



FIGURE 2. Buffer Example Flowchart

TL/DD/5181-2

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1          ;*****
2          ;***          ***
3          ;*** 8-BIT RAM BUFFER SUBROUTINES ***
4          ;***          ***
5          ;*****
6          ;THESE ARE SUBROUTINES FOR IMPLEMENTING A 32 BYTE
7          ;BUFFER IN A COP440 OR COP444L RAM 9/3/82
8  01BC    .CHIP 444
9          .TITLE BUFFER
10 002D    CHARM =      2,13          ;TEMPORARY STORAGE BUFFER MSD
11 002C    CHARL =      2,12          ;TEMPORARY STORAGE BUFFER LSD
12 002F    IPM =       2,15          ;INPUT POINTER MSD
13 002E    IPL =       2,14          ;INPUT POINTER LSD
14 003F    OPM =       3,15          ;OUTPUT POINTER MSD
15 003E    OPL =       3,14          ;OUTPUT POINTER LSD
16 000 00          CLRA
17 0080    .PAGE 2
18          ;MTOC IS A SUBROUTINE THAT TRANSFERS M(OPM) AND M(OPL) TO
19          ;CHARM AND CHARL
20 080 233E    MTOC:  LDD    OPL          ;LOAD LSD OUTPUT POINTER
21 082 50          CAB          ;WHICH IS BD
22 083 233F    LDD    OPM          ;LOAD MSB OUTPUT POINTER FOR B
23 085 54          AISC  4          ;MAKE BR EQUAL 4 OR 5
24 086 12          XABR
25 087 25          LD     2          ;LOAD M(OPM), MAKE BR = 6 OR 7
26 088 23AD    XAD    CHARM        ;M(OPM) TO CHARM
27 08A 05          LD     M(OPL)    ;LOAD M(OPL)
28 08B 23AC    XAD    CHARL        ;M(OPL) TO CHARL
29 08D 48          RET
30          ;
31          ;
32          ;CTOM IS A SUBROUTINE THAT TRANSFERS CHARM AND CHARL TO
33          ;M(IPM) AND M(IPL)
34 08E 232E    CTOM:  LDD    IPL          ;LOAD LSD INPUT POINTER
35 090 50          CAB          ;WHICH IS BD
36 091 232F    LDD    IPM          ;LOAD MSD INPUT POINTER FOR BR
37 093 54          AISC  4          ;MAKE BR = 4 OR 5
38 094 12          XABR
39 095 232D    LDD    CHARM        ;LOAD MSD TEMP STORAGE
40 097 26          X     2          ;TO M(OPM), MAKE BR = 6 OR 7
41 098 232C    LDD    CHARL        ;LOAD LSD TEMP STORAGE
42 09A 06          X     M(OPL)    ;TO M(OPL)
43 09B 48          RET
44          ;
45          ;

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46      .FORM
47      ;INCREMENTS INPUT POINT OR OUTPUT POINTER, ROLLS OVER
48      ;AT 1F HEX
49 09C 2D  INCIP: LBI   IPL           ;POINT TO LSD OF POINTER
50 09D 3D  INCOP: LBI   OPL           ;C=1 FOR INCREMENT
51 09E 22           SC                ;C=1 FOR INCREMENT
52 09F 00           CLRA              ;INCREMENT RAM VALUE
53 0A0 30           ASC                ;NEGATES SKIP CONDITION
54 0A1 44           NOP                ;STORE AND POINT TO (X,F)
55 0A2 04           XIS                ;PROPAGATE CARRY, IF ANY, TO MS
56 0A3 00           CLRA              ;STORE
57 0A4 30           ASC                ;STORE
58 0A5 44           NOP                ;STORE
59 0A6 06           X                  ;STORE
60 0A7 45           RMB   1            ;ROLL OVER AT X'1F
61 0A8 48           RET
62      ;
63      ;
64      .END
    
```

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CHARL 002C  CHARM 002D  CTOM  008E *  INCIP 009C *
INCOP 009D *  IPL   002E  IPM   002F  MTOC 0080 *
OPL   003E  OPM   003F
NO ERROR LINES
42 ROM WORDS USED
COP 444 ASSEMBLY
SOURCE CHECKSUM = C6A5
INPUT FILE 6:RBUFFC.SRC VN: 5
    
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