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1. PURPOSE

THE PURPOSE OF THE SCA INSTRUCTION FUNCTION TEST IS TO CHECK THE OPERATING PERFORMANCE OF THE SCA INSTRUCTION SET. EACH INSTRUCTION IS CHECKED OUT INDIVIDUALLY AND THEN IN MOST CASES CHECKED OUT WITH COMBINATIONS OF OTHER SCA INSTRUCTIONS.

2. REQUIREMENTS

2.1*** PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS AND THIS PROGRAM USES 1.5 K STORAGE WORDS.

2.2*** EQUIPMENT PREREQUISITES

1. SET DATA TERMINAL SWITCH IN THE TEST POSITION. (SEE NOTE)
2. SET STR SWITCH TO STR POSITION OR BSC POSITION IF BI-SYN OPTION IS SELECTED.
3. SET C.E. MODE SWITCH TO OFF POSITION.
4. SET SCA ALARM SWITCH TO ON POSITION.
5. SET BAUD SELECTOR SWITCH TO 600, 1200, 2000, 2400 OR 4800.
6. CHECK TO SEE THAT JUMPERS ARE INSTALLED AS SHOWN BELOW. INSTALL OR REMOVE JUMPERS AS REQUIRED. MARK ON THIS PAGE ANY JUMPERS THAT ARE CHANGED FOR THIS TEST, AND RESTORE TO ORIGINAL CONFIGURATION AFTER COMPLETION OF TEST.

- X K2D08-K2B08 INSTALLED
- X L2D04-L2D08 INSTALLED
- M2B04-M2D08 INSTALLED (NOT REQUIRED IF A DIAL-UP DATA SET IS CONNECTED)
- D6D05-M2D10 INSTALLED
- D6D06-D6D08 REMOVED

NOTE..REFER TO LOGIC PAGE A0003 FOR CUSTOMER OPTION JUMPERS.

3. OPERATING PROCEDURE

****CAUTION*** LOAD AND GO OPERATION CANNOT BE USED ON SYSTEMS WITH 2 MICRO-SECOND CORE SPEED OR IF OPERATION IS TO BE IN BSC MODE. REFER TO SECTION 3.2.3 FOR PROPER SELECTION OF OPERATING OPTIONS.

PROGRAM STOP SWITCH SHOULD NOT BE USED TO HALT PROGRAM. IF THIS SWITCH IS USED, SCA INTERRUPTS MAY CONTINUE TO OCCUR AFTER PROGRAM IS STOPPED.

THESE OPERATING PROCEDURES APPLY TO SINGLE PROGRAM OPERATION ONLY. FOR OVERLAP OPERATION REFER TO SECTION 3.2.3 OF THE 1130 DAGNOSTIC MONITOR II DOCUMENTATION.

3.1*** PROGRAM LOADING

STANDARD MONITOR LOADING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE OM USE PROCEDURE FOR DETAILS.

1. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
2. SET BIT SWITCH 15 OFF - LOAD AND GO (CANNOT BE USED ON SYSTEMS WITH 2 MICRO-SECOND MEMORY SPEED OR IF OPERATION IS TO BE IN BSC MODE)
 ON - TO SPECIFY OPTIONS BEFORE RUNNING. (SEE SECTION 3.2.3)

IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (SECTION 3.5)

3. LOAD DIAGNOSTIC MONITOR AND SCA PROGRAM INSTRUCTIONS FT.
4. SELECT PROGRAM OPTIONS, IF DESIRED.

3.2*** PROGRAM OPERATION.

STANDARD MONITOR OPERATING PROCEDURES APPLY.
THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR
DETAILS.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-7 TO 01.
2. SET SWITCHES 8-15 AS DESIRED.

SWT	FUNCTION
8	RESTART
9	ROUTINE START MESSAGE
10	LOCK ON FUNCTION
11	LOOP PROGRAM
12	LOOP ON ERROR
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR
15	HALT

3. PRESS INT REQ KEY ON CONSOLE.

3.2.2 ROUTINE SELECTION - FUNCTION 1

THE SELECTED ROUTINE WILL LOOP UNTIL A NEW ROUTINE IS SELECTED.

1. TO SET ROUTINE SELECTION

- A. SET SWITCHES 0-7 TO 41.
- B. SET ROUTINE NUMBER IN SWITCHES 12-15.

THE FOLLOWING ROUTINES WILL RUN SEQUENTIALLY AND STOP AFTER
THE LAST ROUTINE IF NO ROUTINE IS SELECTED.

RTN	DESCRIPTION
1	PROGRAM RESET
2	ALARM ON ... RESET
3	ALARM OFF
4	ALARM ON
5	ALARM OFF (TURNS OFF ALARM, TURNED ON BY ROUTINE 4.)
6	END OPERATION
7	ENABLE SCA
8	DISABLE SCA
9	ENABLE ... DISABLE
A	START/STOP TIMER
B	START/STOP ... START/STOP TIMER
C	LOAD SYNC/IDLE REGISTER
D	WRITE BUFFER
E	READ BUFFER
F	SET MASTER MODE
10	SET MASTER MODE ... START/STOP TIMER
11	SET SLAVE MODE
12	SET SLAVE MODE ... START/STOP TIMER
13	SET MASTER MODE ... SET SLAVE MODE
14	START READ
15	START READ ... START/STOP TIMER
16	SET MASTER MODE ... START READ
17	SET MASTER MODE ... START READ ... START/STOP TIMER
18	SET 7 BIT OPERATION
19	SET 6 BIT OPERATION
1A	START READ ... END OPERATION
1B	TRANSMIT SYNC
1C	LOAD SYNC/IDLE REGISTER ... TRANSMIT SYNC
1D	LOAD SYNC/IDLE REG ..TRANSMIT SYNC .. START/STOP TIMER
1E	LOAD SYNC/IDLE REG .. TRANSMIT SYNC ..END OPERATION
1F	START WRITE
20	LOAD SYNC/IDLE REGISTER ... START WRITE
21	START WRITE ... WRITE BUFFER ... END OPERATION
22	SET SCA DIAGNOSTIC MODE

THIS OPTION WILL BE USED TO TROUBLE SHOOT FAILURES IN CONJUNCTION
WITH SW FUNCTIONS 2 AND 3.

- C. PRESS INT REQ. KEY ON CONSOLE.

2. TO RESET ROUTINE SELECTION SET AS IF SELECTING ROUTINE ZERO.

3.2.3 SCA PROGRAM OPTIONS - FUNCTION 2

1. TO SET PROGRAM OPTIONS

- A. SET SWITCHES 0-7 TO 81.
- B. SET SWITCHES 12-15 AS DEOIERED.

SWT FUNCTION

SWT 11 THIS OPTION IS FOR TWO MICRO-SECOND MEMORY SPEED.
SELECT THIS OPTION WHEN THE 1130 MEMORY SPEED IS
2 MICRO-SECONDS.
IGNORE (OFF) FOR 1130....4 MICRO-SEC MEMORY SPEED.

SWT 12 DIAGNOSTIC RUN..(DO NOT SELECT IF RUNNING OVERLAP)
THIS OPTION MAKES ANALYSIS OF THE
DIAGNOSTIC WORDS. BECAUSE OF THE
CRITICAL TIMING INVOLVED IN SENSING
THESE TRIGGERS WHILE THEY ARE BEING SET
AND CLEARED, THIS OPTION IS NOT
RECOMMENDED DURING OVERLAP.

SWT 13 NO RESET..(DO NOT SELECT IF RUNNING OVERLAP)
THIS OPTION ALLOWS THE DELETION OF THE
RESET ROUTINE (ROUTINE 01) AFTER
EXECUTING EACH OF THE OTHER ROUTINES.
ROUTINE 01 TRAPS ANY UNEXPECTED TIMEOUT
INTERRUPTS, DUE TO A CIRCUIT FAILURE.
THIS CUTS PROGRAM RUN TIME TO 3 MIN.

SWT 14 FAST PASS..(DO NOT SELECT IF RUNNING OVERLAD)
THIS OPTION ALLOWS A 250 MSEC ROUTINE
RUN TIME FOR THOSE ROUTINES WHERE THE
TIMEOUT OR AUDIBLE ALARM FUNCTIONS ARE
NOT EXPECTED. PROG RUN TIME IS 1 MIN.
45 SEC.

NOTE... IF SWS 13 AND 14 ARE SELECTED, RUN TIME IS 55 SEC
IF SWS 13 AND 14 ARE NOT SELECTED, RUN TIME IS
APPROXIMATELY 5 MIN.

SWT 15 BI-SYN ..(CAN BE SELECTED IN OVERLAP)
THIS OPTION ALLOWS THE SCA TO OPERATE
IN THE BINARY SYNCHRONOUS MODE. THIS
OPTION INITIATES A SELF-MODIFICATION
TO THE TEST PROGRAM. THE PROGRAM
MODIFICATIONS ALTER ROUTINE INSTRUCTIONS
USING DSW ON DIAGNOSTIC WORDS THAT
WILL BE OF A DIFFERENT VALUE DUE TO
BI-SYN MODE. DESELECTING THIS OPTION
INITIATES A SELF-MODIFICATION TO THE
TEST PROGRAM, THAT WILL CHANGE EFFECTED
DSW AND DIAGNOSTIC WORDS SO AS TO
OPERATE IN THE STR MODE. RELOADING
THE PROGRAM IS NOT NECESSARY WHEN
CHANGE MODES FROM STR TO BI-SYN OR
FROM BI-SYN TO STR.

C. PRESS INT REQ KEY ON CONSOLE.

2. TO RESET PROGRAM OPTIONS, SET 0-7 TO 81 WITH 12 THRU 15
OFF AND PRESS INT REQ KEY.

3.2.4 SCA SCOPE LOOP OPTION - FUNCTION 3

1. TO SET SCOPE LOOP OPTIONS

- A. SET SWITCHES 0-7 TO C1.
- B. SET SWITCHES 8 THRU 15 AS DESIRED.

NOTE....IF TIMEOUT IS EXPECTED, SCOPE LOOP OPTION WILL HAVE NO
EFFECT ON PROGRAM OPERATION. SWS CAN BE SET TO ANY
COMBINATION.

SW FUNCTION

8 2 SECOND ROUTINE DELAY
9 1 SECOND ROUTINE DELAY
105 SECOND ROUTINE DELAY
1125 SECOND ROUTINE DELAY
12125 SECOND ROUTINE DELAY
130625 SECOND ROUTINE DELAY
1403125 SECOND ROUTINE DELAY
15015625 SECOND ROUTINE DELAY
C. PRESS INT REQ. KEY ON CONSOLE.

2. TO RESET DELAY, SET 0-7 TO C1 AND 8-15 TO ZERO AND PRESS
INT REG. KEY.

3.3*** PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS START
3002	HALT ON ERROR	PRESS START

3.3.2 ERROR HALTS

HALT NO. (B REG)	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE.	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS START.
30F6	MONITOR DID NOT LOAD	RELOAD
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD
30F8	READER NOT READY	MAKE READER READY
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4*** PROGRAM TERMINATION

IF LOOP PROGRAM HAS NOT BEEN SPECIFIED, THE PROGRAM WILL TERMINATE AT THE END OF ROUTINE 22.

IF ANY ROUTINE IS SELECTED THAT ROUTINE WILL LOOP AND WILL NOT TERMINATE.

3.5*** RESTART

1. TURN OFF SWITCHES 0-7.
2. TURN ON SWITCH 8.
3. SET DESIRED CONTROL IN SWITCHES 9-14.
4. PRESS INTERRUPT REQUEST KEY.

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT.

APPNN OORR AAAA (MESSAGE)
OR
EPPNN OORR AAAA (MESSAGE)

WHERE A IDENTIFIES STATUS MESSAGES
E IDENTIFIES ERROR MESSAGES
PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE

THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MONITOR OR 18 FOR MESSAGES ORIGINATED BY THIS PROGRAM.

NN IS THE MESSAGE SEQUENCE NUMBER
RR IS THE ROUTINE NUMBER
AAAA IS THE ADDRESS OF THE ROUTINE
MESSAGE IS ANY VARIABLE INFORMATION

4.1*** STATUS MESSAGES

A0000 NUM PID ADRS RELF LD
XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED FOLLOWING THE LOADING OF ANY PROGRAM (EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER, THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED, AND THE RELOCATION FACTOR.

A0001 SWS PID
XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ, TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE CONTENTS OF SWITCHES 8-15 WERE STORED. IF THE SWITCH ENTRY CALLED FOR HALT OF ANY PROGRAM, THE WORD HALT WILL FOLLOW THE MESSAGE.

A1800 OORR AAAA

ROUTINE START MESSAGE - IF SWITCH 9- FUNCTION 0 IS TURNED ON, THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE. R IS THE NUMBER OF THE NEXT ROUTINE AND AAAA IS THE STARTING ADDRESS.

A1801 OORR AAAA XXXX XXX XX XXXXX XXXX XXXX XX XXX X XXXXX
DIAG RUN NO RESET FAST PASS BI SYN 2 MICRO

THIS MESSAGE WILL BE PRINTED OUT WHENEVER A NEW SCA PROGRAM OPTION IS SELECTED. (FUNC. SW2) ONLY THOSE OPTIONS SELECTED WILL BE PRINTED OUT. IF ALL OPTIONS ARE DESELECTED, THE PRINT AREA WILL BE BLANK.

A1802 OORR AAAA XXXXX XXXX
SCOPE LOOP

THIS MESSAGE WILL BE PRINTED OUT WHENEVER A NEW SCOPE LOOP OPTION IS SELECTED.

A1003 RESTORE SYSTEM TO NORMAL
THIS MESSAGE IS PRINTED OUT TO REMIND C.E. TO RESTORE JUMPERS IF CHANGED FOR TEST, AND RESTORE SYSTEM TO NORMAL.

4.2*** ERROR MESSAGES

E0001 SWS INVLD
XXXX
THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE NUMBER OF ANY PROGRAM IN CORE.

F0003 OVR CORE
THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM
A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM. THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.
1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION, THE CHECK SUM WAS NOT CORRECTLY CALCULATED.

WHEN THIS ERROR OCCURS, ATTEMPT TO RELOAD THE PROGRAM.

F0005 000N XXXX
THIS ERROR WILL OCCUR WHEN AN INTERRUPT OCCURS, BUT THE ILSW WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET THE REQUEST BIT.

NOTE---SCA ERROR MESSAGES

WHENEVER AN SCA ERROR MESSAGE IS BEING PRINTED OUT, THE SCA ALARM IS TURNED ON.

THE C.E. BITS CAN BE JUMPERED, AT C.E. DISCRETION, TO ANY POINT IN THE SCA CIRCUITRY. IF THESE BITS ARE NOT WIRED, THEY WILL BE SET TO A 1. (SEE LOGIC FC732, NOTE 2).

IF ALL DSW ANALYSIS APPEAR GOOD AND MANY FAILURES IN DIAGNOSTIC WORDS OR MANY DSW FAILURES AND DIAGNOSTIC WORD APPEAR GOOD, TAKE INTO CONSIDERATION THE READ DSW OR THE SENSE DIAGNOSTIC WORD COMMANDS ARE FAILING.

E1801 OORR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXX0 XX00 XXX0 XX00 XX00 0XX0

AT LEAST 1 INTERRUPT EXPECTED AND RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE WITH RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1802 OORR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXX0 XX00 XXX0 XX00 XX00 0XX0

AT LEAST 1 INTERRUPT EXPECTED, AND NONE RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE WITH THE RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1803 OORR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXX0 XX00 XXX0 XX00 XX00 0XX0

NO INTERRUPTS EXPECTED, AND AT LEAST 1 RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE WITH THE RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1804 00RR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR RESET
 XXXX XX00 XXX0 XX00 XX00 OXX0

AT LEAST 1 INTERRUPT EXPECTED AND RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR RESET = AN INTERRUPT ERROR WAS FOUND AFTER PROGRAMED RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

F1805 00RR AAAA DW1 DW2 WAS S/B ON/F F/ON *CE* DSW ERR
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DSW.
S/B = CALCULATED CONTENTS OF DSW.
ON/F = DSW BIT THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW BIT THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DSW ERR = THE CALCULATED DSW DID NOT COMPARE WITH THE RECEIVED DSW.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

F1806 00RR AAAA DW1 DW2 WAS S/B ON/F F/ON *CE* DSW ERR RESET
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DSW.
S/B = CALCULATED CONTENTS OF DSW.
ON/F = DSW BIT THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW BIT THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DSW ERR RESET = DSW WAS FOUND IN ERROR AFTER PROGRAMED RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OR ERROR.

E1807 00RR AAAA DSW DW2 1WAS 1S/B ON/F F/ON *CE* DW1 ERR
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DSW = STORED CONTENTS OF DSW.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 1.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 1.
ON/F = DIAGNOSTIC WORD 1 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 1 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW1 ERR = THE CALCULATED DIAGNOSTIC WORD 1 DID NOT COMPARE WITH RECEIVED DIAGNOSTIC WORD 1.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1808 00RR AAAA DSW DW2 1WAS 1S/B ON/F F/ON *CE* DW1 ERR RESET
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DSW = STORED CONTENTS OF DSW.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 1.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 1.
ON/F = DIAGNOSTIC WORD 1 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 1 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW1 ERR RESET = DIAGNOSTIC WORD 1 WAS FOUND IN ERROR AFTER PROGRAM RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1809 00RR AAAA DSW DW1 2WAS 2S/B ON/F F/ON *CE* DW2 ERR
 XXXX XX00 XX00 XX00 XX00 XX00 OXX0

DSW = STORED CONTENTS OF DSW
DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 2.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 2.
ON/F = DIAGNOSTIC WORD 2 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 2 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW2 ERR = THE CALCULATED DIAGNOSTIC WORD 2 DID NOT COMPARE WITH RECEIVED DIAGNOSTIC WORD 2.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E180A 00RR AAAA DSW DW1 2WAS 2S/B ON/F F/ON *CE* DW2 ERR RESET
 XXXX XX00 XX00 XX00 XX00 XX00 OXX0

DSW = STORED CONTENTS OF DSW
DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 2.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 2.
ON/F = DIAGNOSTIC WORD 2 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 2 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW2 ERR RESET = DIAGNOSTIC WORD 2 WAS FOUND IN ERROR AFTER PROGRAM RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1808 00RR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
 XXXO XX00 XXXO 0000 0000 0000

INT ERR = THE DSW BIT WERE FOUND NOT TO BE IN ERROR. BUT AT LEAST
1 INTERRUPT WAS EXPECTED, AND NONE WAS RECEIVED. MAKE
SURE C.E. INTERRUPT DELAY SW IS OFF. IF INTERRUPT
DELAY SW IS OFF, GO TO NET NUM. FC731AN4.

5. COMMENTS

5.1*** PROGRAM PHILOSOPHY

THE SCA INSTRUCTION FUNCTION TEST WAS DESIGNED TO CHECKOUT THE SCA
INSTRUCTION SET. EACH COMMAND IS CHECKED OUT INDIVIDUALLY AND IN
MOST CASES, CHECKED OUT IN VARIOUS COMBINATIONS WITH OTHER COMMANDS.
THE PROGRAM TAKES INTO CONSIDERATION VARIOUS CUSTOMER OPTIONS
AVAILABLE IN STR MODE AND BINARY SYNC MODE.
VARIOUS SCA PROGRAM OPTIONS ARE ALSO AVAILABLE BECAUSE OF THE NATURE
OF THE SCA OPERATION. THE MOST IMPORTANT FACTOR BEING, THAT A TIME-
OUT INTERRUPT MAY OCCUR 3 SECONDS AFTER A SCA COMMAND HAS BEEN
IMPROPERLY EXECUTED. BECAUSE OF THESE POSSIBLE TIMEOUTS AND INTER-
MITTENT ERRORS, EACH ROUTINE IS ANALYZED FOR 4 SECONDS BEFORE ITS
TERMINATION. AFTER THE ROUTINE HAS BEEN TERMINATED, THE RESET
ROUTINE IS EXECUTED AND ANOTHER 4 SECOND ANALYSIS CHECK TAKES PLACE
FOR RESET OF THE SCA CIRCUITRY.

THREE SCA PROGRAM OPTIONS ARE AVAILABLE TO REDUCE PROGRAM RUN TIME,
BUT SACRIFICING THE ABILITY TO TRAP TIMEOUT ERRORS. THESE ARE,

1. FAST PASS (FUNC 2 - SW 14)
THIS OPTION ANALYZES ROUTINES WHERE NO TIMEOUT IS
EXPECTED OR NO ALARM CHECK BEING MADE, FOR .250
SECONDS.
2. NO RESET (FUNC 2 - SW 13)
THIS OPTION BYPASSES RUNNING OF RESET ROUTINE AFTER EACH
ROUTINE EXECUTION.
3. FAST PASS AND NO RESET (FUNC 2 - SWS 13 AND 14)
THIS OPTION ALLOWS BOTH THE NO RESET AND FAST PASS OPTION
TO BE RUN AT SAME TIME. THIS OPTION CUTS PROGRAM RUN
TIME TO ABOUT 55 SECONDS.

THE DIAGNOSTIC MODE OPTION (FUNC 2 - SW 12) ALLOWS A MORE EXTENSIVE
CHECK ON THE COMMAND OPERATION. BUT BECAUSE OF THE CRITICAL TIMING
INVOLVED WHEN SENSING THE DIAGNOSTIC WORDS, THIS OPTION SHOULD NOT
BE SELECTED WHEN RUNNING OVERLAP. UNLESS DIAGNOSTIC MODE IS
SELECTED, ANALYSIS IS ONLY MADE ON DSW.

THE SCOPE LOOP OPTION ALLOWS THE SELECTION OF THE RATE AT WHICH
ANALYSIS WILL BE MADE DURING A ROUTINE. THIS RATE ALSO DETERMINES
THE ROUTINE RUN TIME. THE SCOPE LOOP OPTION IS NOT AVAILABLE TO
ROUTINES WHERE TIMEOUT INTERRUPTS ARE EXPECTED.
THE SCOPE LOOP OPTION IS ONLY AVAILABLE IF A ROUTINE THAT HAS BEEN
SELECTED. (FUNCTION 2)

THE PROPER USE OF THIS OPTION IS TO LOOP THE SELECTED FAILING ROUTINE
AND THEN EXECUTE THE DESIRED SCOPE LOOP OPTION TO SET ROUTINE LOOP
RATE.

5.2*** ROUTINE DESCRIPTION

ROUTINE 01 ... PROGRAM RESET

THIS ROUTINE CHECKS THE ABILITY OF THE SCA RESET COMMAND TO
ESTABLISH INITIAL RESET CONDITIONS OF THE SCA CIRCUITRY.
ALL DIAGNOSTIC WORD TRIGGERS AND DSW TRIGGERS SHOULD BE TURNED
OFF, WITH THE EXCEPTION OF THE SEND/RECEIVE RUN TRIGGER. THIS
ROUTINE IS EXECUTED AS THE SECOND HALF OF ALL OTHER ROUTINES
EXCEPT ROUTINES 04 AND 05 IF THE NO RESET PROGRAM OPTION HAS
NOT BEEN SELECTED, (FUNCTION 2, BIT SW 13). THE NO RESET
PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 02 ... ALARM ON

THIS ROUTINE CHECKS THE ABILITY TO TURN ON THE SCA AUDIBLE
ALARM. THE ALARM IS THEN RESET BY A PROGRAM RESET. THE
NORMAL ALARM ON TIME IS 4 SECONDS AND A FAILURE TO RESET IT IS
EVIDENT BY THE ALARM STAYING ON FOR 12 SECONDS OR MORE. MAKE
SURE THE SCA ALARM SWITCH IS TURNED ON FOR THIS ROUTINE. THE
FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 03 ... ALARM OFF

THIS ROUTINE ENSURES THAT EXECUTION OF THE ALARM OFF COMMAND
DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 04 ... ALARM ON

THIS ROUTINE TURNS ON THE SCA AUDIBLE ALARM. THE ALARM IS
NORMALLY TURNED OFF BY THE EXECUTION OF ROUTINE 04, IF NORMAL
ROUTINE SEQUENCE IS TAKING PLACE (4 SECONDS LATER). MAKE SURE
THE SCA ALARM SWITCH IS TURNED ON FOR THIS ROUTINE. THE FAST
PASS AND NO RESET PROGRAM OPTIONS ARE NOT APPLICABLE TO THIS
ROUTINE.

ROUTINE 05 ... ALARM OFF

THIS ROUTINE NORMALLY TURNS OFF THE SCA ALARM TURNED ON BY
ROUTINE 04. IF NORMAL ROUTINE SEQUENCE IS BEING EXECUTED, A
FAILURE IS EVIDENT IF ALARM IS ON LONGER THAN 4 SECONDS.

ROUTINE 06 ... END OPERATION

THIS ROUTINE ENSURES THAT THE EXECUTION OF THE ENDOP COMMAND
DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.
IF DIAGNOSTIC MODE IS SELECTED, THE SETTING OF THE ENDOP
TRIGGER IS CHECKED.

ROUTINE 07 ... ENABLE SCA

THIS ROUTINE CHECKS THE ENABLE COMMAND. BIT 6 OF THE DSW
SHOULD COME ON.

ROUTINE 08 ... DISABLE

THIS ROUTINE ENSURES THAT THE EXECUTION OF THE DISABLE COMMAND
DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 09 ... ENABLE/DISABLE

THIS ROUTINE CHECKS THE ABILITY OF THE DISABLE COMMAND TO RESET THE ENABLE TRIGGER. THE ENABLE DSW BIT SHOULD NOT COME ON.

ROUTINE 0A ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE ENSURES THAT THE EXECUTION OF THE START/STOP TIMER COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY

IN BI SYN MODE ...
EXECUTING THE START/STOP TIMER INSTRUCTION IN BINARY SYNC MODE WILL ALLOW THE PROGRAM TIMER TO OPERATE. A TIMEOUT INTERRUPT WILL OCCUR.

ROUTINE 0B ... START/STOP ... START/STOP TIMER

THIS ROUTINE ENSURES THAT THE EXECUTION OF 2 START/STOP TIMER COMMANDS DO NOT BRING UP UNDESIRABLE LEVEL IN THE SCA CIRCUITRY.

ROUTINE 0C ... LOAD SYNC/IDLE REGISTER

THIS ROUTINE ENSURES THAT THE EXECUTION OF LOAD SYNC/IDLE COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 0D ... WRITE BUFFER

THIS ROUTINE ENSURES THAT THE EXECUTION OF THE WRITE BUFFER COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 0E ... READ BUFFER

THIS ROUTINE ENSURES THAT THE EXECUTION OF THE READ BUFFER COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 0F ... SET MASTER MODE

THIS ROUTINE CHECKS THAT THE SETTING OF THE SCA TO MASTER MODE CAUSES A TIMEOUT INTERRUPT, TURNS OFF RECEIVE RUN AND SETS BUSY AND READY BITS IN THE DSW. THE FAST PASS OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 10 ... SET MASTER MODE ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF SETTING MASTER MODE, IS INHIBITED BY THE START/STOP TIMER COMMAND. THE BUSY AND READY DSW BITS SHOULD COME ON AND RECEIVE RUN DSW BIT SHOULD BE TURNED OFF.

IN BI SYN MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF SETTING MASTER MODE, IS NOT INHIBITED BY THE START/STOP TIMER COMMAND. A TIMEOUT INTERRUPT WILL OCCUR.

ROUTINE 11 ... SET SLAVE MODE

THIS ROUTINE CHECKS THAT THE SETTING OF THE SCA TO THE SLAVE MODE CAUSES A TIMEOUT INTERRUPT, AND TURNS ON RECEIVE RUN, BUSY, AND READY DSW BITS. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 12 ... SET SLAVE MODE ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF SETTING SLAVE MODE IS INHIBITED BY THE START/STOP TIMER COMMAND. THE BUSY, READY, AND RECEIVE RUN DSW BITS SHOULD COME ON.

IN BI SYN MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF SETTING SLAVE MODE IS NOT INHIBITED BY THE START/STOP TIMER COMMAND. A TIMEOUT INTERRUPT WILL OCCUR.

ROUTINE 13 ... SET MASTER MODE ... SET SLAVE MODE

THIS ROUTINE CHECKS THE ABILITY OF THE SET SLAVE MODE COMMAND TO CONDITION THE SCA CIRCUITRY FOR SLAVE MODE FROM MASTER MODE. A TIMEOUT INTERRUPT IS EXPECTED AND RECEIVE/RUN, BUSY AND READY DSW BITS SHOULD BE TURNED ON. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 14 ... START READ

THIS ROUTINE CHECKS THE ABILITY OF THE START READ COMMAND TO GENERATE A TIMEOUT INTERRUPT AND TURN ON RECEIVE RUN, BUSY, AND READY DSW BITS. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 15 ... START READ ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE START/STOP TIMER COMMAND TO INHIBIT THE TIMEOUT INTERRUPT ORIGINALLY SET IN MOTION BY THE START READ COMMAND. THE RECEIVE RUN, BUSY AND READY DSW BITS SHOULD BE TURNED ON.

IN BI SYN MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF THE START READ COMMAND DOES OCCUR AND THAT IT IS NOT INHIBITED BY THE START/STOP TIMER COMMAND.

ROUTINE 16 ... SET MASTER MODE ... START READ

THIS ROUTINE CHECKS THE ABILITY OF THE START READ COMMAND TO BE EXECUTED PROPERLY WHEN THE SCA IS SET TO MASTER MODE. A TIMEOUT INTERRUPT IS EXPECTED AND THE BUSY AND READY DSW BITS SHOULD BE TURNED ON. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 17 ... SET MASTER MODE ... START READ ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE START/STOP TIMER TO INHIBIT THE TIMEOUT INTERRUPTS ORIGINALLY SET IN MOTION BY THE SET MASTER MODE AND START READ COMMANDS. THE BUSY AND READY DSW BITS SHOULD BE TURNED ON.

IN BI SYN MODE ...
THIS ROUTINE CHECKS THAT THE TIMEOUT INTERRUPT EXPECTED AS THE RESULT OF THE SET MASTER MODE AND START READ COMMANDS DOES OCCUR AND THAT IT IS NOT INHIBITED BY THE START/STOP TIMER COMMAND.

ROUTINE 18 ... SET 7 BITS OPERATION

THIS ROUTINE ENSURES THAT THE SET 7 BITS COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 19 ... SET 6 BITS OPERATION

THIS ROUTINE ENSURES THAT THE SET 6 BITS COMMAND DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 1A ... START READ ... END OPERATION

THIS ROUTINE CHECKS THE ABILITY OF THE END OPERATION COMMAND TO TERMINATE THE START READ OPERATION AND INHIBIT THE TIMEOUT INTERRUPT BEFORE IT OCCURS. THE READY AND RECEIVE/RUN DSW BITS SHOULD BE TURNED ON.

ROUTINE 1B ... TRANSMIT SYNC

IN STR MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE TRANSMIT SYNC COMMAND TO GENERATE A WRITE RESPONSE INTERRUPT AND A TIMEOUT INTERRUPT. IT SHOULD ALSO TURN ON CHECK, BUSY, AND READY DSW BITS. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

IN BI SYN MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE TRANSMIT SYNC COMMAND TO GENERATE A WRITE RESPONSE INTERRUPT AND A TIMEOUT INTERRUPT. THE SAME DSW, DIAG WORDS BITS ARE SET THAT WERE SET IN STR MODE EXCEPT THE IDLE CHARACTER TRIGGER BIT IN DW1. IDLE CHAR TRIG IS LEFT OFF.

ROUTINE 1C ... LOAD SYNC/IDLE REGISTER ... TRANSMIT SYNC

IN STR MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE TRANSMIT SYNC COMMAND TO BE PROPERLY EXECUTED AFTER THE SYNC REGISTER HAS BEEN LOADED. THE WRITE RESPONSE AND TIMEOUT INTERRUPT SHOULD BE GENERATED AND THE CHECK, BUSY, AND READY DSW BITS SHOULD BE TURNED ON. THE FAST PASS PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

IN BI SYN MODE ...
THIS ROUTINE OPERATES THE SAME AS DESCRIBED ABOVE IN THE STR SECTION EXCEPT THE IDLE CHARACTER TRIGGER BIT IN DIAG WORD 1 IS LEFT OFF.

ROUTINE 1D ... LOAD SYNC/IDLE REGISTER ... TRANSMIT SYNC ... START/STOP TIMER

IN STR MODE ...
THIS ROUTINE CHECKS THE ABILITY OF THE START/STOP TIMER COMMAND TO INHIBIT THE WRITE RESPONSE AND TIMEOUT INTERRUPTS. THE RECEIVE/RUN DSW BIT SHOULD BE TURNED ON.

IN BI SYN MODE ...
THE ROUTINE CHECKS THE ABILITY OF THE LOAD SYNC/IDLE REGISTER AND TRANSMIT SYNC COMMANDS TO GENERATE THE WRITE RESPONSE AND TIMEOUT INTERRUPTS. THE START/STOP TIMER COMMAND SHOULD NOT INHIBIT TIMEOUT. THE WRITE RESPONSE, CHECK, TIMEOUT, BUSY, READY AND RCV RUN DSW BITS SHOULD BE TURNED ON.

ROUTINE 1E ... LOAD SYNC/IDLE REGISTER ... TRANSMIT SYNC ... END OPERATION

THIS ROUTINE CHECKS THE ABILITY OF THE END OPERATION COMMAND TO TERMINATE THE TRANSMIT SYNC OPERATION. THE TIMEOUT AND WRITE RESPONSE INTERRUPTS SHOULD BE INHIBITED AND THE RECEIVE/RUN DSW BIT TURNED ON.

ROUTINE 1F ... START WRITE

THIS ROUTINE CHECKS THE ABILITY OF THE START WRITE COMMAND TO GENERATE A WRITE RESPONSE INTERRUPT AND TURN ON THE CHECK, BUSY, READY, AND RECEIVE RUN DSW BITS.

ROUTINE 20 ... LOAD SYNC/IDLE REGISTER ... START WRITE

THIS ROUTINE CHECKS THE ABILITY OF THE START WRITE COMMAND TO BE EXECUTED PROPERLY AFTER THE LOADING OF THE SYNC/IDLE REGISTER. A WRITE RESPONSE INTERRUPT SHOULD BE GENERATED AND THE CHECK, BUSY, READY, AND RECEIVE/RUN DSW BITS SHOULD BE TURNED ON.

ROUTINE 21 ... START WRITE ... WRITE BUFFER ... END OPERATION

THIS ROUTINE CHECKS THE ABILITY OF END OPERATION COMMAND TO TERMINATE THE START WRITE OPERATION. THE WRITE RESPONSE INTERRUPT SHOULD BE INHIBITED AND THE CHECK AND RECEIVE/RUN DSW BITS SHOULD BE TURNED ON.

ROUTINE 22 ... SET SCA DIAGNOSTIC MODE

THIS ROUTINE CHECKS THE ABILITY OF THE SET DIAGNOSTIC MODE COMMAND TO GENERATE READ RESPONSE AND WRITE RESPONSE INTERRUPTS. THE CHECK AND RECEIVE/RUN DSW BITS SHOULD BE TURNED ON.

5.3*** DIAGNOSTIC REFERENCE TABLE

ERROR BIT REFERENCE

ERR BIT	BIT POSITION	DSW ERROR	DW1 ERROR	DW2 ERROR
8	0	READ RESP	SYNC TRIG	CLK GATE
4	1	WRT RESP	IDLE CHAR	SYNC CNTR
2	2	CHECK	CHAR CMPT	1ST TRANS
1	3	TIMEOUT	END OP	PHS CNTR
8	4	ANS REQ	DIAG MODE	RCV TAG
4	5	BUSY	TIMER TR	CHAR PHS
2	6	ENABLE	3 SEC TIMER	
1	7	READY	1.5 SEC TIMER	
8	8	RCV RUN	SEND DATA	

ROUTINE 01	COMMAND	FUNCTION	MODIFIER
	RESET	STR WRT	9

	DSW ERR								DW1 ERR								DW2 ERR					ALARM			
	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	.
STR	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
N	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
T	3	3	3	3	3	3	3	3	2	3	5	6	3	3	3	3	6	1	6	1	2	5	5	3	
	5	5	5	5	3	4	6	1		2	3	4	2	1	4	4	3	1	4	1	1	2	3	2	
N	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
U	B	A	B	A	B	A	A	A	A	B	B	B	A	B	A	A	B	A	B	B	A	A	B	B	B
M	A	L	B	M	C	B	Q	X	V	C	Y	M	R	E	R	V	P	L	L	L	T	E	H	X	M
	2	2	2	2	2	4	2	4	6	2	4	2	2	2	2	4	4	4	2	2	2	4	4	2	
BI SYN	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

COMMENTS

THIS ROUTINE CHECKS FOR RESET CONDITION OF THE SCA CIRCUITRY. IT SHOULD BE ABLE TO TRAP SOLID AND INTERMITTENT PROBLEMS IN THIS AREA. IF READY DSW BIT IS ON, CHECK SET UP.

ROUTINE 02	COMMAND	FUNCTION	MODIFIER
	ALARM ON	XIO WRT	14

	DSW ERR								DW1 ERR								DW2 ERR					ALARM			
	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	.
STR	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
N	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
T	3	3	3	3	3	3	3	3	2	3	5	6	3	3	3	3	6	1	6	1	2	5	5	3	
	5	5	5	5	3	4	6	1		2	3	4	2	1	4	4	3	1	4	1	1	2	3	2	
N	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
U	B	A	B	A	B	A	A	A	A	B	B	B	A	B	A	A	B	A	B	B	A	A	B	B	B
M	A	L	B	M	C	B	Q	X	V	C	Y	M	R	E	R	V	P	L	L	L	T	E	H	X	M
	2	2	2	2	2	4	2	4	6	2	4	2	2	2	2	4	4	4	2	2	2	4	4	2	
BI SYN	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	

COMMENTS

THIS ROUTINE TURNS ON THE ALARM AND THE RESET AT END OF THE 4 SECOND DELAY TURN IT OFF. IF ALARM STAYS ON FOR ABOUT 8 SECONDS, GO TO NET NUM. FC321TL4. IF NO ALARM, MAKE SURE ALARM SW IS ON.

ROUTINE 03	COMMAND	FUNCTION	MODIFIER
	ALARM OFF	XIO WRT	15

	DSW ERR								DW1 ERR								DW2 ERR					ALARM			
	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	.
STR	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
N	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
T	3	3	3	3	3	3	3	3	2	3	5	6	3	3	3	3	6	1	6	1	2	5	5	3	
	5	5	5	5	3	4	6	1		2	3	4	2	1	4	4	3	1	4	1	1	2	3	2	
N	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
U	B	A	B	A	B	A	A	A	A	B	B	B	A	B	A	A	B	A	B	B	A	A	B	B	B
M	A	L	B	M	C	B	Q	X	V	C	Y	M	R	E	R	V	P	L	L	L	T	E	H	X	M
	2	2	2	2	2	4	2	4	6	2	4	2	2	2	2	4	4	4	2	2	2	4	4	2	
BI SYN	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
S/B ON	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO ALARM DOES NOT BRING UP UNDESIRED LEVELS IN THE SCA CIRCUITRY.

ROUTINE 04	COMMAND	FUNCTION	MODIFIER
	ALARM ON	XIO WRT	14
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X
N		F F F F F F F F F	F F F F F F F F F
E		C C C C C C C C C	C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
N		5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
U		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M		B A B A B A A A A	B B B A B A A A B A B B A A B B B
		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X

COMMENTS

THIS ROUTINE TURN ON ALARM AND THE RESET IS INHIBITED. THE ALARM SHOULD BE ON FOR 4 SECONDS AND TURNED OFF BY ROUTINE 05. IF ALARM DOES NOT COME ON, MAKE SURE ALARM SW IS ON.

ROUTINE 06	COMMAND	FUNCTION	MODIFIER
	END OP	CONTROL	13
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X
N		F F F F F F F F F	F F F F F F F F F
F		C C C C C C C C C	C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
N		5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
U		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M		B A B A B A A A A	B B B A B A A A B A B B A A B B B
		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X

COMMENTS

THIS ROUTINE CHECKS THE END OPERATION COMMAND.

ROUTINE 05	COMMAND	FUNCTION	MODIFIER
	ALARM OFF	XIO WRT	15
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X
N		F F F F F F F F F	F F F F F F F F F
E		C C C C C C C C C	C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
N		5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
U		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M		B A B A B A A A A	B B B A B A A A B A B B A A B B B
		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X

COMMENTS

THIS ROUTINE TURNS OFF ALARM WHICH WAS TURN ON BY ROUTINE 04. A FAILURE HAS OCCURED, IF ALARM STAYS ON LONGER THAN 4 SECONDS.

ROUTINE 07	COMMAND	FUNCTION	MODIFIER
	ENABLE	CONTROL	8
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X X	. . . . . X X
N		F F F F F F F F F	F F F F F F F F F
F		C C C C C C C C C	C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
N		5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
U		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M		B A B A B A A A A	B B B A B A A A B A B B A A B B B
		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X X	. . . . . X X

COMMENTS

THIS ROUTINE CHECKS SETTING OF THE ENABLE DSW BIT. IF DATA SET CABLE IS NOT PLUGGED INTO DATA SET, AN ANS REQ INT MAY OCCUR BECAUSE ANS REQ LINE IS NOT TERMINATED.

ROUTINE 08	COMMAND	FUNCTION	MODIFIER
	DISABLE	CONTROL	9
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A B A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO DISABLE DOES NOT BRING UP UNDESIRE
LEVELS IN THE SCA CIRCUITRY.

ROUTINE 09	COMMAND	FUNCTION	MODIFIER
	ENABLE	CONTROL	8
	DISABLE	CONTROL	9
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A B A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .

COMMENTS

THIS ROUTINE TURNS ON THE ENABLE TRIGGER AND THEN CHECKS THAT AN
XIO DISABLE RESFT IT.

ROUTINE 0A	COMMAND	FUNCTION	MODIFIER
	START/STOP	CONTROL	10
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A B A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . . X

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP DOES NOT CAUSE A TIMEOU
INTERRUPT IN STR MODE. IF A TIMEOUT INTERRUPT OCCURS, MAKE SURE
STR MODE SW IS IN THE STR POSITION.

ROUTINE 0B	COMMAND	FUNCTION	MODIFIER
	START/STOP	CONTROL	10
	START/STOP	CONTROL	10
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A B A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT 2 CONSECUTIVE XIO START/STOP
INSTRUCTIONS DO NOT CAUSE A TIMEOUT INTERRUPT.

ROUTINE OC	COMMAND	FUNCTION	MODIFIER				
	SYNC/IDLE	XIO WRT	13				
		DSW ERR	DW1 ERR	DW2 ERR	ALARM		
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5			
STR		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.
N	F	F F F F F F F F	F F F F F F F F	F F F F F F	F		
E	C	C C C C C C C C	C C C C C C C C	C C C C C C	C		
T	3	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3		
	5	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B	B A B A B A A A A A	B B B A B A A B A	B B A A B B	B		
M	A	L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	2	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2		
BI SYN		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.

COMMENTS
THIS ROUTINE CHECKS THAT XIO SYNC/IDLE DOES NOT BRING UP UNDESIRED LEVELS IN THE SCA CIRCUITRY.

ROUTINE OD	COMMAND	FUNCTION	MODIFIER				
	WRT BUFFER	XIO WRT	0				
		DSW ERR	DW1 ERR	DW2 ERR	ALARM		
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5			
STR		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.
N	F	F F F F F F F F	F F F F F F F F	F F F F F F	F		
E	C	C C C C C C C C	C C C C C C C C	C C C C C C	C		
T	3	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3		
	5	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B	B A B A B A A A A A	B B B A B A A B A	B B A A B B	B		
M	A	L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	2	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2		
BI SYN		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.

COMMENTS
THIS ROUTINE CHECKS THAT XIO WRITE BUFFER DOES NOT BRING UP UNDESIRED LEVELS IN THE SCA CIRCUITRY.

ROUTINE OE	COMMAND	FUNCTION	MODIFIER				
	RD BUFFER	XIO RD	0				
		DSW ERR	DW1 ERR	DW2 ERR	ALARM		
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5			
STR		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.
N	F	F F F F F F F F	F F F F F F F F	F F F F F F	F		
E	C	C C C C C C C C	C C C C C C C C	C C C C C C	C		
T	3	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3		
	5	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B	B A B A B A A A A A	B B B A B A A B A	B B A A B B	B		
M	A	L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	2	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2		
BI SYN		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . . X	. . . . .	. . . . .	.

COMMENTS
THIS ROUTINE CHECKS THAT XIO READ BUFFER DOES NOT BRING UP UNDESIRED LEVELS IN THE SCA CIRCUITRY.

ROUTINE OF	COMMAND	FUNCTION	MODIFIER				
	MASTER	STR RD	15				
		DSW ERR	DW1 ERR	DW2 ERR	ALARM		
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5			
STR		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . X . X . X .	. . . . .	. . . . .	.
N	F	F F F F F F F F	F F F F F F F F	F F F F F F	F		
E	C	C C C C C C C C	C C C C C C C C	C C C C C C	C		
T	3	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3		
	5	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B	B A B A B A A A A A	B B B A B A A B A	B B A A B B	B		
M	A	L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	2	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2		
BI SYN		. . . . .	. . . . .	. . . . .	.
S/B ON		. . . . X . X . X .	. . . . .	. . . . .	.

COMMENTS
THIS ROUTINE CHECKS THAT XIO MASTER CLEARS RECEIVE/RUN DSW BIT AND SETS TIMEOUT, BUSY, AND READY DSW BITS. IF DATA SET IS NOT IN TEST, THIS WILL BE THE FIRST ROUTINE TO FAIL. (DSW BIT 7) THIS ERROR WILL OCCUR IF THE 2 MIC OPTION WAS NOT SELECTED ON A 2 MIC MEMORY.

ROUTINE 10	COMMAND	FUNCTION	MODIFIER
	MASTER	STR RD	15
	START/STOP	CONTROL	10

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X .	. . . . . X . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X .	. . . . . X . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP PREVENTS THE TIMEOUT INTERRUPT SET IN MOTION BY XIO MASTER.

ROUTINE 12	COMMAND	FUNCTION	MODIFIER
	SLAVE	STR RD	14
	START/STOP	CONTROL	10

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X X	. . . . . X . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X X	. . . . . X . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP PREVENTS THE TIMEOUT INTERRUPT SET IN MOTION BY XIO SLAVE.

ROUTINE 11	COMMAND	FUNCTION	MODIFIER
	SLAVE	STR RD	14

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X . X X	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X . X X	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO SLAVE SETS TIMEOUT, BUSY, AND READY DSW BITS.

ROUTINE 13	COMMAND	FUNCTION	MODIFIER
	MASTER	STR RD	15
	SLAVE	STR RD	14

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X . X X	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X . X . X X	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO SLAVE RESETS REC/RUN DSW BIT AFTER IS WAS CLEARED BY XIO MASTER.

ROUTINE 14	COMMAND	FUNCTION	MODIFIER
	START RD	STR RD	0
	DSW ERR	DW1 ERR	DW2 ERR
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5
STR	. . . . .	. . . . .	. . . . .
S/B ON	. . . . X . X . X X	. . . . .	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . . . .	. . . . .	. . . . .
S/B ON	. . . . X . X . X X	. . . . .	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO START READ SETS TIMEOUT, BUSY, AND READY DSW BITS.

ROUTINE 16	COMMAND	FUNCTION	MODIFIER
	MASTER START RD	STR RD	15 0
	DSW ERR	DW1 ERR	DW2 ERR
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5
STR	. . . . .	. . . . .	. . . . .
S/B ON	. . . . X . X . X .	. . . . .	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . . . .	. . . . .	. . . . .
S/B ON	. . . . X . X . X .	. . . . .	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO START READ IS EXECUTED PROPERLY IN MASTER MODE.

ROUTINE 15	COMMAND	FUNCTION	MODIFIER
	START RD	STR RD	0
	START/STOP	CONTROL	10
	DSW ERR	DW1 ERR	DW2 ERR
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5
STR	. . . . .	. . . . .	. . . . .
S/B ON	. . . . . X . X X	. . . . . X . . .	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . . . .	. . . . .	. . . . .
S/B ON	. . . . . X . X X	. . . . . X . . .	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP PREVENT THE TIMEOUT INTERRUPT SET IN MOTION BY XIO START READ.

ROUTINE 17	COMMAND	FUNCTION	MODIFIER
	MASTER START RD	STR RD	15 0
	START/STOP	CONTROL	10
	DSW ERR	DW1 ERR	DW2 ERR
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5
STR	. . . . .	. . . . .	. . . . .
S/B ON	. . . . . X . X .	. . . . . X . . .	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . . . .	. . . . .	. . . . .
S/B ON	. . . . . X . X .	. . . . . X . . .	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP PREVENTS THE TIMEOUT INTERRUPT SET IN MOTION BY XIO START READ IN MASTER MODE.

ROUTINE 18	COMMAND	FUNCTION	MODIFIER
	SFT 7	CONTROL	15
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .
N		F F F F F F F F F	F F F F F F F F F F
F		C C C C C C C C C	C C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
		5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
N		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
U		B A B A B A A A A	B B B A B A A B A B B A A B B B
M		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO SET 7 DOES NOT BRING UP UNDESIRABLE LEVELS IN THE STR CIRCUITRY.

ROUTINE 1A	COMMAND	FUNCTION	MODIFIER
	START RD END OP	STR RD CONTROL	0 13
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X X	. . . . .
N		F F F F F F F F F	F F F F F F F F F F
F		C C C C C C C C C	C C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
		5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
N		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
U		B A B A B A A A A	B B B A B A A B A B B A A B B B
M		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X X	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT THE END OP COMMAND PREVENT THE TIMEOUT INTERRUPT SET IN MOTION BY XIO START READ.

ROUTINE 19	COMMAND	FUNCTION	MODIFIER
	SET 6	CONTROL	14
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .
N		F F F F F F F F F	F F F F F F F F F F
E		C C C C C C C C C	C C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
		5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
N		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
U		B A B A B A A A A	B B B A B A A B A B B A A B B B
M		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . . . . X	. . . . .

COMMENTS

THIS ROUTINE CHECKS THAT XIO SET 7 DOES NOT BRING UP UNDESIRABLE LEVELS IN THE STR CIRCUITRY.

ROUTINE 1B	COMMAND	FUNCTION	MODIFIER
	SYNC	CONTROL	11
		DSW ERR	DW1 ERR DW2 ERR ALARM
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8 0 1 2 3 4 5
STR		. . . . .	. . . . .
S/B ON		. . X X X . X . X X	X X X X X X X . X X X .
N		F F F F F F F F F	F F F F F F F F F F
F		C C C C C C C C C	C C C C C C C C C C
T		3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6 1 6 1 2 5 5 3
		5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3 1 4 1 1 2 3 2
N		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
U		B A B A B A A A A	B B B A B A A B A B B A A B B B
M		A L B M C B Q X V	C Y M R E R V P L L L T E H X M
		2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4 4 2 2 2 4 4 2
BI SYN		. . . . .	. . . . .
S/B ON		. . X X X . X . X X	X . X X X . X X . X X X .

COMMENTS

THIS ROUTINE CHECKS THAT XIO SYNC SETS TIMEOUT AND WRITE RESPONSE INTERRUPT DSW BITS, AND SET CHECK, BUSY, AND READY DSW BITS.

IF C.E. SW IS TURNED ON, THIS WILL BE FIRST ROUTINE TO FAIL.

ROUTINE 1C	COMMAND	FUNCTION	MODIFIER
	SYNC/IDLE	XIO WRT	13
	SYNC	CONTROL	11

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO SYNC OPERATES PROPERLY AFTER TRANSFERING INTO SYNC/IDLE REGISTER.

ROUTINE 1D	COMMAND	FUNCTION	MODIFIER
	SYNC/IDLE	XIO WRT	13
	SYNC	CONTROL	11
	START/STOP	CONTROL	10

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO START/STOP PREVENTS TIMEOUT AND WRITE RESPONSE INTERRUPTS SET IN MOTION BY XIO SYNC.

ROUTINE 1E	COMMAND	FUNCTION	MODIFIER
	SYNC/IDLE	XIO WRT	13
	SYNC	CONTROL	11
	END OP	CONTROL	13

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO END OP PREVENTS TIMEOUT AND WRITE RESPONSE INTERRUPTS SET IN MOTION BY XIO SYNC.

ROUTINE 1F	COMMAND	FUNCTION	MODIFIER
	START WRT	STR WRT	1

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . .	. . . . .	. . . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO START WRITE CAUSES A WRITE RESPONSE INTERRUPT, AND SETS CHECK, BUSY, AND READY DSW BITS.

ROUTINE 20	COMMAND	FUNCTION	MODIFIER
	SYNC/IDLE	XIO WRT	13
	START WRT	STR WRT	0

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X . . . . .	. . X . . . . .	. X X . X X X	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . X X . . . . .	. . . X . . . . .	. X X . X X X	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO START WRITE IS EXECUTED PROPERLY AFTER LOADING THE SYNC/IDLE REGISTER.

ROUTINE 22	COMMAND	FUNCTION	MODIFIER
	DIAG MODE	CONTROL	12

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X . . . . .	. . X . X . . . . .	. X X . X X X	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X . . . . .	. . X . X . . . . .	. X X . X X X	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO DIAGNOSTIC MODE CAUSES READ AND WRITE INTERRUPTS, AND ALSO SET CHECK DSW BIT.

 LAST PAGE

ROUTINE 21	COMMAND	FUNCTION	MODIFIER
	START WRT	STR WRT	0
	WRT BUFFER	XIO WRT	0
	END OP	CONTROL	13

	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . X . . . . .	. . . X . . . . .	. X . X . . .	.
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F	F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C	C
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . X . . . . .	. . . X . . . . .	. X . X . . .	.

COMMENTS

THIS ROUTINE CHECKS THAT XIO END OP PREVENTS THE WRITE RESPONSE INTERRUPT SET IN MOTION BY XIO START WRITE.

```

05DC          ORG      *E1500
*             EQUATE TABLE
*****
*             THIS TABLE EQUATES TEST PROGRAM LABELS
*             TO THEIR EQUIVALENT DIAGNOSTIC MONITOR
*             ADDRESSES.
*
*-----*
*             MONITOR ENTRY ADDRESSES
*-----*
0160 0        BEGIN EQU    /160      BEGIN ROUTINE
0161 0        START EQU   BEGIN&1  SUPERVISOR ROUTINE
0162 0        ERROR EQU   START&1   ERROR LOG ROUTINE
0163 0        LOG EQU     ERROR&1   STATUS LOG ROUTINE
0164 0        END EQU     LOG&1     END ROUTINE
*
*-----*
*             MONITOR CONTROL WORD ADDRESSES
*-----*
0165 0        RTNSW EQU   END&1     ROUTINE START SW
0166 0        ERLCK EQU  END&2     LOCK ON ERR CONTROL
0167 0        LOGBY EQU  END&3     I/O BUSY SW ADDRS
0168 0        LRCF EQU   END&4     RELOC FACTOR ADDRS
*
*-----*
*             INTERRUPT TRANSFER VECTOR ADDRESSES
*-----*
017A 0        ILO EQU    /17A      INTERRUPT LEVEL 0
018A 0        IL1 EQU   IL0&16    INTERRUPT LEVEL 1
019A 0        IL2 EQU   IL1&16    INTERRUPT LEVEL 2
01AA 0        IL3 EQU   IL2&16    INTERRUPT LEVEL 3
01BA 0        IL4 EQU   IL3&16    INTERRUPT LEVEL 4
01BB 0        RQTY EQU  IL4&1     CON/PRINT REQUEST
01BC 0        RQKB EQU  RQTY&1    USE KEYBOARD REQUEST
01BD 0        SVKB EQU  RQKB&1    KB SERVICE REQUEST
*****
*-----*
*             SCA INSTRUCTION FT
*-----*
*****
*             PROGRAM STATUS TABLE
*****
05DC 0 0318   PID DC      /0318    PROGRAM ID
05DD 0 0000   RID DC      /0000    ROUTINE NUMBER
05DE 0 0000   RAD DC      /0000    ROUTINE ADDRESS
05DF 0 0000   SW0 DC      0        PROGRAM CONTROL
05E0 0 0000   SW1 DC      0        ROUTINE SELECTION
05E1 0 0000   SW2 DC      0        OPTION SELECTION SW
05E2 0 0000   SW3 DC      0        RTN SCAN OPTION
05E3 1 07D7   DC         STRT     LOOP PROGRAM
05E4 1 07D7   DC         STRT     RESTART ADDRESS
05E5 1 07D7   MLSCF DC    STRT     ENTRY SET IN MN/LINE
05E6 0 FFFF   DC         /FFFF    TERMINATOR
*
*****
*             LOCK ON FUNCTION ROUTINE
*****
05E7 0 0000   LOCK DC     /0000
05E8 1 C400 05DF LD L SWO LD SWO
05EA 0 EC80 0166 OR I ERLCK OR WITH MON LOCK SW
05EC 0 100A   SLA 10 CHECK BIT 10
05ED 1 4C90 05E7 BSC I LOCK,- BR IF NOT LOCK/FUNC

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31800020
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31800100
31800110
31800120
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31800150
31800160
31800170
31800180
31800190
31800200
31800210
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31800240
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31800270
31800280
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31800300
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05EF 1 C400 05F5 LD L LOOP
05F1 1 4CA0 05F5 BSC I LOOP,Z
05F3 1 4C80 05E7 BSC I LOCK
05F5 0 0000 LOOP DC *-*
*
*-----*
05F6 0 4480 0160 BEGN BSI I BEGIN MON INITIALIZATION
05F8 1 05DC DC PID PST TABLE
*
*-----*
* START OF TEST AND SINGLE PASS INITIALIZE
*-----*
*****
*             PROGRAM WAIT
*****
* THIS ROUTINE IS USED BY THE TEST PROGRAM
* TO MARK TIME WHILE WAITING FOR AN INTERRUPT
* TO OCCUR.
*
*****
05F9 0 0000 WCNT DC 0 WAIT COUNTER
05FA 0 1000 DELY3 DC /1000 DELAY CONSTANT
*
05FB 0 COFE WAIT3 LD DELY3 LD 4 SEC CONSTANT
05FC 0 D0FC STO WCNT SET IN WAIT COUNTER
05FD 1 C400 05E1 LD L SW2 LD RTN OPTION SWT
05FF 0 100B SLA 11 CK FOR 2 MICRO SPEED
0600 0 4810 BSC - SKIP IF ON
0601 0 7003 MDX WAIT1 BRANCH
0602 0 C0F6 LD WCNT LD WAIT COUNT
0603 0 1001 SLA 1 DOUBLE IT
0604 0 D0F4 STO WCNT LD 4 SEC CONSTANT
0605 0 0834 WAIT1 XIO DSWSE SENSE DSW
0606 0 E83F OR DSWAL SAVE DSW DATA
0607 0 D03E STO DSWAL
0608 0 0835 XIO RDIA1 READ DIAG WORD 1
0609 0 0836 XIO RDIA2 READ DIAG WORD 2
060A 0 C03C LD DIAW1
060B 0 E838 OR DIAL SAVE DIAG 1 DATA
060C 0 D037 STO DIAL
060D 0 C03A LD DIAW2
060E 0 E836 OR DI2AL SAVE DIAG 2 DATA
060F 0 D035 STO DI2AL
0610 1 6700 0616 LDX L3 WAITB SET UP MON RETURN
0612 1 6F00 05E5 STX L3 MLSCF
0614 0 4480 0161 BSI I START GO TO MONITOR
0616 1 74FF 05F9 WAITB MDX L WCNT,-1 REDUCE WAIT COUNT
0618 0 70EC MDX WAIT1 GO BACK TO DELAY
0619 0 0822 XIO DSWSN SENSE RESET DSW
061A 1 C400 0834 LD L RSTNO LOAD NO RESET SW
061C 0 4820 BSC Z
061D 0 7002 MDX WAITB&10 BYPASS RESET
061E 1 0C00 08A6 XIO L RESET EXECUTE RESET
0620 1 4400 0824 BSI L DLYTM DELAY
0622 0 7029 MDX SNDSW GO MAKE ANALYSIS

```

```

LOAD LOOP ADDR
LOOP ON LAST FUNC
IF LOOP ADDR NOT 0
LOCK/ERR LOOP ADR.
*
*****
*             TEST INITIALIZATION
*****
*-----*
*             MON INITIALIZATION
*-----*
*-----*
* START OF TEST AND SINGLE PASS INITIALIZE
*-----*
*****
*             PROGRAM WAIT
*****
* THIS ROUTINE IS USED BY THE TEST PROGRAM
* TO MARK TIME WHILE WAITING FOR AN INTERRUPT
* TO OCCUR.
*
*****
WCNT DC 0 WAIT COUNTER
DELY3 DC /1000 DELAY CONSTANT
*
WAIT3 LD DELY3 LD 4 SEC CONSTANT
STO WCNT SET IN WAIT COUNTER
LD L SW2 LD RTN OPTION SWT
SLA 11 CK FOR 2 MICRO SPEED
BSC - SKIP IF ON
MDX WAIT1 BRANCH
LD WCNT LD WAIT COUNT
SLA 1 DOUBLE IT
STO WCNT LD 4 SEC CONSTANT
WAIT1 XIO DSWSE SENSE DSW
OR DSWAL SAVE DSW DATA
STO DSWAL
XIO RDIA1 READ DIAG WORD 1
XIO RDIA2 READ DIAG WORD 2
LD DIAW1
OR DIAL SAVE DIAG 1 DATA
STO DIAL
LD DIAW2
OR DI2AL SAVE DIAG 2 DATA
STO DI2AL
LDX L3 WAITB SET UP MON RETURN
STX L3 MLSCF
BSI I START GO TO MONITOR
WAITB MDX L WCNT,-1 REDUCE WAIT COUNT
MDX WAIT1 GO BACK TO DELAY
XIO DSWSN SENSE RESET DSW
LD L RSTNO LOAD NO RESET SW
BSC Z
MDX WAITB&10 BYPASS RESET
XIO L RESET EXECUTE RESET
BSI L DLYTM DELAY
MDX SNDSW GO MAKE ANALYSIS
*
*****
*             INTERRUPT
*****
* THE MONITOR RETURNS CONTROL TO THIS ROUTINE
* AFTER DETECTING A SCA INTERRUPT.
*****

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31800700
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31800990
31801000
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31801360
31801370

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SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

```

0623 0 0000      *
0624 0 0817      INTR DC      /0000
0625 0 E820      XIO      DSWSN   SENSE DSW
0626 0 D01F      OR       DSWAL   SAVE DSW DATA
0627 0 0816      STO      DSWAL
0628 0 0817      XIO      RDIA1   SENSE DIAG WD 1
0629 0 C01E      XIO      RDIA2   SENSE DIAG WD 2
062A 0 E81A      LD       DIAW2   LD DIAG WD 2
062B 0 D019      OR       DI2AL   SAVE DIAG 2 DATA
062C 0 C01A      STO      DI2AL
062D 0 E816      LD       DIAW1   LD DIAG 1 WD
062E 0 D015      OR       DI1AL   SAVE DIAG 1 DATA
062F 0 681B      STX     PRTPN   TURN ON INTRPT SW
0630 0 C019      LD       LOPSW  CHK IF INT EXPECTED
0631 0 4820      BSC     Z
0632 0 7005      MDX     EXINT   INTRPT WAS EXPECTED
0633 0 7000      MDX     MOD01  SKIP
0634 0 0000      BSS     E 0
0634 0 1000      MOD01 NOP      PROG MODIFICATION 01
0635 0 1000      NOP
* XIO L RESET FOR STR
* NOP FOR BI SYN
0636 1 4400 0824 BSI L DLYTM  DELAY
0638 1 4C80 0623 EXINT BSC I INTR  RETURN TO SAVED ADDR
*
*****
* IOCC , STORAGE , AND SWS FOR INTRPT RTN
*****
*
063A 0 0000      BSS     E 0
063A 0 0000      DSWSN DC      0      SENSE DSW
063B 0 5700      DC      /5700
063C 0 0000      DSWSN DC      0      SENSE DSW RESET
063D 0 5701      DC      /5701
063E 1 0647      RDIA1 DC      DIAW1  READ DIAG WORD 1
063F 0 5201      DC      /5201
0640 1 0648      RDIA2 DC      DIAW2  READ DIAG WORD 2
0641 0 5202      DC      /5202
0642 0 0000      DIAWD DC      *-*   COMBINED DIAG WORDS
0643 0 0000      DC      *-*   1 AND 2 MODIFIED
0644 0 0000      DI1AL DC      *-*   DIAG 1 DATA
0645 0 0000      DI2AL DC      *-*   DIAG 2 DATA
0646 0 0000      DSWAL DC      *-*   DSW DATA
0647 0 0000      DIAW1 DC      *-*   SAVED DIAG 1
0648 0 0000      DIAW2 DC      *-*   SAVED DIAG 2
0649 0 0000      CADSW DC      *-*   SAVED DSW
064A 0 0000      LOPSW DC      *-*   EXP INTRPT SW
064B 0 0000      PRTPN DC      *-*   PRINT PEND SW
*****
*
*****
* SET UP DATA ANALYSIS
*****
*
064C 0 C0F9      SNDSW LD      DSWAL   LOAD DSW DATA
064D 0 D0FB      STO      CADSW   STORE DSW DATA
064E 0 C0F6      LD       DI2AL   LD DIAG 2 DATA
064F 0 1890      SRT     16
0650 0 1010      SLA     16
0651 0 1086      SLT     6
0652 0 1001      SLA     1
0653 0 E8F0      OR     DI1AL   COMBIND DIAG 1&2
0654 0 D8FD      STD     DIAWD   STORE IN SAVED DIAG
0655 1 4400 09F6 BSI L SRVSN  SERVICE SENSED WD
0657 1 4400 0BC7 BSI L INTAN  MAKE INTRPT ANAL
0659 1 4C00 09A1 BSC L CONAN  GO MAKE ANALYSIS
*****

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31801380
31801390
31801400
31801410
31801420
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31801510
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31801600
31801610
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31801690
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31801960
31801970
31801980
31801990
31802000
31802010
31802020
31802030
31802040
31802050

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065B 0 0000
065C 1 C400 05E0
065E 1 4C08 066A
0660 1 D400 05DD
0662 0 905B
0663 1 4C08 0674
0665 0 1810
0666 1 D400 05E0
0668 1 D400 05DD
066A 1 7401 05DD
066C 0 1010
066D 1 D400 05E2
066F 1 C400 05DD
0671 0 904C
0672 1 4C30 0684
0674 1 6780 05DD
0676 1 C700 069B
0678 1 D400 05DE
067A 1 D400 05F5
067C 1 D400 05E5
067E 0 D400 0165
0680 1 4400 06C5
0682 0 4480 0161
0684 0 630C
0685 0 1010
0686 1 D700 0B73
0688 0 73FF
0689 0 70FC
068A 1 D400 05DD
068C 1 6700 0B0D
068F 1 6F00 0B77
0690 0 6303
0691 1 6F00 0B74
0693 1 0C00 0830
0695 0 4480 0163
0697 1 0B74
0698 1 0C00 0832
069A 0 4480 0164
069C 1 0836
069D 1 083E
069E 1 0843
069F 1 0848
06A0 1 0850
06A1 1 0858
06A2 1 085D
06A3 1 0863
06A4 1 0868
06A5 1 086F
06A6 1 0877
06A7 1 087D
06A8 1 0883
06A9 1 088B
06AA 1 08C0
06AB 1 08C7

```

```

*
*****
* CONTROL ROUTINE
*****
* THIS ROUTINE CHECKS SWITCHES AND CONTROLS
* THE SEQUENCE IN WHICH TEST ROUTINES ARE RUN
*****
*
CNTRL DC      /0000
LD L SW1
BSC L CN20,&  BRANCH IF NO RTN SELECTED
STO L RID      SAVE NEW RTN NUMBER
S RIDCK
BSC L CN30,&  BR IF VALID RTN
SRA 16
STO L SW1     IF INVALID RTN GO
STO L RID     TO RTN ONE
CN20 MDX L RID,1 ADV TO NEXT RTN
SLA 16
STO L SW3     CLEAR FUNCTION 3
LD L RID
S RIDCK
BSC L ENMSG,-Z PRINT RESTORE MSG
CN30 LDX I3 RID
LD L3 RTTBL-1  FETCH RETURN ADRS
STO L RAD
STO L LOOP    LOAD LOOP RTN ADDR.
STO L MLSCF   SET MLSCF FOR RETURN
STO L RTNSW
BSI L CKOPT   CK FOR FUNC 2 & 3
BSI I START   GO TO MONITOR
*
ENMSG LDX 3 12  CLR PRINT TABLE
SLA 16
STO L3 TABLE-1
MDX 3 -1.
MDX ENMSG&2
STO L RID     RESET RTN ID
LDX L3 NMSG
STX L3 TABLE&3 SET ALPHA MSG
LDX 3 3
STX L3 TABLE SET UP MSG ID
XIO L BZON    EXECUTE ALARM ON
BSI I LOG     GO TYPE MESSAGE
DC TABLE
XIO L BZOFF   EXECUTE ALARM OFF
BSI I END     END PROGRAM
*
*****
* ROUTINE SEQUENCE TABLE
*****
*
RTTBL DC      RT01
DC RT02
DC RT03
DC RT04
DC RT05
DC RT06
DC RT07
DC RT08
DC RT09
DC RT0A
DC RT0B
DC RT0C
DC RT0D
DC RT0E
DC RT0F
DC RT10

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31802060
31802070
31802080
31802090
31802100
31802110
31802120
31802130
31802140
31802150
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31802190
31802200
31802210
31802220
31802230
31802240
31802250
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31802300
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31802680
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31802700
31802710
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31802730

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SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

```

06AC 1 08D2      DC      RT11
06AD 1 08D9      DC      RT12
06AE 1 08E4      DC      RT13
06AF 1 08EC      DC      RT14
06B0 1 08F3      DC      RT15
06B1 1 08FE      DC      RT16
06B2 1 0906      DC      RT17
06B3 1 0915      DC      RT18
06B4 1 0918      DC      RT19
06B5 1 0932      DC      RT1A
06B6 1 093B      DC      RT1B
06B7 1 0944      DC      RT1C
06B8 1 094E      DC      RT1D
06B9 1 0961      DC      RT1E
06BA 1 096F      DC      RT1F
06BB 1 0978      DC      RT20
06BC 1 0982      DC      RT21
06BD 1 0991      DC      RT22
LRTN DC
*****
*
06BE 0 0022      RIDCK DC      LRTN-RTTBL&1
06BF 0 0000      S2WAS DC      *-- SW2 WAS
06C0 0 0000      S3WAS DC      *-- SW3 WAS
06C1 1 7401 07DF SAVE1 MDX L RSTSW,&1 ALLOW RESET
06C3 0 0001      K0001 DC      /0001
06C4 0 0000      FSTCK DC      *--
*
06C5 0 0000      CKOPT DC      *--
06C6 0 C0F8      LD      S2WAS      LOAD SW2 WAS
06C7 1 F400 05E1 EOR L SW2      COMPARE WITH SW2 NOW
06C9 0 4820      BSC      Z          CHK FOR CHANGE
06CA 0 703A      MDX      S2PNT     SET UP TO PRINT OPTS
*
06CB 1 C400 05E1 LD L SW2      LD RTN OPTION SW
06CD 0 100C      SLA      12        CHK FOR DIAGNOSTIC
06CE 1 4428 076A BSI L DIAMD,&Z SET UP DIAG MD
06D0 1 C400 05E1 LD L SW2      LD RTN OPTION SW
06D2 0 100D      SLA      13        CHK FOR ALT RESET
06D3 1 4428 0770 BSI L NORST,&Z SET UP FOR NO RESET
06D5 0 C0EB      LD      SAVE1     ALLOW RESET
06D6 1 D400 07E6 STO L RSOFF
06D8 0 C0E9      LD      SAVE1&1
06D9 1 D400 07E7 STO L RSOFF&1
06DB 1 C400 05E1 LD L SW2      LD RTN OPTION SW
06DD 0 100E      SLA      14        CHK FOR FAST PASS
06DE 1 4428 077B BSI L FAST1,&Z SET UP FAST PASS
06E0 0 6700 1000 LDX L3 /1000
06E2 1 6F00 05FA STX L3 DELY3      RESTORE NORMAL DELAY
06E4 1 C400 05E1 LD L SW2      LD RTN OPTION SW
06E6 0 100F      SLA      15        CK FOR BI SYN
06E7 1 4428 0CB5 BSI L BISYN,&Z GO SET UP BI SYN
06E9 1 C400 05E1 LD L SW2      LD RTN OPTION SW
06EB 0 100F      SLA      15        CK FOR STR
06EC 1 4410 0C62 BSI L STR,-      GO SET UP STR
06EE 0 COD1      LD      S3WAS     LOAD SW3 WAS
06EF 1 F400 05E2 EOR L SW3      COMPARE WITH SW3 NOW
06F1 0 4820      BSC      Z
06F2 0 704E      MDX      S3PNT     SET UP TO PRINT SCOPE LOOP
*
06F3 1 C400 05F2 NOPNT LD L SW3      LD SCOPE OPT SW
06F5 1 D400 06C0 STO L S3WAS     STORE IN SW3 WAS
06F7 0 4820      RSC      Z
06F8 0 7002      MDX      SCOPE     CK WHAT TIME BASE
06F9 1 4C80 06C5 OPRTN BSC I CKOPT EXIT TO RETURN
*
06FB 1 C400 05DE SCOPE LD L RAD      CK IF TIMEOUT EXP
06FD 0 90C5      S      K0001
06FE 0 0DC5      STO     FSTCK

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31802740
31802750
31802760
31802770
31802780
31802790
31802800
31802810
31802820
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31802870
31802880
31802890
31802900
31802910
31802920
31802930
31802940
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31802960
31802970
31802980
31802990
31803000
31803010
31803020
31803030
31803040
31803050
31803060
31803070
31803080
31803090
31803100
31803110
31803120
31803130
31803140
31803150
31803160
31803170
31803180
31803190
31803200
31803210
31803220
31803230
31803240
31803250
31803260
31803270
31803280
31803290
31803300
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31803340
31803350
31803360
31803370
31803380
31803390
31803400
31803410

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06FF 1 C480 06C4 LD I FSTCK
0701 0 90C1      S      K0001
0702 1 4C10 0761 BSC L SCOP1,-    SUBTRACT 1
0704 0 70F4      MDX      OPRTN    NO, ALLOW LOOP
*
0705 0 630C      S2PNT LDX 3 12    CLEAR PRINT TABLE
0706 0 1010      SLA      16
0707 1 D700 0B73 STO L3 TABLE-1
0709 0 73FF      MDX      3 -1
070A 0 70FC      MDX      S2PNT&2
070B 1 C400 05E1 LD L SW2      LD RTN OPTION SW
070D 0 100B      SLA      11        CK FOR 2 MICRO SPEED
070E 1 4428 0791 BSI L LOG11,&Z
0710 1 C400 05F1 LD L SW2      LOAD SW2
0712 0 100C      SLA      12        CHK DIAG RUN ON
0713 1 4428 079B BSI L LOG12,&Z
0715 1 C400 05E1 LD L SW2      LOAD SW2
0717 0 100D      SLA      13        CHK NO RESET ON
0718 1 4428 07A5 BSI L LOG13,&Z
071A 1 C400 05E1 LD L SW2      LOAD SW2
071C 0 100E      SLA      14        CHK FAST PASS ON
071D 1 4428 07AF BSI L LOG14,&Z
071F 1 C400 05E1 LD L SW2      LOAD SW2
0721 0 100F      SLA      15        CHECK FAR BI SYN
0722 1 4428 07B9 BSI L LOG15,&Z
0724 1 C400 05E1 LD L SW2      LOAD SW2
0726 0 D098      STO     S2WAS     STORE IN SW2 WAS
*
0727 1 6700 0AF6 LOGO1 LDX L3 LOG1A SET UP ALPHA MSG
0729 1 6F00 0B77 STX L3 TABLE&3
072B 0 6301      LDX      3 1
072C 1 6F00 0B74 STX L3 TABLE SET UP MSG ID
072E 0 6300      LDX      3 0
072F 1 6F00 0B76 STX L3 TABLE&2 SET UP MODIFIERS
0731 1 0C00 0B30 XIO L BZON      EXECUTE ALARM ON
0733 0 4480 0163 BSI I LOG      GO LOG MESSAGE
0735 1 0B74      DC      TABLE
0736 1 0C00 0B32 XIO L BZOFF     EXECUTE ALARM OFF
0738 0 6316      LDX      3 22    CLEAR OUT MSG TABLE
0739 1 C400 0AFA CLLOG LD L LOG18-1
073B 1 D700 0AF5 STO L3 LOG1A-1
073D 0 73FF      MDX      3 -1
073E 0 70FA      MDX      CLLOG
073F 1 4C00 06CB BSC L CKOPT&6 GO EXECUTE OPTIONS
*
0741 1 C400 05E2 S3PNT LD L SW3      LOAD SW3
0743 1 D400 06C0 STO L S3WAS     STORE IN SW3 WAS
0745 0 4820      BSC      Z          CHK IF ON
0746 0 7001      MDX      LOGO2    LOG SCOPE LOOP
0747 0 70AB      MDX      NOPNT    CHK FOR SCOPE OPTION
*
0748 0 630C      LOGO2 LDX 3 12    CLEAR MSG TABLE
0749 0 1010      SLA      16
074A 1 D700 0B73 STO L3 TABLE-1
074C 0 73FF      MDX      3 -1
074D 0 70FC      MDX      LOGO2&2
074E 1 6700 0AF0 LDX L3 ADR5      SET UP ALPHA MSG
0750 1 6F00 0B77 STX L3 TABLE&3
0752 0 6302      LDX      3 2
0753 1 6F00 0B74 STX L3 TABLE SET UP MSG ID
0755 0 6300      LDX      3 0
0756 1 6F00 0B76 STX L3 TABLE&2
0758 1 0C00 0B30 XIO L BZON      EXECUTE ALARM ON
075A 0 4480 0163 BSI I LOG      GO PRINT MESSAGE
075C 1 0B74      DC      TABLE
075D 1 0C00 0B32 XIO L BZOFF     EXECUTE ALARM OFF
075F 1 4C00 06F3 BSC L NOPNT     SET UP SCOPE LOOP

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31803420
31803430
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31803450
31803460
31803470
31803480
31803490
31803500
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31803970
31803980
31803990
31804000
31804010
31804020
31804030
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31804050
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31804070
31804080
31804090

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0761 I C400 05E2  SCOP1 LD L SW3 SET UP SCOPE DELAY 31804100
0763 O 4820 BSC Z CHK IF DELAY SELECTED 31804110
0764 O 7001 MDX SCOP2 31804120
0765 O 7093 MDX OPRTN EXIT TO RETURN 31804130
0766 O 1004 SCOP2 SLA 4 31804140
0767 I D400 05FA ST0 L DELY3 31804150
0769 O 708F MDX OPRTN EXIT TO RETURN 31804160
31804170
31804180
076A O 0000 * DIAMD DC *-* 31804190
076B I 7401 09AB MDX L DIASW,&1 TURN ON DIAG MODE SW 31804200
076D O 1000 NOP 31804210
076E I 4C80 076A BSC I DIAMD EXIT TO RETURN 31804220
31804230
*
0770 O 0000 NORST DC *-* 31804240
0771 I C400 0C2E LD L K1000 LOAD NOP 31804250
0773 I D400 07E6 ST0 L RSOFF PREVENT RESET 31804260
0775 I D400 07E7 ST0 L RSOFF&1 31804270
0777 I 7406 0770 MDX L NORST,&6 MODIFY RETURN 31804280
0779 I 4C80 0770 BSC I NORST EXIT TO RETURN 31804290
31804300
*
077R O 0000 FAST1 DC *-* 31804310
077C I C400 05DE LD L RAD LD RTN ADDRESS 31804320
077E I 9400 06C3 S L K0001 31804330
0780 I D400 06C4 ST0 L FSTCK 31804340
0782 I C480 06C4 LD I FSTCK CHK FOR NO TIMEOUT 31804350
0784 I 9400 06C3 S L K0001 SUBTRACT 1 31804360
0786 I 4C18 078A BSC L FAST2,&- NO, FAST PASS OK 31804370
0788 I 4C80 077B BSC I FAST1 EXIT TO RETURN 31804380
31804390
*
078A O 6700 0100 FAST2 LDX L3 /0100 SET UP 250 MSEC ANAL 31804400
078C I 6F00 05FA STX L3 DELY3 31804410
078E I 7404 077B MDX L FAST1,&4 MODIFY RETURN EXIT 31804420
0790 O 70F7 MDX FAST2-2 EXIT TO RETURN 31804430
31804440
*
0791 O 0000 LOG11 DC *-* 31804450
0792 O 6304 LDX 3 4 LD 2 MIC SPD MSG 31804460
0793 I C700 07D2 LD L3 E1LOG-1 31804470
0795 I D700 0B07 ST0 L3 LOG1E-1 31804480
0797 O 73FF MDX 3 -1 31804490
0798 O 70FA MDX LOG11&2 31804500
0799 I 4C80 0791 BSC I LOG11 EXIT TO RETURN ADDR 31804510
31804520
*
079B O 0000 LOG12 DC *-* 31804530
079C O 6304 LDX 3 4 LD DIAG RUN FOR MSG 31804540
079D I C700 07C2 LD L3 A1LOG-1 31804550
079F I D700 0AF5 ST0 L3 LOG1A-1 31804560
07A1 O 73FF MDX 3 -1 31804570
07A2 O 70FA MDX LOG12&2 31804580
07A3 I 4C80 079B BSC I LOG12 EXIT TO RETURN ADDR 31804590
31804600
*
07A5 O 0000 LOG13 DC *-* 31804610
07A6 O 6304 LDX 3 4 LD NO RESET FOR MSG 31804620
07A7 I C700 07C6 LD L3 B1LOG-1 31804630
07A9 I D700 0AFA ST0 L3 LOG1B-1 31804640
07AB O 73FF MDX 3 -1 31804650
07AC O 70FA MDX LOG13&2 31804660
07AD I 4C80 07A5 BSC I LOG13 EXIT TO RETURN ADDR 31804670
31804680
*
07AF O 0000 LOG14 DC *-* 31804690
07B0 O 6305 LDX 3 5 LD FAST PASS FOR MSG 31804700
07B1 I C700 07CA LD L3 C1LOG-1 31804710
07B3 I D700 0AFF ST0 L3 LOG1C-1 31804720
07B5 O 73FF MDX 3 -1 31804730
07B6 O 70FA MDX LOG14&2 31804740
07B7 I 4C80 07AF BSC I LOG14 EXIT TO RETURN ADDR 31804750
31804760
*
07B9 O 0000 LOG15 DC *-* 31804770
07BA O 6303 LDX 3 3 LOAD BI SYN FOR MSG

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07BB I C700 07CF LD L3 D1LOG-1 31804780
07BD I D700 0B04 ST0 L3 LOG1D-1 31804790
07BF O 73FF MDX 3 -1 31804800
07C0 O 70FA MDX LOG15&2 31804810
07C1 I 4C80 07B9 BSC I LOG15 EXIT TO RETURN 31804820
31804830
*
07C3 O 3222 A1LOG DC /3222 DI 31804840
07C4 O 3E16 DC /3E16 AG 31804850
07C5 O 2162 DC /2162 R 31804860
07C6 O 8276 DC /8276 UN 31804870
31804880
*
07C7 O 7652 B1LOG DC /7652 NO 31804890
07C8 O 2162 DC /2162 R 31804900
07C9 O 369A DC /369A ES 31804910
07CA O 369E DC /369E ET 31804920
31804930
*
07CB O 123E C1LOG DC /123E FA 31804940
07CC O 9A9E DC /9A9E ST 31804950
07CD O 2156 DC /2156 P 31804960
07CE O 3E9A DC /3E9A AS 31804970
07CF O 9A21 DC /9A21 S 31804980
31804990
*
07D0 O 1A22 D1LOG DC /1A22 BI 31805000
07D1 O 219A DC /219A S 31805010
07D2 O A676 DC /A676 YN 31805020
31805030
*
07D3 O 21D8 F1LOG DC /21D8 2 31805040
07D4 O 2172 DC /2172 M 31805050
07D5 O 221E DC /221E 1C 31805060
07D6 O 6252 DC /6252 RO 31805070
31805080
*
*****
INITIALIZATION ROUTINE
*****
* THIS ROUTINE PERFORMS THE REQUIRED
* INITIALIZATION FOR RESTART OF THE PROGRAM.
* IT LOADS THE FIRST ROUTINE OR THE DESIRED
* ROUTINE VIA SELECT SWITCHES INTO THE
* MAINLINE SEQUENCE CONTROL FIELD.
*****
07D7 O 6300 STRT LDX 3 0 31805100
07D8 I 6F00 05D0 STX L3 RID RESET ROUTINE NO. 31805210
07DA I 6500 0623 LDX L1 INTR 31805220
07DC O 6D00 0189 STX L1 IL1-1 SET UP INTRPT ADDR 31805230
07DE O 700A MDX OFF1 TURN OFF PROG SWS 31805240
31805250
*
*****
TURN OFF ALL SWITCHES
*****
*
07DF O 0000 RSTSW DC *-* PROG RESET SW 31805300
*
OFF DC ENTRY AND SAVE AREA 31805310
XIO L RZOFF EXECUTE ALARM OFF 31805320
LD RSTSW LD PROG RESET SW 31805330
BSC Z 31805340
MDX OFF1 SW ON , GO TO OFF1 31805350
RSOFF MDX L RSTSW,&1 TURN ON RESET SW 31805360
MDX OFF2 31805370
*
OFF1 LDX 3 0 31805380
STX 3 RSTSW TURN OFF PROG RESET 31805390
*
OFF2 SLA 16 CLEAR ACC. 31805400
LDX 3 6 31805410
OFF3 ST0 L3 DIAX1-1 31805420
31805430
31805440
31805450

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07EF 0 73FF MDX 3 -1
07F0 0 70FC MDX OFF3
07F1 0 630A LDX 3 10
07F2 1 0700 0641 OFF4 STO L3 DIAWD-1
07F4 0 73FF MDX 3 -1
07F5 0 70FC MDX OFF4
07F6 0 6302 LDX 3 2
07F7 1 0700 0A41 OFF5 STO L3 DSWW1-1
07F9 0 73FF MDX 3 -1
07FA 0 70FC MDX OFF5
07FB 0 6303 LDX 3 3
07FC 1 0400 09AB OFF6 STO L TRGWD-1
07FE 0 73FF MDX 3 -1
07FF 0 70FC MDX OFF6
0800 1 0400 08B8 STO L DSWXX
0802 1 0400 08B9 STO L DIAXX
0804 1 0400 09F3 STO L MKSW1
0806 1 0400 09F4 STO L MKSW2
0808 1 0400 09F5 STO L MKSW3
080A 1 0400 09AB STO L DIASW
080C 1 0400 0834 STO L RSTNO
080E 0 6700 1000 LDX L3 /1000
0810 1 6F00 05FA STX L3 DELY3 RESTORE DELAY
0812 1 C400 0C2E LD L K1000 LOAD NOP
0814 1 4400 06C5 BSI L CKOPT CK FOR SW 2 AND 3
0816 1 4400 05E7 BSI L LOCK CK LOCK,LOOP/ERR FNC
0818 0 C00A LD LOOPE LD LOOP ON ERR SW
0819 0 6300 LDX 3 0
081A 0 6B08 STX 3 LOOPE CLR LOOP ON ERR SW
081B 1 4CA0 05F5 BSC I LOOP,Z LOOP IF SW IS ON
081D 1 C400 07DF LD L RSTSW
081F 1 4C30 0838 BSC L RT01&2,-Z BRANCH TO RESET RTN
0821 1 4400 065B BSI L CNTRL
0823 0 0000 LOOPE DC *-* LOOP ON ERROR SW
*
*
*****
* TIME DELAY - 140 MSEC
*****
*
0824 0 0000 DLYTM DC *-*
0825 0 630C LDX 3 12
0826 0 6B05 STX 3 TMDLY
0827 1 74FF 082C MDX L TMDLY,-1
0829 0 70FD MDX *-3
082A 1 4C80 0824 BSC I DLYTM
*
082C 0 0000 TMDLY DC *-*
*
*****
* 1130 SCA IOCC
*****
*
082E 0000 BSS E
082E 0 0000 ENDDP DC 0 END OP
082F 0 5404 DC /5404
0830 0 0000 BZON DC 0 TURN ON ALARM
0831 0 5102 DC /5102
0832 0 0000 BZOFF DC 0 TURN OFF ALARM
0833 0 5101 DC /5101
0834 0 0000 RSTNO DC *-* NO RESET SW
*
*****
*
*****
* ROUTINE 01
*****
*
0835 0 0001 DC 1

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31805460
31805470
31805480
31805490
31805500
31805510
31805520
31805530
31805540
31805550
31805560
31805570
31805580
31805590
31805600
31805610
31805620
31805630
31805640
31805650
31805660
31805670
31805680
31805690
31805700
31805710
31805720
31805730
31805740
31805750
31805760
31805770
31805780
31805790
31805800
31805810
31805820
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31805870
31805880
31805890
31805900
31805910
31805920
31805930
31805940
31805950
31805960
31805970
31805980
31805990
31806000
31806010
31806020
31806030
31806040
31806050
31806060
31806070
31806080
31806090
31806100
31806110
31806120
31806130

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0836 1 0C00 08A6
0838 0 C84F
0839 0 D87E
083A 1 7401 07DF
083C 0 7023
*
*
*
083D 0 0002
083E 0 C849
083F 0 D878
0840 0 08FF
0841 0 701E
*
*
*
0842 0 0001
0843 0 C844
0844 0 D873
0845 0 08FC
0846 0 7019
*
*
*
0847 0 0002
0848 0 C83F
0849 0 D86E
084A 1 7401 07DF
084C 0 68E7
084D 0 08E2
084E 0 7011
*
*
*
084F 0 0001
0850 0 C837
0851 0 D866
0852 1 7401 07DF
0854 0 68DF
0855 0 08DC
0856 0 7009
*
*
*
0857 0 0001
0858 0 C831
0859 0 D85E
085A 0 08D3
085B 0 7004
*
*
*
085C 0 0001
085D 0 C82E
085E 0 D859
085F 0 0848
0860 1 4C00 05FB

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```

RT01 XIO L RESET EXECUTE RESET
LDD DSW01 SET UP ANALYSIS DATA
STD DSWXX
MDX L RSTSW,&1 TURN ON PROG RESET
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 02
*****
*
DC 2
RT02 LDD DSW01 SET UP ANALYSIS DATA
STD DSWXX
XIO BZON EXECUTE BUZZ ON
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 03
*****
*
DC 1
RT03 LDD DSW01 SET UP ANALYSIS DATA
STD DSWXX
XIO BZOFF EXECUTE BUZZ OFF
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 04
*****
*
DC 2
RT04 LDD DSW01 SET UP ANALYSIS DATA
STD DSWXX
MDX L RSTSW,&1 TURN ON PROG RESET
STX RSTNO SET NO RESET SW
XIO BZON EXECUTE BUZZ ON
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 05
*****
*
DC 1
RT05 LDD DSW01 SET UP ANALYSIS DATA
STD DSWXX
MDX L RSTSW,&1 TURN ON PROG RESET
STX RSTNO SET NO RESET SW
XIO BZOFF EXECUTE BUZZ OFF
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 06
*****
*
DC 1
RT06 LDD DSW02 SET UP ANALYSIS DATA
STD DSWXX
XIO ENDDP EXECUTE ENDDP
MDX RTNGO BRANCH TO DELAY
*
*****
* ROUTINE 07
*****
*
DC 1
RT07 LDD DSW03 SET UP ANALYSIS DATA
STD DSWXX
XIO ENABL EXECUTE ENABLE
RTNGO BSC L WAIT3 BRANCH TO DELAY

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31806140
31806150
31806160
31806170
31806180
31806190
31806200
31806210
31806220
31806230
31806240
31806250
31806260
31806270
31806280
31806290
31806300
31806310
31806320
31806330
31806340
31806350
31806360
31806370
31806380
31806390
31806400
31806410
31806420
31806430
31806440
31806450
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31806470
31806480
31806490
31806500
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31806600
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31806650
31806660
31806670
31806680
31806690
31806700
31806710
31806720
31806730
31806740
31806750
31806760
31806770
31806780
31806790
31806800
31806810

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SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

```

08B4 0 0000 SLAVE DC 0 SLAVE,REC RUN OFF 31808180
08B5 0 5602 DC /5602 31808190
08B6 0 0000 PCVED DC ** SCA RECIEVED WORD 31808200
08B7 0 F000 SEND DC /F000 PATTERN 11110000 31808210
08B8 0 0000 DSWXX DC ** DSW SHOULD/BE 31808220
08B9 0 0000 DIAXX DC ** DIAG WORD SHUD/BE 31808230
***** 31808240
* 31808250
***** 31808260
* ROUTINE 0E 31808270
***** 31808280
* 31808290
* 31808300
08BA 0 0001 DC 1 31808310
08BB 0 C8CC RTOE LDD DSW01 SET UP ANALYSIS DATA 31808310
08BC 0 D8FB STD DSWXX 31808320
08BD 0 08F2 XIO RDCAT EXECUTE READ CAT 31808330
08BE 0 7060 MDX RTNTO BRANCH TO DELAY 31808340
* 31808350
***** 31808360
* ROUTINE OF 31808370
***** 31808380
* 31808390
* 31808400
08BF 0 0000 DC 0 31808410
08C0 0 C8CF RTOE LDD DSW05 SET UP ANALYSIS DATA 31808410
08C1 0 D8F6 STD DSWXX 31808420
08C2 1 7401 064A MDX L LOPSW,&1 TURN ON EXP INT SW 31808430
08C4 0 08E9 XIO MASTR EXECUTE MASTER 31808440
08C5 0 7059 MDX RTNTO BRANCH TO DELAY 31808450
* 31808460
***** 31808470
* ROUTINE 10 31808480
***** 31808490
* 31808500
* 31808510
08C6 0 0000 DC 0 31808510
08C7 0 C8CC RT10 LDD DSW07 SET UP ANALYSIS DATA 31808520
08C8 0 D8EF STD DSWXX 31808530
08C9 0 7000 MDX MOD04 SKIP 31808540
08CA 0000 BSS E 0 31808550
08CA 0 1000 MOD04 NOP PROG MODIFICATION 04 31808560
08CB 0 1000 NOP 31808570
* NOP FOR STR 31808580
* STX L LOPSW FOR BI SYN 31808590
XIO MASTR EXECUTE MASTER 31808600
08CC 0 08E5 XIO L DLYTM 80 MSEC DELAY 31808610
08CD 1 4400 0824 RSI L DLYTM 80 MSEC DELAY 31808620
08CF 0 08DC XIO STST EXECUTE START STOP 31808630
08D0 0 704E MDX RTNTO BRANCH TO DELAY 31808640
* 31808650
***** 31808660
* ROUTINE 11 31808670
***** 31808680
* 31808690
* 31808700
08D1 0 0000 DC 0 31808700
08D2 0 C8BF RT11 LDD DSW06 SET UP ANALYSIS DATA 31808710
08D3 0 D8E4 STD DSWXX 31808710
08D4 1 7401 064A MDX L LOPSW,&1 TURN ON EXP INT SW 31808720
08D6 0 08DD XIO SLAVE EXECUTE SLAVE 31808730
08D7 0 7047 MDX RTNTO BRANCH TO DELAY 31808740
* 31808750
***** 31808760
* ROUTINE 12 31808770
***** 31808780
* 31808790
* 31808800
08D8 0 1000 MOD05 NOP PROG MODIFICATION 05 31808800
* DC 1 FOR STR 31808810
* DC 0 FOR BI SYN 31808820
08D9 0 C8BC RT12 LDD DSW08 SET UP ANALYSIS DATA 31808830
08DA 0 D8DD STD DSWXX 31808840
08DB 0 7000 MDX MOD06 SKIP 31808850

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08DC 0000 BSS E 0 31808860
08DC 0 1000 MOD06 NOP PROG MODIFICATION 06 31808870
08DD 0 1000 NOP 31808880
* NOP FOR STR 31808890
* STX L LOPSW FOR BI SYN 31808900
XIO SLAVE EXECUTE SLAVE 31808910
RSI L DLYTM 80 MSEC DELAY 31808920
XIO STST EXECUTE START STOP 31808930
MDX RTNTO BRANCH TO DELAY 31808940
* 31808950
***** 31808960
* ROUTINE 13 31808970
***** 31808980
* 31808990
* 31809000
08E3 0 0000 DC 0 31809000
08E4 0 C8AD RTOE LDD DSW06 SET UP ANALYSIS DATA 31809010
08E5 0 D8D2 STD DSWXX 31809020
08E6 1 7401 064A MDX L LOPSW,&1 TURN ON EXP INT SW 31809030
08E8 0 08C9 XIO MASTR EXECUTE MASTER 31809040
08E9 0 08CA XIO SLAVE EXECUTE SLAVE 31809050
08EA 0 7034 MDX RTNTO BRANCH TO DELAY 31809060
* 31809070
***** 31809080
* ROUTINE 14 31809090
***** 31809100
* 31809110
* 31809120
08EB 0 0000 DC 0 31809120
08EC 0 C8A5 RT14 LDD DSW06 SET UP ANALYSIS DATA 31809130
08ED 0 D8CA STD DSWXX 31809140
08EE 1 7401 064A MDX L LOPSW,&1 TURN ON EXP INT SW 31809150
08EF 0 0833 XIO STRD EXECUTE START READ 31809160
08F1 0 702D MDX RTNTO BRANCH TO DELAY 31809170
* 31809180
***** 31809190
* ROUTINE 15 31809200
***** 31809210
* 31809220
08F2 0 1000 MOD07 NOP PROG MODIFICATION 07 31809230
* DC 1 FOR STR 31809240
* DC 0 FOR BI SYN 31809250
RT15 LDD DSW08 SET UP ANALYSIS DATA 31809260
STD DSWXX 31809270
MDX MOD08 SKIP 31809280
BSS E 0 31809290
MOD08 NOP PROG MODIFICATION 08 31809300
NOP 31809310
* NOP FOR STR 31809320
* STX L LOPSW FOR BI SYN 31809330
XIO STRD EXECUTE START READ 31809340
RSI L DLYTM 80 MSEC DELAY 31809350
XIO STST EXECUTE START/STOP 31809360
MDX RTNTO BRANCH TO DELAY 31809370
* 31809380
***** 31809390
* ROUTINE 16 31809400
***** 31809410
* 31809420
* 31809430
08FD 0 0000 DC 0 31809430
08FE 0 C891 RT16 LDD DSW05 SET UP ANALYSIS DATA 31809440
08FF 0 D8D9 STD DSWXX 31809450
0900 1 7401 064A MDX L LOPSW,&1 TURN ON EXP INT SW 31809460
0902 0 08AF XIO MASTR EXECUTE RECIEVE MODE 31809470
0903 0 0820 XIO STRD EXECUTE START READ 31809480
0904 0 701A MDX RTNTO BRANCH TO DELAY 31809490
* 31809500
***** 31809510
* ROUTINE 17 31809520
***** 31809530

```

```

0905 0 1000      *
MOD09 NOP          PROG MODIFICATION 09
*   DC           1 FOR STR
*   DC           0 FOR BI SYN
0906 1 CC00 0894 RT17 LDD L DSW07   SET UP ANALYSIS DATA
0908 0 D8AF      STD   DSWXX
0909 0 7000      MDX   MOD10   SKIP
090A 0 0000      BSS   E 0
090A 0 1000      MOD10 NOP          PROG MODIFICATION 10
090B 0 1000      NOP
*   NOP FOR STR
*   STX L LOPSW FOR BI SYN
090C 1 0C00 08R2 XIO L MASTR   EXECUTE RECIEVE MODE
090E 0 0815      XIO L STRD   EXECUTE START READ
090F 1 4400 0824 BSI L DLYTM   80 MSEC DELAY
0911 1 0C00 08AC XIO L STST   EXECUTE START/STOP
0913 0 700B      MDX   RTNT0   BRANCH TO DELAY
*
*****
*   ROUTINE 18
*****
*   DC           1
0914 0 0001      RT18 LDD L DSW01   SET UP ANALYSIS DATA
0915 1 CC00 0888 STD   DSWXX
0917 0 D8A0      XIO L SET7   EXECUTE SET 7
0918 0 0815      MDX   RTNT0   BRANCH TO DELAY
0919 0 7005
*
*****
*   ROUTINE 19
*****
*   DC           1
091A 0 0001      RT19 LDD L DSW01   SET UP ANALYSIS DATA
091B 1 CC00 0888 STD   DSWXX
091D 0 D89A      XIO L SET6   EXECUTE SET 6
091E 0 080D      RTNT0 BSC L WAIT3  BRANCH TO DELAY
091F 1 4C00 05FB
*
*****
*   1130 SCA IOCC
*****
*   BSS E
0922 0000      SIREG DC ICHAR   SYNC/IDLE REG
0922 1 0930      DC /5104
0923 0 5104      STRD DC 0   START READ
0924 0 0000      DC /5600
0925 0 5600      STRWR DC 0   START WRITE
0926 0 0000      DC /5500
0927 0 5500      SYNCH DC 0   SYNCHRONIZE
0928 0 0000      DC /5410
0929 0 5410      DIAG DC 0   DIAGNOSTIC MODE
092A 0 0000      DC /5408
092B 1 5408      SET6 DC 0   SET 6
092C 0 0000      DC /5402
092D 0 5402      SET7 DC 0   SET 7
092E 0 0000      DC /5401
092F 0 5401      ICHAR DC /3900  IDLE CHARACTER
0930 0 3900
*
*****
*   ROUTINE 1A
*****
*   DC           1
0931 0 0001      RT1A LDD L DSW09   SET UP ANALYSIS DATA
0932 1 CC00 0898 STD   DSWXX
0934 1 DC00 0888 XIO L STRD   EXECUTE START READ
0936 0 08ED

```

```

31809540
31809550
31809560
31809570
31809580
31809590
31809600
31809610
31809620
31809630
31809640
31809650
31809660
31809670
31809680
31809690
31809700
31809710
31809720
31809730
31809740
31809750
31809760
31809770
31809780
31809790
31809800
31809810
31809820
31809830
31809840
31809850
31809860
31809870
31809880
31809890
31809900
31809910
31809920
31809930
31809940
31809950
31809960
31809970
31809980
31809990
31810000
31810010
31810020
31810030
31810040
31810050
31810060
31810070
31810080
31810090
31810100
31810110
31810120
31810130
31810140
31810150
31810160
31810170
31810180
31810190
31810200
31810210

```

```

0937 1 0C00 082E
0939 0 70E5
*
093A 0 0000
093B 1 CC00 089A
093D 1 DC00 0888
093F 1 7401 064A
0941 0 08E6
0942 0 70DC
*
0943 0 0000
0944 1 CC00 089A
0946 1 DC00 0888
0948 1 7401 064A
094A 0 08D7
094B 0 08DC
094C 0 70D2
*
094D 0 1000
*
094E 1 CC00 089C
0950 1 DC00 0888
0952 0 7001
0954 0 0000
0954 0 1000
0955 0 1000
*
0956 0 08CB
0957 0 7000
0958 0 0000
0958 0 1000
0959 0 1000
*
095A 0 08CD
095B 1 4400 0824
095D 1 0C00 08AC
095E 0 70BF
*
0960 0 0001
0961 1 CC00 089F
0963 1 DC00 0888
0965 1 7401 064A
0967 0 08BA
0968 0 08BF
0969 1 0C00 082E
096B 1 4400 089A
096D 0 70B1

```

```

XIO L ENDDP      EXECUTE ENDDP
MDX RTNT0        BRANCH TO DELAY
*
*****
*   ROUTINE 1B
*****
*   DC           0
093A 0 0000
093B 1 CC00 089A RT1B LDD L DSW10   SET UP ANALYSIS DATA
093D 1 DC00 0888 STD   DSWXX
093F 1 7401 064A MDX L LOPSW,81   TURN ON EXP INT SW
0941 0 08E6      XIO L SYNCH   EXECUTE SYNC
0942 0 70DC      MDX   RTNT0   BRANCH TO DELAY
*
*****
*   ROUTINE 1C
*****
*   DC           0
093A 0 0000
093B 1 CC00 089A RT1C LDD L DSW10   SET UP ANALYSIS DATA
093D 1 DC00 0888 STD   DSWXX
093F 1 7401 064A MDX L LOPSW,81   TURN ON EXP INT SW
0941 0 08E6      XIO L SIREG   EXECUTE SYNC/IDLE
0942 0 70DC      MDX L SYNCH   EXECUTE SYNC
0943 0 0000      MDX   RTNT0   BRANCH TO DELAY
*
*****
*   ROUTINE 1D
*****
*   DC           0
093A 0 0000
093B 1 CC00 089A RT1D LDD L DSW11   SET UP ANALYSIS DATA
093D 1 DC00 0888 STD   DSWXX
093F 1 7401 064A MDX L LOPSW,81   TURN ON EXP INT SW
0941 0 08E6      XIO L SIREG   EXECUTE SYNC/IDLE
0942 0 70DC      MDX L SYNCH   EXECUTE SYNC
0943 0 0000      MDX   RTNT0   BRANCH TO DELAY
*
*****
*   ROUTINE 1E
*****
*   DC           1
093A 0 0001
093B 1 CC00 089F RT1E LDD L DSW12   SET UP ANALYSIS DATA
093D 1 DC00 0888 STD   DSWXX
093F 1 7401 064A MDX L MKSW1,81   SET DATA MASK SW 1
0941 0 08BA      XIO L SIREG   EXECUTE SYNC/IDLE
0942 0 08BF      XIO L SYNCH   EXECUTE SYNC
0943 0 0000      XIO L ENDDP   EXECUTE ENDDP
0944 1 4400 0824 BSI L DLYTM   80 MSEC DELAY
0945 1 0C00 08AC XIO L STST   EXECUTE START STOP
0946 0 70BF      MDX   RTNT0   BRANCH TO DELAY
*
*****

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31810220
31810230
31810240
31810250
31810260
31810270
31810280
31810290
31810300
31810310
31810320
31810330
31810340
31810350
31810360
31810370
31810380
31810390
31810400
31810410
31810420
31810430
31810440
31810450
31810460
31810470
31810480
31810490
31810500
31810510
31810520
31810530
31810540
31810550
31810560
31810570
31810580
31810590
31810600
31810610
31810620
31810630
31810640
31810650
31810660
31810670
31810680
31810690
31810700
31810710
31810720
31810730
31810740
31810750
31810760
31810770
31810780
31810790
31810800
31810810
31810820
31810830
31810840
31810850
31810860
31810870
31810880
31810890

```

```

*          ROUTINE 1F
*****
096E 0 0001          DC      1
096F 1 CC00 08A0    RT1F  LDD  L  DSW13      SET UP ANALYSIS DATA
0971 1 DC00 08B8          STD  L  DSWXX
0973 1 7401 064A          MDX  L  LOPSW,&1    TURN ON EXP INT SW
0975 0 08B0          XIO   STRWR      EXECUTE START WRITE
0976 0 70A8          MDX   RTNTO      BRANCH TO DELAY

```

```

31810900
31810910
31810920
31810930
31810940
31810950
31810960
31810970
31810980
31810990

```

```

*          ROUTINE 20
*****
0977 0 0001          DC      1
0978 1 CC00 08A0    RT20  LDD  L  DSW13      SET UP ANALYSIS DATA
097A 1 DC00 08B8          STD  L  DSWXX
097C 1 7401 064A          MDX  L  LOPSW,&1    TURN ON EXP INT SW
097E 0 08A3          XIO   SIREG      EXECUTE SYNC/IDLE
097F 0 08A6          XIO   STRWR      EXECUTE START WRITE
0980 0 709E          MDX   RTNTO      BRANCH TO DELAY

```

```

31811000
31811010
31811020
31811030
31811040
31811050
31811060
31811070
31811080
31811090
31811100
31811110
31811120
31811130

```

```

*          ROUTINE 21
*****
0981 0 0001          DC      1
0982 1 CC00 08A2    RT21  LDD  L  DSW14      SET UP ANALYSIS DATA
0984 1 DC00 08B8          STD  L  DSWXX
0986 1 7401 09F4          MDX  L  MKSW2,&1    SET DATA MASK SW 2
0988 0 089D          XIO   STRWR      EXECUTE START WRITE
0989 1 0C00 08AE          XIO  L  WRCAT      EXECUTE WRT BUFFER
098B 1 0C00 082E          XIO  L  ENDOP      EXECUTE ENDOP
098D 1 4400 099A          BSI  L  CHDLY      DELAY 32 MSEC
098F 0 708F          MDX   RTNTO      BRANCH TO DELAY

```

```

31811140
31811150
31811160
31811170
31811180
31811190
31811200
31811210
31811220
31811230
31811240
31811250
31811260
31811270

```

```

*          ROUTINE 22
*****
0990 0 0001          DC      1
0991 1 CC00 08A4    RT22  LDD  L  DSW15      SET UP ANALYSIS DATA
0993 1 DC00 08B8          STD  L  DSWXX
0995 1 7401 064A          MDX  L  LOPSW,&1    TURN ON EXP INT SW
0997 0 0892          XIO   DIAG      EXECUTE DIAG MODE
0998 1 4C00 05FB          BSC  L  WAIT3      BRANCH TO DELAY

```

```

31811280
31811290
31811300
31811310
31811320
31811330
31811340
31811350
31811360
31811370
31811380
31811390
31811400
31811410
31811420
31811430
31811440
31811450
31811460
31811470
31811480
31811490
31811500
31811510
31811520
31811530
31811540
31811550
31811560
31811570

```

```

*          CONTROL ANALYSIS
*          CONTROLS ANALYSIS OF RESULTS FOR
*          FUNCTION LAST EXECUTED
*****
09A1 1 C400 08B8    CONAN LD  L  DSWXX      LOAD S/B DSW
09A3 1 4400 09AF          BSI  L  STOR1
09A5 0 C005          LD   DIASW      CHECK IF DIAG MODE
09A6 1 4C18 07F1          BSC  L  OFF&1,&-  RESTORE PROGRAM SWS
09A8 1 C400 08B9          LD   L  DIAXX      LOAD S/B DIAG WORDS
09AA 0 700A          MDX   STOR2

```

```

*          DIA SW DC      *--*      DIAGNOSTIC MODE SW
*

```

```

09AC 0 0000
09AD 0 0000
09AE 0 0000

```

```

09AF 0 0000
0980 0 D0FC
09B1 1 4400 09BA
09B3 1 4C80 09AF

```

```

09B5 0 D0F7
09B6 1 4400 09C7
09B8 1 4400 07E0

```

```

09BA 0 0000
09BB 1 C400 0649
09BD 1 F400 08B8
09BF 0 D0EF
09C0 0 4820
09C1 0 7001
09C2 0 7002
09C3 1 4400 0A04
09C5 1 4C80 09BA

```

```

09C7 0 0000
09C8 0 C02A
09C9 0 4820
09CA 0 7012
09CB 0 C028
09CC 0 4820
09CD 0 7015
09CE 0 C026
09CF 0 4820
09D0 0 7018
09D1 1 C400 0642
09D3 1 F400 08B9
09D5 0 D0D6
09D6 0 4820
09D7 0 7001
09D8 0 7002
09D9 1 4400 0820
09DB 1 4C80 09C7
09DD 1 C400 0642
09DF 0 E010
09E0 1 D400 0642
09E2 0 70EE
09E3 1 C400 0642
09E5 0 E008
09E6 1 D400 0642
09E8 0 70E8
09E9 1 C400 0642
09EB 0 E006

```

```

*          STORAGE FOR CONTROL ANALYSIS
*****
TRGWD DC      *--*      DIAG WORD ERR. BITS
STWD  DC      *--*      STORED WORD
DSWRD DC      *--*      DSW ERROR BITS
*
STOR1 DC      *--*      SAVED RETURN ADDR
      STO  STWD      STORE S/B DSW
      BSI  L  ANAL1    GO TO ANAL. 1
      BSC  I  STOR1    RETURN TO SAVED ADDR
*
STOR2 STO      STWD      STORE S/B DIAG WORD
      BSI  L  ANAL2    GO TO ANAL. 2
      BSI  L  OFF      GO TO SW RESET RTN
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
ANAL1 DC      *--*      SAVED RETURN ADDR
      LD   L  CADSW    LOAD SENSED DSW
      EOR  L  DSWXX    EOR WITH S/B DSW
      STO  DSWRD      STORE IN DSW ERR BIT
      BSC  Z          CHK IF ERR BITS ON
      MDX  ANL01      ERR BITS ARE ON
      MDX  ANL01&2    ERR BITS ARE NOT ON
ANL01 BSI  L  DSWAN    CHK WHICH BITS ON
      BSC  I  ANAL1    BRANCH TO RETURN ADR
*
*****
*          CHECK TO SEE IF DIAG TRIG ERROR EXISTS
*****
ANAL2 DC      *--*      SAVED RETURN ADDR
      LD   L  MKSW1    LD DATA MASK SW 1
      BSC  Z          LD DATA MASK SW 1
      MDX  DTMK2      GO MASK OUT DATA BIT
      LD   L  MKSW2    LD DATA MASK SW 2
      BSC  Z          LD DATA MASK SW 2
      MDX  DTMK3      GO MASK OUT DATA BIT
      LD   L  MKSW3    LD DATA MASK SW 3
      BSC  Z          LD DATA MASK SW 3
      MDX  DTMK4      BR TO DTMK4
CKIT4 LD  L  DIAWD    LOAD WAS DIAG WDS
      EOR  L  DIAXX    EOR S/B DIAG WORDS
      STO  TRGWD      SET IN DIAG ERR BITS
      BSC  Z          CHKIF ERR BITS ON
      MDX  ANL02      ERROR BITS ARE ON
      MDX  ANL02&2    ERR BITS ARE NOT ON
ANL02 BSI  L  TRGAN    GO TO TRIGGER ANAL
      BSC  I  ANAL2    BRANCH TO SAVED ADDR
DTMK2 LD  L  DIAWD    LD WAS DIAG WD
      AND  MASK3      MASK OUT DATA BITS
      STO  L  DIAWD    STORE IN DIAG WD WAS
      MDX  CKIT4      GO COMPARE DIAG WDS
DTMK3 LD  L  DIAWD    LD WAS DIAG WD
      AND  MASK4      MASK OUT DATA BITS
      STO  L  DIAWD    STORE IN DIAG WD WAS
      MDX  CKIT4      GO COMPARE DIAG WDS
DTMK4 LD  L  DIAWD    LD WAS DIAG WD
      AND  MASK5      MASK OUT DATA BITS

```

```

31811580
31811590
31811600
31811610
31811620
31811630
31811640
31811650
31811660
31811670
31811680
31811690
31811700
31811710
31811720
31811730
31811740
31811750
31811760
31811770
31811780
31811790
31811800
31811810
31811820
31811830
31811840
31811850
31811860
31811870
31811880
31811890
31811900
31811910
31811920
31811930
31811940
31811950
31811960
31811970
31811980
31811990
31812000
31812010
31812020
31812030
31812040
31812050
31812060
31812070
31812080
31812090
31812100
31812110
31812120
31812130
31812140
31812150
31812160
31812170
31812180
31812190
31812200
31812210
31812220
31812230
31812240
31812250

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SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

```

09EC 1 D400 0642      STO L DIAWD      STORE IN DIAG WDS      31812260
09EE 0 70E2          MDX      CKIT4      GO COMPARE DIAG WD    31812270
09EF 0 DFFF          MASK2 DC /DFFF      DSW WAS MASK          31812280
09F0 0 FF63          MASK3 DC /FF63      DIAG MASK             31812290
09F1 0 FF63          MASK4 DC /FF63      DIAG MASK             31812300
09F2 0 FEFF          MASK5 DC /FEFF      DIAG MASK             31812310
09F3 0 0000          MKSW1 DC *-*       MASK SW 1             31812320
09F4 0 0000          MKSW2 DC *-*       MASK SW 2             31812330
09F5 0 0000          MKSW3 DC *-*       *                     31812340
*                     *                     *                     31812350
*                     *                     *                     31812360
*                     *                     *                     31812370
*                     *                     *                     31812380
*                     *                     *                     31812390
* SET UP COMPARE SWITCHES FOR *WAS*          31812400
* DSW WORD                                  31812410
*                     *                     *                     31812420
*                     *                     *                     31812430
09F6 0 0000          SRVSN DC *-*       SAVED RETURN ADDRESS 31812440
09F7 1 C400 09F3      LD L MKSW1         LD DATA MASK SW 1   31812450
09F9 0 4820          BSC Z             *                     31812460
09FA 0 7002          MDX DTMK1         GO MASK OUT DATA BIT 31812470
09FB 1 4C80 09F6      END02 BSC I SRVSN  EXIT TO RETURN ADDR 31812480
*                     *                     *                     31812490
09FD 1 C400 0649      DTMK1 LD L CADSW   LD S/B DSW WORD      31812500
09FF 1 F400 09EF      AND L MASK2        MASK OUT DATA BITS  31812510
0A01 1 D400 0649      STO L CADSW        STORE IN DSW WAS     31812520
0A03 0 70F7          MDX END02         EXIT TO RETURN ADDR  31812530
*                     *                     *                     31812540
*                     *                     *                     31812550
*                     *                     *                     31812560
* DSW ANALYSIS                               31812570
* COMPARE SHOULD/BE DSW WITH WAS DSW        31812580
* AND ANALYZE ANY ERRORS                    31812590
*                     *                     *                     31812600
0A04 0 0000          DSWAN DC *-*       SAVED RETURN ADDRESS 31812610
0A05 1 C400 0649      LD L CADSW        LOAD DSW WAS         31812620
0A07 1 F400 09AE      AND L DSWRD       AND WITH DSW ERR     31812630
0A09 1 D400 0A42      STO L DSWW1       STORE ON/F ERR BITS  31812640
0A0B 1 C400 09AE      LD L DSWRD       LOAD DSW ERR BITS   31812650
0A0D 1 F400 0A42      EOR L DSWW1       EOR WITH ON/F ERR   31812660
0A0F 1 D400 0A43      STO L DSWW2       STORE DSW F/ON ERR   31812670
0A11 1 0C00 0830      XIO L BZON        EXECUTE ALARM ON     31812680
0A13 0 6305          LDX 3 5          SET UP MESSAGE ID 5 31812690
0A14 1 6F00 0A87      STX L3 MSGNO     STORE IN MESSAGE #   31812700
0A16 1 4400 0A44      BSI L MSGID      GO CHK WHICH MSG ID 31812710
0A18 0 6700 007F      LDX L3 /007F     *                     31812720
0A1A 1 6F00 0B76      STX L3 TABLE&2 SET IN MODIFIER ID 31812730
0A1C 1 6700 0A88      LDX L3 ADRI      LD ALPHA 1 ADDR     31812740
0A1E 1 6F00 0B77      STX L3 TABLE&3 SET UP ALPHA MSG     31812750
0A20 1 C400 0A42      LD L DSWW1       LOAD ON/F ERR BITS  31812760
0A22 1 D400 0B7D      STO L TABLE&9   *                     31812770
0A24 1 C400 0A43      LD L DSWW2       LOAD F/ON ERR BITS  31812780
0A26 1 D400 0B7E      STO L TABLE&10 *                     31812790
0A28 1 C400 0B88      LD L DSWXX       LD DSW SHOULD/BE    31812800
0A2A 1 D400 0B7C      STO L TABLE&8   SET UP ERR MESSAGE   31812810
0A2C 1 C400 0649      LD L CADSW       LOAD SENSED DSW     31812820
0A2E 1 D400 0B7B      STO L TABLE&7   SET UP ERR MESSAGE   31812830
0A30 1 C400 0645      LD L DI2AL       *                     31812840
0A32 1 E400 0C37      AND L MASK1      MASK OUT CE BITS    31812850
0A34 1 D400 0B7A      STO L TABLE&6   SET UP ERR MESSAGE   31812860
0A36 1 C400 0644      LD L DI1AL       *                     31812870
0A38 1 D400 0B79      STO L TABLE&5   SET UP ERR MESSAGE   31812880
0A3A 0 4480 0162      RSI I ERROR      GO PRINT ERROR      31812890
0A3C 1 0B74          DC TABLE       MESSAGE TABLE      31812900
0A3D 1 0B1A          DC LOPRT        LOOP ADDRESS         31812910
0A3E 1 0C00 0832      XIO L BZOFF      EXECUTE ALARM OFF   31812920
0A40 1 4C80 0A04      BSC I DSWAN      EXIT TO RETURN      31812930

```

```

0A42 0 0000
0A43 0 0000
0A44 0 0000
0A45 1 C400 0643
0A47 0 1890
0A48 0 1010
0A49 0 1083
0A4A 0 1007
0A4B 1 D400 0B7F
0A4D 1 C400 07DF
0A4F 0 4820
0A50 0 702E
0A51 0 C031
0A52 1 D400 0A9D
0A54 1 D400 0AB7
0A56 1 D400 0AD1
0A58 1 D400 0AEB
0A5A 0 C02B
0A5B 1 4C18 0A6C
0A5D 1 C400 064A
0A5F 0 4820
0A60 0 7014
0A61 1 C400 064B
0A63 0 4820
0A64 0 7018
0A65 0 6300
0A66 0 6B1E
0A67 0 6B1E
0A68 1 4C80 0BC7
0A6A 1 6F00 0A85
0A6C 0 C01A
0A6D 0 8017
0A6F 1 D400 0B74
0A70 0 6300
0A71 0 6B13
0A72 0 6B13
0A73 1 4C80 0A44
0A75 1 C400 064B
0A77 0 4820
0A78 0 7002
0A79 0 6302
0A7A 0 70EF
0A7B 0 6301
0A7C 0 70ED
0A7D 0 6303
0A7E 0 70ER
0A7F 1 7401 0A87
0A81 0 C002
0A82 0 70CF
0A83 0 FFFF
0A84 0 2121
0A85 0 0000
0A86 0 0000
0A87 0 0000

```

```

*****
* DSW ANALYSIS SWITCHES & STORAGE
*****
DSWW1 DC *-* DSW F/ON WORD
DSWW2 DC *-* DSW ON/F WORD
*****
MSGID DC *-*
LD L DIAWD&1 LOAD *CE* BITS
SRT 16
SLA 16
SLT 3
SLA 7
STO L TABLE&11 STORE IN ERR MSG
LD L RSTSW CHK FOR P RESET ERR
BSC Z
MDX NOTRM LET PROG RESET MSG
LD TERM NO PROG RESET MSG
*
MSGGD STO L TERM1
STO L TERM2
STO L TERM3
STO L TERM4
LD INTSW
BSC L IDRTN&2, &- BRANCH NOT INT MSG
LD L LOPSW CHK FOR INTRPT INFO
BSC Z
MDX PNDCK
LD L PRTPN
BSC Z
MDX MID3
LDX 3 0
STX 3 INTID RESET INTERRUPT ID
STX 3 INTSW RESET INTERRUPT SW
BSC I INTAN EXIT TO RETURN
*
IDRTN STX L3 INTID STORE INT MSG ID
LD MSGNO LOAD MESSAGE #
A INTID ADD INT MSG ID
STO L TABLE STORE MESSAGE ID
LDX 3 0
STX 3 INTID RESET INTERRUPT ID
STX 3 INTSW RESET INTERRUPT SW
BSC I MSGID EXIT TO RETURN ADDR
*
PNDCK LD L PRTPN LOAD PRINT PEND SW
BSC Z
MDX MID1
LDX 3 2 SET MESSAGE ID 2
MDX IDRTN
*
MID1 LDX 3 1 SET UP MESSAGE ID 1
MDX IDRTN
*
MID3 LDX 3 3 SET UP MESSAGE ID 3
MDX IDRTN
*
NOTRM MDX L MSGNO, &1 ADD 1 TO MESSAGE #
LD SPACE LOAD SPACES
MDX MSGGD
*
TERM DC /FFFF TERMINATOR
SPACE DC /2121 SPACES
*
INTID DC *-* INTERRUPT ID
INTSW DC *-* INTERRUPT SW
MSGNO DC *-* MESSAGE ID

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31812940
31812950
31812960
31812970
31812980
31812990
31813000
31813010
31813020
31813030
31813040
31813050
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31813070
31813080
31813090
31813100
31813110
31813120
31813130
31813140
31813150
31813160
31813170
31813180
31813190
31813200
31813210
31813220
31813230
31813240
31813250
31813260
31813270
31813280
31813290
31813300
31813310
31813320
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31813360
31813370
31813380
31813390
31813400
31813410
31813420
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31813480
31813490
31813500
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31813520
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31813580
31813590
31813600
31813610

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*
*****
* ALPHA MESSAGE FOR DSW ERROR
*****
*
OAB8 0 3292  ADR1 DC /3292 DW
OAB9 0 FC21   DC /FC21  1
OABA 0 2132   DC /2132   D
OABB 0 92D8   DC /92D8   W2
OABC 0 2121   DC /2121   D
OABD 0 923E   DC /923E   WA
OABE 0 9A21   DC /9A21   S
OABF 0 219A   DC /219A   S
OAB0 0 BC1A   DC /BC1A   /B
OAB1 0 2121   DC /2121   D
OAB2 0 5276   DC /5276   ON
OAB3 0 BC12   DC /BC12   /F
OAB4 0 2112   DC /2112   F
OAB5 0 BC52   DC /BC52   /O
OAB6 0 7621   DC /7621   N
OAB7 0 D61E   DC /D61E   *C
OAB8 0 36D6   DC /36D6   E*
OAB9 0 2132   DC /2132   D
OABA 0 9A92   DC /9A92   SW
OABB 0 2136   DC /2136   E
OAB0 0 6262   DC /6262   RR
OAB1 0 FFFF   TERM1 DC /FFFF   TERMINATOR
OAB2 0 6236   DC /6236   RE
OAB3 0 9A36   DC /9A36   SE
OAB4 0 9E21   DC /9E21   T
OAB5 0 FFFF   DC /FFFF

```

```

*
*****
* ALPHA MESSAGE FOR DIAG WORD 1 ERROR
*****
*
OAA2 0 329A  ADR2 DC /329A  DS
OAA3 0 9221   DC /9221   W
OAA4 0 21D8   DC /21D8   2
OAA5 0 923E   DC /923E   WA
OAA6 0 9A21   DC /9A21   S
OAA7 0 FC92   DC /FC92   1W
OAA8 0 3E9A   DC /3E9A   AS
OAA9 0 21FC   DC /21FC   1
OAAA 0 9ABC   DC /9ABC   S/
OAA0 0 1A21   DC /1A21   B
OAA1 0 5276   DC /5276   ON
OAA2 0 BC12   DC /BC12   /F
OAA3 0 2112   DC /2112   F
OAA4 0 BC52   DC /BC52   /O
OAA5 0 7621   DC /7621   N
OAA6 0 D61E   DC /D61E   *C
OAA7 0 36D6   DC /36D6   E*
OAA8 0 2132   DC /2132   D
OAA9 0 92FC   DC /92FC   W1
OAAA 0 2136   DC /2136   E
OAA0 0 6262   DC /6262   RR
OAA1 0 FFFF   TERM2 DC /FFFF   TERMINATOR
OAA2 0 6236   DC /6236   RE
OAA3 0 9A36   DC /9A36   SE
OAA4 0 9E21   DC /9E21   T
OAA5 0 FFFF   DC /FFFF

```

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*
*****
* ALPHA MESSAGE FOR DIAG WORD 2 ERROR
*****
*
OABC 0 329A  ADR3 DC /329A  DS

```

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31813620
31813630
31813640
31813650
31813660
31813670
31813680
31813690
31813700
31813710
31813720
31813730
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31813750
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31813780
31813790
31813800
31813810
31813820
31813830
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31813990
31814000
31814010
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31814080
31814090
31814100
31814110
31814120
31814130
31814140
31814150
31814160
31814170
31814180
31814190
31814200
31814210
31814220
31814230
31814240
31814250
31814260
31814270
31814280
31814290

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OABD 0 9221
OABE 0 21FC
OABF 0 923E
OAC0 0 9A21
OAC1 0 D892
OAC2 0 3E9A
OAC3 0 21D8
OAC4 0 9ABC
OAC5 0 1A21
OAC6 0 5276
OAC7 0 BC12
OAC8 0 2112
OAC9 0 BC52
OACA 0 7621
OACB 0 D61E
OACC 0 36D6
OACD 0 2132
OACE 0 92D8
OACF 0 2136
OADO 0 6262
OAD1 0 FFFF
OAD2 0 6236
OAD3 0 9A36
OAD4 0 9E21
OAD5 0 FFFF

OAD6 0 3292
OAD7 0 FC21
OAD8 0 2132
OAD9 0 92D8
OADA 0 2121
OADB 0 329A
OADC 0 9221
OADD 0 2152
OADE 0 76BC
OADF 0 1221
OAE0 0 12BC
OAE1 0 5276
OAE2 0 21D6
OAE3 0 1E36
OAE4 0 D621
OAE5 0 2121
OAE6 0 2121
OAE7 0 2122
OAE8 0 769E
OAE9 0 2136
OAEA 0 6262
OAEB 0 FFFF
OAE0 0 9A1E
OAE1 0 5256
OAE2 0 3621
OAE3 0 5E52
OAE4 0 5256
OAE5 0 FFFF

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```

DC /9221 W
DC /21FC 1
DC /923E WA
DC /9A21 S
DC /D892 2W
DC /3E9A AS
DC /21D8 2
DC /9ABC S/
DC /1A21 B
DC /5276 ON
DC /BC12 /F
DC /2112 F
DC /BC52 /O
DC /7621 N
DC /D61E *C
DC /36D6 E*
DC /2132 D
DC /92D8 W2
DC /2136 E
DC /6262 RR
TERM3 DC /FFFF TERMINATOR
DC /6236 RE
DC /9A36 SE
DC /9E21 T
DC /FFFF

*
*****
* ALPHA MESSAGE FOR INTERRUPT ERROR
*****
*
ADR4 DC /3292 DW
DC /FC21 1
DC /2132 D
DC /92D8 W2
DC /2121
DC /329A DS
DC /9221 W
DC /2152 O
DC /76BC N/
DC /1221 F
DC /12BC F/
DC /5276 ON
DC /21D6 *
DC /1E36 CE
DC /D621 *
DC /2121
DC /2121
DC /2122 I
DC /769E NT
DC /2136 E
DC /6262 RR
TERM4 DC /FFFF TERMINATOR
DC /6236 RE
DC /9A36 SE
DC /9E21 T
DC /FFFF

*
*****
* ALPHA MESSAGE FOR SCOPE LOOP
*****
*
ADR5 DC /9A1E SC
DC /5256 DP
DC /3621 E
DC /5E52 LO
DC /5256 DP
DC /FFFF TERMINATOR

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31814300
31814310
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31814370
31814380
31814390
31814400
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31814500
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31814600
31814610
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31814690
31814700
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31814800
31814810
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31814890
31814900
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31814950
31814960
31814970

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0B7E 0 0000      DC      *-*      31816340
0B7F 0 0000      DC      *-*      31816350
*
*****
*          DIAG TRIGGER STORAGE
*****
0B80 0 0000      DIAX1 DC    *-*      DIAG WD 1 WAS      31816380
0B81 0 0000      DIAX2 DC    *-*      DIAG WD 2 WAS      31816390
0B82 0 0000      TRWD1 DC    *-*      DIAG 1 ERROR BITS  31816400
0B83 0 0000      TRWD2 DC    *-*      DIAG 2 ERROR BITS  31816410
0B84 0 0000      TGWD1 DC    *-*      F/ON ERROR WORD    31816420
0B85 0 0000      TGWD2 DC    *-*      ON/F ERROR WORD    31816430
*
*****
0B86 0 C0FC      WDICK LD     TRWD2      LD DIAG WD 2 ERR    31816440
0B87 0 1890      SRT      16              31816450
0B88 0 1010      SLA      16              31816460
0B89 0 1087      SLT      7              31816470
0B8A 0 4820      BSC      Z              CHECK FOR ERR BIT ON 31816480
0B8B 0 7002      MDX      WD2             MAKE ANALYSIS        31816490
0B8C 1 4C80 0B20 BSC      I  TRGAN       EXIT TO RETURN ADDR. 31816500
*
0B8E 1 C400 0B81 WD2      LD      L  DIAX2      LD DIAG WD 2 WAS    31816510
0B90 1 E400 0B83 AND      L  TRWD2      AND DIAG WD 2 ERR   31816520
0B92 1 D400 0B85 STO      L  TGWD2      STORE ON/F ERR      31816530
0B94 1 C400 0B83 LD       L  TRWD2      LOAD DIAG WD 2 ERR  31816540
0B96 1 F400 0B85 EOR      L  TGWD2      EOR ON/F ERR BITS  31816550
0B98 1 D400 0B84 STO      L  TGWD1      STORE F/ON ERR      31816560
0B9A 1 0C00 0B30 XIO      L  BZON        EXECUTE ALARM ON    31816570
0B9C 0 6309      LDX      3 9           31816580
0B9D 1 6F00 0A87 STX      L3 MSGND      SET UP MESSAGE ID 9 31816590
0B9F 1 4400 0A44 BSI      L  MSGID      CHK WHICH MESSAGE ID 31816600
0BA1 0 6700 007F LDX      L3 /007F      31816610
0BA3 1 6F00 0B76 STX      L3 TABLE&2  SET UP MODIFIER ID  31816620
0BA5 1 6700 0ABC LDX      L3 ADR3      LD ALPHA 3 ADDR     31816630
0BA7 1 6F00 0B77 STX      L3 TABLE&3  31816640
0BA9 1 C400 0B84 LD       L  TGWD1      LD ON/F ERROR BITS  31816650
0BAB 0 D0D1      STO      TABLE&9     31816660
0BAC 1 C400 0B85 LD       L  TGWD2      LD F/ON ERROR BITS  31816670
0BAE 0 D0CF      STO      TABLE&10    31816680
0BAF 0 C0D1      LD       DIAX2        LD DIAG WD 2 S/B    31816690
0BB0 0 D0CB      STO      TABLE&8     31816700
0BB1 1 C400 0645 LD       L  DIZAL      LD DIAG WD 2 WAS    31816710
0BB3 1 E400 0C37 AND      L  MASK1      MASK OUT CE BITS    31816720
0BB5 0 D0C5      STO      TABLE&7     31816730
0BB6 1 C400 0644 LD       L  DIAL        LD DIAG WD 1 WAS    31816740
0BB8 0 D0C1      STO      TABLE&6     31816750
0BB9 1 C400 0649 LD       L  CADSW      LOAD DSW WAS        31816760
0BBB 0 D0BD      STO      TABLE&5     31816770
0BBC 0 4480 0162 BSI      I  ERROR      GO PRINT ERROR      31816780
0BBE 1 0B74      DC       TABLE       MESSAGE TABLE      31816790
0BBF 1 0B1A      DC       LOPRT        LOOP ADDRESS        31816800
0BC0 1 0C00 0832 XIO      L  BZOFF      EXECUTE ALARM OFF   31816810
0BC2 0 6300      LDX      3 0           31816820
0BC3 0 68C0      STX      3 TGWD1      31816830
0BC4 0 68C0      STX      3 TGWD2      31816840
0BC5 1 4C80 0B20 BSC      I  TRGAN       EXIT TO RETURN ADDR. 31816850
*
*****
*          INTERRUPT ANALYSIS
*          COMPARES SHOULD/BE INTERRUPTS WITH
*          ACTUAL INTERRUPTS AND ANALIZES ANY FRRS
*****
0BC7 0 0000      INTAN DC    *-*      SAVED RETURN ADD.  31816860
0BC8 0 6300      LDX      3 0           31816870
0BC9 1 6F00 0B7C STX      L3 TABLE&8  RESET INTRPT ERR LOC 31816880

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0BC0 1 6F00 0B7D STX      L3 TABLE&9  RESET INTRPT ERR LOC 31817020
0BC1 1 C400 0649 LD       L  CADSW      LD DSW WAS          31817030
0BC2 1 F400 0C1C AND      L  INTMK      MASK INTRPT BITS    31817040
0BC3 1 D400 0C1A STO      L  INWAS      STORE INT BIT WAS    31817050
0BC4 1 C400 0888 LD       L  DSWXX      LOAD DSW S/R        31817060
0BC5 1 F400 0C1C AND      L  INTMK      MASK INTRPT BITS    31817070
0BC7 1 D400 0C18 STO      L  INSDR      STORE INT BIT S/R    31817080
0BC9 1 F400 0C1A EOP      L  INWAS      CHECK FOR ERROR      31817090
0BD0 0 4820      BSC      Z              31817100
0BDC 0 7001      MDX      INERR        GO TO INT ERR ANAL. 31817110
0BD1 0 703F      MDX      CKINT        CK FOR NO INTRPT    31817120
*
0BDE 1 D400 0C19 INERR STO L ERINT     SAVE INT ERR BITS    31817130
0BE0 1 C400 0C1A LD       L  INWAS      LD INTRPT DSW WAS    31817140
0BE2 1 F400 0C19 AND      L  ERINT     AND INT ERROR BITS   31817150
0BE4 1 D400 0B7C STO      L  TABLE&8  LD INT ERR ON/F BITS 31817160
0BE6 1 C400 0C19 LD       L  ERINT     LD INT ERROR BITS    31817170
0BE8 1 F400 0B7C EOR      L  TABLE&8  EOR INT ON/F ERROR   31817180
0BEA 1 D400 0B7D STO      L  TABLE&9  STORE INT F/ON ERROR 31817190
0BEC 0 7000      MDX      CKERR        31817200
*
0BED 1 C400 0B7C CKERR LD      L  TABLE&8  31817210
0BEF 0 4820      BSC      Z              31817220
0BF0 0 7005      MDX      INTER        CHK IF IT IS 0      31817230
0BF1 1 C400 0B7D LD       L  TABLE&9  FRR BITS ARE LOADED 31817240
0BF3 0 4820      BSC      Z              31817250
0BF4 0 7001      MDX      INTER        CHK IF IT IS 0      31817260
0BF5 0 7027      MDX      CKINT        NO ERR BITS LOADED  31817270
*
0BF6 1 0C00 0830 INTER XIO L BZON      EXECUTE ALARM ON    31817280
0BF8 0 6300      LDX      3 0           31817290
0BF9 1 6F00 0A87 STX      L3 MSGND      31817300
0BF9 1 6C00 0A86 STX      L  INTSW      TURN ON INT MSG SW  31817310
0BFD 1 4400 0A44 BSI      L  MSGID      CHK WHICH MSG ID    31817320
0BFF 0 635F      LDX      3 /005F      31817330
0C00 1 6F00 0B76 STX      L3 TABLE&2  SET UP MODIFIER ID  31817340
0C02 1 6700 0AD6 LDX      L3 ADR4      LD ALPHA 4 ADDRESS   31817350
0C04 1 6F00 0B77 STX      L3 TABLE&3  SET UP ALPHA MSG    31817360
0C06 1 C400 0645 LD       L  DIZAL      LD DIAG WD 2 WAS    31817370
0C08 0 F02F      AND      MASK1        MASK OUT CE BITS    31817380
0C09 1 D400 0B7A STO      L  TABLE&6  LD DIAG WD 1 WAS    31817390
0C0B 1 C400 0644 LD       L  DIAL        LD DIAG WD 1 WAS    31817400
0C0D 1 D400 0B79 STO      L  TABLE&5  31817410
0C0F 1 C400 0649 LD       L  CADSW      LOAD DSW WAS        31817420
0C11 1 D400 0B78 STO      L  TABLE&7  31817430
0C13 0 4480 0162 BSI      I  ERROR      GO PRINT ERROR      31817440
0C15 1 0B74      DC       TABLE       MESSAGE TABLE      31817450
0C16 1 0B1A      DC       LOPRT        LOOP ADDRESS        31817460
0C17 1 4C80 0B7C BSC      I  INTAN      EXIT TO RETURN      31817470
*
0C19 0 0000      ERINT DC    *-*      INTERRUPT ERR BITS  31817510
0C1A 0 0000      INWAS DC    *-*      DSW INT BITS WAS    31817520
0C1B 0 0000      INSDR DC    *-*      DSW INT BITS S/R    31817530
0C1C 0 D800      INTMK DC    /D800     31817540
*
0C1D 1 C400 064A CKINT LD      L  LOPSW  CHK IF INTERRUPT S/R 31817550
0C1E 0 4820      BSC      Z              31817560
0C20 0 7002      MDX      INTOK        31817570
0C21 1 4C80 0B7C BSC      I  INTAN      YES, EXIT TO RETURN 31817580
*
0C23 1 C400 0648 INTOK LD      L  PRTPN  CHK IF INTERRUPT WAS 31817610
0C25 0 4820      BSC      Z              31817620
0C26 0 70FA      MDX      CKINT&4     YES, EXIT TO RETURN 31817630
0C27 0 630B      LDX      3 11         NO, SET MSG ID B    31817640
0C28 1 6F00 0B74 STX      L3 TABLE    31817650
0C2A 1 0C00 0830 XIO      L  BZON      EXECUTE ALARM ON    31817660
0C2C 0 70D2      MDX      INTER&9     GO SET UP ERR TABLE 31817670

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*****
*          CONSTANTS
*****
OC2D 0 0E00      K0800 DC      /0E00      CONSTANT
OC2E 0 1000      K1000 DC      /1000      CONSTANT 1000
OC2F 0 E1EE      KE1EE DC      /E1EE
OC30 0 1080      K1080 DC      /1080
OC31 0 A1EE      KA1EE DC      /A1EE
OC32 0 A4EE      KA4EE DC      /A4EE
OC33 0 7580      K7580 DC      /7580
OC34 0 0500      K0500 DC      /0500
OC35 0 0580      K0580 DC      /0580
OC36 0 E4EC      KE4EC DC      /E4EC
OC37 0 FC00      MASK1 DC      /FC00      CE BIT MASK
OC38 0000        BSS E 0
OC38 1 0C00 08A6 STR01 XIO L RESET      EXECUTE RESET
OC3A 0 1000      BIS01 NOP
OC3B 0 1000      NOP
OC3C 0 0001      STR02 DC      1
OC3D 0 0000      BIS02 DC      0
OC3E 0 1000      STR03 NOP
OC3F 0 1000      NOP
OC40 1 6C00 064A BIS03 STX L LOPSW      TURN ON INTRPT EXPCT
OC42 0 1000      STR04 NOP
OC43 0 1000      NOP
OC44 1 6C00 064A BIS04 STX L LOPSW      TURN ON INTRPT EXPCT
OC46 0 0001      STR05 DC      1
OC47 0 0000      BIS05 DC      0
OC48 0 1000      STR06 NOP
OC49 0 1000      NOP
OC4A 1 6C00 064A BIS06 STX L LOPSW      TURN ON INTRPT EXPCT
OC4C 0 0001      STR07 DC      1
OC4D 0 0000      BIS07 DC      0
OC4E 0 1000      STR08 NOP
OC4F 0 1000      NOP
OC50 1 6C00 064A BIS08 STX L LOPSW
OC52 0 0001      STR09 DC      1
OC53 0 0000      BIS09 DC      0
OC54 0 1000      STR10 NOP
OC55 0 1000      NOP
OC56 1 6C00 064A BIS10 STX L LOPSW
OC58 0 0001      STR11 DC      1
OC59 0 0000      BIS11 DC      0
OC5A 0 1000      STR12 NOP
OC5B 0 1000      NOP
OC5C 1 6C00 064A BIS12 STX L LOPSW
OC5E 0 1000      STR13 NOP
OC5F 0 1000      NOP
OC60 1 7401 09F5 BIS13 MDX L MKSW3,1
*****
* THE FOLLOWING ARE PROGRAM MODIFICATIONS
* FOR STR OR BI SYN WHICH EVER IS SPECIFIED
* BY PROGRAM OPTION SWITCH
*****
OC62 0 0000      STR DC      *--*
OC63 1 CC00 0C38 LDD L STR01      LD STR PROG MODIF 01
OC65 1 DC00 0634 STD L MOD01      STORE IN MOD01
OC67 1 C400 0C3C LD L STR02      LD STP PROG MODIF 02
OC69 1 D400 086D STO L MOD02      STORE IN MOD 02
OC6B 1 CC00 0C3E LDD L STR03
OC6D 1 DC00 0872 STD L MOD03
OC6F 1 CC00 0C42 LDD L STR04
OC71 1 DC00 08CA STD L MOD04
OC73 1 C400 0C46 LD L STR05
OC75 1 D400 08D8 STO L MOD05
OC77 1 CC00 0C48 LDD L STR06
OC79 1 DC00 08DC STD L MOD06

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31817700
31817710
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31817760
31817770
31817780
31817790
31817800
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31818330
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31818350
31818360
31818370

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OC7B 1 C400 0C4C LD L STR07
OC7D 1 D400 08F2 STO L MOD07
OC7F 1 CC00 0C4E LDD L STR08
OC81 1 DC00 08F6 STD L MOD08
OC83 1 C400 0C52 LD L STR09
OC85 1 D400 0905 STO L MOD09
OC87 1 CC00 0C54 LDD L STR10
OC89 1 DC00 090A STD L MOD10
OC8B 1 C400 0C58 LD L STR11
OC8D 1 D400 094D STO L MOD11
OC8F 1 CC00 0C5A LDD L STR12
OC91 1 DC00 0954 STD L MOD12
OC93 1 CC00 0C5E LDD L STR13
OC95 1 DC00 0958 STO L MOD13
OC97 1 C400 088A LD L DSW02
OC99 1 D400 088E STO L DSW04
OC9B 1 C400 0C34 LD L K0500
OC9D 1 D400 0894 STD L DSW07
OC9F 1 C400 0C35 LD L K0580
OCA1 1 D400 0896 STO L DSW08
OCA3 1 C400 0C2F LD L KE1EE
OCA5 1 D400 089B STD L DIA10
OCA7 1 C400 0C35 LD L K0580
OCA9 1 D400 089C STO L DSW11
OCAB 1 C400 0C36 LD L KE4EC
OCAD 1 D400 089D STO L DIA11
OCAE 1 C400 0C2D LD L K0800
OCR1 1 D400 099C STO L DLY&I
OCB3 1 4C80 0C62 BSC I STR

```

```

31818380
31818390
31818400
31818410
31818420
31818430
31818440
31818450
31818460
31818470
31818480
31818490
31818500
31818510
31818520
31818530
31818540
31818550
31818560
31818570
31818580
31818590
31818600
31818610
31818620
31818630
31818640
31818650
31818660
31818670
31818680
31818690
31818700
31818710
31818720
31818730
31818740
31818750
31818760
31818770
31818780
31818790
31818800
31818810
31818820
31818830
31818840
31818850
31818860
31818870
31818880
31818890
31818900
31818910
31818920
31818930
31818940
31818950
31818960
31818970
31818980
31818990
31819000
31819010
31819020
31819030
31819040
31819050

```

```

LOAD DELAY CONSTANT
PUT IN DELAY RTN
RETURN

```

```

*
*
*

```

```

BISYN DC

```

```

*--*

```

```

LD BI SYN PROG MOD 1

```

```

STORE IN MOD01

```

```

LD BI SYN PROG MOD 2

```

```

STORE IN MOD02

```



```

OCFC 1 D400 089C      STD L DSW11
OCFE 1 C400 0C32      LD L KA4EE
OD00 1 D400 089D      STD L DIA11
OD02 1 C400 0C2E      LD L K1000      LOAD DELAY CONSTANT
OD04 1 D400 099C      STD L DLY&1      PUT IN DELAY RTN
OD06 1 4C80 0C85      RSC I BISYN      RETURN
*
*****
OD08 05F6            END      BEGN      LAST STATEMENT
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

31819060
31819070
31819080
31819090
31819100
31819110
31819120
31819130
31819140

```

```

ADR1 0A88 0A1C
ADR2 0AA2 0B46
ADR3 0A8C 0BA5
ADR4 0AD6 0C02
ADR5 0AF0 074E
ANAL1 09BA 09B1 09C5
ANAL2 09C7 09B6 09DR
ANL01 09C3 09C1 09C2
ANL02 09D9 09D7 09DR
ALLOG 07C3 079D
REGIN 0160 05F6
REGN 05F6 0D08
RISYN 0CB5 06E7 0D06
RIS01 0C3A 0CB6
RIS02 0C3D 0CBA
RIS03 0C40 0CBF
RIS04 0C44 0CC2
RIS05 0C47 0CC6
RIS06 0C4A 0CCA
RIS07 0C4D 0CCE
RIS08 0C50 0CD2
RIS09 0C53 0CD6
RIS10 0C56 0CDA
RIS11 0C59 0CDE
RIS12 0C5C 0CE2
RIS13 0C60 0CE6
RZOFF 0832 0698 0736 075D 07E1 0845 0855 0A3F 0B1C 0B61 0BC0
RZON 0830 0693 0731 0758 0840 084D 0A11 0B38 0B9A 0BF6 0C2A
BILLOG 07C7 07A7
CADSW 0649 064D 098B 09FD 0A01 0A05 0A2C 0B5A 0BB9 0BCD 0C0F
CHDLY 099A 096B 098D 099F
CKERR 0BED 0REC
CKINT 0C1D 08DD 0BF5 0C26
CKIT2 0B67 0839
CKIT4 09D1 09E2 09E8 09FE
CKOPT 06C5 068C 06F9 073F 0814
CLLOG 0739 073F
CNTRL 065B 0821
CN20 066A 065F
CN30 0674 0663
CONAN 09A1 0659
CILLOG 07CB 07B1
DELY3 05FA 05FB 06E2 0767 078C 0810
DIAG 092A 0997
DIAMD 076A 06CF 076F
DIASW 09AB 076B 080A 09A5
DIAWD 0642 0654 07E2 09D1 09DD 09E0 09E3 09E6 09E9 09EC 0A45
DIAW1 0647 060A 062C 063F
DIAW2 0649 060D 0629 064C
DIAXX 0889 0802 09A8 09D3 0B21
DIA11 0880 07FD 0827 0850 0867
DIA12 0881 082B 088E 08AF
DIA01 0389
DIA02 0888
DIA03 088D
DIA04 088F
DIA05 0891
DIA06 0893
DIA07 0895
DIA08 0897
DIA09 0899
DIA10 089B 0CA5 0CF8
DIA11 089D 0CAD 0D00
DIA12 089F
DIA13 08A1
DIA14 08A3
DIA15 08A5
DISAR 08AA 0865 086B

```

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

DI1AL 0644 0608 060C 062D 062E 0653 0A36 0852 08B6 0C0B
 DI2AL 0645 060E 060F 062A 062B 064E 0A30 0855 08B1 0C06
 DLY 099B 0CB1 0D04
 DLYTM 0824 0620 0636 082A 08CD 08DF 08F9 090F 095B
 DSWAL 0646 0606 0607 0625 0626 064C
 DSWAN 0A04 09C3 0A40
 DSWRD 09AE 09BF 0A07 0A08
 DSWSE 063A 0605
 DSWSN 063C 0619 0624
 DSWW1 0A42 07F7 0A09 0A0D 0A20
 DSWW2 0A43 0A0F 0A24
 DSWXX 08B8 0800 0839 083F 0844 0849 0851 0859 085E 0864 0869 086F 0878 087E
 0884 088C 08C1 08C8 08D3 08DA 08E5 08ED 08F4 08FF 0908 0917 091D
 0934 093D 0946 0950 0963 0971 097A 0984 0993 09A1 09BD 0A28 0BD3
 DSW01 0888 0838 083E 0843 0848 0850 0863 0868 0877 087D 0883 088B 0915 091B
 DSW02 088A 0858 0C97
 DSW03 088C 085D
 DSW04 088E 086E 0C99 0CEC
 DSW05 0890 08C0 08FE 0CEE
 DSW06 0892 08D2 08E4 08EC 0CF2
 DSW07 0894 08C7 0906 0C9D 0CF0
 DSW08 0896 08D9 08F3 0CA1 0CF4
 DSW09 0898 0932
 DSW10 089A 093B 0944
 DSW11 089C 094E 0CA9 0CFC
 DSW12 089E 0961
 DSW13 08A0 096F 0978
 DSW14 08A2 0982
 DSW15 08A4 0991
 DTMK1 09FD 09FA
 DTMK2 09DD 09CA
 DTMK3 09E3 09CD
 DTMK4 09E9 09D0
 DILOG 07D0 07BB
 ENABL 08A8 085F 086A
 END 0164 069A
 ENDDP 082E 085A 0937 0969 098B
 ENDD2 09FB 0A03
 ENMSG 0684 0672 0689
 ERINT 0C19 0BDE 0BE2 0BE6
 ERLCK 0166 05EA
 ERROR 0162 0A3A 0B5D 0B8C 0C13
 EXINJ 0638 0632
 E1LOG 07D3 0793
 FAST1 0778 06DE 0788 078E
 FAST2 078A 0786 0790
 FSTCK 06C4 06FE 06FF 0780 0782
 ICHAR 0930 0922
 IDRTN 0A6A 0A5B 0A7A 0A7C 0A7E
 ILO 017A
 IL1 018A 07DC
 IL2 019A
 IL3 01AA
 IL4 01BA
 INERR 0BDE 0BDC
 INSDB 0C1B 0BD7
 INTAN 0BC7 0657 0A68 0C17 0C21
 INTER 0BF6 0BF0 0BF4 0C2C
 INTID 0A85 0A66 0A6A 0A6D 0A71
 INTMK 0C1C 0BCF 0BD5
 INTOK 0C23 0C20
 INTR 0623 0638 07DA
 INTSW 0A86 0A5A 0A67 0A72 0BFB
 INWAS 0C1A 0BD1 0BD9 0BE0
 KA1EE 0C31 0CF6
 KA4EE 0C32 0CFE
 KE1EE 0C2F 0CA3
 KE4EC 0C36 0CAB

SCA PROGRAM INSTRUCTIONS FUNCTION TEST STR/BSC

K0001 06C3 06FD 0701 077E 0784
 K0500 0C34 0C9B
 K0580 0C35 0C9F 0CA7
 K0800 0C2D 0CAF
 K1000 0C2E 0771 0812 0D02
 K1080 0C30 0CEA
 K7580 0C33 0CFA
 LOCK 05E7 05ED 05F3 0816
 LOG 0163 0695 0733 075A
 LOGBY 0167
 LOG01 0727
 LOG02 0748 0746 074D
 LOG1A 0AF6 0727 0738 079F
 LOG1B 0AF8 0739 07A9
 LOG1C 0800 07B3
 LOG1D 0805 07BD
 LOG1E 0808 0795
 LOG11 0791 070E 0798 0799
 LOG12 0798 0713 07A2 07A3
 LOG13 07A5 0718 07AC 07AD
 LOG14 07AF 071D 07B6 07B7
 LOG15 07B9 0722 07C0 07C1
 LOOP 05F5 05EF 05F1 067A 081B
 LOOPE 0823 0818 081A 081A
 LOPRT 081A 0A3D 0860 08BF 0C16
 LOPSW 064A 0630 08C2 08D4 08E6 08EE 0900 093F 0948 0973 097C 0995 0A5D 0C1D
 0C40 0C44 0C4A 0C50 0C56 0C5C
 LRTN 06BD 06BE
 MASK1 0C37 0A32 0857 08B3 0C08
 MASK2 09EF 09FF
 MASK3 09F0 09DF
 MASK4 09F1 09E5
 MASK5 09F2 09FB
 MASTR 0882 08C4 08CC 08E8 0902 090C
 MID1 0A7B 0A78
 MID3 0A7D 0A64
 MKSW1 09F3 0804 0965 09C8 09F7
 MKSW2 09F4 0806 0986 09CB
 MKSW3 09F5 0808 09CE 0C60
 MLSCF 05E5 0612 067C
 MOD01 0634 0633 0C65 0CB8
 MOD02 086D 0C69 0CBC
 MOD03 0872 0870 0C6D 0CC0
 MOD04 08CA 08C9 0C71 0CC4
 MOD05 08D8 0C75 0CC8
 MOD06 08DC 08DB 0C79 0CCC
 MOD07 08F2 0C7D 0CD0
 MOD08 08F6 08F5 0C81 0CD4
 MOD09 0905 0C85 0CD8
 MOD10 090A 0909 0C89 0CDC
 MOD11 094D 0C8D 0CE0
 MOD12 0954 0952 0C91 0CE4
 MOD13 0958 0957 0C95 0CE8
 MSGG0 0A52 0A82
 MSGID 0A44 0A16 0A73 0B40 0B9F 0BFD
 MSGND 0A87 0A14 0A6C 0A7F 0B3E 0B9D 0BF9
 NMSG 080D 068C
 NOPNT 06F3 0747 075F
 NORST 0770 06D3 0777 0779
 NOTRM 0A7F 0A50
 OFF 07F0 09A6 0988
 OFF1 07E9 07DE 07F5
 OFF2 07E8 07E8 081E
 OFF3 07ED 07F0
 OFF4 07F2 07F5
 OFF5 07F7 07FA
 OFF6 07FC 07FF
 OPRTN 06F9 0704 0765 0769

PID 05DC 05F8
PNDCK 0A75 0A60
PRTPN 064B 062F 0A61 0A75 0C23
RAD 05DE 0678 06FB 077C
RCVED 08B6 08B0
RDCAT 08B0 08BD
RDIA1 063E 0608 0627
RDIA2 0640 0609 0628
RESET 08A6 061E 0836 0C38
RID 05DD 0660 0668 066A 066F 0674 068A 07D8
RIDCK 06BE 0662 0671
RLCF 0168
RQKB 018C
RQTY 01BB
RSOFF 07E6 06D6 06D9 0773 0775
RSTNO 0834 061A 080C 084C 0854
RSTSW 07DF 06C1 07E3 07E6 07EA 081D 083A 084A 0852 0A4D
RTNGO 0860 083C 0841 0846 084E 0856 085B 0866 086C 0875 087B 0881 0886
RTNSW 0165 067E
RTNTO 091F 08BE 08C5 08D0 08D7 08E2 08EA 08F1 08FC 0904 0913 0919 0939 0942
094C 095F 096D 0976 0980 098F
RTTBL 069C 0676 06BE
RTOA 086E 06A5
RTOB 0877 06A6
RTOC 087D 06A7
RTOD 0883 06A8
RTOE 08BB 06A9
RTOF 08C0 06AA
RT01 0836 069C 081F
RT02 083E 069D
RT03 0843 069E
RT04 0848 069F
RT05 0850 06A0
RT06 0858 06A1
RT07 085D 06A2
RT08 0863 06A3
RT09 0868 06A4
RT1A 0932 06B5
RT1B 093B 06B6
RT1C 0944 06B7
RT1D 094E 06B8
RT1E 0961 06B9
RT1F 096F 06BA
RT10 08C7 06AB
RT11 08D2 06AC
RT12 08D9 06AD
RT13 08E4 06AE
RT14 08EC 06AF
RT15 08F3 06B0
RT16 08FE 06B1
RT17 0906 06B2
RT18 0915 06B3
RT19 091B 06B4
RT20 0978 06BB
RT21 0982 06BC
RT22 0991 06BD
SAVE1 06C1 06D5 06D8
SCOPE 06FB 06F8
SCOPI 0761 0702
SCOPI 0766 0764
SEND 08B7 08AE
SET6 092C 091E
SET7 092E 0918
SIREG 0922 087F 094A 0956 0967 097E
SLAVE 08B4 08D6 08DE 08E9
SND SW 064C 0622
SPACE 0A84 0A81
SRVSN 09F6 0655 09FB

START 0161 0614 06R2
STOR1 09AF 09A3 09B3
STOR2 09B5 09AA
STR 0C62 06EC 0CB3
STRD 0924 08F0 08F8 0903 090E 0936
STPT 07D7 05E3 05E4 05E5
STRWR 0926 0975 097F 099R
STR01 0C38 0C63
STR02 0C3C 0C67
STR03 0C3E 0C6B
STR04 0C42 0C6F
STR05 0C46 0C73
STR06 0C48 0C77
STR07 0C4C 0C7B
STR08 0C4E 0C7F
STR09 0C52 0C83
STR10 0C54 0C87
STR11 0C58 0C9B
STR12 0C5A 0C8F
STR13 0C5F 0C93
STST 08AC 0874 0879 087A 08CF 08E1 08FB 0911 095D
STWD 09AD 0980 0985
SVKR 018D
SW0 05DF 05E8
SW1 05F0 065C 0666
SW2 05E1 05FD 06C7 06CB 06D0 06DB 06E4 06E9 070B 0710 0715 071A 071F 0724
SW3 05E2 066D 06FF 06F3 0741 0761
SYNCH 0928 0941 094R 095A 0968
S2PNT 0705 06CA 070A
S2WAS 06BF 06C6 0726
S3PNT 0741 06F2
S3WAS 06C0 06EE 06F5 0743
TABLE 0B74 0686 068E 0691 0697 0707 0729 072C 072F 0735 074A 0750 0753 0756
075C 0A1A 0A1E 0A22 0A26 0A2A 0A2E 0A34 0A39 0A3C 0A4B 0A6E 0B44
0B48 0B4C 0B4F 0B51 0B54 0B59 0B5C 0B5F 0BA3 0BA7 0BAB 0BAE 0BB0
0BB5 0BB8 0BBB 0BBE 0BC9 0BCB 0BE4 0BER 0BFA 0BFD 0BF1 0C00 0C04
0C09 0C0D 0C11 0C15 0C28
TERM 0A83 0A51
TERM1 0A9D 0A52
TERM2 0AB7 0A54
TERM3 0AD1 0A56
TERM4 0AEB 0A58
TGWD1 0884 084A 0864 0871 0898 08A9 08C3
TGWD2 0885 084D 0865 086B 086F 0892 0896 08AC 08C4
TMDLY 082C 0826 0827
TRGAN 0B20 09D9 088C 08C5
TRGWD 09AC 07FC 09D5 082C
TRWD1 0882 0832 0837 0869 086D
TRWD2 0883 0836 0886 0890 0894
WAITR 0616 0610 061D
WAIT1 0605 0601 0618
WAIT3 05FB 0860 091F 099R
WCNT 05F9 05FC 0602 0604 0616
WD1 083B 0873
WDICK 0886 083A 0866
WD2 088E 088R
WRCAT 08AE 0885 0989
END OF ASSEMBLY

----- LAST PAGE -----

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1. PURPOSE

THE PURPOSE OF SCA WRT/RD BFR AND LINE NOISE DETECTION PROGRAM, IS TO CHECK THE SCA BUFFER FOR PROPER WRITE/READ OPERATION, AND MONITOR THE PHONE-LINE FOR UNDESIRABLE NOISE WHICH WILL CAUSE PROBLEMS IN THE SCA OPERATION.

2. PREREQUISITES

2.1*** PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS AND THIS PROGRAM USES 1.5 K STORAGE WORDS.

2.2*** EQUIPMENT PREREQUISITES

1. SET DATA TERMINAL SWITCH IN THE OPERATE POSITION. (SEE NOTE)
2. SET STR SWITCH TO STR POSITION.
3. SET C.E. MODE SWITCH TO OFF POSITION.
4. SET SCA ALARM SWITCH TO ON POSITION.
5. SET BAUD SELECTOR SWITCH TO 600, 1200, 2000, 2400 OR 4800.

NOTE 1..IF A DIAL-UP DATA SET IS NOT IN USE, INSTALL A JUMPER FROM J4D02 TO J4D08. REMOVE THIS JUMPER TO MAKE DATA SET READY AND EXECUTE ROUTINE 5.

3. OPERATING PROCEDURE

THESE OPERATING PROCEDURES APPLY TO SINGLE PROGRAM OPERATION ONLY. FOR OVERLAP OPERATION REFER TO SECTION 3.2.3 OF THE 1130 DIAGNOSTIC MONITOR II DOCUMENTATION.

3.1*** PROGRAM LOADING

STANDARD MONITOR LOADING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
2. SET BIT SWITCH 15 OFF - LOAD AND GO
 ON - TO SPECIFY OPTIONS BEFORE RUNNING.

IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (SECTION 3.5).

3. LOAD DIAGNOSTIC MONITOR AND SCA WRT/RD BFR, LINE NOISE.
4. SELECT PROGRAM OPTIONS, IF DESIRED.

3.2*** PROGRAM OPERATION.

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-1 OFF.
2. SET SWITCHES 0-7 TO 01.

SW	FUNCTION
8	RESTART
9	ROUTINE START MESSAGE
10	LOCK ON FUNCTION
11	LOOP PROGRAM
12	LOOP ON ERROR
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR
15	HALT

3. PRESS INT REQ KEY ON CONSOLE.

**

3.2.2 ROUTINE SELECTION - FUNCTION 1

THE SELECTED ROUTINE WILL LOOP UNTIL A NEW ROUTINE IS SELECTED.

1. TO SET ROUTINE SELECTION
 - A. SET SWITCHES 0-7 TO 41.
 - B. SET ROUTINE NUMBER IN SWITCHES 10-15.

RTN	DESCRIPTION
1	PROGRAM RESET
2	END OP
3	ONES/ZERO BUFFER TEST
4	FLOATING BIT PATTERN BUFFER TEST
5	LINE NOISE LISTENING TEST

THIS OPTION WILL BE USED TO TROUBLE SHOOT FAILURES.

- C. PRESS INT REG KEY ON CONSOLE.

2. TO RESET ROUTINE SELECTION SET AS IF SELECTING ROUTINE ZERO.

3.3*** PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS START
3002	HALT ON ERROR	DISPLAY MODE-PRESS START. RUN MODE-PRESS START

**

3.3.2 ERROR HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE.	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS START.
30F6	MONITOR DID NOT LOAD	RELOAD
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD
30F8	READER NOT READY	MAKE READER READY
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4*** PROGRAM TERMINATION

IF LOOP PROGRAM HAS NOT BEEN SPECIFIED, THE PROGRAM WILL TERMINATE AT THE END OF ROUTINE 05.

IF ANY ROUTINE IS SELECTED, THAT ROUTINE WILL LOOP AND WILL NOT TERMINATE.

3.5*** RESTART

1. TURN OFF SWITCHES 0-7.
2. TURN ON SWITCH 8.
3. SET DESIRED CONTROL IN SWITCHES 9-14.
4. PRESS INTERRUPT REQUEST KEY.

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT.

APPNN OORR AAAA (MESSAGE)
OR
EPPNN OORR AAAA (MESSAGE)

WHERE A IDENTIFIES STATUS MESSAGES
E IDENTIFIES ERROR MESSAGES
PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE

THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MON-
ITOR OR 11 FOR MESSAGES ORIGINATED BY THIS PROGRAM.

NN IS THE MESSAGE SEQUENCE NUMBER
RR IS THE ROUTINE NUMBER
AAAA IS THE ADDRESS OF THE ROUTINE
MESSAGE IS ANY VARIABLE INFORMATION

4.1*** STATUS MESSAGES

A0000 NUM PID ADRS RELF LD
XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED, FOLLOWING THE LOADING OF ANY PROGRAM
(EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER,
THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED,
AND THE RELOCATION FACTOR.

A0001 SWS PID
XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ
BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ,
TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE
CONTENTS OF SWITCHES 8-15 WERE STORED. IF THE SWITCH ENTRY
CALLED FOR HALT OF ANY PROGRAM, THE WORD HALT WILL FOLLOW THE
MESSAGE.

A1100 00OR AAAA

ROUTINE START MESSAGE - IF SWITCH 9, FUNCTION 0, IS TURNED ON,
THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE.
R IS THE NUMBER OF THE NEXT ROUTINE AND AAAA IS THE STARTING
ADDRESS.

A1101 0005 AAAA SET UP DATA SET CONNECTIONS

THIS MESSAGE IS PRINTED OUT WHEN ROUTINE 05 IS ENTERED AND DATA
SET READY WAS SENSED, AND FOUND OFF. IF DATA SET CONNECTIONS ARE
NOT MADE, THIS MESSAGE WILL BE REPEATED EVERY 16 SECONDS.

TO MAKE DATA SET CONNECTIONS...

1. PHONE ANOTHER TERMINAL.
2. REQUEST THAT THEIR DATA SET BE PUT IN TALK POSITION, AND
PLACE THE HAND-PHONE IN THE DATA SET CRADLE.

NOTE

IF THE HAND PHONE IS NOT PLACED IN THE CRADLE, THE MOUTH-
PIECE WILL PICK UP NOISES WITHIN THE ROOM.
THE REMOTE TERMINAL SHOULD BE POWERED OFF OR
DISCONNECTED FROM THE DATA SET, SO AS NOT TO CREATE
LINE NOISE.

3. AT YOUR DATA SET, PUSH THE DATA BUTTON, OR REMOVE THE
JUMPER FROM J4D02 TO J4D08. THIS SHOULD CAUSE
THE SCA RDY LITE TO COME ON, AND CAUSE THE PROGRAM TO
BRANCH TO LINE LISTENING. ANY LINE CONDITIONS EFFECTING
THE COMMUNICATIONS TERMINAL CIRCUITRY, WILL BE DETECTED
AND PRINTED OUT ON THE CONSOLE TYPEWRITER.
4. PLACE YOUR DATA SET HAND PHONE IN ITS CRADLE.

A1102 0005 AAAA RESET ADAPTER AND HANG UP PHONE

THIS MESSAGE WILL BE PRINTED OUT AFTER LINE LISTENING ROUTINE HAS
COME TO ITS NORMAL END. (APPROXIMATELY 10.5 MINUTES) THIS
MESSAGE WILL NOT BE PRINTED OUT IF ROUTINE 05 IS BEING LOOPED, OR
TERMINATED BY RESETTING THE ADAPTER AND HANGING UP THE PHONE

TO RESET ADAPTER AND HANG UP PHONE.

1. AT YOUR DATA SET, PUSH TALK PUSH-BUTTON.
2. PICK UP PHONE FROM CRADLE AND LISTEN FOR DIAL-TONE.
3. PLACE PHONE BACK INTO CRADLE. THIS WILL ALSO HANG UP
PHONE AT THE OTHER TERMINAL.

A1103 0005 AAAA LINE NOISE ROUTINE TERMINATED

THIS MESSAGE WILL BE PRINTED OUT WHENEVER THE DATA SET GOES NOT
READY. NORMALLY THIS WILL BE AUTOMATIC AT THE NORMAL END OF ROUTI
05, OR WHEN THE C.E. PREMATURELY ENDS THE LINE LISTING ROUTINE BY
PUSHING THE TALK PUSH BUTTON ON THE DATA SET. THE PHONE SHOULD BE
PICKED UP, AND WHEN A DIAL TONE IS HEARD, PLACED BACK INTO
ITS CRADLE.

4.2*** ERROR MESSAGES

E0001 SWS INVLD
XXXX

THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE
NUMBER OF ANY PROGRAM IN CORE.

E0003 DVR CORE
THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD,
EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM
A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM.
THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.
1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION, THE CHECK SUM WAS NOT
CORRECTLY CALCULATED.

WHEN THIS ERROR OCCURS, ATTEMPT TO RELOAD THE PROGRAM.

E0005 000N XXXX
THIS ERROR WILL OCCUR WHEN AN INTERRUPT OCCURS, BUT THE ILSW
WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE
ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET
BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET
THE REQUEST BIT.

WHENEVER AN SCA ERROR MESSAGE IS BEING PRINTED OUT, THE SCA ALARM
IS TURNED ON.

THE C.E. BITS CAN BE JUMPERED, AT C.E. DISCRETION, TO ANY POINT IN
THE SCA CIRCUITRY. IF THESE BITS ARE NOT WIRED, THEY WILL BE SET
TO A 1. (SEE LOGIC FC732, NOTE 2).

IF ALL DSW ANALYSIS APPEAR GOOD AND MANY FAILURES IN DIAGNOSTIC WORDS
OR MANY DSW FAILURES AND DIAGNOSTIC WORD APPEAR GOOD, TAKE INTO
CONSIDERATION THE SENSE DSW OR THE SENSE DIAGNOSTIC WORD COMMANDS
ARE FAILING.

E1101 000R AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
 XXXX XX00 XXX0 XX00 XX00 OXX0

NO INTERRUPTS EXPECTED, AND AT LEAST 1 RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE
WITH THE RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1102 000R AAAA DW1 DW2 WAS S/B ON/F F/ON *CE* DSW ERR
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DSW.
S/B = CALCULATED CONTENTS OF DSW.
ON/F = DSW BIT THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW BIT THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DSW ERR = THE CALCULATED DSW DID NOT COMPARE WITH THE
RECEIVED DSW.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1103 000R AAAA DSW DW2 1WAS 1S/B ON/F F/ON *CE* DW1 ERR
 XXXX XX00 XXX0 XXX0 XXX0 XXX0 OXX0

DSW = STORED CONTENTS OF DSW.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 1.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 1.
ON/F = DIAGNOSTIC WORD 1 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 1 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW1 ERR = THE CALCULATED DIAGNOSTIC WORD 1 DID NOT COMPARE
WITH RECEIVED DIAGNOSTIC WORD 1.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1104 000R AAAA DSW DW1 2WAS 2S/B ON/F F/ON *CE* DW2 ERR
 XXXX XXX0 XX00 XX00 XX00 XX00 OXX0

DSW = STORED CONTENTS OF DSW
DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 2.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 2.
ON/F = DIAGNOSTIC WORD 2 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 2 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW2 ERR = THE CALCULATED DIAGNOSTIC WORD 2 DID NOT COMPARE
WITH RECEIVED DIAGNOSTIC WORD 2.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1105 000R AAAA WAS S/B BFR WRT/RD ERROR
 XXXX XX00

WAS = WORD READ FROM THE BUFFER
S/B = WORD SENT TO THE BUFFER

BFR WRT/RD ERROR = WORD WRITTEN INTO THE BUFFER WAS NOT THE SAME
AS THE WORD RECEIVED FROM THE BUFFER.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1106 000R AAAA WAS LINE NOISE
 X000

WAS = THE BIT CONFIGURATION OF THE BITS IN DIAGNOSTIC WORD 2, WHICH
 CONCERNED WITH LINE NOISE DETECTION. THE DURATION OF THE
 NOISE AS PER BIT CONFIGURATION IS AS FOLLOWS,

8000...NOISE OF 1 TRANSMISSION BIT LENGTH
 9000...NOISE OF MORE THAN 1 TRANSMISSION BIT LENGTH
 A000...NOISE OF 1 TRANSMISSION CHARACTER LENGTH

5. COMMENTS

5.1*** PROGRAM PHILOSOPHY

THE SCA WRT/RD BUFFER, LINE NOISE DETECTION PROGRAM IS DESIGNED WITH
 TWO MAIN OBJECTIVES IN MIND. 1...TO BE ABLE TO DETECT BUFFER WRITE /
 READ ERRORS. AND 2...TO BE ABLE TO DETECT TELEPHONE LINE NOISES THAT
 WOULD HAMPER NORMAL OPERATION BETWEEN THIS SCA INSTALLATION, AND THE
 DESIRED REMOTE STATION. THE EXECUTE TIME OF THIS PROGRAM IS ABOUT 11
 MINUTES.

THE FIRST BUFFER CHECK ROUTINE USES AN ALL ONES PATTERN AND AN ALL
 ZEROS PATTERN. THE DSW AND THE DIAGNOSTIC TRIGGERS ARE ALSO CHECKED
 FOR PROPER OPERATION.

THE SECOND BUFFER CHECK ROUTINE USES A FLOATING ONE AND A FLOATING
 ZERO PATTERN. AGAIN, THE DSW AND DIAGNOSTIC TRIGGERS ARE ALL CHECKED
 FOR PROPER OPERATION.

THE BUFFER CHECK ROUTINES TAKE APPROXIMATELY 20 SECONDS TO EXECUTE.

THE LINE NOISE DETECTION ROUTINE LISTENS FOR LINE NOISES THAT EFFECTS
 THE OPERATION OF NORMAL SCA DATA TRANSMISSION. THE OCCURANCE OF
 THIS TYPE OF LINE NOISE WILL BE PRINTED OUT AS AN ERROR MESSAGE.

THE LINE NOISE DETECTION ROUTINE TAKES APPROXIMATELY 10.5 MINUTES
 TO EXECUTE.

5.2*** ROUTINE DESCRIPTION

ROUTINE 01 ... PROGRAM RESET

THIS ROUTINE CHECKS THE ABILITY OF THE SCA RESET COMMAND TO
 ESTABLISH INITIAL RESET CONDITIONS OF THE SCA CIRCUITRY.
 ALL DIAGNOSTIC WORD TRIGGERS AND DSW TRIGGERS SHOULD BE TURNED
 OFF, WITH THE EXCEPTION OF THE SEND/RECEIVE RUN TRIGGER.

ROUTINE 02 ... END OPERATION

THIS ROUTINE ENSURES THAT THE EXECUTION OF THE ENDOP COMMAND
 DOES NOT BRING UP UNDESIRABLE LEVELS IN THE SCA CIRCUITRY.

ROUTINE 03 ... ONES / ZEROS TEST

THIS ROUTINE WILL FIRST LOAD THE BUFFER WITH ZEROS AND THEN READ
 THE BUFFER 1024 TIMES. A CHECK FOR DATA ERRORS IS MADE FOR EACH
 BUFFER READ OPERATION. IT WILL THEN LOAD THE SCA BUFFER WITH ALL
 ONES AND READ THE BUFFER 1024 TIMES. ANOTHER CHECK FOR DATA
 ERRORS IS MADE EACH TIME THE BUFFER IS READ. THESE TWO OPERATIONS
 ARE REPEATED ALTERNATELY 10 TIMES. THE ROUTINE RUN TIME IS
 APPROXIMATELY 20 SECONDS.

ROUTINE 04 ... FLOATING ONE / ZERO PATTERN

THIS ROUTINE CHECKS THE ABILITY TO WRITE AND READ A FLOATING ONE
 AND A FLOATING ZERO PATTERN WITHOUT PICKING OR DROPPING BITS.
 A CHECK IS MADE AFTER THE WRITE AND READ OPERATION OF EACH
 PATTERN. BIT FLOATING PATTERN IS STARTED IN THE HIGH ORDER
 POSITION (BIT POSITION 0) OF THE BUFFER AND PROGRESSES TO THE
 LOW ORDER POSITION. (BIT 7) THE PATTERN THEN PROGRESSES TO THE
 HIGH ORDER POSITION.

THE FOLLOWING IS THE PATTERN AND SEQUENCE OF THE BUFFER OPERATION

FLOATING 1	FLOATING 0
1000 0000	0111 1111
0100 0000	1011 1111
0010 0000	1101 1111
0001 0000	1110 1111
0000 1000	1111 0111
0000 0100	1111 1011
0000 0010	1111 1101
0000 0001	1111 1110
0000 0010	1111 1101
0000 0100	1111 1011
0000 1000	1111 0111
0001 0000	1110 1111
0010 0000	1101 1111
0100 0000	1011 1111
1000 0000	0111 1111

ROUTINE 05 ... LINE NOISE LISTENING ROUTINE

THIS ROUTINE LISTENS FOR TELEPHONE LINE NOISE CONDITIONS THAT
 WILL EFFECT THE SCA CIRCUITRY. ONLY NOISES EFFECTING SCA CIRCUITS
 WILL BE DETECTED, AND IDENTIFIED BY AN ERROR PRINTOUT.

THE OPERATION OF THIS ROUTINE IS PERFORMED WHILE ON-LINE WITH A
 REMOTE DATA SET. A REMOTE TERMINAL IS NOT REQUIRED. FOR DATA SET
 TYPES SUCH AS 201B OR IBM 3977 THE REMOTE TERMINAL MUST BE POWER-
 ED OFF OR REMOVED FROM THE DATA SET SO AS NOT TO CREATE LINE NOIS

NOISE SIMULATION FOR TEST PURPOSES, CAN BE GENERATED BY WHISTLING
 INTO THE TELEPHONE MOUTH-PIECE OF THE REMOTE DATA SET. THE
 WHISTLING TONE FREQUENCY MUST APPROXIMATELY MATCH THE FREQUENCY
 OF THE DATA NORMALLY COMING OVER THE PHONE LINE.

5.3*** DIAGNOSTIC REFERENCE TABLE

ERROR BIT REFERENCE

ERR BIT	BIT POSITION	DSW ERROR	DW1 ERROR	DW2 ERROR
8	0	READ RESP	SYNC TRIG	CLK GATE
4	1	WRT RESP	IDLE CHAR	SYNC CNTR
2	2	CHECK	CHAR CMPT	1ST TRANS
1	3	TIMEOUT	END OP	PHS CNTR
8	4	ANS REQ	DIAG MODE	RCV TAG
4	5	BUSY	TIMER TR	CHAR PHS
2	6	ENABLE	3 SEC TIMER	
1	7	READY	1.5 SEC TIMER	
8	8	RCV RUN	SEND DATA	

ROUTINE 01	COMMAND	FUNCTION	MODIFIER
	RESET	STR WRT	9
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
S/B ON		. . . . . X	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
.	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2

COMMENTS

THIS ROUTINE CHECKS FOR RESET CONDITION OF THE SCA CIRCUITRY. IT SHOULD BE ABLE TO TRAP SOLID AND INTERMITTENT PROBLEMS IN THIS AREA.

ROUTINE 03 AND ROUTINE 04	BUFFER BIT
	0 1 2 3 4 5 6 7

N	F F F F F F F F
E	C C C C C C C C
T	7 7 7 7 7 7 7 7
	3 3 3 3 3 3 3 3
N	1 1 1 1 1 1 1 1
U	A A A A A A A A
M	Y X W V U T S R
.	4 4 4 4 4 4 4 4

COMMENTS

IF FAILURE APPEARS NOT TO BE BUFFER, RUN SCA PROGRAM INSTRUCTION FT.

----- LAST PAGE -----

ROUTINE 02	COMMAND	FUNCTION	MODIFIER
	END OP	CONTROL	13
		DSW ERR	DW1 ERR
		0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8
S/B ON		. . . . . X	. . . . .
N	F F F F F F F F F	F F F F F F F F F	F F F F F F F F F
E	C C C C C C C C C	C C C C C C C C C	C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A	B B B A B A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
.	2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2

COMMENTS

THIS ROUTINE CHECKS THE END OPERATION COMMAND.

```
05DC          ORG      *E1500
              *        EQUATE TABLE
              *
              *****
              *        THIS TABLE EQUATES TEST PROGRAM LABELS
              *        TO THEIR EQUIVALENT DIAGNOSTIC MONITOR
              *        ADDRESSES.
              *
              *-----*
              *        MONITOR ENTRY ADDRESSES
              *-----*
0160 0        BEGIN EQU      /160      BEGIN ROUTINE
0161 0        START EQU     BEGIN&1   SUPERVISOR ROUTINE
0162 0        ERROR EQU     START&1   ERROR LOG ROUTINE
0163 0        LOG EQU       ERRDR&1   STATUS LOG ROUTINE
0164 0        END EQU       LOG&1     END ROUTINE
              *
              *-----*
              *        MONITOR CONTROL WORD ADDRESSES
              *-----*
0165 0        RTNSW EQU     END&1     ROUTINE START SW
0166 0        ERLCK EQU     END&2     LOCK ON ERR CONTROL
0167 0        LOGBY EQU     END&3     I/O BUSY SW ADDR
0168 0        RLCF EQU      END&4     RELOC FACTOR ADDR
              *
              *-----*
              *        INTERRUPT TRANSFER VECTOR ADDRESSES
              *-----*
017A 0        ILO EQU       /17A     INTERRUPT LEVEL 0
018A 0        IL1 EQU       ILO&16   INTERRUPT LEVEL 1
019A 0        IL2 EQU       IL1&16   INTERRUPT LEVEL 2
01AA 0        IL3 EQU       IL2&16   INTERRUPT LEVEL 3
01BA 0        IL4 EQU       IL3&16   INTERRUPT LEVEL 4
01BB 0        RQTY EQU      IL4&1    CON/PRINT REQUEST
01BC 0        RQKB EQU      RQTY&1   USE KEYBOARD REQUEST
01BD 0        SVKB EQU      RQKB&1   KB SERVICE REQUEST
              *
              *-----*
              *        SCA WRT/RD BFR, LINE NOISE DETECTION
              *-----*
              *****
              *        PROGRAM STATUS TABLE
              *****
05DC 0 0311   PID DC        /0311    PROGRAM ID NUMBER
05DD 0 0000   RID DC        /0000    ROUTINE NUMBER
05DE 0 0000   RAD DC        /0000    ROUTINE ADDRESS
05DF 0 0000   SWO DC        0        PROGRAM CONTROL
05E0 0 0000   SW1 DC        0        ROUTINE SELECTION
05E1 0 0000   SW2 DC        0
05E2 0 0000   SW3 DC        0
05E3 1 0690   DC           STRT      LOOP PROGRAM
05E4 1 0690   DC           STRT      RESTART ADDRESS
05E5 1 0690   MLSCF DC     STRT      ENTRY SET IN MN/LINE
05E6 0 FFFF   DC           /FFFF    TERMINATOR
              *
              *****
              *        LOCK ON FUNCTION ROUTINE
              *****
05E7 0 0000   LOCK DC       /0000
05E8 1 C400 05DF LD L SWO      LD SWO
05EA 0 EC80 0166 OR I ERLCK   OR WITH MON LOCK SW
05EC 0 100A   SLA          10       CHECK BIT 10
05ED 1 4C90 05E7 BSC I LOCK,-  BR IF NOT LOCK/FUNC
```

```
05EF 1 C400 05F5 LD L LOOP    LOAD LOOP ADDR
05F1 1 4CA0 05F5 BSC I LOOP,Z LOOP ON LAST FUNC
05F3 1 4C80 05E7 BSC I LOCK   IF LOOP ADDR NOT 0
05F5 0 0000   LOOP DC    *--    LOCK/ERR LOOP ADR.
              *
              *****
              *        TEST INITIALIZATION
              *****
05F6 0 4480 0160 BEGN BSI I BEGIN  MON INITIALIZATION
05F8 1 05DC   DC        PID     PST TABLE
              *
              *-----*
              *        START OF TEST AND SINGLE PASS INITIALIZE
              *-----*
              *
              *****
              *        PROGRAM WAIT
              *****
              * THIS ROUTINE IS USED BY THE TEST PROGRAM
              * TO MARK TIME WHILE WAITING FOR AN INTERRUPT
              * TO OCCUR.
              *
              *****
05F9 0 0000   WCNT DC    *--    DELAY COUNTER
05FA 0 1000   DELY3 DC   /1000   DELAY CONSTANT
              *
05FB 1 C400 0B35 WAIT1 LD L K0001  1 PASS
05FD 0 D0FB   STO        WCNT    STORE DELAY COUNT
05FE 1 4400 07BA BSI L MIC2
0600 0 7005   MDX        WAIT2
              *
0601 0 C0F8   WAIT3 LD   DELY3    4 SEC. CONSTANT
0602 0 D0F6   STO        WCNT    STORE DELAY COUNT
0603 1 4400 07BA BSI L MIC2
0605 0 7000   MDX        WAIT2
              *
0606 1 C400 071E WAIT2 LD L PRTPN  CHK FOR INTERRUPT
0608 1 4C20 0636 BSC L UINTR,Z  INT. OCCURRED
060A 1 6700 0610 LDX L3 WAIT4   SET UP MON RETURN
060C 1 6F00 05E5 STX L3 MLSCF
060E 0 4480 0161 BSI I START    GO TO MONITOR
              *
0610 1 74FF 05F9 WAIT4 MDX L WCNT,-1 REDUCE DELAY COUNT
0612 0 70F3   MDX        WAIT2  DELAY NOT OVER
0613 1 0C00 0706 XIO L DSWSN    SENSE AND RESET DSW
0615 1 4400 0664 BSI L SNDSW    GO MAKE ANALYSIS
              *
              *****
              *        INTERRUPT
              *****
              * THE MONITOR RETURNS CONTROL TO THIS ROUTINE
              * AFTER DETECTING A SCA INTERRUPT.
              *****
              * UNEXPECTED INTERRUPT OCCURRED
              *****
0617 0 0000   INTR DC    *--
0618 1 0C00 0706 XIO L DSWSN    SENSE RESET DSW
061A 1 D400 0AE8 STO L CADSW    STORE DSW
061C 1 0C00 070C XIO L RDIA1   READ DIAG WD 1
061E 1 0C00 070E XIO L RDIA2   READ DIAG WD 2
0620 1 C400 0725 LD L DIAW2
0622 0 1890   SRT          16
0623 0 1010   SLA          16
0624 0 1086   SLT          6
```

SCA WRITE/READ BUFFER & LINE NOISE DETECTION

SCA WRITE/READ BUFFER & LINE NOISE DETECTION

```

0625 0 1001      SLA      1
0626 1 EC00 0724  OR      L  DIAWI    COMBINE DIAG WORDS
0628 1 DC00 071C  STD      L  DIAWD    STORE DIAG WORDS
062A 1 6C00 071E  STX      L  PRTPN    TURN ON INTERRUPT SW
062C 1 C400 05DE  LD        L  RAD      CHK IF LINE NOISE RT
062E 1 9400 0662  S        L  RTTBL&4
0630 1 4C98 0617  BSC      I  INTR,&-  YES, EXIT TO RETURN
0632 1 0C00 0700  XIO      L  RESET    NO, EXECUTE RESET
0634 1 4C80 0617  BSC      I  INTR      EXIT TO RETURN
*
0636 1 4400 0838  UINTR   BSI      L  INTAN  MAKE INTRPT ANANYSIS
0638 1 4C00 0677  BSC      L  MODES    MAKE ANALYSIS

```

```

31101380
31101390
31101400
31101410
31101420
31101430
31101440
31101450
31101460
31101470
31101480
31101490
31101500
31101510
31101520
31101530
31101540
31101550
31101560
31101570
31101580
31101590
31101600
31101610
31101620
31101630
31101640
31101650
31101660
31101670
31101680
31101690
31101700
31101710
31101720
31101730
31101740
31101750
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31101770
31101780
31101790
31101800
31101810
31101820
31101830
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31101870
31101880
31101890
31101900
31101910
31101920
31101930
31101940
31101950
31101960
31101970
31101980
31101990
31102000
31102010
31102020
31102030
31102040
31102050

```

```

*****
* THIS ROUTINE CHECKS SWITCHES AND CONTROLS
* THE SEQUENCE IN WHICH TEST ROUTINES ARE RUN
*****

```

```

063A 0 0000      CNTRL  DC      *-*
063B 1 C400 05E0  LD        L  SW1
063D 1 4C08 0649  BSC      L  CN20,&  BRANCH IF NO RTN SELECTED
063F 1 D400 05DD  STO      L  RID      SAVE NEW RTN NUMBER
0641 0 9021      S
0642 1 4C08 0650  BSC      L  CN30,&  BR IF VALID RTN
0644 0 1810      SRA      16
0645 1 D400 05E0  STO      L  SW1      IF INVALID RTN GO
0647 1 D400 05DD  STO      L  RID      TO RTN ONE
0649 1 7401 05DD  CN20  MDX      L  RID,1  ADV TO NEXT RTN
064B 1 C400 05DD  LD        L  RID
064D 0 9015      S
064E 0 4480 0164  BSI      I  END,-Z   END PROGRAM
0650 1 6780 05DD  CN30  LDX      I3  RID
0652 1 C700 065D  LD        L3  RTTBL-1  FETCH RETURN ADRS
0654 1 D400 05DE  STO      L  RAD
0656 1 D400 05F5  STO      L  LOOP     LOAD LOOP RTN ADDR.
0658 1 D400 05E5  STO      L  MLSCF    SET MLSCF FOR RETURN
065A 0 D400 0165  STO      L  RTNSW
065C 0 4480 0161  BSI      I  START    GO TO MONITOR

```

```

*****
* ROUTINE SEQUENCE TABLE
*****

```

```

065E 1 06C3      RTTBL  DC      RT1
065F 1 06C9      DC      RT2
0660 1 06CF      DC      RT3
0661 1 0726      DC      RT4
0662 1 0751      LRTN   DC      RT5

```

```

0663 0 0005      RIDCK  DC      LRTN-RTTBL&1

```

```

0664 0 0000      SNDSW  DC      *-*
0665 1 0C00 0706  XIO      L  DSWSN    SENSE DSW
0667 1 D400 0AE8  STO      L  CADSW    STORE DSW
0669 1 0C00 070C  XIO      L  RDIA1    READ DIAG WORD 1
066B 1 0C00 070E  XIO      L  RDIA2    READ DIAG WORD 2
066D 1 C400 0725  LD        L  DIAW2
066F 0 1890      SRT      16
0670 0 1010      SLA      16
0671 0 1086      SLT      6
0672 0 1001      SLA      1
0673 1 EC00 0724  OR      L  DIAWI    COMBINE DIAG WORDS
0675 1 DC00 071C  STD      L  DIAWD    STORE DIAG WORDS

```

```

0677 1 C400 0719  MODES  LD        L  RESMD  CHK FOR RESET MODE
0679 1 4C20 0942  BSC      L  RESAN,Z
067B 1 C400 071A  LD        L  RDMD    CHK FOR READ MODE

```

```

067D 1 4C20 0956  BSC      L  RDAN,Z
067F 1 C400 071B  LD        L  WRTMD    CHK FOR WRITE MODE
0681 1 4C20 0961  BSC      L  WRTAN,Z
*
0683 1 C400 068F  RETRN  LD      L  PRTSW  CHK FOR PRINT SW ON
0685 1 4C20 068B  BSC      L  PRNT,Z
0687 1 4400 069B  BSI      L  OFF
0689 1 4400 063A  BSI      L  CNTRL    RESET PROG SWITCHES
*
068B 0 1010      PRNT   SLA      16      GO TO CONTROL
068C 0 D002      STO      L  PRTSW    TURN OFF ERR SW
068D 1 4C80 0664  BSC      I  SNDSW    GO MAKE ANALYSIS
*
068F 0 0000      PRTSW  DC      *-*    ERROR SWITCH

```

```

0690 0 6300      STRT   LDX      3 0
0691 1 6F00 05DD  STX      L3  RID      STORE ROUTINE NO.
0693 1 6500 0617  LDX      L1  INTR    SET-UP INTRPT ADDR
0695 0 6D00 0189  STX      L1  IL1-1
0697 1 4400 069B  BSI      L  OFF      RESET PROG SWITCHES
0699 1 4400 063A  BSI      L  CNTRL    GO TO CONTROL

```

```

069B 0 0000      OFF    DC      *-*    RETURN ADDRESS
069C 1 C400 05DE  LD        L  RAD
069E 1 9400 0662  S        L  LRTN
06A0 1 4C18 06A4  BSC      L  OFF&9,&-
06A2 1 0C00 0700  XIO      L  RESET
06A4 0 1010      SLA      16
06A5 0 630C      LDX      3 12
06A6 1 D700 0AD9  OFF0  STO      L3  TABLE-1
06A8 0 73FF      MDX      3 -1
06A9 0 70FC      MDX      OFF0
06AA 0 630C      LDX      3 12
06AB 1 D700 0AE5  OFF1  STO      L3  DSWXX-1
06AD 0 73FF      MDX      3 -1
06AE 0 70FC      MDX      OFF1
06AF 0 630D      LDX      3 13
06B0 1 D700 0718  OFF2  STO      L3  RESMD-1
06B2 0 73FF      MDX      3 -1
06B3 0 70FC      MDX      OFF2
06B4 0 6304      LDX      3 4
06B5 1 D700 09CE  OFF3  STO      L3  DSWW1-1
06B7 0 73FF      MDX      3 -1
06B8 0 70FC      MDX      OFF3
06B9 1 4400 05E7  BSI      L  LOCK     CK LOCK, LOOP/ERR FNC
06BB 0 C006      LD        L  LOUPE   LOAD LOOP SW
06BC 0 6300      LDX      3 0         RESET LOOP SW
06BD 0 6804      STX      3  LOUPE
06BE 1 4CA0 05F5  BSC      I  LOOP,Z   CHK IF LOOP SW ON
06C0 1 4C80 069B  BSC      I  OFF      NO, EXIT TO RETURN

```

```

06C2 0 0000      LOUPE  DC      *-*    LOOP ROUTINE SWITCH

```

```

31102060
31102070
31102080
31102090
31102100
31102110
31102120
31102130
31102140
31102150
31102160
31102170
31102180
31102190
31102200
31102210
31102220
31102230
31102240
31102250
31102260
31102270
31102280
31102290
31102300
31102310
31102320
31102330
31102340
31102350
31102360
31102370
31102380
31102390
31102400
31102410
31102420
31102430
31102440
31102450
31102460
31102470
31102480
31102490
31102500
31102510
31102520
31102530
31102540
31102550
31102560
31102570
31102580
31102590
31102600
31102610
31102620
31102630
31102640
31102650
31102660
31102670
31102680
31102690
31102700
31102710
31102720
31102730

```

```

*****
* PROGRAM RESET ROUTINE 01
*****
06C3 0 6855 RT1 STX RESMD TURN ON RESET MODE
06C4 1 6C00 09D1 STX L BNSW1 TURN ON BRANCH SW1
06C6 0 0839 XIO RESET EXECUTE ENDOP
06C7 1 4C00 0601 BSC L WAIT3 BRANCH TO DELAY
*
*****
* ENDOP CHECK ROUTINE 02
*****
06C9 0 684F RT2 STX RESMD TURN ON RESET MODE
06CA 1 6C00 09D2 STX L BNSW2 TURN ON BRANCH SW2
06CC 0 0843 XIO ENDOP EXECUTE ENDOP
06CD 1 4C00 0601 BSC L WAIT3 BRANCH TO DELAY
*
*****
* ZEROS/ONES TEST ROUTINE 03
*****
06CF 0 684A RT3 STX RDMD TURN ON READ MODE
06D0 1 6C00 09D1 STX L BNSW1 TURN ON BRANCH SW1
06D2 0 082D XIO RESET EXECUTE RESET
06D3 0 6310 LDX 3 /0010
06D4 0 684D STX 3 CNTA SET UP COUNTER A
06D5 0 C048 LD ODEVN LD ODD/EVEN SWT
06D6 1 4C20 06E0 BSC L EVEN1,Z GO TO EVEN IF ON
06D8 1 7401 0721 MDX L ODEVN,1 STEP ODD/EVEN SW
06DA 0 6300 LDX 3 0
06DB 0 6844 STX 3 SEND RESET OUTPUT AREA
06DC 0 0827 XIO WRCAT WRT ZEROS IN BUFFER
06DD 1 4400 06EC BSI L BFRCK GO CHECK BUFFER
06DF 0 70F5 MDX RT3&6 MAKE ANOTHER PASS
*
06E0 0 6300 EVEN1 LDX 3 0
06E1 0 683F STX 3 ODEVN TURN OFF ODD/EVEN SW
06E2 0 C033 LD ONES
06E3 0 D03C STO SEND SET UP TO WRITE ONES
06E4 0 081F XIO WRCAT WRT ONES IN BUFFER
06E5 1 4400 06EC BSI L BFRCK GO CHECK BUFFER
06E7 1 74FF 0722 MDX L CNTA,-1 REDUCE COUNTER A
06E9 0 70EB MDX RT3&6 MAKE ANOTHER PASS
06EA 1 4C00 05FB BSC L WAIT1 BRANCH TO DELAY
*
06EC 0 0000 BFRCK DC *--
06ED 0 6600 0400 LDX L2 /0400 SET UP CNTR B
06EF 0 6A33 STX 2 CNTB
*
06F0 0 0811 RDAGN XIO RDCAT RD BUFFER
06F1 1 6600 06F7 LDX L2 RDAGN&7 SET UP MON RETURN
06F3 1 6E00 05E5 STX L2 MLSCF
06F5 0 4480 0161 BSI I START GO TO MONITOR
06F7 0 C027 LD RCVED LD DATA READ
06F8 0 F027 EOR SEND EOR WITH DATA SENT
06F9 1 4C20 08E9 BSC L BFRER,Z CHECK FOR DATA ERROR
06FB 1 74FF 0723 MDX L CNTB,-1 REDUCE COUNTER B
06FD 0 70F2 MDX RDAGN GO READ AGAIN
06FE 1 4C80 06EC BSC I BFRCK EXIT TO RETURN
*
*****
* 1130 SCA IOCC
*****
0700 0000 BSS E 0
0700 0 0000 RESET DC 0 PROGRAM CAT RESET
0701 0 5540 DC /5540

```

```

31102740
31102750
31102760
31102770
31102780
31102790
31102800
31102810
31102820
31102830
31102840
31102850
31102860
31102870
31102880
31102890
31102900
31102910
31102920
31102930
31102940
31102950
31102960
31102970
31102980
31102990
31103000
31103010
31103020
31103030
31103040
31103050
31103060
31103070
31103080
31103090
31103100
31103110
31103120
31103130
31103140
31103150
31103160
31103170
31103180
31103190
31103200
31103210
31103220
31103230
31103240
31103250
31103260
31103270
31103280
31103290
31103300
31103310
31103320
31103330
31103340
31103350
31103360
31103370
31103380
03390
31103400
31103410

```

```

0702 1 071F
0703 0 5200
0704 1 0720
0705 0 5100
0706 0 0000
0707 0 5701
0708 0 0000
0709 0 5600
070A 0 0000
070B 0 5420
070C 1 0724
070D 0 5201
070E 1 0725
070F 0 5202
0710 0 0000
0711 0 5404
0712 0 0000
0713 0 5102
0714 0 0000
0715 0 5101
*
0716 0 FF00
0717 0 8000
0718 0 0100
*
0719 0 0000
071A 0 0000
071B 0 0000
071C 0 0000
071D 0 0000
071E 0 0000
071F 0 0000
0720 0 0000
0721 0 0000
0722 0 0000
0723 0 0000
0724 0 0000
0725 0 0000
*
0726 1 6C00 0718
0728 1 6C00 09D1
072A 0 08D5
072B 1 6700 07DE
072D 1 6F00 0746
072F 1 4400 0739
0731 1 6700 0856
0733 1 6F00 0746
0735 1 4400 0739
0737 1 4C00 05FB
*
0739 0 0000
073A 1 6700 0740
073C 1 6F00 05E5
073E 0 4480 0161
0740 0 630F
0741 0 73FF

```

```

RDCAT DC RCVED READ CAT
DC /5200
WRCAT DC SEND WRITE CAT
DC /5100
DSWSN DC 0 SENSE CAT DSW
DC /5701
STRD DC 0 START READ
DC /5600
STST DC 0 START/STOP TIMEOUT
DC /5420
RDIA1 DC DIAW1 READ DIAG WORD 1
DC /5201
RDIA2 DC DIAW2 READ DIAG WORD 2
DC /5202
ENDOP DC 0 END OP
DC /5404
BZON DC 0 EXECUTE ALARM ON
DC /5102
BZOFF DC 0 EXECUTE ALARM OFF
DC /5101
*
*****
* CONSTANTS
*****
ONES DC /FF00 8 ONES
MASK DC /8000 2WIRE NOISE MASK
MASK1 DC /0100 DSW RDY BIT
*
*****
* SWITCHES AND STORAGE
*****
RESMD DC *-- RESET MODE SW
RDMD DC *-- READ MODE SW
WRTMD DC *-- WRITE MODE SW
DIAWD DC *-- COMBINED DIAG WORDS
DC *-- 1 AND 2
PRTPN DC *-- INTERRUPT SW
RCVED DC *-- BUFFER READ STORAGE
SEND DC *-- BUFFER WRITE STORAGE
ODEVN DC *-- ODD-EVEN SW
CNTA DC *-- COUNTER A
CNTB DC *-- COUNTER B
DIAW1 DC *-- DIAG WD 1 STORAGE
DIAW2 DC *-- DIAG WD 2 STORAGE
*
*****
* WRITE, READ-BACK, CHK BUFFER ROUTINE 04
*****
RT4 STX L WRTMD TURN ON WRT MODE SW
STX L BNSW1 TURN ON BRANCH SW1
XIO RESET EXECUTE RESET
LDX L3 PATNA GET PATTERN A ADDR
STX L3 JUMP&1 STORE PATTERN ADDR
BSI L SHFT WRT, READ, COMPARE
LDX L3 PATNB GET PATTERN B ADDR
STX L3 JUMP&1 STORE PATTERN ADDR
BSI L SHFT WRT, READ, COMPARE
BSC L WAIT1 GO TO DELAY
*
SHFT DC *--
LDX L3 SHFT&7 SET UP MON RETURN
STX L3 MLSCF
BSI I START GO TO MONITOR
LDX 3 15 START WITH 15 IN XR3
MDX 3 -1 MODIFY PATTERN

```

```

31103420
31103430
31103440
31103450
31103460
31103470
31103480
31103490
31103500
31103510
31103520
31103530
31103540
31103550
31103560
31103570
31103580
31103590
31103600
31103610
31103620
31103630
31103640
31103650
31103660
31103670
31103680
31103690
31103700
31103710
31103720
31103730
31103740
31103750
31103760
31103770
31103780
31103790
31103800
31103810
31103820
31103830
31103840
31103850
31103860
31103870
31103880
31103890
31103900
31103910
31103920
31103930
31103940
31103950
31103960
31103970
31103980
31103990
31104000
31104010
31104020
31104030
31104040
31104050
31104060
31104070
31104080
31104090

```

```

0742 0 7002          MDX   JUMP   SET UP PATTERN
0743 1 4C80 0739    BSC   I  SHFT  EXIT TO RETURN
*
0745 1 4780 07DE    JUMP  BSI  I3  PATNA  GO TO PATTERN ADDR
0747 0 08BC         XIO   WRCAT  WRT PATT. IN BUFFER
0748 0 08B9         XIO   RDCAT  RD PATT. FROM BUFFER
0749 0 C005         LD    RCVED  LD PATTERN READ
074A 0 F0D5         EOR   SEND   EOR WITH PATT. SENT
074B 0 6B03         STX  3  XR3A&1  SAVE IXR 3
074C 1 4420 06EC    BSI  L  BFRCK,Z  CHK FOR DATA ERROR
074E 0 6700 0000    XR3A LDX L3 *-*  RESTORE IXR 3
0750 0 70F0         MDX   SHFT&8  GO ON WITH ROUTINE

```

```

*****
* LINE NOISE DECTION
*****
*

```

```

0751 1 0C00 0710    RT5  XIO  L  ENDOP  EXECUTE ENDOP
0753 0 08B4         XIO  STRD  EXECUTE START READ
0754 1 4400 07B1    BSI  L  DLYTM  GO TO DELAY
0756 0 08B3         XIO  STST  INHIBIT TIMEOUT
0757 0 6700 4000    LDX  L3 /4000  SET UP 16 SEC. DELAY
0759 1 6F00 05F9    STX  L3 WCNT
075B 1 4400 07BA    BSI  L  MIC2
075D 0 08A8         XIO  DSWSN  SENSE DSW
075E 0 E0B9         AND  MASK1  SET UP READY CHECK
075F 1 4C20 078D    BSC  L  RDY,Z  CHECK FOR READY
0761 1 6700 0A4D    LOGO1 LDX L3 ADR7  SET UP TO LOG MSG 1
0763 1 6F00 0ADD    STX  L3 TABLE&3
0765 0 6301         LDX  3  1
0766 1 6F00 0ADA    STX  L3 TABLE
0768 0 6300         LDX  3  0
0769 1 6F00 0ADC    STX  L3 TABLE&2
076B 1 0C00 0712    XIO  L  BZON  EXECUTE ALARM ON
076D 0 4480 0163    BSI  I  LOG   LOG SET UP DATA SET
076F 1 0ADA         DC    TABLE
0770 1 0C00 0714    XIO  L  BZOFF EXECUTE ALARM OFF
0772 1 4400 0775    BSI  L  WAIT5 GO TO DELAY
0774 0 70E2         MDX  RT5&6  SET UP DELAY AGAIN

```

```

*
*****
* OPERATING INSTRUCTIONS
*
* WHEN SCA CONSOLE RCV LITE COMES ON, READY
* CONDITION WILL HAVE TO BE ESTABLISHED IN
* ORDER TO BEGIN LINE LISTENING. 1. PHONE
* ANOTHER TERMINAL. 2. REQUEST THAT THEIR
* DATA SET BE PUT IN TALK POSITION AND
* PLACE THE HAND PHONE IN THE DATA SET
* CRADLE. *NOTE... IF THE HAND PHONE AT THEIR
* TERMINAL IS NOT PLACED IN THE CRADLE, THE
* MOUTH PIECE WILL PICK UP NOISES WITHIN THE
* ROOM. 3. AT YOUR DATA SET, PUSH THE DATA
* BUTTON. THIS SHOULD CAUSE THE SCA RDY LITE
* TO COME ON AND CAUSE THE PROGRAM TO BRANCH
* TO LINE LISTENING. ANY LINE CONDITIONS
* EFFECTING THE COMMUNICATIONS TERMINAL
* CIRCUITRY WILL BE DETECTED AND PRINTED OUT
* ON THE CONSOLE TYPEWRITER. LINE LISTENING
* WILL CONTINUE FOR APPROX 10 MINUTES,
* UNLESS TERMINATED BY MAKING THE DATA SET
* NOT READY. 4. PLACE YOUR DATA SET HAND
* PHONE IN ITS CRADLE.
*****
*

```

```

0775 0 0000          WAIT5 DC  *-*
0776 1 6700 077C    LDX  L3 RTRN5  SET UP MON RETURN
0778 1 6F00 05E5    STX  L3 MLSCF

```

```

31104100
31104110
31104120
31104130
31104140
31104150
31104160
31104170
31104180
31104190
31104200
31104210
31104220
31104230
31104240
31104250
31104260
31104270
31104280
31104290
31104300
31104310
31104320
31104330
31104340
31104350
31104360
31104370
31104380
31104390
31104400
31104410
31104420
31104430
31104440
31104450
31104460
31104470
31104480
31104490
31104500
31104510
31104520
31104530
31104540
31104550
31104560
31104570
31104580
31104590
31104600
31104610
31104620
31104630
31104640
31104650
31104660
31104670
31104680
31104690
31104700
31104710
31104720
31104730
31104740
31104750
31104760
31104770

```

```

077A 0 4480 0161
077C 1 74FF 05F9
077E 0 70F7
077F 1 4C80 0775
*
0781 0 0000
0782 1 6700 0788
0784 1 6F00 05E5
0786 0 4480 0161
0788 1 74FF 05F9
078A 0 700C
078B 1 4C80 0781
*
078D 0 6314
078E 0 6B21
078F 0 6700 7800
0791 1 6F00 05F9
0793 1 0C00 0714
0795 1 4400 07BA
*
0797 1 0C00 0706
0799 1 E400 0718
079B 1 4C18 07C7
079D 1 0C00 070E
079F 1 C400 0725
07A1 1 E400 0717
*
07A3 1 4C18 07A9
07A5 1 D400 0ADF
07A7 1 4C00 090D
*
07A9 1 4400 0781
07AB 1 74FF 0780
07AD 0 70E1
07AE 1 4C00 08CE
*
07B0 0 0000
*
07B1 0 0000
07B2 0 6306
07B3 0 6B05
07B4 1 74FF 07B9
07B6 0 70FD
07B7 1 4C80 07B1
*
07B9 0 0000
*
07BA 0 0000
07BB 1 C400 05E1
07BD 0 1008
07BE 1 4C90 07BA
07C0 1 C400 05F9
07C2 0 1001
07C3 1 D400 05F9
07C5 1 4C80 07BA
*
07C7 1 0C00 0700
07C9 1 6700 0A6D
07CB 1 6F00 0ADD
07CD 0 6303
07CE 1 6F00 0ADA
07D0 0 6300

```

```

BSI  I  START  GO TO MONITOR
RTRN5 MDX  L  WCNT,-1  REDUCE DELAY COUNT
      MDX  L  WAIT5&1  CK FOR DELAY OVER
      BSC  I  WAIT5  EXIT TO RETURN
*
WAIT6 DC  *-*
      LDX  L3 RTRN6  SET UP MON RETURN
      STX  L3 MLSCF
      BSI  I  START  GO TO MONITOR
RTRN6 MDX  L  WCNT,-1  REDUCE DELAY COUNT
      MDX  L  LSTNN  GO LISTEN SOME MORE
      BSC  I  WAIT6  EXIT TO RETURN
*
RDY  LDX  3  20  SET UP LISTEN TIME
      STX  3  PASS
      LDX  L3 /7800
      STX  L3 WCNT
      XIO  L  BZOFF  EXECUTE ALARM OFF
      BSI  L  MIC2
*
*****
* LISTEN FOR LINE NOISE
*****
*
LSTNN XIO  L  DSWSN  SENSE DSW
      AND  L  MASK1  SET UP READY CHECK
      BSC  L  HNGUP,&-  CHECK FOR READY
      XIO  L  RDIA2  READ DIAG WD 2
      LD  L  DIAW2  PUT DIAG WRD IN ACCUM
      AND  L  MASK  SET UP NOISE CHECK
*
*
*
PRTER BSC  L  CNTER,&-  DONT BR IF ANY THING
      STO  L  TABLE&5  SET BITS IN MSG
      BSC  L  NOISE  GO PRINT NOISE
*
CNTER BSI  L  WAIT6  GO TO DELAY
      MDX  L  PASS,-1  REDUCE DELAY COUNT
      MDX  L  RDY&2  GO LISTEN SOME MORE
      BSC  L  LOGO2  GO LOG RESET MESSAGE
*
PASS DC  *-*
*
DLYTM DC  *-*
      LDX  3  6
      STX  3  TMDLY
      MDX  L  TMDLY,-1
      MDX  *-*
      BSC  I  DLYTM
*
TMDLY DC  *-*
*
MIC2 DC  *-*
      LD  L  SW2
      SLA  11
      BSC  I  MIC2,-
      LD  L  WCNT
      SLA  1
      STO  L  WCNT
      BSC  I  MIC2
*
HNGUP XIO  L  RESET  EXECUTE RESET
      LDX  L3 ADR9  SET UP RTN TERM MSG
      STX  L3 TABLE&3
      LDX  3  3
      STX  L3 TABLE
      LDX  3  0

```

```

31104780
31104790
31104800
31104810
31104820
31104830
31104840
31104850
31104860
31104870
31104880
31104890
31104900
31104910
31104920
31104930
31104940
31104950
31104960
31104970
31104980
31104990
31105000
31105010
31105020
31105030
31105040
31105050
31105060
31105070
31105080
31105090
31105100
31105110
31105120
31105130
31105140
31105150
31105160
31105170
31105180
31105190
31105200
31105210
31105220
31105230
31105240
31105250
31105260
31105270
31105280
31105290
31105300
31105310
31105320
31105330
31105340
31105350
31105360
31105370
31105380
31105390
31105400
31105410
31105420
31105430
31105440
31105450

```

```

07D1 1 6F00 0ADC      STX  L3 TABLE&2
07D3 1 0C00 0712      XIO  L  BZON      EXECUTE ALARM ON
07D5 0 4480 0163      BSI  I  LOG       LOG RTN TERM MESSAGE
07D7 1 0ADA          DC   TABLE
07D8 1 0C00 0714      XIO  L  BZOFF     EXECUTE ALARM OFF
07DA 1 4400 069B      BSI  L  OFF       RESET PRG SWS
07DC 1 4400 063A      BSI  L  CNTRL     GO TO CONTROL

```

```

*
*****
* TRANSFER VECTOR FOR SCA BUFFER
* WRT AND READ/BACK PATTERNS
*****

```

```

07DE 1 084F          PATNA DC   A15
07DF 1 0848          DC     A14
07E0 1 0841          DC     A13
07E1 1 083A          DC     A12
07E2 1 0833          DC     A11
07E3 1 082C          DC     A10
07E4 1 0825          DC     A9
07E5 1 081E          DC     A8
07E6 1 0817          DC     A7
07E7 1 0810          DC     A6
07E8 1 0809          DC     A5
07E9 1 0802          DC     A4
07EA 1 07FB          DC     A3
07EB 1 07F4          DC     A2
07EC 1 07ED          DC     A1

```

```

*
*****
* WRITE READ/BACK PATTERNS
*****

```

```

07ED 0 0000          A1  DC     0
07EE 0 6500 8000      LDX  L1 /8000
07F0 1 6D00 0720      STX  L1 SEND
07F2 1 4C80 07ED      BSC  I  A1
07F4 0 0000          A2  DC     0
07F5 0 6500 4000      LDX  L1 /4000
07F7 1 6D00 0720      STX  L1 SEND
07F9 1 4C80 07F4      BSC  I  A2
07FB 0 0000          A3  DC     0
07FC 0 6500 2000      LDX  L1 /2000
07FE 1 6D00 0720      STX  L1 SEND
0800 1 4C80 07FB      BSC  I  A3
0802 0 0000          A4  DC     0
0803 0 6500 1000      LDX  L1 /1000
0805 1 6D00 0720      STX  L1 SEND
0807 1 4C80 0802      BSC  I  A4
0809 0 0000          A5  DC     0
080A 0 6500 0800      LDX  L1 /0800
080C 1 6D00 0720      STX  L1 SEND
080E 1 4C80 0809      BSC  I  A5
0810 0 0000          A6  DC     0
0811 0 6500 0400      LDX  L1 /0400
0813 1 6D00 0720      STX  L1 SEND
0815 1 4C80 0810      BSC  I  A6
0817 0 0000          A7  DC     0
0818 0 6500 0200      LDX  L1 /0200
081A 1 6D00 0720      STX  L1 SEND
081C 1 4C80 0817      BSC  I  A7
081E 0 0000          A8  DC     0
081F 0 6500 0100      LDX  L1 /0100
0821 1 6D00 0720      STX  L1 SEND
0823 1 4C80 081E      BSC  I  A8
0825 0 0000          A9  DC     0
0826 0 6500 0200      LDX  L1 /0200
0828 1 6D00 0720      STX  L1 SEND

```

```

31105460
31105470
31105480
31105490
31105500
31105510
31105520
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31105540
31105550
31105560
31105570
31105580
31105590
31105600
31105610
31105620
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31105680
31105690
31105700
31105710
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31105980
31105990
31106000
31106010
31106020
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31106040
31106050
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31106070
31106080
31106090
31106100
31106110
31106120
31106130

```

```

082A 1 4C80 0825
082C 0 0000          A10 DC     0
082D 0 6500 0400      LDX  L1 /0400
082F 1 6D00 0720      STX  L1 SEND
0831 1 4C80 082C      BSC  I  A10
0833 0 0000          A11 DC     0
0834 0 6500 0800      LDX  L1 /0800
0836 1 6D00 0720      STX  L1 SEND
0838 1 4C80 0833      BSC  I  A11
083A 0 0000          A12 DC     0
083B 0 6500 1000      LDX  L1 /1000
083D 1 6D00 0720      STX  L1 SEND
083F 1 4C80 083A      BSC  I  A12
0841 0 0000          A13 DC     0
0842 0 6500 2000      LDX  L1 /2000
0844 1 6D00 0720      STX  L1 SEND
0846 1 4C80 0841      BSC  I  A13
0848 0 0000          A14 DC     0
0849 0 6500 4000      LDX  L1 /4000
084B 1 6D00 0720      STX  L1 SEND
084D 1 4C80 0848      BSC  I  A14
084F 0 0000          A15 DC     0
0850 0 6500 8000      LDX  L1 /8000
0852 1 6D00 0720      STX  L1 SEND
0854 1 4C80 084F      BSC  I  A15

```

```

BSC  I  A9
DC     0
LDX  L1 /0400
STX  L1 SEND
BSC  I  A10
DC     0
LDX  L1 /0800
STX  L1 SEND
BSC  I  A11
DC     0
LDX  L1 /1000
STX  L1 SEND
BSC  I  A12
DC     0
LDX  L1 /2000
STX  L1 SEND
BSC  I  A13
DC     0
LDX  L1 /4000
STX  L1 SEND
BSC  I  A14
DC     0
LDX  L1 /8000
STX  L1 SEND
BSC  I  A15

```

```

*
*****
* TRANSFER VECTOR FOR SCA BUFFER
* WRT AND READ/BACK PATTERNS
*****

```

```

PATNB DC   B15
DC     B14
DC     B13
DC     B12
DC     B11
DC     B10
DC     B9
DC     B8
DC     B7
DC     B6
DC     B5
DC     B4
DC     B3
DC     B2
DC     B1

```

```

*
*****
* WRITE READ/BACK PATTERNS
*****

```

```

0856 1 08C7
0857 1 08C0
0858 1 08B9
0859 1 08B2
085A 1 08AB
085B 1 08A4
085C 1 089D
085D 1 0896
085E 1 088F
085F 1 0888
0860 1 0881
0861 1 087A
0862 1 0873
0863 1 086C
0864 1 0865

```

```

B1  DC     0
LDX  L1 /7F00
STX  L1 SEND
BSC  I  B1
DC     0
LDX  L1 /BF00
STX  L1 SEND
BSC  I  B2
DC     0
LDX  L1 /DF00
STX  L1 SEND
BSC  I  B3
DC     0
LDX  L1 /EF00
STX  L1 SEND
BSC  I  B4
DC     0

```

```

31106140
31106150
31106160
31106170
31106180
31106190
31106200
31106210
31106220
31106230
31106240
31106250
31106260
31106270
31106280
31106290
31106300
31106310
31106320
31106330
31106340
31106350
31106360
31106370
31106380
31106390
31106400
31106410
31106420
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31106460
31106470
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31106660
31106670
31106680
31106690
31106700
31106710
31106720
31106730
31106740
31106750
31106760
31106770
31106780
31106790
31106800
31106810

```

0882 0 6500 F700 LDX L1 /F700
0884 1 6D00 0720 STX L1 SEND
0886 1 4C80 0881 BSC I B5
0888 0 0000 DC 0
0889 0 6500 F800 LDX L1 /F800
088B 1 6D00 0720 STX L1 SEND
088D 1 4C80 0888 BSC I B6
088F 0 0000 DC 0
0890 0 6500 FD00 LDX L1 /FD00
0892 1 6D00 0720 STX L1 SEND
0894 1 4C80 088F BSC I B7
0896 0 0000 DC 0
0897 0 6500 FE00 LDX L1 /FE00
0899 1 6D00 0720 STX L1 SEND
089B 1 4C80 0896 BSC I B8
089D 0 0000 DC 0
089E 0 6500 FD00 LDX L1 /FD00
08A0 1 6D00 0720 STX L1 SEND
08A2 1 4C80 089D BSC I B9
08A4 0 0000 DC 0
08A5 0 6500 F800 LDX L1 /F800
08A7 1 6D00 0720 STX L1 SEND
08A9 1 4C80 08A4 BSC I B10
08AB 0 0000 DC 0
08AC 0 6500 F700 LDX L1 /F700
08AE 1 6D00 0720 STX L1 SEND
08B0 1 4C80 08AB BSC I B11
08B2 0 0000 DC 0
08B3 0 6500 EF00 LDX L1 /EF00
08B5 1 6D00 0720 STX L1 SEND
08B7 1 4C80 08B2 BSC I B12
08B9 0 0000 DC 0
08BA 0 6500 DF00 LDX L1 /DF00
08BC 1 6D00 0720 STX L1 SEND
08BE 1 4C80 08B9 BSC I B13
08C0 0 0000 DC 0
08C1 0 6500 BF00 LDX L1 /BF00
08C3 1 6D00 0720 STX L1 SEND
08C5 1 4C80 08C0 BSC I B14
08C7 0 0000 DC 0
08C8 0 6500 7F00 LDX L1 /7F00
08CA 1 6D00 0720 STX L1 SEND
08CC 1 4C80 08C7 BSC I B15
*

* RESET ADAPTER AND HANG UP TELEPHONE

*
08CE 1 4C00 05E0 LOG02 LD L SW1 CK FOR LOOP RTN OPT
08D0 1 9400 0B37 S L K0005 CHK FOR NOISE RTN
08D2 0 4820 BSC Z
08D3 0 7002 MDX LOG02&8 LOOP NOISE ROUTINE
08D4 1 4400 063A BSI L CNTRL GO TO CONTROL
08D6 1 6700 0A5C LDX L3 ADR8 SET UP RESET MESSAGE
08D8 1 6F00 0ADD STX L3 TABLE&3
08DA 0 6302 LDX 3 2
08DB 1 6F00 0ADA STX L3 TABLE
08DD 0 6300 LDX 3 0
08DE 1 6F00 0ADC STX L3 TABLE&2
08E0 1 0C00 0712 XIO L BZON EXECUTE ALARM ON
08E2 0 4480 0163 BSI I LOG LOG RESET MESSAGE
08E4 1 0ADA DC TABLE
08E5 1 0C00 0714 XIO L BZOFF EXECUTE ALARM OFF
08E7 1 4C00 07C7 BSC L HNGUP GO TERMINATE ROUTINE
*
08E9 1 6C00 068F BFRER STX L PRSW TURN ON ERROR SW
08EB 0 6B1E STX 3 XR3&1 SAVE REGISTER 3
08EC 1 4400 0664 BSI L SNDSW GO MAKE ANALYSIS

31106820
31106830
31106840
31106850
31106860
31106870
31106880
31106890
31106900
31106910
31106920
31106930
31106940
31106950
31106960
31106970
31106980
31106990
31107000
31107010
31107020
31107030
31107040
31107050
31107060
31107070
31107080
31107090
31107100
31107110
31107120
31107130
31107140
31107150
31107160
31107170
31107180
31107190
31107200
31107210
31107220
31107230
31107240
31107250
31107260
31107270
31107280
31107290
31107300
31107310
31107320
31107330
31107340
31107350
31107360
31107370
31107380
31107390
31107400
31107410
31107420
31107430
31107440
31107450
31107460
31107470
31107480
31107490

08EE 0 6305
08EF 1 6F00 0ADA
08F1 1 4C00 0B36
08F3 1 4D00 0ADC
08F5 1 6700 0A36
08F7 1 6F00 0ADD
08F9 1 4C00 0720
08FB 1 4D00 0AEO
08FD 1 4C00 071F
08FF 1 4D00 0ADF
0901 1 0C00 0712
0903 0 4480 0162
0905 1 0ADA
0906 1 0A7D
0907 1 0C00 0714
0909 0 6700 0000
0908 1 4C80 06EC
090D 0 6306
090E 1 6F00 0ADA
0910 0 6300
0911 1 6F00 0A7D
0913 1 4C00 0B35
0915 1 4D00 0ADC
0917 1 6700 0A44
0919 1 6F00 0ADD
091B 1 0C00 0712
091D 0 4480 0162
091F 1 0ADA
0920 1 0A7D
0921 1 0C00 0714
0923 1 0C00 0710
0925 1 0C00 0708
0927 1 4400 07B1
0929 1 0C00 070A
092B 1 4C00 07A9
092D 0 0080
092E 0 0080
092F 0 0000
0930 0 1000
0931 0 0000
0932 1 0400 0AED
0934 1 0400 0AEE
0936 1 4400 096C
0938 1 4C80 0931
093A 1 0400 0AED
093C 1 0400 0AEE
093E 1 4400 097A
0940 1 4C00 0683

LDX 3 5
STX L3 TABLE SET UP MSG ID
LD L K0003 MODIFIERS 2
STO L TABLE&2 SET UP MODIFIER
LDX L3 ADR5
STX L3 TABLE&3 SET UP ALPHA MSG
LD L SEND S/B PATTERN SENT TO BFR
STO L TABLE&6
LD L RCVED WAS PATTERN RD FROM BFR
STO L TABLE&5
XIO L BZON EXECUTE ALARM ON
BSI I ERROR GO PRINT
DC TABLE
DC LOPRT LOOP ADDR
XIO L BZOFF EXECUTE ALARM OFF
LDX L3 *-+ RESTORE REG 3
BSC I BFRCK EXIT TO RETURN
*
NOISE LDX 3 6
STX L3 TABLE SET UP MSG ID
LDX 3 0
STX L3 LOPRT INHIBIT LOOP ON ERR
LD L K0001
STO L TABLE&2 SET UP MODIFIER
LDX L3 ADR6
STX L3 TABLE&3 SET UP ALPHA MSG
XIO L BZON EXECUTE ALARM ON
BSI I ERROR GO PRINT
DC TABLE
DC LOPRT
XIO L BZOFF EXECUTE ALARM OFF
XIO L ENDOP EXECUTE ENDOP
XIO L STRD EXECUTE START READ
BSI L DLYTM GO TO DELAY
XIO L STST INHIBIT TIMEOUT INT
BSC L CNTR RETURN TO ROUTINE
*

* PREDETERMINED VALUES FOR SCA DSW. THESE
* VALUES ARE PRINTED OUT AS S/B, SHOULD BE
* DSW WHEN A DISCREPANCIE EXIST.

*
DSW00 DC /0080
DSW01 DC /0080

* PREDETERMINE VALUES FOR SCA DIAGNOSTIC
* WORDS 1 AND 2 COMBINED

*
DIA00 DC /0000
DIA01 DC /1000
*

*
STOR1 DC *-+ SAVED RETURN ADDR
STO L STWD STORE S/B DSW WORD
STO L DSWXX STORE S/B DSW WORD
BSI L ANAL1 GO TO ANAL. 1
BSC I STOR1 EXIT TO RETURN
*

*
STOR2 STO L STWD STORE S/B DIAG WORD
STO L DIAXX STORE S/B DIAG WORD
BSI L ANAL2 GO TO ANAL. 2
BSC L RETRN BRANCH TO RETRN
*

31107500
31107510
31107520
31107530
31107540
31107550
31107560
31107570
31107580
31107590
31107600
31107610
31107620
31107630
31107640
31107650
31107660
31107670
31107680
31107690
31107700
31107710
31107720
31107730
31107740
31107750
31107760
31107770
31107780
31107790
31107800
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31107960
31107970
31107980
31107990
31108000
31108010
31108020
31108030
31108040
31108050
31108060
31108070
31108080
31108090
31108100
31108110
31108120
31108130
31108140
31108150
31108160
31108170

SCA WRITE/READ BUFFER & LINE NOISE DETECTION

SCA WRITE/READ BUFFER & LINE NOISE DETECTION

```

*****
*
0942 1 C400 09D1 RESAN LD L BNSW1 LOAD BRANCH SW 1
0944 0 4820 BSC Z CHK IF IT IS ON
0945 0 7006 MDX REST1 BRANCH SW 1 IS ON
0946 1 C400 09D2 LD L BNSW2 LOAD BRANCH SW 2
0948 0 4820 BSC Z CHK IF IT IS ON
0949 0 7007 MDX REST2 BRANCH 2 IS ON
094A 1 4C00 0683 BSC L RETRN BRANCH TO RETURN

*
094C 0 C0E0 REST1 LD DSW00 LOAD BRANCH SW 00
094D 1 4400 0931 BSI L STOR1 GO STORE IT
094F 0 C0DF LD DIA00 LOAD S/B DIAG WORD
0950 0 70E9 MDX STOR2 GO STORE 2

*
0951 0 C0DC REST2 LD DSW01 LD S/B DSW01 WORD
0952 1 4400 0931 BSI L STOR1 GO STORE IT
0954 0 C0DB LD DIA01 LD S/B DIAG 01 WORD
0955 0 70E4 MDX STOR2 GO STORE 2

*
0956 1 C400 09D1 RDAN LD L BNSW1 LD BRANCH SW 1
0958 1 4C20 095C BSC L RTR01,Z DONT BR IF OFF
095A 1 4C00 0683 BSC L RETRN RETURN

*
095C 0 C0D0 RTR01 LD DSW00 LD S/B DSW WORD
095D 1 4400 0931 BSI L STOR1
095F 0 C0CF LD DIA00 LD S/B DIAG WORD
0960 0 70D9 MDX STOR2 GO STORE 2

*
0961 1 C400 09D1 WRTAN LD L BNSW1 LOAD BRANCH SWT 1
0963 1 4C20 0967 BSC L WTR01,Z DONT BRANCH IF OFF
0965 1 4C00 0683 BSC L RETRN RETURN

*
0967 0 C0C5 WTR01 LD DSW00 LD S/B DSW WORD
0968 1 4400 0931 BSI L STOR1
096A 0 C0C4 LD DIA00 LD S/B DIAG WORD
096B 0 70CE MDX STOR2 GO STORE 2

*****
* CHECK TO SEE IF DSW ERROR EXISTS
*****
*
096C 0 0000 ANAL1 DC *-* SAVED RETURN ADDR
096D 1 C400 0AE8 LD L CADSW LOAD SENSED DSW
096F 1 F400 0AE6 EOR L DSWXX EOR WITH S/B DSW
0971 1 D400 0AE7 STO L DSWRD STORE IN DSW ERR BIT
0973 0 4820 BSC Z CHK IF ERR BITS ON
0974 0 7001 MDX ANL01 ERR BITS ARE ON
0975 0 7002 MDX ANL01&2 ERR BITS ARE NOT ON
0976 1 4400 0988 ANL01 BSI L DSWAN CHK WHICH BITS ON
0978 1 4C80 096C BSC I ANAL1 BRANCH TO RETURN ADDR

*
*****
* CHECK TO SEE IF DIAG TRIG ERROR EXISTS
*****
*
097A 0 0000 ANAL2 DC *-* SAVED RETURN ADDR
097B 1 C400 071C LD L DIAWD LD DIAGNOSTIC
097D 1 F400 0AEE EOR L DIAXX EOR WITH S/B DIAG WD
097F 1 D400 0AEF STO L TRGWD SET IN DIAG ERR BITS
0981 0 4820 BSC Z CHKIF ERR BITS ON
0982 0 7001 MDX ANL02 ERROR BITS ARE ON
0983 0 7002 MDX ANL02&2 ERR BITS ARE NOT ON
0984 1 4400 0A81 ANL02 BSI L TRGAN CHK WHICH ERR BIT ON
0986 1 4C80 097A BSC I ANAL2 BRANCH TO SAVED ADDR

*****
*

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31108180
31108190
31108200
31108210
31108220
31108230
31108240
31108250
31108260
31108270
31108280
31108290
31108300
31108310
31108320
31108330
31108340
31108350
31108360
31108370
31108380
31108390
31108400
31108410
31108420
31108430
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31108480
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31108600
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31108660
31108670
31108680
31108690
31108700
31108710
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31108770
31108780
31108790
31108800
31108810
31108820
31108830
31108840
31108850

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0988 0 0000
0989 1 C400 0AE8
098B 1 E400 0AE7
098D 1 D400 09CF
098F 1 C400 0AE7
0991 1 F400 09CF
0993 1 D400 09D0
0995 1 4400 09D3
0997 0 6302
0998 1 6F00 0ADA
099A 0 6700 007F
099C 1 6F00 0ADC
099E 1 6700 09DE
09A0 1 6F00 0ADD
09A2 1 C400 09CF
09A4 1 D400 0AE3
09A6 1 C400 09D0
09A8 1 D400 0AE4
09AA 1 C400 0AE6
09AC 1 D400 0AE2
09AE 1 C400 0AE8
09B0 1 D400 0AE1
09B2 1 C400 0725
09B4 0 1890
09B5 0 1010
09B6 0 1086
09B7 0 100A
09B8 1 D400 0AE0
09BA 1 C400 0724
09BC 1 D400 0ADF
09BE 1 0C00 0712
09C0 0 4480 0162
09C2 1 0ADA
09C3 1 0A7D
09C4 1 0C00 0714
09C6 0 6300
09C7 1 6F00 09CF
09C9 1 6F00 09D0
09CB 1 6F00 0AE7
09CD 1 4C80 0988

09CF 0 0000
09D0 0 0000
09D1 0 0000
09D2 0 0000

09D3 0 0000
09D4 1 C400 071D
09D6 0 1890
09D7 0 1010
09D8 0 1083
09D9 0 1007
09DA 1 D400 0AE5
09DC 1 4C80 09D3

09DE 0 3292
09DF 0 FC21
09E0 0 2132

```

```

DSWAN DC *-* SAVED RETURN ADDRESS
LD L CADSW LOAD DSW WAS
AND L DSWRD AND WITH DSW ERR
STO L DSWW1 STORE ON/F ERR BITS
LD L DSWRD LOAD DSW ERR BITS
EOR L DSWW1 EOR WITH ON/F ERR
STO L DSWW2 STORE DSW F/ON ERR
BSI L MSGID CHK C.E. BITS
LDX 3 2 SET UP MSG ID
STX L3 TABLE
LDX L3 /007F
STX L3 TABLE&2 SET IN MODIFIER ID
LDX L3 ADR1 LD ALPHA 1 ADDR
STX L3 TABLE&3 SET UP ALPHA MSG
LD L DSWW1 LOAD ON/F ERR BITS
STO L TABLE&9
LD L DSWW2 LOAD F/ON ERR BITS
STO L TABLE&10
LD L DSWXX LD DSW SHOULD/BE
STO L TABLE&8 SET UP ERR MESSAGE
LD L CADSW LOAD SENSED DSW
STO L TABLE&7 SET UP ERR MESSAGE
LD L DIAW2 LD DIAG WD 2 WAS
SRT 16 MASK C.E. BITS
SLA 16
SLT 6
SLA 10
STO L TABLE&6 SET UP ERR MESSAGE
LD L DIAW1 LD DIAG WD 1 WAS
STO L TABLE&5 SET UP ERR MESSAGE
XIO L BZON EXECUTE ALARM ON
BSI I ERROR GO PRINT ERROR
DC TABLE MESSAGE TABLE
DC LOPRT LOOP ADDRESS
XIO L BZOFF EXECUTE ALARM OFF
LDX 3 0
STX L3 DSWW1 RESET OFF,S/B ON
STX L3 DSWW2 RESET ON,S/B OFF
STX L3 DSWRD RESET BIT ERR ID WD
WRDCK BSC I DSWAN EXIT TO RETURN

*****
* DSW ANALYSIS SWITCHES & STORAGE
*****
DSW1 DC *-*
DSW2 DC *-*
BNSW1 DC *-* BRANCH SW NO. 01
BNSW2 DC *-* BRANCH SW NO. 02
*
MSGID DC *-*
LD L DIAWD&1 LD DIAG WD 2 WAS
SRT 16 FETCH C.E. BITS
SLA 16
SLT 3
SLA 7
STO L TABLE&11 STORE C.E. BITS
BSC I MSGID EXIT TO RETURN
*
*****
* ALPHA MESSAGE FOR DSW ERROR
*****
ADR1 DC /3292 DW
DC /FC21 1
DC /2132 0

```

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31108860
31108870
31108880
31108890
31108900
31108910
31108920
31108930
31108940
31108950
31108960
31108970
31108980
31108990
31109000
31109010
31109020
31109030
31109040
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31109060
31109070
31109080
31109090
31109100
31109110
31109120
31109130
31109140
31109150
31109160
31109170
31109180
31109190
31109200
31109210
31109220
31109230
31109240
31109250
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31109270
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31109530

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09E1 0 92D8	DC	/92D8	W2
09E2 0 2121	DC	/2121	
09E3 0 923E	DC	/923E	WA
09E4 0 9A21	DC	/9A21	S
09E5 0 219A	DC	/219A	S
09E6 0 8C1A	DC	/8C1A	/B
09E7 0 2121	DC	/2121	
09E8 0 5276	DC	/5276	ON
09E9 0 8C12	DC	/8C12	/F
09EA 0 2112	DC	/2112	F
09EB 0 8C52	DC	/8C52	/O
09EC 0 7621	DC	/7621	N
09ED 0 D61E	DC	/D61E	*C
09EE 0 36D6	DC	/36D6	E*
09EF 0 2132	DC	/2132	D
09F0 0 9A92	DC	/9A92	SW
09F1 0 2136	DC	/2136	E
09F2 0 6262	DC	/6262	RR
09F3 0 FFFF	DC	/FFFF	TERMINATOR

*

* ALPHA MESSAGE FOR DIAG WORD 1 ERROR

09F4 0 329A	ADR2 DC	/329A	DS
09F5 0 9221	DC	/9221	W
09F6 0 21D8	DC	/21D8	2
09F7 0 923E	DC	/923E	WA
09F8 0 9A21	DC	/9A21	S
09F9 0 FC92	DC	/FC92	1W
09FA 0 3E9A	DC	/3E9A	AS
09FB 0 21FC	DC	/21FC	1
09FC 0 9ABC	DC	/9ABC	S/
09FD 0 1A21	DC	/1A21	B
09FE 0 5276	DC	/5276	ON
09FF 0 8C12	DC	/8C12	/F
0A00 0 2112	DC	/2112	F
0A01 0 8C52	DC	/8C52	/O
0A02 0 7621	DC	/7621	N
0A03 0 D61E	DC	/D61E	*C
0A04 0 36D6	DC	/36D6	E*
0A05 0 2132	DC	/2132	D
0A06 0 92FC	DC	/92FC	W1
0A07 0 2136	DC	/2136	E
0A08 0 6262	DC	/6262	RR
0A09 0 FFFF	DC	/FFFF	TERMINATOR

*

* ALPHA MESSAGE FOR DIAG WORD 2 ERROR

0A0A 0 329A	ADR3 DC	/329A	DS
0A0B 0 9221	DC	/9221	W
0A0C 0 21FC	DC	/21FC	1
0A0D 0 923E	DC	/923E	WA
0A0E 0 9A21	DC	/9A21	S
0A0F 0 D892	DC	/D892	2W
0A10 0 3E9A	DC	/3E9A	AS
0A11 0 21D8	DC	/21D8	2
0A12 0 9ABC	DC	/9ABC	S/
0A13 0 1A21	DC	/1A21	B
0A14 0 5276	DC	/5276	ON
0A15 0 8C12	DC	/8C12	/F
0A16 0 2112	DC	/2112	F
0A17 0 8C52	DC	/8C52	/O
0A18 0 7621	DC	/7621	N
0A19 0 D61E	DC	/D61E	*C
0A1A 0 36D6	DC	/36D6	E*

31109540
31109550
31109560
31109570
31109580
31109590
31109600
31109610
31109620
31109630
31109640
31109650
31109660
31109670
31109680
31109690
31109700
31109710
31109720
31109730
31109740
31109750
31109760
31109770
31109780
31109790
31109800
31109810
31109820
31109830
31109840
31109850
31109860
31109870
31109880
31109890
31109900
31109910
31109920
31109930
31109940
31109950
31109960
31109970
31109980
31109990
31110000
31110010
31110020
31110030
31110040
31110050
31110060
31110070
31110080
31110090
31110100
31110110
31110120
31110130
31110140
31110150
31110160
31110170
31110180
31110190
31110200
31110210

0A1B 0 2132	
0A1C 0 92D8	
0A1D 0 2136	
0A1E 0 6262	
0A1F 0 FFFF	
0A20 0 3292	
0A21 0 FC21	
0A22 0 2132	
0A23 0 92D8	
0A24 0 2121	
0A25 0 329A	
0A26 0 9221	
0A27 0 2152	
0A28 0 76BC	
0A29 0 1221	
0A2A 0 12BC	
0A2B 0 5276	
0A2C 0 21D6	
0A2D 0 1E36	
0A2E 0 D621	
0A2F 0 2121	
0A30 0 2121	
0A31 0 2122	
0A32 0 769E	
0A33 0 2136	
0A34 0 6262	
0A35 0 FFFF	
0A36 0 923E	
0A37 0 9A21	
0A38 0 219A	
0A39 0 8C1A	
0A3A 0 2121	
0A3B 0 1A12	
0A3C 0 6221	
0A3D 0 9262	
0A3E 0 9EBC	
0A3F 0 6232	
0A40 0 2136	
0A41 0 6262	
0A42 0 5262	
0A43 0 FFFF	
0A44 0 923E	
0A45 0 9A21	
0A46 0 215E	
0A47 0 2276	
0A48 0 3621	
0A49 0 7652	
0A4A 0 229A	
0A4B 0 3621	
0A4C 0 FFFF	

DC	/2132	D
DC	/92D8	W2
DC	/2136	E
DC	/6262	RR
DC	/FFFF	TERMINATOR
* ***** * ALPHA MESSAGE FOR INTERRUPT ERROR *****		
ADR4 DC	/3292	DW
DC	/FC21	1
DC	/2132	D
DC	/92D8	W2
DC	/2121	
DC	/329A	DS
DC	/9221	W
DC	/2152	D
DC	/76BC	N/
DC	/1221	F
DC	/12BC	F/
DC	/5276	ON
DC	/21D6	*
DC	/1E36	CE
DC	/D621	*
DC	/2121	
DC	/2121	I
DC	/769E	NT
DC	/2136	E
DC	/6262	RR
DC	/FFFF	TERMINATOR
* ***** * ALPHA MESSAGE FOR BUFFER WRT/RD ERROR *****		
ADR5 DC	/923E	WA
DC	/9A21	S
DC	/219A	S
DC	/8C1A	/B
DC	/2121	
DC	/1A12	BF
DC	/6221	R
DC	/9262	WR
DC	/9EBC	T/
DC	/6232	RD
DC	/2136	E
DC	/6262	RR
DC	/5262	OR
DC	/FFFF	TERMINATOR
* ***** * ALPHA MESSAGE FOR LINE NOISE ERROR *****		
ADR6 DC	/923E	WA
DC	/9A21	S
DC	/215E	L
DC	/2276	IN
DC	/3621	E
DC	/7652	NO
DC	/229A	IS
DC	/3621	E
DC	/FFFF	TERMINATOR
* ***** * ALPHA MESSAGE FOR SET UP DATA SET *****		

31110220
31110230
31110240
31110250
31110260
31110270
31110280
31110290
31110300
31110310
31110320
31110330
31110340
31110350
31110360
31110370
31110380
31110390
31110400
31110410
31110420
31110430
31110440
31110450
31110460
31110470
31110480
31110490
31110500
31110510
31110520
31110530
31110540
31110550
31110560
31110570
31110580
31110590
31110600
31110610
31110620
31110630
31110640
31110650
31110660
31110670
31110680
31110690
31110700
31110710
31110720
31110730
31110740
31110750
31110760
31110770
31110780
31110790
31110800
31110810
31110820
31110830
31110840
31110850
31110860
31110870
31110880
31110890

```

*****
*
ADR7 DC /9A36 SE
      DC /9E21 T
      DC /B256 UP
      DC /2132 D
      DC /3E9E AT
      DC /3E21 A
      DC /9A36 SE
      DC /9E21 T
      DC /1E52 CO
      DC /7676 NN
      DC /361E EC
      DC /9E22 TI
      DC /5276 ON
      DC /9A21 S
      DC /FFFF TERMINATOR
*
*****
* ALPHA MESSAGE FOR RESET DATA SET
*****
*
ADR8 DC /6236 RE
      DC /9A36 SE
      DC /9E21 T
      DC /3E32 AD
      DC /3E56 AP
      DC /9E36 TE
      DC /6221 R
      DC /3E76 AN
      DC /3221 D
      DC /263E HA
      DC /7616 NG
      DC /21B2 U
      DC /5621 P
      DC /5626 PH
      DC /5276 ON
      DC /3621 E
      DC /FFFF TERMINATOR
*
*****
* ALPHA MESSAGE FOR LINE NOISE TERMINATE
*****
*
ADR9 DC /5E22 LI
      DC /7636 NE
      DC /2176 N
      DC /5222 OI
      DC /9A36 SE
      DC /2162 R
      DC /52B2 OU
      DC /9E22 TI
      DC /7636 NE
      DC /219E T
      DC /3662 ER
      DC /7222 MI
      DC /763E NA
      DC /9E36 TE
      DC /3221 D
      DC /FFFF TERMINATOR
*
LOPRT STX L LOOPE TURN ON LOOP ON ERR
      BSC L OFF&1 GO TO HOUSE/KEEP RTN
*
*****
* DIAG TRIGGER ANALYSIS
* COMPARES *WAS* TRIGGERS WITH S/B
* TRIGGERS AND ANALIZES ANY ERROR

```

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31110900
31110910
31110920
31110930
31110940
31110950
31110960
31110970
31110980
31110990
31111000
31111010
31111020
31111030
31111040
31111050
31111060
31111070
31111080
31111090
31111100
31111110
31111120
31111130
31111140
31111150
31111160
31111170
31111180
31111190
31111200
31111210
31111220
31111230
31111240
31111250
31111260
31111270
31111280
31111290
31111300
31111310
31111320
31111330
31111340
31111350
31111360
31111370
31111380
31111390
31111400
31111410
31111420
31111430
31111440
31111450
31111460
31111470
31111480
31111490
31111500
31111510
31111520
31111530
31111540
31111550
31111560
31111570

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```

*****
*
TRGAN DC *-- SAVED RETURN ADDRESS
      LD L DIAXX LD COMBINED DIAGS
      SRT 16
      SLA 16
      SLT 9
      SLA 7
      STO DIAX1 STORE DIAG 1 WAS
      SLA 16
      SLT 6
      SLA 10
      STO DIAX2 STORE DIAG 2 WAS
      LD L TRGWD LOAD DIA ERROR BITS
      SRT 16
      SLA 16
      SLT 9
      SLA 7
      STO TRWD1 STORE DIAG WD 1 ERR
      SLA 16
      SLT 6
      SLA 10
      STO TRWD2 STORE DIAG WD 2 ERR
      LD TRWD1 LD DIAG WD 1 WAS
      BSC Z CHECK FOR ERR BIT ON
      MDX CKIT2 INITIAL ERR BIT CHK
      MDX WDICK GO CHK DIAG WD 2
*
WDI BSI L MSGID CHK FOR C.E. BITS
      LDX 3 3
      STX L3 TABLE SET UP MSG ID
      LDX 3 /007F
      STX 3 TABLE&2 SET UP MODIFIER ID
      LDX L3 ADR2 LD ALPHA 2 ADDR
      STX 3 TABLE&3
      LD L TGWD1 LD ON/F ERROR BITS
      STO TABLE&9
      LD L TGWD2 LD F/ON ERROR BITS
      STO TABLE&10
      LD DIAX1 LD DIAG WD 1 S/B
      STO TABLE&8
      LD L DIAX1 LD DIAG WD 1 WAS
      STO TABLE&7
      LD L DIAX2 LD DIAG WD 2 WAS
      SRT 16 MASK OUT C.E. BITS
      SLA 16
      SLT 6
      SLA 10
      STO TABLE&6
      LD L CADSW LOAD DSW WAS
      STO TABLE&5
      XIO L BZON EXECUTE ALARM ON
      BSI I ERROR GO PRINT ERROR
      DC TABLE MESSAGE TABLE
      DC LOPRT LOOP ADDRESS
      XIO L BZOFF EXECUTE ALARM OFF
      LDX 3 0
      STX L3 TRWD1
      STX L3 TGWD1
      STX L3 TGWD2
      STX 3 DIAX1
      MDX WDICK GO CHK DIAG WD 2
*
CKIT2 LD L DIAX1 LD DIAG WD 1 WAS
      AND L TRWD1 AND DIAG WD 1 ERR
      STO L TGWD2 STORE ON/F ERR BITS
      LD L TRWD1 LD DIAG WD 1 ERR
      EOR L TGWD2 EOR DIAG WD 1 ON/F

```

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31111580
31111590
31111600
31111610
31111620
31111630
31111640
31111650
31111660
31111670
31111680
31111690
31111700
31111710
31111720
31111730
31111740
31111750
31111760
31111770
31111780
31111790
31111800
31111810
31111820
31111830
31111840
31111850
31111860
31111870
31111880
31111890
31111900
31111910
31111920
31111930
31111940
31111950
31111960
31111970
31111980
31111990
3112000
3112010
3112020
3112030
3112040
3112050
3112060
3112070
3112080
3112090
3112100
3112110
3112120
3112130
3112140
3112150
3112160
3112170
3112180
3112190
3112200
3112210
3112220
3112230
3112240
3112250

```

```

OAD6 1 D400 OAF0      STO L TGWD1      STORE DIAG WD 1 F/ON
OAD8 0 70C3           MDX      WD1
*
*****
*          ERROR PRINT TABLE
*****
*
OADA  0000           BSS E 0
OADA 0 0000         TABLE DC  *--      ERROR PRINT TABLE
OADB 0 0000         DC      *--
OADC 0 0000         DC      *--
OADD 0 0000         DC      *--
OADE 0 0000         DC      *--
OADF 0 0000         DC      *--
OAE0 0 0000         DC      *--
OAE1 0 0000         DC      *--
OAE2 0 0000         DC      *--
OAE3 0 0000         DC      *--
OAE4 0 0000         DC      *--
OAE5 0 0000         DC      *--
*
*****
*          DIAG TRIGGER STORAGE
*****
*
OAE6 0 0000         DSWXX DC  *--      DSW SHOULD/BE
OAE7 0 0000         DSWRD DC  *--      DSW ERROR BITS
OAE8 0 0000         CADSW DC  *--      DSW WAS
OAE9 0 0000         DIAX1 DC  *--      DIAG WD 1 WAS
OAEA 0 0000         DIAX2 DC  *--      DIAG WD 2 WAS
OAEB 0 0000         TRWD1 DC  *--      DIAG 1 ERROR BITS
OAEC 0 0000         TRWD2 DC  *--      DIAG 2 ERROR BITS
OAED 0 0000         STWD  DC  *--      STORED WORD
OAEF 0 0000         DIAXX DC  *--      DIAG WORD SHUD/BE
OAF0 0 0000         TRGWD DC  *--      DIAG WORD ERR. BITS
OAF1 0 0000         TGWD1 DC  *--      F/ON ERROR WORD
OAF1 0 0000         TGWD2 DC  *--      ON/F ERROR WORD
*****
*
OAF2 0 C0F9         WDICK LD   TRWD2      LD DIAG WD 2 ERR
OAF3 0 1890         SRT      16
OAF4 0 1D10         SLA      16
OAF5 0 1087         SLT      7
OAF6 0 4820         BSC      Z          CHECK FOR ERR BIT ON
OAF7 0 7002         MDX      WD2        MAKE ANALYSIS
OAF8 1 4C80 OA81   BSC      I TRGAN     EXIT TO RETURN ADDR.
*
OAF9 1 C400 OAEA   WD2  LD   L DIAX2      LD DIAG WD 2 WAS
OAF9 1 E400 OAEF   AND  L TRWD2      AND DIAG WD 2 ERR
OAF9 1 D400 OAF1   STO  L TGWD2      STORE ON/F ERR
OAF9 1 C400 OAEF   LD   L TRWD2      LOAD DIAG WD 2 ERR
OAF9 1 F400 OAF1   EOR  L TGWD2      EOR ON/F ERR BITS
OAF9 1 D400 OAF0   STO  L TGWD1      STORE F/ON ERR
OAF9 1 4400 09D3   BSI  L MSGID      CHK FOR C.E. BITS
OAF9 0 6304         LDX      3 4
OAF9 1 6F00 OADA   STX  L3 TABLE      SET UP MSG ID
OAF9 0 637F         LDX      3 /007F
OAF9 0 6BCF         STX      3 TABLE&2  SET UP MODIFIER ID
OAF9 1 6700 OAOA   LDX  L3 ADR3        LD ALPHA 3 ADDR
OAF9 0 6BCD         STX      3 TABLE&3
OAF9 1 C400 OAF0   LD   L TGWD1      LD ON/F ERROR BITS
OAF9 0 D0D0         STO      TABLE&9
OAF9 1 C400 OAF1   LD   L TGWD2      LD F/ON ERROR BITS
OAF9 0 DOCE         STO      TABLE&10
OAF9 0 COD3         LD      DIAX2      LD DIAG WD 2 S/B
OAF9 0 DOCA         STO      TABLE&8
OAF9 1 C400 0725   LD   L DIAW2      LD DIAG WD 2 WAS
OAF9 0 1890         SRT      16          MASK OUT C.E. BITS

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31112260
31112270
31112280
31112290
31112300
31112310
31112320
31112330
31112340
31112350
31112360
31112370
31112380
31112390
31112400
31112410
31112420
31112430
31112440
31112450
31112460
31112470
31112480
31112490
31112500
31112510
31112520
31112530
31112540
31112550
31112560
31112570
31112580
31112590
31112600
31112610
31112620
31112630
31112640
31112650
31112660
31112670
31112680
31112690
31112700
31112710
31112720
31112730
31112740
31112750
31112760
31112770
31112780
31112790
31112800
31112810
31112820
31112830
31112840
31112850
31112860
31112870
31112880
31112890
31112900
31112910
31112920
31112930

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OB18 0 1010
OB1C 0 1086
OB1D 0 100A
OB1E 0 00C2
OB1F 1 C400 0724
OB21 0 DOBE
OB22 0 C0C5
OB23 0 DOBB
OB24 1 0C00 0712
OB26 0 4480 0162
OB28 1 OADA
OB29 1 OA7D
OB2A 1 0C00 0714
OB2C 0 6300
OB2D 0 68BE
OB2E 1 6F00 OAF0
OB30 1 6F00 OAF1
OB32 0 68B7
OB33 1 4C80 OA81
*
OB35 0 0001
OB36 0 0003
OB37 0 0005
*
OB38 0 0000
OB39 0 6300
OB3A 1 6F00 OAE2
OB3C 1 6F00 OAE3
OB3E 1 C400 OAE8
OB40 1 E400 OB92
OB42 1 D400 OB90
OB44 1 C400 OAE6
OB46 1 E400 OB92
OB48 1 D400 OB91
OB4A 1 F400 OB90
OB4C 0 4820
OB4D 0 7002
OB4E 1 4C80 OB38
*
OB50 1 D400 OB8F
OB52 1 C400 OB90
OB54 1 E400 OB8F
OB56 1 D400 OAE2
OB58 1 C400 OB8F
OB5A 1 F400 OAE2
OB5C 1 D400 OAE3
OB5E 0 7000
*
OB5F 1 C400 OAE2
OB61 0 4820
OB62 0 7006
OB63 1 C400 OAE3
OB65 0 4820
OB66 0 7002
OB67 1 4C80 OB38
*
OB69 1 4400 09D3
OB6B 0 6301

```

```

SLA 16
SLT 6
SLA 10
STO TABLE&7
LD L DIAX1      LD DIAG WD 1 WAS
STO TABLE&6
LD CADSW       LD DSW WAS
STO TABLE&5
XIO L BZON     EXECUTE ALARM ON
BSI I ERROR    GO PRINT ERROR
DC TABLE      MESSAGE TABLE
DC LOPRT       LOOP ADDRESS
XIO L BZOFF    EXECUTE ALARM OFF
LDX 3 0
STX 3 TRWD2
STX L3 TGWD1
STX L3 TGWD2
STX 3 DIAX2
BSC I TRGAN    EXIT TO RETURN ADDR.
*
*****
*          CONSTANTS
*****
*
K0001 DC /0001      CONSTANT 0001
K0003 DC /0003      CONSTANT 0003
K0005 DC /0005      CONSTANT 0005
*
*****
*          INTERRUPT ANALYSIS
*****
* COMPARES SHOULD/BE INTERRUPTS WITH
* ACTUAL INTERRUPTS AND ANALIZES ANY ERRS
*****
*
INTAN DC *--      SAVED RETURN ADDR.
LDX 3 0
STX L3 TABLE&8  RESET INTRPT ERR LOC
STX L3 TABLE&9  RESET INTRPT ERR LOC
LD L CADSW       LD DSW WAS
AND L INTMK      MASK INTRPT BITS
STO L INWAS      STORE INT BIT WAS
LD L DSWXX       LOAD DSW S/B
AND L INTMK      MASK INTRPT BITS
STO L INSDB      STORE INT BIT S/B
EOR L INWAS      CHECK FOR ERROR
BSC Z
MDX INERR       GO TO INT ERR ANAL.
BSC I INTAN     EXIT TO RETURN ADDR
*
INERR STO L ERINT  SAVE INT ERR BITS
LD L INWAS       LD INTRPT DSW WAS
AND L ERINT      AND INT ERROR BITS
STO L TABLE&8  LD INT ERR ON/F BITS
LD L ERINT       LD INT ERROR BITS
EOR L TABLE&8  EOR INT ON/F ERROR
STO L TABLE&9  STORE INT F/ON ERROR
MDX CKERR
*
CKERR LD L TABLE&8
BSC Z           CHK IF IT IS 0
MDX INTER      ERR BITS ARE LOADED
LD L TABLE&9
BSC Z
MDX INTER
BSC I INTAN    EXIT TO RETURN ADDR
*
INTER BSI L MSGID  CHK FOR C.E. BITS
LDX 3 1

```

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31112940
31112950
31112960
31112970
31112980
31112990
3113000
3113010
3113020
3113030
3113040
3113050
3113060
3113070
3113080
3113090
3113100
3113110
3113120
3113130
3113140
3113150
3113160
3113170
3113180
3113190
3113200
3113210
3113220
3113230
3113240
3113250
3113260
3113270
3113280
3113290
3113300
3113310
3113320
3113330
3113340
3113350
3113360
3113370
3113380
3113390
3113400
3113410
3113420
3113430
3113440
3113450
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3113470
3113480
3113490
3113500
3113510
3113520
3113530
3113540
3113550
3113560
3113570
3113580
3113590
3113600
3113610

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```

OB6C 1 6F00 0ADA      STX  L3 TABLE      SET UP MSG ID      31113620
OB6E 0 635F          LDX   3 /005F      31113630
OB6F 1 6F00 0ADC      STX  L3 TABLE&2   SET UP MODIFIER ID 31113640
OB71 1 6700 0A20      LDX  L3 ADR4        LOAD ALPHA 4 ADDRESS 31113650
OB73 1 6F00 0ADD      STX  L3 TABLE&3   SET UP ALPHA MSG    31113660
OB75 1 C400 0725      LD   L DIAW2        LD DIAG WD 2 WAS    31113670
OB77 0 1890          SRT   16            MASK OUT C.E. BITS  31113680
OB78 0 1010          SLA   16            31113690
OB79 0 1086          SLT   6             31113700
OB7A 0 100A          SLA   10            31113710
OB7B 1 D400 0AEO      STO  L TABLE&6    31113720
OB7D 1 C400 0724      LD   L DIAW1        LD DIAG WD 1 WAS    31113730
OB7F 1 D400 0ADF      STO  L TABLE&5    31113740
OB81 1 C400 0AEB      LD   L CADSW        LOAD DSW WAS        31113750
OB83 1 D400 0AE1      STO  L TABLE&7    31113760
OB85 1 0C00 0712      XIO  L BZON          EXECUTE ALARM ON    31113770
OB87 0 4480 0162      BSI  I ERROR        GO PRINT ERROR      31113780
OB89 1 0ADA          DC   TABLE        MESSAGE TABLE      31113790
OB8A 1 0A7D          DC   LOPRT          LOOP ADDRESS        31113800
OB8B 1 0C00 0714      XIO  L BZOFF        EXECUTE ALARM OFF   31113810
OB8D 1 4C80 0B38      BSC  I INTAN        EXIT TO RETURN ADDR 31113820
                                     31113830
*                                     31113840
OB8F 0 0000          ERINT DC *-*        INTERRUPT ERR BITS  31113850
OB90 0 0000          INWAS DC *-*        DSW INT BITS WAS    31113860
OB91 0 0000          INSDB DC *-*        DSW INT BITS S/B   31113870
OB92 0 D800          INTMK DC /D800     31113880
*                                     31113890
OB94 05F6          END   BEGN        LAST STATEMENT
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY
    
```

```

ADR1 09DE 099E
ADR2 09F4 0AA3
ADR3 0A0A 0B0D
ADR4 0A20 0B71
ADR5 0A36 0BF5
ADR6 0A44 0917
ADR7 0A4D 0761
ADR8 0A5C 08D6
ADR9 0A6D 07C9
ANAL1 096C 0936 0978
ANAL2 097A 093E 0986
ANL01 0976 0974 0975
ANL02 0984 0982 0983
A1 07ED 07EC 07F2
A10 082C 07E3 0831
A11 0833 07E2 0838
A12 083A 07E1 083F
A13 0841 07E0 0846
A14 0848 07DF 084D
A15 084F 07DE 0854
A2 07F4 07EB 07F9
A3 07FB 07EA 0800
A4 0802 07E9 0807
A5 0809 07E8 080E
A6 0810 07E7 0815
A7 0817 07E6 081C
A8 081E 07E5 0823
A9 0825 07E4 082A
BEGIN 0160 05F6
BEGN 05F6 0B94
BFRCCK 06EC 06DD 06E5 06FE 074C 090B
BFREER 08E9 06F9
BNSW1 09D1 06C4 06D0 0728 0942 0956 0961
BNSW2 09D2 06CA 0946
BZOFF 0714 0770 0793 07D8 08E5 0907 0921 09C4 0AC1 0B2A 0B8B
BZON 0712 076B 07D3 08E0 0901 091B 09BE 0ABB 0B24 0B85
B1 0865 0864 086A
B10 08A4 085B 08A9
B11 08AB 085A 0880
B12 08B2 0859 08B7
B13 08B9 0858 08BE
B14 08C0 0857 08C5
B15 08C7 0856 08CC
B2 086C 0863 0871
B3 0873 0862 0878
B4 087A 0861 087F
B5 0881 0860 0886
B6 0888 085F 088D
B7 088F 085E 0894
B8 0896 085D 089B
B9 089D 085C 08A2
CADSW 0AE8 061A 0667 096D 0989 09AE 0ABB 0B22 0B3E 0B81
CKERR 0B5F 0B5E
CKIT2 0ACC 0A9A
CNTA 0722 06D4 06E7
CNTB 0723 06EF 06FB
CNTER 07A9 07A3 092B
CNTRL 063A 0689 0699 07DC 08D4
CN20 0649 063D
CN30 0650 0642
DELY3 05FA 0601
DIAWD 071C 0628 0675 097B 09D4
DIAW1 0724 0626 0673 070C 09BA 0AAE 0B1F 0B7D
DIAW2 0725 0620 066D 070E 079F 09B2 0AB1 0B18 0B75
DIAXX 0AEE 093C 097D 0A82
DIAX1 0AE9 0A88 0AAC 0ACA 0ACC
DIAX2 0AEA 0A8C 0AFA 0B16 0B32
DIA00 092F 094F 095F 096A
    
```

DIA01 0930 0954
 DLYTM 07B1 0754 07B7 0927
 DSWAN 0988 0976 09CD
 DSWRD 0AE7 0971 0988 098F 09CB
 DSWSN 0706 0613 0618 0665 075D 0797
 DSWW1 09CF 06B5 098D 0991 09A2 09C7
 DSWW2 09D0 0993 09A6 09C9
 DSWXX 0AE6 06AB 0934 096F 09AA 0B44
 DSW00 092D 094C 095C 0967
 DSW01 092E 0951
 END 0164 064E
 ENDDP 0710 06CC 0751 0923
 ERINT 088F 0850 0854 0858
 ERLCK 0166 05EA
 ERROR 0162 0903 091D 09C0 0ABD 0B26 0B87
 EVEN1 06E0 06D6
 HNGUP 07C7 079B 08E7
 ILO 017A
 ILI 018A 0695
 IL2 019A
 IL3 01AA
 IL4 01BA
 INERR 0850 084D
 INSD8 0891 0848
 INTAN 0838 0636 084E 0867 088D
 INTER 0869 0862 0866
 INTMK 0892 0840 0846
 INTR 0617 0630 0634 0693
 INWAS 0890 0842 084A 0852
 JUMP 0745 072D 0733 0742
 K0001 0835 05FB 0913
 K0003 0836 08F1
 K0005 0837 08D0
 LOCK 05E7 05ED 05F3 0689
 LOG 0163 076D 07D5 08E2
 LOGBY 0167
 LOG01 0761
 LOG02 08CE 07AE 08D3
 LOOP 05F5 05EF 05F1 0656 06BE
 LOOPE 06C2 068B 06BD 0A7D
 LOPRT 0A7D 0906 0911 0920 09C3 0AC0 0B29 0B8A
 LRTN 0662 0663 069E
 LSTNN 0797 078A
 MASK 0717 07A1
 MASK1 0718 075E 0799
 MIC2 078A 05FE 0603 075B 0795 07BE 07C5
 MLSCF 05E5 060C 0658 06F3 073C 0778 0784
 MODES 0677 0638
 MSGID 09D3 0995 09DC 0A9C 0B06 0B69
 NOISE 090D 07A7
 ODEVN 0721 06D5 06D8 06E1
 OFF 0698 0687 0697 06A0 06C0 07DA 0A7F
 OFF0 06A6 06A9
 OFF1 06AB 06AE
 OFF2 06B0 06B3
 OFF3 06B5 06B8
 ONES 0716 06E2
 PASS 07B0 078E 07AB
 PATNA 07DE 072B 0745
 PATNB 0856 0731
 PID 05DC 05F8
 PRNT 068B 0685
 PRTER 07A5
 PRTPN 071E 0606 062A
 PRTSW 068F 0683 068C 08E9
 RAD 05DE 062C 0654 069C
 RCVED 071F 06F7 0702 0749 08FD
 RDAGN 06F0 06F1 06FD

RDAN 0956 067D
 RDCAT 0702 06F0 0748
 RDIA1 070C 061C 0669
 RDIA2 070E 061E 066B 079D
 RDMD 071A 067B 06CF
 RDY 078D 075F 07AD
 RESAN 0942 0679
 RESET 0700 0632 06A2 06C6 06D2 072A 07C7
 RESMD 0719 0677 0680 06C3 06C9
 REST1 094C 0945
 REST2 0951 0949
 RETRN 0683 0940 094A 095A 0965
 RID 05DD 063F 0647 0649 064B 0650 0691
 RIDCK 0663 0641 064D
 RLCF 0168
 RQKB 018C
 RQTY 018B
 RTNSW 0165 065A
 RTRN5 077C 0776
 RTRN6 0788 0782
 RTRO1 095C 0958
 RTTBL 065E 062E 0652 0663
 RT1 06C3 065E
 RT2 06C9 065F
 RT3 06CF 0660 06DF 06E9
 RT4 0726 0661
 RT5 0751 0662 0774
 SEND 0720 06DB 06E3 06F8 0704 074A 07F0 07F7 07FE 0805 080C 0813 081A 0821
 0828 082F 0836 083D 0844 084B 0852 0868 086F 0876 087D 0884 088B
 0892 0899 08A0 08A7 08AE 08B5 08BC 08C3 08CA 08F9
 SHFT 0739 072F 0735 073A 0743 0750
 SNDSW 0664 0615 068D 08EC
 START 0161 060E 065C 06F5 073E 077A 0786
 STOR1 0931 0938 094D 0952 095D 0968
 STOR2 093A 0950 0955 0960 096B
 STRD 0708 0753 0925
 STRT 0690 05E3 05E4 05E5
 STST 070A 0756 0929
 STWD 0AED 0932 093A
 SVKB 018D
 SW0 05DF 05E8
 SW1 05E0 063B 0645 08CE
 SW2 05E1 078B
 SW3 05E2
 TABLE 0ADA 06A6 0763 0766 0769 076F 07A5 07CB 07CE 07D1 07D7 08D8 08D8 08DE
 08E4 08EF 08F3 08F7 08FB 08FF 0905 090E 0915 0919 091F 0998 099C
 09A0 09A4 09A8 09AC 09B0 09B8 09BC 09C2 09DA 0A9F 0AA2 0AA5 0AAB
 0AAB 0AAD 0AB0 0AB7 0ABA 0ABF 0B09 0B0C 0B0F 0B12 0B15 0B17 0B1E
 0B21 0B23 0B28 0B3A 0B3C 0B56 0B5A 0B5C 0B5F 0B63 0B6C 0B6F 0B73
 0B7B 0B7F 0B83 0B89
 TGWD1 0AF0 0AA6 0AC6 0AD6 0B04 0B10 0B2E
 TGWD2 0AF1 0AA9 0AC8 0AD0 0AD4 0AFE 0B02 0B13 0B30
 TMDLY 07B9 07B3 07B4
 TRGAN 0A81 0984 0AF8 0B33
 TRGWD 0AEF 097F 0ABD
 TRWD1 0AEB 0A93 0A98 0AC4 0ACE 0AD2
 TRWD2 0AEC 0A97 0AF2 0AFC 0B00 0B2D
 UINTR 0636 0608
 WAIT1 05FB 06EA 0737
 WAIT2 0606 0600 0605 0612
 WAIT3 0601 06C7 06CD
 WAIT4 0610 060A
 WAIT5 0775 0772 077E 077F
 WAIT6 0781 078B 07A9
 WCNT 05F9 05FD 0602 0610 0759 077C 0788 0791 07C0 07C3
 WD1 0A9C 0AD8
 WD1CK 0AF2 0A9B 0ACB
 WD2 0AFA 0AF7

WRCAT 0704 06DC 06E4 0747
WRDCK 09CD
WRTAN 0961 0681
WRTND 071B 067F 0726
WTRQ1 0967 0963
XR3 0909 08EB
XR3A 074E 074B
END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA WRAP-AROUND IS TO CHECK THE ABILITY OF THE SCA CIRCUITRY TO TIE THE OUTPUT OF SCA TRANSMIT SERIALIZER TO THE INPUT OF THE SCA RECEIVE DESERIALIZER, AND PROPERLY SHIFT THE SYNC/IDLE BITS OR DATA IN THIS LOOP, WHEN IN DIAGNOSTIC MODE.

2. REQUIREMENTS

2.1*** PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS AND THIS PROGRAM USES THE REMAINING PORTION OF 4K.

2.2*** EQUIPMENT PREREQUISITES

1. SET DATA TERMINAL SWITCH IN THE TEST POSITION.
2. SET STR/BSC SWITCH FOR DESIRED MODE. IF BSC MODE IS SELECTED DO NOT USE THE LOAD AND GO OPTION (SET SW 15 ON AND REFER 3.2.3).
3. SET C.E. MODE SWITCH TO OFF POSITION.
4. SET SCA ALARM SWITCH TO ON POSITION.
5. SET BAUD SELECTOR SWITCH TO DESIRED POSITION.
6. IF CORE SPEED IS 2 MICRO-SECOND DO NOT USE LOAD AND GO OPTION. SET BIT SW 15 ON AND REFER TO SECTION 3.2.3.
7. CHECK TO SEE THAT JUMPERS ARE INSTALLED AS SHOWN BELOW. INSTALL OR REMOVE JUMPERS AS REQUIRED. MARK ON THIS PAGE ANY JUMPERS THAT ARE CHANGED FOR THIS TEST, AND RESTORE TO ORIGINAL CONFIGURATION AFTER COMPLETION OF TEST.

- | | |
|---------------|---|
| D6D06-D6D08 | REMOVED |
| × K2D08-K2B08 | INSTALLED |
| M2D10-D6D05 | INSTALLED |
| × L2D04-L2D08 | INSTALLED |
| M2B04-M2D08 | INSTALLED (NOT REQUIRED IF A DIAL-UP DATA SET IS CONNECTED) |

NOTE 1. REFER TO LOGIC PAGE A0003 FOR CUSTOMER OPTION JUMPERING.

3. OPERATING PROCEDURE

****CAUTION*** LOAD AND GO OPERATION CANNOT BE USED ON SYSTEMS WITH 2 MICRO-SECOND CORE SPEED OR IF OPERATION IS TO BE IN BSC MODE. REFER TO SECTION 3.2.3 FOR PROPER SELECTION OF OPERATING OPTIONS.

MONITOR RELOAD, SWITCH SETTING /8080 OR /80C0, CANNOT BE USED WITH THIS PROGRAM IF ANY DEVICE TO BE CALLED BY THE NEW PROGRAM(S) WILL BE USING INTERRUPT LEVEL ONE. THE LEVEL ONE TRANSFER VECTOR IS SET DIRECTLY BY THIS PROGRAM.

THESE OPERATING PROCEDURE APPLY TO SINGLE PROGRAM OPERATION ONLY. OPERATIONS REFER TO SECTION 3.2.3 OF THE 1130 DIAGNOSTIC MONITOR II DOCUMENTATION. THIS PROGRAM CANNOT BE OPERATED IN OVERLAP MODE.

3.1*** PROGRAM LOADING

STANDARD MONITOR LOADING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
2. SET BIT SWITCH 15 OFF - LOAD AND GO (CANNOT BE USED ON SYSTEMS WITH 2 MICRO-SECOND MEMORY SPEED OR IF OPERATION IS TO BE IN BSC MODE)
ON - TO SPECIFY OPTIONS BEFORE RUNNING. (SEE SECTION 3.2.3)

IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (SEE SECTION 3.5)

3. LOAD DIAGNOSTIC MONITOR AND THIS PROGRAM.
4. SELECT PROGRAM OPTIONS, IF DESIRED.

3.2*** PROGRAM OPERATION.

STANDARD MONITOR OPERATING PROCEDURES APPLY.
 THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR
 DETAILS. THIS PROGRAM CANNOT BE OPERATED IN OVERLAP MODE.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-7 TO 01.
2. SET SWITCHES 8-15 AS DESIRED.

SWT	FUNCTION
8	RESTART
9	ROUTINE START MESSAGE
10	LOCK ON FUNCTION
11	LOOP PROGRAM
12	LOOP ON ERROR
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR
15	HALT

3. PRESS INT REQ KEY ON CONSOLE.

3.2.2 ROUTINE SELECTION - FUNCTION 1

THE SELECTED ROUTINE WILL LOOP UNTIL A NEW ROUTINE IS SELECTED.

1. TO SET ROUTINE SELECTION

- A. SET SWITCHES 0-7 TO 41.
- B. SET ROUTINE NUMBER IN SWITCHES 8-15.

THESE ROUTINES WILL RUN IN SEQUENCE AND TERMINATE AFTER THE LAST
 ROUTINE IF NO ROUTINE IS SELECTED.

RTN	DESCRIPTION (SEE 5.2 FOR COMPLETE RTN DESCRIPTIONS)
1	PROGRAM RESET
2	1 READ RESPONSE INTERRUPT ALLOWED ... WRT BUFFER /FF00
3	2 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
4	3 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
5	4 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
6	5 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
7	6 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
8	7 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
9	8 READ RESPONSE INTERRUPTS ALLOWED ... WRT BUFFER /FF00
A	1 WRAP-AROUND CYCLE ALLOWED ... WRT BUFFER /FF00
B	2 WRAP-AROUND CYCLES ALLOWED ... WRT BUFFER /FF00
C	1 READ RESPONSE INTERRUPT ALLOWED ... SYNC/IDLE /3900
D	2 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
E	3 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
F	4 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
10	5 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
11	6 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
12	7 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
13	8 READ RESPONSE INTERRUPTS ALLOWED ... SYNC/IDLE /3900
14	1 WRAP AROUND CYCLE ALLOWED ... SYNC/IDLE /3900
15	2 WRAP AROUND CYCLES ALLOWED ... SYNC/IDLE /3900
16	10 OR 64 CYCLES WRAP-AROUND ... SYNC/IDLE /3900
17	10 OR 64 CYCLES WRAP-AROUND ... WRT BUFFER /FF00
18	10 WRAP-AROUND WRT BUF /0000 ... SYNC/IDLE /AA00
19	10 WRAP-AROUND WRT BUF /0000 ... SYNC/IDLE /0000
1A	9 WRAP-AROUND 7 BIT WRT BUF /FE00 ... SYNC/IDLE /AA00
1B	8 WRAP-AROUND 6 BIT WRT BUF /FC00 ... SYNC/IDLE /AA00

- C. PRESS INT REQ. KEY ON CONSOLE.

2. TO RESET ROUTINE SELECTION AND RETURN TO NORMAL OPERATION

- A. SET SWS 0-7 TO 41
- B. SET SWS 8-15 OFF
- C. PRESS INT. REQ. KEY

3.2.3 SCA PROGRAM OPTIONS - FUNCTION 2

1. SET SWITCH 0-7 TO 81.
2. SET SWITCHES 10 THRU 15 AS DESIRED.

SW	FUNCTION
SW 10	.... SELECT CHARACTER

THIS OPTION ALLOWS SELECTION OF ANY CHARACTER TO WRAP-AROUND WHEN EXECUTING ROUTINE 17. AFTER SELECTING THIS OPTION, ENTER THE DESIRED CHARACTER IN SWS 8-15 VIA THE FUNCTION 3 SELECT CHARACTER OPTION. (REFER TO 3.2.4)

NOTE.....SELECTION OF THIS OPTION INHIBITS THE FUNCTION 3 SCOPE LOOP OPTION.

SW 11 2 MICRO-SECOND CORE SPEED
THIS OPTION MUST BE SELECTED IF SYSTEM HAS A 2 MICRO-SECOND MEMORY CYCLE. DO NOT SELECT THIS OPTION ON 4 MICRO-SECOND SYSTEMS.

SW 12 DIAGNOSTIC RUN
THIS OPTION MAKES ANALYSIS OF THE DIAGNOSTIC WORDS. BECAUSE OF THE CRITICAL TIMING INVOLVED IN SENSING THESE TRIGGERS WHILE THEY BEING SET AND CLEARED, THIS OPTION IS NOT RECOMMENDED DURING OVERLAP.

SW 13 NO RESET
THIS OPTION ALLOWS THE DELETION OF THE RESET ROUTINE (ROUTINE 01) AFTER EXECUTING EACH OF THE OTHER ROUTINES. ROUTINE 01 TRAPS ANY UNEXPECTED TIMEOUT INTERRUPTS, DUE TO A CIRCUIT FAILURE. THIS CUTS PROGRAM RUN TIME TO 3 MIN.

SW 14 FAST PASS
THIS OPTION ALLOWS A 250 MSEC ROUTINE RUN TIME FOR THOSE ROUTINES WHERE THE WRAP-AROUND FUNCTIONS ARE NOT EXPECTED. PROGRAM RUN TIME IS 45 SEC.

SW 15 BI-SYNC
THIS OPTION ALLOWS THE SCA TO OPERATE IN THE BINARY SYNCHRONOUS MODE. THIS OPTION INITIATES A SELF-MODIFICATION TO THE TEST PROGRAM. THE PROGRAM MODIFICATIONS ALTER ROUTINE INSTRUCTIONS USING DSW AND DIAGNOSTIC WORDS THAT WILL BE OF A DIFFERENT VALUE DUE TO BI-SYN MODE. DESELECTING THIS OPTION INITIATES A SELF-MODIFICATION TO THE TEST PROGRAM, THAT WILL CHANGE EFFECTED DSW AND DIAGNOSTIC WORDS SO AS TO OPERATE IN THE STR MODE. RELOADING THE PROGRAM IS NOT NECESSARY WHEN CHANGE MODES FROM STR TO BI-SYN OR FROM BI-SYN TO STR.

3. PRESS INT REQ KEY ON CONSOLE.
4. RESET OPTIONS BY TURNING SWITCHES 10 THRU 14 OFF AND PRESSING INT REQ. KEY.

3.2.4 SCA SCOPE LOOP OR SELECT CHARACTER OPTION - FUNCTION 3

1. SET SWITCHES 0-7 TO C1.
2. SET SWITCHES 8 THRU 15 AS DESIRED.

NOTE.....IF SELECT CHAR OPTION (BIT 10 FNC 2) IS SELECTED, THE SCOPE LOOP OPTION WILL BE INHIBITED.

SCOPE LOOP OPTION	
SW	FUNCTION
8	.... 2 SECOND ROUTINE DELAY
9	.... 1 SECOND ROUTINE DELAY
10	.... .5 SECOND ROUTINE DELAY
11	.... .25 SECOND ROUTINE DELAY
12	.... .125 SECOND ROUTINE DELAY
13	.... .0625 SECOND ROUTINE DELAY
14	.... .03125 SECOND ROUTINE DELAY
15	.... .015625 SECOND ROUTINE DELAY

SELECT CHARACTER OPTION	
SW	FUNCTION
8	.... SELECT CHARACTER COMBINATION TO BE WRAPPED-AROUND, WHEN RUNNING ROUTINE 17 AND SELECT CHAR. OPTION IS SELECTED. (FUNCTION 2, SW 10) IF SELECT CHAR. OPTION IS NOT SELECTED, ALL ONES WILL BE WRAPPED-AROUND. (/FF)
T	
H	
R	
O	
U	
G	
H	
15	

3. PRESS INT REQ. KEY ON CONSOLE.
4. RESET SCOPE LOOPS AND CHARACTER OPTIONS BY SETTING SWITCHES 8 THRU 15 OFF AND PRESSING INT REQ. KEY.

3.3*** PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG)	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS START
3002	HALT ON ERROR	PRESS START

**

3.3.2 ERROR HALTS

HALT NO. (B REG)	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE.	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS START.
30F6	MONITOR DID NOT LOAD	RELOAD
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD
30F8	READER NOT READY	MAKE READER READY
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4*** PROGRAM TERMINATION

IF LOOP PROGRAM HAS NOT BEEN SPECIFIED, THE PROGRAM WILL TERMINATE AT THE END OF ROUTINE /18.

IF ANY ROUTINE IS SELECTED, THAT ROUTINE WILL LOOP AND WILL NOT TERMINATE.

**

3.5*** RESTART

1. TURN OFF SWITCHES 0-7.
2. TURN ON SWITCH 8.
3. SET DESIRED CONTROL IN SWITCHES 9-14.
4. PRESS INTERRUPT REQUEST KEY.

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT.

APPNN OORR AAAA (MESSAGE)
OR
EPPNN OORR AAAA (MSSAGE)

WHERE A IDENTIFIES STATUS MESSAGES
E IDENTIFIES ERROR MESSAGES
PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE

THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MONITOR OR 19 FOR MESSAGES ORIGINATED BY THIS PROGRAM.

NN IS THE MESSAGE SEQUENCE NUMBER
RR IS THE ROUTINE NUMBER
AAAA IS THE ADDRESS OF THE ROUTINE
MESSAGE IS ANY VARIABLE INFORMATION

4.1*** STATUS MESSAGES

A0000 NUM PID ADRS RELF LD
XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED FOLLOWING THE LOADING OF ANY PROGRAM (EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER, THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED, AND THE RELOCATION FACTOR.

A0001 SWS PID
XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE CONTENTS OF SWITCHES 8-15 WERE STORED. IF THE SWITCH ENTRY CALLED FOR HALT OF ANY PROGRAM THE WORD HALT WILL FOLLOW THE MESSAGE.

A1900 OORR AAAA

ROUTINE START MESSAGE - IF SWITCH 9, FUNCTION 0, IS TURNED ON, THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE. R IS THE NUMBER OF THE NEXT ROUTINE AND AAAA IS THE STARTING ADDRESS.

A1901 OORR AAAA XXXXXX XXXXX XXXX XXX XX XXXXX XXXX XXXX XX XXX X XXX
SELECT CHAR. DIAG RUN NO RESET FAST PASS BI SYN 2 MIC

THIS MESSAGE WILL BE PRINTED OUT WHENEVER A NEW SCA PROGRAM OPTION IS SELECTED. (FUNC. SW2) ONLY THOSE OPTIONS SELECTED WILL BE PRINTED OUT. IF ALL OPTIONS ARE DESELECTED, THE PRINT AREA WILL BE BLANK.

A1902 OORR AAAA XXXXX XXXX
SCOPE LOOP

THIS MESSAGE WILL BE PRINTED OUT WHENEVER A NEW SCOPE LOOP OPTION IS SELECTED.

NOTE....IF SELECT CHAR OPTION IS SELECTED, THE SCOPE LOOP OPTION IS INHIBITED.

A1903 0017 AAAA CHAR SELECTED *RTN 17*
XX00

THIS MESSAGE IS PRINTED OUT WHENEVER SELECT CHAR OPTION IS
SELECTED, ROUTINE 17 IS BEING EXECUTED, AND A NEW CHAR. HAS BEEN
SELECTED.

XX00 = THE 2 CHARS. SELECTED FOR WRAP-AROUND.

A1904 RESTORE SYSTEM TO NORMAL

THIS MESSAGE IS PRINTED OUT TO REMIND C.E. TO REMOVE READY
JUMPER IF INSERTED FOR TEST, AND RESTORE SYSTEM TO NORMAL.

A1905 DO NOT USE MNTR RLD IF DEVICE CALLED
WILL USE INT LEV ONE

THIS MESSAGE IS PRINTED OUT TO REMIND C.E. THAT LEVEL ONE
INTERRUPT IS NOT HANDLED BY MONITOR. (SEE SECTION 3.2)

4.2*** ERROR PRINTOUTS

WHENEVER AN SCA ERROR MESSAGE IS BEING PRINTED OUT, THE SCA ALARM
IS TURNED ON.

THE C.E. BITS CAN BE JUMPERED, AT C.E. DISCRETION, TO ANY POINT IN
THE SCA CIRCUITRY. IF THESE BITS ARE NOT WIRED, THEY WILL BE SET
TO A 1. (SEE LOGIC FC732, NOTE 2).

IF ALL DSW ANALYSIS APPEAR GOOD AND MANY FAILURES IN DIAGNOSTIC WORDS
OR MANY DSW FAILURES AND DIAGNOSTIC WORD APPEAR GOOD, TAKE INTO
CONSIDERATION THE READ DSW OR THE SENSE DIAGNOSTIC WORD COMMANDS
ARE FAILING.

E0001 SWS INVLD
XXXX

THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE
NUMBER OF ANY PROGRAM IN CORE.

E0003 OVR CORE

THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD,
EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM

A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM.
THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.

1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION, THE CHECK SUM WAS NOT CORRECTLY
CALCULATED.

WHEN THIS ERROR OCCURS, ATTEMPT TO RELOAD THE PROGRAM.

E0005 000N XXXX

THIS ERROR WILL OCCUR IF AN INTERRUPT OCCURS, BUT THE ILSW
WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE
ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET
BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET
THE REQUEST BIT.

F1901 00RR AAAA DW1 DW2 DSW ON/F F/ON *CF* INT ERR
XXXO XXOO XXXO XXOO XXOO OXXO

AT LEAST 1 INTERRUPT EXPECTED AND RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CF = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT
COMPARE WITH RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1902 00RR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXXO XXOO XXXO XXOO XXOO OXXO

AT LEAST 1 INTERRUPT EXPECTED, AND NON RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE
WITH THE RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1903 00RR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXXO XXOO XXXO XXOO XXOO OXXO

NO INTERRUPTS EXPECTED, AND AT LEAST 1 RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR = THE CALCULATED DSW INTERRUPT BITS DID NOT COMPARE
WITH THE RECEIVED DSW INTERRUPT BITS.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1904 00RR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR RESET
XXXO XXOO XXXO XXOO XXOO OXXO

AT LEAST 1 INTERRUPT EXPECTED AND RECEIVED.

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
DSW = STORED CONTENTS OF DSW.
ON/F = DSW INTERRUPT BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW INTERRUPT BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

INT ERR RESET = AN INTERRUPT ERROR WAS FOUND AFTER PROGRAMED RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1905 OORR AAAA DW1 DW2 WAS S/B ON/F F/ON *CE* DSW ERR
XXXO XXOO XXXO XXXO XXXO XXXO OXXO

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DSW.
S/B = CALCULATED CONTENTS OF DSW.
ON/F = DSW BIT THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW BIT THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DSW ERR = THE CALCULATED DSW DID NOT COMPARE WITH THE RECEIVED DSW.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1906 OORR AAAA DW1 DW2 WAS S/B ON/F F/ON *CE* DSW ERR RESET
XXXO XXOO XXXO XXXO XXXO XXXO OXXO

DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DSW.
S/B = CALCULATED CONTENTS OF DSW.
ON/F = DSW BIT THAT WERE ON AND SHOULD BE OFF.
F/ON = DSW BIT THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DSW ERR RESET = DSW WAS FOUND IN ERROR AFTER PROGRAMED RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1907 OORR AAAA DSW DW2 1WAS 1S/B ON/F F/ON *CE* DW1 ERR
XXXO XXOO XXXO XXXO XXXO XXXO OXXO

DSW = STORED CONTENTS OF DSW.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 1.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 1.
ON/F = DIAGNOSTIC WORD 1 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 1 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW1 ERR = THE CALCULATED DIAGNOSTIC WORD 1 DID NOT COMPARE WITH RECEIVED DIAGNOSTIC WORD 1.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1908 OORR AAAA DSW DW2 1WAS 1S/B ON/F F/ON *CE* DW1 ERR RESET
XXXO XXOO XXXO XXXO XXXO XXXO OXXO

DSW = STORED CONTENTS OF DSW.
DW2 = STORED CONTENTS OF DIAGNOSTIC WORD 2.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 1.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 1.
ON/F = DIAGNOSTIC WORD 1 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 1 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW1 ERR RESET = DIAGNOSTIC WORD 1 WAS FOUND IN ERROR AFTER PROGRAMED RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E1909 OORR AAAA DSW DW1 2WAS 2S/B ON/F F/ON *CE* DW2 ERR
XXXO XXXO XXOO XXOO XXOO XXOO OXXO

DSW = STORED CONTENTS OF DSW
DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 2.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 2.
ON/F = DIAGNOSTIC WORD 2 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 2 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW2 ERR = THE CALCULATED DIAGNOSTIC WORD 2 DID NOT COMPARE WITH RECEIVED DIAGNOSTIC WORD 2.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E190A OORR AAAA DSW DW1 2WAS 2S/B ON/F F/ON *CE* DW2 ERR RESET
XXXO XXXO XXOO XXOO XXOO XXOO OXXO

DSW = STORED CONTENTS OF DSW
DW1 = STORED CONTENTS OF DIAGNOSTIC WORD 1.
WAS = STORED CONTENTS OF DIAGNOSTIC WORD 2.
S/B = CALCULATED CONTENTS OF DIAGNOSTIC WORD 2.
ON/F = DIAGNOSTIC WORD 2 BITS THAT WERE ON AND SHOULD BE OFF.
F/ON = DIAGNOSTIC WORD 2 BITS THAT WERE OFF AND SHOULD BE ON.
CE = CE BITS OF DIAGNOSTIC WORD 2. (ON OR OFF)

DW2 ERR RESET = DIAGNOSTIC WORD 2 WAS FOUND IN ERROR AFTER PROGRAM RESET.

REFER TO DIAGNOSTIC REFERENCE PAGES FOR ANALYSIS OF ERROR.

E190B OORR AAAA DW1 DW2 DSW ON/F F/ON *CE* INT ERR
XXXO XXOO XXXO OOOO OOOO OOOO

INT ERR = THE DSW BIT WERE FOUND NOT TO BE IN ERROR. BUT AT LEAST 1 INTERRUPT WAS EXPECTED, AND NONE WAS RECEIVED. MAKE SURE C.E. INTERRUPT DELAY SW IS OFF. IF INTERRUPT DELAY SW IS OFF, GO TO NET NUM. FC731AN4.

E190C OORR AAAA WAS S/B *CE* DATA ERROR
XXXO XXOO OXXO

DATA ERROR = THE RECEIVE BUFFER WORD READ, DID NOT COMPARE WITH WORD EXPECTED. IF NO OTHER ERRORS ARE PRESENT, FAILURE COULD BE IN BUFFER, TRANSMIT SERIALIZER, OR RECEIVE DESERIALIZER.

5. COMMENTS

5.1 PROGRAM PHILOSOPHY

THE SCA WRAP-AROUND TEST WAS DESIGNED TO CHECK FOR PROPER OPERATION OF THE SCA CIRCUITRY IN DIAGNOSTIC MODE. THE 1ST INTERRUPT EXPECTED DURING STR-WRAP-AROUND IS A WRITE INTERRUPT. THIS INTERRUPT IS FOLLOWED BY 8 READ INTERRUPTS, ANOTHER WRITE INTERRUPT, AND THEN THE 9TH READ INTERRUPT OF THE CYCLE. WHEN THE 9TH READ INTERRUPT OCCURS, THE 8 BITS THAT MAKE UP THE COMPLETE CHARACTER HAVE BEEN SHIFTED INTO THE READ DESERIALIZER. DURING BI SYN-WRAP-AROUND THE FIRST WRITE INTERRUPT DOES NOT OCCUR. IF THE BUFFER IS READ AFTER FINAL SHIFTING IS DONE INTO THE READ DESERIALIZER THE WORD READ FROM THE BUFFER SHOULD COMPARE WITH THE WORD LOADED INTO THE BUFFER. IF THE BUFFER WAS NOT LOADED, THE SYNC/IDLE REGISTER SHOULD HAVE BEEN LOADED INTO TRANSMIT SERIALIZER AND IS THE WORD READ FROM THE BUFFER.

THE PROGRAM CHECKS THE OPERATION BY LOADING THE BUFFER WITH ALL ONES, AND CHECKING THE BUFFER AFTER EACH INTERRUPT FOR PROPER DATA SHIFTING (ROUTINES 02 THROUGH 0B) THE PROGRAM ALSO CHECKS FOR LOADING OF THE TRANSMIT SERIALIZER FROM THE SYNC/IDLE REGISTER IF THE BUFFER IS NOT LOADED, AND AFTER EACH INTERRUPT, THE SHIFTING OF THE SYNC/IDLE CHARACTER. (ROUTINES 0C THROUGH 15).

ROUTINE 16 CHECKS WRAP-AROUND OF SYNC/IDLE CHARACTER WHEN THE BUFFER IS NOT LOADED.

ROUTINE 17 CHECKS WRAP-AROUND OF DATA WORD FF WHICH WAS LOADED INTO THE BUFFER. IF SELECT CHAR. OPTION IS SELECTED, THAT CHAR. WILL BE WRAP-AROUND.

ROUTINE 18 AND 19 CHECKS WRAP-AROUND WHEN THE BUFFER IS LOADED WITH ZEROS AND SYNC/IDLE REGISTER HAS ALTERNATE PATTERN DURING ROUTINE 18 AND ZEROS DURING ROUTINE 19.

ROUTINE /1A AND /1B CHECKS WRAP-AROUND FOR A 7 BIT WORD AND 6 BIT WORD RESPECTIVELY.

IF THE DIAG RUN OPTION IS NOT SELECTED, ONLY INTERRUPTS, DSW BITS, AND BUFFER DATA IS CHECKED. IF DIAG RUN IS SELECTED, AN ANALYSIS IS ALSO MADE OF THE DIAGNOSTIC WORDS.

VARIOUS SCA PROGRAM OPTIONS ARE ALSO AVAILABLE BECAUSE OF THE NATURE OF THE SCA OPERATION. THE MOST IMPORTANT FACTOR BEING, THAT A TIME-OUT INTERRUPT MAY OCCUR 3 SECONDS AFTER A SCA COMMAND HAS BEEN IMPROPERLY EXECUTED. BECAUSE OF THESE POSSIBLE TIMEOUTS AND INTERMITTENT ERRORS, EACH ROUTINE IS ANALYZED FOR 4 SECONDS BEFORE ITS TERMINATION. AFTER THE ROUTINE HAS BEEN TERMINATED, THE RESET ROUTINE IS EXECUTED AND ANOTHER 4 SECOND ANALYSIS CHECK TAKES PLACE FOR RESET OF THE SCA CIRCUITRY.

THREE SCA PROGRAM OPTIONS ARE AVAILABLE TO REDUCE PROGRAM RUN TIME, BUT SACRIFICING THE ABILITY TO TRAP TIMEOUT ERRORS. THESE ARE

1. FAST PASS (FUNC 2 - SW 14)

THIS OPTION ANALYZES ROUTINES WHERE NO WRAP-AROUND OPERATION IS TAKING PLACE, FOR .250 SECONDS. (ROUTINES 16 AND 17).

2. NO RESET (FUNC 2 - SW 13)

THIS OPTION BYPASSES RUNNING OF RESET ROUTINE AFTER EACH ROUTINE EXECUTION.

3. FAST PASS AND NO RESET (FUNC 2 - SWS 13 AND 14)

THIS OPTION ALLOWS BOTH THE NO RESET AND FAST PASS OPTION TO BE RUN AT SAME TIME. THIS OPTION CUTS PROGRAM RUN TIME TO ABOUT 55 SECONDS.

THE DIAGNOSTIC MODE OPTION (FUNC 2 - SW 12) ALLOWS A MORE EXTENSIVE CHECK ON COMMAND OPERATION. UNLESS DIAGNOSTIC MODE IS SELECTED, ANALYSIS IS ONLY MADE ON DSW.

THE SCOPE LOOP OPTION ALLOWS THE SELECTION OF THE RATE AT WHICH ANALYSIS WILL BE MADE DURING A ROUTINE. THIS RATE ALSO DETERMINES THE ROUTINE RUN TIME. THE SCOPE LOOP OPTION IS NOT AVAILABLE TO ROUTINES WHERE WRAP-AROUND OPERATION TAKES PLACE.

THE PROPER USE OF THIS OPTION IS TO LOOP THE SELECTED FAILING ROUTINE AND THEN EXECUTE THE DESIRED SCOPE LOOP OPTION TO SET ROUTINE LOOP RATE.

THE SELECT CHAR. OPTION ALLOWS THE C.E. TO CHOOSE THE CHAR. OR CHAR. COMBINATION TO WRAP-AROUND WHEN RUNNING ROUTINE 17. IF THIS OPTION IS NOT SELECTED, ALL ONES WILL BE WRAP-AROUND. (/FF)

5.2 ROUTINE DESCRIPTION

ROUTINE 01 ... PROGRAM RESET

THIS ROUTINE CHECKS THE ABILITY OF THE SCA RESET COMMAND TO ESTABLISH INITIAL RESET CONDITIONS OF THE SCA CIRCUITRY. ALL DIAGNOSTIC WORD TRIGGERS AND DSW TRIGGERS SHOULD BE TURNED OFF, WITH THE EXCEPTION OF THE SEND/RECEIVE RUN TRIGGER. THIS ROUTINE IS EXECUTED AS THE SECOND HALF OF ALL OTHER ROUTINES. IF THE NO RESET PROGRAM OPTION HAS NOT BEEN SELECTED, (FUNCTION 2, BIT SW 13). THE NO RESET PROGRAM OPTION IS NOT APPLICABLE TO THIS ROUTINE.

ROUTINE 02 ... 1 READ RESPONSE INTERRUPT ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE 1ST INTERRUPT IS ALLOWED. THE BUFFER WORD READ SHOULD BE /FF00. IF STR SWT IS IN BIN POSITION AND BI SYN OPTION IS NOT SELECTED, THE WRITE INTERRUPT WILL NOT OCCUR AND UNEXPECTED READ INTERRUPT WILL OCCUR CAUSING AN EXTRA BUFFER SHIFT ON ALL ROUTINES. BI SYNC PROGRAM OPTION ADJUSTS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 03 ... 2 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST TWO INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /C000 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.
NOTE.... BUFFER IS RESET TO ALL ONES. IF BUFFER CAN NOT LOADED, IT WILL CONTAIN /FF.

ROUTINE 04 ... 3 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST THREE INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /E000 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 05 ... 4 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST FOUR INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /F000 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 06 ... 5 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST FIVE INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /F800 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 07 ... 6 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST SIX INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /FC00 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 08 ... 7 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST SEVEN INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /FE00 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 09 ... 8 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST EIGHT INTERRUPTS ARE ALLOWED. THE BUFFER WORD READ SHOULD BE /FE00 FOR STR MODE OR /FF00 FOR BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0A ... 1 WRAP-AROUND CYCLE ALLOWED ... BUFFER LOADED TO ALL ONES

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY 1 FULL WRAP-AROUND CYCLE ALLOWED. THE BUFFER WORD READ SHOULD BE /FF00 FOR STR MODE OR /FF00 FOR BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0B ... 2 WRAP-AROUND CYCLES ALLOWED ... BUFFER LOADED TO ALL ONES

THE ROUTINE CHECKS THE PROPER OPERATION WHEN 2 FULL DIAG MODE CYCLE IS ALLOWED TO TAKE PLACE. THE BUFFER WORD READ SHOULD BE /FF00 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0C ... 1 READ RESPONSE INTERRUPT ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST INTERRUPT IS ALLOWED. THE SYNC/IDLE REGISTER IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /8000 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0D ... 2 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST TWO INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /C000 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0E ... 3 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SAC CIRCUITRY WHEN ONLY THE FIRST THREE INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /6000 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 0F ... 4 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST FOUR INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /3000 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

SCA WRAP-AROUND TEST STR/BSC

SCA WRAP-AROUND TEST STR/BSC

ROUTINE 10 ... 5 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST FIVE INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /9800 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 11 ... 6 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST SIX INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /CC00 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SFQUENCE ANALYSIS.

ROUTINE 12 ... 7 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST SEVEN INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /E600 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 13 ... 8 READ RESPONSE INTERRUPTS ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST EIGHT INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /7300 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 14 ... 1 WRAP-AROUND CYCLE ALLOWED ... BUFFER NOT LOADED

THIS ROUTINE CHECKS THE PROPER OPERATION OF THE SCA CIRCUITRY WHEN ONLY THE FIRST NINE INTERRUPTS ARE ALLOWED. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /3900 FOR STR AND BSC. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 15 ... 2 WRAP-AROUND CYCLE ALLOWED ... BUFFER NOT LOADED

THE ROUTINE CHECKS THE PROPER OPERATION WHEN 2 FULL DIAG MODE CYCLE IS ALLOWED TO TAKE PLACE. THE SYNC/IDLE REGISTER CONTAINS /3900 AND IS LOADED INTO THE TRANSMIT SERIALIZER. THE BUFFER WORD READ SHOULD BE /7300 FOR STR AND BSC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 16 ... DIAG MODE WRAP-AROUND BUFFER NOT LOADED.

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION WHEN THE SYNC/IDLE REGISTER IS LOADED INTO THE TRANSMIT SERIALIZER. IF NOT SELECTING DIAGNOSTIC RUN, 10 FULL CYCLES ARE ALLOWED TO TAKE PLACE. IF DIAG RUN OPTION IS SELECTED, 64 FULL CYCLES ARE ALLOW TO TAKE PLACE. AFTER EACH CYCLE, THE BUFFER WORD READ SHOULD BE /3900 FOR STR MODE AND FOR BI SYNC MODE. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTINE 17 ... DIAG MODE WRAP-AROUND BUFFER LOADED TO ALL ONES.

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION WHEN THE BUFFER IS LOADED TO ALL ONES. IF NOT SELECTING DIAGNOSTIC RUN OPTION, 10 FULL CYCLES ARE ALLOWED TO TAKE PLACE. IF DIAGNOSTIC RUN OPTION IS SELECTED, 64 FULL CYCLES ARE ALLOWED TO TAKE PLACE. AFTER EACH CYCLE, THE BUFFER WORD READ SHOULD BE /FF00. IF SELECT CHAR. OPTION IS SELECTED, THE CHAR. SELECTED WILL BE WRAPED-AROUND. BI SYNC PROGRAM OPTION ALTERS THIS ROUTINE FOR PROPER INTERRUPT SEQUENCE ANALYSIS.

ROUTING 18 ... DIAG MODE WRAP-AROUND ... BUFFER LOADED WITH ZEROS.

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION WHEN THE BUFFER IS LOADED WITH ALL ZEROS. TEN FULL WRAP-AROUND CYCLES ARE ALLOWED TO TAKE PLACE. AFTER EACH CYCLE THE BUFFER WORD READ SHOULD BE /0000 FOR BOTH SRT AND BSC MODES. THE SYNC/IDLE REGISTER IS LOADED WITH /AA00.

ROUTINE 19 ... DIAG MODE WRAP-AROUND BUFFER IS LOADED WITH ZEROS.

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION WHEN THE BUFFER IS LOADED WITH ALL ZEROS. TEN FULL WRAP-AROUND CYCLES ARE ALLOWED TO TAKE PLACE. AFTER EACH CYCLE THE BUFFER WORD READ SHOULD BE /0000 FOR BOTH SRT AND BSC MODES. THE SYNC/IDLE REGISTER IS LOADED WITH /0000.

ROUTINE 1A ... DIAG MODE WRAP-AROUND 7 BIT WORD.

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION USING A 7 BIT BUFFER WORD SIZE. BUFFER IS LOADED WITH /FE00 ... ALL ONES. NINE FULL WRAP-AROUND CYCLES ARE ALLOWED TO TAKE PLACE. AFTER EACH CYCLE THE BUFFER WORD READ SHOULD BE /FE00 FOR BOTH STR AND BSC MODES. THE SYNC/IDLE REGEITER IS LOADED WITH /AA00.

ROUTINE 1B ... DIAG MODE WRAP-AROUND 6 BIT WORD

THIS ROUTINE CHECKS THE WRAP-AROUND FUNCTION USING A 6 BIT BUFFER WORD SIZE. BUFFER IS LOADED WITH /FC00 ... ALL ONES. EIGHT FULL WRAP-AROUND CYCLES ARE ALLOWED TO TAKE PLACE. AFTER EACH CYCLE THE BUFFER WORD READ SHOULD BE /FC00 FOR BOTH STR AND BSC MODES. THE SYNC/IDLE REGEITER IS LOADED WITH /AA00.

5.3 DIAGNOSTIC REFERENCE TABLE

ERROR BIT REFERENCE

ERR BIT	BIT POSITION	DSW ERROR	DW1 ERROR	DW2 ERROR
8	0	READ RESP	SYNC TRIG	CLK GATE
4	1	WRT RESP	IDLE CHAR	SYNC CNTR
2	2	CHECK	CHAR CMPT	1ST TRANS
1	3	TIMEOUT	END OP	PHS CNTR
8	4	ANS REQ	DIAG MODE	RCV TAG
4	5	BUSY	TIMER TR	CHAR PHS
2	6	ENABLE	3 SEC TIMER	
1	7	READY	1.5 SEC TIMER	
8	8	RCV RUN	SEND DATA	

ROUTINE 01	COMMAND	FUNCTION	MODIFIER	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	RESET	STR WRT	9	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
STR				.	.	.	.
S/B ON				X	.	.	.
N				F F F F F F F F	F F F F F F F F	F F F F F F	F
E				C C C C C C C C	C C C C C C C C	C C C C C C	C
T				3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
				5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N				1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U				B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M				A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
BI SYN				2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
S/B ON				X	.	.	.

COMMENTS

THIS ROUTINE CHECKS FOR RESET CONDITION OF THE SCA CIRCUITRY. IT SHOULD BE ABLE TO TRAP SOLID AND INTERMITTENT PROBLEMS IN THIS AREA. IF READY DSW BIT IS ON, CHECK SET UP.

ROUTINE 02	COMMAND	FUNCTION	MODIFIER	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	DIAG MODE	CONTROL	12	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
	SYNC/IDLE	XIO WRT	13	.	.	.	.
	WRT BUFFER	XIO WRT	0	.	.	.	.
STR				.	.	.	.
S/B ON				X X X	X X	X X	X
N				F F F F F F F F	F F F F F F F F	F F F F F F	F
E				C C C C C C C C	C C C C C C C C	C C C C C C	C
T				3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
				5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N				1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U				B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M				A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
BI SYN				2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
S/B ON				X X	X X	X X	X

COMMENTS

WHEN OPERATING IN STR MODE, IF A RD INTERRUPT OCCURS AND NO WRT INTERRUPT OCCURS, CHECK STR SWITCH IS IN STR POSITION. IF NO INTERRUPT OCCURS, POSSIBLE CAUSE OF FAILURE COULD BE IN CLOCK CIRCUITRY.

ROUTINES 03, 04, 05, 06, 07, 08,	COMMAND	FUNCTION	MODIFIER	DSW ERR	DW1 ERR	DW2 ERR	ALARM
	DIAG MODE	CONTROL	12	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.
	SYNC/IDLE	XIO WRT	13	.	.	.	.
	WRT BUFFER	XIO WRT	0	.	.	.	.
STR				.	.	.	.
S/B ON				X X X	X X	X X	X
N				F F F F F F F F	F F F F F F F F	F F F F F F	F
E				C C C C C C C C	C C C C C C C C	C C C C C C	C
T				3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3
				5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2
N				1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1	1
U				B A B A B A A A A	B B B A B A A B A	B B A A B B	B
M				A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M
BI SYN				2 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4	2
S/B ON				X X	X X	X X	X

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE 09	COMMAND	FUNCTION	MODIFIER			
	DIAG MODE	CONTROL	12			
	SYNC/IDLE	XIO WRT	13			
	WRT BUFFER	XIO WRT	0			
	DSW ERR	DW1 ERR	DW2 ERR	ALARM		
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.		
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X X	. . . X X . . . . .	. . X X X	.		
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F	F		
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C	C		
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5	3		
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B	B		
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	. 2 2 2 2 2 4 2 4 6	. 2 4 2 2 2 2 2 4 4	. 4 2 2 2 4 4	. 2		
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X X	. . . X X . . . . .	. . X X X	.		

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINES 0A,0B,17,1A,1B	COMMAND	FUNCTION	MODIFIER			
	DIAG MODE	CONTROL	12			
	SYNC/IDLE	XIO WRT	13			
	WRT BUFFER	XIO WRT	0			
	DSW ERR	DW1 ERR	DW2 ERR	ALARM		
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.		
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X X	. . . X X . . . . .	. . X X X	.		
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F	F		
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C	C		
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5	3		
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B	B		
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	. 2 2 2 2 2 4 2 4 6	. 2 4 2 2 2 2 2 4 4	. 4 2 2 2 4 4	. 2		
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X X	. . . X X . . . . .	. . X X X	.		

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE 0C	COMMAND	FUNCTION	MODIFIER			
	DIAG MODE	CONTROL	12			
	SYNC/IDLE	XIO WRT	13			
	WRT BUFFER	XIO WRT	0			
	DSW ERR	DW1 ERR	DW2 ERR	ALARM		
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.		
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X	. . . X X . . . . .	. . X X X	.		
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F	F		
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C	C		
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5	3		
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B	B		
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	. 2 2 2 2 2 4 2 4 6	. 2 4 2 2 2 2 2 4 4	. 4 2 2 2 4 4	. 2		
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X	. . . X X . . . . .	. . X X X	.		

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

NOTE... IF DATA SET SW IS NOT IN TEST, SOME ROUTINES WILL FAIL DW2 - BIT 3

ROUTINE 0D	COMMAND	FUNCTION	MODIFIER			
	DIAG MODE	CONTROL	12			
	SYNC/IDLE	XIO WRT	13			
	WRT BUFFER	XIO WRT	0			
	DSW ERR	DW1 ERR	DW2 ERR	ALARM		
	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.		
STR	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X X	. . . X X . . . . .	. . X X X	.		
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F	F		
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C	C		
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5	3		
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2		
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1		
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B	B		
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M		
	. 2 2 2 2 2 4 2 4 6	. 2 4 2 2 2 2 2 4 4	. 4 2 2 2 4 4	. 2		
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . X X	. . . X X X	. . X X		

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

SCA WRAP-AROUND TEST STR/BSC

SCA WRAP-AROUND TEST STR/BSC

ROUTINE OF	COMMAND	FUNCTION	MODIFIER				
	DIAG MODE	CONTROL	12				
	SYNC/IDLE	XIO WRT	13				
	WRT BUFFER	XIO WRT	0				
	DSW ERR	DW1 ERR	DW2 ERR	ALARM			
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.			
S/B ON	. . . . . X	. . . . . X	X X . X . X	.			
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F			
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C			
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3			
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2			
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1			
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B			
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M			
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X	. . . . . X	X X . X . .	.			

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINES 10, 11	COMMAND	FUNCTION	MODIFIER				
	DIAG MODE	CONTROL	12				
	SYNC/IDLE	XIO WRT	13				
	WRT BUFFER	XIO WRT	0				
	DSW ERR	DW1 ERR	DW2 ERR	ALARM			
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.			
S/B ON	. . . . . X	. . . . . X	X X . X . X	.			
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F			
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C			
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3			
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2			
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1			
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B			
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M			
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X	. . . . . X	X X . X . .	.			

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE OF	COMMAND	FUNCTION	MODIFIER				
	DIAG MODE	CONTROL	12				
	SYNC/IDLE	XIO WRT	13				
	WRT BUFFER	XIO WRT	0				
	DSW ERR	DW1 ERR	DW2 ERR	ALARM			
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.			
S/B ON	. . . . . X	. . . . . X	X X . X . X	.			
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F			
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C			
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3			
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2			
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1			
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B			
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M			
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X	. . . . . X	X X . X . .	.			

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE 12	COMMAND	FUNCTION	MODIFIER				
	DIAG MODE	CONTROL	12				
	SYNC/IDLE	XIO WRT	13				
	WRT BUFFER	XIO WRT	0				
	DSW ERR	DW1 ERR	DW2 ERR	ALARM			
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5	.			
S/B ON	. . . . . X	. . . . . X	X X . X . X	.			
N	F F F F F F F F F	F F F F F F F F F	F F F F F F	F			
E	C C C C C C C C C	C C C C C C C C C	C C C C C C	C			
T	3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 6	1 6 1 2 5 5	3			
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3	2			
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1			
U	B A B A B A A A A	B B B A B A A B A	B B A A B B	B			
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X	M			
BI SYN	. . . . .	. . . . .	. . . . .	.
S/B ON	. . . . . X	. . . . . X	X X . X . .	.			

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE 13	COMMAND	FUNCTION	MODIFIER
	DIAG MODE	CONTROL	12
	SYNC/IDLE	XIO WRT	13
	WRT BUFFER	XIO WRT	0
	DSW ERR	DW1 ERR	DW2 ERR ALARM
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 .
S/B ON	. . X X X X	. . . X X X X	X X . X . X .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
S/B ON	. . X X X X	. . . X X X X	X X . X . X .

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINE 15	COMMAND	FUNCTION	MODIFIER
	DIAG MODE	CONTROL	12
	SYNC/IDLE	XIO WRT	13
	WRT BUFFER	XIO WRT	0
	DSW ERR	DSW1 ERR	DSW2 ERR ALARM
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 .
S/B ON	. . X X X X	. . . X X X	X X . X . X .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
S/B ON	. . X X X X	. . . X X X	X X . X . X .

COMMENTS

TO TROUBLE SHOOT FAILURES WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

ROUTINES 14, 16, 18, 19	COMMAND	FUNCTION	MODIFIERS
	DIAG MODE	CONTROL	12
	SYNC/IDLE	XIO WRT	13
	WRT BUFFER	XIO WRT	0
	DSW ERR	DW1 ERR	DW2 ERR ALARM
STR	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 6 7 8	0 1 2 3 4 5 .
S/R ON	. . X X X X	. . . X X X	X X . X X X .
N	F F F F F F F F F F	F F F F F F F F F F	F F F F F F F F F F
E	C C C C C C C C C C	C C C C C C C C C C	C C C C C C C C C C
T	3 3 3 3 3 3 3 3 2	3 5 6 3 3 3 3 3 6	1 6 1 2 5 5 3
	5 5 5 5 5 3 4 6 1	2 3 4 2 1 4 4 4 3	1 4 1 1 2 3 2
N	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1
U	B A B A B A A A A A	B B B A B A A A B A	B B A A B B B
M	A L B M C B Q X V	C Y M R E R V P L	L L T E H X M
BI SYN	. . 2 2 2 2 4 2 4 6	2 4 2 2 2 2 2 4 4	4 2 2 2 4 4 2
S/B ON	. . X X X X	. . . X X X	X X . X X X .

COMMENTS

TO TROUBLE SHOOT FAILURE WITH SCOPE, LOOP ROUTINE AND SET UP SCOPE LOOP OPTION AS DESIRED.

----- LAST PAGE -----

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05DC          ORG      *E1500
*             EQUATE TABLE
*****
*             THIS TABLE EQUATES TEST PROGRAM LABELS
*             TO THEIR EQUIVALENT DIAGNOSTIC MONITOR
*             ADDRESSES.
*-----*
*             MONITOR ENTRY ADDRESSES
*-----*
0160 0        BEGIN EQU      /160      BEGIN ROUTINE
0161 0        START EQU     BEGIN&1   SUPERVISOR ROUTINE
0162 0        ERROR EQU    START&1   ERROR LOG ROUTINE
0163 0        LOG EQU      ERROR&1   STATUS LOG ROUTINE
0164 0        END EQU      LOG&1     END ROUTINE
*-----*
*             MONITOR CONTROL WORD ADDRESSES
*-----*
0165 0        RTNSW EQU    END&1     ROUTINE START SW
0166 0        ERLCK EQU   END&2     LOCK ON ERR CONTROL
0167 0        LOGBY EQU   END&3     I/O BUSY SW ADDR
0168 0        RLCF EQU    END&4     RELOC FACTOR ADDR
*-----*
*             INTERRUPT TRANSFER VECTOR ADDRESSES
*-----*
017A 0        IL0 EQU     /17A      INTERRUPT LEVEL 0
018A 0        IL1 EQU     IL0&16   INTERRUPT LEVEL 1
019A 0        IL2 EQU     IL1&16   INTERRUPT LEVEL 2
01AA 0        IL3 EQU     IL2&16   INTERRUPT LEVEL 3
01BA 0        IL4 EQU     IL3&16   INTERRUPT LEVEL 4
01BB 0        RQTY EQU    IL4&1    CON/PRINT REQUEST
01BC 0        RQKB EQU    RQTY&1   USE KEYBOARD REQUEST
01BD 0        SVKB EQU    RQKB&1   KB SERVICE REQUEST
*****
*-----*
*             SCA WRAP-AROUND TEST
*-----*
*****
*             PROGRAM STATUS TABLE
*****
05DC 0 0319   PID DC      /0319    PROGRAM ID
05DD 0 0000   RID DC      /0000    ROUTINE NUMBER
05DE 0 0000   RAD DC      /0000    ROUTINE ADDRESS
05DF 0 0000   SW0 DC      0        PROGRAM CONTROL
05E0 0 0000   SW1 DC      0        ROUTINE SELECTION
05E1 0 0000   SW2 DC      0        OPTION SELECTION SW
05E2 0 0000   SW3 DC      0        RTN SCAN OPTION
05E3 1 093A   DC         PLOOP    LOOP PROGRAM
05E4 1 0927   DC         STRT     RESTART ADDRESS
05E5 1 0927   MLSCF DC    STRT     ENTRY SET IN MN/LINE
05E6 0 FFFF   DC         /FFFF    TERMINATOR
*-----*
*             LOCK ON FUNCTION ROUTINE
*****
05E7 0 0000   LOCK DC     /0000
05E8 1 C400 05DF LD L     SW0      LD SW0
05EA 0 EC80 0166 OR I     ERLCK   OR WITH MON LOCK SW
05EC 0 100A   SLA     10      CHECK BIT 10
05ED 1 4C90 05E7 BSC I   LOCK,-   BR IF NOT LOCK/FUNC

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31900020
31900030
31900040
31900050
31900060
31900070
31900080
31900090
31900100
31900110
31900120
31900130
31900140
31900150
31900160
31900170
31900180
31900190
31900200
31900210
31900220
31900230
31900240
31900250
31900260
31900270
31900280
31900290
31900300
31900310
31900320
31900330
31900340
31900350
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31900370
31900380
31900390
31900400
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31900490
31900500
31900510
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31900560
31900570
31900580
31900590
31900600
31900610
31900620
31900630
31900640
31900650
31900660
31900670
31900680
31900690

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05EF 1 C400 05F5
05F1 1 4CA0 05F5
05F3 1 4C80 05E7
05F5 0 0000
*
05F6 0 6700 FFE6
05F8 1 CF00 0676
05FA 1 DF00 0710
05FC 0 7302
05FD 0 70FA
*
05FE 0 4480 0160
0600 1 05DC
*
0601 0 0000
0602 0 1000
*
0603 0 0000
0604 1 7401 06E9
0606 0 6700 FFE6
0608 1 CF00 0710
060A 1 DF00 0676
060C 0 7302
060D 0 70FA
*
060E 1 C400 05E1
0610 1 E400 0798
0612 1 F400 0798
0614 1 EC80 0603
*
0616 0 1888
0617 1 D400 06ED
*
0619 0 1010
061A 1 D400 06E5
061C 0 1084
061D 1 D400 064E
*
061F 0 1010
0620 0 1082
0621 1 4C20 0628
*
0623 1 C400 06DC
0625 0 D036
0626 0 D036
0627 0 7013
*
0628 1 4C04 0633
*
062A 1 C400 06DC

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```

LD L LOOP      LOAD LOOP ADDR
BSC I LOOP,Z   LOOP ON LAST FUNC
BSC I LOCK     IF LOOP ADDR NOT 0
LOOP DC **     LOCK/ERR LOOP ADR.
*
*****
*             TEST INITIALIZATION
*****
*-----*
*             MON INITIALIZATION
*-----*
BEGN LDX L3 -26
SVWTS LDD L3 SIX+26
      STD L3 WTSV0+26
      MDX 3 2
      MDX SVWTS
*
BSI I BEGIN    MON INITIALIZATION
DC PID        PST TABLE
*-----*
*             START OF TEST AND SINGLE-PASS INITIALIZE
*-----*
*****
*             PROGRAM WAIT
*****
* THIS ROUTINE IS USED BY THE TEST PROGRAM
* TO MARK TIME WHILE WAITING FOR AN INTERRUPT
* TO OCCUR.
*****
WCNT DC 0      WAIT COUNTER
DELY3 DC /1000 DELAY CONSTANT
*
GO DC **
MDX L LOPSW,&1 TURN_EXP INTRPT SW
RSTRT LDX L3 -26
      LDD L3 WTSV0+26 MOVE DATA
      STD L3 SIX+26   TO A 2ND. AREA
      MDX 3 2
      MDX RSTRT+2
*
LD L SW2      PICK UP SWITCH READING
AND L K0001   DECIDES IF STR PARAM. S/B
EOR L K0001
OR I GO      TO PICK UP PARAMETERS
*
SRT 8        SHIFTS SWS.8-11 INTO EXT
STO L PASS   PASS CNT. NOW IN ACC
*
SLA 16      CLEAR COMBINED DSW WD.
STO L DSWAL SWS. 8-11 NOW IN ACC,INTCN
SLT 4
STO L STRMD+1 INT CNT GOES IN STR MODE
*
SLA 16      ACC CLEARED
SLT 2       SWS. 12 & 13 NOW IN ACC
BSC L CKSIX,Z BRANCH IF ACC IS NONZER/
              CKSIX IF SW 12 OR 13 IS ON
*
LD L NOPS
STO SIX     PUT NOP INSTR WHERE SIXWAS
STO SEVEN  PUT NOP INSTR WHERE SVNWAS
MDX CKSYN  CHECK SYNC MODE
*
CKSIX BSC L SVN,E BR IF ACC IS ODD(SW 7)
*
LD L NOPS   BIT SEVEN IS OFF

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062C 1 D400 065D	STO L SEVEN	NOP SEVEN	31901380
062E 1 D400 0664	STO L WAIT2	NOP WAIT2	31901390
0630 1 D400 0665	STO L WAIT2+1	NOP READ BUF INST FOR WAIT	31901400
0632 0 7004	MDX SVN+4	2 NOP WAIT3	31901410
	*		31901420
0633 1 C400 06DC	SVN LD L NOPS	BIT 7 IS ON	31901430
0635 1 D400 065C	STO L SIX	NOP SIX	31901440
0637 1 D400 0666	STO L WAIT3	NOP WAIT3	31901450
0639 1 D400 0667	STO L WAIT3+1	NOP READ BUF AFTER WAIT 3	31901460
	*		31901470
063B 0 1081	CKSYN SLT 1	SW 14 NOW IN ACC	31901480
063C 1 4C04 0646	BSC L NOSYN,E	BR IF ACC IS ODD(SW14OFF)	31901490
	*		31901500
063E 1 C400 06DC	LD L NOPS		31901510
0640 1 D400 065F	STO L WRITE	NOP INSTR TO LOAD BUF.	31901520
0642 1 D400 0661	STO L WAIT0+1	NOP, NO TIME TO LD. BUF.	31901530
0644 1 D400 0671	STO L WAIT8+1	NOP	31901540
	*		31901550
0646 0 1081	NOSYN SLT 1	SW 15 NOW IN ACC	31901560
0647 1 4C04 064D	BSC L STRMD,E	BR IF ACC IS ODD,SW 15 ON	31901570
	*		31901580
0649 1 CC00 06DC	LDD L NOPS	SW 15 IS OFF	31901590
064B 1 DC00 0660	STD L WAIT0	1ST.WRT NOT NEEDED IN BSC	31901600
	*		31901610
064D 0 6700 0000	STRMD LDX L3 *-*		31901620
064F 1 7780 064E	MDX I3 STRMD+1	SW 15 IS ON, STR MODE	31901630
0651 0 7001	MDX SET	PICK UP BR INSTRUC.	31901640
0652 0 7004	MDX NOSET		31901650
	*		31901660
0653 1 CC00 06DE	SET LDD L BR	BRANCH INSTRUCTION	31901670
0655 1 DF00 0662	STD L3 WAIT1	WAIT 1 NO LONGER NEEDED	31901680
	*		31901690
0657 1 0C00 0994	NOSFT XIO L RESET	EXECUTE RESET	31901700
	*		31901710
0659 1 0C00 06CE	XIO L SYALT	LOAD SYNC ALT PATTERN	31901720
	*		31901730
065B 0 7000	MDX SIX		31901740
065C 0000	BSS E 0		31901750
	*		31901760
	* THE FOLLOWING INSTRUCTIONS ARE MODIFIED BY THE		
	* PROGRAM TO ALLOW THE CORRECT NUMBER OF INTER-		
	* RUPTS FOR EACH TEST ROUTINE. SOME XIO INSTRUC-		
	* TIONS MAY BE REPLACED BY NOP INSTRUCTIONS TO		
	* ALLOW THE PROPER SEQUENCES OF INTERRUPT SERVICING		

			31901820
			31901830
065C 0 087D	SIX XIO SET6	FOR SIX BIT CHAR.	31901840
	*		31901850
065D 0 087A	SEVEN XIO SET7	FOR SEVEN CHAR.	31901860
	*		31901870
065E 0 0861	XIO DIAG	EXECUTE DIAG MODE	31901880
	*		31901890
065F 0 0876	WRITE XIO WRCAT	LOAD BUFFER	31901900
	*		31901910
	*		31901920
	*		31901930
0660 0 3000	WAIT0 WAIT 0	WAIT FOR STR WRITE RSP.	31901940
0661 0 0874	XIO WRCAT	LOAD BUFFER	31901950
	*		31901960
0662 0 3001	WAIT1 WAIT 1	WAIT FOR 1ST. READ RSP.	31901970
0663 0 0860	XIO RDCAT	READ BUFFER	31901980
	*		31901990
0664 0 3002	WAIT2 WAIT 2	WAIT FOR 2ND.READ RSP.	31902000
0665 0 085E	XIO RDCAT	READ BUFFER	31902010
	*		31902020
0666 0 3003	WAIT3 WAIT 3	WAIT FOR 3RD.READ RSP.	31902030
0667 0 085C	XIO RDCAT	READ BUFFER	31902040
	*		31902050

0668 0 3004	WAIT4 WAIT 4	WAIT FOR 4TH.READ RSP.	31902060
0669 0 085A	XIO RDCAT	READ BUFFER	31902070
	*		31902080
066A 0 3005	WAIT5 WAIT 5	WAIT FOR 5TH.READ RSP.	31902090
066B 0 0858	XIO RDCAT	READ BUFFER	31902100
	*		31902110
066C 0 3006	WAIT6 WAIT 6	WAIT FOR 6TH.READ RSP.	31902120
066D 0 0856	XIO RDCAT	READ BUFFER	31902130
	*		31902140
066E 0 3007	WAIT7 WAIT 7	WAIT FOR 7TH.READ RSP.	31902150
066F 0 0854	XIO RDCAT	READ BUFFER	31902160
	*		31902170
0670 0 3008	WAIT8 WAIT 8	WAIT FOR 8TH.READ RSP.	31902180
0671 0 0864	XIO WRCAT	LOAD BUFFER	31902190
	*		31902200
0672 0 3009	WAIT9 WAIT 9	WAIT FOR WRITE RESPONSE	31902210
0673 0 0850	XIO RDCAT	READ THE BUFFER	31902220
	*		31902230
0674 0 300A	WAITA WAIT /A	WAIT FOR 9TH.READ RSP.	31902240
0675 0 084E	XIO RDCAT	READ THE BUFFER	31902250
0676 1 74FF 06FD	MDX L PASS,-1	DECREMENT PASS CNT.	31902260
0678 0 70EB	MDX WAIT2		31902270
	*		31902280
	*		31902290
	*		31902300
0679 0 084E	END2 XIO RDIA1	READ DIAG. WD.1	31902310
067A 0 084F	XIO RDIA2	READ DIAG. WD.2	31902320
067B 0 0850	XIO ENDDP	END OPERATION	31902330
	*		31902340
067C 0 C069	LD DIAW1	LOAD STORD DW1	31902350
067D 0 D054	STO DI1AL	SAVE TO ACCUMULATE	31902360
067E 0 C068	LD DIAW2	LOAD STORED DW2	31902370
067F 0 D054	STO DI2AL	SAVE TO ACCUMULATE	31902380
	*		31902390
0680 0 0847	XIO RDIA1	READ DIAG.WD1 AGAIN	31902400
0681 0 0848	XIO RDIA2	READ DIAG.WD2 AGAIN	31902410
	*		31902420
0682 0 C063	LD DIAW1	LOAD STORED DW1	31902430
0683 0 E84E	OR DI1AL	DIFFER FROM PREVIOUS ONE?	31902440
0684 0 D04D	STO DI1AL	SAVE ACCUMULATED DW1	31902450
0685 0 C061	LD DIAW2	LOAD STORED DW2	31902460
0686 0 E84D	OR DI2AL	DIFFER FROM PREVIOUS 2 .	31902470
0687 0 D04C	STO DI2AL	SAVE ACCUMULATED DW2	31902480
	*		31902490
0688 1 6C00 06EA	STX L PRTPN	TURN ON INTRPT RCV.	31902500
	*		31902510
068A 1 C400 0602	WAITX LD L DELY3	LD 4 SEC CONSTANT	31902520
068C 1 D400 0601	STO L WCNT	SET IN WAIT COUNTER	31902530
068E 1 C400 05E1	LD L SW2	LD RTN OPTION SWT	31902540
0690 0 100B	SLA 11	CK FOR 2 MICRO SPEED	31902550
0691 0 4810	BSC -	SKIP IF ON	31902560
0692 0 7005	MDX WAITC	BRANCH	31902570
0693 1 C400 0601	LD L WCNT	LD WAIT COUNT	31902580
0695 0 1001	SLA 1	DOUBLE IT	31902590
0696 1 D400 0601	STO L WCNT	LD 4 SEC CONSTANT	31902600
0698 0 0829	WAITC XIO DSWSE	SENSE DSW	31902610
0699 1 EC00 06E5	OR L DSWAL	SAVE DSW DATA	31902620
069B 1 D400 06E5	STO L DSWAL		31902630
069D 0 082A	XIO RDIA1	READ DIAG WORD 1	31902640
069E 0 082B	XIO RDIA2	READ DIAG WORD 2	31902650
069F 1 C400 06E6	LD L DIAW1		31902660
06A1 0 E830	OR DI1AL	SAVE DIAG 1 DATA	31902670
06A2 0 D02F	STO DI1AL		31902680
06A3 1 C400 06E7	LD L DIAW2		31902690
06A5 0 E82E	OR DI2AL	SAVE DIAG 2 DATA	31902700
06A6 0 D02D	STO DI2AL		31902710
06A7 1 6700 06AD	LDX L3 WAITB	SET UP MON RETURN	31902720
06A9 1 6F00 05E5	STX L3 MLSCF		31902730

SCA WRAP-AROUND TEST STR/BSC

SCA WRAP-AROUND TEST STR/BSC

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* THIS ROUTINE CHECKS SWITCHES AND CONTROLS
* THE SEQUENCE IN WHICH TEST ROUTINES ARE RUN
*****
*
073A 0 0000      CNTRL DC      /0000      31904100
073B 1 0400 05E0  LD      L      SW1      31904110
073D 1 4C08 0749  BSC      L      CN20,&    BRANCH IF NO RTN SELECTED 31904120
073F 1 0400 0500  STO      L      RID      SAVE NEW RTN NUMBER     31904130
0741 0 9051      S          RIDCK      31904140
0742 1 4C08 0750  BSC      L      CN30,&    BR IF VALID RTN        31904150
0744 0 1810      SRA      16            31904160
0745 1 0400 05E0  STO      L      SW1      IF INVALID RTN GO      31904170
0747 1 0400 05DD  STO      L      RID      TO RTN ONE                    31904180
0749 1 7401 0500  CN20    MDX      L      RID,1  ADV TO NEXT RTN        31904190
074B 1 0400 0500  LD      L      RID      31904200
074D 0 9045      S          RIDCK      31904210
074E 1 4C30 0760  BSC      L      ENMSG,-Z  PRINT RESTORE MSG      31904220
0750 1 6780 05DD  CN30    LDX      I3      RID      31904230
0752 1 0700 0777  LD      L3      RTTBL-1  FETCH RETURN ADDR     31904240
0754 1 0400 050E  STO      L      RAD      31904250
0756 1 0400 05F5  STO      L      LOOP     LOAD LOOP RTN ADDR.    31904260
0758 1 0400 05E5  STO      L      MLSCF    SET MLSCF FOR RETURN   31904270
075A 0 0400 0165  STO      L      RTNSW    31904280
075C 1 4400 079A  BSI      L      CKOPT    CK FOR FUNC 2&3      31904290
075E 0 4480 0161  BSI      I      START    GO TO MONITOR          31904300
*
0760 0 630C      ENMSG  LDX      3 12     CLR PRINT TABLE      31904310
0761 0 1010      SLA      16            31904320
0762 1 0700 0031  STO      L3      TABLE-1  31904330
0764 0 73FF      MDX      3 -1          31904340
0765 0 70FC      MDX      ENMSG&2     31904350
0766 1 0400 05DD  STO      L      RID      RESET RTN ID           31904360
0768 1 6700 0CB3  LDX      L3      NMSG     31904370
076A 1 6F00 0D35  STX      L3      TABLF&3  SET ALPHA MSG         31904380
076C 0 6304      LDX      3 4          31904390
076D 1 6F00 0D32  STX      L3      TABLE  SET UP MSG ID         31904400
076F 1 0C00 0992  XIO      L      BZON     EXECUTE ALARM ON      31904410
0771 0 4480 0163  BSI      I      LOG      GO TYPE MESSAGE          31904420
0773 1 0D32      DC          TABLE     31904430
0774 1 0C00 0998  XIO      L      BZOFF    EXECUTE ALARM OFF     31904440
0776 0 4480 0164  BSI      I      END      END PROGRAM              31904450
*
*****
*
ROUTINE SEQUENCE TABLE
*****
*
0778 1 099C      RTTBL DC      RT01      31904510
0779 1 09A9      DC      RT02      31904520
077A 1 09B9      DC      RT03      31904530
077B 1 09CA      DC      RT04      31904540
077C 1 09DA      DC      RT05      31904550
077D 1 09EA      DC      RT06      31904560
077E 1 09FA      DC      RT07      31904570
077F 1 0A0A      DC      RT08      31904580
0780 1 0A1A      DC      RT09      31904590
0781 1 0A29      DC      RT0A      31904600
0782 1 0A3A      DC      RT0B      31904610
0783 1 0A4A      DC      RT0C      31904620
0784 1 0A5A      DC      RT0D      31904630
0785 1 0A6A      DC      RT0E      31904640
0786 1 0A7A      DC      RT0F      31904650
0787 1 0A8A      DC      RT10      31904660
0788 1 0A9A      DC      RT11      31904670
0789 1 0AAA      DC      RT12      31904680
078A 1 0ABA      DC      RT13      31904690
078B 1 0AC9      DC      RT14      31904700
078C 1 0ADA      DC      RT15      31904710
078D 1 0AE9      DC      RT16      31904720

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078E 1 0B00      DC      RT17      31904780
078F 1 0B25      DC      RT18      31904790
0790 1 0B36      DC      RT19      31904800
0791 1 0B4R      DC      RT1A      31904810
0792 1 0B60      DC      RT1B      31904820
*****
*
0793 0 001B      RLOCK DC          LRTN-RTTBL&1 31904830
0794 0 0000      S2WAS DC      *-*      SW2 WAS      31904840
0795 0 0000      S3WAS DC      *-*      SW3 WAS      31904850
0796 1 7401 0944  SAVFI MDX      L      RSTSW,&1  ALLOW RESET    31904860
0798 0 0001      K0001 DC      /0001      31904870
0799 0 0000      ESTCK DC      *-*      31904880
*
079A 0 0000      CKOPT DC      *-*      31904890
079B 0 00F8      LD      S2WAS      LOAD SW2 WAS      31904900
079C 1 F400 05F1  EDR      L      SW2      COMPARE WITH SW2 NOW 31904910
079E 0 4820      BSC      Z          CHK FOR CHANGE     31904920
079F 0 7065      MDX      S2PNT     SET UP TO PRINT OPTS 31904930
07A0 1 0400 05F1  LD      L      SW2      LD RTN OPTION SW    31904940
07A2 0 100B      SLA      11         CK FOR 2 MICRO SPEED 31904950
07A3 1 4428 08B0  BSI      L      LOG11,&Z  31904960
07A5 1 0400 05F1  LD      L      SW2      LD RTN OPTION SW    31904970
07A7 0 100C      SLA      12         CHK FOR DIAGNOSTIC  31904980
07A8 1 4428 0847  BSI      L      DIAMD,&Z  SET UP DIAG MD      31904990
07AA 0 630A      LDX      3 10       31905000
07AB 1 6F00 0AFF  STX      L3      RT16&5  SET RTN PASS CNT / 2 31905010
07AD 1 6F00 0B10  STX      L3      WRAP+1  SET RTN PASS CNT / 2 31905020
07AF 1 0400 05E1  LD      L      SW2      LD RTN OPTION SW    31905030
07B1 0 100D      SLA      13         CHK FOR ALT RESET   31905040
07B2 1 4428 0854  BSI      L      NORST,&Z  SET UP FOR NO RESET  31905050
07B4 0 00E1      LD      SAVE1      ALLOW RESET         31905060
07B5 1 0400 094A  STO      L      RSOFF    31905070
07B7 0 00DF      LD      SAVE1&1    31905080
07B8 1 0400 0948  STO      L      RSOFF&1  31905090
07BA 1 0400 05E1  LD      L      SW2      LD RTN OPTION SW    31905100
07BC 0 100E      SLA      14         CK FOR FAST PASS    31905110
07BD 1 4428 085F  BSI      L      FAST1,&Z  SET UP FAST PASS    31905120
07BF 0 6700 1000  LDX      L3      /1000   31905130
07C1 1 6F00 0602  STX      L3      DELY3   RESTORE NORMAL DELAY 31905140
07C3 1 0400 05F1  LD      L      SW2      LOAD SW2            31905150
07C5 0 100A      SLA      10         CHK IF SEL CHAR     31905160
07C6 1 4C28 07D1  BSC      L      OPRTN,&Z  BRANCH IF SEL CHAR  31905170
07C8 0 00CC      LD      S3WAS      LOAD SW3 WAS        31905180
07C9 1 F400 05E2  FOR      L      SW3      COMPARE WITH SW3 NOW 31905190
07CB 0 4820      BSC      Z          31905200
07CC 0 7006      MDX      S3PNT     SET UP TO PRINT     31905210
*
07CD 1 0400 05E2  NOPNT LD      L      SW3   SCOPE LOOP          31905220
07CF 0 4820      BSC      Z          LD SCOPE OPT SW    31905230
07D0 0 7022      MDX      SCOPE     CK WHAT TIME BASE   31905240
07D1 1 4C80 079A  OPRTN BSC      I      CKOPT  EXIT TO RETURN      31905250
*
07D3 1 0400 05E2  S3PNT LD      L      SW3   LOAD SW3            31905260
07D5 1 0400 0795  STO      L      S3WAS    STORE IN SW3 WAS    31905270
07D7 0 4820      BSC      Z          CHK IF ON           31905280
07D8 0 7001      MDX      LOG02     LOG SCOPE LOOP      31905290
07D9 0 70F3      MDX      NOPNT     CHK FOR SCOPE OPTION 31905300
*
07DA 0 630C      LOG02 LDX      3 12     CLFAR MSG TABLE    31905310
07DB 0 1010      SLA      16            31905320
07DC 1 0700 0D31  STO      L3      TABLE-1  31905330
07DE 0 73FF      MDX      3 -1          31905340
07DF 0 70FC      MDX      LOG02&2     31905350
07E0 1 6700 0CA1  LDX      L3      ADR6     SET UP ALPHA MSG     31905360
07E2 1 6F00 0D35  STX      L3      TABLE&3  31905370
07E4 0 6302      LDX      3 2          SET UP MSG ID        31905380
07E5 1 6F00 0D32  STX      L3      TABLE  31905390

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07E7	0	6300	LDX	3	0		31905460
07F8	1	6F00	STX	L3	TABLE&2		31905470
07EA	1	0C00	XIO	L	BZON	EXECUTE ALARM ON	31905480
07EC	0	4480	BSI	I	LOG	GO PRINT MESSAGE	31905490
07EE	1	0D32	DC		TABLE		31905500
07EF	1	0C00	XIO	L	BZOFF	EXECUTE ALARM OFF	31905510
07F1	1	4C00	BSC	L	NOPNT	SFT UP SCOPE LOOP	31905520
*							
07F3	1	0400	SCOPE	LD	L	RAD	CHK IF NO SCOPE
07F5	0	90A2	S		K0001		31905540
07F6	0	00A2	STO		FSTCK		31905550
07F7	1	0480	LD	I	FSTCK		31905560
07F9	0	4820	BSC	Z			31905570
07FA	0	7001	MDX		SCOPI	NO, ALLOW LOOP	31905580
07FB	0	70D5	MDX		OPRTN	EXIT TO RETURN	31905590
07FC	1	0400	SCOPI	LD	L	SW3	SET UP SCOPE DELAY
07FE	0	4820	BSC	Z		CHK IF DELAY SELECTED	31905600
07FF	0	7001	MDX		SCOPI		31905610
0800	0	70D0	MDX		OPRTN	EXIT TO RETURN	31905620
0801	0	1004	SCOPI	SLA	4		31905630
0802	1	0400	STO	L	DFLY3		31905640
0804	0	70CC	MDX		OPRTN	EXIT TO RETURN	31905650
*							
0805	0	630C	S2PNT	LDX	3	12	CLEAR PRINT TABLE
0806	0	1010	SLA		16		31905660
0807	1	0700	STO	L3	TABLE-1		31905670
0809	0	73FF	MDX	3	-1		31905700
080A	0	70FC	MDX		S2PNT&2		31905710
080B	1	0400	LD	L	SW2	LOAD SW2	31905720
080D	0	100A	SLA		10	CHK SELECT CHAR ON	31905730
080E	1	4428	BSI	L	LOG10,&Z		31905740
0810	1	0400	LD	L	SW2	LD RTN OPTION SWT	31905750
0812	0	1008	SLA		11	CK FOR 2 MICRO SPEED	31905760
0813	1	4428	BSI	L	LOG11,&Z		31905770
0815	1	0400	LD	L	SW2	LOAD SW2	31905780
0817	0	100C	SLA		12	CHK DIAG RUN ON	31905790
0818	1	4428	BSI	L	LOG12,&Z		31905800
081A	1	0400	LD	L	SW2	LOAD SW2	31905810
081C	0	100D	SLA		13	CHK NO RESET ON	31905820
081D	1	4428	BSI	L	LOG13,&Z		31905830
081F	1	0400	LD	L	SW2	LOAD SW2	31905840
0821	0	100E	SLA		14	CHK FAST PASS ON	31905850
0822	1	4428	BSI	L	LOG14,&Z		31905860
0824	1	0400	LD	L	SW2	LOAD SW2	31905870
0826	0	100F	SLA		15	CHECK FAR BI SYN	31905880
0827	1	4428	BSI	L	LOG15,&Z		31905890
0829	1	0400	LD	L	SW2	LOAD SW2	31905900
082B	1	0400	STO	L	S2WAS	STORE IN SW2 WAS	31905910
082D	1	6700	LOG01	LDX	L3	LOG1	SET UP ALPHA MSG
082F	1	6F00	STX	L3	TABLE&3		31905920
0831	0	6301	LDX	3	1	SET UP MSG ID	31905930
0832	1	6F00	STX	L3	TABLE		31905940
0834	0	6300	LDX	3	0	SET UP MODIFIERS	31905950
0835	1	6F00	STX	L3	TABLE&2		31905960
0837	1	0C00	XIO	L	BZON	EXECUTE ALARM ON	31905970
0839	0	4480	BSI	I	LOG	GO LOG MESSAGE	31905980
083B	1	0D32	DC		TABLE		31905990
083C	1	0C00	XIO	L	BZOFF	EXECUTE ALARM OFF	31906000
083E	0	631D	LDX	3	29	CLEAR OUT MSG TABLE	31906010
083F	1	0400	CLLOG	LD	L	LOG18-1	31906020
0841	1	0700	STO	L3	LOG1-1		31906030
0843	0	73FF	MDX	3	-1		31906040
0844	0	70FA	MDX		CLLOG		31906050
0845	1	4C00	BSC	L	CKOPT&6		31906060
*							
0847	0	0000	DIAMD	DC		*-*	31906070
0848	1	7401	MDX	L	SWDIA,&1	TURN ON DIAG OPT SW	31906080
084A	0	1000	NOP				31906090
							31906100
							31906110
							31906120
							31906130

084B	0	6340	LDX	3	64		31906140
084C	1	6F00	STX	L3	RT16&5	SET RTN PASS TO 64	31906150
084E	1	6F00	STX	L3	WRAP&1	SET RTN PASS TO 64	31906160
0850	1	7405	MDX	L	DIAMD,&5	MODIFY RETURN ADDR	31906170
0852	1	4C80	BSC	I	DIAMD	EXIT TO RETURN	31906180
*							
0854	0	0000	NORST	DC		*-*	31906190
0855	1	0400	LD	L	K1000	LOAD NOP	31906200
0857	1	0400	STO	L	RSOFF	PREVENT RESET	31906210
0859	1	0400	STO	L	RSOFF&1		31906220
085B	1	7406	MDX	L	NORST,&6	MODIFY RETURN	31906230
085D	1	4C80	BSC	I	NORST	EXIT TO RETURN	31906240
*							
085F	0	0000	FAST1	DC		*-*	31906250
0860	1	0400	LD	L	RAD	CK IF FAST PASS OK	31906260
0862	1	9400	S	L	K0001		31906270
0864	1	0400	STO	L	FSTCK		31906280
0866	1	0480	LD	I	FSTCK	CHK FOR FAST PASS	31906290
0868	0	4820	BSC	Z			31906300
0869	0	7002	MDX		FAST2	FAST PASS ALLOWED	31906310
086A	1	4C80	BSC	I	FAST1	EXIT TO RETURN	31906320
*							
086C	0	6700	FAST2	LDX	L3	/0100	SET UP 250 MSEC ANAL
086E	1	6F00	STX	L3	DELY3		31906330
0870	1	7404	MDX	L	FAST1,&4	MODIFY RETURN EXIT	31906340
0872	0	70F7	MDX		FAST2-2	EXIT TO RETURN	31906350
*							
0873	0	0000	SELCH	DC		*-*	31906360
0874	0	001B	LD		PASS1	LOAD 1ST PASS SW	31906370
0875	0	4820	BSC	Z			31906380
0876	0	701A	MDX		CHPNT	PRINT MSG IF ON	31906390
0877	0	1000	SLA		0	NO-OP	31906400
0878	0	1000	SLA		0	NO-OP	31906410
0879	1	0400	LD	L	S3WAS	LOAD SW3	31906420
087B	1	0400	FOR	L	SW3	EOR WITH SW3 NOW	31906430
087D	0	4820	BSC	Z		CHK IF SW3 CHANGED	31906440
087E	0	7012	MDX		CHPNT	GO PRINT SEL CHAR	31906450
087F	1	0400	CHRTN	LD	L	SW3	FETCH CHAR
0881	1	0400	STO	L	S3WAS	STORE INTO SW3 WAS	31906460
0883	0	1008	SLA		8		31906470
0884	1	0400	STO	L	RDCPR	SET UP RD CHAR S/B	31906480
0886	1	0400	STO	L	SEND	SET UP WRT BUFFER	31906490
0888	0	1010	SLA		16	CLEAR ACC	31906500
0889	0	1000	SLA		0	NO-OP	31906510
088A	1	0400	STO	L	ALT		31906520
088C	0	6300	LDX	3	0		31906530
088D	0	6B02	STX	3	PASS1	TURN OFF 1ST PASS SW	31906540
088E	1	4C80	BSC	I	SELCH	EXIT TO RETURN	31906550
*							
0890	0	0001	PASS1	DC		/0001	31906560
*							
0891	1	0400	CHPNT	LD	L	SW3	LOAD SW3
0893	0	1008	SLA		8		31906570
0894	0	0001	STO		PNTCH	STORE NEW CHAR	31906580
0895	0	7001	MDX		LOG03	SET UP MESSAGE	31906590
*							
0896	0	0000	PNTCH	DC		*-*	31906600
*							
0897	0	630C	LOG03	LDX	3	12	CLEAR MSG TABLE
0898	0	1010	SLA		16		31906610
0899	1	0700	STO	L3	TABLE-1		31906620
089B	0	73FF	MDX	3	-1		31906630
089C	0	70FC	MDX		LOG03&2		31906640
089D	1	6700	LDX	L3	ADR7	SET UP ALPHA MSG	31906650
089F	1	6F00	STX	L3	TABLE&3		31906660
08A1	0	6303	LDX	3	3	SET UP MSG ID	31906670
08A2	1	6F00	STX	L3	TABLE		31906680
08A4	0	6301	LDX	3	1	SET UP MODIFIERS	31906690
							31906700
							31906710
							31906720
							31906730
							31906740
							31906750
							31906760
							31906770
							31906780
							31906790
							31906800
							31906810

SCA WRAP-AROUND TEST STR/BSC

```

08A5 1 6F00 0D34      STX  L3 TABLE&2      31906820
08A7 1 C400 0896      LD   L  PNTCH          31906830
08A9 1 D400 0D37      STO  L  TABLE&5      31906840
08AB 1 0C00 0992      XIO  L  BZON           31906850
08AD 0 4480 0163      BSI  I  LOG           31906860
08AF 1 0D32           DC   TABLE           31906870
08B0 1 0C00 0998      XIO  L  BZOFF         31906880
08B2 0 70CC           MDX  CHRTN           31906890
*
08B3 0 0000           *--*
08B4 0 6306           LDX  3 6             31906910
08B5 1 C700 08EE      LD   L3 AOLOG-1       31906920
08B7 1 D700 0908      STO  L3 LOG1-1        31906930
08B9 0 73FF           MDX  3 -1            31906940
08BA 0 70FA           MDX  LOG10&2         31906950
08BB 1 4C80 08B3      BSC  I  LOG10         31906960
*
08BD 0 0000           *--*
08BE 0 6304           LDX  3 4             31906970
08BF 1 C700 0904      LD   L3 E1LOG-1       31906980
08C1 1 D700 0921      STO  L3 LOG1E-1       31906990
08C3 0 73FF           MDX  3 -1            31907000
08C4 0 70FA           MDX  LOG11&2         31907010
08C5 1 4C80 08BD      BSC  I  LOG11         31907020
*
08C7 0 0000           *--*
08C8 0 6304           LDX  3 4             31907030
08C9 1 C700 08F4      LD   L3 A1LOG-1       31907040
08CB 1 D700 090F      STO  L3 LOG1A-1       31907050
08CD 0 73FF           MDX  3 -1            31907060
08CE 0 70FA           MDX  LOG12&2         31907070
08CF 1 4C80 08C7      BSC  I  LOG12         31907080
*
08D1 0 0000           *--*
08D2 0 6304           LDX  3 4             31907090
08D3 1 C700 08F8      LD   L3 B1LOG-1       31907100
08D5 1 D700 0914      STO  L3 LOG1B-1       31907110
08D7 0 73FF           MDX  3 -1            31907120
08D8 0 70FA           MDX  LOG13&2         31907130
08D9 1 4C80 08D1      BSC  I  LOG13         31907140
*
08DB 0 9000           *--*
08DC 0 6305           LDX  3 5             31907150
08DD 1 C700 08FC      LD   L3 C1LOG-1       31907160
08DF 1 D700 0919      STO  L3 LOG1C-1       31907170
08E1 0 73FF           MDX  3 -1            31907180
08E2 0 70FA           MDX  LOG14&2         31907190
08E3 1 4C80 08DB      BSC  I  LOG14         31907200
*
08E5 0 9000           *--*
08E6 0 6303           LDX  3 3             31907210
08E7 1 C700 0901      LD   L3 D1LOG-1       31907220
08E9 1 D700 091F      STO  L3 LOG1D-1       31907230
08EB 0 73FF           MDX  3 -1            31907240
08EC 0 70FA           MDX  LOG15&2         31907250
08ED 1 4C80 08E5      BSC  I  LOG15         31907260
*
08EF 0 9A36           AOLOG DC /9A36        SE 31907270
08F0 0 5E36           DC /5E36             LE 31907280
08F1 0 1E9E           DC /1E9E             CT 31907290
08F2 0 211E           DC /211E             C  31907300
08F3 0 263E           DC /263E             HA 31907310
08F4 0 6200           DC /6200             R. 31907320
*
08F5 0 3222           A1LOG DC /3222        DI 31907330
08F6 0 3E16           DC /3E16             AG 31907340
08F7 0 2162           DC /2162             R  31907350
08F8 0 B276           DC /B276            UN 31907360

```

```

08F9 0 7652
08FA 0 2162
08FB 0 369A
08FC 0 369E
08FD 0 123E
08FE 0 9A9E
08FF 0 2156
0900 0 3F9A
0901 0 9A21
0902 0 1A22
0903 0 219A
0904 0 A676
0905 0 21D8
0906 0 2172
0907 0 221E
0908 0 6252
0909 0 2121
090A 0 2121
090B 0 2121
090C 0 2121
090D 0 2121
090E 0 2121
090F 0 2121
0910 0 2121
0911 0 2121
0912 0 2121
0913 0 2121
0914 0 2121
0915 0 2121
0916 0 2121
0917 0 2121
0918 0 2121
0919 0 2121
091A 0 2121
091B 0 2121
091C 0 2121
091D 0 2121
091E 0 2121
091F 0 2121
0920 0 2121
0921 0 2121
0922 0 2121
0923 0 2121
0924 0 2121
0925 0 2121
0926 0 FFFF

```

```

*
B1LOG DC /7652 NO
DC /2162 R
DC /369A ES
DC /369E ET
*
C1LOG DC /123E FA
DC /9A9E ST
DC /2156 P
DC /3E9A AS
DC /9A21 S
*
D1LOG DC /1A22 BI
DC /219A S
DC /A676 YN
*
E1LOG DC /21D8 2.
DC /2172 M
DC /221E 1C
DC /6252 RO
*
*****
* ALPHA MESSAGE FOR SCA PROG OPTIONS
*****
*
LOG1 DC /2121
DC /2121
DC /2121
DC /2121
DC /2121
DC /2121
DC /2121
*
LOG1A DC /2121
DC /2121
DC /2121
DC /2121
LOG1B DC /2121
DC /2121
DC /2121
DC /2121
LOG1C DC /2121
DC /2121
DC /2121
DC /2121
LOG1D DC /2121
DC /2121
DC /2121
LOG1E DC /2121
DC /2121
DC /2121
DC /2121
DC /FFFF TERMINATER
*
*****
*
* THIS ROUTINE PERFORMS THE REQUIRED
* INITIALIZATION FOR RESTART OF THE PROGRAM.
* IT LOADS THE FIRST ROUTINE OR THE DESIRED
* ROUTINE VIA SELECT SWITCHES INTO THE
* MAINLINE SEQUENCE CONTROL FIELD.
*****
*

```

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31907500
31907510
31907520
31907530
31907540
31907550
31907560
31907570
31907580
31907590
31907600
31907610
31907620
31907630
31907640
31907650
31907660
31907670
31907680
31907690
31907700
31907710
31907720
31907730
31907740
31907750
31907760
31907770
31907780
31907790
31907800
31907810
31907820
31907830
31907840
31907850
31907860
31907870
31907880
31907890
31907900
31907910
31907920
31907930
31907940
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31907960
31907970
31907980
31907990
31908000
31908010
31908020
31908030
31908040
31908050
31908060
31908070
31908080
31908090
31908100
31908110
31908120
31908130
31908140
31908150
31908160
31908170

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```

0927 0 630C      STRT LDX 3 12      CLEAR PRINT TABLF 31908180
0928 0 1010      SLA 16      31908190
0929 1 0700 0D31  STO L3 TABLE-1 31908200
092B 0 73FF      MDX 3 -1      31908210
092C 0 70FC      MDX      STRT+2 31908220
092D 1 6700 0CC6  LDX L3 NSTRT 31908230
092F 1 6F00 0D35  STX L3 TABLE+3 SET UP ALPHA MSG 31908240
0931 0 6305      LDX 3 5      31908250
0932 1 6F00 0D32  STX L3 TABLE  SET UP MSG ID 31908260
0934 1 0C00 0992  XIO L BZON      EXECUTE ALARM ON 31908270
0936 0 4480 0163  PSI I LOG       GO PRINT MESSAGE 31908280
0938 1 0D32      DC TABLE      31908290
0939 0 085E      XIO BZOFF      EXECUTE ALARM OFF 31908300
093A 0 6300      PLOOP LDX 3 0 31908310
093B 1 6F00 05DD  STX L3 RID      RESET ROUTINE NO. 31908320
093D 1 6500 06B7  LDX L1 INTR     31908330
093F 0 6D00 0009  STX L1 9        SET UP INTRPT ADDR 31908340
0941 0 6D00 001A  STX L1 /001A    SET UP INTRPT ADDR 31908350
0943 0 7009      MDX OFF1       TURN OFF PROG SWS 31908360
*
*****
*
*          TURN OFF ALL SWITCHES
*
*****
*
0944 0 0000      RSTSW DC *-*    PROG RESET SW 31908370
*
0945 0 0000      OFF DC 0        ENTRY AND SAVE AREA 31908380
0946 0 0851      XIO BZOFF      TURN OFF ALARM 31908390
0947 0 C0FC      LD RSTSW       LD PROG RESET SW 31908400
0948 0 4820      BSC 7          31908410
0949 0 7003      MDX OFF1       SW ON , GO TO OFF1 31908420
094A 1 7401 0944  RSOFF MDX L RSTSW,&1 TURN ON RESET SW 31908430
094C 0 7002      MDX OFF2       31908440
*
094D 0 6300      OFF1 LDX 3 0   31908450
094F 0 6BF5      STX 3 RSTSW    31908460
*
094F 0 1010      OFF2 SLA 16    31908470
0950 0 6306      LDX 3 6        31908480
0951 1 0700 0D3D  OFF3 STO L3 DIAX1-1 31908490
0953 0 73FF      MDX 3 -1      31908500
0954 0 70FC      MDX OFF3      31908510
0955 0 6312      LDX 3 18      31908520
0956 1 0700 06E3  OFF4 STO L3 RCVED-1 31908530
0958 0 73FF      MDX 3 -1      31908540
0959 0 70FC      MDX OFF4      31908550
095A 0 6302      LDX 3 2        31908560
095B 1 0700 08E4  OFF5 STO L3 DSWW1-1 31908570
095D 0 73FF      MDX 3 -1      31908580
095E 0 70FC      MDX OFF5      31908590
095F 0 6304      LDX 3 4        31908600
0960 1 0700 087D  OFF6 STO L3 TRGWD-1 31908610
0962 0 73FF      MDX 3 -1      31908620
0963 0 70FC      MDX OFF6      31908630
0964 1 0400 0710  STO L DSWXX    31908640
0966 1 0400 0711  STO L DIAXX    31908650
0968 1 0400 06D2  STO L DIIAL    31908660
096A 1 0400 06D4  STO L DI2AL    31908670
096C 0 6700 1000  LDX L3 /1000   31908680
096E 1 6F00 0602  STX L3 DELY3   RESTORE DELAY 3 31908690
0970 1 0400 0801  LD L RT17&1    RESTORE DATA WORD 31908700
0972 1 0400 06E1  STO L SEND     31908710
0974 0 6700 3900  LDX L3 /3900   RESTORE SYNC ALT 31908720
0976 1 6F00 06E0  STX L3 ALT     31908730
0978 1 4400 079A  BSI L CKOPT    CK FOR FUNC 2&3 31908740
097A 1 4400 05F7  BSI L LOCK     CK LOCK,LOOP/ERR FNC 31908750
097C 0 C00A      LD LOOPF      LD LOOP ON ERR SW 31908760
097D 0 6300      LDX 3 0        31908770

```

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31908180
31908190
31908200
31908210
31908220
31908230
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31908360
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31908390
31908400
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31908680
31908690
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31908780
31908790
31908800
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31908830
31908840
31908850

```

```

097E 0 6808
097F 1 4CA0 05F5
0981 1 C400 0944
0983 1 4C30 099C
0985 1 4400 073A
*
0987 0 0000
*
0988 0 0000
0989 0 630C
098A 0 6805
098B 1 74FF 0990
098D 0 70FD
098E 1 4C80 0988
*
0990 0 0000
*
0992 0000
0992 0 0000
0993 0 5102
0994 0 0000
0995 0 5540
0996 1 099A
0997 0 5104
0998 0 0000
0999 0 5101
099A 0 3900
*
099B 0 0001
099C 0 08F7
099D 1 0C00 09A6
099F 1 0C00 0710
09A1 1 7401 0944
09A3 1 4C00 068A
*
09A6 0000
09A6 0 0080
09A7 0 0000
*
09A8 0 0001
09A9 0 6700 FF00
09AB 1 6F00 06EC
09AD 1 4400 0603
09AF 0 0012
09B0 0 2000
09B1 0 E080
09B2 0 1862
09B3 0 2000
09B4 0 A080
09B5 0 1860
09B6 0 0000

```

```

STX 3 LOOPE      CLR LOOP ON ERR SW 31908860
BSC I LOOP,Z    LOOP IF SW IS ON 31908870
LD L RSTW       31908880
BSC L RT01,Z-   BRANCH TO RESET RTN 31908890
BSI L CNTRL     31908900
*
LOOPF DC *-*    LOOP ON ERROR SW 31908910
*
*****
*          TIME DELAY - 140 MSEC
*****
*
DLYTM DC *-*    31908920
LDX 3 12        31908930
STX 3 TMDLY     31908940
MDX L TMDLY,-1 31908950
MDX *-3         31908960
BSC I DLYTM     31908970
*
TMDLY DC *-*    31908980
*
*****
*          1130 SCA IOCC
*****
*
BSS E 0         31909100
BZON DC 0       ALARM ON 31909110
DC /5102        31909120
RESET DC 0      PROGRAMED RESET 31909130
DC /5540        31909140
SIREG DC ICHAR SYNC/IDLE REG 31909150
DC /5104        31909160
BZOFF DC 0      ALARM OFF 31909170
DC /5101        31909180
ICHAR DC /3900  IDLE CHARACTER 31909190
*
*****
*          ROUTINE 01
*****
*
DC 1           31909210
RT01 XIO 1     EXECUTE RESET 31909220
LDL L DSW01    SET UP ANALYSIS DATA 31909230
STL L DSWXX    31909240
MDX L RSTW,&1  TURN ON PROG RESET 31909250
BSC L WAITX    31909260
*
BSS F 0        31909270
DSW01 DC /0080 S/B DSW 31909280
DC 0           31909290
*
*****
*          ROUTINE 02
*****
*
DC 1           31909300
RT02 LDX L3 /FF00 31909310
STX L3 RDCPR    SET UP DATA READ S/B 31909320
BSI L GO        31909330
DC /0012        31909340
DC /2000        MASK FOR STR 31909350
DC /F080        DSW FOR STR 31909360
DC /1862        DIAG FOR STR 31909370
DC /2000        MASK FOR BSC 31909380
DC /A080        DSW FOR BSC 31909390
DC /1860        DIAG WORD BSC S/B 31909400
DC 0           31909410
*
*****

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31908860
31908870
31908880
31908890
31908900
31908910
31908920
31908930
31908940
31908950
31908960
31908970
31908980
31908990
31909000
31909010
31909020
31909030
31909040
31909050
31909060
31909070
31909080
31909090
31909100
31909110
31909120
31909130
31909140
31909150
31909160
31909170
31909180
31909190
31909200
31909210
31909220
31909230
31909240
31909250
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31909270
31909280
31909290
31909300
31909310
31909320
31909330
31909340
31909350
31909360
31909370
31909380
31909390
31909400
31909410
31909420
31909430
31909440
31909450
31909460
31909470
31909480
31909490
31909500
31909510
31909520
31909530

```

```

*
***** ROUTINE 03 *****
*
09B7 0 1000
09B8 0 0001
09B9 0 6700 C000
09BB 1 6F00 06EC
09BD 1 4400 0603
09BF 0 0022
09C0 0 0000
09C1 0 E080
09C2 0 1862
09C3 0 0000
09C4 0 A080
09C5 0 1860
09C6 0 0000
RT03  LDX  L3 /C000
      STX  L3 RDCPR   SET UP DATA READ S/B
      BSI  L  GO
      DC   /0022
      DC   0
      DC   /E080     DSW STR
      DC   /1862     DIAG STR
      DC   /A080     DSW BSC
      DC   /1860     DIAG BSC
      DC   0

```

```

*
***** ROUTINE 04 *****
*
09C8 0000
09C8 0 1000
09C9 0 0001
09CA 0 6700 F000
09CC 1 6F00 06EC
09CE 1 4400 0603
09D0 0 0032
09D1 0 0000
09D2 0 E080
09D3 0 1862
09D4 0 0000
09D5 0 A080
09D6 0 1860
09D7 0 0000
RT04  LDX  L3 /E000
      STX  L3 RDCPR   SET UP DATA READ S/B
      BSI  L  GO
      DC   /0032
      DC   0
      DC   /E080     DSW
      DC   /1862     DIAGS FOR STR
      DC   0
      DC   /A080     DSW FOR BSC
      DC   /1860
      DC   0

```

```

*
***** ROUTINE 05 *****
*
09D8 0000
09D8 0 1000
09D9 0 0001
09DA 0 6700 F000
09DC 1 6F00 06EC
09DE 1 4400 0603
09E0 0 0042
09E1 0 0000
09E2 0 E080
09E3 0 1862
09E4 0 0002
09E5 0 A080
09E6 0 1860
09E7 0 0000
RT05  LDX  L3 /F000
      STX  L3 RDCPR   SET UP DATA READ S/B
      BSI  L  GO
      DC   /0042
      DC   0
      DC   /E080     DSW STR
      DC   /1862     DIAGS
      DC   /0002
      DC   /A080     DSW BSC
      DC   /1860
      DC   0

```

```

*
***** ROUTINE 06 *****
*
09E8 0000
09E8 0 1000
09E9 0 0001
09EA 0 6700 F800
09EC 1 6F00 06EC
09EE 1 4400 0603
09F0 0 0052
09F1 0 0000
09F2 0 E080
RT06  LDX  L3 /F800
      STX  L3 RDCPR   SET UP DATA READ S/B
      BSI  L  GO
      DC   /0052
      DC   0
      DC   /E080     DSW STR

```

```

31909540
31909550
31909560
31909570
31909580
31909590
31909600
31909610
31909620
31909630
31909640
31909650
31909660
31909670
31909680
31909690
31909700
31909710
31909720
31909730
31909740
31909750
31909760
31909770
31909780
31909790
31909800
31909810
31909820
31909830
31909840
31909850
31909860
31909870
31909880
31909890
31909900
31909910
31909920
31909930
31909940
31909950
31909960
31909970
31909980
31909990
31910000
31910010
31910020
31910030
31910040
31910050
31910060
31910070
31910080
31910090
31910100
31910110
31910120
31910130
31910140
31910150
31910160
31910170
31910180
31910190
31910200
31910210

```

```

09F3 0 1862
09F4 0 0000
09F5 0 A080
09F6 0 1860
09F7 0 0000

```

```

DC /1862 DIAGS
DC 0
DC /A080 DSW BSC
DC /1860 DIAGS
DC 0

```

```

31910220
31910230
31910240
31910250
31910260
31910270
31910280
31910290
31910300
31910310
31910320
31910330
31910340
31910350
31910360
31910370
31910380
31910390
31910400
31910410
31910420
31910430
31910440
31910450
31910460
31910470
31910480
31910490
31910500
31910510
31910520
31910530
31910540
31910550
31910560
31910570
31910580
31910590
31910600
31910610
31910620
31910630
31910640
31910650
31910660
31910670
31910680
31910690
31910700
31910710
31910720
31910730
31910740
31910750
31910760
31910770
31910780
31910790
31910800
31910810
31910820
31910830
31910840
31910850
31910860
31910870
31910880
31910890

```

```

09F8 0000
09F8 0 1000
09F9 0 0001
09FA 0 6700 FC00
09FC 1 6F00 06EC
09FE 1 4400 0603
0A00 0 0062
0A01 0 0000
0A02 0 E080
0A03 0 1862
0A04 0 0000
0A05 0 A080
0A06 0 1860
0A07 0 0000

```

```

***** ROUTINE 07 *****
*
BSS E 0
NOP
DC 1
RT07 LDX L3 /FC00
     STX L3 RDCPR   SET UP DATA READ S/B
     BSI L  GO
     DC /0062
     DC 0
     DC /E080     DSW
     DC /1862     DIAGS STR
     DC 0
     DC /A080     DSW BSC
     DC /1860     DIAGS
     DC 0

```

```

0A08 0000
0A08 0 1000
0A09 0 0001
0A0A 0 6700 FE00
0A0C 1 6F00 06EC
0A0E 1 4400 0603
0A10 0 0072
0A11 0 0000
0A12 0 E080
0A13 0 1862
0A14 0 0000
0A15 0 A080
0A16 0 1860
0A17 0 0000

```

```

***** ROUTINE 08 *****
*
BSS E 0
NOP
DC 1
RT08 LDX L3 /FE00
     STX L3 RDCPR   SET UP DATA READ S/B
     BSI L  GO
     DC /0072
     DC 0
     DC /E080     DSW STR
     DC /1862     DIAGS
     DC 0
     DC /A080     DSW BSC
     DC /1860     DIAGS
     DC 0

```

```

0A18 0000
0A18 0 1000
0A19 0 0001
0A1A 0 6700 FF00
0A1C 1 6F00 06EC
0A1E 1 4400 0603
0A20 0 0092
0A21 0 0004
0A22 0 E080
0A23 0 3862
0A24 0 0004
0A25 0 E080
0A26 0 3862
0A27 0 0000

```

```

***** ROUTINE 09 *****
*
BSS E 0
NOP
DC 1
RT09 LDX L3 /FF00
     STX L3 RDCPR   SET UP DATA READ S/B
     BSI L  GO
     DC /0092     INT CNT
     DC /0004     STR MASK
     DC /E080     DSW
     DC /3862     DIAGS
     DC /0004
     DC /E080     DSW FOR BSC
     DC /3862     BSC DIAGS
     DC 0

```

```

0A28 0 0001

```

```

***** ROUTINE 0A *****
*
DC 1

```

```

0A29 0 6700 FF00 RT0A LDX L3 /FF00
0A2B 1 6F00 06EC STX L3 RDCPR SET UP DATA READ S/B
0A2D 1 4400 0603 BSI L GO
0A2F 0 0102 DC /0102
0A30 0 2000 DC /2000 STR MASK
0A31 0 E080 DC /E080 DSW
0A32 0 1866 DC /1866 DIAGS
0A33 0 2000 DC /2000 BSC MASK
0A34 0 E080 DC /E080 DSW
0A35 0 1866 DC /1866 DIAGS
0A36 0 0000 DC 0

```

```

*
*****
* ROUTINE 0B
*****
*

```

```

0A38 0000 BSS E 0
0A38 0 1000 NOP
0A39 0 0001 DC 1
0A3A 0 6700 FF00 RT0B LDX L3 /FF00
0A3C 1 6F00 06EC STX L3 RDCPR SET UP DATA READ S/B
0A3E 1 4400 0603 BSI L GO
0A40 0 0202 DC /0202
0A41 0 2000 DC /2000 STR MASK
0A42 0 E080 DC /E080 DSW
0A43 0 1866 DC /1866 DIAGS
0A44 0 2000 DC /2000 BSC MASK
0A45 0 E080 DC /E080 DSW
0A46 0 1866 DC /1866 DIAGS
0A47 0 0000 DC 0

```

```

*
*****
* ROUTINE 0C
*****
*

```

```

0A48 0000 BSS F 0
0A48 0 1000 NOP
0A49 0 0001 DC 1
0A4A 0 6700 8000 RT0C LDX L3 /8000
0A4C 1 6F00 06EC STX L3 RDCPR SET UP DATA READ S/B
0A4E 1 4400 0603 BSI L GO
0A50 0 0010 DC /0010 INT CNT
0A51 0 2000 DC /2000 STR MASK
0A52 0 C080 DC /C080 DSW
0A53 0 1862 DC /1862 DIAGS
0A54 0 2000 DC /2000 BSC MASK
0A55 0 8080 DC /8080 DSW
0A56 0 1860 DC /1860 DIAGS
0A57 0 0000 DC 0

```

```

*
*****
* ROUTINE 0D
*****
*

```

```

0A58 0000 BSS F 0
0A58 0 1000 NOP
0A59 0 0001 DC 1
0A5A 0 6700 C000 RT0D LDX L3 /C000
0A5C 1 6F00 06EC STX L3 RDCPR SET UP DATA READ S/B
0A5F 1 4400 0603 BSI L GO
0A60 0 0020 DC /0020
0A61 0 0010 DC /0010 STR MASK
0A62 0 C080 DC /C080 DSW
0A63 0 18E2 DC /18E2 DIAGS
0A64 0 0010 DC /0010 BSC MASK
0A65 0 8080 DC /8080 DSW BSC
0A66 0 18E0 DC /18E0 DIAGS

```

```

31910900
31910910
31910920
31910930
31910940
31910950
31910960
31910970
31910980
31910990
31911000
31911010
31911020
31911030
31911040
31911050
31911060
31911070
31911080
31911090
31911100
31911110
31911120
31911130
31911140
31911150
31911160
31911170
31911180
31911190
31911200
31911210
31911220
31911230
31911240
31911250
31911260
31911270
31911280
31911290
31911300
31911310
31911320
31911330
31911340
31911350
31911360
31911370
31911380
31911390
31911400
31911410
31911420
31911430
31911440
31911450
31911460
31911470
31911480
31911490
31911500
31911510
31911520
31911530
31911540
31911550
31911560
31911570

```

```

0A67 0 0000 DC 0
0A68 0000
0A68 0 1000
0A69 0 0001
0A6A 0 6700 6000
0A6C 1 6F00 06EC
0A6E 1 4400 0603
0A70 0 0030
0A71 0 0000
0A72 0 C080
0A73 0 18EA
0A74 0 0000
0A75 0 8080
0A76 0 18F8
0A77 0 0000

```

```

* DC 0
*****
* ROUTINE 0E
*****
* BSS E 0
NOP
DC 1
RT0E LDX L3 /6000
STX L3 RDCPR SET UP DATA READ S/B
BSI L GO
DC /0030
DC 0
DC /C080 STR DSW
DC /18EA DIAGS
DC 0
DC /8080 BSC DSW
DC /18F8 DIAGS
DC 0

```

```

*
*****
* ROUTINE 0F
*****
*

```

```

0A78 0000
0A78 0 1000
0A79 0 0001
0A7A 0 6700 3000
0A7C 1 6F00 06EC
0A7F 1 4400 0603
0A80 0 0040
0A81 0 0080
0A82 0 C080
0A83 0 186A
0A84 0 0080
0A85 0 8080
0A86 0 1868
0A87 0 0000

```

```

* BSS E 0
NOP
DC 1
RT0F LDX L3 /3000
STX L3 RDCPR SET UP DATA READ S/B
BSI L GO
DC /0040
DC /0080 STR MASK
DC /C080 DSW
DC /186A DIAGS
DC /0080 BSC MASK
DC /8080 DSW
DC /1868 DIAGS
DC 0

```

```

*
*****
* ROUTINE 10
*****
*

```

```

0A88 0000
0A88 0 1000
0A89 0 0001
0A8A 0 6700 9800
0A8C 1 6F00 06EC
0A8E 1 4400 0603
0A90 0 0050
0A91 0 0000
0A92 0 C080
0A93 0 1862
0A94 0 0000
0A95 0 8080
0A96 0 1860
0A97 0 0000

```

```

* BSS F 0
NOP
DC 1
PT10 LDX L3 /9800
STX L3 RDCPR SET UP DATA READ S/B
BSI L GO
DC /0050
DC 0
DC /C080 STR DSW
DC /1862 DIAGS
DC 0
DC /8080 BSC DSW
DC /1860 DIAGS
DC 0

```

```

*
*****
* ROUTINE 11
*****
*

```

```

0A98 0000
0A98 0 1000
0A99 0 0001
0A9A 0 6700 C000
0A9C 1 6F00 06EC

```

```

* BSS E 0
NOP
DC 1
RT11 LDX L3 /C000
STX L3 RDCPR SET UP DATA READ S/B

```

```

31911580
31911590
31911600
31911610
31911620
31911630
31911640
31911650
31911660
31911670
31911680
31911690
31911700
31911710
31911720
31911730
31911740
31911750
31911760
31911770
31911780
31911790
31911800
31911810
31911820
31911830
31911840
31911850
31911860
31911870
31911880
31911890
31911900
31911910
31911920
31911930
31911940
31911950
31911960
31911970
31911980
31911990
31912000
31912010
31912020
31912030
31912040
31912050
31912060
31912070
31912080
31912090
31912100
31912110
31912120
31912130
31912140
31912150
31912160
31912170
31912180
31912190
31912200
31912210
31912220
31912230
31912240
31912250

```

```

0A9E 1 4400 0603      BSI L GO
0AA0 0 0060          DC /0060
0AA1 0 0000          DC 0
0AA2 0 C080          DC /C080 STR DSW
0AA3 0 1862          DC /1862 DIAGS
0AA4 0 0000          DC 0
0AA5 0 8080          DC /8080 BSC DSW
0AA6 0 1860          DC /1860 DIAGS
0AA7 0 0000          DC 0

```

```

*
*****
* ROUTINE 12
*****
*

```

```

0AA8 0000          BSS E 0
0AA8 0 1000          NOP
0AA9 0 0001          DC 1
0AAA 0 6700 F600    RT12 LDX L3 /E600
0AAC 1 6F00 06FC    STX L3 RDCPR SET UP DATA READ S/B
0AAE 1 4400 0603    BSI L GO
0AB0 0 0070          DC /0070
0AB1 0 0010          DC /0010 STR MASK
0AB2 0 C080          DC /C080 DSW
0AB3 0 18E2          DC /18E2 DIAGS
0AB4 0 0010          DC /0010 BSC MASK
0AB5 0 8080          DC /8080 DSW
0AB6 0 18E0          DC /18E0 DIAGS
0AB7 0 0000          DC 0

```

```

*
*****
* ROUTINE 13
*****
*

```

```

0AB8 0000          BSS F 0
0AB8 0 1000          NOP
0AB9 0 0001          DC 1
0ABA 0 6700 7300    RT13 LDX L3 /7300
0ABC 1 6F00 06FC    STX L3 RDCPR SET UP DATA READ S/B
0ABE 1 4400 0603    BSI L GO
0AC0 0 0090          DC /0090 INT. COUNT
0AC1 0 0004          DC /0004 STR MASK
0AC2 0 E080          DC /E080 DSW
0AC3 0 38EA          DC /38EA DIAGS
0AC4 0 0004          DC /0004 BSC MASK
0AC5 0 E080          DC /E080 DSW
0AC6 0 38EA          DC /38EA DIAGS
0AC7 0 0000          DC 0

```

```

*
*****
* ROUTINE 14
*****
*

```

```

0AC8 0 0001          DC 1
0AC9 0 6700 3900    RT14 LDX L3 /3900
0ACB 1 6F00 06FC    STX L3 RDCPR SET UP DATA READ S/B
0ACD 1 4400 0603    BSI L GO
0ACF 0 0100          DC /0100
0AD0 0 2080          DC /2080 STR MASK
0AD1 0 E080          DC /E080 DSW
0AD2 0 186E          DC /186E DIAGS
0AD3 0 2080          DC /2080 BSC MASK
0AD4 0 E080          DC /E080 DSW
0AD5 0 186E          DC /186E DIAGS
0AD6 0 0000          DC 0

```

```

*
*****
* ROUTINE 15
*****
*

```

```

31912260
31912270
31912280
31912290
31912300
31912310
31912320
31912330
31912340
31912350
31912360
31912370
31912380
31912390
31912400
31912410
31912420
31912430
31912440
31912450
31912460
31912470
31912480
31912490
31912500
31912510
31912520
31912530
31912540
31912550
31912560
31912570
31912580
31912590
31912600
31912610
31912620
31912630
31912640
31912650
31912660
31912670
31912680
31912690
31912700
31912710
31912720
31912730
31912740
31912750
31912760
31912770
31912780
31912790
31912800
31912810
31912820
31912830
31912840
31912850
31912860
31912870
31912880
31912890
31912900
31912910
31912920
31912930

```

```

0AD8 0000
0AD8 0 1000
0AD9 0 0001
0ADA 0 6700 7300
0ADC 1 6F00 06FC
0ADE 1 4400 0603
0AE0 0 0200
0AE1 0 2000
0AE2 0 E080
0AE3 0 18EA
0AE4 0 2004
0AE5 0 E080
0AE6 0 18EA
0AE7 0 0000

```

```

0AE8 0 0000
0AE9 0 6700 3900
0AEB 1 6F00 06EC
0AED 0 6700 000A
0AFF 1 6F00 06F2
0AF1 1 C400 06F2
0AF3 0 1008
0AF4 0 0002
0AF5 1 4400 0603
0AF7 0 0000
0AF8 0 2080
0AF9 0 E080
0AFA 0 186E
0AFB 0 2080
0AFC 0 E080
0AFD 0 186E
0AFF 0 0000

```

```

0AFF 0 0000
0B00 0 6700 FF00
0B02 1 6F00 06FC
0B04 1 6F00 06E1
0B06 0 6700 AA00
0B08 1 6F00 06E0
0B0A 1 C400 05F1
0B0C 0 100A
0B0D 1 4428 0873
0B0F 0 6700 000A
0B11 1 6F00 06F2

```

```

0B13 1 C400 06F2
0B15 0 1008
0B16 1 8400 0823
0B18 0 0002
0B19 1 4400 0603
0B1B 0 0000
0B1C 0 2080
0B1D 0 E080
0B1E 0 186E
0B1F 0 2088
0B20 0 E080
0B21 0 186E
0B22 0 0000
0B23 0 0002

```

```

*
BSS F 0
NOP
DC 1
RT15 LDX L3 /7300
STX L3 RDCPR SET UP DATA READ S/B
BSI L GO
DC /0200
DC /2000
DC /E080 STR DSW
DC /18EA DIAGS
DC /2004 BSC MASK
DC /E080 DSW
DC /18EA DIAGS
DC 0

```

```

*
*****
* ROUTINE 16
*****
*

```

```

DC 0
RT16 LDX L3 /3900
STX L3 RDCPR SET UP DATA READ S/B
LDX L3 10
STX L3 STOPS SET RTN PASS COUNT
LD L STOPS
SLA 8
STO **2
BSI L GO
DC **
DC /2080 PASS COUNT
DC /E080 STR MA
DC /186E DIAGS BSC
DC /2080 BSC MASK
DC /E080 DSW
DC /186E
DC 0

```

```

*
*****
* ROUTINE 17
*****
*

```

```

DC 0
RT17 LDX L3 /FF00
STX L3 RDCPR
STX L3 SEND
LDX L3 /AA00
STX L3 ALT
LD L SW2 CHK FOR SELECT CHAR
SLA 10
BSI L SELCH,&Z SET UP SELECTED CHAR
WRAP LDX L3 10
STX L3 STOPS SET RTN PASS COUNT

```

```

*
LD L STOPS
SLA 8
A L K0002
STO **2
BSI L GO
DC **
DC /2080 STR MASK RTN 17
DC /E080 DSW
DC /186E DIAGS
DC /2088 BSC MASK
DC /E080 DSW
DC /186E DIAGS BSC
DC 0
K0002 DC 2

```

```

31912940
31912950
31912960
31912970
31912980
31912990
31913000
31913010
31913020
31913030
31913040
31913050
31913060
31913070
31913080
31913090
31913100
31913110
31913120
31913130
31913140
31913150
31913160
31913170
31913180
31913190
31913200
31913210
31913220
31913230
31913240
31913250
31913260
31913270
31913280
31913290
31913300
31913310
31913320
31913330
31913340
31913350
31913360
31913370
31913380
31913390
31913400
31913410
31913420
31913430
31913440
31913450
31913460
31913470
31913480
31913490
31913500
31913510
31913520
31913530
31913540
31913550
31913560
31913570
31913580
31913590
31913600
31913610

```

```
*
*
*****
*          ROUTINE 18
*****
*
OB24 0 0000          DC      0
OB25 0 6700 0000    RT18  LDX  L3 /0000      ZERO VALUE
OB27 1 6F00 06EC    STX  L3 RDCPR      SET UP S/B DATA WORD
OB29 1 6F00 06E1    STX  L3 SEND      SET UP BUFFER WRITE
OB2B 1 4400 0603    BSI  L GO
OB2D 0 0A02          DC      /0A02      PASS COUNT
OB2E 0 2090          DC      /2090      STR MASK
OB2F 0 E080          DC      /E080      DSW
OB30 0 186E          DC      /186E      DIAGS
OB31 0 2090          DC      /2090      BSC MASK
OB32 0 E080          DC      /E080      DSW
OB33 0 186E          DC      /186E      DIAGS
OB34 0 0000          DC      0
*
*
*****
*          ROUTINE 19
*****
*
OB35 0 0000          DC      0
OB36 0 6700 0000    RT19  LDX  L3 /0000      ZERO VALUE
OB38 1 6F00 06EC    STX  L3 RDCPR      SET UP S/B DATA WORD
OB3A 1 6F00 06E1    STX  L3 SEND      SET UP BUFFER WRITE
OB3C 0 6700 0000    LDX  L3 /0000      ZERO VALUE
OB3E 1 6F00 06E0    STX  L3 ALT      SET UP WRITE SYN REQ
OB40 1 4400 0603    BSI  L GO
OB42 0 0A02          DC      /0A02      PASS COUNT
OB43 0 2090          DC      /2090      STR MASK
OB44 0 E080          DC      /E080      DSW
OB45 0 186E          DC      /186E      DIAGS STR
OB46 0 2090          DC      /2090      BSC MASK
OB47 0 E080          DC      /E080      DSW
OB48 0 186E          DC      /186E      DIAGS
OB49 0 0000          DC      0
*
*
*****
*          ROUTINE 1A
*****
*
OB4A 0 0000          DC      0
OB4B 0 6700 FE00    RT1A  LDX  L3 /FF00      7 BIT WORD
OB4D 1 6F00 06EC    STX  L3 RDCPR      SET UP S/B DATA WORD
OB4F 1 6F00 06E1    STX  L3 SEND      SET UP BUFFER WRITE
OB51 0 6700 AA00    LDX  L3 /AA00      ALTERNATE BIT PATTERN
OB53 1 6F00 06E0    STX  L3 ALT      SET UP WRT SYN REG
OB55 1 4400 0603    BSI  L GO
OB57 0 0906          DC      /0906      PASS COUNT
OB58 0 2000          DC      /2000      STR MASK
OB59 0 E080          DC      /E080      DSW
OB5A 0 186E          DC      /186E
OB5B 0 2000          DC      /2000      BSC MASK
OB5C 0 E080          DC      /E080      DSW BSC
OB5D 0 186E          DC      /186E      DIAGS
OB5F 0 0000          DC      0
*
*
*****
*          ROUTINE 1B
*****
*
OB5F 0 0000          DC      0
```

```
31913620
31913630
31913640
31913650
31913660
31913670
31913680
31913690
31913700
31913710
31913720
31913730
31913740
31913750
31913760
31913770
31913780
31913790
31913800
31913810
31913820
31913830
31913840
31913850
31913860
31913870
31913880
31913890
31913900
31913910
31913920
31913930
31913940
31913950
31913960
31913970
31913980
31913990
31914000
31914010
31914020
31914030
31914040
31914050
31914060
31914070
31914080
31914090
31914100
31914110
31914120
31914130
31914140
31914150
31914160
31914170
31914180
31914190
31914200
31914210
31914220
31914230
31914240
31914250
31914260
31914270
31914280
31914290
```

```
OB60 0 6700 FC00
OB62 1 6F00 06EC
OB64 1 6F00 06E1
OB66 0 6700 AA00
OB68 1 6F00 06E0
OB6A 1 4400 0603
OB6C 0 080A
OB6D 0 2000
OB6E 0 E080
OB6F 0 186E
OB70 0 2000
OB71 0 E080
OB72 0 186E
OB73 0 0000
*
*
*****
*          CONTROL ANALYSIS
*****
*
OB74 1 C400 0710
OB76 1 4400 0882
OB78 0 C008
OB79 1 4C18 0946
OB7B 1 C400 0711
OB7D 0 700A
*
*
*****
*          STORAGE FOR CONTROL ANALYSIS
*****
*
OB7E 0 0000
OB7F 0 0000
OB80 0 0000
OB81 0 0000
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
OB82 0 0000
OB83 0 D0FB
OB84 1 4400 088D
OB86 1 4C80 0882
*
*
*****
*          CHECK TO SEE IF DIAG TRIG ERROR EXISTS
*****
*
OB88 0 D0F6
OB89 1 4400 089A
OB8B 1 4400 0945
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
OB8D 0 0000
OB8E 1 C400 06F8
OB90 1 F400 0710
OB92 0 D0FD
OB93 0 4820
OB94 0 7001
OB95 0 7002
OB96 1 4400 0BA7
OB98 1 4C80 088D
```

```
RT1B  LDX  L3 /FC00      6 BIT WORD
STX  L3 RDCPR      SET UP S/B DATA WORD
STX  L3 SEND      SET UP BUFFER WRITE
LDX  L3 /AA00      ALTERNATE BIT PATTERN
STX  L3 ALT      SET UP WRT SYN REG
BSI  L GO
DC      /080A      PASS COUNT
DC      /2000      STR MASK
DC      /E080      DSW
DC      /186E      DIAGS
DC      /2000      BSC MASK
DC      /E080      DSW
DC      /186E      DIAGS
DC      0
*
*
*****
*          CONTROL ANALYSIS
*****
*
CONAN LD  L DSWXX      LOAD S/B DSW
BSI  L STOR1
LD  SWDIA      CHECK IF DIAG OPT ON
BSC  L OFF&1,&-      RESTORE PROGRAM SWS
LD  L DIAXX      LOAD S/B DIAG WORDS
MDX  STOR2
*
*
*****
*          STORAGE FOR CONTROL ANALYSIS
*****
*
TRGWD DC  *-*      DIAG WORD ERR. BITS
STWD DC  *-*      STORED WORD
DSWRD DC  *-*      DSW ERROR BITS
SWDIA DC  *-*      DIAG OPTION SW
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
STORI DC  *-*      SAVED RETURN ADDR
STO  STWD      STORE S/B DSW WORD
BSI  L ANAL1      GO TO ANAL. 1
BSC  I STORI      RETURN TO SAVED ADDR
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
STOR2 STO  STWD      STORE S/B DIAG WORD
BSI  L ANAL2      GO TO ANAL. 2
BSI  L OFF      GO TO SW RESET RTN
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
ANAL1 DC  *-*      SAVED RETURN ADDR
LD  L CADSW      LOAD SENSED DSW
EOR  L DSWXX      EOR WITH S/B DSW
STO  DSWRD      STORE IN DSW ERR BIT
BSC  Z      CHK IF ERR BITS ON
MDX  ANLO1      ERR BITS ARE ON
MDX  ANLO1&2      ERR BITS ARE NOT ON
ANLO1 BSI  L DSWAN      CHK WHICH BITS ON
BSC  I ANAL1      BRANCH TO RETURN ADR
*
*
*****
*          CHECK TO SEE IF DSW ERROR EXISTS
*****
*
*****
```


OC33 0	BC1A	DC	/BC1A	/B
OC34 0	2121	DC	/2121	
OC35 0	5276	DC	/5276	ON
OC36 0	BC12	DC	/BC12	/F
OC37 0	2112	DC	/2112	F
OC38 0	BC52	DC	/BC52	/D
OC39 0	7621	DC	/7621	N
OC3A 0	D61E	DC	/D61E	*C
OC3B 0	36D6	DC	/36D6	E*
OC3C 0	2132	DC	/2132	D
OC3D 0	9A92	DC	/9A92	SW
OC3E 0	2136	DC	/2136	E
OC3F 0	6262	DC	/6262	RR
OC40 0	FFFF	TERM1 DC	/FFFF	TERMINATOR
OC41 0	6236	DC	/6236	RE
OC42 0	9A36	DC	/9A36	SE
OC43 0	9E21	DC	/9E21	T
OC44 0	FFFF	DC	/FFFF	

TERM1 DC /FFFF TERMINATOR

*

* ALPHA MESSAGE FOR DIAG WORD 1 ERROR

*

OC45 0	329A	ADR2 DC	/329A	DS
OC46 0	9221	DC	/9221	W
OC47 0	21D8	DC	/21D8	2
OC48 0	923E	DC	/923E	WA
OC49 0	9A21	DC	/9A21	S
OC4A 0	FC92	DC	/FC92	1W
OC4B 0	3E9A	DC	/3E9A	AS
OC4C 0	21FC	DC	/21FC	1
OC4D 0	9ABC	DC	/9ABC	S/
OC4E 0	1A21	DC	/1A21	B
OC4F 0	5276	DC	/5276	ON
OC50 0	BC12	DC	/BC12	/F
OC51 0	2112	DC	/2112	F
OC52 0	BC52	DC	/BC52	/D
OC53 0	7621	DC	/7621	N
OC54 0	D61E	DC	/D61E	*C
OC55 0	36D6	DC	/36D6	E*
OC56 0	2132	DC	/2132	D
OC57 0	92FC	DC	/92FC	W1
OC58 0	2136	DC	/2136	E
OC59 0	6262	DC	/6262	RR
OC5A 0	FFFF	TERM2 DC	/FFFF	TERMINATOR
OC5B 0	6236	DC	/6236	RE
OC5C 0	9A36	DC	/9A36	SE
OC5D 0	9E21	DC	/9E21	T
OC5E 0	FFFF	DC	/FFFF	

TERM2 DC /FFFF TERMINATOR

*

* ALPHA MESSAGE FOR DIAG WORD 2 ERROR

*

OC5F 0	329A	ADR3 DC	/329A	DS
OC60 0	9221	DC	/9221	W
OC61 0	21FC	DC	/21FC	1
OC62 0	923E	DC	/923E	WA
OC63 0	9A21	DC	/9A21	S
OC64 0	D892	DC	/D892	2W
OC65 0	3E9A	DC	/3E9A	AS
OC66 0	21D8	DC	/21D8	2
OC67 0	9ABC	DC	/9ABC	S/
OC68 0	1A21	DC	/1A21	B
OC69 0	5276	DC	/5276	DN
OC6A 0	BC12	DC	/BC12	/F
OC6B 0	2112	DC	/2112	F
OC6C 0	BC52	DC	/BC52	/D

ADR3 DC /329A DS

31916340
31916350
31916360
31916370
31916380
31916390
31916400
31916410
31916420
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31916440
31916450
31916460
31916470
31916480
31916490
31916500
31916510
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31916600
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31916680
31916690
31916700
31916710
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31916800
31916810
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31916880
31916890
31916900
31916910
31916920
31916930
31916940
31916950
31916960
31916970
31916980
31916990
31917000
31917010

OC6D 0 7621
OC6E 0 D61E
OC6F 0 36D6
OC70 0 2132
OC71 0 92D8
OC72 0 2136
OC73 0 6262
OC74 0 FFFF
OC75 0 6236
OC76 0 9A36
OC77 0 9E21
OC78 0 FFFF

OC79 0 3292
OC7A 0 FC21
OC7B 0 2132
OC7C 0 92D8
OC7D 0 2121
OC7E 0 329A
OC7F 0 9221
OC80 0 2152
OC81 0 76BC
OC82 0 1221
OC83 0 12BC
OC84 0 5276
OC85 0 21D6
OC86 0 1E36
OC87 0 D621
OC88 0 2121
OC89 0 2121
OC8A 0 2122
OC8B 0 769E
OC8C 0 2136
OC8D 0 6262
OC8E 0 FFFF
OC8F 0 6236
OC90 0 9A36
OC91 0 9E21
OC92 0 FFFF

OC93 0 923E
OC94 0 9A21
OC95 0 219A
OC96 0 BC1A
OC97 0 2121
OC98 0 D61E
OC99 0 36D6
OC9A 0 2121
OC9B 0 323F
OC9C 0 9E3E
OC9D 0 2136
OC9E 0 6262
OC9F 0 5262
OCA0 0 FFFF

OCA1 0 9A1E
OCA2 0 5256

DC	/7621	N
DC	/D61E	*C
DC	/36D6	E*
DC	/2132	D
DC	/92D8	W2
DC	/2136	E
DC	/6262	RR
TERM3 DC	/FFFF	TERMINATOR
DC	/6236	RE
DC	/9A36	SE
DC	/9E21	T
DC	/FFFF	

*

* ALPHA MESSAGE FOR INTERRUPT ERROR

*

ADR4 DC	/3292	DW
DC	/FC21	1
DC	/2132	D
DC	/92D8	W2
DC	/2121	
DC	/329A	DS
DC	/9221	W
DC	/2152	O
DC	/76BC	N/
DC	/1221	F
DC	/12BC	F/
DC	/5276	ON
DC	/21D6	*
DC	/1E36	CE
DC	/D621	*
DC	/2121	
DC	/2121	
DC	/2122	I
DC	/769E	NT
DC	/2136	E
DC	/6262	RR
TERM4 DC	/FFFF	TERMINATOR
DC	/6236	RE
DC	/9A36	SE
DC	/9E21	T
DC	/FFFF	

*

* ALPHA MESSAGE FOR DATA ERROR

*

ADR5 DC	/923E	WA
DC	/9A21	S
DC	/219A	S
DC	/BC1A	/B
DC	/2121	
DC	/D61E	*C
DC	/36D6	E*
DC	/2121	
DC	/323E	DA
DC	/9E3E	TA
DC	/2136	E
DC	/6262	RR
DC	/5262	OR
DC	/FFFF	

*

* ALPHA MESSAGE FOR SCOPE LOOP

*

ADR6 DC	/9A1E	SC
DC	/5256	OP

31917020
31917030
31917040
31917050
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31917100
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31917120
31917130
31917140
31917150
31917160
31917170
31917180
31917190
31917200
31917210
31917220
31917230
31917240
31917250
31917260
31917270
31917280
31917290
31917300
31917310
31917320
31917330
31917340
31917350
31917360
31917370
31917380
31917390
31917400
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31917680
31917690

SCA WRAP-AROUND TEST STR/BSC

SCA WRAP-AROUND TEST STR/BSC

OCA3 0 3621
OCA4 0 5E52
OCA5 0 5256
OCA6 0 FFFF

DC /3621 E
DC /5E52 LO
DC /5256 OP
DC /FFFF TERMINATER

31917700
31917710
31917720
31917730
31917740
31917750
31917760
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31917790
31917800
31917810
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31918000
31918010
31918020
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31918080
31918090
31918100
31918110
31918120
31918130
31918140
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31918190
31918200
31918210
31918220
31918230
31918240
31918250
31918260
31918270
31918280
31918290
31918300
31918310
31918320
31918330
31918340
31918350
31918360
31918370

OCE9 0 D055
OCEA 1 C400 0B7F
OCEC 0 1890
OCED 0 1010
OCEF 0 1089
OCEFF 0 1007
OCFO 0 D04F
OCF1 0 1010
OCF2 0 1086
OCF3 0 100A
OCF4 0 D04C
OCF5 0 C04A
OCF6 0 4820
OCF7 0 702D
OCF8 0 704B

OCF9 1 0C00 0992
OCFB 0 6307
OCFC 1 6F00 0C2A
OCFE 1 4400 0BE7
OD00 0 6700 007F
OD02 1 6F00 0D34
OD04 1 6700 0C45
OD06 1 6F00 0D35
OD08 1 C400 0D42
OD0A 0 D030
OD0B 1 C400 0D43
OD0D 0 D02E
OD0E 0 C02F
OD0F 0 D02A
OD10 1 C400 06D2
OD12 0 D026
OD13 1 C400 06D4
OD15 1 E400 0E20
OD17 0 D020
OD18 1 C400 06E8
OD1A 0 D01C
OD1B 0 4480 0162
OD1D 1 0D32
OD1E 1 0CC0
OD1F 1 0C00 0998
OD21 0 6300
OD22 0 6B1F
OD23 0 6B1F
OD24 0 701F

OD25 1 C400 0D3E
OD27 1 E400 0D40
OD29 1 D400 0D43
OD2B 1 C400 0D40
OD2D 1 F400 0D43
OD2F 1 D400 0D42
OD31 0 70C7

OD32 0 0000
OD32 0 0000
OD33 0 0000
OD34 0 0000
OD35 0 0000
OD36 0 0000
OD37 0 0000
OD38 0 0000
OD39 0 0000
OD3A 0 0000

STO DIAX2 STORE DIAG 2 WAS
LD L TRGWD LOAD DIA ERROR BITS
SRT 16
SLA 16
SLT 9
SLA 7
STO TRWD1 STORE DIAG WD 1 FRR
SLA 16
SLT 6
SLA 10
STO TRWD2 STORE DIAG WD 2 ERR
LD TRWD1
BSC Z CHECK FOR ERR BIT ON
MDX CKIT2 INITIAL ERR BIT CHK
MDX WDICK GO CHK DIAG WD 2

* W01 XID L BZON EXECUTE ALARM ON
LDX 3 7
STX L3 MSGNO SET UP MESSAGE ID 7
BSI L MSGID CHK WHICH MESSAGE ID
LDX L3 /007F
STX L3 TABLE&2 SET UP MODIFIER ID
LDX L3 ADR2 LD ALPHA 2 ADDR
STX L3 TABLE&3
LD L TGWD1 LD ON/F ERROR BITS
STO TABLE&9
LD L TGWD2 LD F/ON ERROR BITS
STO TABLE&10
LD DIAX1 LD DIAG WD 1 S/B
STO TABLE&8
LD L DI1AL LD DIAG WD 1 WAS
STO TABLE&7
LD L DI2AL LD DIAG WD 2 WAS
AND L MASK1 MASK OUT CE BITS
STO TABLE&6
LD L CADSW LOAD DSW WAS
STO TABLE&5
BSI I ERROR GO PRINT ERROR
DC TABLE MESSAGE TABLE
DC LOPRT LOOP ADDRESS
XIO L BZOFF EXECUTE ALARM OFF
LDX 3 0
STX 3 TGWD1
STX 3 TGWD2
MDX WDICK GO CHK DIAG WD 2

* CKIT2 LD L DIAX1 LD DIAG WD 1 WAS
AND L TRWD1 AND DIAG WD 1 ERR
STO L TGWD2 STORE ON/F ERR BITS
LD L TRWD1 LD DIAG WD 1 ERR
EOR L TGWD2 EOR DIAG WD 1 ON/F
STO L TGWD1 STORE DIAG WD 1 F/ON
MDX WD1

*

* ERROR PRINT TABLE

*
TABLE BSS E 0
DC *-* ERROR PRINT TABLE
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*
DC *-*

31918380
31918390
31918400
31918410
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31918900
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31918960
31918970
31918980
31918990
31919000
31919010
31919020
31919030
31919040
31919050

OCA7 0 1E26
OCA8 0 3E62
OCA9 0 219A
OCAA 0 365E
OCAB 0 361E
OCAC 0 9E36
OCAD 0 3221
OCAE 0 D662
OCAF 0 9E76
OCB0 0 21FC
OCB1 0 D4D6
OCB2 0 FFFF

ADR7 DC /1E26 CH
DC /3E62 AR
DC /219A S
DC /365E EL
DC /361E EC
DC /9E36 TE
DC /3221 D
DC /D662 *R
DC /9E76 TN
DC /21FC 1
DC /D4D6 7*
DC /FFFF TERMINATER

OCB3 0 6236
OCB4 0 9A9E
OCB5 0 5262
OCB6 0 3621
OCB7 0 9AA6
OCB8 0 9A9E
OCB9 0 3672
OCBA 0 219E
OCBB 0 5221
OCBC 0 7652
OCBD 0 6272
OCBE 0 3E5E
OCBF 0 FFFF

NMSG DC /6236 RE
DC /9A9E ST
DC /5262 OR
DC /3621 E
DC /9AA6 SY
DC /9A9E ST
DC /3672 EM
DC /219E T
DC /5221 O
DC /7652 NO
DC /6272 RM
DC /3E5E AL
DC /FFFF TERMINATER

OCC0 1 6C00 0987
OCC2 1 0C00 0998
OCC4 1 4C00 094F

L0PRT STX L LOOPE TURN ON LOOP ON ERR
XIO L BZOFF EXECUTE ALARM OFF
BSC L OFF2 GO TO HOUSE/KEEP RTN

OCC6 0 0015
OCD5 0 0008
OCDD 0 FFFF

* MONITOR RELOAD MESSAGE

* NSTRT TYPE .DO NOT USE MNTR RLD IF DEVICE.
TYPE .USES INT LEV ONE.
DC /FFFF

OCDE 0 0000
OCDF 1 C400 0711
OCF1 0 1890
OCF2 0 1010
OCF3 0 1089
OCF4 0 1007
OCF5 0 D058
OCF6 0 1010
OCF7 0 1086
OCF8 0 100A

TRGAN DC *-* SAVED RETURN ADDRESS
LD L DIAXX LD COMBINFED DIAGS
SRT 16
SLA 16
SLT 9
SLA 7
STO DIAX1 STORE DIAG 1 WAS
SLA 16
SLT 6
SLA 10

```

0D3B 0 0000      DC      *--
0D3C 0 0000      DC      *--
0D3D 0 0000      DC      *--
*
*****
*          DIAG TRIGGER STORAGE
*****
*
0D3E 0 0000      DIAX1 DC    *--      DIAG WD 1 WAS
0D3F 0 0000      DIAX2 DC    *--      DIAG WD 2 WAS
0D40 0 0000      TRWD1 DC    *--      DIAG 1 ERROR BITS
0D41 0 0000      TRWD2 DC    *--      DIAG 2 ERROR BITS
0D42 0 0000      TGWD1 DC    *--      F/ON ERROR WORD
0D43 0 0000      TGWD2 DC    *--      ON/F ERROR WORD
*****
*
0D44 0 C0FC      WDICK LD      TRWD2      LD DIAG WD 2 ERR
0D45 0 1890      SRT        16
0D46 0 1010      SLA        16
0D47 0 1087      SLT        7
0D48 0 4820      BSC        Z          CHECK FOR ERR BIT ON
0D49 0 7002      MDX        WD2      MAKE ANALYSIS
0D4A 1 4C80 0CDE BSC        I TRGAN      EXIT TO RETURN ADDR.
*
0D4C 1 C400 0D3F WD2  LD      L DIAX2      LD DIAG WD 2 WAS
0D4E 1 E400 0D41 AND      L TRWD2      AND DIAG WD 2 ERR
0D50 1 D400 0D43 STO      L TGWD2      STORE ON/F ERR
0D52 1 C400 0D41 LD      L TRWD2      LOAD DIAG WD 2 ERR
0D54 1 F400 0D43 EOR      L TGWD2      EOR ON/F ERR BITS
0D56 1 D400 0D42 STO      L TGWD1      STORE F/ON ERR
0D58 1 0C00 0992 XIO      L BZON        EXECUTE ALARM ON
0D5A 0 6309      LDX        3 9
0D5B 1 6F00 0C2A STX      L3 MSGNO      SET UP MESSAGE ID 9
0D5D 1 4400 0BE7 BSI      L MSGID      CHK WHICH MESSAGE ID
0D5F 0 6700 007F LDX      L3 /007F
0D61 1 6F00 0D34 STX      L3 TABLE&2  SET UP MODIFIER ID
0D63 1 6700 0C5F LDX      L3 ADR3      LD ALPHA 3 ADDR
0D65 1 6F00 0D35 STX      L3 TABLE&3
0D67 1 C400 0D42 LD      L TGWD1      LD ON/F ERROR BITS
0D69 0 D0D1      STO      TABLE&9
0D6A 1 C400 0D43 LD      L TGWD2      LD F/ON ERROR BITS
0D6C 0 D0CF      STO      TABLE&10
0D6D 0 C0D1      LD      DIAX2      LD DIAG WD 2 S/B
0D6E 0 D0CB      STO      TABLE&8
0D6F 1 C400 06D4 LD      L DI2AL      LD DIAG WD 2 WAS
0D71 1 E400 0E20 AND      L MASK1      MASK OUT CE BITS
0D73 0 D0C5      STO      TABLE&7
0D74 1 C400 06D2 LD      L DI1AL      LD DIAG WD 1 WAS
0D76 0 D0C1      STO      TABLE&6
0D77 1 C400 06E8 LD      L CADSW      LOAD DSW WAS
0D79 0 D0BD      STO      TABLE&5
0D7A 0 4480 0162 BSI      I ERROR      GO PRINT ERROR
0D7C 1 0D32      DC      TABLE      MESSAGE TABLE
0D7D 1 0CC0      DC      LOPRT        LOOP ADDRESS
0D7E 1 0C00 0998 XIO      L BZOFF      EXECUTE ALARM OFF
0D80 0 6300      LDX      3 0
0D81 0 6BC0      STX      3 TGWD1
0D82 0 6BC0      STX      3 TGWD2
0D83 1 4C80 0CDE BSC      I TRGAN      EXIT TO RETURN ADDR.
*
*****
*          INTERRUPT ANALYSIS
*          COMPARES SHOULD/BE INTERRUPTS WITH
*          ACTUAL INTERRUPTS AND ANALIZES ANY ERRS
*****
*
0D85 0 0000      INTAN DC   *--      SAVED RETURN ADD.
0D86 0 6300      LDX      3 0

```

```

31919060
31919070
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31919330
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31919380
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31919670
31919680
31919690
31919700
31919710
31919720
31919730

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```

0D87 1 6F00 0D3A STX      L3 TABLE&8  RESET INTRPT ERR LOC
0D89 1 6F00 0D3B STX      L3 TABLE&9  RESET INTRPT ERR LOC
0D8B 1 C400 06E8 LD      L CADSW      LD DSW WAS
0D8D 1 E400 0DED AND      L INTMK      MASK INTRPT BITS
0D8F 1 D400 0DEB STO      L INWAS      STORE INT BIT WAS
0D91 1 C400 0710 LD      L DSWXX      LOAD DSW S/B
0D93 1 E400 0DED AND      L INTMK      MASK INTRPT BITS
0D95 1 D400 0DEC STO      L INSDB      STORE INT BIT S/B
0D97 1 F400 0DEB EOR      L INWAS      CHECK FOR ERROR
0D99 0 4820      BSC        Z
0D9A 0 7001      MDX        INERR      GO TO INT ERR ANAL.
0D9B 0 703E      MDX        CKINT      CK FOR NO INTERRUPT
*
0D9C 1 D400 0DEA INERR STO  L ERINT      SAVE INT ERR BITS
0D9E 1 C400 0DEB LD      L INWAS      LD INTRPT DSW WAS
0DA0 1 E400 0DEA AND      L ERINT      AND INT ERROR BITS
0DA2 1 D400 0D3A STO      L TABLE&8  LD INT ERR ON/F BITS
0DA4 1 C400 0DEA LD      L ERINT      LD INT ERROR BITS
0DA6 1 F400 0D3A EOR      L TABLE&8  EOR INT ON/F ERROR
0DA8 1 D400 0D3B STO      L TABLE&9  STORE INT F/ON ERROR
0DAA 0 7000      MDX        CKERR
0DAB 1 C400 0D3A CKERR LD      L TABLE&8
0DAD 0 4820      BSC        Z          CHK IF IT IS 0
0DAE 0 7005      MDX        INTER      ERR BITS ARE LOADED
0DAF 1 C400 0D3B LD      L TABLE&9
0DB1 0 4820      BSC        Z          CHK IF IT IS 0
0DB2 0 7001      MDX        INTER
0DB3 0 7026      MDX        CKINT      NO ERR BITS LOADED
0DB4 1 0C00 0992 INTER XIO  L BZON      EXECUTE ALARM ON
0DB6 0 6300      LDX        3 0
0DB7 1 6F00 0C2A STX      L3 MSGNO
0DB9 1 6C00 0C29 STX      L INTSW      TURN ON INT MSG SW
0DBB 1 4400 0BE7 BSI      L MSGID      CHK WHICH MSG ID
0DBD 0 635F      LDX        3 /005F
0DBE 1 6F00 0D34 STX      L3 TABLE&2  SET UP MODIFIER ID
0DC0 1 6700 0C79 LDX      L3 ADR4      LOAD ALPHA 4 ADDRESS
0DC2 1 6F00 0D35 STX      L3 TABLE&3  SET UP ALPHA MSG
0DC4 1 C400 06D4 LD      L DI2AL      LD DIAG WD 2 WAS
0DC6 1 E400 0E20 AND      L MASK1      MASK OUT CE BITS
0DC8 1 D400 0D38 STO      L TABLE&6
0DCA 1 C400 06D2 LD      L DI1AL      LD DIAG WD 1 WAS
0DCC 1 D400 0D37 STO      L TABLE&5
0DCE 1 C400 06E8 LD      L CADSW      LOAD DSW WAS
0DD0 1 D400 0D39 STO      L TABLE&7
0DD2 0 4480 0162 BSI      I ERROR      GO PRINT ERROR
0DD4 1 0D32      DC      TABLE      MESSAGE TABLE
0DD5 1 0CC0      DC      LOPRT        LOOP ADDRESS
0DD6 1 0C00 0998 XIO      L BZOFF      EXECUTE ALARM OFF
0DD8 1 4C80 0D85 BSC      I INTAN      EXIT TO RETURN
*
0DDA 1 C400 06E9 CKINT LD  L LOPSW      CHK IF INTERRUPT S/B
0DDC 0 4820      BSC        Z
0DDD 0 7002      MDX        INTOK
0DDE 1 4C80 0D85 BSC      I INTAN      YES, EXIT TO RETURN
*
0DF0 1 C400 06EA INTOK LD  L PRTPN      CHK IF INTERRUPT WAS
0DE2 0 4820      BSC        Z
0DE3 0 70FA      MDX        CKINT&4  YES, EXIT TO RETURN
0DE4 0 630B      LDX        3 I1      NO, SET MSG ID B
0DE5 1 6F00 0D32 STX      L3 TABLE
0DE7 1 0C00 0992 XIO      L BZON      EXECUTE ALARM ON
0DE9 0 70D3      MDX        INTER&9  GO SET UP ERR TABLE
*
0DEA 0 0000      ERINT DC    *--      INTERRUPT ERR BITS
0DEB 0 0000      INWAS DC    *--      DSW INT BITS WAS
0DEC 0 0000      INSDB DC   *--      DSW INT BITS S/B
0DED 0 0800      INTMK DC    /D800
*

```

```

31919740
31919750
31919760
31919770
31919780
31919790
31919800
31919810
31919820
31919830
31919840
31919850
31919860
31919870
31919880
31919890
31919900
31919910
31919920
31919930
31919940
31919950
31919960
31919970
31919980
31919990
31920000
31920010
31920020
31920030
31920040
31920050
31920060
31920070
31920080
31920090
31920100
31920110
31920120
31920130
31920140
31920150
31920160
31920170
31920180
31920190
31920200
31920210
31920220
31920230
31920240
31920250
31920260
31920270
31920280
31920290
31920300
31920310
31920320
31920330
31920340
31920350
31920360
31920370
31920380
31920390
31920400
31920410

```

```

ODEF 1 C400 06E4   DATCK DC   *--*
ODEF 1 EC00 06EF   LD L RCVED   LOAD BUFFER DATA
ODF3 1 D400 06E4   OR L INBUF   SAVE BUFFER DATA
ODF5 1 F400 06EC   STO L RCVED
ODF7 0 4820        EOR L RDCPR   CK FOR DATA ERROR
ODF8 0 7002        BSC I Z
ODF9 1 4C80 0DFE   MDX DATER    GO TO DATA ERR RTN
                                BSC I DATCK   EXIT TO RETURN
*
ODFB 1 C400 06D1   DATER LD L DIAWD&1 SET UP C.F. BIT CHK
ODFD 0 1890        SRT 16
ODFF 0 1010        SLA 16
OE00 0 1007        SLT 3
OE01 1 D400 0039   SLA 7
OE03 1 0C00 0992   STO L TABLE&7
OE05 0 630C        XIO L BZON    EXECUTE ALARM ON
OE06 1 6F00 0D32   LDX 3 12     SET UP MESSAGE ID C
OE08 0 6307        STX L3 TABLE
OE09 1 6F00 0D34   LDX 3 /0007
OE0B 1 6700 0C93   STX L3 TABLE&2
OE0D 1 6F00 0D35   LDX L3 ADR5
OE0F 1 C400 06E4   STX L3 TABLE&3
OE11 1 D400 0D37   LD L RCVED   LOAD DATA WAS
OE13 1 C400 06EC   STO L TABLE&5
OE15 1 D400 0D38   LD L RDCPR   LOAD DATA S/B
OE17 0 4480 0162   STO L TABLE&6
OE19 1 0D32        BSI I ERROR  GO PRINT ERROR
OE1A 1 0CC0        DC TABLE
OE1B 1 0C00 0998   DC LOPRT
OE1D 1 4C80 0DEE   XIO L BZOFF EXECUTE ALARM OFF
                                BSC I DATCK   EXIT TO RETURN

```

```

*
*****
*          CONSTANTS
*****
*

```

```

OE1F 0 1000        K1000 DC /1000   CONSTANT 1000
OE20 0 FC00        MASK1 DC /FC00  CE BIT MASK
OE22 0 05F6        END BEGN   LAST STATEMENT
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

31920420
31920430
31920440
31920450
31920460
31920470
31920480
31920490
31920500
31920510
31920520
31920530
31920540
31920550
31920560
31920570
31920580
31920590
31920600
31920610
31920620
31920630
31920640
31920650
31920660
31920670
31920680
31920690
31920700
31920710
31920720
31920730
31920740
31920750
31920760
31920770
31920780
31920790
31920800

```

```

ADR1 0C2B 08BF
ADR2 0C45 0D04
ADR3 0C5F 0D63
ADR4 0C79 0DC0
ADR5 0C93 0E0B
ADR6 0CA1 07E0
ADR7 0CA7 089D
ALT 06E0 06CF 088A 0976 0B08 0B3E 0B53 0B68
ANAL1 0B8D 0B84 0B98
ANAL2 0B9A 0B89 0BA5
ANL01 0B96 0B94 0B95
ANL02 0BA3 0BA1 0BA2
AOLOG 08EF 08B5
A1LOG 08F5 08C9
BEGIN 0160 05FF
BEGN 05F6 0E22
BR 06DE 0653
BZOFF 0998 0774 07EF 083C 08B0 0939 0946 0BE1 0CC2 0D1F 0D7E 0DD6 0E1B
BZON 0992 076F 07EA 0837 08AB 0934 08B4 0CF9 0D58 0DB4 0DE7 0E03
B1LOG 08F9 08D3
CADSW 06E8 0713 088F 08AB 0BCF 0D18 0D77 0D8B 0DCE
CHECK 0733 071D
CHPNT 0891 0876 087E
CHRTN 087F 08B2
CKERR 0DAB 0DAA
CKINT 0DDA 0D9B 0DB3 0DE3
CKIT2 0D25 0CF7
CKIT3 0B9B
CKOPT 079A 075C 07D1 0845 0978
CKSIX 0628 0621
CKSYN 063B 0627
CLLOG 083F 0844
CNTIN 06EE
CNTRL 073A 0985
CN20 0749 073D
CN30 0750 0742
CONAN 0B74 0737
C1LOG 08FD 08DD
DATCK 0DEF 0733 0DF9 0E1D
DATER 0DFB 0DF8
DELY3 0602 068A 07C1 0802 086E 096E
DIAG 06C0 065E
DIAMD 0847 07A8 0850 0852
DIASW 06F0
DIAWD 06D0 071A 0727 0728 0B9B 0BE8 0DFB
DIAW1 06E6 067C 0682 069F 06C8
DIAW2 06E7 067E 0685 06A3 06CA
DIAXX 0711 0732 0966 0B7B 0B9D 0CDF
DIAX1 0D3E 0951 0CE5 0D0E 0D25
DIAX2 0D3F 0CE9 0D4C 0D6D
DI1AL 06D2 067D 0683 0684 06A1 06A2 0719 072B 0968 0BD9 0D10 0D74 0DCA
DI2AL 06D4 067F 0686 0687 06A5 06A6 0714 072F 096A 0BD3 0D13 0D6F 0DC4
DLYTM 0988 06B3 098F
DSWAL 06E5 061A 0699 069B 06B9 06BA 0712
DSWAN 0BA7 0B96 0BE3
DSWRD 0B80 0B92 0BAA 0BAF
DSWSE 06C2 0698
DSWSN 06C6 06B0 06B8
DSWW1 0BE5 095B 0BAC 0B80 0BC3
DSWW2 0BE6 08B2 0BC7
DSWXX 0710 0730 0964 099F 0B74 0B90 0BCB 0D91
DSW01 09A6 099D
D1LOG 0902 08E7
END 0164 0776
ENDOP 06CC 067B
END2 0679 06DE
ENMSG 0760 074E 0765
FRINT 0DEA 0D9C 0DA0 0DA4

```

ERLCK 0166 05EA
FRROR 0162 0BDD 0D1B 0D7A 0DD2 0E17
FILGG 0905 088F
FAST1 085F 07BD 086A 0870
FAST2 086C 0869 0872
FFFF 0739 0726
FSTCK 0799 07F6 07F7 0864 0866
GO 0603 0614 071F 09AD 098D 09CE 09DE 09EE 09FE 0A0E 0A1E 0A2D 0A3E 0A4E
0A5E 0A6E 0A7E 0A8E 0A9E 0AAE 0ABE 0ACD 0ADE 0AF5 0B19 0B2B 0B40
0B55 0B6A
ICHAR 099A 0996
IDRTN 0C0D 0BFE 0C1D 0C1F 0C21
ILO 017A
IL1 018A
IL2 019A
IL3 01AA
IL4 01BA
INBUF 06EF 0DF1
INERR 0D9C 0D9A
INSDB 0DEC 0D95
INTAN 0D85 0735 0C0B 0DD8 0DDE
INTER 0DB4 0DAE 0DB2 0DE9
INTID 0C28 0C09 0C0D 0C10 0C14
INTMK 0DED 0D8D 0D93
INTOK 0DE0 0DDD
INTR 06B7 06BD 093D
INTSW 0C29 0BFD 0C0A 0C15 0DB9
INWAS 0DEB 0D8F 0D97 0D9E
K0001 0798 0610 0612 07F5 0862
K0002 0B23 0B16
K0008 06E2
K0009 06E3
K1000 0E1F 0855
LOCK 05E7 05ED 05F3 097A
LOG 0163 0771 07EC 0839 08AD 0936
LOGBY 0167
LOG01 082D
LOG02 07DA 07D8 07DF
LOG03 0897 0895 089C
LOG1 0909 082D 0841 08B7
LOG1A 0910 08CB
LOG1B 0915 083F 08D5
LOG1C 091A 08DF
LOG1D 091F 08E9
LOG1E 0922 08C1
LOG10 08B3 080E 08BA 08BB
LOG11 08BD 07A3 0813 08C4 08C5
LOG12 08C7 0818 08CE 08CF
LOG13 08D1 081D 08D8 08D9
LOG14 08DB 0822 08E2 08E3
LOG15 08E5 0827 08EC 08ED
LOOP 05F5 05EF 05F1 0756 097F
LOOPE 0987 097C 097E 0CC0
LOPRT 0CC0 08F0 0D1E 0D7D 0DD5 0E1A
LOPSW 06E9 0604 0C00 0DDA
LRTN 0792 0793
MASK1 0E20 08D5 0D15 0D71 0DC6
MID1 0C1E 0C1B
MID3 0C20 0C07
MLSCF 05E5 06A9 0758
MSGGD 08F5 0C25
MSGID 0BE7 08B9 0C16 0CFE 0D5D 0DBB
MSGND 0C2A 08B7 0C0F 0C22 0CFC 0D5B 0DB7
NMSG 0C83 0768
NOPNT 07CD 07D9 07F1
NOPS 06DC 0623 062A 0633 063F 0649
NORST 0854 07B2 085B 085D
NOSET 0657 0652

NOSYN 0646 063C
NOTRM 0C22 0BF3
NSTRT 0CC6 092D
OFF 0945 0879 088B
OFF1 094D 0943 0949
OFF2 094F 094C 0CC4
OFF3 0951 0954
OFF4 0956 0959
OFF5 0958 095E
OFF6 0960 0963
OPRTN 07D1 07C6 07FB 0800 0804
PASS 06ED 0617 0676
PASS1 0890 0874 088D
PID 05DC 0600
PLOOP 093A 05E3
PNDCK 0C18 0C03
PNTCH 0896 0894 08A7
PRTPN 06EA 0688 0C04 0C18 0DE0
RAD 05DE 0754 07F3 0860
RCVED 06E4 06C4 0956 0DEF 0DF3 0E0F
RDCAT 06C4 0663 0665 0667 0669 066B 066D 066F 0673 0675
RDCNT 06F3
RDCPR 06EC 0884 09AB 09BB 09CC 09DC 09EC 09FC 0A0C 0A1C 0A2B 0A3C 0A4C 0A5C
0A6C 0A7C 0A8C 0A9C 0AAC 0ABC 0ACB 0ADC 0AEB 0B02 0B27 0B38 0B4D
0B62 0DF5 0E13
RDIA1 06C8 0679 0680 069D
RDIA2 06CA 067A 0681 069E
RDWRT 06F5
RESET 0994 0657 0681 099C
RID 05DD 073F 0747 0749 074B 0750 0766 093B
RIDCK 0793 0741 074D
RLCF 0168
RQKB 01BC
RQTY 01BB
RSOFF 094A 07B5 07B8 0857 0859
RSTRT 0606 060D
RSTSW 0944 071B 0796 0947 094A 094E 0981 09A1 0BF0
RTNSW 0165 075A
RTTBL 0778 0752 0793
RTOA 0A29 0781
RTOB 0A3A 0782
RTOC 0A4A 0783
RTOD 0A5A 0784
RTOE 0A6A 0785
RTOF 0A7A 0786
RT01 099C 0778 0983
RT02 09A9 0779
RT03 09B9 077A
RT04 09CA 077B
RT05 09DA 077C
RT06 09EA 077D
RT07 09FA 077E
RT08 0A0A 077F
RT09 0A1A 0780
RT1A 0B4B 0791
RT1B 0B60 0792
RT10 0A8A 0787
RT11 0A9A 0788
RT12 0AAA 0789
RT13 0ABA 078A
RT14 0AC9 078B
RT15 0ADA 078C
RT16 0AE9 078D 07AB 084C
RT17 0B00 078E 0970
RT18 0B25 078F
RT19 0B36 0790
SAVE1 0796 0784 07B7
SCOPE 07F3 07D0

SCOP1 07FC 07FA
 SCOP2 0801 07FF
 SELCH 0873 088E 080D
 SEND 06F1 06D6 0886 0972 0804 0829 083A 084F 0864
 SET 0653 0651
 SET6 06DA 065C
 SET7 06D8 065D
 SEVEN 065D 0626 067C
 SIREG 0996
 SIX 065C 05F8 060A 0625 0635 065B
 SNDSW 0712 06B5
 SPACE 0C27 0C24
 START 0161 06AB 075E
 STOCT 06F1
 STOPS 06F2 0AEF 0AF1 0B11 0B13
 STOR1 0B82 0B76 0B86
 STOR2 0B88 0B7D
 STRMD 064D 061D 0647 064F
 STRT 0927 05E4 05E5 092C
 STWD 0B7F 0B83 0B8A
 SVKB 01BD
 SVN 0633 0628 0632
 SVWTS 05F8 05FD
 SWDIA 0B81 0B48 0B78
 SWO 05DF 05E8
 SW1 05E0 073B 0745
 SW2 05E1 060E 068E 0721 079C 07A0 07A5 07AF 07BA 07C3 080B 0810 0815 081A
 081F 0824 0829 080A
 SW3 05E2 07C9 07CD 07D3 07FC 0878 087F 0891
 SYALT 06CE 0659
 SYCMD 06EB
 S2PNT 0805 079F 080A
 S2WAS 0794 079B 082B
 S3PNT 07D3 07CC
 S3WAS 0795 07C8 07D5 0879 0881
 TABLE 0D32 0762 076A 076D 0773 07DC 07E2 07E5 07E8 07FE 0807 082F 0832 0835
 083B 0899 089F 08A2 08A5 08A9 08AF 0929 092F 0932 0938 08BD 08C1
 08C5 08C9 08CD 08D1 08D7 08DB 08DF 08EE 0C11 0D02 0D06 0D0A 0D0D
 0D0F 0D12 0D17 0D1A 0D1D 0D61 0D65 0D69 0D6C 0D6E 0D73 0D76 0D79
 0D7C 0D87 0D89 0DA2 0DA6 0DA8 0DAB 0DAF 0DBE 0DC2 0DC8 0DCC 0DD0
 0DD4 0DE5 0E01 0E06 0E09 0E0D 0E11 0E15 0E19
 TERM 0C26 0BF4
 TERM1 0C40 0BF5
 TERM2 0C5A 0BF7
 TERM3 0C74 0BF9
 TERM4 0C8E 0BF8
 TGWD1 0D42 0D08 0D22 0D2F 0D56 0D67 0D81
 TGWD2 0D43 0D0B 0D23 0D29 0D2D 0D50 0D54 0D6A 0D82
 TMDLY 0990 098A 098B
 TRGAN 0CDE 0BA3 0D4A 0D83
 TRGWD 0B7E 0960 0B9F 0CEA
 TRWD1 0D40 0CF0 0CF5 0D27 0D2B
 TRWD2 0D41 0CF4 0D44 0D4E 0D52
 WAITA 0674
 WAITB 06AD 06A7
 WAITC 0698 0692 06AF
 WAITX 068A 09A3
 WAIT0 0660 0642 064B
 WAIT1 0662 0655
 WAIT2 0664 062E 0630 0678
 WAIT3 0666 0637 0639
 WAIT4 0668
 WAIT5 066A
 WAIT6 066C
 WAIT7 066E
 WAIT8 0670 0644
 WAIT9 0672
 WCNT 0601 068C 0692 0696 06AD

WD1 0CF9 0D31
 WDICK 0D44 0CF8 0D24
 WD2 0D4C 0D49
 WRAP 080F 07AD 084E
 WRCAT 06D6 065F 0661 0671
 WRCNT 06F4
 WRITE 065F 0640
 WTSV0 06F6 05FA 0608
 END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA TRANSMIT/RECEIVE STR PROGRAM IS TO PROVIDE PROGRAM ABILITY TO OPERATE THE 1130 SCA IN AN OVER-THE-LINE TEST WITH ANOTHER STR TERMINAL. AN OPTION IS ALSO PROVIDED TO HOLD THE SCA IN A CONSTANT TRANSMIT OR RECEIVE MODE FOR SCOPING PURPOSES.

2. PREREQUISITES

- 2.1 PROGRAM PREREQUISITES
- A. THIS PROGRAM IS LOADED BY THE 1130 RELOCATING DIAGNOSTIC LOADER.
 - B. THE REMOTE TERMINAL MUST HAVE THE CAPABILITY OF TRANSMITTING AND/OR RECEIVING DATA RECORDS USING NORMAL STR LINE CONTROL PROCEDURES.

2.2 EQUIPMENT PREREQUISITES

- A. SET STR/BSC SWITCH TO STR POSITION.
- B. SET BAUD SELECTOR SWITCH TO MATCH REMOTE TERMINAL.
- C. SFT DATA SET CONNECTOR PLUG SWITCH TO OPER.
- D. CE SWITCH MUST BE OFF.
- E. SCA MUST BE CONNECTED THROUGH THE PROPER MODEM EQUIPMENT TO ANOTHER STR TERMINAL. DATA SETS USED MUST BE COMPATIBLE WITH BAUD RATE AND CUSTOMER OPTIONS SELECTED.
- F. REFER TO LOGIC PAGE A0003 FOR CUSTOMER OPTION JUMPERING. OPTION FUNCTIONS MUST MATCH REMOTE TERMINAL.

NOTE...DIAL UP CONNECTIONS...AUTOMATIC LINE DISCONNECT OCCURS WHEN 1130 RESET KEY IS PRESSED OR WHEN SCA PROGRAM RESET IS EXECUTED. THIS PROGRAM WILL EXECUTE A PROGRAM RESET WHEN EITHER THE HALT OR MANUAL TERMINATION OPTION IS SELECTED. IF IT IS DESIRED THAT LINE DISCONNECT BE PREVENTED, REMOVE THE PROGRAM CONTROL OF READY JUMPER SPECIFIED ON LOGIC PAGE A0003.

3. OPERATING PROCEDURE

3.1 PROGRAM LOADING

TO LOAD FROM CARDS...

- A. PLACE THE RELOCATING LOADER, THE SCA TRANSMIT/RECEIVE STR PROGRAM, AND AT LEAST ONE BLANK CARD IN THE READER.
- B. MAKE READER READY.
- C. PRESS THE 1131 RESET AND PROGRAM LOAD KEYS.
- D. IF PROGRAM FAILS TO LOAD OR STOPS AT A WAIT BELOW ADDRESS /0160 REFER TO THE RELOCATING LOADER DOCUMENTATION.

TO LOAD FROM PAPER TAPE...

- A. PLACE THE RELOCATING LOADER IN THE READER.
- B. MAKE READER READY.
- C. PRESS THE 1131 RESET AND PROGRAM LOAD KEYS.
- D. AT LOADER WAIT 30F6 (B REG) PLACE THE SCA PROGRAM IN THE READER.
- E. MAKE READER READY.
- F. MANUALLY SET IAR TO /0078.
- G. SET MODE SWITCH TO RUN AND PRESS PROGRAM START.
- H. IF PROGRAM FAILS TO LOAD OR STOPS AT A WAIT BELOW ADDRESS /0160 REFER TO THE RELOCATING LOADER DOCUMENTATION.

3.2 PROGRAM OPERATION

- A. AFTER LOADING MESSAGE A1 WILL BE PRINTED AND THE PROGRAM WILL LOOP WAITING FOR TEST ROUTINE AND OPTION SELECTIONS.
- B. SELECT THE DESIRED TEST USING FUNCTION 1 (REFER 3.2.2).
- C. IF DESIRED, SELECT XMIT RECORD COUNT OR XMIT DATA BY USING FUNCTION 2, FUNCTION 3, OR MANUAL ENTRY (REFER 3.2.3 THRU 3.2.5).
- D. SELECT THE START TEST OPTION (FUNCTION 0 SWT 8) AND ANY OTHER DESIRED FUNCTION 0 OPTIONS (REFER 3.2.1).
- E. THE SELECTED TEST WILL BEGIN EXECUTION.

TABLE 1

RTN	DESCRIPTION (SEE SECTION 5.2 FOR DETAILED DESCRIPTIONS)
0	RECEIVE NORMAL - THIS ROUTINE PROVIDES THE ABILITY TO RECEIVE TEST RECORDS FROM THE REMOTE TERMINAL USING NORMAL STR LINE CONTROL PROCEDURES. RECORDS MAY BE UP TO 130 CHARACTERS IN LENGTH AND MAY CONTAIN ILRC SEQUENCES.
1	TRANSMIT NORMAL - THIS ROUTINE TRANSMITS THE TEST RECORD CONTAINED IN TABLE DATA1 (REFER 3.2.5). THE RECORD IS TRANSMITTED THE NUMBER OF TIMES SPECIFIED BY THE RECORD COUNT SELECTION OPTION. NORMAL STR LINE CONTROL PROCEDURES ARE USED. THIS ROUTINE MAY BE USED TO TRANSMIT TO MOST STR DEVICES.
2	TRANSMIT RIPPLE - THIS ROUTINE TRANSMITS 64 RECORDS OF 80 CHARACTERS EACH. THE DATA TRANSMITTED IS THE SHIFTING PATTERN DESCRIBED IN SECTION 5.3. THIS ROUTINE MUST BE USED TO TRANSMIT TO SYSTEM 360 MOD 20 DIAGNOSTIC PROGRAM MFT 182.
NOTETHE FOLLOWING THREE TEST ROUTINES ARE INTENDED TO BE USED FOR SCOPING PURPOSES ONLY. THESE ROUTINES DO NOT USE NORMAL LINE CONTROL OR PRINT ANY ERROR MESSAGES. TERMINATION OF EACH OF THESE ROUTINES MUST BE VIA THE HALT OPTION OR A PROGRAM RESTART.	
3	RECEIVE CONTINUOUS - THIS ROUTINE LOADS THE IDLE CHARACTER INTO THE SYNC/IDLE REGISTER, EXECUTES A START READ INSTRUCTION, AND LOOPS WAITING FOR INTERRUPTS. WHEN A READ RESPONSE OCCURS THE BUFFER IS READ. WHEN A TIMEOUT OCCURS AN END OPERATION AND ANOTHER START READ ARE EXECUTED.
4	XMIT BUFFER CONTINUOUS - THIS ROUTINE LOADS THE IDLE CHARACTER INTO THE SYNC/IDLE REGISTER, EXECUTES A START WRITE COMMAND, AND LOOPS WAITING FOR INTERRUPTS. WHEN ANY INTERRUPT OCCURS, THE CHARACTER ENTERED VIA FUNCTION 3 IS LOADED INTO THE BUFFER FOR TRANSMISSION. THE FUNCTION 3 SELECTION MAY BE CHANGED AT ANY TIME.
5	XMIT SYNC/IDLE CONTINUOUS - THIS ROUTINE LOADS THE CHARACTER ENTERED VIA THE FUNCTION 3 OPTION INTO THE SYNC/IDLE REGISTER, EXECUTES A START WRITE COMMAND AND LOOPS WAITING FOR INTERRUPTS. WHEN ANY INTERRUPT OCCURS THE SYNC/IDLE REG IS AGAIN LOADED WITH THE FUNCTION 3 CHARACTER. THE FUNCTION 3 ENTRY MAY BE CHANGED AT ANY TIME.

3.2.1 PROGRAM CONTROL - FUNCTION 0

TO SELECT PROGRAM CONTROL OPTIONS...

- A. SET SWITCHES 0 AND 1 TO 00 (FUNCTION 0)
- B. SET SWITCHES 8 THRU 15 AS DESIRED USING TABLE 0
- C. PRESS INTERRUPT REQUEST KEY.

TABLE 0

SWT	FUNCTION
8	START TEST - CAUSES THE SELECTED TEST ROUTINE TO BEGIN EXECUTION. HAS NO EFFECT IF SELECTED WHILE A TEST ROUTINE IS IN EXECUTION.
9	TRACE ENTIRE TEST - CAUSES ALL TRACE INFORMATION (REFER 4.4) EXCEPT GOOD TEXT XMITTED AND RECEIVED TO BE SAVED FOR PRINTING. NORMALLY ONLY THAT INFORMATION WHICH IS RELATED TO AN ERROR IS SAVED.
10	TRACE TEXT - CAUSES GOOD TEXT XMITTED AND RECEIVED TO BE INCLUDED IN THE INFORMATION SAVED FOR THE TRACE PRINTOUT. (REFER 4.4)
11	LOOP TEST - CAUSES THE SELECTED TEST ROUTINE TO AUTOMATICALLY RESTART AFTER THE END-OF-TEST PRINTOUTS.
12	BYPASS TRACE PRINTOUT - BYPASSES THE ENTIRE TRACE PRINTOUT.
13	BYPASS E AND I PRINTOUTS - BYPASSES ALL ERROR (E) AND SCA INFORMATION (I) PRINTOUTS.
14	MANUAL TEST TERMINATE - CAUSES TEST ROUTINES 0, 1, AND 2 TO IMMEDIATELY RESET THE SCA AND BRANCH TO PRINT THE END OF TEST MESSAGES. HAS NO EFFECT ON TEST ROUTINES 3, 4, OR 5.
15	HALT - CAUSES AN IMMEDIATE SCA RESET AND A RETURN TO THE STARTING LOOP TO WAIT FOR OPTION SELECTIONS.

3.2.2 TEST ROUTINE SELECTION - FUNCTION 1

TO SELECT A TEST ROUTINE...

- A. SET SWITCHES 0 AND 1 TO 01 (FUNCTION 1).
- B. SET DESIRED ROUTINE NUMBER IN SWITCHES 12 THRU 15 USING TABLE 1.
- C. PRESS INTERRUPT REQUEST KEY.

NOTEIF NO ROUTINE IS SELECTED OR AN INVALID ROUTINE NUMBER IS ENTERED, TEST ROUTINE 0 WILL BE SELECTED.

3.2.3 RECORD COUNT SELECTION - FUNCTION 2

TO SELECT THE NUMBER OF TEST MESSAGES TO BE TRANSMITTED BY TEST ROUTINE 1 (TRANSMIT NORMAL)...

- A. SET SWITCHES 0 AND 1 TO 10 (FUNCTION 2)
- B. ENTER THE DESIRED NUMBER OF RECORDS IN SWITCHES 2 THRU 15.
- C. PRESS INTERRUPT REQUEST KEY.

IF NO FUNCTION 2 SELECTION IS ENTERED, 6 RECORDS WILL BE TRANSMITTED BY TEST ROUTINE 1.

3.2.4 DATA SELECTION - FUNCTION 3

TO ENTER THE CHARACTER TO BE CONTINUOUSLY TRANSMITTED BY TEST ROUTINES 4 AND 5...

- A. SET SWITCHES 0 AND 1 TO 11 (FUNCTION 3)
- B. ENTER THE DESIRED CHARACTER IN SWITCHES 8 THRU 15.
- C. PRESS THE INTERRUPT REQUEST KEY.

IF NO FUNCTION 3 SELECTION IS ENTERED, ROUTINES 4 AND 5 WILL TRANSMIT THE IDLE (/39) CHARACTER.

3.2.5 MANUAL DATA ENTRY

TEST ROUTINE 1 (TRANSMIT NORMAL) TRANSMITS THE TEST RECORD CONTAINED IN TABLE DATA1. THIS TABLE NORMALLY CONTAINS A RECORD 80 CHARACTERS IN LENGTH. THE FIRST 70 CHARACTERS CONSIST OF THE 'A' (HEX 71) CHARACTER. THE NEXT 9 CHARACTERS ARE THE NUMERICS 1 THRU 9. THE LAST CHARACTER IS A RECORD MARK.

TABLE DATA1 MAY BE MANUALLY CHANGED TO CAUSE TEST ROUTINE 1 TO TRANSMIT ANY DESIRED TEXT. TO CHANGE TABLE DATA1...

- A. MANUALLY LOAD IAR TO /0160. LEAVE MODE SWITCH IN LOAD POSITION.
- B. ENTER THE DESIRED NUMBER OF CHARACTERS TO BE TRANSMITTED IN SWITCHES 8 THRU 15. MAXIMUM RECORD LENGTH IS 128 CHARACTERS.
- C. PRESS PROGRAM START.
- D. ENTER TEXT CHARACTERS TO BE TRANSMITTED IN SWITCHES 0 THRU 15 AND PRESS START AFTER EACH ENTRY. ENTER TWO 8 BIT CHARACTERS AT A TIME. THE TEXT CHARACTERS ENTERED MUST BE VALID 4 OF 8 CODE AND MUST NOT CONTAIN ANY OF THE SIX STR CONTROL CHARACTERS. RECORD MARKS AND GROUP MARKS MAY BE ENTERED ANYWHERE IN THE TABLE. WHEN TRANSMITTING THE PROGRAM WILL PROVIDE ALL NECESSARY CONTROL CHARACTERS AND WILL INSERT AN INTERMEDIATE LRC CHARACTER FOLLOWING EACH RECORD MARK OR GROUP MARK FOUND IN THE TABLE.
- E. AFTER THE LAST DATA ENTRY TURN MODE SWITCH TO RUN, PRESS RESET, AND PROGRAM START.

3.3 PROGRAM HALTS

THERE ARE NO NORMAL PROGRAM HALTS IN THIS PROGRAM. ALL WAITS ARE ERROR WAITS.

WAITS OCCURING BELOW ADDRESS /0160 ARE IN THE LOADER. REFER TO RELOCATING LOADER DOCUMENTATION.

THERE ARE THREE ERROR WAITS CONTAINED IN THIS PROGRAM. THE WAIT MAY BE IDENTIFIED BY REFERENCING THE B REGISTER. THE SCA IS RESET BEFORE THE PROGRAM HALTS IN AN ERROR WAIT. A PROGRAM RESTART IS NECESSARY TO EXIT FROM ANY ERROR WAIT.

B REG	ERROR WAIT DESCRIPTION
3001	SCA FAILED TO INTERRUPT - RUN SCA WRAP-AROUND TEST AND PROGRAM INSTRUCTIONS FUNCTION TEST (PIDS 0318 AND 0319).
3002	CONSOLE PRINTER FAILED TO INTERRUPT.
3003	AN INTERRUPT OCCURED ON A LEVEL NOT USED BY THIS PROGRAM. THIS MAY BE CAUSED BY USE OF THE PROGRAM STOP BUTTON.

3.4 PROGRAM TERMINATION

UNLESS THE LOOP OPTION IS SELECTED TEST ROUTINE TERMINATION WILL OCCUR AS FOLLOWS...

- A. ROUTINE 0 WILL TERMINATE WHEN EOT IS SUCCESSFULLY RECEIVED FROM THE REMOTE TERMINAL.
- B. ROUTINES 1 AND 2 WILL TERMINATE AFTER SUCCESSFULLY TRANSMITTING THE REQUIRED NUMBER OF RECORDS AND EOT IS SUCCESSFULLY TRANSMITTED AND RECEIVED.
- C. ROUTINES 3, 4, AND 5 WILL TERMINATE ONLY WHEN THE HALT OPTION IS SELECTED OR A PROGRAM RESTART IS EXECUTED.

3.5 RESTARTING PROGRAM

THE PROGRAM MAY BE RESTARTED AT ANY TIME BY PRESSING IMMEDIATE STOP, RESET, AND PROGRAM START. RESTART WILL DESELECT ALL FUNCTION 0 OPTIONS. OTHER OPTION SELECTIONS WILL REMAIN UNCHANGED.

4. PRINTOUTS

ALL PRINTOUTS BEGIN WITH TWO IDENTIFICATION CHARACTERS. THE FIRST CHARACTER IDENTIFIES THE PRINTOUT AS A PROGRAM STATUS PRINTOUT (A), AN SCA INFORMATION PRINTOUT (I), AN ERROR PRINTOUT (E), OR A TRACE PRINTOUT (T). THE SECOND CHARACTER IDENTIFIES THE SPECIFIC PRINTOUT.

4.1 PROGRAM STATUS PRINTOUTS (A)

THESE PRINTOUTS ARE ALL INITIATED BY THE MAINLINE OF THE PROGRAM AND PROVIDE PROGRAM STATUS INFORMATION.

A1 SELECT TEST RTN AND START

INDICATES THAT THE PROGRAM IS IDLING WAITING FOR ROUTINE AND OPTION ENTRIES AND SELECTION OF THE START TEST OPTION.

A2 SWS XXXX

INDICATES THAT THE PROGRAM HAS ACCEPTED A SWITCH ENTRY. XXXX IS THE SWITCH SETTING.

A3 START TEST RTN XX

TEST ROUTINE XX HAS BEGUN EXECUTION.

A4 END TEST RECORDS SENT (RCVD) XXXX

THIS MESSAGES IS PRINTED FOLLOWING EITHER NORMAL TERMINATION OR MANUAL TERMINATION OF TEST ROUTINES 0, 1, AND 2. XXXX IS THE TOTAL NUMBER OF TEST RECORDS THAT HAVE BEEN SUCCESSFULLY TRANSMITTED OR RECEIVED. THE RECORD COUNT IS PRINTED IN HEXADECIMAL.

A5 HALT

THE HALT OPTION HAS BEEN SELECTED. THE SCA WILL BE RESET AND THE PROGRAM WILL LOOP WAITING FOR OPTION SELECTION.

A6 MANUAL TERM

THE MANUAL TERMINATION OPTION HAS BEEN SELECTED. THE SCA WILL BE RESET AND THE END-OF-TEST PRINTOUTS OUTPUT.

4.2 SCA INFORMATION PRINTOUTS (I)

THESE PRINTOUTS ARE ALL INITIATED BY THE SCA INTERRUPT SERVICE SUBROUTINE AND USUALLY PROVIDE INFORMATION CONCERNING NORMAL LINE CONDITIONS. THESE PRINTOUTS MAY INDICATE AN ERROR CONDITION AND SHOULD THEREFORE BE CONSIDERED ALONG WITH THE ERROR PRINTOUTS.

I1 DATA SET NOT RDY

A 3 SECOND TIMEOUT OCCURED AFTER A START SYNC COMMAND WAS EXECUTED. THIS INDICATES THAT THE CLEAR-TO-SEND LINE FROM THE DATA SET DID NOT BECOME ACTIVE. THIS CONDITION OCCURED ON THE FIRST ATTEMPT TO TRANSMIT TO THE REMOTE TERMINAL. PROBABLE CAUSE IN A SWITCHED NETWORK IS LACK OF CONNECTION WITH THE REMOTE TERMINAL. ON A PERMANENT LINE CONNECTION THIS IS AN ERROR CONDITION. TRANSMISSION ATTEMPTS AND THIS PRINTOUT WILL BE REPEATED UNTIL WRITE RESPONSES BEGIN OCCURING.

I2 NO SYNC

A RECEIVE TIMEOUT OCCURED WHILE ATTEMPTING TO RECEIVE FROM THE REMOTE TERMINAL. PROBABLE CAUSE IS THAT THE REMOTE TERMINAL IS NOT YET READY TO TRANSMIT (TEST NOT STARTED). ATTEMPTS TO BEGIN HANDSHAKING AND THIS PRINTOUT WILL BE REPEATED UNTIL READ RESPONSES BEGIN OCCURING.

I3 TEL RCVD

THE TEL SEQUENCE WAS RECEIVED. THIS USUALLY INDICATES THAT THE REMOTE TERMINAL OPERATOR DESIRES TELEPHONE COMMUNICATIONS.

I4 TIMEOUT

AN EXPECTED RECEIVE TIMEOUT OCCURED. RECEIVE TIMEOUTS ARE EXPECTED IN THE FOLLOWING CONDITIONS...

- A. A RECORD BEING RECEIVED BEGAN WITH AN INVALID CONTROL SEQUENCE. IN THIS CASE IT IS PROBABLE THAT CHARACTER PHASE IS INCORRECTLY ESTABLISHED AND THE RECORD WILL BE TERMINATED BLY A TIMEOUT. IN THIS CONDITION THIS PRINTOUT WILL BE PRECEDED BY AN E3 OR E5 PRINTOUT.
- B. RECORDS ARE NORMALLY RECEIVED WITH TL LOADED INTO THE SYNC/IDLE REGISTER SO THAT CHARACTER PHASE CAN BE ESTABLISHED ON THE TL PRECEEDING THE RECORD. IF THE TRANSMITTER SENDS A CL SEQUENCE SUCH AS CL EOT, CHARACTER PHASE WILL NOT BE ESTABLISHED AND A TIMEOUT WILL OCCUR. TWO SUCH TIMEOUTS NORMALLY OCCUR BEFORE IDLE IS LOADED INTO THE SYNC/IDLE REG IN PREPARATION FOR RECEIVING THE CL SEQUENCE. IF A CL SEQUENCE IS THEN NOT RECEIVED AN ERROR MESSAGE IS OUTPUT.
- C. WHEN THE TRANSMITTING TERMINAL SENDS A CL SEQUENCE (CL EOT) IT IS EXPECTED THAT THE REMOTE TERMINAL WILL NOT REPLY UNTIL AFTER THE THIRD TRY BECAUSE OF THE CONDITION DESCRIBED IN B ABOVE.

I5 CONTENTION

THE INQ SEQUENCE WAS RECEIVED IN RESPONSE TO INQ. THIS INDICATES THAT BOTH TERMINALS ARE ATTEMPTING TO TRANSMIT RECORDS.

4.3 ERROR PRINTOUTS (E)

THE SCA INTERRUPT SERVICE SUBROUTINE PERFORMS ALL ERROR DETECTION AND INITIATES ALL ERROR PRINTOUTS. THE CONSOLE PRINTER IS OPERATED IN OVERLAP WITH THE SCA SO THAT ERROR RECOVERY ATTEMPTS MAY TAKE PLACF AT THE SAME TIME AN ERROR MESSAGE IS BEING PRINTED. SINCE THE SCA OPERATES AT A MUCH HIGHER INTERRUPT RATE THAN THE PRINTER, THIS MAY RESULT IN ERRORS OCCURING FASTER THAN THEY CAN BE PRINTED OUT. WHEN THIS OCCURS SOME OF THE ERROR PRINTOUTS WILL RE BYPASSED. THIS PROCEDURE DOES NOT ADVERSLY AFFECT THE DIAGNOSTIC CAPABILITY OF THE PROGRAM BECAUSE HIGH ERROR RATES CAN ONLY BE CAUSED BY REPETITIVE INVALID TEXT CHARACTERS. WHEN ERRORS OCCUR FASTER THAN CAN BE PRINTED, THE FIRST AND LAST ERRORS OF THE STRING WILL ALWAYS BE PRINTED. ALL ERRORS WILL BE FLAGGED IN THE TRACE PRINTOUT.

NOTE ALL UNEXPECTED CONDITIONS ARE REPORTED BY ERROR PRINTOUTS INCLUDING SOFT (RECOVERABLE) ERRORS. CAREFULL ANALYSIS OF PRINTOUTS IS REQUIRED TO DETERMINE IF A HARDWARE FAILURE ACTUALLY EXISTS. A SMALL NUMBER OF RECOVERED ERRORS ARE GENERALLY TO BE EXPECTED IN A COMMUNICATIONS NETWORK BECAUSE OF SMALL AMOUNTS OF TRANSMISSION LINE NOISE.

E1 DATA SET FAIL

A 3 SECOND TIMEOUT OCCURED AFTER A START WRITE OR START SYNC COMMAND WAS EXECUTED. THIS INDICATES THAT THE CLEAR-TO-SEND LINE FROM THE DATA SET DID NOT BECOME ACTIVE. PROBABLE CAUSE IN A SWITCHED NETWORK IS LOSS OF CONNECTION WITH THE REMOTE TERMINAL. AT LEAST ONE WRITE RESPONSE HAD OCCURED NORMALLY EARLIER IN THE TEST.

E2 LOST SYNC

A RECEIVE TIMEOUT OCCURED WHILE ATTEMPTING TO ESTABLISH SYNCHRONIZATION WITH THE REMOTE TERMINAL. CHARACTER PHASE HAD BEEN ESTABLISHED EARLIER IN THE TEST BUT SYNCHRONIZATION WAS LOST BEFORE THE OPEN FUNCTION COULD BE COMPLETED.

E3 INVALID LEADER

THE FIRST CHARACTER OF A CONTROL SEQUENCE RECEIVED WAS NIETHER CL NOR TL. PROBABLE CAUSE IS INCORRECT ESTABLISHMENT OF CHARACTER PHASE.

E4 EXP CL NOT RCVD

A PREVIOUS RECEIVE TIMEOUT HAD OCCURED WHILE RECEIVING RECORDS SO THE PROGRAM WAS NOW EXPECTING TO RECEIVE A CL SFQUENCE. A TL SEQUENCE WAS RECEIVED. THIS INDICATES THAT THE PREVIOUS TIMEOUT(S) WERE ERROR CONDITIONS. (SEE I4 DESCRIPTION)

E5 INVALID CONT SEQ

A CONTROL SEQUENCE RECEIVED WAS NOT AS EXPECTED.

E6 ERR SEQ

THE ERROR RECEIVED SEQUENCE WAS RECEIVED IN RESPONSE TO A RECORD OR INQ TRANSMITTED. THIS INDICATES THAT THE REMOTE TERMINAL DID NOT RECEIVE THE LAST RECORD CORRECTLY.

SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

E7 WRONG ACK

THE WRONG ALTERNATE ACKNOWLEDGEMENT WAS RECEIVED IN RESPONSE TO A RECORD TRANSMITTED. THIS INDICATES THAT THE REMOTE TERMINAL MISSED AN ENTIRE RECORD.

E8 ERR TIMEOUT

AN UNEXPECTED RECEIVE TIMEOUT OCCURED WHILE ATTEMPTING TO RECEIVE A RECORD OR CONTROL SEQUENCE.

E9 INQ SEQ

THE INQUIRY SEQUENCE WAS RECEIVED IN RESPONSE TO THE LAST ACKNOWLEDGEMENT TRANSMITTED. THIS INDICATES THAT THE REMOTE TERMINAL FAILED TO RECEIVE THE ACKNOWLEDGEMENT.

EA ILRC ERR

AN INTERMEDIATE LRC CHARACTER RECEIVED WAS INCORRECT.

EB LRC ERR

A LRC CHARACTER RECEIVED WAS INCORRECT.

EC 4/8 ERR

A TEXT CHARACTER WAS RECEIVED WHICH WAS NOT OF VALID 4 OF 8 CODE.

ED ABORT SEQ

THE ABORT SEQUENCE (CL IDLE) WAS RECEIVED WHILE RECEIVING A RECORD.

EE CONT CHAR IN TEXT

ONE OF THE STR CONTROL CHARACTERS WAS RECEIVED AS A DATA CHARACTER.

4.4 TRACE PRINTOUTS (T)

THE TRACE PRINTOUT PROVIDES THE CAPABILITY FOR LISTING ON THE CONSOLE PRINTER IN THE ORDER IN WHICH THEY OCCURED...

- A. ALL MAINLINE PROGRAM CALLS ON THE SCA INTERRUPT SERVICE SUBROUTINE.
- B. ALL LOAD SYNC/IDLE REGISTER INSTRUCTIONS.
- C. ALL START READ, START WRITE, AND START SYNC INSTRUCTIONS.
- D. ALL CONTROL AND DATA CHARACTERS TRANSMITTED AND RECEIVED.
- E. ALL TIMEOUTS.

DURING EXECUTION OF A TEST ROUTINE THIS TRACE INFORMATION IS STORED IN A TABLE IN CORE. ON COMPLETION OF THE TEST THIS TABLE MAY THEN BE PRINTED OUT.

IN NORMAL OPERATION ONLY THOSE SECTIONS OF A TEST IN WHICH AN ERROR OCCURED ARE STORED. WHEN AN ERROR OCCURS THE TRACE INFORMATION STARTING WITH THE LAST CALL ON THE INTERRUPT SERVICE SUBROUTINE AND PROCEEDING THROUGH THE ERROR RECOVERY IS STORED. THE PRINTOUT WILL THEN SHOW THE OPERATIONS LEADING UP TO THE ERROR AND THE ENTIRE PROCEDURE REQUIRED TO RECOVER FROM THE ERROR. THE TRACE ENTIRE TEST OPTION (FUNCTION 0 SWT 9) WILL CAUSE THE ENTIRE TEST TO BE TRACED EVEN IF NO ERRORS OCCUR.

DATA CHARACTERS WHICH ARE TRANSMITTED AND RECEIVED WITHOUT ERROR ARE NORMALLY REPRESENTED AS A BLOCK BY THE WORD 'TEXT' IN THE TRACE PRINTOUT. THIS REDUCES PRINT TIME. ALL CONTROL CHARACTERS INCLUDING LEADING IDLE CHARACTERS AND TRAILING PAD CHARACTERS AND ALL ERRONEOUS DATA CHARACTERS ARE PRINTED AS TWO DIGIT HEX CHARACTERS. THE TRACE TEXT OPTION (FUNCTION 0 SWT 10) ALLOWS ALL DATA, CORRECT OR INCORRECT, TO BE PRINTED IN HEX.

ANY CONTROL OR DATA CHARACTER RECEIVED WHICH IS NOT CORRECT WILL BE FLAGGED BY AN ASTERISK AND AN ERROR MESSAGE ID TO THE RIGHT OF THE ERRONEOUS CHARACTER. THE TWO DIGIT ERROR MSG ID REFERS TO THE ERROR MESSAGE ASSOCIATED WITH THE ERROR CONDITION. USE THE ERROR MSG ID TO FIND THE APPROPRIATE ERROR MESSAGE IN THE ERROR PRINTOUTS SECTION (4.3).

****CAUTION**** DO NOT CONFUSE THE HEX CHARACTER WITH THE ERROR MSG ID. THE ERRONEOUS HEX CHARACTER IS TO THE LEFT OF THE ASTERISK, THE ERROR MESSAGE ID IS TO THE RIGHT.

T1 OPEN IN

INDICATES A CALL ON THE SCA SUBROUTINE TO ESTABLISH SYNCHRONIZATION WITH THE REMOTE TERMINAL AND TO RECEIVE THE INQ SEQUENCE PRIOR TO RECEIVE DATA RECORDS. THIS OPERATION WILL BE COMPLETE WHEN THE INQ IS RECEIVED.

T2 OPEN OUT

INDICATES A CALL ON THE SCA SUBROUTINE TO ESTABLISH SYNCHRONIZATION WITH THE REMOTE TERMINAL, TRANSMIT THE INQ SEQUENCE, AND RECEIVE THE ACKNOWLEDGEMENT TO THE INQ.

T3 ACK AND RECV, ST WR

INDICATES A CALL ON THE SCA SUBROUTINE TO ACKNOWLEDGE THE LAST RECORD RECEIVED AND TO RECEIVE THE NEXT RECORD. A START WRITE COMMAND IS EXECUTED AT THIS POINT. THE ACKNOWLEDGEMENT XMITTED WILL BE PRINTED FOLLOWING THIS PRINTOUT. THIS OPERATION WILL BE COMPLETE WHEN THE NEXT RECORD OR EOT IS SUCCESSFULLY RECEIVED.

T4 XM DATA, ST WR

INDICATES A CALL ON THE SCA SUBROUTINE TO XMIT A TEST RECORD AND RECEIVE THE ACKNOWLEDGEMENT. A START WRITE COMMAND IS EXECUTED AT THIS POINT. THE DATA RECORD XMITTED WILL BE PRINTED FOLLOWING THIS PRINTOUT. THIS OPERATION WILL BE COMPLETE WHEN THE CORRECT ACKNOWLEDGEMENT IS RECEIVED.

T5 S/I=IDLE, ST SYNC

AT THIS POINT THE IDLE CHARACTER WAS LOADED INTO THE SYNC/IDLE REG AND A SYNCHRONIZE COMMAND EXECUTED. IF ANY CHARACTERS ARE XMITTED WHEN WRITE RESPONSES BEGIN OCCURING THESE WILL BE PRINTED FOLLOWING THIS PRINTOUT.

T6 ST RD

A START READ COMMAND WAS EXECUTED. CONTROL CHARACTERS OR DATA RECEIVED WILL BE PRINTED FOLLOWING THIS PRINTOUT. THE IDLE CHARACTER IS IN THE SYNC/IDLE REG AT THE TIME THIS COMMAND IS EXECUTED.

T7 S/I=TL, ST RD

TL WAS LOADED INTO THE SYNC/IDLE REG AND A START READ COMMAND EXECUTED. THIS SEQUENCE IS EXECUTED IN PREPARATION FOR RECEIVING A TL CONTROL SEQUENCE. IF THE TRANSMITTER SENDS A CL SEQUENCE SUCH AS CL EOT, CHARACTER PHASE WILL NOT BE ESTABLISHED AND A RECEIVE TIMEOUT WILL OCCUR. FOR THIS REASON AN ERROR MSG WILL NOT BE OUTPUT IF A TIMEOUT OCCURS AT THIS POINT. ANY CONTROL CHARACTERS OR DATA RECEIVED WILL BE PRINTED FOLLOWING THIS PRINTOUT.

T8 S/I=CL, ST RD

CL WAS LOADED INTO THE SYNC/IDLE REG AND A START READ COMMAND EXECUTED. ANY CONTROL CHARACTERS OR DATA RECEIVED WILL BE PRINTED FOLLOWING THIS PRINTOUT.

T9 S/I=IDLE

THE IDLE CHARACTER WAS LOADED INTO THE SYNC/IDLE REGISTER. THIS IS DONE AFTER THE FIRST READ RESPONSE TO OCCUR WHEN TL IS IN THE SYNC/IDLE REG.

TA S/I=IDLE, ST WR

IDLE WAS LOADED INTO THE SYNC/IDLE REG AND A START WRITE COMMAND EXECUTED. THE CONTROL CHARACTERS TRANSMITTED WILL BE PRINTED FOLLOWING THIS PRINTOUT.

TB TIMEOUT

AN EXPECTED THREE SECOND TIMEOUT OCCURED. (REFER I4 DESCRIPTION)

TC ERR TIMEOUT

AN UNEXPECTED THREE SECOND TIMEOUT OCCURED.

TD XM EOT

INDICATES A CALL ON THE SCA SUBROUTINE TO TRANSMIT THE EOT SEQUENCE.

TE CLOSE, RESET

INDICATES A CALL ON THE SCA SUBROUTINE TO HALT ALL SCA OPERATIONS. THE SCA WILL BE RESET.

TF ENDOP, ST RD

END SCA OPERATION AND START READ COMMANDS WERE EXECUTED. THIS IS DONE TO ATTEMPT CORRECT ESTABLISHMENT OF CHARACTER PHASE AFTER AN INVALID LEADER IS READ.

TG CORE

INDICATES THAT CORE STORAGE BECAME FULL WHILE STORING TRACE INFORMATION. THE TEST WILL CONTINUE TO RUN BUT NO FURTHER TRACE INFORMATION CAN BE STORED.

5. COMMENTS

5.1 PROGRAM PHILOSOPHY

THE 1130 SCA TRANSMIT/RECEIVE STR PROGRAM PROVIDES THE ABILITY TO TRANSMIT TEST RECORDS TO OR RECEIVE RECORDS FROM ANOTHER STR TERMINAL. NORMAL STR LINE CONTROL PROCEDURES ARE USED WITH THE EXCEPTION THAT ERROR RECOVERY ATTEMPS ARE UNLIMITED.

THE PROGRAM CONTAINS AN INTERRUPT SERVICE SUBROUTINE VERY SIMILAR TO THE 1130 SCA SUBROUTINE SCAT1. THIS PROVIDES A TEST WHICH OPERATES IN MUCH THE SAME MANNER AS THE CUSTOMERS OPERATION. ALL NORMAL STR TRANSMIT/RECEIVE OPERATIONS ARE CARRIED OUT VIA CALLS ON THIS SUBROUTINE. ALL STR LINE CONTROL IS HANDLED BY THIS SUBROUTINE.

THE TRACE PRINTOUT PROVIDES THE CAPABILITY FOR LISTING ON THE CONSOLE PRINTER IN THE ORDER IN WHICH THEY OCCURED, ALL CALLS ON THE SCA SUBROUTINE, ALL SIGNIFICANT XIO INSTRUCTIONS, AND ALL DATA TRANSMITTED AND RECEIVED.

IN ADDITION TO THE NORMAL TRANSMIT/RECEIVE FUNCTIONS, THREE TEST ROUTINES ARE PROVIDED WHICH MAY BE USED TO HOLD THE SCA IN A CONTINUOUS TRANSMIT OR RECEIVE MODE. THESE ROUTINES ARE INTENDED TO BE USED ONLY FOR SCOPING PURPOSES. THEY PROVIDE NO ERROR DETECTION OR PRINTOUTS.

5.2 DEFINITIONS

THROUGHOUT THIS DOCUMENT AND IN PRINTOUTS BY THIS PROGRAM THE FOLLOWING TERMS AND ABBREVIATIONS ARE USED IN REFERING TO 1130 SCA IO CONTROL COMMANDS.

START READ (ST RD) - AN INITIATE READ IOCC WHICH PLACES THE ADAPTOR IN THE RECEIVE MODE OF OPERATION.

START WRITE (ST WR) - AN INITIATE WRITE IOCC WHICH PLACES THE ADAPTOR IN THE TRANSMIT MODE OF OPERATION.

START SYNC (ST SYNC) - A CONTROL COMMAND WHICH PLACES THE ADAPTOR IN THE SYNCHRONIZE MODE OF OPERATION.

5.3 ROUTINE DESCRIPTIONS

TEST ROUTINE 0 - RECEIVE NORMAL

- A. CALLS ON THE SCA SUBROUTINE TO PERFORM AN OPEN DATA IN FUNCTION.
- B. LOOPS UNTIL THE OPEN OPERATION IS COMPLETE (INQ RCVD).
- C. CALLS ON THE SCA SUBROUTINE TO PERFORM AN ACKNOWLEDGE AND RECEIVE FUNCTION.
- D. LOOPS UNTIL THE FUNCTION IS COMPLETE (GOOD RECORD OR EOT RCVD).
- E. IF END OF TEST HAS BEEN TURNED ON (EOT RCVD), GOES TO PRINT THE END OF TEST MESSAGES. IF END OF TEST HAS NOT BEEN TURNED ON, RETURNS TO STEP C ABOVE.

SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

TEST ROUTINE 1 - TRANSMIT NORMAL

- A. CALLS ON THE SCA SUBROUTINE TO PERFORM AN OPEN DATA OUT FUNCTION.
- B. LOOPS UNTIL THE OPEN FUNCTION IS COMPLETE (ACK RCVD).
- C. SETS A RECORD COUNT INDICATOR EQUAL TO THE VALUE INTERED VIA THE FUNTION 2 OPTION.
- D. IF THE COUNT IS NOT ZERO CALLS ON THE SCA SUBROUTINE TO XMIT THE TEST RECORD CONTAINED IN TABLE DATA1 (SEE 3.2.5) AND RECEIVE THE ACKNOWLEDGEMENT. WHEN THE XMIT FUNCTION IS COMPLETE (ACK RCVD) THE RECORD COUNT IS DECREMENTED AND STEP D REPEATED.
- E. WHEN THE RECORD COUNT GOES TO ZERO A XMIT EOT CALL IS EXECUTED. WHEN THE XMIT EOT FUNCTION IS COMPLETED (EOT RCVD) THE END OF TEST MESSAGES ARE PRINTED.

TEST ROUTINE 2 - TRANSMIT RIPPLE

- A. SETS THE RECORD COUNT TO 64.
- B. SETS UP A TRANSMIT TABLE IN CORE WHICH CONTAINS A RECORD LENGTH OF 80 (HEX 0050). THE DATA CONTAINED IN THE TABLE CONSISTS OF 11 SPECIAL CHARACTERS, THE ALPHA CHARACTERS A-Z, AND THE NUMERICS 0-9. THIS PATTERN IS REPEATED ONCE FOR A TOTAL OF 94 CHARACTERS (SEE LISTING TABLE DATA2). ONLY THE FIRST 80 OF THE 94 CHARACTERS ARE TRANSMITTED.
- C. CALLS ON THE SCA SUBROUTINE TO TRANSMIT THE DEVELOPED TEST RECORD AND RECEIVE THE ACKNOWLEDGEMENT, THEN LOOPS UNTIL THE XMIT FUNCTION IS COMPLETE.
- D. ROTATES THE ENTIRE 94 CHARACTER XMIT TABLE ONE CHARACTER, MOVING THE FIRST CHARACTER TO THE END. IF THE RECORD COUNT IS NOT YET ZERO RETURNS TO STEP C.
- E. AFTER 64 RECORDS HAVE BEEN SENT, CALLS ON THE SCA SUBROUTINE TO XMIT EOT. WHEN THE XMIT EOT OPERATION IS COMPLETE (EOT RCVD) GOES TO PRINT THE END OF TEST MESSAGES.

TEST ROUTINE 3 - RECEIVE CONTINUOUS

- A. LOAD THE IDLE CHARACTER INTO THE SYNC IDLE REGISTER.
- B. EXECUTES A START READ COMMAND AND LOOPS WAITING FOR INTERRUPTS.
- C. READS THE BUFFER WHEN A READ RESPONSE OCCURS.
- D. EXECUTES AN END OPERATION AND ANOTHER START READ WHEN A TIMEOUT OCCURS.

TEST ROUTINE 4 - XMIT BUFFER CONTINUOUS

- A. LOADS THE IDLE CHARACTER INTO THE SYNC/IDLE REGISTER.
- B. EXECUTES A START WRITE COMMAND AND LOOPS WAITING FOR INTERRUPTS.
- C. WHEN ANY INTERRUPT OCCURS THE CHARACTER ENTERED VIA FUNCTION 3 IS LOADED INTO THE BUFFER.

TEST ROUTINE 5 - XMIT SYNC/IDLE CONTINUOUS

- A. LOADS THE CHARACTER ENTERED VIA FUNCTION 3 INTO THE SYNC/IDLE REGISTER.
- B. EXECUTES A START WRITE COMMAND AND LOOPS WAITING FOR INTERRUPTS.
- C. REPEATS STEP A WHEN ANY INTERRUPT OCCURS.

SCA INTERRUPT SERVICE SUBROUTINE

THIS ROUTINE IS CALLED BY TEST ROUTINES 0, 1, AND 2 FOR ALL TRANSMIT/RECEIVE OPERATIONS.

THE CALLING SEQUENCE IS...

```
BSI L SCAT
DC /WXYZ CONTROL PARAMETER
DC IOAR XMIT TABLE ADDRESS (USED ONLY FOR XMIT FUNCTIONS)
```

W DEFINES THE I/O FUNCTION TO BE PERFORMED. X, Y, AND Z FURTHER DEFINE THE OPERATION DEPENDING ON THE FUNCTION SELECTED BY W.

W=10 TEST FUNCTION, XYZ MUST BE 1000

TEST THE SCA SUBROUTINE BUSY INDICATOR. IF THE INDICATOR IS ON RETURN TO THE CALLING ROUTINE AT THE CONTROL PARAMETER+1. IF THE INDICATOR IS OFF RETURN AT THE CONTROL PARAMETER+2.

W=1, 2, OR 3 CLOSE FUNCTION, XYZ NOT USED
TURNS OFF THE SCA SUBROUTINE BUSY INDICATOR AND RESETS THE SCA.

W=4 OPEN FUNCTION, XY NOT USED, Z=0 DATA IN, Z=NON-0 DATA OUT

BEGINS HANDSHAKING WITH THE REMOTE TERMINAL. IF TEL IS RECEIVED TRANSMITS THE TEL SEQUENCE. IF EOT IS RECEIVED TRANSMITS THE EOT SEQUENCE. IF DATA IN IS SELECTED, RESETS THE BUSY INDICATOR WHEN INQ IS RECEIVED. IF DATA OUT IS SELECTED TRANSMITS INQ UNTIL THE CORRECT ACK IS RECEIVED THEN RESETS THE BUSY INDICATOR.

W=5 XMIT FUNCTION, X=0 XMIT DATA, X=NON-0 XMIT EOT, Y=0 DO NOT XMIT ILBC CHARACTERS, Y=NON-0 XMIT AN ILRC FOLLOWING EACH RM OR GM IN THE XMIT TABLE, Z NOT USED

IF XMIT DATA, TRANSMITS THE TEST RECORD LOCATED AT IOAR AND RECEIVES THE ACKNOWLEDGEMENT. THE FIRST WORD OF THE TEST RECORD TABLE MUST CONTAIN THE COUNT OF THE NUMBER OF CHARACTERS TO BE TRANSMITTED. NORMAL ERROR RECOVERY IS PERFORMED UNTIL THE CORRECT ACKNOWLEDGEMENT IS RECEIVED. WHEN THE CORRECT ACK IS RECEIVED THE BUSY INDICATOR IS RESET.
IF XMIT EOT, XMITS THE EOT SEQUENCE AND RECEIVES THE RESPONSE. IF THE RESPONSE EOT, THE BUSY INDICATOR IS RESET, THE END OF TEST INDICATOR IS TURNED ON, AND THE SCA SUBROUTINE IS SET TO A CONTINUOUS HANDSHAKE MODE. IF THE RESPONSE IS NOT EOT, EOT IS RETRANSMITTED.

W=6-F ACKNOWLEDGE AND RECEIVE FUNCTION, X NOT USED, Y=0 DO NOT USE ILRC, Y=NON-0 USE ILRC, Z NOT USED

ACKNOWLEDGES THE LAST RECORD RECEIVED AND RECEIVES THE NEXT RECORD. PERFORMS NORMAL ERROR RECOVERY UNTIL THE RECORD IS PROPERLY RECEIVED, THEN RESETS THE ROUTINE BUSY INDICATOR. IF EOT IS RECEIVED THE BUSY INDICATOR IS RESET, THE END OF TEST INDICATOR SET, AND EOT IS TRANSMITTED. HANDSHAKING WILL THEN CONTINUE

SCA TRANSMIT/RECEIVE STR

6. APPENDIX

6.1 STR CONTROL CHARACTERS

CHARACTER	.BIT CONFIGURATION.	HEX .	
	. N X O R 8 4 2 1 .		
TL	. 0 0 1 1 0 1 0 1 .	35 .	
CL	. 0 1 0 1 0 1 0 1 .	55 .	
INQ/ERR	. 0 1 0 1 1 0 0 1 .	59 .	
SOR1/ACK1	. 0 1 0 1 0 0 1 1 .	53 .	
SOR2/ACK2	. 0 0 1 1 0 0 1 1 .	33 .	
EOT	. 0 1 0 1 1 0 1 0 .	5A .	MAY ALSO BE USED AS A DATA CHARACTER
TEL	. 0 1 0 1 1 1 0 0 .	5C .	MAY ALSO BE USED AS A DATA CHARACTER
LRC	. - - - - - .		

6.2 STR CONTROL SEQUENCES

	. LEADER .	. TRAILER .
* END OF IDLE (EDI)	. CL .	. IDLE .
* INQUIRY (INQ)	. TL .	. INQ .
START OF ODD RECORD (SOR1)	. TL .	. SOR1 .
START OF EVEN RECORD (SOR2)	. TL .	. SOR2 .
END OF RECORD (EOTR)	. TL .	. LRC .
ACKNOWLEDGEMENT OF ODD RECORD (ACK1)	. CL .	. ACK1 .
ACKNOWLEDGEMENT OF EVEN RECORD (ACK2)	. CL .	. ACK2 .
ERROR RECEIVED (ERR)	. CL .	. ERR .
* END OF TRANSMISSION (EOT)	. CL .	. EOT .
* TELEPHONE (TEL)	. CL .	. TEL .

* THESE SEQUENCES ARE PRECEDED BY 1.25 SECONDS OF IDLES.

----- LAST PAGE -----

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```

0160          ABS          3AE00020
          ORG      /0160    3AE00030
          *          3AE00040
          DC      /03AE     PID 3AE00050
          ***** 3AE00060
          *          3AE00070
          *          3AE00080
          *          3AE00090
          *          3AE00100
          *          3AE00110
          *          3AE00120
          DATA1 DC      80   3AE00130
          DC      /7171     AA 3AE00140
          DC      /7171     AA 3AE00150
          DC      /7171     AA 3AE00160
          DC      /7171     AA 3AE00170
          DC      /7171     AA 3AE00180
          DC      /7171     AA 3AE00190
          DC      /7171     AA 3AE00200
          DC      /7171     AA 3AE00210
          DC      /7171     AA 3AE00220
          DC      /7171     AA 3AE00230
          DC      /7171     AA 3AE00240
          DC      /7171     AA 3AE00250
          DC      /7171     AA 3AE00260
          DC      /7171     AA 3AE00270
          DC      /7171     AA 3AE00280
          DC      /7171     AA 3AE00290
          DC      /7171     AA 3AE00300
          DC      /7171     AA 3AE00310
          DC      /7171     AA 3AE00320
          DC      /7171     AA 3AE00330
          DC      /7171     AA 3AE00340
          DC      /7171     AA 3AE00350
          DC      /7171     AA 3AE00360
          DC      /7171     AA 3AE00370
          DC      /7171     AA 3AE00380
          DC      /7171     AA 3AE00390
          DC      /7171     AA 3AE00400
          DC      /7171     AA 3AE00410
          DC      /7171     AA 3AE00420
          DC      /7171     AA 3AE00430
          DC      /7171     AA 3AE00440
          DC      /7171     AA 3AE00450
          DC      /7171     AA 3AE00460
          DC      /7171     AA 3AE00470
          DC      /E1E2     12 3AE00480
          DC      /93E4     34 3AE00490
          DC      /9596     56 3AE00500
          DC      /17E8     78 3AE00510
          DC      /99AA     9RM 3AE00520
          BSS      24        3AE00530
          *          3AE00540
          *          3AE00550
          *          3AE00560
          *          3AE00570
          *          3AE00580
          *          3AE00590
          *          3AE00600
          *          3AE00610
          *          3AE00620
          *          3AE00630
          *          3AE00640
          *          3AE00650
          *          3AE00660
          *          3AE00670
          *          3AE00680
          *          3AE00690
          DATA2 DC      80   3AE00610
          DC      /1B2B     # 3AE00620
          DC      /4B4E     $ - 3AE00630
          DC      /6C8B     < . 3AE00640
          DC      /CA9C     . @ 3AE00650
          DC      /ACB1     % / 3AE00660
          DC      /8E71     & A 3AE00670
          DC      /7263     B C 3AE00680
          DC      /7465     D E 3AE00690

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01AB 0 6687          DC      /6687     F G 3AE00700
01AC 0 7869          DC      /7869     H I 3AE00710
01AD 0 D1D2          DC      /D1D2     J K 3AE00720
01AE 0 C3D4          DC      /C3D4     L M 3AE00730
01AF 0 C5C6          DC      /C5C6     N O 3AE00740
01B0 0 47D8          DC      /47D8     P Q 3AE00750
01B1 0 C9B2          DC      /C9B2     R S 3AE00760
01B2 0 A3B4          DC      /A3B4     T U 3AE00770
01B3 0 A5A6          DC      /A5A6     V W 3AE00780
01B4 0 27B8          DC      /27B8     X Y 3AE00790
01B5 0 A99A          DC      /A99A     Z 0 3AE00800
01B6 0 E1E2          DC      /E1E2     1 2 3AE00810
01B7 0 93E4          DC      /93E4     3 4 3AE00820
01B8 0 9596          DC      /9596     5 6 3AE00830
01B9 0 17E8          DC      /17E8     7 8 3AE00840
01BA 0 991B          DC      /991B     9 # 3AE00850
01BB 0 2B4B          DC      /2B4B     , $ 3AE00860
01BC 0 4E6C          DC      /4E6C     - < 3AE00870
01BD 0 8BCA          DC      /8BCA     . . 3AE00880
01BE 0 9CAC          DC      /9CAC     @ % 3AE00890
01BF 0 B18E          DC      /B18E     / & 3AE00900
01C0 0 7172          DC      /7172     A B 3AE00910
01C1 0 6374          DC      /6374     C D 3AE00920
01C2 0 6566          DC      /6566     E F 3AE00930
01C3 0 8778          DC      /8778     G H 3AE00940
01C4 0 69D1          DC      /69D1     I J 3AE00950
01C5 0 D2C3          DC      /D2C3     K L 3AE00960
01C6 0 D4C5          DC      /D4C5     M N 3AE00970
01C7 0 C647          DC      /C647     O P 3AE00980
01C8 0 D8C9          DC      /D8C9     Q R 3AE00990
01C9 0 B2A3          DC      /B2A3     S T 3AE01000
01CA 0 B4A5          DC      /B4A5     U V 3AE01010
01CB 0 A627          DC      /A627     W X 3AE01020
01CC 0 B8A9          DC      /B8A9     Y Z 3AE01030
01CD 0 9AE1          DC      /9AE1     0 1 3AE01040
01CE 0 E293          DC      /E293     2 3 3AE01050
01CF 0 E495          DC      /E495     4 5 3AE01060
01D0 0 9617          DC      /9617     6 7 3AE01070
01D1 0 E899          DC      /E899     8 9 3AE01080
          *          3AE01090
          *          3AE01100
          *          3AE01110
          *          3AE01120
          *          3AE01130
          *          3AE01140
          *          3AE01150
          *          3AE01160
          *          3AE01170
          *          3AE01180
          *          3AE01190
          *          3AE01200
          *          3AE01210
          *          3AE01220
          *          3AE01230
          *          3AE01240
          *          3AE01250
          *          3AE01260
          *          3AE01270
          *          3AE01280
          *          3AE01290
          *          3AE01300
          *          3AE01310
          *          3AE01320
          *          3AE01330
          *          3AE01340
          *          3AE01350
          *          3AE01360
          *          3AE01370
          *****
          *          PROGRAM INITIALIZATION - BEGIN
          *          *****
          *          BEGIN LDX L1 T          XRI=CONSTANT TABLE ADR
          *          LDX L2 /1000          DETERMINE CORE SIZE
          *          LD L2 CORSZ
          *          S 1 CORSZ-T
          *          BSC L STCOR,+
          *          LD L 2
          *          SLA 1
          *          STO L 2
          *          MDX BEGIN+4
          *          STCOR MDX 2 -2          MAKE HIGHEST EVEN ADRS
          *          NOP
          *          STX L2 CORSZ          SAVE IT
          *          LD 1 INTER-T          SET UP
          *          LDX 2 6          INTERRUPT
          *          VECTR STO 2 7          VECTOR ADDRESSES
          *          MDX 2 -1          TO ERROR
          *          MDX VECTR          ADDRESS
          *          LDX L2 INT4          SET UP INTERRUPT
          *          STX L2 /C          LEVEL 4 VECTOR
          *
          01D2 0 6500 089D
          01D4 0 6600 1000
          01D6 0 6600 08E7
          01D8 0 914A
          01D9 0 4C18 01E1
          01DB 0 C400 0002
          01DD 0 1001
          01DE 0 D400 0002
          01E0 0 70F5
          01E1 0 72FE
          01E2 0 1000
          01E3 0 6E00 08E7
          01E5 0 C156
          01E6 0 6206
          01E7 0 D207
          01E8 0 72FF
          01E9 0 70FD
          01EA 0 6600 03A7
          01EC 0 6E00 000C

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```

01EE 0 C1FF          LD  1 MDX3-T   SET UP
01EF 0 D400 0000    STO  L  0       RESTART
01F1 0 C9FD          LDD  1 BOOT-T   BRANCHES
01F2 0 DC00 0004    STD  L  4
*
01F4 0 1010          SLA  16        CLEAR
01F5 0 D100          STO  1 SWO-T   FUNCTION 0 OPTIONS
01F6 0 D13C          STO  1 LGBSY-T AND RESET BUSY
01F7 0 D138          STO  1 SWBSY-T INDICATORS
*
*****
*
*           WAIT FOR START SELECTION - START
*
*****
*
01F8 0 4400 0418    START BSI L SCAT CLEAR SCA SUB-ROUTINE
01FA 0 3000          DC      /3000
*
01FB 0 4400 031F    BSI  L LOG     PRINT PROG START MSG
01FD 0 08FC          DC      MSG1
*
01FE 0 4400 02D7    WTA  BSI L SWCHK CHECK FOR SWITCH ENTRY
*
0200 0 C100          LD   1 SWO-T
0201 0 4C04 030F    BSC  L HALT,E  BR IF HALT OPTION
*
0203 0 1008          SLA  8
0204 0 4C10 01FE    BSC  L WTA,-   BR IF START NOT SELECTED
*
0206 0 1808          SRA  8
0207 0 E11A          AND  1 H007C-T RESET HALT, MANUAL TERM,
0208 0 D100          STO  1 SWO-T   AND START OPTIONS
*
0209 0 C101          LOOP LD  1 SW1-T
020A 0 100C          SLA  12
020B 0 180C          SRA  12
020C 0 D101          STO  1 SW1-T
020D 0 911D          S    1 D5-T
020E 0 4C08 0212    BSC  L TEST,+  BR IF VALID RTN SELECT
*
0210 0 1010          SLA  16
0211 0 D101          STO  1 SW1-T   INVALID ROUTINE,
*                               SELECT RTN 0
*
0212 0 4400 031F    TEST BSI L LOG     PRINT RTN START MSG
0214 0 0911          DC      MSG3
*
0215 0 6680 089E    LDX  I2 SW1
0217 0 4E80 0219    BSC  I2 RTTBL  GO TO TEST ROUTINE
*
-----
*
*           ROUTINE ADDRESS TABLE - RTTBL
*
0219 0 021F          RTTBL DC TEST0
021A 0 0230          DC TEST1
021B 0 0246          DC TEST2
021C 0 026F          DC TEST3
021D 0 0286          DC TEST4
021E 0 0297          DC TEST5
*
*****
*
*           TEST ROUTINE 0 - TEST0
*
*****
*
021F 0 4400 031F    TEST0 BSI L LOG     PRINT RTN NUMBER
0221 0 0000          DC      /0000

```

```

0222 0 4400 0418   *
0224 0 4000          BSI  L SCAT   OPEN-DATA IN
*                               DC      /4000
*                               3AE02060
*                               3AE02070
*                               3AE02080
0225 0 4400 02A8   *
*                               BSI  L WTB    WAIT UNTIL READY
*                               3AE02090
*                               3AE02100
0227 0 4400 0418   *
0229 0 6010          RCV  BSI L SCAT   ACKNOWLEDGE AND RECEIVE
*                               DC      /6010
*                               3AE02110
*                               3AE02120
*                               3AE02130
022A 0 4400 02A8   *
*                               BSI  L WTB    WAIT UNTIL READY
*                               3AE02140
*                               3AE02150
022C 0 C139          LD   1 ENDSW-T
022D 0 4C20 03BD    BSC  L END,Z    BR IF EOT RECEIVED.
*                               3AE02160
*                               3AE02170
*                               3AE02180
022F 0 70F7          MDX  RCV    GO RECEIVE NEXT MSG
*                               3AE02190
*                               3AE02200
*                               3AE02210
*                               3AE02220
*                               3AE02230
*                               3AE02240
*                               3AE02250
*                               3AE02260
*                               3AE02270
*                               3AE02280
*                               3AE02290
*                               3AE02300
*                               3AE02310
*                               3AE02320
*                               3AE02330
*                               3AE02340
*                               3AE02350
*                               3AE02360
*                               3AE02370
*                               3AE02380
*                               3AE02390
*                               3AE02400
*                               3AE02410
*                               3AE02420
*                               3AE02430
*                               3AE02440
*                               3AE02450
*                               3AE02460
*                               3AE02470
*                               3AE02480
*                               3AE02490
*                               3AE02500
*                               3AE02510
*                               3AE02520
*                               3AE02530
*                               3AE02540
*                               3AE02550
*                               3AE02560
*                               3AE02570
*                               3AE02580
*                               3AE02590
*                               3AE02600
*                               3AE02610
*                               3AE02620
*                               3AE02630
*                               3AE02640
*                               3AE02650
*                               3AE02660
*                               3AE02670
*                               3AE02680
*                               3AE02690
*                               3AE02700
*                               3AE02710
*                               3AE02720
*                               3AE02730
*****
*
*           TEST ROUTINE 1 - TEST1
*
*****
*
0230 0 4400 031F    TEST1 BSI L LOG     PRINT RTN NUMBER
0232 0 0001          DC      /0001
*
0233 0 C102          LD   1 SW2-T
0234 0 D150          STO  1 XMCNT-T SET RECORD COUNT
*
0235 0 4400 0418    BSI  L SCAT   OPEN-DATA OUT
0237 0 4001          DC      /4001
*
0238 0 4400 02A8    BSI  L WTB    WAIT UNTIL READY
*
023A 0 C150          XM1  LD  1 XMCNT-T
023B 0 4C08 02CF    BSC  L TMEOT,+ BR IF RECORD COUNT 0
*
023D 0 9118          S    1 D1-T    DECREMENT COUNT BY 1
023E 0 D150          STO  1 XMCNT-T
*
023F 0 4400 0418    BSI  L SCAT   XMIT RECORD
0241 0 5010          DC      /5010
0242 0 0161          DC      DATA1
*
0243 0 4400 02A8    BSI  L WTB    WAIT UNTIL READY
*
0245 0 70F4          MDX  XM1    GO TO CK COUNT
*
*****
*
*           TEST ROUTINE 2 - TEST2
*
*****
*
0246 0 4400 031F    TEST2 BSI L LOG     PRINT RTN NUMBER
0248 0 0002          DC      /0002
*
0249 0 6240          LDX  2 64
024A 0 6F00 08ED    STX  L2 XMCNT  SET RECORD COUNT = 64
*
024C 0 6200          LDX  2 -48
024D 0 C600 01D2    LD   L2 DATA2+48 SET UP
024F 0 D600 0A87    STO  L2 TSTBL+48 DATA TABLE
0251 0 7201          MDX  2 1      TO XMIT
0252 0 70FA          MDX  TST21
*
0253 0 4400 0418    BSI  L SCAT   OPEN-DATA OUT
0255 0 4001          DC      /4001

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```

0256 0 4400 02A8      BSI L  WTB      WAIT UNTIL READY      3AE02740
*
0258 0 4400 0418      XM2 BSI L  SCAT      XMIT RECORD          3AE02750
025A 0 5010            DC      /5010        3AE02760
025B 0 0A57            DC      TSTBL        3AE02770
*
025C 0 4400 02A8      BSI L  WTB      WAIT UNTIL READY      3AE02780
*
025E 0 622F            LDX 2  47          SHIFT              3AE02790
025F 0 6400 0A58      LD  L  TSTBL+1     XMIT              3AE02800
0261 0 1890            SRT 16             DATA             3AE02810
0262 0 6600 0A57      TST22 LD L2 TSTBL    TABLE           3AE02820
0264 0 18D8            RTE 24             3AE02830
0265 0 0600 0A57      STO L2 TSTBL      3AE02840
0267 0 1088            SLT 8              3AE02850
0268 0 72FF            MDX 2  -1          3AE02860
0269 0 70F8            MDX      TST22     3AE02870
*
026A 0 74FF 08ED      MDX L  XMCNT,-1    DECREMENT COUNT BY 1 3AE02880
026C 0 70EB            MDX      XM2      XM NEXT RCD IF CNT NOT 0 3AE02890
*
026D 0 4C00 02CF      BSC L  TMEOT      COUNT ZERO - XMIT EOT 3AE02900
*
*****
TEST ROUTINE 3 - TEST3
*****
026F 0 4400 031F      TEST3 BSI L  LOG      PRINT RTN NUMBER     3AE02910
0271 0 0003            DC      /0003        3AE02920
*
0272 0 6600 0279      LDX L2 T3INT      SET INTERRUPT VECTOR 3AE02930
0274 0 6E00 0009      STX L2 /9         3AE02940
*
0276 0 09DB            XIO 1  LOAD-T     LOAD SYNC IN SYNC/IDLE REG 3AE02950
0277 0 09CF            XIO 1  STRED-T    START READ           3AE02960
*
0278 0 7050            MDX      WTC      GO WAIT FOR INTERRUPT 3AE02970
*
-----
TEST RTN 3 INT SERVICE - T3INT
*
0279 0 0000            T3INT DC *-*      INTERRUPT ENTRY      3AE02980
027A 0 09CB            STD 1  AQ-T       SAVE A AND Q         3AE02990
*
027B 0 09E3            XIO 1  SENSR-T    SENSE DSW AND RESET  3AE03000
027C 0 4828            BSC 2+           SKIP IF NO READ RESPONSE 3AE03010
*
027D 0 09D5            XIO 1  READ-T     READ BUFFER          3AE03020
*
027E 0 1003            SLA 3            3AE03030
027F 0 4C10 0283      BSC L  T3IEX,-    BR IF NO TIMEOUT     3AE03040
*
0281 0 09E5            XIO 1  ENDOP-T    END SCA OPERATION    3AE03050
0282 0 09CF            XIO 1  STRED-T    START READ           3AE03060
*
0283 0 09CB            T3IEX LDD 1 AQ-T   RESTORE A AND Q      3AE03070
0284 0 4CC0 0279      BOSC I  T3INT     EXIT INTERRUPT       3AE03080
*
*****
TEST ROUTINE 4 - TEST4
*****
0286 0 4400 031F      TEST4 BSI L  LOG      PRINT RTN NUMBER     3AE03090
0288 0 0004            DC      /0004        3AE03100

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```

0289 0 6600 0290      LDX L2 T4INT      SET INTERRUPT VECTOR  3AE03420
028B 0 6E00 00D9      STX L2 /9         3AE03430
*
028D 0 09DB            XIO 1  LOAD-T     LOAD IDLE TO SYNC REG 3AE03440
028E 0 09D1            XIO 1  STWRT-T    START WRITE          3AE03450
*
028F 0 7039            MDX      WTC      GO WAIT FOR INTERRUPTS 3AE03460
*
-----
TEST RT4 INT SERVICE - T4INT
*
0290 0 0000            T4INT DC *-*      INTERRUPT ENTRANCE   3AE03470
0291 0 09CB            STD 1  AQ-T       SAVE A AND Q REGS    3AE03480
*
0292 0 09E3            XIO 1  SENSR-T    SENSE DSW AND RESET  3AE03490
0293 0 09D9            XIO 1  WRSW3-T    WRITE TO BUFFER      3AE03500
*
0294 0 09CB            LDD 1  AQ-T       RESTORE A AND Q REGS  3AE03510
0295 0 4CC0 0290      BOSC I  T4INT     EXIT INTERRUPT       3AE03520
*
*****
TEST ROUTINE 5 - TEST 5
*****
0297 0 4400 031F      TEST5 BSI L  LOG      PRINT RTN NUMBER     3AE03530
0299 0 0005            DC      /0005        3AE03540
*
029A 0 6600 02A1      LDX L2 T5INT      SET INTERRUPT VECTOR  3AE03550
029C 0 6E00 0009      STX L2 /9         3AE03560
*
029E 0 09E1            XIO 1  SIREG-T    LOAD SYNC/IDLE REG   3AE03570
029F 0 09D1            XIO 1  STWRT-T    START WRITE          3AE03580
*
02A0 0 7028            MDX      WTC      GO WAIT FOR INTERRUPT 3AE03590
*
-----
TEST RTN 5 INT SERVICE - T5INT
*
02A1 0 0000            T5INT DC *-*      INTERRUPT ENTRANCE   3AE03600
02A2 0 09CB            STD 1  AQ-T       SAVE A AND Q REGS    3AE03610
*
02A3 0 09E3            XIO 1  SENSR-T    SENSE DSW AND RESET  3AE03620
02A4 0 09E1            XIO 1  SIREG-T    LOAD SYNC/IDLE REG   3AE03630
*
02A5 0 09CB            LDD 1  AQ-T       RESTORE A AND Q REGS  3AE03640
02A6 0 4CC0 02A1      BOSC I  T5INT     EXIT INTERRUPT       3AE03650
*
*****
WAIT LOOP B - WTB
*****
02A8 0 0000            WTB  DC *-*      GO CHECK FOR SWITCH ENTRY 3AE03660
02A9 0 4400 02D7      BSI L  SWCHK      3AE03670
*
02AB 0 0C10            LD 1  SWO-T       3AE03680
02AC 0 4C04 030F      BSC L  HALT,E     BR IF HALT SELECTED  3AE03690
*
02AE 0 1801            SRA 1            3AE03700
02AF 0 4C04 0315      BSC L  TERM,E     BR IF MANUAL TERM SLEECTED 3AE03710
*
02B1 0 4400 031F      BSI L  LOG      CK IF LOG RTN BUSY   3AE03720
02B3 0 8000            DC      /8000        3AE03730
02B4 0 7003            MDX      CKSCA     BR IF BUSY           3AE03740

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```

*
02B5 0 C14F      *      LD      I EX-T      3AE04100
02B6 0 4C20 02BE *      BSC    L  ERRPR,Z    BR IF ERROR MSG TO PRINT 3AE04110
*                                     3AE04120
02B8 0 4400 0418 *      CKSCA BSI  L  SCAT      TEST SCA RTN FOR BUSY 3AE04130
02BA 0 0000      *      DC      0              3AE04140
02BB 0 70ED      *      MDX    WTB+1        BR IF BUSY 3AE04150
*                                     3AE04160
02BC 0 4C80 02A8 *      BSC    I  WTB        RETURN TO CALLING RTN 3AE04170
*                                     3AE04180
*                                     3AE04190
*-----*
*      PRINT ERROR MESSAGE - ERRPR 3AE04200
*      ERRPR STO  ERLOG+2  STORE MSG ADR IN LOG CALL 3AE04210
02BE 0 D008      *      SLA    16              3AE04220
02BF 0 1010      *      STO  I EX-T        CLEAR ERROR MSG ADR IND 3AE04230
02C0 0 D14F      *      LD      I SWO-T      3AE04240
02C1 0 C100      *      SRA    2              3AE04250
02C2 0 1802      *      BSC    L  CKSCA,E    BR IF BYPASS ERR PRINT 3AE04260
02C3 0 4C04 02B8 *      BSC    L  CKSCA,E    BR IF BYPASS ERR PRINT 3AE04270
*                                     3AE04280
02C5 0 4400 031F *      ERLOG BSI  L  LOG      PRINT ERROR MSG 3AE04290
02C7 0 0000      *      DC      *-*          3AE04300
*                                     3AE04310
*                                     3AE04320
02C8 0 70EF      *      MDX    CKSCA        3AE04330
*      3AE04340
*      3AE04350
*      3AE04360
*      3AE04370
*      3AE04380
*      3AE04390
*      3AE04400
*      3AE04410
*      3AE04420
*      3AE04430
*      3AE04440
*      3AE04450
*      3AE04460
*      3AE04470
*      3AE04480
*      3AE04490
*      3AE04500
*      3AE04510
*      3AE04520
*      3AE04530
*      3AE04540
*      3AE04550
*      3AE04560
*      3AE04570
*      3AE04580
*      3AE04590
*      3AE04600
*      3AE04610
*      3AE04620
*      3AE04630
*      3AE04640
*      3AE04650
*      3AE04660
*      3AE04670
*      3AE04680
*      3AE04690
*      3AE04700
*      3AE04710
*      3AE04720
*      3AE04730
*      3AE04740
*      3AE04750
*      3AE04760
*      3AE04770
*      3AE04780
*      3AE04790
*      3AE04800
*      3AE04810
*      3AE04820
*      3AE04830
*      3AE04840
*      3AE04850
*      3AE04860
*      3AE04870
*      3AE04880
*      3AE04890
*      3AE04900
*      3AE04910
*      3AE04920
*      3AE04930
*      3AE04940
*      3AE04950
*      3AE04960
*      3AE04970
*      3AE04980
*      3AE04990
*      3AE05000
*      3AE05010
*      3AE05020
*      3AE05030
*      3AE05040
*      3AE05050
*      3AE05060
*      3AE05070
*      3AE05080
*      3AE05090
*      3AE05100
*      3AE05110
*      3AE05120
*      3AE05130
*      3AE05140
*      3AE05150
*      3AE05160
*      3AE05170
*      3AE05180
*      3AE05190
*      3AE05200
*      3AE05210
*      3AE05220
*      3AE05230
*      3AE05240
*      3AE05250
*      3AE05260
*      3AE05270
*      3AE05280
*      3AE05290
*      3AE05300
*      3AE05310
*      3AE05320
*      3AE05330
*      3AE05340
*      3AE05350
*      3AE05360
*      3AE05370
*      3AE05380
*      3AE05390
*      3AE05400
*      3AE05410
*      3AE05420
*      3AE05430
*      3AE05440
*      3AE05450
*
WTC BSI L SWCHK GO CHECK FOR SWITCH ENTRY
*
LD I SWO-T
BSC L HALT,E BR IF HALT SELECTED
*
MDX WTC LOOP
*****
*
TRANSMIT EOT - TMEOT
*****
*
TMEOT BSI L SCAT TRANSMIT EOT
DC /5100
DC TSTBL
*
BSI L WTB WAIT UNTIL READY
*
BSC L END GO TO PRINT END MSGS
*****
*
CHECK FOR SWITCH ENTRY - SWCHK
*****
*
SWCHK DC *-*
LD I SWBSY-T
BSC I SWCHK,+ - EXIT IF NO SW ENTRY
*
BSI L LOG LOOP UNTIL
DC /8000 LOG ROUTINE
MDX *-4 IS NOT BUSY
*
LD I SWS-T FETCH SW ENTRY READ
SRT 14

```

SCA TRANSMIT/RECEIVE STR

```

02E1 0 E11C      AND    1 D3-T      3AE04780
02E2 0 D001      STO    **1        3AE04790
02E3 0 6600 0000 *      LDX    L2 *-*      XR2=FUNCTION BITS (0-1) 3AE04800
*                                     3AE04810
02E5 0 1010      *      SLA    16          3AE04820
02E6 0 108E      *      SLT    14          3AE04830
02E7 0 D600 089D *      STO    L2 SWO      STORE DATA BITS (2-15) 3AE04840
*                                     3AE04850
02E9 0 C103      *      LD      1 SW3-T    3AE04860
02EA 0 1008      *      SLA    8          3AE04870
02EB 0 D104      *      STO    1 SW3A-T    XMIT CHAR FOR RTNS 4 AND 5 3AE04880
*                                     3AE04890
02EC 0 C152      *      LD      1 SWS-T    CONVERT FIRST 3AE04900
02ED 0 1888      *      SRT    8          TWO HEX CHARACTERS 3AE04910
02EE 0 1008      *      SLA    8          READ TO TWO PRINTER 3AE04920
02EF 0 1808      *      SRA    8          CHARACTERS AND 3AE04930
02F0 0 4400 0385 *      BSI    L  HEX      STORE IN SWITCH 3AE04940
02F2 0 D019      *      STO    SWMSG+4     ACKNOWLEDGEMENT MSG 3AE04950
*                                     3AE04960
02F3 0 1010      *      SLA    16          CONVERT SECOND TWO HEX 3AE04970
02F4 0 1088      *      SLT    8          CHARS READ TO 3AE04980
02F5 0 4400 0385 *      BSI    L  HEX      PRINTER CODE AND 3AE04990
02F7 0 D015      *      STO    SWMSG+5     STORE IN SWITCH MSG 3AE05000
*                                     3AE05010
02F8 0 1010      *      SLA    16          3AE05020
02F9 0 D138      *      STO    1 SWBSY-T   RESET SW BUSY INDICATOR 3AE05030
*                                     3AE05040
02FA 0 4400 031F *      BSI    L  LOG      PRINT SWS MESSAGE 3AE05050
02FC 0 0308      *      DC      SWMSG      3AE05060
*                                     3AE05070
02FD 0 4C80 02D7 *      BSC    I  SWCHK     RETURN TO CALLING RTN 3AE05080
*                                     3AE05090
*-----*
*      INT REQ KEY INTERRUPT SERVICE - SWINT 3AE05100
*      SWINT DC *-*      ENTER FROM INT4 RTN 3AE05110
*      LD      1 SWBSY-T 3AE05120
0300 0 C13B      *      BSC    I  SWINT,Z  EXIT IF BUSY IND ON 3AE05130
0301 0 4CA0 02FF *      STX    L  SWBSY    SET BUSY INDICATOR 3AE05140
*      XID    1 RDSWS-T   READ SWITCHES 3AE05150
0303 0 6C00 08D8 *      BSC    I  SWINT    RETURN TO INT LEVEL 4 RTN 3AE05160
0305 0 09F7      *      3AE05170
0306 0 4C80 02FF *      3AE05180
*      3AE05190
*-----*
*      ACKNOWLEDGE SWITCHES MSG - SWMSG 3AE05200
*      SWMSG DC /3ED8    A2 3AE05210
*      DC /2121          3AE05220
*      DC /9A92          SW 3AE05230
*      DC /9A21          S 3AE05240
*      DC *-*            3AE05250
*      DC *-*            3AE05260
*      DC 0              3AE05270
*      3AE05280
*      3AE05290
*      3AE05300
*      3AE05310
*      3AE05320
*      3AE05330
*      3AE05340
*      3AE05350
*      3AE05360
*      3AE05370
*      3AE05380
*      3AE05390
*      3AE05400
*      3AE05410
*      3AE05420
*      3AE05430
*      3AE05440
*      3AE05450
*
HALT AND I H007C-T RESET HALT, MANUAL TRFM,
STO 1 SWO-T AND START OPTIONS
*
BSI LOG PRINT HALT
DC MSG2
*
BSC L START GO TO CLOSE SCA RTN
*
*****

```

SCA TRANSMIT/RECEIVE STR

```

*
*          MANUAL TERMINATION RTN - TERM          3AE05460
*          3AE05470
*          3AE05480
*****
*          3AE05490
*          3AE05500
0315 0 1001  TERM  SLA  1          3AE05510
0316 0 E11A  AND  1 H007C-T  RESET HALT, MANUAL TERM,  3AE05520
0317 0 D100  STO  1 SW0-T      AND START OPTIONS      3AE05530
*
*          3AE05540
0318 0 4400 0418  BSI  L  SCAT      CLOSE SCA SUB-ROUTINE  3AE05550
031A 0 3000  DC      /3000          3AE05560
*
*          3AE05570
031B 0 4003  BSI  LOG      PRINT MANUAL TERMINATION  3AE05580
031C 0 091B  DC      MSG4          3AE05590
*
*          3AE05600
031D 0 4C00 03C0  BSC  L  END+3      GO TO PRINT END MSGS  3AE05610
*
*          3AE05620
*****
*          3AE05630
*          3AE05640
*          3AE05650
*          3AE05660
*          3AE05670
*****
*          3AE05680
031F 0 0000  LOG  DC      0          3AE05690
0320 0 C13C  LD  1  LGBSY-T      3AE05700
0321 0 4C18 0334  BSC  L  LOG2,+--  BR IF LOG RTN NOT BUSY  3AE05710
*
*          3AE05720
0323 0 7401 08DE  MDX  L  LGDLY,1  INCRE DELAY COUNTER  3AE05730
0325 0 7006  MDX      LOG1      BR IF NOT FULL COUNT  3AE05740
*
*          3AE05750
0326 0 C141  LD  1  LGDLY-T      3AE05760
0327 0 4C20 032C  BSC  L  LOG1,Z  BR IF DELAY COUNT NOT 0  3AE05770
*
*          3AE05780
0329 0 09E7  XID  1  RESET-T  RESET SCA          3AE05790
032A 0 3002  WT2  WAIT  2      **ERROR** LOG DEVICE FAIL  3AE05800
032B 0 70FE  MDX      WT2      NO INTERRUPT          3AE05810
*
*          3AE05820
032C 0 C480 031F  LOG1  LD  I  LOG      3AE05830
032E 0 4C10 0320  BSC  L  LOG+1,-  BR IF NOT TEST CALL  3AE05840
*
*          3AE05850
0330 0 1001  SLA  1          3AE05860
0331 0 4C20 0320  BSC  L  LOG+1,Z  BR IF 4 DIGIT HEX  3AE05870
*
*          3AE05880
0333 0 7022  MDX      LOG6      BR IF TEST CALL      3AE05890
*
*          3AE05900
0334 0 C480 031F  LOG2  LD  I  LOG      3AE05910
0336 0 4C10 033E  BSC  L  LOG3,-  BR IF NOT TEST CALL  3AE05920
*
*          3AE05930
0338 0 1001  SLA  1          3AE05940
0339 0 4C20 035A  BSC  L  LOG7,Z  BR IF 4 DIGIT HEX  3AE05950
*
*          3AE05960
033B 0 7401 031F  MDX  L  LOG,1  INCRE RETURN ADDRESS  3AE05970
033D 0 7018  MDX      LOG6      GO TO RETURN          3AE05980
*
*          3AE05990
033E 0 1888  LOG3  SRT  8          3AE06000
033F 0 4C20 034B  BSC  L  LOG4,Z  BR IF ALPHA PRINT  3AE06010
*
*          3AE06020
0341 0 D025  STO      HXMSG+1  SET 2 DIGIT TERMINATOR  3AE06030
*
*          3AE06040
0342 0 1088  LOG3A  SLT  8          3AE06050
0343 0 4041  BSI  HEX      POSITION 2 DIGIT HEX CHAR  3AE06060
*
*          3AE06070
0344 0 D021  STO      HXMSG      SAVE IN HEX MSG          3AE06080
0345 0 6600  LDX  L2  HXMSG      3AE06090
0347 0 6E00 0366  STX  L2  PRADR      SET PRINT ADR TO HEX MSG  3AE06100
0349 0 09FF  XID  1  SPACE-T  SPACE PRINTER          3AE06110
034A 0 7004  MDX      LOG5          3AE06120
*
*          3AE06130

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SCA TRANSMIT/RECEIVE STR

```

034B 0 1088  LOG4  SLT  8          3AE06140
034C 0 D400 08F1  STO  L  PRADR      SET PRINT ADR TO ALPHA MSG  3AE06150
034E 0 09F1  XID  1  CRTRN-T  3AE06160
*
*          3AE06170
034F 0 6C00 08DB  LOG5  STX  L  L12SW  SET 1ST/2ND CHAR SWITCH  3AE06180
0351 0 6C00 08D9  STX  L  LGBSY  SET LOG BUSY IND      3AE06190
0353 0 1010  SLA  16          3AE06200
0354 0 D141  STO  1  LGDLY-T  RESTART DELAY COUNT  3AE06210
0355 0 D141  STO  1  LGDLY-T  RESTART DELAY COUNTER  3AE06220
*
*          3AE06230
0356 0 7401 031F  LOG6  MDX  L  LOG,1  INCRE RETURN ADDRESS  3AE06240
0358 0 4C80 031F  BSC  I  LOG      RETURN TO CALLING RTN  3AE06250
*
*          3AE06260
035A 0 1889  LOG7  SRT  9          3AE06270
035B 0 E119  AND  1  H00FF-T  FIRST TWO HEX DIGITS  3AE06280
035C 0 4028  BSI  HEX      CONVERT TO PRINT CODE  3AE06290
*
*          3AE06300
035D 0 1888  SRT  8          3AE06310
035E 0 E959  OR  1  ASTER-T  ASTERISK          3AE06320
035F 0 D007  STO      HXMSG+1  3AE06330
*
*          3AE06340
0360 0 1010  SLA  16          3AE06350
0361 0 1088  SLT  8          3AE06360
0362 0 1008  SLA  8          3AE06370
0363 0 D004  STO      HXMSG+2  3AE06380
0364 0 1010  SLA  16          3AE06390
0365 0 70DC  MDX      LOG3A  3AE06400
*
*          3AE06410
-----
*          3AE06420
*          HEX MESSAGE STORAGE - HXMSG
*          3AE06430
*          3AE06440
HXMSG DC  *-*
DC 0
DC 0
*          3AE06450
*          3AE06460
*          3AE06470
*          3AE06480
-----
*          3AE06490
*          PRINTER INTERRUPT SERVICE - LGINT
*          3AE06500
*          3AE06510
LGINT DC  *-*  ENTER FROM INT4 RTN  3AE06520
SLA 16  3AE06530
STO L  LGDLY-T  RESTART DELAY COUNTER  3AE06540
*
*          3AE06550
LD I  PRADR  FETCH TWO CHARACTERS  3AE06560
STO 1  PRTWD-T  SET UP TO PRINT 1ST CHAR  3AE06570
BSC L  LINTX,+  BR IF PRINT COMPLETE  3AE06580
*
*          3AE06590
MDX L  L12SW  BR IF 1ST/2ND IND ON  3AE06600
MDX LINT1  3AE06610
*
*          3AE06620
SLA 8  3AE06630
STO 1  PRTWD-T  SET UP TO PRINT 2ND CHAR  3AE06640
BSC L  LINTX,+  BR IF PRINT COMPLETE  3AE06650
*
*          3AE06660
MDX L  PRADR,+1  INCRE PRINT ADDRESS  3AE06670
STX L  L12SW  SET 1ST/2ND IND  3AE06680
MDX LINT2  3AE06690
*
*          3AE06700
LINT1 SLA 16  3AE06710
STO 1  L12SW-T  RESET 1ST/2ND IND  3AE06720
*
*          3AE06730
LINT2 XID 1  PRINT-T  PRINT CHARACTER  3AE06740
MDX LINTX+1  GO TO EXIT  3AE06750
*
*          3AE06760
LINTX STO 1  LGBSY-T  RESET LOG BUSY IND  3AE06770
BSC I  LGINT  RETURN TO INT4 RTN  3AE06780
*
*          3AE06790
*****
*          3AE06800
*          3AE06810

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*          HEX TO PRINT CONVERSION RTN - HEX          3AE06820
*          3AE06830
*****
0385 0 0000          HEX      DC      0          3AE06840
0386 0 1884          DC      SRT      4          3AE06850
0387 0 D009          STO      HEX2+1  STORE FIRST HEX CHAR 3AE06860
0388 0 1010          SLA      16          3AE06870
0389 0 1084          SLT      4          3AE06880
038A 0 D001          STO      HEX1+1  STORE SECOND HEX CHAR 3AE06890
*          3AE06900
038B 0 6600 0000    HEX1     LDX     L2  *--      XR2=SECOND HEX CHAR 3AE06910
038D 0 C600 0397    LD      L2  TRTBL  FETCH PRINTER CODE 3AE06920
038F 0 1888          SRT      8          3AE06930
0390 0 6600 0000    HEX2     LDX     L2  *--      XR2=FIRST HEX CHAR 3AE06940
0392 0 C600 0397    LD      L2  TRTBL  FETCH PRINTER CODE 3AE06950
0394 0 1088          SLT      8          3AE06960
0395 0 4C80 0385    BSC     I  HEX      RETURN TO CALLING ROUTINE 3AE06970
*          3AE06980
*          3AE06990
*          3AE07000
*          3AE07010
*          3AE07020
*          3AE07030
*          3AE07040
*          3AE07050
*          3AE07060
*          3AE07070
*          3AE07080
*          3AE07090
*          3AE07100
*          3AE07110
*          3AE07120
*          3AE07130
*          3AE07140
*          3AE07150
*          3AE07160
*          3AE07170
*          3AE07180
*          3AE07190
*          3AE07200
*          3AE07210
*          3AE07220
*          3AE07230
*          3AE07240
*          3AE07250
*          3AE07260
*          3AE07270
*          3AE07280
*          3AE07290
*          3AE07300
*          3AE07310
*          3AE07320
*          3AE07330
*          3AE07340
*          3AE07350
*          3AE07360
*          3AE07370
*          3AE07380
*          3AE07390
*          3AE07400
*          3AE07410
*          3AE07420
*          3AE07430
*          3AE07440
*          3AE07450
*          3AE07460
*          3AE07470
*          3AE07480
*          3AE07490
*          3AE07500
*          3AE07510
*          3AE07520
*          3AE07530
*          3AE07540
*          3AE07550
*          3AE07560
*          3AE07570
*          3AE07580
*          3AE07590
*          3AE07600
*          3AE07610
*          3AE07620
*          3AE07630
*          3AE07640
*          3AE07650
*          3AE07660
*          3AE07670
*          3AE07680
*          3AE07690
*          3AE07700
*          3AE07710
*          3AE07720
*          3AE07730
*          3AE07740
*          3AE07750
*          3AE07760
*          3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

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*          3AE07000
*          3AE07010
*          3AE07020
*          3AE07030
*          3AE07040
*          3AE07050
*          3AE07060
*          3AE07070
*          3AE07080
*          3AE07090
*          3AE07100
*          3AE07110
*          3AE07120
*          3AE07130
*          3AE07140
*          3AE07150
*          3AE07160
*          3AE07170
*          3AE07180
*          3AE07190
*          3AE07200
*          3AE07210
*          3AE07220
*          3AE07230
*          3AE07240
*          3AE07250
*          3AE07260
*          3AE07270
*          3AE07280
*          3AE07290
*          3AE07300
*          3AE07310
*          3AE07320
*          3AE07330
*          3AE07340
*          3AE07350
*          3AE07360
*          3AE07370
*          3AE07380
*          3AE07390
*          3AE07400
*          3AE07410
*          3AE07420
*          3AE07430
*          3AE07440
*          3AE07450
*          3AE07460
*          3AE07470
*          3AE07480
*          3AE07490

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*          3AE07000
*          3AE07010
*          3AE07020
*          3AE07030
*          3AE07040
*          3AE07050
*          3AE07060
*          3AE07070
*          3AE07080
*          3AE07090
*          3AE07100
*          3AE07110
*          3AE07120
*          3AE07130
*          3AE07140
*          3AE07150
*          3AE07160
*          3AE07170
*          3AE07180
*          3AE07190
*          3AE07200
*          3AE07210
*          3AE07220
*          3AE07230
*          3AE07240
*          3AE07250
*          3AE07260
*          3AE07270
*          3AE07280
*          3AE07290
*          3AE07300
*          3AE07310
*          3AE07320
*          3AE07330
*          3AE07340
*          3AE07350
*          3AE07360
*          3AE07370
*          3AE07380
*          3AE07390
*          3AE07400
*          3AE07410
*          3AE07420
*          3AE07430
*          3AE07440
*          3AE07450
*          3AE07460
*          3AE07470
*          3AE07480
*          3AE07490

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```

03B9 0 0000          ERINT   DC      *--      INTERRUPT ENTRANCE 3AE07500
03BA 0 09E7          XIO     1  RESET-T  RESET SCA          3AE07510
03BB 0 3003          WT3    WAIT    3          **ERROR** INTERRUPT OCCURED 3AE07520
03BC 0 70FE          MDX     WT3          ON LEVEL 0, 2, 3, OR 5 3AE07530
*          3AE07540
*          3AE07550
*          3AE07560
*          3AE07570
*          3AE07580
*          3AE07590
*          3AE07600
*          3AE07610
*          3AE07620
*          3AE07630
*          3AE07640
*          3AE07650
*          3AE07660
*          3AE07670
*          3AE07680
*          3AE07690
*          3AE07700
*          3AE07710
*          3AE07720
*          3AE07730
*          3AE07740
*          3AE07750
*          3AE07760
*          3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

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03BD 0 4400 031F    END     BSI     L  LOG      PRINT END TEST 3AE07610
03BF 0 0400          DC      ENDM1          3AE07620
*          3AE07630
*          3AE07640
*          3AE07650
*          3AE07660
*          3AE07670
*          3AE07680
*          3AE07690
*          3AE07700
*          3AE07710
*          3AE07720
*          3AE07730
*          3AE07740
*          3AE07750
*          3AE07760
*          3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03C0 0 C149          LD      1  RCDCT-T  CONVERT 3AE07650
03C1 0 1888          SRT     8          RECORD 3AE07660
03C2 0 E119          AND     1  HOOFF-T  COUNT 3AE07670
03C3 0 4400 0385    BSI     L  HEX      TO FOUR 3AE07680
03C5 0 D400 0411    STO     L  ENDM5+9  PRINT CODE 3AE07690
*          3AE07700
*          3AE07710
*          3AE07720
*          3AE07730
*          3AE07740
*          3AE07750
*          3AE07760
*          3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03C7 0 1010          SLA     16          AND STORE 3AE07710
03C8 0 1088          SLT     8          IN RECORD 3AE07720
03C9 0 4400 0385    BSI     L  HEX      COUNT MESSAGE 3AE07730
03CB 0 D400 0412    STO     L  ENDM5+10 3AE07740
*          3AE07750
*          3AE07760
*          3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03CD 0 4400 031F    BSI     L  LOG      PRINT RECORD COUNT 3AE07760
03CF 0 0408          DC      ENDM5 3AE07770
*          3AE07780
*          3AE07790
*          3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03D0 0 6600 0A87    LDX     L2  TRCTB  SET POINTER B TO 3AE07790
03D2 0 6E00 08EA    STX     L2  PNTB   START OF TRACE TABLE 3AE07800
*          3AE07810
*          3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03D4 0 4400 02D7    END1    BSI     L  SWCHK  CHECK FOR SWITCH ENTRY 3AE07820
*          3AE07830
*          3AE07840
*          3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03D6 0 C100          LD      1  SWO-T    BR IF HALT SELECTED 3AE07840
03D7 0 4C04 030F    BSC     L  HALT,E  3AE07850
*          3AE07860
*          3AE07870
*          3AE07880
*          3AE07890
*          3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03D9 0 E11A          AND     1  HOO7C-T  RESET HALT, MANUAL TERM, 3AE07870
03DA 0 D100          STO     1  SWO-T    AND START OPTIONS 3AE07880
03DB 0 100C          SLA     12          3AE07890
03DC 0 4C28 03FA    BSC     L  END4,Z+  BR IF BYPASS TRACE 3AE07900
*          3AE07910
*          3AE07920
*          3AE07930
*          3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03DE 0 C14C          LD      1  PNTA-T  3AE07920
03DF 0 914D          S       1  PNTB-T  3AE07930
03E0 0 4C28 03FA    BSC     L  END4,Z+  BR IF TRACE PRINT COMPLETE 3AE07940
*          3AE07950
*          3AE07960
*          3AE07970
*          3AE07980
*          3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03E2 0 C480 08EA    LD      I  PNTB   FETCH MSG FROM TRACE TBL 3AE07960
03E4 0 D011          STO     END3+2  STO IN LOG CALL 3AE07970
03E5 0 1888          SRT     8          3AE07980
03E6 0 4C08 03EA    BSC     L  END2,+  BR IF HEX MSG 3AE07990
*          3AE08000
*          3AE08010
*          3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03E8 0 6300          LDX     3  0        XR3=0 3AE08010
03E9 0 700A          MDX     END3       GO TO PRINT ALPHA MSG 3AE08020
*          3AE08030
*          3AE08040
*          3AE08050
*          3AE08060
*          3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03EA 0 4820          END2    BSC     Z        SKIP IF TWO DIGIT HEX 3AE08040
03EB 0 73FF          MDX     3 -1       3AE08050
03EC 0 7001          MDX     END2A      BR NOT CARRIER RETURN TIME 3AE08060
03ED 0 7002          MDX     END2B      BR CARRIER RETURN TIME 3AE08070
*          3AE08080
*          3AE08090
*          3AE08100
*          3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03EE 0 73FF          END2A   MDX     3 -1  BR NOT CARRIER RETURN TIME 3AE08100
03EF 0 7004          MDX     END3       3AE08110
*          3AE08120
*          3AE08130
*          3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

```

03F0 0 6314          END2B   LDX     3  20  CARRIER RETURN 3AE08120
03F1 0 4400 031F    BSI     L  LOG      3AE08130
03F3 0 0A55          DC      TMSGI      3AE08140
*          3AE08150
*          3AE08160
*          3AE08170

```

SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

```

*
03F7 0 7401 08EA MDX L PNTB,1 INCR TABLE ADR 3AE08180
03F9 0 70DA MDX ENDL GO CHECK FOR MORE TO PRINT 3AE08190
*
03FA 0 C100 END4 LD 1 SWO-T FETCH FUNCTION 0 OPTIONS 3AE08210
03FB 0 100B SLA 11 3AE08220
03FC 0 4C28 0209 BSC L LOOP,Z+ BR IF LOOP PROGRAM 3AE08230
*
03FE 0 4C00 01FB BSC L START+3 GO WAIT FOR START SELECT 3AE08240
*
-----
*
* END OF TEST MESSAGES
*
0400 0 3EF0 ENDM1 DC /3EF0 A4 3AE08250
0401 0 2121 DC /2121 3AE08260
0402 0 3676 DC /3676 EN 3AE08270
0403 0 3221 DC /3221 D 3AE08280
0404 0 9E36 DC /9E36 TE 3AE08290
0405 0 9A9E DC /9A9E ST 3AE08300
0406 0 0000 DC 0 3AE08310
*
0408 0000 BSS E 0 3AE08320
0408 0 2121 ENDMS DC /2121 3AE08330
0409 0 2121 DC /2121 3AE08340
040A 0 6236 DC /6236 RE 3AE08350
040B 0 1E52 DC /1E52 CO 3AE08360
040C 0 6232 DC /6232 RD 3AE08370
040D 0 9A21 DC /9A21 S 3AE08380
040E 0 0000 DC *- SE, RC 3AE08390
040F 0 0000 DC *- NT, VD 3AE08400
0410 0 2121 DC /2121 3AE08410
0411 0 0000 DC *- RECORD 3AE08420
0412 0 0000 DC *- COUNT 3AE08430
0413 0 0000 DC 0 3AE08440
*
0414 0 9A36 SENT DC /9A36 SE 3AE08450
0415 0 769E DC /769E NT 3AE08460
*
0416 0 621E RCVD DC /621E RC 3AE08470
0417 0 8632 DC /8632 VD 3AE08480
*
*****
* SCA XMIT/RCV ROUTINE - SCAT
*****
0418 0 0000 SCAT DC *- 3AE08490
0419 0 6600 04F2 LDX L2 INT1 SET INTERRUPT 3AE08500
041B 0 6E00 0009 STX L2 /9 TRANSFER VECTOR 3AE08510
*
041D 0 6680 0418 LDX I2 SCAT XR2=PARAMETER ADDRESS 3AE08520
041F 0 7201 MDX 2 1 INCR RETURN 3AE08530
0420 0 6E00 04F1 STX L2 EXIT+1 STORE RETURN ADR 3AE08540
*
0422 0 C129 LD 1 RTBSY-T 3AE08550
0423 0 4C18 0436 BSC L NBSUY,+ BR IF RTN NOT BUSY 3AE08560
*
0425 0 7401 08DD MDX L DLYA,1 INCR DELAY COUNT A AND 3AE08570
0427 0 7006 MDX BUSY BR IF NOT FULL COUNT 3AE08580
*
0428 0 74FF 08DC MDX L DLYB,-1 DECR DELAY COUNT B AND 3AE08590
042A 0 7003 MDX BUSY BR IF NOT ZERO COUNT 3AE08600
*
042B 0 09E7 XIO 1 RESET-T RESET SCA 3AE08610
042C 0 3001 WT1 WAIT 1 **ERROR** NO SCA INTERRUPT 3AE08620
042D 0 70FE MDX WT1 3AE08630
*

```

```

042E 0 C2FF BUSY LD 2 -1 FETCH CONTROL PARAMETER 3AE08860
042F 0 180C SRA 12 3AE08870
0430 0 4C18 04F0 BSC L EXIT,+ GO EXIT IF TEST FUNCTION 3AE08880
*
0432 0 9113 S 1 H0004-T 3AE08890
0433 0 4C28 046C BSC L CLOSE,Z+ BR IF CLOSE FUNCTION 3AE08900
*
0435 0 70E3 MDX SCAT+1 LOOP UNTIL READY 3AE08910
*
0436 0 1010 NBSUY SLA 16 3AE08920
0437 0 D140 STO 1 DLYA-T SET 3AE08930
0438 0 C113 LD 1 H0004-T DELAY 3AE08940
0439 0 D13F STO 1 DLYB-T COUNTERS 3AE08950
*
043A 0 C2FF LD 2 -1 FETCH CONTROL PARAMETER 3AE08960
043B 0 4C20 0441 BSC L NTEST,Z BR IF NOT TEST FUNCTION 3AE08970
*
043D 0 7401 04F1 MDX L EXIT+1,1 TEST FUNCTION 3AE08980
043F 0 4C00 04F0 BSC L EXIT NOT BUSY EXIT 3AE08990
*
0441 0 1010 NTEST SLA 16 3AE09000
0442 0 D13A STO 1 ERRSW-T RESET ERROR SWITCH 3AE09010
0443 0 D12C STO 1 TOIND-T CLEAR TIMEOUT INDICATOR 3AE09020
0444 0 D135 STO 1 TOCNT-T CLEAR TIMEOUT COUNTER 3AE09030
0445 0 C14C LD 1 PNTA-T CORRECT 3AE09040
0446 0 D14D STO 1 PNTB-T TRACE POINTER 3AE09050
0447 0 914A S 1 CORSZ-T 3AE09060
0448 0 D138 STO 1 OVRCCR-T 3AE09070
*
0449 0 C2FF LD 2 -1 FETCH CONTROL PARAMETER 3AE09080
044A 0 180C SRA 12 3AE09090
044B 0 9113 S 1 H0004-T 3AE09100
044C 0 4C28 046C BSC L CLOSE,Z+ BR IF CLOSE FUNCTION 3AE09110
*
044E 0 4C08 0479 BSC L OPEN,+ BR IF OPEN FUNCTION 3AE09120
*
0450 0 911B S 1 D1-T 3AE09130
0451 0 4C18 04B7 BSC L XMIT,+ BR IF XMIT FUNCTION 3AE09140
*
*****
* ACK AND RECEIVE FUNCTION - RECV
*****
0453 0 C2FF RECV LD 2 -1 FETCH CONTROL PARAMETER 3AE09150
0454 0 E117 AND 1 H00F0-T 3AE09160
0455 0 D133 STO 1 ILRC-T ILRC ON FOR INT LRC CHECK 3AE09170
*
0456 0 C119 LD 1 H00FF-T 3AE09180
0457 0 D145 STO 1 WDCNT-T MAX RCV WORD COUNT 255 3AE09190
*
0458 0 6600 09DB LDX L2 TMSG3 ACK AND RCV MSG 3AE09200
045A 0 4400 082B BSI L TRACE STORE MSG IN TRACE TABLE 3AE09210
*
045C 0 6600 06A9 LDX L2 RCW SET UP 3AE09220
045E 0 6E00 08FA STX L2 WTF RESPONSE 3AE09230
0460 0 6600 06CB LDX L2 RCR ADDRESSES 3AE09240
0462 0 6E00 08F9 STX L2 RDF FOR SERVICING 3AE09250
0464 0 6600 079A LDX L2 RCTIM INTERRUPTS 3AE09260
0466 0 6E00 08FB STX L2 TIMF 3AE09270
*
0468 0 6C00 08CB STX L XACK TURN ON XMIT-ACK 3AE09280
046A 0 4C00 04E1 BSC L EXIT1 GO TO CALL EXIT 3AE09290
*
*****
* CLOSE FUNCTION - CLOSE
*****
046C 0 6600 0A39 CLOSE LDX L2 TMSGE CLOSE MSG 3AE09300
046E 0 4400 082B BSI L TRACE STO MSG IN TRACE TBL 3AE09310
*

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SCA TRANSMIT/RECEIVE STR

```

0470 0 09E7      *      XIO  1 RESET-T   RESET SCA          3AE09540
0471 0 620E      *      LDX  2 &14          3AE09550
0472 0 1010      *      SLA  16            3AE09560
0473 0 D600 08BB CL4A  STO  L2 TAB4-1   RESET INDICATORS  3AE09570
0475 0 72FF      *      MDX  2 -1          3AE09580
0476 0 70FC      *      MDX  CL4A          3AE09590
0477 0 4C00 04F0 *      BSC  L  EXIT    GO TO CALL EXIT  3AE09600
*
*-----*
*      OPEN FUNCTION - OPEN
*
0479 0 1010      *      OPEN  SLA  16      RESET INDICATORS  3AE09610
047A 0 D149      *      STO  1 RCDCT-T   RECORD COUNT      3AE09620
047B 0 D136      *      STO  1 READY-T   INITIAL DATA SET 3AE09630
047C 0 D137      *      STO  1 SYNCI-T   INITIAL SYNC IND  3AE09640
047D 0 D14F      *      STO  1 EX-T     INITIAL SYNC IND  3AE09650
*
047E 0 C155      *      LD  1 TBADR-T   INITIALIZE         3AE09660
047F 0 D14C      *      STO  1 PNTA-T   TRACE              3AE09670
0480 0 D14D      *      STO  1 PNTB-T   TABLE             3AE09680
0481 0 D138      *      STO  1 OVRCR-T  OVER CORE IND     3AE09690
*
0482 0 C9FB      *      LDD  1 ACKS-T   INIT. TO SOR2, ACK2 3AE09700
0483 0 D9F9      *      STD  1 ACK-T    CONTROL PARAMETER  3AE09710
0484 0 C2FF      *      LD  2 -1        DIGIT 4 FOR DATA I/O 3AE09720
0485 0 100C      *      SLA  12        IN DR OUT          3AE09730
0486 0 D131      *      STD  1 TYPE-T   BRANCH IF DATA IN 3AE09740
0487 0 4C18 04AA *      BSC  L  DIN,+  3AE09750
*
0488 0 CC00 0414 *      LDD  L  SENT    SET UP END MSG     3AE09760
0488 0 DC00 040E *      STD  L  ENDMS+6 FOR XMIT          3AE09770
048D 0 6600 09D4 *      LDX  L2 TMSG2  OPEN OUT MSG      3AE09780
048F 0 4400 082B *      BSI  L  TRACE  STO MSG IN TRACE TABLE 3AE09790
0491 0 09E9      *      XIO  1 SEND-T  TURN OFF RCV RUN TRIG 3AE09800
*
0492 0 09E5      *      DIN2 XIO  1 ENDDP-T END OPERATION      3AE09810
*
0493 0 6600 057F *      LDX  L2 OPW    SET UP              3AE09820
0495 0 6E00 08FA *      STX  L2 WTF    RESPONSE             3AE09830
0497 0 6600 059F *      LDX  L2 OPR    ADDRESSES           3AE09840
0499 0 6E00 08F9 *      STX  L2 RDF    FOR SERVICING       3AE09850
049B 0 6600 05C8 *      LDX  L2 CKOPR  INTERRUPTS          3AE09860
049D 0 6E00 08FB *      STX  L2 TIMF   3AE09870
*
049F 0 6C00 08CD *      STX  L  XEOI   TURN ON XMIT-EOI    3AE09880
04A1 0 6C00 08CF *      STX  L  LCNTL  TURN ON LEADER CNTRL 3AE09890
04A3 0 09DB      *      XIO  1 LOAD-T  LOAD IDLE TO SYNC-REG 3AE09900
04A4 0 09D3      *      XIO  1 SYNC-T  SEND IDLES        3AE09910
04A5 0 6600 09F1 *      LDX  L2 TMSG5  S/I=IDLE MSG      3AE09920
04A7 0 4400 082B *      BSI  L  TRACE  STO MSG IN TRACE TBL 3AE09930
04A9 0 703D      *      MDX  EXIT2    GO TO CALL EXIT    3AE09940
*
04AA 0 6600 09CD *      DIN  LDX  L2 TMSG1 OPEN IN MSG     3AE09950
04AC 0 4400 082B *      BSI  L  TRACE  STO MSG IN TRACE TBL 3AE09960
04AE 0 CC00 0416 *      LDD  L  RCVD   SET UP FND MSG     3AE09970
04B0 0 DC00 040E *      STD  L  ENDMS+6 FOR RECEIVE      3AE09980
*
04B2 0 09EB      *      XIO  1 RCVTR-T TURN ON RCV RUN TRIG 3AE09990
04B3 0 C9F9      *      LDD  1 ACK-T   3AE10000
04B4 0 18D0      *      RTE  16        RECEIVE TRANSMITS ACK2 3AE10010
04B5 0 D9F9      *      STD  1 ACK-T   FIRST              3AE10020
04B6 0 70DB      *      MDX  DIN2     CONTN PROCESSNG OPEN 3AE10030
*
*-----*
*      TRANSMIT FUNCTION - XMIT
*
04B7 0 C2FF      *      XMIT LD  2 -1   FETCH CONTROL PARAMETER 3AE10040
3AE10050
3AE10060
3AE10070
3AE10080
3AE10090
3AE10100
3AE10110
3AE10120
3AE10130
3AE10140
3AE10150
3AE10160
3AE10170
3AE10180
3AE10190
3AE10200
3AE10210

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SCA TRANSMIT/RECEIVE STR

```

04B8 0 E117      *      AND  1 HOOFO-T   3AE10220
04B9 0 D133      *      STO  1 ILRC-T   TURN ON ILRC FOR INT LRC 3AE10230
04BA 0 C200      *      LD  2 0          3AE10240
04BB 0 D147      *      STO  1 IOAR-T   SAVE I/O AREA ADDRESS 3AE10250
04BC 0 C480 08E4 *      LD  I  IOAR     3AE10260
04BE 0 D145      *      STO  1 WDCNT-T  SAVE WORD COUNT      3AE10270
*
04BF 0 6600 05D6 *      LDX  L2 XMW    SET UP              3AE10280
04C1 0 6E00 08FA *      STX  L2 WTF    RESPONSE             3AE10290
04C3 0 6600 0645 *      LDX  L2 XMR    ADDRESSES           3AE10300
04C5 0 6E00 08F9 *      STX  L2 RDF    FOR SERVICING       3AE10310
04C7 0 6600 0694 *      LDX  L2 XMT    INTERRUPTS          3AE10320
04C9 0 6E00 08FB *      STX  L2 TIMF   3AE10330
04CB 0 7401 04F1 *      MDX  L  EXIT+1,+1 3AE10340
*
04CD 0 1010      *      SLA  16        3AE10350
04CE 0 D130      *      STO  1 XEOI-T   TURN OFF XMIT-EOI    3AE10360
04CF 0 C480 0418 *      LD  I  SCAT    CONTROL PARAMETER 3AE10370
04D1 0 E118      *      AND  1 HOOFO-T  DIGIT 2 FOR EOT     3AE10380
*
04D2 0 4C20 04DB *      BSC  L  SEOT,Z  BR IF EOT          3AE10390
*
04D4 0 6600 09E7 *      LDX  L2 TMSG4  XM DATA MSG      3AE10400
04D6 0 4400 082B *      BSI  L  TRACE  STORE MSG IN TRACE TBL 3AE10410
04D8 0 6C00 08C1 *      STX  L  XSOR   TURN ON XMIT-SOR   3AE10420
04DA 0 7006      *      MDX  EXIT1     GO TO CALL EXIT    3AE10430
*
04DB 0 D126      *      SEOT  STO  1 XEOT-T TURN ON XMIT-EOT   3AE10440
04DC 0 6600 0A33 *      LDX  L2 TMSGD  XM EOT MSG        3AE10450
04DE 0 4400 082B *      BSI  L  TRACE  STORE MSG IN TRACE TBL 3AE10460
04E0 0 7006      *      MDX  EXIT2    GO TO CALL EXIT    3AE10470
*
*-----*
*      EXIT CALL PROCESSING ROUTINE - EXIT1
*
04E1 0 C9F9      *      EXIT1 LDD  1 ACK-T  NEXT SOR TO RECEIVE 3AE10480
04E2 0 18D0      *      RTE  16        3AE10490
04E3 0 D9F9      *      STD  1 ACK-T   NEXT ACK TO TRANSMIT 3AE10500
04E4 0 C15A      *      LD  1 D000X-T  NUMBER OF IDLES TO 3AE10510
04E5 0 D15B      *      STO  1 IDLCT-T  PRECEED TRANSMISSION 3AE10520
04E6 0 09D1      *      XIO  1 STWRT-T  START WRITE          3AE10530
*
04E7 0 6C00 08C6 *      EXIT2 STX  L  RTBSY TURN ON ROUTINE BUSY 3AE10540
04E9 0 6C00 08CC *      STX  L  FAIL   TURN ON FAIL IND    3AE10550
04EB 0 1010      *      SLA  16        3AE10560
04EC 0 D139      *      STO  1 ENDSW-T  TURN OFF END OF TEST IND 3AE10570
04ED 0 D12A      *      STO  1 CLTM-T  TURN OFF LOAD CL IND   3AE10580
04EE 0 D12B      *      STO  1 TLTM-T  TURN OFF LOAD TL IND   3AE10590
04EF 0 6300      *      LDX  3 0        3AE10600
*
04F0 0 4C00 0000 *      EXIT  BSC  L  *-*  3AE10610
*
*****
*
*      SCA INTERRUPT PROCESSING - INT1
*
*****
*
04F2 0 0000      *      INT1  DC  *-*   INTERRUPT ENTRY  3AE10620
04F3 0 D9CB      *      STD  1 AQ-T    SAVE A AND Q REGS  3AE10630
04F4 0 6E00 0813 *      STX  L2 XR2+1  SAVE INDEX REG 2    3AE10640
04F6 0 6F00 0815 *      STX  L3 XR3+1  SAVE INDEX REG 3    3AE10650
04F8 0 6300      *      LDX  3 0        3AE10660
04F9 0 C400 082B *      LD  L  TRACE   3AE10670
04FB 0 D14B      *      STO  1 SAVE-T  3AE10680
*
04FC 0 1010      *      SLA  16        3AE10690
04FD 0 D14E      *      STO  1 PNTC-T  3AE10700
3AE10710
3AE10720
3AE10730
3AE10740
3AE10750
3AE10760
3AE10770
3AE10780
3AE10790
3AE10800
3AE10810
3AE10820
3AE10830
3AE10840
3AE10850
3AE10860
3AE10870
3AE10880
3AE10890

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SCA TRANSMIT/RECEIVE STR

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04FE 0 D140      STO 1 DLYA-T   SET
04FF 0 C113      LD 1 H0004-T  DELAY
0500 0 D13F      STO 1 DLYB-T   COUNTERS
*
0501 0 09E3      *   XIO 1 SENSR-T  SENSE DSW AND RESET
0502 0 D143      *   STO 1 DSW-T   SAVE DSW
*
0503 0 4C28 050D *   BSC L READI,&Z BR IF READ RESPONSE
*
0505 0 1001      *   SLA 1
0506 0 4C28 052F *   BSC L FAILC,&Z BR IF WRITE RESPONSE
*
0508 0 1003      *   SLA 3
0509 0 4C02 056B *   BSC L TMCHK,C BR IF TIMEOUT
*
050B 0 4C00 080D *   BSC L INTX+2 GO TO RESTORE AND EXIT
*
*-----*
*   READ RESPONSE - READI
*
050D 0 1003      READI SLA 3
050E 0 4C28 056B *   BSC L TMCHK,Z+ BR IF TIMEOUT, IGNORE READ
*
0510 0 6C00 08D4 *   STX L SYNCI   TURN ON INITIAL SYNC IND
0512 0 09D5      *   XIO 1 READ-T  RD CHAR INTO BUFFER
*
0513 0 C125      *   LD 1 DATA-T
0514 0 4CA0 08F9 *   BSC I RDF,Z   BR IF RECEIVING DATA
*
0516 0 4400 084C *   BSI L ITRCH  STORE CHAR IN TRACE TBL
*
0518 0 C132      *   LD 1 LCNTL-T
0519 0 4C98 08F9 *   BSC I RDF,+-- BR IF LEADER CONTROL OFF
*
051B 0 C142      *   LD 1 BUF-T
051C 0 D12D      *   STO 1 CLSW-T  BUF=CL CL SW ON
051D 0 F105      *   EOR 1 CLC-T
051E 0 4C18 052C *   BSC L TLCL+1,+-- BR IF BUF=CL
*
0520 0 F10F      *   EOR 1 H6000-T
0521 0 4C18 052B *   BSC L TLCL,+-- BR IF BUF=TL
*
0523 0 6303      *   LDX 3 3      INVALID LEADER MSG NUMBER
0524 0 09E5      *   XIO 1 ENDP-T  END SCA OPERATION
0525 0 09CF      *   XIO 1 STRED-T START READ
0526 0 6600 0A42 *   LDX L2 TMSGF ENDP, ST RD MSG
0528 0 4400 0845 *   BSI L ITRCA  STORE MSG IN TRACE TBL
052A 0 7002      *   MDX TLCL+2
*
052B 0 D12D      *   TLCL STO 1 CLSW-T  TURN OFF CL RCVD IND
052C 0 D132      *   STO 1 LCNTL-T  TURN OFF CONTROL LEADER
052D 0 4C00 080D *   BSC L INTX+2  GO TO RESTORE AND EXIT
*
*-----*
*   WRITE RESPONSE - FAILC
*
052F 0 1010      *   FAILC SLA 16
0530 0 D12F      *   STO 1 FAIL-T  TURN OFF FAIL IND
0531 0 6C00 08D3 *   STX L READY  TURN ON INITIAL RDY IND
*
0533 0 C15B      *   LD 1 IDLCT-T  IF NO IDLES TO WRITE
0534 0 4C08 053F *   BSC L XMPAD,+ BR TO CK FOR PAD TO WRITE
*
0536 0 911B      *   S 1 D1-T     DECRE NUM. OF IDLES BY 1
0537 0 D15B      *   STO 1 IDLCT-T
0538 0 C107      *   LD 1 IDLE-T  FETCH IDLE CHARACTER
0539 0 D142      *   STO 1 BUF-T
053A 0 09D7      *   XIO 1 WTBUF-T WRITE IDLE

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SCA TRANSMIT/RECEIVE STR

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053B 0 4400 084C BSI L ITRCH STORE CHAR IN TRACE TBL
053D 0 4C00 080B BSC L INTX GO TO RESTORE AND EXIT
*
053F 0 C11F      * XMPAD LD 1 XPAD-T IF NO PAD TO WRITE
0540 0 4C98 08FA * BSC I WTF,&- BR TO SERVICE WRT RESP
*
0542 0 C114      * LD 1 HFF00-T FETCH PAD CHARACTER
0543 0 D142      * STO 1 BUF-T
0544 0 09D7      * XIO 1 WTBUF-T WRITE PAD
0545 0 4400 084C BSI L ITRCH STORE CHAR IN TRACE TBL
0547 0 1010      * SLA 16
0548 0 D11F      * STO 1 XPAD-T TURN OFF XMIT-PAD IND
*
0549 0 C12B      * LD 1 TLTM-T
054A 0 4C20 0555 * BSC L RTL,Z BR IF LOAD TL IND ON
*
054C 0 C12A      * LD 1 CLTM-T
054D 0 4C20 055D * BSC L RCL,Z BR IF LOAD CL IND ON
*
054F 0 6600 09FD * LDX L2 TMSG6 ST RD MSG
0551 0 4400 0845 BSI L ITRCA STORE MSG IN TRACE TBL
0553 0 C000      * LD *
0554 0 7012      * MDX RD2 TURN LEADER CONTROL IND ON
*
0555 0 09DF      * RTL XIO 1 LDTL-T LOAD TL TO SYNC REG
0556 0 6600 0A02 * LDX L2 TMSG7 S/I=TL, ST RD MSG
0558 0 4400 0845 BSI L ITRCA STORE MSG IN TRACE TABLE
055A 0 1010      * SLA 16 TURN OFF LEADER CONTROL
055B 0 D12D      * STO 1 CLSW-T
055C 0 7008      * MDX RD1 TURN OFF CL SWITCH
*
055D 0 09DD      * RCL XIO 1 LDCL-T LOAD CL TO SYNC-REG
055E 0 6600 0A0B * LDX L2 TMSG8 S/I=CL, ST RD MSG
0560 0 4400 0845 BSI L ITRCA STORE MSG IN TRACE TABLE
0562 0 6C00 08CA * STX L CLSW TURN ON CL SWITCH
0564 0 1010      * SLA 16 TURN OFF LEADER CONTROL
*
0565 0 D12A      * RD1 STO 1 CLTM-T TURN OFF LOAD CL IND
0566 0 D12B      * STO 1 TLTM-T TURN OFF LOAD TL IND
*
0567 0 D132      * RD2 STO 1 LCNTL-T LEADER CONT ON OR OFF
0568 0 09CF      * XIO 1 STRED-T START READ
0569 0 4C00 080D * BSC L INTX+2 BR TO RESTORE AND EXIT
*
*-----*
*   TIMEOUT - TMCHK
*
056B 0 09E5      * TMCHK XIO 1 ENDP-T END SCA OPERATION
056C 0 6C00 08CF * STX L LCNTL TURN ON LEADER CONTROL
*
056E 0 C12F      * LD 1 FAIL-T
056F 0 4C98 08FB * BSC I TIMF,+-- BR IF DS FAIL IND OFF
*
0571 0 C136      * LD 1 READY-T
0572 0 4C20 0578 * BSC L DFAIL,Z BR IF DS RDY FAILURE
*
0574 0 74FF 08EA * MDX L PNTB,-1 DECRE TRACE POINTER
0576 0 6310      * LDX 3 16 DATA SET NOT RDY MSG
0577 0 7005      * MDX X
*
0578 0 6600 0A2B * DFAIL LDX L2 TMSGC ERR TIMEOUT MSG
057A 0 4400 0845 BSI L ITRCA STORE MSG IN TRACE TABLE
057C 0 6301      * LDX 3 1 DATA SET FAIL MSG
057D 0 4C00 07F0 * BSC L XMITI GO TO SEND IDLES
*
*-----*
*   WRITE RESPONSE FOR OPEN - OPW
*

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SCA TRANSMIT/RECEIVE STR

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057F 0 C132 OPW LD 1 LCNTL-T 3AE12260
0580 0 4C18 0591 BSC L XEOTQ,&- BR IF LEADER CONTROL OFF 3AE12270
* 3AE12280
0582 0 C131 LD 1 TYPE-T IS DATA IN 3AE12290
0583 0 4C18 0804 BSC L WTCL,&- YES, GO WRITE CL 3AE12300
* 3AE12310
0585 0 C129 LD 1 RTBSY-T 3AE12320
0586 0 4C20 058A BSC L BSY,Z BR IF ROUTINE IS BUSY 3AE12330
* 3AE12340
0588 0 6C00 08CD STX L XEOI TURN ON XMIT-EOI IND. 3AE12350
* 3AE12360
058A 0 C130 BSY LD 1 XEOI-T DATA OUT 3AE12370
058B 0 E926 OR 1 XEOT-T 3AE12380
058C 0 E921 OR 1 XTEL-T 3AE12390
* WRITE CL IF XEOI, XEOT, OR XTEL ON 3AE12400
058D 0 4C20 0804 BSC L WTCL,Z 3AE12410
* 3AE12420
058F 0 4C00 0802 BSC L WTTL GO TO WRITE TL 3AE12430
* 3AE12440
0591 0 C126 XEOTQ LD 1 XEOT-T 3AE12450
0592 0 4C20 07D2 BSC L WTEOT,Z BR IF XEOT ON 3AE12460
* 3AE12470
0594 0 C121 LD 1 XTEL-T 3AE12480
0595 0 4C20 07DA BSC L WTTTEL,Z BR IF XTEL ON 3AE12490
* 3AE12500
0597 0 C130 LD 1 XEOI-T 3AE12510
0598 0 4C20 07D6 BSC L WTEOI,Z BR IF XEOI ON 3AE12520
* 3AE12530
059A 0 C131 LD 1 TYPE-T 3AE12540
059B 0 4C18 07D6 BSC L WTEOI,+ WR IDLE IF DATA IN 3AE12550
* 3AE12560
059D 0 4C00 07CE BSC L WTINQ GO TO WRITE INQ 3AE12570
* 3AE12580
*-----*
* READ RESPONSE FOR OPEN - OPR 3AE12590
* 3AE12600
059F 0 6C00 08CF OPR STX L LCNTL TURN ON LEADER CONTROL 3AE12610
05A1 0 C128 LD 1 RCVER-T 3AE12620
05A2 0 4C20 07EA BSC L XMEOI,Z BR IF RCV-ERR ON 3AE12630
* 3AE12640
05A4 0 C12D LD 1 CLSW-T 3AE12650
05A5 0 4C18 05BE BSC L INQQ,&- BR IF LAST CHAR A TL 3AE12660
* 3AE12670
05A7 0 C142 LD 1 BUF-T BUF # EOT 3AE12680
05A8 0 F10A EOR 1 EOTC-T 3AE12690
05A9 0 4C18 07E7 BSC L XMEOT,+ BR IF BUF=EOT 3AE12700
* 3AE12710
05AB 0 F10E EOR 1 H6300-T BUF # IDLE 3AE12720
05AC 0 4C18 07F0 BSC L XMITI,&- BR IF BUF # IDLE 3AE12730
* 3AE12740
05AF 0 F10D EOR 1 H6500-T BUF # TFL 3AE12750
05AF 0 4C18 07ED BSC L XMTEL,+ BR IF BUF = TEL 3AE12760
* 3AE12770
05B1 0 C131 LD 1 TYPE-T 3AE12780
05B2 0 4C18 05BA BSC L OPERR,&- BR IF DATA IN, ERROR 3AE12790
* 3AE12800
05B4 0 C142 LD 1 BUF-T 3AE12810
05B5 0 F1FB EOR 1 ACKS-T CHECK FOR 3AE12820
05B6 0 4B20 BSC Z EITHER 3AE12830
05B7 0 F10C EOR 1 GMC-T ACK1 OR ACK2 3AE12840
05B8 0 4C18 05C5 BSC L OPREFX,+ BR IF EITHER 3AE12850
* 3AE12860
05BA 0 6305 OPFRR LDX 3 5 INVALID CONT SEQ MSG 3AE12870
05BB 0 700A MDX OPREFX+1 3AE12880
* 3AE12890
05BC 0 6314 OPERR LDX 3 20 CONTENTION MSG 3AE12900
05BD 0 7008 MDX CPREFX+1 3AE12910
* 3AE12920
* 3AE12930
    
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SCA TRANSMIT/RECEIVE STR

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05BE 0 C142 INQQ LD 1 BUF-T LAST CHAR. WAS TL 3AE12940
05BF 0 F108 EOR 1 INQC-T BUF# INQ 3AE12950
05C0 0 4C20 05BA BSC L OPERR,Z BR IF BUF NOT # INQ 3AE12960
* 3AE12970
05C2 0 C131 LD 1 TYPE-T 3AE12980
05C3 0 4C20 05BC BSC L OPER1,Z BR IF DATA OUT, 3AE12990
* INQ RCVD 3AE13000
05C5 0 D129 OPREX STO 1 RTBSY-T TURN OFF RTN BUSY 3AE13010
05C6 0 4C00 07F0 BSC L XMITI GO TO SEND IDLES 3AE13020
* 3AE13030
*-----*
* TIMEOUT FOR OPEN - CKOPR 3AE13040
* 3AE13050
05C8 0 C137 CKOPR LD 1 SYNCI-T 3AE13060
05C9 0 4C20 05CF BSC L NOSYN,Z BR IF PREVIOUS SYNC 3AE13070
* 3AE13080
05CB 0 74FB 08EA MDX L PNTB,-5 DECRE TRACE POINTER 3AE13100
05CD 0 6311 LDX 3 17 NO SYNC MSG 3AE13110
05CE 0 7005 MDX X1 3AE13120
* 3AE13130
05CF 0 6600 0A2B NOSYN LDX L2 TMSGC ERR TIMEOUT MSG 3AE13140
05D1 0 4400 0845 BSI L ITRCA STORE MSG IN TRACE TABLE 3AE13150
05D3 0 6302 LDX 3 2 LOST SYNC MSG 3AE13160
05D4 0 4C00 07EA X1 BSC L XMEOI GO TO SEND EOI 3AE13170
* 3AE13180
*-----*
* WRITE RESPONSE FOR XMIT - XMW 3AE13190
* 3AE13200
05D6 0 C121 XMW LD 1 XTEL-T IS XMIT-TEL ON 3AE13210
05D7 0 4C20 0611 BSC L TEL7,Z YES, BRANCH 3AE13220
* 3AE13230
05D9 0 C126 LD 1 XEOT-T IS XMIT-EOT ON 3AE13240
05DA 0 4C20 0615 BSC L EOT7,Z YES, BRANCH 3AE13250
* 3AE13260
05DC 0 C130 LD 1 XEOI-T IS XMIT-EOI ON 3AE13270
05DD 0 4C20 0619 BSC L EOI7,Z YES, BRANCH 3AE13280
* 3AE13290
05DF 0 C123 LD 1 XINQ-T IS XMIT-INQ ON 3AE13300
05E0 0 4C20 061F BSC L INQ7,Z YES, BRANCH 3AE13310
* 3AE13320
05E2 0 C124 LD 1 XSOR-T IS XMIT-SOR ON 3AE13330
05E3 0 4C20 0623 BSC L SOR7,Z YES, BRANCH 3AE13340
* 3AE13350
05E5 0 C127 LD 1 XRLRC-T IS XR-ILRC ON 3AE13360
05E6 0 4C20 062F BSC L ILRC7,Z YES, BRANCH 3AE13370
* 3AE13380
05E8 0 C146 LD 1 COUNT-T IS WD CNT ZERO 3AE13390
05E9 0 4C18 0637 BSC L QLRC,&- YES, BRANCH 3AE13400
* 3AE13410
05EB 0 911B S 1 D1-T DECREMENT WORD COUNT 3AE13420
05EC 0 D146 STO 1 COUNT-T 3AE13430
* 3AE13440
05ED 0 C480 08E5 LD I POINT PICK UP CHARACTER 3AE13450
* 3AE13460
05EF 0 7400 08DA MDX L RIGHT 3AE13470
05F1 0 7004 MDX XMW1 BR IF XMIT RIGHT BYTE 3AE13480
* 3AE13490
05F2 0 1808 SRA 8 3AE13500
05F3 0 6C00 08DA STX L RIGHT TURN ON RIGHT BYTE IND 3AE13510
05F5 0 7006 MDX XMW2 3AE13520
* 3AE13530
05F6 0 D142 XMW1 STO 1 BUF-T 3AE13540
05F7 0 1010 SLA 16 3AE13550
05F8 0 D13D STO 1 RIGHT-T TURN OFF RIGHT BYTE IND 3AE13560
05F9 0 7401 08E5 MDX L POINT,1 INCRE I/O AREA POINTER 3AE13570
05FB 0 C142 LD 1 BUF-T 3AE13580
* 3AE13590
05FC 0 1008 XMW2 SLA 8 3AE13600
    
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SCA TRANSMIT/RECEIVE STR

05FD 0 0142	STO	1	BUF-T	STORE CHAR TO XMIT	3AE13620
05FE 0 F144	EOR	1	LRC-T	BUILD LRC	3AE13630
05FF 0 0144	STO	1	LRC-T		3AE13640
	*				3AE13650
0600 0 C142	LD	1	BUF-T		3AE13660
0601 0 F10B	EOR	1	RM-T	IS CHAR A REC MARK	3AE13670
0602 0 4820	BSC		Z		3AE13680
0603 0 F10C	EOR	1	GMC-T	IS IT A GROUP MARK	3AE13690
0604 0 4820	BSC		Z		3AE13700
0605 0 7004	MDX		DATA	BYPASS ILRC CHECK	3AE13710
	*				3AE13720
0606 0 C133	LD	1	ILRC-T	IF ILRC IS REQUESTED	3AE13730
0607 0 D127	STO	1	XRIRC-T	TURN ON XR-ILRC	3AE13740
0608 0 4C20 060E	BSC	L	SVDTA,Z	BR IF ILRC REQ	3AE13750
	*				3AE13760
060A 0 4400 0856	DATA	BSI	L	GDATA	3AE13770
060C 0 4C00 07E2	BSC	L	WTEND+5	GO TO STORE DATA IN TRACE	3AE13780
	*				3AE13790
060E 0 C142	SVDTA	LD	1	BUF-T	3AE13800
060F 0 4C00 07E0	BSC	L	WTEND+3	FETCH CHAR TO XMIT	3AE13810
	*				3AE13820
0611 0 C132	TEL7	LD	1	LCNTL-T	3AE13830
0612 0 4C18 07DA	BSC	L	WTTEL,+	XMIT CHAR AND TRACE	3AE13840
	*				3AE13850
0614 0 7008	MDX		XCL	GOTO SEND CL	3AE13860
	*				3AE13870
0615 0 C132	EOT7	LD	1	LCNTL-T	3AE13880
0616 0 4C18 07D4	BSC	L	WTEOT+2,+	GOTO SEND EOT	3AE13890
	*				3AE13900
0618 0 7004	MDX		XCL	GOTO SEND CL	3AE13910
	*				3AE13920
0619 0 D12A	EOT7	STO	1	CLTM-T	3AE13930
061A 0 C132	LD	1	LCNTL-T	TURN ON LOAD CL IND	3AE13940
061B 0 4C18 07D6	BSC	L	WTEOI,+	GO TO SEND IDLE	3AE13950
	*				3AE13960
061D 0 4C00 0804	XCL	BSC	L	WTCL	3AE13970
	*				3AE13980
061F 0 C132	INQ7	LD	1	LCNTL-T	3AE13990
0620 0 4C18 07CE	BSC	L	WTINQ,+	GOTO SEND INQ	3AE14000
	*				3AE14010
0622 0 7001	MDX		SOR7&1	GOTO SEND TL	3AE14020
	*				3AE14030
0623 0 C132	SOR7	LD	1	LCNTL-T	3AE14040
0624 0 4C20 0802	BSC	L	WTTL,Z	GOTO SEND TL	3AE14050
	*				3AE14060
0626 0 D124	STO	1	XSOR-T	TURN OFF XMIT-SOR	3AE14070
0627 0 C145	LD	1	WDCNT-T		3AE14080
0628 0 D146	STO	1	COUNT-T	SET UP WORD COUNT,	3AE14090
0629 0 C147	LD	1	IOAR-T	I/O AREA POINTER	3AE14100
062A 0 811B	A	1	D1-T		3AE14110
062B 0 D148	STO	1	POINT-T		3AE14120
062C 0 D132	STO	1	LCNTL-T	TRN ON LEADER CONTRL	3AE14130
062D 0 C1F9	LD	1	ACK-T	PREPARE TO XMIT SOR	3AE14140
062E 0 7001	MDX		ILRC7&1	GOTO CLEAR LRC	3AE14150
	*				3AE14160
062F 0 C144	ILRC7	LD	1	LRC-T	3AE14170
0630 0 D142	STO	1	BUF-T	PREPARE TO XMIT LRC	3AE14180
0631 0 1010	SLA		16	STORE CHAR TO XMIT	3AE14190
0632 0 D144	STO	1	LRC-T	CLEAR LRC	3AE14200
0633 0 D127	STO	1	XRIRC-T	TURN OFF XR-ILRC	3AE14210
0634 0 C142	LD	1	BUF-T	FETCH CHAR TO XMIT	3AE14220
0635 0 4C00 07E0	BSC	L	WTEND+3	GO TO XMIT CHAR	3AE14230
	*				3AE14240
0637 0 C129	QLRC	LD	1	RTBSY-T	3AE14250
0638 0 4C18 0642	BSC	L	FILL,&-	IF NOT BUSY,	3AE14260
	*				3AE14270
063A 0 C132	LD	1	LCNTL-T	BR TO SEND EOI	3AE14280
063B 0 4C20 0802	BSC	L	WTTL,Z	GOTO SFND TL	3AE14290

SCA TRANSMIT/RECEIVE STR

063D 0 6C00 08C7	*	STX	L	CLTM	TURN ON LOAD CL IND	3AE14300
063F 0 6C00 08BC		STX	L	XPAD	TURN ON XMIT-PAD	3AE14310
0641 0 70ED		MDX		ILRC7	GO TO XMIT LRC	3AE14320
	*					3AE14330
0642 0 C000	FILL	LD	*			3AE14340
0643 0 D130		STO	1	XEOI-T	TURN ON XMIT-EOI	3AE14350
0644 0 70D8		MDX		XCL	BR TO SEND CL	3AE14360
	*					3AE14370
	*					3AE14380
	*					3AE14390
	*					3AE14400
	*					3AE14410
0645 0 6C00 08CF	XMR	STX	L	LCNTL	TURN ON LEADER CONTROL	3AE14420
0647 0 C128		LD	1	RCVER-T		3AE14430
0648 0 4C20 068C		BSC	L	CNTER+1,Z	BR IF ERR RCVD IND ON	3AE14440
	*					3AE14450
064A 0 C12D		LD	1	CLSW-T		3AE14460
064B 0 4C18 068B		BSC	L	CNTER,+	BR IF LAST CHAR NOT CL	3AE14470
	*					3AE14480
064D 0 C142		LD	1	BUF-T		3AE14490
064E 0 F109		EOR	1	TELC-T	BUF # TEL	3AE14500
064F 0 4C18 067E		BSC	L	ALTER,&-	YES, BRANCH	3AE14510
	*					3AE14520
0651 0 C122		LD	1	TEL-T		3AE14530
0652 0 4C20 068B		BSC	L	CNTER,Z	TEL SW ON, TRY AGAIN	3AE14540
	*					3AE14550
0654 0 C126		LD	1	XEOT-T		3AE14560
0655 0 4C18 0660		BSC	L	CKACK,&-	GO CK ACK IF OFF	3AE14570
	*					3AE14580
0657 0 C142		LD	1	BUF-T	XMIT-EOT IS ON,	3AE14590
0658 0 F10A		EOR	1	EOTC-T	IS BUF#EOT	3AE14600
0659 0 4C18 07BA		BSC	L	ENTST,+	EOT RCVD, END OF TEST	3AE14610
	*					3AE14620
065B 0 C142		LD	1	BUF-T		3AE14630
065C 0 F107		EOR	1	IDLE-T		3AE14640
065D 0 4C20 068B		BSC	L	CNTER,Z	BR IF NOT IDLE	3AE14650
	*					3AE14660
065F 0 702C		MDX		CNTER+1		3AE14670
	*					3AE14680
0660 0 C142	CKACK	LD	1	BUF-T	IS RIGHT ACK IN BUF	3AE14690
0661 0 F1F9		EOR	1	ACK-T		3AE14700
0662 0 4C20 0668		BSC	L	NOACK,Z	NO, BRANCH	3AE14710
	*					3AE14720
0664 0 D123		STO	1	XINQ-T	YES, TURN OFF XINQ	3AE14730
0665 0 7401 08E6		MDX	L	RCDC,1	INCRE RECORD COUNT	3AE14740
0667 0 7018		MDX		D8-1	GO CLEAR ROUTINE BUSY	3AE14750
	*					3AE14760
0668 0 C142	NOACK	LD	1	BUF-T		3AE14770
0669 0 F107		EOR	1	IDLE-T	IS CHAR AN IDLE	3AE14780
066A 0 4C18 0686		BSC	L	INQON,&-	BR IF YES	3AE14790
	*					3AE14800
066C 0 C142		LD	1	BUF-T		3AE14810
066D 0 F108		EOR	1	ERRC-T		3AE14820
066E 0 4C20 0677		BSC	L	C8,Z	BR IF NOT ERR RESP	3AE14830
	*					3AE14840
0670 0 6306		LDX	3	6	ERR SEQ MESSAGE	3AE14850
0671 0 1010	DAT	SLA		16		3AE14860
0672 0 D123		STO	1	XINQ-T	TURN OFF XMIT-INQ	3AE14870
0673 0 C000		LD	*			3AE14880
0674 0 D124		STO	1	XSOR-T	TURN ON XMIT-SOR	3AE14890
0675 0 4C00 07F9		BSC	L	STWT2	GO TO START WRITE	3AE14900
	*					3AE14910
0677 0 C9F9	C8	LDD	1	ACK-T		3AE14920
0678 0 1090		SLT		16	CHECK FOR OTHER ACK	3AE14930
0679 0 F142		EOR	1	BUF-T		3AE14940
067A 0 4C20 068B		BSC	L	CNTER,Z	BR NOT OTHER ACK	3AE14950
	*					3AE14960
067C 0 6307		LDX	3	7	WRONG ACK MSG	3AE14970


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067D 0 70F3          MDX    DAT          3AE14980
*                   *                   *
067E 0 C122          ALTER LD  1 TEL-T          3AE14990
067F 0 4C18 07ED    BSC    L  XMTL,+-- GO TO XMIT TEL  3AE15000
*                   *                   *
0681 0 1010          SLA     16          3AE15010
0682 0 D122          STO     1 TEL-T          3AE15020
0683 0 D129          STO     1 RTBSY-T      3AE15030
*                   *                   *
0684 0 4C00 07F0    DB      BSC    L  XMITI      GO TO SEND IDLES  3AE15040
*                   *                   *
0686 0 C129          INQDN LD  1 RTBSY-T      3AE15050
0687 0 4C18 07EA    BSC    L  XMEOI,&- BR TO SENT IDLE, NOT BSY 3AE15060
*                   *                   *
0689 0 4C00 07E4    BSC    L  XMINQ      BUSY, SEND INQ    3AE15070
*                   *                   *
068B 0 6305          CNTRR LDX  3 5          INVALID CONT SEQ MSG 3AE15080
068C 0 C122          LD      1 TEL-T          3AE15090
068D 0 4C20 07EE    BSC    L  XMTL+1,Z TEL ON, GO XMIT TEL 3AE15100
*                   *                   *
068F 0 C126          LD      1 XEOT-T        3AE15110
0690 0 4C20 07F0    BSC    L  XMITI,Z      XEOT ON, GO XMIT EOT 3AE15120
*                   *                   *
0692 0 4C00 07E4    BSC    L  XMINQ      GO TO XMIT INQ    3AE15130
*                   *                   *
-----
*                   *                   *
0694 0 C126          XMT     LD  1 XEOT-T        3AE15140
0695 0 4C18 06A3    BSC    L  ERRTO,+-- BR IF NOT EOT SENT 3AE15150
*                   *                   *
0697 0 C135          LD      1 TOCNT-T      3AE15160
0698 0 8118          A       1 D1-T          INCRE TIMEOUT COUNT 3AE15170
0699 0 D135          STO     1 TOCNT-T      3AE15180
069A 0 911C          S       1 D3-T          3AE15190
069B 0 4C10 06A3    BSC    L  ERRTO,- BR IF THREE TIMEOUTS 3AE15200
*                   *                   *
069D 0 6600 0A25    LDX    L2 TMSGB      TIMEOUT MSG        3AE15210
069F 0 4400 0845    BSI    L  ITRCA      STORE MSG IN TRACE TABLE 3AE15220
06A1 0 6313          LDX    3 19          TIMEOUT MSG        3AE15230
06A2 0 70E9          MDX    CNTR+1        3AE15240
*                   *                   *
06A3 0 6308          ERRTO LDX  3 8          ERR TIMEOUT MSG    3AE15250
06A4 0 6600 0A2B    LDX    L2 TMSGC      ERR TIMEOUT MSG    3AE15260
06A6 0 4400 0845    BSI    L  ITRCA      STORE MSG IN TRACE TABLE 3AE15270
06A8 0 70E3          MDX    CNTR+1        GO TO RETRY        3AE15280
*                   *                   *
-----
*                   *                   *
06A9 0 C132          RCW    LD  1 LCNTL-T      3AE15290
06AA 0 4C20 0804    BSC    L  WTCL,Z      SEND CL IF ON      3AE15300
*                   *                   *
06AC 0 C12C          LD      1 TOIND-T      3AE15310
06AD 0 4C20 06C2    BSC    L  TLTMQ,Z BR IF TIMEOUT OCCURRED 3AE15320
*                   *                   *
06AF 0 C121          LD      1 XTEL-T        3AE15330
06B0 0 4C20 07DA    BSC    L  WTTEL,Z BR IF XMIT-TEL ON 3AE15340
*                   *                   *
06B2 0 C130          LD      1 XFOI-T        3AE15350
06B3 0 4C20 07D6    BSC    L  WTEOI,Z XEOI ON, GO SEND IDLE 3AE15360
*                   *                   *
06B5 0 C120          LD      1 XERR-T        3AE15370
06B6 0 4C18 06BD    BSC    L  ACKQ,&- BR IF XMIT-ERR NOT ON 3AE15380
*                   *                   *
06B8 0 C108          LD      1 ERRC-T        3AE15390
06B9 0 6C00 08C8    EX1    STX  L  TLTM      TRANSMIT ERR        3AE15400
06BB 0 4C00 07DD    BSC    L  WTEND      TURN ON LOAD TL IND 3AE15410
*                   *                   *
06BB 0 4C00 07DD    BSC    L  WTEND      GO SENT ACK OR ERR 3AE15420

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06BD 0 C12E          *                   *                   *
06BE 0 4C18 07D6    ACKQ  LD  1 XACK-T          3AE15660
*                   *                   *
06C0 0 C1F9          BSC    L  WTEOI,+-- BR IF XMIT-ACK NOT ON 3AE15670
06C1 0 70F7          *                   *                   *
*                   *                   *
06C2 0 1010          LD      1 ACK-T          3AE15680
06C3 0 D12C          MDX    EX1          GO TO XMIT ACK    3AE15690
06C4 0 C135          *                   *                   *
06C5 0 8118          TLTMQ SLA  16          3AE15700
06C6 0 D135          STO     1 TOIND-T      TURN OFF TIMEOUT IND. 3AE15710
06C7 0 4804          LD      1 TOCNT-T      3AE15720
06C8 0 D128          A       1 D1-T          ALTERNATE TL AND IDLE 3AE15730
06C9 0 4C00 07D6    STO     1 TOCNT-T      3AE15740
*                   *                   *
*                   *                   *
06CB 0 C125          BSC    E          SKIP IF COUNT EVEN 3AE15750
06CC 0 4C20 0709    STO     1 TLTM-T      TURN ON LOAD TL IND 3AE15760
*                   *                   *
06CE 0 6C00 08CF    BSC    L  WTEOI      GO TO WRITE IDLE 3AE15770
06D0 0 C128          *                   *                   *
06D1 0 4C20 078B    *                   *                   *
*                   *                   *
06D3 0 C12D          RCR    LD  1 DATA-T          3AE15800
06D4 0 4C20 06F8    BSC    L  RECRD,Z BR IF RCVNG A RECORD 3AE15810
*                   *                   *
06DE 0 C135          *                   *                   *
06D7 0 4C18 06DC    STX    L  LCNTL      TURN ON LD CNTRL    3AE15820
*                   *                   *
06D9 0 6304          LD      1 RCVER-T      3AE15830
06DA 0 1010          BSC    L  RCT,Z BR IF RCV-ERR IS ON 3AE15840
06DB 0 D135          *                   *                   *
*                   *                   *
06DD 0 C142          LD      1 CLSW-T        3AE15850
06DE 0 4C18 06F2    BSC    L  SWON,Z BR IF LAST CHAR CL 3AE15860
*                   *                   *
06E0 0 09DB          LD      1 TOCNT-T      3AE15870
06E1 0 6600 0A14    BSC    L  QINQ,+-- GET TIMEOUT COUNT 3AE15880
06E3 0 4400 0845    *                   *                   *
*                   *                   *
06E5 0 C9F9          LD      3 4          EXP CL NOT RCVD MSG 3AE15890
06E6 0 1090          SLA     16          3AE15900
06E7 0 F142          STO     1 TOCNT-T      RESET TIMEOUT COUNT 3AE15910
06E8 0 4C20 0706    *                   *                   *
*                   *                   *
06EA 0 D120          QINQ  LD  1 BUF-T          IS BUF = INQ        3AE15920
06EB 0 D12E          EOR    1 INQC-T        3AE15930
06EC 0 D144          BSC    L  CKBSY,&- BR TO CHECK RTN BUSY 3AE15940
06ED 0 6C00 08C2    *                   *                   *
*                   *                   *
06EF 0 09ED          XIO    1 LOAD-T        LOAD SYNC REG WITH IDLE 3AE15950
06F0 0 4C00 080D    LDX    L2 TMSG9      S/I=IDLE MSG        3AE15960
*                   *                   *
*                   *                   *
06F2 0 C129          LD      16          3AE15970
06F3 0 4C18 07F0    EOR    1 BUF-T        3AE15980
*                   *                   *
*                   *                   *
06F5 0 6309          LD      1 TOCNT-T      3AE15990
06F6 0 4C00 07F9    BSC    L  INCSQ,Z BR IF NOT RIGHT SOR 3AE16000
*                   *                   *
*                   *                   *
06F8 0 C142          XIO    1 RETIM-T      RESTART TIMER        3AE16010
06F9 0 F10A          BSC    L  INTX+2 GO TO RESTORE AND EXIT 3AE16020
06FA 0 4C20 06FF    *                   *                   *
*                   *                   *
06FC 0 C000          CKBSY LD  1 RTBSY-T      IS BUF # CORRECT SOR 3AE16030
*                   *                   *
*                   *                   *
LD      16          3AE16040
EOR    1 BUF-T        3AE16050
BSC    L  QTEL,Z BR IF NOT RIGHT SOR 3AE16060
*                   *                   *
*                   *                   *
LD      *          3AE16070

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SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

06FD 0 4C00 07BA	BSC	L	ENTST	EOT RCVD, END TEST	3AE16340
* QTEL	EOR	1	H0600-T		3AE16350
06FF 0 F116	BSC	L	XMTEL,+	BR IF BUF=TEL	3AE16360
0700 0 4C18 07ED					3AE16370
* EOR	L1	H6500-T			3AE16380
0702 0 F500 000D	BSC	L	XMEOI,+	BR IF IDLE IN BUF	3AE16390
0704 0 4C18 07EA					3AE16400
* INCSQ	LDX	3	5	INVALID CONT SEQ MSG	3AE16410
0706 0 6305	BSC	L	RCT		3AE16420
0707 0 4C00 078B					3AE16430
* RECRD	LD	1	RCVER-T		3AE16440
0709 0 C128	BSC	L	RCT-2,Z	BR IF RCV-ERR ON	3AE16450
070A 0 4C20 0789					3AE16460
* LD	1	ABRT1-T			3AE16470
070C 0 C134	BSC	L	CKSEQ,Z	BR IF POSSIBLE ABORT	3AE16480
070D 0 4C20 077E					3AE16490
* LD	1	LCNTL-T			3AE16500
070F 0 C132	BSC	L	CHECK,Z	BR IF LD CNTRL ON	3AE16510
0710 0 4C20 0736					3AE16520
* STX	L	LCNTL		TURN ON LEADER CNTRL	3AE16530
0712 0 6C00 08CF	BSI	L	ITRCH	STO CHAR IN TRACE TBL	3AE16540
0714 0 4400 084C	LD	1	XRLRC-T		3AE16550
0716 0 C127	BSC	L	LAST,&-	BR IF NO ILRC	3AE16560
0717 0 4C18 0724					3AE16570
* LD	1	BUF-T		COMPARE LRC S	3AE16580
0719 0 C142	EOR	1	LRC-T		3AE16590
071A 0 F144	BSC	L	GILRC,+	BR IF EQ COMPARE	3AE16600
071B 0 4C18 0720					3AE16610
* STO	1	XERR-T		TURN ON XMIT-ERR	3AE16620
071D 0 D120	LDX	3	/A	ILRC ERR MSG	3AE16630
071E 0 630A	SLA	16			3AE16640
071F 0 1010					3AE16650
* GILRC	STO	1	XRLRC-T	CLEAR XR-ILRC	3AE16660
0720 0 D127	STO	1	LRC-T	CLEAR LRC BUCKET	3AE16670
0721 0 D144	BSC	L	INTX+2	GO TO RESTORE AND EXIT	3AE16680
0722 0 4C00 080D					3AE16690
* LAST	STO	1	DATA-T	TURN OFF DATA SWITCH	3AE16700
0724 0 D125	LD	1	BUF-T		3AE16710
0725 0 C142	EOR	1	LRC-T	COMPARE LRC S	3AE16720
0726 0 F144	BSC	L	CLEAR,Z	BR IF NO EQ COMPARE	3AE16730
0727 0 4C20 0732					3AE16740
* STO	1	LRC-T		CLEAR LRC BUCKET	3AE16750
0729 0 D144	LD	1	XERR-T		3AE16760
072A 0 C120	BSC	L	B10,Z	XMIT-ERR ON, BRANCH	3AE16770
072B 0 4C20 0793					3AE16780
* STO	1	RTBSY-T		CLEAR ROUTINE BUSY	3AE16790
072D 0 D129	MDX	L	RCDCT,1	INCR RECORD COUNT	3AE16800
072E 0 7401 08E6	BSC	L	XMITI	GO TO SEND IDLES	3AE16810
0730 0 4C00 07F0					3AE16820
* CLEAR	SLA	16			3AE16830
0732 0 1010	STO	1	LRC-T	CLEAR LRC BUCKET	3AE16840
0733 0 D144	LDX	3	/B	LRC ERR MSG	3AE16850
0734 0 630B	MDX	B10		GO TURN ON XMIT-ERR	3AE16860
0735 0 705D					3AE16870
* CHECK	LD	1	BUF-T		3AE16880
0736 0 C142	SRA	8		CK FOR VALID DATA CH	3AE16890
0737 0 1808	BSC	L	*&1,E		3AE16900
0738 0 4C04 073B	MDX	CK48		CK FOR CNTRL CHAR	3AE16910
073A 0 7007	SRA	4			3AE16920
073B 0 1804	EOR	1	D3-T		3AE16930
073C 0 F11C	BSC	L	INVAL,+	BR IF CONTROL CHAR	3AE16940
073D 0 4C18 076F	EOR	1	D6-T		3AE16950
073F 0 F11E	BSC	L	INVAL,+	BR IF CONTROL CHAR	3AE16960
0740 0 4C18 076F					3AE16970
* CK48	LD	1	BUF-T	CHECK 4/8 CODE	3AE16980
0742 0 C142	LDX	2	16		3AE16990
0743 0 6210	SLCA	2	0	POSITION 1ST BIT	3AE17000
0744 0 1240					3AE17010

0745 0 4828	BSC	Z+		SKIP, NO BITS ON	3AE17020
0746 0 F110	EOR	1	H8000-T	TURN OFF 1ST BIT	3AE17030
0747 0 1240	SLCA	2	0	POSITION 2ND BIT	3AE17040
0748 0 4828	BSC	Z+		SKIP, NO BITS ON	3AE17050
0749 0 F110	EOR	1	H8000-T	TURN OFF 2ND BIT	3AE17060
074A 0 1240	SLCA	2	0	POSITION 3RD BIT	3AE17070
074B 0 4828	BSC	Z+		SKIP, NO BITS ON	3AE17080
074C 0 F110	EOR	1	H8000-T	TURN OFF 3RD BIT	3AE17090
074D 0 1240	SLCA	2	0	POSITION 4TH BIT	3AE17100
074E 0 4C10 076B	BSC	L	FOUR8,-	BR IF LESS THAN 4 BITS	3AE17110
0750 0 F110	EOR	1	H8000-T	TURN OFF 4TH BIT	3AE17120
0751 0 4C20 076B	BSC	L	FOUR8,Z	BR IF MORE THAN 4 BITS	3AE17130
* VALID	LD	1	BUF-T		3AE17140
0753 0 C142	EOR	1	LRC-T		3AE17150
0754 0 F144	STO	1	LRC-T	BUILD LRC	3AE17160
0755 0 D144					3AE17170
* LD	1	BUF-T			3AE17180
0756 0 C142	EOR	1	RM-T	IS CHAR A RECORD MRK	3AE17190
0757 0 F10B	BSC	Z			3AE17200
0758 0 4820	EOR	1	GMC-T	OR A GROUP MARK	3AE17210
0759 0 F10C	BSC	L	GOOD,Z	NO, GO TO STORE DATA	3AE17220
075A 0 4C20 0765					3AE17230
* LD	1	ILRC-T		YES, IF ILRC REQSTD	3AE17240
075C 0 C133	STO	1	XRLRC-T	TURN ON XR-ILRC	3AE17250
075D 0 D127	BSC	L	GOOD,+	BR IF NO ILRC REQ	3AE17260
075E 0 4C18 0765					3AE17270
* CNTRL	SLA	16			3AE17280
0760 0 1010	STO	1	LCNTL-T	TURN OFF LEADER CONTROL	3AE17290
0761 0 D132	BSI	L	ITRCH	STORE CHAR IN TRACE TBL	3AE17300
0762 0 4400 084C	MDX	GOOD+4		GO TO RESTORE AND EXIT	3AE17310
0764 0 7004					3AE17320
* GOOD	LD	L	/3	ANY ERRORS	3AE17330
0765 0 C400 0003	BSI	L	GDATA,+	NO, STORE DATA IN TRACE TB	3AE17340
0767 0 4418 0856	BSC	L	INTX+2	GO TO RESTORE AND EXIT	3AE17350
0769 0 4C00 080D					3AE17360
* FOUR8	LDX	3	/C	4/8 ERR MSG	3AE17370
0768 0 630C	BSI	L	ITRCH	STORE BUF IN TRACE TBL	3AE17380
076C 0 4400 084C	MDX	ABORT+2			3AE17390
076E 0 700D					3AE17400
* INVAL	LD	1	BUF-T		3AE17410
076F 0 C142	EOR	1	IDLE-T		3AE17420
0770 0 F107	BSC	L	CNTRL+2,+	BR IF IDLE IN BUF	3AE17430
0771 0 4C18 0762					3AE17440
* EOR	1	H0C00-T		IS BUF=TL	3AE17450
0773 0 F115	BSC	L	CNTRL,&-	BR IF BUF # TL	3AE17460
0774 0 4C18 0760					3AE17470
* LDX	3	/E		CONT CHAR IN TEXT MSG	3AE17480
0776 0 630E	EOR	1	H6C00-T	IS BUF=CL	3AE17490
0777 0 F112	BSC	L	ABORT+2,Z	BR IF NO	3AE17500
0778 0 4C20 077C					3AE17510
* ABORT	LD	*			3AE17520
077A 0 C000	STO	1	ABRT1-T	TURN ON ABORT IND.	3AE17530
077B 0 D134	STO	1	XERR-T	TURN ON XMIT-ERR	3AE17540
077C 0 D120	MDX	VALID		CONTINUE AS IF GOOD DATA	3AE17550
077D 0 7005					3AE17560
* CKSEQ	SLA	16			3AE17570
077E 0 1010	STO	1	ABRT1-T	TURN OFF ABORT IND	3AE17580
077F 0 D134	LD	1	BUF-T		3AE17590
0780 0 C142	EOR	1	IDLE-T		3AE17600
0781 0 F107	BSC	L	CHECK,Z	BR IF NOT IDLE IN BUF	3AE17610
0782 0 4C20 0736					3AE17620
* BSI	L	ITRCH		STORE CHAR IN TRACE TBL	3AE17630
0784 0 4400 084C	LDX	3	/D	ABORT SEQ MSG	3AE17640
0786 0 630D	BSC	L	XMITI	GO TO SEND IDLES	3AE17650
0787 0 4C00 07F0					3AE17660
* BSI	L	ITRCH		STORE CHAR IN TRACE TBL	3AE17670
0789 0 4400 084C	RCT	LD	*		3AE17680
078B 0 C000					3AE17690

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078C 0 D125      STO 1 DATA-T   TURN ON DATA SWITCH   3AE17700
078D 0 D128      STO 1 RCVER-T   TURN ON RCV-ERR       3AE17710
078E 0 D132      STO 1 LCNTL-T   TURN ON LD CNTRL      3AE17720
*
078F 0 C142      LD 1 BUF-T      3AE17730
0790 0 F114      EOR 1 HFF00-T   IS BUF = ALL ONES    3AE17740
0791 0 4C20 080D BSC L INTX+2,Z  BR IF BUF NOT ALL ONES 3AE17750
*
0793 0 1010      B10 SLA 16      3AE17760
0794 0 D125      STO 1 DATA-T   TURN OFF DATA SWITCH 3AE17770
0795 0 D128      STO 1 RCVER-T   TURN OFF RCV ERR     3AE17780
0796 0 6C00 08BD STX L XERR      TURN ON XMIT-ERR     3AE17790
0798 0 4C00 07F0 BSC L XMITI     GO TO SEND IDLES    3AE17800
*
-----
*
*          TIMEOUT FOR RECEIVE - RCTIM
*
079A 0 6600 0A25 RCTIM LDX L2 TMSGB  TIMEOUT MSG           3AE17810
079C 0 C128      LD 1 RCVER-T   IF RCV ERROR,        3AE17820
079D 0 4420 0845 BSI L ITRCA,Z  STORE MSG IN TRACE TBL 3AE17830
079F 0 6313      LDX 3 19      TIMEOUT MSG           3AE17840
07A0 0 C128      LD 1 RCVER-T   IF RCV ERROR,        3AE17850
07A1 0 4C20 0793 BSC L B10,Z   XMIT ERR, RESET IND.  3AE17860
*
07A3 0 C125      LD 1 DATA-T   3AE17870
07A4 0 4C20 07B4 BSC L DATER,Z  BR IF RECEIVING DATA 3AE17880
*
07A6 0 C135      LD 1 TOCNT-T   3AE17890
07A7 0 911C      S 1 D3-T      3AE17900
07A8 0 4C28 07AD BSC L TMOK,Z+  BR IF LESS THAN 3 TIMEOUTS 3AE17910
*
07AA 0 6600 0A28 LDX L2 TMSGC  ERR TIMEOUT MSG       3AE17920
07AC 0 6308      LDX 3 8      ERR TIMEOUT MSG       3AE17930
*
07AD 0 4400 0845 TMOK BSI L ITRCA  STORE MSG IN TRACE TBL 3AE17940
07AF 0 C000      LD *          3AE17950
07B0 0 D130      STO 1 XEOI-T   TURN ON XMIT-EOI     3AE17960
07B1 0 D12C      STO 1 TOIND-T  TURN ON TIMEOUT IND.  3AE17970
07B2 0 4C00 07F0 BSC L XMITI     GO TO SEND IDLES    3AE17980
*
07B4 0 6600 0A28 DATER LDX L2 TMSGC  ERR TIMEOUT MSG       3AE17990
07B6 0 4400 0845 BSI L ITRCA  STO MSG IN TRACE TBL  3AE18000
07B8 0 6308      LDX 3 8      ERR TIMEOUT MSG       3AE18010
07B9 0 70D9      MDX B10      ERR TIMEOUT MSG       3AE18020
*
-----
*
*          SCA INTERRUPT EXIT ROUTINES
*
07BA 0 D126      ENTST STO 1 XEOT-T  TURN XEOT ON OR OFF   3AE18030
07BB 0 1010      SLA 16        3AE18040
07BC 0 D120      STO 1 XERR-T  TURN OFF XMIT-ERR     3AE18050
07BD 0 D12E      STO 1 XACK-T  TURN OFF XMIT-ACK     3AE18060
07BE 0 D129      STO 1 RTBSY-T TURN OFF ROUTINE BUSY 3AE18070
07BF 0 6C00 08D6 STX L ENDSW   TURN ON END OF TEST IND 3AE18080
*
07C1 0 6600 057F LDX L2 OPW    SET UP                3AE18090
07C3 0 6E00 08FA STX L2 WTF    RESPONSE          3AE18100
07C5 0 6600 059F LDX L2 OPR    ADDRESSES            3AE18110
07C7 0 6E00 08F9 STX L2 RDF    FOR SERVICING  3AE18120
07C9 0 6600 05C8 LDX L2 CKOPR  INTERRUPTS           3AE18130
07CB 0 6E00 08FB STX L2 TIMF   3AE18140
07CD 0 7022      MDX XMITI     GO TO SEND IDLES    3AE18150
*
07CE 0 6C00 08C7 WTINQ STX L CLTM  TURN ON LOAD CL IND  3AE18160
07D0 0 C108      LD 1 INQC-T  FETCH INQ CHARACTER  3AE18170
07D1 0 7008      MDX WTEND    GO TO WRITE IT    3AE18180
*
07D2 0 1010      WTEOT SLA 16  3AE18190

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07D3 0 D126      STO 1 XEOT-T   TURN OFF XMIT-EOI     3AE18380
07D4 0 C10A      LD 1 EOTC-T   FETCH EOT CHARACTER   3AE18390
07D5 0 7007      MDX WTEND     GO TO WRITE IT       3AE18400
*
07D6 0 1010      WTEOI SLA 16  3AE18410
07D7 0 D130      STO 1 XEOI-T  TURN OFF XMIT-EOI     3AE18420
07D8 0 C107      LD 1 IDLE-T  FETCH IDLE CHARACTER  3AE18430
07D9 0 7003      MDX WTEND     GO TO WRITE IT       3AE18440
*
07DA 0 1010      WTTTEL SLA 16  3AE18450
07DB 0 D121      STO 1 XTEL-T  TURN OFF XMIT-TEL     3AE18460
07DC 0 C109      LD 1 TELC-T  FETCH TEL CHARACTER   3AE18470
*
07DD 0 6C00 08BC WTTEND STX L XPAD  TURN ON XMIT-PAD     3AE18480
07DF 0 D142      STO 1 BUF-T  STORE CHAR TO WRITE IN BUF 3AE18490
07E0 0 4400 084C BSI L ITRCH  STORE CHAR IN TRACE TABLE 3AE18500
07E2 0 09D7      XIO 1 WTBUFF-T WRITE CHARACTER        3AE18510
07E3 0 7027      MDX INTX      GO TO RESTORE AND EXIT 3AE18520
*
07E4 0 6C00 08C0 XMINQ STX L XINQ  TURN ON XMIT-INQ     3AE18530
07E6 0 7009      MDX XMITI     GO TO SEND IDLES     3AE18540
*
07E7 0 6C00 08C3 XMEOT STX L XEOT  TURN ON XMIT-EOT     3AE18550
07E9 0 7006      MDX XMITI     GO TO SEND IDLES     3AE18560
*
07EA 0 6C00 08CD XMEOI STX L XEOI  TURN ON XMIT-EOI     3AE18570
07EC 0 7003      MDX XMITI     GO TO SEND IDLES     3AE18580
*
07ED 0 6312      XMTTEL LDX 3 18  XR3=TEL RCVD MSG NUMBER 3AE18590
07EE 0 6C00 08BE STX L XTEL    TURN ON XMIT-TEL     3AE18600
*
07F0 0 09DB      XMITI XIO 1 LOAD-T  LOAD IDLE TO SYNC REG  3AE18610
07F1 0 09D3      XIO 1 SYNC-T  START SYNC              3AE18620
07F2 0 6600 09F1 LDX L2 TMSG5  S/I=IDLE, ST SYNC MSG  3AE18630
07F4 0 4400 0845 BSI L ITRCA  STORE MSG IN TRACE TBL 3AE18640
07F6 0 1010      SLA 16        3AE18650
07F7 0 D128      STO 1 RCVER-T TURN OFF ERROR RCVD IND 3AE18660
07F8 0 7012      MDX INTX      GO TO RESTORE AND EXIT 3AE18670
*
07F9 0 09DB      STWT2 XIO 1 LOAD-T  LOAD IDLE TO SYNC REG  3AE18680
07FA 0 09D1      XIO 1 STWRT-T START WRITE              3AE18690
07FB 0 6600 0A18 LDX L2 TMSG4  S/I=IDLE, ST WR MSG   3AE18700
07FD 0 4400 0845 BSI L ITRCA  STORE MSG IN TRACE TBL 3AE18710
07FF 0 C15A      LD 1 D00X-T  NUMBER OF IDLES TO     3AE18720
0800 0 D158      STO 1 IDLCT-T PRECEED TRANSMISSION  3AE18730
0801 0 7009      MDX INTX      GO TO RESTORE AND EXIT 3AE18740
*
0802 0 C106      WTTTL LD 1 TLC-T  FETCH TL CHARACTER    3AE18750
0803 0 7001      MDX WTCL+1   GO TO WRITE IT        3AE18760
*
0804 0 C105      WTTCL LD 1 CLC-T  FETCH CL CHARACTER    3AE18770
0805 0 D142      STO 1 BUF-T  STO CHAR IN BUF       3AE18780
0806 0 4400 084C BSI L ITRCH  STORE CHAR IN TRACE TBL 3AE18790
0808 0 09D7      XIO 1 WTBUFF-T WRITE CHARACTER        3AE18800
0809 0 1010      SLA 16        3AE18810
080A 0 D132      STO 1 LCNTL-T TURN OFF LEADER CONTROL 3AE18820
*
080B 0 6C00 08CC INTX STX L FAIL  TURN ON DATA SET FAIL IND 3AE18830
080D 0 7300      MDX 3 0      3AE18840
080E 0 7009      MDX ERROR    BR IF ERROR OCCURED 3AE18850
*
080F 0 C148      INTXA LD 1 SAVE-T  RESTORE A AND Q        3AE18860
0810 0 D01A      STO TRACE     RESTORE XR2            3AE18870
0811 0 C9CB      LDD 1 AQ-T    RESTORE XR3            3AE18880
0812 0 6600 0000 XR2 LDX L2 *-*  RESTORE XR3            3AE18890
0814 0 6700 0000 XR3 LDX L3 *-*  RESTORE XR3            3AE18900
0816 0 4CC0 04F2 BOSC I INTI    EXIT INTERRUPT        3AE18910
*

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SCA TRANSMIT/RECEIVE STR

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0818 0 C700 0988 ERROR LD L3 ERMSG-1 3AE19060
081A 0 D14F STO 1 EX-T SET ERROR MSG ADR IND 3AE19070
* 3AE19080
MDX 3 -15 3AE19090
081B 0 73F1 MDX INTXA BR IF I MSG 3AE19100
081C 0 70F2 * 3AE19110
* STO 1 ERRSW-T TURN ON ERROR IND 3AE19120
LD 1 PNTC-T FETCH ADR LAST HEX CHAR 3AE19130
081E 0 C14E BSC L INTXA,+ BR LAST CHAR NOT HEX 3AE19140
081F 0 4C08 080F * 3AE19150
* LD I PNTC FETCH LAST HEX CHAR 3AE19160
0823 0 1888 SRT 8 3AE19170
0824 0 C400 0003 LD L 3 FETCH MSG NUMBER 3AE19180
0826 0 8111 A 1 HOOEF-T 3AE19190
0827 0 1088 SLT 8 COMB ERR NO AND HEX CHAR 3AE19200
0828 0 D480 08EB STO I PNTC STORE IN TRACE TABLE 3AE19210
082A 0 70E4 MDX INTXA 3AE19220
* 3AE19230
***** 3AE19240
* 3AE19250
* TRACE MSG STORE ROUTINE - TRACE 3AE19260
* 3AE19270
***** 3AE19280
* 3AE19290
* 3AE19300
TRACE DC *-* 3AE19310
LD 1 OVRCR-T 3AE19320
082C 0 C138 BSC L NOVER+2,+ EXIT IF CORE FULL 3AE19330
082D 0 4C18 083A * 3AE19340
MDX L PNTB,1 INCRE TRACE POINTER B 3AE19350
082F 0 7401 08EA LD 1 PNTB-T 3AE19360
0831 0 C14D S 1 CORSZ-T 3AE19370
0832 0 914A BSC L NOVER,Z+ BR IF STILL MORE CORE 3AE19380
0833 0 4C28 0838 * 3AE19390
STO 1 OVRCR-T SET CORE FULL IND 3AE19400
0835 0 D138 LD 1 OVRCR-T CORE FULL MSG 3AE19410
0836 0 6600 0A4B * LD L2 TMSGG 3AE19420
* NOVER STX I2 PNTB STORE MSG IN TRACE TBL 3AE19430
0838 0 6E80 08EA LD 1 SWO-T 3AE19440
083A 0 C100 SLA 9 3AE19450
083B 0 1009 BSC L SAVIT,Z+ BR IF TRACE ALL SELECTED 3AE19460
083C 0 4C28 0841 * 3AE19470
LD 1 ERRSW-T 3AE19480
083E 0 C13A BSC I TRACE,+ BR IF NO ERRORS YET 3AE19490
083F 0 4C98 082B * 3AE19500
SAVIT LD 1 PNTB-T 3AE19510
0841 0 C14D STO 1 PNTA-T UPDATE POINTER A 3AE19520
0842 0 D14C BSC I TRACE RETURN TO CALLING ROUTINE 3AE19530
0843 0 4C80 082B * 3AE19540
*-----*
* TRACE CALLS FROM INTERRUPT 3AE19550
* 3AE19560
ITRCA DC *-* 3AE19570
LD 1 ENDSW-T 3AE19580
0845 0 0000 BSC I ITRCA,Z EXIT IF END OF TEST IS ON 3AE19590
0846 0 C139 * 3AE19600
0847 0 4CA0 0845 BSI TRACE STORE MSG IN TRACE TBL 3AE19610
* BSC I ITRCA RETURN TO CALLING ROUTINE 3AE19620
* 3AE19630
*-----*
* STORE TWO DIGIT HEX CHARACTER 3AE19640
* 3AE19650
ITRCH DC *-* 3AE19660
LD 1 BUF-T FETCH BUFFER CONTENTS 3AE19670
084C 0 0000 SRA 8 3AE19680
084D 0 C142 * 3AE19690
084E 0 1808 STO L 2 XR2=HEX CHARACTER 3AE19700
084F 0 D400 0002 BSI ITRCA STORE CHAR IN TRACE TBL 3AE19710
0851 0 40F3 LD 1 PNTB-T 3AE19720
0852 0 C14D STO 1 PNTC-T UPDATE TRACE POINTER C 3AE19730
0853 0 D14F

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0854 0 4C80 084C BSC I ITRCH RETURN TO CALLING ROUTINE 3AE19740
* 3AE19750
*-----*
* STORE GOOD DATA IN TRACE TABLE 3AE19760
* 3AE19770
* 3AE19780
GDATA DC *-* 3AE19790
LD 1 SWO-T 3AE19800
0856 0 0000 SLA 10 3AE19810
0857 0 C100 BSC L NSAVE,- BR IF DATA SAVE OPTION OFF 3AE19820
0858 0 100A * 3AE19830
0859 0 4C10 085D BSI ITRCH STORE DATA IN TRACE TBL 3AE19840
* MDX RTRN RETURN TO CALLING ROUTINE 3AE19850
* 3AE19860
NSAVE LD I PNTB 3AE19870
EOR MSG+1 3AE19880
085D 0 C480 08EA BSC I GDATA,+ BR IF MSG ALREADY STORED 3AE19890
085F 0 F003 * 3AE19900
0860 0 4C98 0856 MSG LDX L2 TMSGH TEXT MSG 3AE19910
* BSI ITRCA STORE MSG IN TRACE TABLE 3AE19920
RTRN BSC I GDATA RETURN TO CALLING ROUTINE 3AE19930
* 3AE19940
***** 3AE19950
* 3AE19960
* CONSTANTS AND INDICATORS 3AE19970
* 3AE19980
***** 3AE19990
* 3AE20000
AQ BSS E 2 FOR ACC AND EXT 3AE20010
AQ2 BSS 2 3AE20020
* 3AE20030
STRED DC 0 START READ 3AE20040
DC /5600 IOCC 3AE20050
STWRT DC 0 START WRITE 3AE20060
DC /5500 IOCC 3AE20070
SYNC DC 0 SYNCHRONIZE 3AE20080
DC /5410 IOCC 3AE20090
READ DC BUF READ 3AE20100
DC /5200 IOCC 3AE20110
WTBUF DC BUF WRITE 3AE20120
DC /5100 IOCC 3AE20130
WRSW3 DC SW3A WRITE FROM SWS 3AE20140
DC /5100 IOCC 3AE20150
LOAD DC IDLE LOAD SYNC/IDL REGIS 3AE20160
DC /5104 IOCC 3AE20170
LDCL DC CLC LOAD SYNC REG WITH CL 3AE20180
DC /5104 IOCC 3AE20190
LDTL DC TLC LOAD SYNC REG WITH TL 3AE20200
DC /5104 IOCC 3AE20210
SIREG DC SW3A LOAD SYNC REG FROM SWS 3AE20220
DC /5104 IOCC 3AE20230
SENSR DC 0 SENSE AND RESET DSW 3AE20240
DC /5701 IOCC 3AE20250
ENDOP DC 0 END OPERATION 3AE20260
DC /5404 IOCC 3AE20270
RESET DC 0 PROGRAM SCA RESET 3AE20280
DC /5540 IOCC 3AE20290
SEND DC 0 SEND-RCV RUN TR. ON 3AE20300
DC /5601 IOCC 3AE20310
RCVTR DC 0 SEND-RCV RUN TR. OFF 3AE20320
DC /5602 IOCC 3AE20330
RETIM DC 0 RESTART TIMEOUT 3AE20340
DC /5702 IOCC 3AE20350
* 3AE20360
SPACE DC SPS SPACE PRINTER 3AE20370
DC /0900 IOCC 3AE20380
CRTRN DC CR CARRIER RETURN 3AE20390
DC /0900 IOCC 3AE20400
PRINT DC PRTWD PRINTER WRITE 3AE20410
0868 0002
086A 0002
086C 0 0000
086D 0 5600
086E 0 0000
086F 0 5500
0870 0 0000
0871 0 5410
0872 0 080F
0873 0 5200
0874 0 080F
0875 0 5100
0876 0 08A1
0877 0 5100
0878 0 08A4
0879 0 5104
087A 0 08A2
087B 0 5104
087C 0 08A3
087D 0 5104
087E 0 08A1
087F 0 5104
0880 0 0000
0881 0 5701
0882 0 0000
0883 0 5404
0884 0 0000
0885 0 5540
0886 0 0000
0887 0 5601
0888 0 0000
0889 0 5602
088A 0 0000
088B 0 5702
088C 0 08F5
088D 0 0900
088E 0 08F4
088F 0 0900
0890 0 08F0

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0891	0	0900	DC	/0900	IOCC	3AE20420			
0892	0	0000	SNSPR	DC	0	3AE20430			
0893	0	0F01	DC	/0F01	SENSE PRINTER DSW	3AE20440			
0894	0	08EF	RDSWS	DC	IOCC	3AE20450			
0895	0	3A00	DC	/3A00	READ SWS	3AE20460			
*									
0896	0	0000	ACK	DC	0	3AE20470			
0897	0	0000	DC	0	CURRENT ACK/SOR	3AE20480			
0898	0	3300	ACKS	DC	0	3AE20490			
0899	0	5300	DC	/5300	NEXT ACK/SOR	3AE20500			
*									
089A	0	4C00	01D2	B00T	BSC	L	BEGIN	RESTART BRANCH	3AE20510
089C	0	7003	MDX3	MDX		**+3		RESTART BRANCH	3AE20520
*									
089D	0	0000	T	BSS	0				3AE20530
*									
089D	0	0000	SW0	DC	0			FUNCTION 0 SWITCH ENTRY	3AE20540
089E	0	0000	SW1	DC	0			FUNCTION 1 SWITCH ENTRY	3AE20550
089F	0	0006	SW2	DC	6			FUNCTION 2 SWITCH ENTRY	3AE20560
08A0	0	0039	SW3	DC	/0039			FUNCTION 3 SWITCH ENTRY	3AE20570
08A1	0	3900	SW3A	DC	/3900			XMIT CHAR FOR RTNS 4 AND 5	3AE20580
*									
08A2	0	5500	CLC	DC	/5500			4/8 FOR CL	3AE20590
08A3	0	3500	TLC	DC	/3500			4/8 FOR TL	3AE20600
08A4	0	3900	IDLE	DC	/3900			4/8 FOR IDLE	3AE20610
08A5	0	5900	INQC	DC	/5900			4/8 FOR INQ	3AE20620
08A5	0		ERRC	EQU	INQC			4/8 FOR ERR	3AE20630
08A6	0	5C00	TELC	DC	/5C00			4/8 FOR TEL	3AE20640
08A7	0	5A00	EOTC	DC	/5A00			4/8 FOR EOT	3AE20650
08A8	0	AA00	RM	DC	/AA00			4/8 FOR RECORD MARK	3AE20660
*									
08A9	0	2700	GMC	DC	/2700			CONST FOR GM CHECK	3AE20670
08AA	0	6500	H6500	DC	/6500			TEL CK CONST 6500	3AE20680
08AB	0	6300	H6300	DC	/6300			IDLE CK CONST 6300	3AE20690
08AC	0	6000	H6000	DC	/6000			TL CHECK CONST 6000	3AE20700
*									
08AD	0	8000	H8000	DC	/8000			CONSTANT 8000	3AE20710
08AE	0	00EF	H00EF	DC	/00EF			CONSTANT 00EF	3AE20720
08AF	0	6C00	H6C00	DC	/6C00			CONSTANT 6C00	3AE20730
08B0	0	0004	H0004	DC	/0004			CONSTANT 0004	3AE20740
08B1	0	FF00	HFF00	DC	/FF00			CONSTANT FF00	3AE20750
08B2	0	0C00	H0C00	DC	/0C00			CONSTANT 0C00	3AE20760
08B3	0	0600	H0600	DC	/0600			CONSTANT 0600	3AE20770
08B4	0	00F0	H00F0	DC	/00F0			CONSTANT 00F0	3AE20780
08B5	0	0F00	H0F00	DC	/0F00			CONSTANT 0F00	3AE20790
08B6	0	00FF	H00FF	DC	/00FF			CONSTANT 00FF	3AE20800
08B7	0	007C	H007C	DC	/007C			CONSTANT 007C	3AE20810
*									
08B8	0	0001	D1	DC	1			CONSTANT 0001	3AE20820
08B9	0	0003	D3	DC	3			CONSTANT 0003	3AE20830
08BA	0	0005	D5	DC	5			CONSTANT 0005	3AE20840
08BB	0	0006	D6	DC	6			CONSTANT 0006	3AE20850
*									
08Bc	0	0000	TAB4	BSS	0			BEGIN TABLE TO CLEAR	3AE20860
08BC	0	0000	XPAD	DC	0			XMIT PAD IND	3AE20870
08BD	0	0000	XERR	DC	0			TRANSMIT ERR IND.	3AE20880
08BE	0	0000	XTEL	DC	0			TRANSMIT TEL IND.	3AE20890
08BF	0	0000	TEL	DC	0			INITIATE XMIT TEL	3AE20900
08C0	0	0000	XINQ	DC	0			TRANSMIT INQ IND.	3AE20910
08C1	0	0000	XSOR	DC	0			TRANSMIT SOR IND.	3AE20920
08C2	0	0000	DATA	DC	0			XMIT/RCV DATA IND	3AE20930
08C3	0	0000	XEOT	DC	0			TRANSMIT EOT IND.	3AE20940
08C4	0	0000	XRLRC	DC	0			XMIT/RCV ILRC IND	3AE20950
08C5	0	0000	RCVER	DC	0			ERROR ON RCV	3AE20960
08C6	0	0000	RTBSY	DC	0			ROUTINE BUSY	3AE20970
*									
08C7	0	0000	CLTM	DC	0			LOAD CL IND	3AE20980
08C8	0	0000	TLTM	DC	0			LOAD TL IND	3AE20990

08C9	0	0000	TOIND	DC	0			TIMEOUT INDICATOR	3AE21100
08CA	0	0000	CLSW	DC	0			CONTROL LEADER IND.	3AE21110
08CB	0	0000	XACK	DC	0			XMIT ACK INDICATOR	3AE21120
08CC	0	0000	FAIL	DC	0			DATA SET FAIL CHECK	3AE21130
08CD	0	0000	XEOI	DC	0			TRANSMIT EOI IND.	3AE21140
08CE	0	0000	TYPE	DC	0			DATA IN OR OUT	3AE21150
08CF	0	0000	LCNTL	DC	0			CONTROL SEQUENCE IND.	3AE21160
08D0	0	0000	ILRC	DC	0			ILRC IN RECORD IND.	3AE21170
08D1	0	0000	ABRT1	DC	0			ABORT IND ON IF CL IN DATA	3AE21180
08D2	0	0000	TOCNT	DC	0			TIMEOUT COUNTER	3AE21190
08D3	0	0000	READY	DC	0			INITIAL READY IND	3AE21200
08D4	0	0000	SYNCR	DC	0			INITIAL SYNC IND	3AE21210
08D5	0	0000	OVRCR	DC	0			CORE FULL INDICATOR	3AE21220
08D6	0	0000	ENDSW	DC	0			END OF TEST IND	3AE21230
08D7	0	0000	ERRSW	DC	0			ERROR INDICATOR	3AE21240
08D8	0	0000	SWSY	DC	0			CONSOLE SWS RTN BUSY IND	3AE21250
08D9	0	0000	LGBSY	DC	0			LOG RTN BUSY IND	3AE21260
08DA	0	0000	RIGHT	DC	0			XMIT RIGHT BYTE IND	3AE21270
08DB	0	0000	LIZSW	DC	0			1ST/2ND CHAR IND	3AE21280
08DC	0	0000	DLVB	DC	0			SCA INT DELAY COUNT B	3AE21290
08DD	0	0000	DLVA	DC	0			SCA INT DELAY COUNT A	3AE21300
08DE	0	0000	LGOLY	DC	0			LOG DELAY COUNTER	3AE21310
*									
08DF	0	0000	BUF	DC	0			4/8 BUF FOR RCV/XMIT	3AE21320
08E0	0	0000	DSW	DC	0			DEVICE STATUS WORD	3AE21330
08E1	0	0000	LRC	DC	0			LRC ACCUMULATOR	3AE21340
08E2	0	0000	WDCNT	DC	0			WORD COUNT FROM USER	3AE21350
08E3	0	0000	COUNT	DC	0			ACTUAL WORD COUNT	3AE21360
08E4	0	0000	IOAR	DC	0			I/O AREA ADDRESS	3AE21370
08E5	0	0000	POINT	DC	0			I/O AREA POINTER	3AE21380
08E6	0	0000	RCDCT	DC	0			RECORD COUNT	3AE21390
*									
08E7	0	5533	CORSZ	DC	/5533			THE NEXT ADRS WILL BE PROG SET	3AE21400
08E8	0	0000	SAVE	DC	0			MAX EVEN CORE ADDRESS	3AE21410
08E9	0	0A86	PNTA	DC	TRCTB-1			TEMP STORAGE	3AE21420
08EA	0	0A86	PNTB	DC	TRCTB-1			TRACE POINTER A	3AE21430
08EB	0	0000	PNTC	DC	0			TRACE POINTER B	3AE21440
08EC	0	0000	EX	DC	0			TRACE POINTER C	3AE21450
08ED	0	0000	XMCNT	DC	0			ERROR MSG ADR IND	3AE21460
08EE	0	0000	PRDSW	DC	0			XMIT RECORD COUNT	3AE21470
08EF	0	0000	SWS	DC	0			PRINTER DSW STORAGE	3AE21480
08F0	0	0000	PRTWD	DC	0			CONSOLE SWS BUFFER	3AE21490
08F1	0	0000	PRADR	DC	0			LOG RTN DATA BUFFER	3AE21500
08F2	0	0A86	TBADR	DC	TRCTB-1			MSG ADR STORAGE	3AE21510
08F3	0	0389	INTER	DC	ERINT			TRACE TABLE ADR	3AE21520
*									
08F4	0	8100	CR	DC	/8100			ERR INT RTN ADR	3AE21530
08F5	0	2100	SPS	DC	/2100			CARRIER RETURN CODE	3AE21540
08F6	0	D600	ASTER	DC	/D600			SPACE CODE	3AE21550
*									
08F7	0	0005	D000X	DC	5			ASTERISK	3AE21560
08F8	0	0000	IDLCT	DC	**			TOTAL NUMBER OF IDLES	3AE21570
*									
08F9	0	0000	RDF	DC	0			XMIT THIS NUMBER OF IDLES	3AE21580
08FA	0	0000	WTF	DC	0				3AE21590
08FB	0	0000	TIMF	DC	0			BR ADDR FOR READ	3AE21600
*									
08FC	0	0016	MSG1	TYPE	. A1			BR ADDR FOR WRITE	3AE21610
*									
090C	0	0005	MSG2	TYPE	.A5			BR ADDR FOR TIMEOUT	3AE21620
*									

SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

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0911 0010 MSG3 TYPE .A3 START TEST RTN... 3AE21780
* 3AE21790
091B 0008 MSG4 TYPE .A6 MANUAL TERM.. 3AE21800
* 3AE21810
*-----*
* ERROR MESSAGES
* 3AE21820
* 3AE21830
* 3AE21840
0923 0009 ER01 TYPE .E1 DATA SET FAIL.. 3AE21850
* 3AE21860
092C 0007 ER02 TYPE .E2 LCST SYNC.. 3AE21870
* 3AE21880
0933 0010 ER03 TYPE .E3 INVALID LEADER... 3AE21890
* 3AE21900
093D 0010 ER04 TYPE .E4 EXP CL NOT RCVD.. 3AE21910
* 3AE21920
0947 0011 ER05 TYPE .E5 INVALID CONT SEQ... 3AE21930
* 3AE21940
0952 0006 ER06 TYPE .E6 ERR SEQ.. 3AE21950
* 3AE21960
0958 0007 ER07 TYPE .E7 WRONG ACK.. 3AE21970
* 3AE21980
095F 0008 ER08 TYPE .E8 ERR TIMEOUT.. 3AE21990
* 3AE22000
0967 0006 ER09 TYPE .E9 INQ SEQ.. 3AF22010
* 3AE22020
096D 0007 EROA TYPE .EA ILRC ERR... 3AE22030
* 3AE22040
0974 0006 EROB TYPE .EB LRC ERR.. 3AE22050
* 3AE22060
097A 0006 EROC TYPE .FC 4/8 ERR.. 3AE22070
* 3AE22080
0980 0007 EROD TYPE .ED ABORT SEQ.. 3AF22090
* 3AE22100
0987 0011 EROE TYPE .EE CONT CHAR IN TEXT.. 3AE22110
* 3AE22120
0992 0 0000 EROF DC 0 SPARE MSG LOCATION 3AF22130
* 3AE22140
*-----*
* SCA INFORMATION MESSAGES
* 3AE22150
* 3AE22160
0993 0011 INFO1 TYPE .I1 DATA SET NOT RDY... 3AE22170
* 3AE22180
099E 0006 INFO2 TYPE .I2 NO SYNC.. 3AE22200
* 3AF22210
09A4 0007 INFO3 TYPE .I3 TEL RCVD... 3AE22220
* 3AE22230
09AB 0006 INFO4 TYPE .I4 TIMEOUT.. 3AF22240
* 3AE22250
09B1 0008 INFO5 TYPE .I5 CONTENTION... 3AF22260
* 3AE22270
*-----*
* MESSAGE ADDRESS TABLE
* 3AE22280
* 3AE22290
* 3AE22300
* 3AE22310
09B9 0 0923 ERMSG DC ER01 3AF22320
09BA 0 092C DC ER02 3AF22330
09BB 0 0933 DC ER03 3AE22340
09BC 0 093D DC ER04 3AF22350
09BD 0 0947 DC ER05 3AE22360
09BE 0 0952 DC ER06 3AE22370
09BF 0 0958 DC ER07 3AE22380
09C0 0 095F DC ER08 3AE22390
09C1 0 0967 DC ER09 3AE22400
09C2 0 096D DC EROA 3AE22410
09C3 0 0974 DC EROB 3AE22420
09C4 0 097A DC EROC 3AE22430
09C5 0 0980 DC EROD 3AE22440
09C6 0 0987 DC EROE 3AE22450
09C7 0 0992 DC EROF

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09C8 0 0993 DC INFO1 3AE22460
09C9 0 099E DC INFO2 3AE22470
09CA 0 09A4 DC INFO3 3AE22480
09CB 0 09AB DC INFO4 3AE22490
09CC 0 09B1 DC INFO5 3AE22500
*-----*
* TRACE MESSAGES
* 3AE22510
* 3AE22520
* 3AE22530
09CD 0007 TMSG1 TYPE . T1 OPEN IN... 3AE22540
* 3AE22550
09D4 0007 TMSG2 TYPE . T2 OPEN OUT.. 3AE22560
* 3AE22570
09DB 0012 TMSG3 TYPE . T3 ACK AND RCV, ST WR.. 3AE22580
* 3AE22590
09E7 0010 TMSG4 TYPE . T4 XM DATA, ST WR.. 3AE22600
* 3AE22610
09F1 0012 TMSG5 TYPE .T5 S/I=IDLE, ST SYNC... 3AE22620
* 3AE22630
09FD 0005 TMSG6 TYPE .T6 ST RD.. 3AE22640
* 3AE22650
0A02 0009 TMSG7 TYPE .T7 S/I=TL, ST RD.. 3AE22660
* 3AE22670
0A0B 0009 TMSG8 TYPE .T8 S/I=CL, ST RD.. 3AE22680
* 3AE22690
0A14 0007 TMSG9 TYPE .T9 S/I=IDLE... 3AE22700
* 3AE22710
0A1B 0010 TMSGA TYPE .TA S/I=IDLE, ST WR.. 3AE22720
* 3AE22730
0A25 0006 TMSGB TYPE .TB TIMEOUT.. 3AE22740
* 3AE22750
0A2B 0008 TMSGC TYPE .TC ERR TIMEOUT.. 3AE22760
* 3AE22770
0A33 0006 TMSGD TYPE .TD XM EOT.. 3AE22780
* 3AE22790
0A39 0009 TMSGE TYPE .TE CLOSE, RESET... 3AE22800
* 3AE22810
0A42 0009 TMSGF TYPE .TF ENDP, ST RD... 3AE22820
* 3AE22830
0A4B 0005 TMSGG TYPE .TG CORE... 3AE22840
* 3AE22850
0A50 0005 TMSGH TYPE . TEXT... 3AE22860
* 3AE22870
0A55 0002 TMSGI TYPE . .. 3AE22880
* 3AE22890
* 3AE22900
***** 3AE22910
* 3AE22920
0A57 0030 TSTBL BSS 48 XMIT TBL FOR TEST RTN 2 3AE22930
* 3AE22940
0A87 0 09CD TRCTB DC TMSG1 START OF TRACE TABLE 3AE22950
* 3AE22960
* 3AE22970
*-----*
* END BEGIN
0A88 01D2 NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

ABORT 077A 076E 0778
 ABRT1 08D1 070C 077B 077F
 ACK 0896 0483 0485 04E1 04E3 062D 0661 0677 06C0 06E5
 ACKQ 06BD 06B6
 ACKS 0898 0482 05B5
 ALTER 067E 064F
 AQ 0868 027A 0283 0291 0294 02A2 02A5 04F3 0811
 AQ2 086A 03A8 03B3
 ASTER 08F6 035E
 BEGIN 01D2 01E0 089A 0A88
 BOOT 089A 01F1
 BSY 058A 0586
 BUF 08DF 051B 0539 0543 05A7 05B4 05BE 05F6 05FB 05FD 0600 060E 0630 0634
 064D 0657 065B 0660 0668 066C 0679 06DC 06E7 06F8 0719 0725 0736
 0742 0753 0756 076F 0780 078F 07DF 0805 084D 0872 0874
 BUSY 042E 0427 042A
 B10 0793 072B 0735 07A1 07B9
 CHECK 0736 0710 0782
 CKACK 0660 0655
 CKBSY 06F2 06DE
 CKOPR 05C8 049B 07C9
 CKSCA 02B8 02B4 02C3 02C8
 CKSEQ 077E 070D
 CK48 0742 073A
 CLC 08A2 051D 0804 087A
 CLEAR 0732 0727
 CLOSE 046C 0433 044C
 CLSW 08CA 051C 052B 055B 0562 05A4 064A 06D3
 CLTM 08C7 04ED 054C 0565 0619 063D 07CE
 CL4A 0473 0476
 CNTER 068B 0648 064B 0652 065D 065F 067A 06A2 06A8
 CNTRL 0760 0771 0774
 CORSZ 08E7 01D6 01D8 01F3 0447 0832
 COUNT 08E3 05E8 05EC 0628
 CR 08F4 088E
 CRTRN 088E 034E
 C8 0677 066E
 DAT 0671 067D
 DATA 08C2 0513 06CB 06ED 0724 078C 0794 07A3
 DATAC 060A 0605
 DATA1 0161 0242
 DATA2 01A2 024D
 DATER 07B4 07A4
 DFAIL 0578 0572
 DIN 04AA 0487
 DIN2 0492 04B6
 DLYA 08DD 0425 0437 04FF
 DLYB 08DC 0428 0439 0500
 DSW 08E0 0502
 D000X 08F7 04E4 07FF
 D1 08B8 023D 0450 0536 05EB 062A 0698 06C5
 D3 08B9 02E1 069A 073C 07A7
 D5 08BA 020D
 D6 08BB 073F
 D8 0684 0667
 END 03BD 022D 02D5 031D
 ENDMS 0408 03C5 03CB 03CF 048B 0480
 ENDMI 0400 03BF
 ENDOP 0882 0281 0492 0524 056B
 ENDSW 08D6 022C 04EC 07BF 0846
 END1 03D4 03F9
 END2 03EA 03E6
 END2A 03EE 03EC
 END2B 03F0 03ED
 END3 03F4 03E4 03E9 03EF
 END4 03FA 03DC 03E0
 ENTST 07BA 0659 06FD
 EO17 0619 05DD

EOTC 08A7 05A8 0658 06F9 07D4
 EOT7 0615 05DA
 ERINT 03B9 08F3
 ERLOG 02C5 02BE
 ERMSG 09B9 0818
 ERRC 08A5 066D 06B8
 ERROR 0818 080E
 ERRPR 02BE 02B6
 ERRSW 08D7 0442 081D 083E
 ERRTO 06A3 0695 069B
 EROA 096D 09C2
 EROB 0974 09C3
 EROC 097A 09C4
 EROD 0980 09C5
 EROE 0987 09C6
 EROF 0992 09C7
 ERO1 0923 09B9
 ERO2 092C 09BA
 ERO3 0933 09BB
 ERO4 093D 09BC
 ERO5 0947 09BD
 ERO6 0952 09BE
 ERO7 0958 09BF
 ERO8 095F 09C0
 ERO9 0967 09C1
 EX 08EC 02B5 02C0 047D 081A
 EXIT 04F0 0420 0430 043D 043F 0477 04CB
 EXIT1 04E1 046A 04DA
 EXIT2 04F7 04A9 04E0
 EX1 06B9 06C1
 FAIL 08CC 04F9 0530 056E 080B
 FAILC 052F 0506
 FILL 0642 0638
 FOUR8 076B 074E 0751
 GDATA 0856 060A 0767 0860 0865
 GILRC 0720 071B
 GMC 08A9 05B7 0603 0759
 GOOD 0765 075A 075E 0764
 HALT 030F 0201 02AC 02CC 03D7
 HEX 0385 02F0 02F5 0343 035C 0395 03C3 03C9
 HEX1 0388 038A
 HEX2 0390 0387
 HFF00 08B1 0542 0790
 HXMSG 0366 0341 0344 0345 035F 0363
 HOC00 08B2 0773
 HOF00 08B5 04D1
 H00EF 08AE 0826
 H00FF 08B6 035B 03C2 0456
 H00F0 08B4 0454 04B8
 H0004 08B0 0432 0438 044B 04FF
 H007C 08B7 0207 030F 0316 03D9
 H0600 08B3 06FF
 H6C00 08AF 0777
 H6000 08AC 0520
 H6300 08AB 05AB
 H6500 08AA 05AE 0702
 H8000 08AD 0746 0749 074C 0750
 IDLCT 08F8 04E5 0533 0537 0800
 IDLE 08A4 0538 065C 0669 0770 0781 07D8 0878
 ILRC 08D0 0455 04B9 0606 075C
 ILRC7 062F 05E6 062E 0641
 INCSQ 0706 06E8
 INFO1 0993 09C8
 INFO2 099E 09C9
 INFO3 09A4 09CA
 INFO4 09AB 09CB
 INFO5 09B1 09CC
 INQC 08A5 05BF 06DD 07D0

SCA TRANSMIT/RECEIVE STR

SCA TRANSMIT/RECEIVE STR

INQON 0686 066A
 INQQ 05BE 05A5
 INQ7 061F 05E0
 INTER 08F3 01E5
 INTX 080B 050B 052D 053D 0569 06F0 0722 0769 0791 07E3 07F8 0801
 INTXA 080F 081C 081F 082A
 INT1 04F2 0419 0816
 INT4 03A7 01EA 03B7
 INVAL 076F 073D 0740
 IOAR 08E4 048B 04BC 0629
 ITRCA 0845 0528 0551 0558 0560 057A 05D1 069F 06A6 06E3 079D 07AD 07B6 07F4
 07FD 0847 084A 0851 0864
 ITRCH 084C 0516 053B 0545 0714 0762 076C 0784 0789 07E0 0806 0854 085B
 LAST 0724 0717
 LCNTL 08CF 04A1 0518 052C 0567 056C 057F 059F 0611 0615 061A 061F 0623 062C
 063A 0645 06A9 06CE 070F 0712 0761 078E 080A
 LDCL 087A 055D
 LDTL 087C 0555
 LGBSY 08D9 01F6 0320 0351 0382
 LGDLY 08DE 0323 0326 0354 0355 036B
 LGINT 0369 0383 03AD
 LINTX 0382 0370 0377 0381
 LINT1 037E 0374
 LINT2 0380 037D
 LOAD 0878 0276 028D 04A3 06E0 07F0 07F9
 LOG 031F 01FB 0212 021F 0230 0246 026F 0286 0297 02B1 02C5 02DB 02FA 0311
 031B 032C 032E 0331 0334 033B 0356 0358 03BD 03CD 03F1 03F4
 LOG1 032C 0325 0327
 LOG2 0334 0321
 LOG3 033E 0336
 LOG3A 0342 0365
 LOG4 034B 033F
 LOG5 034F 034A
 LOG6 0356 0333 033D
 LOG7 035A 0339
 LOOP 0209 03FC
 LRC 08E1 05FE 05FF 062F 0632 06EC 071A 0721 0726 0729 0733 0754 0755
 L12SW 08DB 034F 0372 037B 037F
 MDX3 089C 01EE
 MSG 0862 085F
 MSG1 08FC 01FD
 MSG2 090C 0312
 MSG3 0911 0214
 MSG4 091B 031C
 NBUSY 0436 0423
 NDACK 0668 0662
 NOSYN 05CF 05C9
 NOVER 0838 082D 0833
 NSAVE 085D 0859
 NTEST 0441 043B
 OPEN 0479 044E
 OPERR 05BA 05B2 05C0
 OPER1 05BC 05C3
 OPR 059F 0497 07C5
 OPREX 05C5 05B8 05BB 05BD
 OPW 057F 0493 07C1
 OVRCR 08D5 0448 0481 082C 0835
 PNTA 08E9 03DE 0445 047F 0842
 PNTB 08EA 03D2 03DF 03E2 03F7 0446 0480 0574 05CB 082F 0831 0838 0841 0852
 085D
 PNTC 08EB 04FD 081E 0821 0828 0853
 POINT 08E5 05ED 05F9 062B
 PRADR 08F1 0347 034C 036D 0379
 PRDSW 08EE 03AC 03AF
 PRINT 0890 0380
 PRTWD 08F0 036F 0376 0890
 QINQ 06DC 06D7
 QLRC 0637 05E9

QTEL 06FF 06FA
 RCDCT 08E6 03C0 047A 0665 072F
 RCL 055D 054D
 RCR 06CB 0460
 RCT 078B 06D1 0707 070A
 RCTIM 079A 0464
 RCV 0227 022F
 RCVD 0416 04AE
 RCVER 08C5 05A1 0647 06D0 0709 078D 0795 079C 07A0 07F7
 RCVTR 0888 04B2
 RCW 06A9 045C
 RDF 08F9 0462 0499 04C5 0514 0519 07C7
 RDSWS 0894 0305
 RDI 0565 055C
 RD2 0567 0554
 READ 0872 027D 0512
 READI 050D 0503
 READY 08D3 0478 0531 0571
 RECRD 0709 06CC
 RECV 0453
 RESET 0884 0329 03BA 042B 0470
 RETIM 088A 06EF
 RIGHT 08DA 05EF 05F3 05F8
 RM 08A8 0601 0757
 RTBSY 08C6 0422 04E7 0585 05C5 0637 0683 0686 06F2 072D 07BE
 RTL 0555 054A
 RTRN 0865 085C
 RTTBL 0219 0217
 SAVE 08E8 04FB 080F
 SAVIT 0841 083C
 SCAT 0418 01F8 0222 0227 0235 023F 0253 0258 02B8 02CF 0318 041D 0435 04CF
 SEND 0886 0491
 SENSR 0880 027B 0292 02A3 0501
 SENT 0414 0489
 SFOT 04DB 04D2
 SIREG 087E 029E 02A4
 SNSPR 0892 03AB
 SORT 0623 05E3 0622
 SPACE 088C 0349
 SPS 08F5 088C
 START 01F8 0313 03FE
 STAT2 03B4 03A9
 STCOR 01E1 01D9
 STRED 086C 0277 0282 0525 0568
 STWRT 086E 028E 029F 04E6 07FA
 STWT2 07F9 0675 06F6
 SVDTA 060E 0608
 SWBSY 08D8 01F7 02D8 02F9 0300 0303
 SWCHK 02D7 01FE 02A9 02C9 02D9 02FD 03D4
 SWINT 02FF 0301 0306 03B1
 SWMSG 0308 02F2 02F7 02FC
 SWON 06F8 06D4
 SWS 08EF 02DF 02EC 0894
 SWO 089D 01F5 0200 0208 02AB 02C1 02CB 02E7 0310 0317 03D6 03DA 03FA 083A
 0857
 SW1 089E 0209 020C 0211 0215
 SW2 089F 0233
 SW3 08A0 02E9
 SW3A 08A1 02EB 0876 087E
 SYNC 0870 04A4 07F1
 SYNCI 08D4 047C 0510 05C8
 T 089D 01D2 01D8 01E5 01EE 01F1 01F5 01F6 01F7 0200 0207 0208 0209 020C
 020D 0211 022C 0233 0234 023A 023D 023E 0276 0277 027A 027B 027D
 0281 0282 0283 028D 028E 0291 0292 0293 0294 029E 029F 02A2 02A3
 02A4 02A5 02AB 02B5 02C0 02C1 02CB 02D8 02DF 02E1 02E9 02EB 02EC
 02F9 0300 0305 030F 0310 0316 0317 0320 0326 0329 0349 034E 0354
 0355 035B 035E 036B 036F 0376 037F 0380 0382 03AB 03AB 03AC 03AF
 03B3 03BA 03C0 03C2 03D6 03D9 03DA 03DE 03DF 03FA 0422 042B 0432

0437 0438 0439 0442 0443 0444 0445 0446 0447 0448 0448 0450 0454
0455 0456 0457 0470 047A 047B 047C 047D 047E 047F 0480 0481 0482
0483 0486 0491 0492 04A3 04A4 04B2 04B3 04B5 04B8 04B9 04BB 04BE
04CE 04D1 04DB 04E1 04E3 04E4 04E5 04E6 04EC 04ED 04EE 04F3 04FB
04FD 04FE 04FF 0500 0501 0502 0512 0513 0518 051B 051C 051D 0520
0524 0525 052B 052C 0530 0533 0536 0537 0538 0539 053A 053F 0542
0543 0544 0548 0549 054C 0555 055B 055D 0565 0566 0567 0568 056B
056E 0571 057F 0582 0585 058A 058B 058C 0591 0594 0597 059A 05A1
05A4 05A7 05A8 05AB 05AE 05B1 05B4 05B5 05B7 05BE 05BF 05C2 05C5
05C8 05D6 05D9 05DC 05DF 05E2 05E5 05E8 05EB 05EC 05F6 05F8 05FB
05FD 05FE 05FF 0600 0601 0603 0606 0607 060E 0611 0615 0619 061A
061F 0623 0626 0627 0628 0629 062A 062B 062C 062D 062F 0630 0632
0633 0634 0637 063A 0643 0647 064A 064D 064E 0651 0654 0657 0658
065B 065C 0660 0661 0664 0668 0669 066C 066D 0672 0674 0677 0679
067E 0682 0683 0686 068C 068F 0694 0697 0698 0699 069A 06A9 06AC
06AF 06B2 06B5 06B8 06B0 06C0 06C3 06C4 06C5 06C6 06C8 06CB 06D0
06D3 06D6 06DB 06DC 06DD 06E0 06E5 06E7 06EA 06EB 06EC 06EF 06F2
06FB 06F9 06FF 0702 0709 070C 070F 0716 0719 071A 071D 0720 0721
0724 0725 0726 0729 072A 072D 0733 0736 073C 073F 0742 0746 0749
074C 0750 0753 0754 0755 0756 0757 0759 075C 075D 0761 076F 0770
0773 0777 077B 077C 077F 0780 0781 078C 078D 078E 078F 0790 0794
0795 079C 07A0 07A3 07A6 07A7 07B0 07B1 07BA 07BC 07BD 07BE 07D0
07D3 07D4 07D7 07D8 07DB 07DC 07DF 07E2 07F0 07F1 07F7 07F9 07FA
07FF 0800 0802 0804 0805 0808 080A 080F 0811 081A 081D 081E 0826
082C 0831 0832 0835 083A 083E 0841 0842 0846 084D 0852 0853 0857

TAB4 08BC 0473
TBADR 08F2 047E
TEL 08BF 0651 067E 0682 068C
TELC 08A6 064E 07DC
TEL7 0611 05D7
TERM 0315 02AF
TEST 0212 020E
TEST0 021F 0219
TEST1 0230 021A
TEST2 0246 021B
TEST3 026F 021C
TEST4 0286 021D
TEST5 0297 021E
TIMF 08FB 0466 049D 04C9 056F 07CB
TLC 08A3 0802 087C
TLCL 052B 051E 0521 052A
TLTM 08C8 04EE 0549 0566 06B9 06C8
TLTMQ 06C2 06AD
TMCHK 056B 0509 050E
TMEOT 02CF 023B 026D
TMOK 07AD 07A8
TMSGA 0A1B 07FB
TMSGB 0A25 069D 079A
TMSGC 0A2B 057B 05CF 06A4 07AA 07B4
TMSGD 0A33 04DC
TMSGE 0A39 046C
TMSGF 0A42 0526
TMSGG 0A4B 0836
TMSGH 0A50 0862
TMSGI 0A55 03F3
TMSG1 09CD 04AA 0A87
TMSG2 09D4 048D
TMSG3 09DB 0458
TMSG4 09E7 04D4
TMSG5 09F1 04A5 07F2
TMSG6 09FD 054F
TMSG7 0A02 0556
TMSG8 0A0B 055E
TMSG9 0A14 06E1
TOCNT 08D2 0444 0697 0699 06C4 06C6 06D6 06DB 07A6
TOIND 08C9 0443 06AC 06C3 07B1
TRACE 082B 045A 046E 048F 04A7 04AC 04D6 04DE 04F9 0810 083F 0843 0849
TRCTB 0A87 03D0 08E9 08EA 08F2

TRTBL 0397 038D 0392
TSTBL 0A57 024F 025B 025F 0262 0265 02D2
TST21 024D 0252
TST22 0262 0269
TYPE 08CE 0486 0582 059A 05B1 05C2
T3IEX 0283 027F
T3INT 0279 0272 0284
T4INT 0290 0289 0295
T5INT 02A1 029A 02A6
VALID 0753 077D
VECTR 01E7 01E9
WDCNT 08E2 0457 04BE 0627
WRSW3 0876 0293
WTA 01FE 0204
WTB 02A8 0225 022A 0238 0243 0256 025C 02BB 02BC 02D3
WTBUF 0874 053A 0544 07E2 0808
WTC 02C9 0278 028F 02A0 02CE
WTCL 0804 0583 058D 061D 06AA 0803
WTEND 07DD 060C 060F 0635 06BB 07D1 07D5 07D9
WTEOI 07D6 0598 059B 061B 06B3 06BE 06C9
WTEOT 07D2 0592 0616
WTF 08FA 045E 0495 04C1 0540 07C3
WTINQ 07CE 059D 0620
WTTFL 07DA 0595 0612 0680
WTTL 0802 058F 0624 063B
WT1 042C 042D
WT2 032A 032B
WT3 03BB 03BC
X 057D 0577
XACK 08CB 0468 06BD 06EB 07BD
XCL 061D 0614 0618 0644
XEQI 08CD 049F 04CE 0588 058A 0597 05DC 0643 06B2 07B0 07D7 07EA
XEQT 08C3 04DB 058B 0591 05D9 0654 06BF 0694 07BA 07D3 07E7
XEOTQ 0591 0580
XERR 08BD 06B5 06EA 071D 072A 077C 0796 07BC
XINQ 08C0 05DF 0664 0672 07E4
XMCNT 08ED 0234 023A 023E 024A 026A
XMEOI 07FA 05A2 05D4 0687 0704
XMEOT 07E7 05A9
XMINQ 07E4 0689 0692
XMIT 04B7 0451
XMITI 07F0 057D 05AC 05C6 0684 0690 06F3 0730 0787 0798 07B2 07CD 07E6 07E9
07EC
XMPAD 053F 0534
XMR 0645 04C3
XMT 0694 04C7
XMTEL 07ED 05AF 067F 068D 0700
XMW 05D6 04BF
XMW1 05F6 05F1
XMW2 05FC 05F5
XM1 023A 0245
XM2 0258 026C
XPAD 08BC 053F 0548 063F 07DD
XRLRC 08C4 05E5 0607 0633 0716 0720 075D
XR2 0812 04F4
XR2A 03B5 03AA
XR3 0814 04F6
XSOR 08C1 04DB 05E2 0626 0674
XTEL 08BE 058C 0594 05D6 06AF 07DB 07EE
X1 05D4 05CE
END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA DISPLAY PROGRAM IS TO PROVIDE AN AID FOR MANUAL CONTROL OF THE SYNCHRONOUS COMMUNICATIONS ADAPTER (SCA) AND TO DISPLAY THE RESULTS FOR VISUAL OBSERVATION. THE DISPLAY PROGRAM IS USED IN CONJUNCTION WITH THE SCA C.E. SWITCHES AND THE CONSOLE SWITCHES. IT SHOULD BE EMPHASIZED THAT THIS PROGRAM IS NOT INTENDED FOR ERROR DETECTION OR FAULT FINDING. HOWEVER IT IS MOST SUITABLE FOR DETAILED ANALYSIS OF A PARTICULAR SCA FUNCTION THAT IS SUSPECTED AS BEING FAULTY.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

THERE ARE NO PROGRAM PREREQUISITES FOR RUNNING THE DISPLAY PROGRAM. THE DISPLAY PROGRAM IS A STAND ALONE TYPE OF PROGRAM AND IS THE ONLY PROGRAM RESIDING IN 1130 MEMORY DURING ITS EXECUTION.

2.2 EQUIPMENT REQUIREMENTS

1. DATA TERMINAL SWITCH IN TEST POSITION.
 2. CE SPACE SWITCH TO MARK (OFF).
 3. CE MODE SWITCH TO ON.
 4. SET SCA SPEED SELECT SWITCH TO SINGLE PULSE.
 5. SET CONSOLE SWITCHES 5,6,7 AND 8 THROUGH 15 FOR DESIRED INSTRUCTION TO BE EXECUTED. SEE OPERATING PROCEDURE AND DISPLAY CHARTS.
 6. STR SWITCH TO STR.
 7. ACCUMULATOR BIT 15 WILL BE ON UNTIL PUT TO USE BY CE. THIS INDICATOR IS AVAILABLE FOR WIRING OF ANY DISPLAY DESIRED. USE PANEL PIN K7B09.
 8. CHECK TO SEE THAT JUMPERS ARE INSTALLED AS SHOWN BELOW. INSTALL OR REMOVE JUMPERS AS REQUIRED. MARK ON THIS PAGE ANY JUMPERS THAT ARE CHANGED FOR THIS TEST, AND RESTORE TO ORIGINAL CONFIGURATION AFTER COMPLETION OF TEST.
- M2D10-D6D05 NOT INSTALLED
K2D08-K2B08 INSTALLED
L2D04-L2D08 INSTALLED
M2B04-M2D08 INSTALLED (NOT REQUIRED IF A DIAL-UP DATA SET IS CONNECTED)

NOTE..REFER TO LOGIC PAGE A0003 FOR CUSTOMER OPTION JUMPERING.

3. OPERATING PROCEDURE

3.1 PROGRAM LOADING

TO LOAD FROM CARDS...

- A. PLACE THE RELOCATING LOADER. THE SCA DISPLAY PROGRAM, AND AT LEAST ONE BLANK CARD IN THE READER.
- B. MAKE READER READY.
- C. PRESS THE 1131 RESET AND PROGRAM LOAD KEYS.
- D. IF PROGRAM FAILS TO LOAD OR STOPS AT A WAIT BELOW ADDRESS /0160 REFER TO THE RELOCATING LOADER DOCUMENTATION.
- E. TO LOAD HEX PATCH CARDS USE THE FOLLOWING FORMAT-
COLUMN 1.....12 PUNCH
COLUMN 2-5.....HEX VALUE OF THE CORE ADDRESS TO BE MODIFIED.
COLUMN 6.....MUST BE BLANK.
COLUMN 7-10...DATA WORD TO BE INSERT INTO THE PROGRAM.
COLUMN 11.....MUST BE BLANK.
COLUMN 12-15..DATA WORD ETC.
COLUMN 16.....MUST BE BLANK
COLUMN 17-20..DATA WORD ETC.
ETC.

TO LOAD FROM PAPER TAPE...

- A. PLACE THE RELOCATING LOADER IN THE READER.
- B. MAKE READER READY.
- C. PRESS THE 1131 RESET AND PROGRAM LOAD KEYS.
- D. AT LOADER WAIT 30F6 (B REG) PLACE THE SCA PROGRAM IN THE READER.
- E. MAKE READER READY.
- F. PRESS PROGRAM START.
- G. IF PROGRAM FAILS TO LOAD OR STOPS AT A WAIT BELOW ADDRESS /0160 REFER TO THE RELOCATING LOADER DOCUMENTATION.
- H. HEX PATCHES MUST BE LOADED VIA THE BIT SWITCHES AFTER THE PROGRAM IS LOADED.

3.2 PROGRAM OPERATION

A SUCCESSFUL PROGRAM LOAD AND SWITCH SET-UP WILL BE INDICATED BY BIT 8 OF THE ACC BEING ON AND THE STEPPING OF THE I COUNTER AND THE MEMORY ADDRESS REGISTER. THIS INDICATES THAT THE PROGRAM IS RUNNING, SENSE DSW INSTRUCTION IS WORKING AND THE RCV RUN TRG IS BEING READ OUT. THE DISPLAY PROGRAM, WHEN RUNNING, INDICATES THE STATUS OF THE DSW, DIAGNOSTIC WORD 1, DIAGNOSTIC WORD 2 AND SCA BUFFER CONTENTS. MANUAL CONTROL OF THE PROGRAM AND THE SCA IS ACCOMPLISHED BY THE SCA CE SWITCHES AND THE 1130 CONSOLE SWITCHES. INSERTING AND EXECUTING DIFFERENT SCA INSTRUCTIONS IS ALSO UNDER MANUAL CONTROL OF THE CONSOLE SWITCHES. SEE SECTION 3.3 PROGRAM CONTROL.

3.3 PROGRAM CONTROL

THE DISPLAY PROGRAM AND SCA ARE UNDER MANUAL CONTROL OF THE SCA CE SWITCHES AND THE 1130 CONSOLE SWITCHES. THE 1130 CONSOLE SWITCHES PROVIDE ABILITY TO INSERT AND EXECUTE DIFFERENT SCA INSTRUCTIONS. THE CE SWITCH PROVIDE CONTROLS TO THE SCA CIRCUITRY AND FOR SINGLE CYCLE CONTROL OF THE SCA CLOCK. THE CONTROLLING FUNCTION OF THESE SWITCHES ARE AS FOLLOWS.....

CONSOLE SWT 0....EACH CHANGE OF SWT 0 WILL INITIATE THE EXECUTION OF THE SCA INSTRUCTION SET-UP IN THE CONSOLE SWTS.

FOR VISUAL DISPLAY. ON, PERMITS INTERRUPT LEVEL 1 TO FUNCTION NORMALLY.

CONSOLE SWT 2....UP, TO READ AND DISPLAY SCA BUFFER DATA IN ACCUM. DOWN, TO DISPLAY DSW IN ACCUMULATOR

CONSOLE SWT 3.....ON, TO LOAD CONSOLE SWTS 8 THROUGH 15 INTO COMMON DUMP AREA OF DISPLAY PROGRAM. INSTRUCTIONS FOR LOADING ARE.... SET SWT 3 ON AND DESIRED BIT VALVES IN SWITCHES 8-15, IMMEDIATE STOP, CONSOLE RESET, PROGRAM START. USEFUL IN CHANGING BUFFER WRITE DATA. OFF, PERMITS COMMON DUMP AREA TO BE CLEARED TO ZERO DURING A PROGRAM RESTART,

CONSOLE SWT 4.....UNUSED

CONSOLE SWTS 5-7..TO SPECIFY THE 3 BIT FUNCTION CODE OF THE IOCC (INPUT/OUTPUT CONTROL COMMAND) FOR SCA INSTRUCTIONS. SEE SECTION 4, DISPLAY CHARTS.

CONSOLE SWTS 8-15..TO SPECIFY THE 8 BIT MODIFIER CODE OF THE IOCC FOR SCA INSTRUCTIONS. SEE SECTION 4, DISPLAY CHARTS. WHEN SWT 3 IS UP, CONSOLE SWTS 8 THROUGH 15 WILL BE TRANSFERRED INTO THE COMMON DUMP AREA OF THE DISPLAY PROGRAM.

SPEED SELECT SWT..SET TO SINGLE PULSE FOR CLOCK CONTROL

STR SWT.....SET TO STR FOR OPERATION MODE CONTROL

CE MODE SWT.....SET ON TO ACTIVATE THE CE SPACE SWITCH AND THE SINGLE CYCLE PUSHBUTTON CIRCUITRY.

CE SPACE SWT.....SET OFF (MARK) THIS CONDITIONS THE RECEIVE DATA LINE TO A RECEIVE MARK LEVEL WHEN ON (SPACE) THE RECEIVE SPACE LINE ARE ACTIVATED

CE SNGL CYC PB SW..THIS PUSHBUTTON SWITCH CONTROLS THE PUSHBUTTON LATCH. PRESSING..TURNS ON THE PB LATCH, RELEASING TURNS OFF THE PB LATCH. THIS SWITCH AND THE OTHER CE SWITCHES PROVIDE ON/OFF CONTROL OF THE GATED OSCILLATOR A LINE AND B LINE. CAUTION ... THIS PB SWITCH IS NOT INTERLOCKED WITH PRINT OUT. ADVISE SLOW REPETITION WHEN OPERATING P.B. SWITCH.

3.4 PROGRAM HALTS

HALT NO.	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP	RESET AND RESTART PROGRAM

3.5 RESTART

PRESS IMMEDIATE STOP, RESET, THEN START. THIS WILL RESET SCA AND COUNTER, AND RESTART THE DISPLAY PROGRAM. RESTART ACTION WILL ALSO TRANSFER CONSOLE SWTS 8-15 TO COMMON DUMP AREA WHEN SWT 3 IS UP.

4. PRINTOUT AND DISPLAY CHARTS

4.1 PRINTOUT

THE ONLY PRINTOUT MADE BY THE DISPLAY PROGRAM WILL BE THE COUNT VALUE FOR THE NUMBER OF TIMES THE CE PUSH BUTTON HAS BEEN PUSHED. THE COUNT VALUE IS CONSECUTIVE. EACH DEPRESSION OF THE CE PUSH BUTTON CAUSE AN INCREMENT OF ONE TO THE COUNT AND THAT VALUE TO BE PRINTED OUT. IE 1 2 3 4 5 6 7 8 9 10 11 12 13 ETC.

4.2 DISPLAY CHART

NOTE..PROGRAM SHOULD BE RESTARTED AFTER START WRITE, START READ,
SYNCHRONIZE MODE, OR DIAGNOSTIC MODE COMMANDS ARE EXECUTED.

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
.WRITE	.SWT 7	.SWT 14	.ALARM ON
EXECUTE SWT.0			
CONSOLE			
INDICATORS	PB COUNT		
RDY	*		
ABL			
REC			
TSM			
BFR			
CLK			
D I			
C P			
.....			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
.....			
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR.			
2 CH CMPLT			
3 END OP TR.			
4 DIAG TRG			
5 TIMER TRG.			
6 3 SEC TMR.			
7 1.5 SEC T.			
8 SND SPACE.			
9 CLK GT TR.			
10 SYNC CTR.			
11 1ST TRAN.			
12 P C CTRL.			
13 REC TAG			
14 C P TRG			
15 P C 1 TR.	*		

NOTE...ALARM SHOULD STAY ON UNTIL
RESET OR ALARM OFF COMMAND.

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
.WRITE	.SWT 7	.SWT 15	.ALARM OFF
EXECUTE SWT.0			
CONSOLE			
INDICATORS	PB COUNT		
RDY	*		
ABL			
REC			
TSM			
BFR			
CLK			
D I			
C P			
.....			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
.....			
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR.			
2 CH CMPLT			
3 END OP TR.			
4 DIAG TRG			
5 TIMER TRG.			
6 3 SEC TMR.			
7 1.5 SEC T.			
8 SND SPACE.			
9 CLK GT TR.			
10 SYNC CTR.			
11 1ST TRAN.			
12 P C CTRL.			
13 REC TAG			
14 C P TRG			
15 P C 1 TR.	*		

NOTE...SEE ALARM ON COMMAND

.COMMAND		.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.CONTROL		.SWT 5	.SWT 8	.ENABLE SCA
EXECUTE SWT.0				
CONSOLE INDICATORS .PB COUNT				
RDY	*	.	.	NOTE...NO INTERRUPT, PB ACTION HAS NO EFFECT.
ABL	*	.	.	
REC	.	.	.	
TSM	.	.	.	
BFR	.	.	.	
CLK	.	.	.	
D I	.	.	.	
C P	.	.	.	
.....				
ACCUMULATOR				
0 RD RESPN	.	.	.	
1 WRT RESPN	.	.	.	
2 CHECK	.	.	.	
3 TIMEOUT	.	.	.	
4 ANS REQ	.	.	.	
5 BUSY	.	.	.	
6 ENABLE	*	.	.	
7 READY	*	.	.	
8 REC RUN	*	.	.	
.....				
ACCM EXT				
0 SYNC TRG	.	.	.	
1 IDL CH TR	.	.	.	
2 CH CMPLT	.	.	.	
3 END OP TR	.	.	.	
4 DIAG TRG	.	.	.	
5 TIMER TRG	.	.	.	
6 3 SEC TMR	.	.	.	
7 1.5 SEC T	.	.	.	
8 SND SPACE	.	.	.	
9 CLK GT TR	.	.	.	
10 SYNC CTR	.	.	.	
11 1ST TRAN	.	.	.	
12 P C CTRL	.	.	.	
13 REC TAG	.	.	.	
14 C P TRG	.	.	.	
15 P C I TR	*	.	.	

.COMMAND		.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.CONTROL		.SWT 5	.SWT 9	.DISABLE SCA
EXECUTE SWT.0				
CONSOLE INDICATORS .PB COUNT				
RDY	*	.	.	NOTE...NO INTERRUPT, PB ACTION HAS NO EFFECT.
ABL	.	.	.	
REC	.	.	.	
TSM	.	.	.	
BFR	.	.	.	
CLK	.	.	.	
D I	.	.	.	
C P	.	.	.	
.....				
ACCUMULATOR				
0 RD RESPN	.	.	.	
1 WRT RESPN	.	.	.	
2 CHECK	.	.	.	
3 TIMEOUT	.	.	.	
4 ANS REQ	.	.	.	
5 BUSY	.	.	.	
6 ENABLE	.	.	.	
7 READY	*	.	.	
8 REC RUN	*	.	.	
.....				
ACCM EXT				
0 SYNC TRG	.	.	.	
1 IDL CH TR	.	.	.	
2 CH CMPLT	.	.	.	
3 END OP TR	.	.	.	
4 DIAG TRG	.	.	.	
5 TIMER TRG	.	.	.	
6 3 SEC TMR	.	.	.	
7 1.5 SEC T	.	.	.	
8 SND SPACE	.	.	.	
9 CLK GT TR	.	.	.	
10 SYNC CTR	.	.	.	
11 1ST TRAN	.	.	.	
12 P C CTRL	.	.	.	
13 REC TAG	.	.	.	
14 C P TRG	.	.	.	
15 P C I TR	*	.	.	

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
.START WRITE	.SWTS 5 AND 7	.SWT 9	.RESET SCA
EXECUTE SWT.0			
CONSOLE INDICATORS	PB COUNT		NOTE... SHOULD RESET ANY CIRCUITS LEFT AN BY A PREVIOUS COMMAND. SEE ALARM ON COMMAND.
RDY	*	.	
ABL	.	.	
REC	.	.	
TSM	.	.	
BFR	.	.	
CLK	.	.	
D I	.	.	
C P	.	.	
.....			
ACCUMULATOR			
0 RD RESPN	.	.	
1 WRT RESPN	.	.	
2 CHECK	.	.	
3 TIMEOUT	.	.	
4 ANS REQ	.	.	
5 BUSY	.	.	
6 ENABLE	.	.	
7 READY	.	.	
8 REC RUN	*	.	
.....			
ACCM EXT			
0 SYNC TRG	.	.	
1 IDL CH TR	.	.	
2 CH CMPLT	.	.	
3 END OP TR	.	.	
4 DIAG TRG	.	.	
5 TIMER TRG	.	.	
6 3 SEC TMR	.	.	
7 1.5 SEC T	.	.	
8 SND SPACE	.	.	
9 CLK GT TR	.	.	
10 SYNC CTR	.	.	
11 1ST TRAN	.	.	
12 P C CTRL	.	.	
13 REC TAG	.	.	
14 C P TRG	.	.	
15 P C I TR	*	.	

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
.CONTROL	.SWT 5	.SWT 10	.START/STOP TIMER
EXECUTE SWT.0			
CONSOLE INDICATORS	PB COUNT		NOTE... EACH TIME SWTO IS CHANGED THE TIMER TRIG (BIT 5 OF ACCM EXT) WILL CHANGE ITS OFF/ON STATUS. PB ACTION HAS NO EFFECT, NO INTERRUPT
RDY	*	.	
ABL	.	.	
REC	.	.	
TSM	.	.	
BFR	.	.	
CLK	.	.	
D I	.	.	
C P	.	.	
.....			
ACCUMULATOR			
0 RD RESPN	.	.	
1 WRT RESPN	.	.	
2 CHECK	.	.	
3 TIMEOUT	.	.	
4 ANS REQ	.	.	
5 BUSY	.	.	
6 ENABLE	.	.	
7 READY	*	.	
8 REC RUN	*	.	
.....			
ACCM EXT			
0 SYNC TRG	.	.	
1 IDL CH TR	.	.	
2 CH CMPLT	.	.	
3 END OP TR	.	.	
4 DIAG TRG	.	.	
5 TIMER TRG	*	.	
6 3 SEC TMR	.	.	
7 1.5 SEC T	.	.	
8 SND SPACE	.	.	
9 CLK GT TR	.	.	
10 SYNC CTR	.	.	
11 1ST TRAN	.	.	
12 P C CTRL	.	.	
13 REC TAG	.	.	
14 C P TRG	.	.	
15 P C I TR	*	.	

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.CONTROL	.SWT 5	.SWT 13	.END OP
EXECUTE SWT.0			
CONSOLE			
INDICATORS	.PB COUNT		NOTE...NO INTERRUPT, PB ACTION HAS NO EFFECT.
RDY	*		
ABL			
REC			
TSM			
BFR			
CLK			
D I			
C P			
.....			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
.....			
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR			
2 CH CMPLT			
3 END OP TR	*		
4 DIAG TRG			
5 TIMER TRG			
6 3 SEC TMR			
7 1.5 SEC T			
8 SND SPACE			
9 CLK GT TR			
10 SYNC CTR			
11 1ST TRAN			
12 P C CTRL			
13 REC TAG			
14 C P TRG			
15 P C 1 TR	*		

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.WRITE	.SWT 7	.NONE	.WRITE BUFFER
EXECUTE SWT.0			
CONSOLE			
INDICATORS	.PB COUNT		NOTE... BUFFER SHOULD CONTAINED DATA FROM THE COMMON DUMP AREA IN DISPLAY PROGRAM. SWT 2 UP TO DISPLAY DATA IN ACCUM. DISPLAY SHOULD BE ALL ONES IF PREVIOUS COMMAND WAS RESET FOLLOWED BY A READ BFR, ALL ZERO IF RESET PRECEDED THIS WRITE BFR COMMAND. NO INTERRUPT, PB ACTION HAS NO EFFECT.
RDY	*		
ABL			
REC			
TSM			
BFR	*		
CLK			
D I			
C P			
.....			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
.....			
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR			
2 CH CMPLT			
3 END OP TR			
4 DIAG TRG			
5 TIMER TRG			
6 3 SEC TMR			
7 1.5 SEC T			
8 SND SPACE			
9 CLK GT TR			
10 SYNC CTR			
11 1ST TRAN			
12 P C CTRL			
13 REC TAG			
14 C P TRG			
15 P C 1 TR	*		

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
READ	SWT 6	NONE	READ BUFFER
EXECUTE SWT.0			
CONSOLE INDICATORS	PB COUNT		NOTE...BUFFER SHOULD CONTAIN DATA FROM THE COMMON DUMP AREA IN DISPLAY PROGRAM. SWT 2 UP TO DISPLAY DATA IN ACCUM. DISPLAY SHOULD BE ALL ZEROS IF PREVIOUS COMMAND WAS WRITE ZEROS TO BFR. ALL ONES IF RESET PRECEDED THIS READ BFR COMMAND. NO INTERRUPT, PB ACTION HAS NO EFFECT.
RDY	*		
ABL			
REC			
TSM			
BFR			
CLK			
D I			
C P			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR			
2 CH CMPLT			
3 END OP TR			
4 DIAG TRG			
5 TIMER TRG			
6 3 SEC TMR			
7 1.5 SEC T			
8 SND SPACE			
9 CLK GT TR			
10 SYNC CTR			
11 1ST TRAN			
12 P C CTRL			
13 REC TAG			
14 C P TRG			
15 P C 1 TR	*		

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
CONTROL	SWT 5	SWT 15	SET 7
EXECUTE SWT.0			
CONSOLE INDICATORS	PB COUNT		NOTE...NO INTERRUPT, PB ACTION HAS NO EFFECT. SWT 2 UP TO DISPLAY BFR DATA IN ACCUM. PRECEED THIS SET 7 COMMAND WITH RESET AND READ BUFFER WHICH SHOULD THEN CONTAIN 7 ONES.
RDY	*		
ABL			
REC			
TSM			
BFR			
CLK			
D I			
C P			
ACCUMULATOR			
0 RD RESPN			
1 WRT RESPN			
2 CHECK			
3 TIMEOUT			
4 ANS REQ			
5 BUSY			
6 ENABLE			
7 READY	*		
8 REC RUN	*		
ACCM EXT			
0 SYNC TRG			
1 IDL CH TR			
2 CH CMPLT			
3 END OP TR			
4 DIAG TRG			
5 TIMER TRG			
6 3 SEC TMR			
7 1.5 SEC T			
8 SND SPACE			
9 CLK GT TR			
10 SYNC CTR			
11 1ST TRAN			
12 P C CTRL			
13 REC TAG			
14 C P TRG			
15 P C 1 TR	*		

.COMMAND		.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.CONTROL	.SWT 5	.SWT 14	.SET 6	
.EXECUTE SWT.0				
CONSOLE INDICATORS	PB COUNT			NOTE...NO INTERRUPT, PB ACTION HAS NO EFFECT.
RDY	*	.	.	SWT 2 UP TO DISPLAY BFR DATA IN ACCUM. PRECEED THIS SET 6 COMMAND WITH RESET AND READ BUFFER WHICH SHOULD THEN CONTAIN 6 ONES.
ABL	.	.	.	
REC	.	.	.	
TSM	.	.	.	
BFR	.	.	.	
CLK	.	.	.	
D I	.	.	.	
C P	.	.	.	
.....				
ACCUMULATOR				
0 RD RESPN	.	.	.	
1 WRT RESPN	.	.	.	
2 CHECK	.	.	.	
3 TIMEOUT	.	.	.	
4 ANS REQ	.	.	.	
5 BUSY	.	.	.	
6 ENABLE	.	.	.	
7 READY	*	.	.	
8 REC RUN	*	.	.	
.....				
ACCM EXT				
0 SYNC TRG	.	.	.	
1 IDL CH TR	.	.	.	
2 CH CMPLT	.	.	.	
3 END OP TR	.	.	.	
4 DIAG TRG	.	.	.	
5 TIMER TRG	.	.	.	
6 3 SEC TMR	.	.	.	
7 1.5 SEC T	.	.	.	
8 SND SPACE	.	.	.	
9 CLK GT TR	.	.	.	
10 SYNC CTR	.	.	.	
11 1ST TRAN	.	.	.	
12 P C CTRL	.	.	.	
13 REC TAG	.	.	.	
14 C P TRG	.	.	.	
15 P C 1 TR	*	.	.	

.COMMAND		.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.START READ	.SWTS 5 AND 6	.NONE	.RCV MODE	
.EXECUTE SWT.0				
CONSOLE INDICATORS	PB COUNT	. 1 .		NOTE...INTERRUPT OCCURS 3 SECONDS AFTER EXECUTING SWT 0, ADDITIONAL HAS NO EFFECT EXCEPT CLK ON/OFF
RDY	*	* .	.	
ABL	.	.	.	
REC	*	* .	.	
TSM	.	.	.	
BFR	.	.	.	
CLK	.	.	.	
D I	.	.	.	
C P	.	.	.	
.....				
ACCUMULATOR				
0 RD RESPN	.	.	.	
1 WRT RESPN	.	.	.	
2 CHECK	.	.	.	
3 TIMEOUT	.	.	.	* COMES ON AFTER 3 SECONDS AND STAYS ON
4 ANS REQ	.	.	.	
5 BUSY	*	* .	.	
6 ENABLE	.	.	.	
7 READY	*	* .	.	
8 REC RUN	*	* .	.	
.....				
ACCM EXT				
0 SYNC TRG	.	.	.	
1 IDL CH TR	.	.	.	
2 CH CMPLT	.	.	.	
3 END OP TR	.	.	.	
4 DIAG TRG	.	.	.	
5 TIMER TRG	.	.	.	
6 3 SEC TMR	.	.	.	* COMES ON AFTER 6 SECONDS AND STAYS ON
7 1.5 SEC T	.	.	.	
8 SND SPACE	.	.	.	
9 CLK GT TR	.	.	*	
10 SYNC CTR	.	.	.	
11 1ST TRAN	.	.	.	
12 P C CTRL	.	.	.	
13 REC TAG	.	.	.	
14 C P TRG	.	.	.	
15 P C 1 TR	*	* .	.	

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.START READ	.SWTS 5 AND 6	.SWT 15	.RCV MASTER
.EXECUTE SWT 0, SWT 1 OFF,			

CONSOLE INDICATORS	.PB COUNT	. 1 .	NOTE... INTERRUPT 1 OCCURS 3 SECONDS
RDY	*	* .	AFTER EXECUTING SWT 0, ADDITIONAL
ABL	.	. .	HAS NO EFFECT EXCEPT CLK ON/OFF
REC	*	* .	
TSM	.	. .	
BFR	.	. .	
CLK	.	. .	
D I	.	. .	
C P	.	. .	
.....			
ACCUMULATOR	.	. .	
0 RD RESPN	.	. .	
1 WRT RESPN	.	. .	
2 CHECK	.	. .	
3 TIMEOUT	* COMES ON AFTER 3 SECONDS AND STAYS ON	.	
4 ANS REQ	.	. .	
5 BUSY	*	* .	
6 ENABLE	.	. .	
7 READY	*	* .	
8 REC RUN	.	. .	
.....			
ACCM EXT	.	. .	
0 SYNC TRG	.	. .	
1 IDL CH TR	.	. .	
2 CH CMLT	.	. .	
3 END OP TR	.	. .	
4 DIAG TRG	.	. .	
5 TIMER TRG	.	. .	
6 3 SEC TMR	* COMES ON AFTER 6 SECONDS AND STAYS ON.	.	
7 1.5 SEC T	.	. .	
8 SND SPACE	.	. .	
9 CLK GT TR	.	* .	
10 SYNC CTR	.	. .	
11 1ST TRAN	.	. .	
12 P C CTRL	.	. .	
13 REC TAG	.	. .	
14 C P TRG	.	. .	
15 P C I TR	*	* .	

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.START READ	.SWTS 5 AND 6	.SWT 14	.RCV SLAVE
.EXECUTE SWT 0			

CONSOLE INDICATORS	.PB COUNT	. 1 .	NOTE... INTERRUPT OCCURS 3 SECONDS AFTER
RDY	*	* .	EXECUTING SWT 0, ADDITIONAL PB ACT
ABL	.	. .	NO EFFECT EXCEPT CLK ON/OFF.
REC	*	* .	
TSM	.	. .	
BFR	.	. .	
CLK	.	. .	
D I	.	. .	
C P	.	. .	
.....			
ACCUMULATOR	.	. .	
0 RD RESPN	.	. .	
1 WRT RESPN	.	. .	
2 CHECK	.	. .	
3 TIMEOUT	* COMES ON AFTER 3 SECONDS	.	
4 ANS REQ	.	. .	
5 BUSY	*	* .	
6 ENABLE	.	. .	
7 READY	*	* .	
8 REC RUN	*	* .	
.....			
ACCM EXT	.	. .	
0 SYNC TRG	.	. .	
1 IDL CH TR	.	. .	
2 CH CMLT	.	. .	
3 END OP TR	.	. .	
4 DIAG TRG	.	. .	
5 TIMER TRG	.	. .	
6 3 SEC TMR	* COMES ON AFTER 6 SECONDS	.	
7 1.5 SEC T	.	. .	
8 SND SPACE	.	. .	
9 CLK GT TR	.	* .	
10 SYNC CTR	.	. .	
11 1ST TRAN	.	. .	
12 P C CTRL	.	. .	
13 REC TAG	.	. .	
14 C P TRG	.	. .	
15 P C I TR	*	* .	

COMMAND	IOCC FUNCTION		IOCC MODIFIER CODE	FUNCTION
	CONTROL	SWT 5		
EXECUTE SWT 0				
CONSOLE INDICATORS	PB COUNT	1 2		NOTE...NO INTERRUPT
RDY	*	* *		
ABL	.	.		
REC	.	.		
TSM	*	* *		
BFR	.	.		
CLK	.	.		
D I	.	.		
C P	.	.		
.....				
ACCUMULATOR				
0 RD RESPN.	.	.		
1 WRT RESPN.	.	.		
2 CHECK	.	.		
3 TIMEOUT	.	.		
4 ANS REQ	.	.		
5 BUSY	*	* *		
6 ENABLE	.	.		
7 READY	*	* *		
8 REC RUN	*	* *		
.....				
ACCM EXT				
0 SYNC TRG	*	* *		
1 IDL CH TR.	.	.		
2 CH CMPLT	.	.		
3 END OP TR.	.	.		
4 DIAG TRG	.	.		
5 TIMER TRG	.	.		
6 3 SEC TMR.	.	.		
7 1.5 SEC T.	* COMES ON AFTER 1.5 SECONDS AND STAYS ON.	.		
8 SND SPACE	.	.		
9 CLK GT TR.	.	* *		
10 SYNC CTR.	.	.		
11 1ST TRAN.	.	.		
12 P C CTRL.	.	.		
13 REC TAG	.	.		
14 C P TRG	.	.		
15 P C I TR.	*	* *		

COMMAND	IOCC FUNCTION			IOCC MODIFIER CODE	FUNCTION
	START WRITE	SWTS 5 AND 7	NONE		
EXECUTE INSTR					
CONSOLE INDICATORS	PB COUNT	1 8 9			OPERATING INSTRUCTIONS...
RDY	*	* * *			1. CE SWT ON, CE S/M SWT TO MARK, SPEED SWT TO ANY SPEED, SWT 1 OFF.
ABL	.	.			2. RESET
REC	.	.			3. EXECUTE THE ABOVE START WRITE INSTRUCTION.
TSM INSTR 3	*	* * *			4. EXECUTE WRITE BUFFER (SWT 7), BFR LITE SHOULD COME ON.
BFR INSTR 4	*	* *			CAUTION...CONSOLE SWT 2 OFF WILL CAUSE CHAR GAP CHECK (ACCUM BIT 2)
CLK	.	.			
D I	.	.			
C P	.	.			
.....					
ACCUMULATOR					NOTE...INTERRUPT LEVEL 1 OCCURS AT PB COUNT 8, SND SPACE (ACCUM EXT BIT 8) WILL COME ON.
0 RD RESPN.	.	.			
1 WRT RESPN.	.	* *			
2 CHECK	.	.			
3 TIMEOUT	.	.			
4 ANS REQ	.	.			
5 BUSY	*	* * *			
6 ENABLE	.	.			
7 READY	*	* * *			
8 REC RUN	*	* * *			
.....					
ACCM EXT					
0 SYNC TRG	.	.			
1 IDL CH TR.	.	.			
2 CH CMPLT	.	.			
3 END OP TR.	.	.			
4 DIAG TRG	.	.			
5 TIMER TRG	.	.			
6 3 SEC TMR.	.	.			
7 1.5 SEC T.	.	.			
8 SND SPACE	.	* *			
9 CLK GT TR.	.	.			
10 SYNC CTR.	.	* *			
11 1ST TRAN.	.	.			
12 P C CTRL.	.	.			
13 REC TAG	.	.			
14 P C TRG	.	* *			
15 P C I TR.	*	* * *			

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
WRITE	SWT 7	SWT 13	WRITE SYNC REGISTER
EXECUTE INSTR			
CONSOLE			
INDICATORS	PB COUNT	11.	OPERATING INSTRUCTIONS...
RDY	*	*	1. CE SWT OFF, CE S/M SWT TO MARK, SINGLE PULSE, SWT 1 OFF, SWT 2 OFF,
ABL	.	.	2. RESET
REC	.	.	3. EXECUTE...WRITE SYNC REGISTER ...
TSM	.	.	SWTS 7 AND 13.
BFR	.	.	4. EXECUTE...SET DIAG MODE...SWTS 5 & 12
CLK	.	*	5. PB COUNT 11...CHECK FOR INT LEVELS
D I	.	.	1 AND 4 ON.
C P	.	.	CAUTION...CONSOLE SWT 2 ON
.....			WILL CAUSE CHAR GAP CHECK
ACCUMULATOR			(ACCUM BIT 2)
0 RD RESPN	.	.	
1 WRT RESPN	.	*	
2 CHECK	.	.	
3 TIMEOUT	.	.	
4 ANS REQ	.	.	
5 BUSY	.	.	
6 ENABLE	.	.	
7 READY	*	*	
8 REC RUN	*	*	
.....			
ACCM EXT			
0 SYNC TRG	.	.	
1 IDL CH TR	.	.	
2 CH CMPLT	*	*	
3 END OP TR	.	.	
4 DIAG TRG	*	*	
5 TIMER TRG	.	.	
6 3 SEC TMR	.	.	
7 1.5 SEC T	.	.	
8 SND SPACE	.	.	
9 CLK GT TR	*	*	
10 SYNC CTR	.	.	
11 1ST TRAN	.	.	
12 P C CTRL	.	.	
13 REC TAG	.	.	
14 C P TRG	.	.	
15 P C 1 TR	*	*	

COMMAND	IOCC FUNCTION	IOCC MODIFIER CODE	FUNCTION
CONTROL	SWT 5	SWT 12	SET DIAGNOSTIC MODE
EXECUTE INSTR			
CONSOLE			
INDICATORS	PB COUNT	1 2 16 28 47 48 59	OPERATING INSTRUCTIONS...
RDY	*	*	1. CE SWT ON, CE S/M SWT TO MARK, SWT 1 OFF, SWT 2 OFF, SINGLE PULSE.
ABL	.	.	
REC	.	.	
TSM	.	.	2. EXECUTE...SET DIAG MODE COMAND
BFR	.	.	3. CHANGE CE S/M SWT TO SPACE...
CLK (INSTR 5)	.	*	DI INDICATOR LIGHT SHOULD
D I (INSTR 3)	*	*	COME ON, ACC EX BIT 11 ON
.....			
C P	.	.	
.....			
ACCUMULATOR			
0 RD RESPN	.	.	4. PB COUNT 1...CK FOR ACC EX
1 WRT RESPN	.	.	BIT 9 ON
2 CHECK	.	.	5. PB COUNT 2...CK FOR CLK INDICA
3 TIMEOUT	.	.	TOR ON, THIS LIGHT SHOULD
4 ANS REQ	.	.	CHANGE EVERY 2 PULSES.
5 BUSY	.	.	6. PB COUNT 15...CK FOR ACC EX
6 ENABLE	.	.	BIT 11 OFF, ACC EX BIT 12 ON.
7 READY	*	*	7. PB COUNT 28...CK FOR ACC BIT 0
8 REC RUN	*	*	ON, BFR INDICATOR ON.
15MEMRY TRG.	SEE NOTE	.	
.....			
ACCM EXT			
0 SYNC TRG	.	.	8. PB COUNT 31...CHANGE CE S/M
1 IDL CH TR	.	.	SWT TO MARK. (SEE NOTE)
2 CH CMPLT	.	.	9. PB COUNT 47...CK FOR ACC 15
3 END OP TR	.	.	ON, THIS LIGHT COULD HAVE
4 DIAG TRG	*INSTR 2	*	COME ON ANY TIME AFTER PB
5 TIMER TRG	.	.	COUNT 33.
6 3 SEC TMR	.	.	10. PB COUNT 48...CK FOR ACC 15
7 1.5 SEC T	.	.	OFF
8 SND SPACE	.	.	11. PB COUNT 59...CK FOR ACC 2 ON
9 CLK GT TR	.	*	
10 SYNC CTR	.	.	
11 1ST TRAN	*	*	
12 P C CTRL	.	*	
13 REC TAG	.	.	
14 C P TRG	.	.	
15 P C 1 TR	*	*	

NOTE ... JUMPER J2B09 TO K7B09 FOR MEMORY TRIGGER DISPLAY IN ACC BIT 15.

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.READ	.SWT 6	.SWT 15	.READ DIAG WORD 1
* THIS COMMAND HAS NO EFFECT.			
.READ	.SWT 6	.SWT 14	.READ DIAG WORD 2
* THIS COMMAND HAS NO EFFECT.			
.SENSE DSW	.SWTS 5,6,7	.NONE	.PLACE DSW IN ACCUM
* THIS COMMAND HAS NO EFFECT.			
.SENSE DSW	.SWTS 5,6,7	.SWTS 14 AND 15	.PLACE DSW IN ACC/RESET
* THIS COMMAND HAS NO EFFECT.			

.COMMAND	.IOCC FUNCTION	.IOCC MODIFIER CODE	.FUNCTION
.SENSE ILSW	.SWTS 6,7	.NONE	.PLACE ILSW IN ACCUM.
* THIS COMMAND HAS NO EFFECT.			

4.3

INDICATOR CARD IN SOCKET G3 ON PIN SIDE OF BOARD C-A1

T O P			
XMIT BIT 0...	0	0	...XMIT BIT 6
XMIT BIT 1...	0	0	...XMIT BIT 7
XMIT BIT 2...	0	0	...DATA MARK BIT
XMIT BIT 3...	0	0	...SPARE 4
XMIT BIT 4...	0	0	...SPARE 5
XMIT BIT 5...	0	0	...SPARE 6

INDICATOR CARD IN SOCKET F3 ON PIN SIDE OF BOARD C-A1

T O P			
NOT RCV BIT 0...	0	0	...NOT RCV BIT 6
NOT RCV BIT 1...	0	0	...NOT RCV BIT 7
NOT RCV BIT 2...	0	0	...NOT RCV TAG
NOT RCV BIT 3...	0	0	...SPARE 1
NOT RCV BIT 4...	0	0	...SPARE 2
NOT RCV BIT 5...	0	0	...SPARE 3

OPERATING INSTRUCTIONS

1. CE SWT ON, CE S/M SWT TO MARK, ANY SPEED, DATA TERMINAL SWITCH IN TEST POSITION, STR, CONSOLE SW1 ON (UP), SWT 2 OFF.
2. LOAD COMMON DUMP AREA OF DISPLAY PROGRAM A ONE IN BIT 0 POSITION. THIS CAN BE DONE BY SETTING UP CONSOLE SWITCHES 3 AND 8 THEN DO A PROGRAM RESTART.
3. EXECUTE A WRITE BUFFER COMMAND...CONSOLE SWT 7 UP THEN EXECUTE SWT 0.
4. EXECUTE A SET DIAGNOSTIC MODE FUNCTION...CONSOLE SWTS 5 AND 12, THEN EXECUTE SWT 0.
5. PLACE INDICATOR CARD (PART NUMBER 5803975) IN SOCKET F3 OR G3 ON PIN SIDE OF BOARD C-A1. AND OBSERVE INDICATOR CARD LIGHTS.
* DISREGARD SPARE INDICATOR POSITIONS

FIRST SEVEN PB COUNT OPERATIONS SHIFTS REGISTERS UNTIL CHARACTER COMPLETE OCCURS. THIS CAN BE OBSERVED AT LOCATIONS G3 AND F3.

- PB COUNT 1 POSITION BIT 0 SHOULD BE OFF, ALL OTHER SHOULD BE ON.
 - PB COUNT 2 POSITIONS BIT 0, 1 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
 - PB COUNT 3 POSITIONS BIT 0, 1, 2 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
 - PB COUNT 4 POSITIONS BIT 0, 1, 2, 3 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
 - PB COUNT 5 POSITIONS BIT 0, 1, 2, 3, 4 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
 - PB COUNT 6 POSITIONS BIT 0, 1, 2, 3, 4, 5 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
 - PB COUNT 7 POSITIONS BIT 0,1,2,3,4,5,6 SHOULD BE OFF, ALL OTHERS SHOULD BE ON.
- EIGHTH DEPRESSION OF PB TRANSFERS DATA FROM BUFFER TO SERIALIZER AND SHIFTS THE REGISTERS ONE POSITIONS.
- PB COUNT 8 POSITIONS XMIT BIT 2,3,4,5,6,7 AND DATA MARK BIT SHOULD BE OFF, XMIT BITS 0, 1 SHOULD BE ON.
 - PB COUNT 8 POSITIONS NOT RCV BIT 0,1,2,3,4,5,6,7 SHOULD BE OFF NOT RCV TAG SHOULD BE ON.
 - PB COUNT 9 POSITIONS XMIT BIT 1,2 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 9 POSITION NOT RCV BIT 0 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 10 POSITIONS XMIT BIT 2,3 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 10 POSITIONS NOT RCV BIT 0,1, SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 11 POSITIONS XMIT BIT 3,4 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 11 POSITIONS NOT RCV BIT 0,1, 2 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 12 POSITIONS XMIT BIT 4,5 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 12 POSITIONS NOT RCV BIT 0,1,2,3 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 13 POSITIONS XMIT BIT 5,6 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 13 POSITIONS NOT RCV BIT 0,1,2,3,4 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 14 POSITIONS XMIT BIT 6,7 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.
 - PB COUNT 14 POSITIONS NOT RCV BIT 0,1,2,3,4,5 SHOULD BE ON, ALL OTHERS SHOULD BE OFF.

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PB COUNT 15 POSITIONS XMIT BIT 7, DATA MARK BIT SHOULD BE ON,
ALL OTHERS SHOULD BE OFF
PB COUNT 15 POSITIONS NOT RCV BIT 0,1,2,3,4,5,6 SHOULD BE ON,
ALL OTHERS SHOULD BE OFF.

PB COUNT 16 ALL XMIT BIT POSITIONS SHOULD BE ON.
PB COUNT 16 POSITIONS NOT RCV BIT 1,2,3,4,5,6,7 SHOULD BE ON,
POSITION NOT RCV TAG SHOULD BE OFF.

TO OBSERVE OPERATION IN SINGLE STEP, DIAGNOSTIC MODE,
THE FOLLOWING SHOULD BE NOTED.

CLOCK TIME	OPERATION
.....
9 (INITIAL CYCLE)	RESET SERIALIZER
11 (INITIAL CYCLE)	TRANSFER BUFFER TO SERIALIZER
16 (EACH CYCLE)	SHIFT DESERIALIZER
0 (EACH CYCLE)	SHIFT SERIALIZER

5. COMMENTS

5.1 THE INTENT OF THIS PROGRAM IS TO PROVIDE FOR THE DETAILED ANALYSIS OF SCA FUNCTIONS AND TO DISPLAY THE RESULTS IN THE 1130 CONSOLE LIGHTS. THE SCA IS CONTROLLED BY THE DISPLAY PROGRAM AND THE SCA CE SWITCHES. FLEXIABILITY IN THE CONTROL OF THE SCA IS ACCOMPLISHED BY THE ABILITY TO EXECUTE ANY OF THE SCA COMMANDS. THE SCA COMMANDS ARE SET UP IN THE 1130 CONSOLE SWITCHES SO AS TO REPRESENT THE VARIABLES IN SCA INPUT/OUTPUT CONTROL COMMAND (IOCC). CONSOLE SWITCHES 5, 6 AND 7 REPRESENT THE FUNCTION OF THE IOCC. CONSOLE SWITCHES 8 THROUGH 15 REPRESENT THE MODIFIER CODE OF THE IOCC. THE RESULTS DISPLAYED BY THE PROGRAM ARE TO BE OBSERVED BY WATCHING THE CONSOLE ACCUMULATOR LIGHTS, ACCUMULATOR EXTENSION LIGHTS, AND THE SCA INDICATOR LIGHTS. THE SCA DSW VALUES ARE LOCATED IN ACCUMULATOR BIT POSITIONS 0 THROUGH 8. THE SCA CE PUSH BUTTON COUNT IS DISPLAYED IN ACCUMULATOR BIT POSITIONS 9 THROUGH 14. SCA MEMORY TRIGGER IS REPRESENTED BY ACCUMULATOR BIT POSITION 15 WHEN WIRED IN. STATUS OF DIAGNOSTIC WORD 1 AND 2 IS DISPLAY IN ACCUMULATOR EXTENSION BIT POSITIONS 0 THROUGH 15.

----- LAST PAGE -----

```

ABS
*****
* SWITCH 0 CHANGE FOR LOADING NEW INSTRUCTIN
* SWITCH 1 DOWN TO FREEZE INTERPT LVL 1
* SWITCH 2 UP TO READ AND DISPLAY BUFFER
* SWITCH 3 UP TO LOAD COMMON DUMP AREA
*
*
*
*****
*
0160          ORG      /160
0160 0 03AF   DC       /03AF      PID
0161 0 C400 02B0 START LD  L KINT1    LD INTRPT LVL 2 ADDR
0163 0 D400 0009      STO  L 9          STORE INTRPT 2 ADDR
0165 0 C400 02B1      LD  L KINT4    LD INTRPT LVL 4 ADDR
0167 0 D400 000C      STO  L 12         STORE INTRPT 4 ADDR
0169 0 6500 0D1B      LDX  L1 /OFFF-CORE LD IR-1 WITH AMOUNT
*
*
*
016B 0 C400 02E4      LD  L CORE      LOAD ADDRESS OF CORE
016D 0 D500 02E4      STO  L1 CORE    LOAD UNUSED STORAGE
*
*
016F 0 71FF          MDX  1 -1      DECREMENT
0170 0 70FC          MDX  *-4      BRANCH BACK 4
0171 0 CC00 029C     LDD  L BSC      LOAD INSTR BSC L SWRD
0173 0 DC00 0000     STO  L 0        STORE AS STARTNG ADD
0175 0 CC00 029E     LDD  L LOOP     LOAD LOOP ADDR
0177 0 DC00 0FFE     STD  L /OFFE    STORE LOOPING ADDR
*
*
*
*****
* STARTING ADDRESS IS SWRD
*
*****
*
0179 0 1010          SWRD  SLA  16      CLEAR
017A 0 D400 02B8     STO  L PBCNT    CLEAR PB COUNTER
017C 0 D400 02B9     STO  L PBSTO   CLEAR PB INDICATOR
017E 0 D400 02AB     STO  L STUN    CLEAR STUN WORK AREA
0180 0 0C00 028A     XIO  L RDSWS   READ CONSOLE SWITCHES
0182 0 C400 02B3     LD  L SWS
0184 0 1003          SLA  3          SHIFT LEFT 3 POSITIONS
0185 0 4C10 018B     BSC  L CLEAR,- BR IF SWT 3 IS OFF
0187 0 1005          SLA  5          MOVE BUFFER PATTERN
*
*
0188 0 D400 0288     STO  L SDSWR   STO IN COMMON DUMP
*
*
018A 0 7003          MDX  CLEAR&3   SKIP
018B 0 1010          CLEAR SLA  16   CLEAR
018C 0 D400 0288     STO  L SDSWR   CLEAR COMMON DUMP
*
*
*
*****
* LOOPING ADDRESS IS REPT
*
*****
*
018E 0 0C00 028A     REPT XIO L RDSWS READ CONSOLE SWS

```

```

3AF00020
3AF00030
3AF00040
3AF00050
3AF00060
3AF00070
3AF00080
3AF00090
3AF00100
3AF00110
3AF00120
3AF00130
3AF00140
3AF00150
3AF00160
3AF00170
3AF00180
3AF00190
3AF00200
3AF00210
3AF00220
3AF00230
3AF00240
3AF00250
3AF00260
3AF00270
3AF00280
3AF00290
3AF00300
3AF00310
3AF00320
3AF00330
3AF00340
3AF00350
3AF00360
3AF00370
3AF00380
3AF00390
3AF00400
3AF00410
3AF00420
3AF00430
3AF00440
3AF00450
3AF00460
3AF00470
3AF00480
3AF00490
3AF00500
3AF00510
3AF00520
3AF00530
3AF00540
3AF00550
3AF00560
3AF00570
3AF00580
3AF00590
3AF00600
3AF00610
3AF00620
3AF00630
3AF00640
3AF00650
3AF00660
3AF00670
3AF00680
3AF00690

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0190 0 C400 02B3
0192 0 F400 02B4
0194 0 4C10 01A2
0196 0 C400 02B3
0198 0 D400 02B4
019A 0 E400 02B7
019C 0 EC00 02B6
019E 0 D400 0297
01A0 0 0C00 0296
01A2 0 0C00 0290
01A4 0 0C00 0292
01A6 0 C400 02AF
01A8 0 1809
01A9 0 EC00 02AE
01AB 0 D400 0299
01AD 0 0C00 0292
01AF 0 C400 02AF
01B1 0 E400 02B8
*
*
01B3 0 1808
01B4 0 4C18 01C7
*
*
01B6 0 C400 02B9
01B8 0 4C04 01CA
01BA 0 8400 02BC
01BC 0 D400 02B9
01BE 0 1001
01BF 0 8400 02B8
01C1 0 E400 02BA
*
*
01C3 0 D400 02B8
01C5 0 4C00 01FE
01C7 0 1010
01C8 0 D400 02B9
01CA 0 CC00 0298
01CC 0 C400 02AF
01CE 0 1807
01CF 0 E400 02BC
*
*
01D1 0 D400 02AE
01D3 0 0C00 028A
01D5 0 C400 02B3
01D7 0 1002
01D8 0 4C10 01DF
01DA 0 0C00 0294
01DC 0 C400 02BD
01DE 0 7002
01DF 0 0C00 0284
01E1 0 EC00 02AE
01E3 0 EC00 02B8
01E5 0 4C00 02E4
*
*
01E7 0001
01E8 0 D400 02AD
01EA 0 C400 02B3
01EC 0 1001

```

```

LD  L SWS      LOAD SWITCH STATUS
EOR  L SWSTG   EOR WITH PREVIOUS
BSC  L RDIAG,- BRANCH IF BIT 0 SAME
LD  L SWS      LOAD SWITCH STATUS
STO  L SWSTG   STORE SWITCH STATUS
AND  L K07FF   ERASE AREA ASSIGNMT
OR  L K5000    INSERT SCA AREA ASGN
STO  L IOCC&1 STORE IN IOCC INSTR
XIO  L IOCC    EXECUTE SCA INSTR
RDIAG XIO L RDAG1 READ DIAG WORD 1
XIO  L RDAG2  READ DIAG WORD 2
LD  L DAG2S
SRA  9         SHIFT RIGHT DIAG WRD
OR  L DAG1S   OR DIAG WORD 1
STO  L DAG12&1 PUT IN SAVE AREA
XIO  L RDAG2  READ DIAG WORD 2
LD  L DAG2S
AND  L K0100  MASK OUT ALL BITS
*
*
SRA  8
BSC  L RPBS,&- EXCEPT PUSH BUTTON
LATCH BIT
SHIFT RIGHT BIT 7
BRANCH IF NO PB ACTN
*
*
IF PUSH BUTTON WAS PUSHED THEN...
*
LD  L PBSTO   LOAD PB INDICATOR
BSC  L KLDD,E BR TO KLDD IF OFF
A  L K0001    ADD 1 FOR NEW PB PUSH
STO  L PBSTO  STO IN PB INDICATOR
SLA  1        ADD 1 TO BIT 14
A  L PBCNT    ADD 1 TO PB COUNT
AND  L K007E  MASK OUT ALL BITS
EXCEPT BIT 9-14
*
*
PUSH BUTTON COUNT IN ACC REG BITS 9-14
*
STO  L PBCNT  STORE PUSH BUTTON CNT
BSC  L STOX   BRANCH TO STOX
RPBS SLA  16  CLEAR
STO  L PBSTO  CLEAR PB INDICATOR
KLDD LDD L DAG12 LOAD DIAG WORD IN EXT
LD  L DAG2S  LOAD DIAG WORD 2
SRA  7       SHIFT RIGHT 7 BITS
AND  L K0001
*
*
STO  L DAG1S  PUT IN DIAG WORD 1
XIO  L RDSWS  READ CONSOLE SWITCHES
LD  L SWS     LOAD SWITCHES STATUS
SLA  2       SHIFT LEFT 2 POSITNS
BSC  L KOR1-2,- BR IF SWITCH 2 IS OFF
XIO  L RBUF   READ SCA BUFFER
LD  L BFSTO  LOAD SCA BUFFER DATA
MDX  KOR1    SKIP TO KOR1
XIO  L SDSW  READ SCA DSW
KOR1 OR  L DAG1S  LOAD CE BITS
OR  L PBCNT  ADD BITS 9-14 TO ACC
BSC  L CORE  BRANCH TO CORE
*
*
*****
* INTERRUPT LEVEL ONE ENTRY
*
*****
*
INT1 BSS  1    INTRPT 1 ENTRY ADDR
STO  L BSTGE  SAVE ACC IN BSTGE
LD  L SWS     LOAD SWITCHES STATUS
SLA  1        SHIFT LEFT 1 POSITN

```

SCA DISPLAY PROGRAM

SCA DISPLAY PROGRAM

```

01ED 0 4C10 018E      BSC L REPT,-      BRANCH TO REPT IF
*                      SWITCH 1 IS OFF
* WHEN SWT 1 IS OFF INTRPT 1 WILL REMAIN ON
*
01EF 0 0C00 0288      XIO L SDSWR       SENSE AND RESET DSW
01F1 0 C400 02AD      LD L BSTGE        RESTORE ACC
01F3 0 4CC0 01E7      BOSC I INT1       BR AND CLEAR INTRPT 1
*
*****
* INTERRUPT LEVEL FOUR ENTRY
*
*****
01F5 0001             INT4 BSS 1         INTRPT 4 ENTRY ADDR
01F6 0 DC00 029A      STD L ASTGE       SAVE ACC AND Q REG
01F8 0 0C00 028C      XIO L SENTW      SENSE CONSOL SWT,RESET
01FA 0 CC00 029A      LDD L ASTGE      RESTORE ACC AND Q REG
01FC 0 4CC0 01F5      BOSC I INT4      BR AND CLEAR INTRPT 4
*
*
*****
* PRINT ROUTINE
*
*****
01FE 0 0C00 0286      STDX XIO L SPACE  EXECUTE TYPEWRITER WRT
0200 0 0C00 028C      XIO L SENTW      SENSE CONSOL SWT,RESET
0202 0 1004           SLA 4            SHIFT BUSY BIT
0203 0 4C28 0200      BSC L *-5,&Z     WAIT ON TW BUSY
0205 0 C400 02B8      LD L PBCNT       LD PUSH BUTTON COUNT
0207 0 1801           SRA 1            LINE UP BITS 9 TO 14
0208 0 9400 02C3      S L K10          TEST FOR UNITS/TENS
020A 0 4C10 0229      BSC L STIND,-    BR TO STIND IF NOT NEG
020C 0 C400 02B8      LD L PBCNT       LD PUSH BUTTON COUNT
020E 0 1801           SRA 1            LINE UP BITS 9 TO 14
020F 0 D400 02AB      STO L STUN       SAVE PBCNT IN
*                      STORE UNITS.
*
* TRANSLATE UNITS COUNT
*
0211 0 6680 02AB      BGNUN LDX I2 STUN LD IR2 WITH PB COUNT
0213 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0215 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
0217 0 0C00 028E      PRNT1 XIO L PRNT  CONSOLE TYPE OUT
0219 0 0C00 028C      XIO L SENTW      SENSE CONSOL SWT,RESET
021B 0 1004           SLA 4            SHIFT BUSY BIT
021C 0 4C28 0219      BSC L *-5,&Z     WAIT ON TW BUSY
021E 0 C400 02B2      LD L TIND       LD TENS INDICATOR
0220 0 4C20 0224      BSC L RSTND,Z   BR TO RSTND IF TENS BIT
0222 0 4C00 01CA      BSC L KLDD      BR TO KLDD
*
*
0224 0 1010           RSTND SLA 16     CLEAR ACCUM
0225 0 D400 02B2      STO L TIND      CLEAR TENS INDICATOR
0227 0 6400 0211      LDX L BGNUN     BRANCH TO BGNUN
*
*
0229 0 C400 02C4      STIND LD L K1    LOAD VALUE OF ONE
022B 0 D400 02B2      STO L TIND      SET TENS INDICATOR
*
* TEST PUSH BUTTON COUNT FOR 60
*
022D 0 C400 02B8      LD L PBCNT      LD PUSH BUTTON COUNT
022F 0 1801           SRA 1            SHIFT VALUE RIGHT 1
0230 0 9400 02BE      S L K60         SUBTRACT VALUE OF 60
0232 0 4C28 023D      BSC L PBCT5,&Z  BR TO PBCT5 IF NEG

```

```

0234 0 D400 02AB      STO L STUN      STORE REMAINDER IN
*                      STORE UNITS
*                      LD IR2 WITH VALUE OF 6
*                      LD ACC WITH PB COUNT
*                      STORE IN TYPE OUT AREA
*                      GO TYPE
*
* TEST PUSH BUTTON COUNT FOR 50 TO 59 COUNT
*
023D 0 C400 02B8      PBCT5 LD L PBCNT LD PUSH BUTTON COUNT
023F 0 1801           SRA 1            SHIFT RT VALUE OF 1
0240 0 907E           S K50           SUBTRACT VALUE OF 50
0241 0 4C28 024C      BSC L PBCT4,&Z  BR TO PBCT4 IF NEG
0243 0 D400 02AB      STO L STUN      STORE REMAINDER
0245 0 6205           LDX 2 5         LD IR2 WITH 5
0246 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0248 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
024A 0 4C00 0217      BSC L PRNT1     BR TO PRNT1, TYPE IT
*
*
* TEST PUSH BUTTON COUNT FOR 40 TO 49 VALUE
*
024C 0 C06B           PBCT4 LD L PBCNT LD PUSH BUTTON COUNT
024D 0 1801           SRA 1            SHIFT
024E 0 9071           S K40           SUBTRACT 40
024F 0 4C28 025A      BSC L PBCT3,&Z  BR TO PBCT3 IF NEG
0251 0 D400 02AB      STO L STUN      STORE REMAINDER
0253 0 6204           LDX 2 4         LD IR2 WITH 4
0254 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0256 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
0258 0 4C00 0217      BSC L PRNT1     BR TO PRNT1, TYPEIT
*
*
* TEST PUSH BUTTON COUNT FOR 30 TO 39 VALUE
*
025A 0 C05D           PBCT3 LD L PBCNT LOAD PUSH BUTTON COUNT
025B 0 1801           SRA 1            SHIFT RIGHT ONE
025C 0 9064           S K30           SUBTRACT 30
025D 0 4C28 0268      BSC L PBCT2,&Z  BR TO PBCT2 IF NEG
025F 0 D400 02AB      STO L STUN      STORE REMAINDER
0261 0 6203           LDX 2 3         LD IR2 WITH 3
0262 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0264 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
0266 0 4C00 0217      BSC L PRNT1     BR TO PRNT1, TYPE IT
*
*
* TEST PUSH BUTTON COUNT FOR 20 TO 29 COUNT
*
0268 0 C04F           PBCT2 LD L PBCNT LD PUSH BUTTON COUNT
0269 0 1801           SRA 1            SHIFT RIGHT ONE
026A 0 9057           S K20           SUBTRACT 20
026B 0 4C28 0276      BSC L PBCT1,&Z  BR TO PBCT1 IF NEG
026D 0 D400 02AB      STO L STUN      STORE REMAINDER
026F 0 6202           LDX 2 2         LD IR2 WITH TWO
0270 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0272 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
0274 0 4C00 0217      BSC L PRNT1     BR TO PRNT1, TYPE IT
*
*
* TEST PUSH BUTTON COUNT FOR 10 TO 19 VALUE
*
0276 0 C041           PBCT1 LD L PBCNT LD PUSH BUTTON COUNT
0277 0 1801           SRA 1            SHIFT RIGHT ONE
0278 0 904A           S K10           SUBTRACT TEN
0279 0 4C28 02E3      BSC L WAIT,&Z   BR TO WAIT IF NEG
027B 0 D400 02AB      STO L STUN      STORE REMAINDER
027D 0 6201           LDX 2 1         LOAD IR2 WITH ONE
027E 0 C600 02A0      LD L2 ZERO      LD ACC WITH PB COUNT
0280 0 D400 02AA      STO L CHPRT     STORE IN TYPE OUT AREA
0282 0 4C00 0217      BSC L PRNT1     BR TO PRNT1, TYPE IT
*

```



```

*
*
*****
* IOCC FOR SCA AND 1130 CONSOLE PRINTER
*
*****
*
0284 0001 SDSW BSS E 1 IOCC SENSE DSW
0285 0 5700 DC /5700 WITHOUT RESET DSW
*
0286 0 02AC SPACE DC SPAC1 IOCC CONSOLE PRINTER
0287 0 0900 DC /0900 SPACE
*
0288 0 0000 SDSWR DC 0 IOCC SENSE DSW
0289 0 5701 DC /5701 AND RESET DSW
*
028A 0 02B3 RDSWS DC SWS IOCC READ CONSOL SWTS
028B 0 3A00 DC /3A00
*
028C 0 0000 SENTW DC 0 IOCC SENSE CONSOLE
028D 0 0F01 DC /0F01 SWITCHES AND RESET
*
028E 0 02AA PRNT DC CHPRT IOCC FOR CONSOLE
028F 0 0900 DC /0900 PRINTER
*
0290 0 02AE RDAG1 DC DAG1S IOCC READ DIAGNOSTIC
0291 0 5201 DC /5201 WORD 1
*
0292 0 02AF RDAG2 DC DAG2S IOCC READ DIAGNOSTIC
0293 0 5202 DC /5202 WORD 2
*
0294 0 02BD RBUF DC BFSTO IOCC READ DATA FROM
0295 0 5200 DC /5200 SCA BUFFER TO CORE
*
*
0296 0 0288 IOCC DC SDSWR COMMON DUMP AREA FOR
0297 0 0000 DC 0 SCA IOCC
*
*
*****
* CONSTANTS AND SAVE AREA
*
*****
*
0298 0002 DAG12 BSS 2 DIAG WORDS 1 AND 2
029A 0002 ASTGE BSS 2 ACC AND Q REG SAVE AREA
029C 0 4C00 0179 BSC BSC L SWRD STORED PROG INSTR
029E 0 4C00 018E LOOP BSC L REPT STORED PROG INSTR
02A0 0 C400 ZERO DC /C400 CONSOLE PRINTER 0
02A1 0 FC00 ONE DC /FC00 CONSOLE PRINTER 1
02A2 0 D800 TWO DC /D800 CONSOLE PRINTER 2
02A3 0 DC00 THREE DC /DC00 CONSOLE PRINTER 3
02A4 0 F000 FOUR DC /F000 CONSOLE PRINTER 4
02A5 0 F400 FIVE DC /F400 CONSOLE PRINTER 5
02A6 0 D000 SIX DC /D000 CONSOLE PRINTER 6
02A7 0 D400 SEVEN DC /D400 CONSOLE PRINTER 7
02A8 0 E400 EIGHT DC /E400 CONSOLE PRINTER 8
02A9 0 E000 NINE DC /E000 CONSOLE PRINTER 9
02AA 0 0000 CHPRT DC 0 TYPEWRITER OUTPUT AREA
02AB 0 0000 STUN DC 0 STORE UNITS AREA
02AC 0 2100 SPAC1 DC /2100 CONSOLE PRINTER SPACE
02AD 0 0000 BSTGE DC 0 ACC SAVE AREA
02AE 0 0000 DAG1S DC 0 DIAG WORD 1
02AF 0 0000 DAG2S DC 0 DIAG WORD 2
02B0 0 01E7 KINT1 DC INT1 INTERRUPT LEVEL 1

```

```

3AF02740
3AF02750
3AF02760
3AF02770
3AF02780
3AF02790
3AF02800
3AF02810
3AF02820
3AF02830
3AF02840
3AF02850
3AF02860
3AF02870
3AF02880
3AF02890
3AF02900
3AF02910
3AF02920
3AF02930
3AF02940
3AF02950
3AF02960
3AF02970
3AF02980
3AF02990
3AF03000
3AF03010
3AF03020
3AF03030
3AF03040
3AF03050
3AF03060
3AF03070
3AF03080
3AF03090
3AF03100
3AF03110
3AF03120
3AF03130
3AF03140
3AF03150
3AF03160
3AF03170
3AF03180
3AF03190
3AF03200
3AF03210
3AF03220
3AF03230
3AF03240
3AF03250
3AF03260
3AF03270
3AF03280
3AF03290
3AF03300
3AF03310
3AF03320
3AF03330
3AF03340
3AF03350
3AF03360
3AF03370
3AF03380
3AF03390
3AF03400
3AF03410

```

```

02B1 0 01F5
02B2 0 0000
02B3 0 0000
02B4 0 0000
02B5 0 0003
02B6 0 5000
02B7 0 07FF
02B8 0 0000
02B9 0 0000
02BA 0 007E
02BB 0 0100
02BC 0 0001
02BD 0 0000
02BE 0 003C
02BF 0 0032
02C0 0 0028
02C1 0 001E
02C2 0 0014
02C3 0 000A
02C4 0 0001

```

```

KINT4 DC INT4
TIND DC 0
SWS DC 0
SWSTG DC 0
K0003 DC /0003
K5000 DC /5000
K07FF DC /07FF
PBCNT DC /0000
PBSTO DC /0000
K007E DC /007E
K0100 DC /0100
K0001 DC /0001
BFSTO DC /0000
K60 DC 60
K50 DC 50
K40 DC 40
K30 DC 30
K20 DC 20
K10 DC 10
K1 DC 1

```

```

INTRPT LVL 4
TENS INDICATOR
SWITCHES
CONSOLE SWTS SAVE AREA
CONSTANT
CONSTANT
MASK
PUSH BUTTON COUNT
PUSH BUTTON ON INDICTOR

```

SCA BUFFER READ DATA

```

*
*
*****
* THIS AREA IS FREE FOR PROGRAM
*MODIFICATION, PATCH CARDS, ETC.
*
*****
*
02C5 001E BSS 30 PATCH AREA
*
*****
*
02E3 0 3001 WAIT DC /3001 PROGRAM STOP 3, ERROR
*
*
*
*
*****
02E4 0 1000 CORE NOP 0 AVAILABLE CORE
02E6 0161 END START END OF PROG INSTRUCTNS
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

3AF03420
3AF03430
3AF03440
3AF03450
3AF03460
3AF03470
3AF03480
3AF03490
3AF03500
3AF03510
3AF03520
3AF03530
3AF03540
3AF03550
3AF03560
3AF03570
3AF03580
3AF03590
3AF03600
3AF03610
3AF03620
3AF03630
3AF03640
3AF03650
3AF03660
3AF03670
3AF03680
3AF03690
3AF03700
3AF03710
3AF03720
3AF03730
3AF03740
3AF03750
3AF03760
3AF03770
3AF03780
3AF03790
3AF03800
3AF03810

```

SCA DISPLAY PROGRAM

SCA DISPLAY PROGRAM

ASTGE 029A 01F6 01FA
 BFSTO 02BD 01DC 0294
 BGNUN 0211 0227
 BSC 029C 0171
 BSTGE 02AD 01E8 01F1
 CHPRT 02AA 0215 0239 0248 0256 0264 0272 0280 028E
 CLEAR 018B 0185 018A
 CORE 02E4 0169 016B 016D 01E5
 DAG1S 02AE 01A9 01D1 01E1 0290
 DAG12 0298 01AB 01CA
 DAG2S 02AF 01A6 01AF 01CC 0292
 EIGHT 02A8
 FIVE 02A5
 FOUR 02A4
 INT1 01E7 01F3 0280
 INT4 01F5 01FC 02B1
 IOCC 0296 019E 01A0
 KINT1 02B0 0161
 KINT4 02B1 0165
 KLDD 01CA 0188 0222
 KOR1 01E1 01D8 01DE
 K0001 028C 01BA 01CF
 K0003 02B5
 K007E 02BA 01C1
 K0100 02BB 0181
 K07FF 02B7 019A
 K1 02C4 0229
 K10 02C3 0208 0278
 K20 02C2 026A
 K30 02C1 025C
 K40 02C0 024E
 K50 02BF 0240
 K5000 02B6 019C
 K60 02BE 0230
 LOOP 029E 0175
 NINE 02A9
 ONE 02A1
 PBCNT 0288 017A 01BF 01C3 01E3 0205 020C 022D 023D 024C 025A 0268 0276
 PBCT1 0276 0268
 PBCT2 0268 025D
 PBCT3 025A 024F
 PBCT4 024C 0241
 PBCT5 023D 0232
 PBSTO 02B9 017C 01B6 018C 01C8
 PRNT 028E 0217
 PRNT1 0217 023B 024A 0258 0266 0274 0282
 RBUF 0294 01DA
 RDAG1 0290 01A2
 RDAG2 0292 01A4 01AD
 RDIAG 01A2 0194
 RDSWS 028A 0180 018E 01D3
 REPT 018E 01ED 029E
 RPBS 01C7 0184
 RSTND 0224 0220
 SDSW 0284 01DF
 SDSWR 0288 0188 018C 01EF 0296
 SENTW 028C 01F8 0200 0219
 SEVEN 02A7
 SIX 02A6
 SPACE 0286 01FE
 SPAC1 02AC 0286
 START 0161 02E6
 STIND 0229 020A
 STOX 01FE 01C5
 STUN 02AB 017E 020F 0211 0234 0243 0251 025F 026D 027B
 SWRD 0179 029C
 SWS 02B3 0182 0190 0196 01D5 01EA 028A
 SWSTG 02B4 0192 0198

THREE 02A3
 TIND 02B2 021E 0225 022B
 TWO 02A2
 WAIT 02E3 0279
 ZERO 02A0 0213 0237 0246 0254 0262 0270 027E
 END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA TRANSMIT/RECEIVE BSC POINT-TO-POINT PROGRAM IS TO PROVIDE PROGRAM ABILITY TO OPERATE THE 1130 SCA ON-LINE WITH ANOTHER BSC TERMINAL IN A POINT-TO-POINT CONTENTION DATA LINK. THE MODE OF OPERATION IS BINARY SYNCHRONOUS. THE PROGRAM IS PRIMARILY A TEST OF SYSTEM INTEGRITY RATHER THAN A FAULT ISOLATING DIAGNOSTIC, HOWEVER, A DIAGNOSTIC CAPABILITY IS PROVIDED BY PROGRAM OPERATING OPTION.

NOTE..THERE IS ANOTHER P-T-P PROGRAM (PID 316) AVAILABLE WHICH CONTAINS ALL OF THE STANDARD X TEST MESSAGE VALUES CONTAINED IN THIS TEST, PLUS ADDITIONAL X VALUES WHICH CAN ONLY BE ENTERED VIA PATCH CARDS FOR THIS PROGRAM (SEE SECTION 5.2.1). THE OTHER BSC PROGRAM PERFORMS CHECKOUT ON OTHER BSC DEVICES AND REQUIRES 8K OF STORAGE.

2. PREREQUISITES

****CAUTION****

READ SECTIONS 3.1 AND 3.5 FOR SPECIAL OPERATING PROCEDURES BEFORE TAKING THE 1130 OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM.

2.1 PROGRAM PREREQUISITES

1. THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS AND THIS PROGRAM USES THE REMAINING PORTION OF 4K.
2. THE REMOTE TERMINAL MUST HAVE THE CAPABILITY OF EITHER TRANSMITTING OR RECEIVING AND RESPONDING TO REQUEST-FOR-TEST MESSAGES AS DESCRIBED IN THIS PROGRAM DESCRIPTION.

2.2 EQUIPMENT PREREQUISITES

1. SET STR/BSC SWITCH TO BSC POSITION.
2. SET BAUD SELECTION SWITCH TO MATCH REMOTE TERMINAL
3. SET DATA SET CONNECTOR PLUG SWITCH TO OPER
4. CE SWITCH MUST BE OFF
5. REFER TO LOGIC PAGE ADO03 FOR CUSTOMER OPTION JUMPERS. OPTION FUNCTIONS MUST MATCH THE REMOTE TERMINAL.
6. SCA MUST BE CONNECTED THROUGH THE PROPER MODEM EQUIPMENT TO ANOTHER BSC TERMINAL. DATA SETS USED MUST BE COMPATIBLE WITH BAUD RATE AND CUSTOMER OPTIONS SELECTED.

NOTE...DIAL-UP CONNECTIONS...AUTOMATIC LINE DISCONNECT OCCURS WHEN 1130 RESET KEY IS PRESSED OR WHEN SCA PROGRAM RESET IS EXECUTED. THIS PROGRAM WILL EXECUTE A PROGRAM RESET ONLY IF A DISCONNECT SIGNAL IS RECEIVED FROM THE REMOTE TERMINAL OR IF THE PATCH CARD DESCRIBED IN 3.1 NOTE 3 IS USED. IF IT IS DESIRED THAT LINE DISCONNECT BE PREVENTED REMOVE THE JUMPER FROM D6D05 TO M2D10.

3. OPERATING PROCEDURE

SEE DIAGNOSTIC MONITOR USE PROCEDURE FOR DETAILS OF PROGRAM LOADING AND OPERATING PROCEDURES. PROGRAM OVERLAP IS NOT RECOMMENDED DUE TO TIMING CONSIDERATIONS.

3.1 PROGRAM LOADING

PROGRAM LOADING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

1. NOTIFY THE OPERATOR AT THE REMOTE TERMINAL THAT THE 1130 WILL BE TAKEN OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM. IT MAY BE NECESSARY FOR THE REMOTE TERMINAL OPERATOR TO TAKE ACTION IN PREPARATION FOR THE TEST PROCEDURE.
2. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
3. SET BIT SWITCH 15...OFF - FOR LOAD AND GO. (NOTE 1)
...ON - TO SPECIFY OPTIONS BEFORE RUNNING. (NOTE 2)
4. LOAD DIAGNOSTIC MONITOR AND THIS PROGRAM.
5. SELECT PROGRAM OPTIONS AS DESIRED.

NOTE 1..NORMAL LOAD AND GO OPERATION ASSUMES THAT THE PROGRAM WILL BE INITIATING THE TEST PROCEDURE AND TEST ROUTINES 1-6 WILL BE EXECUTED. IF THE PROGRAM WILL NORMALLY BE REQUIRED TO RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES (TEST ROUTINE 8) IT IS RECOMMENDED THAT A PATCH CARD BE INSERTED IN THE PROGRAM DECK TO AUTOMATICALLY SELECT ROUTINE 8. THE PATCH CARD SHOULD CONTAIN IN COLUMNS 1-10, 0050 0008, ALL OTHER COLUMNS SHOULD BE BLANK. THE PATCH CARD SHOULD BE INSERTED AHEAD OF THE LAST CARD IN THE PROGRAM DECK. ROUTINE 8 MAY BE SUBSEQUENTLY DE-SELECTED BY USING FUNCTION 1.

NOTE 2..IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (3.5)

NOTE 3..1130 TO S/360 SWITCHED (DIAL-UP) LINES. THE S/360 PROGRAMS WILL DISCONNECT FROM THE COMMUNICATIONS LINE AT THE END OF EACH TEST. IT IS RECOMMENDED THAT THE FOLLOWING PATCH CARD BE PREPARED FOR 1130 TO S/360 TESTS OVER SWITCHED LINES. USE OF THIS CARD WILL CAUSE THE 1130 PROGRAM TO DISCONNECT AT THE END OF EACH TEST. THE PATCH CARD MUST BE PUNCHED AS FOLLOWS.

COLUMNS 1-5 0061C
COLUMN 6 BLANK
COLUMNS 7-9 0000
ALL OTHER COLUMNS BLANK

THIS CARD MUST BE INSERTED IN FRONT OF THE LAST BINARY CARD IN THE PROGRAM DECK.

PAPER TAPE IPL SYSTEMS. MANUALLY LOAD ALL ZEROS INTO CORE CORE LOCATION /061C AFTER PROGRAM HAS BEEN LOADED.

3.2 PROGRAM OPERATION

PROGRAM OPERATING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-7 TO 01
2. SET SWITCHES 8-15 AS DESIRED

SWT	FUNCTION
8	RESTART (SEE SECTION 3.5)
9	ROUTINE START MESSAGE
10	(NOT USED)
11	LOOP PROGRAM
12	(NOT USED)
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR (USE NOT RECOMMENDED)
15	HALT (SEE SECTION 3.5)

3. PRESS INT REQ KEY ON CONSOLE

3.2.2 ROUTINE SELECTION - FUNCTION 1

ROUTINE SELECTION WILL BE INOPERATIVE IF THE RFT RECEIVER OPTION (FUNCTION 2 SWITCH 15) IS SELECTED.

ROUTINES 1-6 WILL BE EXECUTED IN SEQUENCE IF NO ROUTINE (OR 00) IS SELECTED. ROUTINES 7 AND 8 WILL BE EXECUTED ONLY IF SELECTED. ONLY ROUTINE 8 WILL LOOP CONTINUOUSLY IF SELECTED. ALL OTHERS WILL TERMINATE AT THE COMPLETION OF THE ROUTINE.

TO LOOP A ROUTINE FIRST SELECT THE ROUTINE THEN SELECT THE LOOP PROGRAM OPTION (FUNCTION 0 SWT 11).

TO SET ROUTINE SELECTION

- A. SET SWITCHES 0-7 TO 41
- B. SET ROUTINE NUMBER IN SWITCHES 8-15

RTN	DESCRIPTION
1. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 02 Y TIMES
2. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 16 Y TIMES
3. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 19 Y TIMES
4. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=02 RECEIVE TEST MESSAGES
5. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=16 RECEIVE TEST MESSAGES
6. . .	.TRANSMIT REQUEST FOR TEST WITH X=19 RECEIVE TEST MESSAGES
7. . .	.TRANSMIT REQUEST FOR TEST WITH X=12(SEE SECTION 5.2) TRANSMIT OR RECIEVE TEST MESSAGES AS DEFINED BY X VALUE
8. . .	.RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES

- C. PRESS INT REQ KEY ON CONSOLE

TO DESELECT ROUTINE AND RETURN TO NORMAL OPERATION

- A. SET SWITCHES 0-7 TO 41
- B. SET SWITCHES 8-15 OFF
- C. PRESS INT REQ KEY
- D. DESELECT LOOP OPTION IF SELECTED.

3.2.3 PROGRAM OPTIONS - FUNCTION 2

1. SET SWITCHES 0-7 TO 81
2. SET SWITCHES 11-15 AS DESIRED

SWT	FUNCTION
SWT 15..ON..	RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES. (EXECUTE ROUTINE 8 ONLY) ..OFF..TRANSMIT REQUEST-FOR-TEST MESSAGE THEN TRANSMIT OR RECEIVE Y TEST MESSAGES. (ALLOW EXECUTION OF RTNS 1-7)
SWT 14..ON..	ALLOW PRINTING OF DIAGNOSTIC ERROR MESSAGES. (ERROR MESSAGES E1708 THRU E1725) SEE NOTE SECTION 4.2 ..OFF..DO NOT PRINT DIAGNOSTIC ERROR MESSAGES.
SWT 13..ON..	PRINT ENTIRE TEXT OF ANY MESSAGE OR CONTROL SEQUENCE RECEIVED WHICH CONTAINED AN ERROR. (SEE SECTION 4.3)
SWT 12..ON..	PRINT ENTIRE TEXT TRANSMITTED AND RECEIVED. (SEE SECTION 4.3)
SWT 11..ON..	8K OF CORE STORAGE AVAILABLE ..OFF..ONLY 4K OF CORE STORAGE AVAILABLE

NOTE...THE AMOUNT OF TEXT THAT CAN BE SAVED FOR PRINTING WHEN OPTION SWT 12 OR 13 IS ON IS LIMITED BY THE AVAILABLE CORE STORAGE. IN A 4K SYSTEM ONLY THE FIRST FEW TEST MESSAGES CAN BE SAVED AND PRINTED OUT. IN SYSTEMS LARGER THAN 4K SELECTION OF OPTION SWT 11 WILL ALLOW OVER 25 TEST MESSAGES TO BE SAVED FOR PRINTING.

SWT 10..ON..SEND ID HEADER WITH INITIAL ENQ OR INITIAL ACK.
..OFF..DO NOT SEND ID HEADER.

NOTE...IF IDENTIFICATION HEADER CODE IS REQUESTED, THE FOLLOWING 15 CHARACTER CODE WILL BE USED... 1130BSCAPTPDIAG . THIS CODE MAY BE CHANGED BY PUNCHING THE DESIRED EBCDIC CODE IN HEXADECIMAL BYTES IN A PATCH CARD. THE USER SHOULD INSURE THAT 15 ID CHARACTERS ARE ENTERED. THE PATCH CARD MUST BE PUNCHED AS FOLLOWS...

COLUMNS 1-5 8061E
COLUMN 6 BLANK
COLUMNS 7-45 XXXX XXXX XXXX XXXX XXXX XXXX XXXX XX00
ALL OTHER COLUMNS BLANK

WHERE XX IS THE EBCDIC EQUIVALENT FOR ANY ALPHA-NUMERIC CHARACTER. THE FOLLOWING IS AN EXAMPLE OF A PATCH CARD ID OF BOCARATON1OCT69 ...

8061E C2D6 C3C1 D9C1 E3D6 D5F1 D6C3 E3F6 F900

THE ID PATCH CARD, IF USED, MUST BE INSERTED IN FRONT OF THE LAST BINARY CARD IN THE PROGRAM DECK.

PAPER TAPE IPL SYSTEMS. MANUALLY LOAD THE EBCDIC EQUIVALENT ALPHA NUMERIC CHARACTERS INTO CORE LOCATIONS /061E THROUGH /0625.

3. PRESS INT REQ KEY ON CONSOLE.

3.2.4 PROGRAM OPTION - FUNCTION 3

WHEN TRANSMITTING REQUEST-FOR-TEST MESSAGES (EXECUTING RTNS 1-7) THIS OPTION ALLOWS SELECTION OF THE NUMBER OF TEST MESSAGES THAT ARE TO BE TRANSMITTED OR RECEIVED. THE VALUE ENTERED IN SWITCHES 8-15 IS USED AS A COUNT OF TEST MESSAGES AND IS ALSO CONVERTED TO TWO EBCDIC DECIMAL DIGITS AND ENTERED IN THE Y FIELD OF THE RFT MESSAGE. THIS VALUE MUST BE BETWEEN DECIMAL 01 AND 99.

TO SELECT THE Y VALUE

1. SET SWITCHES 1-7 TO C1
2. SET SWITCHES 8-15 AS DESIRED (HEX 01 TO 63)
3. PRESS INT REQ KEY ON CONSOLE

TO RETURN TO NORMAL OPERATION

1. SET SWITCHES 0-7 TO C1
2. SET SWITCHES 8-15 TO 01
3. PRESS INT REQ KEY

3.3 PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS PROGRAM START
3002	HALT ON ERROR	PRESS PROGRAM START

3.3.2 ERROR HALTS

HALT NO. (B REG)	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD PROGRAM
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD PROGRAM
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD PROGRAM
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS. READER START. PRESS PROGRAM START
30F6	MONITOR DID NOT LOAD	RELOAD PROGRAM
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD PROGRAM
30F8	READER NOT READY	MAKE READER READY PRESS PROGRAM START
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND PROGRAM START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4 PROGRAM TERMINATION

IF LOOP OPERATION HAS NOT BEEN SPECIFIED, THE PROGRAM WILL END...

1. AT THE END OF ROUTINE 6 IF NO ROUTINE HAS BEEN SELECTED AND THE RFT RECEIVER OPTION (FUNCTION 2 SWT 15) IS NOT SELECTED.
2. AT THE END OF THE SELECTED ROUTINE IF ANY ROUTINE OTHER THAN ROUTINE 8 IS SELECTED.
3. IF ROUTINE 8 IS SELECTED BY EITHER FUNCTION 1 OR FUNCTION 2 SWT 15 THE PROGRAM WILL LOOP CONTINUOUSLY.

NOTE....AFTER NORMAL PROGRAM END THE SCA IS LEFT IN RECEIVE MODE. INTERRUPTS WILL CONTINUE TO OCCUR BUT WILL BE IGNORED BY THE PROGRAM. (SEE 3.5)

3.5 HALTING AND RESTARTING PROGRAM

AFTER NORMAL PROGRAM END OR AFTER SELECTION OF PROGRAM HALT (FUNCTION 0 SWT 15) THE SCA IS LEFT IN RECEIVE MODE. INTERRUPTS WILL CONTINUE TO OCCUR BUT WILL BE IGNORED BY THE PROGRAM. THIS PROCEDURE PREVENTS LINE DISCONNECT WHEN THE PROGRAM IS STOPPED. FOR THIS REASON IT IS RECOMMENDED THAT USE OF THE PROGRAM STOP, IMMEDIATE STOP, AND RESET KEYS BE AVOIDED WHEN OPERATING THIS PROGRAM. THE PROGRAM STOP KEY WILL NORMALLY STOP THE PROGRAM ONLY UNTIL THE NEXT INTERRUPT OCCURS. IN DIAL-UP CONNECTIONS USE OF THE RESET KEY MAY CAUSE LINE DISCONNECT.

IT IS ALSO RECOMMENDED THAT WHENEVER POSSIBLE THE PROGRAM BE ALLOWED TO RUN TO NORMAL COMPLETION. IF IT IS NECESSARY TO USE THE PROGRAM HALT OPTION OR OTHERWISE HALT THE PROGRAM THIS SHOULD BE DONE DURING THE END OF TEST PRINTOUT. IF THE TEST MUST BE TERMINATED DURING EXECUTION OF A TEST SEQUENCE, THEN ALLOW SUFFICIENT TIME FOR THE REMOTE TERMINAL TO FINISH THE TEST CYCLE BEFORE RESTARTING THE PROGRAM--OR RESTART BOTH TERMINALS.

TO HALT PROGRAM (SEE 3.2.1)

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 15
3. PRESS INT REQ KEY

TO RESTART PROGRAM (SEE 3.2.1)

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 8
3. SET DESIRED CONTROL IN SWITCHES 9-14
4. PRESS INT REQ KEY ON CONSOLE IF THIS DOES NOT RESTART PROGRAM THEN..
5. PRESS IMMEDIATE STOP
6. PRESS RESET
7. PRESS INT REQ KEY

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT EXCEPT THE TEXT PRINTOUT. (SEE 4.3)

APPNN OORR AAAA MESSAGE
OR
EPPNN OORR AAAA MESSAGE (MESSAGE OMITTED FOR DIAGNOSTIC PRINTOUTS)

WHERE A IDENTIFIES STATUS MESSAGES
E IDENTIFIES ERROR MESSAGES
PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE

THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MONITOR OR 17 FOR MESSAGES ORIGINATED BY THIS PROGRAM

NN IS THE MESSAGE IDENTIFICATION NUMBER
RR IS THE ROUTINE NUMBER
AAAA IS THE STARTING ADDRESS OF THE ROUTINE
MESSAGE IS ANY VARIABLE INFORMATION

4.1 STATUS MESSAGES (LOG MESSAGES)

A0000 NUM PID ADRS RELF LD
XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED FOLLOWING THE LOADING OF ANY PROGRAM (EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER, THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED, AND THE RELOCATION FACTOR.

A0001 SWS PID
XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE CONTENTS OF SWITCHES 8-15 WERE STORED. IF THE SWITCH ENTRY CALLED FOR HALT OF ANY PROGRAM THE WORD HALT WILL FOLLOW THE MESSAGE.

A1700 OORR AAAA

ROUTINE START MESSAGE - IF SWITCH 9, FUNCTION 0, IS TURNED ON. THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE.

A1701 OORR AAAA MAKE DATA SET READY

BEFORE EACH ROUTINE IS STARTED THE PROGRAM CHECKS FOR A READY CONDITION IN THE DSW, AND PRINTS THIS MESSAGE IF READY IS NOT ON. IN A PERMANENT LINE CONNECTION THIS IS AN ERROR CONDITION. IN A DIAL-UP CONNECTION THIS MESSAGE IS A REQUEST THAT A CONNECTION BE ESTABLISHED WITH THE REMOTE TERMINAL. CONNECTION MAY BE ESTABLISHED BY ANY OF THE FOLLOWING MEANS..

1. MANUALLY ESTABLISH CONNECTION AT BOTH TERMINALS OR
2. IF REMOTE TERMINAL CAN ANSWER AUTOMATICALLY THEN DIAL THE REMOTE TERMINAL, WAIT FOR THE END OF THE TONE RECEIVED FROM THE OTHER TERMINAL, PRESS THE DATA BUTTON ON THE DATA SET. OR
3. PRESS THE AUTO-ANSWER BUTTON ON THE DATA SET. THE PROGRAM WILL THEN CONTINUE TO PRINT THIS MESSAGE UNTIL AN INCOMING CALL IS RECEIVED. WHEN A CALL IS RECEIVED THE PROGRAM WILL ANSWER AND CONDUCT THE TEST.

THIS MESSAGE WILL BE REPEATED AT ABOUT 20 SEC INTERVALS UNTIL READY IS SENSED IN THE DSW.

NOTE....INITIAL LINE CONNECTION DIALING MUST ALWAYS BE DONE AT THE SYSTEM WHICH IS TO TRANSMIT THE RFT MESSAGE. WHEN EXECUTING RTNS 1-7 DIAL FROM THE 1130 END. WHEN EXECUTING RTN 8 DIAL FROM THE REMOTE TERMINAL END. THIS MESSAGE IS PRINTED AT ANY TIME THAT LINE DISCONNECT OCCURS. THE PROGRAM WILL RESET THE SCA AND IF THE SYSTEM IS CONFIGURED FOR AUTOMATIC DISCONNECT, DISCONNECT FROM THE COMMUNICATIONS LINE

A1702 OORR AAAA MON ENQ

THIS MESSAGE MEANS THAT TEST ROUTINE 8 IS MONITORING THE LINE FOR THE ENQ CHARACTER WHICH PRECEEDS THE FIRST MESSAGE. THIS MESSAGE WILL BE REPEATED AT INTERVALS AND ALL OTHER CHARACTERS RECEIVED WILL BE IGNORED UNTIL THE ENQ CHARACTER IS RECEIVED. WHEN ENQ IS RECEIVED AN ACKNOWLEDGEMENT (DLE ACKO) WILL BE TRANSMITTED AND THE RFT MESSAGE RECEIVED.

A1703 OORR AAAA NO ANS ENQ

THIS MESSAGE IS PRINTED BY ROUTINES 1-7 AFTER 7 ATTEMPTS TO ESTABLISH INITIAL COMMUNICATION WITH REMOTE TERMINAL HAVE FAILED. THE PROGRAM HAS TRANSMITTED ENQ 7 TIMES, BUT EITHER NO RESPONSE OR A RESPONSE OTHER THAN THE POSITIVE ACKNOWLEDGEMENT (DLE ACKO) WAS RECEIVED. THIS MESSAGE USUALLY INDICATES THAT THE REMOTE TERMINAL IS NOT YET READY TO RECEIVE. IF IT IS ESTABLISHED THAT THE REMOTE TERMINAL IS READY TO RECEIVE THEN THIS IS AN ERROR CONDITION. AFTER PRINTING THE TEST ROUTINE WILL BE RESTARTED.

A1704 OORR AAAA DISCONNECT

THIS MESSAGE IS PRINTED AFTER THE 1130 HAS RECEIVED A DISCONNECT CHARACTER SEQUENCE (DLE EOT) FROM THE REMOTE STATION (SWITCHED NET). (REFER TO SECTION 3.1 FOR A DEFINITION OF DISCONNECT OPERATIONS)

A1705 00RR AAAA X Y TMOU NAK INV RESP
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE TRANSMITTER (RTNS 1-3, RTN 7 IF X=00, AND RTN 8 IF X IS NOT 00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING RESPONSES TO TEST MESSAGES, THE NUMBER OF NEGATIVE RESPONSES (NAK) TO TEST MESSAGES, AND THE NUMBER OF INVALID RESPONSES (ANY RESPONSE OTHER THAN ACK0,ACK1,NAK,WACK) TO TEST MESSAGES, AN ERROR FREE TEST IS INDICATED BY THE COUNTS IN THE LAST THREE FIELDS BEING ZERO.

A1706 00RR AAAA X Y TMOU W ERR W/O ERR
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE RECEIVER (RTNS 4-6, RTN 7 IF X NOT 00, AND RTN 8 IF X=00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING TEST MESSAGES, THE NUMBER OF TEST MESSAGES RECEIVED WITH EITHER BCC OR FORMAT ERRORS, THE NUMBER OF TEST MESSAGES RECEIVED WITHOUT ERROR. AN ERROR FREE TEST IS INDICATED BY THE NUMBER OF ERROR FREE MESSAGES BEING EQUAL TO THE Y VALUE.

A1707 00RR AAAA RVI RCVD, EOT SENT

THIS MESSAGE IS PRINTED WHEN THE SLAVE STATION REPLIES WITH AN RVI INSTEAD OF AN ACKNOWLEDGEMENT. RVI IS A REQUEST FOR TERMINATION OF THE CURRENT TRANSMISSION AS SOON AS POSSIBLE. TRANSMISSION IS TERMINATED WITH AN EOT AT THE END OF THE CURRENT TRANSMISSION BLOCK.

A1708 00RR AAAA TTD RCVD

THIS MESSAGE IS PRINTED WHEN THE RESPONDER (RTN 8) HAS RECEIVED A TTD SEQUENCE (STX/ENQ) DURING MESSAGE TRANSFER. TTD INDICATES A DELAY OF MORE THAN 2 SECONDS BEFORE THE NEXT TRANSMISSION BLOCK IS SENT OR A CONTROLLED FORWARD ABORT OF THE CURRENT TRANSMISSION. RTN 8 WILL RESPOND TO THE TTD WITH A NAK CHARACTER.

4.2 ERROR MESSAGES

E0001 SWS INVLD
XXXX

THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE NUMBER OF ANY PROGRAM IN CORE.

E0003 OVR CORE

THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD, EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM

A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM. THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.

1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION THE CHECK SUM WAS NOT CORRECTLY CALCULATED.

WHEN THIS ERROR OCCURS ATTEMPT TO RELOAD THE PROGRAM.'

E0005 000N XXXX

THIS ERROR WILL OCCUR IF AN INTERRUPT OCCURS, BUT THE ILSW WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET THE REQUEST BIT.

E1700 00RR AAAA 25 WACKS R

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-7 WHEN 25 CONSECUTIVE WAIT BEFORE ACKNOWLEDGE (WACK) RESPONSES HAVE BEEN RECEIVED FROM THE REMOTE TERMINAL. THE PROGRAM WILL TERMINATE AND PRINT THE END OF TEST MESSAGE.

E1701 00RR AAAA DATA SET NRDY

THE DATA SET BECAME NOT READY WHILE THE PROGRAM WAS ATTEMPTING TO TRANSMIT OR RECEIVE A MESSAGE OR CONTROL SEQUENCE. IF INITIAL COMMUNICATION WITH THE REMOTE TERMINAL HAD NOT YET BEEN ESTABLISHED THE PROGRAM WILL RESTART THE TEST ROUTINE. IF THE EXCHANGE OF MESSAGES WITH THE REMOTE TERMINAL WAS IN PROGRESS AT THE TIME THE ERROR OCCURED, THE PROGRAM WILL ATTEMPT TO PROCEED WITH THE TEST.

E1702 00RR AAAA 7 TRIES T

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-7 AFTER 7 ATTEMPTS TO TRANSMIT THE REQUEST-FOR-TEST MESSAGE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND EITHER END THE PROGRAM OR GO ON TO THE NEXT ROUTINE. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1703 00RR AAAA 7 TRIES R

THIS MESSAGE IS PRINTED BY TEST ROUTINE 8 AFTER 7 ATTEMPTS TO RECEIVE THE REQUEST-FOR-TEST SEQUENCE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST AND WILL RESTART ROUTINE 8. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1704 OORR AAAA INV X

THIS MESSAGE IS PRINTED BY TEST ROUTINE 7 IF AN INVALID X VALUE IS ENTERED BY A PROGRAM PATCH CARD.
CORRECT THE PATCH CARD AND RELOAD THE PROGRAM.

E1705 OORR AAAA INV Y

THIS MESSAGE IS PRINTED BY ROUTINES 1-7 IF AN INVALID Y VALUE IS ENTERED VIA FUNCTION 3. ENTER A CORRECT VALUE (HEX 01 TO 63) AND RESTART THE PROGRAM.

E1706 OORR AAAA INV RFT RCVD

THIS MESSAGE IS PRINTED BY TEST ROUTINE 8 IF A REQUEST FOR TEST MESSAGE IS RECEIVED WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE RFT MESSAGE CONTAINED ONE OF THE FOLLOWING ERRORS.

1. THE RFT MESSAGE DID NOT BEGIN WITH SOH ⌘
2. THE X FIELD WAS GREATER THAN DECIMAL 99
3. THE Y FIELD WAS GREATER THAN DECIMAL 99
4. THE X VALUE WAS NOT ONE OF THOSE RECOGNIZED BY ROUTINE 8

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT MESSAGE FOR UP TO 7 TRYS.

E1707 OORR AAAA EOT RCVD

THE END OF TRANSMISSION (EOT) CHARACTER WAS RECEIVED IN RESPONSE TO OR IN PLACE OF A MESSAGE PRIOR TO THE NORMAL END OF TEST. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED PRINT THE END OF TEST MESSAGE.

E1708 OORR AAAA DISCONNECT

THE DISCONNECT SEQUENCE (DLE EOT) WAS RECEIVED IN RESPONSE TO OR IN PLACE OF A MESSAGE PRIOR TO THE NORMAL END OF TEST. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE, RESET THE SCA, AND PRINT THE END OF TEST MESSAGE IF ANY TEST MESSAGES HAVE BEEN RECEIVED.

E1709 OORR AAAA NO INTRP

AN EXPECTED INTERRUPT FAILED TO OCCUR. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND PRINT THE END OF TEST MESSAGE IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E170A OORR AAAA CONTENTION

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-7 IF ENQ IS RECEIVED IN RESPONSE TO ENQ WHEN ATTEMPTING TO ESTABLISH INITIAL COMMUNICATION WITH THE REMOTE TERMINAL. THIS INDICATES THAT BOTH TERMINALS ARE ATTEMPTING TO TRANSMIT. CORRECT BY ONE TERMINAL GOING TO RECEIVE RFT MESSAGES. WHEN THIS ERROR OCCURS THE PROGRAM WILL RESTART THE TEST ROUTINE.

****NOTE..DIAGNOSTIC ERROR MESSAGES..THE FOLLOWING ERROR MESSAGES ARE PRINTED ONLY IF FUNCTION 2 SWITCH 14 IS SELECTED. EACH OF THESE MESSAGES INDICATES A SOFT (RECOVERABLE) ERROR CONDITION. INCLUDED IN THE DESCRIPTION OF EACH OF THESE PRINTOUTS IS THE ACTION THAT WILL BE TAKEN BY THE PROGRAM TO ATTEMPT RECOVERY FROM THE ERROR. THESE PRINTOUTS ARE INTENDED TO BE USED AS A GUIDE IN LOCATING THE EXACT POINT OF FAILURE IN THE TEXT PRINTOUT.

E170B OORR AAAA

TEST ROUTINE 8 HAD RECEIVED AND ACKNOWLEDGED THE INITIAL ENQ AND WAS EXPECTING THE RFT MESSAGE WHEN A SECOND ENQ WAS RECEIVED. THIS INDICATES THAT THE REMOTE TERMINAL DID NOT CORRECTLY RECEIVE THE ACKNOWLEDGEMENT (DLE ACK). THE PROGRAM WILL RE-TRANSMIT THE ACKNOWLEDGEMENT.

E170C OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING THE RFT MESSAGE. THIS INDICATES THAT EITHER CHARACTER PHASE WAS NEVER ESTABLISHED AND NOTHING WAS RECEIVED OR THE END OF TEXT CHARACTER (ETX OR ETB) WAS NOT RECEIVED CORRECTLY. THE PROGRAM WILL MONITOR THE LINE FOR ENQ AND WHEN ENQ IS RECEIVED RE-TRANSMIT THE LAST ACKNOWLEDGEMENT (ACK OR NAK).

E170D OORR AAAA

CHARACTER PHASE WAS ESTABLISHED WHEN ATTEMPTING TO RECEIVE THE RFT MESSAGE, BUT THE MESSAGE DID NOT BEGIN WITH A VALID START OF TEXT SEQUENCE (SOH, STX, OR DLE STX). THIS IS AN INDICATION OF FALSE SYNCHRONIZATION. THE PROGRAM WILL ABORT SYNCHRONIZATION AFTER RECEIVING TWO CHARACTERS AND WILL THEN MONITOR FOR ENQ. WHEN ENQ IS RECEIVED THE LAST ACKNOWLEDGEMENT WILL BE RE-TRANSMITTED.

E170E OORR AAAA

THE PROGRAM WAS MONITORING THE LINE FOR ENQ FOLLOWING A PREVIOUS ERROR, BUT ENQ WAS NOT RECEIVED. THE PROGRAM WILL RETURN TO MONITORING FOR ENQ.

E170F OORR AAAA

THE RFT MESSAGE WAS RECEIVED WITH EITHER A BLOCK CHECK ERROR OR A FORMAT ERROR. A FORMAT ERROR OCCURS UNDER THE FOLLOWING CONDITIONS.

1. SOH WAS RECEIVED IN HEADING OR NORMAL TEXT
2. STX WAS RECEIVED IN NORMAL TEXT
3. ENQ OR EOT WAS RECEIVED IN HEADING OR NORMAL TEXT
4. DLE WAS RECEIVED IN TRANSPARENT TEXT AND WAS IMMEDIATELY FOLLOWED BY OTHER THAN DLE, SYN, ETX, ETB, OR ITB.

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1710 OORR AAAA

WHILE ATTEMPTING TO RECEIVE THE RFT MESSAGE A MESSAGE WAS RECEIVED WHICH WAS NOT AN RFT MESSAGE (MESSAGE DID NOT BEGIN WITH SOH ⌘). THE PROGRAM WILL TRANSMIT NAK AND AGAIN TRY TO RECEIVE THE RFT MESSAGE.

E1711 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED AN X FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT.

E1712 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A Y FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT MESSAGE.

E1713 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A X VALUE WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1714 OORR AAAA

AFTER SUCCESSFULLY RECEIVING AND ACKNOWLEDGING THE RFT MESSAGE THE PROGRAM WAS EXPECTING THE EOT CHARACTER, BUT THE ENQ CHARACTER WAS RECEIVED. THIS INDICATES THAT THE REMOTE TERMINAL DID NOT RECEIVE THE LAST ACKNOWLEDGEMENT. THE PROGRAM WILL RE-TRANSMIT THE LAST ACKNOWLEDGEMENT.

E1715 OORR AAAA

EOT WAS NOT RECEIVED FOLLOWING THE RFT MESSAGE. THE PROGRAM WILL AGAIN ATTEMPT TO RECEIVE THE EOT CHARACTER.

E1716 OORR AAAA

REMOTE TERMINAL HAS BEEN RESPONDING FOR APPROXIMATELY 50 SECONDS WITH WAIT BEFORE ACKNOWLEDGE (WACK) COMMANDS. THE PROGRAM WILL TERMINATE.

E1718 OORR AAAA

AN INVALID SEQUENCE WAS RECEIVED IN RESPONSE TO AN RFT MESSAGE (RESPONSE OTHER THAN ACK,NAK,OR WACK).THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT ACKNOWLEDGEMENT BE REPEATED.

E1719 OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING THE RFT MESSAGE. THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT THE ACKNOWLEDGEMENT BE REPEATED.

E171A OORR AAAA

THE WRONG ALTERNATE POSITIVE ACKNOWLEDGEMENT WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE IF A TIMEOUT OCCURED PREVIOUSLY, IF NO TIMEOUT OCCURED ENQ WILL BE TRANSMITTED.

E171B OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THIS INDICATES THAT THE RFT WAS RECEIVED BY THE REMOTE TERMINAL WITH A BCC ERROR. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE.

E171C OORR AAAA

EITHER NO RESPONSE OR A WACK RESPONSE WAS RECEIVED IN RESPONSE TO THE ENQ WHICH PRECEEDS THE TEST MESSAGES. THE PROGRAM WILL RE-TRANSMIT THE ENQ.

E171D OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E171E OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E1720 OORR AAAA

AN INVALID RESPONSE (NOT ACK,NAK OR WACK) RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE TRANSMITTED.

E1721 OORR AAAA

NO ENQ WAS RECEIVED PRECEEDING THE TEST MESSAGES. THE PROGRAM WILL REQUEST A RE-TRANSMISSION OF THE ENQ.

E1722 OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE.

E1723 OORR AAAA

THE TEST MESSAGE RECEIVED DID NOT START WITH A VALID START OF TEXT CHARACTER (SOH, STX, OR DLE STX). THE PROGRAM WILL LOG THIS ERROR IN THE END OF TEST MESSAGE.

E1724 OORR AAAA

THE TEST MESSAGE WAS RECEIVED WITH A BCC OR FORMAT ERROR. THE PROGRAM WILL TRANSMIT NAK AND LOG THE ERROR IN THE END OF TEST MESSAGE. (SEE E170F FOR DEFINITION OF FORMAT ERROR).

E1725 OORR AAAA

NO EOT WAS RECEIVED FOLLOWING THE TEST MESSAGES. THE PROGRAM WILL IGNORE THIS ERROR.

4.3 TEXT PRINTOUT

IF FUNCTION 2 SWITCH 12 IS TURNED ON ALL TEXT AND CONTROL CHARACTERS WHICH ARE TRANSMITTED OR RECEIVED BY THE PROGRAM WILL BE PRINTED AT THE COMPLETION OF THE TEST.

IF FUNCTION 2 SWITCH 12 IS OFF BUT SWITCH 13 IS ON, ONLY THOSE MESSAGES OR CONTROL SEQUENCES WHICH WERE RECEIVED WITH AN ERROR INDICATION WILL BE PRINTED OUT.

ALL EBCDIC CHARACTERS WILL BE PRINTED IN HEXADECIMAL FORM. IN ADDITION TO THE HEX PRINTOUT, 5 ALPHA MESSAGES MAY ALSO BE PRINTED.

1. XMIT....THIS IS PRINTED AT THE START OF DATA TRANSMITTED.
2. RECV....THIS IS PRINTED AT THE START OF DATA RECEIVED.
3. TIMEOUT.THIS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT A RECEIVE TIMEOUT OCCURED.
4. ERR.....THIS IS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT THE DATA RECEIVED WAS NOT AS EXPECTED.
5. CORE....THIS INDICATES THAT STORAGE OF DATA TRANSMITTED AND RECEIVED EXCEEDED AVAILABLE CORE STORAGE AND NO FURTHER DATA COULD BE STORED.

THE SCA HARDWARE AUTOMATICALLY REMOVES ALL SYNCHRONOUS IDLE CHARACTERS WHICH ARE RECEIVED PRECEEDING EACH MESSAGE. FOR THIS REASON RECEIVE PRINTOUTS WILL SHOW NO LEADING SYN CHARACTERS.

THE SCA HARDWARE AUTOMATICALLY INSERTS TWO SYN CHARACTERS PRECEEDING EACH TRANSMISSION AND THE PROGRAM INSERTS FOUR. FOR THIS REASON TRANSMIT PRINTOUTS WILL SHOW FOUR LEADING SYN CHARACTERS.

THE FOLLOWING IS A LIST OF POINTS TO CHECK IN THE TEXT PRINT WHICH MAY BE USEFUL IN DETERMINING THE CAUSE OF AN ERROR.

1. SOH (0100) MUST NOT APPEAR IN HEADING OR NORMAL TEXT (FORMAT ERR)
2. STX (0200) MUST NOT APPEAR IN NORMAL TEXT (FORMAT ERROR)
3. HEADING OR NORMAL TEXT MUST END WITH ETX (0300) OR ETB (2600) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERS.
4. SOH (0100) INDICATES THE START OF HEADING TEXT.
5. STX (0200) INDICATES THE START OF NORMAL TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
6. DLE STX (1000 0200) INDICATES THE START OF TRANSPARENT TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
7. DLE (1000) MUST NOT APPEAR IN TRANSPARENT TEXT FOLLOWED BY ANY CHARACTER OTHER THAN SYN (3200), DLE (1000), ETB (2600), ETX (0300), OR ITB (1F00).
8. TRANSPARENT TEXT MUST END WITH DLE ETB (1000 2600) OR DLE ETX (1000 0300) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERS.
9. SYN INSERTION--THE SYNCHRONOUS IDLE SEQUENCE MUST BE TRANSMITTED AT INTERVALS BY A TERMINAL TRANSMITTING LONG MESSAGES TO ENSURE THAT THE TERMINALS MAINTAIN CHARACTER SYNCHRONIZATION. THE SYNCHRONOUS IDLE SEQUENCE IS SYN SYN (3200 3200) FOR HEADING AND NORMAL TEXT AND DLE SYN (1000 3200) FOR TRANSPARENT TEXT. THE RATE OF INSERTION SHOULD BE NOMINALLY EVERY ONE SECOND FOR NORMAL TEXT AND EVERY 85 CHARACTERS FOR TRANSPARENT TEXT. THIS RATE WILL VARY WITH THE SETTING OF THE TRANSMIT TIMER FOR NORMAL TEXT AND THE PROGRAM TIMER FOR TRANSPARENT TEXT. THE 1130 TRANSMIT TIMER IS NORMALLY SET FOR 1.25 SECONDS AND THE PROGRAM TIMER FOR .35 SECONDS.
10. DLE (1000) MUST BE INSERTED FOLLOWING EACH DLE CHARACTER WHICH IS TRANSMITTED AS DATA IN TRANSPARENT TEXT.

5. COMMENTS

5.1 PROGRAM PHILOSOPHY

EACH TEST PERFORMED BY THE 1130 TRANSMIT/RECEIVE BSC PROGRAM CAN BE DIVIDED INTO TWO SEPARATE TEST PHASES. IN THE FIRST PHASE ONE OF THE TERMINALS TRANSMITS A REQUEST-FOR-TEST (RFT) MESSAGE TO REQUEST THAT A TEST PROCEDURE BE PERFORMED. THE RFT MESSAGE CONTAINS VARIOUS PARAMETERS WHICH DEFINE THE ACTION TO BE PERFORMED AND TEXT TO BE USED DURING THE TEST.. DURING THIS PHASE NORMAL BSC ERROR RECOVERY IS PERFORMED ON THE RFT MESSAGE. THE SECOND PHASE IS THE ACTUAL PERFORMANCE OF THE TEST AS DEFINED BY THE RFT MESSAGE. IF THE X FIELD IN THE RFT MESSAGE WAS 00 THEN THE RFT TRANSMITTER (THE REQUESTING TERMINAL) WILL TRANSMIT Y TEST MESSAGES. IF X WAS OTHER THAN 00 THEN THE RFT RECEIVER WILL TRANSMIT Y TEST MESSAGES, AND THE TEXT CONTAINED IN THE TEST MESSAGE WILL BE DETERMINED BY THE X VALUE. NO ERROR RECOVERY WILL BE PERFORMED ON TEST MESSAGES.

5.1.1 REQUEST-FOR-TEST MESSAGES

THE REQUEST FOR TEST MESSAGE HAS THE FORMAT..

S	A	D	S	D	E	B	NOTE..THE TEXT IS INCLUDED ONLY IF
O	X	Y	N	D	L	T	X=01, AND THE DLE CHARACTERS
H	R	E	X	E	X	C	ARE INCLUDED ONLY IF TRANSPARENT

TEXT IS USED.

WHERE..

SOH% IDENTIFIES THE MESSAGE AS AN RFT MESSAGE

X IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH DEFINES THE ACTION TO BE PERFORMED DURING THE TEST AND/OR SPECIFIES THE TEST MESSAGE TO BE USED DURING THE TEST.

IF X=00 THEN THE RFT TRANSMITTER WILL TRANSMIT THE TEST MESSAGES.

IF X=01 THEN THE RFT RECEIVER WILL TRANSMIT TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE.

IF X=02-99 THE RFT RECEIVER WILL TRANSMIT THE TEST MESSAGE SPECIFIED BY THE X VALUE.

Y IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH SPECIFIES THE NUMBER OF TEST MESSAGES TO BE TRANSMITTED.

THE N AND ADR FIELDS ARE USED FOR COMPONENT SELECTION IN A P-T-P CONFIGURATION. IF THE N FIELD IS NOT ZERO,THE COMPONENT SELECT CHARACTERS IN THE ADR FIELD WILL BE INSERTED IN PLACE OF THE SYN/SYN FOLLOWING THE STX FOR NON-TRANSPARENT MESSAGES (04,14,15,16)

5.1.2 TEST MESSAGES

THE FOLLOWING TEST MESSAGES ARE USED BY THIS PROGRAM

02-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 256 CHARACTERS L T C
E X 0 THROUGH 255 E X C

04-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S SS TEXT SAME AS 02 EXCEPT E B
T YY CONTROL CHARACTERS ARE T C
X NN OMITTED 245 CHARACTERS X C

12-EBCDIC NORMAL TEXT

S E TEXT E B
T S / 36 CHARACTERS T C
X C A-Z AND 0-9 X C

13-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S E TEXT E B
T S 4 36 CHARACTERS T C
X C A-Z AND 0-9 X C

14-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S SS TEXT E B
T YY 36 CHARACTERS T C
X NN A-Z AND 0-9 X C

15-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S SS TEXT E B
T YY 74 CHARACTERS HEX 00 T C
X NN 6 CHARACTERS SYN X C

16-EBCDIC NORMAL TEXT

S SS TEXT E B
T YY 40 CHARACTERS HEX AA T C
X NN 40 CHARACTERS HEX 55 X C

19-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 280 CHARACTERS HEX 00 L T C
E X 10 CHARACTERS SYN E X C

5.1.3 LINE CONTROL

THE FOLLOWING LINE CONTROL CHARTS SHOW THE NORMAL SEQUENCE OF CONTROL AND TEXT CHARACTERS TRANSMITTED BY EACH TERMINAL UNDER VARIOUS TEST CONDITIONS. THE EXAMPLES ALL ASSUME A Y VALUE OF ONE. THE DLE CHARACTERS ARE OMITTED FOR NON-TRANSPARENT TEXT. THE ACKO AND ACKI SHOWN IN THE CHARTS REPRESENT THE COMPLETE POSITIVE ACKNOWLEDGEMENT SEQUENCES. ACK 0/1 OR NAK RESPONSES TO TEXT MAY BE PRECEDED BY UP TO SEVEN LEADING GRAPHIC CHARACTERS. THESE CHARACTERS WILL BE PRINTED IN THE TEXT PRINTOUT BUT WILL OTHERWISE BE IGNORED BY THE PROGRAM.

FOR X=00

RFT	E	S	A	S	D	D	E	E
XMITTER	N	0% X Y N D T T	R	X	L	T	L	O
(RTNS 1-7)	Q	H	R	X	E	X	E	T

RFT	A	A	A
RECEIVER	CO	C1	CO
(RTN 8)	K	K	L

FOR X=01

RFT	E	S	A	D	D	E	E	A	A
XMITTER	N	0% X Y N D L T TEXT	R	E	L	T	O	CO	C1
(RTNS 1-7)	Q	H	R	E	X	E	T	K	K

RFT	A	A	E	D	D	E	E
RECEIVER	CO	C1	N	L	T	L	O
(RTN 8)	K	K	Q	E	X	E	T

FOR X=02-99

RFT	E	S	A	S	E	A	A
XMITTER	N	0% X Y N D T T	R	X	O	CO	C1
(RTNS 1-7)	Q	H	R	X	T	K	K

RFT	A	A	E	D	D	E	E
RECEIVER	CO	C1	N	L	T	L	O
(RTN 8)	K	K	Q	E	X	E	T

5.2 ROUTINE DESCRIPTIONS

- RTN 1..ROUTINE 1 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 02 Y TIMES.
- RTN 2..ROUTINE 2 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 16 Y TIMES.
- RTN 3..ROUTINE 3 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 19 Y TIMES.
- RTN 4..ROUTINE 4 TRANSMITS AN RFT WITH X=02 THEN RECEIVES TEST MESSAGE 02 Y TIMES.
- RTN 5..ROUTINE 5 TRANSMITS AN RFT WITH X=16 THEN RECEIVES TEST MESSAGE 16 Y TIMES.
- RTN 6..ROUTINE 6 TRANSMITS AN RFT WITH X=19 THEN RECEIVES TEST MESSAGE 19 Y TIMES.

RTN 7..ROUTINE 7 WILL BE EXECUTED ONLY IF SELECTED BY FUNCTION 1. THIS ROUTINE NORMALLY WILL TRANSMIT AN RFT MESSAGE WITH X=12 AND RECEIVE TEST MESSAGE 12 Y TIMES. THIS ROUTINE HAS ASSOCIATED WITH IT A 52 WORD TABLE IN CORE STORAGE WHICH MAY BE ALTERED TO PROVIDE RFT MESSAGES AND TEST MESSAGES WHICH ARE NOT PROVIDED BY ROUTINES 1-6. THIS TABLE IS ALTERED BY PROGRAM PATCH CARD (SEE DM DESCRIPTION). THE FIRST WORD OF THE TABLE CONTAINS THE X VALUE TO BE USED IN THE RFT MESSAGE TRANSMITTED BY ROUTINE 7. THIS VALUE IS ENTERED IN HEXADECEIMAL FORM (FOR X=13 ENTER 00D). THE SECOND WORD OF THE TABLE CONTAINS (IN HEX) THE COUNT OF ALL CHARACTERS INCLUDING CONTROL CHARACTERS IN THE TEXT PORTION OF THE TABLE. THE LAST 50 WORDS IN THE TABLE CONTAIN THE TEXT WHICH WILL BE USED IN THE TEST MESSAGES IF X=00 IS ENTERED, OR IN THE RFT MESSAGE IF X=01 IS ENTERED. IF ANY CONTROL CHARACTERS ARE TO BE USED IN THE TEXT OR IF LONG REPEATATIVE PATTERNS ARE USED THE TEXT MUST BE TRANSPARENT AND BEGIN WITH DLE STX AND END WITH DLE ETX. IF NORMAL TEXT IS USED IT MUST BEGIN WITH STX AND END WITH ETX. THE PROGRAM WILL SUPPLY ALL OTHER NECESSARY CONTROL CHARACTERS. THE STARTING ADDRESS OF THE TABLE IS 05E8. SEE SECTION 5.2.1 FOR SAMPLE PATCH CARDS.

WARNING ALTERATION OF TABLE WILL ALSO AFFECT OPERATION OF ROUTINE 8. SEE RTN 8 DESCRIPTION.

RTN 8..ROUTINE 8 IS THE RFT RECEIVER ROUTINE. THIS ROUTINE WILL, WHEN SELECTED, CONTINUOUSLY MONITOR THE COMMUNICATIONS LINE UNTIL AN RFT MESSAGE IS RECEIVED. IF THE X VALUE IN THE RFT RECEIVED WAS 00 THIS ROUTINE WILL THEN ACCEPT Y TEST MESSAGES FROM THE REMOTE TERMINAL. IF THE X VALUE WAS 01 THIS ROUTINE WILL TRANSMIT Y TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE. IF THE X VALUE WAS 02, 12, 16, OR 19 THIS ROUTINE WILL TRANSMIT THE TEST MESSAGE SPECIFIED Y TIMES. THIS ROUTINE HAS ASSOCIATED WITH IT A 52 WORD TABLE IN CORE STORAGE WHICH MAY BE ALTERED BY PROGRAM PATCH CARD TO ALLOW SERVICING OF RFT MESSAGES NOT NORMALLY ACCEPTED BY THE PROGRAM. THIS IS THE SAME TABLE WHICH IS USED BY ROUTINE 7 (SEE RTN 7 FOR TABLE DESCRIPTION). IF AN RFT MESSAGE IS RECEIVED WHICH CONTAINS AN X VALUE WHICH IS EQUAL TO THE X VALUE ENTERED IN THE FIRST WORD OF THE TABLE THEN THIS ROUTINE WILL TRANSMIT Y TEST MESSAGES CONTAINING THE TEXT ENTERED IN THE TABLE. WITH NO PATCH CARDS INSERTED THE TABLE CONTAINS AN X VALUE OF 12 AND TEST MESSAGE 12. SEE SECTION 5.2.1 FOR SAMPLE PATCH CARDS.

WARNING ALTERATION OF TABLE WILL ALSO AFFECT OPERATION OF ROUTINE 7. SEE ROUTINE 7 DESCRIPTION.

5.2.1 SAMPLE PATCH CARDS

THE FOLLOWING PATCH CARDS MAY BE USED TO ALTER OPERATION OF ROUTINES 7 AND 8. PUNCH ALL CARDS STARTING IN COLUMN 1. THE & INDICATES A 12 PUNCH IN COLUMN 1. PATCH CARDS MUST BE PLACED AHEAD OF LAST CARD IN PROGRAM DECK.

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=13 AND RECEIVE TEST MESSAGE 13, AND TO CAUSE RTN 8 TO ACCEPT AN RFT WITH X=13 AND TRANSMIT TEST MESSAGE 13 USE ONE PATCH CARD..

805E8 000D 0028 0227 F4C1

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=4 AND RECEIVE TEST MESSAGE 4. ***CAUTION*** RTN 8 CANNOT BE MADE TO ACCEPT AN RFT WITH X=04. IF THIS PATCH CARD IS USED RTN 8 WILL TRANSMIT ERRONEOUS TEST MESSAGES IF X=04 IS RECEIVED. USE ONE PATCH CARD..

805E8 0004

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=14 AND RECEIVE TEST MESSAGE 14, AND TO CAUSE RTN 8 TO ACCEPT AN RFT WITH X=14 AND TRANSMIT TEST MESSAGE 14. USE TWO PATCH CARDS..

805E8 000E 0028 0232 32C1 C2C3 C4C5 C6C7 C8C9 D1D2 D3D4 D5D6 D7D8 D9E2 E3E4
805F6 E5E6 E7E8 E9F0 F1F2 F3F4 F5F6 F7F8 F903

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=15 AND RECEIVE TEST MESSAGE 15, AND TO CAUSE RTN 8 TO ACCEPT AN RFT WITH X=15 AND TRANSMIT TEST MESSAGE 15. USE FOUR PATCH CARDS..

805E8 000F 0054 0232 3200 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
805F6 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
80604 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0032 3232
80612 3232 3203

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=00 THEN TRANSMIT Y TEST MESSAGES CONTAINING A SCOPING PATTERN OF 80 HEX AA CHARACTERS. RTN 8 WILL NORMALLY ACCEPT ANY RFT WITH X=00 AND WILL ACCEPT ANY TEST MESSAGES FOLLOWING THAT RFT. THE ONLY AFFECT OF THESE PATCH CARDS ON RTN 8 WILL BE TO CAUSE RTN 8 TO REJECT AN RFT WITH X=12. USE FOUR PATCH CARDS..

805E8 0000 0054 1002 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
805F6 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
80604 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
80612 AAAAAA 1003

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=01 AND RECEIVE TEST MESSAGES CONTAINING A SCOPING PATTERN OF 80 HEX AA CHARACTERS. RTN 8 WILL NORMALLY ACCEPT ANY RFT WITH X=01 AND WILL TRANSMIT TEST MESSAGES CONTAINING THE TEXT RECEIVED IN TH RFT. THE ONLY AFFECT OF THESE PATCH CARDS ON RTN 8 WILL BE TO CAUSE RTN 8 TO REJECT AN RFT WITH X=12. USE FOUR PATCH CARDS..

805E8 0001 0054 1002 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
805F6 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
80604 AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
80612 AAAAAA 1003

6. APPENDIX

6.1 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL CHARACTERS

BSC CHARACTER	HEX	MEANING
SYN	32	SYNCHRONOUS IDLE
DLE	10	DATA LINK ESCAPE
ENQ	2D	ENQUIRY
SOH	01	START OF HEADING
STX	02	START OF TEXT
ETB	26	END OF BLOCK
ETX	03	END OF TEXT
ITB	1F	INTERMEDIATE BLOCK CHARACTER
EOT	37	END OF TRANSMISSION
NAK	3D	NEGATIVE ACKNOWLEDGEMENT
ACKO	70	POSITIVE ACKNOWLEDGEMENT, EVEN RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
ACK1	61	POSITIVE ACKNOWLEDGEMENT, ODD RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
RVI	7C	REVERSE INTERRUPT (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
WACK	6B	WAIT BEFORE TRANSMIT-POSITIVE ACK (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)

6.2 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL SEQUENCES

BSC SEQUENCE	FUNCTION
SYN SYN	SYNCHRONOUS IDLE NORMAL
DLE SYN	SYNCHRONOUS IDLE TRANSPARENT TEXT
ENQ	ENQUIRY
SOH	START OF HEADING
STX	START OF NORMAL TEXT
DLE STX	START OF TRANSPARENT TEXT
ETB BCC	END OF HEADING OR NORMAL TEXT BLOCK
ITB BCC	END OF HEADING OR NORMAL TEXT INTERMEDIATE BLOCK
ETX BCC	END OF HEADING OR NORMAL TEXT
DLE ETB BCC	END OF TRANSPARENT TEXT BLOCK
DLE ITB BCC	END OF TRANSPARENT TEXT INTERMEDIATE BLOCK
DLE ETX BCC	END OF TRANSPARENT TEXT
DLE ACKO	POSITIVE ACKNOWLEDGEMENT EVEN RECORD
DLE ACK1	POSITIVE ACKNOWLEDGEMENT ODD RECORD
DLE RVI	REVERSE INTERRUPT
STX ENQ	TEMPORARY TEXT DELAY (TTD)
NAK	NEGATIVE ACKNOWLEDGEMENT
EOT	END OF TRANSMISSION
DLE EOT	DISCONNECT SIGNAL
DLE WACK	POSITIVE ACKNOWLEDGEMENT BUSY RESPONSE

----- LAST PAGE -----

```

***** PROGRAM ID 0317 *****
***** EQUATE TABLE *****
* THIS TABLE EQUATES TEST PROGRAM LABELS
* TO THEIR EQUIVALENT DIAGNOSTIC MONITOR
* ADDRESSES.
*-----*
* MONITOR ENTRY ADDRESSES
*-----*
0160 0 BEGIN EQU /0160 BEGIN ROUTINE
0161 0 START EQU BEGIN&1 SUPERVISOR ROUTINE
0162 0 ERROR EQU START&1 ERROR LOG ROUTINE
0163 0 LOG EQU ERROR&1 STATUS LOG ROUTINE
0164 0 END EQU LOG&1 END ROUTINE
*-----*
* MONITOR CONTROL WORD ADDRESSES
*-----*
0165 0 RTNSW EQU END&1 ROUTINE START SW
0166 0 ERLCK EQU END&2 LOCK ON ERROR CONTROL
0167 0 LOGBY EQU END&3 I/O BUSY SW ADDR
0168 0 RLCF EQU END&4 RELOCATION FACTOR ADDR
*-----*
* INTERRUPT TRANSFER VECTOR ADDRESSES
*-----*
017A 0 ILO EQU /017A INTERRUPT LEVEL ZERO
018A 0 IL1 EQU ILO&16 INTERRUPT LEVEL ONE
019A 0 IL2 EQU IL1&16 INTERRUPT LEVEL TWO
01AA 0 IL3 EQU IL2&16 INTERRUPT LEVEL THREE
01BA 0 IL4 EQU IL3&16 INTERRUPT LEVEL FOUR
01BB 0 RQTY EQU IL4&1 CONSOLE PRINTER REQUEST
01BC 0 RQKB EQU RQTY&1 USE KEYBOARD REQUEST
01BD 0 SVKB EQU RQKB&1 KB SERVICE REQUEST
*-----*
*****
05DC ORG *&/05DC
*-----*
* THE MONITOR USES CORE LOCATIONS 0-05DC.
* FOR CONTENTS OF THESE ADDRESSES REFER
* TO THE DIAGNOSTIC MONITOR LISTING.
*-----*
*****
***** PROGRAM CONTROL TABLE *****
*****
05DC 0 0317 PID DC /0317 PROGRAM ID
05DD 0 0000 RID DC *- ROUTINE ID
05DE 0 0000 RAD DC *- ROUTINE ADDRESS
05DF 0 0000 SWO DC *- PROGRAM CONTROL
05E0 0 0000 SW1 DC *- ROUTINE SELECTION
05E1 0 0000 SW2 DC *- OPERATING OPTIONS
05E2 0 0001 SW3 DC /0001 Y VALUE FOR RFT
05E3 1 062A DC STRT LOOP ADDRESS
05E4 1 062A DC STRT RESTART ADDRESS
05E5 0 0000 MLSCF DC *- MONITOR ENTRY ONE
05E6 0 0000 DC *- MONITOR ENTRY TWO
05E7 0 FFFF DC /FFFF TERMINATOR
*-----*
*****
***** TEST MESSAGE TEXT *****
*****
* THIS TABLE DEFINES THE X VALUE TO BE
* USED IN THE RFT MESSAGE WHICH IS
* TRANSMITTED BY TEST ROUTINE 7.

```

```

31700020
31700030
31700040
31700050
31700060
31700070
31700080
31700090
31700100
31700110
31700120
31700130
31700140
31700150
31700160
31700170
31700180
31700190
31700200
31700210
31700220
31700230
31700240
31700250
31700260
31700270
31700280
31700290
31700300
31700310
31700320
31700330
31700340
31700350
31700360
31700370
31700380
31700390
31700400
31700410
31700420
31700430
31700440
31700450
31700460
31700470
31700480
31700490
31700500
31700510
31700520
31700530
31700540
31700550
31700560
31700570
31700580
31700590
31700600
31700610
31700620
31700630
31700640
31700650
31700660
31700670
31700680
31700690

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```

05E8 0 000C
05E9 0 0028
05EA 0 0227
05EB 0 61C1
05EC 0 C2C3
05ED 0 C4C5
05EE 0 C6C7
05EF 0 C8C9
05F0 0 D1D2
05F1 0 D3D4
05F2 0 D5D6
05F3 0 D7D8
05F4 0 D9E2
05F5 0 E3E4
05F6 0 E5E6
05F7 0 E7E8
05F8 0 E9F0
05F9 0 F1F2
05FA 0 F3F4
05FB 0 F5F6
05FC 0 F7F8
05FD 0 F903
05FE 001E
061C 0 FFFF
061D 0 0010
061E 0008
0626 0 7000
0627 0 4480 0160
0629 1 05DC
062A 1 6700 0C01
062C 0 6F00 0189
062E 0 6300
062F 0 6BAD
0630 1 6F00 0E15
0632 1 C400 0E39
0634 1 D400 0E82
0636 1 C400 05E1
0638 0 100A
0639 1 D400 0E28
063B 0 1001
063C 0 6700 1FFE
063E 1 4C28 0642
0640 0 6700 0FFE
0642 1 6F00 0E1F
0644 0 1004
0645 1 EC00 05E0

```

```

* IF THIS RFT MSG IS RECEIVED BY TEST
* ROUTINE 8, THE TEST MESSAGE CONTAINED
* IN THIS TABLE WILL BE TRANSMITTED.
*-----*
XSPEC DC /000C X=12
DC 40 CHARACTER COUNT
DC /0227 STX ESC
DC /61C1 / A
DC /C2C3 B C
DC /C4C5 D E
DC /C6C7 F G
DC /C8C9 H I
DC /D1D2 J K
DC /D3D4 L M
DC /D5D6 N O
DC /D7D8 P Q
DC /D9E2 R S
DC /E3E4 T U
DC /E5E6 V W
DC /E7E8 X Y
DC /E9F0 Z 0
DC /F1F2 1 2
DC /F3F4 3 4
DC /F5F6 5 6
DC /F7F8 7 8
DC /F903 9 ETX
BSS 30
DIAL DC /FFFF DIAL-UP SWITCH
IDRSP DC 16 CHARACTER COUNT FOR ID
EBC .1130BSCAPTDIAG.
DC /7000
*****
***** INITIALIZE AND START *****
*****
BGIN BSI I BEGIN
DC PID PCT ADDRESS
*
STRT LDX L3 INT
STX L3 IL1-1
LDX 3 0 SET TO START AT
STX 3 RID ROUTINE ONE
STX L3 RTBSY RESET INT RTN BUSY IND
*-----*
*****
***** ROUTINE SEQUENCE CONTROL *****
*****
* THIS ROUTINE CHECKS PROGRAM OPTIONS
* AND CONTROLS THE SEQUENCE IN WHICH
* TEST ROUTINES ARE EXECUTED.
*-----*
CNTRL LD L SYSYN INITIALIZE SELECT CHAR
STO L SELCT
LD L SW2
SLA 10
STO L IDFLG SAVE ID INDICATOR
SLA 1 CK OPTION SWITCH
LDX L3 /1FFE
BSC L *+2,+Z BR IF OVER 4K
*
LDX L3 /FFE
*
STX L3 TOP SET HIGH CORE LIMIT
SLA 4 CK OPTION SWITCH
OR L SW1

```

```

31700700
31700710
31700720
31700730
31700740
31700750
31700760
31700770
31700780
31700790
31700800
31700810
31700820
31700830
31700840
31700850
31700860
31700870
31700880
31700890
31700900
31700910
31700920
31700930
31700940
31700950
31700960
31700970
31700980
31700990
31701000
31701010
31701020
31701030
31701040
31701050
31701060
31701070
31701080
31701090
31701100
31701110
31701120
31701130
31701140
31701150
31701160
31701170
31701180
31701190
31701200
31701210
31701220
31701230
31701240
31701250
31701260
31701270
31701280
31701290
31701300
31701310
31701320
31701330
31701340
31701350
31701360
31701370

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BSCA POINT-TO-POINT DIAGNOSTIC

```

0647 1 D400 0E2A      STO L OPTIN      SAVE RTN NO AND OPTION 31701380
0649 1 4C10 064E      BSC L CN00,-    BR IF RFT XMITTER    31701390
*
064B 0 6308           LDX 3 8          31701400
064C 0 6B90           STX 3 RID        SELECT RTN 8         31701410
064D 0 7015           MDX             CN30 31701420
*
064E 1 C400 05E0      CN00 LD L SW1     31701430
0650 1 4C08 065C      BSC L CN20,&     BR IF NO RTN SELECTED 31701440
*
0652 1 D400 05DD      CN10 STO L RID    SAVE NEW RTN NUMBER  31701450
0654 0 9024           S RIDCK          31701460
0655 1 4C08 0663      BSC L CN30,&     BR IF VALID RTN     31701470
*
0657 0 1810           SRA 16           31701480
0658 1 D400 05E0      STO L SW1        IF INVALID RTN      31701490
065A 1 D400 05DD      STO L RID        GO TO RTN ONE      31701500
*
065C 1 7401 05DD      CN20 MDX L RID,&1 ADVANCE TO NEXT RTN 31701510
065E 1 C400 05DD      LD L RID         CHECK FOR END OF    31701520
0660 0 9019           S RTNOM          NORMAL SEQUENCE     31701530
0661 0 4480 0164      BSI I END,-Z     END PROGRAM          31701540
*
0663 1 6780 05DD      CN30 LDX I3 RID   31701550
0665 1 C700 0670      LD L3 RTTBLE-1  FETCH RTN ADDR      31701560
0667 1 D400 05DE      STO L RAD        STORE RTN ADDR       31701570
0669 0 D400 0165      STO L RTNSW      SET RTN START SWITCH 31701580
066B 1 6700 068D      LDX L3 CLEAR     31701590
066D 1 6F00 05E5      STX L3 MLSCF     SET MONITOR RETURN  31701600
066F 0 4480 0161      BSI I START      GO TO MONITOR       31701610
*
-----
*
*          ROUTINE ADDRESS TABLE
*
0671 1 068C          RTTBLE DC RTN1    XMIT RFT X 00 TM 02 31701620
0672 1 06C3          DC RTN2    XMIT RFT X 00 TM 16 31701630
0673 1 06CA          DC RTN3    XMIT RFT X 00 TM 19 31701640
0674 1 06D4          DC RTN4    XMIT RFT X 02     31701650
0675 1 06D6          DC RTN5    XMIT RFT X 16     31701660
0676 1 06D8          NRTN DC RTN6    XMIT RFT X 19     31701670
0677 1 06E2          DC RTN7    XMIT RFT SPECIAL 31701680
0678 1 06EC          LRTN DC RTN8    RFT RECEIVER RTN 31701690
*
0679 0 0008          RIDCK DC LRTN-RTTBLE1 31701700
067A 0 0006          RTNOM DC NRTN-RTTBLE1 31701710
*
*****
*          COMBINE ENQ OR ACKO WITH ID
*          HEADER AND REQUEST XMRCV
*****
067B 0 0000          XMTID DC *--*      31701720
067C 1 C480 067B      LD I XMTID      ENQ OR ACKO CMD 31701730
067E 0 1888          SRT 8           31701740
067F 0 C0A5          LD IDRSP&8      LAST ID HEADER CHAR 31701750
0680 0 1808          SRA 8           31701760
0681 0 18D8          RTE 24          COMBINE CMD WITH ID CHAR 31701770
0682 0 D0A2          STO IDRSP&8     AND SAVE             31701780
0683 0 E3E7          AND 3 H0001-T   31701790
0684 0 F3EF          EOR 3 H0011-T   OR CHAR CNT ENQ =16 31701800
0685 0 D097          STO IDRSP        AND SAVE ACK =17   31701810
0686 1 4400 0911      BSI L XMRCV      XMIT ENQ OR ACKO    31701820
0688 1 861D          DC IDRSP&/8000  AND RECEIVE ACK OR RFT 31701830
0689 1 7404 067B      MDX L XMTID,4   INCREMENT TO RETURN EXIT 31701840
068B 1 4C80 067B      BSC I XMTID      RETURN              31701850
*
*****
*          CLEAR END OF TEST PRINT TABLE
*

```

BSCA POINT-TO-POINT DIAGNOSTIC

```

*****
*
068D 1 6700 0E80      CLEAR LDX L3 T   XR3#CONSTANT TABLE ADDR 31702060
068F 1 4400 07D7      BSI L INITL     INITIALIZE ACKO/ACK1 31702070
0691 0 6314          LDX 3 20        CLEAR END OF          31702080
0692 0 1010          SLA 16          TEST                  31702090
0693 1 D700 0E86      STO L3 TABLE-1 MESSAGE          31702100
0695 0 73FF          MDX 3 -1        TABLE                31702110
0696 0 70FC          MDX *-4         31702120
0697 1 D400 0F40      STO L ENTBL     31702130
0699 1 D400 0F41      STO L ENTBL+1   31702140
069B 1 6700 0E80      LDX L3 T        XR3=CONSTANT TABLE ADDR 31702150
069D 0 D3A7          STO 3 ERRNO-T   RESET ERROR IND      31702160
069E 0 D3A3          STO 3 TMXMI-T   RESET TEST MSG XMIT IND 31702170
069F 0 D3A2          STO 3 TMRCI-T   RESET TEST MSG RCV IND 31702180
06A0 0 C3AC          LD 3 ENADR-T    31702190
06A1 0 D3A1          STO 3 ENPNT-T   31702200
06A2 0 D3A0          STO 3 CNTPT-T   31702210
06A3 0 D3AD          STO 3 ENPT2-T   31702220
*
*****
*          WAIT FOR DATA SET READY
*
06A4 0 C3FB          GTRDY LD 3 H7000-T 31702230
06A5 0 D399          STO 3 WTCNT-T   SET DELAY COUNTER    31702240
06A6 0 08BC          XIO 3 ENDOP-T   END SCA OPERATION    31702250
06A7 0 08C6          XIO 3 STRED-T   START READ           31702260
06A8 0 0BD0          XIO 3 SENSE-T   SENSE SCA DSW        31702270
06A9 0 1808          SRA 8           GO TO SELECTED ROUTINE 31702280
06AA 1 4C84 05DE      BSC I RAD,E     IF DATA SET READY   31702290
*
06AC 1 74FF 0E19      MDX L WTCNT,-1  DECRE COUNT BY ONE   31702300
06AE 0 7004          MDX **4         BR IF COUNT NOT ZERO 31702310
06AF 0 6201          LDX 2 1         XR2=MSG NUMBER       31702320
06B0 1 4400 0983      BSI L TYPIT     GO PRINT MSG          31702330
06B2 0 70F1          MDX GTRDY       GO CK READY AGAIN    31702340
*
06B3 1 6700 06B9      LDX L3 CKRDY   31702350
06B5 1 6F00 05E5      STX L3 MLSCF   SET MONITOR RETURN   31702360
06B7 0 4480 0161      BSI I START     GO TO MONITOR        31702370
*
06B9 1 6700 0E80      CKRDY LDX L3 T  XR3#CONSTANT TBL ADDR 31702380
06BB 0 70EA          MDX GTRDY&2    31702390
*
*****
*          TEST ROUTINE 1
*
06BC 0 1010          RTN1 SLA 16     X VALUE 00           31702400
06BD 1 4400 0A60      BSI L GNRFT     GO GENERATE RFT MSG  31702410
06BF 1 4400 07FC      BSI L XMRFT     GO XMIT RFT MSG      31702420
06C1 0 C3E5          LD 3 H0002-T   TEST MSG NO. 02     31702430
06C2 0 700D          MDX RTN3+6     31702440
*
*****
*          TEST ROUTINE 2
*
06C3 0 1010          RTN2 SLA 16     X VALUE 00           31702450
06C4 1 4400 0A60      BSI L GNRFT     GO GENERATE RFT MSG  31702460
06C6 1 4400 07FC      BSI L XMRFT     GO XMIT RFT MSG      31702470
06C8 0 C3CE          LD 3 D16-T     TEST MSG NO. 16     31702480
06C9 0 7006          MDX RTN3+6     31702490
*
*****
*          TEST ROUTINE 3
*

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*
06CA 0 1010      RTN3  SLA    16      X VALUE 00      31702740
06CB 1 4400 OA60  BSI  L  GNRFT    GO GENERATE RFT MSG 31702750
06CD 1 4400 07FC  BSI  L  XMRFT    GO XMIT RFT MSG     31702760
06CF 0 C3D0      LD    3  D19-T    TEST MSG NO. 19     31702770
*
06D0 1 4400 OAB3  BSI  L  GNTM     GO GENERATE TEST MSG 31702780
06D2 1 4C00 0856  BSC  L  XMTM1    GO XMIT TEST MSGS   31702790
*
*****
* TEST ROUTINE 4
*****
06D4 0 C3E5      RTN4  LD    3  H0002-T  X VALUE 02      31702800
06D5 0 7003      MDX   RTN6+1      31702810
*
*****
* TEST ROUTINE 5
*****
06D6 0 C3CE      RTN5  LD    3  D16-T    X VALUE 16      31702820
06D7 0 7001      MDX   RTN6+1      31702830
*
*****
* TEST ROUTINE 6
*****
06D8 0 C3D0      RTN6  LD    3  D19-T    X VALUE 19      31702840
*
06D9 1 4400 OA60  BSI  L  GNRFT    GO GENERATE RFT MSG 31702850
06DB 1 4400 07FC  BSI  L  XMRFT    GO XMIT RFT MSG     31702860
06DD 1 4400 0911  BSI  L  XMRCV    TRANSMIT EOT       31702870
06DF 1 0E62      DC    EDCT       31702880
06E0 1 4C00 0892  BSC  L  RCVTM    GO RECEIVE TEST MSGS 31702890
*
*****
* TEST ROUTINE 7
*****
06E2 1 C400 05E8  RTN7  LD    L  XSPEC    GET X VALUE      31702900
06E4 1 4C20 06D9  BSC  L  RTN6+1,Z    BR IF X NOT 00    31702910
*
06E6 1 4400 OA60  BSI  L  GNRFT    GO GENERATE RFT MSG 31702920
06E8 1 4400 07FC  BSI  L  XMRFT    GO XMIT RFT MSG     31702930
06EA 0 1010      SLA   16         31702940
06EB 0 70E4      MDX   RTN3+6     31702950
*
*****
* TEST ROUTINE 8
*****
06EC 1 4400 0911  RTN8  BSI  L  XMRCV    RECEIVE           31702960
06EE 0 8000      DC    /8000      31702970
06EF 0 C31D      LD    3  RAREA&1-T  31702980
06F0 0 F3E8      EOR   3  ENQ-T    31702990
06F1 1 4C20 06F8  BSC  L  **+5,Z    BR IF NOT ENQ RECEIVED 31703000
*
06F3 0 C3CA      LD    3  H0007-T    31703010
06F4 0 D398      STO   3  RETRY-T    SET RETRY=7      31703020
06F5 0 C3F0      LD    3  D25-T     31703030
06F6 0 D3A9      STO   3  REWAK-T    SET WACK CTR = 25 31703040
06F7 0 7006      MDX   XMACK       31703050
*
06F8 0 6100      LDX   1  0         31703060
06F9 0 6202      LDX   2  2         31703070
06FA 1 4400 079F  BSI  L  CKRTR     XR2=MSG NUMBER   31703080
06FC 1 4C00 0691  BSC  L  CLEAR&4   GO CHECK RETRY COUNT 31703090
*
31703100
31703110
31703120
31703130
31703140
31703150
31703160
31703170
31703180
31703190
31703200
31703210
31703220
31703230
31703240
31703250
31703260
31703270
31703280
31703290
31703300
31703310
31703320
31703330
31703340
31703350
31703360
31703370
31703380
31703390
31703400
31703410

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06FE 0 C3A8      XMACK LD    3  IDFLG-T  ID REQUIRED FLAG   31703420
06FF 1 4428 067B BSI  L  XMTID,Z&   GO XMIT ID IF REQUESTED 31703430
0701 0 1010      SLA   /10        ACK CMD IF NEEDED   31703440
*
0702 1 4400 0911  BSI  L  XMRCV     TRANS ACK WITHOUT ID 31703450
0704 1 8E65      DC    LSTAK&/8000 AND RECEIVE RFT 31703460
0705 0 C391      LD    3  BUFFER-T  31703470
0706 0 F3F6      EOR   3  HFFFF-T   31703480
0707 1 4C18 0725 BSC  L  TMOT,&-    BR IF RECV TIMEOUT 31703490
*
0709 1 7400 0E06 MDX  L  MDSWT     SKIP IF NO TEXT RCVD 31703500
070B 0 701B      MDX   TEXTR      BR IF TEXT RECEIVED 31703510
*
070C 0 C31D      LD    3  RAREA&1-T 31703520
070D 0 F3E8      EOR   3  ENQ-T     31703530
070E 1 4C18 0721 BSC  L  ENQRC,&-  BR IF ENQ RECEIVED 31703540
*
0710 1 4400 07EC BSI  L  EOTCK     GO CK FOR EOT RCVD  31703550
*
0712 0 610D      LDX   1  /D       31703560
0713 0 6203      LDX   2  3        31703570
0714 1 4400 079F BSI  L  CKRTR     XR2=MESSAGE NUMBER  31703580
0716 1 4400 0911 RCENQ BSI  L  XMRCV    GO TO CK RETRY      31703590
0718 0 8000      DC    /8000      RECEIVE             31703600
0719 0 C31D      LD    3  RAREA&1-T 31703610
071A 0 F3E8      EOR   3  ENQ-T     31703620
071B 1 4C18 06FE BSC  L  XMACK,&-  BR IF ENQ RECEIVED 31703630
*
071D 1 4400 07EC BSI  L  EOTCK     GO CK FOR EOT RECVD 31703640
*
071F 0 610E      LDX   1  /E       31703650
0720 0 70F3      MDX   RCENQ-2    31703660
*
0721 0 610B      ENQRC LDX   1  /B    31703670
0722 0 6203      LDX   2  3        31703680
0723 0 407B      BSI  L  CKRTR     XR2=MESSAGE NUMBER 31703690
0724 0 70D9      MDX   XMACK      GO TO CK RETRY      31703700
*
0725 0 610C      TMOT  LDX   1  /C    31703710
0726 0 70ED      MDX   RCENQ-2    31703720
*
0727 0 1810      TEXTR SRA   16     31703730
0728 0 D3A8      STO   3  IDFLG-T  RESET ID REQ FLAG   31703740
0729 0 C387      LD    3  ERR-T    31703750
072A 1 4C18 072E BSC  L  **+2,+--  BR IF NO TEXT ERRORS 31703760
*
072C 0 610F      LDX   1  /F       31703770
072D 0 7063      MDX   XMNAK      31703780
*
072E 0 C31D      LD    3  RAREA&1-T 31703790
072F 0 F3DF      EOR   3  SOHPC-T  31703800
0730 1 4C18 0734 BSC  L  **+2,+--  BR IF RFT MESSAGE   31703810
*
0732 0 6110      LDX   1  /10     31703820
0733 0 7063      MDX   BDRFT      31703830
*
0734 0 C31E      LD    3  RAREA&2-T 31703840
0735 1 4400 07CD BSI  L  DTB       GET X FROM RFT MSG  31703850
0737 0 D30C      STO   3  TABLE+5-T  CONVERT TO BINARY  31703860
0738 0 93D2      S     3  D99-T    PUT IN PRINT TABLE 31703870
0739 1 4C08 073D BSC  L  **+2,+    BR IF X NOT OVER 99 31703880
*
073B 0 6111      LDX   1  /11     31703890
073C 0 705A      MDX   BDRFT      31703900
*
073D 0 C30C      LD    3  RAREA&1-T 31703910
073E 1 9400 0E3C S     L  D14       31703920
0740 1 4C18 0748 BSC  L  CKESC,+-- BR IF X IS 14      31703930
31703940
31703950
31703960
31703970
31703980
31703990
31704000
31704010
31704020
31704030
31704040
31704050
31704060
31704070
31704080
31704090

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07D3 0 839A      A      3 TEMP-T      ADD LO DIGIT      31705460
07D4 0 E3F7      AND     3 HOOFF-T     SAVE BITS 8-15   31705470
07D5 1 4C80 07CD BSC     I  DTB       RETURN                31705480
*
*****
* INITIALIZE POSITIVE ACKNOWLEDGEMENT
* TO ACKO AND SET RETRY TO 7.
*****
07D7 0 0000      INITL DC    *-*
07D8 0 C3CA      LD      3 H0007-T
07D9 0 D398      STO     3 RETRY-T   SET RETRY TO 7
07DA 0 C3F0      LD      3 D25-T
07DB 0 D3A9      STO     3 REWAK-T   RESET WACK TO 25
07DC 0 CBD4      LDD     3 ACKS-T    INITIALIZE
07DD 0 DBD6      STD     3 POSAK-T   POSITIVE
07DE 0 D3E6      STO     3 LSTAK&1-T ACKNOWLEDGEMENTS
07DF 1 4C80 07D7 BSC     I  INITL    RETURN                31705630
*
*****
* ALTERNATE POSITIVE ACKNOWLEDGEMENT
* AND SET RETRY TO 7.
*****
07E1 0 0000      ALTNT DC    *-*
07E2 0 CBD6      LDD     3 POSAK-T   ALTERNATE
07E3 0 18D0      RTE     16          POSITIVE
07E4 0 DBD6      STD     3 POSAK-T   ACKNOWLEDGEMENTS
07E5 0 D3E6      STO     3 LSTAK+1-T
07E6 0 C3CA      LD      3 H0007-T
07E7 0 D398      STO     3 RETRY-T   SET RETRY TO 7
07E8 0 C3F0      LD      3 D25-T
07E9 0 D3A9      STO     3 REWAK-T   RESET WACK TO 25
07EA 1 4C80 07E1 BSC     I  ALTNT    RETURN                31705790
*
*****
* CHECK FOR EOT OR DLE EOT RECEIVED
*****
07EC 0 0000      EOTCK DC    *-*
07ED 0 C31D      LD      3 RARE&1-T
07EE 0 F3E3      EOR     3 EOT-T
07EF 1 4C18 07F7 BSC     L  EDTRC,&- BR IF EOT RECEIVED
*
07F1 0 C31D      LD      3 RARE&1-T
07F2 0 F3EA      EOR     3 DLEOT-T
07F3 1 4C18 07F9 BSC     L  DISCN,&- BR IF DISCONNECT RCVD
*
07F5 1 4C80 07EC BSC     I  EOTCK    RETURN                31705940
*
07F7 0 6207      EOTRC LDX   2 7
07F8 0 70CC      MDX     ERREX&7
*
07F9 0 0BD2      DISCN XID   3 RESET-T RESET SCA
07FA 0 6208      LDX     2 8
07FB 0 70C9      MDX     ERREX&7
*
*****
* TRANSMIT RFT MESSAGE
*****
07FC 0 0000      XMRFT DC    *-*
07FD 0 1010      SLA     16
07FE 0 D3A5      STO     3 TOIND-T   RESET TIMEOUT IND
*
07FF 0 C3A8      LD      3 IDFLG-T   ID HEADER REQUIRED FLAG
0800 1 4428 067B BSI     L  XMTID,Z& GO XMIT ID IF REQUESTED
0802 0 102D      SLA     /2D        ENQ CMD IF NEEDED

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0803 1 4400 0911 * XMENQ BSI L XMRCV XMIT ENQ AND 31706140
0805 1 8E67      DC      ENQCT&/8000 RECEIVE RESPONSE 31706150
0806 0 C31D      LD      3 RARE&1-T 31706160
0807 0 F3E8      EOR     3 ENQ-T     31706170
0808 1 4C20 0811 BSC     L  *&7,Z    BR IF NOT ENQ RECVD 31706180
*
080A 0 6100      LDX     1 0        31706200
080B 0 620A      LDX     2 /A       XR2=MESSAGE NUMBER 31706210
080C 0 4092      BSI     L  CKRTR   GO TO CK RETRY     31706220
080D 1 4400 09F3 BSI     L  ERPRT   GO TO PRINT MESSAGE 31706230
080F 1 4C00 068D BSC     L  CLEAR   RESTART ROUTINE   31706240
*
0811 0 C31D      LD      3 RARE&1-T 31706250
0812 0 F3D6      EOR     3 POSAK-T 31706260
0813 1 4C18 081B BSC     L  CTINU-1,&- BR IF CORRECT ACK RCVD 31706270
*
0815 0 6100      LDX     1 0        31706280
0816 0 6203      LDX     2 3        31706290
0817 1 4400 079F BSI     L  CKRTR   31706300
0819 1 4C00 0691 BSC     L  CLEAR&4 RESTART ROUTINE 31706310
*
081B 0 D3A8      STO     3 IDFLG-T  RESET ID FLAG     31706320
081C 0 40C4      CTINU BSI     L  ALTNT ALTERNATE ACKS 31706330
081D 1 4400 0911 BSI     L  XMRCV   XMIT RFT MSG AND 31706340
081F 1 8E9F      DC      RFTTM&/8000 RECEIVED RESPONSE 31706350
0820 0 40CB      BSI     L  EOTCK   GO CK FOR EOT RECVD 31706360
0821 0 C391      LD      3 BUFR-T  31706370
0822 0 F3F6      EOR     3 HFFFF-T 31706380
0823 1 4C18 0839 BSC     L  ERRTO,&- BR IF TIMEOUT 31706390
*
0825 0 C31D      LD      3 RARE&1-T 31706400
0826 0 F3D6      EOR     3 POSAK-T 31706410
0827 1 4C98 07FC BSC     I  XMRFT,&- BR IF CORRECT ACK RCVD 31706420
*
0829 0 C31D      LD      3 RARE&1-T 31706430
082A 0 F3D7      EOR     3 POSAK&1-T 31706440
082B 1 4C18 083D BSC     L  WRACK,&- BR IF WRONG ALTERNATE ACK 31706450
*
082D 0 C31D      LD      3 RARE&1-T 31706460
082E 0 F3E4      EOR     3 NAK-T    31706470
082F 1 4C18 0844 BSC     L  NAKRC,&- BR IF NAK RECEIVED 31706480
*
0831 0 6118      LDX     1 /18     31706490
0832 0 6202      XENQ2 LDX     2 2 31706500
0833 1 4400 079F BSI     L  CKRTR   GO TO CHECK RETRY 31706510
0835 1 4400 0911 BSI     L  XMRCV   XMIT ENQ AND 31706520
0837 1 8E67      DC      ENQCT&/8000 RECEIVE RESPONSE 31706530
0838 0 70E7      MDX     CTINU&4  31706540
*
0839 0 6119      ERRTO LDX     1 /19 31706550
083A 1 6D00 0E25 STX     L1 TOIND   SET TIMEOUT IND 31706560
083C 0 70F5      MDX     XENQ2    31706570
*
083D 0 611A      WRACK LDX     1 /1A 31706580
083E 0 C3A5      LD      3 TOIND-T 31706590
083F 1 4C18 0832 BSC     L  XENQ2,&- BR IF TIMEOUT IND ZERO 31706600
*
0841 0 1010      SLA     16        31706610
0842 0 D3A5      STO     3 TOIND-T RESET TIMEOUT IND 31706620
0843 0 7001      MDX     *+1      31706630
*
0844 0 6118      NAKRC LDX     1 /18 31706640
0845 0 6202      LDX     2 2      31706650
0846 1 4400 079F BSI     L  CKRTR   GO CK RETRY     31706660
0848 0 70D4      MDX     CTINU+1  31706670
*
*****

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* TRANSMIT TEST MESSAGES
*****
0849 0 408D          XMTM BSI   INITL   INITIALIZE ACKO/ACK1
084A 1 4400 0911    BSI L  XMRCV   XMIT ENQ AND
084C 1 8E67          DC    ENQCT&/8000 RECEIVE RESPONSE
084D 0 C31D          LD    3 RAREA&1-T
084E 0 F3D6          EOR   3 POSAK-T
084F 1 4C18 0856    BSC L  XMTM1,&- BR IF CORRECT ACK
*
0851 0 611C          LDX   1 /1C
0852 0 6203          LDX   2 3
0853 1 4400 079F    BSI L  CKRTR   CK RETRY CTR
0855 0 70F4          MDX   XMTM&1  XMIT ENQ AGAIN
*
0856 0 C000          XMTM1 LD   *
0857 0 D3A3          STO   3 TMXMI-T SET TEST MSG XMIT IND
0858 0 C30D          LD    3 TABLE+6-T GET Y VALUE
0859 0 D3A6          STO   3 YCNT-T  SET Y COUNT
085A 0 4086          BSI   ALTNT   ALTERNATE ACKS
085B 0 C3A6          LD    3 YCNT-T
085C 1 4C08 0901    BSC L  ENTST,+ BR IF Y=00
*
085E 0 93E7          S     3 H0001-T DECREASE Y COUNT BY ONE
085F 0 D3A6          STO   3 YCNT-T
0860 0 C39E          LD    3 TMPNT-T
0861 0 EBFA          OR    3 H8000-T
0862 0 D002          STO   *&2
0863 1 4400 0911    BSI L  XMRCV   XMIT TEST MSG AND
0865 0 0000          DC    *-*     RECEIVE RESPONSE
0866 1 4400 07EC    BSI L  EOTCK   GO CK FOR EOT RCVD
*
0868 0 C391          LD    3 BUFFER-T
0869 0 F3F6          EOR   3 HFFFF-T
086A 1 4C20 0870    BSC L  *&4,Z  BR IF NO TIMEOUT
*
086C 1 7401 0E8E    MDX L  TABLE&7,&1 ADD ONE TO TMOUT COUNT
086E 0 611E          LDX   1 /1E
086F 0 701C          MDX   CKY
*
0870 0 C31D          LD    3 RAREA&1-T
0871 0 F3E4          EOR   3 NAK-T
0872 1 4C20 0878    BSC L  *&4,Z  BR IF NOT NAK RCVD
*
0874 1 7401 0E8F    MDX L  TABLE&8,&1 ADD ONE TO NAK COUNT
0876 0 611D          LDX   1 /1D
0877 0 7014          MDX   CKY
*
0878 0 C31D          LD    3 RAREA&1-T
0879 0 F3D7          EOR   3 POSAK&1-T
087A 1 4C18 085A    BSC L  TSMMSG-1,+ BR IF ACK
*
087C 0 C31D          LD    3 RAREA&1-T
087D 0 F3D6          EOR   3 POSAK-T
087E 1 4C18 085A    BSC L  TSMMSG-1,+ BR IF CORRECT ACK
*
0880 0 C31D          LD    3 RAREA&1-T
0881 0 F304          EOR   3 RVI-T
0882 1 4C20 0889    BSC L  ADBAD,Z BR IF NOT RVI
0884 0 1010          SLA   16
0885 0 D3A6          STO   3 YCNT-T  CLEAR Y CTR
0886 0 C000          LD    *
0887 0 D303          STO   3 RVISW-T SET RVI SWITCH
0888 0 70D1          MDX   TSMMSG-1
*
0889 1 7401 0E90    ADBAD MDX L  TABLE&9,&1
0888 0 6120          LDX   1 /20
*

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31706820
31706830
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31706990
31707000
31707010
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31707100
31707110
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31707150
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31707170
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31707190
31707200
31707210
31707220
31707230
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31707480
31707490

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088C 1 6D00 0E27  CKY STX L1 ERRNO STORE ERROR NUMBER 31707500
088E 0 C3B2          LD    3 MSG4-T 31707510
088F 1 4400 0BC8    BSI L  STALP 31707520
0891 0 70C8          MDX   TSMMSG-1 31707530
* 31707540
***** 31707550
* RECEIVE TEST MESSAGES 31707560
***** 31707570
* 31707580
RCVTM LD 3 TABLE+6-T GET Y VALUE 31707590
0893 0 D3A6          STO   3 YCNT-T STORE IN Y COUNTER 31707600
0894 0 C000          LD    * 31707610
0895 0 D3A2          STO   3 TMRCI-T SET TEST MSG RCVD IND 31707620
0896 1 4400 07D7    BSI L  INITL INITIALIZE ACKO/ACK1 31707630
0898 1 4400 0911    BSI L  XMRCV RECEIVE 31707640
089A 0 8000          DC    /8000 31707650
089B 0 C31D          RCVT1 LD 3 RAREA&1-T 31707660
089C 0 F3E8          EOR   3 ENQ-T 31707670
089D 1 4C18 08C0    BSC L  RTMSG&2,&- BR IF ENQ RCVD 31707680
* 31707690
089F 1 4400 07EC    BSI L  EOTCK GO CK FOR EOT RCVD 31707700
08A1 0 6121          LDX   1 /21 31707710
08A2 0 6202          LDX   2 2 31707720
08A3 1 4400 079F    BSI L  CKRTR CHECK RETRY CTR 31707730
08A5 0 C3E4          LD    3 NAK-T 31707740
08A6 0 D3E6          STO   3 LSTAK&1-T 31707750
08A7 1 4400 0911    BSI L  XMRCV 31707760
08A9 1 8E65          DC    LSTAK&/8000 31707770
08AA 0 C8D6          LDD   3 POSAK-T 31707780
08AB 0 18D0          RTE   16 31707790
08AC 0 D8D6          STD   3 POSAK-T ROTATE ACKS 31707800
08AD 0 D3E6          STO   3 LSTAK&1-T 31707810
08AE 0 70EC          MDX   RCVT1 GO CHECK FOR ENQ 31707820
08AF 1 6D00 0E27  RTM STX L1 ERRNO STORE ERROR NUMBER 31707830
08B1 1 4400 07E1    BSI L  ALTNT ALTERNATE ACKS 31707840
08B3 0 C3B2          LD    3 MSG4-T 31707850
08B4 1 4400 0BC8    BSI L  STALP 31707860
08B6 0 C3A6          LD    3 YCNT-T 31707870
08B7 1 4C08 08EB    BSC L  END1,& BR IF Y COUNT ZERO 31707880
* 31707890
08B9 0 93E7          S     3 H0001-T DECREASE Y COUNT BY ONE 31707900
08BA 0 D3A6          STO   3 YCNT-T 31707910
08BB 0 4055          BSI L  XMRCV RECEIVE 31707920
08BC 0 8000          DC    /8000 31707930
08BD 0 7009          MDX   **9 31707940
* 31707950
RTMSG BSI L ALTNT ALTERNATE ACKS 31707960
08BE 1 4400 07E1    LD    3 YCNT-T 31707970
08C0 0 C3A6          BSC L  END2,& BR IF Y COUNT ZERO 31707980
* 31707990
08C3 0 93E7          S     3 H0001-T DECREASE Y COUNT BY ONE 31708000
08C4 0 D3A6          STO   3 YCNT-T 31708010
08C5 0 404B          BSI L  XMRCV XMIT CURRENT ACK AND 31708020
08C6 1 8E65          DC    LSTAK&/8000 RECEIVE TEST MSG 31708030
08C7 0 C391          LD    3 BUFFER-T 31708040
08C8 0 F3F6          EOR   3 HFFFF-T 31708050
08C9 1 4C20 08CF    BSC L  *&4,Z  BR IF NO TIMEOUT 31708060
* 31708070
08CB 1 7401 0E8E    MDX L  TABLE&7,&1 31708080
08CD 0 6122          LDX   1 /22 31708090
08CE 0 70E0          MDX   RTM 31708100
* 31708110
08CF 1 7400 0E06    MDX L  MDSWT 31708120
08D1 0 7006          MDX   *&6 BR IF TEXT WAS RCVD 31708130
08D2 1 4400 07EC    BSI L  EOTCK GO CK FOR EOT RCVD 31708140
08D4 0 6123          LDX   1 /23 31708150
08D5 1 7401 0E8F    MDX L  TABLE&8,&1 31708160
08D7 0 70D7          MDX   RTM 31708170

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BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

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0962 0 D394      STO 3 POINT-T   POINT TO XMIT AREA   31709540
0963 0 C3C6      LD 3 H0004-T      31709550
0964 0 D392      STO 3 SYNC-T     SET XMIT SYNS IND   31709560
0965 0 C3B0      LD 3 MSG2-T      31709570
0966 1 4400 OBC8  BSI L STALP      31709580
0968 0 C000      LD *             31709590
0969 0 D395      STO 3 RTBSY-T   SET RTN BUSY IND   31709600
096A 0 0B8C      XIO 3 ENDOP-T   END SCA OPERATION  31709610
096B 0 0BBE      XIO 3 STSYN-T  START WRITE        31709620
096C 1 4C80 0943 BSC I GO        RETURN TO CALLING RTN 31709630
*
*****
* SAVE OR DELETE LAST MESSAGE 31709660
*****
*
CKOPN DC *-*
LDX L3 T        31709690
LD L SW2        CK OPTION SWITCH 31709700
SLA 12          31709710
BSC L *E3,ZE    BR IF PRINT ALL TEXT ON 31709720
*
LD 3 NOERR-T    31709740
BSC L *E3,Z     BR IF NO ERROR      31709750
*
LD 3 ENPNT-T    31709770
STO 3 ENPT2-T   SAVE LAST MESSAGE   31709780
MDX *E2        31709790
*
LD 3 ENPT2-T    31709800
STO 3 ENPNT-T   DELETE LAST MESSAGE 31709810
*
SLA 16          31709820
STO I ENPNT     31709830
BSC I CKOPN     31709840
*
*****
* PRINT STATUS MESSAGE 31709880
*****
*
TYPIT DC *-*
STX L2 TABLE   STORE MSG NUMBER   31709890
LD L2 AMGS-1    GET MSG ADDRS      31709900
STO 3 TABLE+3-T STORE MSG ADDR    31709910
BSI I LOG       PRINT MESSAGE      31709920
DC TABLE      31709930
LDX L3 T       RESTORE XR3         31709940
SLA 16         31709950
STO 3 TABLE+3-T 31709960
BSC I TYPIT     RETURN             31709970
*
AMSGS DC A1701  MAKE DATA SET RDY  31709980
DC A1702  MON ENQ      31709990
DC A1703  NO ANS ENQ  31710000
DC E1708  DISCONNECT  31710010
DC A1705  31710020
DC A1706  31710030
DC A1707  RVI MSG     31710040
DC A1708  TTD MSG     31710050
*
A1701 DC /723E  MA      31710060
DC /5A36  KE      31710070
DC /2132  D       31710080
DC /3E9E  AT      31710090
DC /3E21  A       31710100
DC /9A36  SE      31710110
DC /9E21  T       31710120
DC /6232  RD      31710130
DC /A621  Y       31710140

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09A3 0 FFFF      DC /FFFF  TERMINATOR 31710220
*
A1702 DC /7252  MO      31710230
DC /7621  N       31710240
DC /3676  EN      31710250
DC /6621  Q       31710260
DC /FFFF  TERMINATOR 31710270
*
A1703 DC /7652  NO      31710280
DC /213E  A       31710290
DC /769A  NS      31710300
DC /2136  E       31710310
DC /7666  NQ      31710320
DC /FFFF  TERMINATOR 31710330
*
A1705 DC /9621  X       31710340
DC /2121  Y       31710350
DC /A621  Y       31710360
DC /2121  TM      31710370
DC /9E72  OU      31710380
DC /52B2  T       31710390
DC /763E  NA      31710400
DC /5A21  K       31710410
DC /2121  IN      31710420
DC /2276  V       31710430
DC /8621  RE      31710440
DC /6236  SP      31710450
DC /9A56  TERMINATOR 31710460
DC /FFFF  31710470
*
A1706 DC /9621  X       31710480
DC /2121  Y       31710490
DC /2121  TM      31710500
DC /2121  OU      31710510
DC /A621  Y       31710520
DC /2121  TM      31710530
DC /9E72  OU      31710540
DC /52B2  T       31710550
DC /9E21  T       31710560
DC /9221  W       31710570
DC /3662  ER      31710580
DC /6221  R       31710590
DC /928C  W/      31710600
DC /5221  O       31710610
DC /3662  ER      31710620
DC /6221  R       31710630
DC /6221  R       31710640
DC /6221  R       31710650
DC /6221  R       31710660
DC /6221  R       31710670
DC /6221  R       31710680
DC /6221  R       31710690
DC /6221  R       31710700
DC /FFFF  TERMINATOR 31710710
*
A1707 DC /6286  RV      31710720
DC /2221  I       31710730
DC /621E  RC      31710740
DC /B632  VD      31710750
DC /8036  ,E      31710760
DC /529E  OT      31710770
DC /219A  S       31710780
DC /3676  EN      31710790
DC /9E21  T       31710800
DC /FFFF  TERMINATOR 31710810
*
A1708 DC /9E9E  TT      31710820
DC /3221  D       31710830
DC /621E  RC      31710840
DC /B632  VD      31710850
DC /FFFF  TERMINATOR 31710860
*
09DB 0 9E9E      DC /9E9E  TT      31710870
09DC 0 3221      DC /3221  D       31710880
09DD 0 621E      DC /621E  RC      31710890
09DE 0 B632      DC /B632  VD      31710900
09DF 0 FFFF      DC /FFFF  TERMINATOR 31710910

```

```

*****
* PRINT DIAGNOSTIC MESSAGE
*****
*
09E0 0 0000
09E1 1 C400 05E1
09E3 0 100E
09E4 1 4C90 09E0
*
09E6 0 C3A7
09E7 1 4C98 09E0
*
09E9 0 D307
09EA 0 4480 0162
09EC 1 0E87
09ED 0 0000
09EE 1 6700 0E80
09FO 0 1010
09F1 0 D3A7
09F2 0 70F4
*
*****
* PRINT ERROR MESSAGE
*****
*
09F3 0 0000
09F4 1 6E00 0E87
09F6 1 C600 0A03
09F8 0 D30A
09F9 0 4480 0162
09FB 1 0E87
09FC 0 0000
09FD 1 6700 0E80
09FF 0 1010
0A00 0 D30A
0A01 1 4C80 09F3
*
0A03 1 0A0E
0A04 1 0A14
0A05 1 0A1C
0A06 1 0A22
0A07 1 0A28
0A08 1 0A2C
0A09 1 0A30
0A0A 1 0A37
0A0B 1 0A3C
0A0C 1 0A42
0A0D 1 0A47
*
0A0E 0 D8F4
0A0F 0 2192
0A10 0 3E1E
0A11 0 5A9A
0A12 0 2162
0A13 0 FFFF
*
0A14 0 323E
0A15 0 9E3E
0A16 0 219A
0A17 0 369E
0A18 0 2176
0A19 0 6232
0A1A 0 A621
0A1B 0 FFFF
*
0A1C 0 D421
0A1D 0 9E62
0A1E 0 2236

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```

31710900
31710910
31710920
31710930
31710940
31710950
31710960
31710970
31710980
31710990
31711000
31711010
31711020
31711030
31711040
31711050
31711060
31711070
31711080
31711090
31711100
31711110
31711120
31711130
31711140
31711150
31711160
31711170
31711180
31711190
31711200
31711210
31711220
31711230
31711240
31711250
31711260
31711270
31711280
31711290
31711300
31711310
31711320
31711330
31711340
31711350
31711360
31711370
31711380
31711390
31711400
31711410
31711420
31711430
31711440
31711450
31711460
31711470
31711480
31711490
31711500
31711510
31711520
31711530
31711540
31711550
31711560
31711570

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0A1F 0 9A21 DC /9A21 S
0A20 0 9E21 DC /9E21 T
0A21 0 FFFF DC /FFFF TERMINATOR
*
0A22 0 D421 E1703 DC /D421 7
0A23 0 9E62 DC /9E62 TR
0A24 0 2236 DC /2236 IE
0A25 0 9A21 DC /9A21 S
0A26 0 6221 DC /6221 R
0A27 0 FFFF DC /FFFF TERMINATOR
*
0A28 0 2276 E1704 DC /2276 IN
0A29 0 B621 DC /B621 V
0A2A 0 9621 DC /9621 X
0A2B 0 FFFF DC /FFFF TERMINATOR
*
0A2C 0 2276 E1705 DC /2276 IN
0A2D 0 B621 DC /B621 V
0A2E 0 A621 DC /A621 Y
0A2F 0 FFFF DC /FFFF TERMINATOR
*
0A30 0 2276 E1706 DC /2276 IN
0A31 0 B621 DC /B621 V
0A32 0 6212 DC /6212 RF
0A33 0 9E21 DC /9E21 T
0A34 0 621E DC /621E RC
0A35 0 B632 DC /B632 VD
0A36 0 FFFF DC /FFFF TERMINATOR
*
0A37 0 3652 E1707 DC /3652 EO
0A38 0 9E21 DC /9E21 T
0A39 0 621E DC /621E RC
0A3A 0 B632 DC /B632 VD
0A3B 0 FFFF DC /FFFF TERMINATOR
*
0A3C 0 3222 E1708 DC /3222 DI
0A3D 0 9A1E DC /9A1E SC
0A3E 0 5276 DC /5276 ON
0A3F 0 7636 DC /7636 NE
0A40 0 1E9E DC /1E9E CT
0A41 0 FFFF DC /FFFF TERMINATOR
*
0A42 0 7652 E1709 DC /7652 NO
0A43 0 2122 DC /2122 I
0A44 0 769E DC /769E NT
0A45 0 6256 DC /6256 RP
0A46 0 FFFF DC /FFFF TERMINATOR
*
0A47 0 1E52 E170A DC /1E52 CO
0A48 0 769E DC /769E NT
0A49 0 3676 DC /3676 EN
0A4A 0 9E22 DC /9E22 T1
0A4B 0 5276 DC /5276 ON
0A4C 0 FFFF DC /FFFF TERMINATOR
*
*****
*
0A4D 0 9E22 TOMSG DC /9E22 TI
0A4E 0 7236 DC /7236 ME
0A4F 0 52B2 DC /52B2 OU
0A50 0 9E21 DC /9E21 T
0A51 0 FFFF DC /FFFF TERMINATOR
*
0A52 0 0303 XMSG DC /0303
0A53 0 9672 DC /9672 XM
0A54 0 229E DC /229E IT
0A55 0 FFFF DC /FFFF TERMINATOR
*

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31711580
31711590
31711600
31711610
31711620
31711630
31711640
31711650
31711660
31711670
31711680
31711690
31711700
31711710
31711720
31711730
31711740
31711750
31711760
31711770
31711780
31711790
31711800
31711810
31711820
31711830
31711840
31711850
31711860
31711870
31711880
31711890
31711900
31711910
31711920
31711930
31711940
31711950
31711960
31711970
31711980
31711990
31712000
31712010
31712020
31712030
31712040
31712050
31712060
31712070
31712080
31712090
31712100
31712110
31712120
31712130
31712140
31712150
31712160
31712170
31712180
31712190
31712200
31712210
31712220
31712230
31712240
31712250

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BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

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OA56 0 0303      RCMSG DC      /0303      31712260
OA57 0 6236      DC          /6236      RE          31712270
OA58 0 1EB6      DC          /1EB6      CV          31712280
OA59 0 FFFF      DC          /FFFF      TERMINATOR 31712290
*
OA5A 0 3662      ERMSG DC      /3662      ER          31712300
OA5B 0 6221      DC          /6221      R          31712310
OA5C 0 FFFF      DC          /FFFF      TERMINATOR 31712320
*
OA5D 0 1E52      ENCOR DC     /1E52      CO          31712330
OA5E 0 6236      DC          /6236      RE          31712340
OA5F 0 FFFF      DC          /FFFF      TERMINATOR 31712350
*
*****
*          GENERATE REQUEST FOR TEST MESSAGE
*****
*
OA60 0 0000      GNRFT DC     *--*          31712380
OA61 0 D30C      STO 3 TABLE+5-T STORE X VALUE 31712390
OA62 1 4C28 OAA3 BSC L XERR,Z+ BR IF INVALID X VALUE 31712400
OA64 0 93D2      S 3 D99-T          31712410
OA65 1 4C30 OAA3 BSC L XERR,-Z BR IF INVALID X VALUE 31712420
*
OA67 0 83D2      A 3 D99-T          31712430
OA68 0 4041      BSI BTD          CONVERT TO EBCDIC 31712440
OA69 0 D321      STO 3 RFTTM+2-T PUT IN RFT MSG 31712450
*
OA6A 1 C400 05E2 LD L SW3          GET Y VALUE 31712460
OA6C 0 D30D      STO 3 TABLE+6-T 31712470
OA6D 1 4C08 OAA5 BSC L YERR,+ BR IF INVALID Y VALUE 31712480
OA6F 0 93D2      S 3 D99-T          31712490
OA70 1 4C30 OAA5 BSC L YERR,-Z BR IF INVALID Y VALUE 31712500
*
OA72 0 83D2      A 3 D99-T          31712510
OA73 0 4036      BSI BTD          CONVERT TO EBCDIC 31712520
OA74 0 D322      STO 3 RFTTM+3-T PUT IN RFT MSG 31712530
OA75 0 C3DF      LD 3 SOHPC-T      31712540
OA76 0 D320      STO 3 RFTTM+1-T PUT SOH % IN RFT 31712550
*
OA77 0 C3CA      LD 3 H0007-T      SET RFT CHARACTER 31712560
OA78 0 D39C      STO 3 CNTA-T      COUNT TO 7 31712570
OA79 0 C3F2      LD 3 HF000-T      31712580
OA7A 0 D323      STO 3 RFTTM+4-T SET N FIELD TO ZERO 31712590
*
OA7B 0 C30C      LD 3 TABLE+5-T GET X VALUE 31712600
OA7C 0 93E7      S 3 H0001-T      31712610
OA7D 1 4C18 OAB7 BSC L XONE,&- BR IF X=01 31712620
*
OA7F 0 C3F3      LD 3 HF002-T      31712630
OA80 0 D323      STO 3 RFTTM+4-T PUT N ZERO STX IN RFT 31712640
OA81 0 C3DE      LD 3 ETX-T        31712650
OA82 0 D324      STO 3 RFTTM+5-T PUT ETX IN RFT MSG 31712660
OA83 1 7402 OE1C MDX L CNTA,&2 ADD 2 TO COUNT 31712670
OA85 0 C39C      LD 3 CNTA-T      31712680
OA86 0 7019      MDX          EXITA+5 31712690
*
OA87 1 C400 05E9 XONE LD L XSPEC+1 GET CHAR COUNT 31712700
OA89 0 D39D      STO 3 CNTB-T      31712710
OA8A 0 6300      LDX 3 0           31712720
OA8B 1 C700 05EA LD L3 XSPEC+2 GET 2 CHARACTERS 31712730
OA8D 0 1890      SRT 16           PUT IN Q 31712740
OA8E 0 1010      SLA 16           31712750
OA8F 0 1088      SLT 8           PUT 1ST CHAR IN ACC 31712760
OA90 1 EF00 OEA3 OR L3 RFTTM+4 COMBINE WITH LAST CHAR 31712770
OA92 1 D700 OEA3 STO L3 RFTTM+4 PUT IN RFT 31712780
OA94 0 7301      MDX 3 1         ADD ONE TO XR3 31712790
OA95 0 1090      SLT 16          PUT 2ND CHAR IN ACC 31712800
OA96 1 D700 OEA3 STO L3 RFTTM&4 STORE IN RFT MSG 31712810

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OA98 1 74FE OE1D MDX L CNTB,-2 DECREASE COUNT BY TWO 31712940
OA9A 0 70F0      MDX          XONE&4 BR IF COUNT NOT ZERO 31712950
*
OA9B 1 6700 OE80 EXITA LDX L3 T RESTORE XR3 31712960
OA9D 1 C400 05E9 LD L XSPEC+1 31712970
OA9F 0 839C      A 3 CNTA-T      31712980
OAA0 0 D31F      STO 3 RFTTM-T   STO RFT CHAR COUNT 31712990
OAA1 1 4C80 OAA6 BSC I GNRFT RETURN 31713000
*
OAA3 0 6204      XERR LDX 2 4     XR2=MESSAGE NUMBER 31713010
OAA4 0 7001      MDX          YERR+1 31713020
*
OAA5 0 6205      YERR LDX 2 5     XR2=MESSAGE NUMBER 31713030
OAA6 1 4400 09F3 BSI L ERPRT GO PRINT MSG 31713040
OAA8 0 4480 0164 BSI I END END PROGRAM 31713050
*
*****
*          CONVERT BINARY TO 2 EBCDIC
*          DECIMAL DIGITS
*****
*
OAAA 0 0000      BTD DC          *--*          31713060
OAA8 0 1890      SRT 16          31713070
OAA8 0 1088      D 3 H000A-T    DIVIDE BY DEC 10 31713080
OAAE 0 1808      SLT 8          PUT HI ORDER DIGIT IN 31713090
OAAF 0 1088      SRA 8          ACC 4-7 AND LOW ORDER 31713100
OAB0 0 EBF4      SLT 8          DIGIT IN ACC 12-15 31713110
OAB1 1 4C80 OAAA OR 3 HFOFO-T ADD ZONE BITS 31713120
BSC I BTD RETURN 31713130
*
*****
*          GENERATE TEST MESSAGE
*****
*
OAB3 0 0000      GNTM DC          *--*          31713140
OAB4 1 4C20 OABB BSC L XNOTZ,Z BR IF X NOT ZERO 31713150
*
OAB6 1 6700 05E9 LDX L3 XSPEC+1 SET TEST MESSAGE 31713160
OAB8 1 6F00 OE1E STX L3 TMPNT LOCATION INDICATOR 31713170
OABA 0 707A      MDX          EXITB&4 31713180
*
OABB 0 D39A      XNOTZ STO 3 TEMP-T SAVE X VALUE 31713190
OABC 0 93E7      S 3 H0001-T    31713200
OABD 1 4C20 OAD6 BSC L XNOT1,Z BR IF X NOT ONE 31713210
*
OABF 0 C388      LD 3 COUNT-T   GET CHAR RECVD COUNT 31713220
OAC0 0 93CA      S 3 H0007-T    SUBTRACT 7 31713230
OAC1 0 D39C      STO 3 CNTA-T   STORE IN COUNTER A 31713240
OAC2 0 D31F      STO 3 RFTTM-T STORE IN TEST MSG AREA 31713250
OAC3 1 6700 OE9F LDX L3 RFTTM SET TEST MESSAGE 31713260
OAC5 1 6F00 OE1E STX L3 TMPNT LOCATION INDICATOR 31713270
OAC7 0 6300      LDX 3 0        31713280
OAC8 1 C700 OEA0 LD L3 RAREA+4 GET 2 CHARACTERS 31713290
OACA 0 1890      SRT 16         PUT IN Q 31713300
OACB 1 C700 OEA1 LD L3 RAREA+5 GET NEXT 2 CHARACTERS 31713310
OACD 0 18C8      RTE 8          31713320
OACE 1 D700 OEA0 STO L3 RFTTM&1 STO 2 CHAR IN TEST MSG 31713330
OADO 0 1888      SRT 8          31713340
OAD1 0 7301      MDX 3 1        31713350
OAD2 1 74FE OE1C MDX L CNTA,-2 DECREASE COUNT BY 2 31713360
OAD4 0 70F6      MDX *-10       31713370
OAD5 0 705B      MDX          EXITB EXIT IF LAST CHAR 31713380
*
OAD6 0 93E7      XNOT1 S 3 H0001-T BR IF X NOT 2 31713390
OAD7 1 4C20 OAE6 BSC L XNOT2,Z 31713400
*
OAD9 0 C3BE      LD 3 D260-T    SET TEST MESSAGE 31713410
OADA 0 D31F      STO 3 RFTTM-T CHAR COUNT TO 260 31713420

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OADB 0 93C6      S      3 H0004-T      31713620
OADC 0 D39C      STO     3 CNTA-T      SET COUNTER A TO 256      31713630
OADD 0 C3E0      LD      3 DLSTX-T      GET DLE STX CHARACTERS   31713640
OADE 0 D320      STO     3 RFTTM+1-T    PUT IN TEST MSG          31713650
OADF 0 C3E7      LD      3 H0001-T      GET 1ST 2 TEXT CHARS    31713660
OAE0 0 6300      LDX     3 0            31713670
OAE1 1 D700 OEA1  STO     L3 RFTTM+2     STORE IN TEST MSG        31713680
OAE3 1 8400 OE78  A      L H0202        ADD TWO TO EACH CHAR     31713690
OAE5 0 7301      MDX     3 1            31713700
OAE6 1 74FE OE1C  MDX     L CNTA,-2     DECRE COUNT BY TWO       31713710
OAE8 0 70F8      MDX     *-8           BR IF NOT LAST CHAR      31713720
OAE9 1 C400 OE61  LD      L DLETX       GET DLE ETX CHARS       31713730
OAEB 1 D700 OEA1  STO     L3 RFTTM+2     STORE IN TEST MSG        31713740
OAEF 0 7043      MDX     EXITB         31713750
*
OAEF 0 93BC      XNOT2 S      3 D14-T      31713760
OAEF 1 4C20 OBOF  BSC     L XNT16,Z     BR IF X NOT 16          31713770
*
OAF1 0 C302      LD      3 SELCT-T     GET SELECT CHARACTER     31713780
OAF2 0 1890      SRT     16            31713800
OAF3 0 C3E5      LD      3 H0002-T     GET STX                  31713810
OAF4 0 1088      SLT     8             ADD ESC OR SYN           31713820
OAF5 0 D320      STO     3 RFTTM+1-T    PUT IN TEST MESSAGE     31713830
OAF6 0 1090      SLT     16            GET SYN OR SEL CHAR     31713840
OAF7 0 EB01      OR      3 K00AA-T     GET AA CHARACTERS       31713850
OAF8 0 D321      STO     3 RFTTM+2-T    PUT IN TEST MESSAGE     31713860
OAF9 0 C3B6      LD      3 HAA55-T     PUT HEX AA55 IN         31713870
OAFB 0 D335      STO     3 RFTTM+22-T   CENTER OF MESSAGE       31713880
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713890
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713900
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713910
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713920
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713930
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713940
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713950
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713960
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713970
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713980
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31713990
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714000
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714010
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714020
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714030
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714040
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714050
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714060
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714070
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714080
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714090
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714100
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714110
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714120
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714130
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714140
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714150
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714160
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714170
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714180
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714190
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714200
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714210
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714220
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714230
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714240
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714250
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714260
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714270
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714280
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714290
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714300
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714310
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714320
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714330
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714340
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714350
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714360
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714370
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714380
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714390
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714400
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714410
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714420
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714430
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714440
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714450
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714460
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714470
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714480
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714490
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714500
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714510
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714520
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714530
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714540
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714550
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714560
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714570
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714580
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714590
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714600
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714610
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714620
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714630
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714640
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714650
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714660
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714670
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714680
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714690
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714700
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714710
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714720
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714730
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714740
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714750
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714760
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714770
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714780
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714790
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714800
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714810
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714820
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714830
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714840
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714850
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714860
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714870
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714880
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714890
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714900
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714910
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714920
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714930
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714940
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714950
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714960
OAFB 0 C3B8      LD      3 H5ETX-T     PUT 55 EXT AT           31714970

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OB2E 1 4C20 0797 BSC L BDRFT,Z BR IF NOT EQUAL 31714300
OB30 0 7085 MDX L GNTM&3 31714310
*
OB31 1 6700 0E9F * EXITB LDX L3 RFTTM SET TEST MESSAGE 31714320
OB33 1 6F00 0E1E STX L3 TMPNT LOCATION INDICATOR 31714330
OB35 1 6700 0E80 LDX L3 T RESTORE XR3 31714340
OB37 1 4C80 0AB3 BSC I GNTM RETURN 31714350
*
*****
* PRINT END OF TEST MESSAGE
*****
*
OB39 0 C303 ENPRT LD 3 RVISW-T 31714410
OB3A 1 4C10 0B3F BSC L TTD,- BR IF RVI NOT REC 31714420
OB3C 0 6207 LDX 2 7 31714430
OB3D 1 4400 0983 BSI L TYPIT 31714440
*
OB3F 0 C306 * TTD LD 3 TTDSW-T 31714460
OB40 1 4C10 0B45 BSC L ENTYP,- BR IF TTD NOT REC 31714470
OB42 0 6208 LDX 2 8 31714480
OB43 1 4400 0983 BSI L TYPIT 31714490
*
OB45 0 1010 ENTYP SLA 16 31714500
OB46 0 D303 STO 3 RVISW-T RESET RVI SWITCH 31714510
OB47 0 D306 STO 3 TTDSW-T RESET TTD SWITCH 31714520
*
OB48 1 7400 0E23 MDX L TMXMI 31714550
OB4A 0 705D MDX PRXM BR IF TEST MSG XMIT IND ON 31714570
OB4B 1 7400 0E22 MDX L PMRCI 31714580
OB4D 0 705C MDX PTRC BR IF TEST MSG REC IND ON 31714590
*
OB4E 1 4400 096E PDAT BSI L CKOPN 31714600
OB50 1 C400 05E1 LD L SW2 CK OPTION SWITCH 31714610
OB52 0 100C SLA 12 31714620
OB53 0 180E SRA 14 31714630
OB54 1 4C18 0BB5 * BSC L ENDIT,&- BR IF PRINT TEXT NOT ON 31714650
*
OB56 1 6700 0F40 LDX L3 ENTBL 31714660
OB58 1 6F00 0E1C STX L3 CNTA 31714670
*
OB5A 1 C480 0E1C GTCNT LD I CNTA GET WORD FROM END MSG TBL 31714690
OB5C 1 4C18 0BB5 BSC L ENDIT,&- BR IF ZERO 31714710
*
OB5E 1 4C08 0B7D * BSC L ALPH,+ BR IF ALPHA MSG ADDRS 31714720
*
OB60 1 D400 0E1D STO L CNTB SAVE HEX CHAR COUNT 31714740
OB62 0 63F2 LDX 3 -14 31714750
OB63 1 7401 0E1C GTHDX MDX L CNTA,+1 31714760
OB65 1 C480 0E1C LD I CNTA GET 2 HEX BYTES 31714770
OB67 0 1888 SRT 8 31714780
OB68 0 1008 SLA 8 31714790
OB69 1 D700 0E9A STO L3 TABLE&19 PUT HEX WORD IN PRINT TBL 31714800
OB6B 0 7301 MDX 3 &1 31714810
OB6C 1 74FF 0E1D MDX L CNTB,-1 DECRE CHAR COUNT BY ONE 31714820
OB6E 0 7001 MDX *&1 31714830
OB6F 0 701F MDX HEX BR IF COUNT EXHAUSTED 31714850
*
OB70 0 1088 SLT 8 31714860
OB71 0 1008 SLA 8 31714870
OB72 1 D700 0E9A STO L3 TABLE&19 PUT 2ND WD IN PRINT TBL 31714880
OB74 1 74FF 0E1D MDX L CNTB,-1 DECRE COUNT BY ONE 31714890
OB76 0 7003 MDX *&3 BR IF CNT NOT ZERO 31714900
OB77 0 7301 MDX 3 &1 31714910
OB78 0 1000 NOP 31714920
OB79 0 7015 MDX HEX GO PRINT IF CNT ZERO 31714930
*
OB7A 0 7301 MDX 3 &1 31714940
OB7B 0 70E7 MDX GTHDX GO STO NEXT CHAR IF ROOM 31714950

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BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

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OB7C 0 7012          MDX    HEX    GO PRT IF 14 CHARS    31714980
*
OB7D 1 E400 OE7C    ALPH  AND  L  H7FFF    31714990
OB7F 1 D400 OE8A    STO  L  TABLE+3    31715000
OB81 1 C400 OE7A    LD   L  H8000        31715010
OB83 1 D400 OE89    STO  L  TABLE&2    31715020
OB85 0 4480 0163    BSI  I  LOG          GO PRINT MSG    31715030
OB87 1 OE87        DC   TABLE          31715040
OB88 0 4038        BSI  CKMON           31715050
OB89 0 1010        SLA  16              31715060
OB8A 1 D400 OE8A    STO  L  TABLE&3    31715070
OB8C 1 7401 OE1C    MDX  L  CNTA,&1      31715080
OB8E 0 70CB        MDX  L  GTCNT        31715090
*
OB8F 0 C400 0003    HEX  LD  L  3        SET UP          31715100
OB91 1 F400 OE76    EOR  L  HFFFF        NUMBER OF      31715110
OB93 1 8400 OE7E    A    L  H1802        CHARACTERS    31715120
OB95 0 D002        STO  *&2            TO BE         31715130
OB96 1 C400 OE7C    LD   L  H7FFF        PRINTED       31715140
OB98 0 1800        SRA  *--*           31715150
OB99 1 EC00 OE7A    OR   L  H8000        31715160
OB9B 1 D400 OE89    STO  L  TABLE&2    31715170
OB9D 0 4480 0163    BSI  I  LOG          PRINT MSG      31715180
OB9F 1 OE87        DC   TABLE          31715190
OBA0 0 4020        BSI  CKMON           31715200
OBA1 1 C400 OE1D    LD   L  CNTB         31715210
OBA3 1 4C20 0B62    BSC  L  GTHEx-1,Z   BR IF MORE HEX CHARACTERS 31715220
*
OBA5 1 7401 OE1C    MDX  L  CNTA,&1      31715230
OBA7 0 70B2        MDX  L  GTCNT        31715240
*
OBA8 0 6205        PRTXM LDX 2 5        31715250
OBA9 0 7001        MDX  *&1            31715260
*
OBAA 0 6206        PRTRC LDX 2 6        31715270
OBAB 0 C3FD        LD   3 H001F-T      31715280
OBAC 0 D308        STO  3 TABLE+1-T   31715290
OBAD 0 D309        STO  3 TABLE+2-T   31715300
OBAE 1 4400 0983    BSI  L  TYPIT        GO PRINT MSG    31715310
OB80 0 4010        BSI  CKMON           31715320
OB81 0 1010        SLA  16              31715330
OB82 1 D400 OE88    STO  L  TABLE+1    31715340
OB84 0 7099        MDX  PDAT            31715350
*
OB85 1 C400 OE2A    ENDIT LD  L  OPTIN        31715360
OB87 1 4C28 062A    BSC  L  STRT,Z+     BR IF OPTION SW 15 ON 31715370
OB89 1 4C08 0632    BSC  L  CNTRL,+    BR IF NO RTN SEL ECTED 31715380
*
OB8B 1 9400 0679    S    L  RIDCK        31715390
OB8D 1 4C18 062A    BSC  L  STRT,+     31715400
*
OB8F 0 4480 0164    BSI  I  END          31715410
*
OBC1 0 0000        CKMON DC *--*        31715420
OBC2 1 6780 OBC1    LDX  I3 CKMON        31715430
OBC4 1 6F00 05E5    STX  L3 MLSCF        31715440
OBC6 0 4480 0161    BSI  I  START        31715450
*
*****
* STORE ALPHA MSG IN PRINT TABLE
*****
*
OBC8 0 0000        STALP DC *--*        31715460
OBC9 0 D39A        STO  3 TEMP-T       SAVE MSG ADDR 31715470
OBCA 0 F3B2        EOR  3 MSG4-T        31715480
OBCB 0 D3AE        STO  3 NOERR-T      31715490
OBCC 0 C0FB        LD   STALP          SET UP         31715500
OBCE 0 D00A        STO  STOIT          RETURN        31715510

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OBCE 0 C3A1        LD   3 ENPNT-T      31715660
OBCE 0 D3A0        STO  3 CNTPT-T      31715670
OBDO 1 7401 OE20    MDX  L  CNTPT,+1    31715680
OBDD 0 939F        S    3 TOP-T        31715690
OBDE 1 4C30 0BFC    BSC  L  OUT&7,Z-    BR IF NO MORE CORE 31715700
*
OBDE 1 4C10 0BF7    BSC  L  OUT&2,-     BR IF ONE ADDR LEFT 31715710
OBDF 0 701D        MDX  OUT            BR TO STORE MSG ADDR 31715720
*
*****
* STORE HEX CHARACTER IN PRINT TABLE
*****
*
OBDE 0 0000        STOIT DC *--*        31715730
OBDE 0 D39A        STO  3 TEMP-T       SAVE HEX CHARACTER 31715740
OBDA 0 C3A1        LD   3 ENPNT-T      31715750
OBDB 0 939F        S    3 TOP-T        31715760
OBDC 1 4C30 0BFC    BSC  L  OUT&7,Z-    BR IF NO MORE CORE 31715770
*
OBDE 1 4C10 0BF7    BSC  L  OUT&2,-     BR IF ONE ADDRESS LEFT 31715780
*
OBEO 0 C3A0        LD   3 CNTPT-T      31715790
OBE1 0 F3A1        EOR  3 ENPNT-T      31715800
OBE2 1 4C20 0BE7    BSC  L  *&3,Z       BR IF ALPH MSG WAS LAST 31715810
*
OBE4 1 7401 OE21    MDX  L  ENPNT,&1    INCR POINTER     31715820
OBE6 0 70F3        MDX  STOIT&2        BRANCH           31715830
OBE7 1 C480 OE20    LD   I  CNTPT       ADD 1 TO HEX CHAR CNT 31715840
OBE9 0 83E7        A    3 H0001-T      31715850
OBEA 1 D480 OE20    STO  I  CNTPT       31715860
OBE1 4C04 0BF5     BSC  L  OUT,E        BR IF COUNT ODD   31715870
*
OBE1 1 74FF OE21    MDX  L  ENPNT,-1    DECRE POINTER BY ONE 31715880
OBF0 0 C39A        LD   3 TEMP-T      31715890
OBF1 0 1808        SRA  8              31715900
OBF2 1 EC80 OE21    OR   I  ENPNT       PACK TWO HEX CHARACTERS 31715910
OBF4 0 7003        MDX  OUT&3         BRANCH           31715920
*
OBF5 0 C39A        OUT  LD  3 TEMP-T    GET CHARACTER     31715930
OBF6 0 7001        MDX  *&1            SKIP              31715940
OBF7 0 C3B3        LD   3 MSG5-T      31715950
OBF8 1 D480 OE21    STO  I  ENPNT       STO ALPH OR HEX MSG 31715960
OBF9 1 7401 OE21    MDX  L  ENPNT,&1    INCR POINTER BY ONE 31715970
OBF0 0 1010        SLA  16              31715980
OBF1 1 D480 OE21    STO  I  ENPNT       31715990
OBF2 1 4C80 0BD8    BSC  I  STOIT       RETURN            31716000
*
*****
* INTERRUPT SERVICE ROUTINE
*****
*
OC01 0 0000        INT  DC *--*        31716010
OC02 1 6E00 OE02    STX  L2 EXIT+1     SAVE XR2         31716020
OC04 1 6700 OE80    LDX  L3 T           XR3#CONSTANT TBL 31716030
OC06 0 0BCE        XIO  3 SNRSR-T     SENSE SCA DSW    31716040
OC07 0 D396        STO  3 DSW-T       SAVE DSW         31716050
OC08 0 C395        LD   3 RTBSY-T     31716060
OC09 1 4C18 0DFD    BSC  L  EXIT1,&-    BR IF RTN NOT BUSY 31716070
*
OC0B 0 C3FC        LD   3 H7FFF-T     31716080
OC0C 0 D399        STO  3 WTCNT-T     RESTORE WAIT COUNT 31716090
*
OC0D 0 C393        LD   3 FCODE-T     31716100
OC0E 1 4C18 0C4A    BSC  L  RECV,&-    BR IF RECV FUNCTION 31716110
*
*****
* TRANSMIT FUNCTION
*****

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OC10 0 C396      LD      3 DSW-T      31716340
OC11 0 1003      SLA      3      31716350
OC12 1 4C10 OC1E BSC L WRESP,- BR IF NO TIMEOUT 31716360
*
OC14 0 C386      LD      3 MDSWT-T     31716370
OC15 0 93C0      S        3 H0003-T     31716380
OC16 0 4818      BSC      8-      SKIP NOT TRANS MODE 31716390
OC17 0 OBC0      XIO      3 TIMER-T     31716400
OC18 0 C3E5      LD      3 H0002-T     31716410
OC19 0 D392      STO      3 SYNC-T     31716420
OC1A 0 C396      LD      3 DSW-T      31716430
OC1B 0 1001      SLA      1      31716440
OC1C 1 4C10 OE01 BSC L EXIT,- RETURN IF NOT WR RESP 31716450
*
OC1E 0 C38A      WRESP LD 3 LSDLE-T 31716460
OC1F 1 4C20 OC3A BSC L CKCNT,Z BR IF LAST CHAR WAS DLE 31716470
*
OC21 0 C386      LD      3 MDSWT-T     31716480
OC22 0 93C0      S        3 H0003-T     31716490
OC23 1 4C30 OC3A BSC L CKCNT,Z- BR IF BCC TIME 31716500
*
OC25 0 C392      LD      3 SYNC-T     31716510
OC26 1 4C08 OC3A BSC L CKCNT,& BR IF SYNS IND ZERO 31716520
*
OC28 0 93E7      S        3 H0001-T     31716530
OC29 0 D392      STO      3 SYNC-T     31716540
OC2A 1 4C18 OC35 BSC L WSYNC,&- BR IF SYNS IND ZERO 31716550
*
OC2C 0 C386      LD      3 MDSWT-T     31716560
OC2D 0 93C0      S        3 H0003-T     31716570
OC2E 1 4C20 OC35 BSC L WSYNC,Z BR IF NOT TRANS MODE 31716580
*
OC30 0 C3D9      LD      3 DLE-T     31716590
OC31 0 40A6      BSI      STOIT STORE DLE IN PRINT TBL 31716600
OC32 0 OBC2      XIO      3 WRDLE-T XMIT DLE 31716610
OC33 1 4C00 OE01 BSC L EXIT RETURN 31716620
*
OC35 0 C3D8      WSYNC LD 3 SYN-T 31716630
OC36 0 40A1      BSI      STOIT STORE SYN IN PRINT TBL 31716640
OC37 0 OBC4      XIO      3 WRSYN-T XMIT SYN 31716650
OC38 1 4C00 OE01 BSC L EXIT RETURN 31716660
*
OC3A 0 C388      CKCNT LD 3 COUNT-T 31716670
OC3B 1 4C04 OC44 BSC L ODD,E BR IF CHAR COUNT ODD 31716680
*
OC3D 1 C480 OE14 LD I POINT GET WORD FROM I/O AREA 31716690
OC3F 0 E3F5      AND      3 HFF00-T MASK OUT BITS 8-15 31716700
OC40 0 D391      STBFR STO 3 BUFFER-T PUT CHAR IN BUFFER 31716710
OC41 1 7401 OE08 MDX L COUNT,&1 INCRE CHAR COUNT &1 31716720
OC43 0 702B      MDX      MDXMD GO TO CK MODE 31716730
*
OC44 1 C480 OE14 ODD LD I POINT GET WORD FROM I/O AREA 31716740
OC46 0 1008      SLA      8 BITS 8-15 TO WRITE POSIT 31716750
OC47 1 7401 OE14 MDX L POINT,&1 INCRE ADDR POINTER &1 31716760
OC49 0 70F6      MDX      STBFR 31716770
*
*-----
* RECEIVE FUNCTION
*-----
OC4A 0 C396      RECV LD 3 DSW-T 31716780
OC4B 0 1003      SLA      3 31716790
OC4C 1 4C10 OC55 BSC L READB,- BR IF NOT TIMEOUT 31716800
*
OC4E 0 C3F6      LD      3 HFFFF-T 31716810
OC4F 0 D391      STO      3 BUFFER-T SET TIMEOUT END 31716820
OC50 0 C3AF      LD      3 MSG1-T STORE TIMEOUT MSG 31716830
OC51 1 4400 OBC8 BSI L STALP IN PRINT TBL 31716840
OC53 1 4C00 ODFB BSC L RCEXT 31716850

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OC55 0 OBC8
OC56 0 C391
OC57 1 4400 OBD8
OC59 0 C391
OC5A 0 F3D9
OC5B 1 4C18 OC6F
OC5D 0 C305
OC5E 1 4C28 OC67
OC60 0 C391
OC61 0 F3DD
OC62 1 4C20 OC6F
OC64 0 C000
OC65 0 D305
OC66 0 7008
OC67 0 1810
OC68 0 D305
OC69 0 C391
OC6A 0 F3E8
OC6B 1 4C20 OC6F
OC6D 0 C000
OC6E 0 D306
OC6F 1 6680 OE06
OC71 1 4E80 OC73
OC73 1 OC7A
OC74 1 OC93
OC75 1 OC9B
OC76 1 OCAC
OC77 1 OCED
OC78 1 OD00
OC79 1 OD2C
OC7A 0 C38C
OC7B 1 6C00 OE0C
OC7D 0 4818
OC7E 0 OBCA
OC7F 0 C391
OC80 0 F3E8
OC81 0 4820
OC82 0 F3E8
OC83 1 4C18 OC8F
OC85 0 C391
OC86 0 F3E4
OC87 1 4C18 OC8F
OC89 0 C391
OC8A 0 F3DA
OC8B 1 4C20 OD35
OC8D 1 6C00 OE05
OC8F 0 1010
OC90 0 D395
OC91 1 4C00 ODBB
OC93 1 4400 OD7B

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* READB XIO 3 READ-T READ SCA BUFFER 31717020
LD 3 BUFFER-T 31717030
BSI L STOIT STO CHAR IN PRINT TBL 31717040
LD 3 BUFFER-T 31717050
EOR 3 DLE-T 31717060
BSC L MDXMD,&- BR IF DLE 31717070
LD 3 STXSW-T 31717080
BSC L TTDCK,&Z BR IF LAST CHAR WAS STX 31717090
LD 3 BUFFER-T 31717100
EOR 3 STX-T 31717110
BSC L MDXMD,Z BR IF NOT STX 31717120
LD * 31717130
STO 3 STXSW-T SET STX REC FLAG 31717140
MDX MDXMD 31717150
*
TTDCK SRA 16 31717160
STO 3 STXSW-T RESET STX SWITCH 31717170
LD 3 BUFFER-T 31717180
EOR 3 ENQ-T 31717190
BSC L MDXMD,Z BR IF NOT TTD 31717200
LD * 31717210
STO 3 TTDSW-T SET TTD FLAG 31717220
*
*-----
* BRANCH TO PROPER MODE
*-----
MDXMD LDX I2 MDSWT GET MODE INDICATOR 31717230
BSC I2 * TO PROPER ROUTINE 31717240
DC NOMOD NO MODE SET R2=0 31717250
DC HEADG XMIT/REC HEADING R2=1 31717260
DC NORML XMIT/REC NORM TEXT R2=2 31717270
DC TRANS XMIT/REC TRANS TEXT R2=3 31717280
DC BCC1 XMIT/REC LOW ORD BCC R2=4 31717290
DC BCC2 XMIT/REC HIGK ORD BCC R2=5 31717300
DC ITBMD INT BLK CK MODE R2=6 31717310
*
*-----
* NO MODE SET
*-----
NOMOD LD 3 FIRST-T 31717320
STX L FIRST SET FIRST CHAR IND 31717330
BSC +- SKIP IF IND ON 31717340
*
XIO 3 RETIM-T RESTART TIMER 31717350
LD 3 BUFFER-T 31717360
EOR 3 ENQ-T 31717370
BSC Z SKIP IF ENQ 31717380
EOR 3 EQEOT-T 31717390
BSC L DONE,&- BR IF ENQ OR EOT 31717400
*
LD 3 BUFFER-T 31717410
EOR 3 NAK-T 31717420
BSC L DONE,&- BR IF NAK 31717430
*
LD 3 BUFFER-T 31717440
EOR 3 WAK-T 31717450
BSC L CKSTX&1,Z BR IF NOT WACK 31717460
STX L MSWAK SET WACK RECEIVED FLAG 31717470
*
DONE SLA 16 31717480
STO 3 RTBSY-T RESET RTN BUSY IND 31717490
BSC L RDWRT 31717500
*
*-----
* TRANSMIT/RECEIVE HEADING TEXT
*-----
HEADG BSI L CKSYN GO CHECK FOR SYN CHAR 31717510

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BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

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OC95 1 4400 OD34      BSI L CKSTX      GO CHECK FOR START CHAR 31717700
OC97 1 4400 OD8F      BSI L CKEND      GO CHECK FOR END CHAR   31717710
OC99 1 4C00 ODA9      BSC L BLKCK      CALC BCC AND XMIT OR STO 31717720
                        *
                        *-----*
                        *          TRANSMIT/RECEIVE NORMAL TEXT          *
                        *-----*
OC98 1 4400 OD7B      NORML BSI L CKSYN  GO CK FOR SYN CHAR   31717730
OC9D 0 C391           LD      3 BUFFER-T 31717740
OC9E 0 F3D9           EOR     3 DLE-T    31717750
OC9F 0 4820           BSC     Z          SKIP IF DLE CHAR 31717760
OCA0 0 F3E0           EOR     3 DLSTX-T 31717770
OCA1 0 4820           BSC     Z          SKIP IF DLE OR STX 31717780
OCA2 0 F3DB           EOR     3 SXSOH-T 31717790
OCA3 1 4C18 OCA9      BSC L **+,+-     BR IF DLE STX OR STX 31717800
OCA5 1 4400 OD8F      BSI L CKEND      GO CK FOR END CHAR   31717810
OCA7 1 4C00 ODA9      BSC L BLKCK      GO TO XMIT OR STO CHAR 31717820
                        *
OCA9 0 C000           LD      *          SET ERROR INDICATOR 31717830
OCAA 0 D387           STO     3 ERR-T   31717840
OCAB 0 70FB           MDX    *-5        31717850
                        *
                        *-----*
                        *          TRANSMIT/RECEIVE TRANSPARENT TEXT      *
                        *-----*
OCAC 0 C38A           TRANS LD  3 LSDLE-T 31717860
OCAD 1 4C20 OCB7      BSC L DLESQ,Z    BR IF LAST CHAR WAS DLE 31717870
                        *
OCAF 0 C391           LD      3 BUFFER-T 31717880
OCB0 0 F3D9           EOR     3 DLE-T    31717890
OCB1 1 4C20 ODA9      BSC L BLKCK,Z    BR IF NOT DLE IN BUFFER 31717900
OCB3 0 C000           LD      *          SET LAST DLE IND 31717910
OCB4 0 D38A           STO     3 LSDLE-T 31717920
OCB5 1 4C00 ODBB      BSC L RDWRT      31717930
                        *
OCB7 0 1010           DLESQ SLA  16     RESET LAST CHAR DLE IND 31717940
OCB8 0 D38A           STO     3 LSDLE-T 31717950
OCB9 0 C393           LD      3 FCODE-T 31717960
OCBA 1 4C20 OCCD      BSC L XMTOP,Z    BR IF XMIT FUNCTION 31717970
                        *
OCBC 0 C391           LD      3 BUFFER-T 31717980
OCBD 0 F3D8           EOR     3 SYN-T    31717990
OCBE 1 4C18 OCD6      BSC L DCRCT,&-   BR IF SYN RECVD 31718000
                        *
OCC0 0 F3DC           EOR     3 DLSYN-T 31718010
OCC1 1 4C20 OCC7      BSC L NOTDL,Z    BR IF NOT DLE RECVD 31718020
                        *
OCC3 1 4400 ODAB      BSI L CALBC      GO CALCULATE BCC 31718030
OCC5 1 4C00 OE01      BSC L EXIT       31718040
                        *
OCC7 1 4400 OD8F      NOTDL BSI L CKEND GO CK FOR END CHAR 31718050
OCC9 0 C000           LD      *          31718060
OCCA 0 D387           STO     3 ERR-T   31718070
OCCB 1 4C00 ODA9      BSC L BLKCK      31718080
                        *
OCCD 1 C480 OE13      XMTOP LD  I FCODE 31718090
OCCF 0 9388           S      3 COUNT-T 31718100
OCD0 1 4C30 OCD6      BSC L DCRCT,Z-   BR IF NOT LAST CHAR XMIT 31718110
                        *
OCD2 1 4400 OD8F      BSI L CKEND      GO CK FOR END CHAR 31718120
OCD4 1 4C00 ODF3      BSC L XMEXT      31718130
                        *
OCD6 0 C388           DCRCT LD  3 COUNT-T 31718140
OCD7 1 4C04 OCD8      BSC L *&2,E     BR IF COUNT ODD 31718150
OCD9 1 74FF OE14      MDX L POINT,-1  DECREASE ADDR POINTER -1 31718160
OCDB 1 74FF OE08      MDX L COUNT,-1  DECREASE COUNT -1 31718170
OCDD 0 C393           LD      3 FCODE-T 31718180
OCDE 1 4C20 OCE3      BSC L WRF,Z     BR IF XMIT FUNCTION 31718190

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OCE0 0 OBCA          *      XIO  3 RETIM-T  RESTART TIMER 31718380
OCE1 1 4C00 OE01     *      BSC  L EXIT  31718390
                        *
OCE3 0 OBC2          *      WRF  XIO  3 WRDLE-T XMIT DLE CHAR 31718400
OCE4 0 C3D9          *      LD    3 DLE-T  31718410
OCE5 0 D391          *      STO  3 BUFFER-T 31718420
OCE6 1 4400 ODAB     *      BSI  L CALBC  31718430
OCE8 0 C3D9          *      LD    3 DLE-T  31718440
OCE9 1 4400 OBD8     *      BSI  L STOIT  31718450
OCEB 1 4C00 OE01     *      BSC  L EXIT  31718460
                        *
OCE0 0 6205          *      BCC1 LDX  2 5    SET BCC2 IN MODE IND 31718470
OCEE 1 6E00 OE06     *      STX  L2 MDSWT  BR IF XMIT FUNCTION 31718480
OCF0 0 C393          *      LD    3 FCODE-T 31718490
OCF1 1 4C20 OCF8     *      BSC  L XMBCC,Z 31718500
                        *
OCF3 0 C391          *      LD    3 BUFFER-T 31718510
OCF4 0 1808          *      SRA   8        SAVE LOW ORDER 8 BITS 31718520
OCF5 0 D397          *      STO  3 BCCR-T  OF BLOCK CK CHAR 31718530
OCF6 1 4C00 OE01     *      BSC  L EXIT  31718540
                        *
OCF8 0 C389          *      XMBCC LD  3 BCCA-T  GET LOW 8 BITS BCCA 31718550
OCF9 0 1008          *      SLA   8        PUT IN BUFFER 31718560
OCFA 0 D391          *      STO  3 BUFFER-T 31718570
OCFB 1 4400 OBD8     *      BSI  L STOIT  XMIT BUFFER 31718580
OCFD 0 OBCC          *      XIO  3 WRBUF-T 31718590
OCFE 1 4C00 OE01     *      BSC  L EXIT  31718600
                        *
OD00 0 C393          *      BCC2 LD  3 FCODE-T 31718610
OD01 1 4C20 OD11     *      BSC  L XMLST,Z BR IF XMIT FUNCTION 31718620
                        *
OD03 0 C391          *      LD    3 BUFFER-T 31718630
OD04 0 EB97          *      OR    3 BCCR-T  31718640
OD05 0 D397          *      STO  3 BCCR-T  SAVE RECVD BCC CHAR 31718650
OD06 0 9389          *      S      3 BCCA-T 31718660
OD07 0 4820          *      BSC  Z          SKIP IF NO BCC ERROR 31718670
OD08 0 D387          *      STO  3 ERR-T   SET ERROR IND 31718680
OD09 0 D389          *      STO  3 BCCA-T 31718690
OD0A 0 C390          *      LD    3 MDSAV-T 31718700
OD0B 1 4C18 ODFB     *      BSC  L RCEXT,+ 31718710
                        *
OD0D 0 6206          *      LDX  2 6        31718720
OD0E 1 6E00 OE06     *      STX  L2 MDSWT 31718730
OD10 0 70ED          *      MDX   BCC2-2 31718740
                        *
OD11 0 C38E          *      XMLST LD  3 PAD-T 31718750
OD12 1 4C20 OD25     *      BSC  L XMPAD,Z BR TO XMIT PAD 31718760
                        *
OD14 0 C389          *      LD    3 BCCA-T 31718770
OD15 0 E3F5          *      AND  3 HFF00-T 31718780
OD16 0 D391          *      STO  3 BUFFER-T 31718790
OD17 1 4400 OBD8     *      BSI  L STOIT  PUT BCC CHAR IN BUFFR 31718800
OD19 0 OBCC          *      XIO  3 WRBUF-T 31718810
OD1A 0 C390          *      LD    3 MDSAV-T 31718820
OD1B 1 4C18 OD21     *      BSC  L *&4,&- 31718830
                        *
OD1D 0 6206          *      LDX  2 6        31718840
OD1E 1 6E00 OE06     *      STX  L2 MDSWT 31718850
OD20 0 7002          *      MDX   *&2     31718860
OD21 1 6C00 OE0E     *      STX  L PAD    SET XMIT PAD IND 31718870
OD23 1 4C00 OE01     *      BSC  L EXIT  31718880
                        *
OD25 0 C3F5          *      XMPAD LD  3 HFF00-T 31718890
OD26 0 D391          *      STO  3 BUFFER-T 31718900

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OD27 0 OBCC          XIO  3 WRBUF-T   XMIT PAD
OD28 0 1010          SLA   16
OD29 0 D391          STO   3 BUFFER-T
OD2A 1 4C00 ODF3     BSC  L XNEXT
*
OD2C 0 404E          ITBMD BSI    CKSYN
OD2D 0 C390          LD    3 MDSAV-T
OD2E 0 D386          STO   3 MDSWT-T
OD2F 0 1010          SLA   16
OD30 0 D389          STO   3 BCCA-T
OD31 0 D390          STO   3 MDSAV-T
OD32 1 4C00 ODA9     BSC  L BLKCK
*
*-----*
*          CHECK FOR START OF TEXT
*-----*
OD34 0 0000          CKSTX DC   *-*
OD35 0 C38A          LD    3 LSDLE-T
OD36 1 4C20 OD4B     BSC  L STXCK,Z   BR IF LAST CHAR DLE
*
OD38 0 C391          LD    3 BUFFER-T
OD39 0 F3D9          EOR   3 DLE-T
OD3A 1 4C18 OD6A     BSC  L BFDLE,&-  BR IF DLE IN BUFFER
*
OD3C 0 C38D          LD    3 SECND-T
OD3D 1 4C20 OD65     BSC  L WTEXT,Z
*
OD3F 0 C391          LD    3 BUFFER-T
OD40 0 F3DD          EOR   3 STX-T
OD41 1 4C18 OD6D     BSC  L BFSTX,&-  BR IF STX IN BUFFER
*
OD43 0 F3DB          EOR   3 SXSOH-T
OD44 1 4C18 OD71     BSC  L BFSOH,&-  BR IF SOH IN BUFFER
*
OD46 0 C38C          LD    3 FIRST-T
OD47 1 4C98 OD34     BSC  I CKSTX,&-  BR IF SECND WD IND ZERO
*
OD49 0 D38D          STO   3 SECND-T   SET SECOND WORD IND
OD4A 0 701A          MDX
*
OD4B 0 1010          STXCK SLA   16
OD4C 0 D38A          STO   3 LSDLE-T   RESET LAST CHAR DLE IND
*
OD4D 0 C38D          LD    3 SECND-T
OD4E 1 4C20 OC8F     BSC  L DONE,Z
*
OD50 0 C391          LD    3 BUFFER-T
OD51 0 F3DD          EOR   3 STX-T
OD52 1 4C20 OD5F     BSC  L NOSTX,Z   BR NOT STX IN BUFFER
*
OD54 0 6203          LDX   2 3
OD55 1 6E00 OE06     STX  L2 MDSWT   SET TRANSPARENT MODE
OD57 0 C393          LD    3 FCODE-T
OD58 0 4820          BSC   Z        SKIP IF RECV FUNCTION
OD59 0 OBCC          XIO   3 TIMER-T  START PROG TIMER
OD5A 0 C38C          LD    3 FIRST-T
OD5B 1 4C18 ODA9     BSC  L BLKCK,&-  BR IF NOT FIRST CHAR
OD5D 1 4C00 ODBB     BSC  L RDWRT
*
OD5F 0 C38C          NOSTX LD   3 FIRST-T
OD60 1 4C20 OC8F     BSC  L DONE,Z
*
OD62 0 C000          SETER LD   *
OD63 0 D387          STO   3 ERR-T   SET ERROR IND
OD64 0 70F5          MDX   CKFST
*
OD65 0 C393          WTEXT LD   3 FCODE-T
OD66 1 4C18 OF01     BSC  L EXIT,+
    
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31719060
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31719190
31719200
31719210
31719220
31719230
31719240
31719250
31719260
31719270
31719280
31719290
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31719310
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31719330
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31719660
31719670
31719680
31719690
31719700
31719710
31719720
31719730

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OD68 1 4C00 ODBB
*
OD6A 0 C000
OD6B 0 D38A
OD6C 0 70ED
*
OD6D 0 6202
OD6E 1 6E00 OE06
OD70 0 70E9
*
OD71 0 C38C
OD72 1 4C18 OD62
OD74 0 1010
OD75 0 D38C
OD76 0 D38D
OD77 0 6201
OD78 1 6E00 OE06
OD7A 0 70E2
*
OD7B 0 0000
OD7C 0 C391
OD7D 0 F3D8
OD7E 1 4C20 OD8B
*
OD80 0 D38A
OD81 0 C393
OD82 1 4C20 ODBB
*
OD84 0 C38B
OD85 0 4820
OD86 0 OBCC
OD87 0 C000
OD88 0 D38B
OD89 1 4C00 OE01
*
OD8B 0 1010
OD8C 0 D38B
OD8D 1 4C80 OD7B
*
OD8F 0 0000
OD90 0 C391
OD91 0 F3EC
OD92 0 4820
OD93 0 F3ED
OD94 1 4C18 ODA7
*
OD96 0 C391
OD97 0 F3E8
OD98 0 4820
OD99 0 F3EB
OD9A 1 4C20 ODA1
*
OD9C 0 D395
OD9D 0 C000
OD9E 0 D387
OD9F 1 4C00 ODBB
*
ODA1 0 C391
ODA2 0 F3EE
ODA3 1 4CA0 OD8F
    
```

```

*          BSC  L RDWRT
*
BFDLE LD   *
      STO  3 LSDLE-T   SET LAST CHAR DLE IND
      MDX
*
BFSTX LDX  2 2
      STX  L2 MDSWT   SET NORMAL TEXT MODE
      MDX
*
BFSOH LD   3 FIRST-T
      BSC  L SETER,&-  BR IF NOT FIRST CHAR
      SLA  16
      STO  3 FIRST-T   RESET FIRST CHAR IND
      STO  3 SECND-T   RESET SECOND CHAR IND
      LDX  2 1
      STX  L2 MDSWT   SET HEADING MODE
      MDX
*
*-----*
*          CHECK FOR SYN CHARACTER
*-----*
CKSYN DC   *-*
      LD    3 BUFFER-T
      EOR   3 SYN-T
      BSC  L NOSYN,Z   BR IF NOT SYN IN BUFFER
*
      STO   3 LSDLE-T   RESET LAST CHAR DLE IND
      LD    3 FCODE-T
      BSC  L RDWRT,Z   BR IF XMIT FUNCTION
*
      LD    3 LSYN-T
      BSC  Z          SKIP IF LAST CHAR NOT SYN
      XIO   3 RETIM-T  RESTART TIMER
      LD    *
      STO   3 LSYN-T   SET LAST CHAR SYN IND
      BSC  L EXIT
*
NOSYN SLA  16
      STO   3 LSYN-T   RESET LAST CHAR SYN IND
      BSC  I CKSYN
*
*-----*
*          CHECK FOR END CHARACTER
*-----*
CKEND DC   *-*
      LD    3 BUFFER-T
      EOR   3 ETB-T
      BSC  Z          SKIP IF ETB IN BUFFER
      EOR   3 EBETX-T
      BSC  L SETBC,&-  BR IF ETX OR ETB IN BUFFER
*
      LD    3 BUFFER-T
      EOR   3 ENQ-T
      BSC  Z          SKIP IF ENQ IN BUFFER
      EOR   3 EQEOT-T
      BSC  L **5,Z
*
      STO   3 RTBSY-T   RESET BUSY IND
      LD    *
      STO   3 ERR-T   SET ERROR IND
      BSC  L RDWRT
*
      LD    3 BUFFER-T
      EOR   3 ITB-T
      BSC  I CKEND,Z
*
    
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31719740
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31719800
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31719990
31720000
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31720260
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31720380
31720390
31720400
31720410

BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

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ODA5 0 C386      LD 3 MDSWT-T
ODA6 0 D390      STO 3 MDSAV-T
*
ODA7 0 6204      SETBC LDX 2 4
ODA8 0 6A5D      STX 2 MDSWT      SET MODE IND FOR BCC1
*
ODA9 0 4001      BLKCK BSI CALBC      GO CALCULATE BCC
ODAA 0 7010      MDX RDWRT
*
*-----*
*          CALCULATE BLOCK CHECK CHARACTER
*-----*
ODAB 0 0000      CALBC DC *-*
ODAC 0 6208      LDX 2 8      SET SHIFT COUNT TO 8
ODAD 0 C391      LD 3 BUFFER-T   GET CHAR FROM BUFFER
ODAE 0 1808      SRA 8
ODAF 0 F389      EOR 3 BCCA-T   ADD REMAINDER
ODB0 1 4C04 ODB4 BITCK BSC L ADPLY,E
*
ODB2 0 1801      SRA 1
ODB3 0 7002      MDX DECRE
*
ODB4 0 1801      ADPLY SRA 1
ODB5 0 F3FF      EOR 3 POLYN-T   ADD POLYNOMIAL
ODB6 0 72FF      MDX 2 -1     SKIP IF LAST SHIFT
ODB7 0 70F8      MDX BITCK
ODB8 0 D389      STO 3 BCCA-T   STORE NEW REMAINDER
ODB9 1 4C80 ODB8 BSC I CALBC
*
*-----*
*          STORE RECEIVED CHARACTER OR
*          TRANSMIT CHARACTER IN BUFFER
*-----*
ODBB 0 C393      RDWRT LD 3 FCODE-T
ODBC 1 4C20 ODC0 BSC L *E2,Z
*
ODBE 0 C31C      LD 3 RAREA-T
ODBF 0 7002      MDX *E2
*
ODC0 1 C480 OE13 LD I FCODE
ODC2 0 9388      S 3 COUNT-T
ODC3 1 4C28 ODE5 BSC L CKBC1,+Z BR ON FULL COUNT
*
ODC5 0 C393      STOWR LD 3 FCODE-T
ODC6 1 4C20 ODD8 BSC L WRITE,Z BR IF XMIT FUNCTION
*
ODC8 0 C388      LD 3 COUNT-T
ODC9 1 4C04 ODCF BSC L NEVEN,E BR IF COUNT ODD
*
ODCB 0 C391      LD 3 BUFFER-T   PUT RECEIVED CHARACTER
ODCC 1 D480 OE14 STO I POINT     IN I/O AREA
ODCE 0 701E      MDX INCNT
*
ODCF 0 C391      NEVEN LD 3 BUFFER-T
ODD0 0 1808      SRA 8
ODD1 1 EC80 OE14 OR I POINT     PACK TWO CHARACTERS
ODD3 1 D480 OE14 STO I POINT     PUT IN I/O AREA
ODD5 1 7401 OE14 MDX L POINT,&1 INCRE ADDR POINTER &1
ODD7 0 7015      MDX INCNT
*
ODD8 0 C391      WRITE LD 3 BUFFER-T
ODD9 1 4400 OBD8 BSI L STOIT
ODDB 0 0BCC      XIO 3 WRBUF-T  WRITE BUFFER
ODDC 0 C395      LD 3 RTBSY-T
ODDD 1 4C20 OE01 BSC L EXIT,Z
*
ODE0 0 6A25      LDX 2 5
ODE1 0 6A25      STX 2 MDSWT   SET MODE IND FOR BCC2

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31720420
31720430
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31720450
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31720490
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31720680
31720690
31720700
31720710
31720720
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31720760
31720770
31720780
31720790
31720800
31720810
31720820
31720830
31720840
31720850
31720860
31720870
31720880
31720890
31720900
31720910
31720920
31720930
31720940
31720950
31720960
31720970
31720980
31720990
31721000
31721010
31721020
31721030
31721040
31721050
31721060
31721070
31721080
31721090

```

```

ODE1 0 C000
ODE2 0 D38E
ODE3 0 D395
ODE4 0 701C
*
ODE5 0 C386
ODE6 0 93C6
ODE7 1 4C18 ODC5
*
ODE9 0 D387
ODEA 0 C393
ODEB 1 4C20 ODF3
*
ODED 1 7401 OE08
ODEF 0 C395
ODFO 1 4C20 OE01
ODF2 0 7008
*
ODF3 0 C398
ODF4 1 4C10 ODFB
*
ODF6 0 1010
ODF7 0 D393
ODF8 1 4400 0943
ODFA 0 7006
*
ODFB 0 C000
ODFC 0 D38F
*
ODFD 0 0B8C
ODFE 0 0BC6
ODFF 0 1010
OE00 0 D395
OE01 0 6600 0000
OE03 1 4C80 OC01
*
OE05 0 0000
OE06 0 0000
OE07 0 0000
OE08 0 0000
OE09 0 0000
OE0A 0 0000
OE0B 0 0000
OE0C 0 0000
OE0D 0 0000
OE0E 0 0000
OE0F 0 0000
OE10 0 0000
OE11 0 0000
OE12 0 0000
OE13 0 0000
OE14 0 0000
OE15 0 0000
OE16 0 0000
OE17 0 0000
OE18 0 0000
OE19 0 0000
OE1A 0 0000
OE1B 0 0000
OE1C 0 0000

```

```

LD *
STO 3 PAD-T      SET XMIT PAD IND
STO 3 RTBSY-T   SET RTN BUSY IND
MDX EXIT
*
CKBC1 LD 3 MDSWT-T
S 3 H0004-T
BSC L STOWR,&- BR IF MODE IND BCC1
*
STO 3 ERR-T
LD 3 FCODE-T
BSC L XMEXT,Z BR IF XMIT MODE
*
INCNT MDX L COUNT,&1 INCRE COUNT &1
LD 3 RTBSY-T
BSC L EXIT,Z
MDX RCEXT
*
*-----*
*          END TRANSMIT/RECEIVE
*-----*
XMEXT LD 3 REQ-T GET XMIT/REC REQ
BSC L RCEXT,- BR IF XMIT ONLY
*
SLA 16
STO 3 FCODE-T SET RECEIVE FUNCTION
BSI L GO START RECEIVE
MDX EXIT
*
RCEXT LD *
STO 3 MSEND-T SET MSG END IND
*
EXIT1 XIO 3 ENDOP-T END SCA OPERATION
XIO 3 STRED-T START READ
SLA 16
STO 3 RTBSY-T
EXIT LDX L2 *-*
BSC I INT
*
*****
*          INDICATORS, CONSTANTS, IOCCS
*****
TT BSS 0
MSWAK DC *-* WACK RECEIVED FLAG
MDSWT DC *-* MODE IND
ERR DC *-* ERROR IND
COUNT DC *-* CHARACTER COUNT
BCCA DC *-* BCC ACCUMULATION
LSDLE DC *-* LAST CHAR DLE IND
LSYN DC *-* LAST CHAR SYN IND
FIRST DC *-* FIRST CHARACTER IND
SECND DC *-* SECOND CHARACTER IND
PAD DC *-* XMIT PAD INDICATOR
MSEND DC *-* END OF MSG IND
MDSAV DC *-*
BUFFER DC *-* XMIT/REC BUFFER
SYNC DC *-* XMIT SYNS IND
FCODE DC *-* FUNCTION CODE
POINT DC *-* I/O AREA POINTER
RTBSY DC *-* ROUTINE BUSY IND
DSW DC *-* DSW STORAGE
BCCR DC *-* BLOCK CHECK CHAR STORAGE
RETRY DC *-* RETRY COUNTER
WTCNT DC *-* INTERRUPT WAIT COUNT
TEMP DC *-* TEMPORARY STORAGE
REQ DC *-* XMIT/REC REQUEST IND
CNTA DC *-* COUNTER A

```

```

31721100
31721110
31721120
31721130
31721140
31721150
31721160
31721170
31721180
31721190
31721200
31721210
31721220
31721230
31721240
31721250
31721260
31721270
31721280
31721290
31721300
31721310
31721320
31721330
31721340
31721350
31721360
31721370
31721380
31721390
31721400
31721410
31721420
31721430
31721440
31721450
31721460
31721470
31721480
31721490
31721500
31721510
31721520
31721530
31721540
31721550
31721560
31721570
31721580
31721590
31721600
31721610
31721620
31721630
31721640
31721650
31721660
31721670
31721680
31721690
31721700
31721710
31721720
31721730
31721740
31721750
31721760
31721770

```

OE1D 0 0000	CNTB DC	*--	COUNTER B	31721780
OE1E 0 0000	TMPNT DC	*--	TEST MESSAGE LOCATOR	31721790
OE1F 0 0000	TOP DC	*--	HIGHEST ADDRS TO BE USED	31721800
OE20 0 0000	CNTPT DC	*--		31721810
OE21 0 0000	ENPNT DC	*--	TEXT TABLE POINTER	31721820
OE22 0 0000	TMRCI DC	*--	TEST MSG RECV IND	31721830
OE23 0 0000	TMXMI DC	*--	TEST MSG XMIT IND	31721840
OE24 0 0000	IOAR DC	*--	I/O AREA ADDRESS	31721850
OE25 0 0000	TOIND DC	*--	TIMEOUT INDICATOR	31721860
OE26 0 0000	YCNT DC	*--	TEST MSG COUNT	31721870
OE27 0 0000	ERRNO DC	*--	ERROR NUMBER	31721880
OE28 0 0000	IDFLG DC	*--	XMIT ID INFO INDICATOR	31721890
OE29 0 0000	REWAK DC	*--	WACK RECEIVED CTR	31721900
OE2A 0 0000	OPTIN DC	*--		31721910
OE2B 0 0000	TYPE DC	*--		31721920
OE2C 1 0F40	ENADR DC	ENTBL		31721930
OE2D 0 0000	ENPT2 DC	*--		31721940
OE2E 0 0000	NDERR DC	*--		31721950
OE2F 1 8A4D	MSG1 DC	TOMSG&/8000		31721960
OE30 1 8A52	MSG2 DC	XMSG&/8000		31721970
OE31 1 8A56	MSG3 DC	RCMSG&/8000		31721980
OE32 1 8A5A	MSG4 DC	ERMMSG&/8000		31721990
OE33 1 8A5D	MSG5 DC	ENCOR&/8000		31722000
OE34 0 02AA	STXAA DC	/02AA		31722010
OE35 0 AAAA	HAAAA DC	/AAAA		31722020
OE36 0 AA55	HAA55 DC	/AA55		31722030
OE37 0 5555	H5555 DC	/5555		31722040
OE38 0 5503	H5ETX DC	/5503		31722050
OE39 0 3232	SYSYN DC	/3232		31722060
OE3A 0000	BSS E 0		IOCC TABLE	31722070
OE3A 1 0E58	SYNRG DC	SYN	WR SYN TO SYNC REG	31722080
OE3B 0 5104	DC	/5104	IOCC	31722090
OE3C 0 000E	ENDOP DC	14	END OPERATION	31722100
OE3D 0 5404	DC	/5404	IOCC	31722110
OE3E 0 0104	STSYN DC	260	START SYNC	31722120
OE3F 0 5410	DC	/5410	IOCC	31722130
OE40 0 0003	TIMER DC	3	START PROG TIMER	31722140
OE41 0 5420	DC	/5420	IOCC	31722150
OE42 1 0E59	WRDLE DC	DLE	WRITE DLE	31722160
OE43 0 5100	DC	/5100	IOCC	31722170
OE44 1 0E58	WRSYN DC	SYN	WRITE SYN	31722180
OE45 0 5100	DC	/5100	IOCC	31722190
OE46 0 0004	STRED DC	4	INITIATE READ	31722200
OE47 0 5600	DC	/5600	IOCC	31722210
OE48 1 0E11	READ DC	BUFFR	READ CHAR TO BUFFER	31722220
OE49 0 5200	DC	/5200	IOCC	31722230
OE4A 0 0007	RETIM DC	7	RESTART TIMER	31722240
OE4B 0 5702	DC	/5702	IOCC	31722250
OE4C 1 0E11	WRBUF DC	BUFFR	WRITE BUFFER	31722260
OE4D 0 5100	DC	/5100	IOCC	31722270
OE4E 0 0010	SNSRS DC	16	SENSE AND RESET DSW	31722280
OE4F 0 5701	DC	/5701	IOCC	31722290
OE50 0 0013	SENSE DC	19	SENSE DSW	31722300
OE51 0 5700	DC	/5700	IOCC	31722310
OE52 0 0063	RESET DC	99	RESET SCA	31722320
OE53 0 5540	DC	/5540	IOCC	31722330
OE54 0 1070	ACKS DC	/1070	DLE ACKO	31722340
OE55 0 1061	DC	/1061	DLE ACK1	31722350
OE56 0 0000	POSAK DC	*--		31722360
OE57 0 0000	DC	*--		31722370
OE58 0 3200	SYN DC	/3200	SYN CHARACTER	31722380
OE59 0 1000	DLE DC	/1000	DLE CHARACTER	31722390
OE5A 0 6800	WAK DC	/6800	WACK CHARACTER	31722400
OE5B 0 0300	SXSOH DC	/0300	STX SOH EXCLUSIVE OR	31722410
OE5C 0 2200	DL SYN DC	/2200	DLE SYN EXCLUSIVE OR	31722420
OE5D 0 0200	STX DC	/0200	STX CHARACTER	31722430
OE5E 0 0300	ETX DC	/0300	ETX CHARACTER	31722440
OE5F 0 016C	SOHPC DC	/016C	SOH % CHARACTERS	31722450

OE60 0 1002	DLSTX DC	/1002	DLE STX CHARACTERS	31722460
OE61 0 1003	DLETX DC	/1003	DLE ETX CHARACTERS	31722470
OE62 0 0001	EOTCT DC	/0001	COUNT FOR XMIT EOT	31722480
OE63 0 3700	EOT DC	/3700	EOT CHARACTER	31722490
OE64 0 3D00	NAK DC	/3D00	NAK CHARACTER	31722500
OE65 0 0002	LSTAK DC	/0002	COUNT POS ACK	31722510
OE66 0 0000	DC	*--		31722520
OE67 0 0001	ENQCT DC	/0001	COUNT FOR XMIT ENQ	31722530
OE68 0 2D00	ENQ DC	/2D00	ENQ CHARACTER	31722540
OE69 0 0002	DEOTC DC	/0002		31722550
OE6A 0 1037	DLEOT DC	/1037	DLE EOT CHARACTERS	31722560
OE6B 0 1A00	EQEOT DC	/1A00	ENQ EOT EXCLUSIVE OR	31722570
OE6C 0 2600	ETB DC	/2600	ETB CHARACTER	31722580
OE6D 0 2500	EBETX DC	/2500	ETB ETX EXCLUSIVE OR	31722590
OE6E 0 1F00	ITB DC	/1F00		31722600
OE67 0	H0001 EQU	ENQCT		31722610
OE65 0	H0002 EQU	LSTAK		31722620
OE40 0	H0003 EQU	TIMER		31722630
OE46 0	H0004 EQU	STRED		31722640
OE4A 0	H0007 EQU	RETIM		31722650
OE6F 0 0011	H0011 DC	/11		31722660
OE3C 0	D14 EQU	ENDOP		31722670
OE4E 0	D16 EQU	SNSRS		31722680
OE50 0	D19 EQU	SENSE		31722690
OE70 0 0019	D25 DC	25		31722700
OE52 0	D99 EQU	RESET		31722710
OE3E 0	D260 EQU	STSYN		31722720
OE71 0 000A	H000A DC	/000A		31722730
OE72 0 F000	HF000 DC	/F000		31722740
OE73 0 F002	HF002 DC	/F002		31722750
OE74 0 F0F0	HFF00 DC	/F0F0		31722760
OE75 0 FF00	HFFF0 DC	/FFF0		31722770
OE76 0 FFFF	HFFFF DC	/FFF		31722780
OE77 0 00FF	H00FF DC	/00FF		31722790
OE78 0 0202	H0202 DC	/0202		31722800
OE79 0 0F0F	H0F0F DC	/0F0F		31722810
OE7A 0 8000	H8000 DC	/8000		31722820
OE7B 0 7000	H7000 DC	/7000		31722830
OE7C 0 7FFF	H7FFF DC	/7FFF		31722840
OE7D 0 001F	H001F DC	/001F		31722850
OE7E 0 1802	H1802 DC	/1802		31722860
OE7F 0 A001	POLYN DC	/A001		31722870
OE80 0000	T BSS	0		31722880
OE80 0 0032	KSYN DC	/0032	SYN CHARACTER	31722890
OE81 0 00AA	K00AA DC	/00AA		31722900
OE82 0 0000	SELCT DC	*--	SELECT CHAR LOCATION	31722910
OE83 0 0000	RVISW DC	*--	RVI FLAG	31722920
OE84 0 107C	RVI DC	/107C		31722930
OE85 0 0000	STXSW DC	*--	STX FLAG	31722940
OE86 0 0000	TTDSW DC	*--	TTD FLAG	31722950
	*****			31722960
	TABLE BSS 20			31722970
	*****			31722980
OE9C 0000	BSS E 0			31722990
OE9C 0 012C	RAREA DC	300		31723000
OE9D 0002	BSS 2			31723010
	*****			31723020
OE9F 0097	RFTTM BSS	151		31723030
	*****			31723040
OF36 000A	BSS 10	PATCH AREA		31723050
OF40 008D	ENTBL BSS	PID+/A22--*		31723060
OFFE 0627	END	BGIN		31723070

NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

ACKS OE54 07DC
 ADBAD 0889 0882
 ADPLY 0DB4 0DB0
 ALPH 0B7D 0B5E
 ALTNT 07E1 0779 07EA 081C 085A 08B1 08BE 08DB
 AMSGS 0992 0986
 A1701 099A 0992
 A1702 09A4 0993
 A1703 09A9 0994
 A1705 09AF 0996
 A1706 09C0 0997
 A1707 09D1 0998
 A1708 09DB 0999
 BCCA OE09 0CF8 0D06 0D09 0D14 0D30 0DAF 0DB8
 BCCR OE17 0CF5 0D04 0D05
 BCC1 0CED 0C77
 BCC2 0D00 0C78 0D10
 BDRFT 0797 0733 073C 0773 0B2E
 BEGIN 0160 0627
 BFDLE 0D6A 0D3A
 BFSOH 0D71 0D44
 BFSTX 0D6D 0D41
 BGIN 0627 0FFE
 BITCK 0DB0 0DB7
 BLKCK 0DA9 0C99 0CA7 0CB1 0CCB 0D32 0D5B
 BTD OAAA 0A68 0A73 0A81
 BUFFR OE11 0705 0821 0868 08C7 0C40 0C4F 0C56 0C59 0C60 0C69 0C7F 0C85 0C89
 0C9D 0CAF 0CBC 0CE5 0CF3 0CFA 0D03 0D16 0D26 0D29 0D38 0D3F 0D50
 0D7C 0D90 0D96 0DA1 0DAD 0DCB 0DCF 0DD8 0E48 0E4C
 CALBC 0DAB 0CC3 0CE6 0DA9 0DB9
 CKBC1 0DE5 0DC3
 CKCNT 0C3A 0C1F 0C23 0C26
 CKEND 0D8F 0C97 0CA5 0CC7 0CD2 0DA3
 CKESC 0748 0740 0743
 CKFST 0D5A 0D64 0D6C 0D70 0D7A
 CKMON 0BC1 0B88 0BA0 0BB0 0BC2
 CKOPN 096E 0944 0981 0B4E
 CKRDY 06B9 06B3
 CKRTR 079F 06FA 0714 0723 0788 078C 0792 07B7 07BC 080C 0817 0833 0846 0853
 08A3 093E
 CKSTX 0D34 0C8B 0C95 0D47
 CKSYN 0D7B 0C93 0C9B 0D2C 0D8D
 CKY 088C 086F 0877
 CLEAR 068D 066B 06FC 07CB 080F 0819
 CNTA OE1C 0A78 0A83 0A85 0A9F 0AC1 0AD2 0ADC 0AE6 0B58 0B5A 0B63 0B65 0B8C
 0BA5
 CNTB OE1D 0A89 0A98 0B60 0B6C 0B74 0BA1
 CNTPT OE20 06A2 0BCF 0BD0 0BE0 0BE7 0BEA
 CNTRL 0632 0BB9
 CN00 064E 0649
 CN10 0652
 CN20 065C 0650
 CN30 0663 064D 0655
 COUNT OE08 0ABF 0C3A 0C41 0CCF 0CD6 0CDB 0DC2 0DC8 0DED
 CTINU 081C 0813 0838 0848
 DCRCCT 0CD6 0C8E 0CDD
 DECRE 0DB6 0DB3
 DEOTC OE69 0905
 DIAGP 09E0 07C1 08FE 091B 09E4 09E7
 DIAL 061C 0901 0909
 DISCN 07F9 07F3
 DLE OE59 0C30 0C5A 0C9E 0CB0 0CE4 0CE8 0D39 0E42
 DLEOT OE6A 07F2 08F5
 DLESQ 0CB7 0CAD
 DLETX OE61 0AE9 0B14
 DLSTX OE60 0ADD 0B12 0CA0
 DLSYN OE5C 0CC0
 DONE 0C8F 0C83 0C87 0D4E 0D60

DSW OE16 0C07 0C10 0C1A 0C4A
 DTB 07CD 0735 076D 07D5
 D14 OE3C 073E 0AEE
 D16 OE4E 06C8 06D6
 D19 OE50 06CF 06D8
 D25 OE70 06F5 07DA 07E8
 D260 OE3E 0AD9
 D99 OE52 0738 076F 0A64 0A67 0A6F 0A72
 EBETX OE6D 0D93
 EMSGS 0A03 09F6
 ENADR OE2C 06A0
 ENCOR 0A5D 0E33
 END 0164 0661 0AA8 0BBF
 ENDIT 0BB5 0B54 0B5C
 ENDOP OE3C 06A6 095C 096A 0DFD
 END1 08EB 08B7
 END2 08EE 08C1
 ENPNT OE21 06A1 0979 097D 097F 0BCE 0BDA 0BE1 0BE4 0BEE 0BF2 0BF8 0BFA 0BFD
 ENPRT 0B39 08F2 090F
 ENPT2 OE2D 06A3 097A 097C
 ENQ OE68 06F0 070D 071A 0783 0807 089C 0C6A 0C80 0D97
 ENQCT OE67 0805 0837 084C
 ENQRC 0721 070E
 ENTBL 0F40 0697 0699 0B56 0E2C
 ENTST 0901 085C
 ENTS2 0909 07C7 08F6 0900 093A
 ENTYP 0B45 0B40
 EOT OE63 077E 07EE 08F1
 EOTCK 07EC 0710 071D 0781 07F5 0820 0866 089F 08D2
 EOTCT OE62 06DF 0908
 EOTRC 07F7 07EF
 EQEOT OE6B 0C82 0D99
 ERLCK 0166
 ERMSG 0A5A 0E32
 ERPRT 09F3 07C5 080D 0932 0938 0A01 0AA6
 ERR OE07 0729 08D8 0CAA 0CCA 0D08 0D63 0D9E 0DE9
 ERREX 07BE 0784 07F8 07FB
 ERRNO OE27 069D 07A0 07BE 088C 08AF 08E5 08F9 09E6 09F1
 ERROR 0162 09EA 09F9
 ERRTO 0839 0823
 ESC2 0756 0750 0755
 ETB OE6C 0D91
 ETX OE5E 0A81
 EXIT OE01 0C02 0C1C 0C33 0C38 0CC5 0CE1 0CEB 0CF6 0CFE 0D23 0D66 0D89 0DDD
 0DE4 0DF0 0DFA
 EXITA 0A9B 0A86
 EXITB 0B31 0ABA 0AD5 0AED 0B0E 0B29
 EXIT1 0DFD 0C09
 EXIT8 0799 0775
 E170A 0A47 0A0D
 E1700 0A0E 0A03
 E1701 0A14 0A04
 E1702 0A1C 0A05
 E1703 0A22 0A06
 E1704 0A28 0A07
 E1705 0A2C 0A08
 E1706 0A30 0A09
 E1707 0A37 0A0A
 E1708 0A3C 0995 0A0B
 E1709 0A42 0A0C
 FCODE OE13 0918 094F 0C0D 0CB9 0CCD 0CDD 0CF0 0D00 0D57 0D65 0D81 0DBB 0DC0
 0DC5 0DEA 0DF7
 FIRST OE0C 0C7A 0C7B 0D46 0D5A 0D5F 0D71 0D75
 GDMMSG 08E8 08D9
 GNRFT 0A60 06BD 06C4 06CB 06D9 06E6 0AA1
 GNTM 0AB3 06D0 0777 0B30 0B37
 GO 0943 0919 095E 096C 0DF8
 GTCNT 0B5A 0B8E 0BA7

GTHX 0B63 0B7B 0BA3
GTRDY 06A4 0682 068B
HAAAA 0E35 0AFD
HAA55 0E36 0AF9
HEADG 0C93 0C74
HEX 0B8F 0B6F 0B79 0B7C
HFFFF 0E76 0706 0822 0869 08C8 0B91 0C4E
HFF00 0E75 0C3F 0D15 0D25
HFOFO 0E74 0AB0
HF000 0E72 0A79
HF002 0E73 0A7F
HFOFO 0E79 07CE
H00FF 0E77 07D4
H000A 0E71 07D1 0AAC
H0001 0E67 0683 0742 0745 074F 07B3 07BA 085E 08B9 08C3 0961 0A7C 0ABC 0AD6
H0002 0E65 06C1 06D4 0AF3 0C18
H0003 0E40 0B0F 0C15 0C22 0C2D
H0004 0E46 0963 0ADB 0DE6
H0007 0E4A 06F3 07D8 07E6 0A77 0AC0
H001F 0E7D 0BAB
H0011 0E6F 0684
H0202 0E78 0AE3
H1802 0E7E 0B93
H5ETX 0E38 0AFB
H5555 0E37 0B04
H7FFF 0E7C 0917 091D 0B7D 0B96 0C0B
H7000 0E78 06A4
H8000 0E7A 0861 0B81 0B99
IDFLG 0E28 0639 06FE 0728 07FF 081B
IDRSP 061D 067F 0682 0685 0688
ILO 017A
IL1 018A 062C
IL2 019A
IL3 01AA
IL4 01BA
INCNT 0DED 0DCE 0DD7
INITL 07D7 068F 07DF 0849 0896
INT 0C01 062A 0E03
IOAR 0E24 0960
ITB 0E6E 0DA2
ITBMD 0D2C 0C79
KSYN 0E80 0754
K00AA 0E81 0AF7
LOG 0163 0989 0B85 0B9D
LOGBY 0167
LRTN 0678 0679
LSDLE 0E0A 0C1E 0CAC 0CB4 0CB8 0D35 0D4C 0D6B 0D80
LSTAK 0E65 0704 077C 0794 07DE 07E5 08A6 08A9 08AD 08C6 08DE 08EF
LSYN 0E0B 0D84 0D88 0D8C
MDSAV 0E10 0D0A 0D1A 0D2D 0D31 0DA6
MDSWT 0E06 0709 08CF 0C14 0C21 0C2C 0C6F 0CEE 0D0E 0D1E 0D2E 0D55 0D6E 0D78
MDXMD 0C6F 0C43 0C5B 0C62 0C66 0C6B
MLSCF 05E5 066D 0685 0927 0BC4
MSEND 0E0F 0922 0DFC
MSG1 0E2F 0C50
MSG2 0E30 0965
MSG3 0E31 0952
MSG4 0E32 07AF 088E 08B3 08E1 08FB 0BCA
MSG5 0E33 0BF7
MSWAK 0E05 07AC 091F 0C8D
NAK 0E64 0793 082E 0871 08A5 08DD 0C86
NAKRC 0844 082F
NEVEN 0DCF 0DC9
NGERR 0E2E 0976 0BCB
NOESC 0758 074D
NOMOD 0C7A 0C73

NORML 0C9B 0C75
NOSTX 0D5F 0D52
NOSYN 0D8B 0D7E
NOTDL 0CC7 0CC1
NRTN 0676 067A
NTSPC 076C 0746 075B
ODD 0C44 0C3B
OPTIN 0E2A 0647 07A9 0BB5
OUT 0BF5 0BD3 0BD5 0BD7 0BDC 0BDE 0BEC 0BF4
PAD 0E0E 0D11 0D21 0DE2
PDAT 0B4E 0BB4
PID 05DC 0629 0F40
POINT 0E14 0958 0962 0C3D 0C44 0C47 0CD9 0DCC 0DD1 0DD3 0DD5
POLYN 0E7F 0DB5
POSAK 0E56 07DD 07E2 07E4 0812 0826 082A 084E 0879 087D 08AA 08AC
PRTRC 0BAA 0B4D
PRTXM 0BA8 0B4A
RAD 05DE 0667 06AA
RAREA 0E9C 06EF 070C 0719 072E 0734 074A 076C 077D 0782 07ED 07F1 0806 0811
0825 0829 082D 084D 0870 0878 087C 0880 089B 08FO 08F4 094D 0955
0AC8 0ACB 0DBE
RCENQ 0716 0720 0726
RCXT 0DFB 0C53 0D0B 0DF2 0DF4
RCMSG 0A56 0E31
RCVTM 0892 06E0
RCVT1 089B 08AE
RDWRT 0DBB 0C91 0CB5 0D5D 0D68 0D82 0D9F 0DAA
READ 0E48 0C55
READB 0C55 0C4C
RECV 0C4A 0C0E
REQ 0E1B 0916 0DF3
RESET 0E52 07F9 090C
RETIM 0E4A 0C7E 0CE0 0D86
RETRN 092B 0925
RETRY 0E18 06F4 07B2 07B6 07D9 07E7
REWAK 0E29 06F6 07B9 07BB 07DB 07E9
RFTTM 0E9F 081F 0A69 0A74 0A76 0A7A 0A80 0A82 0A90 0A92 0A96 0AA0 0AC2 0AC3
0ACE 0ADA 0ADE 0AE1 0AEB 0AF5 0AF8 0AFA 0AFC 0AFF 0B06 0B0C 0B13
0B15 0B1A 0B21 0B27 0B31
RID 05DD 062F 064C 0652 065A 065C 065E 0663
RIDCK 0679 0654 0BBB
RLCF 0168
RQKB 01BC
RQTY 01BB
RTBSY 0E15 0630 095B 0969 0C08 0C90 0D9C 0DDC 0DE3 0DEF 0E00
RTM 08AF 08CE 08D7
RTMSG 08BE 079D 089D 08E7 08EA
RTNOM 067A 0660
RTNSW 0165 0669
RTN1 068C 0671
RTN2 06C3 0672
RTN3 06CA 0673 06C2 06C9 06EB
RTN4 06D4 0674
RTN5 06D6 0675
RTN6 06D8 0676 06D5 06D7 06E4
RTN7 06E2 0677
RTN8 06EC 0678
RTTBL 0671 0665 0679 067A
RVI 0E84 0881
RVISW 0E83 0887 0B39 0B46
SECND 0E0D 0D3C 0D49 0D4D 0D76
SELCT 0E82 0634 0749 0757 075D 0AF1
SENSE 0E50 06A8 092D
SFTBC 0DA7 0D94
SFTER 0D62 0D72
SNSRS 0E4E 0C06
SOHPC 0E5F 072F 0A75
STALP 0BC8 07B0 088F 08B4 08E2 08FC 0953 0966 0BCC 0C51

BSCA POINT-TO-POINT DIAGNOSTIC

BSCA POINT-TO-POINT DIAGNOSTIC

START 0161 066F 06B7 0929 0BC6
 STBFR 0C40 0C49
 STOIT 0BD8 0BCD 0BE6 0BFF 0C31 0C36 0C57 0CE9 0CFB 0D17 0DD9
 STOWR 0DC5 0DE7
 STRED 0E46 06A7 095D 0DFE
 STRT 062A 05E3 05E4 07AA 0BB7 0BBD
 STSYN 0E3E 096B
 STX 0E5D 0C61 0D40 0D51
 STXAA 0E34
 STXCK 0D4B 0D36
 STXSW 0E85 0C5D 0C65 0C68
 SVKB 018D
 SWO 05DF
 SW1 05E0 0645 064E 0658 07A7
 SW2 05E1 0636 07A4 0971 09E1 0B50
 SW3 05E2 0A6A
 SXSOH 0E5B 0CA2 0D43
 SYN 0E58 0C35 0CBD 0D7D 0E3A 0E44
 SYNC 0E12 0964 0C19 0C25 0C29
 SYNRG 0E3A 094E
 SYSYN 0E39 0632 0748 0B1F
 T 0E80 0683 0684 068D 069B 069D 069E 069F 06A0 06A1 06A2 06A3 06A4 06A5
 06A6 06A7 06A8 06B9 06C1 06C8 06CF 06D4 06D6 06D8 06EF 06F0 06F3
 06F4 06F5 06F6 06FE 0705 0706 070C 070D 0719 071A 0728 0729 072E
 072F 0734 0737 0738 073D 0742 0745 0748 0749 074A 074F 0754 0757
 0758 075D 076C 076E 076F 0774 077D 077E 0782 0783 0793 0794 0799
 079A 079C 07A9 07AF 07B2 07B3 07B6 07B9 07BA 07BB 07BE 07CE 07CF
 07D1 07D3 07D4 07D8 07D9 07DA 07DB 07DC 07DD 07DE 07E2 07E4 07E5
 07E6 07E7 07E8 07E9 07ED 07EE 07F1 07F2 07F9 07FE 07FF 0806 0807
 0811 0812 081B 0821 0822 0825 0826 0829 082A 082D 082E 083E 0842
 084D 084E 0857 0858 0859 085B 085E 085F 0860 0861 0868 0869 0870
 0871 0878 0879 087C 087D 0880 0881 0885 0887 088E 0892 0893 0895
 089B 089C 08A5 08A6 08AA 08AC 08AD 08B3 08B6 08B9 08BA 08C0 08C3
 08C4 08C7 08C8 08D8 08DD 08DE 08E1 08F0 08F1 08F4 08F5 08FB 090C
 0916 0917 0918 091D 091E 091F 0922 092B 092D 094B 094D 094E 094F
 0952 095B 095C 095D 0960 0961 0962 0963 0964 0965 0969 096A 096B
 096F 0976 0979 097A 097C 097D 0988 098C 098F 09E6 09E9 09EE 09F1
 09F8 09FD 0A00 0A61 0A64 0A67 0A69 0A6C 0A6F 0A72 0A74 0A75 0A76
 0A77 0A78 0A79 0A7A 0A7B 0A7C 0A7F 0A80 0A81 0A82 0A85 0A89 0A9B
 0A9F 0AA0 0AAC 0AB0 0ABB 0ABC 0ABF 0AC0 0AC1 0AC2 0AD6 0AD9 0ADA
 0ADB 0ADC 0ADD 0ADE 0ADF 0AEE 0AF1 0AF3 0AF5 0AF7 0AF8 0AF9 0AFA
 0AFB 0AFC 0AFD 0B0F 0B12 0B13 0B14 0B2A 0B35 0B39 0B3F 0B46 0B47
 0BAB 0BAC 0BAD 0BC9 0BCA 0BCB 0BCE 0BCF 0BD2 0BD9 0BDA 0BDB 0BE0
 0BE1 0BE9 0BF0 0BF5 0BF7 0C04 0C06 0C07 0C08 0C0B 0C0C 0C0D 0C10
 0C14 0C15 0C17 0C18 0C19 0C1A 0C1E 0C21 0C22 0C25 0C28 0C29 0C2C
 0C2D 0C30 0C32 0C35 0C37 0C3A 0C3F 0C40 0C4A 0C4E 0C4F 0C50 0C55
 0C56 0C59 0C5A 0C5D 0C60 0C61 0C65 0C68 0C69 0C6A 0C6E 0C7A 0C7E
 0C7F 0C80 0C82 0C85 0C86 0C89 0C8A 0C90 0C9D 0C9E 0CA0 0CA2 0CAA
 0CAC 0CAF 0CB0 0CB4 0CB8 0CB9 0CBC 0CBD 0CC0 0CCA 0CCF 0CD6 0CDD
 0CE0 0CE3 0CE4 0CE5 0CE8 0CF0 0CF3 0CF5 0CF8 0CFA 0CFD 0D00 0D03
 0D04 0D05 0D06 0D08 0D09 0D0A 0D11 0D14 0D15 0D16 0D19 0D1A 0D25
 0D26 0D27 0D29 0D2D 0D2E 0D30 0D31 0D35 0D38 0D39 0D3C 0D3F 0D40
 0D43 0D46 0D49 0D4C 0D4D 0D50 0D51 0D57 0D59 0D5A 0D5F 0D63 0D65
 0D6B 0D71 0D75 0D76 0D7C 0D7D 0D80 0D81 0D84 0D86 0D88 0D8C 0D90
 0D91 0D93 0D96 0D97 0D99 0D9C 0D9E 0DA1 0DA2 0DA5 0DA6 0DAD 0DAF
 0DB5 0DB8 0DBB 0DBE 0DC2 0DC5 0DC8 0DCB 0DCF 0DD8 0DDB 0DDC 0DE2
 0DE3 0DE5 0DE6 0DE9 0DEA 0DEF 0DF3 0DF7 0DFC 0DFD 0DFE 0E00
 TABLE 0E87 0693 0737 073D 0758 076E 0774 0799 0858 086C 0874 0889 0892 08CB
 08D5 08DF 08E8 0984 0988 098B 098F 09E9 09EC 09F4 09F8 09FB 0A00
 0A61 0A6C 0A7B 0B69 0B72 0B7F 0B83 0B87 0B8A 0B9B 0B9F 0BAC 0BAD
 0BB2
 TEMP 0E1A 07CF 07D3 0ABB 0B2A 0BC9 0BD9 0BF0 0BF5
 TEXTR 0727 070B
 TIMER 0E40 0C17 0D59
 TMOT 0725 0707
 TMPNT 0E1E 0860 0AB8 0AC5 0B33
 TMRCI 0E22 069F 079C 0895 0B4B
 TMXMI 0F23 069E 0857 0B48

TOIND 0E25 07FE 083A 083E 0842
 TOMSG 0A4D 0E2F
 TOP 0E1F 0642 0BD2 0BDB
 TRANS 0CAC 0C76
 TSMSG 085B 087A 087E 0888 0891
 TT 0E05 0947
 TTD 083F 083A
 TTDCK 0C67 0C5E
 TTDSW 0E86 083F 0B47 0C6E
 TYPE 0E2B 07A2 07C3
 TYPIT 0983 06B0 07C9 090E 0990 0B3D 0B43 0BAE
 WACKR 07B9 07AE
 WAIT 091D 0936
 WAK 0E5A 0C8A
 WAKER 093C 0920
 WRACK 083D 082B
 WRBUF 0E4C 0CFD 0D19 0D27 0DDB
 WRDLE 0E42 0C32 0CE3
 WRESP 0C1E 0C12
 WRF 0CE3 0CDE
 WRITE 0DD8 0DC6
 WRSYN 0E44 0C37
 WSYNC 0C35 0C2A 0C2E
 WTCNT 0E19 06A5 06AC 091E 0934 0C0C
 WTEXT 0D65 0D3D 0D4A
 XENQ2 0832 083C 083F
 XERR 0AA3 0A62 0A65
 XMACK 06FE 06F7 071B 0724 0795
 XMAK2 077A 0789 0790
 XMBCC 0CF8 0CF1
 XMENQ 0803
 XMEXT 0DF3 0CD4 0D2A 0DEB
 XMIT 0960 0950
 XMLST 0D11 0D01
 XMMSG 0A52 0E30
 XMNAK 0791 072D 0798
 XMPAD 0D25 0D12
 XMRCV 0911 0686 06DD 06EC 0702 0716 077A 078D 0803 081D 0835 084A 0863 0898
 08A7 08BB 08C5 08EB 08EE 0904 0907 0912 0914 0923 0942
 XMRFT 07FC 06BF 06C6 06CD 06DB 06E8 0827
 XMTID 067B 067C 0689 068B 06FF 0800
 XMTM 0849 077F 0855 0940
 XMTM1 0856 06D2 084F
 XMTOP 0CCD 0CBA
 XNOTZ 0ABB 0AB4
 XNOT1 0AD6 0ABD
 XNOT2 0AEE 0AD7
 XNT16 0B0F 0AEF
 XNT19 0B2A 0B10
 XONE 0A87 0A7D 0A9A
 XSPEC 05E8 06E2 0759 075F 0763 0766 076A 0A87 0A8B 0A9D 0AB6 0B2B
 YCNT 0E26 079A 0859 085B 085F 0885 0893 08B6 08BA 08C0 08C4
 YERR 0AA5 0A6D 0A70 0AA4
 END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA TRANSMIT/RECEIVE BSC MULTI-POINT PROGRAM IS TO PROVIDE PROGRAM ABILITY TO OPERATE THE 1130 SCA ON-LINE AS A SLAVE TERMINAL IN A MULTI-POINT DATA LINK. THE MASTER TERMINAL MUST HAVE THE CAPABILITY OF RECEIVING AND RESPONDING TO REQUEST-FOR-TEST MESSAGES AS DESCRIBED IN THIS PROGRAM DESCRIPTION. THE MODE OF OPERATION IS BINARY SYNCHRONOUS. THE PROGRAM IS PRIMARILY A TEST OF SYSTEM INTEGRITY RATHER THAN A FAULT ISOLATING DIAGNOSTIC, HOWEVER, A DIAGNOSTIC CAPABILITY IS PROVIDED BY PROGRAM OPERATING OPTIONS.

2. PREREQUISITES

****CAUTION****

READ SECTIONS 3.1 AND 3.5 FOR SPECIAL OPERATING PROCEDURES BEFORE TAKING THE 1130 OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM.

2.1 PROGRAM PREREQUISITES

1. THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS AND THIS PROGRAM USES THE REMAINING PORTION OF 4K.
2. THE MASTER TERMINAL MUST HAVE THE CAPABILITY OF RECEIVING AND RESPONDING TO REQUEST-FOR-TEST MESSAGES AS DESCRIBED IN THIS PROGRAM DESCRIPTION.
3. IF THE PROGRAM IS TO BE LOADED VIA CARD INPUT A PROGRAM PATCH CARD SHOULD BE PREPARED TO PROVIDE THE POLLING AND SELECTION ADDRESSES BY WHICH THE 1130 WILL BE ADDRESSED. THIS CARD MUST BE PUNCHED AS FOLLOWS..

COLUMNS 1-5 00628
COLUMN 6 BLANK
COLUMNS 7-8 THE POLLING ADDRESS IN HEXADECIMAL.
COLUMNS 9-10 THE SELECTION ADDRESS IN HEXADECIMAL
ALL OTHER COLUMNS MUST BE BLANK.

THIS PATCH CARD SHOULD BE INSERTED IN FRONT OF THE LAST CARD IN THE PROGRAM DECK.

****NOTE**** IF THE POLLING AND SELECTION ADDRESSES TRANSMITTED BY THE MASTER TERMINAL CONSIST OF MORE THAN ONE EIGHT BIT CHARACTER, ENTER ONLY THE FIRST CHARACTER FROM THE NORMAL POLLING AND SELECTION ADDRESSES.

2.2 EQUIPMENT PREREQUISITES

1. SET STR/BSC SWITCH TO BSC POSITION.
2. SET BAUD SELECTION SWITCH TO MATCH THE MASTER TERMINAL.
3. SET DATA SET CONNECTOR PLUG SWITCH TO OPER
4. CE SWITCH MUST BE OFF
5. REFER TO LOGIC PAGE ADO03 FOR CUSTOMER OPTION JUMPERS. OPTION FUNCTIONS MUST MATCH THE MASTER TERMINAL.
6. SCA MUST BE CONNECTED THROUGH THE PROPER MODEM EQUIPMENT TO A MASTER BSC TERMINAL. DATA SETS USED MUST BE COMPATIBLE WITH BAUD RATE AND CUSTOMER OPTIONS SELECTED.

3. OPERATING PROCEDURE

SEE DIAGNOSTIC MONITOR USE PROCEDURE FOR DETAILS OF PROGRAM LOADING AND OPERATING PROCEDURES. PROGRAM OVERLAP IS NOT RECOMMENDED DUE TO TIMING CONSIDERATIONS.

3.1 PROGRAM LOADING

PROGRAM LOADING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

1. NOTIFY THE OPERATOR AT THE MASTER TERMINAL THAT THE 1130 WILL BE TAKEN OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM. IT MAY BE NECESSARY FOR THE MASTER TERMINAL OPERATOR TO TAKE ACTION TO PREVENT POLLING OF THE 1130 UNTIL THE PROGRAM HAS BEGUN EXECUTION.
2. IF CARD IPL IS USED INSERT THE PROGRAM PATCH CARD TO SPECIFY THE POLL AND SELECTION ADDRESSES. (SEE SECTION 2.1)
3. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
4. SET BIT SWITCH 15...OFF - FOR LOAD AND GO. (NOTE 1)
 ...ON - TO SPECIFY OPTIONS BEFORE RUNNING. (NOTE2)
5. LOAD DIAGNOSTIC MONITOR AND THIS PROGRAM.
5. SELECT PROGRAM OPTIONS AS DESIRED.
7. AFTER PROGRAM HAS BEGUN EXECUTION NOTIFY THE MASTER TERMINAL OPERATOR THAT THE 1130 IS NOW READY TO RECEIVE POLLING AND SELECTION ADDRESSES.

NOTE 1..NORMAL LOAD AND GO OPERATION ASSUMES THAT THE PROGRAM WILL BE TRANSMITTING REQUEST-FOR-TEST MESSAGES AND ROUTINES 1-6 WILL BE EXECUTED.

NOTE 2..IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (3.5)

NOTE 3.. IF PAPER TAPE IPL IS USED OR IF NO POLL AND SELECTION ADDRESSES WERE ENTERED BY PATCH CARD, THE PROGRAM WILL HALT AT WAITS 3 AND 4 IMMEDIATELY AFTER PROGRAM IS LOADED. SEE SECTION 3.3 TO PROCEED FROM THESE WAITS.

3.2 PROGRAM OPERATION

PROGRAM OPERATING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-7 TO 01
2. SET SWITCHES 8-15 AS DESIRED

SWT	FUNCTION
8	RESTART (SEE SECTION 3.5)
9	ROUTINE START MESSAGE
10	(NOT USED)
11	LOOP PROGRAM
12	(NOT USED)
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR (USE NOT RECOMMENDED)
15	HALT (SEE SECTION 3.5)

3. PRESS INT REQ KEY ON CONSOLE

3.2.2 ROUTINE SELECTION - FUNCTION 1

ROUTINE SELECTION WILL BE INOPERATIVE IF THE RFT RECEIVER OPTION (FUNCTION 2 SWITCH 15) IS SELECTED.

ROUTINES 1-6 WILL BE EXECUTED IN SEQUENCE IF NO ROUTINE (OR 00) IS SELECTED. ROUTINES 7 AND 8 WILL BE EXECUTED ONLY IF SELECTED. ONLY ROUTINE 8 WILL LOOP CONTINUOUSLY IF SELECTED. ALL OTHERS WILL TERMINATE AT THE COMPLETION OF THE ROUTINE.

TO LOOP A ROUTINE FIRST SELECT THE ROUTINE THEN SELECT THE LOOP PROGRAM OPTION (FUNCTION 0 SWT 11).

TO SET ROUTINE SELECTION

- A. SET SWITCHES 0-7 TO 41
- B. SET ROUTINE NUMBER IN SWITCHES 8-15

RTN	DESCRIPTION
1. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 02 Y TIMES
2. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 16 Y TIMES
3. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=00 TRANSMIT TEST MESSAGE 19 Y TIMES
4. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=02 RECEIVE TEST MESSAGES
5. . .	.TRANSMIT REQUEST-FOR-TEST WITH X=16 RECEIVE TEST MESSAGES
6. . .	.TRANSMIT REQUEST FOR TEST WITH X=19 RECEIVE TEST MESSAGES
7. . .	.TRANSMIT REQUEST FOR TEST WITH X=12(SEE SECTION 5.2) TRANSMIT OR RECIEVE TEST MESSAGES AS DEFINED BY X VALUE
8. . .	.RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES

C. PRESS INT REQ KEY ON CONSOLE

TO DESELECT ROUTINE AND RETURN TO NORMAL OPERATION

- A. SET SWITCHES 0-7 TO 41
- B. SET SWITCHES 8-15 OFF
- C. PRESS INT REQ KEY
- D. DESELECT LOOP OPTION IF SELECTED.

3.2.3 PROGRAM OPTIONS - FUNCTION 2

1. SET SWITCHES 0-7 TO 01
2. SET SWITCHES 11-15 AS DESIRED

SWT	FUNCTION
SWT 15..ON..	RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES. (EXECUTE ROUTINE 8 ONLY) ..OFF..TRANSMIT REQUEST-FOR-TEST MESSAGE THEN TRANSMIT OR RECEIVE Y TEST MESSAGES. (ALLOW EXECUTION OF RTNS 1-7)
SWT 14..ON..	ALLOW PRINTING OF DIAGNOSTIC ERROR MESSAGES. (ERROR MESSAGES E1A0B THRU E1A25) SEE NOTE SECTION 4.2 ..OFF..DO NOT PRINT DIAGNOSTIC ERROR MESSAGES.
SWT 13..ON..	PRINT ENTIRE TEXT OF ANY MESSAGE OR CONTROL SEQUENCE RECEIVED WHICH CONTAINED AN ERROR. (SEE SECTION 4.3)
SWT 12..ON..	PRINT ENTIRE TEXT TRANSMITTED AND RECEIVED. (SEE SECTION 4.3)
SWT 11..ON..	8K OF CORE STORAGE AVAILABLE ..OFF..ONLY 4K OF CORE STORAGE AVAILABLE

NOTE...THE AMOUNT OF TEXT THAT CAN BE SAVED FOR PRINTING
WHEN OPTION SWT 12 OR 13 IS ON IS LIMITED BY THE AVAILABLE
CORE STORAGE. IN A 4K SYSTEM ONLY THE FIRST FEW TEST
MESSAGES CAN BE SAVED AND PRINTED OUT. IN SYSTEMS LARGER
THAN 4K SELECTION OF OPTION SWT 11 WILL ALLOW OVER 25
TEST MESSAGES TO BE SAVED FOR PRINTING.

3. PRESS INT REQ KEY ON CONSOLE.

3.2.4 PROGRAM OPTION - FUNCTION 3

WHEN TRANSMITTING REQUEST-FOR-TEST MESSAGES (EXECUTING RTNS 1-7)
THIS OPTION ALLOWS SELECTION OF THE NUMBER OF TEST MESSAGES
THAT ARE TO BE TRANSMITTED OR RECEIVED. THE VALUE ENTERED IN
SWITCHES 8-15 IS USED AS A COUNT OF TEST MESSAGES AND IS ALSO
CONVERTED TO TWO EBCDIC DECIMAL DIGITS AND ENTERED IN THE Y FIELD
OF THE RFT MESSAGE. THIS VALUE MUST BE BETWEEN DECIMAL 01 AND 99.

TO SELECT THE Y VALUE

1. SET SWITCHES 1-7 TO C1
2. SET SWITCHES 8-15 AS DESIRED (HEX 01 TO 63)
3. PRESS INT REQ KEY ON CONSOLE

TO RETURN TO NORMAL OPERATION

1. SET SWITCHES 0-7 TO C1
2. SET SWITCHES 8-15 TO 01
3. PRESS INT REQ KEY

3.3 PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS PROGRAM START
3002	HALT ON ERROR	PRESS PROGRAM START
3003	NO POLLING OR SELECTION ADDRESSES WERE ENTERED BY PATCH CARD.	SET POLLING ADDRESS IN SWITCHES 0-7. SET SELECTION ADDRESS IN SWITCHES 8-15. PRESS PROGRAM START.
3004	THIS WAIT ALWAYS OCCURS AFTER RESTART FROM WAIT 3003 TO ALLOW FOR SELECTION OF PROGRAM LOAD OPTION SWT 15.	SET SWT 15 AS DESIRED. (SEE 3.1) PRESS PROGRAM START

3.3.2 ERROR HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD PROGRAM
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD PROGRAM
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD PROGRAM
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS READER START. PRESS PROGRAM START
30F6	MONITOR DID NOT LOAD	RELOAD PROGRAM
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD PROGRAM
30F8	READER NOT READY	MAKE READER READY PRESS PROGRAM START
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND PROGRAM START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4 PROGRAM TERMINATION

IF LOOP OPERATION HAS NOT BEEN SPECIFIED, THE PROGRAM WILL END...

1. AT THE END OF ROUTINE 6 IF NO ROUTINE HAS BEEN SELECTED AND THE RFT RECEIVER OPTION (FUNCTION 2 SWT 15) IS NOT SELECTED.
2. AT THE END OF THE SELECTED ROUTINE IF ANY ROUTINE OTHER THAN ROUTINE 8 IS SELECTED.
3. IF ROUTINE 8 IS SELECTED BY EITHER FUNCTION 1 OR FUNCTION 2 SWT 15 THE PROGRAM WILL LOOP CONTINUOUSLY.

NOTE...AFTER NORMAL PROGRAM END THE INTERRUPT SERVICE PORTION OF THE PROGRAM CONTINUES TO MONITOR THE LINE. SEE SECTION 3.5 FOR DETAILS OF THIS PROCEDURE.

3.5 HALTING AND RESTARTING PROGRAM

AFTER NORMAL PROGRAM END OR AFTER SELECTION OF PROGRAM HALT (FUNCTION 0 SWT 15) THE INTERRUPT SERVICE PORTION OF THE PROGRAM CONTINUES TO MONITOR THE LINE FOR THE SELECTION OR POLLING ADDRESSES. IF THE POLLING ADDRESS IS RECEIVED, EOT WILL BE TRANSMITTED. IF THE SELECTION ADDRESS IS RECEIVED, NAK WILL BE TRANSMITTED. THIS PROCEDURE PREVENTS THE MASTER STATION FROM REMOVING THE 1130 FROM THE LIST OF POLLED STATIONS BECAUSE OF NO RESPONSE TO ADDRESSING. FOR THIS REASON IT IS RECOMMENDED THAT USE OF PROGRAM STOP, IMMEDIATE STOP, AND RESET KEYS BE AVOIDED WHEN OPERATING THIS PROGRAM. THE PROGRAM STOP KEY WILL NORMALLY STOP THE PROGRAM ONLY UNTIL THE NEXT INTERRUPT OCCURS.

IT IS ALSO RECOMMENDED THAT WHENEVER POSSIBLE THE PROGRAM BE ALLOWED TO RUN TO NORMAL COMPLETION. IF IT IS NECESSARY TO USE THE PROGRAM HALT OPTION OR OTHERWISE HALT THE PROGRAM THIS SHOULD BE DONE DURING THE END OF TEST PRINTOUT. IF THE TEST MUST BE TERMINATED DURING EXECUTION OF A TEST SEQUENCE, THEN ALLOW SUFFICIENT TIME FOR THE MASTER TERMINAL TO FINISH THE TEST CYCLE BEFORE RESTARTING THE PROGRAM.

TO HALT PROGRAM (SEE 3.2.1)

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 15
3. PRESS INT. REQ. KEY

TO RESTART PROGRAM

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 8
3. SET DESIRED CONTROL IN SWITCHES 9-14
4. PRESS INT REQ KEY ON CONSOLE
IF THIS DOES NOT RESTART PROGRAM THEN..
5. PRESS IMMEDIATE STOP
6. PRESS RESET
7. PRESS INT REQ KEY

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT EXCEPT THE TEXT PRINTOUT. (SEE 4.3)

APPNN OORR AAAA	MESSAGE
OR	
EPPNN OORR AAAA	MESSAGE (MESSAGE OMITTED FOR DIAGNOSTIC PRINTOUTS)
WHERE	A IDENTIFIES STATUS MESSAGES
	E IDENTIFIES ERROR MESSAGES
	PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE
	THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MONITOR OR 1A FOR MESSAGES ORIGINATED BY THIS PROGRAM
NN	IS THE MESSAGE IDENTIFICATION NUMBER
RR	IS THE ROUTINE NUMBER
AAAA	IS THE STARTING ADDRESS OF THE ROUTINE
MESSAGE	IS ANY VARIABLE INFORMATION

4.1 STATUS MESSAGES (LOG MESSAGES)

A0000 NUM PID ADRS RELF LD
XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED FOLLOWING THE LOADING OF ANY PROGRAM (EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER, THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED, AND THE RELOCATION FACTOR.

A0001 SWS PID
XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE CONTENTS OF SWITCHES 8-15 WHERE STORED. IF THE SWITCH ENTRY CALLED FOR HALT OF ANY PROGRAM THE WORD HALT WILL FOLLOW THE MESSAGE.

A1A00 OORR AAAA

ROUTINE START MESSAGE - IF SWITCH 9, FUNCTION 0, IS TURNED ON. THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE.

A1A01 OORR AAAA MON POLL

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-7 AND INDICATES THAT THE PROGRAM IS MONITORING THE LINE FOR THE POLLING ADDRESS. THE PROGRAM WILL PROCEED NO FURTHER UNTIL THE CORRECT POLLING SEQUENCE IS RECEIVED.

A1A02 OORR AAAA MON SEL

THIS MESSAGE IS PRINTED BY TEST ROUTINE 8 AND INDICATES THAT THE PROGRAM IS MONITORING THE LINE FOR THE SELECTION ADDRESS. THE PROGRAM WILL PROCEED NO FURTHER UNTIL THE CORRECT SELECTION SEQUENCE IS RECEIVED.

A1A03 OORR AAAA X Y TMOUT NAK INV RESP
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE TRANSMITTER (RTNS 1-3, AND RTN 7 IF X=00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING RESPONSES TO TEST MESSAGES, THE NUMBER OF NEGATIVE RESPONSES TO TEST MESSAGES, AND THE NUMBER OF INVALID RESPONSES (ANY RESPONSE OTHER THAN ACK0, ACK1, NAK) TO TEST MESSAGES. AN ERROR FREE TEST IS INDICATED BY THE COUNTS IN THE LAST THREE FIELDS BEING ZERO.

A1A04 OORR AAAA X Y TMOUT W ERR W/O ERR
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE RECEIVER (RTNS 4-6, RTN 7 IF X NOT 00, AND RTN 8 IF X=00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING TEST MESSAGES, THE NUMBER OF TEST MESSAGES RECEIVED WITH EITHER BCC OR FORMAT ERRORS, THE NUMBER OF TEST MESSAGES RECEIVED WITHOUT ERROR. AN ERROR FREE TEST IS INDICATED BY THE NUMBER OF ERROR FREE MESSAGES BEING EQUAL TO THE Y VALUE.

4.2 ERROR MESSAGES

E0001 SWS INVLD
XXXX

THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE NUMBER OF ANY PROGRAM IN CORE.

E0003 OVR CORE

THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD, EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM

A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM. THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.

1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION THE CHECK SUM WAS NOT CORRECTLY CALCULATED.

WHEN THIS ERROR OCCURS ATTEMPT TO RELOAD THE PROGRAM.'

E0005 000N XXXX

THIS ERROR WILL OCCUR IF AN INTERRUPT OCCURS, BUT THE ILSW WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET THE REQUEST BIT.

E1A01 OORR AAAA DATA SET NRDY

THE DATA SET BECAME NOT READY WHILE THE PROGRAM WAS ATTEMPTING TO TRANSMIT OR RECEIVE A MESSAGE OR CONTROL SEQUENCE.

E1A02 OORR AAAA 7 TRIES T

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-7 AFTER 7 ATTEMPTS TO TRANSMIT THE REQUEST-FOR-TEST MESSAGE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND EITHER END THE PROGRAM OR GO ON TO THE NEXT ROUTINE. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1A03 OORR AAAA 7 TRIES R

THIS MESSAGE IS PRINTED BY TEST ROUTINE 8 AFTER 7 ATTEMPTS TO RECEIVE THE REQUEST-FOR-TEST SEQUENCE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST AND WILL RESTART ROUTINE 8. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1A04 OORR AAAA INV X

THIS MESSAGE IS PRINTED BY TEST ROUTINE 7 IF AN INVALID X VALUE IS ENTERED BY A PROGRAM PATCH CARD. CORRECT THE PATCH CARD AND RELOAD THE PROGRAM.

E1A05 OORR AAAA INV Y

THIS MESSAGE IS PRINTED BY ROUTINES 1-7 IF AN INVALID Y VALUE IS ENTERED VIA FUNCTION 3. ENTER A CORRECT VALUE (HEX 01 TO 63) AND RESTART THE PROGRAM.

E1A06 OORR AAAA INV RFT RCVD

THIS MESSAGE IS PRINTED BY TEST ROUTINE 8 IF A REQUEST FOR TEST MESSAGE IS RECEIVED WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE RFT MESSAGE CONTAINED ONE OF THE FOLLOWING ERRORS.

1. THE RFT MESSAGE DID NOT BEGIN WITH SOH &
2. THE X FIELD WAS GREATER THAN DECIMAL 99
3. THE Y FIELD WAS GREATER THAN DECIMAL 99
4. THE X VALUE WAS NOT 00.

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT MESSAGE FOR UP TO 7 TRYS.

E1A07 OORR AAAA EOT RCVD

THE END OF TRANSMISSION (EOT) CHARACTER WAS RECEIVED IN RESPONSE TO OR IN PLACE OF A MESSAGE PRIOR TO THE NORMAL END OF TEST. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED PRINT THE END OF TEST MESSAGE.

E1A08 OORR AAAA NO INTRP

AN EXPECTED INTERRUPT FAILED TO OCCUR. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND PRINT THE END OF TEST MESSAGE IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

****NOTE..DIAGNOSTIC ERROR MESSAGES..THE FOLLOWING ERROR MESSAGES ARE PRINTED ONLY IF FUNCTION 2 SWITCH 14 IS SELECTED. EACH OF THESE MESSAGES INDICATES A SOFT (RECOVERABLE) ERROR CONDITION. INCLUDED IN THE DESCRIPTION OF EACH OF THESE PRINTOUTS IS THE ACTION THAT WILL BE TAKEN BY THE PROGRAM TO ATTEMPT RECOVERY FROM THE ERROR. THESE PRINTOUTS ARE INTENDED TO BE USED AS A GUIDE IN LOCATING THE EXACT POINT OF FAILURE IN THE TEXT PRINTOUT.

E1A0B OORR AAAA

TEST ROUTINE 8 HAD RECEIVED AND ACKNOWLEDGED THE SELECTION SEQUENCE AND WAS EXPECTING THE RFT MESSAGE WHEN ENQ WAS RECEIVED. THIS INDICATES THAT THE MASTER TERMINAL DID NOT CORRECTLY RECEIVE THE ACKNOWLEDGEMENT (DLE ACK). THE PROGRAM WILL RE-TRANSMIT THE ACKNOWLEDGEMENT.

E1A0C OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING THE RFT MESSAGE. THIS INDICATES THAT EITHER CHARACTER PHASE WAS NEVER ESTABLISHED AND NOTHING WAS RECEIVED OR THE END OF TEXT CHARACTER (ETX OR ETB) WAS NOT RECEIVED CORRECTLY. THE PROGRAM WILL MONITOR THE LINE FOR ENQ AND WHEN ENQ IS RECEIVED RE-TRANSMIT THE LAST ACKNOWLEDGEMENT (ACK OR NAK).

E1A0D OORR AAAA

CHARACTER PHASE WAS ESTABLISHED WHEN ATTEMPTING TO RECEIVE THE RFT MESSAGE, BUT THE MESSAGE DID NOT BEGIN WITH A VALID START OF TEXT SEQUENCE (SOH, STX, OR DLE STX). THIS IS AN INDICATION OF FALSE SYNCHRONIZATION. THE PROGRAM WILL ABORT SYNCHRONIZATION AFTER RECEIVING TWO CHARACTERS AND WILL THEN MONITOR FOR ENQ. WHEN ENQ IS RECEIVED THE LAST ACKNOWLEDGEMENT WILL BE RE-TRANSMITTED.

E1A0E OORR AAAA

THE PROGRAM WAS MONITORING THE LINE FOR ENQ FOLLOWING A PREVIOUS ERROR, BUT ENQ WAS NOT RECEIVED. THE PROGRAM WILL RETURN TO MONITORING FOR ENQ.

E1A0F OORR AAAA

THE RFT MESSAGE WAS RECEIVED WITH EITHER A BLOCK CHECK ERROR OR A FORMAT ERROR. A FORMAT ERROR OCCURS UNDER THE FOLLOWING CONDITIONS.

1. SOH WAS RECEIVED IN HEADING OR NORMAL TEXT
2. STX WAS RECEIVED IN NORMAL TEXT
3. ENQ OR EOT WAS RECEIVED IN HEADING OR NORMAL TEXT
4. DLE WAS RECEIVED IN TRANSPARENT TEXT AND WAS IMMEDIATELY FOLLOWED BY OTHER THAN DLE, SYN, ETX, ETB, OR ITB.

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1A10 OORR AAAA

WHILE ATTEMPTING TO RECEIVE THE RFT MESSAGE A MESSAGE WAS RECEIVED WHICH WAS NOT AN RFT MESSAGE (MESSAGE DID NOT BEGIN WITH SOH %). THE PROGRAM WILL TRANSMIT NAK AND AGAIN TRY TO RECEIVE THE RFT MESSAGE.

E1A11 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED AN X FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT.

E1A12 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A Y FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT MESSAGE.

E1A13 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A X VALUE WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1A18 OORR AAAA

AN INVALID SEQUENCE WAS RECEIVED IN RESPONSE TO AN RFT MESSAGE (A RESPONSE OTHER THAN ACK OR NAK). THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT ACKNOWLEDGEMENT BE REPEATED.

E1A19 OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING THE RFT MESSAGE. THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT THE ACKNOWLEDGEMENT BE REPEATED.

E1A1A OORR AAAA

THE WRONG ALTERNATE POSITIVE ACKNOWLEDGEMENT WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE IF A TIMEOUT OCCURED PREVIOUSLY, IF NO TIMEOUT OCCURED ENQ WILL BE TRANSMITTED.

E1A1B OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THIS INDICATES THAT THE RFT WAS RECEIVED BY THE MASTER TERMINAL WITH A BCC ERROR. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE.

E1A1D OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E1A1E OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E1A20 OORR AAAA

AN INVALID RESPONSE (NOT ACK OR NAK) WAS RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE TRANSMITTED.

E1A21 OORR AAAA

NO ENQ WAS RECEIVED PRECEEDING THE TEST MESSAGES. THE PROGRAM WILL IGNORE THIS ERROR.

E1A22 OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE.

E1A23 OORR AAAA

THE TEST MESSAGE RECEIVED DID NOT START WITH A VALID START OF TEXT CHARACTER (SOH, STX, OR DLE STX). THE PROGRAM WILL LOG THIS ERROR IN THE END OF TEST MESSAGE.

E1A24 OORR AAAA

THE TEST MESSAGE WAS RECEIVED WITH A BCC OR FORMAT ERROR. THE PROGRAM WILL TRANSMIT NAK AND LOG THE ERROR IN THE END OF TEST MESSAGE. (SEE E1A0F FOR DEFINITION OF FORMAT ERROR).

E1A25 OORR AAAA

NO EOT WAS RECEIVED FOLLOWING THE TEST MESSAGES. THE PROGRAM WILL IGNORE THIS ERROR.

4.3 TEXT PRINTOUT

IF FUNCTION 2 SWITCH 12 IS TURNED ON ALL TEXT AND CONTROL CHARACTERS WHICH ARE TRANSMITTED OR RECEIVED BY THE PROGRAM WILL BE PRINTED AT THE COMPLETION OF THE TEST.

IF FUNCTION 2 SWITCH 12 IS OFF BUT SWITCH 13 IS ON, ONLY THOSE MESSAGES OR CONTROL SEQUENCES WHICH WERE RECEIVED WITH AN ERROR INDICATION WILL BE PRINTED OUT.

ALL EBCDIC CHARACTERS WILL BE PRINTED IN HEXADECIMAL FORM. IN ADDITION TO THE HEX PRINTOUT, 5 ALPHA MESSAGES MAY ALSO BE PRINTED.

1. XMIT....THIS IS PRINTED AT THE START OF DATA TRANSMITTED.
2. RECV....THIS IS PRINTED AT THE START OF DATA RECEIVED.
3. TIMEOUT.THIS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT A RECEIVE TIMEOUT OCCURED.
4. ERR.....THIS IS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT THE DATA RECEIVED WAS NOT AS EXPECTED.
5. CORE....THIS INDICATES THAT STORAGE OF DATA TRANSMITTED AND RECEIVED EXCEEDED AVAILABLE CORE STORAGE AND NO FURTHER DATA COULD BE STORED.

THE INITIAL POLLING OR SELECTION SEQUENCE RECEIVED FROM THE MASTER TERMINAL WILL NOT APPEAR IN THE TEXT PRINTOUT.

THE SCA HARDWARD AUTOMATICALLY REMOVES ALL SYNCHRONOUS IDLE CHARACTERS WHICH ARE RECEIVED PRECEEDING EACH MESSAGE. FOR THIS REASON RECEIVE PRINTOUTS WILL SHOW NO LEADING SYN CHARACTERS.

THE SCA HARDWARD AUTOMATICALLY INSERTS TWO SYN CHARACTERS PRECEEDING EACH TRANSMISSION AND THE PROGRAM INSERTS FOUR. FOR THIS REASON TRANSMIT PRINTOUTS WILL SHOW FOUR LEADING SYN CHARACTERS.

THE FOLLOWING IS A LIST OF POINTS TO CHECK IN THE TEXT PRINT WHICH MAY BE USEFUL IN DETERMINING THE CAUSE OF AN ERROR.

1. SOH (0100) MUST NOT APPEAR IN HEADING OR NORMAL TEXT (FORMAT ERR)
2. STX (0200) MUST NOT APPEAR IN NORMAL TEXT (FORMAT ERROR)
3. HEADING OR NORMAL TEXT MUST END WITH ETX (0300) OR ETB (2600) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERS.
4. SOH (0100) INDICATES THE START OF HEADING TEXT.
5. STX (0200) INDICATES THE START OF NORMAL TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
6. DLE STX (1000 0200) INDICATES THE START OF TRANSPARENT TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
7. DLE (1000) MUST NOT APPEAR IN TRANSPARENT TEXT FOLLOWED BY ANY CHARACTER OTHER THAN SYN (3200), DLE (1000), ETB (2600), ETX (0300), OR ITB (1F00).
8. TRANSPARENT TEXT MUST END WITH DLE ETB (1000 2600) OR DLE ETX (1000 0300) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERES.
9. SYN INSERTION--THE SYNCHRONOUS IDLE SEQUENCE MUST BE TRANSMITTED AT INTERVALS BY A TERMINAL TRANSMITTING LONG MESSAGES TO ENSURE THAT THE TERMINALS MAINTAIN CHARACTER SYNCHRONIZATION. THE SYNCHRONOUS IDLE SEQUENCE IS SYN SYN (3200 3200) FOR HEADING AND NORMAL TEXT AND DLE SYN (1000 3200) FOR TRANSPARENT TEXT. THE RATE OF INSERTION SHOULD BE NOMINALLY EVERY ONE SECOND FOR NORMAL TEXT AND EVERY 85 CHARACTERS FOR TRANSPARENT TEXT. THIS RATE WILL VARY WITH THE SETTING OF THE TRANSMIT TIMER FOR NORMAL TEXT AND THE PROGRAM TIMER FOR TRANSPARENT TEXT. THE 1130 TRANSMIT TIMER IS NORMALLY SET FOR 1.25 SECONDS AND THE PROGRAM TIMER FOR .35 SECONDS.
10. DLE (1000) MUST BE INSERTED FOLLOWING EACH DLE CHARACTER WHICH IS TRANSMITTED AS DATA IN TRANSPARENT TEXT.

5. COMMENTS

5.1 PROGRAM PHILOSOPHY

EACH TEST PERFORMED BY THE 1130 TRANSMIT/RECEIVE BSC PROGRAM CAN BE DIVIDED INTO TWO SEPARATE TEST PHASES. IN THE FIRST PHASE ONE OF THE TERMINALS TRANSMITS A REQUEST-FOR-TEST (RFT) MESSAGE TO REQUEST THAT A TEST PROCEDURE BE PERFORMED. THE RFT MESSAGE CONTAINS VARIOUS PARAMETERS WHICH DEFINE THE ACTION TO BE PERFORMED AND TEXT TO BE USED DURING THE TEST.. DURING THIS PHASE NORMAL BSC ERROR RECOVERY IS PERFORMED ON THE RFT MESSAGE. THE SECOND PHASE IS THE ACTUAL PERFORMANCE OF THE TEST AS DEFINED BY THE RFT MESSAGE. IF THE X FIELD IN THE RFT MESSAGE WAS 00 THEN THE RFT TRANSMITTER (THE REQUESTING TERMINAL) WILL TRANSMIT Y TEST MESSAGES. IF X WAS OTHER THAN 00 THEN THE RFT RECEIVER WILL TRANSMIT Y TEST MESSAGES, AND THE TEXT CONTAINED IN THE TEST MESSAGE WILL BE DETERMINED BY THE X VALUE. NO ERROR RECOVERY WILL BE PERFORMED ON TEST MESSAGES.

5.1.1 REQUEST-FOR-TEST MESSAGES

THE REQUEST FOR TEST MESSAGE HAS THE FORMAT..

S	T	D	S	D	E	B	NOTE..THE TEXT IS INCLUDED ONLY IF
0	%	X	Y	N	O	L	X=01, AND THE DLE CHARACTERS
H							ARE INCLUDED ONLY IF TRANSPARENT
							TEXT IS USED.

WHERE..

SOH% IDENTIFIES THE MESSAGE AS AN RFT MESSAGE

X IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH DEFINES THE ACTION TO BE PERFORMED DURING THE TEST AND/OR SPECIFIES THE TEST MESSAGE TO BE USED DURING THE TEST.

IF X=00 THEN THE RFT TRANSMITTER WILL TRANSMIT THE TEST MESSAGES.

IF X=01 THEN THE RFT RECEIVER WILL TRANSMIT TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE.

IF X=02-99 THE RFT RECEIVER WILL TRANSMIT THE TEST MESSAGE SPECIFIED BY THE X VALUE.

Y IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH SPECIFIES THE NUMBER OF TEST MESSAGES TO BE TRANSMITTED.

N IS A NUMERIC CHARACTER WHICH DEFINES THE SIZE OF THE TO FIELD. THIS WILL ALWAYS BE 1 FOR THE 1130 MULTI-POINT PROGRAM.

TO IS THE SELECTION ADDRESS WHICH IS ENTERED BY PATCH CARD.

5.1.2 TEST MESSAGES

THE FOLLOWING TEST MESSAGES ARE USED BY THIS PROGRAM

02-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 256 CHARACTERS L T C
E X 0 THROUGH 255 E X C

04-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S TEXT SAME AS 02 EXCEPT E B
T CONTROL CHARACTERS ARE T C
X OMITTED 245 CHARACTERS X C

12-EBCDIC NORMAL TEXT

S E TEXT E B
T S / 36 CHARACTERS T C
X C A-Z AND 0-9 X C

13-EBCDIC NORMAL TEXT

(MUST BE SELECTED BY PATCH CARD)

S E TEXT E B
T S 4 36 CHARACTERS T C
X C A-Z AND 0-9 X C

14-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S TEXT E
T 36 CHARACTERS T
X A-Z AND 0-9 X

15-EBCDIC NORMAL TEXT (MUST BE SELECTED BY PATCH CARD)

S TEXT E B
T 74 CHARACTERS HEX 00 T C
X 6 CHARACTERS SYN X C

16-EBCDIC NORMAL TEXT

S TEXT E B
T 40 CHARACTERS HEX AA T C
X 40 CHARACTERS HEX 55 X C

19-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 280 CHARACTERS HEX 00 L T C
E X 10 CHARACTERS SYN E X C

5.1.3 LINE CONTROL

THE FOLLOWING LINE CONTROL CHARTS SHOW THE NORMAL SEQUENCE OF CONTROL AND TEXT CHARACTERS TRANSMITTED BY EACH TERMINAL UNDER VARIOUS TEST CONDITIONS. THE EXAMPLES ALL ASSUME A Y VALUE OF ONE. THE DLE CHARACTERS ARE OMITTED FOR NON-TRANSPARENT TEXT. THE ACKO AND ACKI SHOWN IN THE CHARTS REPRESENT THE COMPLETE POSITIVE ACKNOWLEDGEMENT SEQUENCES. POL AND SEL REPRESENT THE POLLING AND SELECTION ADDRESSES. THE EOT CHARACTERS PRECEDING EACH POLLING AND SELECTION ADDRESS ARE REQUIRED TO RESET ALL TERMINALS ON THE LINE TO CONTROL MODE. CHARACTER PHASE MUST BE RE-ESTABLISHED AFTER EACH OF THESE EOT CHARACTERS. ACK O/I OR NAK RESPONSES TO TEXT MAY BE PRECEDED BY UP TO SEVEN LEADING GRAPHIC CHARACTERS. THESE CHARACTERS WILL BE PRINTED IN THE TEXT PRINTOUT BUT WILL OTHERWISE BE IGNORED BY THE PROGRAM.

FOR X=00 WHEN THE MASTER IS TRANSMITTING THE RFT MESSAGE.

SLAVE (1130)	A CO K		A C1 K		A CO K	
MASTER	E S E S	T S E	D S	D E	E	
	O E N O % X Y N O T T	L T TEXT	L T	L T	O	
	T L Q H	X X	E X	E X	T	

FOR X=00 WHEN THE SLAVE IS TRANSMITTING THE RFT MESSAGE.

SLAVE (1130)	S O % X Y N O T T	T S E	D S	D E	E	
	H	X X	E X	E X	O	
MASTER	E P E		A		A	
	O O N		C1		CO	
	T L Q		K		K	

FOR X=01

SLAVE (1130)	S O % X Y N O T T	T D S	D E	E	A	A
	H	E X	E X	T	CO	C1
					K	K
MASTER	E P E		A	E S E	D S	D E
	O O N		C1	O E N	L T TEXT	L T
	T L Q		K	T L Q	E X	E X

FOR X=02-99

SLAVE (1130)	S O % X Y N O T T	T S E	E	A	A	
	H	X X	T	CO	C1	
				K	K	
MASTER	E P E		A	E S E	D S	D E
	O O N		C1	O E N	L T TEXT	L T
	T L Q		K	T L Q	E X	E X

5.2 ROUTINE DESCRIPTIONS

- RTN 1..ROUTINE 1 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 02 Y TIMES.
- RTN 2..ROUTINE 2 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 16 Y TIMES.
- RTN 3..ROUTINE 3 TRANSMITS AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE 19 Y TIMES.
- RTN 4..ROUTINE 4 TRANSMITS AN RFT WITH X=02 THEN RECEIVES TEST MESSAGE 02 Y TIMES.
- RTN 5..ROUTINE 5 TRANSMITS AN RFT WITH X=16 THEN RECEIVES TEST MESSAGE 16 Y TIMES.
- RTN 6..ROUTINE 6 TRANSMITS AN RFT WITH X=19 THEN RECEIVES TEST MESSAGE 19 Y TIMES.
- RTN 7..ROUTINE 7 WILL BE EXECUTED ONLY IF SELECTED BY FUNCTION 1. THIS ROUTINE NORMALLY WILL TRANSMIT AN RFT MESSAGE WITH X=12 AND RECEIVE TEST MESSAGE 12 Y TIMES. THIS ROUTINE HAS ASSOCIATED WITH IT A 52 WORD TABLE IN CORE STORAGE WHICH MAY BE ALTERED TO PROVIDE RFT MESSAGES AND TEST MESSAGES WHICH ARE NOT PROVIDED BY ROUTINES 1-6. THIS TABLE IS ALTERED BY PROGRAM PATCH CARD (SEE DM DESCRIPTION). THE FIRST WORD OF THE TABLE CONTAINS THE X VALUE TO BE USED IN THE RFT MESSAGE TRANSMITTED BY ROUTINE 7. THIS VALUE IS ENTERED IN HEXADECIMAL FORM (FOR X=13 ENTER 00D). THE SECOND WORD OF THE TABLE CONTAINS (IN HEX) THE COUNT OF ALL CHARACTERS INCLUDING CONTROL CHARACTERS IN THE TEXT PORTION OF THE TABLE. THE LAST 50 WORDS IN THE TABLE CONTAIN THE TEXT WHICH WILL BE USED IN THE TEST MESSAGES IF X=00 IS ENTERED, OR IN THE RFT MESSAGE IF X=01 IS ENTERED. IF ANY CONTROL CHARACTERS ARE TO BE USED IN THE TEXT OR IF LONG REPEATATIVE PATTERNS ARE USED THE TEXT MUST BE TRANSPARENT AND BEGIN WITH DLE STX AND END WITH DLE ETX. IF NORMAL TEXT IS USED IT MUST BEGIN WITH STX AND END WITH ETX. THE PROGRAM WILL SUPPLY ALL OTHER NECESSARY CONTROL CHARACTERS. THE STARTING ADDRESS OF THE TABLE IS 05E8. SEE SECTION 5.2.1 FOR SAMPLE PATCH CARDS.
- RTN 8..ROUTINE 8 IS THE RFT RECEIVER ROUTINE. THIS ROUTINE WILL, WHEN SELECTED, CONTINUOUSLY MONITOR THE COMMUNICATIONS LINE UNTIL AN RFT MESSAGE IS RECEIVED. IF THE X VALUE IN THE RFT RECEIVED WAS 00 THIS ROUTINE WILL THEN ACCEPT Y TEST MESSAGES FROM THE MASTER TERMINAL.

5.2.1 SAMPLE PATCH CARDS

THE FOLLOWING PATCH CARDS MAY BE USED TO ALTER THE OPERATION OF ROUTINE 7. PUNCH ALL CARDS STARTING IN COLUMN 1. THE & INDICATES A 12 PUNCH IN COLUMN 1. PATCH CARDS MUST BE PLACED AHEAD OF LAST CARD IN PROGRAM DECK.

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=13 AND RECEIVE TEST MESSAGE 13. USE ONE PATCH CARD..

805E8 000D

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=4 AND RECEIVE TEST MESSAGE 4. USE ONE PATCH CARD..

805E8 0004

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=14 AND RECEIVE TEST MESSAGE 14.
USE ONE PATCH CARD..

805E8 000E

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=15 AND RECEIVE TEST MESSAGE 15.
USE ONE PATCH CARD..

805E8 000F

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=00 THEN TRANSMIT Y TEST MESSAGES
CONTAINING A SCOPING PATTERN OF 80 HEX AA CHARACTERS.
USE FOUR PATCH CARDS..

805E8 0000 0054 1002 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
805F6 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
80604 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
80612 AAAA 1003

TO CAUSE RTN 7 TO TRANSMIT AN RFT WITH X=01 AND RECEIVE TEST MESSAGES
CONTAINING A SCOPING PATTERN OF 80 HEX AA CHARACTERS.
USE FOUR PATCH CARDS..

805E8 0001 0054 1002 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
805F6 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
80604 AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
80612 AAAA 1003

6. APPENDIX

6.1 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL CHARACTERS

BSC CHARACTER	HEX	MEANING
SYN	32	SYNCHRONOUS IDLE
DLE	10	DATA LINK ESCAPE
ENQ	2D	ENQUIRY
SOH	01	START OF HEADING
STX	02	START OF TEXT
ETB	26	END OF BLOCK
ETX	03	END OF TEXT
ITB	1F	INTERMEDIATE BLOCK CHARACTER
EOT	37	END OF TRANSMISSION
NAK	3D	NEGATIVE ACKNOWLEDGEMENT
ACK0	70	POSITIVE ACKNOWLEDGEMENT, EVEN RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
ACK1	61	POSITIVE ACKNOWLEDGEMENT, ODD RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)

6.2 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL SEQUENCES

BSC SEQUENCE	FUNCTION
SYN SYN	SYNCHRONOUS IDLE NORMAL
DLE SYN	SYNCHRONOUS IDLE TRANSPARENT TEXT
ENQ	ENQUIRY
SOH	START OF HEADING
STX	START OF NORMAL TEXT
DLE STX	START OF TRANSPARENT TEXT
ETB BCC	END OF HEADING OR NORMAL TEXT BLOCK
ITB BCC	END OF HEADING OR NORMAL TEXT INTERMEDIATE BLOCK
ETX BCC	END OF HEADING OR NORMAL TEXT
DLE ETB BCC	END OF TRANSPARENT TEXT BLOCK
DLE ITB BCC	END OF TRANSPARENT TEXT INTERMEDIATE BLOCK
DLE ETX BCC	END OF TRANSPARENT TEXT
DLE ACK0	POSITIVE ACKNOWLEDGEMENT EVEN RECORD
DLE ACK1	POSITIVE ACKNOWLEDGEMENT ODD RECORD
NAK	NEGATIVE ACKNOWLEDGEMENT
EOT	END OF TRANSMISSION
DLE EOT	DISCONNECT SIGNAL

----- LAST PAGE -----

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

*****
*****          PROGRAM ID 031A
*****
*****          EQUATE TABLE
*****
*****          THIS TABLE EQUATES TEST PROGRAM LABELS
*****          TO THEIR EQUIVALENT DIAGNOSTIC MONITOR
*****          ADDRESSES.
*****
*****          -----
*****          MONITOR ENTRY ADDRESSES
*****          -----
0160  BEGIN EQU      /0160      BEGIN ROUTINE
0161  START EQU     BEGIN&1    SUPERVISOR ROUTINE
0162  ERROR EQU     START&1    ERROR LOG ROUTINE
0163  LOG EQU       ERROR&1    STATUS LOG ROUTINE
0164  END EQU       LOG&1      END ROUTINE
*****
*****          -----
*****          MONITOR CONTROL WORD ADDRESSES
*****          -----
0165  RTNSW EQU    END&1      ROUTINE START SW
0166  ERLCK EQU    END&2      LOCK ON ERROR CONTROL
0167  LOGBY EQU    END&3      I/O BUSY SW ADDR3
0168  RLCF EQU     END&4      RELOCATION FACTOR ADDR3
*****
*****          -----
*****          INTERRUPT TRANSFER VECTOR ADDRESSES
*****          -----
017A  ILO EQU      /017A      INTERRUPT LEVEL ZERO
018A  IL1 EQU      ILO&16     INTERRUPT LEVEL ONE
019A  IL2 EQU      IL1&16     INTERRUPT LEVEL TWO
01AA  IL3 EQU      IL2&16     INTERRUPT LEVEL THREE
01BA  IL4 EQU      IL3&16     INTERRUPT LEVEL FOUR
01BB  RQTY EQU     IL4&1      CONSOLE PRINTER REQUEST
01BC  SQKB EQU     RQTY&1     USE KEYBOARD REQUEST
01BD  RQKB EQU     RQKB&1     KB SERVICE REQUEST
*****
*****          -----
*****          ORG * &/05DC
*****          -----
*****          THE MONITOR USES CORE LOCATIONS 0-05DC.
*****          FOR CONTENTS OF THESE ADDRESSES REFER
*****          TO THE DIAGNOSTIC MONITOR LISTING.
*****          -----
*****          -----
*****          PROGRAM CONTROL TABLE
*****          -----
*****          -----
05DC 0 031A  PID DC /031A PROGRAM ID
05DD 0 0000  RID DC *-- ROUTINE ID
05DE 0 0000  RAD DC *-- ROUTINE ADDRESS
05DF 0 0000  SW0 DC *-- PROGRAM CONTROL
05E0 0 0000  SW1 DC *-- ROUTINE SELECTION
05E1 0 0000  SW2 DC *-- OPERATING OPTIONS
05E2 0 0001  SW3 DC /0001 Y VALUE FOR RFT
05E3 1 0629  DC STRT LOOP ADDRESS
05E4 1 0629  DC STRT RESTART ADDRESS
05E5 0 0000  MLSCF DC *-- MONITOR ENTRY ONE
05E6 0 0000  DC *-- MONITOR ENTRY TWO
05E7 0 FFFF  DC /FFFF TERMINATOR
*****
*****          -----
*****          TEST MESSAGE TEXT
*****          -----
*****          THIS TABLE DEFINES THE X VALUE TO BE
*****          USED IN THE RFT MESSAGE WHICH IS
*****          TRANSMITTED BY TEST ROUTINE 7.

```

```

31A00020
31A00030
31A00040
31A00050
31A00060
31A00070
31A00080
31A00090
31A00100
31A00110
31A00120
31A00130
31A00140
31A00150
31A00160
31A00170
31A00180
31A00190
31A00200
31A00210
31A00220
31A00230
31A00240
31A00250
31A00260
31A00270
31A00280
31A00290
31A00300
31A00310
31A00320
31A00330
31A00340
31A00350
31A00360
31A00370
31A00380
31A00390
31A00400
31A00410
31A00420
31A00430
31A00440
31A00450
31A00460
31A00470
31A00480
31A00490
31A00500
31A00510
31A00520
31A00530
31A00540
31A00550
31A00560
31A00570
31A00580
31A00590
31A00600
31A00610
31A00620
31A00630
31A00640
31A00650
31A00660
31A00670
31A00680
31A00690

```

```

05E8 0 000C
05E9 0 0028
05EA 0 0227
05EB 0 61C1
05EC 0 C2C3
05ED 0 C4C5
05EE 0 C6C7
05EF 0 C8C9
05F0 0 D1D2
05F1 0 D3D4
05F2 0 D5D6
05F3 0 D7D8
05F4 0 D9E2
05F5 0 E3E4
05F6 0 E5E6
05F7 0 E7E8
05F8 0 E9F0
05F9 0 F1F2
05FA 0 F3F4
05FB 0 F5F6
05FC 0 F7F8
05FD 0 F903
05FE 001E

```

```

061C 0 C00B
061D 1 4C20 0622

```

```

0626 0000
0626 1 0628
0627 0 3A00
0628 0 0000

```

```

0629 1 C400 0DB1
062B 0 1890
062C 0 C0FB
062D 0 18D8
062E 1 D400 0D71
0630 0 18C8
0631 0 1808
0632 0 1088
0633 1 D400 0D70
0635 1 6700 0B24
0637 0 6F00 0189
0639 0 6300
063A 1 6F00 05DD
063C 1 6F00 0D72
063E 1 D400 0D6D

```

```

* IF THIS RFT MSG IS RECEIVED BY TEST
* ROUTINE 8, THE TEST MESSAGE CONTAINED
* IN THIS TABLE WILL BE TRANSMITTED.
*
*-----

```

```

XSPEC DC /000C X=12
DC 40 CHARACTER COUNT
DC /0227 STX ESC
DC /61C1 / A
DC /C2C3 B C
DC /C4C5 D E
DC /C6C7 F G
DC /C8C9 H I
DC /D1D2 J K
DC /D3D4 L M
DC /D5D6 N O
DC /D7D8 P Q
DC /D9E2 R S
DC /E3E4 T U
DC /E5E6 V W
DC /E7E8 X Y
DC /E9F0 Z 0
DC /F1F2 1 2
DC /F3F4 3 4
DC /F5F6 5 6
DC /F7F8 7 8
DC /F903 9 ETX
BSS 30

```

```

*
*****
*****          INITIALIZE AND START
*****

```

```

BGIN LD EDIT
BSC L *E3,Z BR IF EDIT IS ENTERED
*
WAIT 3 WAIT FOR EDIT ENTRY
XIO BITSW READ BIT SWITCHES
WAIT 4 WAIT FOR LOAD OPTIONS
BSI I BEGIN GO TO MONITOR
DC PID PCT ADDRESS

```

```

*
BSS E
BITSW DC EDIT READ BIT SWITCHES
DC /3A00 IOCC
EDIT DC *-* POLL AND SELECT ADDRESSES

```

```

*
STRT LD L ENQ
SRT 16
LD EDIT
RTE 24
STO L SELCT STORE SELECTION SEQUENCE
RTE 8
SRA 8
SLT 8
STO L POLL STORE POLLING SEQUENCE
LDX L3 INT
STX L3 IL1-1
LDX 3 0
STX L3 RID START AT ROUTINE ONE
STX L3 REQ2
STO L MONIT START MONITOR OPERATION

```

```

*
*****
*****          ROUTINE SEQUENCE CONTROL
*****
*****          THIS ROUTINE CHECKS PROGRAM OPTIONS
*****          AND CONTROLS THE SEQUENCE IN WHICH

```

```

31A00700
31A00710
31A00720
31A00730
31A00740
31A00750
31A00760
31A00770
31A00780
31A00790
31A00800
31A00810
31A00820
31A00830
31A00840
31A00850
31A00860
31A00870
31A00880
31A00890
31A00900
31A00910
31A00920
31A00930
31A00940
31A00950
31A00960
31A00970
31A00980
31A00990
31A01000
31A01010
31A01020
31A01030
31A01040
31A01050
31A01060
31A01070
31A01080
31A01090
31A01100
31A01110
31A01120
31A01130
31A01140
31A01150
31A01160
31A01170
31A01180
31A01190
31A01200
31A01210
31A01220
31A01230
31A01240
31A01250
31A01260
31A01270
31A01280
31A01290
31A01300
31A01310
31A01320
31A01330
31A01340
31A01350
31A01360
31A01370

```

```

* TEST ROUTINES ARE EXECUTED.
*
-----
0640 1 C400 05E1 CNTRL LD L SW2
0642 0 100B SLA 11 CK OPTION SWITCH
0643 0 6700 1FFE LDX L3 /1FFE
0645 1 4C28 0649 BSC L **2,+Z BR IF OVER 4K
*
0647 1 6700 0FF7 LDX L3 LSTWD
*
0649 1 6F00 0D62 STX L3 TOP SET HIGH CORE LIMIT
064B 0 1004 SLA 4 CK OPTION SWITCH
064C 1 EC00 05E0 OR L SW1
064E 1 D400 0D68 STO L OPTIN SAVE RTN NO AND OPTION
0650 1 4C10 0656 BSC L CN00,- BR IF RFT XMITTER
*
0652 0 6308 LDX 3 8
0653 1 6F00 05DD STX L3 RID SELECT RTN 8
0655 0 7015 MDX CN30
*
0656 1 C400 05E0 CN00 LD L SW1
0658 1 4C08 0664 BSC L CN20,& BR IF NO RTN SELECTED
*
065A 1 D400 05DD CN10 STO L RID SAVE NEW RTN NUMBER
065C 0 9024 S RIDCK
065D 1 4C08 066B BSC L CN30,& BR IF VALID RTN
*
065F 0 1810 SRA 16
0660 1 D400 05E0 STO L SW1 IF INVALID RTN
0662 1 D400 05DD STO L RID GO TO RTN ONE
*
0664 1 7401 05DD CN20 MDX L RID,&1 ADVANCE TO NEXT RTN
0666 1 C400 05DD LD L RID CHECK FOR END OF
0668 0 9019 S RTNOM NORMAL SEQUENCE
0669 0 4480 0164 BSI I END,-Z END PROGRAM
*
066B 1 6780 05DD CN30 LDX I3 RID
066D 1 C700 0678 LD L3 RTTBL-1 FETCH RTN ADDR
066F 1 D400 05DE STO L RAD STORE RTN ADDR
0671 0 D400 0165 STX L RTNSW SET RTN START SWITCH
0673 1 6700 0683 LDX L3 CLEAR
0675 1 6F00 05E5 STX L3 MLSCF SET MONITOR RETURN
0677 0 4480 0161 BSI I START GO TO MONITOR
*
-----
* ROUTINE ADDRESS TABLE
-----
0679 1 06B6 RTTBL DC RTN1 XMIT RFT X 00 TM 02
067A 1 06BD DC RTN2 XMIT RFT X 00 TM 16
067B 1 06C4 DC RTN3 XMIT RFT X 00 TM 19
067C 1 06CE DC RTN4 XMIT RFT X 02
067D 1 06D0 DC RTN5 XMIT RFT X 16
067E 1 06D2 NRTN DC RTN6 XMIT RFT X 19
067F 1 06DC DC RTN7 XMIT RFT SPECIAL
0680 1 06E6 LRTN DC RTN8 RFT RECEIVER RTN
*
0681 0 0008 RIDCK DC LRTN-RTTBL&1
0682 0 0006 RTNOM DC NRTN-RTTBL&1
*
*****
* CLEAR END OF TEST PRINT TABLE
*****
0683 1 6700 0D49 CLEAR LDX L3 T XR3#CONSTANT TABLE ADDR
0685 1 4400 076B BSI L INITL INITIALIZE ACK0/ACK1
0687 0 6316 LDX 3 22 CLEAR END OF
0688 0 1010 SLA 16 TEST
0689 1 D700 0EF2 STO L3 TABLE-1 MESSAGE

```

```

31A01380
31A01390
31A01400
31A01410
31A01420
31A01430
31A01440
31A01450
31A01460
31A01470
31A01480
31A01490
31A01500
31A01510
31A01520
31A01530
31A01540
31A01550
31A01560
31A01570
31A01580
31A01590
31A01600
31A01610
31A01620
31A01630
31A01640
31A01650
31A01660
31A01670
31A01680
31A01690
31A01700
31A01710
31A01720
31A01730
31A01740
31A01750
31A01760
31A01770
31A01780
31A01790
31A01800
31A01810
31A01820
31A01830
31A01840
31A01850
31A01860
31A01870
31A01880
31A01890
31A01900
31A01910
31A01920
31A01930
31A01940
31A01950
31A01960
31A01970
31A01980
31A01990
31A02000
31A02010
31A02020
31A02030
31A02040
31A02050

```

```

068B 0 73FF
068C 0 70FC
068D 1 6700 0D49
068F 0 D321
0690 0 D31D
0691 0 D31C
0692 0 C32B
0693 0 D31B
0694 0 D32C
0695 0 D31A
*
0696 0 0B4F
0697 0 1005
0698 0 4810
0699 0 7003
069A 0 1002
069B 1 4CA8 05DE
*
069D 0 1010
069E 0 D30D
069F 1 4400 0889
06A1 0 C377
06A2 0 D32A
06A3 1 6700 06A9
06A5 1 6F00 05E5
06A7 0 4480 0161
*
06A9 1 6700 0D49
06AB 0 0B4F
06AC 0 1007
06AD 1 4CA8 05DE
*
06AF 1 74FF 0D73
06B1 0 70F1
06B2 0 6201
06B3 1 4400 091E
06B5 0 70E0
*
06B6 0 1010
06B7 1 4400 0978
06B9 1 4400 0785
06BB 0 C365
06BC 0 700D
*
06BD 0 1010
06BE 1 4400 0978
06C0 1 4400 0785
06C2 0 C34D
06C3 0 7006
*
06C4 0 1010
06C5 1 4400 0978

```

```

MDX 3 -1 TABLE
MDX *-4
LDX L3 T XR3=CONSTANT TABLE ADDR
STO 3 ERRNO-T RESET ERROR IND
STO 3 TMXMI-T RESET TEST MSG XMIT IND
STO 3 TMRCI-T RESET TEST MSG RCV IND
LD 3 ENADR-T
STO 3 ENPNT-T
STO 3 ENPT2-T
STO 3 CNTPT-T
*
*****
* WAIT FOR DATA SET READY
*****
*
GTRDY XIO 3 SENSE-T SENSE SCA DSW
SLA 5
BSC - SKIP IF SCA BUSY
MDX *&3
SLA 2 GO TO SELECTED ROUTINE
BSC I RAD,Z& IF DATA SET READY
*
SLA 16
STO 3 FCODE-T SET RECEIVE FUNCTION
BSI L GO GO START RECEIVE
DELAY LD 3 H7000-T
STO 3 DLYCT-T SET DELAY COUNTER
LDX L3 CKRDY
STX L3 MLSCF SET MONITOR RETURN
BSI I START GO TO MONITOR
*
CKRDY LDX L3 T XR3#CONSTANT TABLE ADDR
XIO 3 SENSE-T SENSE SCA DSW
SLA 7 GO TO SELECTED ROUTINE
BSC I RAD,Z& IF DATA SET READY
*
MDX L DLYCT,-1 DECRE DELAY COUNT BY ONE
MDX DELAY&2 BR IF COUNT NOT ZERO
LDX 2 1 XR2#MESSAGE NUMBER
BSI L ERPRT GO PRINT MESSAGE
MDX GTRDY
*
*****
* TEST ROUTINE 1
*****
RTN1 SLA 16 X VALUE 00
BSI L GNRFT GO GENERATE RFT MSG
BSI L XMRFT GO XMIT RFT MSG
LD 3 H0002-T TEST MSG NO. 02
MDX RTN3+6
*
*****
* TEST ROUTINE 2
*****
RTN2 SLA 16 X VALUE 00
BSI L GNRFT GO GENERATE RFT MSG
BSI L XMRFT GO XMIT RFT MSG
LD 3 D16-T TEST MSG NO. 16
MDX RTN3+6
*
*****
* TEST ROUTINE 3
*****
RTN3 SLA 16 X VALUE 00
BSI L GNRFT GO GENERATE RFT MSG

```

```

31A02060
31A02070
31A02080
31A02090
31A02100
31A02110
31A02120
31A02130
31A02140
31A02150
31A02160
31A02170
31A02180
31A02190
31A02200
31A02210
31A02220
31A02230
31A02240
31A02250
31A02260
31A02270
31A02280
31A02290
31A02300
31A02310
31A02320
31A02330
31A02340
31A02350
31A02360
31A02370
31A02380
31A02390
31A02400
31A02410
31A02420
31A02430
31A02440
31A02450
31A02460
31A02470
31A02480
31A02490
31A02500
31A02510
31A02520
31A02530
31A02540
31A02550
31A02560
31A02570
31A02580
31A02590
31A02600
31A02610
31A02620
31A02630
31A02640
31A02650
31A02660
31A02670
31A02680
31A02690
31A02700
31A02710
31A02720
31A02730

```

```

06C7 1 4400 0785      BSI L XMRFT      GO XMIT RFT MSG
06C9 0 C34F          LD 3 D19-T      TEST MSG NO. 19
*
06CA 1 4400 09D1      BSI L GNTM      GO GENERATE TEST MSG
06CC 1 4C00 07C0      BSC L XMTM      GO TRANSMIT TEST MSG
*
*****
* TEST ROUTINE 4
*****
*
06CE 0 C365          RTN4 LD 3 H0002-T  X VALUE 02
06CF 0 7003          MDX RTN6+1
*
*****
* TEST ROUTINE 5
*****
*
06D0 0 C34D          RTN5 LD 3 D16-T   X VALUE 16
06D1 0 7001          MDX RTN6+1
*
*****
* TEST ROUTINE 6
*****
*
06D2 0 C34F          RTN6 LD 3 D19-T   X VALUE 19
*
06D3 1 4400 0978      BSI L GNRFT      GO GENERATE RFT MSG
06D5 1 4400 0785      BSI L XMRFT      GO XMIT RFT MSG
06D7 1 4400 085F      BSI L XMRCV      TRANSMIT EOT
06D9 1 0DAA          DC EDTCT
06DA 1 4C00 07FB      BSC L RCVTM      GO RECEIVE TEST MSGS
*
*****
* TEST ROUTINE 7
*****
*
06DC 1 C400 05E8      RTN7 LD L XSPEC   GET X VALUE
06DE 1 4C20 06D3      BSC L RTN6+1,Z  BR IF X NOT 00
*
06E0 1 4400 0978      BSI L GNRFT      GO GENERATE RFT MSG
06E2 1 4400 0785      BSI L XMRFT      GO XMIT RFT MSG
06E4 0 1010          SLA 16
06E5 0 70E4          MDX RTN3+6
*
*****
* TEST ROUTINE 8
*****
*
06E6 0 6202          RTN8 LDX 2 2      XR2#MESSAGE NUMBER
06E7 1 4400 08C9      BSI L TYPIT      GO PRINT MESSAGE
06E9 0 C376          LD 3 H8000-T
06EA 0 D329          STO 3 REQ2-T     SET RECEIVE REQUEST
06EB 1 6600 06F1      LDX L2 *E4
06ED 1 6E00 085F      STX L2 XMRCV     SET WAIT RETURN
06EF 1 4C00 086B      BSC L WAIT       GO WAIT FOR SELECT ADDRS
*
06F1 0 1010          SLA 16
06F2 0 D324          STO 3 MONIT-T   RESET MONITOR IND
06F3 1 4400 085F      XMACK BSI L XMRCV TRANSMIT ACK
06F5 1 8DAE          DC LSTAK&/8000  AND RECEIVE RFT
06F6 0 C30B          LD 3 BUFR-T
06F7 0 F372          EOR 3 HFFFF-T
06F8 1 4C18 0715      BSC L TMOT,&-   BR IF RECV TIMEOUT
*
06FA 1 7400 0D49      MDX L MDSWT      SKIP IF NO TEXT RCVD
06FC 0 701A          MDX TEXTR        BR IF TEXT RECEIVED
*
06FD 0 C37D          LD 3 RAREA&1-T

```

```

31A02740
31A02750
31A02760
31A02770
31A02780
31A02790
31A02800
31A02810
31A02820
31A02830
31A02840
31A02850
31A02860
31A02870
31A02880
31A02890
31A02900
31A02910
31A02920
31A02930
31A02940
31A02950
31A02960
31A02970
31A02980
31A02990
31A03000
31A03010
31A03020
31A03030
31A03040
31A03050
31A03060
31A03070
31A03080
31A03090
31A03100
31A03110
31A03120
31A03130
31A03140
31A03150
31A03160
31A03170
31A03180
31A03190
31A03200
31A03210
31A03220
31A03230
31A03240
31A03250
31A03260
31A03270
31A03280
31A03290
31A03300
31A03310
31A03320
31A03330
31A03340
31A03350
31A03360
31A03370
31A03380
31A03390
31A03400
31A03410

```

```

06FE 0 F368          EOR 3 ENQ-T
06FF 1 4C18 0711      BSC L ENQRC,&-  BR IF ENQ RECEIVED
*
0701 1 4400 077C      * BSI L EOTCK    GO CK FOR EOT RCVD
*
0703 0 610D          LDX 1 /D
0704 0 6203          LDX 2 3          XR2=MESSAGE NUMBER
0705 0 4042          BSI CKRTR        GO TO CK RETRY
0706 1 4400 085F      RCENQ BSI L XMRCV RECEIVE
0708 0 8000          DC /8000
0709 0 C37D          LD 3 RAREA&1-T
070A 0 F368          EOR 3 ENQ-T
070B 1 4C18 06F3      BSC L XMACK,&-  BR IF ENQ RECEIVED
*
070D 1 4400 077C      * BSI L EOTCK    GO CK FOR EOT RECVD
*
070F 0 610E          LDX 1 /E
0710 0 70F3          MDX RCENQ-2
*
0711 0 610B          ENQRC LDX 1 /B
0712 0 6203          LDX 2 3          XR2=MESSAGE NUMBER
0713 0 4034          BSI CKRTR        GO TO CK RETRY
0714 0 70DE          MDX XMACK
*
0715 0 610C          TMOT LDX 1 /C
0716 0 70ED          MDX RCENQ-2
*
0717 0 C301          TEXTR LD 3 ERR-T
0718 1 4C18 071C      BSC L *+2,+--  BR IF NO TEXT ERRORS
*
071A 0 610F          LDX 1 /F
071B 0 7020          MDX XMNAK
*
071C 0 C37D          LD 3 RAREA&1-T
071D 0 F35E          EOR 3 SOHPC-T
071E 1 4C18 0722      BSC L *+2,+--  BR IF RFT MESSAGE
*
0720 0 6110          LDX 1 /10
0721 0 7018          MDX BDRFT
*
0722 0 C37E          LD 3 RAREA&2-T  GET X FROM RFT MSG
0723 0 403D          BSI DTB          CONVERT TO BINARY
0724 1 D400 0EF8      STO L TABLE&5  PUT IN PRINT TABLE
0726 0 9351          S 3 D99-T
0727 1 4C08 072B      BSC L *+2,+    BR IF X NOT OVER 99
*
0729 0 6111          LDX 1 /11
072A 0 700F          MDX BDRFT
*
072B 1 C400 0DC8      LD L RAREA+3    GET Y VALUE FROM RFT
072D 0 4033          BSI DTB          CONVERT TO BINARY
072E 1 D400 0EF9      STO L TABLE&6  PUT IN PRINT TABLE
0730 0 9351          S 3 D99-T
0731 1 4C08 0735      BSC L *+2,+    BR IF Y NOT OVER 99
*
0733 0 6112          LDX 1 /12
0734 0 7005          MDX BDRFT
*
0735 0 6113          LDX 1 /13
0736 1 C400 0EF8      LD L TABLE&5   GET X VALUE
0738 1 4C18 0741      BSC L EXIT8,+-- BR IF X=00
*
073A 0 6206          BDRFT LDX 2 6    XR2=MESSAGE NUMBER
073B 0 7001          MDX XMNAK+1
*
073C 0 6203          XMNAK LDX 2 3    XR2=MESSAGE NUMBER
073D 0 400A          BSI CKRTR        GO TO CK RETRY
073E 0 C364          LD 3 NAK-T       SET UP TO

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31A03420
31A03430
31A03440
31A03450
31A03460
31A03470
31A03480
31A03490
31A03500
31A03510
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31A03530
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31A03580
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31A03600
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31A03690
31A03700
31A03710
31A03720
31A03730
31A03740
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31A03920
31A03930
31A03940
31A03950
31A03960
31A03970
31A03980
31A03990
31A04000
31A04010
31A04020
31A04030
31A04040
31A04050
31A04060
31A04070
31A04080
31A04090

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SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

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073F 0 D366      STO 3 LSTAK&1-T  XMIT NAK      31A04100
0740 0 70B2      MDX      XMACK      31A04110
*
0741 1 C400 0EF9  EXIT8 LD L TABLE+6  GET Y VALUE      31A04120
0743 0 D320      STO 3 YCNT-T      SET Y COUNTER      31A04130
0744 0 C000      LD      *      31A04140
0745 0 D31C      STO 3 TMRCI-T      SET TEST MSG RECV IND  31A04150
0746 1 4C00 081D  BSC L RTMSG      GO TO RECEIVE TEST MSGS  31A04160
*
*****
*      CHECK RETRY COUNTER      31A04170
*****
*
0748 0 0000      CKRTR DC *-*      31A04180
0749 1 6D00 0D6A  STX L1 ERRND      STORE ERROR NUMBER      31A04190
074B 1 6E00 0D6C  STX L2 TYPE      SAVE MESSAGE NUMBER      31A04200
074D 0 C331      LD 3 MSG4-T      GET MSG ADDRS      31A04210
074E 1 4400 0ADB  BSI L STALP      GO STORE IN PRINT TBL      31A04220
0750 0 C312      LD 3 RETRY-T      31A04230
0751 0 9367      S 3 H0001-T      DECRE RETRY BY ONE      31A04240
0752 1 4C08 0757  BSC L ERREX,&    BR IF RETRY ZERO      31A04250
*
0754 0 D312      STO 3 RETRY-T      RETURN      31A04260
0755 1 4C80 0748  BSC I CKRTR      31A04270
*
0757 1 4400 0B1A  ERREX BSI L STMON  START MONITOR OPERATION  31A04280
0759 1 4400 090A  BSI L DIAGP      GO PRINT DIAG MSG      31A04290
075B 1 6680 0D6C  LDX I2 TYPE      XR2=MESSAGE NUMBER      31A04300
075D 1 4400 091E  BSI L ERPRT      GO PRINT ERROR MSG      31A04310
075F 1 4C00 0A58  BSC L ENPRT      END ROUTINE      31A04320
*
*****
*      CONVERT 2 EBCDIC DECIMAL DIGITS      31A04330
*      TO BINARY      31A04340
*****
*
0761 0 0000      DTB DC *-*      31A04350
0762 0 E375      AND 3 HOFF-T      REMOVE BITS 0-3 8-11      31A04360
0763 0 D314      STO 3 TEMP-T      31A04370
0764 0 1808      SRA 8      RIGHT JUSTIFY HI DIGIT      31A04380
0765 0 A36E      M 3 H000A-T      MULT BY DEC 10      31A04390
0766 0 1090      SLT 16      31A04400
0767 0 8314      A 3 TEMP-T      ADD LD DIGIT      31A04410
0768 0 E373      AND 3 HOFF-T      SAVE BITS 8-15      31A04420
0769 1 4C80 0761  BSC I DTB      RETURN      31A04430
*
*****
*      INITIALIZE POSITIVE ACKNOWLEDGEMENT      31A04440
*      TO ACKO AND SET RETRY TO 7.      31A04450
*****
*
076B 0 0000      INITL DC *-*      31A04460
076C 0 C349      LD 3 H0007-T      31A04470
076D 0 D312      STO 3 RETRY-T      SET RETRY TO 7      31A04480
076E 0 CB53      LDD 3 ACKS-T      INITIALIZE      31A04490
076F 0 DB55      STD 3 POSAK-T      POSITIVE      31A04500
0770 0 D366      STO 3 LSTAK&1-T  ACKNOWLEDGEMENTS      31A04510
0771 1 4C80 076B  BSC I INITL      RETURN      31A04520
*
*****
*      ALTERNATE POSITIVE ACKNOWLEDGEMENT      31A04530
*      AND SET RETRY TO 7.      31A04540
*****
*
0773 0 0000      ALTNT DC *-*      31A04550
0774 0 CB55      LDD 3 POSAK-T      ALTERNATE      31A04560
0775 0 18D0      RTE 16      POSITIVE      31A04570
0776 0 DB55      STD 3 POSAK-T      ACKNOWLEDGEMENTS      31A04580

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0777 0 D366      STO 3 LSTAK+1-T      31A04780
0778 0 C349      LD 3 H0007-T      31A04790
0779 0 D312      STO 3 RETRY-T      SET RETRY TO 7      31A04800
077A 1 4C80 0773  BSC I ALTNT      RETURN      31A04810
*
*****
*      CHECK FOR EOT RECEIVED      31A04820
*****
*
077C 0 0000      EOTCK DC *-*      31A04830
077D 0 C37D      LD 3 RAREA&1-T      31A04840
077E 0 F362      EOR 3 EOT-T      31A04850
077F 1 4CA0 077C  BSC I EOTCK,Z      BR IF NOT EOT RECVD      31A04860
*
0781 0 6207      LDX 2 7      31A04870
0782 1 6E00 0D6C  STX L2 TYPE      31A04880
0784 0 70D2      MDX ERREX      31A04890
*
*****
*      TRANSMIT RFT MESSAGE      31A04900
*****
*
0785 0 0000      XMRFT DC *-*      31A04910
0786 0 6201      LDX 2 1      XR2#MESSAGE NUMBER      31A04920
0787 1 4400 08C9  BSI L TYPIT      GO PRINT MESSAGE      31A04930
0789 0 C367      LD 3 H0001-T      31A04940
078A 0 D329      STO 3 REQ2-T      SET TRANSMIT REQUEST      31A04950
078B 1 6600 0791  LDX L2 *E4      31A04960
078D 1 6E00 085F  STX L2 XMRCV      SET WAIT RETURN      31A04970
078F 1 4C00 086B  BSC L WAIT      GO WAIT FOR POLL ADDRS      31A04980
0791 0 1010      SLA 16      31A04990
0792 0 D324      STO 3 MONIT-T      RESET MONITOR IND      31A05000
*
0793 0 40DF      CTINU BSI L ALTNT  ALTERNATE ACKS      31A05010
0794 1 4400 085F  BSI L XMRCV      XMIT RFT MSG AND      31A05020
0796 1 8E5C      DC RFTTM&/8000  RECEIVED RESPONSE      31A05030
0797 0 40E4      BSI EDTCK      GO CK FOR EOT RECVD      31A05040
0798 0 C30B      LD 3 BUFFER-T      31A05050
0799 0 F372      EOR 3 HFFF-T      31A05060
079A 1 4C18 07B0  BSC L ERRT0,&-  BR IF TIMEOUT      31A05070
*
079C 0 C37D      LD 3 RAREA&1-T      31A05080
079D 0 F355      EOR 3 POSAK-T      31A05090
079E 1 4C98 0785  BSC I XMRFT,&-  BR IF CORRECT ACK RCVD      31A05100
*
07A0 0 C37D      LD 3 RAREA&1-T      31A05110
07A1 0 F356      EOR 3 POSAK&1-T      31A05120
07A2 1 4C18 07B4  BSC L WRACK,&-  BR IF WRONG ALTERNATE ACK      31A05130
*
07A4 0 C37D      LD 3 RAREA&1-T      31A05140
07A5 0 F364      EOR 3 NAK-T      31A05150
07A6 1 4C18 07BB  BSC L NAKRC,&-  BR IF NAK RECEIVED      31A05160
*
07A8 0 6118      LDX 1 /18      31A05170
07A9 0 6202      XENQ2 LDX 2 2      31A05180
07AA 1 4400 0748  BSI L CKRTR      GO TO CHECK RETRY      31A05190
07AC 1 4400 085F  BSI L XMRCV      XMIT ENQ AND      31A05200
07AE 1 8DB0      DC ENQCT&/8000  RECEIVE RESPONSE      31A05210
07AF 0 70E7      MDX CTINU&4      31A05220
*
07B0 0 6119      ERRTO LDX 1 /19      31A05230
07B1 1 6D00 0D68  STX L1 TOIND      SET TIMEOUT IND      31A05240
07B3 0 70F5      MDX XENQ2      31A05250
*
07B4 0 611A      WRACK LDX 1 /1A      31A05260
07B5 0 C31F      LD 3 TOIND-T      31A05270
07B6 1 4C18 07A9  BSC L XENQ2,&-  BR IF TIMEOUT IND ZERO      31A05280

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SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

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07B8 0 1010      SLA      16      31A05460
07B9 0 D31F      STO      3 TOIND-T  RESET TIMEOUT IND 31A05470
07BA 0 7001      MDX      **+1    31A05480
*              *              31A05490
*              *              31A05500
07BB 0 611B      NAKRC LDX  1 /1B    31A05510
07BC 0 6202      LDX      2 2      31A05520
07BD 1 4400 0748 BSI  L  CKRTR    GO CK RETRY 31A05530
07BF 0 70D4      MDX      CTINU+1 31A05540
*              *              31A05550
*****          *****
*              *              31A05560
*****          *****
*              *              31A05570
*              *              31A05580
*              *              31A05590
07C0 0 C000      XMTM  LD      *      31A05600
07C1 0 D31D      STO      3 TMXMI-T SET TEST MSG XMIT IND 31A05610
07C2 1 C400 0EF9 LD  L  TABLE&6 GET Y VALUE 31A05620
07C4 0 D320      STO      3 YCNT-T  SET Y COUNT 31A05630
07C5 0 40AD      BSI      ALTNT    ALTERNATE ACKS 31A05640
07C6 0 C320      TSMMSG LD  3 YCNT-T 31A05650
07C7 1 4C08 07F4 BSC  L  EX,+      BR IF Y=00 31A05660
*              *              31A05670
*              *              31A05680
07C9 0 9367      S        3 H0001-T  DECRE Y COUNT BY ONE 31A05690
07CA 0 D320      STO      3 YCNT-T 31A05700
07CB 0 C318      LD        3 TMPNT-T 31A05710
07CC 0 EB76      OR        3 H8000-T 31A05720
07CD 0 D002      STO      * &2      31A05730
07CE 1 4400 085F BSI  L  XMRCV    XMIT TEST MSG AND 31A05740
07D0 0 0000      DC      *- *      RECEIVE RESPONSE 31A05750
07D1 1 4400 077C BSI  L  EOTCK    GO CK FOR EOT RCVD 31A05760
*              *              31A05770
*              *              31A05780
07D3 0 C30B      LD        3 BUFR-T 31A05790
07D4 0 F372      EOR      3 HFFFF-T 31A05800
07D5 1 4C20 07DB BSC  L  * &4,Z    BR IF NO TIMEOUT 31A05810
*              *              31A05820
*              *              31A05830
07D7 1 7401 0EFA MDX  L  TABLE&7,&1 ADD ONE TO TMOU COUNT 31A05840
07D9 0 611E      LDX      1 /1E    31A05850
07DA 0 7013      MDX      CKY      31A05860
*              *              31A05870
*              *              31A05880
07DB 0 C37D      LD        3 RAREA&1-T 31A05890
07DC 0 F364      EOR      3 NAK-T    31A05900
07DD 1 4C20 07E3 BSC  L  * &4,Z    BR IF NOT NAK RCVD 31A05910
*              *              31A05920
*              *              31A05930
07DF 1 7401 0EFB MDX  L  TABLE&8,&1 ADD ONE TO NAK COUNT 31A05940
07E1 0 611D      LDX      1 /1D    31A05950
07E2 0 700B      MDX      CKY      31A05960
*              *              31A05970
*              *              31A05980
07E3 0 C37D      LD        3 RAREA&1-T 31A05990
07E4 0 F356      EOR      3 POSAK-T 31A06000
07E5 1 4C18 07C5 BSC  L  TSMMSG-1,+ BR IF ACK 31A06010
*              *              31A06020
*              *              31A06030
07E7 0 C37D      LD        3 RAREA&1-T 31A06040
07E8 0 F355      EOR      3 POSAK-T 31A06050
07E9 1 4C18 07C5 BSC  L  TSMMSG-1,+ BR IF CORRECT ACK 31A06060
*              *              31A06070
*              *              31A06080
07EB 1 7401 0EFC MDX  L  TABLE&9,&1 ADD 1 TO INVALID RESP CNT 31A06090
07ED 0 6120      LDX      1 /20    31A06100
*              *              31A06110
*              *              31A06120
07EE 1 6D00 0D6A CKY  STX  L1 ERRNO  STORE ERROR NUMBER 31A06130
07F0 0 C331      LD        3 MSG4-T 31A06130
07F1 1 4400 0ADB BSI  L  STALP    31A06130
07F3 0 70D1      MDX      TSMMSG-1 31A06130
*              *              31A06130
07F4 1 4400 085F EX  BSI  L  XMRCV    TRANSMIT EOT 31A06130
07F6 1 0DAA      DC      EOTCT    31A06130
07F7 1 4400 0B1A BSI  L  STMON    31A06130
07F9 1 4C00 0A58 BSC  L  ENPRT    GO PRINT END MSGS 31A06130
*****          *****

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31A05460
31A05470
31A05480
31A05490
31A05500
31A05510
31A05520
31A05530
31A05540
31A05550
31A05560
31A05570
31A05580
31A05590
31A05600
31A05610
31A05620
31A05630
31A05640
31A05650
31A05660
31A05670
31A05680
31A05690
31A05700
31A05710
31A05720
31A05730
31A05740
31A05750
31A05760
31A05770
31A05780
31A05790
31A05800
31A05810
31A05820
31A05830
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31A05900
31A05910
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31A05930
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31A05980
31A05990
31A06000
31A06010
31A06020
31A06030
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31A06050
31A06060
31A06070
31A06080
31A06090
31A06100
31A06110
31A06120
31A06130

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*              *              31A06140
*****          *****
*              *              31A06150
*              *              31A06160
07FB 1 C400 0EF9 RCVTM LD  L  TABLE&6  GET Y VALUE 31A06170
07FD 0 D320      STO      3 YCNT-T  STORE IN Y COUNTER 31A06180
07FE 0 C000      LD        *      31A06190
07FF 0 D31C      STO      3 TMRCI-T  SET TEST MSG RCVD IND 31A06200
0800 1 4400 076B BSI  L  INITL    INITIALIZE ACK0/ACK1 31A06210
0802 1 4400 085F BSI  L  XMRCV    RECEIVE 31A06220
0804 0 8000      DC      /8000    31A06230
0805 0 C326      LD        3 POLLC-T 31A06240
0806 0 F328      EOR      3 SELCT-T 31A06250
0807 1 4C18 081F BSC  L  RTMSG&2,&- BR IF SELECT RCVD 31A06260
*              *              31A06270
*              *              31A06280
0809 0 C37D      LD        3 RAREA&1-T 31A06290
080A 0 F362      EOR      3 EOT-T    31A06300
080B 1 4C18 0802 BSC  L  RCVTM&7,&- BR IF EOT RECEIVED 31A06310
*              *              31A06320
080D 0 6121      LDX      1 /21    31A06330
080E 1 6D00 0D6A RTM  STX  L1 ERRNO  STORE ERROR NUMBER 31A06340
0810 1 4400 0773 BSI  L  ALTNT    ALTERNATE ACKS 31A06350
0812 0 C331      LD        3 MSG4-T 31A06360
0813 1 4400 0ADB BSI  L  STALP    31A06370
0815 0 C320      LD        3 YCNT-T 31A06380
0816 1 4C08 084A BSC  L  END1,&    BR IF Y COUNT ZERO 31A06390
*              *              31A06400
*              *              31A06410
0818 0 9367      S        3 H0001-T  DECRE Y COUNT BY ONE 31A06420
0819 0 D320      STO      3 YCNT-T 31A06430
081A 0 4044      BSI      XMRCV    RECEIVE 31A06440
081B 0 8000      DC      /8000    31A06450
081C 0 7009      MDX      **+9    31A06460
*              *              31A06470
*              *              31A06480
081D 1 4400 0773 RTMSG BSI  L  ALTNT    ALTERNATE ACKS 31A06490
081F 0 C320      LD        3 YCNT-T 31A06500
0820 1 4C08 084D BSC  L  END2,&    BR IF Y COUNT ZERO 31A06510
*              *              31A06520
0822 0 9367      S        3 H0001-T  DECRE Y COUNT BY ONE 31A06530
0823 0 D320      STO      3 YCNT-T 31A06540
0824 0 403A      BSI      XMRCV    XMIT CURRENT ACK AND 31A06550
0825 1 8DAE      DC      LSTAK&/8000 RECEIVE TEST MSG 31A06560
0826 0 C30B      LD        3 BUFR-T 31A06570
0827 0 F372      EOR      3 HFFFF-T 31A06580
0828 1 4C20 082E BSC  L  * &4,Z    BR IF NO TIMEOUT 31A06590
*              *              31A06600
*              *              31A06610
082A 1 7401 0EFA MDX  L  TABLE&7,&1 31A06620
082C 0 6122      LDX      1 /22    31A06630
082D 0 70E0      MDX      RTM      31A06640
*              *              31A06650
*              *              31A06660
082E 1 7400 0D49 MDX  L  MDSWT    31A06670
0830 0 7006      MDX      * &6      BR IF TEXT WAS RCVD 31A06680
0831 1 4400 077C BSI  L  EOTCK    GO CK FOR EOT RCVD 31A06690
0833 0 6123      LDX      1 /23    31A06700
0834 1 7401 0EFB MDX  L  TABLE&8,&1 31A06710
0836 0 70D7      MDX      RTM      31A06720
*              *              31A06730
*              *              31A06740
0837 0 C301      LD        3 ERR-T 31A06750
0838 1 4C18 0847 BSC  L  GDMSG,&-  BR IF NO ERRORS IN TEXT 31A06760
*              *              31A06770
*              *              31A06780
083A 1 4400 0773 BSI  L  ALTNT    31A06790
083C 0 C364      LD        3 NAK-T  SET UP TO 31A06800
083D 0 D366      STO      3 LSTAK+1-T XMIT NAK 31A06810
083E 1 7401 0EFB MDX  L  TABLE&8,&1 31A06820
0840 0 C331      LD        3 MSG4-T 31A06830
0841 1 4400 0ADB BSI  L  STALP    31A06840
0843 0 6124      LDX      1 /24    31A06850
0844 1 6D00 0D6A STX  L1 ERRNO  31A06860
0846 0 70D8      MDX      RTMSG&2 31A06870
*              *              31A06880

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31A06140
31A06150
31A06160
31A06170
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31A06260
31A06270
31A06280
31A06290
31A06300
31A06310
31A06320
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31A06680
31A06690
31A06700
31A06710
31A06720
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31A06740
31A06750
31A06760
31A06770
31A06780
31A06790
31A06800
31A06810

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0847 1 7401 0EFC  GDMMSG MDX L TABLE&9,&1 31A06820
0849 0 70D3      MDX          RTMSG      31A06830
*
084A 0 4014      *
084B 0 8000      END1  BSI    XMRCV    RECEIVE EOT 31A06840
084C 0 7002      DC      /8000      31A06850
*
084D 0 4011      *
084E 1 8DAE      END2  BSI    XMRCV    XMIT CURRENT ACK AND 31A06860
084F 0 C37D      DC      LSTAK&/8000 RECEIVE EOT 31A06870
0850 0 F362      LD      3 RAREA&1-T 31A06880
0851 1 4C18 0859 EOR     3 EOT-T      31A06890
*
*
0853 0 6125      *
0854 1 6D00 0D6A LDX     1 /25      31A06900
0856 0 C331      STX    L1 ERRNO   31A06910
0857 1 4400 0ADB LD      3 MSG4-T   31A06920
0859 1 4400 0B1A BSI    L STALP    31A06930
085B 1 4400 090A BSI    L STMON    31A06940
085D 1 4C00 0A58 BSI    L DIAGP    31A06950
*
*
*****
*
*          PROCESS TRANSMIT/RECEIVE CALL
*          AND WAIT FOR COMPLETION OF OPERATION
*****
*
085F 0 0000      *
0860 1 C480 085F XMRCV  DC    *--*   31A06960
0862 0 D315      LD      1 XMRCV    GET XMIT/RCV REQUEST 31A07000
0863 0 E378      STQ    3 REQ-T    31A07100
0864 0 D30D      AND    3 H7FFF-T  REMOVE BIT 0          31A07110
0865 1 7401 085F STQ    3 FCODE-T  SET FUNCTION FOR XMIT/REC 31A07120
0867 1 4400 0889 MDX    L XMRCV,+1 31A07130
0869 1 4400 090A BSI    L GO        START XMIT OR RECV   31A07140
*
*
086B 0 C378      *
086C 0 D313      WAIT  LD      3 H7FFF-T 31A07150
*
*
086D 0 C309      *
086E 1 4CA0 085F LD      3 MSEND-T  CK FOR END XMIT/RCV   31A07160
0870 1 6700 087E BSC    I XMRCV,Z  BR IF MSG END         31A07170
0872 1 6F00 05E5 LDX    L3 RETRN    31A07180
0874 0 4480 0161 STX    L3 MLSCF    SET MONITOR RETURN   31A07190
*
*
0876 1 6700 0D49 RETRN  LDX    L3 T      RESTORE XR3           31A07200
0878 0 0B4F      XIO    3 SENSE-T  SENSE SCA DSW       31A07210
0879 0 1007      SLA    7          31A07220
087A 1 4C28 087F BSC    L *+3,Z+   GO TO MONITOR        31A07230
*
*
087C 0 6201      *
087D 1 4400 091E LDX    2 1        31A07240
*
*
087F 1 74FF 0D5C MDX    L WTCNT,-1  DECRE WAIT CNT BY ONE 31A07250
0881 0 70EB      MDX    WAIT&2    BR IF COUNT NOT ZERO 31A07260
0882 1 4400 0B1A BSI    L STMON    31A07270
0884 0 6208      LDX    2 8        31A07280
0885 1 4400 091E BSI    L ERPRT    PRINT ERROR MSG     31A07290
0887 1 4C00 0A58 BSC    L ENPRT    END ROUTINE      31A07300
*
*
*****
*
*          START TRANSMIT/RECEIVE OPERATION
*****
*
0889 0 0000      *
088A 0 4029      GO      DC    *--*   31A07310
088B 0 630C      BSI    CKOPN      31A07320
088C 0 1010      LDX    3 12      RESET          31A07330
*
*
SLA    16          TWELVE      31A07340

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```

088D 1 D700 0D48 STO    L3 T-1      INDICATORS          31A07500
088F 0 73FF      MDX    3 -1      31A07510
0890 0 70FC      MDX    *-4      31A07520
*
0891 1 6700 0D49 *
0893 0 D37D      LDX    L3 T      XR3#CONSTANT TABLE ADDR 31A07530
0894 0 0B39      STQ    3 RAREA+1-T 31A07540
0895 0 C30D      XIO    3 SYNRG-T  SYN TO SYNC REG      31A07550
0896 1 4C20 08A6 LD      3 FCODE-T  CK FUNCTION          31A07560
*
*
0898 0 C330      *
0899 1 4400 0ADB LD      3 MSG3-T  BR IF XMIT FUNCTION   31A07570
089B 1 6600 0DC5 BSI    L STALP    31A07580
089D 0 7201      LDX    L2 RAREA  31A07590
089E 1 6E00 0D57 MDX    2 &1      31A07600
08A0 0 C000      STX    L2 POINT  POINT TO RECEIVE AREA 31A07610
08A1 0 D30F      LD      *        31A07620
08A2 0 0B3B      STO    3 RTBSY-T  SET RTN BUSY IND     31A07630
08A3 0 0B45      XIO    3 ENDP-T  END SCA OPERATION    31A07640
08A4 1 4C80 0889 BSC    I STRED-T  START READ           31A07650
*
*
08A6 0 D31E      *
08A7 0 8367      XMIT  STO    3 IOAR-T 31A07660
08A8 0 D30E      A      3 H0001-T  31A07670
08A9 0 C345      STO    3 POINT-T  POINT TO XMIT AREA   31A07680
08AA 0 D30C      LD      3 H0004-T 31A07690
08AB 0 C32F      STO    3 SYNC-T  SET XMIT SYNS IND   31A07700
08AC 1 4400 0ADB LD      3 MSG2-T  31A07710
08AE 0 C000      BSI    L STALP    31A07720
08AF 0 C000      LD      *        31A07730
08B0 0 0B3B      STO    3 RTBSY-T  SET RTN BUSY IND     31A07740
08B1 0 0B3D      XIO    3 ENDP-T  END SCA OPERATION    31A07750
08B2 1 4C80 0889 XIO    3 STSYN-T  START WRITE          31A07760
*
*
08B4 0 0000      *
08B5 1 6700 0D49 CKOPN  DC    *--*   31A07770
08B7 1 C400 05E1 LDX    L3 T      31A07780
08B9 0 100C      LD      L SW2     CK OPTION SWITCH     31A07790
08BA 1 4C28 08BF SLA    12          31A07800
*
*
088C 0 C32D      *
088D 1 4C20 08C2 BSC    L *&3,Z    BR IF PRINT ALL TEXT ON 31A07810
*
*
08BF 0 C31B      *
08C0 0 D32C      LD      3 NOERR-T 31A07820
08C1 0 7002      STO    3 ENPT2-T  BR IF NO ERROR       31A07830
*
*
08C2 0 C32C      *
08C3 0 D31B      LD      3 ENPT2-T 31A07840
*
*
08C4 0 1010      *
08C5 1 D480 0D64 STO    3 ENPT-T   SAVE LAST MESSAGE    31A07850
08C7 1 4C80 08B4 MDX    * &2      31A07860
*
*
08C9 0 0000      *
08CA 1 6E00 0EF3 LD      3 ENPT-T  DELETE LAST MESSAGE 31A07870
08CC 1 C600 08D9 *
08CE 1 D400 0EF6 SLA    16          31A07880
08D0 0 4480 0163 STO    I ENPNT    31A07890
08D2 1 0EF3      BSC    I CKOPN    31A07900
*
*
08C9 0 0000      *
08CA 1 6E00 0EF3 TYPIT  DC    *--*   31A07910
08CC 1 C600 08D9 STX    L2 TABLE  STORE MSG NUMBER  31A07920
08CE 1 D400 0EF6 LD      L2 AMGS-1  GET MSG ADDR      31A07930
08D0 0 4480 0163 STO    L TABLE&3 STORE MSG ADDR  31A07940
08D2 1 0EF3      BSI    I LOG      PRINT MESSAGE       31A07950
DC      TABLE     31A07960

```

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

08D3 1 6700 0D49      LDX L3 T      RESTORE XR3
08D5 0 1010          SLA      16
08D6 1 D400 0FF6      STO L TABLE&3
08D8 1 4C80 08C9      BSC I TYPIT  RETURN
*
08DA 1 08DE          AMGS DC      A1701  MON POLL
08DB 1 08E3          DC      A1702  MON SEL
08DC 1 08E8          DC      A1703
08DD 1 08F9          DC      A1704
*
08DE 0 7252          A1701 DC      /7252  MO
08DF 0 7621          DC      /7621  N
08E0 0 5652          DC      /5652  PD
08E1 0 5E5E          DC      /5E5E  LL
08E2 0 FFFF          DC      /FFFF  TERMINATOR
*
08E3 0 7252          A1702 DC      /7252  MO
08E4 0 7621          DC      /7621  N
08E5 0 9A36          DC      /9A36  SE
08E6 0 5E21          DC      /5E21  L
08E7 0 FFFF          DC      /FFFF  TERMINATOR
*
08E8 0 9621          A1703 DC      /9621  X
08E9 0 2121          DC      /2121
08EA 0 2121          DC      /2121
08EB 0 A621          DC      /A621  Y
08EC 0 2121          DC      /2121
08ED 0 2121          DC      /2121
08EE 0 9E72          DC      /9E72  TM
08EF 0 52B2          DC      /52B2  OU
08F0 0 9E21          DC      /9E21  T
08F1 0 763E          DC      /763E  NA
08F2 0 5A21          DC      /5A21  K
08F3 0 2121          DC      /2121
08F4 0 2276          DC      /2276  IN
08F5 0 B621          DC      /B621  V
08F6 0 6236          DC      /6236  RE
08F7 0 9A56          DC      /9A56  SP
08F8 0 FFFF          DC      /FFFF  TERMINATOR
*
08F9 0 9621          A1704 DC      /9621  X
08FA 0 2121          DC      /2121
08FB 0 2121          DC      /2121
08FC 0 A621          DC      /A621  Y
08FD 0 2121          DC      /2121
08FE 0 2121          DC      /2121
08FF 0 9E72          DC      /9E72  TM
0900 0 52B2          DC      /52B2  OU
0901 0 9E21          DC      /9E21  T
0902 0 9221          DC      /9221  W
0903 0 3662          DC      /3662  ER
0904 0 6221          DC      /6221  R
0905 0 92BC          DC      /92BC  W/
0906 0 5221          DC      /5221  O
0907 0 3662          DC      /3662  ER
0908 0 6221          DC      /6221  R
0909 0 FFFF          DC      /FFFF  TERMINATOR
*
*****
* PRINT DIAGNOSTIC MESSAGE
*****
*
090A 0 0000          DIAGP DC     *--*
090B 1 C400 05E1      LD L SW2      CK OPTION SWT
090D 0 100E          SLA      14
090E 1 4C90 090A      BSC I DIAGP,- BR IF NOT DIAG PRNT
*
0910 0 C321          LD      3 ERRNO-T  GET ERROR NUMBER

```

```

31A08180
31A08190
31A08200
31A08210
31A08220
31A08230
31A08240
31A08250
31A08260
31A08270
31A08280
31A08290
31A08300
31A08310
31A08320
31A08330
31A08340
31A08350
31A08360
31A08370
31A08380
31A08390
31A08400
31A08410
31A08420
31A08430
31A08440
31A08450
31A08460
31A08470
31A08480
31A08490
31A08500
31A08510
31A08520
31A08530
31A08540
31A08550
31A08560
31A08570
31A08580
31A08590
31A08600
31A08610
31A08620
31A08630
31A08640
31A08650
31A08660
31A08670
31A08680
31A08690
31A08700
31A08710
31A08720
31A08730
31A08740
31A08750
31A08760
31A08770
31A08780
31A08790
31A08800
31A08810
31A08820
31A08830
31A08840
31A08850

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```

0911 1 4C98 090A
0913 1 D400 0EF3
0915 0 4480 0162
0917 1 0EF3
0918 0 0000
0919 1 6700 0D49
091B 0 1010
091C 0 D321
091D 0 70F3
091E 0 0000
091F 1 6E00 0EF3
0921 1 C600 092F
0923 1 D400 0EF6
0925 0 4480 0162
0927 1 0EF3
0928 0 0000
0929 1 6700 0D49
092B 0 1010
092C 1 D400 0EF6
092E 1 4C80 091E
0930 1 0938
0931 1 0940
0932 1 0946
0933 1 094C
0934 1 0950
0935 1 0954
0936 1 095B
0937 1 0960
0938 0 323E
0939 0 9E3E
093A 0 219A
093B 0 369E
093C 0 2176
093D 0 6232
093E 0 A621
093F 0 FFFF
0940 0 D421
0941 0 9E62
0942 0 2236
0943 0 9A21
0944 0 9E21
0945 0 FFFF
0946 0 D421
0947 0 9E62
0948 0 2236
0949 0 9A21
094A 0 6221
094B 0 FFFF
094C 0 2276
094D 0 B621
094E 0 9621
094F 0 FFFF
0950 0 2276
0951 0 B621
0952 0 A621
0953 0 FFFF

```

```

* BSC I DIAGP,+ BR IF NO ERROR
*
STO L TABLE
BSI I ERROR GO PRINT ERROR MSG
DC TABLE
DC 0
LDX L3 T RESTORE XR3
SLA 16
STO 3 ERRNO-T SET ERROR NO. TO ZERO
MDX *-13
*
*****
* PRINT ERROR MESSAGE
*****
*
ERPRT DC *--*
STX L2 TABLE STORE MSG NUMBER
LD L2 EMSGS-1 GET MSG ADDR
STO L TABLE&3 STORE MSG ADDR
BSI I ERROR PRINT MSG
DC TABLE
DC 0
LDX L3 T RESTORE XR3
SLA 16
STO L TABLE&3
BSC I ERPRT
*
EMSGS DC E1701 DATA SET NRDY
DC E1702 7 TRIES T
DC E1703 7 TRIES R
DC E1704 INV X
DC E1705 INV Y
DC E1706 INV RFT RCVD
DC E1707 EOT RCVD
DC E1708 NO INTRP
*
E1701 DC /323E DA
DC /9E3E TA
DC /219A S
DC /369E ET
DC /2176 N
DC /6232 RD
DC /A621 Y
DC /FFFF TERMINATOR
*
E1702 DC /D421 7
DC /9E62 TR
DC /2236 IE
DC /9A21 S
DC /9E21 T
DC /FFFF TERMINATOR
*
E1703 DC /D421 7
DC /9E62 TR
DC /2236 IE
DC /9A21 S
DC /6221 R
DC /FFFF TERMINATOR
*
E1704 DC /2276 IN
DC /B621 V
DC /9621 X
DC /FFFF TERMINATOR
*
E1705 DC /2276 IN
DC /B621 V
DC /A621 Y
DC /FFFF TERMINATOR

```

```

31A08860
31A08870
31A08880
31A08890
31A08900
31A08910
31A08920
31A08930
31A08940
31A08950
31A08960
31A08970
31A08980
31A08990
31A09000
31A09010
31A09020
31A09030
31A09040
31A09050
31A09060
31A09070
31A09080
31A09090
31A09100
31A09110
31A09120
31A09130
31A09140
31A09150
31A09160
31A09170
31A09180
31A09190
31A09200
31A09210
31A09220
31A09230
31A09240
31A09250
31A09260
31A09270
31A09280
31A09290
31A09300
31A09310
31A09320
31A09330
31A09340
31A09350
31A09360
31A09370
31A09380
31A09390
31A09400
31A09410
31A09420
31A09430
31A09440
31A09450
31A09460
31A09470
31A09480
31A09490
31A09500
31A09510
31A09520
31A09530

```

```

*
0954 0 2276      E1706 DC      /2276      IN
0955 0 8621      DC      /8621      V
0956 0 6212      DC      /6212      RF
0957 0 9E21      DC      /9E21      T
0958 0 621E      DC      /621E      RC
0959 0 8632      DC      /8632      VD
095A 0 FFFF      DC      /FFFF      TERMINATOR
*
095B 0 3652      E1707 DC      /3652      ED
095C 0 9E21      DC      /9E21      T
095D 0 621E      DC      /621E      RC
095E 0 8632      DC      /8632      VD
095F 0 FFFF      DC      /FFFF      TERMINATOR
*
0960 0 7652      E1708 DC      /7652      NO
0961 0 2122      DC      /2122      I
0962 0 769E      DC      /769E      NT
0963 0 6256      DC      /6256      RP
0964 0 FFFF      DC      /FFFF      TERMINATOR
*
*****
*
0965 0 9E22      TOMSG DC      /9E22      TI
0966 0 7236      DC      /7236      ME
0967 0 5282      DC      /5282      OU
0968 0 9E21      DC      /9E21      T
0969 0 FFFF      DC      /FFFF      TERMINATOR
*
096A 0 0303      XMMSG DC      /0303      XM
096B 0 9672      DC      /9672      IT
096C 0 229E      DC      /229E      IT
096D 0 FFFF      DC      /FFFF      TERMINATOR
*
096E 0 0303      RCMSG DC      /0303      RE
096F 0 6236      DC      /6236      CV
0970 0 1EB6      DC      /1EB6      TERMINATOR
0971 0 FFFF      DC      /FFFF      TERMINATOR
*
0972 0 3662      ERMSG DC      /3662      ER
0973 0 6221      DC      /6221      R
0974 0 FFFF      DC      /FFFF      TERMINATOR
*
0975 0 1E52      ENCDR DC      /1E52      CO
0976 0 6236      DC      /6236      RE
0977 0 FFFF      DC      /FFFF      TERMINATOR
*
*****
*
0978 0 0000      GNRFT DC      *-*
0979 1 D400 0EF8  STO L TABLE&5  STORE X VALUE
097B 1 4C28 09C1  BSC L XERR,Z+   BR IF INVALID X VALUE
097D 0 9351      S      3 D99-T
097E 1 4C30 09C1  BSC L XERR,-Z   BR IF INVALID X VALUE
*
0980 0 8351      A      3 D99-T
0981 0 4046      BSI    BTD      CONVERT TO EBCDIC
0982 1 D400 0E5E  STO L RFTTM+2   PUT IN RFT MSG
*
0984 1 C400 05E2  LD L SW3        GET Y VALUE
0986 1 D400 0EF9  STO L TABLE&6
0988 1 4C08 09C3  BSC L YERR,+    BR IF INVALID Y VALUE
098A 0 9351      S      3 D99-T
098B 1 4C30 09C3  BSC L YERR,-Z   BR IF INVALID Y VALUE
*
098D 0 8351      A      3 D99-T

```

```

31A09540
31A09550
31A09560
31A09570
31A09580
31A09590
31A09600
31A09610
31A09620
31A09630
31A09640
31A09650
31A09660
31A09670
31A09680
31A09690
31A09700
31A09710
31A09720
31A09730
31A09740
31A09750
31A09760
31A09770
31A09780
31A09790
31A09800
31A09810
31A09820
31A09830
31A09840
31A09850
31A09860
31A09870
31A09880
31A09890
31A09900
31A09910
31A09920
31A09930
31A09940
31A09950
31A09960
31A09970
31A09980
31A09990
31A10000
31A10010
31A10020
31A10030
31A10040
31A10050
31A10060
31A10070
31A10080
31A10090
31A10100
31A10110
31A10120
31A10130
31A10140
31A10150
31A10160
31A10170
31A10180
31A10190
31A10200
31A10210

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```

098E 0 4039      BSI    BTD      CONVERT TO EBCDIC
098F 1 D400 0E5F  STO L RFTTM+3   PUT IN RFT MSG
0991 0 C35E      LD      3 SOHPC-T
0992 1 D400 0E5D  STO L RFTTM+1   PUT SOH % IN RFT
*
0994 0 C349      LD      3 H0007-T
0995 0 8367      A      3 H0001-T   SET RFT CHARACTER
0996 0 D316      STO    3 CNTA-T   COUNT TO 8
0997 1 C400 0628  LD L EDIT
0999 0 1008      SLA    8
099A 0 1808      SRA    8
099B 0 EB6F      OR     3 HF100-T
099C 1 D400 0E60  STO L RFTTM&4   SET N AND TO FIELDS
*
099E 1 C400 0EF8  LD L TABLE&5   GET X VALUE
09A0 0 9367      S      3 H0001-T
09A1 1 4C18 09AC  BSC L XONE,&-    BR IF X=01
*
09A3 0 C35D      LD      3 ETX-T
09A4 0 1808      SRA    8
09A5 0 EB5C      OR     3 STX-T
09A6 1 D400 0E61  STO L RFTTM&5   PUT STX ETX IN RFT MSG
09A8 1 7402 0D5F  MDX L CNTA,&2   ADD 2 TO COUNT
09AA 0 C316      LD      3 CNTA-T
09AB 0 7011      MDX    EXITA+5
*
09AC 1 C400 05E9  XONE LD L XSPEC+1  GET CHAR COUNT
09AE 0 D317      STO    3 CNTB-T
09AF 0 6300      LDX   3 0
09B0 1 C700 05EA  LD L3 XSPEC+2   GET 2 CHARACTERS
09B2 1 D700 0E61  STO L3 RFTTM&5  PUT IN RFT
09B4 0 7301      MDX   3 1        ADD ONE TO XR3
09B5 1 74FE 0D60  MDX L CNTB,-2   DECRE COUNT BY TWO
09B7 0 70F8      MDX    XONE&4   BR IF COUNT NOT ZERO
*
09B8 1 6700 0D49  EXITA LDX L3 T   RESTORE XR3
09BA 1 C400 05E9  LD L XSPEC+1
09BC 0 8316      A      3 CNTA-T
09BD 1 D400 0E5C  STO L RFTTM     STO RFT CHAR COUNT
09BF 1 4C80 0978  BSC I GNRFT     RETURN
*
09C1 0 6204      XERR LDX 2 4     XR2=MESSAGE NUMBER
09C2 0 7001      MDX    YERR+1
*
09C3 0 6205      YERR LDX 2 5     XR2=MESSAGE NUMBER
09C4 1 4400 091E  BSI L ERPRT     GO PRINT MSG
09C6 0 4480 0164  BSI I END       END PROGRAM
*
*****
*
09C8 0 0000      BTD    DC      *-*
09C9 0 1890      SRT    16
09CA 0 AB6E      D      3 H000A-T  DIVIDE BY DEC 10
09CB 0 1088      SLT    8          PUT HI ORDER DIGIT IN
09CC 0 1808      SRA    8          ACC 4-7 AND LOW ORDER
09CD 0 1088      SLT    8          DIGIT IN ACC 12-15
09CE 0 EB70      OR     3 HF0F0-T  ADD ZONE BITS
09CF 1 4C80 09C8  BSC I BTD       RETURN
*
*****
*
09D1 0 0000      GNTM  DC      *-*
09D2 1 4C20 09D9  BSC L XNOTZ,Z   BR IF X NOT ZERO

```

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31A10220
31A10230
31A10240
31A10250
31A10260
31A10270
31A10280
31A10290
31A10300
31A10310
31A10320
31A10330
31A10340
31A10350
31A10360
31A10370
31A10380
31A10390
31A10400
31A10410
31A10420
31A10430
31A10440
31A10450
31A10460
31A10470
31A10480
31A10490
31A10500
31A10510
31A10520
31A10530
31A10540
31A10550
31A10560
31A10570
31A10580
31A10590
31A10600
31A10610
31A10620
31A10630
31A10640
31A10650
31A10660
31A10670
31A10680
31A10690
31A10700
31A10710
31A10720
31A10730
31A10740
31A10750
31A10760
31A10770
31A10780
31A10790
31A10800
31A10810
31A10820
31A10830
31A10840
31A10850
31A10860
31A10870
31A10880
31A10890

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SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

09D4 1 6700 05E9 *
09D6 1 6F00 0D61   LDX L3 XSPEC+1 SET TEST MESSAGE
09D8 0 7078       STX L3 TMPNT  LOCATION INDICATOR
                   MDX   EXITB&4

*
09D9 0 D314      XNOTZ STO 3 TEMP-T  SAVE X VALUE
09DA 0 9367      S      3 H0001-T
09DB 1 4C20 09F5 BSC L XNOT1,Z BR IF X NOT ONE

*
09DD 0 C302      LD      3 COUNT-T  GET CHAR RECVD COUNT
09DE 0 9349      S      3 H0007-T  SUBTRACT 7
09DF 0 D316      STO 3 CNTA-T  STORE IN COUNTER A
09E0 1 D400 0E5C STO L RFTTM  STORE IN TEST MSG AREA
09E2 1 6700 0E5C LDX L3 RFTTM  SET TEST MESSAGE
09E4 1 6F00 0D61 STX L3 TMPNT  LOCATION INDICATOR
09E6 0 6300      LDX 3 0
09E7 1 C700 0DC9 LD L3 RAREA+4 GET 2 CHARACTERS
09E9 0 1890      SRT 16 PUT IN Q
09EA 1 C700 0DCA LD L3 RAREA+5 GET NEXT 2 CHARACTERS
09EC 0 18C8      RTE 8
09ED 1 D700 0E5D STO L3 RFTTM&1 STO 2 CHAR IN TEST MSG
09EF 0 1888      SRT 8
09F0 0 7301      MDX 3 1
09F1 1 74FE 0D5F MDX L CNTA,-2 DECRE COUNT BY 2
09F3 0 70F6      MDX *-10
09F4 0 7058      MDX   EXITB   EXIT IF LAST CHAR

*
09F5 0 9367      XNOT1 S      3 H0001-T
09F6 1 4C20 0A0F BSC L XNOT2,Z BR IF X NOT 2

*
09F8 0 C33D      LD      3 D260-T  SET TEST MESSAGE
09F9 1 D400 0E5C STO L RFTTM  CHAR COUNT TO 260
09FB 0 9345      S      3 H0004-T
09FC 0 D316      STO 3 CNTA-T  SET COUNTER A TO 256
09FD 0 C35F      LD      3 DLSTX-T  GET DLE STX CHARACTERS
09FE 1 D400 0E5D STO L RFTTM+1 PUT IN TEST MESSAGE
0A00 0 C367      LD      3 H0001-T  GET 1ST 2 TEXT CHARS
0A01 0 6300      LDX 3 0
0A02 1 D700 0E5E STO L3 RFTTM+2 STORE IN TEST MSG
0A04 1 8400 0DBD A      L H0202  ADD TWO TO EACH CHAR
0A06 0 7301      MDX 3 1
0A07 1 74FE 0D5F MDX L CNTA,-2 DECRE COUNT BY TWO
0A09 0 70F8      MDX *-8 BR IF NOT LAST CHAR
0A0A 1 C400 0DA9 LD L DLETX  GET DLE ETX CHARS
0A0C 1 D700 0E5E STO L3 RFTTM+2 STORE IN TEST MSG
0A0E 0 7041      MDX   EXITB

*
0A0F 0 9338      XNOT2 S      3 D14-T
0A10 1 4C20 0A2D BSC L XNT16,Z BR IF X NOT 16

*
0A12 0 C333      LD      3 STXAA-T
0A13 1 D400 0E5D STO L RFTTM&1 PUT STX AA IN TEST MSG
0A15 0 C335      LD      3 HAA55-T  PUT HEX AA55 IN
0A16 1 D400 0E71 STO L RFTTM&21 CENTER OF TEST MSG
0A18 0 C337      LD      3 H5ETX-T  PUT 55 EXT AT
0A19 1 D400 0E85 STO L RFTTM&41 END OF TEST MESSAGE
0A1B 0 C334      LD      3 HAAAA-T  PUT 19 HEX AAAA
0A1C 0 6313      LDX 3 19 CHARACTERS
0A1D 1 D700 0E5D STO L3 RFTTM&1 IN TEST MESSAGE
0A1F 0 73FF      MDX 3 -1
0A20 0 70FC      MDX *-4
0A21 0 6313      LDX 3 19 PUT 19 HEX 5555
0A22 1 C400 0D7F LD L H5555 CHARACTERS
0A24 1 D700 0E71 STO L3 RFTTM&21 IN TEST MESSAGE
0A26 0 73FF      MDX 3 -1
0A27 0 70FC      MDX *-4
0A28 0 6700 0054 LDX L3 84 PUT CHAR COUNT
0A2A 1 6F00 0E5C STX L3 RFTTM IN TEST MESSAGE

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0A2C 0 7023      MDX   EXITB
0A2D 0 933F      *
0A2E 1 4C20 0A49 XNT16 S      3 H0003-T
                   BSC L XNT19,Z BR IF X NOT 19

*
0A30 0 C35F      LD      3 DLSTX-T  PUT DLE STX
0A31 1 D400 0E5D STO L RFTTM&1 IN TEST MESSAGE
0A33 0 C360      LD      3 DLETX-T  PUT DLE ETX AT
0A34 1 D400 0EEF STO L RFTTM&147 END OF TEST MESSAGE
0A36 0 6700 008C LDX L3 140 PUT 140 HEX 0000
0A38 0 1010      SLA 16 CHARACTERS
0A39 1 D700 0E5D STO L3 RFTTM&1 IN TEST MESSAGE
0A3B 0 73FF      MDX 3 -1
0A3C 0 70FC      MDX *-4
0A3D 0 6305      LDX 3 5 PUT 5 SYN SYN
0A3E 1 C400 0D81 LD L SYSYN CHARACTERS
0A40 1 D700 0EE9 STO L3 RFTTM&141 IN TEST MESSAGE
0A42 0 73FF      MDX 3 -1
0A43 0 70FC      MDX *-4
0A44 0 6700 0126 LDX L3 294 PUT CHAR COUNT
0A46 1 6F00 0E5C STX L3 RFTTM IN TEST MSG
0A48 0 7007      MDX   EXITB

*
0A49 0 C314      XNT19 LD      3 TEMP-T  GET X VALUE
0A4A 1 F400 05E8 EOR L XSPEC  CK EQUAL TO SPECIAL X
0A4C 0 6113      LDX 1 /13
0A4D 1 4C20 073A BSC L BDRFT,Z BR IF NOT EQUAL
0A4F 0 7084      MDX   GNTM&3

*
0A50 1 6700 0E5C EXITB LDX L3 RFTTM SET TEST MESSAGE
0A52 1 6F00 0D61 STX L3 TMPNT  LOCATION INDICATOR
0A54 1 6700 0D49 LDX L3 T RESTORE XR3
0A56 1 4C80 09D1 BSC I GNTM RETURN

*
*****
* PRINT END OF TEST MESSAGE
*****
*
0A58 1 7400 0D66 ENPRT MDX L TMXMI
0A5A 0 705D      MDX   PRTXM BR IF TEST MSG XMIT IND ON
0A5B 1 7400 0D65 MDX L TMRCI
0A5D 0 705C      MDX   PRTRC BR IF TEST MSG REC IND ON
0A5E 1 4400 08B4 BSI L CKOPN

*
0A60 1 C400 05E1 LD L SW2 CK OPTION SWITCH
0A62 0 100C      SLA 12
0A63 0 180E      SRA 14
0A64 1 4C18 0AC8 BSC L ENDIT,&- BR IF PRINT TEXT NOT ON

*
0A66 1 6700 0F07 LD L3 ENTBL
0A68 1 6F00 0D5F STX L3 CNTA

*
0A6A 1 C480 0D5F GTCNT LD I CNTA GET WORD FROM END MSG TBL
0A6C 1 4C18 0AC8 BSC L ENDIT,&- BR IF ZERO

*
0A6E 1 4C08 0A8D BSC L ALPH,+ BR IF ALPHA MSG ADDRS

*
0A70 1 D400 0D60 STO L CNTB SAVE HEX CHAR COUNT
0A72 0 63F2      LDX 3 -14
0A73 1 7401 0D5F GTHDX MDX L CNTA,+1
0A75 1 C480 0D5F LD I CNTA GET 2 HEX BYTES
0A77 0 1888      SRT 8
0A78 0 1008      SLA 8
0A79 1 D700 0F06 STO L3 TABLE&19 PUT HEX WORD IN PRINT TBL
0A7B 0 7301      MDX 3 &1
0A7C 1 74FF 0D60 MDX L CNTB,-1 DECRE CHAR COUNT BY ONE
0A7E 0 7001      MDX * &1
0A7F 0 701F      MDX   HEX BR IF COUNT EXHAUSTED

```

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

*
OA80 0 1088      SLT      8
OA81 0 1008      SLA      8
OA82 1 D700 OF06  STO L3  TABLE&19  PUT 2ND WD IN PRINT TBL
OA84 1 74FF OD60  MDX L  CNTB,-1    DECRE COUNT BY ONE
OA86 0 7003      MDX      *&3      BR IF CNT NOT ZERO
OA87 0 7301      MDX      3 &1
OA88 0 1000      NOP
OA89 0 7015      MDX      HEX      GO PRINT IF CNT ZERO

*
OA8A 0 7301      MDX      3 &1
OA8B 0 70E7      MDX      GTHGX   GO STO NEXT CHAR IF ROOM
OA8C 0 7012      MDX      HEX      GO PRT IF 14 CHARS

*
OA8D 1 E400 ODC1  ALPH  AND  L  H7FFF
OA8F 1 D400 OEF6  STO  L  TABLE+3
OA91 1 C400 ODBF  LD   L  H8000
OA93 1 D400 OEF5  STO  L  TABLE&2
OA95 0 4480 0163  BSI  I  LOG      GO PRINT MSG
OA97 1 0EF3      DC   TABLE
OA98 0 403B      BSI  CKMON
OA99 0 1010      SLA  16
OA9A 1 D400 OEF6  STO  L  TABLE&3
OA9C 1 7401 OD5F  MDX  L  CNTA,&1
OA9E 0 70CB      MDX      GTCNT

*
OA9F 0 C400 0003  HEX  LD   L  3      SET UP
OAA1 1 F400 ODBB  EOR  L  HFFFF    NUMBER OF
OAA3 1 8400 ODC3  A   L  H1802    CHARACTERS
OAA5 0 D002      STO  *&2      TO BE
OAA6 1 C400 ODC1  LD   L  H7FFF    PRINTED
OAA8 0 1800      SRA  *--*
OAA9 1 FC00 ODBF  OR   L  H8000
OAAB 1 D400 OEF5  STO  L  TABLE&2
OAAD 0 4480 0163  BSI  I  LOG      PRINT MSG
OAAF 1 0EF3      DC   TABLE
OAB0 0 4023      BSI  CKMON
OAB1 1 C400 OD60  LD   L  CNTB
OAB3 1 4C20 OA72  BSC  L  GTHGX-1,Z BR IF MORE HEX CHARACTERS

*
OAB5 1 7401 OD5F  MDX  L  CNTA,&1
OAB7 0 70B2      MDX      GTCNT

*
OAB8 0 6203      PRTXM LDX  2 3
OAB9 0 7001      MDX      *&1

*
OABA 0 6204      PRTRC LDX  2 4
OABB 1 C400 ODC2  LD   L  H001F
OABD 1 D400 OEF4  STO  L  TABLE&1
OABF 1 D400 OEF5  STO  L  TABLE&2
OAC1 1 4400 08C9  BSI  L  TYPIT   GO PRINT MSG
OAC3 0 4010      BSI  CKMON
OAC4 0 1010      SLA  16
OAC5 1 D400 OEF4  STO  L  TABLE&1
OAC7 0 7096      MDX      ENPRT&6

*
OAC8 1 C400 OD6B  ENDIT LD  L  OPTIN
OACA 1 4C28 0629  BSC  L  STRT,Z+  BR IF OPTION SW 15 ON
OACC 1 4C08 0640  BSC  L  CNTRL,+ BR IF NO RTN SEL ECTED

*
OACE 1 9400 0681  S   L  RIDCK
OAD0 1 4C18 0629  BSC  L  STRT,+-

*
OAD2 0 4480 0164  BSI  I  END

*
OAD4 0 0000      CKMON DC  *--*
OAD5 1 6780 OAD4  LDX  I3  CKMON
OAD7 1 6F00 05E5  STX  L3  MLSCF

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31A12260
31A12270
31A12280
31A12290
31A12300
31A12310
31A12320
31A12330
31A12340
31A12350
31A12360
31A12370
31A12380
31A12390
31A12400
31A12410
31A12420
31A12430
31A12440
31A12450
31A12460
31A12470
31A12480
31A12490
31A12500
31A12510
31A12520
31A12530
31A12540
31A12550
31A12560
31A12570
31A12580
31A12590
31A12600
31A12610
31A12620
31A12630
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31A12660
31A12670
31A12680
31A12690
31A12700
31A12710
31A12720
31A12730
31A12740
31A12750
31A12760
31A12770
31A12780
31A12790
31A12800
31A12810
31A12820
31A12830
31A12840
31A12850
31A12860
31A12870
31A12880
31A12890
31A12900
31A12910
31A12920
31A12930

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OAD9 0 4480 0161
OADB 0 0000
OADC 0 D314
OADD 0 F331
OADE 0 D32D
OADF 0 C0FB
OAE0 0 D00D
OAE1 0 C324
OAE2 1 4CA0 OADB
OAE4 0 C31B
OAE5 0 D31A
OAE6 1 7401 OD63
OAE8 0 9319
OAE9 1 4C30 0B15
OAEB 1 4C10 0B10
OAEF 0 0000
OAEF 0 D314
OAF0 0 C324
OAF1 1 4CA0 OAEF
OAF3 0 C31B
OAF4 0 9319
OAF5 1 4C30 0B15
OAF7 1 4C10 0B10
OAF9 0 C31A
OAFB 1 4C20 0B00
OAFD 1 7401 OD64
OAF 0 70F0
OB00 1 C480 OD63
OB02 0 8367
OB03 1 D480 OD63
OB05 1 4C04 0B0E
OB07 1 74FF OD64
OB09 0 C314
OB0A 0 1808
OB0B 1 EC80 OD64
OB0D 0 7003
OB0E 0 C314
OB0F 0 7001
OB10 0 C332
OB11 1 D480 OD64
OB13 1 7401 OD64
OB15 0 1010
OB16 1 D480 OD64
OB18 1 4C80 OAEF
OB1A 0 0000

```

```

BSI I START
*
*****
* STORE ALPHA MSG IN PRINT TABLE
*****
*
STALP DC  *--*
STO 3 TEMP-T      SAVE MSG ADDR
EOR 3 MSG4-T
STO 3 NOERR-T
LD STALP          SET UP
STO STOIT         RETURN
LD 3 MONIT-T
BSC I STALP,Z
LD 3 ENPNT-T
STO 3 CNTPT-T
MDX L CNTPT,+1
S 3 TOP-T
BSC L OUT&7,Z-    BR IF NO MORE CORE

*
BSC L OUT&2,-    BR IF ONE ADDR LEFT
MDX OUT          BR TO STORE MSG ADDR

*
*****
* STORE HEX CHARACTER IN PRINT TABLE
*****
*
STOIT DC  *--*
STO 3 TEMP-T      SAVE HEX CHARACTER
LD 3 MONIT-T
BSC I STOIT,Z
LD 3 ENPNT-T
S 3 TOP-T
BSC L OUT&7,Z-    BR IF NO MORE CORE

*
BSC L OUT&2,-    BR IF ONE ADDRESS LEFT

*
LD 3 CNTPT-T
EOR 3 ENPNT-T
BSC L *&3,Z      BR IF ALPH MSG WAS LAST

*
MDX L ENPNT,&1   INCRE POINTER
MDX STOIT&2     BRANCH
LD I CNTPT
A 3 H0001-T     ADD 1 TO HEX CHAR CNT
STO I CNTPT
BSC L OUT,E     BR IF COUNT ODD

*
MDX L ENPNT,-1  DECRE POINTER BY ONE
LD 3 TEMP-T
SRA 8
OR I ENPNT      PACK TWO HEX CHARACTERS
MDX OUT&3       BRANCH

*
OUT LD 3 TEMP-T  GET CHARACTER
MDX *&1         SKIP
LD 3 MSG5-T
STO I ENPNT     STO ALPH OR HEX MSG
MDX L ENPNT,&1 INCRE POINTER BY ONE
SLA 16
STO I ENPNT
BSC I STOIT     RETURN

*
*****
* START MONITOR OPERATION
*****
*
STMON DC  *--*

```

```

31A12940
31A12950
31A12960
31A12970
31A12980
31A12990
31A13000
31A13010
31A13020
31A13030
31A13040
31A13050
31A13060
31A13070
31A13080
31A13090
31A13100
31A13110
31A13120
31A13130
31A13140
31A13150
31A13160
31A13170
31A13180
31A13190
31A13200
31A13210
31A13220
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31A13490
31A13500
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31A13520
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31A13540
31A13550
31A13560
31A13570
31A13580
31A13590
31A13600
31A13610

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OB1B 0 C000      LD      *
OB1C 0 D324      STO     3 MONIT-T   SET MONITOR IND
OB1D 0 1010      SLA     16
OB1E 0 D329      STO     3 REQ2-T   RESET REQUEST IND
OB1F 0 D30D      STO     3 FCODE-T   SET RECEIVE FUNCTION
OB20 1 4400 0889 BSI     L GO        START RECEIVE
OB22 1 4C80 0B1A BSC     I STMON
*
*****
*          INTERRUPT SERVICE ROUTINE
*****
*
INT  DC      *--
OB24 0 0000      STX     L2 EXIT+1   SAVE XR2
OB25 1 6E00 0D46 LDX     L3 T        XR3#CONSTANT TBL
OB27 1 6700 0D49 XIO     3 SNSRS-T   SENSE SCA DSW
OB29 0 0B4D      STO     3 DSW-T   SAVE DSW
OB2A 0 D310      LD       3 RTBSY-T
OB2B 0 C30F      BSC     L EXIT1,&- BR IF RTN NOT BUSY
OB2C 1 4C18 0D41
*
OB2E 0 C378      LD       3 H7FFF-T
OB2F 0 D313      STO     3 WTCNT-T  RESTORE WAIT COUNT
*
OB30 0 C30D      LD       3 FCODE-T
OB31 1 4C18 0B6F BSC     L RECV,&-  BR IF RECV FUNCTION
*
-----
*          TRANSMIT FUNCTION
-----
*
OB33 0 C310      LD       3 DSW-T
OB34 0 1003      SLA     3
OB35 1 4C10 0B41 BSC     L WRESP,-  BR IF NO TIMEOUT
*
OB37 0 C300      LD       3 MDSWT-T
OB38 0 933F      S       3 H0003-T
OB39 0 4818      BSC     &-        SKIP NOT TRANS MODE
OB3A 0 0B3F      XIO     3 TIMER-T   START PROG TIMER
OB3B 0 C365      LD       3 H0002-T
OB3C 0 D30C      STO     3 SYNC-T   XMIT SYNS IND TO 2
OB3D 0 C310      LD       3 DSW-T
OB3E 0 1001      SLA     1
OB3F 1 4C10 0D45 BSC     L EXIT,-   RETURN IF NOT WR RESP
*
OB41 0 C304      WRESP  LD     3 LSDLE-T
OB42 1 4C20 0B5F BSC     L CKCNT,Z  BR IF LAST CHAR WAS DLE
*
OB44 0 C300      LD       3 MDSWT-T
OB45 0 933F      S       3 H0003-T
OB46 1 4C30 0B5F BSC     L CKCNT,Z- BR IF BCC TIME
*
OB48 0 C30C      LD       3 SYNC-T
OB49 1 4C08 0B5F BSC     L CKCNT,&  BR IF SYNS IND ZERO
*
OB4B 0 9367      S       3 H0001-T   DECRE SYNS IND BY ONE
OB4C 0 D30C      STO     3 SYNC-T
OB4D 1 4C18 0B59 BSC     L WSYNC,&- BR IF SYNS IND ZERO
*
OB4F 0 C300      LD       3 MDSWT-T
OB50 0 933F      S       3 H0003-T
OB51 1 4C20 0B59 BSC     L WSYNC,Z  BR IF NOT TRANS MODE
*
OB53 0 C358      LD       3 DLE-T
OB54 1 4400 0AEE BSI     L STOIT    STORE DLE IN PRINT TBL
OB56 0 0B41      XIO     3 WRDLE-T  XMIT DLE
OB57 1 4C00 0D45 BSC     L EXIT     RETURN
*
OB59 0 C357      WSYNC  LD     3 SYN-T
OB5A 1 4400 0AEE BSI     L STOIT    STO SYN IN PRINT TBL

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OB5C 0 0B43      XIO     3 WRSYN-T   XMIT SYN
OB5D 1 4C00 0D45 BSC     L EXIT     RETURN
*
OB5F 0 C302      CKCNT  LD     3 COUNT-T
OB60 1 4C04 0B69 BSC     L ODD,E    BR IF CHAR COUNT ODD
*
OB62 1 C480 0D57 LD       I POINT   GET WORD FROM I/O AREA
OB64 0 E371      AND     3 HFF00-T  MASK OUT BITS 8-15
OB65 0 D30B      STBFR  STO     3 BUFFER-T PUT CHAR IN BUFFER
OB66 1 7401 0D4B MDX     L COUNT,&1 INCRE CHAR COUNT &1
OB68 0 7015      MDX     MDXMD      GO TO CK MODE
*
OB69 1 C480 0D57 ODD     LD     I POINT   GET WORD FROM I/O AREA
OB6B 0 1008      SLA     8           BITS 8-15 TO WRITE POSIT
OB6C 1 7401 0D57 MDX     L POINT,&1  INCRE ADDR POINTER &1
OB6E 0 70F6      MDX     STBFR
*
-----
*          RECEIVE FUNCTION
-----
*
OB6F 0 C310      RECV   LD     3 DSW-T
OB70 0 1003      SLA     3
OB71 1 4C10 0B7A BSC     L READB,-  BR IF NOT TIMEOUT
*
OB73 0 C372      LD       3 HFFFF-T
OB74 0 D30B      STO     3 BUFFER-T  SET TIMEOUT END
OB75 0 C32E      LD       3 MSG1-T  STORE TIMEOUT MSG
OB76 1 4400 0ADB BSI     L STALP    IN PRINT TBL
OB78 1 4C00 0D12 BSC     L RCEXT
*
OB7A 0 0B47      READB  XIO   3 READ-T   READ SCA BUFFER
OB7B 0 C30B      LD       3 BUFFER-T
OB7C 1 4400 0AEE BSI     L STOIT    STO CHAR IN PRINT TBL
*
-----
*          BRANCH TO PROPER MODE
-----
*
OB7E 0 C300      MDXMD  LD     3 MDSWT-T   GET MODE INDICATOR
OB7F 0 EB77      OR      3 H7000-T
OB80 0 D000      STO     *           SET UP MDX TO
OB81 0 7000      MDX     *           PROPER MODE
*
OB82 0 7008      MDX     NOMOD   NO MODE SET
OB83 0 7021      MDX     HEADG   XMIT/REC HEADING
OB84 0 7028      MDX     NORML   XMIT/REC NORMAL TEXT
OB85 0 7038      MDX     TRANS  XMIT/REC TRANSPARENT TEXT
OB86 0 7078      MDX     BCC1   XMIT/REC LOW ORDER BCC
OB87 1 4C00 0C12 BSC     L BCC2   XMIT/REC HIGH ORDER BCC
OB89 1 4C00 0C3E BSC     L ITBMD   INT BLK CK MODE
*
-----
*          NO MODE SET
-----
*
OB8B 0 C306      NOMOD  LD     3 FIRST-T
OB8C 1 6C00 0D4F STX     L FIRST   SET FIRST CHAR IND
OB8E 1 4C20 0B93 BSC     L NFST,Z  BR IF IND WAS ON
*
OB90 0 C30B      LD       3 BUFFER-T
OB91 0 D326      STO     3 POLLC-T
OB92 0 0B49      XIO     3 RETIM-T  RESTART TIMER
*
OB93 0 C30B      NFST   LD     3 BUFFER-T
OB94 0 F368      EOR     3 ENQ-T
OB95 0 4820      BSC     Z           SKIP IF ENQ
OB96 0 F36A      EOR     3 EQEOT-T
OB97 1 4C18 0B9D BSC     L **+,+-  BR IF ENQ OR EOT
*
OB99 0 C30B      LD       3 BUFFER-T

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OB9A 0 F364          EOR 3 NAK-T
OB9B 1 4C20 0C48    BSC L CKSTX+1,Z BR IF NOT NAK
*
OB9D 0 1010        DONE SLA 16
OB9E 0 D30F        STO 3 RTBSY-T RESET RTN BUSY IND
OB9F 0 C30B        LD 3 BUFR-T
OBA0 0 1808        SRA 8
OBA1 0 EB26        OR 3 POLLC-T
OBA2 0 D326        STO 3 POLLC-T
OBA3 1 4C00 0CD1   BSC L RDWRT
*
*-----*
* TRANSMIT/RECEIVE HEADING TEXT
*-----*
OBA5 1 4400 0C8E   HEADG BSI L CKSYN GO CHECK FOR SYN CHAR
OBA7 1 4400 0C47   BSI L CKSTX GO CHECK FOR START CHAR
OBA9 1 4400 0CA2   BSI L CKEND GO CHECK FOR END CHAR
OBA8 1 4C00 0CBF   BSC L BLKCK CALC BCC AND XMIT OR STO
*
*-----*
* TRANSMIT/RECEIVE NORMAL TEXT
*-----*
OBAD 1 4400 0C8E   NORML BSI L CKSYN GO CK FOR SYN CHAR
OBAF 0 C30B        LD 3 BUFR-T
OBBO 0 F358        EOR 3 DLE-T
OBBI 0 4820        BSC Z SKIP IF DLE CHAR
OBBI 0 4820        EOR 3 DLSTX-T
OBBI 0 4820        BSC Z SKIP IF DLE OR STX
OBBI 0 4820        EOR 3 SXSOH-T
OBBI 0 4820        BSC L **+,+- BR IF DLE STX OR STX
OBBI 0 4820        BSI L CKEND GO CK FOR END CHAR
OBBI 0 4820        BSC L BLKCK GO TO XMIT OR STO CHAR
*
OBBI 0 4820        LD *
OBBI 0 4820        STO 3 ERR-T SET ERROR INDICATOR
OBBI 0 4820        MDX *-5
*
*-----*
* TRANSMIT/RECEIVE TRANSPARENT TEXT
*-----*
OBBI 0 4820        TRANS LD 3 LSDLE-T
OBBI 0 4820        BSC L DLESQ,Z BR IF LAST CHAR WAS DLE
*
OBBI 0 4820        LD 3 BUFR-T
OBBI 0 4820        EOR 3 DLE-T
OBBI 0 4820        BSC L BLKCK,Z BR IF NOT DLE IN BUFFER
OBBI 0 4820        LD *
OBBI 0 4820        STO 3 LSDLE-T SET LAST DLE IND
OBBI 0 4820        BSC L RDWRT
*
OBBI 0 4820        DLESQ SLA 16
OBBI 0 4820        STO 3 LSDLE-T RESET LAST CHAR DLE IND
OBBI 0 4820        LD 3 FCODE-T
OBBI 0 4820        BSC L XMTOP,Z BR IF XMIT FUNCTION
*
OBBI 0 4820        LD 3 BUFR-T
OBBI 0 4820        EOR 3 SYN-T
OBBI 0 4820        BSC L DCRCT,&- BR IF SYN RECVD
*
OBBI 0 4820        EOR 3 DLSYN-T
OBBI 0 4820        BSC L NOTDL,Z BR IF NOT DLE RECVD
*
OBBI 0 4820        BSI L CALBC GO CALCULATE BCC
OBBI 0 4820        BSC L EXIT
*
OBBI 0 4820        NOTDL BSI L CKEND GO CK FOR END CHAR
OBBI 0 4820        LD *
OBBI 0 4820        STO 3 ERR-T

```

```

31A14980
31A14990
31A15000
31A15010
31A15020
31A15030
31A15040
31A15050
31A15060
31A15070
31A15080
31A15090
31A15100
31A15110
31A15120
31A15130
31A15140
31A15150
31A15160
31A15170
31A15180
31A15190
31A15200
31A15210
31A15220
31A15230
31A15240
31A15250
31A15260
31A15270
31A15280
31A15290
31A15300
31A15310
31A15320
31A15330
31A15340
31A15350
31A15360
31A15370
31A15380
31A15390
31A15400
31A15410
31A15420
31A15430
31A15440
31A15450
31A15460
31A15470
31A15480
31A15490
31A15500
31A15510
31A15520
31A15530
31A15540
31A15550
31A15560
31A15570
31A15580
31A15590
31A15600
31A15610
31A15620
31A15630
31A15640
31A15650

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```

OBDD 1 4C00 0CBF   BSC L BLKCK
*
OBDF 1 C480 0D56   XMTOP LD I FCODE
OBE1 0 9302        S 3 COUNT-T
OBE2 1 4C30 0BE8   BSC L DCRCT,Z- BR IF NOT LAST CHAR XMIT
*
OBE4 1 4400 0CA2   BSI L CKEND GO CK FOR END CHAR
OBE6 1 4C00 0DOA   BSC L XMEXT
*
OBE8 0 C302        DCRCT LD 3 COUNT-T
OBE9 1 4C04 0BED   BSC L *E2,E BR IF COUNT ODD
OBE8 1 74FF 0D57   MDX L POINT,-1 DECREASE ADDR POINTER -1
OBE8 1 74FF 0D4B   MDX L COUNT,-1 DECREASE COUNT -1
OBEF 0 C30D        LD 3 FCODE-T
OBF0 1 4C20 0BF5   BSC L WRF,Z BR IF XMIT FUNCTION
*
OBF2 0 0B49        XIO 3 RETIM-T RESTART TIMER
OBF3 1 4C00 0D45   BSC L EXIT
*
OBF5 0 0B41        WRF XIO 3 WRDLE-T XMIT DLE CHAR
OBF6 0 C358        LD 3 DLE-T
OBF7 0 D30B        STO 3 BUFR-T
OBF8 1 4400 0CC1   BSI L CALBC
OBF8 0 C358        LD 3 DLE-T
OBF8 1 4400 0AEE   BSI L STOIT
OBF8 1 4C00 0D45   BSC L EXIT
*
*-----*
* TRANSMIT/RECEIVE BCC CHARACTERS
*-----*
OBFF 0 6205        BCC1 LDX 2 5
OC00 1 6E00 0D49   STX L2 MDSWT SET BCC2 IN MODE IND
OC02 0 C30D        LD 3 FCODE-T
OC03 1 4C20 0COA   BSC L XMBCC,Z BR IF XMIT FUNCTION
*
OC05 0 C30B        LD 3 BUFR-T
OC06 0 1808        SRA 8 SAVE LOW ORDER 8 BITS
OC07 0 D311        STO 3 BCCR-T OF BLOCK CK CHAR
OC08 1 4C00 0D45   BSC L EXIT
*
OC0A 0 C303        XMBCC LD 3 BCCA-T
OC0B 0 1008        SLA 8 GET LOW 8 BITS BCCA
OC0C 0 D30B        STO 3 BUFR-T PUT IN BUFFER
OC0D 1 4400 0AEE   BSI L STOIT
OC0F 0 0B4B        XIO 3 WRBUF-T XMIT BUFFER
OC10 1 4C00 0D45   BSC L EXIT
*
OC12 0 C30D        BCC2 LD 3 FCODE-T
OC13 1 4C20 0C23   BSC L XMLST,Z BR IF XMIT FUNCTION
*
OC15 0 C30B        LD 3 BUFR-T
OC16 0 EB11        OR 3 BCCR-T
OC17 0 D311        STO 3 BCCR-T SAVE RECVD BCC CHAR
OC18 0 9303        S 3 BCCA-T
OC19 0 4820        BSC Z SKIP IF NO BCC ERROR
OC1A 0 D301        STO 3 ERR-T SET ERROR IND
OC1B 0 D303        STO 3 BCCA-T
OC1C 0 C30A        LD 3 MDSAV-T
OC1D 1 4C18 0D12   BSC L RCEXT,+
*
OC1F 0 6207        LDX 2 7
OC20 1 6E00 0D49   STX L2 MDSWT
OC22 0 70ED        MDX BCC2-2
*
OC23 0 C308        XMLST LD 3 PAD-T
OC24 1 4C20 0C37   BSC L XMPAD,Z BR TO XMIT PAD
*
OC26 0 C303        LD 3 BCCA-T

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31A15660
31A15670
31A15680
31A15690
31A15700
31A15710
31A15720
31A15730
31A15740
31A15750
31A15760
31A15770
31A15780
31A15790
31A15800
31A15810
31A15820
31A15830
31A15840
31A15850
31A15860
31A15870
31A15880
31A15890
31A15900
31A15910
31A15920
31A15930
31A15940
31A15950
31A15960
31A15970
31A15980
31A15990
31A16000
31A16010
31A16020
31A16030
31A16040
31A16050
31A16060
31A16070
31A16080
31A16090
31A16100
31A16110
31A16120
31A16130
31A16140
31A16150
31A16160
31A16170
31A16180
31A16190
31A16200
31A16210
31A16220
31A16230
31A16240
31A16250
31A16260
31A16270
31A16280
31A16290
31A16300
31A16310
31A16320
31A16330

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OC27 0 E371      AND  3 HFF00-T      31A16340
OC28 0 D30B      STO  3 BUFFER-T      31A16350
OC29 1 4400 OAE  BSI  L STOIT          31A16360
OC2B 0 0B4B      XIO  3 WRBUF-T      31A16370
OC2C 0 C30A      LD   3 MDSAV-T      31A16380
OC2D 1 4C18 OC33 BSC  L *&4,&-      31A16390
*
OC2F 0 6207      LDX  2 7            31A16400
OC30 1 6E00 OD49 STX  L2 MDSWT      31A16410
OC32 0 7002      MDX  *&2          31A16420
OC33 1 6C00 OD51 STX  L PAD          31A16430
OC35 1 4C00 OD45 BSC  L EXIT        31A16440
*
OC37 0 C371      XMPAD LD  3 HFF00-T  31A16450
OC38 0 D30B      STO  3 BUFFER-T      31A16460
OC39 0 0B4B      XIO  3 WRBUF-T      31A16470
OC3A 0 1010      SLA  16           31A16480
OC3B 0 D30B      STO  3 BUFFER-T      31A16490
OC3C 1 4C00 ODOA BSC  L XMEXT       31A16500
*
OC3E 1 4400 OC8E ITBMD BSI  L CKSYN    31A16510
OC40 0 C30A      LD   3 MDSAV-T      31A16520
OC41 0 D300      STO  3 MDSWT-T      31A16530
OC42 0 1010      SLA  16           31A16540
OC43 0 D303      STO  3 BCCA-T      31A16550
OC44 0 D30A      STO  3 MDSAV-T      31A16560
OC45 1 4C00 OCBF BSC  L BLKCK       31A16570
*
OC47 0 0000      CKSTX DC *--*      31A16580
OC48 0 C304      LD   3 LSDLE-T      31A16590
OC49 1 4C20 OC5E BSC  L STXCK,Z     31A16600
*
OC4B 0 C30B      LD   3 BUFFER-T      31A16610
OC4C 0 F358      EOR  3 DLE-T      31A16620
OC4D 1 4C18 OC7D BSC  L BFDLE,&-    31A16630
*
OC4F 0 C307      LD   3 SECND-T      31A16640
OC50 1 4C20 OC78 BSC  L WTEXT,Z     31A16650
*
OC52 0 C30B      LD   3 BUFFER-T      31A16660
OC53 0 F35C      EOR  3 STX-T      31A16670
OC54 1 4C18 OC80 BSC  L BFSTX,&-    31A16680
*
OC56 0 F35A      EOR  3 SXSOH-T     31A16690
OC57 1 4C18 OC84 BSC  L BFSOH,&-    31A16700
*
OC59 0 C306      LD   3 FIRST-T      31A16710
OC5A 1 4C98 OC47 BSC  I CKSTX,&-    31A16720
*
OC5C 0 D307      STO  3 SECND-T      31A16730
OC5D 0 701A      MDX  WTEXT        31A16740
*
OC5E 0 1010      STXCK SLA  16      31A16750
OC5F 0 D304      STO  3 LSDLE-T     31A16760
*
OC60 0 C307      LD   3 SECND-T      31A16770
OC61 1 4C20 OB9D BSC  L DONE,Z     31A16780
*
OC63 0 C30B      LD   3 BUFFER-T      31A16790
OC64 0 F35C      EOR  3 STX-T      31A16800
OC65 1 4C20 OC72 BSC  L NOSTX,Z     31A16810
*
OC67 0 6203      LDX  2 3            31A16820
OC68 1 6E00 OD49 STX  L2 MDSWT      31A16830
OC6A 0 C30D      LD   3 FCODE-T     31A16840

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OC6B 0 4820      BSC  Z            31A17020
OC6C 0 0B3F      XIO  3 TIMER-T    31A17030
OC6D 0 C306      CKFST LD  3 FIRST-T 31A17040
OC6E 1 4C18 OCBF BSC  L BLKCK,&-   31A17050
OC70 1 4C00 OCD1 BSC  L RDWRT      31A17060
*
OC72 0 C306      NOSTX LD  3 FIRST-T 31A17070
OC73 1 4C20 OB9D BSC  L DONE,Z    31A17080
*
OC75 0 C000      SETER LD  *        31A17090
OC76 0 D301      STO  3 ERR-T      31A17100
OC77 0 70F5      MDX  CKFST        31A17110
*
OC78 0 C30D      WTEXT LD  3 FCODE-T 31A17120
OC79 1 4C18 OD45 BSC  L EXIT,+-    31A17130
*
OC7B 1 4C00 OCD1 BSC  L RDWRT      31A17140
*
OC7D 0 C000      BFDLE LD  *        31A17150
OC7E 0 D304      STO  3 LSDLE-T    31A17160
OC7F 0 70E5      MDX  CKFST        31A17170
*
OC80 0 6202      BFSTX LDX  2 2      31A17180
OC81 1 6E00 OD49 STX  L2 MDSWT      31A17190
OC83 0 70E9      MDX  CKFST        31A17200
*
OC84 0 C306      BFSOH LD  3 FIRST-T 31A17210
OC85 1 4C18 OC75 BSC  L SETER,&-   31A17220
OC87 0 1010      SLA  16           31A17230
OC88 0 D306      STO  3 FIRST-T    31A17240
OC89 0 D307      STO  3 SECND-T    31A17250
OC8A 0 6201      LDX  2 1          31A17260
OC8B 1 6E00 OD49 STX  L2 MDSWT      31A17270
OC8D 0 70E2      MDX  CKFST&3     31A17280
*
OC8E 0 0000      CKSYN DC *--*      31A17290
OC8F 0 C30B      LD   3 BUFFER-T    31A17300
OC90 0 F357      EOR  3 SYN-T      31A17310
OC91 1 4C20 OC9E BSC  L NOSYN,Z    31A17320
*
OC93 0 D304      STO  3 LSDLE-T    31A17330
OC94 0 C30D      LD   3 FCODE-T    31A17340
OC95 1 4C20 OCD1 BSC  L RDWRT,Z    31A17350
*
OC97 0 C305      LD   3 LSYN-T      31A17360
OC98 0 4820      BSC  Z            31A17370
OC99 0 0B49      XIO  3 RETIM-T    31A17380
OC9A 0 C000      LD   *            31A17390
OC9B 0 D305      STO  3 LSYN-T     31A17400
OC9C 1 4C00 OD45 BSC  L EXIT        31A17410
*
OC9E 0 1010      NOSYN SLA  16      31A17420
OC9F 0 D305      STO  3 LSYN-T     31A17430
OCA0 1 4C80 OC8E BSC  I CKSYN      31A17440
*
OCA2 0 0000      CKEND DC *--*      31A17450
OCA3 0 C30B      LD   3 BUFFER-T    31A17460
OCA4 0 F36B      EOR  3 ETB-T      31A17470
OCA5 0 4820      BSC  Z            31A17480
OCA6 0 F36C      EOR  3 EBETX-T    31A17490
OCA7 1 4C18 OCBA BSC  L SETBC,&-   31A17500
*

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SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

OCA9 0 C30B      LD  3  BUFFER-T
OCA0 0 F368      EOR  3  ENQ-T
OCAB 0 4820      BSC  Z
OCAC 0 F36A      EOR  3  EQEOT-T      SKIP IF ENQ IN BUFFER
OCAD 1 4C20 OCB4 BSC  L  *+5,Z
*
OCAF 0 D30F      STO  3  RTBSY-T      RESET BUSY IND
OCB0 0 C000      LD  *
OCB1 0 D301      STO  3  ERR-T      SET ERROR IND
OCB2 1 4C00 OCB1 BSC  L  RDWRT
*
OCB4 0 C30B      LD  3  BUFFER-T
OCB5 0 F36D      EOR  3  ITB-T
OCB6 1 4CA0 OCA2 BSC  I  CKEND,Z
*
OCB8 0 C300      LD  3  MDSWT-T
OCB9 0 D30A      STO  3  MDSAV-T
*
OCBA 0 6204      SETBC LDX  2  4
OCBB 1 6E00 OD49 STX  L2 MDSWT      SET MODE IND FOR BCC1
OCBD 1 4C00 OCBF BSC  L  BLKCK
*
OCBF 0 4001      BLKCK BSI  CALBC      GO CALCULATE BCC
OCC0 0 7010      MDX  RDWRT
*
*-----
*          CALCULATE BLOCK CHECK CHARACTER
*-----
OCC1 0 0000      CALBC DC  *-*
OCC2 0 6208      LDX  2  8      SET SHIFT COUNT TO 8
OCC3 0 C30B      LD  3  BUFFER-T      GET CHAR FROM BUFFER
OCC4 0 1808      SRA  8
OCC5 0 F303      EOR  3  BCCA-T      ADD REMAINDER
OCC6 1 4C04 OCCA BITCK BSC  L  ADPLY,E
*
OCC8 0 1801      SRA  1
OCC9 0 7002      MDX  DECRE
*
OCCA 0 1801      ADPLY SRA  1
OCCB 0 F37B      EOR  3  POLYN-T      ADD POLYNOMIAL
OCCC 0 72FF      DECRE MDX  2  -1      SKIP IF LAST SHIFT
OCCD 0 70F8      MDX  BITCK
OCCF 0 D303      STO  3  BCCA-T      STORE NEW REMAINDER
OCCF 1 4C80 OCC1 BSC  I  CALBC
*
*-----
*          STORE RECEIVED CHARACTER OR
*          TRANSMIT CHARACTER IN BUFFER
*-----
OCD1 0 C30D      RDWRT LD  3  FCODE-T
OCD2 1 4C20 OCD6 BSC  L  *%2,Z
*
OCD4 0 C37C      LD  3  RAREA-T
OCD5 0 7002      MDX  *%2
*
OCD6 1 C480 OD56 LD  I  FCODE
OCD8 0 9302      S  3  COUNT-T
OCD9 1 4C28 OCFC BSC  L  CKBC1,+Z      BR ON FULL COUNT
*
OCDB 0 C30D      STOWR LD  3  FCODE-T
OCDC 1 4C20 OCEE BSC  L  WRITE,Z      BR IF XMIT FUNCTION
*
OCDE 0 C302      LD  3  COUNT-T
OCDF 1 4C04 OCE5 BSC  L  NEVEN,E      BR IF COUNT ODD
*
OCE1 0 C30B      LD  3  BUFFER-T      PUT RECEIVED CHARACTER
OCE2 1 D480 OD57 STO  I  POINT      IN I/O AREA
OCE4 0 701F      MDX  INCNT
    
```

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

OCE5 0 C30B      *
OCE6 0 1808      NEVEN LD  3  BUFFER-T
OCE7 1 EC80 OD57 SRA  8
OCE9 1 D480 OD57 OR  I  POINT      PACK TWO CHARACTERS
OCEB 1 7401 OD57 STO  I  POINT      PUT IN I/O AREA
OCED 0 7016      MDX  L  POINT,&1      INCRE ADDR POINTER &1
*
OCEE 0 C30B      *
OCEF 1 4400 OAEF WRITE LD  3  BUFFER-T
OCF1 0 0B4B      BSI  L  STOIT
OCF2 0 C30F      XIO  3  WRBUF-T      WRITE BUFFER
OCF3 1 4C20 OD45 LD  3  RTBSY-T
*
OCF5 0 6205      LDX  2  5
OCF6 1 6E00 OD49 STX  L2 MDSWT      SET MODE IND FOR BCC2
OCF8 0 C000      LD  *
OCF9 0 D308      STO  3  PAD-T      SET XMIT PAD IND
OCFA 0 D30F      STO  3  RTBSY-T      SET RTN BUSY IND
OCFB 0 7049      MDX  EXIT
*
OCFC 0 C300      *
OCFD 0 9345      CKBC1 LD  3  MDSWT-T
OCFE 1 4C18 OCDB S  3  H0004-T
*
OD00 0 D301      BSC  L  STOWR,&-      BR IF MODE IND BCC1
OD01 0 C30D      STO  3  ERR-T
OD02 1 4C20 OD0A LD  3  FCODE-T
*
OD04 1 7401 OD4B INCNT MDX  L  COUNT,&1      INCRE COUNT &1
OD06 0 C30F      LD  3  RTBSY-T
OD07 1 4C20 OD45 BSC  L  EXIT,Z
OD09 0 7008      MDX  RCEXT
*
*-----
*          END TRANSMIT/RECEIVE
*-----
ODOA 0 C315      XMEXT LD  3  REQ-T      GET XMIT/REC REQ
ODOB 1 4C10 OD12 BSC  L  RCEXT,-      BR IF XMIT ONLY
*
OD0E 0 1010      SLA  16
OD0F 0 D30D      STO  3  FCODE-T      SET RECEIVE FUNCTION
OD10 1 4400 0889 BSI  L  GO      START RECEIVE
OD11 0 7033      MDX  EXIT
*
OD12 0 C000      RCEXT LD  *
OD13 0 D309      STO  3  MSEND-T      SET MSG END IND
*
OD14 0 C058      LD  MONIT
OD15 1 4C18 OD41 BSC  L  EXIT1,&-      BR IF MONITOR OPERATION
*
OD17 0 C37D      LD  3  RAREA&1-T
OD18 1 7400 OD6E MDX  L  CNTMD      SKIP IF NOT CONTROL MODE
OD1A 0 7006      MDX  PLSEL
*
OD1B 0 F362      EOR  3  EOT-T
OD1C 1 4C20 OD20 BSC  L  *%2,Z      BR IF NOT EOT RECVD
*
OD1E 0 C000      LD  *
OD1F 0 D325      STO  3  CNTMD-T      SET CONTROL MODE
*
OD20 0 70EC      MDX  XMEXT&3
*
OD21 0 C326      PLSEL LD  3  POLLC-T
OD22 0 F327      EOR  3  POLL-T
OD23 1 4C18 OD2E BSC  L  POLRC,&-      BR IF POLL RECVD
*
OD25 0 C326      LD  3  POLLC-T
    
```

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

```

OD26 0 F328          EOR  3  SELCT-T
OD27 1 4C18 0D34    BSC  L  SELRC,&-  BR IF SELECT RECVD
*
OD29 0 1010          SLA  16
OD2A 1 7400 0D49    MDX  L  MDSWT      SKIP IF NO TEXT RECVD
OD2C 0 D325          STO  3  CNTMD-T    RESET CONTROL MODE
OD2D 0 70DF          MDX  XMEXT&3
*
OD2E 0 C329          POLRC LD  3  REQ2-T
OD2F 1 4C30 0D41    BSC  L  EXIT1,Z-  BR IF TRANSMIT OP
*
OD31 1 6600 8DAA    LDX  L2  EOTCT&/8000
OD33 0 7005          MDX  *&5
*
OD34 0 C329          SELRC LD  3  REQ2-T
OD35 1 4C28 0D41    BSC  L  EXIT1,Z&
*
OD37 1 6600 8DAC    LDX  L2  NAKCT&/8000
OD39 1 6E00 0D5E    STX  L2  REQ
OD3B 0 7600 8000    MDX  L2  /8000
OD3D 0 1000          NOP
OD3E 1 6E00 0D56    STX  L2  FCODE
OD40 0 70CE          MDX  XMEXT&5
*
OD41 0 0B3B          EXIT1 XIO 3  ENDDP-T    END SCA OPERATION
OD42 0 0B45          XIO  3  STRED-T    START READ
OD43 0 1010          SLA  16
OD44 0 D30F          STO  3  RTBSY-T
OD45 0 6600 0000    EXIT  LDX L2  *--
OD47 1 4C80 0B24    BSC  I  INT
*
*****
*          INDICATORS, CONSTANTS, IOCCS
*****
*
OD49  0000          T      BSS
OD49 0 0000          MDSWT DC  *--  MODE IND
OD4A 0 0000          ERR  DC  *--  ERROR IND
OD4B 0 0000          COUNT DC *--  CHARACTER COUNT
OD4C 0 0000          BCCA DC  *--  BCC ACCUMULATION
OD4D 0 0000          LSDLE DC *--  LAST CHAR DLE IND
OD4E 0 0000          LSYN DC  *--  LAST CHAR SYN IND
OD4F 0 0000          FIRST DC *--  FIRST CHARACTER IND
OD50 0 0000          SECND DC *--  SECND CHARACTER IND
OD51 0 0000          PAD  DC  *--  XMIT PAD INDICATOR
OD52 0 0000          MSEND DC *--  END OF MSG IND
OD53 0 0000          MDSAV DC *--
OD54 0 0000          BUFR DC  *--  XMIT/REC BUFFER
OD55 0 0000          SYNC DC  *--  XMIT SYNS IND
OD56 0 0000          FCODE DC *--  FUNCTION CODE
OD57 0 0000          POINT DC *--  I/O AREA POINTER
OD58 0 0000          RTBSY DC *--  ROUTINE BUSY IND
OD59 0 0000          DSW  DC  *--  DSW STORAGE
OD5A 0 0000          BCCR DC  *--  BLOCK CHECK CHAR STORAGE
OD5B 0 0000          RETRY DC *--  RETRY COUNTER
OD5C 0 0000          WTCNT DC *--  INTERRUPT WAIT COUNT
OD5D 0 0000          TEMP DC  *--  TEMPORARY STORAGE
OD5E 0 0000          REQ  DC  *--  XMIT/REC REQUEST IND
OD5F 0 0000          CNTA DC  *--  COUNTER A
OD60 0 0000          CNTB DC  *--  COUNTER B
OD61 0 0000          TMPNT DC *--  TEST MESSAGE LOCATOR
OD62 0 0000          TOP  DC  *--  HIGHEST ADDR TO BE USED
OD63 0 0000          CNTPT DC *--
OD64 0 0000          ENPNT DC *--  TEXT TABLE POINTER
OD65 0 0000          TMXMI DC *--  TEST MSG RECVD IND
OD66 0 0000          IQAR DC  *--  TEST MSG XMIT IND
OD67 0 0000          TOIND DC *--  I/O AREA ADDRESS
OD68 0 0000          TOIND DC *--  TIMEOUT INDICATOR

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31A19060
31A19070
31A19080
31A19090
31A19100
31A19110
31A19120
31A19130
31A19140
31A19150
31A19160
31A19170
31A19180
31A19190
31A19200
31A19210
31A19220
31A19230
31A19240
31A19250
31A19260
31A19270
31A19280
31A19290
31A19300
31A19310
31A19320
31A19330
31A19340
31A19350
31A19360
31A19370
31A19380
31A19390
31A19400
31A19410
31A19420
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31A19440
31A19450
31A19460
31A19470
31A19480
31A19490
31A19500
31A19510
31A19520
31A19530
31A19540
31A19550
31A19560
31A19570
31A19580
31A19590
31A19600
31A19610
31A19620
31A19630
31A19640
31A19650
31A19660
31A19670
31A19680
31A19690
31A19700
31A19710
31A19720
31A19730

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OD69 0 0000          YCNT  DC  *--  TEST MSG COUNT
OD6A 0 0000          ERRNO DC  *--  ERROR NUMBER
OD6B 0 0000          OPTIN DC  *--
OD6C 0 0000          TYPE  DC  *--
OD6D 0 0000          MONIT DC  *--
OD6E 0 0000          CNTMD DC  *--
OD6F 0 0000          POLL  DC  *--
OD70 0 0000          POLL  DC  *--
OD71 0 0000          SELCT DC  *--
OD72 0 0000          REQ2  DC  *--
OD73 0 0000          DLYCT DC  *--
OD74 1 0F07          ENADR DC  ENTBL
OD75 0 0000          ENPT2 DC  *--
OD76 0 0000          NOERR DC  *--
OD77 1 8965          MSG1  DC  TOMSG&/8000
OD78 1 896A          MSG2  DC  XMMSG&/8000
OD79 1 896E          MSG3  DC  RCMSG&/8000
OD7A 1 8972          MSG4  DC  ERMMSG&/8000
OD7B 1 8975          MSG5  DC  ENCORE&/8000
OD7C 0 02AA          STXAA DC  /02AA
OD7D 0 AAAA          HAAAA DC  /AAAA
OD7E 0 AA55          HAA55 DC  /AA55
OD7F 0 5555          H5555 DC  /5555
OD80 0 5503          H5ETX DC  /5503
OD81 0 3232          SYSYN DC  /3232
OD82  0000          BSS  E  IOCC TABLE
OD82 1 0DA0          SYNRG DC  SYN  IOCC WR SYN TO SYNC REG
OD83 0 5104          DC  /5104  IOCC
OD84 0 000E          14  ENDOP DC  14  IOCC END OPERATION
OD85 0 5404          DC  /5404  IOCC
OD86 0 0104          STSYN DC  260  IOCC START SYNC
OD87 0 5410          DC  /5410  IOCC
OD88 0 0003          TIMER DC  3  IOCC START PROG TIMER
OD89 0 5420          DC  /5420  IOCC
OD8A 1 0DA1          WRDLE DC  DLE  IOCC WRITE DLE
OD8B 0 5100          DC  /5100  IOCC
OD8C 1 0DA0          WRSYN DC  SYN  IOCC WRITE SYN
OD8D 0 5100          DC  /5100  IOCC
OD8E 0 0004          STRED DC  4  IOCC INITIATE READ
OD8F 0 5600          DC  /5600  IOCC
OD90 1 0D54          READ  DC  BUFR  IOCC READ CHAR TO BUFFER
OD91 0 5200          DC  /5200  IOCC
OD92 0 0007          RETIM DC  7  IOCC RESTART TIMER
OD93 0 5702          DC  /5702  IOCC
OD94 1 0D54          WRBUF DC  BUFR  IOCC WRITE BUFFER
OD95 0 5100          DC  /5100  IOCC
OD96 0 0010          SNSRS DC  16  IOCC SENSE AND RESET DSW
OD97 0 5701          DC  /5701  IOCC
OD98 0 0013          SENSE DC  19  IOCC SENSE DSW
OD99 0 5700          DC  /5700  IOCC
OD9A 0 0063          RESET DC  99  IOCC RESET SCA
OD9B 0 5540          DC  /5540  IOCC
OD9C 0 1070          ACKS  DC  /1070  IOCC DLE ACK0
OD9D 0 1061          DC  /1061  IOCC DLE ACK1
OD9E 0 0000          POSAK DC  *--
OD9F 0 0000          DC  *--
ODA0 0 3200          SYN  DC  /3200  SYN CHARACTER
ODA1 0 1000          DLE  DC  /1000  DLE CHARACTER
ODA2 0 1200          DLSTY DC  /1200  DLE STX EXCLUSIVE OR
ODA3 0 0300          SXSOH DC  /0300  STX SOH EXCLUSIVE OR
ODA4 0 2200          DLSYN DC  /2200  DLE SYN EXCLUSIVE OR
ODA5 0 0200          STX  DC  /0200  STX CHARACTER
ODA6 0 0300          ETX  DC  /0300  ETX CHARACTER
ODA7 0 016C          SOHPC DC  /016C  SOH % CHARACTERS
ODA8 0 1002          DLSTX DC  /1002  DLE STX CHARACTERS
ODA9 0 1003          DLETX DC  /1003  DLE ETX CHARACTERS
ODAA 0 0001          EOTCT DC  /0001  COUNT FOR XMIT EOT
ODAB 0 3700          EOT  DC  /3700  EOT CHARACTER

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ODAC 0 0001	NAKCT DC	/0001	
ODAD 0 3D00	NAK DC	/3D00	NAK CHARACTER
ODAE 0 0002	LSTAK DC	/0002	COUNT POS ACK
ODAF 0 0000	DC	*--*	
ODB0 0 0001	ENQCT DC	/0001	COUNT FOR XMIT ENQ
ODB1 0 2D00	ENQ DC	/2D00	ENQ CHARACTER
ODB2 0 1037	DLEOT DC	/1037	DLE EOT CHARACTERS
ODB3 0 1A00	EQEOT DC	/1A00	ENQ EOT EXCLUSIVE OR
ODB4 0 2600	ETB DC	/2600	ETB CHARACTER
ODB5 0 2500	EBETX DC	/2500	ETB ETX EXCLUSIVE OR
ODB6 0 1F00	ITB DC	/1F00	
ODB0	H0001 EQU	ENQCT	
ODAE	H0002 EQU	LSTAK	
OD88	H0003 EQU	TIMER	
OD8E	H0004 EQU	STRED	
OD92	H0007 EQU	RETIM	
OD84	D14 EQU	ENDOP	
OD96	D16 EQU	SNSRS	
OD98	D19 EQU	SENSE	
OD9A	D99 EQU	RESET	
OD86	D260 EQU	STSYN	
OD87 0 000A	H000A DC	/000A	
OD88 0 F100	HF100 DC	/F100	
OD89 0 F0F0	HFF00 DC	/F0F0	
OD8A 0 FF00	HFFF0 DC	/FF00	
OD8B 0 FFFF	HFFFF DC	/FFFF	
OD8C 0 00FF	H00FF DC	/00FF	
OD8D 0 0202	H0202 DC	/0202	
OD8E 0 0F0F	H0F0F DC	/0F0F	
OD8F 0 8000	H8000 DC	/8000	
ODC0 0 7000	H7000 DC	/7000	
ODC1 0 7FFF	H7FFF DC	/7FFF	
ODC2 0 001F	H001F DC	/001F	
ODC3 0 1802	H1802 DC	/1802	
ODC4 0 A001	POLYN DC	/A001	

ODC5 0 012C	RAREA DC	300	
ODC6 0096	BSS	150	

OE5C 0097	RFTTM BSS	151	

OE53 0014	TABLE BSS	20	

OF07 00F0	ENTBL BSS	240	
OFF7 0 0000	LSTWD DC	*--*	
OFF8 061C	END	BGIN	

NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

31A20420
31A20430
31A20440
31A20450
31A20460
31A20470
31A20480
31A20490
31A20500
31A20510
31A20520
31A20530
31A20540
31A20550
31A20560
31A20570
31A20580
31A20590
31A20600
31A20610
31A20620
31A20630
31A20640
31A20650
31A20660
31A20670
31A20680
31A20690
31A20700
31A20710
31A20720
31A20730
31A20740
31A20750
31A20760
31A20770
31A20780
31A20790
31A20800
31A20810
31A20820
31A20830
31A20840
31A20850
31A20860
31A20870

C R O S S R E F E R E N C E

NAME	VALUE	REFERENCES
ACKS	0D9C	076E
ADPLY	0CCA	0CC6
ALPH	0A8D	0A6E
ALTNT	0773	077A,0793,07C5,0810,081D,083A
AMSGS	08DA	08CC
A1701	08DE	08DA
A1702	08E3	08DB
A1703	08E8	08DC
A1704	08F9	08DD
BCCA	0D4C	0C0A,0C18,0C1B,0C26,0C43,0CC5,0CCE
BCCR	0D5A	0C07,0C16,0C17
BCC1	0BFF	0886
BCC2	0C12	0B87,0C22
BDRFT	073A	0721,072A,0734,0A4D
BEGIN	0160	0622
BFDL	0C7D	0C4D
BFSOH	0C84	0C57
BFSTX	0C80	0C54
BGIN	061C	0FF8
BITCK	0CC6	0CCD
BITSW	0626	0620
BLKCK	0CBF	0B8B,0BB9,0BC3,0BDD,0C45,0C6E,0CBD
BTD	09C8	0981,098E,09CF
BUFFR	0D54	06F6,0798,07D3,0826,0865,0874,087B,0890,0893,0899,089F,0BAF,0BC1,0BCE,0BF7,0C05,0C0C,0C15,0C28,0C38,0C3B,0C4B,0C52,0C63,0C8F,0CA3,0CA9,0CB4,0CC3,0CE1,0CE5,0CEE,0D90,0D94,0BD5,0BF8,0CBF,0CCF
CALBC	0CC1	
CKBC1	0CFC	0CD9
CKCNT	0B5F	0B42,0B46,0B49
CKEND	0CA2	0BA9,0BB7,0BD9,0BE4,0CB6
CKFST	0C6D	0C77,0C7F,0C83,0C8D
CKMON	0AD4	0A98,0AB0,0AC3,0AD5
CKOPN	08B4	088A,08C7,0A5E
CKRDY	06A9	06A3
CKRTR	0748	0705,0713,073D,0755,07AA,07BD
CKSTX	0C47	0B9B,0BA7,0C5A
CKSYN	0C8E	0BA5,0BAD,0C3E,0CA0
CKY	07EE	07DA,07E2
CLEAR	0683	0673
CNTA	0D5F	0996,09A8,09AA,09BC,09DF,09F1,09FC,0A07,0A68,0A6A,0A73,0A75,0A9C,0AB5
CNTB	0D60	09AE,09B5,0A70,0A7C,0A84,0AB1
CNTMD	0D6E	0D18,0D1F,0D2C
CNTPT	0D63	0695,0AE5,0AE6,0AF9,0B00,0B03
CNTRL	0640	0ACC
CN00	0656	0650
CN10	065A	
CN20	0664	0658
CN30	066B	0655,065D
COUNT	0D4B	09DD,0B5F,0B66,0BE1,0BE8,0BED,0CD8,0CDE,0D04
CTINU	0793	07AF,07BF
DCRCT	0BE8	0BD0,0BE2
DECRE	0CCC	0CC9
DELAY	06A1	06B1
DIAGP	090A	0759,085B,0869,090E,0911
DLE	0DA1	0B53,0BB0,0BC2,0BF6,0BFA,0C4C,0D8A
DLEOT	0DB2	
DLESQ	0BC9	0BBF
DLETX	0DA9	0A0A,0A33
DLSTX	0DA8	09FD,0A30,0BB2
DLSTY	0DA2	
DLSYN	0DA4	0BD2
DLYCT	0D73	06A2,06AF
DONE	0B9D	0C61,0C73
DSW	0D59	0B2A,0B33,0B3D,0B6F
DTB	0761	0723,072D,0769

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

D14 0D84 0A0F
D16 0D96 06C2,06D0
D19 0D98 06C9,06D2
D260 0D86 09F8
D99 0D9A 0726,0730,097D,0980,098A,098D
EBETX 0DB5 0CA6
EDIT 0628 061C,0626,062C,0997
EMSGS 0930 0921
ENADR 0D74 0692
ENCOR 0975 0D7B
END 0164 0669,09C6,0AD2
ENDIT 0AC8 0A64,0A6C
ENDOP 0D84 08A2,08B0,0D41
END1 084A 0816
END2 084D 0820
ENPNT 0D64 0693,08BF,08C3,08C5,0AE4,0AF3,0AFA,0AFD,0B07,0B0B,0B11,0B13,0B16
ENPRT 0A58 075F,07F9,085D,0887,0AC7
ENPT2 0D75 0694,08C0,08C2
ENQ 0DB1 0629,06FE,070A,0B94,0CAA
ENQCT 0DB0 07AE
ENQRC 0711 06FF
ENTBL 0F07 0A66,0D74
EOT 0DAB 077E,080A,0850,0D1B
EOTCK 077C 0701,070D,077F,0797,07D1,0831
EOTCT 0DAA 06D9,07F6,0D31
EQEOT 0DB3 0B96,0CAC
ERLCK 0166
ERMSG 0972 0D7A
ERPRT 091E 06B3,075D,087D,0885,092E,09C4
ERR 0D4A 0717,0837,08BC,08DC,0C1A,0C76,0CB1,0D00
ERREX 0757 0752,0784
ERRNO 0D6A 068F,0749,07EE,080E,0844,0854,0910,091C
ERROR 0162 0915,0925
ERRTO 0780 079A
ETB 0DB4 0CA4
ETX 0DA6 09A3
EX 07F4 07C7
EXIT 0D45 0B25,0B3F,0B57,0B5D,0BD7,0BF3,0BFD,0C08,0C10,0C35,0C79,0C9C,0CF3
0CFB,0D07,0D11
EXITA 09B8 09AB
EXITB 0A50 09D8,09F4,0A0E,0A2C,0A48
EXIT1 0D41 0B2C,0D15,0D2F,0D35
EXIT8 0741 0738
E1701 0938 0930
E1702 0940 0931
E1703 0946 0932
E1704 094C 0933
E1705 0950 0934
E1706 0954 0935
E1707 095B 0936
E1708 0960 0937
FCODE 0D56 069E,0864,0895,0B1F,0B30,0BCB,0BDF,0BEF,0C02,0C12,0C6A,0C78,0C94
0CD1,0CD6,0CDB,0D01,0D0E,0D3E
FIRST 0D4F 088B,088C,0C59,0C6D,0C72,0C84,0C88
GDMMSG 0847 0838
GNRFT 0978 06B7,06BE,06C5,06D3,06E0,09BF
GNTM 09D1 06CA,0A4F,0A56
GO 0889 069F,0867,08A4,08B2,0B20,0D0F
GTCNT 0A6A 0A9E,0AB7
GTHX 0A73 0A8B,0AB3
GTRDY 0696 06B5
HAAAA 0D7D 0A1B
HAA55 0D7E 0A15
HEADG 0BA5 0883
HEX 0A9F 0A7F,0A89,0A8C
HFFFF 0DBB 06F7,0799,07D4,0827,0AA1,0B73
HFF00 0DBA 0864,0C27,0C37
HF0F0 0DB9 09CE

SCA TRANSMIT/RECEIVE BSC MULTI-POINT

HF100 0DB8 099B
H0F0F 0DBE 0762
H00FF 0DB8 0768
H000A 0DB7 0765,09CA
H0001 0DB0 0751,0789,07C9,0818,0822,08A7,0995,09A0,09DA,09F5,0A00,0B02,0B4B
H0002 0DAE 06BB,06CE,0B3B
H0003 0D88 0A2D,0B38,0B45,0B50
H0004 0D8E 08A9,09FB,0CFD
H0007 0D92 076C,0778,0994,09DE
H001F 0DC2 0ABB
H0202 0DBD 0A04
H1802 0DC3 0AA3
H5ETX 0D80 0A18
H5555 0D7F 0A22
H7FFF 0DC1 0863,086B,0A8D,0AA6,0B2E
H7000 0DC0 06A1,0B7F
H8000 0DBF 06E9,07CC,0A91,0AA9
ILO 017A
IL1 018A 0637
IL2 019A
IL3 01AA
IL4 01BA
INCNT 0D04 0CE4,0CED
INITL 076B 0685,0771,0800
INT 0B24 0635,0D47
IOAR 0D67 08A6
ITB 0DB6 0CB5
ITBMD 0C3E 0B89
LOG 0163 08D0,0A95,0AAD
LOGBY 0167
LRTN 0680 0681
LSDLE 0D4D 0B41,0BBE,0BC6,0BCA,0C48,0C5F,0C7E,0C93
LSTAK 0DAE 06F5,073F,0770,0777,0825,083D,084E
LSTWD 0FF7 0647
LSYN 0D4E 0C97,0C9B,0C9F
MDSAV 0D53 0C1C,0C2C,0C40,0C44,0CB9
MDSWT 0D49 06FA,082E,0B37,0B44,0B4F,0B7E,0C00,0C20,0C30,0C41,0C68,0C81,0C8B
0CB8,0CB8,0CF6,0CFC,0D2A
MDXMD 0B7E 0B68
MLSCF 05E5 0675,06A5,0872,0AD7
MONIT 0D6D 063E,06F2,0792,0AE1,0AF0,0B1C,0D14
MSEND 0D52 086D,0D13
MSG1 0D77 0B75
MSG2 0D78 08AB
MSG3 0D79 0898
MSG4 0D7A 074D,07F0,0812,0840,0856,0ADD
MSG5 0D7B 0B10
NAK 0DAD 073E,07A5,07DC,083C,0B9A
NAKCT 0DAC 0D37
NAKRC 078B 07A6
NEVEN 0CE5 0CDF
NFST 0B93 0B8E
NOERR 0D76 08BC,0ADE
NOMOD 0B8B 0B82
NORML 0BAD 0B84
NOSTX 0C72 0C65
NOSYN 0C9E 0C91
NOTDL 0BD9 0BD3
NRTN 067E 0682
ODD 0B69 0B60
OPTIN 0D6B 064E,0AC8
OUT 0B0E 0AE9,0AEB,0AED,0AF5,0AF7,0B05,0B0D
PAD 0D51 0C23,0C33,0CF9
PID 05DC 0624
PLSEL 0D21 0D1A
POINT 0D57 089E,08A8,0B62,0B69,0B6C,0BEB,0CE2,0CE7,0CE9,0CEB
POLL 0D70 0633,0D22
PQLLC 0D6F 0805,0B91,0BA1,0BA2,0D21,0D25

POLRC OD2E OD23
POLYN ODC4 OCCB
POSAK OD9E 076F,0774,0776,079D,07A1,07E4,07E8
PRTRC OABA OA5D
PRTXM OAB8 OA5A
RAD O5DE 066F,069B,06AD
RAREA ODC5 06FD,0709,071C,0722,072B,077D,079C,07A0,07A4,07DB,07E3,07E7,0809
084F,0893,089B,09E7,09EA,0CD4,0D17
0710,0716
RCENQ 0706
RCEXT OD12 0B78,0C1D,0D09,0D0B
RCMSG 096E 0D79
RCVTM 07FB 06DA,080B
RDWRT OCD1 0BA3,0BC7,0C70,0C7B,0C95,0CB2,0CC0
READ OD90 0B7A
READB 0B7A 0B71
RECV 0B6F 0B31
REQ OD5E 0862,0DOA,0D39
REQ2 OD72 063C,06EA,078A,0B1E,0D2E,0D34
RESET OD9A
RETIM OD92 0B92,0BF2,0C99
RETRN 0876 0B70
RETRY OD5B 0750,0754,076D,0779
RFTTM OE5C 0796,0982,098F,0992,099C,09A6,09B2,09BD,09E0,09E2,09ED,09F9,09FE
0A02,0A0C,0A13,0A16,0A19,0A1D,0A24,0A2A,0A31,0A34,0A39,0A40,0A46
0A50
RID 05DD 063A,0653,065A,0662,0664,0666,066B
RIDCK 0681 065C,0ACE
RLCF 0168
RQKB 01BC
RQTY 01BB
RTBSY OD58 08A1,08AF,0B2B,0B9E,0CAF,0CF2,0CFA,0D06,0D44
RTM 080E 082D,0836
RTMSG 081D 0746,0807,0846,0849
RTNOM 0682 0668
RTNSW 0165 0671
RTN1 06B6 0679
RTN2 06BD 067A
RTN3 06C4 067B,06BC,06C3,06E5
RTN4 06CE 067C
RTN5 06D0 067D
RTN6 06D2 067E,06CF,06D1,06DE
RTN7 06DC 067F
RTN8 06E6 0680
RTTBL 0679 066D,0681,0682
SECND OD50 0C4F,0C5C,0C60,0C89
SELCT OD71 062E,0806,0D26
SELRC OD34 0D27
SENSE OD98 0696,06AB,0878
SETBC OCBA OCA7
SETER OC75 OC85
SNSRS OD96 0B29
SDHPC ODA7 071D,0991
STALP OADB 074E,07F1,0813,0841,0857,0899,08AC,0ADF,0AE2,0B76
START 0161 0677,06A7,0874,0AD9
STBFR 0B65 0B6E
STMON 0B1A 0757,07F7,0859,0882,0B22
STOIT OAE E OAE0,0AF1,0AFF,0B18,0B54,0B5A,0B7C,0BFB,0COD,0C29,0CEF
STOWR OCDB OCFE
STRED OD8E 08A3,0D42
STRT 0629 05E3,05E4,0ACA,0ADO
STSYN OD86 08B1
STX ODA5 09A5,0C53,0C64
STXAA OD7C OA12
STXCK OC5E OC49
SVKB 01BD
SW0 05DF
SW1 05E0 064C,0656,0660
SW2 05E1 0640,08B7,090B,0A60

SW3 05E2 0984
SXSOH ODA3 0BB4,0C56
SYN ODA0 0B59,0BCF,0C90,0D82,0D8C
SYNC OD55 08AA,0B3C,0B48,0B4C
SYNRG OD82 0894
SYSYN OD81 0A3E
T OD49 0683,068D,068F,0690,0691,0692,0693,0694,0695,0696,069E,06A1,06A2
06A9,06AB,06BB,06C2,06C9,06CE,06D0,06D2,06E9,06EA,06F2,06F6,06F7
06FD,06FE,0709,070A,0717,071C,071D,0722,0726,0730,073E,073F,0743
0745,074D,0750,0751,0754,0762,0763,0765,0767,0768,076C,076D,076E
076F,0770,0774,0776,0777,0778,0779,077D,077E,0789,078A,0792,0798
0799,079C,079D,07A0,07A1,07A4,07A5,07B5,07B9,07C1,07C4,07C6,07C9
07CA,07CB,07CC,07D3,07D4,07DB,07DC,07E3,07E4,07E7,07E8,07F0,07FD
07FF,0805,0806,0809,080A,0812,0815,0818,0819,081F,0822,0823,0826
0827,0837,083C,083D,0840,084F,0850,0856,0862,0863,0864,086B,086C
086D,0876,0878,088D,0891,0893,0894,0895,0898,08A1,08A2,08A3,08A6
08A7,08A8,08A9,08AA,08AB,08AF,08B0,08B1,08B5,08BC,08BF,08C0,08C2
08C3,08D3,0910,0919,091C,0929,097D,0980,098A,098D,0991,0994,0995
0996,099B,09A0,09A3,09A5,09AA,09AE,09B8,09BC,09CA,09CE,09D9,09DA
09DD,09DE,09DF,09F5,09F8,09FB,09FC,09FD,0A00,0A0F,0A12,0A15,0A18
0A1B,0A2D,0A30,0A33,0A49,0A54,0ADC,0ADD,0ADE,0AE1,0AE4,0AE5,0AE8
0AEF,0AF0,0AF3,0AF4,0AF9,0AFA,0B02,0B09,0B0E,0B10,0B1C,0B1E,0B1F
0B27,0B29,0B2A,0B2B,0B2E,0B2F,0B30,0B33,0B37,0B38,0B3A,0B3B,0B3C
0B3D,0B41,0B44,0B45,0B48,0B4B,0B4C,0B4F,0B50,0B53,0B56,0B59,0B5C
0B5F,0B64,0B65,0B6F,0B73,0B74,0B75,0B7A,0B7B,0B7E,0B7F,0B8B,0B90
0B91,0B92,0B93,0B94,0B96,0B99,0B9A,0B9E,0B9F,0BA1,0BA2,0BAF,0BB0
0BB2,0BB4,0BBC,0BBE,0BC1,0BC2,0BC6,0BCA,0BCB,0BCE,0BCF,0BD2,0BDC
0BE1,0BE8,0BEF,0BF2,0BF5,0BF6,0BF7,0BFA,0C02,0C05,0C07,0C0A,0C0C
0C0F,0C12,0C15,0C16,0C17,0C18,0C1A,0C1B,0C1C,0C23,0C26,0C27,0C28
0C2B,0C2C,0C37,0C38,0C39,0C3B,0C40,0C41,0C43,0C44,0C48,0C4B,0C4C
0C4F,0C52,0C53,0C56,0C59,0C5C,0C5F,0C60,0C63,0C64,0C6A,0C6C,0C6D
0C72,0C76,0C78,0C7E,0C84,0C88,0C89,0C8F,0C90,0C93,0C94,0C97,0C99
0C9B,0C9F,0CA3,0CA4,0CA6,0CA9,0CAA,0CAC,0CAF,0CB1,0CB4,0CB5,0CB8
0CB9,0CC3,0CC5,0CCB,0CCE,0CD1,0CD4,0CD8,0CDB,0CDE,0CE1,0CE5,0CEE
0CF1,0CF2,0CF9,0CFA,0CFC,0CFD,0D00,0D01,0D06,0D0A,0D0E,0D13,0D17
0D1B,0D1F,0D21,0D22,0D25,0D26,0D2C,0D2E,0D34,0D41,0D42,0D44
0689,0724,072E,0736,0741,07C2,07D7,07DF,07EB,07FB,082A,0834,083E
0847,08CA,08CE,08D2,08D6,0913,0917,091F,0923,0927,092C,0979,0986
099E,0A79,0A82,0A8F,0A93,0A97,0A9A,0AAB,0AAF,0ABD,0ABF,0AC5
TEMP OD5D 0763,0767,09D9,0A49,0ADC,0AEF,0B09,0B0E
TEXTR 0717 06FC
TIMER OD88 0B3A,0C6C
TMOT 0715 06F8
TMPNT OD61 07CB,09D6,09E4,0A52
TMRCI OD65 0691,0745,07FF,0A5B
TMXMI OD66 0690,07C1,0A58
TOIND OD68 07B1,07B5,07B9
TOMSG 0965 0D77
TOP OD62 0649,0AE8,0AF4
TRANS 0BBE 0885
TSMSG 07C6 07E5,07E9,07F3
TYPE OD6C 074B,075B,0782
TYPIT 08C9 06E7,0787,08D8,0AC1
WAIT 086B 06EF,078F,0881
WRACK 07B4 07A2
WRBUF OD94 0C0F,0C2B,0C39,0CF1
WRDLE OD8A 0B56,0BF5
WRESP 0B41 0B35
WRF 0BF5 0BF0
WRITE OCEE 0CDC
WRSYN OD8C 0B5C
WSYNC 0B59 0B4D,0B51
WTCNT OD5C 086C,087F,0B2F
WTEXT OC78 0C50,0C5D
XENQ2 07A9 07B3,07B6
XERR 09C1 097B,097E
XMACK 06F3 070B,0714,0740
XMBCC OCOA 0C03

XMEXT 0D0A 0BE6,0C3C,0D02,0D20,0D2D,0D40
XMIT 08A6 0896
XMLST 0C23 0C13
XMMSG 096A 0D78
XMNAK 073C 071B,073B
XMPAD 0C37 0C24
XMRCV 085F 06D7,06ED,06F3,0706,078D,0794,07AC,07CE,07F4,0802,081A,0824,084A
084D,0860,0865,086E
XMRFT 0785 06B9,06C0,06C7,06D5,06E2,079E
XMTM 07C0 06CC
XMTOP 0BDF 0BCC
XNOTZ 09D9 09D2
XNOT1 09F5 09DB
XNOT2 0A0F 09F6
XNT16 0A2D 0A10
XNT19 0A49 0A2E
XONE 09AC 09A1,09B7
XSPEC 05E8 06DC,09AC,09B0,09BA,09D4,0A4A
YCNT 0D69 0743,07C4,07C6,07CA,07FD,0815,0819,081F,0823
YERR 09C3 0988,098B,09C2

END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE SCA TRANSMIT/RECEIVE BSC POINT-TO-POINT PROGRAM IS TO PROVIDE PROGRAM ABILITY TO OPERATE THE 1130 SCA ON-LINE WITH ANOTHER BSC TERMINAL IN A POINT-TO-POINT CONTENTION DATA LINK. THE MODE OF OPERATION IS BINARY SYNCHRONOUS. THE PROGRAM IS PRIMARILY A TEST OF SYSTEM INTEGRITY RATHER THAN A FAULT ISOLATING DIAGNOSTIC, HOWEVER, A DIAGNOSTIC CAPABILITY IS PROVIDED BY PROGRAM OPERATING OPTION.

****NOTE****

THERE ARE TWO VERSIONS OF THIS PROGRAM. PID 316 IS THE 8K VERSION AND WILL AUTOMATICALLY PROCESS ALL X VALUES FROM X=00 THRU X=99. IT ALSO PROVIDES NECESSARY MANUAL INTERVENTION DELAYS FOR OPERATION WITH 2770/2780 TERMINALS. PID 317 IS THE 4K VERSION IN WHICH ONLY X VALUES 00,01,02,12,16, & 19 ARE PROVIDED AUTOMATICALLY. X VALUES 13,14,15,20,21, & 22 REQUIRE PATCH CARD INSERTION. PID 317 DOES NOT PROVIDE MANUAL INTERVENTION DELAYS FOR 2770/2780 OPERATION. (PID 317 DOES NOT SUPPORT X=99 MESSAGES)

2. PREREQUISITES

****CAUTION****

READ SECTIONS 3.1 AND 3.5 FOR SPECIAL OPERATING PROCEDURES BEFORE TAKING THE 1130 OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM.

2.1 PROGRAM PREREQUISITES

1. THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 1.5 K STORAGE WORDS.
2. THE REMOTE TERMINAL MUST HAVE THE CAPABILITY OF EITHER TRANSMITTING OR RECEIVING AND RESPONDING TO REQUEST-FOR-TEST MESSAGES AS DESCRIBED IN THIS PROGRAM DESCRIPTION.

2.2 EQUIPMENT PREREQUISITES

1. SET STR/BSC SWITCH TO BSC POSITION.
2. SET BAUD SELECTION SWITCH TO MATCH REMOTE TERMINAL
3. SET DATA SET CONNECTOR PLUG SWITCH TO OPER
4. CE SWITCH MUST BE OFF
5. REFER TO LOGIC PAGE A0003 FOR CUSTOMER OPTION JUMPERS. OPTION FUNCTIONS MUST MATCH THE REMOTE TERMINAL.
6. SCA MUST BE CONNECTED THROUGH THE PROPER MODEM EQUIPMENT TO ANOTHER BSC TERMINAL. DATA SETS USED MUST BE COMPATIBLE WITH BAUD RATE AND CUSTOMER OPTIONS SELECTED.

NOTE...DIAL-UP CONNECTIONS...AUTOMATIC LINE DISCONNECT OCCURS WHEN 1130 RESET KEY IS PRESSED OR WHEN SCA PROGRAM RESET IS EXECUTED. THIS PROGRAM WILL EXECUTE A PROGRAM RESET ONLY IF A DISCONNECT SIGNAL IS RECEIVED FROM THE REMOTE TERMINAL OR IF THE PATCH CARD DESCRIBED IN 3.1 NOTE 3 IS USED. IF IT IS DESIRED THAT LINE DISCONNECT BE PREVENTED REMOVE THE JUMPER FROM D6D05 TO M2D10.

3. OPERATING PROCEDURE

SEE DIAGNOSTIC MONITOR USE PROCEDURE FOR DETAILS OF PROGRAM LOADING AND OPERATING PROCEDURES. PROGRAM OVERLAP IS NOT RECOMMENDED DUE TO TIMING CONSIDERATIONS.

3.1 PROGRAM LOADING

PROGRAM LOADING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

1. NOTIFY THE OPERATOR AT THE REMOTE TERMINAL THAT THE 1130 WILL BE TAKEN OFF-LINE FOR LOADING OF THE DIAGNOSTIC PROGRAM. IT MAY BE NECESSARY FOR THE REMOTE TERMINAL OPERATOR TO TAKE ACTION IN PREPARATION FOR THE TEST PROCEDURE.
2. SET FIRST TYPEWRITER TAB 20 CHARACTERS FROM LEFT MARGIN.
3. SET BIT SWITCH 15...OFF - FOR LOAD AND GO. (NOTE 1)
...ON - TO SPECIFY OPTIONS BEFORE RUNNING. (NOTE2)
4. LOAD DIAGNOSTIC MONITOR AND THIS PROGRAM.
5. SELECT PROGRAM OPTIONS AS DESIRED.

NOTE 1..NORMAL LOAD AND GO OPERATION ASSUMES THAT THE PROGRAM WILL BE INITIATING THE TEST PROCEDURE AND TEST ROUTINES 1-13 WILL BE EXECUTED. IF THE PROGRAM WILL NORMALLY BE REQUIRED TO RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES (TEST ROUTINE 18) IT IS RECOMMENDED THAT A PATCH CARD BE INSERTED IN THE PROGRAM DECK TO AUTOMATICALLY SELECT ROUTINE 18. THE PATCH CARD SHOULD CONTAIN IN COLUMNS 1-10, &05E0 0018, ALL OTHER COLUMNS SHOULD BE BLANK. THE PATCH CARD SHOULD BE INSERTED AHEAD OF THE LAST CARD IN THE PROGRAM DECK. ROUTINE 18 MAY BE SUBSEQUENTLY DE-SELECTED BY USING FUNCTION 1.

NOTE 2..IF HALTED AFTER LOADING, SELECT PROGRAM OPTIONS THEN TURN OFF HALT SWITCH OR FOLLOW NORMAL RESTART PROCEDURE (3.5)

NOTE 3..1130 TO S/360 SWITCHED (DIAL-UP) LINES. THE S/360 PROGRAMS WILL DISCONNECT FROM THE COMMUNICATIONS LINE AT THE END OF EACH TEST. IT IS RECOMMENDED THAT THE FOLLOWING PATCH CARD BE PREPARED FOR 1130 TO S/360 TESTS OVER SWITCHED LINES. USE OF THIS CARD WILL CAUSE THE 1130 PROGRAM TO DISCONNECT AT THE END OF EACH TEST. THE PATCH CARD MUST BE PUNCHED AS FOLLOWS.

COLUMNS 1-5 &061C
COLUMN 6 BLANK
COLUMNS 7-9 0000
ALL OTHER COLUMNS BLANK

THIS CARD MUST BE INSERTED IN FRONT OF THE LAST BINARY CARD IN THE PROGRAM DECK.

PAPER TAPE IPL SYSTEMS. MANUALLY LOAD ALL ZEROS INTO CORE LOCATION /061C AFTER PROGRAM HAS BEEN LOADED.

3.2 PROGRAM OPERATION

PROGRAM OPERATING PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR ADDITIONAL DETAILS. OVERLAP IS NOT RECOMMENDED.

3.2.1 PROGRAM CONTROL - FUNCTION 0

1. SET SWITCHES 0-7 TO 01
2. SET SWITCHES 8-15 AS DESIRED

SWT	FUNCTION
8	RESTART (SEE SECTION 3.5)
9	ROUTINE START MESSAGE
10	(NOT USED)
11	LOOP PROGRAM
12	(NOT USED)
13	BYPASS ERROR PRINTOUT
14	HALT ON ERROR (USE NOT RECOMMENDED)
15	HALT (SEE SECTION 3.5)

3. PRESS INT REQ KEY ON CONSOLE

3.2.2 ROUTINE SELECTION - FUNCTION 1

ROUTINE SELECTION WILL BE INOPERATIVE IF THE RFT RECEIVER OPTION (FUNCTION 2 SWITCH 15) IS SELECTED.

ROUTINES 1-13 WILL BE EXECUTED IN SEQUENCE IF NO ROUTINE (OR 00) IS SELECTED. ROUTINES 14-18 WILL BE EXECUTED ONLY IF SELECTED. ONLY ROUTINE 18 WILL LOOP CONTINUOUSLY IF SELECTED. ALL OTHERS WILL TERMINATE AT THE COMPLETION OF THE ROUTINE.

TO LOOP A ROUTINE FIRST SELECT THE ROUTINE THEN SELECT THE LOOP PROGRAM OPTION (FUNCTION 0 SWT 11).

TO SET ROUTINE SELECTION

- A. SET SWITCHES 0-7 TO 41
- B. SET ROUTINE NUMBER IN SWITCHES 8-15

RTN NO. (HEX)	TRANSMIT RFT WITH X VALUE OF	TRANSMIT (OR) RECEIVE	MESSAGE NUMBER	NUMBER OF TIMES	COMMENTS
01	X=00	TRANSMIT	02	Y	
02	X=00	TRANSMIT	04	Y	
03	X=00	TRANSMIT	12	Y	
04	X=00	TRANSMIT	13	Y	
05	X=00	TRANSMIT	14	Y	
06	X=00	TRANSMIT	15	Y	
07	X=00	TRANSMIT	16	Y	
08	X=00	TRANSMIT	19	Y	
09	X=00	TRANSMIT	20	Y	
0A	X=00	TRANSMIT	21	Y	
0B	X=00	TRANSMIT	22	Y	
0C	X=02	RECEIVE	02	Y	
0D	X=04	RECEIVE	04	Y	
0E	X=12	RECEIVE	12	Y	
0F	X=13	RECEIVE	13	Y	
10	X=14	RECEIVE	14	Y	
11	X=15	RECEIVE	15	Y	
12	X=16	RECEIVE	16	Y	
13	X=19	RECEIVE	19	Y	
14	X=20	RECEIVE	20	Y	BY SELECTION
15	X=21	RECEIVE	21	Y	BY SELECTION
16	X=22	RECEIVE	22	Y	BY SELECTION
17	TRANSMIT RFT WITH X=00(SEE SECTION 5.2) TRANSMIT OR RECEIVE TEST MESSAGES AS DEFINED BY X VALUE.				BY SELECTION
18	RECEIVE AND RESPOND TO RFT MESSAGES				BY SELECTION

C. PRESS INT REQ KEY ON CONSOLE

TO DESELECT ROUTINE AND RETURN TO NORMAL OPERATION

- A. SET SWITCHES 0-7 TO 41
- B. SET SWITCHES 8-15 OFF
- C. PRESS INT REQ KEY
- D. DESELECT LOOP OPTION IF SELECTED.

3.2-3 PROGRAM OPTIONS - FUNCTION 2

- 1. SET SWITCHES 0-7 TO 81
- 2. SET SWITCHES 11-15 AS DESIRED

SWT FUNCTION

SWT 15..ON..RECEIVE AND RESPOND TO REQUEST-FOR-TEST MESSAGES.
(EXECUTE ROUTINE 18 ONLY)
..OFF..TRANSMIT REQUEST-FOR-TEST MESSAGE THEN TRANSMIT OR
RECEIVE Y TEST MESSAGES. (ALLOW EXECUTION OF RTNS 1-17)

SWT 14..ON..ALLOW PRINTING OF DIAGNOSTIC ERROR MESSAGES.
(ERROR MESSAGES E160B THRU E1625) SEE NOTE SECTION 4.2
..OFF..DO NOT PRINT DIAGNOSTIC ERROR MESSAGES.

SWT 13..ON..PRINT ENTIRE TEXT OF ANY MESSAGE OR CONTROL SEQUENCE
RECEIVED WHICH CONTAINED AN ERROR. (SEE SECTION 4.3)

SWT 12..ON..PRINT ENTIRE TEXT TRANSMITTED AND RECEIVED.
(SEE SECTION 4.3)

SWT 11..ON..TERMINAL(2770/2780) MODE OF OPERATION. CAUSES A DELAY OF
10 SECONDS AFTER RFT IS RECEIVED BEFORE REQUESTED TEST
MESSAGE IS TRANSMITTED.(DELAY FOR MANUAL INTERVENTION AT
TERMINAL)
(MUST BE ON TO OPERATE WITH 2770/2780)
..OFF..NORMAL MODE. NO DELAY.

SWT 10..ON..SEND ID HEADER WITH INITIAL ENQ OR INITIAL ACK.
..OFF..DO NOT SEND ID HEADER.

NOTE...IF IDENTIFICATION HEADER CODE IS REQUESTED, THE
FOLLOWING 15 CHARACTER CODE WILL BE USED... 1130BSCAPTDIAG .
THIS CODE MAY BE CHANGED BY PUNCHING THE DESIRED EBCDIC
CODE IN HEXADECIMAL BYTES IN A PATCH CARD. THE USER
SHOULD INSURE THAT 15 ID CHARACTERS ARE ENTERED. THE PATCH
CARD MUST BE PUNCHED AS FOLLOWS...

COLUMNS 1-5 8061E
COLUMN 6 BLANK
COLUMNS 7-45 XXXX XXXX XXXX XXXX XXXX XXXX XXXX XX00
ALL OTHER COLUMNS BLANK

WHERE XX IS THE EBCDIC EQUIVALENT FOR ANY ALPHA-NUMERIC
CHARACTER. THE FOLLOWING IS AN EXAMPLE OF A PATCH CARD
ID OF BOCARATON1OCT69 ...

8061E C2D6 C3C1 D9C1 E3D6 D5F1 D6C3 E3F6 F900

THE ID PATCH CARD, IF USED, MUST BE INSERTED IN FRONT OF THE
LAST BINARY CARD IN THE PROGRAM DECK.

PAPER TAPE IPL SYSTEMS. MANUALLY LOAD THE EBCDIC
EQUIVALENT ALPHA NUMERIC CHARACTERS INTO CORE LOCATIONS
/061E THROUGH /0625.

SWT 9..ON..PRINT LINE MESSAGES ON 1132 PRINTER.

SWT 8..ON..PRINT LINE MESSAGES ON 1403 PRINTER.

NOTE..IF BOTH SWT 8 AND 9 ARE OFF,MESSAGES ARE PRINTED ON THE CONSOLE
PRINTER.

3. PRESS INT REQ KEY ON CONSOLE.

3.2.4 PROGRAM OPTION - FUNCTION 3

WHEN TRANSMITTING REQUEST-FOR-TEST MESSAGES (EXECUTING RTNS 1-17)
THIS OPTION ALLOWS SELECTION OF THE NUMBER OF TEST MESSAGES
THAT ARE TO BE TRANSMITTED OR RECEIVED. THE VALUE ENTERED IN
SWITCHES 8-15 IS USED AS A COUNT OF TEST MESSAGES AND IS ALSO
CONVERTED TO TWO EBCDIC DECIMAL DIGITS AND ENTERED IN THE Y FIELD
OF THE RFT MESSAGE. THIS VALUE MUST BE BETWEEN DECIMAL 01 AND 99.

TO SELECT THE Y VALUE

1. SET SWITCHES 1-7 TO C1
2. SET SWITCHES 8-15 AS DESIRED (HEX 01 TO 63)
3. PRESS INT REQ KEY ON CONSOLE

TO RETURN TO NORMAL OPERATION

1. SET SWITCHES 0-7 TO C1
2. SET SWITCHES 8-15 TO 01
3. PRESS INT REQ KEY

3.3 PROGRAM HALTS

3.3.1 NORMAL HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
3001	PROGRAM STOP OR ADDRESS STOP	PRESS PROGRAM START
3002	HALT ON ERROR	PRESS PROGRAM START

3.3.2 ERROR HALTS

HALT NO. (B REG).	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER	RELOAD PROGRAM
30F2	READER DSW ERROR WHEN LOADING LOADER	RELOAD PROGRAM
30F3	CARD 2 OF LOADER DID NOT LOAD	RELOAD PROGRAM
30F4	CAN NOT CLEAR CORE - DUE TO ERROR IN ADDRESSING UPPER CORE	
30F5	READER CHECK WHEN LOADING MONITOR OR TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS READER START. PRESS PROGRAM START
30F6	MONITOR DID NOT LOAD	RELOAD PROGRAM
30F7	CHECK SUM WHEN LOADING MONITOR	RELOAD PROGRAM
30F8	READER NOT READY	MAKE READER READY PRESS PROGRAM START
30F9	INVALID INTERRUPT WHICH WILL NOT RESET	PRESS RESET AND PROGRAM START
30FA	CONSOLE PRINTER HANG UP - BUSY WILL NOT GO OFF	FIX THE CONSOLE PRINTER

3.4 PROGRAM TERMINATION

IF LOOP OPERATION HAS NOT BEEN SPECIFIED, THE PROGRAM WILL END...

1. AT THE END OF ROUTINE 13 IF NO ROUTINE HAS BEEN SELECTED AND THE RFT RECEIVER OPTION (FUNCTION 2 SWT 15) IS NOT SELECTED.
2. AT THE END OF THE SELECTED ROUTINE IF ANY ROUTINE OTHER THAN ROUTINE 18 IS SELECTED.
3. IF ROUTINE 18 IS SELECTED BY EITHER FUNCTION 1 OR FUNCTION 2 SWT 15 THE PROGRAM WILL LOOP CONTINUOUSLY.

NOTE....AFTER NORMAL PROGRAM END THE SCA IS LEFT IN RECEIVE MODE. INTERRUPTS WILL CONTINUE TO OCCUR BUT WILL BE IGNORED BY THE PROGRAM. (SEE 3.5)

3.5 HALTING AND RESTARTING PROGRAM

AFTER NORMAL PROGRAM END OR AFTER SELECTION OF PROGRAM HALT (FUNCTION 0 SWT 15) THE SCA IS LEFT IN RECEIVE MODE. INTERRUPTS WILL CONTINUE TO OCCUR BUT WILL BE IGNORED BY THE PROGRAM. THIS PROCEDURE PREVENTS LINE DISCONNECT WHEN THE PROGRAM IS STOPPED. FOR THIS REASON IT IS RECOMMENDED THAT USE OF THE PROGRAM STOP, IMMEDIATE STOP, AND RESET KEYS BE AVOIDED WHEN OPERATING THIS PROGRAM. THE PROGRAM STOP KEY WILL NORMALLY STOP THE PROGRAM ONLY UNTIL THE NEXT INTERRUPT OCCURS. IN DIAL-UP CONNECTIONS USE OF THE RESET KEY MAY CAUSE LINE DISCONNECT.

IT IS ALSO RECOMMENDED THAT WHENEVER POSSIBLE THE PROGRAM BE ALLOWED TO RUN TO NORMAL COMPLETION. IF IT IS NECESSARY TO USE THE PROGRAM HALT OPTION OR OTHERWISE HALT THE PROGRAM THIS SHOULD BE DONE DURING THE END OF TEST PRINTOUT. IF THE TEST MUST BE TERMINATED DURING EXECUTION OF A TEST SEQUENCE, THEN ALLOW SUFFICIENT TIME FOR THE REMOTE TERMINAL TO FINISH THE TEST CYCLE BEFORE RESTARTING THE PROGRAM--OR RESTART BOTH TERMINALS.

TO HALT PROGRAM (SEE 3.2.1)

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 15
3. PRESS INT REQ KEY

TO RESTART PROGRAM (SEE 3.2.1)

1. TURN OFF SWITCHES 0-6
2. TURN ON SWITCHES 7 AND 8
3. SET DESIRED CONTROL IN SWITCHES 9-14
4. PRESS INT REQ KEY ON CONSOLE
IF THIS DOES NOT RESTART PROGRAM THEN..
5. PRESS IMMEDIATE STOP
6. PRESS RESET
7. PRESS INT REQ KEY

4. PRINTOUTS

ALL PRINTOUTS ARE IN THE STANDARD FORMAT EXCEPT THE TEXT PRINTOUT. (SEE 4.3)

APPNN OORR AAAA MESSAGE
 OR
EPPNN OORR AAAA MESSAGE (MESSAGE OMITTED FOR DIAGNOSTIC PRINTOUTS)

WHERE A IDENTIFIES STATUS MESSAGES
 E IDENTIFIES ERROR MESSAGES
 PP IS THE PID OF THE PROGRAM CAUSING THE MESSAGE

THIS WILL BE EITHER 00 FOR MESSAGES ORIGINATED BY MONITOR OR 16 FOR MESSAGES ORIGINATED BY THIS PROGRAM

NN IS THE MESSAGE IDENTIFICATION NUMBER
RR IS THE ROUTINE NUMBER
AAAA IS THE STARTING ADDRESS OF THE ROUTINE
MESSAGE IS ANY VARIABLE INFORMATION

4.1 STATUS MESSAGES (LOG MESSAGES)

A0000 NUM PID ADRS RELF LD
 XXXX XXXX XXXX XXXX

THIS MESSAGE IS PRINTED FOLLOWING THE LOADING OF ANY PROGRAM (EXCEPT MONITOR). THE MESSAGE GIVES THE LOAD SEQUENCE NUMBER, THE PROGRAM ID, THE ADDRESS INTO WHICH THE PROGRAM WAS LOADED, AND THE RELOCATION FACTOR.

A0001 SWS PID
 XXXX XXXX

THIS MESSAGE IS PRINTED EACH TIME A VALID SWITCH ENTRY IS READ BY THE MONITOR. THE MESSAGE CONTAINS THE SWITCH SETTING READ TOGETHER WITH THE PROGRAM ID OF THE PROGRAM INTO WHICH THE CONTENTS OF SWITCHES 8-15 WERE STORED. IF THE SWITCH ENTRY CALLED FOR HALT OF ANY PROGRAM THE WORD HALT WILL FOLLOW THE MESSAGE.

A1600 OORR AAAA

ROUTINE START MESSAGE - IF SWITCH 9, FUNCTION 0, IS TURNED ON. THIS MESSAGE WILL BE PRINTED BEFORE THE START OF EACH ROUTINE.

A1600 OORR AAAA X=99 ABORT,NO ENQ IN 1 MIN

THIS MESSAGE IS PRINTED WHEN AN ENQ IS NOT RECEIVED WITHIN ONE MINUTE AFTER RECEIVING AN X=99 RFT FROM A TERMINAL DEVICE SUCH AS A 2780.(ROUTINE 18) ROUTINE 18 IS RESTARTED AFTER THIS MESSAGE. THE X=99 REQUESTOR MUST RE-INITIALIZE THE TEST BY SENDING A NEW X=99 RFT.

A1601 OORR AAAA MAKE DATA SET READY

BEFORE EACH ROUTINE IS STARTED THE PROGRAM CHECKS FOR A READY CONDITION IN THE DSW, AND PRINTS THIS MESSAGE IF READY IS NOT ON. IN A PERMANENT LINE CONNECTION THIS IS AN ERROR CONDITION. IN A DIAL-UP CONNECTION THIS MESSAGE IS A REQUEST THAT A CONNECTION BE ESTABLISHED WITH THE REMOTE TERMINAL. CONNECTION MAY BE ESTABLISHED BY ANY OF THE FOLLOWING MEANS..

1. MANUALLY ESTABLISH CONNECTION AT BOTH TERMINALS
OR
2. IF REMOTE TERMINAL CAN ANSWER AUTOMATICALLY THEN DIAL THE REMOTE TERMINAL, WAIT FOR THE END OF THE TONE RECEIVED FROM THE OTHER TERMINAL, PRESS THE DATA BUTTON ON THE DATA SET.
OR
3. PRESS THE AUTO-ANSWER BUTTON ON THE DATA SET. THE PROGRAM WILL THEN CONTINUE TO PRINT THIS MESSAGE UNTIL AN INCOMING CALL IS RECEIVED. WHEN A CALL IS RECEIVED THE PROGRAM WILL ANSWER AND CONDUCT THE TEST.

THIS MESSAGE WILL BE REPEATED AT ABOUT 20 SEC INTERVALS UNTIL READY IS SENSED IN THE DSW.

NOTE....1130 TO S/360 DIAL-UP CONNECTIONS...
DIALING MUST ALWAYS BE DONE AT THE SYSTEM WHICH IS TO TRANSMIT THE RFT MESSAGE.
WHEN EXECUTING RTNS 1-17 DIAL FROM THE 1130 END.
WHEN EXECUTING RTN 18 DIAL FROM THE REMOTE TERMINAL END.
THIS MESSAGE IS PRINTED AT ANY TIME THAT LINE DISCONNECT OCCURS. THE PROGRAM WILL RESET THE SCA AND IF THE SYSTEM IS CONFIGURED FOR AUTOMATIC DISCONNECT, DISCONNECT FROM THE COMMUNICATIONS LINE

A1602 OORR AAAA MON ENQ

THIS MESSAGE MEANS THAT TEST ROUTINE 18 IS MONITORING THE LINE FOR THE ENQ CHARACTER WHICH PRECEEDS THE FIRST MESSAGE. THIS MESSAGE WILL BE REPEATED AT INTERVALS AND ALL OTHER CHARACTERS RECEIVED WILL BE IGNORED UNTIL THE ENQ CHARACTER IS RECEIVED. WHEN ENQ IS RECEIVED AN ACKNOWLEDGEMENT (DLE ACKO) WILL BE TRANSMITTED AND THE RFT MESSAGE RECEIVED.

A1603 OORR AAAA NO ANS ENQ

THIS MESSAGE IS PRINTED BY ROUTINES 1-17 AFTER 7 ATTEMPTS TO ESTABLISH INITIAL COMMUNICATION WITH REMOTE TERMINAL HAVE FAILED. THE PROGRAM HAS TRANSMITTED ENQ 7 TIMES, BUT EITHER NO RESPONSE OR A RESPONSE OTHER THAN THE POSITIVE ACKNOWLEDGEMENT (DLE ACKO) WAS RECEIVED. THIS MESSAGE USUALLY INDICATES THAT THE REMOTE TERMINAL IS NOT YET READY TO RECEIVE. IF IT IS ESTABLISHED THAT THE REMOTE TERMINAL IS READY TO RECEIVE THEN THIS IS AN ERROR CONDITION. AFTER PRINTING THE TEST ROUTINE WILL BE RESTARTED.

A1604 OORR AAAA DISCONNECT

THIS MESSAGE IS PRINTED AFTER THE 1130 HAS RECEIVED A DISCONNECT CHARACTER SEQUENCE (DLE EOT) FROM THE REMOTE STATION (SWITCHED NET).
(REFER TO SECTION 3.1 FOR A DEFINITION OF DISCONNECT OPERATIONS)

A1605 OORR AAAA X Y TMOU NAK INV RESP
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE TRANSMITTER (RTNS 1-B, RTN 17 IF X=00, AND RTN 18 IF X IS NOT 00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING RESPONSES TO TEST MESSAGES, THE NUMBER OF NEGATIVE RESPONSES (NAK) TO TEST MESSAGES, AND THE NUMBER OF INVALID RESPONSES (ANY RESPONSE OTHER THAN ACKO,ACK1,NAK,WACK) TO TEST MESSAGES, AN ERROR FREE TEST IS INDICATED BY THE COUNTS IN THE LAST THREE FIELDS BEING ZERO.

A1606 OORR AAAA X Y TMOU W ERR W/O ERR
000XX 000XX 000XX 000XX 000XX

THIS IS THE NORMAL END OF TEST MESSAGE WHICH IS PRINTED BY THE TEST MESSAGE RECEIVER (RTNS C-16, RTN 17 IF X NOT 00, AND RTN 18 IF X=00). THE PRINTOUT PROVIDES THE X AND Y VALUES FROM THE RFT MESSAGE, THE NUMBER OF RECEIVE TIMEOUTS WHICH OCCURED WHILE RECEIVING TEST MESSAGES, THE NUMBER OF TEST MESSAGES RECEIVED WITH EITHER BCC OR FORMAT ERRORS, THE NUMBER OF TEST MESSAGES RECEIVED WITHOUT ERROR. AN ERROR FREE TEST IS INDICATED BY THE NUMBER OF ERROR FREE MESSAGES BEING EQUAL TO THE Y VALUE.

A1607 OORR AAAA RVI RCVD, EOT SENT

THIS MESSAGE IS PRINTED WHEN THE SLAVE STATION REPLIES WITH AN RVI INSTEAD OF AN ACKNOWLEDGEMENT. RVI IS A REQUEST FOR TERMINATION OF THE CURRENT TRANSMISSION AS SOON AS POSSIBLE. TRANSMISSION IS TERMINATED WITH AN EOT AT THE END OF THE CURRENT TRANSMISSION BLOCK.

A1608 OORR AAAA TTD RCVD

THIS MESSAGE IS PRINTED WHEN THE RESPONDER (RTN 18) HAS RECEIVED A TTD SEQUENCE (STX/ENQ) DURING MESSAGE TRANSFER. TTD INDICATES A DELAY OF MORE THAN 2 SECONDS BEFORE THE NEXT TRANSMISSION BLOCK IS SENT OR A CONTROLLED FORWARD ABORT OF THE CURRENT TRANSMISSION. RTN 18 WILL RESPOND TO THE TTD WITH A NAK CHARACTER.

A1614 OORR AAAA LINE PRINTER NOT READY

THE PRINTER SELECTED BY FUNCTION 2 SWT 8 OR 9 IS NOT READY. READY PRINTER AND CONTINUE.

4.2 ERROR MESSAGES

E0001 SWS INVL D
XXXX

THE SETTING OF SWITCHES 4-7 DID NOT EQUAL THE LOAD SEQUENCE NUMBER OF ANY PROGRAM IN CORE.

E0003 OVR CORE

THE PROGRAM, WHICH THE LOADER WAS ATTEMPTING TO LOAD, EXCEEDED AVAILABLE CORE. LOADING WAS TERMINATED.

E0004 CKSUM

A CHECK SUM ERROR WAS DETECTED WHILE LOADING A TEST PROGRAM.
THIS ERROR OCCURS UNDER ANY OF THE FOLLOWING CONDITIONS.

1. A CARD IS MISSING OR IS OUT OF SEQUENCE.
2. THERE IS AN EXTRA CARD IN THE DECK.
3. THE PUNCHED INFORMATION ON THE CARD IS NOT CORRECT.
4. DATA WAS LOST OR PICKED UP DUE TO A MACHINE MALFUNCTION.
5. DUE TO A CPU MALFUNCTION THE CHECK SUM WAS NOT CORRECTLY CALCULATED.

WHEN THIS ERROR OCCURS ATTEMPT TO RELOAD THE PROGRAM.'

E0005 000N XXXX

THIS ERROR WILL OCCUR IF AN INTERRUPT OCCURS, BUT THE ILSW WAS NOT CORRECT. N IS THE INTERRUPT LEVEL AND XXXX IS THE ILSW. THIS PRINTOUT WILL ONLY OCCUR IF THE INTERRUPT IS RESET BY A BOSC. NO ATTEMPT IS MADE BY THE ERROR ROUTINE TO RESET THE REQUEST BIT.

E1600 00RR AAAA 25 WACKS R

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-17 WHEN 25 CONSECUTIVE WAIT BEFORE ACKNOWLEDGE (WACK) RESPONSES HAVE BEEN RECEIVED FROM THE REMOTE TERMINAL. THE PROGRAM WILL TERMINATE AND PRINT THE END OF TEST MESSAGE.

E1601 00RR AAAA DATA SET NRDY

THE DATA SET BECAME NOT READY WHILE THE PROGRAM WAS ATTEMPTING TO TRANSMIT OR RECEIVE A MESSAGE OR CONTROL SEQUENCE. IF INITIAL COMMUNICATION WITH THE REMOTE TERMINAL HAD NOT YET BEEN ESTABLISHED THE PROGRAM WILL RESTART THE TEST ROUTINE. IF THE EXCHANGE OF MESSAGES WITH THE REMOTE TERMINAL WAS IN PROGRESS AT THE TIME THE ERROR OCCURED, THE PROGRAM WILL ATTEMPT TO PROCEED WITH THE TEST.

E1602 00RR AAAA 7 TRIES T

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-17 AFTER 7 ATTEMPTS TO TRANSMIT THE REQUEST-FOR-TEST MESSAGE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND EITHER END THE PROGRAM OR GO ON TO THE NEXT ROUTINE. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1603 00RR AAAA 7 TRIES R

THIS MESSAGE IS PRINTED BY TEST ROUTINE 18 AFTER 7 ATTEMPTS TO RECEIVE THE REQUEST-FOR-TEST SEQUENCE HAVE FAILED. THE PROGRAM WILL TERMINATE THE CURRENT TEST AND WILL RESTART ROUTINE 8. THE NORMAL END OF TEST MESSAGE WILL NOT BE PRINTED SINCE NO TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E1604 00RR AAAA INV X

THIS MESSAGE IS PRINTED BY TEST ROUTINE 17 IF AN INVALID X VALUE IS ENTERED BY A PROGRAM PATCH CARD. CORRECT THE PATCH CARD AND RELOAD THE PROGRAM.

E1605 00RR AAAA INV Y

THIS MESSAGE IS PRINTED BY ROUTINES 1-17 IF AN INVALID Y VALUE IS ENTERED VIA FUNCTION 3. ENTER A CORRECT VALUE (HEX 01 TO 63) AND RESTART THE PROGRAM.

E1606 00RR AAAA INV RFT RCVD

THIS MESSAGE IS PRINTED BY TEST ROUTINE 18 IF A REQUEST FOR TEST MESSAGE IS RECEIVED WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE RFT MESSAGE CONTAINED ONE OF THE FOLLOWING ERRORS.

1. THE RFT MESSAGE DID NOT BEGIN WITH SOH %
2. THE X FIELD WAS GREATER THAN DECIMAL 99
3. THE Y FIELD WAS GREATER THAN DECIMAL 99
4. THE X VALUE WAS NOT ONE OF THOSE RECOGNIZED BY ROUTINE 18

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT MESSAGE FOR UP TO 7 TRYS.

E1607 00RR AAAA EOT RCVD

THE END OF TRANSMISSION (EOT) CHARACTER WAS RECEIVED IN RESPONSE TO OR IN PLACE OF A MESSAGE PRIOR TO THE NORMAL END OF TEST. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED PRINT THE END OF TEST MESSAGE.

E1608 00RR AAAA DISCONNECT

THE DISCONNECT SEQUENCE (OLE EOT) WAS RECEIVED IN RESPONSE TO OR IN PLACE OF A MESSAGE PRIOR TO THE NORMAL END OF TEST. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE, RESET THE SCA, AND PRINT THE END OF TEST MESSAGE IF ANY TEST MESSAGES HAVE BEEN RECEIVED.

E1609 00RR AAAA NO INTRP

AN EXPECTED INTERRUPT FAILED TO OCCUR. THE PROGRAM WILL TERMINATE THE CURRENT TEST ROUTINE AND PRINT THE END OF TEST MESSAGE IF ANY TEST MESSAGES HAVE BEEN TRANSMITTED OR RECEIVED.

E160A 00RR AAAA CONTENTION

THIS MESSAGE IS PRINTED BY TEST ROUTINES 1-17 IF ENQ IS RECEIVED IN RESPONSE TO ENQ WHEN ATTEMPTING TO ESTABLISH INITIAL COMMUNICATION WITH THE REMOTE TERMINAL. THIS INDICATES THAT BOTH TERMINALS ARE ATTEMPTING TO TRANSMIT. CORRECT BY ONE TERMINAL GOING TO RECEIVE RFT MESSAGES. WHEN THIS ERROR OCCURS THE PROGRAM WILL RESTART THE TEST ROUTINE.

****NOTE..DIAGNOSTIC ERROR MESSAGES..THE FOLLOWING ERROR MESSAGES ARE PRINTED ONLY IF FUNCTION 2 SWITCH 14 IS SELECTED. EACH OF THESE MESSAGES INDICATES A SOFT (RECOVERABLE) ERROR CONDITION. INCLUDED IN THE DESCRIPTION OF EACH OF THESE PRINTOUTS IS THE ACTION THAT WILL BE TAKEN BY THE PROGRAM TO ATTEMPT RECOVERY FROM THE ERROR. THESE PRINTOUTS ARE INTENDED TO BE USED AS A GUIDE IN LOCATING THE EXACT POINT OF FAILURE IN THE TEXT PRINTOUT.

E160B OORR AAAA

TEST ROUTINE 18 HAD RECEIVED AND ACKNOWLEDGED THE INITIAL ENQ AND WAS EXPECTING THE RFT MESSAGE WHEN A SECOND ENQ WAS RECEIVED. THIS INDICATES THAT THE REMOTE TERMINAL DID NOT CORRECTLY RECEIVE THE ACKNOWLEDGEMENT (DLE ACK). THE PROGRAM WILL RE-TRANSMIT THE ACKNOWLEDGEMENT.

E160C OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING THE RFT MESSAGE. THIS INDICATES THAT EITHER CHARACTER PHASE WAS NEVER ESTABLISHED AND NOTHING WAS RECEIVED OR THE END OF TEXT CHARACTER (ETX OR ETB) WAS NOT RECEIVED CORRECTLY. THE PROGRAM WILL MONITOR THE LINE FOR ENQ AND WHEN ENQ IS RECEIVED RE-TRANSMIT THE LAST ACKNOWLEDGEMENT (ACK OR NAK).

E160D OORR AAAA

CHARACTER PHASE WAS ESTABLISHED WHEN ATTEMPTING TO RECEIVE THE RFT MESSAGE, BUT THE MESSAGE DID NOT BEGIN WITH A VALID START OF TEXT SEQUENCE (SOH, STX, OR DLE STX). THIS IS AN INDICATION OF FALSE SYNCHRONIZATION. THE PROGRAM WILL ABORT SYNCHRONIZATION AFTER RECEIVING TWO CHARACTERS AND WILL THEN MONITOR FOR ENQ. WHEN ENQ IS RECEIVED THE LAST ACKNOWLEDGEMENT WILL BE RE-TRANSMITTED.

E160E OORR AAAA

THE PROGRAM WAS MONITORING THE LINE FOR ENQ FOLLOWING A PREVIOUS ERROR, BUT ENQ WAS NOT RECEIVED. THE PROGRAM WILL RETURN TO MONITORING FOR ENQ.

E160F OORR AAAA

THE RFT MESSAGE WAS RECEIVED WITH EITHER A BLOCK CHECK ERROR OR A FORMAT ERROR. A FORMAT ERROR OCCURS UNDER THE FOLLOWING CONDITIONS.

1. SOH WAS RECEIVED IN HEADING OR NORMAL TEXT
2. STX WAS RECEIVED IN NORMAL TEXT
3. ENQ OR EOT WAS RECEIVED IN HEADING OR NORMAL TEXT
4. DLE WAS RECEIVED IN TRANSPARENT TEXT AND WAS IMMEDIATELY FOLLOWED BY OTHER THAN DLE, SYN, ETX, ETB, OR ITB.

THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1610 OORR AAAA

WHILE ATTEMPTING TO RECEIVE THE RFT MESSAGE A MESSAGE WAS RECEIVED WHICH WAS NOT AN RFT MESSAGE (MESSAGE DID NOT BEGIN WITH SOH X). THE PROGRAM WILL TRANSMIT NAK AND AGAIN TRY TO RECEIVE THE RFT MESSAGE.

E1611 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED AN X FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT.

E1612 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A Y FIELD WHICH WAS NOT COMPOSED OF TWO DECIMAL DIGITS. THE PROGRAM WILL TRANSMIT NAK AND AGAIN ATTEMPT TO RECEIVE THE RFT MESSAGE.

E1613 OORR AAAA

THE RFT MESSAGE RECEIVED CONTAINED A X VALUE WHICH THE PROGRAM IS NOT CAPABLE OF RESPONDING TO. THE PROGRAM WILL TRANSMIT NAK AND ATTEMPT TO RECEIVE THE RFT AGAIN.

E1614 OORR AAAA

AFTER SUCCESSFULLY RECEIVING AND ACKNOWLEDGING THE RFT MESSAGE THE PROGRAM WAS EXPECTING THE EOT CHARACTER, BUT THE ENQ CHARACTER WAS RECEIVED. THIS INDICATES THAT THE REMOTE TERMINAL DID NOT RECEIVE THE LAST ACKNOWLEDGEMENT. THE PROGRAM WILL RE-TRANSMIT THE LAST ACKNOWLEDGEMENT.

E1615 OORR AAAA

EOT WAS NOT RECEIVED FOLLOWING THE RFT MESSAGE. THE PROGRAM WILL AGAIN ATTEMPT TO RECEIVE THE EOT CHARACTER.

E1616 OORR AAAA

REMOTE TERMINAL HAS BEEN RESPONDING FOR APPROXIMATELY 50 SECONDS WITH WAIT BEFORE ACKNOWLEDGE (WACK) COMMANDS. THE PROGRAM WILL TERMINATE.

E1618 OORR AAAA

AN INVALID SEQUENCE WAS RECEIVED IN RESPONSE TO AN RFT MESSAGE (RESPONSE OTHER THAN ACK,NAK,OR WACK).THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT ACKNOWLEDGEMENT BE REPEATED.

E1619 OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING THE RFT MESSAGE. THE PROGRAM WILL TRANSMIT ENQ TO REQUEST THAT THE ACKNOWLEDGEMENT BE REPEATED.

E161A OORR AAAA

THE WRONG ALTERNATE POSITIVE ACKNOWLEDGEMENT WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE IF A TIMEOUT OCCURED PREVIOUSLY, IF NO TIMEOUT OCCURED ENQ WILL BE TRANSMITTED.

E161B OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE. THIS INDICATES THAT THE RFT WAS RECEIVED BY THE REMOTE TERMINAL WITH A BCC ERROR. THE PROGRAM WILL RE-TRANSMIT THE RFT MESSAGE.

E161C OORR AAAA

EITHER NO RESPONSE OR A WACK RESPONSE WAS RECEIVED IN RESPONSE TO THE ENQ WHICH PRECEEDS THE TEST MESSAGES. THE PROGRAM WILL RE-TRANSMIT THE ENQ.

E161D OORR AAAA

NAK WAS RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E161E OORR AAAA

A RECEIVE TIMEOUT OCCURED AFTER TRANSMITTING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE WILL BE TRANSMITTED.

E1620 OORR AAAA

AN INVALID RESPONSE (NOT ACK,NAK OR WACK) RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE AND THE NEXT TEST MESSAGE TRANSMITTED.

E1621 OORR AAAA

NO ENQ WAS RECEIVED PRECEEDING THE TEST MESSAGES. THE PROGRAM WILL REQUEST A RE-TRANSMISSION OF THE ENQ.

E1622 OORR AAAA

A RECEIVE TIMEOUT OCCURED WHILE RECEIVING A TEST MESSAGE. THIS ERROR WILL BE LOGGED IN THE END OF TEST MESSAGE.

E1623 OORR AAAA

THE TEST MESSAGE RECEIVED DID NOT START WITH A VALID START OF TEXT CHARACTER (SOH, STX, OR DLE STX). THE PROGRAM WILL LOG THIS ERROR IN THE END OF TEST MESSAGE.

E1624 OORR AAAA

THE TEST MESSAGE WAS RECEIVED WITH A BCC OR FORMAT ERROR. THE PROGRAM WILL TRANSMIT NAK AND LOG THE ERROR IN THE END OF TEST MESSAGE. (SEE E160F FOR DEFINITION OF FORMAT ERROR).

E1625 OORR AAAA

NO EOT WAS RECEIVED FOLLOWING THE TEST MESSAGES. THE PROGRAM WILL IGNORE THIS ERROR.

4.3 TEXT PRINTOUT

IF FUNCTION 2 SWITCH 12 IS TURNED ON ALL TEXT AND CONTROL CHARACTERS WHICH ARE TRANSMITTED OR RECEIVED BY THE PROGRAM WILL BE PRINTED AT THE COMPLETION OF THE TEST.

IF FUNCTION 2 SWITCH 12 IS OFF BUT SWITCH 13 IS ON, ONLY THOSE MESSAGES OR CONTROL SEQUENCES WHICH WERE RECEIVED WITH AN ERROR INDICATION WILL BE PRINTED OUT.

ALL EBCDIC CHARACTERS WILL BE PRINTED IN HEXADECIMAL FORM. IN ADDITION TO THE HEX PRINTOUT, 5 ALPHA MESSAGES MAY ALSO BE PRINTED.

1. XMIT....THIS IS PRINTED AT THE START OF DATA TRANSMITTED.
2. RECV....THIS IS PRINTED AT THE START OF DATA RECEIVED.
3. TIMEOUT.THIS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT A RECEIVE TIMEOUT OCCURED.
4. ERR.....THIS IS PRINTED AT THE END OF DATA RECEIVED AND INDICATES THAT THE DATA RECEIVED WAS NOT AS EXPECTED.
5. CORE....THIS INDICATES THAT STORAGE OF DATA TRANSMITTED AND RECEIVED EXCEEDED AVAILABLE CORE STORAGE AND NO FURTHER DATA COULD BE STORED.

THE SCA HARDWARE AUTOMATICALLY REMOVES ALL SYNCHRONOUS IDLE CHARACTERS WHICH ARE RECEIVED PRECEEDING EACH MESSAGE. FOR THIS REASON RECEIVE PRINTOUTS WILL SHOW NO LEADING SYN CHARACTERS.

THE SCA HARDWARE AUTOMATICALLY INSERTS TWO SYN CHARACTERS PRECEEDING EACH TRANSMISSION AND THE PROGRAM INSERTS FOUR. FOR THIS REASON TRANSMIT PRINTOUTS WILL SHOW FOUR LEADING SYN CHARACTERS.

THE FOLLOWING IS A LIST OF POINTS TO CHECK IN THE TEXT PRINT WHICH MAY BE USEFUL IN DETERMINING THE CAUSE OF AN ERROR.

1. SOH (0100) MUST NOT APPEAR IN HEADING OR NORMAL TEXT (FORMAT ERR)
2. STX (0200) MUST NOT APPEAR IN NORMAL TEXT (FORMAT ERROR)
3. HEADING OR NORMAL TEXT MUST END WITH ETX (0300) OR ETB (2600) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERS.
4. SOH (0100) INDICATES THE START OF HEADING TEXT.
5. STX (0200) INDICATES THE START OF NORMAL TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
6. DLE STX (1000 0200) INDICATES THE START OF TRANSPARENT TEXT (THIS MAY APPEAR IMMEDIATELY FOLLOWING HEADING TEXT).
7. DLE (1000) MUST NOT APPEAR IN TRANSPARENT TEXT FOLLOWED BY ANY CHARACTER OTHER THAN SYN (3200), DLE (1000), ETB (2600), ETX (0300), OR ITB (1F00).
8. TRANSPARENT TEXT MUST END WITH DLE ETB (1000 2600) OR DLE ETX (1000 0300) FOLLOWED BY THE TWO BLOCK CHECK CHARACTERS.
9. SYN INSERTION--THE SYNCHRONOUS IDLE SEQUENCE MUST BE TRANSMITTED AT INTERVALS BY A TERMINAL TRANSMITTING LONG MESSAGES TO ENSURE THAT THE TERMINALS MAINTAIN CHARACTER SYNCHRONIZATION. THE SYNCHRONOUS IDLE SEQUENCE IS SYN SYN (3200 3200) FOR HEADING AND NORMAL TEXT AND DLE SYN (1000 3200) FOR TRANSPARENT TEXT. THE RATE OF INSERTION SHOULD BE NOMINALLY EVERY ONE SECOND FOR NORMAL TEXT AND EVERY 85 CHARACTERS FOR TRANSPARENT TEXT. THIS RATE WILL VARY WITH THE SETTING OF THE TRANSMIT TIMER FOR NORMAL TEXT AND THE PROGRAM TIMER FOR TRANSPARENT TEXT. THE 1130 TRANSMIT TIMER IS NORMALLY SET FOR 1.25 SECONDS AND THE PROGRAM TIMER FOR .35 SECONDS.
10. DLE (1000) MUST BE INSERTED FOLLOWING EACH DLE CHARACTER WHICH IS TRANSMITTED AS DATA IN TRANSPARENT TEXT.

5. COMMENTS

5.1 PROGRAM PHILOSOPHY

EACH TEST PERFORMED BY THE 1130 TRANSMIT/RECEIVE BSC PROGRAM CAN BE DIVIDED INTO TWO SEPARATE TEST PHASES. IN THE FIRST PHASE ONE OF THE TERMINALS TRANSMITS A REQUEST-FOR-TEST (RFT) MESSAGE TO REQUEST THAT A TEST PROCEDURE BE PERFORMED. THE RFT MESSAGE CONTAINS VARIOUS PARAMETERS WHICH DEFINE THE ACTION TO BE PERFORMED AND TEXT TO BE USED DURING THE TEST.. DURING THIS PHASE NORMAL BSC ERROR RECOVERY IS PERFORMED ON THE RFT MESSAGE. THE SECOND PHASE IS THE ACTUAL PERFORMANCE OF THE TEST AS DEFINED BY THE RFT MESSAGE. IF THE X FIELD IN THE RFT MESSAGE WAS 00 THEN THE RFT TRANSMITTER (THE REQUESTING TERMINAL) WILL TRANSMIT Y TEST MESSAGES. IF X WAS OTHER THAN 00 THEN THE RFT RECEIVER WILL TRANSMIT Y TEST MESSAGES, AND THE TEXT CONTAINED IN THE TEST MESSAGE WILL BE DETERMINED BY THE X VALUE. NO ERROR RECOVERY WILL BE PERFORMED ON TEST MESSAGES.

5.1.1 REQUEST-FOR-TEST MESSAGES

THE REQUEST FOR TEST MESSAGE HAS THE FORMAT..

S	A D S	D E B	NOTE..THE TEXT IS INCLUDED ONLY IF
O % X Y N D L T	TEXT	L T C	X=01, AND THE DLE CHARACTERS
H	R E X	E X C	ARE INCLUDED ONLY IF TRANSPARENT
			TEXT IS USED.

WHERE..

SOH% IDENTIFIES THE MESSAGE AS AN RFT MESSAGE

X IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH DEFINES THE ACTION TO BE PERFORMED DURING THE TEST AND/OR SPECIFIES THE TEST MESSAGE TO BE USED DURING THE TEST.

IF X=00 THEN THE RFT TRANSMITTER WILL TRANSMIT THE TEST MESSAGES.

IF X=01 THEN THE RFT RECEIVER WILL TRANSMIT TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE.

IF X=02-98 THE RFT RECEIVER WILL TRANSMIT THE TEST MESSAGE SPECIFIED BY THE X VALUE.

IF X=99 THE RFT RECEIVER WILL DELAY A MAXIMUM OF 1 MINUTE BEFORE RECEIVING TEXT FROM THE DATA TERMINAL (2770/2780)

Y IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH SPECIFIES THE NUMBER OF TEST MESSAGES TO BE TRANSMITTED.

THE N AND ADR FIELDS ARE USED FOR COMPONENT SELECTION IN A P-T-P CONFIGURATION. IF THE N FIELD IS NOT ZERO,THE COMPONENT SELECT CHARACTERS IN THE ADR FIELD WILL BE INSERTED IN PLACE OF THE SYN/SYN FOLLOWING THE STX FOR NON-TRANSPARENT MESSAGES (04,14,15,16)

5.1.2 TEST MESSAGES

THE FOLLOWING TEST MESSAGES ARE USED BY THIS PROGRAM

02-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 256 CHARACTERS L T C
E X 0 THROUGH 255 E X C

04-EBCDIC NORMAL TEXT

S S S TEXT SAME AS 02 EXCEPT E B
T Y Y CONTROL CHARACTERS ARE T C
X N N OMITTED 245 CHARACTERS X C

12-EBCDIC NORMAL TEXT (2780 PRINTER)

S E TEXT E B
T S / 36 CHARACTERS T C
X C A-Z AND 0-9 X C

13-EBCDIC NORMAL TEST (2780 PUNCH)

S E TEXT E B
T S 4 36 CHARACTERS T C
X C A-Z AND 0-9 X C

14-EBCDIC NORMAL TEXT

S S S TEXT E B
T Y Y 36 CHARACTERS T C
X N N A-Z AND 0-9 X C

15-EBCDIC NORMAL TEXT

S S S TEXT E B
T Y Y 74 CHARACTERS HEX 00 T C
X N N 6 CHARACTERS SYN X C

16-EBCDIC NORMAL TEXT

S S S TEXT E B
T Y Y 40 CHARACTERS HEX AA T C
X N N 40 CHARACTERS HEX 55 X C

19-EBCDIC TRANSPARENT TEXT

D S TEXT D E B
L T 280 CHARACTERS HEX 00 L T C
E X 10 CHARACTERS SYN E X C

20-EBCDIC TRANSPARENT TEXT

D S TEXT DEB
L T 80 CHARACTERS LTC
E X U-2,0-9,HEX 00-3F EXC

21-EBCDIC TRANSPARENT TEXT

D S TEXT DEB
L T 120 CHARACTERS LTC
E X A-2,0-9,HEX 00-53 EXC

22-EBCDIC TRANSPARENT TEXT

D S TEXT DEB
L T 144 CHARACTERS LTC
E X A-2,0-9,HEX 00-6B EXC

5.1.3 LINE CONTROL

THE FOLLOWING LINE CONTROL CHARTS SHOW THE NORMAL SEQUENCE OF CONTROL AND TEXT CHARACTERS TRANSMITTED BY EACH TERMINAL UNDER VARIOUS TEST CONDITIONS. THE EXAMPLES ALL ASSUME A Y VALUE OF ONE. THE DLE CHARACTERS ARE OMITTED FOR NON-TRANSPARENT TEXT. THE ACKO AND ACKI SHOWN IN THE CHARTS REPRESENT THE COMPLETE POSITIVE ACKNOWLEDGEMENT SEQUENCES. ACK O/I OR NAK RESPONSES TO TEXT MAY BE PRECEDED BY UP TO SEVEN LEADING GRAPHIC CHARACTERS. THESE CHARACTERS WILL BE PRINTED IN THE TEXT PRINTOUT BUT WILL OTHERWISE BE IGNORED BY THE PROGRAM.

FOR X=00

RFT	E	S	A	S	D	S	D	E	E
XMITTER	N	O% X Y N D T T	L T	TEXT	L T	O			
(RTNS 1-17)	Q	H	R X X	E X	E X				T

RFT	A		A		A				
RECEIVER	CO		C1		CO				
(RTN 18)	K		K		K				

FOR X=01

RFT	E	S	A	D	S	D	E	E	A	A
XMITTER	N	O% X Y N D L T	TEXT	L T	O	CO				C1
(RTNS 1-17)	Q	H	R E X	E X	T	K				K

RFT	A		A	E	D	S	D	E	E	
RECEIVER	CO		C1	N	L T	TEXT	L T	O		
(RTN 18)	K		K	Q	E X	E X				T

FOR X=02-98

RFT	E	S	A	S	E	A			A
XMITTER	N	O% X Y N D T T	O	CO					C1
(RTNS 1-17)	Q	H	R X X	T	K				K

RFT	A		A	E	D	S	D	E	E
RECEIVER	CO		C1	N	L T	TEXT	L T	O	
(RTN 18)	K		K	Q	E X	E X			T

FOR X=99

RFT	E	S	(D) S (D) E	E	OPERATOR	E	D	S	D	E	E
XMITTER	N	O%99Y0 (L) T (L) T	O-----N	L T	TEXT	L T	O				
(2780)	Q	H	(E) X (E) X	T	INTERVENTION	Q	E	X	E	X	T

RFT	A		A	(30 SECOND)	A				A
RECEIVER	CO		C1	(MINIMUM TIME)	CO				C1
(RTN 18)	K		K	(DELAY)	K				K

5.2 ROUTINE DESCRIPTIONS (REFER TO SECTION 3.2.2 TABLE FOR DETAIL)

ROUTINES 01-08(HEX)..TRANSMIT AN RFT MESSAGE WITH X=00 AND THEN TRANSMITS TEST MESSAGE (02-22) Y TIMES.

ROUTINES 0C-16(HEX)..TRANSMIT AN RFT MESSAGE WITH X= (02-22), THEN RECEIVES TEST MESSAGE (02-22) Y TIMES

RTN17..IS EXECUTED ONLY IF SELECTED BY FUNCTION 1. THIS ROUTINE NORMALLY WILL TRANSMIT AN RFT WITH X=00 AND THEN TRANSMIT A SCOPING PATTERN OF 80 HEX AA CHARACTERS Y TIMES. THIS RTN HAS ASSOCIATED WITH IT A 52 WORD TABLE IN CORE STORAGE WHICH MAY BE ALTERED TO PROVIDE RFT MESSAGES AND TEST MESSAGES WHICH ARE NOT PROVIDED BY ROUTINES 1-16. THIS TABLE IS ALTERED BY PROGRAM PATCH CARD (SEE DM DESCRIPTION). THE FIRST WORD OF THE TABLE CONTAINS THE X VALUE TO BE USED IN THE RFT MESSAGE TRANSMITTED BY ROUTINE 17. THIS VALUE IS ENTERED IN HEXADECIMAL FORM. THE SECOND WORD OF THE TABLE CONTAINS (IN HEX) THE COUNT OF ALL CHARACTERS INCLUDING CONTROL CHARACTERS IN THE TEXT PORTION OF THE TABLE. THE LAST 50 WORDS IN THE TABLE CONTAIN THE TEXT WHICH WILL BE USED IN THE TEST MESSAGES IF X=00 IS ENTERED, OR IN THE RFT MESSAGE IF X=01 IS ENTERED. IF ANY CONTROL CHARACTERS ARE TO BE USED IN THE TEXT OR IF LONG REPEATATIVE PATTERNS ARE USED THE TEXT MUST BE TRANSPARENT AND BEGIN WITH DLE STX AND END WITH DLE ETX. IF NORMAL TEXT IS USED IT MUST BEGIN WITH STX AND END WITH ETX. THE PROGRAM WILL SUPPLY ALL OTHER NECESSARY CONTROL CHARACTERS. THE STARTING ADDRESS OF THE TABLE IS 05E8. SEE SECTION 5.2.1 FOR SAMPLE PATCH CARDS.

WARNING ALTERATION OF TABLE WILL ALSO AFFECT OPERATION OF ROUTINE 18. SEE RTN 18 DESCRIPTION.

RTN18.ROUTINE 18 IS THE RFT RECEIVER ROUTINE. THIS ROUTINE WILL, WHEN SELECTED, CONTINUOUSLY MONITOR THE COMMUNICATIONS LINE UNTIL AN RFT MESSAGE IS RECEIVED. IF THE X VALUE IN THE RFT RECEIVED WAS 00 THIS ROUTINE WILL THEN ACCEPT Y TEST MESSAGES FROM THE REMOTE TERMINAL. IF THE X VALUE WAS 01 THIS ROUTINE WILL TRANSMIT Y TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE. IF THE X VALUE WAS 02 THRU 22 THIS ROUTINE WILL TRANSMIT THE TEST MESSAGE SPECIFIED Y TIMES. THIS ROUTINE HAS ASSOCIATED WITH IT A 52 WORD TABLE IN CORE STORAGE WHICH MAY BE ALTERED BY PROGRAM PATCH CARD TO ALLOW SERVICING OF RFT MESSAGES NOT NORMALLY ACCEPTED BY THE PROGRAM. THIS IS THE SAME TABLE WHICH IS USED BY ROUTINE 17 (SEE RTN 17 FOR TABLE DESCRIPTION). IF AN RFT MESSAGE IS RECEIVED WHICH CONTAINS AN X VALUE WHICH IS EQUAL TO THE X VALUE ENTERED IN THE FIRST WORD OF THE TABLE THEN THIS ROUTINE WILL TRANSMIT Y TEST MESSAGES CONTAINING THE TEXT ENTERED IN THE TABLE. WITH NO PATCH CARDS INSERTED THE TABLE CONTAINS AN X VALUE OF 00 AND A SCOPING PATTERN OF 80 HEX AA CHARACTERS.

SEE SECTION 5.2.1 FOR SAMPLE PATCH CARDS.
 WARNING ALTERATION OF TABLE WILL ALSO AFFECT OPERATION OF ROUTINE 17 SEE ROUTINE 17 DESCRIPTION.

ROUTINE 18 IS ALSO USED TO RESPOND TO A SPECIAL LINE CONTROL SEQUENCE (X=99) WHEN RECEIVING TRANSPARENT TEXT FROM A TERMINAL SUCH AS A 2780. ROUTINE 18 WILL RECOGNIZE AND RESPOND TO THE X=99 RFT. (REFER TO SECTION 5.1.3 FOR THE X=99 LINE SEQUENCE FORMAT)

5.2.1 DATA PATTERN TABLE (PATCH CARDS)

THE DATA PATTERN TABLE AT LOCATION 05E8 CAN BE MODIFIED TO PROVIDE DATA PATTERNS NOT FOUND IN X VALUES 02,04,12,13,14,15,16,19,20,21 AND 22. THE TABLE IS 52 WORDS IN LENGTH AND WILL AFFECT THE OPERATION OF ROUTINES 17 AND 18 (SEE ROUTINE DESCRIPTIONS FOR RTNS 17 AND 18).

PUNCH ALL PATCH CARDS STARTING IN COLUMN 1. THE & INDICATES A 12 PUNCH IN COLUMN 1. PATCH CARDS MUST BE PLACED AHEAD OF THE LAST CARD IN THE PROGRAM DECK.

THE FOLLOWING IS A SAMPLE PATCH CARD INPUT TO THE DATA PATTERN TABLE FOR A TRANSPARENT MESSAGE.

```
&05E8 00XX 0064 1002 ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ
&05F6 ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ
&0604 ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ
&0612 ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ ZZZZ 1003
```

XX= ANY X VALUE OTHER THAN 02,04,12,13,14,15,16,19,20,21 OR 22

ZZZZ= ANY HEX VALUE

TO CAUSE RTN 17 TO TRANSMIT AN RFT WITH X=01 AND RECEIVE TEST MESSAGES CONTAINING A SCOPING PATTERN OF 80 HEX AA CHARACTERS.

&05E8 0001

6. APPENDIX

6.1 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL CHARACTERS

BSC CHARACTER	HEX	MEANING
SYN	32	SYNCHRONOUS IDLE
DLE	10	DATA LINK ESCAPE
ENQ	2D	ENQUIRY
SOH	01	START OF HEADING
STX	02	START OF TEXT
ETB	26	END OF BLOCK
ETX	03	END OF TEXT
ITB	1F	INTERMEDIATE BLOCK CHARACTER
EOT	37	END OF TRANSMISSION
NAK	3D	NEGATIVE ACKNOWLEDGEMENT
ACK0	70	POSITIVE ACKNOWLEDGEMENT, EVEN RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
ACK1	61	POSITIVE ACKNOWLEDGEMENT, ODD RECORD (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
RVI	7C	REVERSE INTERRUPT (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)
WACK	6B	WAIT BEFORE TRANSMIT-POSITIVE ACK (CONTROL CHARACTER ONLY IF IN CONTROL SEQUENCE--SEE 6.2)

6.2 BINARY SYNCHRONOUS COMMUNICATIONS CONTROL SEQUENCES

BSC SEQUENCE	FUNCTION
SYN SYN	SYNCHRONOUS IDLE NORMAL
DLE SYN	SYNCHRONOUS IDLE TRANSPARENT TEXT
ENQ	ENQUIRY
SOH	START OF HEADING
STX	START OF NORMAL TEXT
DLE STX	START OF TRANSPARENT TEXT
ETB BCC	END OF HEADING OR NORMAL TEXT BLOCK
ITB BCC	END OF HEADING OR NORMAL TEXT INTERMEDIATE BLOCK
ETX BCC	END OF HEADING OR NORMAL TEXT
DLE ETB BCC	END OF TRANSPARENT TEXT BLOCK
DLE ITB BCC	END OF TRANSPARENT TEXT INTERMEDIATE BLOCK
DLE ETX BCC	END OF TRANSPARENT TEXT
DLE ACK0	POSITIVE ACKNOWLEDGEMENT EVEN RECORD
DLE ACK1	POSITIVE ACKNOWLEDGEMENT ODD RECORD
DLE RVI	REVERSE INTERRUPT
STX ENQ	TEMPORARY TEXT DELAY (TTD)
NAK	NEGATIVE ACKNOWLEDGEMENT
EOT	END OF TRANSMISSION
DLE EOT	DISCONNECT SIGNAL
DLE WACK	POSITIVE ACKNOWLEDGEMENT BUSY RESPONSE

----- LAST PAGE -----


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0634 1 6F00 1128      STX L3 $IBSY      CLEAR BSY SWITCH      31601380
*
*                      CHECK FOR MEMORY SPEED      31601390
*                      31601400
*                      31601410
0636 0 C480 0167      ZYES LD I LOGBY      GET TYPEWRITER USER SW  31601420
0638 0 4818           BSC E-              IS TYPEWRITER IN USE  31601430
0639 0 7006           MDX ZOKAY          * NO                    31601440
*                      31601450
*                      31601460
063A 1 6700 0636      LDX L3 ZYES         GET MLSCF ENTER AND GO  31601470
063C 1 6F00 05E5      STX L3 MLSCF        * TO MONITOR           31601480
063F 0 4480 0161      BSI I START        *                      31601490
*                      31601500
*                      31601510
0640 0 0813           ZOKAY XIO ZDSW       SENSE TYPEWRITER DSW  31601520
0641 0 1004           SLA 4              IS TYPEWRITER BUSY    31601530
0642 0 4828           BSC EZ             * YES                  31601540
0643 0 70F2           MDX ZYES           SET USER SWITCH       31601550
0644 0 6C80 0167      STX I LOGBY        GET INTR RTN ADRS AND  31601560
0646 1 6700 0657      LDX L3 ZINT        * SET IN MONITOR      31601570
0648 0 6F00 01BB      STX L3 RQTY        GET TIME CONSTANT     31601580
064A 0 6700 0F00      LDX L3 /OF00       *                      31601590
*                      31601600
*                      31601610
064C 0 0805           XIO ZSHFT          SHIFT RIBBON FOR TIMING 31601620
*                      31601630
*                      31601640
064D 0 73FF           MDX 3 -1           REDUCE COUNT           31601650
064E 0 70FE           MDX *-2           *                      31601660
064F 0 6B04           STX 3 ZDSW         SET MEMORY SW FOR 2 MIC 31601670
0650 0 70E5           MDX ZYES          GO WAIT FOR INTR      31601680
*                      31601690
*                      31601700
0652 0000            BSS E 0           ZSHFT DC ZCODE      SHIFT CODE ADRS       31601710
0652 1 0656           DC /0900          TYPEWRITER IOCC       31601720
0653 0 0900           ZDSW DC /0004     ZER/ IS 2 MIC MEMORY  31601730
0654 0 0004           DC /0F01          SENSE DSW IOCC        31601740
0655 0 0F01           ZCODE DC /0900    SHIFT TO RED RIBBON   31601750
0656 0 0900           *
*                      31601760
*                      31601770
*                      31601780
*                      31601790
*                      31601800
*                      31601810
*                      31601820
*                      31601830
*                      31601840
*                      31601850
*                      31601860
*                      31601870
*                      31601880
*                      31601890
*                      31601900
*                      31601910
*                      31601920
*                      31601930
*                      31601940
*                      31601950
*                      31601960
*                      31601970
*                      31601980
*                      31601990
*                      31602000
*                      31602010
*                      31602020
*                      31602030
*                      31602040
*                      31602050
0657 0 0000           ZINT DC **-*      INTR ENTRY            31601750
0658 0 08FB           XIO ZDSW          RESET DEVICE           31601760
0659 0 1010           SLA 16           CLEAR ACC AND USER   31601770
065A 0 D480 0167      STO I LOGBY      * SWITCH              31601780
065C 1 4C40 065E      BOSC L *         RESET INTR LEVEL      31601790
065E 0 C0F5           LD ZDSW          31601800
065F 1 4C18 0664      BSC L CNTRL,+--  BR IF 2 MIC           31601810
0661 0 6311           LDX 3 17         31601820
0662 1 6F00 093A      STX L3 XPD1+1    SET DELAY FOR 3.6 MIC 31601830
*                      31601840
*                      31601850
*                      31601860
*                      31601870
*                      31601880
*                      31601890
*                      31601900
*                      31601910
*                      31601920
*                      31601930
*                      31601940
*                      31601950
*                      31601960
*                      31601970
*                      31601980
*                      31601990
*                      31602000
*                      31602010
*                      31602020
*                      31602030
*                      31602040
*                      31602050
0664 1 C400 13DC      CNTRL LD L SYSYN   INITIAL SELECT        31601930
0666 1 D400 1425      STO L SELCT      31601940
0668 1 C400 05E1      LD L SW2         31601950
066A 0 100A           SLA 10          31601960
066B 1 D400 13CB      STO L IDFLG      SAVE ID INDICATOR     31601970
066D 0 6700 1FFE      LDX L3 /1FFE     31601980
066F 1 6F00 13C2      STX L3 TOP       SET HIGH CORE LIMIT   31601990
0671 0 1005           SLA 5           CHECK OPTION SWITCH   31602000
0672 1 EC00 05F0      OR L SW1         31602010
0674 1 D400 13CD      STO L OPTIN      SAVE RTN NO AND OPTION 31602020
0676 1 4C10 067C      BSC L CN00,-    BR IF RFT XMITTER     31602030
*                      31602040
*                      31602050
0678 0 6318           LDX 3 24        31602050

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0679 1 6F00 05DD      STX L3 RID       SELECT RTN 18         31602060
067B 0 7015           MDX CN30         CN30                 31602070
*                      31602080
*                      31602090
067C 1 C400 05E0      CN00 LD L SW1     BR IF NO RTN SELECTED 31602100
067E 1 4C08 068A      BSC L CN20,E     31602110
*                      31602120
*                      31602130
0680 1 D400 05DD      CN10 STO L RID    SAVE NEW RTN NUMBER   31602140
0682 0 9034           S RIDCK          31602150
0683 1 4C08 0691      BSC L CN30,E     BR IF VALID RTN      31602160
*                      31602170
*                      31602180
0685 0 1810           SRA 16          IF INVALID RTN       31602190
0686 1 D400 05E0      STO L SW1        GO TO RTN ONE        31602200
0688 1 D400 05DD      STO L RID        31602210
*                      31602220
*                      31602230
068A 1 7401 05DD      CN20 MDX L RID,E1 ADVANCE TO NEXT RTN  31602240
068C 1 C400 05DD      LD L RID         CHECK FOR END OF     31602250
068E 0 9029           S RTNOM          NORMAL SEQUENCE     31602260
068F 0 4480 0164      BSI I END,-Z    END PROGRAM          31602270
*                      31602280
*                      31602290
0691 1 6780 05DD      CN30 LDX I3 RID  .    31602300
0693 1 C700 069E      LD L3 RTTBL-1   FETCH RTN ADRS      31602310
0695 1 D400 05DE      STO L RAD        STORE RTN ADDR       31602320
0697 0 D400 0165      STO L RTNSW     SET RTN START SWITCH 31602330
0699 1 6700 06CE      LDX L3 CLEAR    31602340
069B 1 6F00 05E5      STX L3 MLSCF    SET MONITOR RETURN   31602350
069D 0 4480 0161      BSI I START     GO TO MONITOR        31602360
*                      31602370
*                      31602380
*                      31602390
*                      31602400
*                      31602410
*                      31602420
*                      31602430
*                      31602440
*                      31602450
*                      31602460
*                      31602470
*                      31602480
*                      31602490
*                      31602500
*                      31602510
*                      31602520
*                      31602530
*                      31602540
*                      31602550
*                      31602560
*                      31602570
*                      31602580
*                      31602590
*                      31602600
*                      31602610
*                      31602620
*                      31602630
*                      31602640
*                      31602650
*                      31602660
*                      31602670
*                      31602680
*                      31602690
*                      31602700
*                      31602710
*                      31602720
*                      31602730

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ROUTINE ADDRESS TABLE

```

069F 1 06FD          RTTBL DC RTN1      XMIT RFT X=00 TM=02  31602350
06A0 1 0704          DC RTN2        XMIT RFT X=00 TM=04  31602360
06A1 1 0708          DC RTN3        XMIT RFT X=00 TM=12  31602370
06A2 1 0716          DC RTN4        XMIT RFT X=00 TM=13  31602380
06A3 1 071E          DC RTN5        XMIT RFT X=00 TM=14  31602390
06A4 1 0725          DC RTN6        XMIT RFT X=00 TM=15  31602400
06A5 1 072D          DC RTN7        XMIT RFT X=00 TM=16  31602410
06A6 1 0734          DC RTN8        XMIT RFT X=00 TM=19  31602420
06A7 1 073B          DC RTN9        XMIT RFT X=00 TM=20  31602430
06A8 1 0743          DC RTNA        XMIT RFT X=00 TM=21  31602440
06A9 1 0748          DC RTNB        XMIT RFT X=00 TM=22  31602450
06AA 1 0753          DC RTNC        XMIT RFT X=02        31602460
06AB 1 0755          DC RTND        XMIT RFT X=04        31602470
06AC 1 0757          DC RTNE        XMIT RFT X=12        31602480
06AD 1 0759          DC RTNF        XMIT RFT X=13        31602490
06AE 1 075B          DC RTN10       XMIT RFT X=14        31602500
06AF 1 075D          DC RTN11       XMIT RFT X=15        31602510
06B0 1 075F          DC RTN12       XMIT RFT X=16        31602520
06B1 1 0761          NRTN DC RTN13     XMIT RFT X=19        31602530
06B2 1 0763          DC RTN14       XMIT RFT X=20        31602540
06B3 1 0765          DC RTN15       XMIT RFT X=21        31602550
06B4 1 0767          DC RTN16       XMIT RFT X=22        31602560
06B5 1 0771          DC RTN17       XMIT RFT SPECIAL    31602570
06B6 1 077B          LRTN DC RTN18   RFT RECEIVER RTN    31602580
*                      31602590
*                      31602600
06B7 0 0018          RIDCK DC LRTN-RTTBL&1 31602610
06B8 0 0013          RTNOM DC NRTN-RTTBL&1 31602620
*                      31602630
*                      31602640
*                      31602650
*                      31602660
*                      31602670
*                      31602680
*                      31602690
*                      31602700
*                      31602710
*                      31602720
*                      31602730
06B9 0 0000          XMTID DC **-*    ENQ OR ACKO CMD     31602700
06BA 1 C480 06B9      LD I XMTID      8                    31602710
06BC 0 1888          SRT 8           LAST ID HEADER CHAR 31602720
06BD 1 C400 0625      LD L IDRSP+8    8                    31602730
06BF 0 1808          SRA 8           31602730

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06C0 0 18D8
06C1 1 0400 0625
06C3 0 E3F7
06C4 0 F3EF
06C5 1 0400 061D
06C7 1 4400 09FC
06C9 1 861D
06CA 1 7404 06B9
06CC 1 4C80 06B9
*
*****
* CLEAR END OF TEST PRINT TABLE
*****
*
CLEAR LDX L3 T          XR3#CONSTANT TABLE ADDR
BSI L INITL           INITIALIZE ACKO/ACK1
LDX 3 20              CLEAR END OF
SLA 16                TEST
STO L3 TABLE-1      MESSAGE
MDX 3 -1              TABLE
MDX *-4
STO L ENTBL
STO L ENTBL+1
LDX L3 T              XR3=CONSTANT TABLE ADDR
STO 3 ERRNO-T        RESET ERROR IND
STO 3 TMXMI-T        RESET TEST MSG XMIT IND
STO 3 TMRCI-T        RESET TEST MSG RCV IND
LD 3 ENADR-T
STO 3 ENPNT-T
STO 3 CNTPT-T
STO 3 ENPT2-T
*
*****
* WAIT FOR DATA SET READY
*****
*
GTRDY LD 3 H7000-T    SET DELAY COUNTER
STO 3 WTCNT-T        END SCA OPERATION
XIO 3 ENDOP-T        START READ
XIO 3 STRED-T        SENSE SCA DSW
SRA 8                GO TO SELECTED ROUTINE
BSC I RAD,E          IF DATA SET READY
*
MDX L WTCNT,-1       DECRE COUNT BY ONE
MDX **+              BR IF COUNT NOT ZERO
LDX 2 1              XR2=MSG NUMBER
BSI L TYPIT          GO PRINT MSG
MDX GTRDY            GO CK READY AGAIN
*
LDX L3 CKRDY
STX L3 MLSCF        SET MONITOR RETURN
BSI I START         GO TO MONITOR
*
CKRDY LDX L3 T       XR3#CONSTANT TBL ADDR
MDX GTRDY&2
*
*****
* TEST ROUTINE 1
*****
*
RTN1 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD 3 H0002-T        TEST MSG NO. 02
MDX RTN3+6
*
*****

```

```

06CE 1 6700 1424
06D0 1 4400 0864
06D2 0 6314
06D3 0 1010
06D4 1 0700 142C
06D6 0 73FF
06D7 0 70FC
06D8 1 0400 15D5
06DA 1 0400 15D6
06DC 1 6700 1424
06DE 0 D3A6
06DF 0 D3A2
06E0 0 D3A1
06E1 0 C3AE
06E2 0 D3A0
06E3 0 D39F
06E4 0 D3AC

```

```

06E5 0 C3FB
06E6 0 D398
06E7 0 0B8C
06E8 0 08C6
06E9 0 08D0
06EA 0 1808
06EB 1 4C84 05DE

```

```

06ED 1 74FF 13BC
06FF 0 7004
06F0 0 6201
06F1 1 4400 0A6E
06F3 0 70F1

```

```

06F4 1 6700 06FA
06F6 1 6F00 05F5
06F8 0 4480 0161

```

```

06FA 1 6700 1424
06FC 0 70FA

```

```

06FD 0 1010
06FE 1 4400 085B
0700 1 4400 0899
0702 0 C3F5
0703 0 700D

```

```

0704 0 1010
0705 1 4400 085B
0707 1 4400 0899
0709 0 C3C6
070A 0 7006

```

```

070B 0 1010
070C 1 4400 085B
070E 1 4400 0899
0710 0 C004
0711 1 4400 0BAE
0713 1 4C00 08FA
0715 0 000C

```

```

0716 0 1010
0717 1 4400 085B
0719 1 4400 0899
0718 0 C001
071C 0 70F4
071D 0 000D

```

```

071E 0 1010
071F 1 4400 085B
0721 1 4400 0899
0723 0 C3BC
0724 0 70EC

```

```

0725 0 1010
0726 1 4400 085B
0728 1 4400 0899
072A 0 C001
072B 0 70E5
072C 0 000F

```

```

072D 0 1010
072E 1 4400 085B
0730 1 4400 0899
0732 0 C3CF
0733 0 70DD

```

```

* TEST ROUTINE 2
*****
RTN2 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD 3 H0004-T        TEST MSG NO. 04
MDX RTN3+6
*
*****
* TEST ROUTINE 3
*****
RTN3 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD D12              TEST MSG NO. 12
*
BSI L GNTM          GO GENERATE TEST MSG
BSC L XMTM1         GO XMIT TEST MSGS
D12 DC /000C
*
*****
* TEST ROUTINE 4
*****
RTN4 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD D13              TEST MSG NO. 13
MDX RTN3+6
D13 DC /000D
*
*****
* TEST ROUTINE 5
*****
RTN5 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD 3 D14-T          TEST MSG NO. 14
MDX RTN3+6
*
*****
* TEST ROUTINE 6
*****
RTN6 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD D15              TEST MSG NO. 15
MDX RTN3+6
D15 DC /000F
*
*****
* TEST ROUTINE 7
*****
RTN7 SLA 16          X VALUE 00
BSI L GNRFT         GO GENERATE RFT MSG
BSI L XMRFT         GO XMIT RFT MSG
LD 3 D16-T          TEST MSG NO. 16
MDX RTN3+6
*
*****
* TEST ROUTINE 8
*****

```

```

0734 0 1010 RTN8 SLA 16 X VALUE 00 31604100
0735 1 4400 085B RSI L GNRFT GO GENERATE RFT MSG 31604110
0737 1 4400 0899 BSI L XMRFT GO XMIT RFT MSG 31604120
0739 0 C3D0 LD 3 D19-T TEST MSG NO. 19 31604130
073A 0 70D6 MDX RTN3+6 31604140
***** 31604150
* TEST ROUTINE 9 31604160
***** 31604170
073B 0 1010 RTN9 SLA 16 X VALUE 00 31604180
073C 1 4400 085B RSI L GNRFT GO GENERATE RFT MSG 31604190
073E 1 4400 0899 BSI L XMRFT GO XMIT RFT MSG 31604200
0740 0 C001 LD D20 TEST MSG NO. 20 31604210
0741 0 70CF MDX RTN3+6 31604220
0742 0 0014 D20 DC /0014 31604230
***** 31604240
* TEST ROUTINE A 31604250
***** 31604260
0743 0 1010 RTNA SLA 16 X VALUE 00 31604270
0744 1 4400 085B BSI L GNRFT GO GENERATE RFT MSG 31604280
0746 1 4400 0899 BSI L XMRFT GO XMIT RFT MSG 31604290
0748 0 C001 LD D21 TEST MSG NO. 21 31604300
0749 0 70C7 MDX RTN3+6 31604310
074A 0 0015 D21 DC /0015 31604320
***** 31604330
* TEST ROUTINE B 31604340
***** 31604350
074B 0 1010 RTNB SLA 16 X VALUE 00 31604360
074C 1 4400 085B BSI L GNRFT GO GENERATE RFT MSG 31604370
074E 1 4400 0899 BSI L XMRFT GO XMIT RFT MSG 31604380
0750 0 C001 LD D22 TEST MSG NO. 22 31604390
0751 0 70BF MDX RTN3+6 31604400
0752 0 0016 D22 DC /0016 31604410
***** 31604420
* TEST ROUTINE C 31604430
***** 31604440
0753 0 C3E5 RTNC LD 3 H0002-T X VALUE 02 31604450
0754 0 7013 MDX RTN16+1 31604460
***** 31604470
* TEST ROUTINE D 31604480
***** 31604490
0755 0 C3C6 RTND LD 3 H0004-T X VALUE 04 31604500
0756 0 7011 MDX RTN16+1 31604510
***** 31604520
* TEST ROUTINE E 31604530
***** 31604540
0757 0 C0BD RTNE LD D12 X VALUE 12 31604550
0758 0 700F MDX RTN16+1 31604560
***** 31604570
* TEST ROUTINE F 31604580
***** 31604590
0759 0 C0C3 RTNF LD D13 X VALUE 13 31604600
075A 0 70DD MDX RTN16+1 31604610
***** 31604620
* TEST ROUTINE 10 31604630
***** 31604640
075B 0 C3BC RTN10 LD 3 D14-T X VALUE 14 31604650
075C 0 70DB MDX RTN16+1 31604660
***** 31604670
* TEST ROUTINE 11 31604680
***** 31604690
075D 0 C0CE RTN11 LD D15 X VALUE 15 31604700
075E 0 70D9 MDX RTN16+1 31604710
***** 31604720
* TEST ROUTINE 12 31604730
***** 31604740
075F 0 C3CF RTN12 LD 3 D16-T X VALUE 16 31604750
0760 0 70D7 MDX RTN16+1 31604760
***** 31604770

```

```

0761 0 C3D0
0762 0 7005
0763 0 CODE
0764 0 7003
0765 0 C0E4
0766 0 7001
0767 0 C0EA
0768 1 4400 085B
076A 1 4400 0899
076C 1 4400 09FC
076E 1 1406
076F 1 4C00 0946
0771 1 C400 05E8
0773 1 4C20 0768
0775 1 4400 085B
0777 1 4400 0899
0779 0 1010
077A 0 7096
077B 1 4400 09FC
077D 0 8000
077E 0 C31F
077F 0 F3E8
0780 1 4C20 078A
0782 0 C3CA
0783 0 D397
0784 0 C3F0
0785 0 D3A8
0786 0 C303
0787 1 4C28 081D
0789 0 7009
078A 0 6100
078B 0 6202
078C 1 4400 0821
078E 0 C303
078F 1 4C28 06E5
0791 1 4C00 06D2
0793 0 C3A7
0794 1 4428 06B9
0796 0 1010
0797 1 4400 09FC
0799 1 9409
079A 0 C390
079B 0 F3F6
079C 1 4C18 0789
079E 1 7400 13A9
07A0 0 701A

```

```

* TEST ROUTINE 13 31604780
***** 31604790
RTN13 LD 3 D19-T X VALUE 19 31604800
MDX RTN16+1 31604810
***** 31604820
* TEST ROUTINE 14 31604830
***** 31604840
RTN14 LD D20 X VALUE 20 31604850
MDX RTN16+1 31604860
***** 31604870
* TEST ROUTINE 15 31604880
***** 31604890
RTN15 LD D21 X VALUE 21 31604900
MDX RTN16+1 31604910
***** 31604920
* TEST ROUTINE 16 31604930
***** 31604940
RTN16 LD D22 X VALUE 22 31604950
BSI L GNRFT GO GENERATE RFT MSG 31604960
BSI L XMRFT GO XMIT RFT MSG 31604970
BSI L XMRCV TRANSMIT EOT 31604980
DC EOTCT 31604990
BSC L RCVTM GO RECEIVE TEST MSGS 31605000
***** 31605010
* TEST ROUTINE 17 31605020
***** 31605030
RTN17 LD L XSPEC GET X VALUE 31605040
BSC L RTN16+1,Z BR IF NOT 00 31605050
BSI L GNRFT GO GENERATE RFT MSG 31605060
BSI L XMRFT GO XMIT RFT MSG 31605070
SLA 16 31605080
MDX RTN3+6 31605090
***** 31605100
* TEST ROUTINE 18 31605110
***** 31605120
RTN18 BSI L XMRCV RECEIVE 31605130
DC /8000 31605140
LD 3 RAREAG1-T 31605150
EOR 3 ENQ-T 31605160
BSC L NOENQ,Z BR IF NOT ENQ RECEIVED 31605170
* 31605180
LD 3 H0007-T 31605190
STO 3 RETRY-T SET RETRY=7 31605200
LD 3 D25-T 31605210
STO 3 REWAK-T SET WACK CTR = 25 31605220
LD 3 ENQSW-T CHECK FOR X=99 MODE 31605230
BSC L EXIT8+2,Z+ BR IF X=99 MODE 31605240
MDX XMACK 31605250
***** 31605260
NOENQ LDX 1 0 31605270
LDX 2 2 XR2=MSG NUMBER 31605280
BSI L CKRTR GO CHECK RETRY COUNT 31605290
LD 3 ENQSW-T 31605300
BSC L GTRDY,Z+ BR IF X=99 MODE 31605310
BSC L CLEAR&4 31605320
* 31605330
XMACK LD 3 IDFLG-T ID REQUIRED FLAG 31605340
BSI L XMTID,Z& GO XMIT ID IF REQUESTED 31605350
SLA /10 ACK CMD IF NEEDED 31605360
* 31605370
BSI L XMRCV TRANS ACK WITHOUT ID 31605380
DC LSTAK&/8000 AND RECEIVE RFT 31605390
LD 3 BUFFER-T 31605400
EOR 3 HFFFF-T 31605410
BSC L TMOT,&- BR IF RECV TIMEOUT 31605420
* 31605430
MDX L MDSWT SKIP IF NO TEXT RCVD 31605440
MDX TEXTR BR IF TEXT RECEIVED 31605450

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*
07A1 0 C31F      LD      3 RAREA&1-T
07A2 0 F3E8      EOR     3 ENQ-T
07A3 1 4C18 07B5 BSC    L  ENQRC,&-  BR IF FNO RECEIVED
*
07A5 1 4400 0879 BSI    L  EOTCK      GO CK FOR EOT RCVD
*
07A7 0 610D      LDX    1 /D
07A8 0 62C3      LDX    2 3          XR2=MESSAGE NUMBER
07A9 0 4077      BSI    CKRTR      GO TO CK RETRY
07AA 1 4400 09FC RCENQ  BSI    L  XMRCV    RECEIVE
07AC 0 8000      DC     /8000
07AD 0 C31F      LD      3 RAREA&1-T
07AE 0 F3F8      EOR     3 FNO-T
07AF 1 4C18 0793 BSC    L  XMACK,&-  BR IF ENQ RECEIVED
*
07B1 1 4400 0879 BSI    L  EOTCK      GO CK FOR EOT RCVD
*
07B3 0 610F      LDX    1 /E
07B4 0 70F3      MDX    RCENQ-2
*
07B5 0 610B      ENQRC LDX    1 /B
07B6 0 6203      LDX    2 3          XR2=MESSAGE NUMBER
07B7 0 4069      BSI    CKRTR      GO TO CK RETRY
07B8 0 70DA      MDX    XMACK
*
07B9 0 610C      TMOT  LDX    1 /C
07BA 0 70ED      MDX    RCENQ-2
*
07BB 0 1810      TEXTR SRA     16
07BC 0 D3A7      STO    3 IDFLG-T   RESET ID REQ FLAG
07BD 0 C386      LD     3 ERR-T
07BE 1 4C18 07C2 BSC    L  **2,+--  BR IF NO TEXT ERRORS
*
07C0 0 610F      LDX    1 /F
07C1 0 7051      MDX    XMNAK
*
07C2 0 C31F      LD      3 RAREA&1-T
07C3 0 F3DF      EOR     3 SOHPC-T
07C4 1 4C18 07C8 BSC    L  **2,+--  BR IF RFT MESSAGE
*
07C6 0 6110      LDX    1 /10
07C7 0 7051      MDX    BDRFT
*
07C8 0 C3B8      LD      3 SYSN-T
07C9 0 D301      STO    3 SELCT-T   INITIALIZE SELECT LOC.
07CA 0 C822      LDD    3 RAREA+4-T GET N CHARACTER
07CB 0 1084      SLT    4           TRUNCATE ZONE
07CC 0 188C      SRT    12          POSITION N CHARACTER
07CD 1 4C18 07D8 BSC    L  NOESC,+-- BR IF N IS ZERO
07CE 0 93F7      S      3 H0001-T   CHECK FOR TWO SEL CHAR
07CF 1 4C20 07D6 BSC    L  FSC2,Z    BR IF TWO SEL CHAR
07D0 0 1088      SLT    8           BRING IN ONE SEL CHAR
07D1 0 1008      SLA    8           POSITION SEL CHAR
07D2 0 EB00      DR     3 KSYN-T    ADD SYN CHAR
07D3 0 7001      MDX    ESC2+1     GO SFT SEL CHAR
07D4 0 1090      ESC2  SLT    16    BRING IN 2 SFL CHAR
07D5 0 D301      STO    3 SELCT-T   SET SFLECT SEQUENCE
07D6 0 C321      LD     3 RAREA+3-T GET Y VALUE FROM RFT
07D7 1 4400 085A BSI    L  DTB       CONVERT TO BINARY
07D8 0 D30F      STO    3 TABLE+6-T PUT IN PRINT TABLE
07D9 0 93D2      S      3 D99-T
07DA 1 4C08 07F1 BSC    L  **2,+    BR IF Y NOT OVER 99
*
07DF 0 6112      LDX    1 /12
07E0 0 7038      MDX    BDRFT
*
07E1 0 C320      LD      3 RAREA&2-T GET X FROM RFT MSG

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31605460
31605470
31605480
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31605500
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31605690
31605700
31605710
31605720
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31605750
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31605800
31605810
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31605900
31605910
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31605950
31605960
31605970
31605980
31605990
31606000
31606010
31606020
31606030
31606040
31606050
31606060
31606070
31606080
31606090
31606100
31606110
31606120
31606130

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07E2 0 4077
07E3 0 D30E
07E4 0 93D2
07E5 1 4C08 07E9
*
07E7 0 6111
07E8 0 7030
*
07E9 1 4C20 07F2
07EB 0 C000
07EC 1 D400 09EB
07EE 0 D302
07EF 0 407F
07F0 1 4C00 09CC
07F2 1 C400 1432
07F4 0 D302
07F5 1 D400 09EB
07F7 1 4C18 081B
*
07F9 1 4400 08AF
07FB 0 4072
07FC 1 4400 09FC
07FE 1 9409
07FF 0 C31F
0800 0 F3E3
0801 1 4C18 08E7
*
0803 0 4075
*
0804 0 C31F
0805 0 F3E8
0806 1 4C20 080C
*
0808 0 6114
0809 0 6203
080A 0 4016
080B 0 70F0
*
080C 0 6115
080D 0 6203
080E 0 4012
080F 1 4400 09FC
0811 0 8000
0812 0 70EC
*
0813 0 6203
0814 0 400C
0815 0 C3E4
0816 0 D3E6
0817 1 4C00 0793
*
0819 0 6206
081A 0 70F9
*
081B 0 C30F
081C 0 D3A5
081D 0 C000
081E 0 D3A1
081F 1 4C00 0976
*
0821 0 0000
0822 1 6000 13CA
0824 1 6F00 13CF
0826 1 C400 05F1

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BSI    DTB       CONVERT TO BINARY
STO    3 TABLE+5-T PUT IN PRINT TABLE
S      3 D99-T
BSC    L  **2,+    BR IF X NOT OVER 99
*
LDX    1 /11
MDX    BDRFT
*
BSC    L  GETX,Z    BR IF NOT X=99
LD     *
STO    L  EOTSW     SET EOT SW
STO    3 SX99-T     SET 2780 MODE INDICATOR
BSI    ALTNT       ALTERNATE ACKS
BSC    L  END2      GO CHECK FOR EOT CHAR
GETX  LD     L  TABLE+5 GET X VALUE
STO    3 SX99-T     RESET 2780 SWITCH
STO    L  EOTSW     RESET 2780 EOT SWITCH
BSC    L  EXIT8,+-- BR IF X=00
*
BSI    L  GNTM      GO GENERATE TEST MSG
BSI    ALTNT       ALTERNATE ACKS
XMAK2 BSI    L  XMRCV    XMIT ACKNOWLEDGEMENT
DC     LSTAK&/8000 AND RECEIVE MSG
LD     3 RAREA&1-T
EOR    3 EOT-T
BSC    L  XMTM,+-- BR IF EOT RECEIVED
*
BSI    EOTCK      GO CK FOR DISCONNECT
*
LD     3 RAREA&1-T
EOR    3 ENQ-T
BSC    L  **4,Z    BR IF NOT ENQ RECEIVED
*
LDX    1 /14
LDX    2 3          XR2=MESSAGE NUMBER
BSI    CKRTR      GO TO CK RETRY
MDX    XMAK2
*
LDX    1 /15
LDX    2 3          XR2=MESSAGE NUMBER
BSI    CKRTR      GO TO CK RETRY
BSI    L  XMRCV    RECEIVE
DC     /8000
MDX    XMAK2&3
*
XMAK  LDX    2 3          XR2=MESSAGE NUMBER
BSI    CKRTR      GO TO CK RETRY
LD     3 NAK-T     SET UP TO
STO    3 LSTAK&1-T XMIT NAK
BSC    L  XMACK
*
BDRFT LDX    2 6          XR2=MESSAGE NUMBER
MDX    XMNAK+1
*
EXIT8 LD     3 TABLE+6-T GET Y VALUE
STO    3 YCNT-T     SET Y COUNTER
LD     *
STO    3 TMRCI-T    SET TEST MSG RCV IND
BSC    L  RTMSG     GO TO RECEIVE TEST MSGS
*
*****
*
CHECK RETRY COUNTER
*****
*
CKRTR DC     **
STX    L1 ERRNO     STORE ERROR NUMBER
STX    L2 TYPE      SAVE MESSAGE NUMBER
LD     L  SW2

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31606140
31606150
31606160
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31606180
31606190
31606200
31606210
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31606270
31606280
31606290
31606300
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31606380
31606390
31606400
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31606690
31606700
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31606740
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31606760
31606770
31606780
31606790
31606800
31606810

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0828 0 100F          SLA      15
0829 1 EC00 05F0    OR       L SW1          31606820
082R 0 F3A9         FOR      3 OPTIN-T   31606830
082C 1 4C20 062A    BSC     L STRT,Z      BR IF OPTION CHANGE 31606840
*
082E 1 7400 13A8    MDX     L MSWAK        WAS LAST ACK A WACK 31606850
0830 0 700A        MDX     WACKR          YES, SFE IF # 25    31606860
0831 0 C3B1        LD      3 MSG4-T      GET MSG ADDRS       31606870
0832 1 4400 0DF7    BSI     L STALP        GO STORE IN PRINT TBL 31606880
0834 0 C397        LD      3 REPLY-T     31606890
0835 0 93E7        S       3 H0001-T    DECREASE RETRY BY ONE 31606900
0836 1 4C08 0840    BSC     L ERREX,Z     BR IF RETRY ZERO    31606910
*
0838 0 D397        STO     3 REPLY-T     31606920
0839 1 4C80 0821    BSC     I CKRTR      RETURN              31606930
*
083B 0 C3A8        WACKR  LD      3 REWAK-T 31606940
083C 0 93E7        S       3 H0001-T    31606950
083D 0 D3A8        STO     3 REWAK-T     31606960
083E 1 4C80 0821    BSC     I CKRTR,Z-   REDUCE WACK CTR BY 1 31606970
*
0840 0 C303        ERREX  LD      3 ENQSW-T 31606980
0841 1 4C28 0852    BSC     L END99,Z+   BR IF X=99 MODW     31606990
0843 0 C3A6        LD      3 ERRNO-T    31607000
0844 1 4C18 084E    BSC     L ERRNX,+-- BR IF NO ERROR      31607010
*
0846 1 4400 0ADB    BSI     L DIAGP      GO PRINT DIAG MSG    31607020
0848 1 6680 13CE    LDX     I2 TYPE      XR2=MESSAGE NUMBER  31607030
084A 1 4400 0AFE    BSI     L ERPRT      GO PRINT ERROR MSG   31607040
084C 1 4C00 09F4    BSC     L ENT2       END ROUTINE          31607050
*
084E 1 4400 0A6E    ERRNX  BSI     L TYPIT  GO PRINT MESSAGE     31607060
0850 1 4C00 06CE    BSC     L CLEAR      RESTART ROUTINE     31607070
0852 0 6200        LDX     2 0          31607080
0853 1 4400 0A6E    BSI     L TYPIT      PRINT X=99 ABORT MSG 31607090
0855 0 1010        SLA     16           31607100
0856 0 D302        STO     3 SX99-T     RESET X=99 MODE      31607110
0857 0 D303        STO     3 ENQSW-T    RESET ENQ SWITCH     31607120
0858 1 4C00 09EC    BSC     L ENTST      PRINT END MSG        31607130
*
*****
*          CONVERT 2 EBCDIC DECIMAL DIGITS
*          TO BINARY
*****
085A 0 0000        DTB     DC      *--
085B 0 E3F9        AND     3 HOFF-T     REMOVE BITS 0-3 8-11 31607140
085C 0 D399        STO     3 TEMP-T     31607150
085D 0 1808        SRA     8            RIGHT JUSTIFY HI DIGIT 31607160
085E 0 A3F1        M       3 H000A-T    MULT BY DEC 10       31607170
085F 0 1090        SLT     16           31607180
0860 0 8399        A       3 TEMP-T     ADD LO DIGIT         31607190
0861 0 E3F7        AND     3 HOFF-T     SAVE BITS 8-15      31607200
0862 1 4C80 085A    BSC     I DTB        RETURN              31607210
*
*****
*          INITIALIZE POSITIVE ACKNOWLEDGEMENT
*          TO ACKO AND SET RETRY TO 7.
*****
0864 0 0000        INITL  DC      *--
0865 0 C3CA        LD      3 H0007-T    31607220
0866 0 D397        STO     3 REPLY-T    SET RETRY TO 7      31607230
0867 0 C3F0        LD      3 D25-T     31607240
0868 0 D3A8        STO     3 REWAK-T    RESET WACK TO 25    31607250
0869 0 CBD4        LDD     3 ACKS-T     INITIALIZE           31607260
086A 0 DBD6        STD     3 POSAK-T    POSITIVE            31607270
086B 0 D3E6        STO     3 LSTAK&1-T ACKNOWLEDGEMENTS   31607280

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086C 1 4C80 0864    BSC     I INITL      RETURN              31607500
*
*****
*          ALTERNATE POSITIVE ACKNOWLEDGEMENT
*          AND SET RETRY TO 7.
*****
086F 0 0000        ALTNT  DC      *--
086F 0 CBD6        LDD     3 POSAK-T    ALTERNATE           31607510
0870 0 18D0        RTE     16          POSITIVE            31607520
0871 0 DBD6        STD     3 POSAK-T    ACKNOWLEDGEMENTS   31607530
0872 0 D3E6        STO     3 LSTAK+1-T 31607540
0873 0 C3CA        LD      3 H0007-T    31607550
0874 0 D397        STO     3 REPLY-T    SET RETRY TO 7      31607560
0875 0 C3F0        LD      3 D25-T     31607570
0876 0 D3A8        STO     3 REWAK-T    RESET WACK TO 25    31607580
0877 1 4C80 086E    BSC     I ALTNT      RETURN              31607590
*
*****
*          CHECK FOR EOT OR DLE EOT RECEIVED
*****
0879 0 0000        EOTCK  DC      *--
087A 0 C307        LD      3 TTDSW-T    31607600
087B 1 4C10 0880    BSC     L TTD,-      BR IF NO TTD        31607610
087D 0 6208        LDX     2 8          31607620
087E 1 4400 0A6E    BSI     L TYPIT      PRINT TTD RCVD      31607630
0880 0 1010        TTD     SLA     16   CLEAR TTD FLAG      31607640
0881 0 D307        STO     3 TTDSW-T    31607650
0882 0 C31F        LD      3 RAREA&1-T 31607660
0883 0 F3E3        EOR     3 EOT-T     31607670
0884 1 4C18 088C    BSC     L EOTRC,&-   BR IF EOT RECEIVED 31607680
*
0886 0 C31F        LD      3 RAREA&1-T 31607690
0887 0 F3EA        EOR     3 DLEOT-T    31607700
0888 1 4C18 0892    BSC     L DISCN,&-   BR IF DISCONNECT RCVD 31607710
*
088A 1 4C80 0879    BSC     I EOTCK      RETURN              31607720
*
EOTRC LDX     2 7
LD      L EOTSW
BSC     L ENT2,+Z    BRANCH IF EOT SW ON 31607730
MDX     ERREX+10    31607740
*
DISCN XIO     3 RESET-T RESET SCA              31607750
LD      L EOTSW
BSC     L ENT2,+Z    BRANCH IF EOT SW ON 31607760
LDX     2 8
MDX     ERREX+10    31607770
*
*****
*          TRANSMIT RFT MESSAGE
*****
0899 0 0000        XMRFT  DC      *--
089A 0 1010        SLA     16
089B 0 D34A        STO     3 TOIND-T    RESET TIMEOUT IND   31607780
*
LD      3 IDFLG-T    ID HEADER REQUIRED FLAG 31607790
BSI     L XMTID,Z&  GO XMIT ID IF REQUESTED 31607800
SLA     /2D          ENQ CMD IF NEEDED   31607810
*
08A0 1 4400 09FC    XMENQ  BSI     L XMRCV  XMIT ENQ AND           31607820
08A2 1 940B        DC      ENQCT&/8000 RECEIVE RESPONSE 31607830
08A3 0 C31F        LD      3 RAREA&1-T 31607840
08A4 0 F3E8        EOR     3 ENQ-T     31607850
08A5 1 4C20 08AF    BSC     L XMENO,Z    BR IF NOT ENQ RECVD 31607860
*

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08A7 0 6100          LDX 1 0
08A8 0 620A         LDX 2 /A
08A9 1 4400 0821    BSI L CKRTR      XR2=MESSAGE NUMBER
08AB 1 4400 0AEF    BSI L ERPRT      GO CHECK RETRY
08AD 1 4C00 06CE    BSC L CLEAR      GO TO PRINT MESSAGE
                                RESTART ROUTINE
*
08AF 0 C31F         XMEND LD 3 RAREA&1-T
08B0 0 F3D6         EOR 3 POSAK-T
08B1 1 4C18 08B9    BSC L CTINU-1,&- BR IF CORRECT ACK RCVD
*
08B3 0 6100          LDX 1 0
08B4 0 6203         LDX 2 3
08B5 1 4400 0821    BSI L CKRTR
08B7 1 4C00 06D2    BSC L CLEAR&4   RESTART ROUTINE
*
08B9 0 D3A7         STO 3 IDFLG-T    RESET ID FLAG
08BA 0 40B3         CTINU BSI ALTNT    ALTERNATE ACKS
08BB 1 4400 09FC    BSI L XMRVC     XMIT RFT MSG AND
08BD 1 9445         DC RFTTM&/8000 RECEIVED RESPONSE
08BE 0 40BA         BSI EOTCK      GO CK FOR EOT RECVD
08BF 0 C390         LD 3 BUFFER-T
08C0 0 F3F6         EOR 3 HFFFF-T
08C1 1 4C18 08D7    BSC L ERRTO,&- BR IF TIMEOUT
*
08C3 0 C31F         LD 3 RAREA&1-T
08C4 0 F3D6         EOR 3 POSAK-T
08C5 1 4C98 0899    BSC I XMRFT,&- BR IF CORRECT ACK RCVD
*
08C7 0 C31F         LD 3 RAREA&1-T
08C8 0 F3D7         EOR 3 POSAK&1-T
08C9 1 4C18 08DB    BSC L WRACK,&- BR IF WRONG ALTERNATE ACK
*
08CB 0 C31F         LD 3 RAREA&1-T
08CC 0 F3E4         EOR 3 NAK-T
08CD 1 4C18 08E2    BSC L NAKRC,&- BR IF NAK RECEIVED
*
08CF 0 6118         LDX 1 /18
08D0 0 6202         XENQ2 LDX 2 2
08D1 1 4400 0821    BSI L CKRTR      GO TO CHECK RETRY
08D3 1 4400 09FC    BSI L XMRVC     XMIT ENQ AND
08D5 1 940B         DC ENQCT&/8000 RECEIVE RESPONSE
08D6 0 70E7         MDX CTINU&4
*
08D7 0 6119         ERRTO LDX 1 /19
08D8 1 6D00 13C8    STX LI TOIND    SET TIMEOUT IND
08DA 0 70F5         MDX XENQ2
*
08DB 0 611A         WRACK LDX 1 /1A
08DC 0 C3A4         LD 3 TOIND-T
08DD 1 4C18 08D0    BSC L XENQ2,&- BR IF TIMEOUT IND ZERO
*
08DF 0 1010         SLA 16
08E0 0 D3A4         STO 3 TOIND-T   RESET TIMEOUT IND
08E1 0 7001         MDX ++1
*
08E2 0 611B         NAKRC LDX 1 /1B
08E3 0 6202         LDX 2 2
08E4 1 4400 0821    BSI L CKRTR      GO CK RETRY
08E6 0 70D4         MDX CTINU+1
*
*****
* TRANSMIT TEST MESSAGES
*****
08F7 1 4400 0864    XMTM BSI L INITL INITIALIZE ACKO/ACK1
08E9 1 C400 05F1    LD L SW2
08EB 0 100B         SLA 11
08EC 1 4C28 0937    BSC L XPDLY,+Z BR IF TERMINAL MODE

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31608690
31608700
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31608740
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31608780
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31608800
31608810
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31608830
31608840
31608850

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08EE 1 4400 09FC    XMTM2 BSI L XMRVC     XMIT ENQ AND
08F0 1 940B         DC ENQCT&/8000 RECEIVE RESPONSE
08F1 0 C31F         LD 3 RAREA&1-T
08F2 0 F3D6         EOR 3 POSAK-T
08F3 1 4C18 08FA    BSC L XMTM1,&- BR IF CORRECT ACK
*
08F5 0 611C         LDX 1 /1C
08F6 0 6203         LDX 2 3
08F7 1 4400 0821    BSI L CKRTR      CK RETRY CTR
08F9 0 70EE         MDX XMTM&1     XMIT ENQ AGAIN
*
08FA 0 C000         XMTM1 LD *
08FB 0 D3A2         STO 3 TMXMI-T   SET TEST MSG XMIT IND
08FC 0 C30F         LD 3 TABLE+6-T GET Y VALUE
08FD 0 D3A5         STO 3 YCNT-T    SET Y COUNT
08FE 1 4400 086E    BSI L ALTNT     ALTERNATE ACKS
0900 0 C3A5         TSMMSG LD 3 YCNT-T
0901 1 4C08 09EC    BSC L ENTST,+  BR IF Y=00
*
0903 0 93E7         S 3 H0001-T    DECRE Y COUNT BY ONE
0904 0 D3A5         STO 3 YCNT-T
0905 0 C39D         LD 3 TMPNT-T
0906 0 EBFA         OR 3 H8000-T
0907 0 D002         STO *E2
0908 1 4400 09FC    BSI L XMRVC     XMIT TEST MSG AND
090A 0 0000         DC *-*
090B 1 4400 0879    BSI L EOTCK     GO CK FOR EOT RECVD
*
090D 0 C390         LD 3 BUFFER-T
090E 0 F3F6         EOR 3 HFFFF-T
090F 1 4C20 0915    BSC L *E4,Z    BR IF NO TIMEOUT
*
0911 1 7401 1434    MDX L TABLE&7,&1 ADD ONE TO TMOU COUNT
0913 0 611E         LDX 1 /1E
0914 0 701C         MDX CKY
*
0915 0 C31F         LD 3 RAREA&1-T
0916 0 F3E4         EOR 3 NAK-T
0917 1 4C20 091D    BSC L *E4,Z    BR IF NOT NAK RCVD
*
0919 1 7401 1435    MDX L TABLE&8,&1 ADD ONE TO NAK COUNT
091B 0 611D         LDX 1 /1D
091C 0 7014         MDX CKY
*
091D 0 C31F         LD 3 RAREA&1-T
091E 0 F3D7         EOR 3 POSAK&1-T
091F 1 4C18 08FE    BSC L TSMMSG-2,+-- BR IF ACK
*
0921 0 C31F         LD 3 RAREA&1-T
0922 0 F3D6         EOR 3 POSAK-T
0923 1 4C18 08FE    BSC L TSMMSG-2,+-- BR IF CORRECT ACK
*
0925 0 C31F         LD 3 RAREA+1-T
0926 0 F308         EOR 3 RVI-T
0927 1 4C20 092E    BSC L ADBAD,Z  BR IF NOT RVI
0929 0 1010         SLA 16
092A 0 D3A5         STO 3 YCNT-T    SET Y COUNT=00
092B 0 C000         LD *
092C 0 D306         STO 3 RVISW-T  SET RVI RECEIVED SWITCH
092D 0 70D0         MDX TSMMSG-2   TERMINATE TEST
092E 1 7401 1436    ADBAD MDX L TABLE+9,+1 ADD 1 TO INVALID RESP CT
0930 0 6120         LDX 1 /20
*
0931 1 6D00 13CA    CKY STX LI ERRNO STORE ERROR NUMBER
0933 0 C3B1         LD 3 MSG4-T
0934 1 4400 0DF7    BSI L STALP
0936 0 70C7         MDX TSMMSG-2
0937 0 08D2         XPDLY XIO 3 RESET-T RESET BSCA

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31608860
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31608990
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1130 BSC PT-TO-PT & 2770/2780--8K

1130

1130 BSC PT-TO-PT & 2770/2780--8K

1130

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0938 0 0BCE          XIO  3 SNSRS-T  SENSE & RST DSM  31609540
0939 0 6700 001R    XPDLI LDX  L3 27          31609550
093B 0 1810          SRA  16          31609560
093C 1 8400 140B    A  L  H0001  DECR. COUNT  31609570
093E 1 4C10 093C    BSC  L *-4,-          31609580
0940 0 73FF          MDX  3 -1          31609590
0941 0 70F9          MDX  XPDLY+4  31609600
0942 1 6700 1424    LDX  L3 T  RESTORE IX 3  31609610
0944 1 4C00 08EE    BSC  L XMTM2  RETURN TO XMTM 31609620
*
*****
* RECEIVE TEST MESSAGES
*****
*
0946 0 C30F          RCVTM LD  3 TABLE+6-T  GET Y VALUE  31609680
0947 0 D3A5          STO  3 YCNT-T  STORE IN Y COUNTER 31609690
0948 0 C000          RCVX  LD  *          31609700
0949 0 D3A1          STO  3 TMRCI-T  SET TEST MSG RCV IN 31609710
094A 1 4400 0864    BSI  L INITL  INITIALIZE ACKO/ACKI 31609720
094C 1 4400 09FC    RCVY BSI  L XMRCV  RECEIVE          31609730
094E 0 8000          DC  /8000          31609740
094F 0 C31F          RCVTI LD  3 RARE&1-T  31609750
0950 0 F3E8          EOR  3 ENQ-T  31609760
0951 1 4C18 0978    BSC  L RTMSG&Z,- BR IF ENQ RCVD 31609770
*
0953 1 4400 0879    RCVZ BSI  L EOTCK  GO CHECK FOR EOT RCVD 31609790
0955 0 6121          LDX  1 /21          31609800
0956 0 6202          LDX  2 2          31609810
0957 1 4400 0821    BSI  L CKRTR  CHECK RETRY CTR  31609820
0959 0 C3E4          LD  3 NAK-T  31609830
095A 0 D3E6          STO  3 LSTAK&1-T  31609840
095B 1 4400 09FC    BSI  L XMRCV  31609850
095D 1 9409          DC  LSTAK&/8000  31609860
095E 0 CBD6          LDD  3 POSAK-T  31609870
095F 0 18D0          RTE  16          31609880
0960 0 DBD6          STD  3 POSAK-T  ROTATE ACKS  31609890
0961 0 D3E6          STO  3 LSTAK&1-T  31609900
0962 0 70EC          MDX  RCVTI  GO CHECK FOR ENQ  31609910
0963 1 6D00 13CA    RTM  STX  L1 ERRNO  STORE ERROR NUMBER 31609920
0965 1 4400 086E    BSI  L ALTNT  ALTERNATE ACKS  31609930
0967 0 C3B1          LD  3 MSG4-T  31609940
0968 1 4400 0DF7    BSI  L STALP  31609950
096A 0 C302          LD  3 SX99-T  31609960
096B 1 4C28 0972    BSC  L **5,Z+  BR IF X=99  31609970
096D 0 C3A5          LD  3 YCNT-T  31609980
096E 1 4C08 09C9    BSC  L END1,&  BR IF Y COUNT ZERO 31609990
*
0970 0 93E7          S  3 H0001-T  DECRE Y COUNT BY ONE 31610000
0971 0 D3A5          STO  3 YCNT-T  31610010
0972 1 4400 09FC    BSI  L XMRCV  RECEIVE          31610020
0974 0 8000          DC  /8000          31610030
0975 0 700F          MDX  RCVA  31610040
*
0976 1 4400 086F    RTMSG BSI  L ALTNT  ALTERNATE ACKS 31610050
0978 0 1810          SRA  16          31610060
0979 0 D303          STO  3 ENQSW-T  RESET ENQ SW  31610070
097A 0 C302          LD  3 SX99-T  LOAD X99 SWITCH 31610080
097B 1 4C28 0982    BSC  L **5,Z+  BR IF X=99  31610090
097D 0 C3A5          LD  3 YCNT-T  31610100
097E 1 4C08 09CC    BSC  L END2,&  BR IF Y COUNT ZERO 31610110
*
0980 0 93E7          S  3 H0001-T  DECRE Y COUNT BY ONE 31610120
0981 0 D3A5          STO  3 YCNT-T  31610130
0982 1 4400 09FC    BSI  L XMRCV  XMIT CURRENT ACK AND 31610140
0984 1 9409          DC  LSTAK&/8000  RECEIVE TEST MSG 31610150
0985 0 C390          LD  3 BUFFER-T  31610160
0986 0 F3F6          EOR  3 HFFFF-T  31610170
0987 1 4C20 099C    BSC  L RCVB,Z  BR IF NO TIMEOUT 31610180

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*
0989 1 7401 1434    MDX  L TABLE&7,&1  31610220
098B 0 6122          LDX  1 /22          31610230
098C 0 C302          LD  3 SX99-T  LOAD X99 SWITCH  31610240
098D 1 4C10 0963    BSC  L RTM,-  BR IF NOT X99  31610250
098F 1 7401 099A    MDX  L TOCT,+1  STEP T.O. COUNT  31610260
0991 0 C008          LD  TOCT  LOAD TIMEOUT COUNT  31610270
0992 0 93CA          S  3 H0007-T  CK FOR 7 S  31610280
0993 1 4C20 0963    BSC  L RTM,Z  BR IF NOT 7 TIMEOUTS 31610290
0995 0 6203          END8 LDX  2 3  LOAD MESSAGE NO.  31610300
0996 1 4400 0AEE    BSI  L ERPT  PRINT ERROR MESSAGE 31610310
0998 1 4C00 09EC    BSC  L ENTST  END TEST  31610320
099A 0 0000          TOCT DC  **  SUCCESSIVE T.O. COUNT 31610330
099B 0 0000          NAKCT DC **  SUCCESSIVE NAK COUNT 31610340
*
099C 1 7400 13A9    RCVB MDX  L MDSWT  31610350
099E 0 7006          MDX  *&6  BR IF TEXT WAS RCVD 31610360
099F 1 4400 0879    BSI  L EOTCK  GO CK FOR EOT RCVD 31610370
09A1 0 6123          LDX  1 /23          31610380
09A2 1 7401 1435    MDX  L TABLE&8,&1  31610390
09A4 0 70BE          MDX  RTM  31610400
*
09A5 0 C386          LD  3 ERR-T  31610410
09A6 1 4C18 09BE    BSC  L GDMSG,&- BR IF NO ERRORS IN TEXT 31610420
*
09A8 1 4400 086E    BSI  L ALTNT  31610430
09AA 0 C3E4          LD  3 NAK-T  SET UP TO  31610440
09AB 0 D3E6          STO  3 LSTAK+1-T  XMIT NAK  31610450
09AC 1 7401 1435    MDX  L TABLE&8,&1  31610460
09AE 0 C3B1          LD  3 MSG4-T  31610470
09AF 1 4400 0DF7    BSI  L STALP  31610480
09B1 0 6124          LDX  1 /24          31610490
09B2 1 6D00 13CA    STX  L1 ERRNO  31610500
09B4 0 C302          LD  3 SX99-T  31610510
09B5 1 4C10 0978    BSC  L RTMSG+2,- BR IF NOT 2780 31610520
09B7 1 7401 0998    MDX  L NAKCT,+1  STEP NAK COUNTER 31610530
09B9 0 C0E1          LD  NAKCT  LOAD NAK COUNT  31610540
09BA 0 93CA          S  3 H0007-T  CHECK FOR 7 CONSEC NAKS 31610550
09BB 1 4C20 0978    BSC  L RTMSG+2,Z BR IF NOT 7 NAKS  31610560
09BD 0 70D7          MDX  END8  31610570
*
09BE 0 1810          GDMSG SRA  16  31610580
09BF 0 D0DA          STO  TOCT  RESET T.O. COUNT  31610590
09C0 0 D0DA          STO  NAKCT  RESET NAK COUNT  31610600
09C1 0 C302          LD  3 SX99-T  31610610
09C2 1 4C10 09C6    BSC  L NOT99,- BR IF NOT X99 MODE 31610620
09C4 0 C000          LD  *  31610630
09C5 0 D025          STO  EOTSW  SET 2780 EOT SW  31610640
09C6 1 7401 1436    NOT99 MDX  L TABLE+9,+1  31610650
09C8 0 70AD          MDX  RTMSG  31610660
*
09C9 0 4032          END1 BSI  XMRCV  RECEIVE EOT  31610670
09CA 0 8000          DC  /8000          31610680
09CB 0 7002          MDX  *&2  31610690
*
09CC 0 402F          END2 BSI  XMRCV  XMIT CURRENT ACK AND 31610700
09CD 1 9409          DC  LSTAK&/8000  RECEIVE EOT  31610710
09CE 0 C31F          LD  3 RARE&1-T  31610720
09CF 0 F3E3          EOR  3 EOT-T  31610730
09D0 1 4C18 09DF    BSC  L END3,+  BR IF EOT RECEIVED 31610740
*
09D2 0 C31F          LD  3 RAREA+1-T  31610750
09D3 0 F3EA          EOR  3 DLEOT-T  DLE EOT RECEIVED 31610760
09D4 1 4C18 09F7    BSC  L ENTS2+3,+ *YES, BRANCH 31610770
*
09D6 0 6125          LDX  1 /25          31610780
09D7 1 6D00 13CA    STX  L1 ERRNO  31610790
09D9 0 C3B1          LD  3 MSG4-T  31610800

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09DA 1 4400 0DF7      BSI L STALP
09DC 1 4400 0ADB      BSI L DIAGP
09DE 0 7015           MDX ENTST2
09DF 0 C00B          END3 LD EOTSW      LOAD EOT SWITCH
09E0 1 4C10 0D60      BSC L ENPRT,-    BR IF EOT SW OFF
09E2 0 1810           SRA 16
09E3 0 D007           STO EOTSW      RESET EOT SWITCH
09E4 0 C000           LD *
09E5 0 D303           STO 3 ENOSW-T   SET ENQ MONITOR SW
09E6 1 C400 0742      LD L D20
09E8 0 D397           STO 3 RETRY-T   SET RETRY TO 20
09E9 1 4C00 077R      BSC L RTN18     GO WAIT FOR 2780 ENQ
09EB 0 0000           EOTSW DC *-*    2780 SWITCH
*
*****
*
*          END OF TEST
*****
*
09EC 1 7400 061C      ENTST MDX L DIAL  SKIP IF DIAL-UP
09EE 0 7003           MDX *E3
*
09EF 0 400C           BSI XMRCV      TRANSMIT DLE EOT
09F0 1 140D           DC DEOTC
09F1 0 7005           MDX **5
*
09F2 0 4009           BSI XMRCV      TRANSMIT EOT
09F3 1 1406           DC EOTCT
*
09F4 1 7400 061C      ENTS2 MDX L DIAL  SKIP IF DIAL-UP
09F6 0 7003           MDX **3
*
09F7 0 0BD2           XIO 3 RESET-T   RESET SCA
09F8 0 6204           LDX 2 4         XR2=MESSAGE NUMBER
09F9 0 4074           BSI TYPIT
09FA 1 4C00 0D60      BSC L ENPRT     PRINT END MESSAGE
*
*****
*
*          PROCESS TRANSMIT/RECEIVE CALL
*          AND WAIT FOR COMPLETION OF OPERATION
*****
*
09FC 0 0000           XMRCV DC *-*
09FD 1 C480 09FC      LD I XMRCV     GET XMIT/RCV REQUEST
09FF 1 7401 09FC      MDX L XMRCV,+1
0A01 0 D39A           STO 3 REQ-T
0A02 0 E3FC           AND 3 H7FFF-T   REMOVE BIT 0
0A03 0 D392           STO 3 FCODE-T   SET FUNCTION FOR XMIT/REC
0A04 1 4400 0A2E      BSI L GO       START XMIT OR REC
0A06 1 4400 0ADB      BSI L DIAGP
*
0A08 0 C3FC           WAIT LD 3 H7FFF-T
0A09 0 D398           STO 3 WTCNT-T  SET INT WAIT COUNT
*
0A0A 0 C384           LD 3 MSWAK-T
0A0B 1 4C20 0A27      BSC L WAKER,Z   BRANCH IF WACK RECEIVED
0A0D 0 C38E           LD 3 MSEND-T   CK FOR END XMIT/RCV
0A0E 1 4CA0 09FC      BSC I XMRCV,Z   BR IF MSG END
0A10 1 6700 0A16      LDX L3 RETRN
0A12 1 6F00 05F5      STX L3 MLSCF
0A14 0 4480 0161      BSI I START    GO TO MONITOR
*
0A16 1 6700 1424      RETRN LDX L3 T  RESTORE XR3
0A18 0 0BDC           XIO 3 SENSE-T  SENSE SCA DSW
0A19 0 1007           SLA 7
0A1A 1 4C28 0A1F      BSC L **3,Z+
*
0A1C 0 6201           LDX 2 1
0A1D 1 4400 0AFF      BSI L ERPRT    PRINT ERROR MSG

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31610900
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31611570

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0A1F 1 74FF 13BC
0A21 0 70E8
0A22 0 6209
0A23 1 4400 0AEE
0A25 1 4C00 09F4
*
0A27 0 6116
0A28 0 6200
0A29 1 4400 0821
0A2B 1 C400 08F0
0A2D 0 70D3
*
0A2E 0 0000
0A2F 0 4029
0A30 0 630D
0A31 0 1010
0A32 1 D700 13A7
0A34 0 73FF
0A35 0 70FC
*
0A36 1 6700 1424
0A38 0 D31F
0A39 0 0BBA
0A3A 0 C392
0A3B 1 4C20 0A4B
*
0A3D 0 C380
0A3E 1 4400 0DF7
0A40 1 6600 1442
0A42 0 7201
0A43 1 6E00 1387
0A45 0 C000
0A46 0 D394
0A47 0 0B8C
0A48 0 0BC6
0A49 1 4C80 0A2E
*
0A4B 0 D3A3
0A4C 0 83E7
0A4D 0 D393
0A4E 0 C3C6
0A4F 0 D391
0A50 0 C3AF
0A51 1 4400 0DF7
0A53 0 C000
0A54 0 D394
0A55 0 0BBC
0A56 0 0BBE
0A57 1 4C80 0A2E
*
0A59 0 0000
0A5A 1 6700 1424
0A5C 1 C400 05E1
0A5E 0 100C
0A5F 1 4C28 0A64
*
0A61 0 C3AD
0A62 1 4C20 0A67

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*
MDX L WTCNT,-1    DECRE WAIT CNT BY ONE
MDX WAIT&2        BR IF COUNT NOT ZFRO
LDX 2 9
BSI L ERPRT       PRINT ERROR MSG
BSC L ENTS2       END ROUTINE
*
WAKER LDX 1 /16
LDX 2 0
BSI L CKRTR       CHECK WACK RETRY CTR
LD L XMTM2+2      ENQ RESPONSE REQUEST
MDX XMRCV+5       SET UP TO SEND ENQ
*
*****
*          START TRANSMIT/RECEIVE OPERATION
*****
*
GO DC *-*
BSI CKOPN
LDX 3 13          RESET
SLA 16            THIRTEEN
STO L3 TT-1      INDICATORS
MDX 3 -1
MDX *-4
*
LDX L3 T          XR3#CONSTANT TABLE ADDR
STO 3 RAREA+1-T
XIO 3 SYNRG-T    SYN TO SYNC REG
LD 3 FCODE-T     CK FUNCTION
BSC L XMIT,Z     BR IF XMIT FUNCTION
*
LD 3 MSG3-T
BSI L STALP
LDX L2 RAREA
MDX 2 &1
STX L2 POINT     POINT TO RECEIVE AREA
LD *
STO 3 RTBSY-T    SET RTN BUSY IND
XIO 3 ENDOP-T   END SCA OPERATION
XIO 3 STRED-T   START READ
BSC I GO        RETURN TO CALLING RTN
*
XMIT STO 3 IOAR-T
A 3 H001-T
STO 3 POINT-T   POINT TO XMIT AREA
LD 3 H004-T
STO 3 SYNC-T    SET XMIT SYNS IND
LD 3 MSG2-T
BSI L STALP
LD *
STO 3 RTBSY-T   SET RTN BUSY IND
XIO 3 ENDOP-T   END SCA OPERATION
XIO 3 STSYN-T   START WRITE
BSC I GO        RETURN TO CALLING RTN
*
*****
*          SAVE OR DELETE LAST MESSAGE
*****
*
CKOPN DC *-*
LDX L3 T
LD L SW2         CK OPTION SWITCH
SLA 12
BSC L *E3,Z&    BR IF PRINT ALL TEXT ON
*
LD 3 NOERR-T
BSC L *E3,Z     BR IF NO ERROR
*

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31611580
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3162250

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OA64 0 C3A0      LD 3 ENPNT-T
OA65 0 D3AC      STO 3 ENP2-T   SAVE LAST MESSAGE
OA66 0 7002      MDX *E2
*
OA67 0 C3AC      LD 3 ENP2-T
OA68 0 D3A0      STO 3 ENPNT-T   DELETE LAST MESSAGE
*
OA69 0 1010      SLA 16
OA6A 1 D480 13C4 STO 1 ENPNT
OA6C 1 4C80 OA59 BSC 1 CKOPN
*
*****
* PRINT STATUS MESSAGE
*****
*
OA6E 0 0000      TYPIT DC *--
OA6F 1 6E00 142D STX L2 TABLE   STORE MSG NUMBER
OA71 1 C600 OA7E LD L2 AMGS   GET MSG ADDR
OA73 0 D30C      STO 3 TABLE+3-T STORE MSG ADDR
OA74 1 4400 1039 BSI L $XLOG     CHECK WHICH PRINTER
OA76 1 6700 1424 LDX L3 T       RESTORE XR3
OA78 0 1010      SLA 16
OA79 1 4400 ODE0 BSI L PRDLD    CHECK FOR 1132 DELAY
OA7B 0 D30C      STO 3 TABLE+3-T
OA7C 1 4C80 OA6E BSC 1 TYPIT    RETURN
*
OA7E 1 OA87      AMGS DC A1700   X=99 ABORT
OA7F 1 OA95      DC A1701   MAKE DATA SET READY
OA80 1 OA9F      DC A1702   MON ENQ
OA81 1 OAA4      DC A1703   NO ANS ENQ
OA82 1 OB37      DC E1708   DISCONNECT
OA83 1 OAAA      DC A1705
OA84 1 OABB      DC A1706
OA85 1 OACC      DC A1707   RVI RCVD
OA86 1 OAD6      DC A1708   TTD RCVD
*
OA87 0 96C2      A1700 DC /96C2   X=
OA88 0 E0E0      DC /E0E0   99
OA89 0 213E      DC /213E   A
OA8A 0 1A52      DC /1A52   BO
OA8B 0 629E      DC /629E   RT
OA8C 0 8076      DC /8076   ,N
OA8D 0 5221      DC /5221   O
OA8E 0 3676      DC /3676   EN
OA8F 0 6621      DC /6621   Q
OA90 0 2276      DC /2276   IN
OA91 0 21FC      DC /21FC   I
OA92 0 2172      DC /2172   M
OA93 0 2276      DC /2276   IN
OA94 0 FFFF      DC /FFFF   TERMINATOR
OA95 0 723E      A1701 DC /723E   MA
OA96 0 5A36      DC /5A36   KE
OA97 0 2132      DC /2132   D
OA98 0 3E9E      DC /3E9E   AT
OA99 0 3E21      DC /3E21   A
OA9A 0 9A36      DC /9A36   SE
OA9B 0 9E21      DC /9E21   T
OA9C 0 6232      DC /6232   RD
OA9D 0 A621      DC /A621   Y
OA9E 0 FFFF      DC /FFFF   TERMINATOR
*
OA9F 0 7252      A1702 DC /7252   MO
OAA0 0 7621      DC /7621   N
OAA1 0 3676      DC /3676   FN
OAA2 0 6621      DC /6621   Q
OAA3 0 FFFF      DC /FFFF   TERMINATOR
*
OAA4 0 7652      A1703 DC /7652   NO

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31612260
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OAA5 0 213E      DC /213E   A
OAA6 0 769A      DC /769A   NS
OAA7 0 2136      DC /2136   E
OAA8 0 7666      DC /7666   NQ
OAA9 0 FFFF      DC /FFFF   TERMINATOR
*
OAAA 0 9621      A1705 DC /9621   X
OAAB 0 2121      DC /2121
OAAC 0 2121      DC /2121
OAAD 0 A621      DC /A621   Y
OAAE 0 2121      DC /2121
OAAF 0 2121      DC /2121
OAB0 0 9E72      DC /9E72   TM
OAB1 0 52B2      DC /52B2   OU
OAB2 0 9E21      DC /9E21   T
OAB3 0 763E      DC /763E   NA
OAB4 0 5A21      DC /5A21   K
OAB5 0 2121      DC /2121
OAB6 0 2276      DC /2276   IN
OAB7 0 8621      DC /8621   V
OAB8 0 6236      DC /6236   RE
OAB9 0 9A56      DC /9A56   SP
OABA 0 FFFF      DC /FFFF   TERMINATOR
*
OABB 0 9621      A1706 DC /9621   X
OABC 0 2121      DC /2121
OABD 0 2121      DC /2121
OABE 0 A621      DC /A621   Y
OABF 0 2121      DC /2121
OAC0 0 2121      DC /2121
OAC1 0 9E72      DC /9E72   TM
OAC2 0 52B2      DC /52B2   OU
OAC3 0 9E21      DC /9E21   T
OAC4 0 9221      DC /9221   W
OAC5 0 3662      DC /3662   ER
OAC6 0 6221      DC /6221   R
OAC7 0 92BC      DC /92BC   W/
OAC8 0 5221      DC /5221   O
OAC9 0 3662      DC /3662   ER
OACA 0 6221      DC /6221   R
OACB 0 FFFF      DC /FFFF   TERMINATOR
OACC 0 62B6      A1707 DC /62B6   RV
OACD 0 2221      DC /2221   I
OACE 0 621E      DC /621E   RC
OACF 0 8632      DC /8632   VD
OADO 0 8036      DC /8036   ,E
OAD1 0 529E      DC /529E   OT
OAD2 0 219A      DC /219A   S
OAD3 0 3676      DC /3676   EN
OAD4 0 9E21      DC /9E21   T
OAD5 0 FFFF      DC /FFFF   TERMINATOR
OAD6 0 9E9E      A1708 DC /9E9E   TT
OAD7 0 3221      DC /3221   D
OAD8 0 621E      DC /621E   RC
OAD9 0 8632      DC /8632   VD
OADA 0 FFFF      DC /FFFF   TERMINATOR
*
*****
* PRINT DIAGNOSTIC MESSAGE
*****
*
DIAGP DC *--
LD L SW2      CK OPTION SWT
SLA 14
BSC I DIAGP,- BR IF NOT DIAG PRNT
*
LD 3 ERRNO-T  GET ERROR NUMBER
BSC I DIAGP,+ BR IF NO ERROR

```

```

31612940
31612950
31612960
31612970
31612980
31612990
31613000
31613010
31613020
31613030
31613040
31613050
31613060
31613070
31613080
31613090
31613100
31613110
31613120
31613130
31613140
31613150
31613160
31613170
31613180
31613190
31613200
31613210
31613220
31613230
31613240
31613250
31613260
31613270
31613280
31613290
31613300
31613310
31613320
31613330
31613340
31613350
31613360
31613370
31613380
31613390
31613400
31613410
31613420
31613430
31613440
31613450
31613460
31613470
31613480
31613490
31613500
31613510
31613520
31613530
31613540
31613550
31613560
31613570
31613580
31613590
31613600
31613610

```

```

*
OAF4 0 D309      STO 3 TABLE-T
OAF5 1 4400 1052 BSI L $ELOG      CHECK WHICH PRINTER
OAF7 1 6700 1424 LDX L3 T          RESTORE XR3
OAE9 1 4400 0DE0 BSI L PRDPL      CHECK FOR 1132 DELAY
OAFB 0 1010      SLA 16
OAF6 0 D3A6      STO 3 ERRNO-T    SET ERROR NO. TO ZERO
OAFD 0 70F4      MDX *-12

```

```

*
*****
* PRINT ERROR MESSAGE
*****

```

```

OAEF 0 0000      ERPRT DC    *-
OAFF 1 6E00 142D STX L2 TABLE STORE MSG NUMBER
OAF1 1 C600 OAFE LD L2 EMSGS  GET MSG ADDR
OAF3 0 D30C      STO 3 TABLE+3-T STORE MSG ADDR
OAF4 1 4400 1052 RSI L $FLOG      CHECK WHICH PRINTER
OAF6 1 6700 1424 LDX L3 T          RESTORE XR3
OAF8 1 4400 0DE0 BSI L PRDPL      CHECK FOR 1132 DELAY
OAF9 0 1010      SLA 16
OAFB 0 D30C      STO 3 TABLE+3-T
OAF6 1 4C80 OAEF BSC I ERPRT

```

```

*
OAFE 1 0B09      EMSGS DC    E1700    25 WACKS R
OAFF 1 0B0F      DC    E1701    DATA SET NRDY
OB00 1 0B17      DC    E1702    7 TRIES T
OB01 1 0B1D      DC    E1703    7 TRIES R
OB02 1 0B23      DC    E1704    INV X
OB03 1 0B27      DC    E1705    INV Y
OB04 1 0B2B      DC    E1706    INV RFT RCVD
OB05 1 0B32      DC    E1707    EDT RCVD
OB06 1 0B37      DC    E1708    DISCONNECT
OB07 1 0B3D      DC    E1709    NO INTRP
OB08 1 0B42      DC    E170A   CONTENTION

```

```

*
OB09 0 D8F4      E1700 DC    /D8F4    25
OB0A 0 2192      DC    /2192    W
OB0B 0 3E1F      DC    /3E1E    AC
OB0C 0 5A9A      DC    /5A9A    KS
OB0D 0 2162      DC    /2162    R
OB0E 0 FFFF      DC    /FFFF    TERMINATOR

```

```

*
OB0F 0 323E      E1701 DC    /323E    DA
OB10 0 9E3E      DC    /9E3E    TA
OB11 0 219A      DC    /219A    S
OB12 0 369E      DC    /369E    ET
OB13 0 2176      DC    /2176    N
OB14 0 6232      DC    /6232    RD
OB15 0 A621      DC    /A621    Y
OB16 0 FFFF      DC    /FFFF    TFRMINATOR

```

```

*
OB17 0 D421      E1702 DC    /D421    7
OB18 0 9E62      DC    /9E62    TR
OB19 0 2236      DC    /2236    IE
OB1A 0 9A21      DC    /9A21    S
OB1B 0 9E21      DC    /9E21    T
OB1C 0 FFFF      DC    /FFFF    TERMINATOR

```

```

*
OB1D 0 D421      E1703 DC    /D421    7
OB1E 0 9E62      DC    /9E62    TR
OB1F 0 2236      DC    /2236    IF
OB20 0 9A21      DC    /9A21    S
OB21 0 6221      DC    /6221    R
OB22 0 FFFF      DC    /FFFF    TERMINATOR

```

```

*
OB23 0 2276      E1704 DC    /2276    IN
OB24 0 B621      DC    /B621    V

```

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31613620
31613630
31613640
31613650
31613660
31613670
31613680
31613690
31613700
31613710
31613720
31613730
31613740
31613750
31613760
31613770
31613780
31613790
31613800
31613810
31613820
31613830
31613840
31613850
31613860
31613870
31613880
31613890
31613900
31613910
31613920
31613930
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31613970
31613980
31613990
31614000
31614010
31614020
31614030
31614040
31614050
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31614070
31614080
31614090
31614100
31614110
31614120
31614130
31614140
31614150
31614160
31614170
31614180
31614190
31614200
31614210
31614220
31614230
31614240
31614250
31614260
31614270
31614280
31614290

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```

OB25 0 9621      DC    /9621    X
OB26 0 FFFF      DC    /FFFF    TERMINATOR
*
OB27 0 2276      E1705 DC    /2276    IN
OB28 0 B621      DC    /B621    V
OB29 0 A621      DC    /A621    Y
OB2A 0 FFFF      DC    /FFFF    TERMINATOR
*
OB2B 0 2276      E1706 DC    /2276    IN
OB2C 0 B621      DC    /B621    V
OB2D 0 6212      DC    /6212    RF
OB2E 0 9E21      DC    /9E21    T
OB2F 0 621E      DC    /621E    RC
OB30 0 B632      DC    /B632    VD
OB31 0 FFFF      DC    /FFFF    TERMINATOR
*
OB32 0 3652      E1707 DC    /3652    EO
OB33 0 9E21      DC    /9E21    T
OB34 0 621E      DC    /621E    RC
OB35 0 B632      DC    /B632    VD
OB36 0 FFFF      DC    /FFFF    TERMINATOR
*
OB37 0 3222      E1708 DC    /3222    DI
OB38 0 9A1E      DC    /9A1E    SC
OB39 0 5276      DC    /5276    ON
OB3A 0 7636      DC    /7636    NE
OB3B 0 1E9E      DC    /1E9E    CT
OB3C 0 FFFF      DC    /FFFF    TERMINATOR
*
OB3D 0 7652      E1709 DC    /7652    NO
OB3E 0 2122      DC    /2122    I
OB3F 0 769E      DC    /769E    NT
OB40 0 6256      DC    /6256    RP
OB41 0 FFFF      DC    /FFFF    TERMINATOR
*
OB42 0 1E52      E170A DC    /1E52    CO
OB43 0 769E      DC    /769E    NT
OB44 0 3676      DC    /3676    EN
OB45 0 9E22      DC    /9E22    TI
OB46 0 5276      DC    /5276    ON
OB47 0 FFFF      DC    /FFFF    TERMINATOR
*
OB48 0 9E22      TOMSG DC    /9E22    TI
OB49 0 7236      DC    /7236    ME
OB4A 0 52B2      DC    /52B2    OU
OB4B 0 9E21      DC    /9E21    T
OB4C 0 FFFF      DC    /FFFF    TERMINATOR
*
OB4D 0 0303      XMMSG DC    /0303
OB4E 0 9672      DC    /9672    XM
OB4F 0 229E      DC    /229E    IT
OB50 0 FFFF      DC    /FFFF    TERMINATOR
*
OB51 0 0303      RCMSG DC    /0303
OB52 0 6236      DC    /6236    RE
OB53 0 1EB6      DC    /1EB6    CV
OB54 0 FFFF      DC    /FFFF    TERMINATOR
*
OB55 0 3662      ERMSG DC    /3662    ER
OB56 0 6221      DC    /6221    R
OB57 0 FFFF      DC    /FFFF    TERMINATOR
*
OB58 0 1E52      ENCOR DC    /1E52    CO
OB59 0 6236      DC    /6236    RE
OB5A 0 FFFF      DC    /FFFF    TERMINATOR

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31614300
31614310
31614320
31614330
31614340
31614350
31614360
31614370
31614380
31614390
31614400
31614410
31614420
31614430
31614440
31614450
31614460
31614470
31614480
31614490
31614500
31614510
31614520
31614530
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31614560
31614570
31614580
31614590
31614600
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31614670
31614680
31614690
31614700
31614710
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31614770
31614780
31614790
31614800
31614810
31614820
31614830
31614840
31614850
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31614870
31614880
31614890
31614900
31614910
31614920
31614930
31614940
31614950
31614960
31614970

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```

*****
* GENERATE REQUEST FOR TEST MESSAGE
*****
GNRFT DC *-*
OB5B 0 0000
OB5C 0 D30F STO 3 TABLE+5-T STORE X VALUE
OB5D 1 4C28 0B9E BSC L XERR,Z+ BR IF INVALID X VALUE
OB5F 0 93D2 S 3 D99-T
OB60 1 4C30 0B9E BSC L XFRR,-Z BR IF INVALID X VALUE
*
OB62 0 83D2 A 3 D99-T
OB63 0 4041 BSI BTD CONVERT TO EBCDIC
OB64 0 D323 STO 3 RFTTM+2-T PUT IN RFT MSG
*
OB65 1 C400 05E2 LD L SW3 GET Y VALUE
OB67 0 D30F STO 3 TABLE+6-T
OB68 1 4C08 0BA0 BSC L YERR,+ BR IF INVALID Y VALUE
OB6A 0 93D2 S 3 D99-T
OB6B 1 4C30 0BA0 BSC L YERR,-Z BR IF INVALID Y VALUE
*
OB6D 0 83D2 A 3 D99-T
OB6E 0 4036 BSI BTD CONVERT TO EBCDIC
OB6F 0 D324 STO 3 RFTTM+3-T PUT IN RFT MSG
OB70 0 C3DF LD 3 SOHPC-T
OB71 0 D322 STO 3 RFTTM+1-T PUT SOH % IN RFT
*
OB72 0 C3CA LD 3 H0007-T SET RFT CHARACTER
OB73 0 D39B STO 3 CNTA-T COUNT TO 7
OB74 0 C3F2 LD 3 HF000-T
OB75 0 D325 STO 3 RFTTM+4-T SET N FIELD TO ZERO
*
OB76 0 C30E LD 3 TABLE+5-T GET X VALUE
OB77 0 93E7 S 3 H0001-T
OB78 1 4C18 0B82 BSC L XONE,&- BR IF X=01
*
OB7A 0 C3F3 LD 3 HF002-T
OB7B 0 D325 STO 3 RFTTM+4-T PUT N ZERO STX IN RFT
OB7C 0 C3DE LD 3 ETX-T
OB7D 0 D326 STO 3 RFTTM+5-T PUT ETX IN RFT MSG
OB7E 1 7402 13BF MDX L CNTA,&2 ADD 2 TO COUNT
OB80 0 C39B LD 3 CNTA-T
OB81 0 7019 MDX EXITA+5
*
OB82 1 C400 05E9 XONE LD L XSPEC+1 GET CHAR COUNT
OB84 0 D39C STO 3 CNTB-T
OB85 0 6300 LDX 3 0
OB86 1 C700 05EA LD L3 XSPEC+2 GET 2 CHARACTERS
OB88 0 1890 SRT 16 PUT IN Q
OB89 0 1010 SLA 16
OB8A 0 1088 SLT 8 PUT 1ST CHAR IN ACC
OB8B 1 EF00 1449 OR L3 RFTTM+4 COMBINE WITH LAST CHAR
OB8D 1 D700 1449 STO L3 RFTTM+4 PUT IN RFT
OB8F 0 7301 MDX 3 1 ADD ONE TO XR3
OB90 0 1090 SLT 16 PUT 2ND CHAR IN ACC
OB91 1 D700 1449 STO L3 RFTTM&4 STORE IN RFT MSG
OB93 1 74FE 13C0 MDX L CNTR,-2 DECRE COUNT BY TWO
OB95 0 70F0 MDX XONE&4 BR IF COUNT NOT ZERO
*
OB96 1 6700 1474 EXITA LDX L3 T RESTORE XR3
OB98 1 C400 05E9 LD L XSPEC+1
OB9A 0 839B A 3 CNTA-T
OB9B 0 D321 STO 3 RFTTM-T STO RFT CHAR COUNT
OB9C 1 4C80 0B5B BSC I GNRFT RETURN
*
OB9E 0 6204 XFRR LDX 2 4 XR2=MESSAGE NUMBER
OB9F 0 7001 MDX YERR+1
*
OBA0 0 6205 YERR LOX 2 5 XR2=MESSAGE NUMBER

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31614980
31614990
31615000
31615010
31615020
31615030
31615040
31615050
31615060
31615070
31615080
31615090
31615100
31615110
31615120
31615130
31615140
31615150
31615160
31615170
31615180
31615190
31615200
31615210
31615220
31615230
31615240
31615250
31615260
31615270
31615280
31615290
31615300
31615310
31615320
31615330
31615340
31615350
31615360
31615370
31615380
31615390
31615400
31615410
31615420
31615430
31615440
31615450
31615460
31615470
31615480
31615490
31615500
31615510
31615520
31615530
31615540
31615550
31615560
31615570
31615580
31615590
31615600
31615610
31615620
31615630
31615640
31615650

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```

OBA1 1 4400 OAEI
OBA3 0 4480 0164
*
OBA5 0 0000
OBA6 0 1890
OBA7 0 ABF1
OBA8 0 1088
OBA9 0 1808
OBAA 0 1088
OBAB 0 EBF4
OBAC 1 4C80 OBA5
*
OBAE 0 0000
OBAF 1 4C20 0BB7
*
OBB1 1 6700 05E9
OBB3 1 6F00 13C1
OBB5 1 4C00 0D48
*
OBB7 0 D399
OBB8 0 93E7
OBB9 1 4C20 0BD2
*
OBBB 0 C387
OBBC 0 93CA
OBBD 0 D39B
OBBE 0 D321
OBBF 1 6700 1445
OBC1 1 6F00 13C1
OBC3 0 6300
OBC4 1 C700 1446
OBC6 0 1890
OBC7 1 C700 1447
OBC9 0 18C8
OBCA 1 D700 1446
OBCC 0 1888
OBCD 0 7301
OBCE 1 74FE 13BF
OBDO 0 70F6
OBD1 0 7052
*
OBD2 0 93E7
OBD3 1 4C20 0BEA
*
OBD5 0 C3BE
OBD6 0 D321
OBD7 0 93C6
OBD8 0 D39B
OBD9 0 C3E0
OBDA 0 D322
OBD8 0 C3E7
OBD8 0 6300
OBD9 1 D700 1447
OBD1 1 8400 141C
OBE1 0 7301
OBE2 1 74FE 13BF
OBE4 0 70F8
OBE5 1 C400 1405
OBE7 1 D700 1447

```

```

BSI L ERPRT GO PRINT MSG
BSI I END END PROGRAM
*
*****
* CONVERT BINARY TO 2 EBCDIC
* DECIMAL DIGITS
*****
BTD DC *-*
SRT 16
D 3 H000A-T DIVIDE BY DEC 10
SLT 8 PUT HI ORDER DIGIT IN
SRA 8 ACC 4-7 AND LOW ORDER
SLT 8 DIGIT IN ACC 12-15
OR 3 HFOFO-T ADD ZONE BITS
BSC I BTD RETURN
*
*****
* GENERATE TEST MESSAGE
*****
GNTM DC *-*
BSC L XNOTZ,Z BR IF X NOT ZERO
*
LDX L3 XSPEC+1 SET TEST MESSAGE
STX L3 TMPNT LOCATION INDICATOR
BSC L EXITB+4
*
XNOTZ STO 3 TEMP-T SAVE X VALUE
S 3 H0001-T
BSC L XNOT1,Z BR IF X NOT ONE
*
LD 3 COUNT-T GET CHAR RECVD COUNT
S 3 H0007-T SUBTRACT 7
STO 3 CNTA-T STORE IN COUNTER A
STO 3 RFTTM-T STORE IN TEST MSG AREA
LDX L3 RFTTM SET TEST MESSAGE
STX L3 TMPNT LOCATION INDICATOR
LDX 3 0
LD L3 RAREA+4 GET 2 CHARACTERS
SRT 16 PUT IN Q
LD L3 RAREA+5 GET NEXT 2 CHARACTERS
RTE 8
STO L3 RFTTM&1 STO 2 CHAR IN TEST MSG
SRT 8
MDX 3 1
MDX L CNTA,-2 DECRE COUNT BY 2
MDX *-10
MDX EXITC EXIT IF LAST CHAR
*
XNOT1 S 3 H0001-T
BSC L XNOT2,Z BR IF X NOT 2
*
LD 3 D260-T SET TEST MESSAGE
STO 3 RFTTM-T CHAR COUNT TO 260
S 3 H0004-T
STO 3 CNTA-T SET COUNTER A TO 256
LD 3 DLSTX-T GET DLE STX CHARACTERS
STO 3 RFTTM+1-T PUT IN TEST MSG
LD 3 H0001-T GET 1ST 2 TEXT CHARS
LDX 3 0
SETO2 STO L3 RFTTM+2 STORE IN TEST MSG
A L H0202 ADD TWO TO EACH CHAR
MDX 3 1
MDX L CNTA,-2 DECRE COUNT BY TWO
MDX *-8 BR IF NOT LAST CHAR
LD L DLETX GET DLE ETX CHARS
STO L3 RFTTM+2 STORE IN TEST MSG

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31615660
31615670
31615680
31615690
31615700
31615710
31615720
31615730
31615740
31615750
31615760
31615770
31615780
31615790
31615800
31615810
31615820
31615830
31615840
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31615860
31615870
31615880
31615890
31615900
31615910
31615920
31615930
31615940
31615950
31615960
31615970
31615980
31615990
31616000
31616010
31616020
31616030
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31616090
31616100
31616110
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31616180
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31616260
31616270
31616280
31616290
31616300
31616310
31616320
31616330

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OC94 0 708F	MDX	EXITC	31617700
OC95 0 93E7	NOT15 S	3 H0001-T	31617710
OC96 1 4C20 0CB7	BSC L	XNT16,Z BR IF X NOT 16	31617720
*			
OC98 0 C301	LD	3 SELCT-T GET SFLECT CHARACTER	31617730
OC99 0 189C	SRT	16 SEL. CHAR TO Q	31617740
OC9A 0 C3F5	LD	3 H0002-T GET STX	31617750
OC9B 0 108E	SLT.	8 ADD SYN OR ESC	31617760
OC9C 0 D322	STO	3 RFTTM+1-T PUT IN TEST MESSAGE	31617770
OC9D 0 1090	SLT	16 GET SYN OR SELECT CHAR	31617780
OC9E 0 EB04	OR	3 K00AA-T GET AA CHARACTERS	31617790
OC9F 0 D323	STO	3 RFTTM+2-T PUT IN TEST MESSAGE	31617800
OCA0 0 C385	LD	3 HAA55-T PUT HEX AA55 IN	31617810
OCA1 0 D337	STO	3 RFTTM+22-T CENTER OF TEST MSG	31617820
OCA2 0 C387	LD	3 H5ETX-T PUT 55 EXT AT	31617830
OCA3 0 D34B	STO	3 RFTTM+42-T END OF TEST MSG	31617840
OCA4 0 C384	LD	3 HAAAA-T PUT 19 HEX AAAA	31617850
OCA5 0 6313	LDX	3 19 CHARACTERS	31617860
OCA6 1 D700 1447	STO L3	RFTTM+2 IN TEST MESSAGE	31617870
OCA8 0 73FF	MDX	3 -1	31617880
OCA9 0 70FC	MDX	*-4	31617890
OCAA 0 6313	LDX	3 19 PUT 19 HEX 5555	31617900
OCAB 1 C400 13DA	LD	L H5555 CHARACTERS	31617910
OCAD 1 D700 145B	STO L3	RFTTM+22 IN TEST MESSAGE	31617920
OCAF 0 73FF	MDX	3 -1	31617930
OCB0 0 70FC	MDX	*-4	31617940
OCB1 0 6700 0056	LDX L3	86 PUT CHAR COUNT	31617950
OCB3 1 6F00 1445	STX L3	RFTTM IN TEST MESSAGE	31617960
OCB5 1 4C00 0D44	BSC L	EXITB	31617970
*			
OCB7 0 93C0	XNT16 S	3 H0003-T	31617980
OCB8 1 4C20 0CD3	BSC L	XNT19,Z BR IF X NOT 19	31618000
*			
OCBA 0 C3F0	LD	3 DLSTX-T PUT DLE STX	31618010
OCBB 0 D322	STO	3 RFTTM+1-T IN TEST MSG	31618020
OCBC 0 C3E1	LD	3 DLFTX-T PUT DLE FTX AT	31618030
OCBD 1 D400 14D8	STO L	RFTTM&147 END OF TEST MESSAGE	31618040
OCBF 0 6700 008C	LDX L3	140 PUT 140 HEX 0000	31618050
OCC1 0 1010	SLA	16 CHARACTERS	31618060
OCC2 1 D700 1446	STO L3	RFTTM&1 IN TEST MESSAGE	31618070
OCC4 0 73FF	MDX	3 -1	31618080
OCC5 0 70FC	MDX	*-4	31618090
OCC6 0 6305	LDX	3 5 PUT 5 SYN SYN	31618100
OCC7 1 C400 13DC	LD	L SYSYN CHARACTERS	31618110
OCC9 1 D700 14D2	STO L3	RFTTM&141 IN TEST MESSAGE	31618120
OCCB 0 73FF	MDX	3 -1	31618130
OCCC 0 70FC	MDX	*-4	31618140
OCCD 0 6700 0126	LDX L3	294 PUT CHAR COUNT	31618150
OCCF 1 6F00 1445	STX L3	RFTTM IN TEST MSG	31618160
*			
OCDD 1 4C00 0D44	BSC L	EXITB	31618170
OCDE 0 93E7	XNT19 S	3 H0001-T	31618180
OCDF 1 4C20 0CF6	BSC L	XNT20,Z BR IF X NOT 20	31618190
OCDG 0 C01E	LD	D84 SET TEST MESSAGE	31618200
OCDH 0 D321	STO	3 RFTTM-T CHAR COUNT TO 84	31618210
OCDI 0 C3E0	LD	3 DLSTX-T GET DLE STX CHARACTERS	31618220
OCDJ 0 D322	STO	3 RFTTM+1-T PUT IN TEST MESSAGE	31618230
OCDA 0 6308	LDX	3 8 SFT TABLE	31618240
OCDB 1 6F00 13BF	STX L3	CNTA WORD COUNT	31618250
OCDD 0 6300	LDX	3 0 CLEAR WORD POINTER	31618260
OCDE 1 C700 0D57	SFT20 LD	L3 DATTR+10 GET FIRST CHARACTER	31618270
OCDF 0 1008	SLA	8 POSITION CHARACTER	31618280
OCF1 1 D400 0C27	STO L	HIBYT SAVE CHARACTER	31618290
OCF3 1 C700 0D58	LD	L3 DATTR+11 GET 2ND CHARACTER	31618300
OCF5 0 1808	SRA	8 POSITION CHARACTER	31618310
OCF6 1 E000 0C27	OR	L HIBYT GET FIRST CHARACTER	31618320
OCF8 1 D700 1447	STO L3	RFTTM+2 PUT IN TEST MESSAGE	31618330
OCFA 0 7301	MDX	3 +1 STEP WORD POINTER	31618340

OCED 1 74FF 13BF	MDX L	CNTA,-1	DECR WORD COUNT	31618380
OCED 0 70F0	MDX	SET20	GO GET NEXT CHAR SET	31618390
OCEE 0 6240	LDX	2 64		31618400
OCEF 1 6E00 13BF	STX L2	CNTA	SET SEQUENTIAL CHAR COUNT	31618410
OCF1 1 C400 140B	LD	L H0001	PRIME CHARACTER GENERATOR	31618420
OCF3 1 4C00 0BDD	BSC L	SFT02	GO GENERATE SEQUENTIAL	31618430
OCF5 0 0054	D84 DC	84	CHARACTERS	31618440
OCF6 0 93E7	XNT20 S	3 H0001-T		31618450
OCF7 1 4C20 0D19	BSC L	XNT21,Z	BR IF X NOT 21	31618460
OCF9 0 C01E	LD	D124	SET TEST MESSAGE	31618470
OCFA 0 D321	STO	3 RFTTM-T	CHAR COUNT TO 124	31618480
OCFB 0 C3E0	LD	3 DLSTX-T	GET DLE STX CHARACTERS	31618490
OCFC 0 D322	STO	3 RFTTM+1-T	PUT IN TEST MESSAGE	31618500
OCFD 0 6312	LDX	3 18	SET TABLE	31618510
OCFE 1 6F00 13BF	STX L3	CNTA	WORD COUNT	31618520
OD00 0 6300	LDX	3 0	CLEAR WORD POINTER	31618530
OD01 1 C700 0D4D	SET21 LD	L3 DATTR	GET FIRST CHARACTER	31618540
OD03 0 1008	SLA	8	POSITION CHARACTER	31618550
OD04 1 D400 0C27	STO L	HIBYT	SAVE CHARACTER	31618560
OD06 1 C700 0D4E	LD	L3 DATTR+1	GET 2ND CHARACTER	31618570
OD08 0 1808	SRA	8	POSITION CHARACTER	31618580
OD09 1 EC00 0C27	OR	L HIBYT	GET FIRST CHARACTER	31618590
OD0B 1 D700 1447	STO L3	RFTTM+2	PUT IN TEST MESSAGE	31618600
OD0D 0 7301	MDX	3 +1	STEP WORD POINTER	31618610
OD0E 1 74FF 13BF	MDX L	CNTA,-1	DECR WORD COUNT	31618620
OD10 0 70F0	MDX	SET21	GO GET NEXT CHAR SET	31618630
OD11 0 6254	LDX	2 84		31618640
OD12 1 6E00 13BF	STX L2	CNTA	SET SEQUENTIAL CHAR COUNT	31618650
OD14 1 C400 140B	LD	L H0001	PRIME CHARACTER GENERATOR	31618660
OD16 1 4C00 0BDD	BSC L	SET02	GO GENERATE SEQUENTIAL	31618670
OD18 0 007C	D124 DC	124	CHARACTERS	31618680
OD19 0 93E7	XNT21 S	3 H0001-T		31618690
OD1A 1 4C20 0D3C	BSC L	XNT22,Z	BR IF X NOT 22	31618700
OD1C 0 C01E	LD	D148	SET TEST MESSAGE	31618710
OD1D 0 D321	STO	3 RFTTM-T	CHAR COUNT TO 148	31618720
OD1E 0 C3E0	LD	3 DLSTX-T	GET DLE STX CHARACTERS	31618730
OD1F 0 D322	STO	3 RFTTM+1-T	PUT IN TEST MESSAGE	31618740
OD20 0 6312	LDX	3 18	SET TABLE	31618750
OD21 1 6F00 13BF	STX L3	CNTA	WORD COUNT	31618760
OD23 0 6300	LDX	3 0	CLEAR WORD POINTER	31618770
OD24 1 C700 0D4D	SET22 LD	L3 DATTR	GET FIRST CHARACTER	31618780
*				31618790
OD26 0 1008	SLA	8	POSITION CHARACTER	31618800
OD27 1 D400 0C27	STO L	HIBYT	SAVE CHARACTER	31618810
OD29 1 C700 0D4E	LD	L3 DATTR+1	GET 2ND CHARACTER	31618820
OD2B 0 1808	SRA	8	POSITION CHARACTER	31618830
OD2C 1 EC00 0C27	OR	L HIBYT	GET FIRST CHARACTER	31618840
OD2E 1 D700 1447	STO L3	RFTTM+2	PUT IN TEST MESSAGE	31618850
OD30 0 7301	MDX	3 +1	STEP WORD POINTER	31618860
OD31 1 74FF 13BF	MDX L	CNTA,-1	DECR WORD COUNT	31618870
OD33 0 70F0	MDX	SET22	GET NEXT CHARACTER	31618880
OD34 0 626C	LDX	2 108		31618890
OD35 1 6E00 13BF	STX L2	CNTA	SET SEQUENTIAL CHAR COUNT	31618900
OD37 1 C400 140B	LD	L H0001	PRIME CHARACTER GENERATOR	31618910
OD39 1 4C00 0BDD	BSC L	SET02	GO GENERATE SEQUENTIAL	31618920
OD3B 0 0094	D148 DC	148	CHARACTERS	31618930
OD3C 0 C399	XNT22 LD	3 TEMP-T	GET X VALUE	31618940
OD3D 1 F400 05E8	EOR L	XSPEC	CK EQUAL TO SPECIAL X	31618950
OD3F 0 6113	LDX	1 /13		31618960
OD40 1 4C20 0B19	BSC L	BDRFT,Z	BR IF NOT EQUAL	31618970
OD42 1 4C00 0B81	BSC L	GNTM+3		31618980
*				31618990
OD44 1 6700 1445	EXITB LDX	L3 RFTTM	SET TEST MESSAGE	31619000
OD46 1 6F00 13C1	STX L3	TMPNT	LOCATION INDICATOR	31619010
OD48 1 6700 1424	LDX	L3 T	RESTORE XR3	31619020
OD4A 1 4C80 0BAE	BSC	I GNTM	RETURN	31619030
OD4C 0 0227	STXSC DC	/0227	STX/ESC	31619040
OD4D 0 00C1	DATTR DC	/00C1	0 A	31619050

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OD4E 0 C2C3      DC      /C2C3      B  C
OD4F 0 C4C5      DC      /C4C5      D  E
OD50 0 C6C7      DC      /C6C7      F  G
OD51 0 C8C9      DC      /C8C9      H  I
OD52 0 D1D2      DC      /D1D2      J  K
OD53 0 D3D4      DC      /D3D4      L  M
OD54 0 D5D6      DC      /D5D6      N  O
OD55 0 D7D8      DC      /D7D8      P  Q
OD56 0 D9F2      DC      /D9F2      R  S
OD57 0 E3E4      DC      /E3E4      T  U
OD58 0 E5E6      DC      /E5E6      V  W
OD59 0 E7E8      DC      /E7E8      X  Y
OD5A 0 E9F0      DC      /E9F0      Z  0
OD5B 0 F1F2      DC      /F1F2      1  2
OD5C 0 F3F4      D4 DC      /F3F4      3  4
OD5D 0 F5F6      DC      /F5F6      5  6
OD5E 0 F7F8      DC      /F7F8      7  8
OD5F 0 F900      DC      /F900      9  0

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D4

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*****
* PRINT END OF TEST MESSAGE
*****

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OD60 0 C306      ENPRT LD 3 RVISW-T
OD61 1 4C10 OD66 BSC L ENTYP,- BR IF NO RVI
OD63 0 6207      LDX 2 7
OD64 1 4400 OA6E BSI L TYPIT PRINT RVI RCVD
OD66 0 1010      ENTYP SLA 16
OD67 0 D306      STO 3 RVISW-T CLEAR RVI FLAG
OD68 1 7400 13C6 MDX L TMXMI
OD6A 0 7053      MDX PRTXM BR IF TEST MSG XMIT IND ON
OD6B 1 7400 13C5 MDX L TMRCI
OD6D 0 7052      MDX PRTRC BR IF TEST MSG REC IND ON
*
OD6E 1 4400 OA59 PDAT BSI L CKOPN
OD70 1 C400 05E1 LD L SW2 CK OPTION SWITCH
OD72 0 100C      SLA 12
OD73 0 180E      SRA 14
OD74 1 4C18 ODCB BSC L ENDIT,- BR IF PRINT TEXT NOT ON
OD76 1 6700 15D5 LDX L3 ENTBL
OD78 1 6F00 13BF STX L3 CNTA
*
OD7A 1 C480 13BF GTCNT LD I CNTA GET WORD FROM END MSG TBL
OD7C 1 4C18 ODCB BSC L ENDIT,- BR IF ZERO
*
OD7E 1 4C08 0D92 BSC L ALPH,+ BR IF ALPHA MSG ADDRS
*
OD80 1 D400 13C0 STO L CNTR SAVE HEX CHAR COUNT
OD82 0 63F2      LDX 3 -14
OD83 1 7401 13BF GTHEX MDX L CNTA,+1
OD85 1 C480 13BF LD I CNTA GET 2 HEX BYTES
OD87 1 D700 1440 STO L3 TABLE&19 PUT HEX WORD IN PRINT TBL
OD89 1 74FE 13C0 MDX L CNTB,-2 DECR CHAR COUNT BY TWO
OD8R 0 7003      MDX ENX
OD8C 0 7301      MDX 3 1 ADJ LINE COUNT
OD8D 0 100C      NOP
OD8E 0 7C14      MDX HEX GO PRINT IF CNT ZERO
*
OD8F 0 7301      ENX MDX 3 1 ADJ LINE COUNT
OD90 0 70F2      MDX GTHEX GO GET NEXT CHARACTER
OD91 0 7011      MDX HEX GO PRT IF 14 CHARS
*
OD92 1 F400 142C ALPH AND L H7FFF
OD94 1 D400 1430 STO L TABLE+3
OD96 1 C400 141F LD L H8000
OD98 1 D400 142F STO L TABLE&2
OD9A 1 4400 1039 BSI L $XLOG CHECK WHICH PRINTER
OD9C 0 403C      BSI CKMON

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31619060
31619070
31619080
31619090
31619100
31619110
31619120
31619130
31619140
31619150
31619160
31619170
31619180
31619190
31619200
31619210
31619220
31619230
31619240
31619250
31619260
31619270
31619280
31619290
31619300
31619310
31619320
31619330
31619340
31619350
31619360
31619370
31619380
31619390
31619400
31619410
31619420
31619430
31619440
31619450
31619460
31619470
31619480
31619490
31619500
31619510
31619520
31619530
31619540
31619550
31619560
31619570
31619580
31619590
31619600
31619610
31619620
31619630
31619640
31619650
31619660
31619670
31619680
31619690
31619700
31619710
31619720
31619730

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OD9D 0 1010      SLA 16
OD9E 1 D400 1430 STO L TABLE&3
ODA0 1 7401 13BF MDX L CNTA,&1
ODA2 0 70D7      MDX GTCNT
*
ODA3 0 C400 0003 HEX LD L 3 SET UP
ODA5 1 F400 141A EOR L HFFFF NUMBER OF
ODA7 1 8400 1422 A L H1802 CHARACTERS
ODA9 0 D002      STO *E2 TO BE
ODAA 1 C400 1420 LD L H7FFF PRINTED
ODAC 0 1800      SRA *-*
ODAD 1 EC00 141E OR L H8000
ODAF 1 D400 142F STO L TABLE&2
ODB1 1 4400 1039 BSI L $XLOG CHECK WHICH PRINTER
ODB3 0 4025      BSI CKMON
ODB4 1 C400 13C0 LD L CNTB
ODB6 1 4C30 0D82 BSC L GTHEX-1,Z- BR IF MORE HEX CHARACTERS
*
ODB8 0 1010      SLA 16 CLEAR SWITCH AND ACC
ODB9 1 D400 1129 STO L $FLSW *
ODBB 1 7401 13BF MDX L CNTA,&1
ODBD 0 70BC      MDX GTCNT
*
ODBE 0 6205      PRTXM LDX 2 5
ODBF 0 7001      MDX *E1
*
ODC0 0 6206      PRTRC LDX 2 6
ODC1 0 C3FD      LD 3 H001F-T
ODC2 0 D30A      STO 3 TABLE+1-T
ODC3 0 D30B      STO 3 TABLE+2-T
ODC4 1 4400 OA6E BSI L TYPIT GO PRINT MSG
ODC6 0 4012      BSI CKMON
ODC7 0 1010      SLA 16
ODC8 1 D400 142E STO L TABLE+1
ODCA 0 70A3      MDX PDAT
*
ODCB 1 4400 0DE0 ENDIT BSI L PRDCL CHECK FOR 1132 DELAY
ODCC 1 C400 13C0 LD L OPTIN
ODCF 1 4C28 062A BSC L STRT,Z+ BR IF OPTION SW 15 ON
ODD1 1 4C08 0664 BSC L CNTRL,+ BR IF NO RTN SEL ECTED
*
ODD3 1 9400 06R7 S L RIDCK
ODD5 1 4C18 062A BSC L STRT,+
*
ODD7 0 4480 0164 BSI I END
*
ODD9 0 0000      CKMON DC *-*
ODDA 1 6780 0DD9 LDX I3 CKMON
ODDC 1 6F00 05E5 STX L3 MLSCF
ODDE 0 4480 0161 BSI I START
ODE0 0 0000      PRTDL DC *-* 1132 PRINT DELAY ROUTINE
ODE1 1 C400 05E1 LD L SW2
ODE3 0 1009      SLA 9 CHECK FOR 1132 PRINTER
ODE4 1 4C10 0DF5 BSC L DLEX,- BR IF NOT 1132 PRINTER
ODE6 1 6700 1424 LDX L3 T
ODE8 0 08D2      XIO 3 RESET-T RESET BSCA
ODE9 0 08CF      XIO 3 SNSRS-T SENSE AND RST DSW
ODEA 0 6700 0005 LDX L3 5 LOAD DELAY COUNT
ODEC 0 1810      DLY1 SRA 16 1132 PRINT DELAY
ODED 1 8400 140B A L H0001 DECR. COUNT
ODEF 1 4C10 0DED BSC L *-4,-
ODF1 0 73FF      MDX 3 -1
ODF2 0 70F9      MDX DLY1
ODF3 1 6700 1424 LDX L3 T RESTORE INDEX 3
ODF5 1 4C80 0DE0 DLEX BSC I PRDCL RETURN
*
*****
* STORE ALPHA MSG IN PRINT TABLE

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31619740
31619750
31619760
31619770
31619780
31619790
31619800
31619810
31619820
31619830
31619840
31619850
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31619870
31619880
31619890
31619900
31619910
31619920
31619930
31619940
31619950
31619960
31619970
31619980
31619990
31620000
31620010
31620020
31620030
31620040
31620050
31620060
31620070
31620080
31620090
31620100
31620110
31620120
31620130
31620140
31620150
31620160
31620170
31620180
31620190
31620200
31620210
31620220
31620230
31620240
31620250
31620260
31620270
31620280
31620290
31620300
31620310
31620320
31620330
31620340
31620350
31620360
31620370
31620380
31620390
31620400
31620410

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*****
*
00F7 0 0000
00F8 0 0399
00F9 0 F3R1
00FA 0 03A0
00FB 0 00FB
00FC 0 000D
00FD 0 0303
00FE 1 4C2R 0E2F
00F0 0 03A0
0E01 0 039F
0E02 1 7401 13C3
0E04 0 939E
0E05 1 4C30 0E2E

0E07 1 4C10 0E29
0E09 0 7010

*****
*
0E0A 0 0000
0E0B 0 0399
0E0C 0 03A0
0E0D 0 939E
0E0E 1 4C30 0E2F

0E10 1 4C10 0E29

0E12 0 039F
0E13 0 F3A0
0E14 1 4C20 0F19

0E16 1 7401 13C4
0E18 0 70F3
0E19 1 0480 13C3
0E1B 0 83F7
0E1C 1 0480 13C3
0E1E 1 4C04 0E27

0E20 1 74FF 13C4
0E22 0 0399
0E23 0 1808
0E24 1 0C80 13C4
0E26 0 7003

0E27 0 0399
0E28 0 7001
0E29 0 03B2
0E2A 1 0480 13C4
0E2C 1 7401 13C4
0E2E 0 1010
0E2F 1 0480 13C4
0E31 1 4C80 0E0A

0E33 0 0000
0E34 1 6F00 1036
0E36 1 6700 1424
0E38 0 0BCE
0E39 0 0395
0E3A 0 0394
0E3B 1 4C18 1031

*****
*
STALP DC *-*
STO 3 TEMP-T SAVE MSG ADDRS
EOR 3 MSG4-T
STO 3 NOFRR-T
LD STALP SET UP
STO STOIT RETURN
LD 3 ENQSW-T
BSC L OUT+7,+Z BR IF X=99 INITIAL
LD 3 ENPNT-T
STO 3 CNTPT-T
MDX L CNTPT,+1
S 3 TOP-T
BSC L OUT&7,Z- BR IF NO MORE CORE
*
BSC L OUT&2,- BR IF ONE ADDR LEFT
MDX OUT BR TO STORE MSG ADDRS
*
*****
*
STORE HEX CHARACTER IN PRINT TABLE
*****
*
STOIT DC *-*
STO 3 TEMP-T SAVE HEX CHARACTER
LD 3 ENPNT-T
S 3 TOP-T
BSC L OUT&7,Z- BR IF NO MORE CORE
*
BSC L OUT&2,- BR IF ONE ADDRESS LEFT
*
LD 3 CNTPT-T
EOR 3 ENPNT-T
BSC L *&3,Z BR IF ALPH MSG WAS LAST
*
MDX L ENPNT,&1 INCRE POINTER
MDX STOIT&2 BRANCH
LD I CNTPT
A 3 H0001-T ADD 1 TO HEX CHAR CNT
STG I CNTPT
BSC L OUT,E BR IF COUNT ODD
*
MDX L ENPNT,-1 DECFE POINTER BY ONE
LD 3 TEMP-T
SPA 8
OR I ENPNT PACK TWO HEX CHARACTERS
MDX OUT&3 BRANCH
*
OUT LD 3 TEMP-T GET CHARACTER
MDX *&1 SKIP
LD 3 MSG5-T
STO I ENPNT STO ALPH OR HFX MSG
MDX L ENPNT,&1 INCRE POINTER BY ONE
SLA 16
STO I ENPNT
BSC I STOIT RETURN
*
*****
*
INTERRUPT SERVICE ROUTINE
*****
*
INT DC *-*
STX L2 FXIT+1 SAVE XR2
LDX L3 T XR3#CONSTANT TBL
XIO 3 SNRS-T SENSE SCA DSW
STO 3 DSW-T SAVE DSW
LD 3 RTBSY-T
BSC L EXIT1,&- BR IF RTN NOT BUSY

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31620420
31620430
31620440
31620450
31620460
31620470
31620480
31620490
31620500
31620510
31620520
31620530
31620540
31620550
31620560
31620570
31620580
31620590
31620600
31620610
31620620
31620630
31620640
31620650
31620660
31620670
31620680
31620690
31620700
31620710
31620720
31620730
31620740
31620750
31620760
31620770
31620780
31620790
31620800
31620810
31620820
31620830
31620840
31620850
31620860
31620870
31620880
31620890
31620900
31620910
31620920
31620930
31620940
31620950
31620960
31620970
31620980
31620990
31621000
31621010
31621020
31621030
31621040
31621050
31621060
31621070
31621080
31621090

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0E3D 0 C3FC
0E3E 0 0398
0E3F 0 C392
0E40 1 4C18 0E7C
0E42 0 C395
0E43 0 1003
0E44 1 4C10 0E50
0E46 0 C385
0E47 0 93C0
0E48 0 4818
0E49 0 0BC0
0E4A 0 C3E5
0E4B 0 0391
0E4C 0 C395
0E4D 0 1001
0E4E 1 4C10 1035
0E50 0 C389
0E51 1 4C20 0E6C
0E53 0 C385
0E54 0 93C0
0E55 1 4C30 0E6C
0E57 0 C391
0E58 1 4C08 0E6C
0E5A 0 93E7
0E5B 0 0391
0E5C 1 4C18 0E67
0E5E 0 C385
0E5F 0 93C0
0E60 1 4C20 0E67
0E62 0 C3D9
0E63 0 40A6
0E64 0 0BC2
0E65 1 4C00 1035
0E67 0 C3D8
0E68 0 40A1
0E69 0 0BC4
0E6A 1 4C00 1035
0E6C 0 C387
0E6D 1 4C04 0E76
0E6F 1 0480 1387
0E71 0 E3F5
0E72 0 0390
0E73 1 7401 13AB
0E75 0 702B
0E76 1 0480 1387
0E78 0 1008
0E79 1 7401 1387
0E7B 0 70F6

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```

*
LD 3 H7FFF-T
STO 3 WTCNT-T RESTORF WAIT COUNT
*
LD 3 FCODE-T
BSC L RECV,&- BR IF RECV FUNCTION
*
-----
*
TRANSMIT FUNCTION
-----
LD 3 DSW-T
SLA 3
BSC L WRESP,- BR IF NO TIMEOUT
*
LD 3 MDSWT-T
S 3 H0003-T
BSC &- SKIP NOT TRANS MODE
XIO 3 TIMER-T START PROG TIMER
LD 3 H0002-T
STO 3 SYNC-T XMIT SYNS IND TO 2
LD 3 DSW-T
SLA 1
BSC L EXIT,- RETURN IF NOT WR RESP
*
WRESP LD 3 LSDLE-T
BSC L CKCNT,Z BR IF LAST CHAR WAS DLE
*
LD 3 MDSWT-T
S 3 H0003-T
BSC L CKCNT,Z- BR IF BCC TIME
*
LD 3 SYNC-T
BSC L CKCNT,& BR IF SYNS IND ZERO
*
S 3 H0001-T DECFE SYNS IND BY ONE
STO 3 SYNC-T
BSC L WSYNC,&- BR IF SYNS IND ZERO
*
LD 3 MDSWT-T
S 3 H0003-T
BSC L WSYNC,Z BR IF NOT TRANS MODE
*
LD 3 DLE-T
BSI STOIT STORE DLE IN PRINT TBL
XIO 3 WRDLE-T XMIT DLE
BSC L EXIT RETURN
*
WSYNC LD 3 SYN-T
BSI STOIT STORE SYN IN PRINT TBL
XIO 3 WRSYN-T XMIT SYN
BSC L EXIT RETURN
*
CKCNT LD 3 COUNT-T
BSC L ODD,E BR IF CHAR COUNT ODD
*
LD I POINT GET WORD FROM I/O AREA
AND 3 HFF00-T MASK OUT BITS 8-15
STO 3 BUFFER-T PUT CHAR IN BUFFER
MDX L COUNT,&1 INCRE CHAR COUNT &1
MDX MDXMD GO TO CK MODE
*
ODD LD I POINT GET WORD FROM I/O AREA
SLA 8 BITS 8-15 TO WRITE POSIT
MDX L POINT,&1 INCRE ADDR POINTER &1
MDX STBFR
*
-----
*
RECFIVE FUNCTION

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31621100
31621110
31621120
31621130
31621140
31621150
31621160
31621170
31621180
31621190
31621200
31621210
31621220
31621230
31621240
31621250
31621260
31621270
31621280
31621290
31621300
31621310
31621320
31621330
31621340
31621350
31621360
31621370
31621380
31621390
31621400
31621410
31621420
31621430
31621440
31621450
31621460
31621470
31621480
31621490
31621500
31621510
31621520
31621530
31621540
31621550
31621560
31621570
31621580
31621590
31621600
31621610
31621620
31621630
31621640
31621650
31621660
31621670
31621680
31621690
31621700
31621710
31621720
31621730
31621740
31621750
31621760
31621770

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*-----*
OE7C 0 C395      RECV  LD  3 DSW-T      31621780
OE7D 0 1003      SLA   3          31621790
OE7F 1 4C10 OE87 BSC  L  READR,-    BR IF NOT TIMEOUT 31621800
*                                     31621810
OE80 0 C3F6      LD    3 HFFFF-T    31621820
OE81 0 D390      STO   3 BUFFER-T    SET TIMEOUT END   31621830
OE82 0 C3AE      LD    3 MSG1-T     STORE TIMEOUT MSG 31621840
OE83 1 4400 ODF7 BSI  L  STALP      IN PRINT TBL     31621850
OE85 1 4C00 102F BSC  L  RCFTX      31621860
*                                     31621870
OE87 0 08C8      READR XIO 3 READ-T    READ SCA BUFFER   31621880
OE88 0 C390      LD    3 BUFFER-T    31621890
OE89 1 4400 OF0A BSI  L  STOIT      STO CHAR IN PRINT 31621900
OE8B 0 C390      LD    3 BUFFER-T    GET CHARACTER     31621910
OE8C 0 F3D9      EOR   3 DLE-T      31621920
OE8D 1 4C18 OFA1 BSC  L  MDXMD,+--  BR IF DLE        31621930
OE8F 0 C305      LD    3 STXSW-T    31621940
OE90 1 4C28 OF99 BSC  L  TTDCX,+Z   BR IF LAST CHAR  31621950
OE92 0 C390      LD    3 BUFFER-T    GET CHARACTER     31621960
OE93 0 F3DD      EOR   3 STX-T      31621970
OE94 1 4C20 OFA1 BSC  L  MDXMD,Z    BR IF NOT STX    31621980
OE96 0 C000      LD    *           31621990
OE97 0 D305      STO   3 STXSW-T    SET STX RCVD SWITCH 31622000
OE98 0 7008      MDX   MDXMD       31622010
OE99 0 1810      TTDCX SRA  16     31622020
OE9A 0 D305      STO   3 STXSW-T    RESET STX SWITCH  31622030
OE9B 0 C390      LD    3 BUFFER-T    GET CHARACTER     31622040
OE9C 0 F3E8      EOR   3 ENQ-T      31622050
OE9D 1 4C20 OFA1 BSC  L  MDXMD,Z    BR IF NOT TTD    31622060
OE9F 0 C000      LD    *           31622070
OFA0 0 D307      STO   3 TTDSW-T    SET TTD FLAG      31622080
*                                     31622090
*-----*
* BRANCH TO PROPER MODE
*-----*
OEA1 1 6680 13A9 MDXMD LDX  12 MDSWT    GET MODE INDICATOR 31622100
OEA3 1 4E80 OEA5 BSC  12 *          TO PROPER ROUTINE 31622110
OEA5 1 OFAC      DC    NOMOD        NO MODE SET       31622120
OEA6 1 OFC5      DC    HEADG        XMIT/REC HEADING   31622130
OEA7 1 OECD      DC    NORML        XMIT/REC NORM TEXT 31622140
OEA8 1 OEDE      DC    TRANS        XMIT/REC TRANS TEXT 31622150
OEA9 1 OF1F      DC    BCC1         XMIT/REC LOW ORD BCC 31622160
OFAA 1 OF32      DC    BCC2         XMIT/REC HIGH ORD BCC 31622170
OEA1 1 OF5F      DC    ITBMD        INT BLK CK MODE    31622180
*                                     R2=0 31622190
*                                     R2=1 31622170
*                                     R2=2 31622180
*                                     R2=3 31622190
*                                     R2=4 31622200
*                                     R2=5 31622210
*                                     R2=6 31622220
*-----*
* NO MODE SET
*-----*
OFA1 0 C388      NOMOD LD  3 FIRST-T    31622230
OFA2 1 6C00 13AF STX  L  FIRST      SET FIRST CHAR IND 31622240
OFA3 0 4818      BSC  L  +-          SKIP IF IND ON     31622250
*                                     31622260
OFA4 0 08CA      XIO   3 RETIM-T     RESTART TIMER      31622270
OFA5 0 C390      LD    3 BUFFER-T    31622280
OFA6 0 F3E8      EOR   3 ENQ-T      31622290
OFA7 0 4820      BSC  Z            SKIP IF ENQ        31622300
OFA8 0 F3E8      EOR   3 EQEOT-T    31622310
OFA9 1 4C18 OFC1 BSC  L  DONE,&-    BR IF ENQ OR FOT  31622320
*                                     31622330
OFA10 0 C390     LD    3 BUFFER-T    31622340
OFA11 0 F3E4     FOR   3 NAK-T      31622350
OFA12 1 4C18 OFC1 BSC  L  DONE,&-    BR IF NAK         31622360
*                                     31622370
OFA13 0 C390     LD    3 BUFFER-T    31622380
OFA14 0 F3DA     FOR   3 WAK-T      31622390
OFA15 1 4C18 OFC1 BSC  L  DONE,&-    BR IF NAK         31622400
*                                     31622410
OFA16 0 C390     LD    3 BUFFER-T    31622420
OFA17 0 F3DA     FOR   3 WAK-T      31622430
OFA18 1 4C20 OF67 BSC  L  CKSTX&1,Z  BR IF NOT WACK    31622440
OFA19 1 6C00 13A8 STX  L  MSWAK      SET WACK RECEIVED FLAG 31622450

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```

OFC1 0 1010
OEC2 0 D394
OEC3 1 4C00 OFEE
*
OFC5 1 4400 OFAD
OEC7 1 4400 OF66
OEC9 1 4400 OFC1
OECB 1 4C00 OFDC
*
OEC1 1 4400 OFAD
OECF 0 C390
OED0 0 F3D9
OED1 0 4820
OED2 0 F3E0
OED3 0 4820
OED4 0 F3DB
OED5 1 4C18 OEDB
OED7 1 4400 OFC1
OED9 1 4C00 OFDC
*
OEDB 0 C000
OEDC 0 D386
OEDD 0 70FB
*
OEDE 0 C389
OEDF 1 4C20 OFE9
*
OEE1 0 C390
OEE2 0 F3D9
OEE3 1 4C20 OFDC
OEE5 0 C000
OEE6 0 D389
OEE7 1 4C00 OFEE
*
OEE9 0 1010
OEEA 0 D389
OEEB 0 C392
OEEC 1 4C20 OFEF
*
OEEF 0 C390
OEEF 0 F3D8
OEF0 1 4C18 OF08
*
OEF2 0 F3DC
OEF3 1 4C20 OFF9
*
OEF5 1 4400 OFDE
OEF7 1 4C00 1035
*
OEF9 1 4400 OFC1
OEFB 0 C000
OEEC 0 D386
OEEF 1 4C00 OFDC
*
OEEF 1 C480 13B6
OEF01 0 9387
OEF02 1 4C30 OF08

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```

*
* DONE SLA 16
* STO 3 RTBSY-T RESET RTN BUSY IND
* BSC L RDWRT
*
*-----*
* TRANSMIT/RECEIVE HEADING TEXT
*-----*
HEADG BSI  L  CKSYN    GO CHECK FOR SYN CHAR 31622530
      BSI  L  CKSTX    GO CHECK FOR START CHAR 31622540
      BSI  L  CKEND    GO CHECK FOR END CHAR  31622550
      BSC  L  BLKCK    CALC BCC AND XMIT OR STO 31622560
*
*-----*
* TRANSMIT/RECEIVE NORMAL TEXT
*-----*
NORML BSI  L  CKSYN    GO CK FOR SYN CHAR 31622610
      LD   3 BUFFER-T  31622620
      EOR  3 DLE-T     31622630
      BSC  Z           31622640
      EOR  3 DLSTX-T   SKIP IF DLE CHAR     31622650
      BSC  Z           31622660
      EOR  3 SXSOH-T   SKIP IF DLE OR STX   31622670
      BSC  L  **+,+--  BR IF DLE STX OR STX  31622680
      BSI  L  CKEND    GO CK FOR END CHAR  31622690
      BSC  L  BLKCK    GO TO XMIT OR STO CHAR 31622700
*
      LD   *           31622710
      STO  3 ERR-T     SET ERROR INDICATOR 31622720
      MDX *+5         31622730
*
*-----*
* TRANSMIT/RECEIVE TRANSPARENT TEXT
*-----*
TRANS LD  3 LSDLE-T
      BSC  L  DLESQ,Z  BR IF LAST CHAR WAS DLE 31622800
*
      LD   3 BUFFER-T  31622810
      EOR  3 DLE-T     31622820
      BSC  L  BLKCK,Z  BR IF NOT DLE IN BUFFER 31622830
      LD   *           31622840
      STO  3 LSDLE-T   SET LAST DLE IND   31622850
      BSC  L  RDWRT    31622860
*
      DLESQ SLA  16    31622870
      STO  3 LSDLE-T  RESET LAST CHAR DLE IND 31622880
      LD   3 FCODE-T   31622890
      BSC  L  XMTOP,Z  BR IF XMIT FUNCTION   31622900
*
      LD   3 BUFFER-T  31622910
      EOR  3 SYN-T     31622920
      BSC  L  DCRCT,&- BR IF SYN RECVD     31622930
*
      EOR  3 DLSYN-T   31622940
      BSC  L  NOTDL,Z  BR IF NOT DLE RECVD   31622950
*
      BSI  L  CALBC    GO CALCULATE BCC     31622960
      BSC  L  EXIT     31622970
*
      NOTDL BSI  L  CKEND  GO CK FOR END CHAR  31622980
      LD   *           31622990
      STO  3 ERR-T     31623000
      BSC  L  BLKCK    31623010
*
      XMTOP LD  I  FCODE  31623020
      S    3 COUNT-T   31623030
      BSC  L  DCRCT,Z- BR IF NOT LAST CHAR XMIT 31623040
*

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OF04 1 4400 OFC1      BSI L CKEND      GO CK FOR END CHAR      31623140
OF06 1 4C00 1027      BSC L XMEXT      31623150
*
OF08 0 C387          DCRCT LD 3 COUNT-T 31623160
OF09 1 4C04 OF0D      BSC L *E2,F      BR IF COUNT ODD      31623170
OF0B 1 74FF 13R7      MOX L POINT,-1   DECRE ADDR POINTER -1 31623180
OF0D 1 74FF 13AB      MOX L COUNT,-1   DECRE COUNT -1      31623190
OF0F 0 C392          LD 3 FCODE-T     31623200
OF10 1 4C20 OF15      LD 3 FCODE-T     31623210
*
OF12 0 0RCA          BSC L WRF,Z      BR IF XMIT FUNCTION  31623220
OF13 1 4C00 1035      XIO 3 RETIM-T    RESTART TIMER       31623230
*
OF15 0 0BC2          WRF XIO 3 WRDLE-T XMIT DLE CHAR      31623240
OF16 0 C3D9          LD 3 DLE-T       31623250
OF17 0 D390          STO 3 BUFFER-T   31623260
OF18 1 4400 OFDE      BSI L CALBC      31623270
OF1A 0 C3D9          LD 3 DLE-T       31623280
OF1B 1 4400 OF0A      BSI L ST0IT      31623290
OF1D 1 4C00 1035      BSC L EXIT       31623300
*
*-----*
* TRANSMIT/RECEIVE BCC CHARACTERS
*-----*
OF1F 0 6205          BCC1 LDX 2 5      31623310
OF20 1 6E00 13A9      STX L2 MDSWT     SET BCC2 IN MODE IND 31623320
OF22 0 C392          LD 3 FCODE-T     31623330
OF23 1 4C20 OF2A      RSC L XMBCC,Z    BR IF XMIT FUNCTION  31623340
*
OF25 0 C390          LD 3 BUFFER-T    31623350
OF26 0 1808          SRA 8            31623360
OF27 0 D396          STO 3 BCCR-T     31623370
OF28 1 4C00 1035      BSC L EXIT       31623380
*
OF2A 0 C388          XMBCC LD 3 BCCA-T 31623390
OF2B 0 1008          SLA 8            31623400
OF2C 0 D390          STO 3 BUFFER-T   31623410
OF2D 1 4400 OF0A      BSI L ST0IT      31623420
OF2E 0 0BCC          XIO 3 WRBUF-T    XMIT BUFFER         31623430
OF30 1 4C00 1035      BSC L EXIT       31623440
*
OF32 0 C392          BCC2 LD 3 FCODE-T 31623450
OF33 1 4C20 OF42      BSC L XMLST,Z    BR IF XMIT FUNCTION  31623460
*
OF35 0 C390          LD 3 BUFFER-T    31623470
OF36 0 EB96          OR 3 BCCR-T      31623480
OF37 0 D396          STO 3 BCCR-T     31623490
OF38 0 9388          S 3 BCCA-T       31623500
OF39 0 4820          BSC Z            31623510
OF3A 0 D386          STO 3 ERR-T      31623520
OF3B 0 D388          STO 3 BCCA-T     31623530
OF3C 0 C38F          LD 3 MDSAV-T     31623540
OF3D 1 4C18 102F      BSC L RCEXT,+    31623550
*
OF3F 0 6206          LDX 2 6          31623560
OF40 1 6E00 13A9      STX L2 MDSWT     31623570
OF42 0 70ED          MDX BCC2-2       31623580
*
OF43 0 C38D          XMLST LD 3 PAD-T  31623590
OF44 1 4C20 OF57      BSC L XMPAD,Z    BR TO XMIT PAD      31623600
*
OF46 0 C388          LD 3 BCCA-T      31623610
OF47 0 E3F5          AND 3 HFF00-T    31623620
OF48 0 D390          STO 3 BUFFER-T   31623630
OF49 1 4400 OF0A      BSI L ST0IT      31623640
OF4B 0 0BCC          XIO 3 WRBUF-T    WRITE BUFFER        31623650
OF4C 0 C38F          LD 3 MDSAV-T     31623660
OF4D 1 4C18 OF53      BSC L *E4,&-     BR IF NO ITB       31623670

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OF4F 0 6206          * LDX 2 6        31623820
OF50 1 6E00 13A9      STX L2 MDSWT     SET ITB MODE        31623830
OF52 0 7002          MDX *E2          31623840
OF53 1 6C00 13R1      STX L PAD        SET XMIT PAD IND    31623850
OF55 1 4C00 1035      BSC L EXIT       31623860
*
OF57 0 C3F5          XMPAD LD 3 HFF00-T 31623870
OF58 0 D390          STO 3 BUFFER-T   SET PAD IN BUFFER   31623880
OF59 0 0BCC          XIO 3 WRBUF-T    XMIT PAD            31623890
OF5A 0 1010          SLA 16           31623900
OF5B 0 D390          STO 3 BUFFER-T   31623910
OF5C 1 4C00 1027      BSC L XMEXT      31623920
*
OF5E 0 404E          ITBMD BSI CKSYN   31623930
OF5F 0 C38F          LD 3 MDSAV-T     31623940
OF60 0 D385          STO 3 MDSWT-T    31623950
OF61 0 1010          SLA 16           31623960
OF62 0 D388          STO 3 BCCA-T     31623970
OF63 0 D38F          STO 3 MDSAV-T    31623980
OF64 1 4C00 OFDC      BSC L BLKCK      31623990
*
*-----*
* CHECK FOR START OF TEXT
*-----*
OF66 0 0000          CKSTX DC *-*      31624000
OF67 0 C389          LD 3 LSDLE-T     31624010
OF68 1 4C20 OF7D      BSC L STXCK,Z    BR IF LAST CHAR DLE 31624020
*
OF6A 0 C390          LD 3 BUFFER-T    31624030
OF6B 0 F3D9          EOR 3 DLE-T      31624040
OF6C 1 4C18 OF9C      BSC L BF0LE,&-   BR IF DLE IN BUFFER 31624050
*
OF6E 0 C38C          LD 3 SECND-T     31624060
OF6F 1 4C20 OF97      BSC L WTEXT,Z    31624070
*
OF71 0 C390          LD 3 BUFFER-T    31624080
OF72 0 F3DD          EOR 3 STX-T      31624090
OF73 1 4C18 OF9F      BSC L BFSTX,&-   BR IF STX IN BUFFER 31624100
*
OF75 0 F3DB          FOR 3 SXSOH-T    31624110
OF76 1 4C18 OFA3      BSC L BFSOH,&-   BR IF SOH IN BUFFER 31624120
*
OF78 0 C38P          LD 3 FIRST-T     31624130
OF79 1 4C98 OF66      BSC L CKSTX,&-   BR IF SECND WD IND ZERO 31624140
*
OF7B 0 D38C          STO 3 SFCND-T    SET SECOND WORD IND 31624150
OF7C 0 701A          MDX WTEXT        31624160
*
OF7D 0 1010          STXCK SLA 16     31624170
OF7E 0 D389          STO 3 LSDLE-T    RESET LAST CHAR DLE IND 31624180
*
OF7F 0 C38C          LD 3 SECND-T     31624190
OF80 1 4C20 OFC1      BSC L DONE,Z     31624200
*
OF82 0 C390          LD 3 BUFFER-T    31624210
OF83 0 F3DD          FOR 3 STX-T      31624220
OF84 1 4C20 OF91      BSC L NOSTX,Z    BR NOT STX IN BUFFER 31624230
*
OF86 0 6203          LDX 2 3          31624240
OF87 1 6E00 13A9      STX L2 MDSWT     SET TRANSPARENT MODE 31624250
OF88 0 C392          LD 3 FCODE-T     31624260
OF8A 0 4820          BSC Z            31624270
OF8B 0 0BC0          XIO 3 TIMER-T    SKIP IF RECV FUNCTION 31624280
OF8C 0 C38B          LD 3 FIRST-T     START PROG TIMER    31624290
OF8D 1 4C18 OFDC      BSC L BLKCK,&-   BR IF NOT FIRST CHAR 31624300
OF8F 1 4C00 OFEE      BSC L RDWRT      31624310

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OF91 0 C38B      NOSTX LD 3 FIRST-T
OF92 1 4C20 OFC1 BSC L DONE,Z
*
OF94 0 C000      SETER LD *
OF95 0 D386      STO 3 FRR-T   SFT ERROR IND
OF96 0 70F5      MDX  CKFST
*
OF97 0 C392      WTFXT LD 3 FCODE-T
OF98 1 4C18 1035 BSC L EXIT,+
*
OF9A 1 4C00 OFEE BSC L RDWRT
*
OF9C 0 C000      BFDLE LD *
OF9D 0 D389      STO 3 LSDLE-T  SET LAST CHAR DLE IND
OF9E 0 70ED      MDX  CKFST
*
OF9F 0 6202      BFSTX LDX 2 2
OFA0 1 6E00 13A9 STX L2 MDSWT  SET NORMAL TEXT MODE
OFA2 0 70E9      MDX  CKFST
*
OFA3 0 C38B      BFSOH LD 3 FIRST-T
OFA4 1 4C18 OF94 BSC L SETER,&-  BR IF NOT FIRST CHAR
OFA6 0 1010      SLA 16
OFA7 0 D38B      STO 3 FIRST-T  RESET FIRST CHAR IND
OFA8 0 D38C      STO 3 SFCND-T  RESET SECOND CHAR IND
OFA9 0 6201      LDX 2 1
OFAA 1 6E00 13A9 STX L2 MDSWT  SET HEADING MODE
OFAC 0 70E2      MDX  CKFST&3
*
-----
* CHECK FOR SYN CHARACTER
-----
OFAD 0 0000      CKSYN DC *-*
OFAE 0 C390      LD 3 BUFFER-T
OFAF 0 F3D8      EOR 3 SYN-T
OFB0 1 4C20 OFBD BSC L NOSYN,Z  BR IF NOT SYN IN BUFFER
*
OFB2 0 D389      STO 3 LSDLE-T  RESET LAST CHAR DLE IND
OFB3 0 C392      LD 3 FCODE-T
OFB4 1 4C20 OFEE BSC L RDWRT,Z  BR IF XMIT FUNCTION
*
OFB6 0 C38A      LD 3 LSYN-T
OFB7 0 4820      BSC 7
OFB8 0 OBCA      XID 3 RETIM-T  SKIP IF LAST CHAR NOT SYN
OFB9 0 C000      LD *           RESTART TIMER
OFBA 0 D38A      STO 3 LSYN-T  SET LAST CHAR SYN IND
OFBB 1 4C00 1035 BSC L EXIT
*
OFBD 0 1C10      NOSYN SLA 16
OFBE 0 D38A      STO 3 LSYN-T  RESET LAST CHAR SYN IND
OFBF 1 4C80 OFAD BSC I CKSYN
*
-----
* CHECK FOR END CHARACTER
-----
OFC1 0 0000      CKEND DC *-*
OFC2 0 C390      LD 3 BUFFER-T
OFC3 0 F3EC      EOR 3 FTB-T
OFC4 0 4820      BSC Z
OFC5 0 F3FD      FOR 3 FBETX-T  SKIP IF ETB IN BUFFER
OFC6 1 4C18 OFD9 BSC L SETBC,&- BR IF FTX OR FTB IN BUFFER
*
OFC8 0 C390      LD 3 BUFFER-T
OFC9 0 F3E8      EOR 3 ENQ-T
OFCA 0 4820      BSC 7
OFCE 0 F3E8      EOR 3 EQEOT-T  SKIP IF FNQ IN BUFFER
OFCC 1 4C20 OFD3 BSC L *+5,Z

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31624500
31624510
31624520
31624530
31624540
31624550
31624560
31624570
31624580
31624590
31624600
31624610
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31624630
31624640
31624650
31624660
31624670
31624680
31624690
31624700
31624710
31624720
31624730
31624740
31624750
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31624770
31624780
31624790
31624800
31624810
31624820
31624830
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31624880
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31624900
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31624920
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31624960
31624970
31624980
31624990
31625000
31625010
31625020
31625030
31625040
31625050
31625060
31625070
31625080
31625090
31625100
31625110
31625120
31625130
31625140
31625150
31625160
31625170

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OFCE 0 D394      STO 3 RTBSY-T  RESET BUSY IND
OFCF 0 C000      LD *
OFDD 0 D386      STO 3 ERR-T   SET ERROR IND
OFDE 1 4C00 OFFE BSC L RDWRT
*
OFD3 0 C390      LD 3 BUFFER-T
OFD4 0 F3EE      EOR 3 ITB-T
OFD5 1 4CA0 OFC1 BSC I CKEND,Z
*
OFD7 0 C385      LD 3 MDSWT-T
OFD8 0 D38F      STO 3 MDSAV-T
*
OFD9 0 6204      SETBC LDX 2 4
OFDA 1 6E00 13A9 STX L2 MDSWT  SET MODE IND FOR BCC
*
OFDC 0 4001      BLKCK BSI CALBC  GO CALCULATE BCC
OFDD 0 7010      MDX  RDWRT
*
-----
* CALCULATE BLOCK CHECK CHARACTER
-----
OFDE 0 0000      CALBC DC *-*
OFDF 0 6208      LDX 2 8
OFE0 0 C390      LD 3 BUFFER-T  SET SHIFT COUNT TO 8
OFE1 0 1808      SRA 8           GET CHAR FROM BUFFER
OFE2 0 F388      EOR 3 BCCA-T  ADD REMAINDER
OFE3 1 4C04 OFE7 BITCK BSC L ADPLY,E
*
OFE5 0 1801      SRA 1
OFE6 0 7002      MDX  DECRE
*
ADPLY SRA 1
EOR 3 POLYN-T  ADD POLYNOMIAL
DECRE MDX 2 -1  SKIP IF LAST SHIFT
MDX BITCK
STO 3 BCCA-T  STORE NEW REMAINDER
OFEC 1 4C80 OFDE BSC I CALBC
*
-----
* STORE RECEIVED CHARACTER OR TRANSMIT CHARACTER IN BUFFER
-----
OFEE 0 C392      RDWRT LD 3 FCODE-T
OFEF 1 4C20 OFF3 BSC L *E2,Z
*
OFF1 0 C31E      LD 3 RAREA-T
OFF2 0 7002      MDX *E2
*
OFF3 1 C480 1386 LD I FCODE
OFF5 0 9387      S 3 COUNT-T
OFF6 1 4C28 1019 BSC L CKBC1,+Z BR ON FULL COUNT
*
OFF8 0 C392      STOWR LD 3 FCODE-T
OFF9 1 4C20 100B BSC L WRITE,Z BR IF XMIT FUNCTION
*
OFFB 0 C387      LD 3 COUNT-T
OFFC 1 4C04 1002 BSC L NEVEN,E BR IF COUNT ODD
*
OFFE 0 C390      LD 3 BUFFER-T  PUT RECEIVED CHARACTER
OFFF 1 0480 1387 STO I POINT  IN I/O AREA
1001 0 701F      MDX INCNT
*
NEVEN LD 3 BUFFER-T
SRA 8
OR I POINT  PACK TWO CHARACTERS
STO I POINT  PUT IN I/O AREA
MDX L POINT,&I INCRE ADDR POINTER &I
MDX INCNT

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31625180
31625190
31625200
31625210
31625220
31625230
31625240
31625250
31625260
31625270
31625280
31625290
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31625310
31625320
31625330
31625340
31625350
31625360
31625370
31625380
31625390
31625400
31625410
31625420
31625430
31625440
31625450
31625460
31625470
31625480
31625490
31625500
31625510
31625520
31625530
31625540
31625550
31625560
31625570
31625580
31625590
31625600
31625610
31625620
31625630
31625640
31625650
31625660
31625670
31625680
31625690
31625700
31625710
31625720
31625730
31625740
31625750
31625760
31625770
31625780
31625790
31625800
31625810
31625820
31625830
31625840
31625850

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*
1008 0 C390      WRITE LD      3  BUFFER-T
100C 1 4400 0F0A BSI  L  ST0IT
100F 0 0BCC      XIO   3  WRBUF-T   WRITE BUFFER
100F 0 C394      LD     3  RTBSY-T
1010 1 4C20 1035 BSC  L  EXIT,Z
*
1012 0 6205      LDX   2  5
1013 1 6E00 13A9 STX   L2 MDSWT   SET MODE FOR BCC2
1015 0 C000      LD     *
1016 0 D38D      STO   3  PAD-T   SET XMIT PAD IND
1017 0 D394      STO   3  RTBSY-T SET RTN BUSY IND
1018 0 701C      MDX   EXIT
*
1019 0 C385      CKRC1 LD     3  MDSWT-T
101A 0 93C6      S      3  H0004-T
101B 1 4C18 0FF8 BSC  L  STOWR,&- BR IF MODE IND BCC1
*
101D 0 D386      STO   3  ERR-T
101F 0 C392      LD     3  FCODE-T
101F 1 4C20 1027 BSC  L  XMEXT,Z   BR IF XMIT MODE
*
1021 1 7401 13AB INCNT MDX  L  COUNT,&1 INCR COUNT &1
1023 0 C394      LD     3  RTBSY-T
1024 1 4C20 1035 BSC  L  FXIT,Z
1026 0 7008      MDX   RCEXT
*
-----
*
*                END TRANSMIT/RECEIVE
*
-----
1027 0 C39A      XMEXT LD     3  RFQ-T   GET XMIT/REC RFQ
1028 1 4C10 102F BSC  L  RCEXT,-   BR IF XMIT ONLY
*
102A 0 1010      SLA   16
102B 0 D392      STO   3  FCODE-T   SET RECEIVE FUNCTION
102C 1 4400 0A2E RSI  L  GO         START RECEIVE
102E 0 7006      MDX   EXIT
*
102F 0 C000      RCEXT LD     *
1030 0 D38F      STO   3  MSEND-T   SET MSG END IND
*
1031 0 0BRC      EXIT1 XIO   3  ENDRP-T   END SCA OPERATION
1032 0 0BCC6     XIO   3  STRED-T   START READ
1033 0 1010      SLA   16
1034 0 D394      STO   3  RTBSY-T
1035 0 6600 0000 EXIT  LDX  L2  *-*
1037 1 4C80 0F33 BSC  I  INT
*
*****
*
*                CHECK FOR PRINTER AVAILABILITY
*
*                FUNCTION SWITCH 8=1- 1403 PRINTER
*                FUNCTION SWITCH 9=1- 1132 PRINTER
*
*****
1039 0 0000      $XL0G DC  *-*      RTN ENTRY
103A 1 C400 05E1 LD     L  SW2      GET FUNC 2 SW SETTINGS
103C 0 1009      SLA   9
103D 1 4C02 1045 BSC  L  $XL03,C    BCH IF 1403 PTR
103F 1 4C10 104D BSC  L  $XLND,-    BCH IF NOT 1132
1041 0 C005      LD     $XL32     GET TABLE ADRS AND
1042 1 EC00 141F OR     L  H8000    * OR IN BIT ZERO FOR
1044 0 D002      STO   $XL32    * 1132 PRINTER
*
1045 1 4400 1076 $XL03 BSI  L  $LOG   USE LINE PRINTER
1047 1 142D      $XL32 DC  TABLE MSG TABLE ADRS
*

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31625860
31625870
31625880
31625890
31625900
31625910
31625920
31625930
31625940
31625950
31625960
31625970
31625980
31625990
31626000
31626010
31626020
31626030
31626040
31626050
31626060
31626070
31626080
31626090
31626100
31626110
31626120
31626130
31626140
31626150
31626160
31626170
31626180
31626190
31626200
31626210
31626220
31626230
31626240
31626250
31626260
31626270
31626280
31626290
31626300
31626310
31626320
31626330
31626340
31626350
31626360
31626370
31626380
31626390
31626400
31626410
31626420
31626430
31626440
31626450
31626460
31626470
31626480
31626490
31626500
31626510
31626520
31626530

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1048 0 COFE
1049 0 1001
104A 0 1801
104B 0 D0FB
104C 0 7003
*
104D 0 4480 0163 $XLND BSI  I  LOG   USE CONSOLE PTR
104F 1 142D      DC     TABLE MSG TABLE ADRS
*
1050 1 4C80 1039 $XLGX BSC  I  $XLOG  RTN RETURN
*****
*
*                CHECK FOR PRINTER AVAILABILITY
*
*                FUNCTION SWITCH 8=1- 1403 PRINTER
*                FUNCTION SWITCH 9=1- 1132 PRINTER
*
*****
1052 0 0000      $ELOG DC  *-*      RTN ENTRY
1053 1 C400 05E1 LD     L  SW2      GET FUNC 2 SW SETTINGS
1055 0 1009      SLA   9
1056 1 4C02 105E BSC  L  $ELOG3,C   BCH IF 1403 PTR
1058 1 4C10 1066 BSC  L  $ELND,-    BCH IF NOT 1132
105A 0 C005      LD     $EL32     GET TABLE ADRS AND
105B 1 EC00 141F OR     L  H8000    * OR IN BIT ZERO FOR
105D 0 D002      STO   $EL32    * 1132 PRINTER
*
105E 1 4400 106C $ELOG3 BSI  L  $FRR   USE LINE PRINTER
1060 1 142D      $EL32 DC  TABLE MSG TABLE ADRS
*
1061 0 COFE
1062 0 1001
1063 0 1801
1064 0 D0FB
1065 0 7004
*
1066 0 4480 0162 $FLND BSI  I  ERROR  USE CONSOLE PTR
1068 1 142D      DC     TABLE MSG TABLE ADRS
1069 0 0000      DC     0
*
106A 1 4C80 1052 $ELGX BSC  I  $ELOG  RTN RETURN
*****
*
*
*                THIS ROUTINE WILL LOG MESSAGES ON THE
*                1132 OR 1403 PRINTER
*
*                THE PRINTER TYPE IS DEFINED BY BIT 0 OF
*                THE MESSAGE ADDRESS IN THE CALLING SEQUENCE
*
*                BIT 0 ON WILL SELECT THE 1132
*                BIT 0 OFF WILL SELECT THE 1403
*
*                CONTROL IS RETURNED TO THE CALLING
*                PROGRAM UPON COMPLETION OF PRINTING THE
*                MESSAGE
*****
*
*                CALLING SEQUENCE
*
*                BSI  $LOG
*                DC   ADDRESS(BIT 0 WILL SELECT PRINTER)
*
*                MESSAGE FORMAT
*                DC   MESSAGE NUMBER
*                DC   HEX/DECIMAL SWITCH
*                DC   DATA WORD ID
*                DC   FIRST ALPHA ADRS

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31626540
31626550
31626560
31626570
31626580
31626590
31626600
31626610
31626620
31626630
31626640
31626650
31626660
31626670
31626680
31626690
31626700
31626710
31626720
31626730
31626740
31626750
31626760
31626770
31626780
31626790
31626800
31626810
31626820
31626830
31626840
31626850
31626860
31626870
31626880
31626890
31626900
31626910
31626920
31626930
31626940
31626950
*
31626960
*
31626970
*
31626980
*
31626990
*
31627000
*
31627010
*
31627020
*
31627030
*
31627040
*
31627050
*
31627060
*
31627070
*
31627080
*
31627090
*
31627100
*
31627110
*
31627120
*
31627130
*
31627140
*
31627150
*
31627160
*
31627170
*
31627180
*
31627190
*
31627200
*
31627210

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* DC SECOND ALPHA ADDR * 31627220
* 0 TO 15 DATA WORDS * 31627230
* * 31627240
* NO OF WORDS DEFINED BY * 31627250
* BITS 1 TO 15 OF DATA WORD ID * 31627260
* * 31627270
*****
106C 0 0000 $ERR DC *-* RTN ENTRY 31627280
106D 1 6D00 110B STX L1 $XR1&1 SAVE XR 1 31627290
106F 0 C0FC LD $ERR GET ENTRY AND XFER TO 31627300
1070 0 D005 STO $LOG * LOG ENTRY FOR RETURN 31627310
1071 1 7400 1129 MDX L $FLSW,0 IS SWITCH SET 31627320
1073 0 700B MDX $RBX&2 * YES 31627330
1074 0 610F LDX 1 /000E * NO 31627340
1075 0 7007 MDX $RBX 31627350
* * 31627360
* * 31627370
* * 31627380
1076 0 0000 $LOG DC *-* 31627390
1077 1 6D00 110B STX L1 $XR1&1 SAVE XR1 31627400
1079 1 7400 1129 MDX L $FLSW,0 IS SWITCH SET 31627410
107B 0 7003 MDX $RBX&2 * YES 31627420
107C 0 610A LDX 1 /000A * NO 31627430
107D 1 6D00 12C3 $RBX STX L1 $ID SET AN A OR E 31627440
107F 1 6C00 1129 STX L $FLSW SET FIRST LINE SWITCH 31627450
* * 31627460
1081 1 C480 1076 LD I $LOG GET MESSAGE ADDRESS 31627470
1083 1 D400 1162 STO L $TMP SAVE IT 31627480
1085 1 4C28 1095 BSC L $407,&Z BRANCH IF 1132 31627490
1087 1 6500 127C LDX L1 $INT GET INTR ADRS 31627500
1089 0 6D00 0186 STX L1 IL4-4 * AND SET IN MONITOR 31627510
108B 1 6500 124F LDX L1 $1403 LOAD 1403 ADDRESS 31627520
108D 1 6D00 1125 STX L1 $PTST STORE FOR PRINTING 31627530
108F 1 6D00 1127 STX L1 $PRI4 TURN 1403 IND ON 31627540
1091 0 1010 SLA 16 31627550
1092 1 D400 1126 STO L $PRI1 TURN 1132 IND. OFF 31627560
1094 0 700D MDX $OTST 31627570
* * 31627580
1095 1 6500 1205 $407 LDX L1 $1132 LOAD 1132 ADDRESS 31627590
1097 1 6D00 1125 STX L1 $PTST STORE FOR PRINTING 31627600
1099 1 6D00 1126 STX L1 $PRI1 TURN 1132 INDICATOR ON 31627610
109B 1 6500 1340 LDX L1 $INTR GET 1132 XFER VECTOR 31627620
109D 0 6D00 018A STX L1 IL1 AND STORE 31627630
109F 0 1010 SLA 16 31627640
10A0 1 D400 1127 STO L $PRI4 TURN 1403 IND. OFF 31627650
10A2 1 C400 1162 $OTST LD L $TMP GET ADDRESS AGAIN 31627660
10A4 0 1001 SLA 1 REMOVE HIGH ORDER BIT 31627670
10A5 0 1801 SRA 1 IF IT IS ON 31627680
10A6 0 D001 STO $&1 STORE FOR ADDRESS 31627690
10A7 0 6700 0000 LDX L3 *-* XR3 = TABLE ADDRESS 31627700
10A9 1 CC00 05DC LDD L PID LOAD PID & RID 31627710
10AB 0 D876 STD $PIRI STORE THEM 31627720
10AC 1 C400 05DE LD L RAD LOAD RAD 31627730
10AE 0 D075 STO $RAD STORE IT 31627740
10AF 0 C300 LD 3 0 GET MESSAGE ID 31627750
10B0 0 1888 SRT 8 SAVE IT IN Q 31627760
10B1 0 C070 LD $PIRI PID TO ACCUMULATOR 31627770
10B2 0 1088 SLT 8 COMBINE PID & MID 31627780
10B3 0 D06E STO $PIRI STORE COMBINED MESSAGE 31627790
10B4 0 405B BST $CLR CLEAR I/O AREA 31627800
10B5 1 6600 1212 LDX L2 $I0AR-1 XR2 = I/O AREA ADDR 31627810
10B7 0 C301 $STUP LD 3 1 LOAD HEX/DEC SWITCH 31627820
10B8 0 18D0 RTE 16 PUT IT IN Q 31627830
10B9 0 C302 LD 3 2 LOAD CONTROL WORD 31627840
10BA 0 1001 SLA 1 CHECK IF BIT 0 ON 31627850
10BB 0 1801 SRA 1 FOR FIRST LINE INDICATE 31627860
10BC 0 D863 STD $DWI SAVE THEM 31627870
10BD 1 4C02 10E0 BSC L $LOG8,C BRANCH IF NOT FIRST LINE 31627880
* * 31627890

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10BF 1 C400 12C3 LD L $ID GET MSG TYPE 31627900
10C1 0 18D0 RTE 16 * PLACE IN Q 31627910
10C2 1 4400 1164 BSI L $HEX * TO CONVERT 31627920
10C4 0 72FF MDX 2 -1 ADJ POSITIONING REG 31627930
10C5 0 1010 SLA 16 GET BLANK FOR 1132 31627940
10C6 1 7400 1127 MDX L $PRI4,0 IS IT 1132 31627950
10C8 0 C061 LD $7F7F * NO 31627960
10C9 1 D400 1213 STO L $I0AR MODIFY PRINT LINE 31627970
10CB 0 18D0 RTE 16 * SAVE BLANK CODE 31627980
10CC 1 C400 1214 LD L $I0AR&1 GET 2ND POSITION 31627990
10CE 0 1008 SLA 8 MOVE CODE OVER 31628000
10CF 0 18C8 RTE 8 * AND REPOSITION 31628010
10D0 1 D400 1214 STO L $I0AR&1 STORE BACK 31628020
10D2 0 C04F LD $PIRI LOAD PID & MID 31628030
10D3 0 18D0 RTE 16 PUT THEM IN Q 31628040
10D4 1 4400 1164 BSI L $HEX CONVERT THEM 31628050
10D6 0 C04C LD $PIRI&1 LOAD RID 31628060
10D7 1 4C08 10E0 BSC L $LOG8,+ BRANCH IF NO RID 31628070
10D9 0 18D0 RTE 16 PUT IT IN Q 31628080
10DA 1 4400 1164 BSI L $HEX CONVERT IT 31628090
10DC 0 C047 LD $RAD LOAD RAD 31628100
10DD 0 18D0 RTE 16 PUT IT IN Q 31628110
10DE 1 4400 1164 BSI L $HEX CONVERT IT 31628120
10F0 1 6600 121F $LOG8 LDX L2 $I0AR&12 SIMULATE TAB 31628130
10E2 0 C303 LD 3 3 FIRST ALPHA ADDR 31628140
10E3 1 D400 11AD STO L $CONV SET ALPHA SWITCH 31628150
10E5 1 4420 11AD BSI L $CONV,Z CONVERT IF ALPHA 31628160
10E7 0 C304 LD 3 4 SECOND ALPHA ADDR 31628170
10E8 1 4420 11AD BSI L $CONV,Z CONVERT IF ALPHA 31628180
10EA 1 C400 11AD LD L $CONV 31628190
10EC 1 4C18 10F4 BSC L $LOG9,+ BRANCH IF NO ALPHA 31628200
10EE 1 4480 1125 BSI I $PTST TEST WHICH PRINTER 31628210
10F0 0 4000 DC /4000 AND PRINT ALPHA 31628220
10F1 0 401E BSI $CLR CLEAR ALPHA FROM I/O AREA 31628230
10F2 1 6600 121F LDX L2 $I0AR&12 SIMULATE TAB FOR DATA 31628240
10F4 0 7314 $LOG9 MDX 3 20 XR3=DATA TABLE ADDR 31628250
10F5 0 680B STX 3 $LOG2+1 SAVE DATA TABLE ADDR 31628260
10F6 0 63F1 LDX 3 -15 COUNT FOR DATA WORDS 31628270
10F7 0 C828 LDD $DWI GET DATA WORD ID 31628280
10F8 1 4C04 1100 $LOG0 BSC L $LOG2,E BRANCH IF THERE IS A WORD 31628290
10FA 0 C825 $LOG1 LDD $DWI GET DATA WORD ID AGAIN 31628300
10FB 0 18C1 RTE 1 LOOK FOR NEXT CHAR 31628310
10FC 0 D823 STD $DWI PUT MODIFIED DWI BACK 31628320
10FD 0 7301 MDX 3 1 SET XR3 FOR NEXT CHAR 31628330
10FE 0 70F9 MDX $LOG0 CHECK AGAIN 31628340
10FF 0 7007 MDX $LEND NO MORE - GO PRINT 31628350
1100 0 C700 0000 $LOG2 LD L3 *-* LOAD DATA WORD 31628360
1102 0 18D0 RTE 16 PUT IT IN Q 31628370
1103 1 4C04 112R BSC L $DEC,E CONVERT TO DEC 31628380
1105 0 405E BSI $HEX OR HEX 31628390
1106 0 70F3 MDX $LOG1 CHECK FOR MORE 31628400
1107 1 4480 1125 $LEND BSI I $PTST CHECK PRINTER 31628410
1109 0 4000 DC /4000 AND PRINT DATA 31628420
* * 31628430
* RETURN TO USFR * 31628440
* * 31628450
$XR1 LDX L1 *-* RESTORE XR1 31628460
* * 31628470
MDX L $LOG,1 UPDATE RETURN ADDR 31628480
BSC I $LOG GOOD-BYE 31628490
*****
* * 31628500
* * 31628510
* * 31628520
* * 31628530
$CLR DC *-* 31628540
LD $IBSY 31628550
BSC Z 31628550
MDX *-3 31628560
* * 31628570

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1114 0 1010      SLA      16      CLEAR TO1132 BLANKS      31628580
1115 1 7400 1127 MDX      L  $PR14,0  SKIP IF 1132           31628590
1117 0 C012      LD        $7F7F    LOAD 1403 BLANKS      31628600
1118 0 6230      LDX      2  61      CLEAR                   31628610
1119 1 0600 1212 $CLFR  STO  L2  $I0AR-1  I/O AREA           31628620
1118 0 72FF      MDX      2  -1      TO                   31628630
1110 0 70FC      MDX      $CLER      BLANKS           31628640
1110 1 4C80 1110 BSC      I  $CLR      31628650
*
1120 0002      $DWI  BSS  E  2      31628660
1122 0002      $PIRI  BSS  2        31628670
1124 0 0000      $RAD  DC    *-*      31628680
1125 0 0000      $PTST DC    *-*      31628690
1126 0 0000      $PRI1 DC    *-*      31628700
1127 0 0000      $PRI4 DC    *-*      31628710
1128 0 0000      $IBSY DC    *-*      31628720
1129 0 0000      $FLSW DC    *-*      31628730
112A 0 7F7F      $7F7F DC    /7F7F    FIRST LINE SWITCH    31628740
*****
*
*          DECIMAL CONVERSION ROUTINE          *
*
*****
112B 0 C033      $DEC  LD      $SIX      31628800
112C 0 D82F      STD      $WCNT      SET CHARACTER COUNT    31628810
112D 1 6500 1189 LDX      L1  $TABL&1  XRI = TABLE ADDRESS    31628820
112F 0 C02D      LD      $WCNT&1      LOAD WORD TO BE CONVERTED 31628830
1130 1 4C10 1139 BSC      L  $DECI,-   BRANCH IF POSITIVE      31628840
1132 0 C02D      LD      $N32      LOAD 1132 MINUS SIGN    31628850
1133 1 7400 1127 MDX      L  $PR14,0  SKIP IF 1132           31628860
1135 0 C02F      LD      $N14      LOAD 1403 MINUS SIGN    31628870
1136 0 D200      STO     2  0      PUT IN I/O AREA           31628880
1137 0 10A0      SLT     32      CLEAR                   31628890
1138 0 9024      S        $WCNT&1    COMPLEMENT (UMBER      31628900
1139 0 7203      $DECI  MDX  2  3      LOW ORDER FIRST        31628910
113A 0 18D0      RTE     16      CHARACTER TO Q           31628920
113B 0 C04C      LD      $TABL      GET BLANK                   31628930
113C 0 7006      MDX     $DEC3&2    PUT IT AWAY             31628940
113D 0 1810      $DEC2  SRA     16    CLEAR                   31628950
113E 0 AB1F      D        $TEN      DIVIDE                   31628960
113F 0 18D0      RTE     16      REMAINDER TO A          31628970
1140 0 D001      STO     $DEC3&1    31628980
1141 0 C500 0000 $DEC3  LD      L1  *-*      LOAD CHAR                   31628990
1143 1 7400 1127 MDX      L  $PR14,0  SKIP IF 1132           31629000
1145 0 1008      SLA     9      REMOVE UNUSED CHAR AND 31629010
1146 0 1808      SRA     3      PUT IN RIGHT BYTE      31629020
1147 0 D01A      STO     $TMP      SAVE IT                   31629030
1148 1 74FF 1150 MDX      L  $WCNT,-1    DECREMENTE WORD COUNT    31629040
114A 0 1810      $DEC4  SRA     16    CLEAR                   31629050
114B 0 AB12      D        $TEN      DIVIDE                   31629060
114C 0 18D0      RTE     16      REMAINDER TO A          31629070
114D 0 D001      STO     $DEC5&1    31629080
114E 0 C500 0000 $DEC5  LD      L1  *-*      GET CHARACTER             31629090
1150 1 7400 1126 MDX      L  $PR11,0  SKIP IF 1403           31629100
1152 0 1808      SRA     8      REMOVE UNUSED CHARACTER 31629110
1153 0 1008      SLA     8      AND PUT IN LEFT BYTE    31629120
1154 0 E80D      OR      $TMP      MAKE ONE WORD           31629130
1155 0 D200      STO     2  0      PUT IT IN I/O AREA      31629140
1156 0 72FF      MDX     2  -1      UPDATE I/O AREA         31629150
1157 1 74FF 1150 MDX      L  $WCNT,-1    DECREMENT WORD COUNT    31629160
1159 0 70E2      MDX     $DEC2      GET MORE IF NOT DONE    31629170
115A 0 7203      MDX     2  3      UPDATE I/O AREA IF DONE 31629180
115B 0 709F      MDX     $LOG1      GO BACK                   31629190
115C 0002      $WCNT  BSS  F  2      31629200
115F 0 000A      $TEN  DC    10      31629210
115F 0 0006      $SIX  DC     6      31629220
1160 0 0060      $N32  DC    /60    31629230
1161 0 0061      $N14  DC    /61    31629240
31629250

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1162 0002      $TMP  BSS  E  2      31629260
*****
*          HEXADECIMAL CONVERSION ROUTINE      *
*
*****
1164 0 0000      $HEX  DC    *-*      31629310
1165 0 7201      MDX     2  1      LEAVE A SPACE           31629320
1166 1 6500 1189 LDX      L1  $TABL&1  31629330
1168 0 C01D      LD      $TWO      SET CHAR COUNT           31629340
1169 0 D0F2      STO     $WCNT      31629350
116A 0 1810      $HEX1 SRA     16    CLEAR ACCUMULATOR      31629360
1168 0 1084      SLT     4      BRING IN NEXT CHAR     31629370
116C 0 D001      STO     $HEX2&1    31629380
116D 0 C500 0000 $HEX2  LD      L1  *-*      LOAD CHARACTER           31629390
116F 1 7400 1126 MDX      L  $PR11,0  SKIP IF 1403           31629400
1171 0 1808      SRA     8      DUMP UNUSED CHAR AND 31629410
1172 0 1008      SLA     8      PUT IN LEFT BYTE       31629420
1173 0 D011      STO     $TMP1      SAVE LEFT HALF         31629430
1174 0 1010      SLA     16    CLEAR ACCUMULATOR     31629440
1175 0 1084      SLT     4      GET NEXT CHARACTER     31629450
1176 0 D001      STO     $HEX3&1    31629460
1177 0 C500 0000 $HEX3  LD      L1  *-*      LOAD 1403 CHARACTER     31629470
1179 1 7400 1127 MDX      L  $PR14,0  SKIP IF 1132           31629480
117B 0 1008      SLA     8      DUMP UNUSED CHAR AND 31629490
117C 0 1808      SRA     8      PUT IN RIGHT BYTE      31629500
117D 0 E807      OR      $TMP1      MAKE ONE WORD           31629510
117E 0 D200      STO     2  0      PUT IT AWAY             31629520
117F 0 7201      MDX     2  1      UPDATE I/O AREA         31629530
1180 1 74FF 1150 MDX      L  $WCNT,-1    DECREMENT WORD COUNT    31629540
1182 0 70E7      MDX     $HEX1      GET MORE                   31629550
1183 1 4C80 1164 BSC      I  $HEX      GO BACK                   31629560
1185 0 0000      $TMP1  DC    *-*      31629570
1186 0 0002      $TWO  DC     2      31629580
1187 0 0000      $BSY  DC    *-*      31629590
*****
*          1132/1403 CONVERSION TABLE          *
*
*****
1188 0 007F      $TABL  DC    /007F    BLANK                   31629600
1189 0 F049      DC    /F049          0                   31629610
118A 0 F140      DC    /F140          1                   31629620
118B 0 F201      DC    /F201          2                   31629630
118C 0 F302      DC    /F302          3                   31629640
118D 0 F443      DC    /F443          4                   31629650
118E 0 F504      DC    /F504          5                   31629660
118F 0 F645      DC    /F645          6                   31629670
1190 0 F746      DC    /F746          7                   31629680
1191 0 F807      DC    /F807          8                   31629690
1192 0 F908      DC    /F908          9                   31629700
1193 0 C164      DC    /C164          A                   31629710
1194 0 C225      DC    /C225          B                   31629720
1195 0 C326      DC    /C326          C                   31629730
1196 0 C467      DC    /C467          D                   31629740
1197 0 C568      DC    /C568          E                   31629750
1198 0 C629      DC    /C629          F                   31629760
1199 0 C72A      DC    /C72A          G                   31629770
119A 0 C86B      DC    /C86B          H                   31629780
119B 0 C92C      DC    /C92C          I                   31629790
119C 0 D158      DC    /D158          J                   31629800
119D 0 D219      DC    /D219          K                   31629810
119E 0 D31A      DC    /D31A          L                   31629820
119F 0 D45B      DC    /D45B          M                   31629830
11A0 0 D51C      DC    /D51C          N                   31629840
11A1 0 D65D      DC    /D65D          O                   31629850
11A2 0 D75E      DC    /D75E          P                   31629860

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11A3 0 D81F	DC	/D81F	Q	31629940
11A4 0 D920	DC	/D920	R	31629950
11A5 0 E20D	DC	/E20D	S	31629960
11A6 0 E30E	DC	/E30E	T	31629970
11A7 0 E44F	DC	/E44F	U	31629980
11A8 0 E510	DC	/E510	V	31629990
11A9 0 E651	DC	/E651	W	31630000
11AA 0 E752	DC	/E752	X	31630010
11AB 0 E813	DC	/E813	Y	31630020
11AC 0 E954	DC	/E954	Z	31630030

* 31630040

* 31630050

* 31630060

* 31630070

* 31630080

* 31630090

* 31630100

* 31630110

* 31630120

* 31630130

* 31630140

* 31630150

* 31630160

* 31630170

* 31630180

* 31630190

* 31630200

* 31630210

* 31630220

* 31630230

* 31630240

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* TILT ROTATE TABLE

11AD 0 0000	\$CONV	DC	*--		
11AE 0 D002		STO	\$AMES&1	STORE MESSAGE ADDRESS	
11AF 0 7201		MDX	2 1	LEAVE A SPACE	
11B0 0 C400 0000	\$AMES	LD	L *--	LOAD ALPHA WORD	
11B2 0 F03A		EOR	\$TERM	IS IT A TERMINATOR	
11B3 1 4C98 11AD	BSC	I	\$CONV,&-	GO BACK IF DONE	
11B5 1 C480 11B1	LD	I	\$AMES&1	LOAD IT AGAIN	
11B7 0 F034		EOR	\$LNFD	IS IT LINE FEED	
11B8 0 4820	BSC	Z		SKIP IF YES	
11B9 0 7005	MDX		\$NOLF	NO LINE FEED	
11BA 1 4480 1125	BSI	I	\$PTST	GO CHECK WHICH PRINTER	
11BC 0 2000	DC		/2000	AND SKIP THE PAGE	
11BD 1 7401 11B1	MDX	L	\$AMES&1,1	GET NEXT CHARACTER	
11BF 0 6124	\$NOLF	LDX	1 36	SET TO STEP ACROSS TABLE	
11C0 0 10A0		SLT	32	CLEAR A&Q	
11C1 1 C480 11B1	LD	I	\$AMES&1	LOAD IT AGAIN	
11C3 0 1888	SRT		8	PUT RIGHT HALF IN Q	
11C4 0 1008	SLA		8	CLEAR SIGN BITS	
11C5 0 1808	SRA		8	MOVE TO RIGHT OF A	
11C6 0 0898	STD		\$TMP	PUT THEM AWAY	
11C7 0 C098	LD		\$TMP&1	GET RIGHT HALF OF CHAR	
11C8 0 1808	SRA		8	PUT IN RIGHT IF A	
11C9 0 D099	STO		\$TMP&1	PUT IT AEAY	
11CA 1 C500 11EF	\$LTST	LD	L1 \$TTBL	GET CHAR FROM TABLE	
11CC 0 F095		EOR	\$TMP	IS IT A HIT	
11CD 1 4C18 11D1	BSC	L	\$LTBL,&-	BRANCH ON A HIT	
11CF 0 71FF	MDX		1 -1	SET FOR NEXT CHARACTER	
11D0 0 70F9	MDX		\$LTST	AND TRY AGAIN	
11D1 1 C500 1188	\$LTBL	LD	L1 \$TABL	LOAD CHAR FROM TABLE	
11D3 1 7400 1126	MDX	L	\$PR11,0	SKIP IF 1403	
11D5 0 1808	SRA		8	DUMP UNUSED CHAR AND	
11D6 0 1008	SLA		8	PUT IN LEFT BYTE	
11D7 0 00AD	STO		\$TMP1	SAVE IT	
11D8 0 6124	LDX		1 36	SET FOR COUNT	
11D9 1 C500 11EF	\$RTST	LD	L1 \$TTBL	GET CHARACTER FROM TABLE	
11DB 0 F087		EOR	\$TMP&1	IS IT A HIT	
11DC 1 4C18 11E0	BSC	L	\$RTBL,&-	BRANCH ON A HIT	
11DE 0 71FF	MDX		1 -1	SET FOR ANOTHER CHAR	
11DF 0 70F9	MDX		\$RTST	AND TRY AGAIN	
11E0 1 C500 1188	\$RTBL	LD	L1 \$TABL	GET CHAR FROM TABLE	
11E2 1 7400 1127	MDX	L	\$PR14,0	SKIP IF 1132	
11E4 0 1008	SLA		8	DUMP UNUSED CHAR AND	
11E5 0 1808	SRA		8	PUT IN RIGHT BYTE	
11E6 0 E89E	OR		\$TMP1	MAKE ONE WORD	
11E7 0 D200	STO		2 0	PUT IT IN I/O AREA	
11E8 1 7401 11B1	MDX	L	\$AMF&1,1	SET FOR NEXT CHAR	
11EA 0 7201	MDX		2 1	STEP I/O AREA	
11EB 0 70C4	MDX		\$AMES	GO GET ANOTHER ONE	
11EC 0 0303	\$LNFD	DC	/0303	LINE FEED CONSTANT	
11FD 0 FFFF	\$TERM	DC	/FFFF		

* 31630590

* 31630600

* 31630610

* TILT ROTATE TABLE

11FE 0 0021	DC	/21	SPACE	31630620
11FF 0 00C4	DC	/C4	0	31630640
11F0 0 00F6	DC	/F6	1	31630650
11F1 0 00D8	DC	/D8	2	31630660
11F2 0 00D6	DC	/D6	3	31630670
11F3 0 00F0	DC	/F0	4	31630680
11F4 0 00F4	DC	/F4	5	31630690
11F5 0 00D0	DC	/D0	6	31630700
11F6 0 00D4	DC	/D4	7	31630710
11F7 0 00E4	DC	/E4	8	31630720
11F8 0 00E0	DC	/E0	9	31630730
11F9 0 003E	DC	/3E	A	31630740
11FA 0 001A	DC	/1A	B	31630750
11FB 0 001E	DC	/1E	C	31630760
11FC 0 0032	DC	/32	D	31630770
11FD 0 0036	DC	/36	E	31630780
11FE 0 0012	DC	/12	F	31630790
11FF 0 0016	DC	/16	G	31630800
1200 0 0026	DC	/26	H	31630810
1201 0 0022	DC	/22	I	31630820
1202 0 007E	DC	/7E	J	31630830
1203 0 005A	DC	/5A	K	31630840
1204 0 005E	DC	/5E	L	31630850
1205 0 0072	DC	/72	M	31630860
1206 0 0076	DC	/76	N	31630870
1207 0 0052	DC	/52	O	31630880
1208 0 0056	DC	/56	P	31630890
1209 0 0066	DC	/66	Q	31630900
120A 0 0062	DC	/62	R	31630910
120B 0 009A	DC	/9A	S	31630920
120C 0 009E	DC	/9E	T	31630930
120D 0 00B2	DC	/B2	U	31630940
120E 0 0086	DC	/86	V	31630950
120F 0 0092	DC	/92	W	31630960
1210 0 0096	DC	/96	X	31630970
1211 0 00A6	DC	/A6	Y	31630980
1212 0 00A2	DC	/A2	Z	31630990

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* 31630990

* 31631000

* 31631010

* 31631020

* 31631030

* 31631040

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* 31631080

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* 31631100

* 31631110

* 31631120

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* 31631190

* 31631200

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* 31631260

* 31631270

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* 31631290

* 31631300

* 31631310

* 31631320

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1253 1 C480 124F LD I $1403 GET FUNCTION 31631300
1255 1 4C28 1274 BSC L $SKIP,&Z BRANCH IF RESTORE 31631310
1257 0 1001 SLA 1 IS IT PRINT 31631320
1258 1 4C28 1267 BSC L $WRIT,&Z BRANCH IF YES 31631330
125A 0 1001 SLA 1 IS IT DOUBLE SPACE 31631340
125B 1 4C28 1265 BSC L $DOBL,&Z BRANCH IF DOUBLE SPACE 31631350
125D 0 085A $SING XIO $DSW-1 IT MUST BE SINGLE SPACE 31631360
125E 0 1802 SRA 2 IS CARRIAGE BUSY 31631370
125F 0 4804 BSC E SKIP IF NOR 31631380
1260 0 70FC MDX $SING LOOP 31631390
1261 1 7401 1187 MDX L $BSY,1 31631400
1263 0 0856 XIO $SPAC-1 31631410
1264 0 7008 MDX $RET 31631420
1265 0 6854 $DOBL STX $SPA2 SET 2 SPACE INDICATOR 31631430
1266 0 70F6 MDX $SING 31631440
1267 0 0850 $WRIT XIO $DSW-1 31631450
1268 0 1801 SRA 1 IS PRINTER BUSY 31631460
1269 0 4804 BSC E SKIP IF NOT 31631470
126A 0 70FC MDX $WRIT LOOP IF BUSY 31631480
126B 1 7408 1187 MDX L $BSY,8 31631490
126D 1 7401 1128 MDX L $IBSY,1 31631500
126F 0 084E XIO $PRNT PRINT THE LINE 31631510
* 31631520
1270 1 7401 124F $RET MDX L $1403,1 ADJ RETURN ADRS 31631530
1272 1 4C80 124F BSC I $1403 31631540
* 31631550
1274 0 0843 $SKIP XIO $DSW-1 GET DSW 31631560
1275 0 1802 SRA 2 IS CARRIAGE BUSY 31631570
1276 0 4804 BSC E SKIP IF NOT 31631580
1277 0 70FC MDX $SKIP LOOP IF BUSY 31631590
1278 1 7401 1187 MDX L $BSY,1 31631600
127A 0 0841 XIO $CHI SKIP TO CHANNEL 1 31631610
127B 0 70F4 MDX $RET GO BACK 31631620
* 31631630
127C 0 0000 $INT DC *-* INTERRUPT ENTRY 31631640
127D 0 D838 STD $AQ SAVE A & Q 31631650
127E 0 282A STS $STAT 31631660
127F 0 0840 XIO $DSWR-1 31631670
1280 0 D03F STO $WSD STORE IT 31631680
1281 0 1001 SLA 1 IS IT XFER COMPLETE 31631690
1282 0 4810 BSC - SKIP IF YES 31631700
1283 0 7006 MDX $GOON NO 31631710
1284 0 1010 SLA 16 CLEAR ACC 31631720
1285 1 D400 1128 STO L $IBSY CLEAR BUSY 31631730
1287 1 7401 1187 MDX L $BSY,1 31631740
1289 0 701E MDX $IRET INTERRUPT RETURN 31631750
128A 0 1001 $GOON SLA 1 IS IT PRINT COMPLETE 31631760
128B 0 4810 BSC - SKIP IF YES 31631770
128C 0 7005 MDX $NDOG NO 31631780
128D 1 74F8 1187 MDX L $BSY,-8 31631790
128E 0 1000 NOP XIO $SPAC-1 SPACE 31631800
1290 0 0829 MDX $IRET RETURN IF NO ERRORS 31631810
1291 0 7016 * 31631820
1292 0 1001 $NDOG SLA 1 IS IT CARRIAGE COMPLETE 31631830
1293 0 4810 BSC - SKIP IF YES 31631840
1294 0 7013 MDX $IRET NOT 1403 TRY AGAIN 31631850
1295 1 74FF 1187 MDX L $BSY,-1 31631860
1297 0 1000 NOP LD $WSD GET DSW 31631870
1298 0 C027 SLA 12 IS CHANNEL 12 ON 31631880
1299 0 100C BSC L $CHI2,&Z BRANCH IF YES 31631890
129A 1 4C28 12A5 LD $SPA2 IS 2 SPACE IND. ON 31631900
129C 0 C010 BSC L $IRET,&- BRANCH IF NO 31631910
129D 1 4C18 12A8 SLA 16 CLEAR ACC 31631920
129E 0 1010 STO $SPA2 RFSET 2 SPACE INDICATOR 31631930
12A0 0 D019 31631940
31631950
31631960
31631970

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12A1 1 7401 1187 MDX L $BSY,1 31631980
12A3 0 0817 XIO $SPAC START NEXT SPACE 31631990
12A4 0 7003 MDX $IRET GO BACK 31632000
12A5 0 0816 $CHI2 XIO $CHI SKIP TO 1 31632010
12A6 1 7401 1187 MDX L $BSY,1 31632020
12A8 0 C80D $IRET LDD $AQ 31632030
12A9 0 2000 $STAT LDS 31632040
12AA 1 4C80 127C BSC I $INT RETURN TO MONITOR 31632050
***** 31632060
* 31632070
* 31632080
12AC 0 0000 $NRDY DC *-* 31632090
12AD 0 4480 0163 BSI I LOG USE MON LOG 31632100
12AF 1 12C4 DC $XXX MSG ADRS 31632110
* 31632120
12B0 0 0807 XIO $DSW-1 GET DSW AGAIN 31632130
12B1 0 4804 BSC E SKIP IF READY 31632140
12B2 0 70FD MDX *-3 GO. WAIT IF NOT 31632150
12B3 1 4C80 12AC BSC I $NRDY GO BACK IF READY 31632160
***** 31632170
* 31632180
12B6 0002 $AQ BSS E 2 31632190
12B8 0 8600 $B600 DC /8600 CONSTANT FOR ERRORS 31632200
12B9 0 AF00 $DSW DC /AF00 SENSE DSW W/O RESET 31632210
12BA 0 0000 $SPA2 DC *-* 31632220
12BB 0 AC00 $SPAC DC /AC00 SPACE IOCC 31632230
12BC 1 12C2 $CHI DC $I 31632240
12BD 0 A900 DC /A900 IOCC 31632250
12BE 1 1213 $PRNT DC $IOAR PRINT IOCC 31632260
12BF 0 A000 DC /A000 31632270
12C0 0 0000 $WSD DC *-* SAVE DSW 31632280
12C1 0 AF01 $DSWR DC /AF01 SENSE DSW W/RESET 31632290
12C2 0 0800 $I DC /0800 31632300
12C3 0 0000 $ID DC *-* MSG TYPE, A OR E 31632310
12C4 0 0014 $XXX DC 20 MSG NUMBER 31632320
12C5 0 0000 DC 0 31632330
12C6 0 0000 DC 0 31632340
12C7 1 12C9 DC LPTNR ALPHA MSG 31632350
12C8 0 0000 DC 0 31632360
* 31632370
12C9 0011 LPTNR TYPE .LINE PRINTER NOT READY. 31632380
12D4 0 FFFF DC /FFFF TERMINATOR 31632390
* 31632400
***** 31632410
* 31632420
1132 PRINT ROUTINE * 31632430
* 31632440
***** 31632450
12D5 0 0000 $1132 DC *-* 31632460
12D6 1 C400 1187 LD L $BSY IS PRINTER BUSY 31632470
12D8 0 4820 BSC Z SKIP IF NOT 31632480
12D9 0 70FC MDX $1132&1 LOOP 31632490
12DA 0 085D XIO $DW-1 GET DSW 31632500
12DB 0 1005 SLA 5 IS PRINTER READY 31632510
12DC 1 4428 131B BSI L $NRD,&Z 31632520
12DE 1 C480 12D5 LD I $113? GET FUNCTION CODE 31632530
12E0 1 4C28 12F1 BSC L $SKIP,&Z BRANCH IF RESTORE 31632540
12E2 0 1001 SLA 1 IS IT PRINT 31632550
12E3 1 4C28 12F6 BSC L $WRIT,&Z BRANCH IF YES 31632560
12E5 0 1001 SLA 1 IS IT DOUBLE SPACE 31632570
12E6 1 4C28 12FF BSC L $DBL,&Z BRANCH IF YES 31632580
12E8 0 401F $SNG BSI $TEST TEST BUSY AND 16 IDLES 31632590
12E9 0 7401 0027 MDX L 39,1 SCAN COMPLETE IND 31632600
12EB 1 7401 1187 MDX L $BSY,1 31632610
12ED 0 0843 XIO $SPA SINGLE SPACE 31632620
12EE 0 7015 MDX $BAK RETURN 31632630
* 31632640
12FF 0 683C $DBL STX $SP2 TURN ON 2 SPACE IND 31632650

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12F0 0 70F7	MDX	\$SNG	GO SPACE	31632660
12F1 0 4016	* \$SKP	RSI	\$TFST	31632670
12F2 1 7401 1187	MDX	L \$BSY,1	TEST BUSY ANS 16 IDLES	31632680
12F4 0 0839	XIO	\$CHA1-1	SKIP TO ONE	31632690
12F5 0 700E	MDX	\$BAK	RETURN	31632700
12F6 0 0841	* \$WRT	XIO	\$DW-1	31632710
12F7 0 1006	SLA	6	GET DSW	31632720
12F8 0 4828	BSC	&Z	IS PRINTER BUSY	31632730
12F9 0 70FC	MDX	\$WRT	SKIP IF NOT	31632740
12FA 0 C82D	LDD	\$48	LOOP	31632750
12FB 0 082E	STD	\$CT48		31632760
12FC 0 4015	BSI	\$EMPT	CLEAR SCAN AREA	31632770
12FD 0 7401 0027	MDX	L 39,1	SCAN COMPLETE IND	31632780
12FF 1 7401 1187	MDX	L \$BSY,1	TURN ON BUSY	31632790
1301 1 7401 1128	MDX	L \$IBSY,1		31632800
1303 0 082E	XIO	\$STPT-1	START PRINTER	31632810
1304 1 7401 12D5	\$BAK	MDX L \$1132,1	ADJ RETURN ADRS	31632820
1306 1 4C80 12D5	BSC	I \$1132		31632830

1308 0 0000	* \$TEST	DC	*-*	31632840
1309 0 082E	XIO	\$DW-1	GET DSW	31632850
130A 0 1003	SLA	3	IS CARRIAGE BUSY	31632860
130B 0 4828	BSC	&Z	SKIP IF NOT	31632870
130C 0 70FC	MDX	\$TEST&1	LOOP UNTIL DONE	31632880
130D 0 C01D	\$TSID	LD	\$CT16	31632890
130E 0 4828	BSC	&Z	ARE IDLES BUSY	31632900
130F 0 70FD	MDX	\$TSID	SKIP IF NOT	31632910
1310 1 4C80 1308	BSC	I \$TEST	LOOP	31632920
1312 0 0000	\$EMPT	DC	*-*	31632930
1313 0 1010	SLA	16	O.K. FOR CARRIAGE	31632940
1314 0 61F8	LDD	I -8	CLEAR ACC	31632950
1315 0 D500 0028	\$MPT	STO L1 40	SET TO STEP ACROSS	31632960
1317 0 7101	MDX	I 1	ZERO A WORD	31632970
1318 0 70FC	MDX	\$MPT	SET FOR NEXT WORD	31632980
1319 1 4C80 1312	BSC	I \$EMPT	DO IT AGAIN	31632990

1318 0 0000	* \$NRD	DC	*-*	31633000
131C 0 4480 0163	BSI	I LOG	USE MON LOG	31633010
131E 1 12C4	DC	\$XXX	MSG ADRS	31633020
131F 0 0818	* XIO	\$DW-1	GET DSW AFAIN	31633030
1320 0 180A	SRA	10		31633040
1321 0 4804	BSC	E	CLEAR ACC	31633050
1322 0 70FC	MDX	*-4	SET TO STEP ACROSS	31633060
1323 1 4C80 1318	BSC	I \$NRD	ZERO A WORD	31633070

1326 0002	* \$AQ1	BSS E 2	SET FOR NEXT WORD	31633080
1328 0 0030	\$48	DC 48	DO IT AGAIN	31633090
1329 0 0010	DC	16	ALL DONE	31633100
132A 0 0000	\$CT48	DC	*-*	31633110
132B 0 0000	\$CT16	DC	*-*	31633120
132C 0 0000	\$SP2	DC	*-*	31633130
132D 0 3701	\$DWR	DC	/3701	31633140
132E 0 0000	\$SWD	DC	*-*	31633150
132F 0 3404	\$CHA1	DC	/3404	31633160
1330 0 0000	\$WHEL	DC	*-*	31633170
1331 0 3401	\$SPA	DC	/3401	31633180
1332 0 0000	\$QTST	DC	*-*	31633190
1333 0 3480	\$STPT	DC	/3480	31633200
1334 1 1330	\$EMTR	DC	\$WHEL	31633210
1335 0 3200	DC	/3200	IOCC	31633220

1336 0 FF00	\$FF	DC	/FF00	31633340
1337 0 0002	\$2	DC	2	31633350
1338 0 0000	DC		0	31633360
1339 0 3700	\$DW	DC	/3700	31633370
133A 0 0000	DC		0	31633380
133B 0 0001	\$D1	DC	1	31633390
133C 0 0000	DC		0	31633400
133D 0 3440	\$STOP	DC	/3440	31633410
133E 0 0020	\$32	DC	32	31633420
133F 0 3402	\$STPC	DC	/3402	31633430

1340 0 0000	* \$INTR	DC	*-*	31633440
1341 0 D8E4	STD	\$AQ1	SAVE A & Q	31633450
1342 0 2835	STS	\$ATUS	SAVE STATUS	31633460
1343 0 6A36	STX	2 \$XR2E1		31633470
1344 0 08E7	XIO	\$DWR-1	SENSE W/RESET	31633480
1345 0 D0E8	STO	\$SWD	SAVE DSW	31633490
1346 1 4C10 1357	BSC	L \$GON,-	BRANCH IF NOT EMITTER	31633500
1348 0 C0F1	LD	\$CT48	IS SCANNING COMPLETE	31633510
1349 1 4C20 1370	BSC	L \$EMIT,Z	READ EMITTER IF NOT	31633520
134B 0 40C6	BSI	\$EMPT	YES CLEAR SCAN FIELD	31633530
134C 0 7401 0027	MDX	L 39,1	SCAN COMPLETE BIT	31633540
134E 0 1010	SLA	16	CLEAR I/O AREA	31633550
134F 1 D400 1128	STO	L \$IBSY	BUSY INDICATOR	31633560
1351 1 74FF 1328	MDX	L \$CT16,-1	DECREMENT COUNTER	31633570
1353 0 7023	MDX	\$IBAK	RETURN	31633580
1354 0 08E7	XIO	\$STOP-1	STOP PRINTER IF DONE	31633590
1355 0 08DA	XIO	\$SPA-1	SPACE AFTER	31633600
1356 0 7020	MDX	\$IBAK		31633610
1357 0 1001	\$GON	SLA 1	IS IT SKIP RESPONSE	31633620
1358 1 4C10 1362	BSC	L \$NOG,-	BRANCH IF NOT	31633630
135A 0 1007	SLA	7	IS IT CHANNEL 1	31633640
135B 1 4C10 1377	BSC	L \$IBAK,-	RETURN IF NOT	31633650
135D 0 08E0	XIO	\$STPC-1	STOP CARRIAGE	31633660
135E 1 74FF 1187	MDX	L \$BSY,-1	TURN OFF BUSY	31633670
1360 0 1000	NOP			31633680
1361 0 7015	MDX	\$IBAK	RETURN	31633690
1362 0 1001	\$NOG	SLA 1	IS IT SPACE RESPONSE	31633700
1363 0 4810	BSC	-	SKIP IF YES	31633710
1364 0 7012	MDX	\$IBAK	NOT 1132, TRY AGAIN	31633720
1365 1 74FF 1187	MDX	L \$BSY,-1	TURN OFF BUSY	31633730
1367 0 1000	NOP			31633740
1368 0 C0C5	LD	\$SWD	GET DSW	31633750
1369 1 4C04 1374	BSC	L \$CA12,E	BRANCH IF CH 12 ON	31633760
136B 0 C0C0	LD	\$SP2	IS 2 SPACE IND ON	31633770
136C 1 4C18 1377	BSC	L \$IBAK,&-	BRANCH IF NO	31633780
136E 0 1010	SLA	16	CLEAR	31633790
136F 0 D0BC	STO	\$SP2	TURN OFF 2 SPACE IND	31633800
1370 1 7401 1187	MDX	L \$BSY,1		31633810
1372 0 08BD	XIO	\$SPA-1	START 2ND SPACE	31633820
1373 0 7003	MDX	\$IBAK	GO BACK	31633830
1374 1 7401 1187	\$CA12	MDX L \$BSY,1		31633840
1376 0 08B7	XIO	\$CHA1-1	START SKIP TO ONE	31633850
1377 0 C8AF	\$IBAK	LDD \$AQ1	RESTORE A & Q	31633860
1378 0 2000	\$ATUS	LDS	RESTORE STATUS	31633870
1379 0 6600 0000	\$XR2	LDD L2 *-*		31633880
137B 1 4C80 1340	BSC	I \$INTR	RETURN TO MONITOR	31633890

137D 0 08B6	* \$EMIT	XIO	\$EMTR	31633900
137E 0 C0B1	LD	\$WHEL	LOAD EMITTER CHAR	31633910
137F 0 1808	SRA	8	PUT IN RIGHT HALF	31633920
1380 0 E8AF	OR	\$WHEL	PUT IT IN LEFT HALF	31633930
1381 0 D0AE	STO	\$WHEL	2 CHARACTERS IN WHEL	31633940
1382 0 408F	BSI	\$EMPT	CLEAR SCAN FIELD	31633950
1383 0 C0BA	LD	\$32		31633960
1384 0 D01D	STO	\$EMT3&1	STORE FOR SCAN AREA	31633970

1385 0 00AC	STO	\$QSTST	STORE FOR + CNTR	31634020
1386 0 62C4	LDX	2 -60	XR2 TO STEP I/O AREA	31634030
1387 1 C600 124F	\$EMT1 LD	L2 \$I0AR&60	GET CHARACTER	31634040
1389 0 FOA6	EOR	\$WHEL	COMPARE	31634050
138A 0 80A8	A	\$FF	DID LEFT CHAR COMPARE	31634060
138R 1 4C02 138E	BSC	L *&1,C	BRANCH IF NO	31634070
138D 0 88A8	AD	\$2-1	ADD 2 INTO Q IF YES	31634080
138F 0 1008	SLA	8	CHECH RIGHT CHARACTER	31634090
138F 0 4P18	BSC	&-	SKIP IF NO	31634100
1390 0 88A9	AD	\$D1-1	ADD 1 INTO Q IF YES	31634110
1391 0 7201	MDX	2 1	SET FOR NEXT CHAR	31634120
1392 0 7009	MDX	\$EMT2	SHIFT BITS IF NI SKIP	31634130
1393 0 1010	SLA	16		31634140
1394 0 18C8	RTE	8	GET LAST BITS TO ACC	31634150
1395 0 80A5	A	\$D1	SCAN COMPLETE BIT	31634160
1396 0 D400 0027	STO	L 39	PUT IT AWAY	31634170
1398 1 74FF 132A	MDX	L \$CT48,-1	DECREMENT SCAN COUNTER	31634180
139A 0 1000	NOP		IN CASE OF SKIP	31634190
139B 0 70DB	MDX	\$IBAK	GO BACK	31634200
139C 0 1082	\$EMT2 SLT	2	SHIFT BITS IN Q	31634210
139D 1 74FC 1332	MDX	L \$QSTST,-4	SKIP IF FULL WORD DONE	31634220
139F 0 70E7	MDX	\$EMT1	GET NEXT TWO WORDS	31634230
13A0 0 108F	SLT	14	SHIFT TO ACC	31634240
13A1 0 D400 0020	\$EMT3 STO	L 32	PUT IN SCAN AREA	31634250
13A3 1 7401 13A2	MDX	L \$EMT3&1,1	INCREMENT SCAN AREA	31634260
13A5 1 7420 1332	MDX	L \$QSTST,32	SET FOR NEXT SCAN	31634270
13A7 0 70DF	MDX	\$EMT1	GET MORE WORDS	31634280

* INDICATORS, CONSTANTS, IOCCS				

*				
13A8 0000	TT	BSS	0	31634320
13A8 0 0000	MSWAK	DC	*--	31634330
13A9 0 0000	MDSWT	DC	*--	31634340
13AA 0 0000	ERR	DC	*--	31634350
13AB 0 0000	COUNT	DC	*--	31634360
13AC 0 0000	BCCA	DC	*--	31634370
13AD 0 0000	LSOLE	DC	*--	31634380
13AE 0 0000	LSYN	DC	*--	31634390
13AF 0 0000	FIRST	DC	*--	31634400
13B0 0 0000	SECND	DC	*--	31634410
13B1 0 0000	PAD	DC	*--	31634420
13B2 0 0000	MSEND	DC	*--	31634430
13B3 0 0000	MDSAV	DC	*--	31634440
13B4 0 0000	BUFFR	DC	*--	31634450
13B5 0 0000	SYNC	DC	*--	31634460
13B6 0 0000	FCODE	DC	*--	31634470
13B7 0 0000	POINT	DC	*--	31634480
13B8 0 0000	RTBSY	DC	*--	31634490
13B9 0 0000	DSW	DC	*--	31634500
13BA 0 0000	BCCR	DC	*--	31634510
13BB 0 0000	RETRY	DC	*--	31634520
13BC 0 0000	WTCNT	DC	*--	31634530
13BD 0 0000	TEMP	DC	*--	31634540
13BE 0 0000	REQ	DC	*--	31634550
13BF 0 0000	CNTA	DC	*--	31634560
13C0 0 0000	CNTR	DC	*--	31634570
13C1 0 0000	TMPT	DC	*--	31634580
13C2 0 0000	TOP	DC	*--	31634590
13C3 0 0000	CNTPT	DC	*--	31634600
13C4 0 0000	ENPNT	DC	*--	31634610
13C5 0 0000	TMRCI	DC	*--	31634620
13C6 0 0000	TMXMI	DC	*--	31634630
13C7 0 0000	IQAP	DC	*--	31634640
13C8 0 0000	TOIND	DC	*--	31634650
13C9 0 0000	YCNT	DC	*--	31634660
13CA 0 0000	ERRNO	DC	*--	31634670
13CB 0 0000	IDFLG	DC	*--	31634680
				31634690

13CC 0 0000	REWAK	DC	*--	31634700
13CD 0 0000	OPTIN	DC	*--	31634710
13CE 0 0000	TYPE	DC	*--	31634720
13CF 1 15D5	ENADR	DC	ENTBL	31634730
13D0 0 0000	ENPT2	DC	*--	31634740
13D1 0 0000	NOERR	DC	*--	31634750
13D2 1 8R48	MSG1	DC	TOMSG&/8000	31634760
13D3 1 8B4D	MSG2	DC	XMMSG&/8000	31634770
13D4 1 8B51	MSG3	DC	RCMSG&/8000	31634780
13D5 1 8B55	MSG4	DC	ERMSG&/8000	31634790
13D6 1 8B58	MSG5	DC	ENCOR&/8000	31634800
13D7 0 02AA	STXAA	DC	/02AA	31634810
13D8 0 AAAA	HAAAA	DC	/AAAA	31634820
13D9 0 AA55	HAA55	DC	/AA55	31634830
13DA 0 5555	H5555	DC	/5555	31634840
13DB 0 5503	H5ETX	DC	/5503	31634850
13DC 0 3232	SYSYN	DC	/3232	31634860
13DE 0000	BSS	E	0	31634870
13DE 1 13FC	SYNRG	DC	SYN	31634880
13DF 0 5104	DC		/5104	31634890
13E0 0 000E	ENDOP	DC	14	31634900
13E1 0 5404	DC		/5404	31634910
13E2 0 0104	DC		260	31634920
13E3 0 5410	DC		/5410	31634930
13E4 0 0003	TIMER	DC	3	31634940
13E5 0 5420	DC		/5420	31634950
13E6 1 13FD	WRDLE	DC	DLE	31634960
13E7 0 5100	DC		/5100	31634970
13E8 1 13FC	WRSYN	DC	SYN	31634980
13E9 0 5100	DC		/5100	31634990
13EA 0 0004	STRED	DC	4	31635000
13EB 0 5600	DC		/5600	31635010
13EC 1 13B4	READ	DC	DC	31635020
13ED 0 5200	DC		/5200	31635030
13EE 0 0007	RETIM	DC	7	31635040
13EF 0 5702	DC		/5702	31635050
13F0 1 13B4	WRBUF	DC	DC	31635060
13F1 0 5100	DC		/5100	31635070
13F2 0 0010	SNSRS	DC	16	31635080
13F3 0 5701	DC		/5701	31635090
13F4 0 0013	SENSE	DC	19	31635100
13F5 0 5700	DC		/5700	31635110
13F6 0 0063	RESET	DC	99	31635120
13F7 0 5540	DC		/5540	31635130
13F8 0 1070	ACKS	DC	/1070	31635140
13F9 0 1061	DC		/1061	31635150
13FA 0 0000	POSAK	DC	*--	31635160
13FB 0 0000	DC		*--	31635170
13FC 0 3200	SYN	DC	/3200	31635180
13FD 0 1000	DLE	DC	/1000	31635190
13FE 0 6800	WAK	DC	/6800	31635200
13FF 0 0300	SXSOH	DC	/0300	31635210
1400 0 2200	DLSYN	DC	/2200	31635220
1401 0 0200	STX	DC	/0200	31635230
1402 0 0300	ETX	DC	/0300	31635240
1403 0 016C	SOHPC	DC	/016C	31635250
1404 0 1002	DLSTX	DC	/1002	31635260
1405 0 1003	DLETX	DC	/1003	31635270
1406 0 0001	EOTCT	DC	/0001	31635280
1407 0 3700	EOT	DC	/3700	31635290
1408 0 3000	NAK	DC	/3000	31635300
1409 0 0002	LSTAK	DC	/0002	31635310
140A 0 0000	DC		*--	31635320
140B 0 0001	ENQCT	DC	/0001	31635330
140C 0 2000	ENQ	DC	/2000	31635340
140D 0 0002	DFOTC	DC	/0002	31635350
140E 0 1037	DLEOT	DC	/1037	31635360
140F 0 1A00	EQEOT	DC	/1A00	31635370

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1410 0 2600      FTB  DC  /2600      ETB CHARACTER
1411 0 2500      EBETX DC /2500      ETB ETX EXCLUSIVE OR
1412 0 1F00      ITR  DC  /1F00
1408 0           H0001 EQU ENQCT
1409 0           H0002 EQU LSTAK
13F4 0           H0003 EQU TIMER
13EA 0           H0004 EQU STRED
13EE 0           H0007 EQU RETIM
1413 0 0011      H0011 DC  /11
13E0 0           D14  EQU  ENDOP
13F2 0           D16  EQU  SNSRS
13F4 0           D19  EQU  SENSE
1414 0 0019      D25  DC   25
13F6 0           D99  EQU  RESET
13E2 0           D260 EQU  STSYN
1415 0 000A      H000A DC  /000A
1416 0 F000      HF000 DC /F000
1417 0 F002      HF002 DC /F002
1418 0 F0F0      HF0F0 DC /F0F0
1419 0 FF00      HFF00 DC /FF00
141A 0 FFFF      HFFFF DC /FFFF
141B 0 00FF      H00FF DC /00FF
141C 0 0202      H0202 DC /0202
141D 0 0F0F      H0F0F DC /0F0F
141E 0 8000      H8000 DC /8000
141F 0 7000      H7000 DC /7000
1420 0 7FFF      H7FFF DC /7FFF
1421 0 001F      H001F DC /001F
1422 0 1802      H1802 DC /1802
1423 0 A001      POLYN DC /A001
1424 0000        T      BSS  0
1424 0 0032      KSYN DC  /0032      SYN CHARACTER
1425 0 0000      SELCT DC *-*      SELECT CODE LOCATION
1426 0 0000      SX99 DC  *-*      2780 SWITCH
1427 0 0000      ENQSW DC *-*      2780 SWITCH
1428 0 00AA      K00AA DC /00AA
1429 0 0000      STXSW DC *-*      STX FLAG
142A 0 0000      RVISW DC *-*      RVI FLAG
142B 0 0000      TTDSW DC *-*      TTD FLAG
142C 0 107C      RVI  DC  /107C
*****
142D 0014      TABLE BSS  20
*****
1442 0000          BSS  E  0
1442 0 0320      RAREA DC  800
1443 0002          BSS  2
*****
1445 0190      RFTTM BSS  400
*****
15D5 0A06      ENTBL BSS  PID+/1A00-*
1FDC 0627      END  BGIN
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

31635380
31635390
31635400
31635410
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31635690
31635700
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31635720
31635730
31635740
31635750
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31635770
31635780
31635790
31635800
31635810
31635820
31635830
31635840
31635850
31635860
31635870
31635880

```

```

$AMES 1180 11AE 1185 118D 11C1 11E8 11EB
$AQ 12B6 127D 12A8
$AQ1 1326 1341 1377
$ATUS 1378 1342
$RAK 1304 12EF 12F5
$BSY 1187 0632 1261 126B 1278 1287 128D 1295 12A1 12A6 12D6 12F8 12F2 12FF
135E 1365 1370 1374
$CA12 1374 1369
$CHA1 132F 12F4 1376
$CH1 12BC 127A 12A5
$CH12 12A5 129A
$CLER 1119 111C
$CLR 1110 10B4 10F1 111D
$CONV 11AD 10E3 10E5 10EA 11B3
$CT16 132B 130D 1351
$CT48 132A 12FB 1348 1398
$DBL 12EF 12E6
$DEC 112B 1103
$DEC1 1139 1130
$DEC2 113D 1159
$DEC3 1141 113C 1140
$DEC4 114A
$DEC5 114E 114D
$DOBL 1265 125B
$DSW 12B9 1250 125D 1267 1274 1280
$DSWR 12C1 127F
$DW 1339 12DA 12F6 1309 131F
$DWI 1120 10BC 10F7 10FA 10FC
$DWR 132D 1344
$D1 133B 1390 1395
$ELGX 106A 1065
$ELNO 1066 1058
$ELOG 1052 0AF5 0AF4 106A
$ELO3 105E 1056
$EL32 1060 105A 105D 1061 1064
$FMIT 137D 1349
$EMPT 1312 12FC 1319 1348 1382
$EMTR 1334 137D
$FMT1 1387 139F 13A7
$EMT2 139C 1392
$EMT3 13A1 1384 13A3
$ERR 106C 105E 106F
$FF 1336 138A
$FLSW 1129 00B9 1071 1079 107F
$GON 1357 1346
$GOON 128A 1283
$HEX 1164 10C2 10D4 10DA 10DE 1105 1183
$HEX1 116A 1182
$HEX2 116D 116C
$HEX3 1177 1176
$IBAK 1377 1353 1356 1358 1361 1364 136C 1373 139B
$IBSY 1128 0634 1111 126D 1285 1301 134F
$ID 12C3 107D 10BF
$INT 127C 1087 12AA
$INTR 1340 109B 137B
$IOAR 1213 10B5 10C9 10CC 10D0 10E0 10F2 1119 12BE 1387
$IRET 12A8 1289 1291 1294 129D 12A4
$LEND 1107 10FF
$LNFD 11EC 11B7
$LOG 1076 1045 1070 1081 110C 110E
$LOG0 10F8 10FE
$LOG1 10FA 1106 115B
$LOG2 1100 10F5 10F8
$LOG8 10E0 10BD 10D7
$LOG9 10F4 10EC
$LTBL 11D1 11CD
$LTST 11CA 11D0
$MPT 1315 1318

```

\$NOG 1362 1358
 \$NOLF 11BF 11B9
 \$NOOG 1292 128C
 \$NRD 131B 12DC 1323
 \$NRDY 12AC 1251 12B3
 \$N14 1161 1135
 \$N32 1160 1132
 \$OTST 10A2 1094
 \$PIRI 1122 10AB 10B1 10B3 10D2 10D6
 \$PRNT 12BF 126F
 \$PRI1 1126 1092 1099 1150 116F 11D3
 \$PRI4 1127 108F 10A0 10C6 1115 1133 1143 1179 11E2
 \$PTST 1125 108D 1097 10FE 1107 118A
 \$QTST 1332 1385 139D 13A5
 \$RAD 1124 10AE 10DC
 \$RBX 107D 1073 1075 107B
 \$RET 1270 1264 127B
 \$RTBL 11F0 11DC
 \$RTST 11D9 11DF
 \$SING 125D 1260 1266
 \$SIX 115F 112B
 \$SKIP 1274 1255 1277
 \$SKP 12F1 12F0
 \$SNG 12E8 12F0
 \$SPA 1331 12ED 1355 1372
 \$SPAC 12BB 1263 1290 12A3
 \$SPA2 12BA 1265 129C 12A0
 \$SP2 132C 12EF 136B 136F
 \$STAT 12A9 127E
 \$STOP 133D 1354
 \$STPC 133F 135D
 \$STPT 1333 1303
 \$STUP 10B7
 \$SWD 132F 1345 1368
 \$TABL 1188 112D 113B 1166 11D1 11F0
 \$TEN 115E 113E 114B
 \$TERM 11ED 11B2
 \$TEST 1308 12E8 12F1 130C 1310
 \$TMP 1162 10B3 10A2 1147 1154 11C6 11C7 11C9 11CC 11DB
 \$TMP1 1185 1173 117D 11D7 11E6
 \$TSID 130D 130F
 \$TTBL 11EF 11CA 11D9
 \$TWO 1186 1168
 \$WCNT 115C 112C 112F 1138 1148 1157 1169 1180
 \$WHEL 1330 1334 137E 1380 1381 1389
 \$WRIT 1267 1258 126A
 \$WRT 12F6 12F3 12F9
 \$WSD 12CC 12B9 1298
 \$XLG 1050 104C
 \$XLND 104D 103F
 \$XLOG 1039 0A74 0D9A 0DB1 1050
 \$XL03 1045 103D
 \$XL32 1047 1041 1044 1048 104B
 \$XR1 110A 106D 1077
 \$XR2 1379 1343
 \$XXX 12C4 12AF 131E
 \$1 12C2 12BC
 \$1132 12D5 1095 12D9 12DE 1304 1306
 \$1403 124F 108B 1253 1270 1272
 \$2 1337 138D
 \$32 133F 1383
 \$407 1095 1085
 \$48 1328 12FA
 \$7F7F 112A 10C8 1117
 \$8600 12B8
 ACKS 13F8 0869 0C35
 ADBAD 092E 0927
 ADPLY 0FE7 0FF3

ALPH 0D92 0D7E
 ALTNT 086E 07EF 07FB 0877 08BA 08FE 0965 0976 09A8
 AMSGS 0A7E 0A71
 A1700 0A87 0A7E
 A1701 0A95 0A7F
 A1702 0A9F 0A80
 A1703 0AA4 0A81
 A1705 0AAA 0A83
 A1706 0ABB 0A84
 A1707 0ACC 0A85
 A1708 0AD6 0A86
 BCCA 13AC 0F2A 0F38 0F3B 0F46 0F62 0FE2 0FEB
 BCCR 13BA 0F27 0F36 0F37
 BCC1 0F1F 0EA9
 BCC2 0F32 0EAA 0F42
 BDRFT 0819 07C7 07E0 07E8 0D40
 BEGIN 0160 0627
 BFDLE 0F9C 0F6C
 BFSOH 0FA3 0F76
 BFSTX 0F9F 0F73
 BGIN 0627 1FDC
 BITCK 0FF3 0FEA
 BLKCK 0FDC 0ECB 0ED9 0EE3 0EFD 0F64 0F8D
 BTD 0BA5 0B63 0B6E 0BAC
 RUFFR 13B4 079A 08BF 090D 0985 0E72 0E81 0E88 0E8B 0E92 0E9B 0EB1 0EB7 0EBB
 0ECF 0EE1 0EEE 0F17 0F25 0F2C 0F35 0F48 0F58 0F5B 0F6A 0F71 0F82
 0FAE 0FC2 0FC8 0FD3 0FE0 0FFF 1002 100B 13EC 13F0
 CALBC 0FDE 0EF5 0F18 0FDC 0FEC
 CARSV 0C26 0BFA 0BFD 0C00 0COA 0C0E 0C16
 CHAR 0BFD 0C04 0C15 0C1F
 CKBC1 1019 0FF6
 CKCNT 0E6C 0E51 0E55 0E58
 CKEND 0FC1 0EC9 0ED7 0EF9 0F04 0FD5
 CKFST 0F8C 0F96 0F9E 0FA2 0FAC
 CKMON 0DD9 0D9C 0DB3 0DC6 0DDA
 CKOPN 0A59 0A2F 0A6C 0D6E
 CKRDY 06FA 06F4
 CKRTR 0821 078C 07A9 07B7 080A 080E 0814 0839 083E 08A9 08B5 08D1 08E4 08F7
 0957 0A29
 CKSTX 0F66 0FBD 0EC7 0F79
 CKSYN 0FAD 0FC5 0ECD 0F5E 0FBF
 CKWAK 0EBB
 CKY 0931 0914 091C
 CLEAR 06CE 0699 0791 0850 08AD 08B7
 CNTA 13BF 0B73 0B7E 0B80 0B9A 0BBD 0BCE 0BD8 0BF2 0BF1 0C13 0C1D 0CDB 0CEB
 0CFF 0CFF 0D0E 0D12 0D21 0D31 0D35 0D78 0D7A 0DB3 0DB5 0DA0 0DBB
 CNTB 13C0 0B84 0B93 0D80 0D89 0DB4
 CNTPT 13C3 06F3 0E01 0E02 0E12 0F19 0E1C
 CNTRL 0664 065F 0DD1
 CN00 067C 0676
 CN10 0680
 CN20 068A 067E
 CN30 0691 067B 0683
 COUNT 13AB 08BB 0E6C 0E73 0F01 0F08 0F0D 0FF5 0FFB 1021
 CTINU 08BA 08B1 08D6 08E6
 CTLCK 0C28 0C02 0C06
 DATTB 0D4D 0C37 0C41 0C60 0C65 0CDE 0CE3 0D01 0D06 0D24 0D29
 DCRCR 0F08 0EF0 0F02
 DECRF 0FE9 0FE6
 DFOTC 140D 09F0
 DIAGP 0ADB 0846 09DC 0A06 0ADF 0AE2
 DIAL 061C 09EC 09F4
 DISCN 0892 0888
 DLF 13FD 0E62 0E8C 0ED0 0EE2 0F16 0F1A 0F6B 13E6
 DLEOT 140E 0887 09D3
 DLESQ 0EE9 0EDF
 DLFTX 1405 0BE5 0C49 0C6D 0CBC
 DLEX 0DF5 0DE4

DLSTX 1404 0BD9 0CBA 0CD8 0CFB 0D1E 0ED2
 DLSYN 1400 0EF2
 DLY1 0DEC 0DF2
 DCNE 0EC1 0FB5 0EB9 0F80 0F92
 DSET 0C36 0C53
 DSW 13B9 0F39 0E42 0E4C 0E7C
 DTB 085A 07D9 07E2 0862
 D12 0715 0710 0757
 D124 0D18 0CF9
 D13 0710 0718 0759
 D14 13E0 0723 0758
 D148 0D3B 0D1C
 D15 072C 072A 075D
 D16 13F2 0732 075F
 D19 13F4 0739 0761
 D20 0742 0740 0763 09E6
 D21 074A 0748 0765
 D22 0752 0750 0767
 D249 0C30 0BF0
 D25 1414 0784 0867 0875
 D260 13E2 0BD5
 D4 0D5C 0C51
 D40 0C72 0C3A 0C58
 D8 0C54 0C32
 D84 0CF5 0CD6
 D99 13F6 07DC 07E4 0B5F 0B62 0B6A 0B6D
 EBETX 1411 0FC5
 EMSGS 0AFE 0AF1
 ENADR 13CF 06E1
 ENCOR 0B58 13D6
 END 0164 068F 0BA3 0DD7
 ENDIT 0DCB 0D74 0D7C
 ENDOP 13E0 06E7 0A47 0A55 1031
 END1 09C9 096E
 END2 09CC 07F0 097E
 END3 09DF 09D0
 END8 0995 09BD
 END99 0852 0841
 ENPNT 13C4 06E2 0A64 0A68 0A6A 0E00 0E0C 0E13 0E16 0E20 0E24 0E2A 0E2C 0E2F
 ENPRT 0D60 09E0 09FA
 ENPT2 13D0 06E4 0A65 0A67
 ENQ 140C 077F 07A2 07AE 0805 08A4 0950 0E9C 0EB2 0FC9
 ENQCT 140B 08A2 08D5 08F0
 ENQRC 07B5 07A3
 ENQSW 1427 0786 078E 0840 0857 0979 09E5 0DFD
 ENTBL 15D5 06D8 06DA 0D76 13CF
 ENTST 09EC 0858 0901 0998
 ENTS2 09F4 084C 088F 0895 09D4 09DE 0A25
 ENTYP 0D66 0D61
 ENX 0D8F 0D8B
 EOT 1407 0800 0883 09CF
 EOTCK 0879 07A5 07B1 0803 088A 08BE 090B 0953 099F
 FOTCT 1406 076E 09F3
 FOTRC 088C 0884
 FOTSW 09EB 07FC 07F5 088D 0893 09C5 09DF 09E3
 EQEOT 140F 0FB4 0FCB
 ERLCK 0166
 FRMSG 0B55 13D5
 ERPR 0AEE 084A 08AB 0996 0A1D 0A23 0AFC 0BA1
 FRR 13AA 07BD 09A5 0EDC 0FFC 0F3A 0F95 0FD0 101D
 ERREX 0840 0836 0891 0898
 FRRNO 13CA 06DE 0822 0843 0931 0963 09B2 09D7 0AE1 0AEC
 FRRNX 084E 0844
 FRROR 0162 1066
 ERRTO 08D7 08C1
 ESC2 07D6 07D0 07D5
 ETR 1410 0FC3
 FTX 1402 087C 0C20 0C7D

EXIT 1035 0E34 0E4E 0E65 0E6A 0EF7 0F13 0F1D 0F28 0F30 0F55 0F98 0FBB 1010
 1018 1024 102E
 EXITA 0B96 0B81
 EXITB 0D44 0BB5 0C24 0CB5 0CD1
 EXITC 0C24 0BD1 0BE9 0C4D 0C71 0C94
 EXIT1 1031 0E38
 EXIT8 081B 0787 07F7
 EXOR 0C02 0C09
 E170A 0B42 0B08
 E1700 0B09 0AFE
 E1701 0B0F 0AFF
 E1702 0B17 0B00
 E1703 0B1D 0B01
 E1704 0B23 0B02
 E1705 0B27 0B03
 E1706 0B2B 0B04
 E1707 0B32 0B05
 E1708 0B37 0A82 0B06
 E1709 0B3D 0B07
 FCODE 13B6 0A03 0A3A 0E3F 0EEB 0EFF 0F0F 0F22 0F32 0F89 0F97 0FB3 0FEE 0FF3
 OFF8 101E 102B
 FIRST 13AF 0EAC 0EAD 0F78 0F8C 0F91 0FA3 0FAT
 GOMSG 09BE 09A6
 GETX 07F2 07E9
 GNRFT 0B5B 06FE 0705 070C 0717 071F 0726 072E 0735 073C 0744 074C 0768 0775
 0B9C
 GNTM 0BAE 0711 07F9 0D42 0D4A
 GO 0A2E 0A04 0A49 0A57 102C
 GTCNT 0D7A 0DA2 0DBD
 GTHX 0D83 0D90 0DB6
 GTRDY 06E5 06F3 06FC 078F
 HAAAA 13D8 0CA4
 HAA55 13D9 0CA0
 HEADG 0EC5 0EA6
 HEX 0DA3 0D8E 0D91
 HFFFF 141A 079B 08C0 090E 0986 0DA5 0E80
 HFF00 1419 0E71 0F47 0F57
 HF0F0 1418 0BAB
 HF000 1416 0B74
 HF002 1417 0B7A
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 H0202 141C 0BDF
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 H5ETX 13DB 0CA2
 H5555 13DA 0CAB
 H7FFF 1420 0A02 0A08 0D92 0DAA 0E3D
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 H8000 141E 0906 0D96 0DAD 1042 105B
 IDFLG 13CB 066B 0793 07BC 089C 0BB9
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 IL1 018A 062C 109D
 IL2 019A
 IL3 01AA
 IL4 01BA 1089
 INCNT 1021 1001 100A

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 INT 0E33 062A 1037
 IOAR 13C7 0A4B
 ITB 1412 0FD4
 ITBMD 0F5E 0EAB
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 KODAA 1428 0C9E
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 LOG 0163 104D 12AD 131C
 LOGBY 0167 0636 0644 065A
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 LRTN 06B6 06B7
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 MSG5 13D6 0E29
 MSWAK 13A8 082E 0A0A 0EBF
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 NAKCT 099B 09B7 09B9 09C0
 NAKRC 08F2 08CD
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 NOENQ 078A 0780
 NOERR 13D1 0A61 0DFA
 NOESC 07D8 07CD
 NOMOD 0FAC 0EA5
 NORML 0ECD 0EA7
 NOSTX 0F91 0F84
 NOSYN 0FBD 0FB0
 NOTDL 0EF9 0EF3
 NOT12 0C4E 0C33
 NOT13 0C55 0C4F
 NOT14 0C73 0C56
 NOT15 0C95 0C74
 NOT99 09C6 09C2
 NRTN 06B1 06B8
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 OUT 0E27 0DFF 0E05 0E07 0E09 0E0F 0E1C 0E1E 0E26
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 PDAT 0D6E 0DCA
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 POLYN 1423 0FE8
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 RVISW 142A 092C 0D60 0D67
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 SECND 13P0 0F6E 0F7B 0F7F 0FA8
 SELCT 1425 0666 07C9 07D7 0BF2 0C5A 0C76 0C98
 SENSE 13F4 06E9 0A18
 SETBC 0FD9 0FC6
 SETER 0F94 0FA4
 SFT02 0BDD 0CF3 0D16 0D39
 SET20 0CDE 0CED
 SET21 0D01 0D10
 SFT22 0D24 0D33
 SHFT 0C31 0BFB 0C0B 0C12 0C1B
 SNSRS 13F2 0938 0DE9 0E38

1130

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ZDSW 0654 0640 064F 0658 065E
ZINT 0657 0646
ZOKAY 0640 0639
ZSHFT 0652 064C
ZYES 0636 063A 0643 0650
END OF ASSEMBLY

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