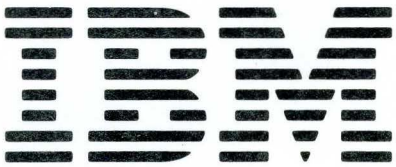


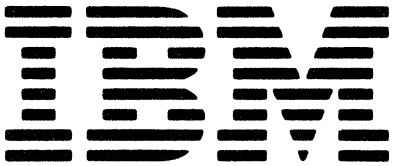
GC21-7775-7

File No. S38-34

IBM System/38

IBM System/38
Guide to Program Product Installation and Device Configuration

Program Numbers:		
	5714-SS1	5714-WP1
	5714-RG1	5714-WP2
	5714-CB1	5714-DCT
	5714-BA1	5714-UT2
	5714-PL1	5714-GP1
	5714-UT1	5714-WP3
	5714-CV2	5714-PC1
	5714-RC1	5714-CR1
		5714-DD1



GC21-7775-7

File No. S38-34

IBM System/38

IBM System/38
Guide to Program Product Installation and Device Configuration

Program Numbers:	5714-SS1	5714-WP1
	5714-RG1	5714-WP2
	5714-CB1	5714-DCT
	5714-BA1	5714-UT2
	5714-PL1	5714-GP1
	5714-UT1	5714-WP3
	5714-CV2	5714-PC1
	5714-RC1	5714-CR1
		5714-DD1

Eighth Edition (November 1986)

This major revision makes obsolete GC21-7775-6. Changes or additions to the text and illustrations are indicated by a vertical line to the left of the change or addition. See *About This Manual* for a summary of changes.

This edition applies to Release 8, Modification Level 0, of IBM
- System/38 CPF (Program 5714-SS1)
- RPG III (Program 5714-RG1)
- COBOL (Program 5714-CB1)
- BASIC (Program 5714-BA1)
- PL/I (Program 5714-PL1)
- IDU (Program 5714-UT1)
- Conversion Reformat Utility (Program 5714-CV2)
- Remote Job Entry Facility (Program 5714-RC1)
- OFFICE/38–Administrative Management (Program 5714-WP1)
- OFFICE/38–Text Management (Program 5714-WP2)
- OFFICE/38–Language Dictionaries (Program 5714-DCT)
- Advanced Printer Function Utility (Program 5714-UT2)
- OFFICE/38–Business Graphics Utility (Program 5714-GP1)
- OFFICE/38-Personal Services/38 (Program 5714-WP3)
- PC Support/38 (Program 5714-PC1)
- System/38 Cryptographic Facility (Program 5714-CR1)
- System/38 Distributed Data Management (Program 5714-DD1)

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About This Manual

This manual helps data processing managers and programmers install program products and configure devices on System/38.

This manual explains how to:

- Prepare for device configuration
- Install the Control Program Facility (CPF) and other program products
- Configure devices using control language (CL) commands

You should use this manual to plan for device configuration before your System/38 is delivered. When your system arrives, you should use the procedures in this manual to install CPF and other program products, and to configure devices. Before you do the installation and configuration, you should fill out the work sheets provided; keep them for ready reference and updating whenever you add, remove, or relocate devices on your system. To ensure that your installation proceeds as smoothly as possible, read the installation and configuration procedures in Chapter 3 before actually performing the procedures.

ORGANIZATION OF THIS MANUAL

This manual contains the following chapters and appendixes.

- Chapter 1, *Installation Overview*, provides an overview of the activities involved in preparing for and installing the Control Program Facility and the other System/38 program products.
- Chapter 2, *Preparing for Device Configuration*, describes a series of work sheets that can be used to help collect the necessary information for configuring the system.
- Chapter 3, *Installation Procedure*, presents a step-by-step explanation of how to install the Control Program Facility, install other System/38 program products, configure devices, and save a copy of the completed system on diskette or magnetic tape.
- Chapter 4, *Adding or Moving Work Stations*, presents a step-by-step explanation of how to add or move a work station.
- Appendix A, *Installation Example*, presents a sample installation and accompanying work sheets for system devices and for local and remote work stations.
- Appendix B, *Communications Example*, provides sample work sheets used to configure several communications examples from the *Data Communications Programmer's Guide*.
- Appendix C, *Work Station Controllers*, describes the basic work station controller (WSC), the Device Interface Expansion feature, the Device Control Expansion feature, and the work station controller-extended (WSCE).
- Appendix D, *Work Station Addressing Example*, describes one possible method for assigning work station addresses.
- Appendix E, *Specifying Line Interfaces and Modem Features*, provides line description parameters for various modems and explains line description parameters.
- Appendix F, *Print Images and Translate Tables*, provides the information necessary to complete the CRTPRTIMG command. All IBM-supported printer models and associated print belts/trains are listed.

SUMMARY OF CHANGES

The following changes have been made to this manual for release 8:

- Information on configuring the IBM 3179 Model 2 Display Station and the IBM 3196 Display Station Models A1, A2, B1, and B2 has been added.
- Information on configuring the IBM 3812 Pageprinter, the IBM 4224 Printer Models 101, 102, 1E2, and 1C2, the IBM 4234 Printer Model 2, the IBM 4245 Printer Models T12 and T20, and the IBM 5262 Printer Model 1 has been added.
- Installation of System/38 Distributed Data Management (DDM) has been added.

Note: This manual follows the convention that *he* means *he or she.*

WHAT YOU SHOULD KNOW

To use this manual effectively, you should know how to:

- Use the System/38 console
- Reply to system messages and prompts
- Load diskette magazines and insert magazines into the diskette magazine drive and, if you receive program products on tape, mount tapes on the magnetic tape drive.

The *IBM System/38 Operator's Guide,* SC21-7735, contains the information you need to perform these tasks.

IF YOU NEED MORE INFORMATION

You may need to refer to another IBM manual for a specific type of information.

Introductory Information

- *IBM System/38 Introduction,* GC21-7728
  - Summary of system design and major functions
  - Description of data processing terms and concepts used with System/38
  - Description of the system configuration and machine characteristics
  - Description of compatibility between System/3 and System/38
  - Description of compatibility between System/34 and System/38
- *IBM System/38 Control Program Facility Concepts,* GC21-7729
  - CPF overview
  - Object management concepts
  - Work storage concepts
  - Data management concepts
  - Managing application development and system operation
- *IBM System/38 Operator's Guide,* SC21-7735
  - Console operation
  - General system operation
- *IBM System/38 Installation Manual—Physical Planning,* GA21-9293
  - System requirements, including space, electrical and air conditioning
- *IBM Cabling System Planning and Installation Guide,* GA27-3361
  - Planning and installation instructions for the IBM Cabling System
- *IBM 5250 Information Display System Planning and Site Preparation Guide,* GA21-9337
  - Space and electrical requirements for work stations
  - Planning template
  - Addressing and switch setting instructions for IBM 3180, 5251, 5252, 5291, and 5292 Display Stations and the IBM 5219, 5224, 5225, 5256, 5262, and 4214 Printers
  - Instructions for filling out the IBM 5251 Model 12 Communications Network Setup Form and the IBM 5294 Communications Network Setup Form

- *IBM 3180 Model 2 Display Station Introduction and Preinstallation Planning Manual*, GA21-9466
  - Introductory material
  - Space and electrical requirements
  - Plan view

- *IBM 3179 Model 2 Display Station Introduction and Preinstallation Planning Manual*, GA18-2404
  - Introductory material
  - Space and electrical requirements
  - Plan view

- *IBM 3196 Display Station Description*, GA18-2481
  - Introductory material
  - Functional description
  - Installation and planning information

- *IBM 3812 Pageprinter Introduction and Planning Guide*, G544-3265
  - Introductory material
  - Space and electrical requirements
  - Instructions for ordering supplies

- *IBM 4224 Printer Planning and Site Preparation Guide*, GC31-2549
  - Introductory material
  - Space and electrical requirements
  - Plan view
  - Cable specifications

- *IBM 4234 Printer Planning and Site Preparation Guide*, GC31-2555
  - Introductory material
  - Space and electrical requirements
  - Instructions for setting switches
  - Instructions for ordering cables and supplies

- *IBM 4245 Printer Information Models T12 and T20*, GA33-1579
  - Introductory material
  - Space and electrical requirements

Messages

- *IBM System/38 Operator's Guide*, SC21-7735
  - Message handling

- *IBM System/38 Messages Guide: CPF, RPG III, IDU*, SC21-7736
  - All messages other than COBOL, BASIC, and PL/I

- *IBM System/38 Messages Guide: COBOL*, SC21-7823
  - All COBOL messages

- *IBM System/38 Messages Guide: BASIC*, SC21-9048
  - All BASIC messages

- *IBM System/38 Messages Guide: PL/I*, SC09-1052

CPF (Control Program Facility) Commands and Functions

- *IBM System/38 Control Language Reference Manual,* SC21-7731
  - Control language syntax and syntax diagrams
  - All control language commands and their parameters
  - Command authorization by user profile

- *IBM System/38 Control Program Facility Programmer's Guide,* SC21-7730
  - Using control language commands to perform CPF functions
  - System values
  - IBM-supplied objects
  - Testing and debugging
  - Performance tuning

- *IBM System/38 Operator's Guide,* SC21-7735
  - System operator and system request menus
  - Job and system status displays
  - Varying or powering devices off and on
  - Peripheral device operation
  - Saving and restoring objects, libraries, and the system

- *IBM System/38 Problem Determination Guide,* SC21-7876
  - Reading system indicator lights
  - System recovery information
  - PDP codes
  - Collecting system information
  - Remote communications diagnostics

Communications

- *IBM System/38 Data Communications Programmer's Guide,* SC21-7825
  - Configuring System/38 communications support
  - System/38 as a host system to work stations
  - System/38 as a terminal to a host system
  - Error handling
  - Examples

- *IBM Synchronous Data Link Control General Information,* GA27-3093
  - Basic SDLC terminology
  - Description of SDLC components
  - Applications and examples

- *IBM Binary Synchronous Communications General Information,* GA27-3004
  - Describes BSC procedures and concepts
  - Message formats for basic operation
  - Planning considerations

- *IBM System/38 3270 Emulation Reference Manual and User's Guide,* SC21-7961

- *The X.25 Interface for Attaching IBM SNA Nodes to Packet-Switched Data Networks,* GA21-3345

Device Setup

Each of the following manuals describes the setup and installation procedures for a particular device.

- *IBM 5251 Display Station Models 1 and 11 Setup Procedure,* GA21-9286

- *IBM 5251 Display Station Models 2 and 12 Setup Procedure,* GA21-9289

- *IBM 5252 Dual Display Station Setup Procedure,* GA21-9288

- *IBM 5291 Display Station Setup Procedure,* GA21-9408

- *IBM 5291 Model 2 Display Station Setup Procedure,* GA21-9802

- *IBM 5292 Color Display Station Setup Procedure,* GA21-9415

- *IBM 5294 Control Unit Setup Procedure*, GA21-9369
  - Step-by-step instructions for setting up the IBM 5294 Control Unit
- *IBM 3180 Model 2 User's Guide*, GA21-9469
- *IBM 3196 Display Station Setup Instructions*, GA18-2488
- *IBM 3179 Model 2 Color Display Station User's Guide*, GA18-2387
- *IBM 5219 Printer Setup Procedure*, GA20-1019
- *IBM 5224 Printer Setup Procedure*, GA34-0093
- *IBM 5225 Printer Setup Procedure*, GA34-0085
- *IBM 5256 Printer Setup Procedure*, GA21-9290
- *IBM 4214 Printer Setup Instructions*, GC31-2565
- *IBM Setup Instructions—5262 Printer Model 1*, GA24-3978
- *IBM 3812 Pageprinter: Setup Instructions*, S544-3266
- *IBM 4224 Printer Setup Instructions*, GC31-3607
- *IBM 4234 Printer Customer Setup Instructions*, GC31-2552

Plotters Attached to the IBM 5292 Color Display Station Model 2

The following publications describe how to attach the IBM 7372 Plotter and the IBM 7371 Plotter to the IBM 5292 Color Display Station Model 2:

- *IBM 7372 Color Plotter Guide to Operations*, SA23-0157
- *IBM 7371 Color Plotter Guide to Operations*, SA23-0154

3270 Device Setup and Configuration

The following publications describe how to set up 3270 devices:

- *IBM 3278 Display Station Setup Instructions*, GA27-2838
- *IBM 3279 Color Display Station Setup Instructions*, GA33-3050
- *IBM 3287 Printer Setup Instructions*, GA27-3171

The following manual provides physical planning information for 3270 display devices:

- *IBM 3270 Information Display System: Installation Manual—Physical Planning*, GA27-2787

The following manual describes how to do the offline configuration of the IBM 3274 Control Unit and attached devices:

- *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*, GA27-2827

Operating 3270 Devices as 5250 Emulators

The following publication provides a summary of the operation of 3277, 3278, and 3279 Display Stations when they are attached to System/38.

- *IBM System/38 Devices as 5250 Emulators*, GX21-8012

IBM Personal Computer Support

- *IBM PC Support/38 User's Guide*, SC21-9089
- *IBM PC Support/38 Technical Reference*, SC21-9090
- *IBM PC 5250 Emulation Program User's Guide*, G570-2202
- *IBM PC Enhanced 5250 Emulation Program User's Guide*, G570-2024

IBM 4700 Finance Support

- *IBM System/38 Finance Support User's Guide*, SC21-9099
- *IBM 4700 Controller Programming Library—Volume 6: Control Program Generation*, GC31-2071
- *IBM 4700 Finance Communication System—System Configurator*, GC31-2017
- *IBM 4700 Finance Communication System—Installation Planning Manual*, GC31-2018
- *IBM 4700 Finance Communication System—Installation Planning Template*, GC31-2019
- *IBM 4700 Finance Communication System—4700 Subsystem Operating Procedures*, GC31-2032
- *IBM 4700 Finance Communication System—4700 Subsystem Problem Determination Procedures*, GC31-2033

Languages and Utilities

The following manuals describe how to use the languages and utilities:

- *IBM System/38 RPG III Reference Manual and Programmer's Guide*, SC21-7725
- *IBM System/38 COBOL Reference Manual and Programmer's Guide*, SC21-7718
- *IBM System/38 BASIC Reference Manual and Programmer's Guide*, SC21-9046
- *IBM System/38 PL/I Reference Manual and Programmer's Guide*, SC09-1051
- *IBM System/38 Source Entry Utility Reference Manual and User's Guide*, SC21-7722
- *IBM System/38 Remote Job Entry Facility Installation Planning Guide*, GC21-7924
- *IBM System/38 Remote Job Entry Facility User's Guide*, SC21-7914
- *IBM System/38 Advanced Printer Facility User's Guide*, SC21-7973
- *IBM System/38 OFFICE/38—Business Graphics Utility User's Guide and Reference Manual*, SC09-1059
- *IBM System/38 Administrative Management: Using and Managing Administrative Management*, SC09-1040
- *IBM System/38 OFFICE/38—Text Management User's Guide and Reference Manual*, SC09-1022

- *IBM System/38 OFFICE/38—Personal Services/38 Introduction*, SC09-1071
- *IBM System/38 OFFICE/38—Personal Services/38 Planning and Installation Guide and Reference*, SC09-1070
- *IBM System/38 OFFICE/38—Personal Services/38 Learning by Example: Primer*, SC09-1069
- *IBM System/38 Screen Design Aid Reference Manual and User's Guide*, SC21-7755
- *IBM System/38 Data File Utility Reference Manual and User's Guide*, SC21-7714
- *IBM System/38 Query Utility Reference Manual and User's Guide*, SC21-7724
- *IBM System/38 Cryptographic Facility User's Guide*, SC21-8026
- *IBM System/38 Distributed Data Management User's Guide*, SC21-8036

Content and Use of System/38 Publications

- *IBM System/38 Guide to Publications*, GC21-7726
  - Contents of System/38 manuals
  - Reading sequences for System/38 manuals
  - Master index, containing index entries from frequently used System/38 manuals
  - Glossary of terms used in System/38 manuals
- *IBM System/38 Bibliography*, GH30-0233
  - Description of all System/38 manuals
  - Description of application programs available for System/38

Chapter 1. Installation Overview

To prepare System/38 and its program products for the processing of your application programs, you and your IBM service representative should follow these steps:

IBM Service Representative:

1. Install and test the system unit and system devices ordered with the system, such as system printer(s), magnetic tape device(s), and the card device.

2. Initialize auxiliary storage, which removes the factory-installed CPF.

3. Install microcode.

You, the customer:

1. Install CPF and the IBM-supplied libraries.

   WARNING: Factory-installed CPF cannot be serviced and should not be used by the customer. If you receive a message warning that the CPF on your system cannot be serviced, ask your IBM service representative to initialize auxiliary storage before you install CPF.

2. Install and verify the languages and utilities that you have ordered.

3. Set up the local and remote work stations that you have ordered.

4. Configure devices using control language (CL) commands.

5. Tailor the system to optimize CPF for your applications.

6. Save the system so that you have a backup copy of the tailored system.

Before your system arrives, you should do the following:

- Design the physical layout of your system (including all the work stations that will be attached to it) and prepare the site for installation of the devices. You may wish to draw a system configuration diagram showing the floor layout of your system. (For an example, see Appendix A.)

- Collect and *document* the information to be used to configure devices.

- Determine how to tailor the system to prepare for your application programs.

SITE PLANNING AND PREPARATION

Site planning and preparation involves planning the physical layout of the entire system, preparing the site for the installation of the devices, and preparing the cabling needed to connect the work station(s) to the system. The following manuals provide information you need for these activities.

- *IBM System/38 Installation Manual—Physical Planning* contains information about the space requirements and site selection, a brief description of the System/38 units and their floor plan requirements, cable requirements, and explanations of electrical and environmental requirements.

- *IBM 5250 Information Display System Planning and Site Preparation Guide* contains installation and cabling information about the IBM 5250 work stations (both display stations and work station printers), the IBM 3180 Model 2 Display Station, the IBM 4214 Model 2 Printer, and the IBM 5262 Model 1 Printer that can be attached to System/38.

- *IBM 3180 Model 2 Display Station Introduction and Preinstallation Planning Manual* contains information about space and electrical requirements for the IBM 3180 Model 2 Display Station.

- *IBM 3179 Model 2 Display Station Introduction and Preinstallation Planning Manual* contains information about space and electrical requirements for the IBM 3179 Model 2 Display Station.

- *IBM 3196 Display Station Description* contains information about space and electrical requirements for the IBM 3196 Display Station.

- *IBM 3812 Pageprinter Introduction and Planning Guide* contains information about space and electrical requirements for the IBM 3812 Pageprinter.

- *IBM 4224 Printer Planning and Site Preparation Guide* contains information about space and electrical requirements for the IBM 4224 Printer.

- *IBM 4234 Printer Planning and Site Preparation Guide* contains information about space and electrical requirements for the IBM 4234 Printer.

- *IBM 4245 Printer Models 12, 20 Information Manual* contains information about space and electrical requirements for the IBM 4245 Printer.

Two methods exist to attach work stations to the System/38: local and remote. These two methods are discussed in the following sections.

Cabling

Either the IBM Cabling System or the Cable Thru feature using two-wire (twinaxial) shielded cable is used for attaching the work stations. Both types of cabling allow a maximum total cable length of 1525 meters (5000 feet) and multiple work stations (seven) to be attached to a single port.

The following figure shows an example of attaching work stations to the IBM Cabling System. In this example, only one System/38 work station port is shown; however, multiple ports can be connected in a similar manner. Actual wiring varies from one building to another.

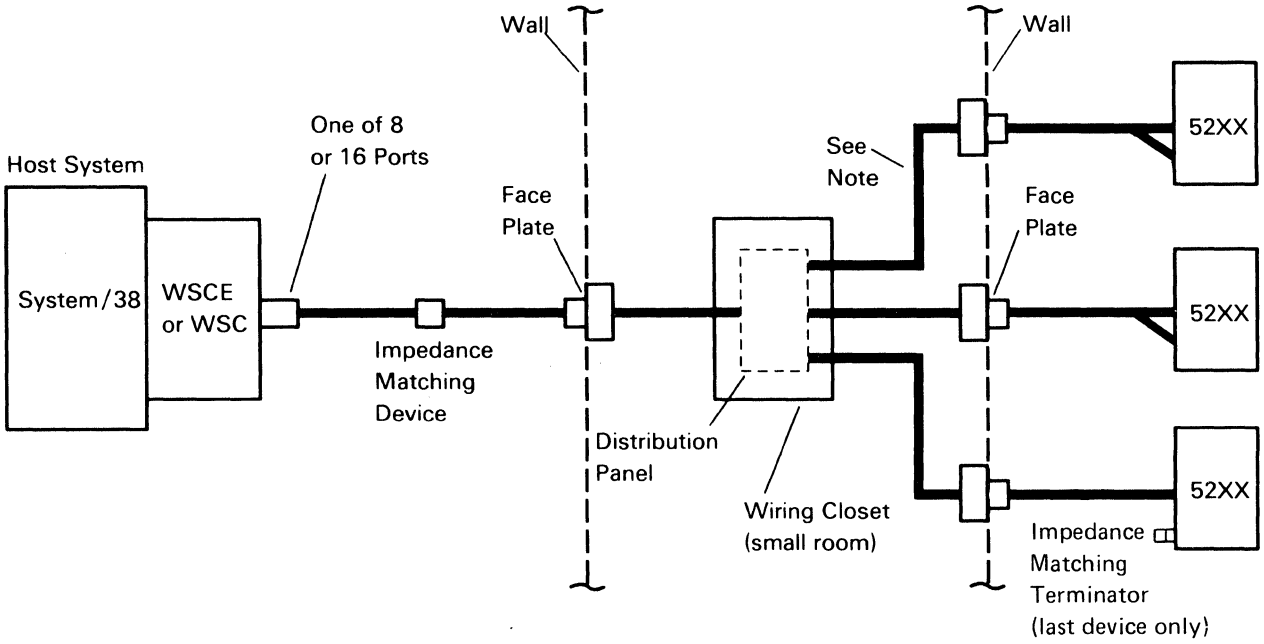


Figure 1-1. The Cabling System

For information about installing and maintaining the cabling system, see the *IBM Cabling System Planning and Installation Guide*, GA27-3361. (In that manual's description of the 5250 Information Display System, the term *host system* refers to System/38.)

Local Work Stations

Local work stations are display stations or work station printers attached to one of the work station controllers on the System/38. As shown in Figure 1-2, there are two types of work station controllers:

- The basic work station controller (WSC), which can support up to 12 work stations on eight ports.
- The work station controller-extended (WSCE), which can support up to 32 work stations on eight ports. Note that the 5251 Model 1 and the 5252 cannot be attached to the work station controller-extended.

Some of the work stations must have the Cable Thru feature so that more than one work station can be attached to a single port.

A basic work station controller (WSC only) can be expanded in one of the following ways:

- Using the Device Control Expansion feature, which supports up to 20 work stations on eight ports.
- Using the Device Interface Expansion feature, which supports up to 20 work stations on 16 ports.

You cannot have both of these features on a single work station controller.

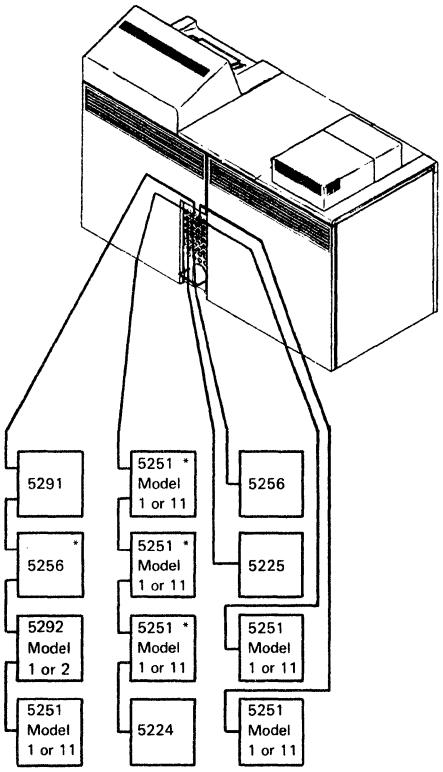
You cannot install either the Device Control Expansion feature or the Device Interface Expansion feature with a work station controller-extended. However, you can install up to eight work station controllers-extended, which allows you to attach up to 256 work stations to your system.

Each port on a work station controller or work station controller-extended can support up to seven work stations on a single twinaxial cable path. The Cable Thru feature must be installed on all but the last work station of a cable path. The Cable Thru feature is not required on the last work station on the cable path, but should be considered for flexibility when work stations are to be added or moved. Note that Cable Thru is a feature of the individual work stations, not System/38.

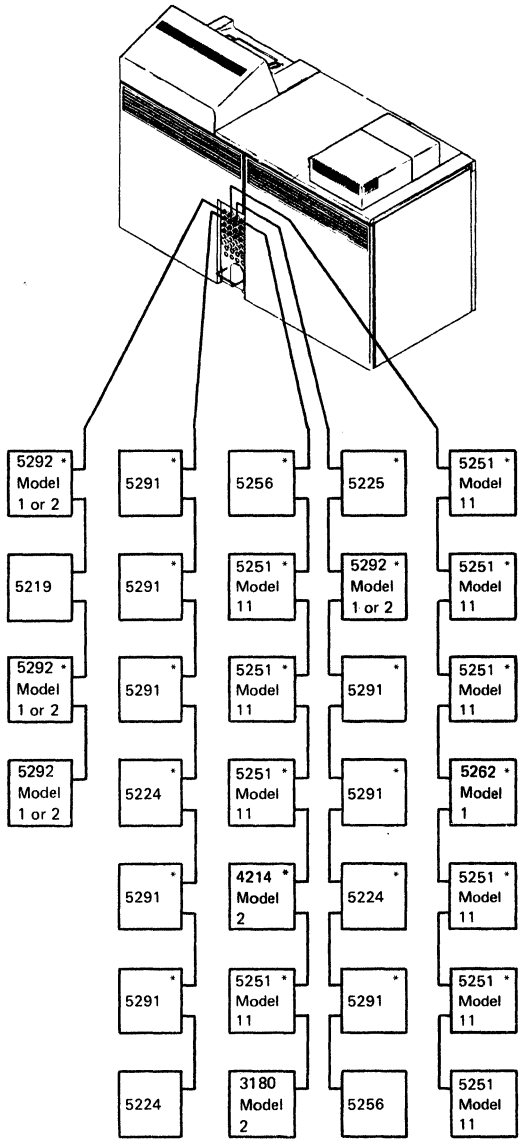
For more information on configuring local work stations, see Chapter 2, *Preparing for Device Configuration,* and Chapter 4, *Adding or Moving Work Stations.*

For more information on work station controllers and work station controllers-extended, see Appendix C.

12 Work Stations on WSC



32 Work Stations on WSCE



* Cable Thru feature

Figure 1-2. Sample Configurations of Work Stations on Work Station Controllers

Remote Work Stations

Remote work stations are display stations or work station printers attached to the System/38 by a communications line or an X.25 packet switching network. The line attaches to a line connection on one of the communications adapters on the system unit. The other end of the line attaches to one or more remote work station controllers or to an X.25 packet switching network. In this manual, *remote work station controller* refers to the IBM 5251 Model 2 or 12 Display Station, the IBM 5294 Control Unit, the IBM 3274 Control Unit, or any control unit that emulates them. *Remote work station controller* does not refer to other control units such as the IBM 370x. *Remote work station* refers to display stations and work station printers that are attached to the System/38 through a remote work station controller.

Remote work station also refers to the 5251 Model 2 or 12 Display Station itself. This is because a 5251 Model 2 or 12 consists of both a control unit (which you configure using the CRTCUD command) and a display station (which you configure using the CRTDEVD command).

The maximum number of control units that can be attached to each SDLC line is 50. However, two limitations may affect how many you actually attach:

- Any limitations on the number of modems supported by the common carrier line you install. See your communications common carrier representative for this information.

- A maximum of eight remote work station controllers can be polled by the communications subsystem microprocessor. When more than eight work station controllers on a line are varied on, the main system processor has to do the polling. This may reduce the performance of the line.

- For X.25, a maximum of 32 controllers can be defined to each of the two X.25 ports, allowing a total of 64 for each system.

There are three types of remote work station controllers:

- IBM 5251 Model 2 or 12 Display Stations, which are called *5251 Control Units* in this manual.

- IBM 5294 Control Units, which are called *5294 Control Units* in this manual.

  Note: Collectively, the IBM 5251 Model 2 or 12 Display Station and the IBM 5294 Control Unit are called *5250 control units*.

- IBM 3274 Control Units and their emulators, which are called *3270 control units* in this manual.

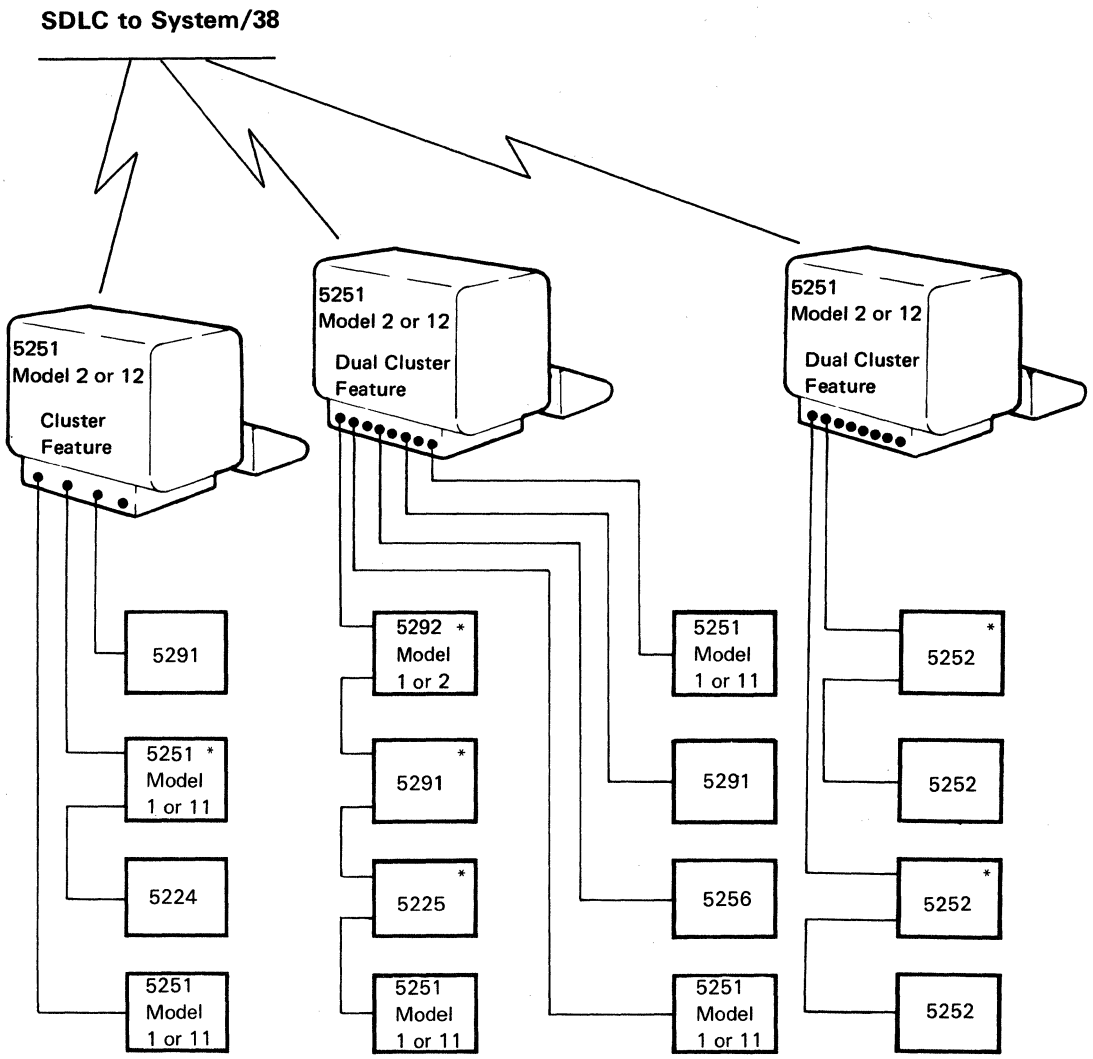
As shown in Figure 1-3, each 5251 Model 2 or 12 can support up to eight additional work stations (four if the Cluster feature is installed on the 5251 Model 2 or 12; eight if the Dual Cluster feature is installed). These work stations are dependent on the 5251 Model 2 or 12 and can be operated only if the 5251 Model 2 or 12 is both powered on and varied on. The dependent work stations are attached to ports (twinaxial connectors) on the Cluster feature or Dual Cluster feature of the 5251 Model 2 or 12.

Each port on a Cluster feature can support up to four work stations on a single cable path. The Cable Thru feature must be installed on all but the last work station on the cable path. The Cable Thru feature is not required on the last work station on the cable path, but should be considered for flexibility when work stations are to be added or moved. Note that Cable Thru is a feature of the individual work stations, not System/38.

Depending on the features installed in the control unit, each 5294 Control Unit can support up to eight work stations. These work stations are dependent on the 5294 Control Unit and can be operated only if the 5294 Control Unit is both powered on and varied on. The dependent work stations are attached to ports on the 5294 Control Unit.

Depending on the features installed in the 3274 Control Unit and on its model number, each 3274 Control Unit can support up to 64 3270 work stations. These work stations are dependent on the 3274 Control Unit and can be operated only if the 3274 Control Unit is both powered on and varied on. The dependent work stations are attached to ports on the 3274 Control Unit.

For more information on configuring remote work stations, see Chapter 2, *Preparing for Device Configuration.* To configure the 5251 Model 2 or 12 Display Station or the 5294 Control Unit, you must use the *IBM 5250 Information Display System Planning and Site Preparation Guide.* To configure the IBM 3274 Control Unit, you must use the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*



*Cable Thru Feature

Note: In each of these examples, the cluster configuration includes the maximum number of devices.

Figure 1-3. Cluster Configurations on the 5251 Model 2 or 12

SNA Communications

Chapter 2 presents work sheets to help you enter the CL commands necessary to configure SNA configurations. Chapter 3 presents procedures to help you enter those commands in the appropriate order. The following sections briefly describe SNA communications on System/38 (not including communications to remote work stations, which are described earlier in this chapter).

For complete information on planning SNA communications, see the *Data Communications Programmer's Guide*.

System/38 as a Terminal to SNA Host Systems

As a terminal, the System/38 can communicate with an IBM System/370, 30xx, or 43xx host system using IMS/VS (Information Management System for Virtual Storage) or CICS/VS (Customer Information Control System for Virtual Storage) with OS/VS1 (Operating System for Virtual Storage, version 1) or OS/VS2. CICS/VS can also be run with DOS/VSE (Disk Operating System for Virtual Storage). The host system must also use ACF/NCP/VS (Advanced Communications Function/Network Control Program for Virtual Storage). The access method used in the network can be VTAM (Virtual Telecommunications Access Method) or TCAM (Telecommunications Access Method). For communications with a host system, the System/38 is considered to be a logical unit type 1 (LU1).

The communications network can be over a point-to-point switched, point-to-point nonswitched, or multipoint nonswitched common carrier or private line. System/38 supports automatic calling, automatic answering, manual calling, and manual answering.

System/38 supports a maximum of 254 logical unit-to-logical unit sessions per communications line.

Using 3270 Emulation, System/38 can communicate (as a 3270 control unit with attached display stations and displays) with SNA host systems that support SNA LU1, LU2, and LU3 session protocols. These include hosts using CICS/VS, IMS/VS, or TSO with VTAM or TCAM. For more information, see the *IBM System/38 3270 Emulation Reference Manual and User's Guide*.

System/38 to SNA Systems—Advanced Program-to-Program Communications

Advanced Program-to-Program Communications (APPC) allows a System/38 to communicate with other IBM systems that support the logical unit (LU6.2) SNA protocol. APPC allows System/38 to communicate with other systems as a peer device. Using APPC, System/38 can communicate with:

- Another System/38 with APPC
- A System/36 with APPC (running on SSP Release 3.0 or later)
- An SNA host system running CICS/VS Version 1.6 or above
- A 5520 with APPC using Document Interchange Support
- A Displaywriter with Electronic Document Distribution (EDD)

APPC is a departure from the traditional structure of an SNA network in that it assumes all the systems are peers, whereas traditional SNA architecture assumes an hierarchical structure. Using APPC, System/38 can start programs on another system, or another system can start programs on the System/38.

Communications occurs over a switched or nonswitched point-to-point line, a nonswitched multipoint line, or an X.25 packet switching network.

If your system is part of an APPC network, you can also configure systems on the network to support display station pass-through. Display station pass-through allows users on one System/38 in an APPC network to sign on to another System/38 and do work on the target system. When doing pass-through, users can execute CL commands, call application programs, and do problem determination on the target system as if they were signed on to a local work station at the target system.

For information on how to configure APPC for all these products, see the *Data Communications Programmer's Guide*. When you configure a system for display station pass-through, you configure virtual work station controllers and virtual work stations on that system. You can use the work sheets at the back of this manual with the instructions in the *Data Communications Programmer's Guide* to help you configure display station pass-through.

SNA Distribution Services (SNADS)

SNA Distribution Services (SNADS) allows a System/38 using the APPC communications to distribute documents, messages, files, or status to other systems. SNADS provides networking services of routing, sending, and receiving processes that allow IBM-developed applications to originate and receive data from other nodes in the SNADS Network.

SNADS allows only IBM-developed transaction programs, such as Document Interchange Architecture (DIA) and Object Distribution, to use its functions to originate and receive distributions.

Some of the services provided by SNADS are:

- Routing support for determining the node at which the recipient resides and which path the transmission should take.
- Support of communications to send and receive objects by determining when other systems are available and when transmission is possible.
- Network definition by providing the commands necessary to define SNADS to your local system.

SNADS can control the following:

- Asynchronous distribution to both local and remote recipients.
- Intermediate node support, including a mixed list of local and remote recipients.
- Redirection to recipients that are no longer local.

For further information on configuring SNADS, see the *Data Communications Programmer's Guide*.

For further information on DIA and Object Distribution, see the *CPF Programmer's Guide*.

Distributed Host Command Facility (DHCF)

The Distributed Host Command Facility (DHCF) allows the display stations of a System/370 to connect to System/38 applications using the Host Command Facility (HCF) under ACF/VTAM. The System/370 display stations appear to the System/38 as remotely attached 3277, 3278, or 3279 display stations.

DHCF allows the following:

- A System/370 display station user to access and use applications written on the System/38.
- A System/370 display station user to interactively operate and control a System/38 as if the display station were attached as a remote 5250 device.
- The System/38 user to communicate with the System/370 display stations using existing application programs.
- The Attachment of HCF-DHCF, LU6.2 (APPC), LU1 (RJE), and SNA 3270 Emulation sessions on one PU2 Controller.
- System/38 to be connected to another System/38 when the systems are attached on a System/370 through a combination of 3270 Emulation and DHCF.

For further information on DHCF, see the *Data Communications Programmer's Guide.*

Distributed Data Management (DDM)

Distributed Data Management (DDM) allows application programs and users to access data files that reside on remote systems. DDM also allows those remote systems to access files on the local System/38. Any system connected in the DDM network can access data on any other system in the network.

DDM provides the support for sharing common data between systems that are architecturally different. With DDM, you can share data between systems without having to write new programs.

To use DDM, first create a DDM file on the local system. The DDM then allows application programs to retrieve, add, update, and delete data records in a file on a remote system.

The communication between the remote systems uses the APPC (SNA LU 6.2) communications.

DDM allows the following:

- Application programs written in RPGIII, COBOL, BASIC, CL, and PL/1 to access data files on remote systems that support DDM.
- Remote systems that support DDM to access the System/38 data base.

For more information on DDM, see the *IBM System/38 Distributed Data Management User's Guide.*

SNA with X.25 Communications

The System/38 provides the interfaces to the CCITT Packet Switching Data Network (PSDN) using the X.25 communications protocol. With X.25, you can use SNA on the System/38 to communicate over a packet switching data network with other devices using SNA. These devices must follow the guidelines established in *The X.25 Interface for Attaching SNA Nodes to Packet-Switched Data Networks* manual.

Using X.25, a System/38 can communicate over a PSDN with the following:

- System/38
- System/36
- System/34 with an RPQ using the network interface adapter (NIA)
- System/370
- 4300
- 5294 Control Unit with an integrated X.25 adapter (IXA)
- 5251 Model 12 with an integrated X.25 adapter (IXA)
- 3274 Controller
- 4701 Finance Controller with an X.25 RPQ installed
- Any other SNA product already supported by System/38 either directly attached to the PSDN or attached through the IBM 5973 Network Interface Adapter (NIA) product

Each System/38 supports two independent attachments to X.25 with a maximum of 32 logical channels on each attachment to the network.

The System/38 support requires no application programming changes when moving from SNA switched or leased circuits to X.25 virtual circuits.

For more information on X.25 communications, see the *CPF Programmer's Guide* and the *Data Communications Concepts Manual.*

Binary Synchronous Communications (BSC)

Chapter 2 presents work sheets to help you enter the CL commands necessary to configure binary synchronous communications. Chapter 3 presents procedures to help you enter those commands in the appropriate order. The following sections briefly describe binary synchronous communications on System/38.

For complete information on planning binary synchronous communications, see the *Data Communications Programmer's Guide.*

System/38 Communications with BSC Devices and Systems

As a BSC host system, the System/38 can communicate with the following:

- IBM 3741 Data Station
- IBM 5260 Retail System
- IBM 5230 Data Collection System
- IBM 5280 Distributed Data System
- IBM 5110 Model 2 Computer
- IBM 5120 Computer
- IBM System/23 Datamaster
- IBM Office System 6 Information Processor (IBM OS/6)
- IBM 6670 Information Distributor
- IBM 6640 Document Printer
- IBM 6240 Communicating Magnetic Card Typewriter
- IBM Communicating Magnetic Card II Typewriter (CMC II)
- IBM 5520 Administrative System
- IBM 6580 Displaywriter
- IBM 3776 Models 1 and 2 Communications Terminals
- IBM 3777 Model 1 Communications Terminal

In a BSC environment, System/38 can communicate with the following systems on an application program-to-application program basis:

- IBM System/3 (also supports System/38 as a tributary station on a multipoint line)
- IBM System/32
- IBM System/34
- IBM System/36
- IBM System/38
- IBM Series/1 (also supports System/38 as a tributary station on a multipoint line)
- IBM 5280 Distributed Data System
- IBM 5110 Model 2 Computer
- IBM 5120 Computer
- IBM System/23 Datamaster

As a BSC terminal, the System/38 can communicate with an IBM System/370, 30xx, or 43xx host system that is using BTAM (Basic Telecommunications Access Method), TCAM (Telecommunications Access Method), or CICS/VS (Customer Information Control System for Virtual Storage) with BTAM).

The BSC network can be over a point-to-point switched or nonswitched line, or System/38 can be a tributary station on a multipoint nonswitched line. System/38 supports automatic calling, automatic answering, manual calling, and manual answering.

Using 3270 Emulation, System/38 can communicate (as a 3270 control unit with attached display stations and printers), with the following host systems:

- Those using CICS/VS, IMS/VS, or TSO with VTAM, BTAM, or TCAM
- Those using VM/CMS
- Series/1 using RPS CM/2 or EDX CF

For more information, see the *IBM System/38 3270 Emulation Reference Manual and User's Guide*.

Binary Synchronous Communications Tributary (BSCT)

BSCT is a subset of BSC in which System/38 acts as a terminal on a BSC multipoint line. Use the BSC and BSCT work sheets (presented in Chapter 2) to help you prepare the CL commands necessary to configure BSCT. Use the procedures presented in Chapter 3 to enter those commands in the appropriate order.

As a BSC terminal on a multipoint line, System/38 can communicate with the following upline host processors:

- Series/1 with RPS and EDX
- System/3 with MLMP and CCP
- System/370 with DOS/VS BTAM
  OS/VS1 BTAM/TCAM
  OS/VS2 BTAM/TCAM
  NCP/VS
  ACF/NCP/VS
- All models of 30xx and 43xx with ICA

For BSCT, the line must be a nonswitched line.

For further information on BSCT, see the *Data Communications Programmer's Guide*.

High-Speed Communications Lines

You can configure one high-speed communications line on each communications attachment on your System/38. Thus, you can configure up to three high-speed communications lines on your System/38. You can attach lines to the other three line connections on each communications attachment, but the other lines must be varied offline when the high-speed line is varied online.

Local High-Speed Communications

Three features are available for local high-speed communications:

- The Digital Data Service Adapter (DDSA), which is feature FC5650. DDSA can run at rates of 2400, 4800, 9600, or 56 000 bps. DDSA allows a local connection to another System/38 or to a System/34, which must also have DDSA. You can configure SDLC (with or without APPC) or BSC to another System/38. You can configure only BSC to a System/34.

- The V.35 local attachment to the IBM 3705, which is feature FC5660. This feature runs at 57 600 bps; you specify RATE(56000) on the CRTLIND command. This feature provides a local half-duplex, point-to-point attachment to System/370, 43xx, and 30xx systems. You can configure both SDLC (LU1 and APPC) and BSC for this feature.

- The local high-speed attachment feature, which is feature FC5680. This feature forms a local connection at 56 000 bps to an appropriately configured Series/1. You can configure only BSC for this feature.

Remote High-Speed Communications

Two features are available for remote high-speed communications:

- The Digital Data Service Adapter (DDSA), which is feature FC5650. For remote communications, DDSA can run at 56 000 bps (in the United States) or at 48 000 bps (outside the United States, where supported). Both SDLC and BSC are supported.

- The V.35 high-speed external modem interface, which is feature FC5660. This feature can run at rates up to 56 000 bps. APPC, SNA LU1, and BSC are supported.

To configure any of the high-speed communications lines, use the CRTLIND, CRTCUD, and CRTDEVD commands.

See Appendix E, *Specifying Line Interfaces and Modem Features*, for valid parameters for the CRTLIND command for these communications lines.

3270 Emulation

System/38 supports 3270 Emulation with the following:

- BSCT nonswitched lines
- SDLC point-to-point switched or nonswitched lines
- SDLC multipoint nonswitched lines
- X.25 packet switching data network (PSDN)

There is no separate installation procedure for 3270 Emulation; it is installed when you install CPF. For specific information on configuring 3270 Emulation, see the *IBM System/38 3270 Emulation Reference Manual and User's Guide.*

Remote Job Entry Facility (RJEF)

System/38 supports RJEF with the following (but not with BSCT):

- BSC switched or nonswitched point-to-point lines
- SDLC point-to-point nonswitched lines, switched point-to-point lines, or multipoint nonswitched lines
- X.25 packet switching data network (PSDN)

See *RJEF with BSC* or *RJEF with SDLC* in Chapter 2 for an overview on configuring RJEF.

For information on installing library QRJE, see *Installing Languages and Utilities* in Chapter 3. For full information on installing and configuring RJEF, see the *RJEF Installation Planning Guide.*

System/38 Finance Support

System/38 supports 4700 finance terminals with the following:

- SDLC point-to-point switched or nonswitched lines
- SDLC multipoint nonswitched lines
- X.25 packet switching data network (PSDN)

See *System/38 Finance Support with SDLC* in Chapter 2 for an overview on configuring System/38 finance terminals.

System/38 Finance Support is installed when you install CPF. For additional information, see the *IBM System/38 Finance Support User's Guide,* SC21-9099, either in hard copy or online using the DSPFNCHLP command.

DEVICE CONFIGURATION PLANNING

You should plan to configure devices on your system in stages:

- System devices (normally done by your IBM service representative for devices you order with your system)
- Local work stations
- Remote work stations
- Remote communications (only an overview is presented in this manual; for complete information, see the *Data Communications Programmer's Guide*)

To actually do the configuration, you must enter CL (control language) commands that create descriptions of devices, their control units (when necessary), and communications lines. You may also need to enter other commands, such as the ADDDEVMODE (Add Device Mode Entry) command. To help you enter these commands, Chapter 2 presents work sheets to be filled out before the system is installed. Each work sheet represents one CL command. In general, you can enter the CL commands:

- From the configuration menu while you are installing CPF
- From any menu at a later time (if you do this, newly configured devices are not usable until the next time CPF is started)

SYSTEM TAILORING

System tailoring is the process of modifying the objects and functions of CPF to better support the applications used on your system. This tailoring normally continues as long as you have your system and continue to develop new ways to meet your data processing needs. However, the topics discussed in the following sections should be considered before you install your system so that any tailoring that is needed for your initial applications can be done as soon as you have installed the system. These topics and others are discussed more fully in the *CPF Concepts Manual* and the *CPF Programmer's Guide*.

Libraries

CPF provides six libraries in which permanent objects are stored: QSYS (the system library), QGPL (the general purpose library), QGDDM (the graphics library), QUSRSYS (the user's system library), QDOC (the document library), and QHLPSYS (the help library). CPF also provides a temporary library (QTEMP) for each job while the job is active on the system. You might want to create additional libraries to meet special needs of your application, such as:

- Grouping objects according to the type of application, system user, or department that uses the objects.
- Allowing multiple versions of the same objects without requiring unique names. Objects stored in different libraries can have the same name.
- Providing security for a group of objects that contain sensitive information. All the objects in the library are subject to security restrictions placed on the library.
- Distinguishing between the test and production versions of files. Libraries can have either test or production attributes. A program that is being tested can only change files that are in a test library.
- Making copies of physical data files that are used for online backup or that are to be saved during concurrent operation while the original file is being updated.

If you need additional libraries for your initial applications, you can create them as part of your initial system installation or later after installation.

Security

The CPF security functions provide a set of standard user profiles and passwords for the:

- Security officer (SECOFR)
- Programmer (PGMR)
- System operator (SYSOPR)
- Work station user (USER)
- IBM service representatives (CE and PSR)

You should consider changing the passwords for these profiles. You can create additional user profiles and change the programmer, system operator, and work station user profiles to meet the security needs of your applications. Also review the default authorizations of the IBM-supplied objects and commands to consider any changes. A detailed discussion about security is presented in the *CPF Programmer's Guide*.

Because the security officer's user profile allows a user to perform most operations on objects on the system, the use of this profile should be limited to the one person in your organization who is responsible for system security. You should change the security officer's password from the CPF-provided password (SECOFR) to a password that is known only by the security officer. You may also wish to authorize the security officer to use a work station other than the system console so that security operations can be performed while the system console is in use.

Subsystems

CPF includes subsystem descriptions for the controlling, interactive, batch, spooling, and programmer subsystems. In many cases, these CPF-provided descriptions are sufficient for your use as they are installed. (The *CPF Programmer's Guide* describes these subsystem descriptions.) The following items should be considered to determine whether you should modify the CPF-provided subsystem descriptions.

- Because the CPF-provided storage pools are based on a main storage capacity of 1024 K bytes, you might need to change the subsystem attributes to accommodate your main storage size and the needs of your applications.

- If specialized operating environments are needed to support your applications, you should create additional subsystem descriptions to provide the appropriate environments. For example, you could place all production work stations in one subsystem to provide convenient startup and termination.

There is no subsystem limit to the number of devices that can be attached to a System/38.

Spooling

CPF provides the following queues for spooled output files:

- Printer output queue, which can be used for 1-part paper (QPRINT)
- Printer output queue, which can be used for 2-part paper (QPRINT2)
- Printer output queue, which can be used for special forms (QPRINTS)
- Punch output queue (QPUNCH)
- Diskette output queue (QDKT)

You might want to create additional output queues for special requirements, such as:

- Additional output queues for special forms or cards
- Printer output queues for each work station printer
- Printer output queues for output requiring special print belts/trains

By providing specialized output queues, you can reduce the amount of operator intervention required when special forms or print belts/trains are used. Thus, you can allow output with special requirements to be accumulated and then printed at one time instead of having the system operator change the forms or print belt/train for each job.

System Values

CPF provides a set of system values to allow you to specify certain attributes of the system. These values can be used to tune the performance of your system, set system editing values, set the default library list, and control some functions during the starting of CPF. A complete list and description of these system values is contained in the *CPF Programmer's Guide*. You should review the system values before your system is delivered to determine whether you want to change any of these attributes when you install the system. The Change System Value (CHGSYSVAL) command can be selected from the configuration menu during the start CPF operation or executed after CPF is completely installed. Some system values do not take effect until the next IMPL if they are changed after you leave the configuration menu.

Print Images

Each print belt/train that you use must be described to CPF by a print image. CPF uses this print image when output is printed to determine what characters are on the print belt/train and how they are arranged.

CPF provides for direct support of all the standard IBM print belts/trains. For standard IBM print belts/trains, the Create Print Image (CRTPRTIMG) command can be used to generate the print image and translate table based on the belt/train number. Appendix F contains additional information about print images. If you use nonstandard print belts/trains, you must create additional print images and translate tables, as described in the *CPF Programmer's Guide*. This can be done as part of your installation process.

Chapter 2. Preparing for Device Configuration

To prepare for device configuration, you will need to decide how to describe the devices (and any control units and communications lines required) to CPF, using CL commands. This chapter is divided into the following sections:

- System devices: These include the diskette magazine drive and any of the following, if installed: the system printer(s), card device, and magnetic tape devices.

- Local work stations: These include display stations and work station printers. Local work stations are attached to a work station controller on your System/38 using a twinaxial cable and do not use a common-carrier line.

- Remote work stations: These include display stations and work station printers. Remote work stations are attached, using a communications line or an X.25 packet switching network, to a communications attachment on your System/38 through a remote work station controller.

- SDLC or X.25 communications. This includes the following:
  - SNA LU1 communications.
  - APPC (Advanced Program-to-Program Communications, a subset of SNA communications protocol). This is also called peer communications, and includes:
    APPC for the primary system on an APPC network.
    APPC for a secondary system on an APPC network.
    APPC to CICS/VS.
  - RJEF (Remote Job Entry Facility).
  - 3270 Emulation using SNA.
  - Remote attachment of 3270 work stations.
  - DHCF (Distributed Host Command Facility).
  - System/38 Finance Support.

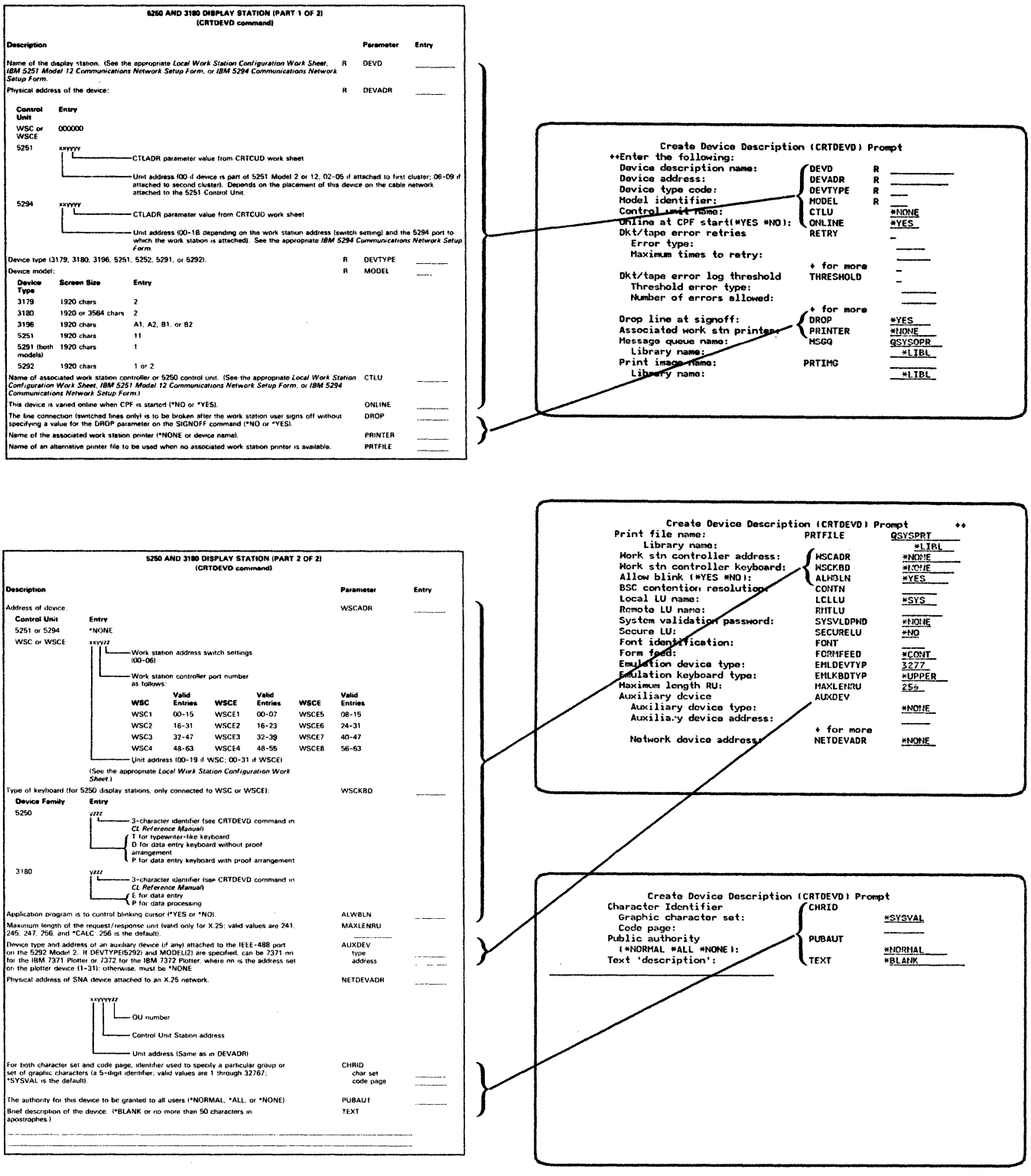
- BSC and BSCT communications. This includes the following:
  - BSC (binary synchronous communications).
  - BSCT (binary synchronous communications tributary).
  - RJEF (Remote Job Entry Facility) with BSC.
  - 3270 Emulation using BSC.

For information on how to configure display station pass-through, see the *Data Communications Programmer's Guide*.

Work sheets for the CL commands used in configuring your system are presented in this chapter. The goal in completing these work sheets is to enable you to enter CL commands quickly and easily when you actually configure your system.

The work sheets contain only parameters that apply to the type of object being configured. For example, the 5250 and 3180 Display Station work sheet omits the RETRY and THRESHOLD parameters because they do not apply to display stations. On the other hand, not all the parameters on a work sheet must be used. For example, you can omit the ONLINE, DROP, PRINTER, PRTFILE, ALWBLN, PUBAUT, and TEXT parameters for display stations; and in some cases, you can also omit the WSCADR and WSCKBD parameters. (You must always specify the CTLU parameter for display stations.)

You use the CRTDEVD command to configure display stations. Figure 2-1 shows the relationship between the 5250 and 3180 Display Station work sheet and the prompts for the Create Device Description (CRTDEVD) command. Each work sheet relates to a single CL command; the CL command is named on the work sheet below the title.



Note: Because the CRTDEVD command is used to describe any device, you do not use all the parameters to describe any one device. Default values are shown on the prompt for parameters that are not required. You should leave these defaults in the prompt when the parameters do not apply to the device you are describing.

Figure 2-1. Relationships between the 5250 and 3180 Display Station Work Sheet and the CRTDEVD Command Prompt

Complete a work sheet for each line, control unit, and device attached to your system. Extra copies of these work sheets are provided at the back of this manual; they can be used as masters to make more copies as needed.

Once the work sheets are filled in, they should be retained and kept updated for reference, as a guide for service personnel, and in the event of expansion or relocation. Appendix A and Appendix B contain examples of the use for most of the work sheets.

Rules for Specifying Names

You must assign unique CPF object names to each line, control unit, and device you create. You cannot qualify the name of a line, control unit, or device with a library name. Use the name whenever you refer to the line, control unit, or device. The names you assign can be up to 10 characters and can be made up of the characters A through Z, 0 through 9, #, @, $, and _ (underscore). The first character cannot be numeric (0 through 9) or an underscore.

To distinguish objects you create from IBM-supplied objects, you should not begin the object names with the letter Q. All IBM-supplied objects (except commands) begin with Q. The names you assign should give other users some indication of the identity and function of the line, control unit, or device. Some examples of commonly used names are as follows:

WS1, WS2, WS3 for display work stations

WSPR1, WSPR2, WSPR3 for work station printers

ACCT1, ACCT2 for work stations in the accounting department

ACCTPR for work station printer in the accounting department

NYLINE for a communications line to New York City

NYCUD1 for a control unit attached to a line to New York City

NYDEV1 for a remote communications device in New York City

The names of the IBM-supplied control unit and device description objects that *may* accompany your system are listed in Appendix G.

Verifying Existing Names on Your System

To verify the names of the IBM-supplied device descriptions (configuration objects) for your system configuration, once CPF is installed:

1. Use the Display Device Configuration (DSPDEVCFG) command or Display Device Status (DSPDEVSTS) command to display the IBM-supplied device name assigned to a particular device description.

2. Use the Display Device Description (DSPDEVD) command to display the IBM-supplied parameter values specified for a particular device description, or enter a 2 for the device description you want to display when using the Display Device Status (DSPDEVSTS) command.

PREPARING FOR SYSTEM DEVICES

System devices include:

- Diskette magazine drive
- System printer(s)
- Card device (MFCU, or multi-function card unit)
- Magnetic tape drive(s)

This section describes how to configure system devices.

Diskette Magazine Drive

The diskette magazine drive is configured (that is, a device description exists for it) when your system is shipped to you. Because of other system dependencies, you should not change any of the required parameters for the diskette magazine drive. However, you may wish to change the other parameters, depending on the needs of your installation.

To check the device description of a diskette magazine drive, enter the following command:

```
DSPDEVD QDKT
```

If device description QDKT is not found, you can create a device description for your diskette magazine drive using the CRTDEVD command and the work sheet for the diskette magazine drive shown in Figure 2-2.

To change the ONLINE, RETRY, THRESHOLD, and TEXT parameters of an existing device description, use the CHGDEVD command; to change the PUBAUT parameter, use the GRTOBJAUT or RVKOBJAUT command.

DISKETTE MAGAZINE DRIVE
(CRTDEVD command)

Description		Parameter	Entry
Name of the diskette magazine drive (QDKT).	R	DEVD	QDKT
Physical address of the device (000012).	R	DEVADR	000012
Device type (72MD).	R	DEVTYPE	72MD
Device model (1001).	R	MODEL	1001
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Type of data error and number of times the system should attempt to recover. (Type must be 1 (for read errors); times can be 40-80 (40 is default).)		RETRY Type: Times:	
Type of data error and error threshold values to retry before logging the error. (Type must be 1 (for read errors); threshold can be 1-100 (50 is default).)		THRESHOLD Type: Threshold:	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

Figure 2-2. Work Sheet for the Diskette Magazine Drive

System Printers

To find out what system printers are currently on your system, enter the DSPDEVCFG command. System printers have the device types 3203, 3262, 4245, and 5211. You can have at most two system printers. In general, the first system printer is named QSYSPRT, and the second is named QSYSPRT2.

To check the device description of a system printer, enter the following command:

```
DSPDEVD printer-device-name
```

where printer-device-name is the name of the system printer. To provide complete backup documentation on paper, copy the information displayed onto the work sheet for the system printer. For procedures used in configuring system printers, see Chapter 3, *Installation Procedures*.

To change the ONLINE, PRTIMG, or TEXT parameter of an existing device description, use the CHGDEVD command; to change the PUBAUT parameter, use the GRTOBJAUT or RVKOBJAUT command.

SYSTEM PRINTER
(CRTDEVD command)

Description				Parameter	Entry
Name of the system printer.			R	DEVD	_____
Physical address of the device:			R	DEVADR	_____
Device	**Entry**				
First system printer					
3262 or 5211	000018				
3203 or 4245	000040				
Second system printer					
3262 or 5211	000058				
3203 or 4245	000040	If first system printer is a 3262 or 5211.			
3203 or 4245	000041	If first system printer is a 3203 or 4245.			
Device type (3262, 5211, 3203, or 4245).			R	DEVTYPE	_____
Device model.			R	MODEL	_____
Device Type	**Model**	**Entry**			
3262	A1	A1			
	B1	B1			
5211	2	2			
3203	5	5			
4245	12	12			
	20	20			
The device is to be varied online when CPF is started (*NO or *YES).				ONLINE	_____
The name of the default print image. (IBM-supplied print image is QSYSIMAGE in QGPL.)				PRTIMG	_____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)				TEXT	_____
_____					
_____					

Figure 2-3. Work Sheet for a System Printer

Card Device

To find out if a card device (MFCU, or multi-function card unit) is currently on your system, enter the DSPDEVCFG command. The card device has type 5424. Because of system dependencies, you should not change any of the required parameters for the card device, except MODEL. However, you may wish to change the other parameters, depending on the needs of your installation.

To check the device description of your card device, enter the following command:

```
DSPDEVD QCARD96
```

If device description QCARD96 is not found, you can create a device description for QCARD96 using the CRTDEVD command and the work sheet shown in Figure 2-4.

To change the MODEL parameter, you must delete, then re-create, the device description (DLTDEVD command and CRTDEVD command). To change the ONLINE or TEXT parameters of an existing device description, use the CHGDEVD command; to change the PUBAUT parameter, use the GRTOBJAUT or RVKOBJAUT command.

CARD DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the card device.	R	DEVD	QCARD96
Physical address of the device (000019).	R	DEVADR	000019
Device type (5424).	R	DEVTYPE	5424
Device model (A1, A2, K1, K2, or K3).	R	MODEL	_____
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

Figure 2-4. Work Sheet for a Card Device

Tape Drives

To check the configuration of magnetic tape control units and magnetic tape drives currently on your system, enter the DSPDEVSTS (Display Device Status) command. Magnetic tape control units are either type 3411 or type 3430. (The 3422 Tape Drive is configured as DEVTYPE 3430.) The display also indicates which tape drives are attached to the magnetic tape control unit. For further information on the magnetic tape control unit or a magnetic tape drive, use option 2 on the DSPDEVSTS display.

To create a control unit description for a magnetic tape control unit, use the CRTCUD (Create Control Unit Description) command and the work sheet shown in Figure 2-5.

To create a device description for a magnetic tape drive, use the CRTDEVD (Create Device Description) command and the work sheet shown in Figure 2-6.

To change the ONLINE or TEXT parameters of an existing magnetic tape control unit, use the CHGCUD command; to change the PUBAUT parameter, use the GRTOBJAUT or RVKOBJAUT command.

To change the DEVTYPE or MODEL parameters of an existing magnetic tape drive, you must delete, then re-create, the device description (DLTDEVD command and CRTDEVD command). To change the ONLINE, RETRY, THRESHOLD, MSGQ, or TEXT parameters of an existing magnetic tape drive, use the CHGDEVD command; to change the PUBAUT parameter, use the GRTOBJAUT or RVKOBJAUT command.

MAGNETIC TAPE CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (3411 or 3430). The 3422 should be configured as a 3430.	R	TYPE	_____
Model number of the control unit. The 3422 should be configured as a 3430, Model A01.	R	MODEL	____

Device Type	Model	Entry
3411	1	1
	2	2
	3	3
3430	A01	A01

Address of the control unit:	R	CTLADR	_____

Type of Control Unit	Entry
3411	0015
3430	0052
3422	0052

This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to four 3410, 3430, or 3422 tape drives). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for tape drives, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	_____ _____ _____ _____
This tape control unit has the hardware data compression (HDC) feature installed (*NO *YES). Valid only for TYPE(3430).		DTACPR	_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).		TEXT	

_____

_____

Figure 2-5. Work Sheet for a Magnetic Tape Control Unit

MAGNETIC TAPE DRIVE
(CRTDEVD command)

Description		Parameter	Entry
Name of the magnetic tape drive.	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____
Device **Entry**			
First unit 000015 for 3410; 000052 for 3430 or 3422			
Second unit 010015 for 3410; 010052 for 3430 or 3422			
Third unit 020015 for 3410; 020052 for 3430 or 3422			
Fourth unit 030015 for 3410; 030052 for 3430 or 3422			
Device type (3410 or 3430). The 3422 should be configured as a 3430.	R	DEVTYPE	_____
Device model (1, 2, 3 for 3410; A01 for the first 3430 or 3422, which contains the magnetic tape control unit; B01 for the other 3430 or 3422 tape drives).	R	MODEL	____
Name of the associated control unit.		CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
Type of data error and number of times the system should attempt to recover. (Type: 1 for read errors; 2 for write errors. Times: If type is 1, 10-20 (default is 10). If type is 2, 15-20 (default is 15).)		RETRY Type: ____ Times: ____ Type: ____ Times: ____	
Type of data error and error threshold values to retry before logging the error. (Type: 1 for read errors; 2 for write errors. Threshold: If type is 1, 1-10 (default is 5). If type is 2, 1-64 (default is 32).)		THRESHOLD Type: ____ Threshold: ____ Type: ____ Threshold: ____	
Name of the message queue to which operational messages should be sent (normally QSYSOPR.*LIBL).		MSGQ	_____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

_____

_____

Figure 2-6. Work Sheet for a Magnetic Tape Drive

PREPARING FOR LOCAL WORK STATIONS

Each System/38 has a work station controller as part of the system unit. Three additional work station controllers are available; also, features to expand or extend work station controllers are available (see Appendix C, *Work Station Controllers*, for a complete description of work station controllers).

Local work stations are display stations and work station printers that are attached to a work station controller (WSC) or work station controller-extended (WSCE). They are attached either directly or indirectly (using the Cable Thru feature on another work station) by a twinaxial cable. The connectors on the work station controller to which the cables are attached are called *ports*.

To configure local work stations, take the following steps:

1. For each work station controller, fill out a work sheet for a local work station controller (for an example, see Figure 2-7; you can display your current local work station controllers with the DSPCTLSTS (Display Control Unit Status) command).

2. Make one copy of the Local Work Station Configuration Work Sheet for every port you will use on your system. This allows room for expansion without revising old work sheets. A blank copy of the Local Work Station Configuration Work Sheet is provided in the back of this manual.

3. Fill out the Local Work Station Configuration Work Sheets. (Detailed instructions and an example are shown in Figure 2-8.)

4. For each work station printer, fill out a work sheet (see Figure 2-9).

5. For each display station, fill out a work sheet (see Figure 2-10).

Determining an existing local work station configuration without the Local Work Station Configuration Work Sheet is a complicated job. Therefore, it is advised that you fill out these work sheets and update them whenever you configure or reconfigure devices on your system.

Local Work Station Configuration Work Sheet

The Local Work Station Configuration Work Sheet allows you to plan the cable connections for one port at a time. Each port can have up to seven work stations attached. The following chart shows the maximum number of work stations allowed for each work station controller:

Feature Available	Maximum Number of Work Stations	Maximum Number of Ports
Work Station Controller (WSC without either expansion feature)	12	8
Work Station Controller (WSC with Device Control Expansion feature)	20	8
Work Station Controller (WSC with Device Interface Expansion feature)	20	16
Work Station Controller-Extended (WSCE)	32	8

As you configure work stations for a work station controller, you must keep these limitations in mind:

- The number of work stations allowed on a port (seven).
- The number of work stations allowed on a work station controller (see the chart above).
- You cannot attach a 5251 Model 1 or a 5252 to a work station controller-extended (WSCE).
- You cannot attach the following to a work station controller (WSC): a 4224 Printer (all models), a 3196 display station (all models), or a 3179 display station with an IBM Enhanced Keyboard.

For more information on work station controllers, see Appendix C, *Work Station Controllers*.

Work Station Controllers (WSC and WSCE)

You can have up to four work station controllers or up to eight work station controllers-extended on your system. To check the configuration of work station controllers already configured on your system, enter the Display Device Configuration (DSPDEVCFG) command. (If this is a first time installation, no work station controllers will be configured.) Work station controllers are either type WSC or type WSCE.

The DSPDEVCFG display also indicates which work stations (if any) are currently attached to each work station controller. For further information on a work station controller, use the Display Control Unit Description (DSPCUD) command; for further information on a work station device, use the Display Device Description (DSPDEVD) command.

To add a work station controller to your system, use the Create Control Unit Description (CRTCUD) command and the work sheet shown in Figure 2-7. Instructions for each parameter value are on the work sheet. Any other parameter values do not apply, and the default values should not be changed.

For more information on work station controllers, see Appendix C, *Work Station Controllers*.

LOCAL WORK STATION CONTROLLER
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (*WSC or *WSCE).	R	TYPE	_____
Model number of the control unit (*NONE):	R	MODEL	_____
Address of the control unit:	R	CTLADR	_____

Type	Entry
WSC1 or WSCE1	0030
WSC2 or WSCE2	0070
WSC3 or WSCE3	00B0
WSC4 or WSCE4	00F0
WSCE5	0032
WSCE6	0072
WSCE7	00B2
WSCE8	00F2

The control unit is to be varied online when CPF is started (*YES or *NO).	ONLINE	____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 20 on WSC; up to 32 on WSCE). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for display devices and work station printers, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (See the appropriate *Local Work Station Configuration Work Sheet.*)	DEV	_____ _____ _____ _____ _____ _____
(Use additional sheets if necessary.)		_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

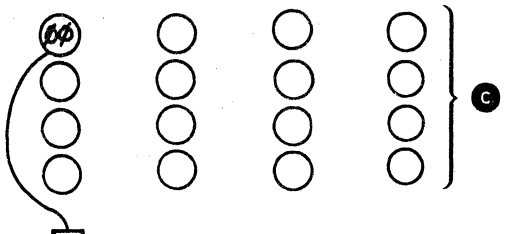
_____

_____

Figure 2-7. Work Sheet for a Local Work Station Controller (WSC or WSCE)

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Ⓒ

Ⓐ Page____ of ____

Circle one:

Ⓑ (WSC1) WSC2 WSC3 WSC4
WSCE1 WSCE2 WSCE3 WSCE4
WSCE5 WSCE6 WSCE7 WSCE8
Contol Unit Name QWSC1

Device Name	ACCT1
Device Type	5251-11
Location	Accounting
Unit Address	ØØ
Port Number	ØØ
Work Station Address	Ø1
Display device	

Ⓓ

Ⓔ

Device Name	ACCT2
Device Type	5256-1
Location	Accounting
Unit Address	Ø1
Port Number	ØØ
Work Station Address	ØØ
Work station printer	

Ⓓ

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Figure 2-8 (Part 1 of 6). Local Work Station Configuration Work Sheet

The following items refer to Part 1 of this figure:

A Fill out this portion when finished with all work sheets for this work station controller. The order of filled-out sheets for this example would be as follows:

1.	Local Control Unit Description Work Sheet	1 of 4
2.	Local Work Station Configuration Work Sheet	2 of 4
3.	Display Station Work Sheet	3 of 4
4.	Work Station Printer Work Sheet	4 of 4

If another port were used with two display stations attached:

1.	Local Control Unit Description Work Sheet	1 of 7	} (same as above)
2.	Local Work Station Configuration Work Sheet	2 of 7	
3.	Display Station Work Sheet	3 of 7	
4.	Work Station Printer Work Sheet	4 of 7	
5.	Local Work Station Configuration Work Sheet	5 of 7	
6.	Display Station Work Sheet	6 of 7	
7.	Work Station Printer Work Sheet	7 of 7	

B Circle the work station controller that controls this port. *Control Unit Name* is the name assigned to the work station controller.

C Number the port to which this work sheet applies. The port numbering scheme is described in Appendix C, *Work Station Controllers*.

D Fill out the work station blocks as follows:

Device Name: The name assigned to each work station device (including work station printers and display stations). This will be the DEVD parameter value on the CRTDEVD command you use to configure the device. Once you assign the work station name, each work station should be physically labeled with the device name.

Device Type: The device type and model number. In this example, ACCT1 is an IBM 5251 Display Station Model 11, and ACCT2 is an IBM 5256 Printer Model 1.

Location: The physical location of the device, for future reference.

Figure 2-8 (Part 2 of 6). Local Work Station Configuration Work Sheet

Note: The following unit address, port number, and work station address become the WSCADR parameter on the CRTDEVD command.

Unit address: The unique number of the work station on the work station controller. For standard work station controllers (WSC), the unit address must be 00-19; for extended work station controllers (WSCE), the unit address must be 00-31. For convenience, assign unit addresses sequentially, beginning with 00. Each 5252 Display Station counts as two devices and, therefore, uses two unit addresses.

Port number: The number of the port to which this device is attached, as follows:

WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

Work Station Address: A 2-digit number (00-06) that must be unique to each work station attached to this port. This number is established by setting the work station address switches. For the 5292 Color Display Station, the 3179 Model 2 Color Display Station, the 3180 Display Station, and the 3196 Display Station, the address is entered through the keyboard. For the 4214 Model 2 Printer, 3812 Pageprinter, and the 4224 Printer, the address is an option selected by pressing the Option key.

- If the work station has the Cable Thru feature, it can be any one of up to seven devices on the line. Each 5252 Display Station counts as two devices. Each 5252 Display Station has a primary address and a secondary (default) address. The primary address must be set in the work station address switches as an even number (00, 02, or 04). The secondary (default) address is the next higher odd number (01, 03, or 05).
- If the work station does not have the Cable Thru feature, the work station address is 00. The address of 00 is set internally because the device does not have any work station address switches. Also, this work station must be either the only work station or the last work station on the line. Should this work station be a 5252 Display Station, the primary address is internally set to 00 and the secondary (default) address is 01.

Note: To provide a consistent addressing scheme, assign the first work station on a port address 01, the second work station address 02, and so on, to show their relative positions on the cable path. Reserve 00 for the last work station on the cable path, in case it does not have the Cable Thru feature. (Work stations without the Cable Thru feature must be the last work station on a cable path and must have a work station address of 00.) If you later need to insert work stations in the cable path, you need not follow the convention; the only requirement for the work station address is that it be unique within the range of 00 to 06 on the port.

Figure 2-8 (Part 3 of 6). Local Work Station Configuration Work Sheet

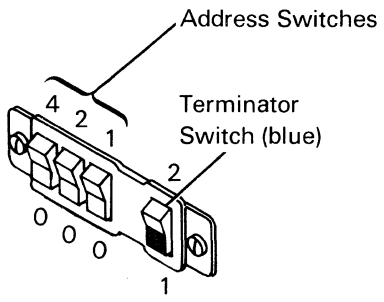
For a description of the work station address switches, see part 5 of this figure.

The blank space at the bottom of each work station block is for any other information you wish to include.

Ⓔ Draw lines between work station blocks to represent cables connecting work stations.

Figure 2-8 (Part 4 of 6). Local Work Station Configuration Work Sheet

When you attach one work station to another, the one closer to the port must have the Cable Thru feature, and its Terminator switch must be set to 2. (If the last work station has the Cable Thru feature, the Terminator switch on it must be set to 1.)



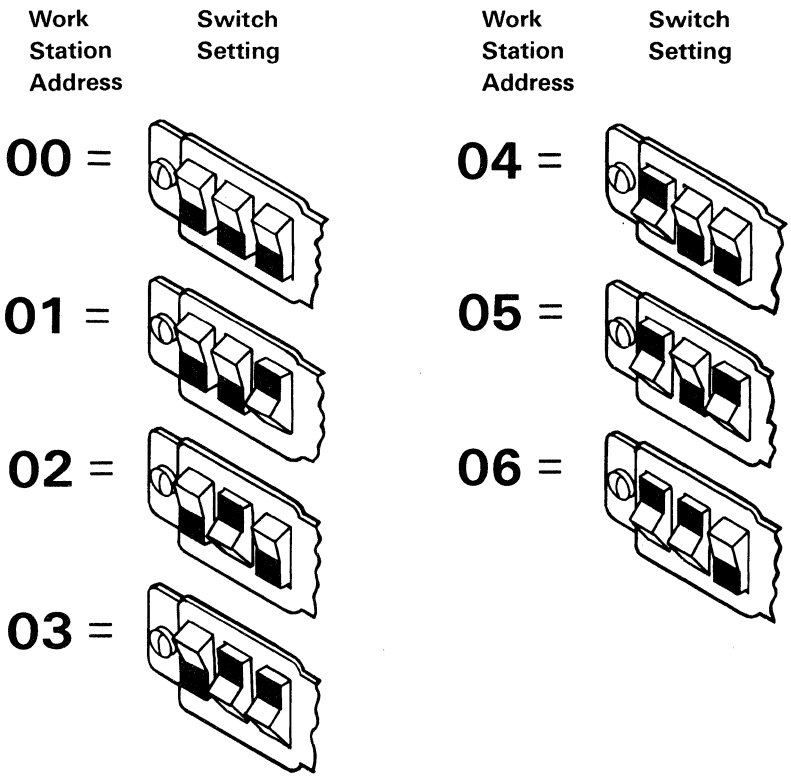
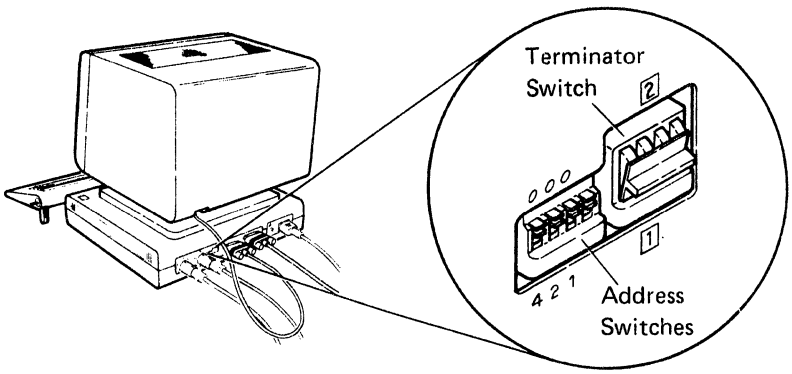


Figure 2-8 (Part 5 of 6). Work Station Address Switches (except 5291 Models 1 and 2 Display Stations)

Notes:

1. The 5292, 3179, 3180, and 3196 Display Stations do not have work station address switches. Their addresses are entered through the keyboard.
2. The address on the 4214, 3812, and the 4224 Printers is an option selected by pressing the Option key.

The following are the switches as they appear on the IBM 5291 Model 2 Display Station.



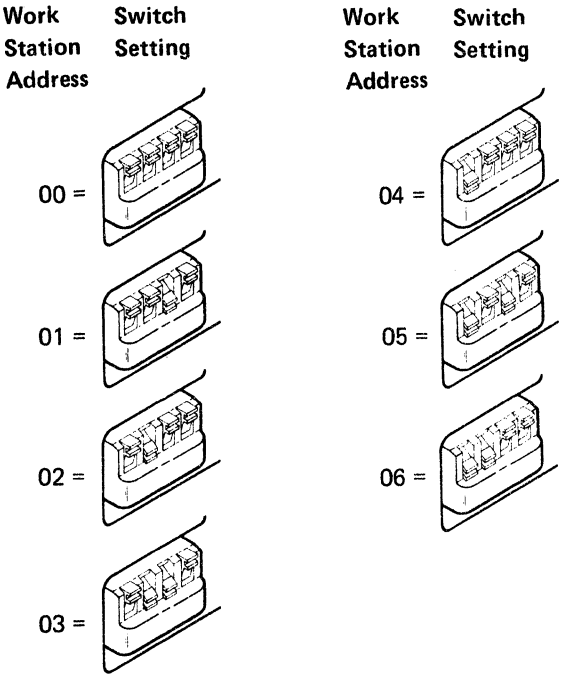


Figure 2-8 (Part 6 of 6). Work Station Address Switches on the 5291 Model 2 Display Station

Local Work Station Printers

Local work station printers are the following:

- IBM 3812 Pageprinter
- IBM 4214 Printer Model 2
- IBM 4224 Printer Models 101, 102, 1E2, and 1C2 (attach to WSCE only)
- IBM 4234 Printer Model 2
- IBM 4245 Printer Models T12 and T20 (attach to WSCE only)
- IBM 5219 Printer Models D1 and D2
- IBM 5224 Printer Models 1 and 2
- IBM 5225 Printer Models 1, 2, 3, and 4
- IBM 5256 Printer Models 1, 2, and 3
- IBM 5262 Printer Model 1

Ordinarily, work station printers are not configured on your system when the system is shipped (that is, no device descriptions exist for them). In planning for a work station printer, keep in mind that it can be associated only with display stations that are on the same work station controller, not on other work station controllers. If the work station printer is attached to a remote work station, it can be associated only with display stations on the same remote work station.

To associate a work station printer with a display station, specify the name of the work station printer on the PRINTER parameter of the Create Device Description (CRTDEVD) command for the display station. The work station printer must be configured before the display work stations are configured for this association to be in effect. (When a work station user presses the Print key, the screen image is printed on the associated work station printer, if it exists. For user-defined displays (formatted using DDS), the DDS keyword PRINT must be specified and in effect at the time the Print key is pressed. For more information, see the *CPF Reference Manual—DDS*.)

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).				R	DEVTYPE _____
Device model (for DEVTYPE (*IPDS) model should be *NONE):				R	MODEL _____
Device Type	**Model**	**Entry**	**Device Type**	**Model**	**Entry**
3812	1	1	5219	D1 D2	D1 D2
4214	2	2	5224	1	1
4245	T12 T20	T12 T20		2	2
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1 2 3	1 2 3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____

Figure 2-9 (Part 1 of 2). Work Sheet for a 5250 Work Station Printer

5250 WORK STATION PRINTER (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Name of the message queue to which operational messages should be sent.	MSGQ	_____ _____
Address of device:	WSCADR	_____

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- yy — Work station address switch settings (00-06)
- zz — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

- xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	_____
Physical address of SNA device attached to an X.25 network.	NETDEVAD	_____

xxyyyyzz
- yyyy — OU number
- zz — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	_____
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

_____
_____

Figure 2-9 (Part 2 of 2). Work Sheet for a 5250 Work Station Printer

Local Display Stations

Local display stations are the following:

- IBM 3196 Display Station Models A1, A2, B1, and B2 (attach to WSCE only)
- IBM 3179 Color Display Station Model 2 (with an IBM Enhanced Keyboard, attaches to WSCE only)
- IBM 3180 Display Station Model 2
- IBM 5251 Display Station Model 1 or Model 11 (Model 1 attaches to WSC only)
- IBM 5252 Dual Display Station (attaches to WSC only)
- IBM 5291 Display Station Model 1 or Model 2
- IBM 5292 Color Display Station Model 1 or Model 2
- IBM Personal Computer

Ordinarily, display stations are not configured on your system when the system is shipped (that is, no device descriptions exist for them).

To create a device description for a display station, use the Create Device Description (CRTDEVD) command and the work sheet shown in Figure 2-10.

Note: If you are attaching a personal computer to your System/38, you get better performance if the personal computer is attached to a WSCE.

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
5294	xxyyyy

5251 xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.

5294 xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	_____
Device model:	R	MODEL	____

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	_____
This device is varied online when CPF is started (*NO or *YES).	ONLINE	_____
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	_____
Name of the associated work station printer (*NONE or device name)..	PRINTER	_____
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	_____

Figure 2-10 (Part 1 of 2). Work Sheet for a 5250 or 3180 Display Station

5250 AND 3180 DISPLAY STATION (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Address of device:	WSCADR	_____

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- xx — Work station address switch settings (00-06)
- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

- zz — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD _____

Device Family	Entry
5250	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement

3180	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	 _____ _____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____

xxyyyyzz
- xx — OU number
- yyyy — Control Unit Station address
- zz — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	 _____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

Figure 2-10 (Part 2 of 2). Work Sheet for a 5250 or 3180 Display Station

CONFIGURING REMOTE WORK STATIONS

Types of Remote Work Stations

There are two types of remote work stations on the System/38:

- *Remote 5250 work stations*, which are the IBM 5251 Model 2 or 12 Display Station, the 5294 Control Unit, and any work stations attached to them. These include:
  - IBM 3179 Color Display Station Model 2 (attaches to the 5294)
  - IBM 3180 Display Station Model 2
  - IBM 3196 Display Station Models A1, A2, B1, and B2 (attach to the 5294)
  - IBM 5251 Display Station Model 1 (attaches to 5251 Model 2 or 12)
  - IBM 5251 Display Station Model 11
  - IBM 5252 Dual Display Station Model 1 (attaches to 5251 Model 2 or 12)
  - IBM 5291 Display Station Models 1 and 2
  - IBM 5292 Color Display Station Model 1
  - IBM 5292 Color Graphics Display Station Model 2
  - IBM Personal Computer
  - IBM 5219 Printer Models D1 and D2
  - IBM 5224 Printer Models 1 and 2
  - IBM 5225 Printer Models 1, 2, 3, and 4
  - IBM 5256 Printer Models 1, 2, and 3
  - IBM 5262 Printer Model 1 (attaches to the 5294)
  - IBM 4214 Printer Model 2 (attaches to the 5294)
  - IBM 3812 Pageprinter Model 1 (attaches to the 5294)
  - IBM 4224 Printer Models 010, 020, 02E, and C2E (attach to the 5294)
  - IBM 4234 Printer Model 2 (attaches to the 5294)

- *Remote 3270 work stations*, which include IBM 3274 Control Units (Models 1c, 21c, 31c, 41c, 51c, and 61c), any work stations attached to them, and any devices that emulate 3270 control units and work stations. These include:
  - IBM 3277 Display Station Model 2 (or equivalent)
  - IBM 3278 Display Station Models 2, 3, 4, and 5 (or equivalent)
  - IBM 3279 Color Display Station Models 2a, 2b, 3a, and 3b (or equivalent)
  - IBM 3290 Display Station
  - IBM 3287 Printer Models 1, 1c, 2, and 2c (or equivalent)

For information on how to operate the 3270 work stations as 5250 emulators, see the *IBM System/38 3270 Remote Attachment Keyboard Card.*

Remote work stations are attached to the System/38 through an SDLC primary line or through an X.25 PSDN attachment to a communications adapter on the system unit. For an illustration of remote work stations, see Figure 2-11.

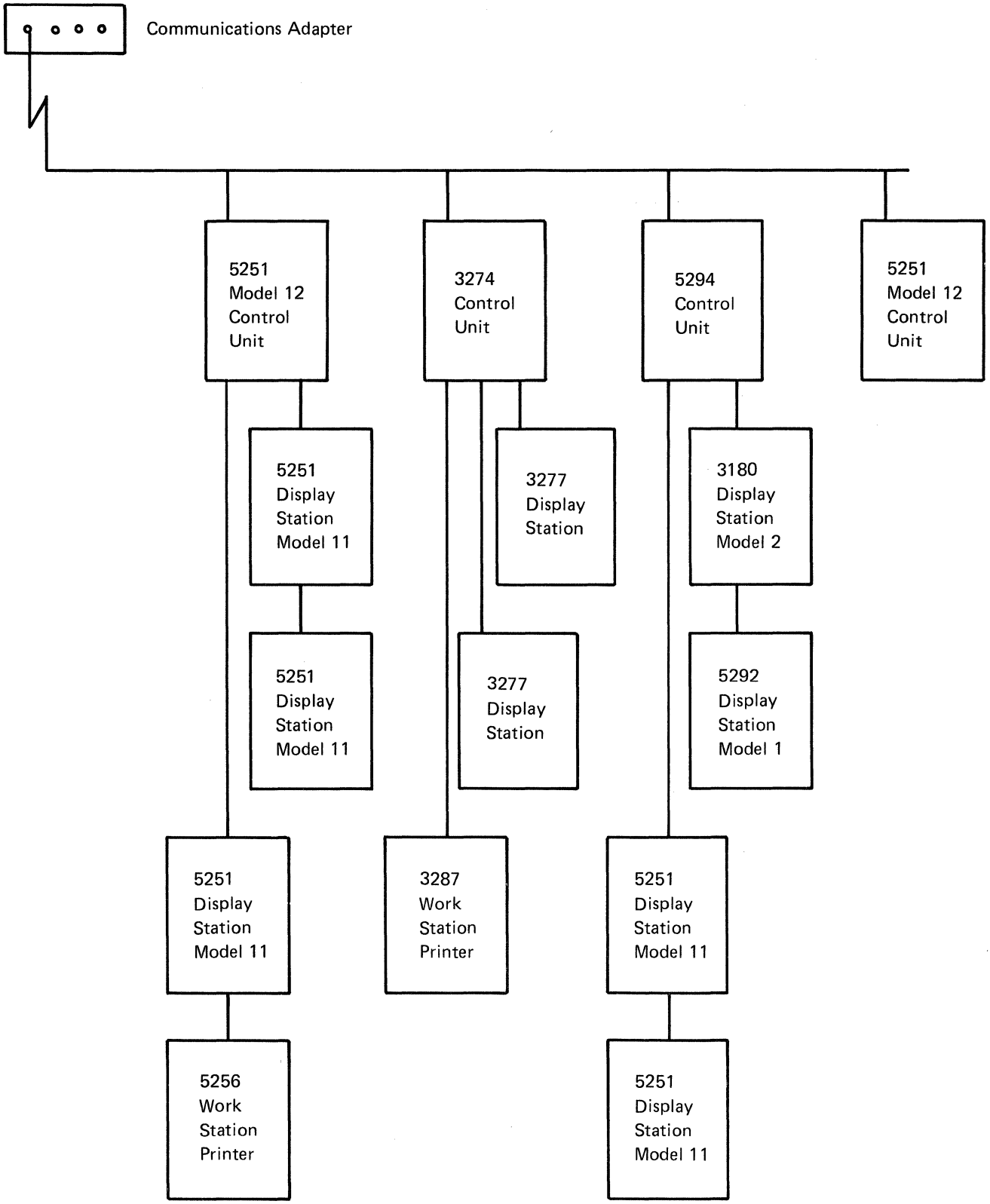
SDLC primary lines can also be used to attach peer control units for APPC when your system is the primary system on an APPC network. For information on configuring APPC on an SDLC primary line, see the section *APPC for the Primary System on an APPC Network* later in this chapter.

Notes:

1. The 4245 Printer Models T12 and T20 are not supported remotely on the 5294 or the 5251 control units.

2. If you are attaching a personal computer to your System/38, you get better performance if the personal computer is attached to a 5294 Control Unit.

For examples of remote work station configurations, see Appendix A, *Installation Example.*



Note: See the section *Remote Work Stations* in Chapter 1 for a description of the maximum number of work stations allowed for each type of control unit.

Figure 2-11. Sample Configuration of Remote Work Stations

Overview of Steps in Configuring Remote Work Stations

For each of the following numbered steps, there is a section later in the chapter giving considerations and detailed instructions for completing the work sheets involved.

1. Arrange remote control units on the line.

2. Configure the line.

3. Configure 5250 control units and any remote 5250 work stations attached to them.

4. Configure 3270 control units and any remote 3270 work stations attached to them.

5. Make sure that a work station entry for each type of display station exists in the appropriate interactive subsystem description.

6. Make sure that the appropriate interactive subsystem is started.

Arranging Remote Control Units on the Line

The steps in arranging remote control units are as follows:

1. Draw a picture of your configuration, showing the number of control units attached to each line description and the number of remote work stations attached to each control unit (as in Figure 2-11). You can configure up to 50 control units on a single line.

2. Once you have decided which control units to attach to the line, fill out the Remote Work Station Configuration Work Sheet. On this work sheet you can include control unit names and addresses and, thus, avoid duplicate names and and addresses. Make one copy of the Remote Work Station Configuration Work Sheet for every line description to which you will attach remote work stations. A blank copy of the work sheet is provided at the back of this manual. To fill out the Remote Work Station Configuration Work Sheet, see the instructions and example shown in Figure 2-12.

Blank work sheets are provided at the back of this book for your convenience.

Appendix A, *Installation Example*, contains examples of the work sheets described in this section.

REMOTE WORK STATION CONFIGURATION WORK SHEET

Communications
attachment (circle one): 1 2 3 (B)

(A) Page _____ of _____

(C) Line Description
Name: _____ _____ _____ _____

○ ○ ○ ○

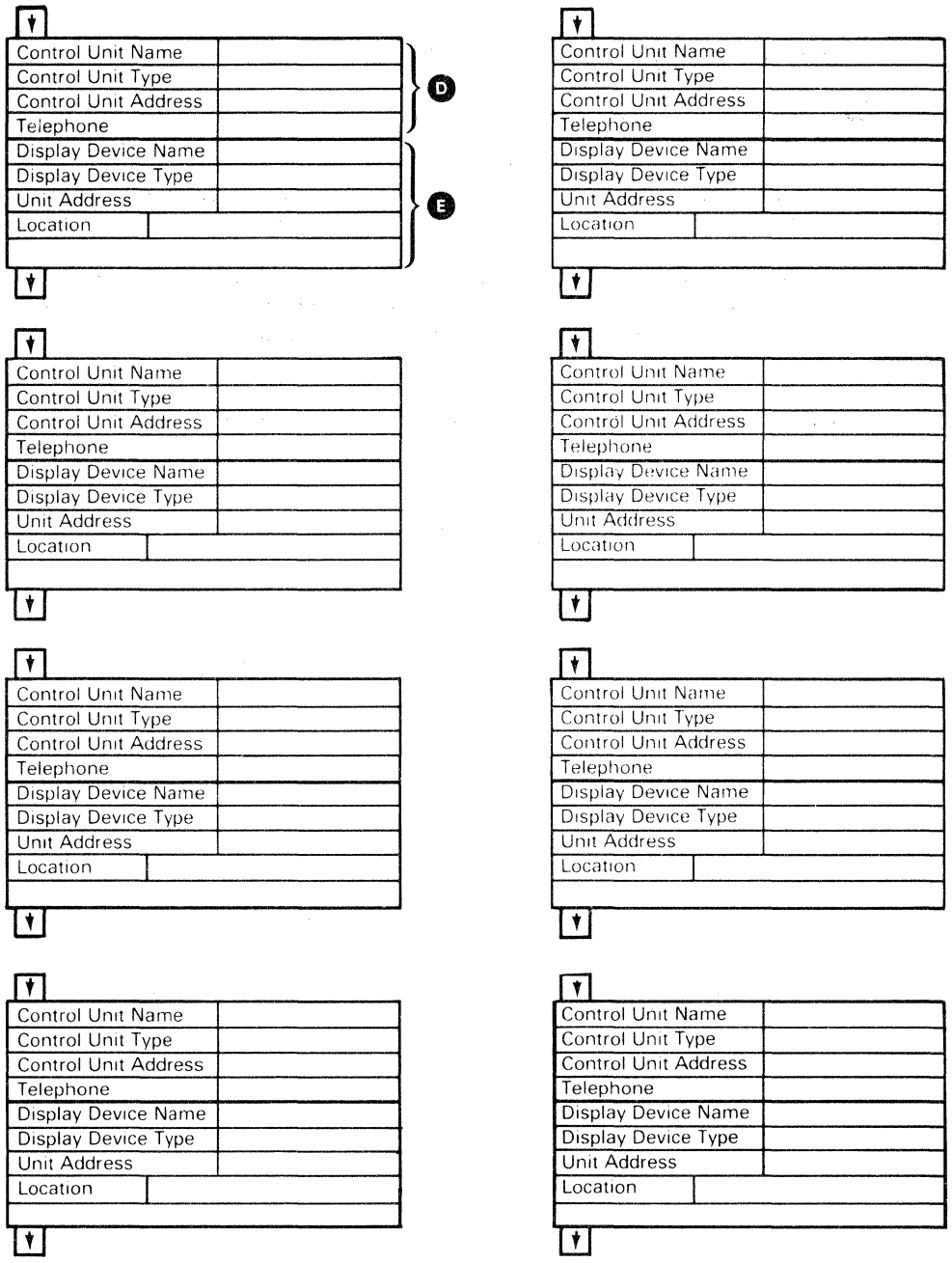


Figure 2-12 (Part 1 of 4). Remote Work Station Configuration Work Sheet

The following items refer to Part 1 of this figure:

Ⓐ Fill out this portion when you have finished with all work sheets for this line.

Ⓑ Circle the number of the communications attachment to which you will attach the line.

Ⓒ Fill in the CPF object name that you assign to the line description. This becomes the LIND parameter on the SDLC Primary Line work sheet.

To leave room for expansion, you may wish to show only one line per work sheet.

Fill out the work station blocks as follows:

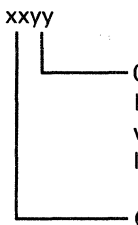
Ⓓ **For the control unit portion:**

Control Unit Name: The CPF object name that you assign to each remote work station controller. This becomes the CUD parameter on the 5250 Control Unit work sheet or the 3270 Control Unit work sheet.

Control Unit Type: For 5251 Model 2 or 12, either 5251-2 or 5251-12. For 5294 Control Units, 5294. For 3270 control units and their emulators, 3274. This becomes the TYPE parameter on the 5250 Control Unit work sheet or the 3270 Control Unit work sheet.

Figure 2-12 (Part 2 of 4). Remote Work Station Configuration Work Sheet

Control Unit Address: A 4-digit number that becomes the CTLADR parameter on the 5250 Control Unit work sheet or the 3270 Control Unit work sheet.



00 if control unit is attached to a switched line; the LINNBR parameter value from the SDLC Primary Line work sheet if control unit is attached to a nonswitched line.

On System/38, xx must be 01-FE. For switched lines, xx must be unique on your system. For nonswitched lines, xx must be unique on the line. For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1 through 9.

For 5251 Models 2 or 12, xx is the controller station address from the IBM 5251 Model 12 Communications Network Setup Form.

For 5294, xx is the controller station address from the IBM 5294 Control Unit Setup Form.

For 3270 control units, xx is the SDLC Control Unit Address from the 3270 Communications Network Setup Form. For a 3274 Control Unit, the SDLC control unit address is the number keyed in for sequence 302 in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For emulating control units, see the documentation for that control unit.

Note: If you already have a 3270 control unit configured to another host system, you need to find out what the current SDLC control unit address is (a 2-digit hexadecimal number). Ask your host system programmer, or check your local documentation.

Telephone: The telephone number of the control unit. If the control unit is on a switched line, this becomes the TELNBR parameter on the 5250 Control Unit work sheet or the 3270 Control Unit work sheet.

Figure 2-12 (Part 3 of 4). Remote Work Station Configuration Work Sheet

E **For the display device portion (5251 Model 2 or 12 only):**

Display Device Name: The CPF object name that you assign to the display device that is part of the 5251 Model 2 or 12. This becomes the DEVD parameter on the 5250 and 3180 Display Station work sheet.

Display Device Type and Model: For 5251 Model 2, specify 5251-1; for 5251 Model 12, specify 5251-11 (do not specify 5251-2 or 5251-12). This becomes DEVTYPE(5251) and MODEL(1 or 11) on the 5250 and 3180 Display Station work sheet.

Unit Address: Always 00 for 5251 Model 2 or 12.

Location: The physical location of the device, for future reference.

The blank space at the bottom of each block is for any other information you wish to include.

Figure 2-12 (Part 4 of 4). Remote Work Station Configuration Work Sheet

CONFIGURING THE LINE

The steps in configuring a line description for remote work stations are as follows:

1. Find out what kind of modem will be on the line. Many of the parameters on the SDLC Primary Line work sheet are determined by the type of modem. (See Figure 2-13.) If you have an IBM-supplied modem, see Appendix E for a chart showing the values for these parameters. If you do not have an IBM-supplied modem, you will need to gather information from the documentation for the modem or from the manufacturer to fill out the parameters. You will use this information later to fill out the SWITCHED, SELECT, INLCNN, and SWNBKU parameters on the 5250 Control Unit work sheet and the 3270 Control Unit work sheet.

2. Finish filling out the SDLC Primary Line work sheet.

   Note: If this is a switched line and you will attach a 5294 Control Unit to it, you must specify a value of at least 38 for the IDLETIME parameter.

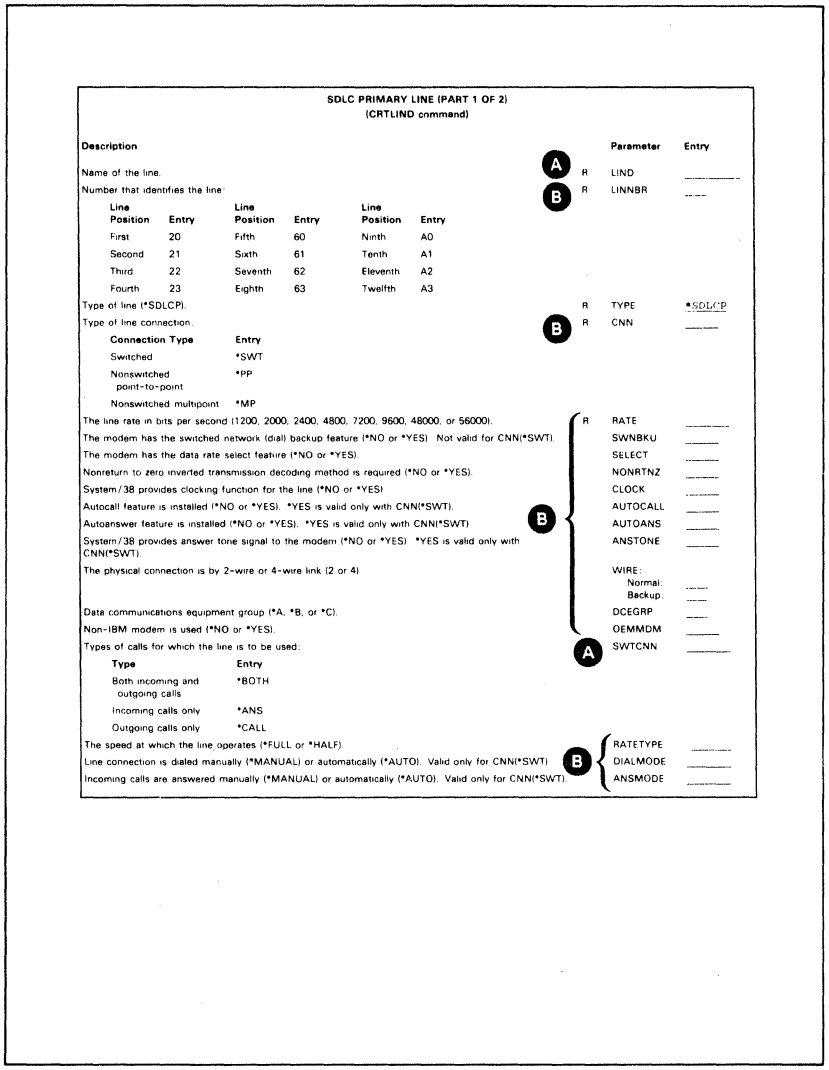
3. Configure the line description (enter the CRTLIND command).

If you create more than one configuration for any of the physical networks, you should complete more than one set of work sheets (including a new SDLC Primary Line work sheet) for each configuration.

You can create up to 10 line descriptions for each physical line attached to your system. However, only one line description can be used (varied online) at a time. For example, a single communications line might be configured as an SDLC primary line for remote work stations one time, and a BSC line another time. Creating several line descriptions eliminates the need to delete and re-create line descriptions each time you change the way a line is used.

For more information on CRTLIND parameter values, see the *CL Reference Manual*.

Appendix A, *Installation Example*, contains examples of the work sheets described in this section.



SDLC PRIMARY LINE (PART 1 OF 2)
(CRTLIND command)

Description			Parameter	Entry
Name of the line.	A	R	LIND	
Number that identifies the line:	B	R	LINNBR	

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCP).		R	TYPE	*SDLCP
Type of line connection.	B	R	CNN	

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	B	R	RATE	
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).			SWNBKU	
The modem has the data rate select feature (*NO or *YES).			SELECT	
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).			NONRTNZ	
System/38 provides clocking function for the line (*NO or *YES).			CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).			AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).			AUTOANS	
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).			ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).			WIRE: Normal: Backup:	
Data communications equipment group (*A, *B, or *C).			DCEGRP	
Non-IBM modem is used (*NO or *YES).			OEMMDM	
Types of calls for which the line is to be used:	A		SWTCNN	

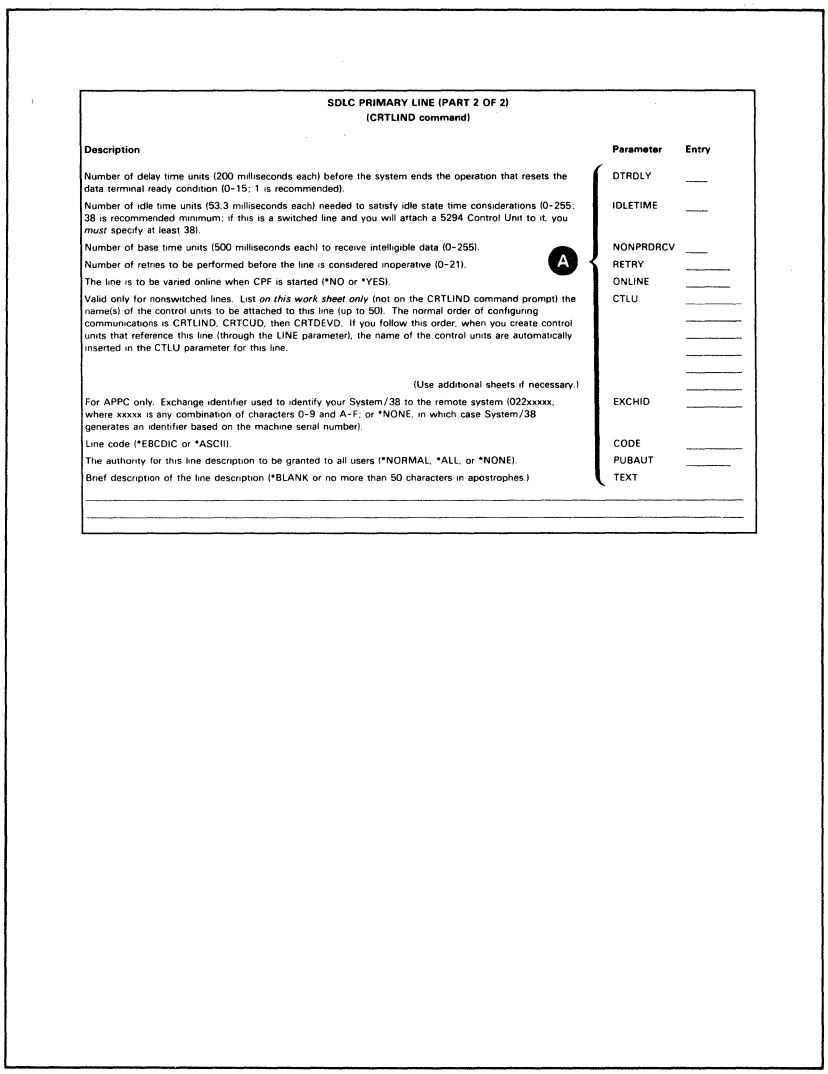
Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).	B		RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).			DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).			ANSMODE	

The work sheet for SDLC Primary Lines includes only the CRTLIND parameter values that apply to SDLC primary lines. For more information on CRTLIND parameter values, see the *CL Reference Manual*.

- **A** User defined
- **B** Determined by modem (see Appendix E if you have an IBM modem)

Figure 2-13 (Part 1 of 2). Remote Work Stations: SDLC Primary Line Work Sheet



SDLC PRIMARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	___
Number of idle time units (53.3 milliseconds each) needed to satisfy idle state time considerations (0-255; 38 is recommended minimum; if this is a switched line and you will attach a 5294 Control Unit to it, you *must* specify at least 38).	IDLETIME	___
Number of base time units (500 milliseconds each) to receive intelligible data (0-255).	NONPRDRCV	___
Number of retries to be performed before the line is considered inoperative (0-21). (A)	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (up to 50). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create control units that reference this line (through the LINE parameter), the name of the control units are automatically inserted in the CTLU parameter for this line.	CTLU	_____
(Use additional sheets if necessary.)		_____
For APPC only. Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	_____
Line code (*EBCDIC or *ASCII).	CODE	_____
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

(A) User defined

Figure 2-13 (Part 2 of 2). Remote Work Stations: SDLC Primary Line Work Sheet

CONFIGURING IBM 5251 CONTROL UNITS AND REMOTE WORK STATIONS ATTACHED TO THEM

This section assumes that you already have a suitable SDLC primary line or X.25 network configured on your system and that you have planned the arrangement of control units on your line. If you have not done these steps, see the sections on these topics earlier in this chapter.

You can attach the following work stations to the IBM 5251 Display Station Model 2 or 12:

- IBM 5251 Display Station Models 1 and 11
- IBM 5252 Dual Display Station Model 1
- IBM 5291 Display Station Models 1 and 2
- IBM 5292 Color Display Station Models 1 and 2
- IBM Personal Computer
- IBM 5219 Printer Models D1 and D2
- IBM 5224 Printer Models 1 and 2
- IBM 5225 Printer Models 1, 2, 3, and 4
- IBM 5256 Printer Models 1, 2, and 3

While doing the following procedure, you will use work sheets with the names, addresses, and other information about control units and work stations. Reduced copies of the work sheets are shown in Figures 2-14 through 2-17. Actual blank work sheets are provided (in alphabetical order) in Appendix W, *Blank Work Sheets*.

Appendix A, *Installation Example*, contains an example of a system configured using the work sheets described in this section.

Do the following steps to configure each 5251 Control Unit:

1. Use the *IBM 5250 Information Display System Site Preparation and Planning Guide* to fill out the IBM 5251 Model 12 Communications Network Setup Form. At this time you will also assign names and addresses to any attached work stations.

2. Fill out the 5250 Control Unit work sheet.

3. Configure the 5251 Control Unit (use the CRTCUD command).

4. Fill out the 5250 and 3180 Display Station work sheet as described in the section *Display Station That Is Part of a 5251 Model 2 or 12* later in this chapter.

5. Fill out a 5250 Work Station Printer work sheet and a 5250 and 3180 Display Station work sheet for each work station you will attach to the control unit.

6. If you are configuring work station printers to be associated with display stations (so that work station users can print screen images by pressing the Print key), configure the work station printers first (using the CRTDEVD command).

   Notes:
   1. The work station printer associated with a display station must be on the same 5250 control unit.
   2. You might also want to have operational messages sent to a nearby display station that uses the printer. To do this, first enter the CRTDEVD command for the work station printer, then enter the CRTDEVD command for the display stations that will use the work station printer (naming the work station printer on the PRINTER parameter). Finally, enter the CHGDEVD command for the work station printer, naming the display station to which operational messages are to be sent in the MSGQ parameter.

7. Configure all the work stations attached to this control unit, including the display device that is part of it (enter the CRTDEVD command).

8. Make sure that a work station entry for each type of display station exists in the appropriate interactive subsystem description (use the DSPSBSD command; the IBM-supplied interactive subsystem is QINTER). If an appropriate entry does not exist, use the ADDWSE command to add one. For example:

   ```
   ADDWSE  SBSD(QINTER)  WRKSTNTYPE(5292)
   ```

9. Make sure that the appropriate interactive subsystem is started. For the IBM-supplied interactive subsystem, use the command:

   ```
   STRSBS  SBSD(QINTER)
   ```

Display Station That Is Part of a 5251 Model 2 or 12

The portion of a 5251 Model 2 or 12 that is a display station is configured as an IBM 5251 Model 1 or 11 on the System/38.

At least one display station must be configured for each 5251 Control Unit on your system.

To create a device description for the display station that is part of a 5251 Model 2 or 12, use the Create Device Description (CRTDEVD) command.

Complete the following parameters on the 5250 and 3180 Display Station work sheet:

DEVD: The name you assign to the *display station.*

DEVADR: 00yyyy, where yyyy is the CTLADR parameter value from the CRTCUD work sheet for the 5251 Model 2 or 12.

DEVTYPE: 5251.

MODEL: 1 or 11.

CTLU: The name you assign to the 5251 Model 2 or 12 Control Unit description (not the same as the DEVD parameter value).

PRINTER: The name of the work station printer, if any, that is to be associated with this display station. The work station printer must be attached to the 5251 Model 2 or 12 through a Cluster feature or Dual Cluster feature port.

WSCADR: Leave blank.

WSCKBD. Leave blank.

The entries for the other parameters are your choice.

5251 Model 2 or 12 without the Expanded Function Feature

If the 5251 Model 2 or 12 does not have the Expanded Function feature, do the following to provide equivalent copy-to-printer function.

To have output printed immediately when the Print key is pressed:

1. Create a printer file as follows:

```
CRTPRTF  file-name.library-name  DEV(work-station-printer-name)
         SPOOL(*NO)
```

2. Specify the name of the printer file you created in step 1 on the PRTFILE parameter of the CRTDEVD or CHGDEVD command. For example:

```
CHGDEVD  display-station-name  PRTFILE(file-name.library-name)
```

To have output spooled when the Print key is pressed:

1. Create an output queue as follows:

```
CRTOUTQ  queue-name.library name
```

2. Create a printer file as follows:

```
CRTPRTF  file-name.library-name  SPOOL(*YES)
         OUTQ(queue-name.library-name)
         SCHEDULE(*FILEEND)
```

3. Specify the name of the printer file you created in step 2 on the PRTFILE parameter of the CRTDEVD or CHGDEVD command. For example:

```
CHGDEVD  display-station-name  PRTFILE(file-name.library-name)
```

4. To print the spooled files, start a printer writer (STRPRTWTR command).

For further information on the CRTPRTF, CRTOUTQ, and STRPRTWTR commands, see the *CL Reference Manual.*

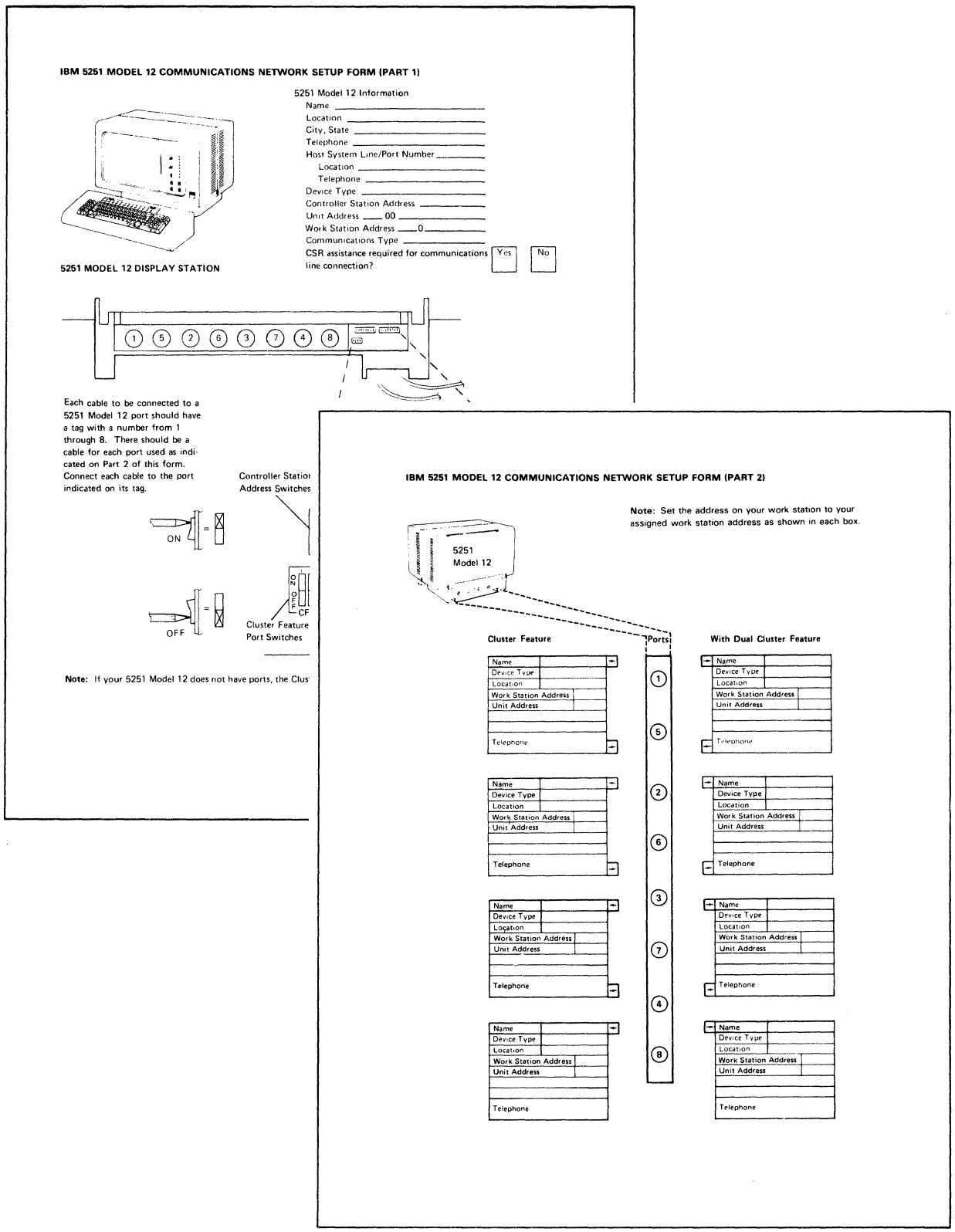
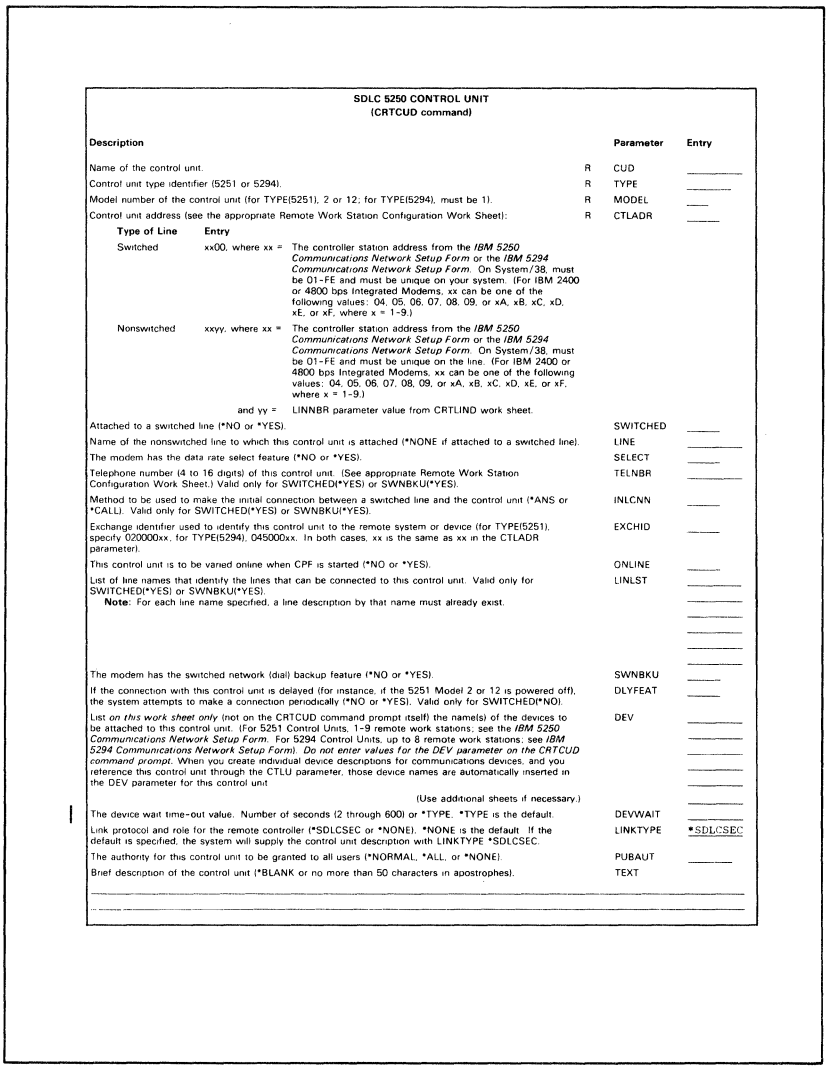


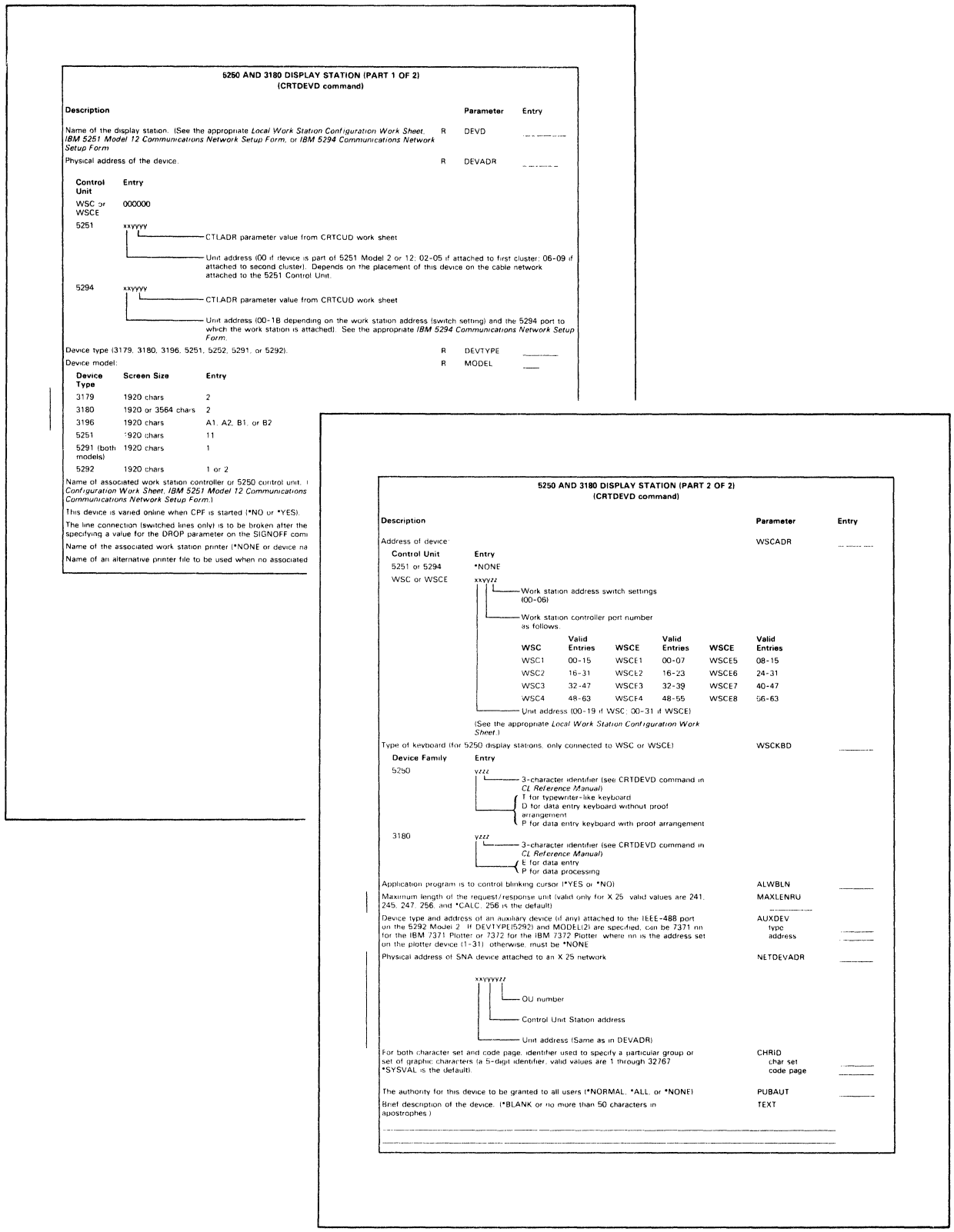
Figure 2-14. IBM 5251 Model 12 Communications Network Setup Form



SDLC 5250 CONTROL UNIT
(CRTCUD command)

Description				Parameter	Entry
Name of the control unit.			R	CUD	
Control unit type identifier (5251 or 5294).			R	TYPE	
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).			R	MODEL	
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):			R	CTLADR	
Type of Line	**Entry**				
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
	and yy =	LINNBR parameter value from CRTLIND work sheet.			
Attached to a switched line (*NO or *YES).				SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).				LINE	
The modem has the data rate select feature (*NO or *YES).				SELECT	
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).				TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).				INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx, for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).				EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).				ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note**: For each line name specified, a line description by that name must already exist.				LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).				SWNBKU	
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).				DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)				DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.				DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.				LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).				TEXT	

Figure 2-15. SDLC 5250 Control Unit Work Sheet



5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form*	R	DEVD	
Physical address of the device.	R	DEVADR	

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy

xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.

5294	xxyyyy		

xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	
Device model:	R	MODEL	

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (*Configuration Work Sheet, IBM 5251 Model 12 Communications Communications Network Setup Form.*)

This device is varied online when CPF is started (*NO or *YES).

The line connection (switched lines only) is to be broken after the specifying a value for the DROP parameter on the SIGNOFF comi

Name of the associated work station printer (*NONE or device na

Name of an alternative printer file to be used when no associated

5250 AND 3180 DISPLAY STATION (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Address of device:	WSCADR	

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- xx — Work station address switch settings (00-06)
- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

- zz — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE)	WSCKBD	

Device Family	Entry
5250	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement

3180	yzzz

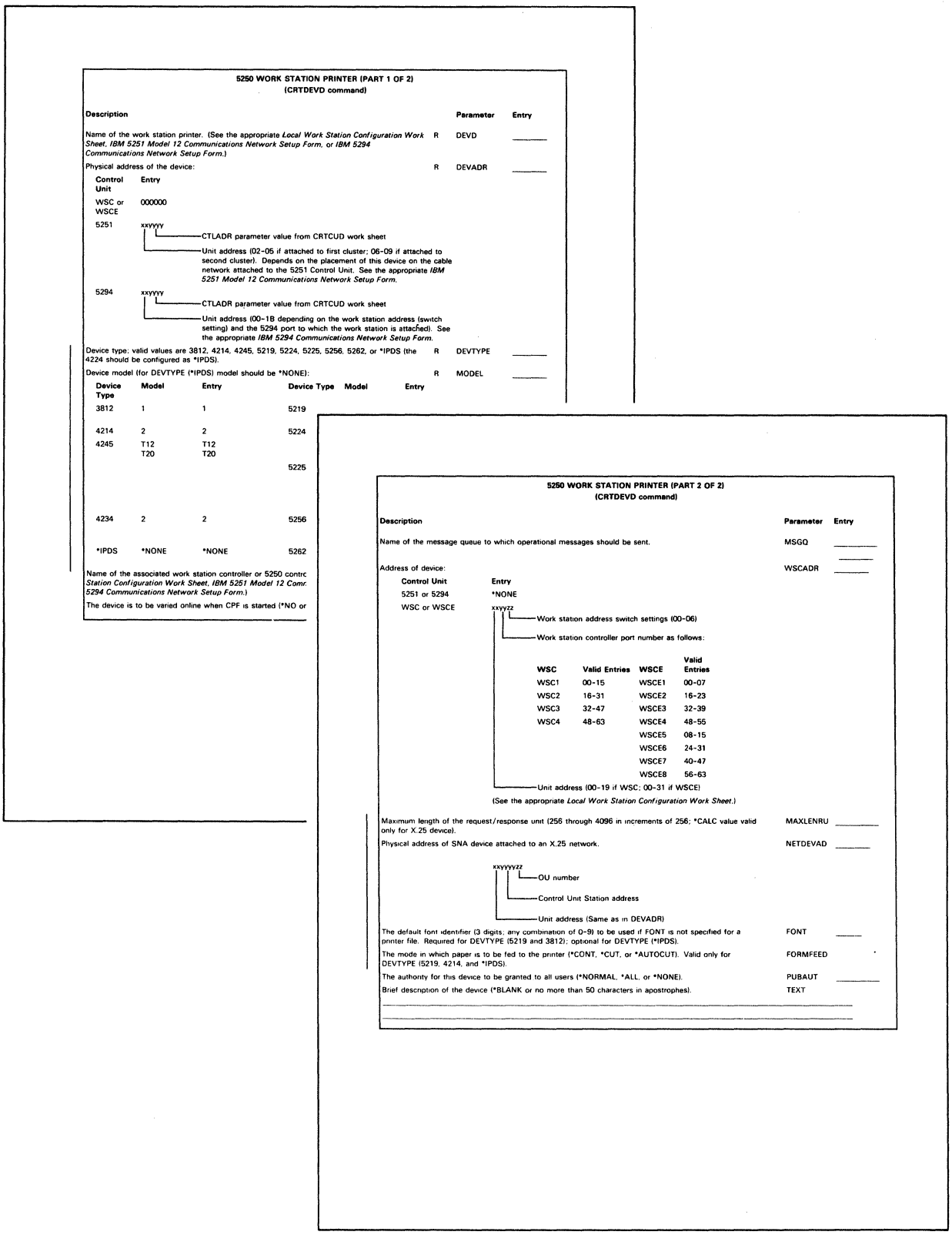
yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO)	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default)	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE	AUXDEV type address	
Physical address of SNA device attached to an X.25 network	NETDEVADR	

xxyyyyzz
- xx — OU number
- yyyy — Control Unit Station address
- zz — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier, valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE)	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure 2-16. 5250 and 3180 Display Station Work Sheet



5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	
Physical address of the device:	R	DEVADR	

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
5294	xxyyyy

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	

Device Type	Model	Entry
3812	1	1
4214	2	2
4245	T12 T20	T12 T20
5219		
5224		
5225		
5256	2	2
5262	*NONE	*NONE

Name of the associated work station controller or 5250 contrc *Station Configuration Work Sheet, IBM 5251 Model 12 Comr. 5294 Communications Network Setup Form.*)

The device is to be varied online when CPF is started (*NO or

5250 WORK STATION PRINTER (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Name of the message queue to which operational messages should be sent.	MSGQ	
Address of device:	WSCADR	

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- zz — Unit address (00-19 if WSC; 00-31 if WSCE)
- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

- xx — Work station address switch settings (00-06)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVAD	

xxyyyyzz
- zz — Unit address (Same as in DEVADR)
- yyyy — Control Unit Station address
- xx — OU number

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

Figure 2-17. 5250 Work Station Printer Work Sheet

CONFIGURING IBM 5294 CONTROL UNITS AND REMOTE WORK STATIONS ATTACHED TO THEM

This section assumes that you already have a suitable SDLC primary line or X.25 network configured on your system and that you have planned the arrangement of control units on your line. If you have not done these steps, see the sections on these topics earlier in this chapter.

If you are attaching this control unit to a switched SDLC primary line already configured on your system, make sure that the IDLETIME parameter value on the line description is at least 38.

If you are attaching this control unit to an X.25 network, make sure that the IDLETIME parameter value on the line description is set to the value prescribed by the network provider for the link level timer.

To check the value, use the DSPLIND command; to change the value, use the CHGLIND command.

You can attach the following work stations to IBM 5294 Control Units:

- IBM 3179 Color Display Station Model 2
- IBM 3196 Display Station Models A1, A2, B1, and B2
- IBM 3180 Display Station Model 2
- IBM 5251 Display Station Model 11
- IBM 5291 Display Station Models 1 and 2
- IBM 5292 Color Display Station Models 1 and 2
- IBM Personal Computer
- IBM 5219 Printer Models D1 and D2
- IBM 5224 Printer Models 1 and 2
- IBM 5225 Printer Models 1, 2, 3, and 4
- IBM 5256 Printer Models 1, 2, and 3
- IBM 5262 Printer Model 1
- IBM 4214 Printer Model 2
- IBM 3812 Pageprinter Model 1
- IBM 4224 Printer Models 101, 102, 1E2, and 1C2
- IBM 4234 Printer Model 2

While doing the following procedure, you will use work sheets with the names, addresses, and other information about control units and work stations. Reduced copies of the work sheets are shown in Figures 2-18 through 2-21. Actual blank work sheets are provided (in alphabetical order) in Appendix W, *Blank Work Sheets*.

Note: The 4245 Printer Models T12 and T20 are not supported remotely on the 5294 or 5251 control units.

Appendix A, *Installation Example*, contains an example of a system configured using the work sheets described in this section.

Do the following steps to configure each 5294 Control Unit:

1. Use the *IBM 5250 Information Display System Site Preparation and Planning Guide* to fill out the IBM 5294 Control Unit Setup Form. A reduced copy of this form, which comes from the *IBM 5250 Information Display System Site Preparation and Planning Guide*, is provided in Figure 2-18. At this time you will also assign names and addresses to any attached work stations.

2. At the 5294 Control Unit, do the offline procedure for configuring a 5294 Control Unit and its attached work stations. This procedure can be done before the control unit is physically attached to the communications line. The offline procedure is described in the *IBM 5294 Control Unit Setup Procedures*. This manual is shipped with the 5294 Control Unit.

3. Fill out the 5250 Control Unit work sheet.

4. Configure the 5294 Control Unit (use the CRTCUD command).

5. Fill out a 5250 Work Station Printer work sheet or a 5250 and 3180 Display Station work sheet for each work station you will attach to the control unit.

6. If you are configuring work station printers to be associated with display stations attached to the control unit (so that the work station user can print screen images by pressing the Print key), configure the work station printers first (using the CRTDEVD command).

   Notes:
   1. The work station printer associated with a display station must be on the same 5250 control unit.
   2. You might also want to have operational messages sent to a nearby display station that uses the printer. To do this, first enter the CRTDEVD command for the work station printer, then enter the CRTDEVD command for the display stations that will use the work station printer (naming the work station printer on the PRINTER parameter). Finally, enter the CHGDEVD command for the work station printer, naming the display station to which operational messages are to be sent in the MSGQ parameter.

7. Configure all the work stations attached to this control unit (use the CRTDEVD command).

8. Make sure that a work station entry for each type of display station exists in the appropriate interactive subsystem description (use the DSPSBSD command; the IBM-supplied interactive subsystem is QINTER). If an appropriate entry does not exist, use the ADDWSE command to add one. For example:

   ```
   ADDWSE  SBSD(QINTER)  WRKSTNTYPE(5292)
   ```

9. Make sure that the appropriate interactive subsystem is started. For the IBM-supplied interactive subsystem, use the command:

   ```
   STRSBS  SBSD(QINTER)
   ```

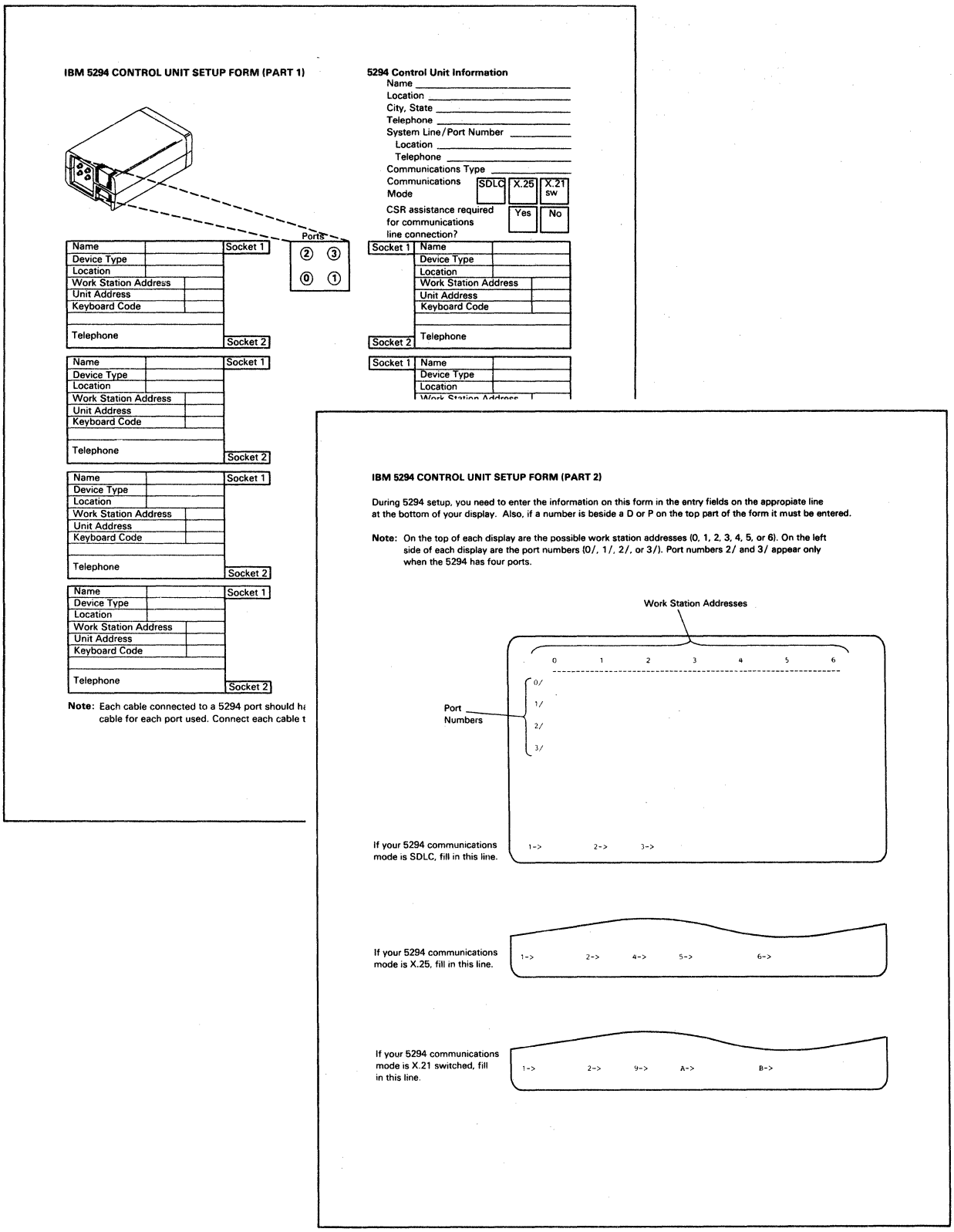
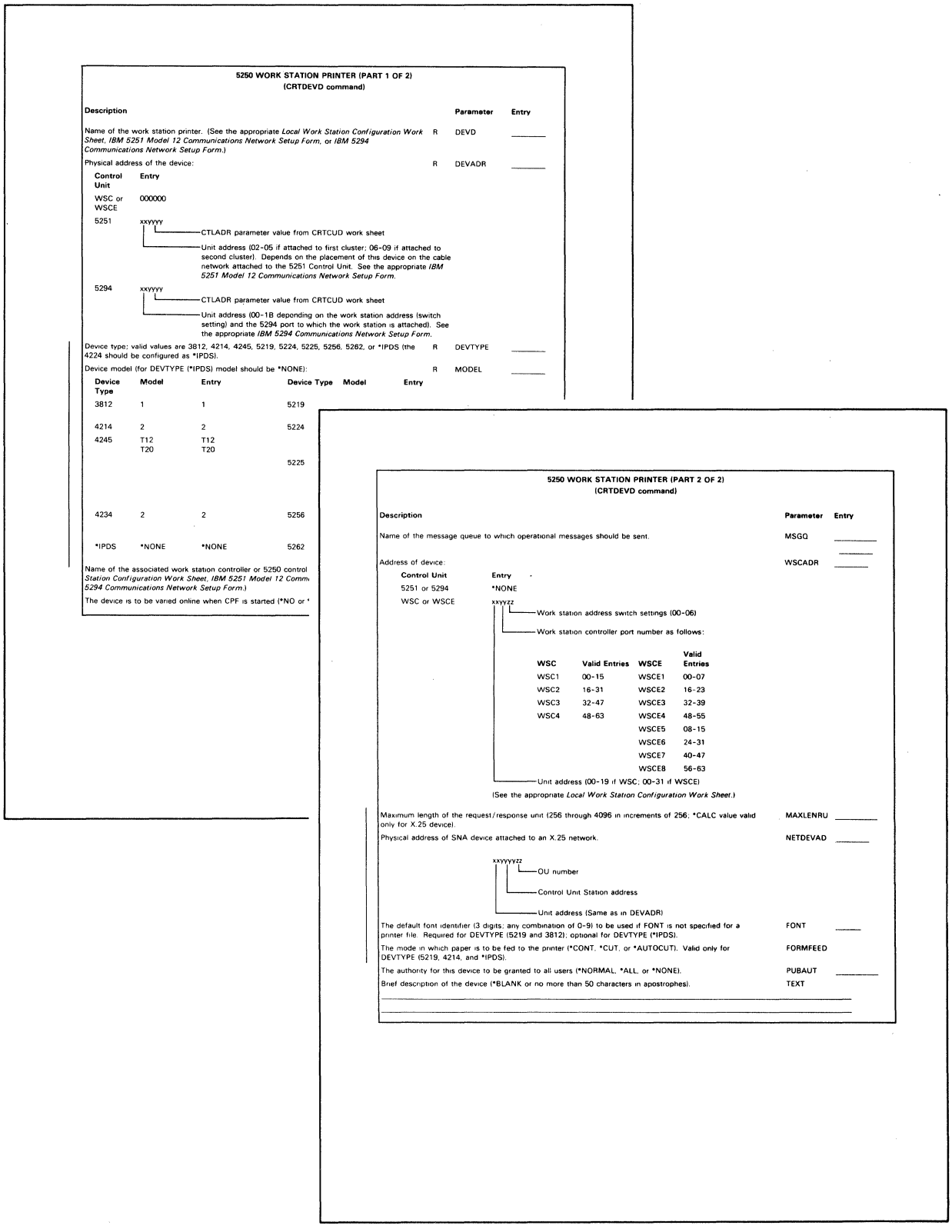


Figure 2-18. IBM 5294 Control Unit Setup Form

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Description				Parameter	Entry
Name of the control unit.			R	CUD	
Control unit type identifier (5251 or 5294).			R	TYPE	
Model number of the control unit (for TYPE(5251), 2 or 12, for TYPE(5294), must be 1).			R	MODEL	
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):			R	CTLADR	
Type of Line	**Entry**				
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD xE, or xF, where x = 1-9.)			
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
	and yy =	LINNBR parameter value from CRTLIND work sheet.			
Attached to a switched line (*NO or *YES).				SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).				LINE	
The modem has the data rate select feature (*NO or *YES).				SELECT	
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).				TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).				INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx, for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).				EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).				ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.				LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).				SWNBKU	
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).				DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations, see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)				DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.				DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.				LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).				TEXT	

Figure 2-19. SDLC 5250 Control Unit Work Sheet



5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	
Physical address of the device:	R	DEVADR	

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219		
4214	2	2	5224		
4245	T12 T20	T12 T20			
			5225		
4234	2	2	5256		
*IPDS	*NONE	*NONE	5262		

Name of the associated work station controller or 5250 control
Station Configuration Work Sheet, IBM 5251 Model 12 Comm
5294 Communications Network Setup Form.)

The device is to be varied online when CPF is started (*NO or *

5250 WORK STATION PRINTER (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Name of the message queue to which operational messages should be sent.	MSGQ	
Address of device:	WSCADR	

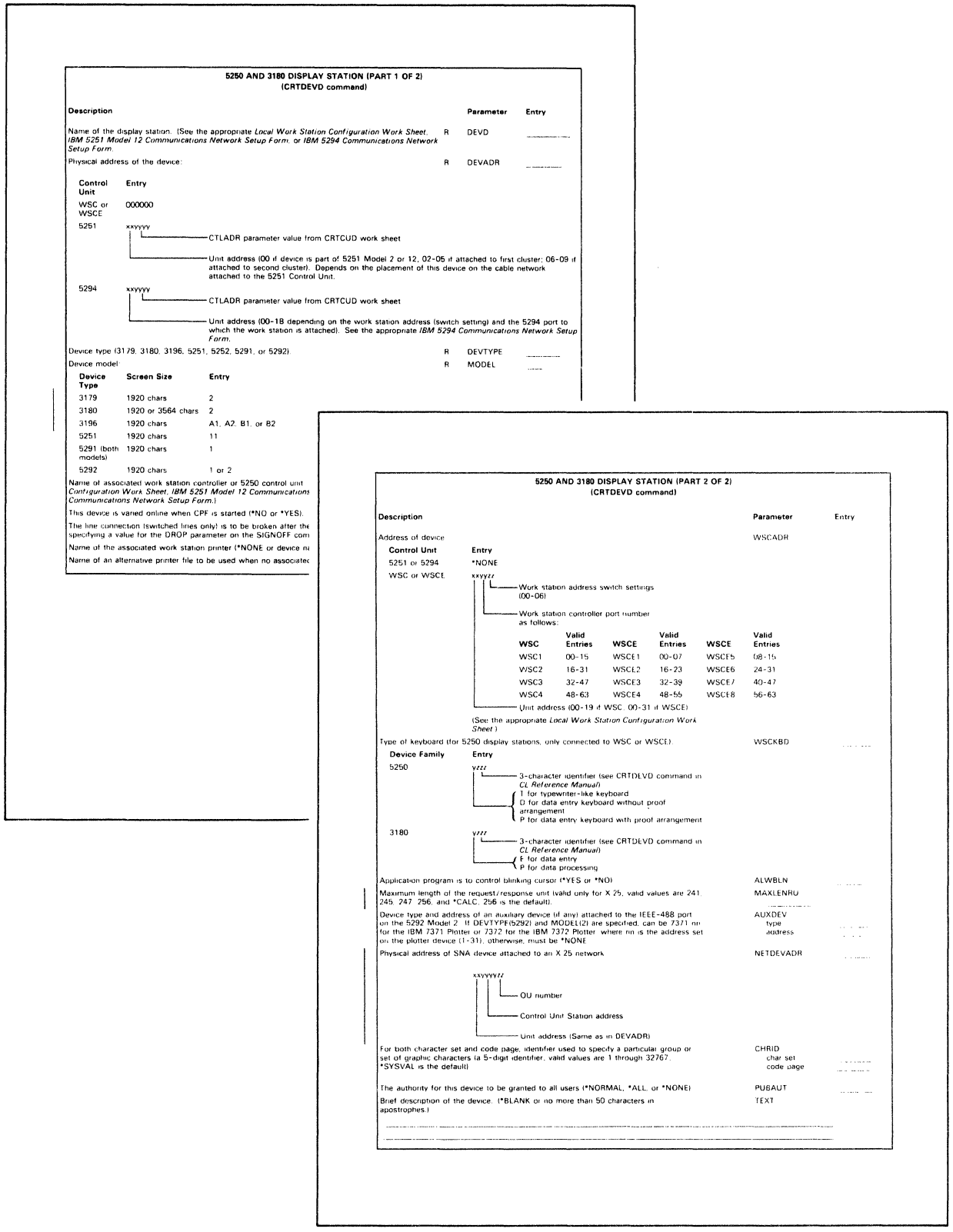
Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz yyyy — Work station address switch settings (00-06) zz — Work station controller port number as follows: xx — Unit address (00-19 if WSC; 00-31 if WSCE)

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network. xxyyyyzz yyyy — OU number zz — Control Unit Station address xx — Unit address (Same as in DEVADR)	NETDEVAD	
The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

Figure 2-20. 5250 Work Station Printer Work Sheet



5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet*, *IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.		R	DEVD
Physical address of the device:		R	DEVADR

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
5294	xxyyyy

- 5251 xxyyyy
  - yyyy: CTLADR parameter value from CRTCUD work sheet
  - xx: Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
- 5294 xxyyyy
  - yyyy: CTLADR parameter value from CRTCUD work sheet
  - xx: Unit address (00-18 depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form*.

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).		R	DEVTYPE
Device model		R	MODEL

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit *Configuration Work Sheet*, *IBM 5251 Model 12 Communications Communications Network Setup Form*.)

This device is varied online when CPF is started (*NO or *YES).

The line connection (switched lines only) is to be broken after the specifying a value for the DROP parameter on the SIGNOFF com

Name of the associated work station printer (*NONE or device na

Name of an alternative printer file to be used when no associatec

5250 AND 3180 DISPLAY STATION (PART 2 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Address of device		WSCADR	

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

- WSC or WSCE xxyyzz
  - zz: Work station address switch settings (00-06)
  - yy: Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

  - xx: Unit address (00-19 if WSC, 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE). — WSCKBD

Device Family	Entry
5250	yzzz
3180	yzzz

- 5250 yzzz
  - zzz: 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
  - y: T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
- 3180 yzzz
  - zzz: 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
  - y: E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO)	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC. 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE	AUXDEV type address	
Physical address of SNA device attached to an X.25 network	NETDEVADR	

xxyyyyzz
- zz: OU number
- yyyy: Control Unit Station address
- xx: Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier, valid values are 1 through 32767. *SYSVAL is the default)	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE)	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure 2-21. 5250 and 3180 Display Station Work Sheet

CONFIGURING IBM 3270 CONTROL UNITS AND REMOTE WORK STATIONS ATTACHED TO THEM

This section assumes that you already have a suitable SDLC primary line or X.25 network configured on your system and that you have planned the arrangement of control units on your line. If you have not done these steps, see the sections on these topics earlier in this chapter.

3270 control units are the IBM 3274 Control Unit (Models 1c, 21c, 31c, 41c, 51c, and 61c) and devices that emulate the 3274 Control Unit. You can attach the following work stations to 3270 control units:

- IBM 3277 Display Station Model 2
- IBM 3278 Display Station Models 2, 3, 4, and 5
- IBM 3279 Color Display Station Models 2a, 2b, 3a, and 3b
- IBM 3290 Display Station
- IBM 3287 Printer Models 1, 1c, 2, and 2c

The 3270 display stations must have the EBCDIC typewriter or data entry keyboard.

Remote 3270 display stations appear to the System/38 as remote 5251 Display Stations Model 11. Parameters that do not apply to the 3270 work stations (like FONT and FORMFEED for the 5219 Printer only) are not allowed on the 3270 work sheets.

While doing the following procedure, you will use work sheets with the names, addresses, and other information about control units and work stations. Reduced copies of the work sheets are shown in Figures 2-22 through 2-25. Actual blank work sheets are provided (in alphabetical order) in Appendix W, *Blank Work Sheets*.

Appendix A, *Installation Example*, contains an example of a system configured using the work sheets described in this section.

Do the following steps to configure each 3270 control unit:

1. Go through the procedure for configuring a 3270 control unit and its attached work stations. This is an *offline* or *local* procedure carried out when the control unit is not physically attached to the communications line. If you are configuring an IBM 3274 Control Unit, this is the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For other 3270 control units and for 3270 emulators, use the documentation supplied by the manufacturer to configure your 3270 network.

2. Fill out the 3270 Communications Network Setup Form to reflect the configuration of your 3270 network. At this time you will assign CPF object names to your 3270 devices.

3. Fill out the 3270 Control Unit work sheet.

   Note: To get a unique EXCHID parameter, you might also want to use 5 digits of the serial number of the control unit to complete the EXCHID parameter on the 3270 Control Unit work sheet.

4. Configure the 3270 Control Unit (use the CRTCUD command).

5. Fill out a 3270 Remote Work Station Printer work sheet or a 3270 Remote Display Station work sheet for each work station you will attach to the control unit.

6. Configure all the work stations attached to this control unit use the CRTDEVD command).

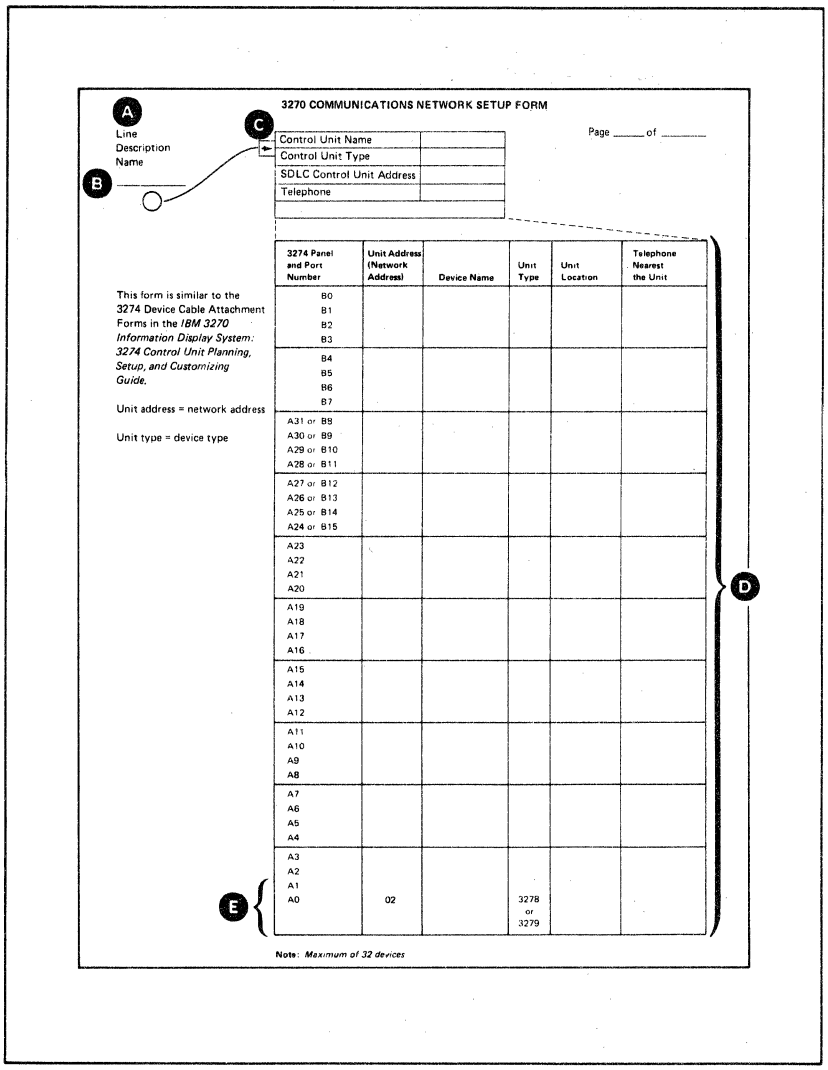
   Note: If you configure an emulating device as a 3278 or 3279, extended attributes are sent to both types, and color attributes are sent to the 3279 emulator. This can result in a negative response if the emulating device or the control unit does not support these attributes.

7. Make sure that a work station entry for each type of display station exists in the appropriate interactive subsystem description (use the DSPSBSD command; the IBM-supplied interactive subsystem is QINTER). If an appropriate entry does not exist, use the ADDWSE command to add one. For example:

   ```
   ADDWSE  SBSD(QINTER)  WRKSTNTYPE(3277)
   ```

8. Make sure that the appropriate interactive subsystem is started. For the IBM-supplied interactive subsystem, use the command:

   ```
   STRSBS  SBSD(QINTER)
   ```



3270 COMMUNICATIONS NETWORK SETUP FORM

Page ____ of ____

A — Line Description Name

B — _____

C

Control Unit Name	
Control Unit Type	
SDLC Control Unit Address	
Telephone	

This form is similar to the 3274 Device Cable Attachment Forms in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

Unit address = network address

Unit type = device type

3274 Panel and Port Number	Unit Address (Network Address)	Device Name	Unit Type	Unit Location	Telephone Nearest the Unit
B0 B1 B2 B3					
B4 B5 B6 B7					
A31 or B8 A30 or B9 A29 or B10 A28 or B11					
A27 or B12 A26 or B13 A25 or B14 A24 or B15					
A23 A22 A21 A20					
A19 A18 A17 A16					
A15 A14 A13 A12					
A11 A10 A9 A8					
A7 A6 A5 A4					
A3 A2 A1 A0	02		3278 or 3279		

D

E

Note: *Maximum of 32 devices*

Figure 2-22 (Part 1 of 2). 3270 Communications Network Setup Form

(A) Complete this form after you do the offline configuration of the 3270 control unit and its attached work stations.

(B) These entries identify the line description name and the line connection on the system unit to which the line is attached (LIND and LINNBR parameters on the CRTLIND work sheet).

(C) Fill in the control unit block as follows:

Control Unit Name: The CPF object name that you assigned to this remote work station controller on the Remote Work Station Configuration Work Sheet.

Control Unit Type: 3274.

SDLC Control Unit Address: A 2-digit number that becomes part of the Control Unit Address on the Remote Work Station Configuration Work Sheet. For a 3274 Control Unit, this is the number keyed in for sequence 302 in the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*.

Telephone: The telephone number of the control unit. If the control unit is on a switched line, this becomes the TELNBR parameter on the SDLC 3270 Control Unit work sheet.

The blank space at the bottom of the block is for any other information you wish to include.

(D) Fill in this part as you would the 3274 Device Cable Attachment forms in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*.

(E) To do the offline configuration of a 3274 Control Unit, you must attach a 3278 or 3279 Display Station to port A0; on System/38, this port has a unit address (also called network address) of 02.

Figure 2-22 (Part 2 of 2). 3270 Communications Network Setup Form

SDLC 3270 CONTROL UNIT
(CRTCUD command)

Description				Parameter	Entry
Name of the control unit.			R	CUD	
Control unit type identifier (3274).			R	TYPE	3274
Model number of the control unit (*NONE).			R	MODEL	*NONE
SDLC control unit address:			R	CTLADR	
Type of Line	**Entry**				
Switched	xx00, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
Nonswitched	xxyy, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
	and yy =	LINNBR parameter value from CRTLIND work sheet.			
Attached to a switched line (*NO or *YES).				SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).				LINE	
The modem has the data rate select feature (*NO or *YES).				SELECT	
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).				TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).				INLCNN	
Exchange identifier used to identify this control unit to the remote system or device. For switched IBM 3274 Control Units, 017xxxxx, where xxxxx must match the Physical Unit Identification (PUID) keyed in for sequence number 215 in the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For nonswitched units, 01700000. For 3270 control units other than IBM 3274 Control Units, including 3270 emulators, see the documentation for the specific device for the appropriate exchange identifier.				EXCHID	
System services control point identifier. Valid only on switched lines. (Default is 050000000000.)				SSCPID	
This control unit is to be varied online when CPF is started (*NO or *YES).				ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.				LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).				SWNBKU	
If the connection with this control unit is delayed (for instance, if the 3270 control unit is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).				DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (Up to 64 remote 3270 work stations, depending on the specific type of 3270 control unit and the features installed. See the *3270 Remote Control Unit Work Sheet*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)				DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.				DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.				LINKTYPE	*SDLCSEC
Type of character coding to be used for this control unit (*LIND, *EBCDIC, or *ASCII). *LIND is the default.				CODE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).				TEXT	

Figure 2-23. SDLC 3270 Control Unit Work Sheet

3270 REMOTE WORK STATION PRINTER
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *3270 Remote Control Unit Work Sheet*.)	R	DEVD	
Physical address of the device:	R	DEVADR	

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address. Also called port address or network address. If the work station is a Category A terminal, hexadecimal 03-21. Port address 03 applies to port A1 on the 3274. Port A0 is not valid for printers. If the work station is a Category B terminal, specify hexadecimal 08-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information.

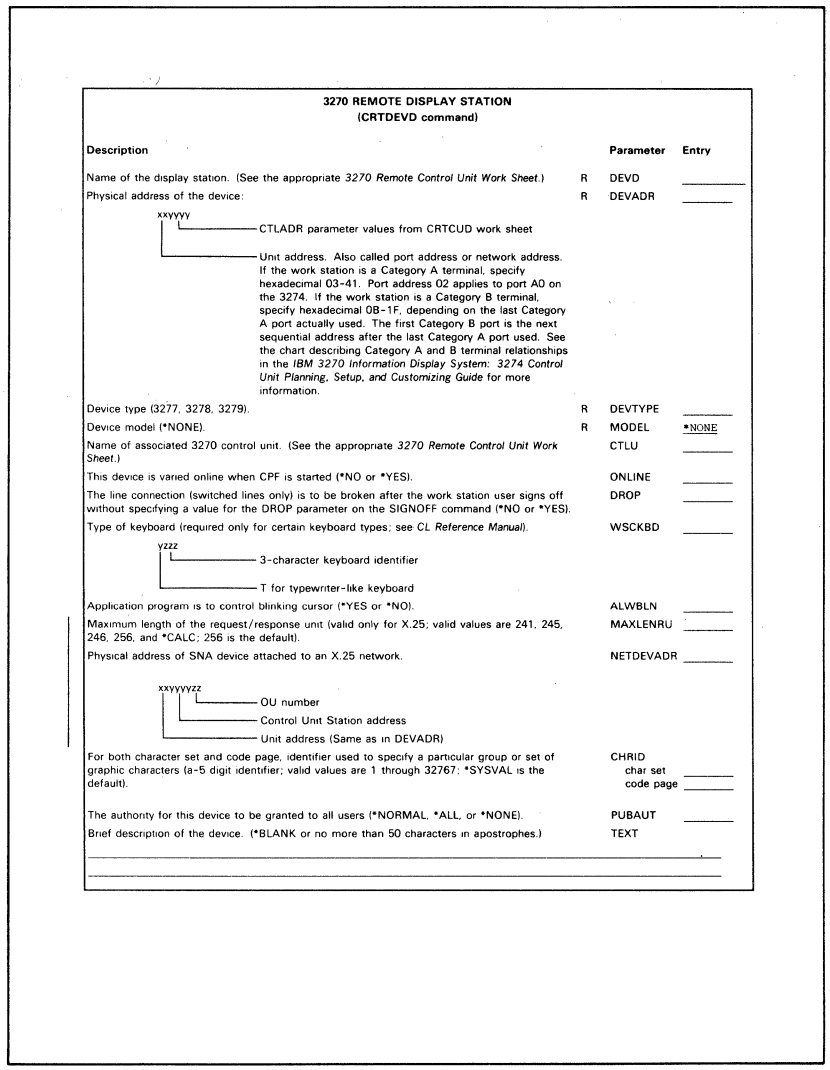
(See the appropriate *3270 Remote Control Unit Work Sheet*.)

Device type (3287).	R	DEVTYPE	3287
Device model (*NONE).	R	MODEL	*NONE
Name of the associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet*.)		CTLU	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

Figure 2-24. 3270 Remote Work Station Printer Work Sheet



3270 REMOTE DISPLAY STATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *3270 Remote Control Unit Work Sheet.*)	R	DEVD	
Physical address of the device:	R	DEVADR	
xxyyyy yy — CTLADR parameter values from CRTCUD work sheet xx — Unit address. Also called port address or network address. If the work station is a Category A terminal, specify hexadecimal 03-41. Port address 02 applies to port A0 on the 3274. If the work station is a Category B terminal, specify hexadecimal 0B-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information.			
Device type (3277, 3278, 3279).	R	DEVTYPE	
Device model (*NONE).	R	MODEL	*NONE
Name of associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet.*)		CTLU	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	
Type of keyboard (required only for certain keyboard types; see *CL Reference Manual*).		WSCKBD	
yzzz zzz — 3-character keyboard identifier y — T for typewriter-like keyboard			
Application program is to control blinking cursor (*YES or *NO).		ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 246, 256, and *CALC; 256 is the default).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	
xxyyyyzz zz — OU number yyyy — Control Unit Station address xx — Unit address (Same as in DEVADR)			
For both character set and code page, identifier used to specify a particular group or set of graphic characters (a-5 digit identifier; valid values are 1 through 32767; *SYSVAL is the default).		CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure 2-25. 3270 Remote Display Station Work Sheet

SNA LU1 COMMUNICATIONS

To configure SNA LU1 communications on your system, fill out the following:

- SDLC Secondary Line work sheet (one for each line description
- SDLC PU2 Control Unit work sheet (one for each remote control unit on the line)
- PLU1 Device work sheet (one for each remote device or system attached to the PU2 Control Unit)

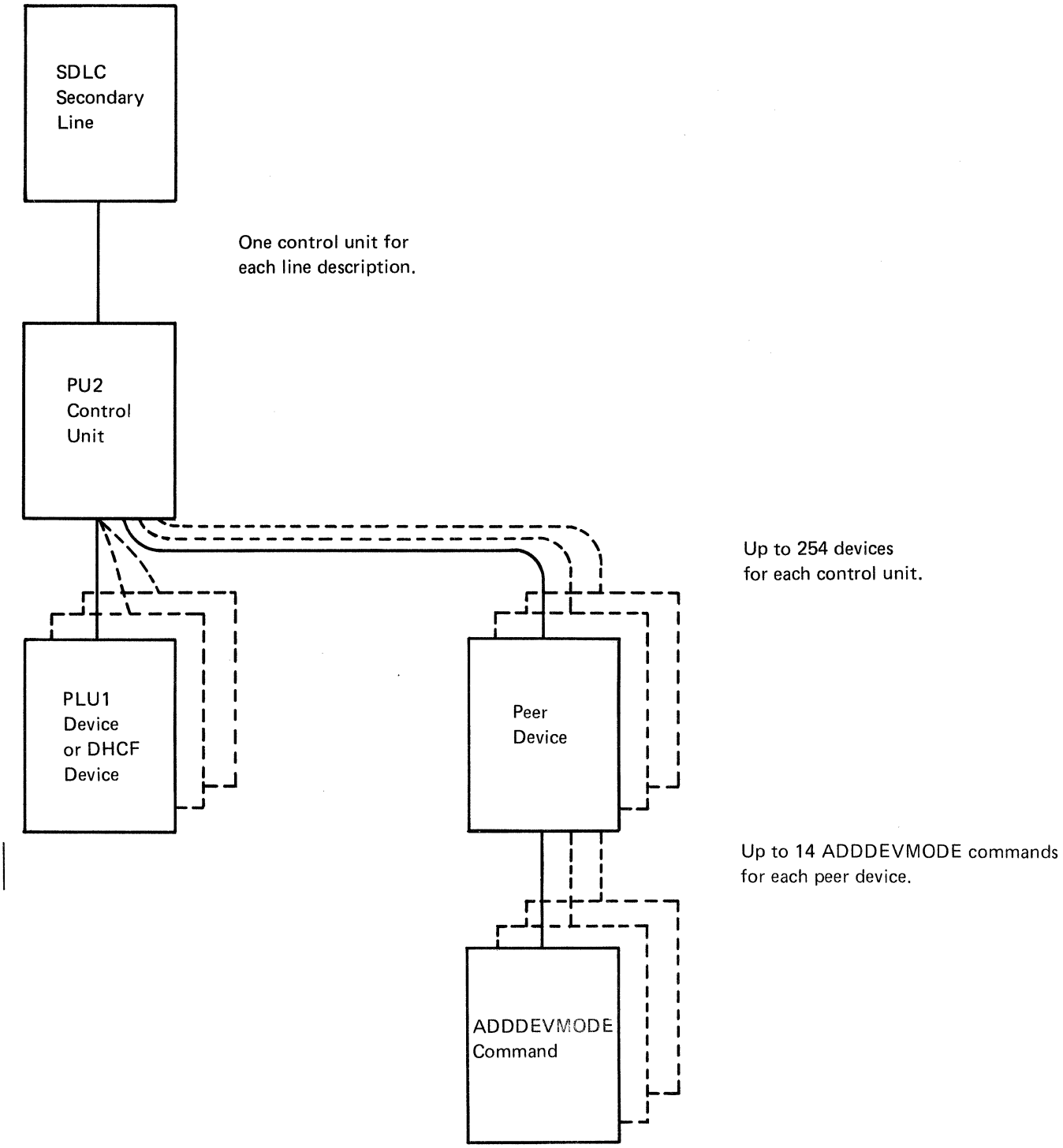
Figure 2-26 shows which work sheets to use to configure System/38 for SNA LU1 communications.

Blank work sheets are provided at the back of this manual for you to copy and using in configuring SNA LU1 communications.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on parameter values required specifically for SNA LU1 communications, see the *Data Communications Programmer's Guide.*



Note: Peer devices and ADDDEVMODE command are not required for SNA LU1 (used for APPC to CICS/VS).

Figure 2-26. SNA LU1 Communications: Possible Attachments to an SDLC Secondary Line

APPC FOR THE PRIMARY SYSTEM ON AN APPC NETWORK

In APPC networks, one system is the primary system and the other systems are secondary systems. Use this section to configure your System/38 to be the primary system. To configure your system as a secondary system, see *APPC for Secondary Systems* later in this chapter.

To configure APPC, fill out the following:

- SDLC Primary Line work sheet (one for each line description)
- SDLC Peer Control Unit work sheet (one for each remote control unit on the line)
- Peer Device work sheet (one for each peer device in the network)
- Add Device Mode Entry (ADDDEVMODE) command (one for each mode entry)

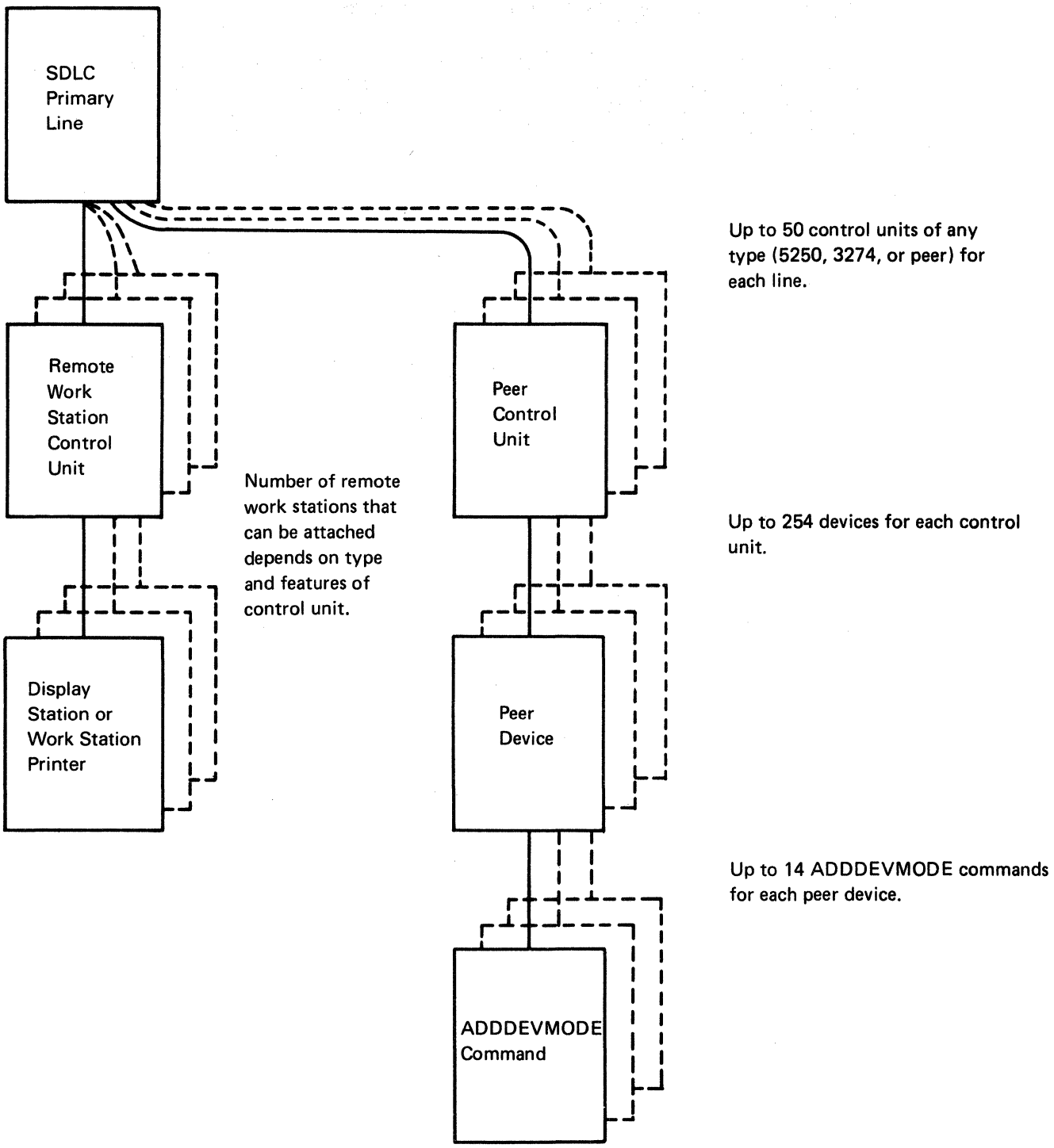
Figure 2-27 shows which work sheets to use to configure System/38 as a primary system on an APPC network.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring APPC.

For more information on CRTLIND, CRTCUD, CRTDEVD, and ADDDEVMODE parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on parameter values required specifically for APPC, see the *Data Communications Programmer's Guide.*



Notes:

1. Remote work station control units and display stations or work station printers are not required for APPC configuration.
2. Both remote work station and peer control units can be varied online at the same time.

Figure 2-27. APPC for Primary Systems: Possible Attachments to an SDLC Primary Line

APPC FOR A SECONDARY SYSTEM ON AN APPC NETWORK

In APPC networks, one system is the primary system and the other systems are secondary systems. Use this section to configure your System/38 to be a secondary system. To configure your system as a primary system, see *APPC for Primary Systems* earlier in this chapter.

To configure APPC, fill out the following:

- SDLC Secondary Line work sheet (one for each line description)
- SDLC Peer Control Unit work sheet (one for each remote control unit on the line)
- Peer Device work sheet (one for each peer device in the network)
- Add Device Mode Entry (ADDDEVMODE) command (one for each mode entry)

Figure 2-28 shows which work sheets to use to configure System/38 as a secondary system on an APPC network.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring APPC.

For more information on CRTLIND, CRTCUD, CRTDEVD, and ADDDEVMODE parameter values, see the *CL Reference Manual*.

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features*.

For more information on parameter values required specifically for APPC, see the *Data Communications Programmer's Guide*.

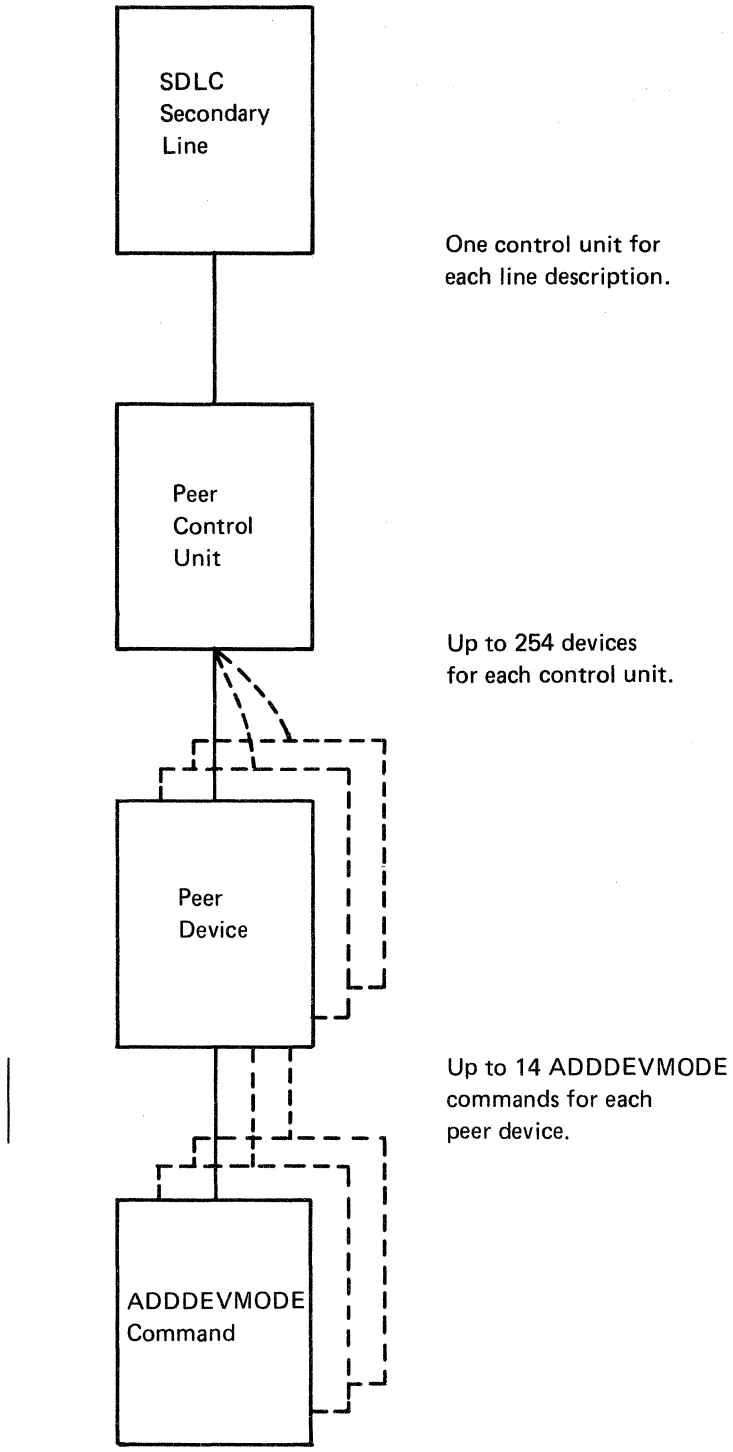


Figure 2-28. APPC for Secondary Systems: Possible Attachments to an SDLC Secondary Line

APPC TO CICS/VS

To configure your system for APPC to CICS/VS, fill out the following:

- SDLC Secondary Line work sheet (one for each line description)
- SDLC PU2 Control Unit work sheet (one for each remote control unit on the line)
- Peer Device work sheet (one for each peer device in the network)
- Add Device Mode Entry (ADDDEVMODE) command (one for each peer device)

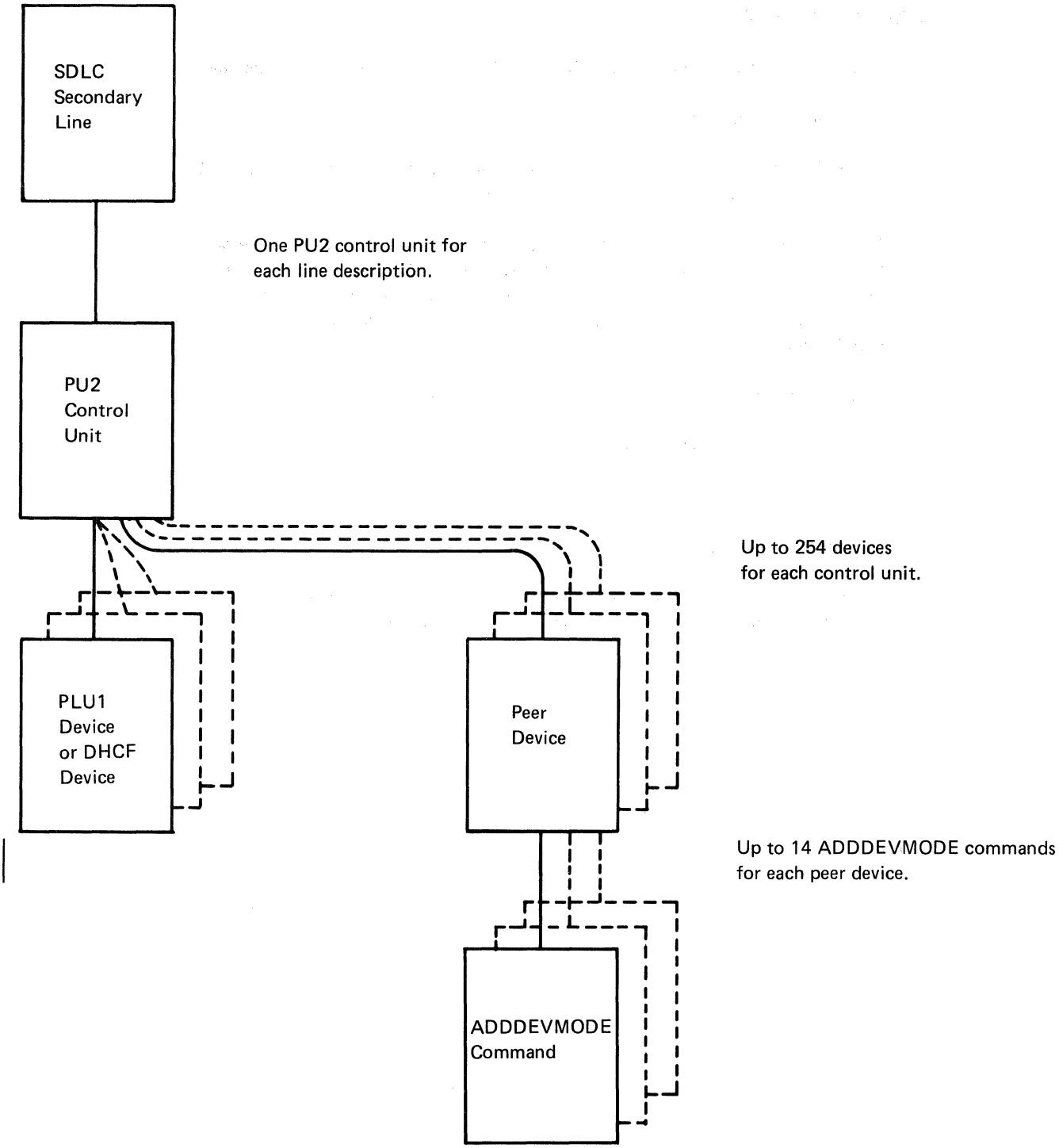
Figure 2-29 shows which work sheets to use to configure System/38 for APPC to CICS/VS.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring APPC to CICS/VS.

For more information on CRTLIND, CRTCUD, CRTDEVD, and ADDDEVMODE parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on parameter values required specifically for APPC, see the *Data Communications Programmer's Guide.*



Note: PLU1 devices are not required for APPC to CICS/VS (used for SNA LU1 communications).

Figure 2-29. APPC to CICS/VS: Possible Attachments to an SDLC Secondary Line

SNADS WITH APPC

To configure your system for SNADS with APPC, make sure of the following:

- Release 7 or greater is installed.
- APPC Network is configured. (Follow the instructions for configuring APPC Primary and Secondary Lines earlier in this chapter.)

The procedure used to define the SNADS Network to your system is the same as with any SNA configuration, with the addition of the Configure Distribution Services (CFGDSTSRV) command. Use the CFGDSTSRV command to define and change your System/38 relationship to the SNADS Network for distribution purposes.

Use the CFGDSTSRV command to do the following:

- Define the next system table.
- Define the routing table.
- Define another ID for the system table.

For more specific information on how to configure each of these tables for a SNADS Network, see the *Data Communications Programmer's Guide.*

X.25 COMMUNICATIONS

To configure X.25 communications on your system, fill out the following:

- X.25 Communications Network Line work sheet
- The appropriate X.25 Control Unit work sheet (one for each control unit in the network)
- The appropriate device work sheet (one for each device)

Figure 2-30 shows which work sheets to use to configure System/38 for X.25 communications.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring X.25 communications.

For more information on CRTLIND, CRTCUD, CRTDEVD, and ADDDEVMODE parameter values, see the *CL Reference Manual*.

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features*.

For more information on parameter values required specifically for X.25, see the *Data Communications Programmer's Guide*.

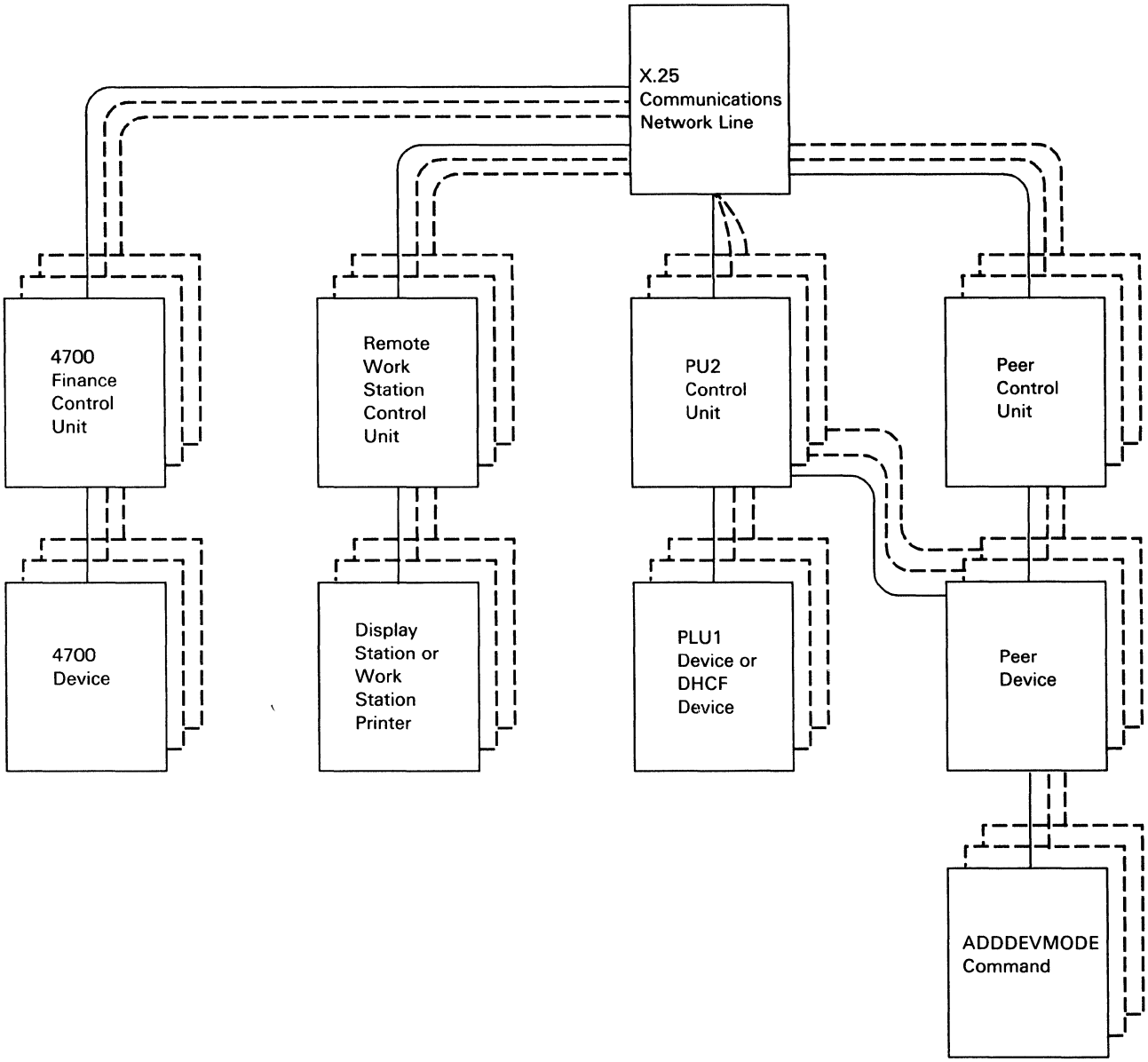


Figure 2-30. X.25 Communications: Possible Attachments

Note: There is no limitation on the number of PU2 Control Units that can be defined to an X.25 network. However, a maximum of 32 controllers can be defined to each of the two X.25 ports, allowing a total of 64 for each system.

BSC WITHOUT RJEF

BSC is binary synchronous communications, and RJEF is the Remote Job Entry Facility, an IBM program product. To configure BSC without RJEF, fill out the following:

- BSC Line without RJEF work sheet (one for each line description)
- BSC Control Unit without RJEF work sheet (one for each control unit)
- BSC Device without RJEF work sheet (one for each BSC device)

Figure 2-31 shows which work sheets to use to configure BSC without RJEF.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring BSC without RJEF.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual*.

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features*.

For more information on parameter values required specifically for BSC, see the *Data Communications Programmer's Guide*.

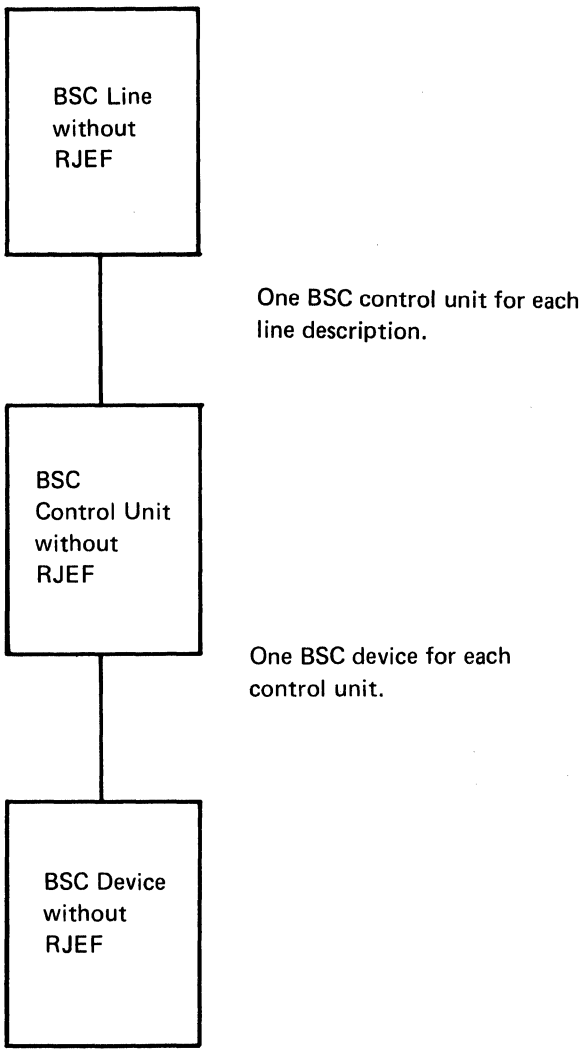


Figure 2-31. Work Sheets Used to Configure BSC without RJEF

RJEF WITH SDLC

RJEF is the Remote Job Entry Facility, an IBM program product, and SDLC is synchronous data link control.

Note: This section is provided for information only. Specific information on configuring RJEF with SDLC is found in the *Remote Job Entry Facility Installation Planning Guide.*

To configure RJEF with SDLC, fill out the following:

- SDLC Secondary Line work sheet
- SDLC PU2 Control Unit work sheet

Use the information from these two work sheets to fill out:

- RJE Configuration Work Sheet

You need only enter the Create RJE Configuration (CRTRJECFG) command, not the CRTLIND, CRTCUD, and CRTDEVD commands. RJE printers, readers, and punches are specified on the CRTRJECFG command.

Figure 2-32 shows which work sheets to use to configure System/38 for RJEF with SDLC.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring RJEF with SDLC.

For more information on CRTLIND, CRTCUD, and CRTRJECFG parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

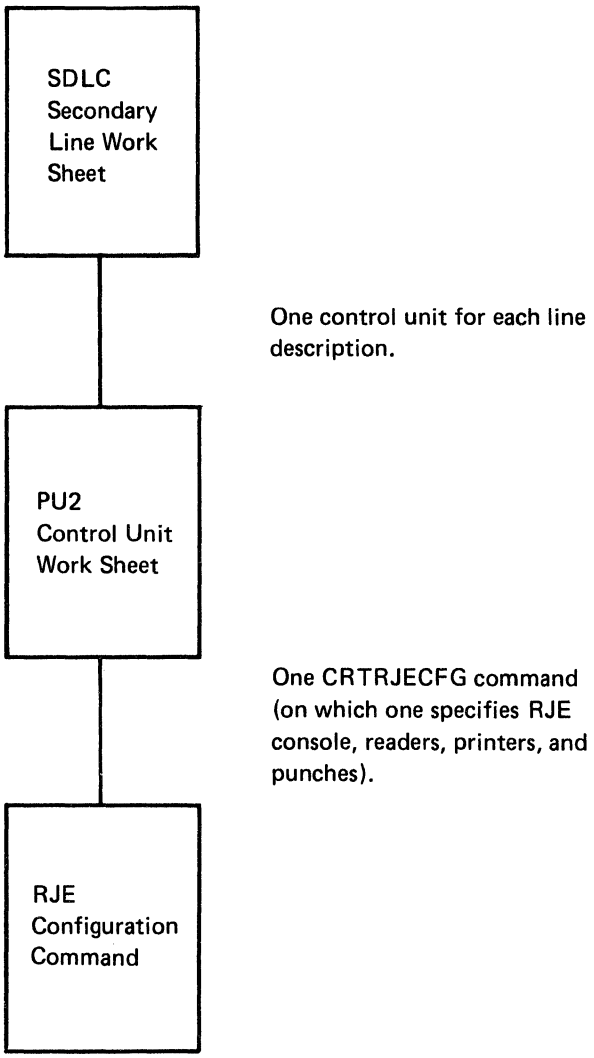


Figure 2-32. Work Sheets Used to Configure RJEF with SDLC

RJEF WITH BSC

RJEF is the Remote Job Entry Facility, an IBM program product, and BSC is binary synchronous communications.

Note: This section is provided for information only. Specific information on configuring RJEF with BSC is found in the *Remote Job Entry Facility Installation Planning Guide.*

To configure RJEF with BSC, fill out the following:

- BSC Line with RJEF work sheet
- BSC Control Unit with RJEF work sheet

Use the information from these two work sheets to fill out:

- RJE Configuration Work Sheet

You need only enter the Create RJE Configuration (CRTRJECFG) command, not the CRTLIND, CRTCUD, and CRTDEVD commands. RJE printers, readers, and punches are specified on the CRTRJECFG command.

Later, when you want to add an RJE printer, reader, or punch, use the following work sheet:

- BSC Device with RJEF work sheet (when you add BSC devices to your RJEF installation)

Figure 2-33 shows which work sheets to use to configure System/38 for RJEF with BSC.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring RJEF.

Note: You can attach a BSC device without RJEF (MODEL(0) specified) to a BSC control unit with RJEF; however, you cannot vary the BSC device without RJEF online at the same time that BSC devices with RJEF (MODEL(1) specified) are varied online.

For more information on CRTLIND, CRTCUD, CRTRJECFG, and CRTDEVD parameter values, see the *CL Reference Manual.* For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

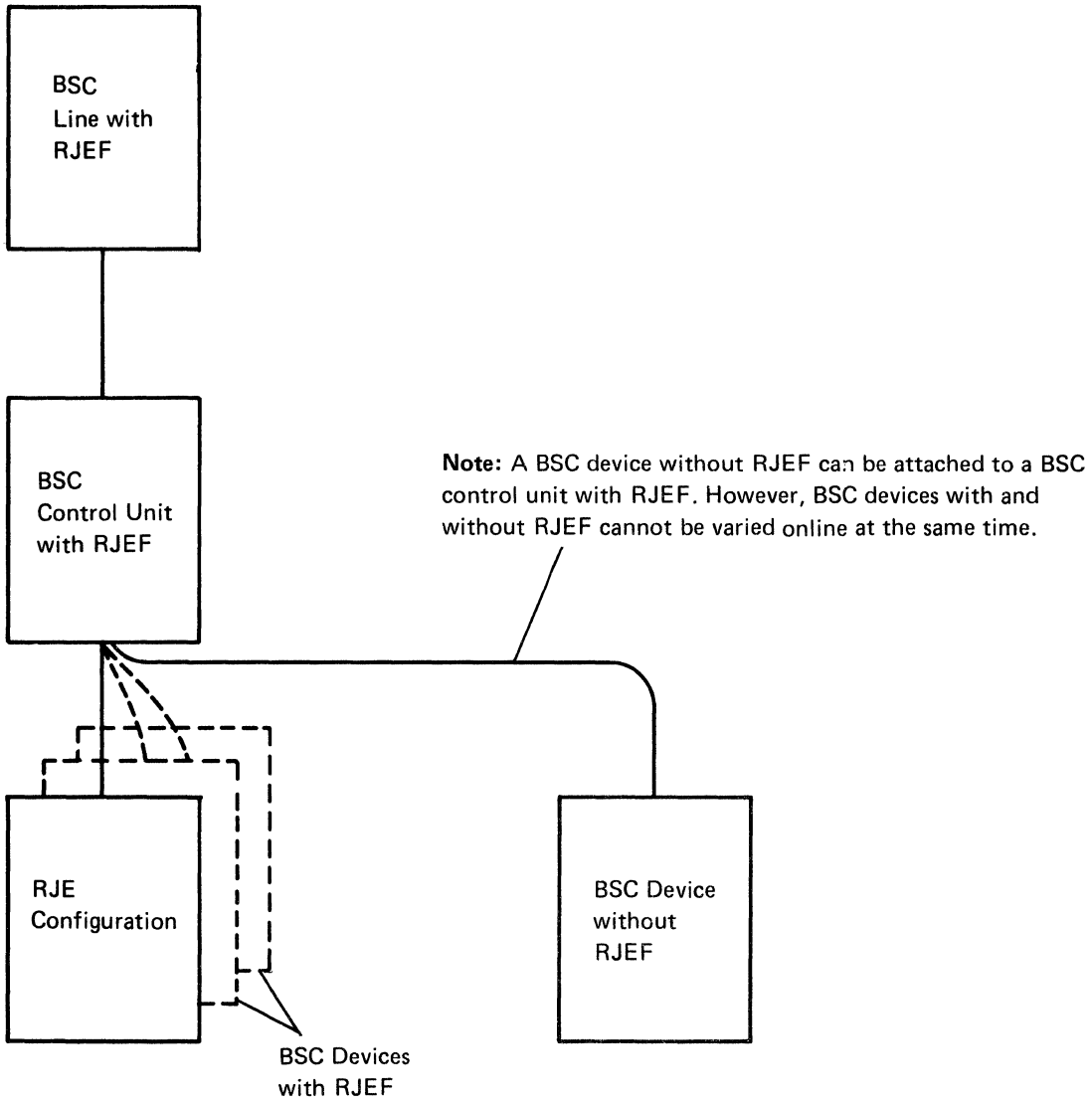


Figure 2-33. RJEF with BSC: Possible Attachments to a BSC Line with RJEF

BSCT WITHOUT 3270 EMULATION

BSCT is binary synchronous communications tributary; 3270 Emulation is a means of using IBM 5250 work stations (display stations and printers) as if they were 3270 devices.

To configure BSCT without 3270 Emulation, fill out the following:

- BSCT Line without 3270 Emulation work sheet (one for each line description)
- BSCT Control Unit without 3270 Emulation work sheet (one for each control unit)
- BSCT Device without 3270 Emulation work sheet (one for each 3270 emulation device)

Figure 2-34 shows which work sheets to use to configure System/38 for BSCT without 3270 Emulation.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring BSCT without 3270 Emulation.

For more information on CRTLIND, CRTCUD, AND CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on parameter values required specifically for BSCT, see the *Data Communications Programmer's Guide.*

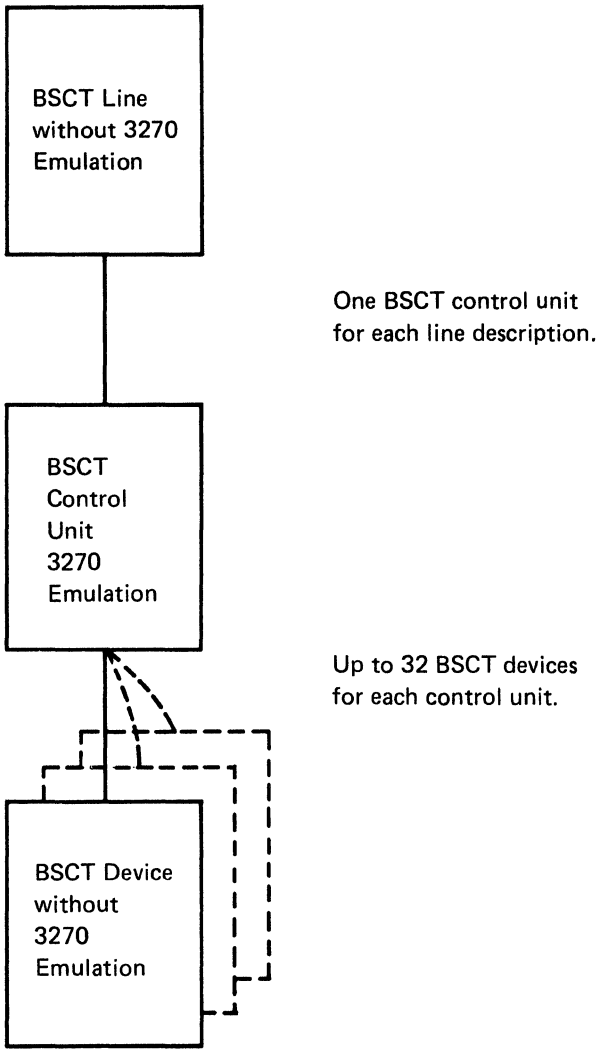


Figure 2-34. BSCT without 3270 Emulation: Possible Attachments to a BSCT Line without 3270 Emulation.

3270 EMULATION USING BSC

3270 Emulation is a means of using System/38 work stations (display stations and printers) as if they were 3270 devices.

Note: This section is provided for information only. Specific information on configuring 3270 Emulation is found in the *3270 Emulation Reference Manual and User's Guide.*

To configure 3270 Emulation using BSC, fill out the following:

- BSCT Line with 3270 Emulation work sheet (one for each line description)
- BSCT Control Unit with 3270 Emulation work sheet (one for each control unit)
- BSCT Device with 3270 Emulation work sheet (one for each 3270 emulation device)

Figure 2-35 shows which work sheets to use to configure System/38 for 3270 Emulation using BSC.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring 3270 Emulation.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

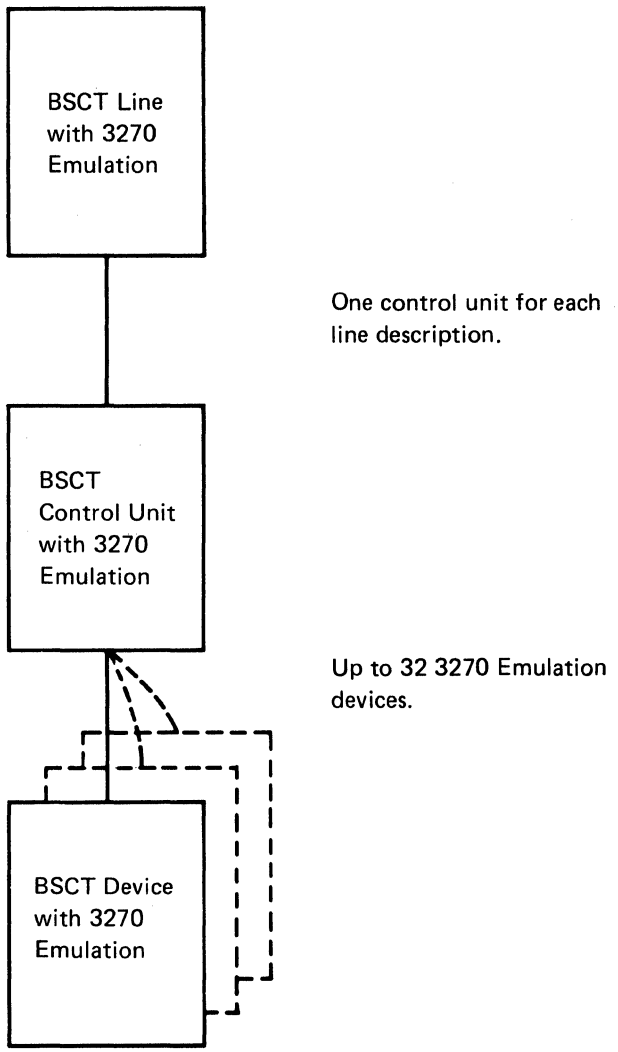


Figure 2-35. 3270 Emulation: Possible Attachments to a BSCT Line with 3270 Emulation

3270 EMULATION USING SNA

3270 Emulation is a means of using the System/38 as if it were a 3270 control unit and System/38 work stations (display stations and printers) as if they were 3270 devices.

Note: This section is provided for information only. Specific information on configuring 3270 Emulation is found in the *3270 Emulation Reference Manual and User's Guide.*

To configure 3270 Emulation using SNA, fill out the following:

- SDLC Secondary Line work sheet (one for each line description)
- SDLC PU2 Control Unit work sheet (one for each control unit)
- PLU1 Device work sheet (one for each 3270 emulation device)

Figure 2-36 shows which work sheets to use to configure System/38 for 3270 Emulation using SNA.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring 3270 Emulation.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

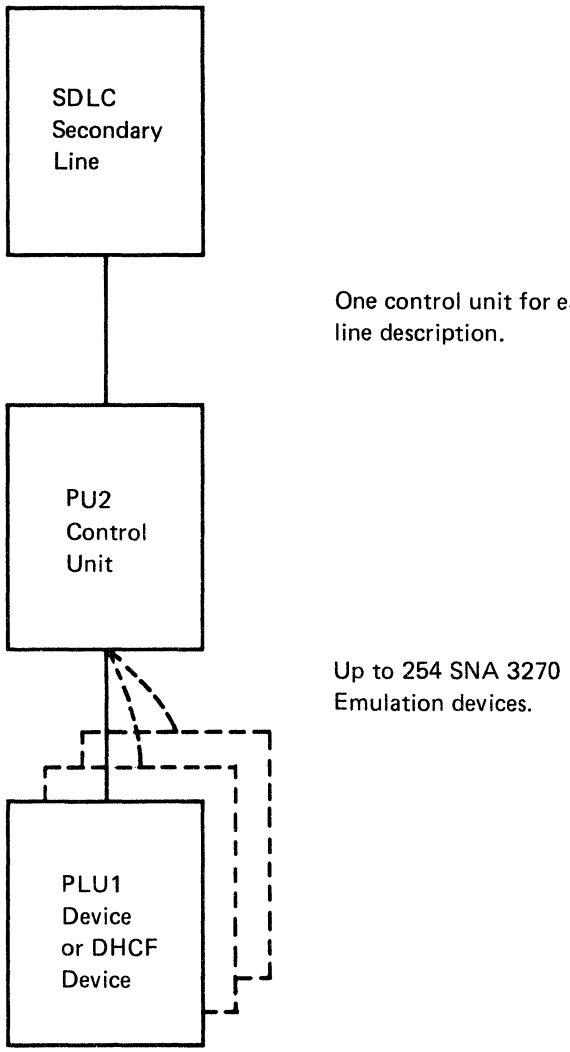


Figure 2-36. 3270 Emulation: Possible Attachments to an SDLC Secondary Line

DHCF WITH SDLC

To configure the Distributed Host Command Facility (DHCF) with Synchronous Data Link Control (SDLC), fill out the following:

- SDLC Secondary Line work sheet (one for each line description)
- SDLC PU2 Control Unit work sheet (one for each control unit)
- 3270 DHCF Remote Display Station work sheet (one for each device)

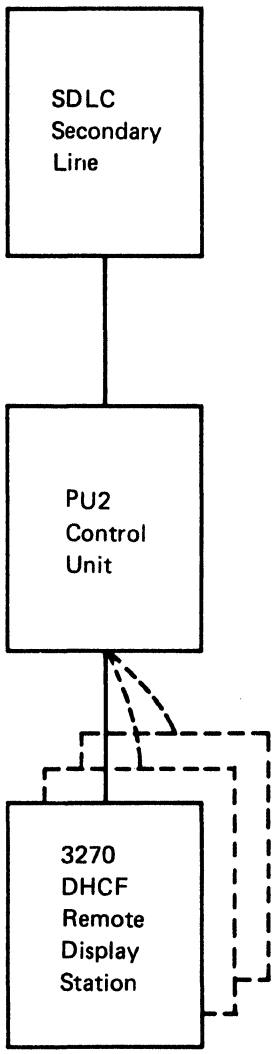
Figure 2-37 shows which work sheets to use to configure System/38 for DHCF.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring DHCF.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on parameter values required specifically for DHCF, see the *Data Communications Programmer's Guide.*



One PU2 control unit for each line description.

Up to 254 devices for each control unit.

Figure 2-37. Work Sheets for Configuring DHCF with SDLC

SYSTEM/38 FINANCE SUPPORT WITH SDLC

Depending on the finance hardware and the control unit application of your system, it is possible to configure your finance control unit as:

- A 3274 Control Unit
- A 3694 document processor
- A 4701 Finance Control Unit

To configure your finance control unit as a 3274 Control Unit, you must use the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

To configure your finance control unit as a finance controller, either a 3694 or a 4701, fill out the following:

- SDLC Primary Line work sheet (one for each line description)
- SDLC Finance Control Unit work sheet (one for each control unit on the line)
- Finance Device work sheet (one for each 4700 device on the network)

Figure 2-38 shows which work sheets to use to configure System/38 for System/38 Finance Support with SDLC.

Blank work sheets are provided at the back of this manual for you to copy and use in configuring System/38 Finance Support.

For more information on CRTLIND, CRTCUD, and CRTDEVD parameter values, see the *CL Reference Manual.*

For more information on specifying parameter values for IBM modems, see the chart in Appendix E, *Specifying Line Interfaces and Modem Features.*

For more information on configuration options and parameter values required specifically for System/38 Finance Support, see the *IBM System/38 Finance Support User's Guide,* SC21-9099, either in hard copy or online using the DSPFNCHLP command.

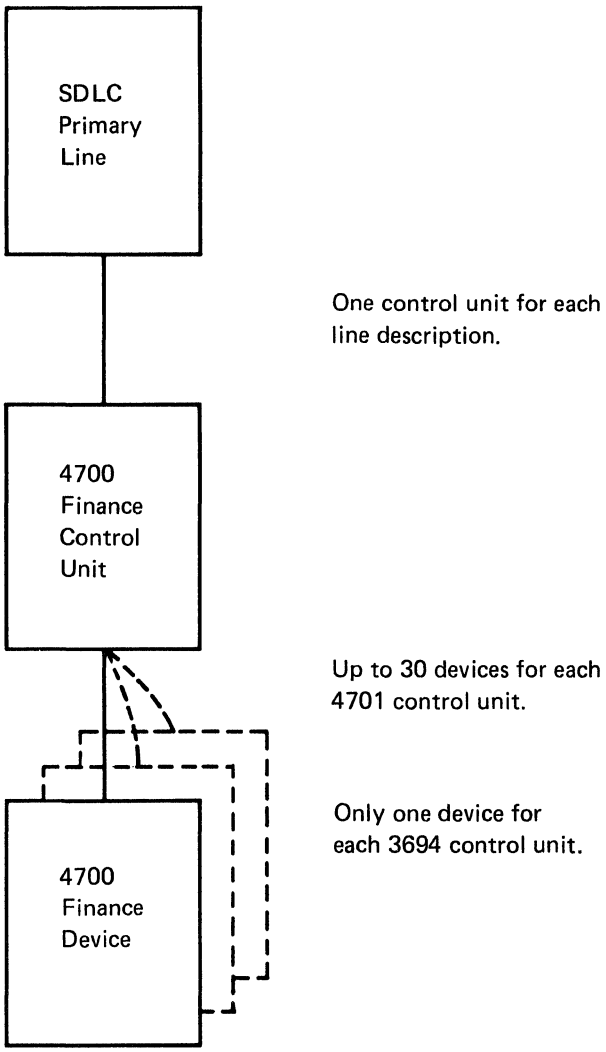


Figure 2-38. System/38 Finance Support with SDLC: Possible Attachments

Chapter 3. Installation Procedure

WARNING: Factory-installed CPF cannot be serviced and should not be used by the customer. If you receive a message warning you that the CPF on your system cannot be serviced, ask your IBM service representative to initialize auxiliary storage before you install CPF.

If you are updating CPF by installing a new release of CPF, do not use this manual. Instead, follow the installation instructions in the *Program Directory* portion of the *Memo to Licensees* that comes with your diskette or magnetic tape package from IBM's Program Information Department (PID).

If you are installing your system for the first time, use the section *Installing Your System for the First Time* in this chapter. You should also read the *Program Directory* portion of the *Memo to Licensees* for any release-specific installation considerations.

If you are reinstalling your system after a problem has occurred, use the section *Reinstalling Your System after a Problem Has Occurred* in this chapter. This is true whether you are installing a version supplied by IBM (from PID) or a version that you have modified (including any device configuration) and saved.

For more information on using system devices, see the *System/38 Operator's Guide*. For more information on using CL commands, see the *CL Reference Manual*.

This chapter describes the following step-by-step procedures:

- Installing your system (including IBM-supplied libraries) for the first time
- Reinstalling your system (including IBM-supplied libraries) after a problem has occurred
- Installing IBM languages and utilities
- Configuring devices on your system
- Saving the system (do this any time you tailor the system for your particular needs)

Responding to Inquiry Messages

As you install your system, you may receive inquiry messages. An inquiry message appears on the system console and interrupts normal installation displays. To continue the installation, you must respond to the message.

A default value of G (Go) will appear in the input field where the response is to be entered. You can accept this default and press the Enter key to continue the installation; or you can cancel the installation by keying in a C (Cancel) and pressing the Enter key. *If you cancel the installation, you must start the installation over from the beginning.*

Installing Your System for the First Time (Including IBM-Supplied Libraries)

Note: The following installation procedure causes all the CPF programs to be spread across all of the available auxiliary disk storage. Therefore, the performance improvements gained by spreading CPF are achieved by installing (or reinstalling) CPF.

At times, abnormal conditions encountered during CPF installation force the machine to terminate processing. A termination message is usually displayed or the condition indicators on the operator/service panel are on in these cases. Follow the instructions in the second-level text of the message or in the *Problem Determination Guide* (for the condition indicators). If you are directed to install CPF, make a second attempt to install CPF. If the second attempt to install CPF fails in the same way, call your IBM service representative. If the second attempt to install CPF fails in a different way, follow the instructions for the new error situation.

CPF must be installed from the system console.

1 Are you installing CPF from diskette?

Yes **No**

Load the installation diskette (shipped in the magnetic tape package; labeled VOL01) in the diskette magazine drive as follows:

a. Place the installation diskette in slot 1 of a diskette magazine.

b. Place the diskette magazine in magazine position 1 (*M1) and close the cover of the diskette magazine drive.

As you continue the procedure, an inquiry message will request you to load the magnetic tape(s) on a specific tape drive. Go to step **2**.

Load the diskettes containing CPF in the diskette magazine drive as follows:

a. Place the first diskette (labeled VOL01 of nn) in slot 1 of the first magazine, place the second diskette (labeled VOL02 of nn) in slot 2 of the first magazine, and so on, where nn equals the number of CPF diskettes shipped from IBM.

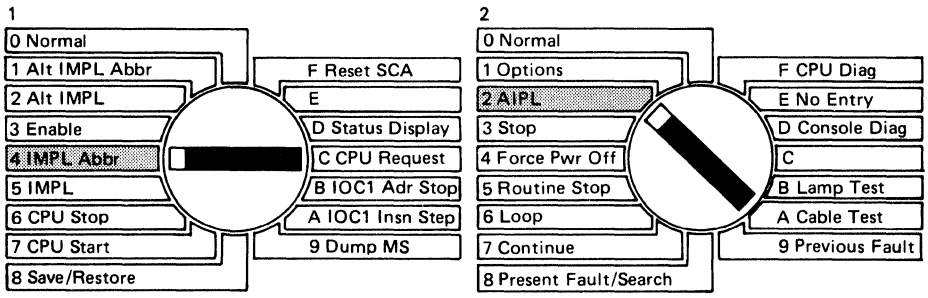
   A magazine can hold only 10 diskettes. Because more than 10 CPF diskettes are supplied from IBM, the additional diskettes must be placed in the slots of additional magazines in consecutive order, starting with slot 1. The following chart shows the correct placement of the CPF diskettes in the magazines and the correct placement of the magazine in the diskette magazine drive:

Magazine Number	Diskette Labels	Position of Magazine in Diskette Magazine Drive
1	VOL01 up to VOL10	1
2	VOL11 up to VOL20	2
3	VOL21 up to VOL30	1
4	VOL31 up to VOL40	2

b. Place magazine 1 in magazine position 1. Place magazine 2 in magazine position 2. Close the cover.

   When magazine 3 is required, an inquiry message prompts you to mount this magazine. Place magazine 3 in magazine position 1, magazine 4 in magazine position 2, and respond to the message with a G.

2 Start the installation by using the following procedure:



a. Set rotary switch 1 to position 4 (IMPL Abbr) or position 5 (IMPL).

   Use position 4 (Initial Microprogram Load Abbreviated) to install CPF without performing all the hardware diagnostics.

   Use position 5 (Initial Microprogram Load) to install CPF and perform all the hardware diagnostics.

b. Set rotary switch 2 to position 2 (AIPL).

   Use position 2 (Alternative Initial Program Load) to copy CPF from diskette or magnetic tape into auxiliary disk storage.

c. Is the system power on (the Power On switch is lit)?

   Yes **No**

   Press the Power On switch to begin the power-on sequence and start the install CPF process. The system displays the install type prompt.

   Power down the system using the following command, if possible:

```
PWRDWNSYS *IMMED
```

   If the system powers down, press the Power On switch to begin the power-on sequence and start the install CPF process. If the system cannot be powered down, press the Load switch to start the install CPF process. The system displays the install type prompt.

```
                    INSTALL TYPE PROMPT
ENTER THE FOLLOWING:
  SYSTEM DATE (YEAR/MONTH/DAY):                    __ / __ / __
  SYSTEM TIME (HOUR:MINUTE:SECOND):                __ : __ : __
  COLD START (*NO *YES):                           *NO
  TYPE OF INSTALL (*NORMAL *ABBRV):                *NORMAL
  RESTORE SYSTEM VALUES FROM MEDIUM (*NO *YES):    *NO
  RESTORE EDIT DESC FROM MEDIUM (*NO *YES):        *NO
  RESTORE REPLY LIST FROM MEDIUM (*NO *YES):       *NO
```

3 Complete the install type prompt as follows:

a. Key in the current date for the system date (year/month/day) and the current time for the system time (hour:minute:second).

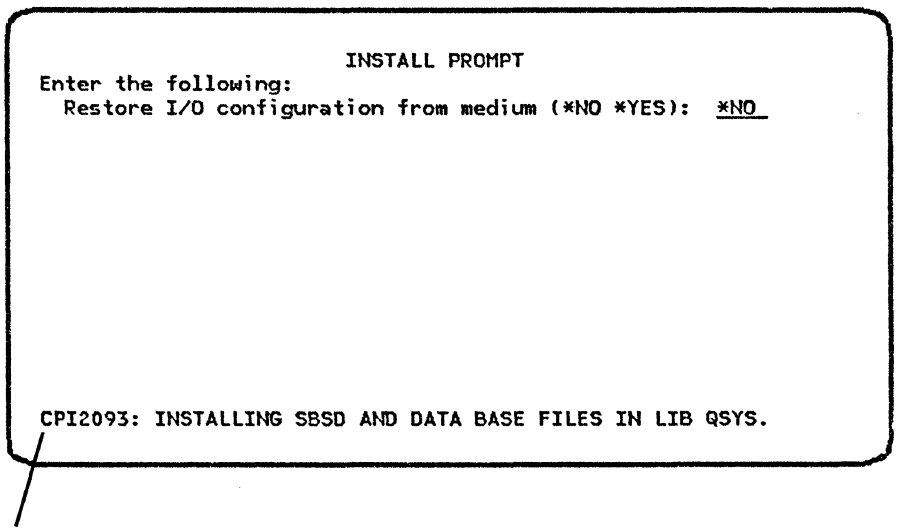
Notes:

1. For the system date, be sure to enter leading zeros. For example, for 5 October 1982, enter 82/10/05.

2. For the system date, a year value equal to or greater than 40 will result in a year from 1940 through 1999. A year value less than 40 will result in a year from 2000 through 2039.

3. For the system time, enter leading zeros and use the 24-hour clock. For example, for 2:05 P.M., enter 14:05:00.

b. Accept the other defaults and press the Enter key. The system continues the CPF install process and displays the install prompt. When you are installing CPF for the first time, the CPF install process requires from 40 to 90 minutes.



This display shows a sample status message. You do not have to respond to these messages.

4 Accept the default *NO on the install prompt and press the Enter key. The system displays the sign-on prompt.

```
Enter password to sign on:                    (A) System:     XXXXXXXX
                                                  Subsystem:  XXXXXXXXXX
                                                  Device:     XXXXXXXXXX
   Password:




(C) COPYRIGHT IBM CORP. 1980, 1986
```

(A) This is the name of your system. You can change the system name from the configuration menu (see step 6).

5 Respond to the sign-on prompt by keying in the security officer password. (The IBM-supplied password is SECOFR.) Press the Enter key. The system responds by displaying several messages (you must respond to them by pressing the Enter key), then the start control program facility prompt. DO NOT PRESS THE ENTER KEY. Go to step 6.

```
                START CONTROL PROGRAM FACILITY PROMPT
Enter the following:
  System date (MDY):                    10 / 05 / 82 (B)
  System time:                          14 : 05 : 00
  Job queues (*KEEP *CLEAR):            *KEEP
  Output queues (*KEEP *CLEAR):         *KEEP
  Incomplete job logs (*KEEP *CLEAR):   *KEEP
  Configuration menu (*NO *YES):        *NO




  Last termination was  XXXXXXXX
```

(B) Sample Date and Time

6 Do you want to use the configuration menu? Use the configuration menu for any of the following reasons:

- If you want to change the sign-on level (QSIGNLVL system value).
- If you want the devices to be online when you finish this installation (instead of waiting until the next time you start CPF or until you vary them online later).
- If your system has only 768 K bytes of main storage (you will need to change system value QMCHPOOL to 300).
- If you are changing system values that affect system tuning (see the *CPF Programmer's Guide*.
- If you are changing the controlling subsystem (QCTLSBSD system value) which appeared in the upper right corner of the sign-on prompt.
- If you have had a problem with bad page frames (you can change the QBADPGFRM system value to continue the start CPF process).
- If you want to change the system name (which appears in the upper right corner of the sign-on prompt). To change the system name, use the Change Network Attributes (CHGNETA) command. To display the system name, use the Display Network Attributes (DSPNETA) command.

Yes **No**

Accept the default *NO for the *Configuration menu* field and press the Enter key. The system responds by displaying the command entry display. Go to step 8

Key in *YES for the *Configuration menu* field and press the Enter key. The system responds by displaying several messages (you must respond to them by pressing the Enter key), then the configuration menu.

On the configuration menu, you can key in the commands listed on the menu and press the CF4 key to request prompting. The configuration menu lists the commands that you can use to configure devices and change system values on your system. You can use the roll keys to display all the commands you can use from the configuration menu (see Figure 3-1), but it is not necessary to display a command before using it.

For further information on how to use the configuration menu, see the *System/38 Operator's Guide*. For procedures used in configuring devices, see the section on device configuration later in this chapter and Chapter 4, *Adding or Relocating Local and Remote Work Stations*. Go to step 7.

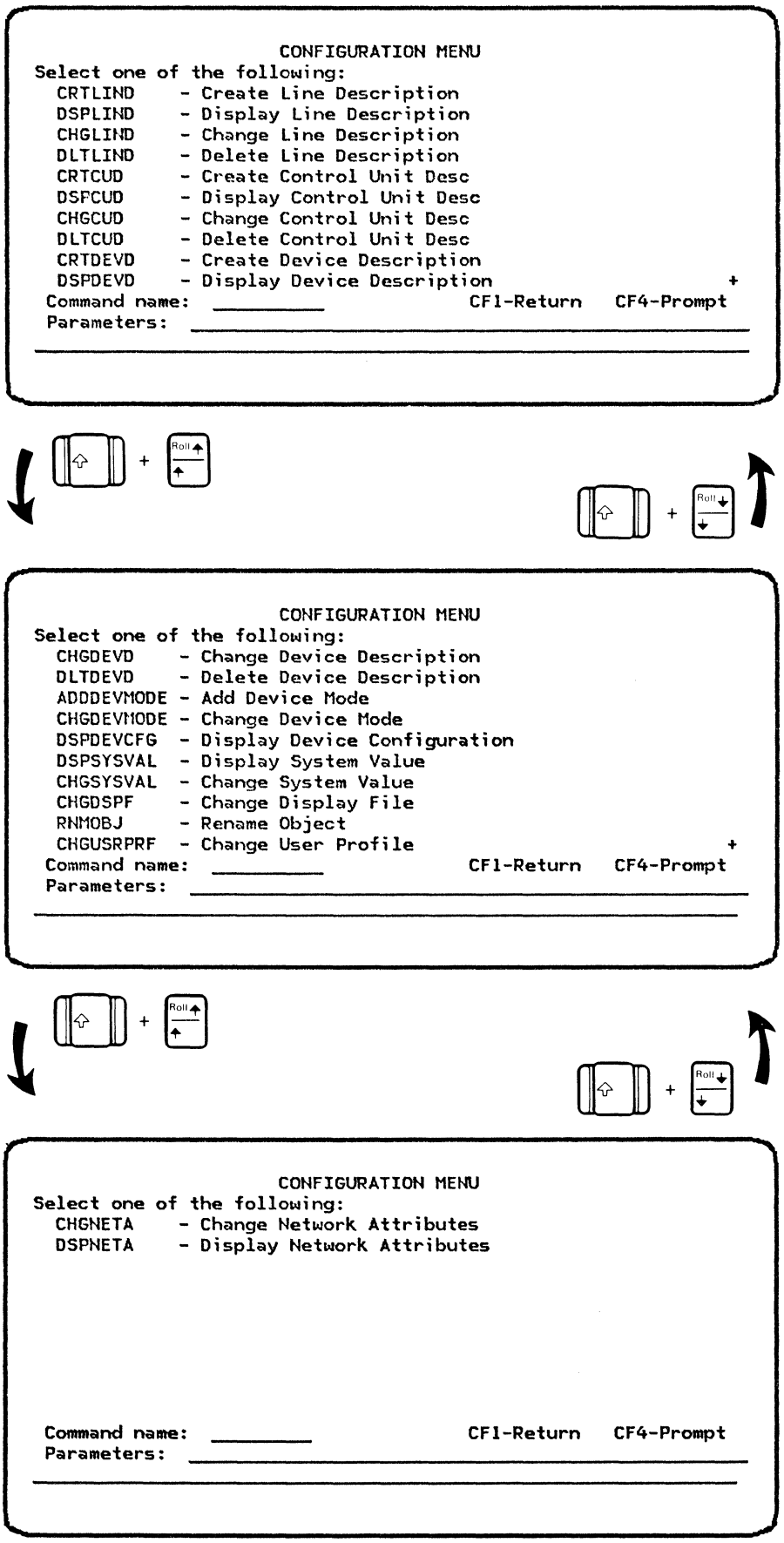


Figure 3-1. Rolling the Configuration Menu

7 Press the CF1 key to exit from the configuration menu and go to the command entry display.

8 Make sure that the system operator message queue is in *BREAK mode. To do this, enter the command:

```
CHGMSGQ  QSYSOPR  *BREAK
```

9 Load the diskette(s) containing library QGPL in slot 1 (*S1). If your system was shipped on diskette, QGPL is on the third to the last (33rd) diskette. If your system was shipped on magnetic tape, QGPL is on the installation diskette.

10 Enter the following command:

```
RSTLIB QGPL LOC(*S1) VOL(volume-identifier)
```

The volume-identifier is the volume of the diskette on which QGPL is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* The system places every object from QGPL as it exists on diskette onto your system in library QGPL and displays the command entry display.

11 Do one of the following to install library QUSRSYS. This library contains objects for Systems Network Architecture Distribution Services (SNADS), personal services, document interchange, object distribution, System/38 Finance Support and various other functions.

a. If you are installing CPF from diskette, load the diskette containing library QUSRSYS in slot 1 (*S1). This is the last diskette (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the exact diskette). Enter the following command:

```
RSTLIB  QUSRSYS  LOC(*S1)  VOL(volume-identifier)
```

The volume-identifier is the volume of the diskette on which QUSRSYS is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

b. If you are installing CPF from tape, QUSRSYS is on the installation tape. Enter the following command:

```
RSTLIB  QUSRSYS  DEV(device name) VOL(volume-identifier)
```

The device name is the name of the tape device description and volume-identifier is the volume of the tape on which QUSRSYS is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

Notes:

1. If you do plan to use SNADS on your system, you should start the QSNADS subsystem before using any of the SNADS commands for the first time. The subsystem can be terminated after a short period of time.

2. After you create the SNADS tables and the system distribution directory, you should save them.

12 Do you plan to use CPF graphics on your system?

Yes **No**

Go to step **13**.

Do one of the following to install library QGDDM:

a. If you are installing CPF from diskette, load the diskette containing library QGDDM in slot 1 (*S1). This is the last or next-to-last diskette (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the exact diskette). Enter the following command:

```
RSTLIB   QGDDM   LOC(*S1)   VOL(volume-identifier)
```

The volume-identifier is the volume of the diskette on which QGDDM is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

b. If you are installing CPF from tape, QGDDM is on the installation tape. Enter the following command:

```
RSTLIB   QGDDM   VOL(volume-identifier)
```

The volume-identifier is the volume of the tape on which QGDDM is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

c. You might also wish to add library QGDDM permanently to the default user library list using the CHGSYSVAL (Change System Value) command. Before changing this system value, you should display its current value using the DSPSYSVAL (Display System Value) command, as follows:

```
DSPSYSVAL   SYSVAL(QUSRLIBL)
```

Write down the current value of the default library list, add QGDDM to make a new default user library list, and enter the CHGSYSVAL command. For example:

```
CHGSYSVAL   SYSVAL(QUSRLIBL)
            VALUE('QGPL QTEMP QGDDM')
```

13 Do you plan to use the library QHLPSYS on your system? This library contains online documentation for System/38 Finance Support, SNADS, OFFICE/38–Personal Services/38, and some CPF Help Text. It is recommended that you do install this library.

Yes **No**

Go to step 14.

Do one of the following to install library QHLPSYS:

a. If you are installing CPF from diskette, load the diskette containing library QHLPSYS in slot 1 (*S1). This is the last diskette (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the exact diskette). Enter the following command:

```
RSTPGMPRD PGMPRD(5714SS1) SAVLIB(QHLPSYS) LOC(*S1)
VOL(volume-identifier)
```

The volume-identifier is the volume of the diskette on which QHLPSYS is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

b. If you are installing CPF from tape, QHLPSYS is on the installation tape. Enter the following command:

```
RSTPGMPRD PGMPRD(5714SS1) SAVLIB(QHLPSYS) DEV(device name)
VOL(volume-identifier)
```

The device name is the name of the tape device description and volume-identifier is the volume of the tape on which QHLPSYS is stored (see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the volume identifier).

Note: There are some files in the library QHLPSYS that can be deleted if you do not plan to use a particular part of the system. For example, files QHFNHELP and QHFNLIST contain the *IBM System/38 Attachment of IBM 4700 Finance Terminals User's Guide*. These files can be deleted if you do not plan to use System/38 Finance Support on your system.

To delete these files, enter the following command:

```
DLTF FILE(QHFN*.QHLPSYS)
```

For more information on what other files are contained in QHLPSYS, see the *CPF Programmer's Guide*.

Go to step 14.

14 Are you configuring an IBM-supplied print belt or train for your system 3262, 5211, or 3203 Printer(s)? (For the 4245 System Printer, you do not need to create a print image and translate table for an IBM-supplied print band.)

Yes **No**

| |

To create a print image and translate for non-IBM print belts or trains, see the *CPF Programmer's Guide*.

Create an IBM-supplied print image as follows:

a. Key in the Create Print Image (CRTPRTIMG) command and press the CF4 key. The system displays the CRTPRTIMG prompt.

Note: Since the 5262 and the 4245 Models T12 and T20 Printers are configured as work station printers, you should not use the CRTPRTIMG command to create a print image and translate table for these printers. See Appendix F, *Print Images and Translate Tables* for more information.

```
                Create Print Image (CRTPRTIMG) Prompt

Enter the following:
  Print image name:                    PRTIMG      R  _________
    Library name:                                       QGPL
  Source file containing image:        SRCFILE        QIMGSRC
    Library name:                                       *LIBL
  Source file member:                  SRCMBR         *PRTIMG
  Belt part number:                    BELTNBR        *NONE
  Device type code:                    DEVTYPE        3262
  Public authority
    (*NORMAL *ALL *NONE)               PUBAUT         *NORMAL
  Text 'description'                   TEXT           *BLANK
```

b. Key in the following parameter values:

PRTIMG parameter: For normal printing, the name specified in the PRTIMG parameter for the device description of the system printer (IBM-supplied names are QSYSPRT and QSYSPRT2). Use the DSPDEVD command to determine the name of the print image required.

BELTNBR parameter: See Appendix F, *Print Images and Translate Tables*, for a list of part numbers or identification codes for print belts or trains. The belt number is marked on the belt.

DEVTYPE parameter: Specify the model number of the system printer for which the print image will be used (must match the DEVTYPE parameter for the device description of the system printer).

For a 3203 Printer, use DEVTYPE(3203).
For a 3262 Printer, use DEVTYPE(3262).
For a 5211 Printer, use DEVTYPE(5211).

TEXT parameter: A description of this print image for future use, such as: Print image for QSYSPRT. Can be no longer than 50 characters.

c. Accept the other defaults as shown and press the Enter key.

Note: IBM-supplied print images and translate tables for the 3262, 5211, and 3203 Printers are on the IBM service library diskettes that the IBM service representative used to install the vertical microcode (VMC). After you have keyed in the correct command parameters and pressed the Enter key, an inquiry message will ask you to load SLV Volume 1 into magazine 1. After inserting the magazine in magazine position 1, enter G to reply to the inquiry message.

d. Cancel any active writer with the CNLWTR command

e. Vary the system printer (QSYSPRT or QSYSPRT2) offline and online again to properly load the print image and translate table. Use the following two commands:

```
VRYDEV   QSYSPRT   *OFF
VRYDEV   QSYSPRT   *ON
```

Note: If you have not specified QSYSIMAGE as the new print image name (step 14 b of this procedure) you must change the PRTIMG parameter value for the appropriate printer using the CHGDEVD command.

15 You have finished installing CPF. If a normal install has occurred, the message CPF3954 will be sent to your QHIST log.

After installing CPF, you may wish to do the following:

- Grant object and user authorities to the appropriate user profiles. How you do this depends on the security needs of your system. See the *CPF Programmer's Guide* for more information.
- Install languages and utilities. Go to *Installing Languages and Utilities* later in this chapter.
- Tune the system to the needs of your installation. See the *CPF Programmer's Guide* for more information.
- Install program changes if available.
- Save the system and any user libraries on diskette or tape. See *Saving the System* later in this chapter.

Reinstalling Your System after a Problem Has Occurred (Including IBM-Supplied Libraries)

Use this procedure to reinstall your system for the following reasons:

- An IBM service representative has initialized disk storage.
- You have a problem with damaged objects.
- An excessive number of spool data base members have been created on your system.
- You have, for any reason, decided to return your system to an earlier state that you have saved using the SAVSYS and SAVLIB commands.

Note: The following installation procedure causes all the CPF programs to be spread across all of the available auxiliary disk storage. Therefore, the performance improvements gained by spreading CPF are achieved by installing (or reinstalling) CPF.

At times, abnormal conditions encountered during CPF installation force the machine to terminate processing. A termination message is usually displayed or the condition indicators on the operator/service panel are on in these cases. Follow the instructions in the second-level text of the message or in the *Problem Determination Guide* (for the condition indicators). If you are directed to install CPF, make a second attempt to install CPF. If this second attempt to install CPF fails in the same way, call your IBM service representative. If the second attempt to install CPF fails in a different way, follow the instructions for the new error situation.

CPF must be installed from the system console.

1 Are you installing CPF from diskette?

Yes **No**

Load the installation diskette (shipped in the magnetic tape package or written when the system was saved) in the diskette magazine drive as follows:

a. Place the installation diskette in slot 1 of a diskette magazine.

b. Place the diskette magazine in magazine position 1 (*M1) and close the cover of the diskette magazine drive.

As you continue the procedure, an inquiry message will request that you load the magnetic tape(s) on a specific tape drive. Go to step **2**.

Load the diskettes containing CPF in the diskette magazine drive as follows:

a. Place the first diskette (labeled VOL01 of nn) in slot 1 of the first magazine, place the second diskette (labeled VOL02 of nn) in slot 2 of the first magazine, and so on, where nn equals the number of CPF diskettes shipped from IBM.

Note: If you are installing a saved version of CPF, the diskettes must be in the same magazine slots that you used when you saved the system.

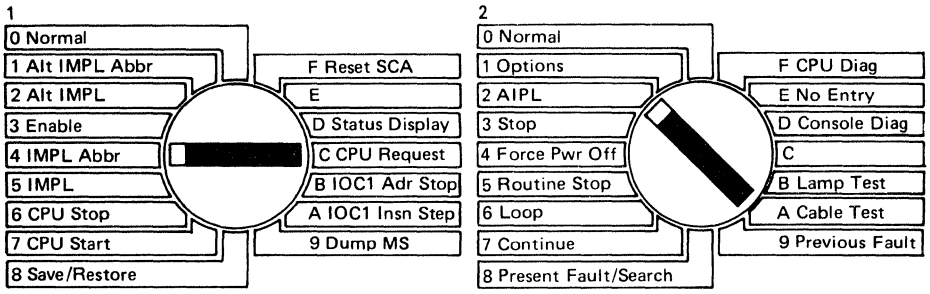
A magazine can hold only 10 diskettes. Because more than 10 CPF diskettes are supplied from IBM, the additional diskettes must be placed in the slots of additional magazines in consecutive order, starting with slot 1. The following chart shows the correct placement of the CPF diskettes in the magazines and the correct placement of the magazine in the diskette magazine drive:

Magazine Number	Diskette Labels	Position of Magazine in Diskette Magazine Drive
1	VOL01 up to VOL10	1
2	VOL11 up to VOL20	2
3	VOL21 up to VOL30	1
4	VOL31 up to VOL40	2

b. Place magazine 1 in magazine position 1. Place magazine 2 in magazine position 2. Close the cover.

When magazine 3 is required, an inquiry message prompts you to mount this magazine. Place magazine 3 in magazine position 1, magazine 4 in magazine position 2, and respond to the message with a G.

2 **Start the installation by using the following procedure.**



a. Set rotary switch 1 to position 4 (IMPL Abbr) or position 5 (IMPL).

   Use position 4 (Initial Microprogram Load Abbreviated) to install CPF without performing all the hardware diagnostics.

   Use position 5 (Initial Microprogram Load) to install CPF and perform all the hardware diagnostics.

b. Set rotary switch 2 to position 2 (AIPL).

   Use position 2 (Alternative Initial Program Load) to copy CPF from diskettes or magnetic tape into auxiliary disk storage.

c. Is the system power on (the Power On switch is lit)?

   Yes **No**

   Press the Power On switch to begin the power-on sequence and start the install CPF process. The system displays the install type prompt.

   Power down the system using the following command, if possible:

```
PWRDWNSYS *IMMED
```

   If the system powers down, press the Power On switch to begin the power-on sequence and start the install CPF process. If the system cannot be powered down, press the Load switch to start the install CPF process. The system displays the install type prompt.

```
                    INSTALL TYPE PROMPT
ENTER THE FOLLOWING:
  SYSTEM DATE (YEAR/MONTH/DAY):                __ / __ / __
  SYSTEM TIME (HOUR:MINUTE:SECOND):            __ : __ : __
  COLD START (*NO *YES):                       *NO
  TYPE OF INSTALL (*NORMAL *ABBRV):            *NORMAL
  RESTORE SYSTEM VALUES FROM MEDIUM (*NO *YES): *NO
  RESTORE EDIT DESC FROM MEDIUM (*NO *YES):    *NO
  RESTORE REPLY LIST FROM MEDIUM (*NO *YES):   *NO
```

3 Key in the current date for the system date (year/month/day) and the current time for the system time (hour:minute:second).

Notes:

1. For the system date, be sure to enter leading zeros. For example, for 5 October 1982, enter 82/10/05.

2. For the system date, a year value equal to or greater than 40 will result in a year from 1940 through 1999. A year value less than 40 will result in a year from 2000 through 2039.

3. For the system time, enter leading zeros and, use the 24-hour clock. For example, for 2:05 P.M., enter 14:05:00.

4 Are you installing CPF to correct a problem of damaged objects on the system?

Yes **No**

Accept the defaults COLD START(*NO) and TYPE OF INSTALL(*NORMAL) and go to step **5**. DO NOT PRESS THE ENTER KEY.

You have two important decisions to make:

- Whether to do a normal or abbreviated installation
- Whether to do a cold start or not

If you are doing a normal installation of CPF, accept the defaults COLD START(*NO) and TYPE OF INSTALL(*NORMAL) and to to step **5**. DO NOT PRESS THE ENTER KEY.

> **Note on normal installations:** In a normal installation of CPF, all CPF objects on the diskettes or tape are placed on your system. Any CPF objects already on the system are replaced by those on diskette or tape.

To do an abbreviated installation of CPF, key in TYPE OF INSTALL(*ABBRV) and go to step **6**. DO NOT CHANGE THE COLD START FIELD.

> **Note on abbreviated installations:** In abbreviated installations, CPF objects are not brought in from diskette or tape. An abbreviated installation takes much less time than a normal installation.

To do a cold start, key in COLD START(*YES). This can be done for either abbreviated or normal installations. DOING A COLD START MAY CAUSE USER DATA TO BE LOST. THIS INCLUDES JOBS ON JOB QUEUES AND OUTPUT ON OUTPUT QUEUES. DO A COLD START ONLY IF YOU ARE DIRECTED TO DO SO.

When you do a cold start, first do an abbreviated installation (specify TYPE OF INSTALL(*ABBRV) with COLD START(*YES)). If your problem persists, do a cold start with normal installation (TYPE OF INSTALL(*NORMAL) with COLD START(*YES)).

Notes on cold starts:

1. The first time you install CPF on your system, CPF creates a number of objects (such as the system operator message queue). If later you install CPF again with COLD START(*NO), CPF re-creates these objects automatically only if CPF finds that they were damaged. If you install CPF again with COLD START(*YES), CPF deletes and re-creates all such objects, whether they are damaged or not.
2. COLD START (*YES) will cause all spool data base files and members to be deleted and the default number to be created. A cold start will also initialize the counter used to assign unique job numbers.
3. Before Release 7 and when installing Release 7 over a previous release, if you used COLD START (*YES) to install CPF, the network attributes alert status (ALRSTS) and alert control unit (ALRCTLU) were lost and had to be restored after you did the cold start. However, after Release 7 has been installed, these attributes will no longer be lost and do not have to be restored.

5 Complete the install type prompt as follows (only if a normal install is performed):

a. Do you want the system values and network attributes on diskette or tape to replace the ones currently on the system? If, during a previous IMPL, you received a message at the system operator message queue stating that the system value object was re-created, you may want to answer yes.

Yes **No**
| |
| The system will be installed with no change to the system values or the network attributes that are currently on your system. Go to step b.
|

Key in *YES for the RESTORE SYSTEM VALUES FROM MEDIUM parameter. For more information, see the *CPF Programmer's Guide*.

b. Do you want the edit descriptions on diskette or tape to replace the edit descriptions currently on your system? If they are damaged on your system or if you want to put them back the way they were when you saved your system, answer yes.

Yes **No**
| |
| Go to step c.
|

Key in *YES for the RESTORE EDIT DESC FROM MEDIUM parameter. For more information on edit descriptions, see the *CPF Programmer's Guide*.

c. Do you want the system reply list on diskette or tape to replace the system reply list currently on your system? If it is damaged on your system or if you want to put it back the way it was when you saved your system, answer yes.

Yes **No**
| |
| Go to step 6.
|

Key in *YES for the RESTORE REPLY LIST FROM MEDIUM parameter. For more information on the system reply list, see the *CPF Programmer's Guide*.

6 Press the Enter key. The system continues the CPF install process and displays the install prompt.

```
                          INSTALL PROMPT
Enter the following:
  Restore I/O configuration from medium (*NO *YES):  *NO


CPI2093: INSTALLING SBSD AND DATA BASE FILES IN LIB QSYS.
```

This display shows a sample status message. You do not have to respond to these messages.

From the install prompt display, you can restore your I/O configuration from the saved medium. To determine if you want to restore your configuration now, consider the following:

If you restore your configuration, configuration objects owned by one of the IBM default profiles (QSECOFR, QPGMR, and so on) are still owned by that profile.

If you restore your configuration, configuration objects owned by a profile that is not one of the IBM default profiles may now be owned by the security officer (QSECOFR). If you want someone other than the security officer to own the objects, you must change the owners for those objects. Therefore, if you have many configuration objects owned by non-IBM supplied profiles that do not exist on the system, you may want to answer *NO to the Restore I/O configuration from medium prompt and install the configuration later.

If you choose not to restore your I/O configuration at the install prompt display, you can now restore your I/O configuration after restoring user profiles, but before restoring object authorities in step 11. To do this, you can either reenter the CL commands, or you can reinstall CPF by using the abbreviated install option and answering *YES to the Install I/O configuration from medium prompt.

7. Do you want the I/O configuration to be destroyed and replaced by whatever I/O configuration is on diskette or tape? (The I/O configuration is all line, control unit, and device descriptions except the diskette magazine drive and console device descriptions being used in the installation. Also, if CPF is being installed from magnetic tape, the magnetic tape control unit description and device description are not destroyed.)

Yes **No**

Accept the default *NO and press the Enter key. The system responds by displaying the sign-on prompt. Go to step **8**.

Respond with the *YES option only when installing a version of CPF that you have saved using the Save System (SAVSYS) command. The *YES option *destroys* all line, control unit, and device descriptions on the system except the device and control unit descriptions being used in the installation:

- The diskette magazine drive and system console device descriptions (if CPF is being installed from diskette); or
- The diskette magazine drive and system console device descriptions plus the magnetic tape control unit and device descriptions being used (if CPF is being installed from tape).

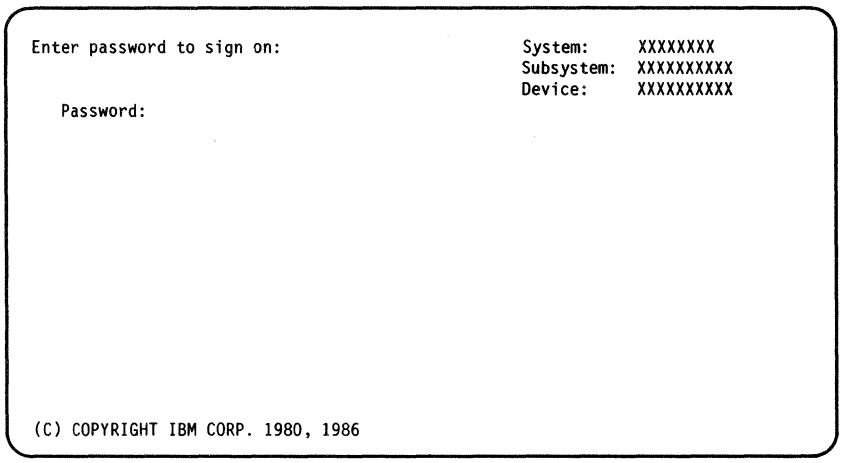
Note: The system uses the first 3430 control unit and the first tape drive on that control unit for installing CPF. Otherwise, it uses the first 3411 control unit and the first tape drive on that control unit. If the control unit and device descriptions for these are damaged or do not exist, the system uses the first of the following default names that successfully creates the control unit description:

CTLU(QTAPEA or QTAPmmdd) DEV(QTAPE5 through QTAPE8 or QTAPmmdd) for a 3430 or 3422

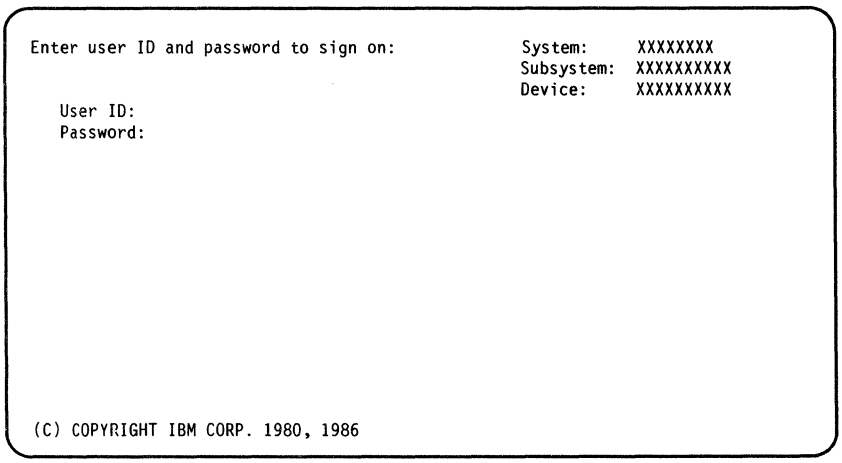
CTLU(QTAPE or QTAPmmdd) DEV(QTAPE1 through QTAPE4 or QTAPmmdd) for a 3410/3411.

If you answer *YES, you will lose any changes to your device configuration made after the system was saved. The system responds by displaying the sign-on prompt.

The following is displayed if single-level sign-on is in effect:



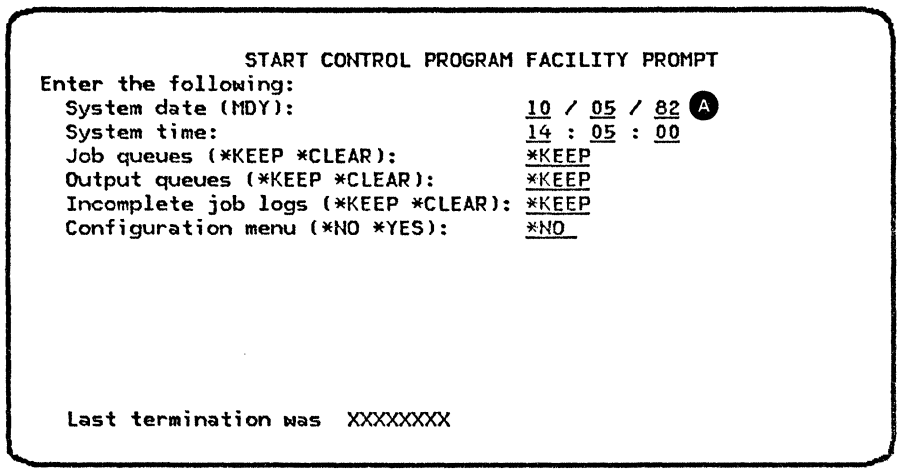
The following is displayed if two-level sign-on is in effect:



For more information on two-level sign-on, see the *CPF Programmer's Guide*.

Note: During an install, the sign-on level system value (QSIGNLVL) is set to the current sign-on level in effect, so any pending change to the sign-on level will not take effect. If the install is after an auxiliary storage initialization, QSIGNLVL is set to 0 and single-level sign-on will be in effect. If necessary, change the sign-on level (QSIGNLVL system value) at the configuration menu.

8 Respond to the sign-on prompt by keying in the security officer sign-on information. If you are reinstalling your system after initializing disk storage and are prompted for a user ID, use the IBM-supplied user ID QSECOFR and the password SECOFR. Press the Enter key. The system responds by displaying several messages (you must respond to them by pressing the Enter key), then the start control program facility prompt. DO NOT PRESS THE ENTER KEY.



A Sample Date and Time

9 Do you want to use the configuration menu? Use the configuration menu for any of the following reasons:

- If you want to change the sign-on level (QSIGNLVL system value).

  Note: If you plan to restore user profiles after CPF is installed, you may need to change the current sign-on level at the configuration menu so it matches the sign-on level that was in effect when the user profiles were saved. If the save is executed with a two-level sign-on in effect and the current sign-on level is single-level, all passwords change to *NONE, except the security officer password which is changed to SECOFR.

- If you want the device to be online when you finish this installation (instead of waiting until the next time you start CPF or until you vary them online later).

- If you are changing system values that affect system tuning (see the *CPF Programmer's Guide*).

- If you are changing the controlling subsystem (QCTLSBSD system value), which appears in the upper right corner of the sign-on prompt.

  Note: If you have been using an alternative controlling subsystem, you must use the configuration menu to redefine the controlling subsystem to the one residing in QSYS. Once the system has been installed, you must redefine the alternative controlling subsystem and do another IMPL to start CPF under the alternative controlling subsystem. This must be done each time you reinstall the system.

- If you want to change the system name (which appears in the upper right corner of the sign-on prompt). To change the system name, use the Change Network Attributes (CHGNETA) command. To display the system name, use the Display Network Attributes (DSPNETA) command.

- If you want to change the library list (system value QSYSLIBL or QUSRLIBL) to delete the libraries that will not be on the system when CPF is installed.

- If you have had a problem with bad page frames (you can change the QBADPGFRM system value to continue the start CPF process).

Yes **No**

Accept the default *NO for the *Configuration menu* field and press the Enter key. The system responds by displaying the command entry display. Go to step **10**.

Key in *YES for the *Configuration menu* field and press the Enter key. The system responds by displaying several messages (you must respond to them by pressing the Enter key), then the configuration menu.

On the configuration menu, you can key in the commands listed on the menu and press the CF4 key to request prompting. The configuration menu lists the commands that you can use to configure devices and change system values on your system. You can use the roll keys to display all the commands you can use from the configuration menu (see Figure 3-2), but it is not necessary to display a command before using it.

For further information on how to use the configuration menu, see the *System/38 Operator's Guide*. For procedures used in configuring devices, see the section on device configuration later in this chapter and Chapter 4, *Adding or Moving Work Stations*. Go to step 10.

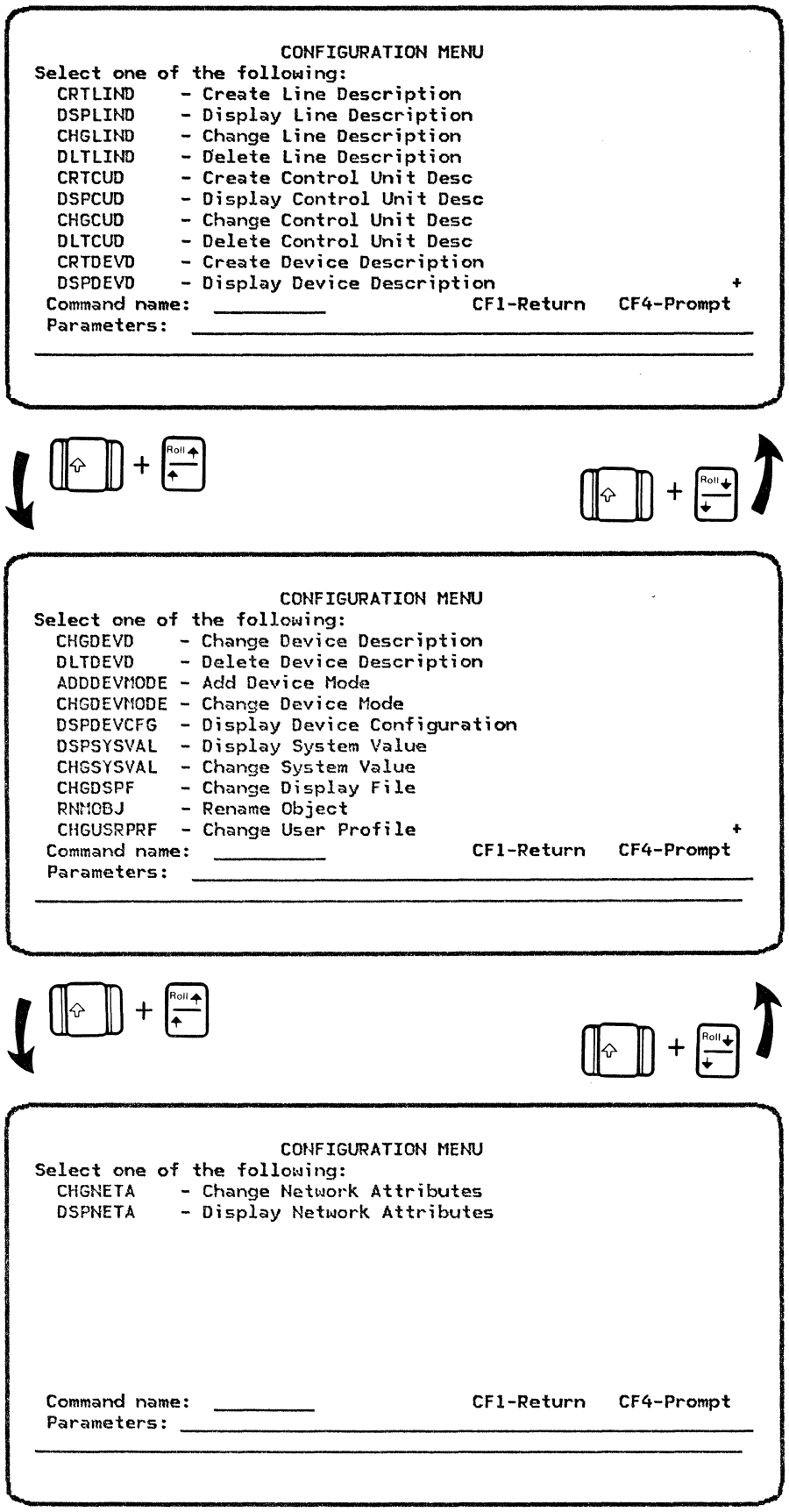


Figure 3-2. Rolling the Configuration Menu

10 Press the CF1 key to exit from the configuration menu and go to the command entry display.

11 CPF is now reinstalled. To restore the entire system, you must do the following:

- Sign on using the IBM security officer password (SECOFR) or run under a program that adopts the security officer profile.
- Check the system operator message queue (use the command DSPMSG QSYSOPR) for any messages identifying damaged objects that were replaced during the install process. Sometimes you can recover data that was lost. If you have messages identifying damaged objects, follow the instructions in the second-level text to recover from the damage. For a general description of damage, see the *CPF Programmer's Guide*.
- Restore all of the user profiles using the Restore User Profiles (RSTUSRPRF) command with the USRPRF(*ALL) default. After CPF is installed, the user profiles must be restored before the libraries can be restored.

  Note: If the user profiles were saved with a two-level sign-on in effect and the system currently has a single-level sign-on in effect, all passwords change to *NONE except the security officer password, which changes to SECOFR. To ensure no passwords are lost, change the QSIGNLVL system value to 1, power down, and restart the IPL for the system so that the two-level sign-on is in effect before executing the RSTUSRPRF command.

  Besides restoring the user profiles, the RSTUSRPRF command creates an internal table containing the object authorities. (The object authorities are restored by the RSTAUT command.) If the system was saved on diskette, the user profiles are saved on the last or the next to last diskette. (See the discussion on restoring user profiles in the *System/38 Operator's Guide* to determine the location of user profiles.)

  Before using this command, you must terminate all subsystems by entering:

  ```
  TRMSBS SBS(*ALL)

  or

  TRMCPF
  ```

  To restore all the user profiles from diskette, use the following RSTUSRPRF command and specify the location and volume:

  ```
  RSTUSRPRF LOC(*M2n) VOL(*MOUNTED)
  ```

  The 'n' in LOC(*M2n) is the location of the diskette containing the user profile.

- Restore all user libraries using the RSTLIB command with LIB(*NONSYS) specified. This restores all user-created libraries, QGPL, QGDDM, QHLPSYS, QUSRSYS, and any program product libraries such as QRPG.

  There are some restrictions on which of the related objects in different libraries must be restored first. See the Save/Restore chapter in the *CPF Programmer's Guide* for more information.

  Note: The library QUSRSYS, like QGPL, contains IBM-supplied objects with user-described information. If you are restoring this library from system diskette, the SNADS configuration and the Object and DIA distributions on the next system queues will be lost and have to be re-created if they have not been previously saved.

- Restore all documents in the library QDOC by using the RSTDOC command with DOC(*ALL) specified.

- Restore object authority. After the user libraries and library QGPL are restored, the user authority for objects must be restored to the user profiles. User authority could not be restored previously because you cannot give authority for an object that does not exist on the system.

  To restore authority, use the Restore Authority (RSTAUT) command. There are no parameters on this command. It can be executed only once after the RSTUSRPRF command. All subsystems must be terminated.

In addition, you may want to do the following:

- Change the print images(s).

- Restore single libraries using the RSTLIB command or using the RSTOBJ command with OBJ(*ALL) specified.

- Restore objects using the RSTOBJ command.

- Check any program changes.

If you are restoring an IBM-supplied version of a library (such as QGPL, QUSRSYS, or QRPG), see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* for the appropriate VOL parameter value.

Installing Languages and Utilities

Follow the procedure in this section to install any of the following program products:

- IBM System/38 RPG III, Program 5714-RG1
- IBM System/38 COBOL, Program 5714-CB1
- IBM System/38 BASIC, Program 5714-BA1
- IBM System/38 PL/I, Program 5714-PL1
- IBM System/38 Interactive Data Base Utilities (IDU), Program 5714-UT1
- IBM System/38 Conversion Reformat Utility, Program 5714-CV2
- IBM System/38 Remote Job Entry Facility (RJEF), Program 5714-RC1
- IBM System/38 OFFICE/38–Administrative Management, Program 5714-WP1
- IBM System/38 OFFICE/38–Text Management, Program 5714-WP2
- IBM System/38 OFFICE/38–Language Dictionaries, Program 5714-DCT
- IBM System/38 Advanced Printer Function Utility (APF), Program 5714-UT2
- IBM System/38 OFFICE/38–Business Graphics Utility, Program 5714-GP1
- IBM System/38 OFFICE/38–Personal Services/38, Program 5714-WP3
- IBM PC Support/38, Program 5714-PC1
- IBM System/38 Cryptographic Facility, Program 5714-CR1
- IBM Distributed Data Management (DDM), Program 5714-DD1

Use this procedure whenever you install a language or utility, including the following cases:

- You are installing your system for the first time.
- You are installing a language or utility for the first time.
- You are installing a new release of a language or utility to update a version already existing on your system.
- You are installing a language or utility to recover after an IBM service representative has initialized disk storage.

Before you use this procedure, the following must be true:

- The Control Program Facility (CPF) or its equivalent must be installed on your system.

- Any programming changes (PCs) that have been temporarily applied or temporarily removed from your current release of languages and utilities must be permanently removed or permanently applied. To find out if any PCs are temporarily applied or temporarily removed, use the Display Programming Changes (DSPPGMCHG) command. PCs that are temporarily removed are displayed with status *Not applied*. To apply programming changes, use the Apply Programming Change (APYPGMCHG) command with OPTION(*PERM) specified. To remove programming changes, use the Remove Programming Change (RMVPGMCHG) command with option (*PERM) specified.

- You should sign on as the system security officer (IBM-supplied password is SECOFR). The system operator should not install languages and utilities. If the system operator restores languages and utilities, programs restored with them would have all public and private authorities revoked.

1. Make sure that the system operator message queue is in *BREAK mode. To do this, enter the command:

```
CHGMSGQ  QSYSOPR  *BREAK
```

2. Make sure that the appropriate library or libraries exist on your system.

The library name is one of the following:

Program Product	Library Name
RPG III	QRPG
COBOL	QCBL
BASIC	QBAS
PL/I	QPLI
IDU	QIDU
Conversion Reformat Utility	QS3E
RJEF	QRJE
OFFICE/38–Text Management	QTXT
OFFICE/38–Language Dictionaries	One of the following: QENGLISH QDEUTSCH QESPANA QFRANCAIS QITALIANO QDANSK QNEDERLND QISLENSK QNORSK QSVENSK
OFFICE/38–Administrative Management	QADM and QADMFLS
OFFICE/38–Personal Services/38	QOFC, QUSRSYS, and QDOC
APF	QAPF
OFFICE/38–Business Graphics Utility	QBGU
PC Support/38	QIWS
System/38 Cryptographic Facility	QCRP
DDM	QDDM

To determine if the library already exists on your system, enter the following command:

```
DSPOBJD library-name.QSYS *LIB
```

If the library does not exist, it will be created by the RSTPGMPRD command. The library type (*TEST or *PROD) and public authority will be determined by the program product.

3 Are you installing RJEF (the Remote Job Entry Facility)?

Yes **No**

Go to step 4.

Make sure that the user profile QRJE exists. (You must first sign on as the security officer.) To make sure it exists, enter the command:

```
DSPUSRPRF QRJE
```

If user profile QRJE does not exist, see the *Remote Job Entry Facility Installation Planning Guide* for information on creating user profile QRJE.

4 Are you installing libraries QADM and QADMFLS (the libraries for OFFICE/38–Administrative Management)?

Yes **No**

Go to step 5.

Make sure that the user profile QADM exists. (You must first sign on as security officer.) To make sure it exists, enter the command:

```
DSPUSRPRF  QADM
```

If user profile QADM does not exist, create it using the following command:

```
CRTUSRPRF  USRPRF(QADM)
           PASSWORD(XXXXXXXXXX)
           INLPGM(*NONE)
           TEXT('ADM USER PROFILE')
```

XXXXXXXXXX is a password of your choice that must be kept in strict confidence.

To complete the installation of OFFICE/38–Administrative Management, see the manual *Using and Managing Administrative Management*.

5 Load the diskette or magnetic tape containing the library of the language or utility you are installing.

6 If you are installing the OFFICE/38 Language Dictionaries program product, key in the Restore Object (RSTOBJ) command and press the CF4 key. The system displays the RSTOBJ prompt.

Note: Language libraries are restored using the RSTOBJ command to prevent the deletion of the Master Program Change Index associated with each library, which occurs when the RSTLIB command is used. When you restore a program product to its recommended library (for example, library QESPANA), and you put no other program product in that library, you should use the RSTLIB command. This deletes the Master Program Change Index and reduces the amount of information to sort through if you need to review programming changes at a later time.

```
                    Restore Object (RSTOBJ) Prompt  + + +
Enter the following:
  Objects or generic* names:        OBJ          R  _________
                                    + for more       _________
  Saved library name of objects:    SAVLIB       R  _________
  Object types:                     OBJTYPE      P  *ALL
                                    + for more       _________
  Device names:                     DEV          P  QDKT
                                    + for more       _______
  Diskette location                 LOC
    Unit (identifier):                             *M12
    Starting diskette:                             *FIRST
  Volume identifier:                VOL             *SAVVOL
                                    + for more       _____
  Sequence number:                  SEQNBR          *SEARCH
```

7 If you are installing any program product except the OFFICE/38 Language Dictionaries program product, key in the Restore Program Product (RSTPGMPRD) command and press the CF4 key. The system displays the RSTPGMPRD prompt.

Note: Using the RSTPGMPRD command to restore language and utility libraries prevents the deletion of the Master Program Change Index associated with each library, which occurs when the RSTLIB command is used. When you restore a program product to its recommended library (for example, RPG to library QRPG), and you put no other program product in that library, you should use the RSTLIB command. This deletes the Master Program Change Index and reduces the amount of information to sort through if you need to review programming changes at a later time.

```
              Restore Program Product (RSTPGMPRD) Prompt

Enter the following:

  Program identifier:                  PGMPRD     R
  Saved library name of objects:       SAVLIB     R
  Device names:                        DEV        P    QDKT
                                       + for more
  Diskette location                    LOC        P
    Unit identifier:                                    *M12
    Starting diskette:                                  *FIRST
  Volume identifier:                   VOL        P    *MOUNTED
                                       + for more
  Sequence number:                     SEQNBR          *SEARCH
  End of tape file option:             ENDOPT          *REWIND
  Save file name:                      SAVF
    Library name:                                       *LIBL
  Library name to be restored:         RSTLIB          *PGMPRD
  Output (*NONE or *LIST)              OUTPUT          *NONE
```

8 Key in the following parameter values for the RSTPGMPRD command:

PGMPRD parameter: Key in the seven-character identifier of the licensed program product to be restored.

SAVLIB parameter: Key in the appropriate library name from step 2.

DEV parameter: If you are installing languages and utilities from diskette, accept the default QDKT. If you are installing languages and utilities from magnetic tape, key in the name of the tape drive on which you have loaded the magnetic tape.

LOC parameter: Accept the defaults *M12 and *FIRST. (Ignore this parameter if magnetic tape is used.)

VOL parameter: Key in the volume identifiers of the diskettes or tapes from which the objects are to be restored. If you are installing a language or utility that is shipped from IBM, see the *Install Procedure* section of the *Program Directory* portion of the *Memo to Licensees* that comes with your diskette or magnetic tape package. If you are installing your own version of a language or utility (that you have saved on diskette or magnetic tape using the SAVLIB or SAVOBJ command), specify *SAVVOL to restore the most recently saved version on diskette or tape or use the *MOUNTED default to restore the first version on the diskette(s) or tape(s) you have loaded.

RSTLIB parameter: Accept the default *PGMPRD. Otherwise, specify the library to which the saved program product is to be restored.

Note: The library prescribed by the *PGMPRD default is required by some program products.

9 Accept the other defaults as shown in the prompt and press the Enter key. The system copies the appropriate objects from diskette or tape onto your system in the library you specify. (If any objects are not restored, informational and escape messages warning of mismatches with source files, such as QRPGSRC, should be ignored.) The system displays a completion message for the appropriate program product on the command entry display.

10 Before verifying that the installation of the program product was successful, display your library list. Each program product is installed into its own library. However, before you can execute the program product, its library name must be in your library list.

To display your library list, enter the following command:

```
DSPLIBL
```

Examine what is displayed to determine if the correct library name is there for the program product you wish to verify. See step **1** for the appropriate names. If the correct library name is displayed, go to step **11**.

If the correct library name is not displayed, add it by using the Add Library List Entry (ADDLIBLE) command. For example, if your library list does not include QRPG, enter the following command:

```
ADDLIBLE QRPG
```

By default, QRPG is placed first in your library list. This change to your library list is in effect only until you sign off.

11 Verify that the program product is correctly installed by using the appropriate procedure as follows:

- *Verifying RPG III*
- *Verifying COBOL*
- *Verifying BASIC*
- *Verifying PL/I*
- *Verifying IDU*
- *Verifying the Conversion Reformat Utility*
- *Verifying RJEF*
- *Verifying OFFICE/38—Text Management*
- *Verifying OFFICE/38—Language Dictionaries*
- *Verifying OFFICE/38—Administrative Management*
- *Verifying OFFICE/38—Personal Services/38*
- *Verifying Advanced Printer Function (APF)*
- *Verifying OFFICE/38—Business Graphics Utility (BGU)*
- *Verifying PC Support/38*
- *Verifying System/38 Cryptographic Facility*
- *Verifying Distributed Data Management (DDM)*

12 Remove the diskette(s) from the diskette magazine drive or the magnetic tape(s) from the magnetic tape drive(s).

13 Repeat the above procedures for each language or utility to be installed.

14 After installing all languages and utilities for your system, you may wish to add the library name permanently to the default user library list. As an example, key in:

```
CHGSYSVAL    SYSVAL(QUSRLIBL)
             VALUE('QGPL QTEMP _ _ _ _')
```

Note: Key in the list of library names (previously displayed as a result of the DSPLIBL command) and the new library names. This time the library list must be enclosed in parentheses and apostrophes with a blank space separating each library name specified. This change takes effect immediately after you sign off for all the jobs started from then on.

15 After completing installation of languages and utilities, go to *Configuring Devices on Your System* later in this chapter if you wish to create or change device descriptions. If you are installing RJEF, go to the *RJEF Programmer's Guide* to complete the installation.

VERIFYING RPG III

1. To verify that RPG III is installed, enter the following command:

```
CRTRPGPGM PGM(PROOF.QTEMP)
          SRCFILE(QRPGSRC.QRPG)
```

The system responds by compiling the IBM-supplied sample source program named PROOF, which was loaded into the QRPGSRC file (in library QRPG) as part of the RPG III installation procedure. The compiled program, named PROOF, is placed in the temporary library QTEMP, which is cleared when you sign off.

2. Execute the sample program by entering the following command:

```
CALL PROOF
```

The following is a sample that includes:

- (A) The source statement listing that you can expect to get as a result of the compile step.
- (B) The printed message indicating that the RPG III program product is installed properly.

Note: Because the sample listing and message are spooled, you must start the spooling subsystem (QSPL) and start a printer writer to actually print the listing and message. Enter these commands:

```
STRSBS SBSD(QSPL)
STRPRTWTR DEV(QSYSPRT) OUTQ(QPRINT)
```

```
5714RG1 RPG   R06M00   840615                                          PAGE    1

COMPILER: SYSTEM/38 RPG      06/15/84
PROGRAM COMPILED AT 10:50:24 ON 02/09/84

SUMMARY OF COMMAND OPTIONS PASSED TO COMPILER
 PGM          PROOF.QTEMP
 SRCFILE      QRPGSRC.QRPG
 OPTION       *SOURCE      *XREF        *GEN         *NODUMP
 GENOPT       *NOLIST      *NOXREF      *NOATR       *NODUMP
 USRPRF       *USER
 PUBAUT       *NORMAL
 TEXT         *SRCMBRTXT
 PRTFILE      QSYSPRT.*LIBL
 GENLVL       009

ACTUAL SOURCE FILE IS QRPGSRC FROM LIBRARY QRPG  MEMBER PROOF
DATE/TIME OF LAST CHANGE TO SOURCE MEMBER IS:  10/04/83  19:28:16
TEXT ASSOCIATED WITH SOURCE FILE IS CHECK OUT INSTALLATION
```

```
5714RG1 RPG  R06M00  840615      PROOF.QTEMP      02/09/84  10:50:24  PAGE    2

SEQUENCE       1         2         3         4         5         6         7      IND    DO    LAST       PAGE   PROGRAM
NUMBER    67890123456789012345678901234567890123456789012345678901234567890123 4  USE    NUM   UPDATE     LINE   ID

NAME OF PROGRAM WILL BE PROOF IN LIBRARY QTEMP

   100  H                                                                                                    PROOF

   200  FQSYSPRT O   F     132            PRINTER

   300  E                    ARRY    1   3  8

   400  C                     MOVE ARRY,2    ARRY,3
   500  C                     SETON                    LR                    1

   600  OQSYSPRT T  1 1   LR
   700  O                                    21 'INSTALLATION'
   800  O                                    24 'OF'
   900  O                                    28 'THE'
  1000  O                                    38 'SYSTEM/38'
  1100  O                                    42 'RPG'
  1200  O                                    51 'COMPILER'
  1300  O                                    54 'IS'
  1400  O                                    63 'VERIFIED'
* 6103      1401   OVERFLOW INDICATOR OA ASSIGNED TO FILE QSYSPRT

* * * * * E N D  O F  S O U R C E * * * * *

        TABLE/ARRAY ---------- ARRY
   1600  COMPILE
   1700  TIME
   1800  ARRAY


  CROSS-REFERENCE LISTING


      FILE/RCD     DEV/RCD      REFERENCES (D=DEFINED)

   01 QSYSPRT      PRINTER       200D  600  1401


      FIELD        ATTR         REFERENCES (M=MODIFIED D=DEFINED)

      ARRY(3)      A(8)       300D
        ARRY,2                 400
        ARRY,3                 400M
      2            LITERAL    400
      3            LITERAL    400


      INDICATOR  REFERENCES (M=MODIFIED D=DEFINED)

      LR           500M  600
      OA           200D 1401

MESSAGES
 MSGID    SEV  NUMBER   TEXT
* QRG6103   00     1      No overflow indicator specified. Overflow indicator assigned to printer file and automatic skip
                         to 6 generated

MESSAGE SUMMARY
TOTAL    00     10     20     30     40     50
   1      1      0      0      0      0      0

  18 RECORDS READ FROM SOURCE FILE
SOURCE RECORDS INCLUDE   14 SPECIFICATIONS,    3 TABLE RECORDS, AND    0 COMMENTS

PRM HAS BEEN CALLED

QRG0003 Program PROOF placed in lib QTEMP. 00 highest severity found

* * * * * E N D  O F  C O M P I L A T I O N * * * * *


INSTALLATION OF THE SYSTEM/38 RPG COMPILER IS VERIFIED
```

VERIFYING COBOL

1 To verify that COBOL is installed, enter the following command:

```
CRTCBLPGM PGM(VERIFY.QTEMP)
          SRCFILE(QCBLSRC.QCBL)
```

The system responds by compiling the IBM-supplied sample source program named VERIFY, which was loaded into the QCBLSRC file (in library QCBL) as part of the COBOL installation procedure. The compiled program, named VERIFY, is placed in the temporary library QTEMP, which is cleared when you sign off.

2 Execute the sample program by entering the following command:

```
CALL VERIFY
```

The following is a sample that includes:

A The source statement listing that you can expect to get as a result of the compile step.

B The printed message indicating that the COBOL program product is installed properly.

Note: Because the sample listing and message are spooled, you must start the spooling subsystem (QSPL) and start a printer writer to actually print the listing and message. Enter the following commands.

```
STRSBS SBSD(QSPL)
STRPRTWTR DEV(QSYSPRT) OUTQ(QPRINT)
```

```
5714CB1 R06 M00 840615                COBOL SOURCE LISTING                                  02/09/84 10:51:21        Page    2
 STMT SEQNBR -A 1 B.. ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 .IDENTFCN S  COPYNAME   CHG/DATE

   1  000100 PROCESS  OPTIONS.
                    COBOL COMPILER OPTIONS IN EFFECT

                        OPTIONS
                        SOURCE
                        NOXREF
                        NOMAP
                        NOVBSUM
                        NONUMBER
                        SEQUENCE
                        GEN
                        GENLVL(29)
                        FLAG( 0)
                        FIPS(NO)
                        QUOTE

                    COBOL GENERATION OPTIONS IN EFFECT

                        NOLIST
                        UNREF
                        RANGE
                        NOATR
                        NOXREF
                        NODUMP
                        NOPATCH
```

```
5714CB1 R06 M00 840615                COBOL SOURCE LISTING                                  02/09/84 10:51:21
 STMT SEQNBR -A 1 B.. ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 .IDENTFCN S  COPYNAME   CHG/DATE

  2  000200 IDENTIFICATION DIVISION.
  3  000300 PROGRAM-ID. VERIFY.
  4  000400   AUTHOR. PROGRAMMER NAME.
  5  000500   INSTALLATION. ROCHESTER LABORATORY.
  6  000600   DATE-WRITTEN. AUGUST 28, 1980.
  7  000700   DATE-COMPILED.  02/09/84 10:51:21    .
  8  000800 ENVIRONMENT DIVISION.
  9  000900 CONFIGURATION SECTION.
 10  001000   SOURCE-COMPUTER. IBM-S38.
 11  001100   OBJECT-COMPUTER. IBM-S38.
 12  001200 INPUT-OUTPUT SECTION.
 13  001300 FILE-CONTROL.
 14  001400     SELECT FILE1 ASSIGN TO PRINTER-QSYSPRT
 15  001500            ORGANIZATION IS SEQUENTIAL.
 16  001600 DATA DIVISION.
 17  001700 FILE SECTION.
 18  001800 FD  FILE1
 19  001900     RECORD CONTAINS 56 CHARACTERS
 20  002000     LABEL RECORDS ARE OMITTED
 21  002100     DATA RECORD IS REC-1.
 22  002200 01  REC-1 PIC X(56).
 23  002300 WORKING-STORAGE SECTION.
 24  002400 01  PRINT-LINE  PIC X(56) VALUE
 25  002500     "INSTALLATION OF THE SYSTEM/38 COBOL COMPILER IS VERIFIED".
 26  002600 PROCEDURE DIVISION.
     002700 WRITE-REC.
 27  002800     OPEN OUTPUT FILE1.
 28  002900     WRITE REC-1 FROM PRINT-LINE.
 29  003000     CLOSE FILE1.
 30  003100     STOP RUN.

                        * * * * *  E N D  O F  S O U R C E  * * * * *


5714CB1 R06 M00 840615                    COBOL MESSAGES                  VERIFY
 STMT  SEQNBR MSGID  SEV  TEXT


                                          MESSAGE SUMMARY
 TOTAL    INFO(0-4)    WARNING(5-19)    ERROR(20-29)    SEVERE(30-39)    TERMINAL(40-99)
    0          0             0               0               0                0

31 source records read
0 copy records read
0 copy members processed
0 sequence errors
0 was the highest severity message issued

 CBL0901 00  Program VERIFY created in library QTEMP.

                    * * * * *  E N D  O F  C O M P I L A T I O N  * * * * *


B {INSTALLATION OF THE SYSTEM/38 COBOL COMPILER IS VERIFIED
```

VERIFYING BASIC

1 To verify BASIC, enter the following command at a 24-line display station (a 5251 Model 11 or 12, a 5291, or a 5292):

```
BGNBAS
```

The system responds by displaying the BASIC session display:

```
Enter BASIC commands or statements in the input field below.
  (Enter /n or /-n to move n records forward or backward.)
Press the key marked ATTN to interrupt a running BASIC program.
  (This key is ignored by compiled BASIC programs.)
Press the ROLL UP or ROLL DOWN key to display additional data.
Press the PRINT key to print the current screen image.
Press the HELP key for additional information about BASIC.
Press CF1 (or enter the OFF command) to exit BASIC.




SESSION STARTED                                    12/17/82 10:21:04
::
CF3-Dup  CF4-Cmd/stmt help  CF5-Services  CF9-Extend line  CF12-Lowercase
```

2 Key in PROC VERIFY on the BASIC session display, as follows:

```
Enter BASIC commands or statements in the input field below.
  (Enter /n or /-n to move n records forward or backward.)
Press the key marked ATTN to interrupt a running BASIC program.
  (This key is ignored by compiled BASIC programs.)
Press the ROLL UP or ROLL DOWN key to display additional data.
Press the PRINT key to print the current screen image.
Press the HELP key for additional information about BASIC.
Press CF1 (or enter the OFF command) to exit BASIC.




SESSION STARTED                                    12/17/82 10:21:04
:: PROC VERIFY
CF3-Dup  CF4-Cmd/stmt help  CF5-Services  CF9-Extend line  CF12-Lowercase
```

3 Press the Enter key. The system runs a BASIC procedure and displays the following results:

```
   SESSION STARTED                                        12/17/82 10:21:04
:: PROC VERIFY
   BAS6737 Received CPF2105: Object VERIFY.QTEMP type *PGM not found.
Beginning BASIC test
Prime numbers under 1000
 2     3     5     7     11    13    17    19    23    29    31    37    41
 43    47    53    59    61    67    71    73    79    83    89    97    101
 103   107   109   113   127   131   137   139   149   151   157   163   167
 173   179   181   191   193   197   199   211   223   227   229   233   239
 241   251   257   263   269   271   277   281   283   293   307   311   313
 317   331   337   347   349   353   359   367   373   379   383   389   397
 401   409   419   421   431   433   439   443   449   457   461   463   463
 479   487   491   499   503   509   521   523   541   547   557   563   569
 571   577   587   593   599   601   607   613   617   619   631   641   643
 647   653   659   661   673   677   683   691   701   709   719   727   733
 739   743   751   757   761   769   773   787   797   809   811   821   823
 827   829   839   853   857   859   863   877   881   883   887   907   911
 919   929   937   941   947   953   967   971   977   983   991   997
Ending BASIC test
   BAS3303 Procedure ended
::
   CF3-Dup  CF4-Cmd/stmt help  CF5-Services  CF9-Extend line  CF12-Lowercase
```

4 Press the CF1 key. You have verified that BASIC is installed.

VERIFYING PL/I

1. To verify that PL/I is installed enter the following command:

```
CRTPLIPGM  PGM(PLITEST.QTEMP)  SRCFILE(QPLISRC.QPLI)
```

The system responds by compiling the IBM-supplied source program named PLITEST, which was loaded into the QPLISRC file (in library QPLI) as part of the PL/I installation procedure. The compiled program, named PLITEST, is placed in the temporary library QTEMP, which is cleared when you sign off.

2. Execute the sample program by entering the following command:

```
CALL  PLITEST
```

The following is a sample that includes:

- (A) The source statement listing that you can expect to get as a result of the compile step.

- (B) The printed message indicating that the PL/I program product is installed properly.

  Note: Because the sample listing and message are spooled, you must start the spooling subsystem (QSPL) and start a printer writer to actually print the listing and message. Enter the following commands:

```
STRSBS  SBSD(QSPL)
STRPRWTR  DEV(QSYSPRT)  OUTQ(QPRINT)
```

```
5714PL1 R06 M00 840615          SYSTEM/38 PL/I COMPILER          PLITEST.QTEMP          02/09/84 10:52:40       PAGE    1

Program name -                   PLITEST.QTEMP
Source file -                    QPLISRC.QPLI     Member - PLITEST     12/20/83 19:05:47
Compiler option -                *SOURCE     *NOXREF     *GENERATE     *NOOPTIONS     *NOAGGREGATE     *NOATTRIBUTES
Code generation option -         *NOLIST     *NOXREF     *NOPATCH      *NODUMP        *NOATTRIBUTES    *NODIAGNOSE
Source margins -                 2 72
Include file -                   QPLISRC.QPLI
Code generation severity level - 19
Print file -                     QSYSPRT.QSYS
Flagging level -                 0
User profile -                   *USER
Public authority -               *NORMAL
Text -                           PL/I VERIFICATION PROGRAM
Compiler -                       IBM System/38 PL/I Compiler
```

```
5714PL1 R06 M00 840615                    PL/I SOURCE LISTING          PLITEST.QTEMP          02/09/84 10:52:40          PAGE    2
                                            /*                PL/I INSTALLATION VERIFICATION PROGRAM                    */

INCLUDE      SEQNBR  STMT.SUBS BLK BN DO    *<.. ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 >.. ... 8  DATE

             000100     1                    /*                PL/I INSTALLATION VERIFICATION PROGRAM                    */
             000200                          PLITEST:
             000300                                  PROC;
A            000400     2        1  1                     DCL TEXT CHAR(35);
             000500     3        1  1                     TEXT = ' PL/I INSTALLATION IS SUCCESSFUL';
             000600     4        1  1                     PUT EDIT (TEXT)
             000700              1  1                         (PAGE, LINE(2), A(35));
             000800     5        1  1                  END PLITEST;


5714PL1 R06 M00 840615                    PL/I MESSAGES                PLITEST.QTEMP          02/09/84 10:52:40          PAGE    3
                                            /*                PL/I INSTALLATION VERIFICATION PROGRAM                    */

 MSGID    SEV   STMT.SUBS    TEXT

                          WARNING DIAGNOSTIC MESSAGES
* PLC2739  10      4         IBM extension to ANSI PL/I General-Purpose Subset: SYSIN or SYPRINT not declared.
* PLC2744  10      4         File 'SYSPRINT' not declared.  'FILE(SYSPRINT)' or 'FILE(SYSIN)' assumed.

                          INFORMATIONAL DIAGNOSTIC MESSAGES
* PLC2159   0      4         'FILE' option missing on 'PUT' statement. Default is 'FILE(SYSPRINT)'.

                                        MESSAGE SUMMARY

      TOTAL          INFORMATIONAL        WARNING            ERROR            SEVERE          UNRECOVERABLE
                        (0-4)             (5-19)            (20-29)           (30-39)            (40-49)

        3                 1                 2                 0                 0                  0

* PLC6901   0               Program PLITEST created in library QTEMP.

                     * * * * *  E N D  O F  C O M P I L A T I O N  * * * * *
```

B { PL/I INSTALLATION IS SUCCESSFUL

VERIFYING IDU

Although IDU contains four utilities (the data file utility, query, the screen design aid, and the source entry utility), you need only verify one. Therefore, it is recommended that you verify only the source entry utility.

1. To verify the source entry utility, enter the following command at a 24-line work station.

```
EDTSRC  QTXTSRC.QIDU  TEST  *TXT
```

The system responds by displaying the edit display.

```
EDIT   LS W:1       Mbr: TEST                  Scan:_____________________________
FMT **  ... ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7
       ****BEGINNING OF DATA****
       *******END OF DATA*******









       Enter I (insert), IFff (insert under format ff), IPff (insert with
         prompt ff) or A (copy after) at cursor.  TXT ff values are:
            **
       For more help,  press HELP.

Member TEST added to file QTXTSRC.QIDU.
```

This display allows text to be entered into a member called TEST in the IBM-supplied file, QTXTSRC.

2 Press the CF1 key. The system responds by displaying the exit display.

```
SEU                    EXIT

Select one of the following:
  1. Exit without update
  2. Exit and update member
  3. Exit and create a new member
  4. Update member, no exit
  5. Create member, no exit
  6. Return to editing

Option:  1
                                  MEMBER      FILE        LIBRARY
For options 2 to 5:               TEST        QTXTSRC     QIDU
  Text (description):
  Resequence member  (Y N):       Y   Start:    1.00  Increment:   1.00

For options 1 to 3:
  Return to member list  (Y N):   N

For options 1 to 6:
  Print source listing  (Y N):    N

TOTAL RECORDS      ADDED      CHANGED      DELETED      SYNTAX ERRORS LEFT
```

You have verified that the source entry utility is installed. Press the Enter key. The system responds by displaying the command entry display.

VERIFYING THE CONVERSION REFORMAT UTILITY

To verify the conversion reformat utility, enter the following command:

```
CALL QTEST1
```

The system responds by performing a sample sort and prints the listing shown in Figure 3-3.

Note: Because the sample listing is spooled, you must start the spooling subsystem (QSPL) and start a printer writer to actually print the listing. Enter the following commands:

```
STRSBS SBSD(QSPL)
STRPRTWTR DEV(QSYSPRT) OUTQ(QPRINT)
```

QTEST1 is a control language program that is installed with the conversion reformat utility. This program creates three files: QRUXDATA, QRUXOUT, and QRUXSRC. The program then automatically executes the conversion reformat utility.

If the verification fails, the three files (QRUXDATA, QRUXOUT, and QRUXSRC) created by the verification program must be deleted before the verification is retried.

```
5714CV2 R06M00  840615          SYSTEM/38 CONVERSION REFORMAT UTILITY                    02/09/84 10:55:17      Page       1

Input file(s) (from command) -     QRUXDATA.*LIBL          Member -   *FIRST
Output file (from command) -       QRUXOUT.*LIBL           Member -   *FIRST
Source file (actual) -             QRUXSRC.QGPL            Member -   QRUXSRC
Print file (actual) -              QSYSPRT.QSYS
Options -                          *PRT       *NOCHK     *NODUMP
        *... ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 ... ... 8 ... ... 9 ... .

          HFILE  00005A
          I C00010001EQCA
          FNC   2   6
          FDC  70  75
          FDC  56  67
                    * * * * *  E N D  O F  S O U R C E  * * * * *


 FMT6010 0 errors found in source file QRUXSRC.QGPL mbr QRUXSRC.
 FMT6020 10 records read and 5 records selected from QRUXDATA.QGPL mbr QRUXDATA.
 FMT6040 10 total records read and 5 total records selected.
 FMT6050 5 records placed in output file QRUXOUT.QGPL mbr QRUXOUT.
 FMT6060 REQUEST SUCCESSFUL 02/09/84 10:55:17.



5714SS1 R06 M00 840615     *LIST        COPY FILE              QRUXSRC.QGPL  QRUXSRC          02/09/84 10:55:23      Page       1

From file -          QRUXSRC.QGPL              Member -    QRUXSRC           Rcd Format -     QRUXSRC
  Max rcd len -      96
To file -            *LIST

          RCDNBR  *... ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 ... ... 8 ... ... 9 ... ... 0
               1                  HFILE  00005A
               2                  I C00010001EQCA
               3                  FNC   2   6
               4                  FDC  70  75
               5                  FDC  56  67

5 records copied to file QSYSPRT.QSYS member/label *N. 0 records excluded.

                    * * * * *  E N D  O F  L I S T I N G  * * * * *



5714SS1 R06 M00 840615     *LIST        COPY FILE              QRUXDATA.QGPL  QRUXDATA         02/09/84 10:55:25      Page       1

From file -          QRUXDATA.QGPL             Member -    QRUXDATA          Rcd Format -     QRUXDATA
  Max rcd len -      96
To file -            *LIST

          RCDNBR  *... ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 ... ... 8 ... ... 9 ... ... 0
               1  A00009                                                SORT # 00005
               2  B00008                                                OMIT # 00005
               3  A00007                                                SORT # 00004
               4  B00006                                                OMIT # 00004
               5  A00005                                                SORT # 00003
               6  B00004                                                OMIT # 00003
               7  A00003                                                SORT # 00002
               8  B00002                                                OMIT # 00002
               9  A00001                                                SORT # 00001
              10  B00000                                                OMIT # 00001

10 records copied to file QSYSPRT.QSYS member/label *N. 0 records excluded.

                    * * * * *  E N D  O F  L I S T I N G  * * * * *



5714SS1 R06 M00 840615     *LIST        COPY FILE              QRUXOUT.QGPL  QRUXOUT          02/09/84 10:55:26      Page       1

From file -          QRUXOUT.QGPL              Member -    QRUXOUT           Rcd Format -     QRUXOUT
  Max rcd len -      96
To file -            *LIST

          RCDNBR  *... ... 1 ... ... 2 ... ... 3 ... ... 4 ... ... 5 ... ... 6 ... ... 7 ... ... 8 ... ... 9 ... ... 0
               1  00001      SORT # 00001
               2  00003      SORT # 00002
               3  00005      SORT # 00003
               4  00007      SORT # 00004
               5  00009      SORT # 00005

5 records copied to file QSYSPRT.QSYS member/label *N. 0 records excluded.

                    * * * * *  E N D  O F  L I S T I N G  * * * * *
```

Figure 3-3. Conversion Reformat Utility Verification Sort Listing

VERIFYING RJEF

To verify RJEF, complete its installation by following the procedures in the *RJEF Planning and Installation Guide.*

VERIFYING OFFICE/38–TEXT MANAGEMENT

1 To verify OFFICE/38–Text Management, enter the following command at a 24-line display station:

```
EDTTXT QTXTSRC.QGPL TEST
```

The system responds by displaying the following display:

```
 TEXT                    PRIMARY MENU

Select one of the following:
   1. Create or revise a document
   2. Browse a document
   3. Print a document
   4. Fill in a form document
Option:  _

Name of the document when stored:
  Document (blank for a list of documents):        TEST
    File   (blank for a list of files):              QTXTSRC
    Library:                                         QGPL


Within Text Management:
  Press HELP key to display help text.
  Press CF1 key to exit any function.
  Press CF2 key to back up to the previous display in a series.

CF6-Display messages
```

2 Press the CF1 key. The system responds by displaying the command entry display. You have verified that OFFICE/38–Text Management is installed.

VERIFYING OFFICE/38–LANGUAGE DICTIONARIES

Note: Before verifying OFFICE/38–Language Dictionaries, verify that OFFICE/38–Text Management is installed.

1 To verify that OFFICE/38–Language Dictionaries is installed, enter the following command at a 24-line display station:

```
EDTDOC  EXAMPLE.QTXT  STDLET
```

The system responds by displaying the Text Management edit display.

```
 TEXT     W:1     Document: STDLET          Scan: _____________________________
Fmt: 1 <..I ... 1 ... ... 2 ... ...C3 ... ... 4 ... ... 5 ... ..> 6 ... ... 7
        **********BEGINNING*********
0001.00 July 9, 1981
0002.00
0003.00
0004.00
0005.00 Mrs. Lawrence Smith
0006.00 3949 San Marcos Road
0007.00 Evanston  Illinois
0008.00
0009.00 Dear Mrs. Smith,
0010.00
0011  1    You may use your CLEARVIEW CARD at any of thousands of
0012.00 merchants in the Chicago area who proudly display the
0013.00 CLEARVIEW sticker.  You will be required to show your card
0014.00 at the time of purchase.
0015.00
0016  1     The limit set on your credit will be $750.00.  If you
0017.00 wish to increase your credit limit beyond $750.00, please
0018.00 call your CLEARVIEW Account Representative on (312)
0019.00 555-1234.
0020.00
```

2 Press the CF5 key. The system responds by displaying the Text Management services menu.

```
 TEXT                        SERVICES MENU
Select one of the following:
  1. Display/change scan/substitute options
  2. Display current document in printed format on split display
  3. Display another document on split display
  4. Copy another document to edit display
  5. Display fields from data base member on split display
  6. Copy fields from data base member to edit display
  7. Display/change list of data files that control printing
  8. Display/change print options
  9. Display/change dictionary search list
Option: 9

  Document/member:  STDLET____   File:  EXAMPLE___   Library: QTXT_____




CF6-Display messages
```

3 Select option 9 by keying in a 9 and pressing the Enter key. The system responds by displaying the dictionary search list.

```
 TEXT                          DICTIONARY SEARCH LIST
 Document:  STDLET                File:  EXAMPLE          Library: QTXT
ORDER  DICTIONARY   LIBRARY              DESCRIPTION
  1    US           QENGLISH             US ENGLISH DICTIONARY
  -    _________    _________
  -    _________    _________
  -    _________    _________
  -    _________    _________
  -    _________    _________
  -    _________    _________
  -    _________    _________

CF5-Display updated dictionary search list
```

4 Key in the names of the dictionaries to be verified, as follows:

For this dictionary:	Key in this name:
United States English	US in library QENGLISH
United Kingdom English	UK in library QENGLISH
Medical	USMED in library QENGLISH
Legal	USLEGAL in library QENGLISH
German	DEUTSCH in library QDEUTSCH
Spanish	ESPANA in library QESPANA
French	FRANCAIS in library QFRANCAIS
Italian	ITALIANO in library QITALIANO
Danish	DANSK in library QDANSK
Dutch	NEDERLND in library QNEDERLND
Icelandic	ISLENSK in library QISLENSK
Norwegian	NORSK in library QNORSK
Swedish	SVENSK in library QSVENSK

For each dictionary you specify, you should also specify the order in which it is to be searched. (The numbers need not be in order.) Press the Enter key. If you receive a message that the dictionary is not found, check your spelling of the name of the dictionary, and press the Enter key again.

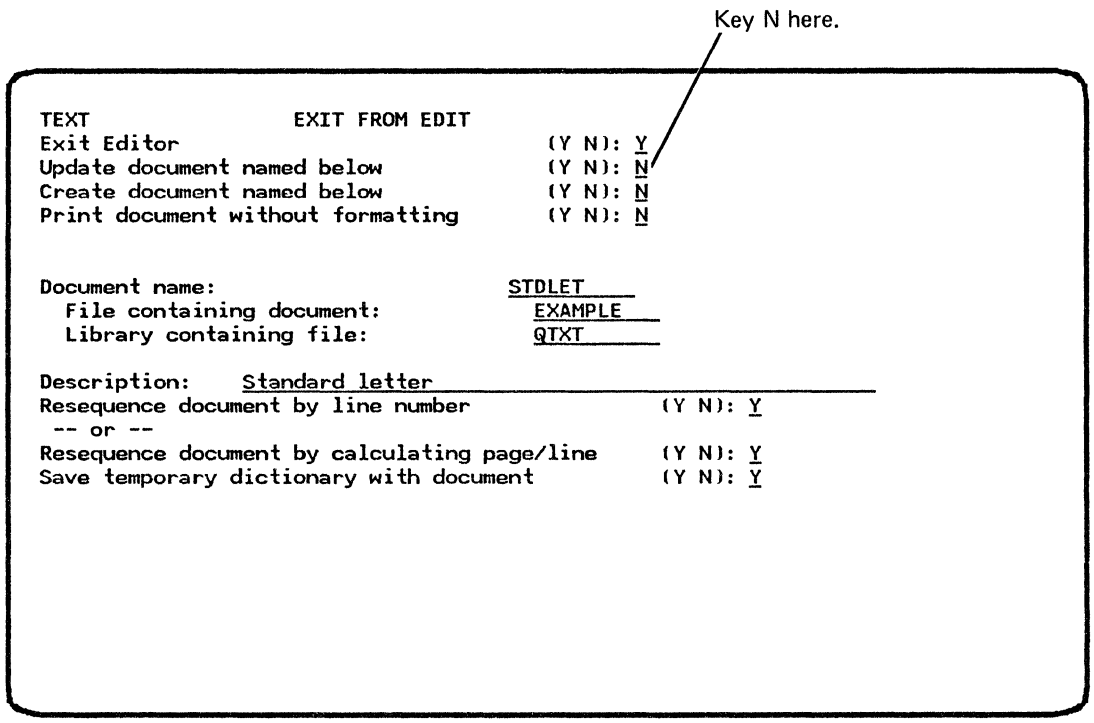
5 Press the Enter key until you return to the edit display.

```
 TEXT     W:1     Document: STDLET          Scan: _____________________________
Fmt: 1 <..I ... 1 ... ... 2 ... ...C3 ... ... 4 ... ... 5 ... ..> 6 ... ... 7
       **********BEGINNING*********
0001.00 July 9, 1981
0002.00
0003.00
0004.00
0005.00 Mrs. Lawrence Smith
0006.00 3949 San Marcos Road
0007.00 Evanston  Illinois
0008.00
0009.00 Dear Mrs. Smith,
0010.00
0011  1    You may use your CLEARVIEW CARD at any of thousands of
0012.00 merchants in the Chicago area who proudly display the
0013.00 CLEARVIEW sticker.  You will be required to show your card
0014.00 at the time of purchase.
0015.00
0016  1     The limit set on your credit will be $750.00.  If you
0017.00 wish to increase your credit limit beyond $750.00, please
0018.00 call your CLEARVIEW Account Representative on (312)
0019.00 555-1234.
0020.00
```

6 Press the CF3 key to check the spelling of the sample letter. The system should show unusual words such as names and addresses in reverse image indicating that they are misspelled (or not found in the dictionary).

```
 TEXT     W:1     Document: STDLET          Scan: _____________________________
Fmt: 1 <..I ... 1 ... ... 2 ... ...C3 ... ... 4 ... ... 5 ... ..> 6 ... ... 7
       **********BEGINNING*********
0001.00 July 9, 1981
0002.00
0003.00
0004.00
0005.00 Mrs. Lawrence Smith
0006.00 3949 San Marcos Road
0007.00 Evanston  Illinois
0008.00
0009.00 Dear Mrs. Smith,
0010.00
0011  1    You may use your CLEARVIEW CARD at any of thousands of
0012.00 merchants in the Chicago area who proudly display the
0013.00 CLEARVIEW sticker.  You will be required to show your card
0014.00 at the time of purchase.
0015.00
0016  1     The limit set on your credit will be $750.00.  If you
0017.00 wish to increase your credit limit beyond $750.00, please
0018.00 call your CLEARVIEW Account Representative on (312)
0019.00 555-1234.
0020.00
```

7 Press the CF1 key. The system responds by displaying the exit from edit display.



8 On the exit from edit display, key N at the position shown. Press the Enter key. The system responds by displaying the command entry display. You have verified that OFFICE/38–Language Dictionaries is installed.

VERIFYING OFFICE/38–ADMINISTRATIVE MANAGEMENT

To verify OFFICE/38–Administrative Management, complete its installation by following the procedures in the manual *Using and Managing Administrative Management*.

VERIFYING OFFICE/38–PERSONAL SERVICES/38

To verify OFFICE/38–Personal Services/38, you must be signed on as the System/38 security officer.

1. Enter the following command at a 24-line display station.

   ```
   ENTPS
   ```

   The system responds by displaying the following display:

```
        PERSONAL SERVICES (PS/38) MAIN MENU              System: S38F

Select one of the following:                              Time  5:53 PM
  1. Handle mail                                  1985     January     1985
  2. Find/handle filed documents                   S   M   T   W   T   F   S
  3. Send message                                              1   2   3   4   5
  4. Create and send memo                          6   7   8   9  10  11  12
  5. Work with text documents                     13  14  15  16  17  18  19
  6. Work with calendars                          20  21  22  23  24  25  26
  7. Work with personal directories               27  28  29  30  31
  8. Administration

 90. Sign off
 Option:  __




    Within PS/38 you can use:
      CF1 - To return to the Main Menu or to exit (End)
      CF2 - To return to the previous display     CF4 - To view messages
      ATTN - To interrupt (suspend) a function    HELP - To get more information
    (C) COPYRIGHT IBM CORP. 1985
```

2. Press the CF1 key. The system responds by displaying the command entry display. You have verified that OFFICE/38–Personal Services/38 is installed.

VERIFYING ADVANCED PRINTER FUNCTION (APF)

1 To verify APF, enter the following command at a 24-line display station:

```
DSNAPF
```

The system responds by displaying the following display.

```
APF                        ADVANCED PRINTER FUNCTION MENU
Select one of the following:
  1. Create or maintain a symbol set
  2. Create or maintain a form description
  3. Print copies or a form description
  4. Merge spooled data with a form description
Option:  _

Enter the symbol set name for option 1:
  Symbol set (blank for list of symbol sets):          __________
    File name:                                         __________
    Library name:                                      *LIBL
Enter the form description name for options 2, 3, or 4:
  Form description (blank for list of forms):          __________
    File name:                                         __________
    Library name:                                      *LIBL




 HELP-Help
```

2 Press the CF1 key. The system responds by displaying the command entry display. You have verified that the Advanced Printer Function is installed.

VERIFYING OFFICE/38–BUSINESS GRAPHICS UTILITY (BGU)

1. To verify that BGU is installed, enter the following command at a 24-line display station:

   ENTBGU

   The system responds by displaying the following display.

```
BGU                                PRIMARY MENU

Select one of the following:
   1. Specify chart data
   2. Create chart format
   3. Restore/change existing chart format
   4. Manage existing chart format
Option:  1

--------------------------------------------------------------------------------
On this menu, select:
   option 1 to enter, retrieve or modify chart data values, chart
            heading, or legend text.
   option 2 to specify chart type, heading position and attributes,
            chart axes, margins, legend position and attributes,
            data attributes or chart notes for a new chart format.
   option 3 to restore and optionally modify a previously created
            chart format.
   option 4 to copy, rename, move, change owner of or delete an
            existing chart format object.
CF2-Within BGU, ignore input and return to previous display

HELP-General BGU Information    CF1-Exit/Save   CF5-Display   CF15-Hardcopy
```

These are displayed only on a 5292 Model 2.

2. Press the CF1 key. The system responds by displaying the command entry display. You have verified that OFFICE/38–Business Graphics Utility is installed.

VERIFYING PC SUPPORT/38

To verify PC Support/38, complete its installation by following the procedures in the manual *IBM PC Support/38 Technical Reference*.

VERIFYING SYSTEM/38 CRYPTOGRAPHIC FACILITY

To verify that System/38 Cryptography Facility is installed, enter the following commands at a 24-line display station:

```
ADDLIBLE QCRP

CALL VERIFY
```

The system responds with the following message:

```
INSTALLATION OF THE SYSTEM/38 CRYPTOGRAPHIC FACILITY IS VERIFIED
```

VERIFYING DISTRIBUTED DATA MANAGEMENT (DDM)

To verify Distributed Data Management, complete its installation by following the procedures in the manual *IBM System/38 Distributed Data Management User's Guide*.

Configuring Devices on Your System

This section provides a series of steps to help you configure devices. You should have already completed the work sheets described in Chapter 2; you will use them to enter various descriptions into the system. The suggested sequence for creating descriptions is:

1. Display the configuration menu as a result of the start CPF operation. Otherwise, you will have to terminate subsystems and vary devices, control units, and lines off before configuring devices, and go through the steps in reverse (vary lines, control units, and devices on, then start subsystems again). Going through the configuration menu avoids these extra steps.

2. Configure system devices if necessary (diskette magazine drive, tape drive(s), system printer(s), card device).

3. Configure local work stations and their controller(s). Before starting the local work station configuration, arrange the work sheets in the following groups:
   a. Work station controller
   b. Work station printer(s)
   c. Display station(s)

4. Configure remote work stations, their lines and their controllers, if any. Before starting the remote work station configuration, arrange the work sheets in the following groups:
   a. Line(s)
   b. Control unit(s)
   c. Work station printer(s)
   d. Display station for each 5251 Model 2 or 12 Control Unit
   e. Display station(s) attached to the control unit(s)

5. Configure for remote communications (BSC, BSCT, SNA). Before starting the remote communications configuration, arrange the work sheets in the following groups:
   a. Line(s)
   b. Control unit(s)
   c. Communications device(s)
   d. Device mode entries

The order in which the descriptions are created is important. A line description should be created before the associated control unit descriptions. The control unit descriptions should be created before the associated device descriptions. Also, the device descriptions for each work station printer should be created before the device description for its associated display work station(s) is created.

If the descriptions are created out of sequence, any commands referring to names of descriptions not yet created are *rejected* by the system.

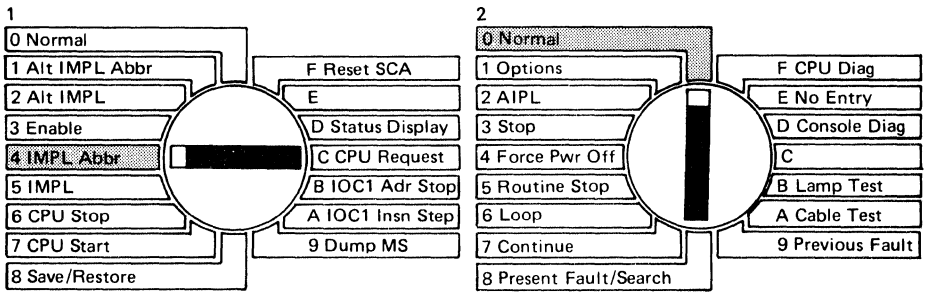
START DEVICE CONFIGURATION

Is the configuration menu displayed on the system console? If you do not wish to use the configuration menu, you can use the command entry display to enter the commands in the following procedures:

Yes **No**

To obtain the configuration menu, once CPF is installed:

a. Set the rotary switches on the operator/service panel as shown.



b. Is the system power on (the Power On switch is lit)?

Yes **No**

Press the Power On switch to start the power-on sequence and start the load CPF process. The system responds with a message display if there are any messages available on the QSYSOPR message queue. Go to step c.

If CPF is already started and active, power down the system using the Power Down System (PWRDWNSYS) command and then press the Power On switch. If CPF is not active but the power is on, press the Load switch. The system responds with a message display if there are any messages available on the QSYSOPR message queue.

c. Press the Enter key. The system responds by displaying the sign-on prompt.

d. Sign on by keying in the security officer password (the IBM-supplied password is SECOFR). (The password is not displayed when it is keyed in.) You can also sign on with any user-created password that allows access to the create, change, and delete commands used in the following procedures. Use a password other than the security officer's password if you do not want the security officer to have exclusive ownership of the device descriptions created.

e. Press the Enter key. The system responds by displaying the start control program facility prompt.

f. Key in the correct system date, the correct system time, and *YES for the *Configuration menu* field.

A

g. Press the Enter key. The system responds by displaying the configuration menu. At this point you may wish to use the Display Device Configuration (DSPDEVCFG) command to determine exactly what device descriptions currently exist for your system configuration.

h. Go to:

- *Configuring System Devices*, or
- *Configuring Local Work Stations*, or
- *Configuring Remote Work Stations*, or
- *Configuring Remote Communications*

Go to:

- *Configuring System Devices*, or
- *Configuring Local Work Stations*, or
- *Configuring Remote Work Stations*, or
- *Configuring Remote Communications*

CONFIGURING SYSTEM DEVICES

1 Are you *changing* the diskette magazine drive device description?

Yes **No**

Are you *replacing* the diskette magazine drive device description?

Yes **No**

Go to step **2**

a. Key in the Delete Device Description (DLTDEVD) command, then press the CF4 key. The system displays the DLTDEVD prompt.

b. Key in the name of the device description that you want to delete (QDKT), then press the Enter key. The system responds by displaying the configuration menu.

c. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

d. Key in the values from the diskette magazine drive work sheet, then press the Enter key. The system responds by displaying the configuration menu.

e. Go to step **2**

a. Key in the Change Device Description (CHGDEVD) command, then press the CF4 key. The system displays the CHGDEVD prompt.

b. Use the information recorded on the diskette magazine drive work sheet to respond to the CHGDEVD prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu.

2 Are you *creating* a system printer device description?

Yes **No**

Are you *replacing* the system printer device description?

Yes **No**

Go to step **4**

a. Key in the Delete Device Description (DLTDEVD) command, then press the CF4 key. The system displays the DLTDEVD prompt.

b. Key in the name of the device description that you want to delete (QSYSPRT or QSYSPRT2), then press the Enter key. The system responds by displaying the configuration menu.

c. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

d. Key in the values from the system printer work sheet, then press the Enter key. The system responds by displaying the configuration menu.

e. Go to step **3**

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Use the information recorded on the system printer work sheet to respond to the CRTDEVD prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu.

3 Do you have another system printer to describe?

Yes **No**

Go to step 4

Go to step 2

4 Do you have a card device to describe?

Yes **No**

Go to step 5

Are you *creating* the card device description?

Yes **No**

Are you *replacing* the card device description?

Yes **No**

Go to step 5

a. Key in the Delete Device Description (DLTDEVD) command, then press the CF4 key. The system displays the DLTDEVD prompt.

b. Key in the name of the device description that you want to delete (QCARD96), then press the Enter key. The system responds by displaying the configuration menu.

c. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

d. Key in the values from the Card Device work sheet, then press the Enter key. The system responds by displaying the configuration menu.

e. Go to step 5

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Use the information recorded on the Card Device work sheet to respond to the CRTDEVD prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu.

5 Do you have a magnetic tape device to describe?

Yes **No**

Go to:

- *Configuring Local Work Stations*, or
- *Configuring Remote Work Stations*, or
- *Configuring Remote Communications*, or
- If you have finished configuring devices, press the CF1 key. The system responds by displaying the command entry display. You should now save the current version of your system to include the new or changed device descriptions. Go to *Saving the System* later in this chapter.

Are you *creating* or *changing* the 3411, 3430, or 3422 control unit description?

Yes **No**

Are you *replacing* the 3411, 3430, or 3422 control unit description?

Yes **No**

Go to step 6.

a. Key in the Delete Control Unit Description (DLTCUD) command, then press the CF4 key. The system displays the DLTCUD prompt.

b. Key in the name of the 3411, 3430, or 3422 control unit description that you want to delete (QTAPE or QTAPEA), then press the Enter key. The system responds by displaying the configuration menu.

c. Key in the Create Control Unit Description (CRTCUD) command, then press the CF4 key. The system displays the CRTCUD prompt.

d. Key in the values from the control unit description work sheet, then press the Enter key. The system responds by displaying the configuration menu.

Note:

1. You *must* key the names of the existing 3411, 3430, or 3422 device descriptions into the DEV parameter.
2. The 3422 tape drive is configured as a 3430.

A B

e. If you are replacing a second magnetic tape control unit, repeat steps a through d.

f. Go to step 6.

a. Key in the Create Control Unit Description (CRTCUD) or Change Control Unit Description (CHGCUD) command, as appropriate, then press the CF4 key. The system displays the command prompt.

b. Use the information recorded on the work sheet to respond to the prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu.

Note: The 3422 tape drive is configured as a 3430.

c. If you are changing a second magnetic tape control unit, repeat steps a and b.

6 Are you *creating* or *changing* the 3410, 3430, or 3422 tape device description?

Yes **No**

Are you *replacing* the 3410, 3430, or 3422 tape device description?

Yes **No**

Go to step 7.

a. Key in the Delete Device Description (DLTDEVD) command, then press the CF4 key. The system displays the DLTDEVD prompt.

b. Key in the name of the device description that you want to delete, then press the Enter key. The system responds by displaying the configuration menu.

c. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

d. Key in the values from the magnetic tape device work sheet, then press the Enter key. The system responds by displaying the configuration menu.

Note: The 3422 tape drive is configured as a 3430.

e. Go to step 7.

a. Key in the Create Control Unit Description (CRTCUD) or Change Device Description (CHGDEVD) command, as appropriate, then press the CF4 key. The system displays the command prompt.

b. Use the information on the magnetic tape device work sheet to respond to the prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu.

Note: The 3422 tape drive is configured as a 3430.

7 Do you have another 3410, 3430, or 3422 tape device to describe?

Yes **No**

Go to:

- *Configuring Local Work Stations*, or
- *Configuring Remote Work Stations*, or
- *Configuring Remote Communications*, or
- If you have finished configuring devices, press the CF1 key. The system responds by displaying the command entry display. You should now save the current version of your system to include the new or changed device descriptions. Go to *Saving the System* later in this chapter.

Go to Step **6**.

CONFIGURING LOCAL WORK STATIONS

Before starting the local work station configuration, arrange the work sheets documenting the local work station configuration in the following groups:

- Local work station controller(s)
- Work station printer(s)
- Display station(s)

The suggested sequence for creating descriptions is to first describe the control units, then the work station printers, then display stations. This sequence for creating descriptions is not a required sequence. However, if the descriptions are created out of sequence, any commands referring to names of descriptions not yet created are *rejected* by the system.

1 Are you *changing* the IBM-supplied work station controller description?

Yes **No**

Are you *replacing* the IBM-supplied work station controller description?

Yes **No**

Go to step **2**.

a. Key in the Delete Control Unit Description (DLTCUD) command, then press the CF4 key. The system displays the DLTCUD prompt.

b. Key in the name of the IBM-supplied control unit description that you want to delete, then press the Enter key. The system responds by redisplaying the configuration menu.

c. Key in the Create Control Unit Description (CRTCUD) command, then press the CF4 key. The system displays the CRTCUD prompt.

d. Key in the values from the local work station controller work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

e. Repeat step **1** for each work station controller. After describing the last work station controller, go to step **2**.

a. Key in the Change Control Unit Description (CHGCUD) command, then press the CF4 key. The system displays the CHGCUD prompt.

b. Use the information recorded on the work sheet to respond to the CHGCUD prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by redisplaying the configuration menu.

c. Repeat step **1** for each work station controller. After describing the last work station controller, go to step **2**.

2 Are there any work station printers attached to the work station controller?

Yes **No**

Go to step 3.

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Key in the values from the work station printer work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

c. Repeat step 2 a and b for each work station printer. After describing the last work station printer, go to step 3.

3 Are there any display stations attached to the work station controller?

Yes **No**

Go to step 4.

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Key in the values from the display station work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

c. Repeat steps 3 a and b for each display station. After describing the last display station, go to step 4.

4 Have you finished configuring devices?

Yes **No**

Go to:

- *Configuring System Devices*, or
- *Configuring Remote Work Stations*, or
- *Configuring Remote Communications*

Do one of the following:

- If you were directed to this section from *Installing Your System for the First Time*, return to step 7 of that section.
- If you were directed to this section from *Reinstalling Your System after a Problem Has Occurred*, return to step 10 of that section.
- Otherwise, press the CF1 key. The system responds by displaying the command entry display. You should now save the current version of your system to include the new or changed device descriptions. Go to *Saving the System* later in this chapter.

CONFIGURING REMOTE WORK STATIONS

Before starting the remote work station configuration, arrange the work sheets documenting the remote work station configuration in the following groups:

- SDLC primary line(s)
- 5250 control unit(s) and 3270 control units
- Work station printer(s)
- Display station(s)

The suggested sequence for creating descriptions is to first describe the communications lines, the control units, the work station printers, and then the display stations. This sequence for creating descriptions is not a required sequence. However, if the descriptions are created out of sequence, any commands referring to names of descriptions not yet created are *rejected* by the system.

1. Key in the Create Line Description (CRTLIND) command, then press the CF4 key. The system displays the CRTLIND prompt.

2. Use the information recorded on the work sheet to respond to the CRTLIND prompt. When you have responded to the appropriate parameters, press the Enter key. The system responds by displaying the configuration menu again.

3. Repeat steps 1 and 2 for each communications line. After describing the last communications line, go to step 4.

4. Key in Create Control Unit Description (CRTCUD) command, then press the CF4 key. The system displays the CRTCUD prompt.

5. Key in the values from the remote work station controller work sheet, then press the Enter key. The system responds by displaying the configuration menu again.

6. Repeat steps 4 and 5 for each control unit. After describing the last control unit, go to step 7.

7 Are there any work station printers attached to a control unit?

Yes **No**
|
Go to step **8**.

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Key in the values from the work station printer work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

c. Repeat steps **7** a and b for each work station printer. After describing the last work station printer, go to step **8**.

8 Are there any display stations attached to a control unit?

Yes **No**
|
Go to step **9**.

a. Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

b. Key in the values from the display station work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

c. Repeat steps **8** a and b for each display station. After describing the last display station, go to step **9**.

9 Have you finished configuring devices?

Yes **No**
|
Go to:

- *Configuring System Devices*, or
- *Configuring Local Work Stations*, or
- *Configuring Remote Communications*

Do one of the following:

- If you were directed to this section from *Installing Your System for the First Time*, return to step **7** of that section.
- If you were directed to this section from *Reinstalling Your System after a Problem Has Occurred*, return to step **10** of that section.
- Otherwise, press the CF1 key. The system responds by displaying the command entry display. You should now save the current version of your system to include the new or changed device descriptions. Go to *Saving the System* later in this chapter.

CONFIGURING REMOTE COMMUNICATIONS (BSC, BSCT, SNA)

Before starting the remote communications configuration, arrange the work sheets documenting the remote communications configuration in the following groups:

- Line(s)
- Control unit(s)
- Communications device(s)
- Device mode entries

The suggested sequence for creating descriptions is to first describe the communications lines, the control units, the communications devices, and the device mode entries. This sequence for creating descriptions is not a required sequence. However, if the descriptions are created out of sequence, any commands referring to names of descriptions not yet created are *rejected* by the system.

1. Key in the Create Line Description (CRTLIND) command, then press the CF4 key. The system displays the CRTLIND prompt.

2. Key in the values from the appropriate line description work sheet, then press the Enter key. The system responds by displaying the configuration menu.

3. Repeat steps 1 and 2 for each communications line. After describing the last communications line, go to step 4.

4. Key in the Create Control Unit Description (CRTCUD) command, then press the CF4 key. The system displays the CRTCUD prompt.

5. Key in the values from the appropriate control unit description work sheet, then press the Enter key. The system responds by displaying the configuration menu.

6. Repeat steps 4 and 5 for each control unit. After describing the last control unit, go to step 7.

7 Key in the Create Device Description (CRTDEVD) command, then press the CF4 key. The system displays the CRTDEVD prompt.

8 Key in the values from the appropriate communications device description work sheet, then press the Enter key. The system responds by redisplaying the configuration menu.

9 Repeat steps 7 and 8 for each communications device or logical session. After describing the last device or session, go to step 10.

10 Are you configuring for Advanced Program-to-Program Communications?

Yes **No**

Go to step 14.

Go to step 11.

11 Key in the Add Device Mode Entry (ADDDEVMODE) command, then press the CF4 key. The system displays the ADDDEVMODE prompt.

12 Key in the values from the add device mode entry work sheet, then press the Enter key. The system responds by displaying the configuration menu.

13 Repeat steps 11 and 12 for each device mode entry work sheet. After adding the device mode entries for each device, go to step 14.

14 Have you finished configuring devices?

Yes **No**

Go to:

- *Configuring System Devices*, or
- *Configuring Local Work Stations*, or
- *Configuring Remote Work Stations*

Do one of the following:

- If you were directed to this section from *Installing Your System for the First Time*, return to step 7 of that section.
- If you were directed to this section from *Reinstalling Your System after a Problem Has Occurred*, return to step 10 of that section.
- Otherwise, press the CF1 key. The system responds by displaying the command entry display. You should now save the current version of your system to include the new or changed device descriptions. Go to *Saving the System* later in this chapter.

SAVING THE SYSTEM

After you have installed your system, including installing program products and available program changes, configuring devices, and tailoring your system, you should save the system and any user libraries. This saved version can then be used to recover from any system failures that require that CPF be installed again. In addition, this saved version allows you to reinstall your system without reconfiguring devices.

To save your installed system, do the following:

- If you are saving the system on diskettes, make sure that they are in save/restore format. To find out what format they are in, use the Display Diskette (DSPDKT) command. The format must be 2D, the sector size 1024, and the code EBCDIC. To change the format of a diskette, use the Initialize Diskette (INZDKT) command with FMT(*SAVRST) specified. If files already exist on a save/restore diskette, you can clear the files with the Clear Diskette (CLRDKT) command.

- If you are saving the system on tape, make sure that the diskette in slot 1 (*S1) is in save/restore format and that the tape has standard labels.

- Make sure the system operator message queue is in *BREAK mode. To do this, enter the following command:

```
CHGMSGQ QSYSOPR *BREAK
```

- Make sure that the system logs QCHG, QHST, and QSRV are up to date by entering the Display Log (DSPLOG) command.

- Use option 9 (delete object) on the object description display to delete all but the current version of the system logs QHST, QSRV, and QCHG. This prevents possible confusion later regarding the dates of the logs. To find out what versions of the logs exist on your system, use the following commands:

```
DSPOBJD QHST*.QSYS   *FILE
DSPOBJD QCHG*.QSYS   *FILE
DSPOBJD QSRV*.QSYS   *FILE
```

- Use the Terminate Subsystem (TRMSBS) command with SBS(*ALL) specified to terminate all subsystems before attempting to save system libraries or all user libraries.

- Use the Save Library (SAVLIB) command with LIB(*NONSYS) specified to save all the user libraries (including QGPL, QUSRSYS, QRPG, QCBL, QBAS, QIDU, QS3E, QRJE, QAPF, QADM, QADMFLS, and QTXT).

Note: Libraries are saved in alphabetic order by library name.

- Use the Save Document (SAVDOC) command with DOC(*ALL) specified to save all the documents in the library QDOC.

- Use the Save System (SAVSYS) command to save the system library QSYS.

  Notes:
  1. When the SAVSYS command is executed, data areas QSAVUSRPRF and QSAVSYS in library QSYS are updated to show the date, time, and media used to save the system. Use the DSPOBJD command with DETAIL(*FULL) to display this information.
  2. Messages on message queues, jobs on job queues, spooled files on output queues, and data on data queues are not saved.

For additional information on saving and restoring the system and on recovering from problems that might occur during save operations, see the *CPF Programmer's Guide*.

PERFORMANCE TUNING

Once you have saved the system, you should tune your system to optimize performance. System tuning should be conducted after installing CPF for the first time or any time the main storage size or the number of devices attached to the system changes. See the *CPF Programmer's Guide* for detailed information on system tuning activities.

Chapter 4. Adding or Moving Work Stations

This chapter contains the following summaries to help you add or move work stations on the System/38.

Local display stations:

- Adding a local display station
- Adding a local work station printer
- Moving a local display station
- Moving a local work station printer

Remote 5250 work stations:

- Adding a 5251 Model 2 or 12
- Adding a 5294 Control Unit
- Adding a remote display station (not a 5251 Model 2 or 12)
- Adding a remote work station printer
- Moving a 5251 Model 2 or 12
- Moving a remote display station (not a 5251 Model 2 or 12)
- Moving a remote work station printer

Remote 3270 work stations:

- Adding a 3270 control unit
- Adding a remote 3270 display station
- Adding a remote 3270 work station printer
- Moving a 3270 control unit
- Moving a remote 3270 display station
- Moving a remote 3270 work station printer

You should first decide if you can wait until the next time CPF is started (perhaps until the next work day or over a weekend) for the new device configurations to take effect. If you can wait, then you can configure devices with the least interruption of system operations.

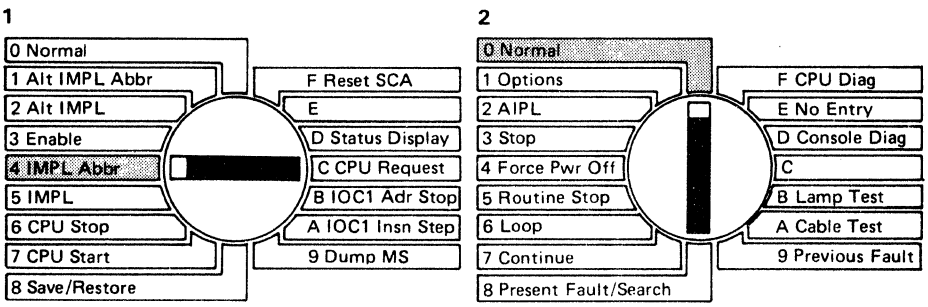
Note: When you add a work station, its controller must be varied offline.

If you plan to add more devices to your configuration later on, you may want to preconfigure devices on your system. This allows you to avoid varying off the controller and interrupting your system operations when adding a new device. See *Planning for Additional Devices* at the end of this chapter for instructions and examples.

If you want the new device configurations to be in effect as soon as possible, you have two choices:

- You can terminate the QINTER subsystem or its equivalent (using the TRMSBS command) and vary offline the appropriate control unit (using the VRYCTLU command) before configuring devices (you must also vary offline any other devices attached to the same control unit). Reverse this procedure after completing your new device configurations.

- You can power down the system (using the PWRDWNSYS command), then power on the system (setting the switches on the operator/service panel and pressing the Power On switch). The switch settings on the operator/service panel are:



After signing with the security officer password (the IBM-supplied password is SECOFR), request the configuration menu from the start control program facility prompt. When you are finished configuring devices, press the CF1 key to exit from the configuration menu.

ADDING A LOCAL DISPLAY STATION

To attach a display station to a work station controller (WSC) or work station controller-extended (WSCE), enter the CRTDEVD command with the following parameters:

Required: DEVD, DEVADR(000000), DEVTYPE, MODEL, CTLU, WSCADR, WSCKBD
Recommended: PRINTER, PRTFILE, TEXT
Optional: ONLINE, ALWBLN, PUBAUT
Optional for 5292 Model 2: AUXDEV

The following example shows how to add a local display station:

```
CRTDEVD DEVD(display-station-name)
        DEVADR(000000)
        DEVTYPE(device-type)
        MODEL(device-model)
        CTLU(work-station-controller)
        WSCADR(xxyyzz)
        WSCKBD(keyboard-code)
        TEXT('Sample display station')
```

For the work station printer, include

```
        PRINTER(work-station-printer-name)
```

You may also wish to fill out the 5250 and 3180 Display Station work sheet and to update the Local Work Station Configuration Work Sheet, to keep your paper documentation up to date.

Additional Considerations

You might also need to do the following:

- For help in specifying the WSCADR parameter, see the 5250 and 3180 Display Station work sheet.

- If you specify the PRINTER parameter, the device description for the work station printer must exist first (if it does not exist, see *Adding a Local Work Station Printer* later in this chapter).

- If you specify the PRTFILE parameter, see the discussion under *Display Station Work Sheet* in Chapter 2.

- If you do not get a sign-on prompt, make sure the device is varied online (VRYDEV command) and that there is a work station entry in the interactive subsystem that is controlling this display station (the IBM-supplied interactive subsystem is QINTER). To check, use the DSPSBSD command; an entry for the type of work station (such as 3180, 5251, 5252, 5291, or 5292) satisfies this requirement. To add a new entry, use the ADDWSE command, as in the following example:

```
ADDWSE  SBSD(QINTER)  WRKSTNTYPE(5292)
```

ADDING A LOCAL WORK STATION PRINTER

To attach a work station printer to a work station controller (WSC) or work station controller-extended (WSCE), enter the CRTDEVD command with the following parameters:

Required: DEVD, DEVADR(000000), DEVTYPE, MODEL, CTLU, WSCADR
Recommended: MSGQ, TEXT
Optional: ONLINE, PUBAUT
Required for 5219 and 3812 Printers; optional for IPDS Printers: FONT
Optional for 5219, 4214, and IPDS Printers: FORMFEED

The following shows how to add a local work station printer:

```
CRTDEVD DEVD(work-station-printer-name)
        DEVADR(000000)
        DEVTYPE(device-type)
        MODEL(device-model)
        CTLU(work-station-controller)
        WSCADR(xxyyzz)
        TEXT('Sample work station printer')
```

To send operational messages to a display station near the printer, add

```
        MSGQ(work-station-name)
```

Additional Considerations

You might also need to do the following:

- For help in specifying the WSCADR parameter, see the 5250 Work Station Printer work sheet.

- If you specify the name of a display station as the MSGQ parameter value, you must first enter a CRTDEVD command for the display station. See *Adding a Local Display Station* earlier in this chapter.

  If the MSGQ parameter on the work station printer names a display station that, in turn, names the work station printer on the PRINTER parameter, you cannot create the work station printer because the display station does not exist. Therefore, you cannot create the display station because the work station printer does not exist. To handle this situation, first create the work station printer without specifying the MSGQ parameter, then create the display station (with the PRINTER parameter specified). Finally, change the device description (CHGDEVD command) of the work station printer, specifying the display station on the MSGQ parameter.

- If display stations that will be using this work station printer already exist, enter the following command:

  ```
  CHGDEVD display-station-name PRINTER(work-station-printer-name)
  ```

  for each such display station.

MOVING A LOCAL DISPLAY STATION

Moving a local display station to a different position on the same port requires no change to the device description. However, you can change addresses to keep to an addressing scheme (see *Additional Considerations* below). Also, if the display station is moved to or from the last position on the cable, you must change the setting of the Terminator switch.

When you move a local display station to a different port on the same work station controller (WSC or WSCE), you must change the port number (yy of xxyyzz on the WSCADR parameter) and you might need to change the work station address (zz of xxyyzz on the WSCADR parameter). See the 5250 and 3180 Display Station work sheet. The display station can continue using the same work station printer (PRINTER parameter).

When you move a local display station to a different work station controller, you must change the following parameters on the device description:

CTLU
WSCADR
PRINTER (if specified)

Additional Considerations

Changing the address (WSCADR parameter) or control unit (CTLU parameter) of a display station requires that you first delete, then re-create, the device description. In order not to lose the original parameter values, use the following commands:

DSPDEVD with OUTPUT(*LIST)
DLTDEVD
CRTDEVD

Use the listing printed by the DSPDEVD command to enter unchanged parameter values on the CRTDEVD command.

MOVING A LOCAL WORK STATION PRINTER

Moving a local work station printer to a different position on the same port requires no change to the device description. However, you can change addresses to keep to an addressing scheme (see *Additional Considerations* below). Also, if the display station is moved to or from the last position on the cable, you must change the setting of the Terminator switch.

When you move a local work station printer to a different port on the same work station controller (WSC or WSCE), you must change the port number (yy of xxyyzz on the WSCADR parameter) and you might need to change the work station address (zz of xxyyzz on the WSCADR parameter). See the 5250 Work Station Printer work sheet.

When you move a local work station printer to a different work station controller, you must change the following parameters on the device description:

```
CTLU
WSCADR
```

Additional Considerations

You might also need to do the following:

- Changing the address (WSCADR parameter) or control unit (CTLU parameter) of a work station printer requires that you first delete, then re-create, the device description. In order not to lose the original parameter values, use the following commands:

  ```
  DSPDEVD with OUTPUT(*LIST)
  DLTDEVD
  CRTDEVD
  ```

  Use the listing printed by the DSPDEVD command to enter unchanged parameter values on the CRTDEVD command.

- For each display station now using a work station printer that you have moved, you must enter the following command:

  ```
  CHGDEVD display-station-name PRINTER(work-station-printer-name)
  ```

- For each display station that no longer uses the work station printer that you have moved, you should enter

  ```
  CHGDEVD display-station-name PRINTER(*NONE)
  ```

  or

  ```
  CHGDEVD display-station-name
          PRINTER(another-work-station-printer-name)
  ```

  as appropriate.

ADDING A 5251 MODEL 2 OR 12

To add a 5251 Model 2 or 12 to an SDLC primary line, enter the CRTCUD and CRTDEVD commands, in that order. On the CRTCUD command, use the following parameters:

Required: CUD, TYPE, MODEL, CTLADR, EXCHID
Required for switched lines: SWITCHED, TELNBR, INLCNN
Needed for operation of switched lines: LINLST
Required for nonswitched lines: LINE
Recommended for nonswitched lines: DLYFEAT
Dependent on installation: SELECT, SWNBKU
Recommended: TEXT
Optional: ONLINE, PUBAUT

For example, on a nonswitched line:

```
CRTCUD  CUD(5251-control-unit-name)
        TYPE(5251)
        MODEL(2 or 12)
        CTLADR(address)
        EXCHID(020000xx)
        LINE(line-description-name)
        DLYFEAT(*YES)
        TEXT('Sample 5251 Model 2 or 12')
```

On the CRTDEVD command, use the following parameters:

Required: DEVD, DEVADR, DEVTYPE, MODEL, CTLU
Recommended: PRINTER, PRTFILE, TEXT
Optional for switched lines: DROP
Optional: ONLINE, ALWBLN, PUBAUT

For example:

```
CRTDEVD DEVD(display-station-name)
        DEVADR(00yyyy)
        DEVTYPE(5251)
        MODEL(1 or 11)
        CTLU(5251-control-unit-name)
        TEXT('Sample display station')
```

With work station printer, add

```
        PRINTER(work-station-printer-name)
```

Additional Considerations

You might also need to do the following:

- For help in specifying the DEVADR parameter, see the 5250 and 3180 Display Station work sheet.

- If you specify the PRINTER parameter, the device description for the work station printer must exist first (see *Adding a Remote 5250 Work Station Printer to a 5250 Control Unit* later in this chapter).

- If you specify the PRTFILE parameter, see the discussion under *Remote 5250 Work Stations Attached to the 5251 Model 2 or 12* in Chapter 2.

- If you do not get a sign-on prompt, make sure the device is varied online (VRYDEV command) and that there is a work station entry in the interactive subsystem that is controlling this display station (the IBM-supplied interactive subsystem is QINTER). To check, use the DSPSBSD command; an entry for the type of work station (5251) satisfies this requirement. To add a new entry, use the ADDWSE command, as in the following example:

```
ADDWSE  SBSD(QINTER)  WRKSTNTYPE(5251)
```

ADDING A 5294 CONTROL UNIT

To add a 5294 Control Unit to an SDLC primary line, first do an offline configuration of the 5250 work stations to be attached to the 5294 Control Unit, then enter the CRTCUD command. Use the procedure described in the *IBM 5250 Information Display System Planning and Site Preparation Guide*. On the CRTCUD command, use the following parameters:

Required: CUD, TYPE, MODEL, CTLADR, EXCHID
Required for switched lines: SWITCHED, TELNBR, INLCNN
Needed for operation of switched lines: LINLST
Required for nonswitched lines: LINE
Dependent on installation: SELECT, SWNBKU, DLYFEAT
Recommended: TEXT
Optional: ONLINE, PUBAUT

For example, on a nonswitched line:

```
CRTCUD CUD(5294-control-unit-name)
       TYPE(5294)
       MODEL(1)
       CTLADR(address)
       EXCHID(045000xx)
       LINE(line-description-name)
       TEXT('Sample 5294 control unit')
```

Additional Considerations

You also need to attach at least one 5250 display station (or emulating device) to the 5294 Control Unit.

You might also need to do the following:

- For switched lines, you should also make sure that the IDLETIME parameter on the SDLC primary line is not zero. If you have one or more 5294 Control Units on the line, the IDLETIME parameter value must be at least 38.

- If you do not get a sign-on prompt on an attached display station, make sure the device is varied online (VRYDEV command) and that there is a work station entry in the interactive subsystem that is controlling this work station (IBM-supplied subsystem is QINTER). To check, use the DSPSBSD command; an entry for the type of work station (3180, 5251, 5291, or 5292) satisfies this requirement.

ADDING A REMOTE 5250 DISPLAY STATION TO A 5250 CONTROL UNIT

Note on adding a remote 5250 display station to a 5294 Control Unit: Adding a remote display station to a 5294 Control Unit changes the configuration of work stations attached to the 5294. For this new configuration of work stations, you must power off the 5294 Control Unit, then perform the offline configuration procedure described in the *IBM 5294 Control Unit Setup Procedure*. This manual is shipped with the 5294 Control Unit. You should change Part 2 of the IBM 5294 Control Unit Setup Form to show the new display station. See the *IBM 5250 Information Display System Site Preparation and Planning Guide* for instructions on filling out the form. It might be helpful to review the section *Configuring 5294 Control Units and Work Stations Attached to Them* in Chapter 2 of this manual.

To attach a 5250 display station to a 5250 control unit, enter the CRTDEVD command with the following parameters:

Required: DEVD, DEVADR, DEVTYPE, MODEL, CTLU
Recommended: PRINTER, PRTFILE, TEXT
Optional: ONLINE, ALWBLN, PUBAUT
Optional for 5292 Model 2: AUXDEV

You should also add a work station entry to the appropriate subsystem description (use the Add Work Station Entry (ADDWSE) command).

An example of a device description for a display station:

```
CRTDEVD DEVD(display-station-name)
        DEVADR(xxyyyy)
        DEVTYPE(device-type)
        MODEL(model-number)
        CTLU(5251-control-unit-name)
        TEXT('Sample display station')
```

For the work station printer, include

```
        PRINTER(work-station-printer-name)
```

For the work station printer attached to a 5251 Model 2 or 12 that does not have the Expanded Function feature, omit the PRINTER parameter and add

```
        PRTFILE(printer-file-name)
```

Additional Considerations

You might also need to do the following:

- For help in specifying the DEVADR parameter, see the 5250 Display Station work sheet.

- If you specify the PRINTER parameter, the device description for the work station printer must exist first (see *Adding a Remote 5250 Work Station Printer to a 5250 Control Unit* later in this chapter). Also, the 5251 Model 2 or 12 to which this display station is attached must have the Expanded Function feature; if not, specify the PRTFILE parameter.

- If you specify the PRTFILE parameter, see the discussion under *5251 Model 2 of 12 without the Expanded Function Feature* in Chapter 2.

- If you do not get a sign-on prompt, make sure the device is varied online (VRYDEV command) and that there is a work station entry in the interactive subsystem that is controlling this work station (IBM-supplied subsystem is QINTER). To check, use the DSPSBSD command; an entry for the type of work station (3180, 5251, 5252, 5291, or 5292) satisfies this requirement.

ADDING A REMOTE 5250 WORK STATION PRINTER TO A 5250 CONTROL UNIT

Note on adding a remote 5250 work station printer to a 5294 Control Unit: Adding a remote work station printer to a 5294 Control Unit changes the configuration of work stations attached to the 5294. For this new configuration of work stations, you must power off the 5294 Control Unit, then perform the offline configuration procedure described in the *IBM 5294 Control Unit Setup Procedure*. This manual is shipped with the 5294 Control Unit. You should change Part 2 of the IBM 5294 Control Unit Setup Form to show the new work station printer. See the *IBM 5250 Information Display System Site Preparation and Planning Guide* for instructions on filling out the form. It might be helpful to review the section *Configuring 5294 Control Units and Work Stations Attached to Them* in Chapter 2 of this manual.

To attach a 5250 work station printer to a 5250 control unit, enter the CRTDEVD command with the following parameters:

Required: DEVD, DEVADR, DEVTYPE, MODEL, CTLU
Recommended: MSGQ, TEXT
Optional: ONLINE, PUBAUT
Required for 5219 and 3812 Printers; optional for IPDS Printers: FONT
Optional for 5219, 4214, and IPDS Printers: FORMFEED

The following shows how to add a remote work station printer:

```
CRTDEVD DEVD(work-station-printer-name)
        DEVADR(xxyyyy)
        DEVTYPE(device-type)
        MODEL(device-model)
        CTLU(work-station-controller)
        TEXT('Sample work station printer')
```

To send operational messages to a display station near the printer, add

```
        MSGQ(work-station-name)
```

Additional Considerations

You might also need to do the following:

- For help in specifying the DEVADR parameter, see the 5250 Work Station Printer work sheet.

- If you specify the name of a display station as the MSGQ parameter value, you must first enter a CRTDEVD command for the display station. See *Adding a Remote 5250 Display Station to a 5250 Control Unit* earlier in this chapter.

  If the MSGQ parameter on the work station printer names a display station that, in turn, names the work station printer on the PRINTER parameter, you cannot create the work station printer because the display station does not exist. Therefore, you cannot create the display station because the work station printer does not exist. To handle this situation, first create the work station printer without specifying the MSGQ parameter, then create the display station (with the PRINTER parameter specified). Finally, change the device description (CHGDEVD command) of the work station printer, specifying the display station on the MSGQ parameter.

- If display stations using this work station printer already exist, enter

  ```
  CHGDEVD display-station-name PRINTER(work-station-printer-name)
  ```

  for each such display station.

MOVING A 5251 MODEL 2 OR 12 USING SDLC

To move a 5251 Model 2 or 12 to another position on the same nonswitched communications line, just move the physical unit and the display stations and work station printers attached to it. No change to device descriptions is necessary.

To move a nonswitched 5251 Model 2 or 12 to a different line, you must delete, then re-create, the control unit description and the display device description for the 5251 Model 2 or 12. In addition, you must delete, then re-create, all device descriptions for all the display stations and work station printers attached to the 5251 Model 2 or 12.

You should first display the control unit description (DSPCUD command) and the device descriptions (DSPDEVD command) before deleting the control unit description and device descriptions. The recommended sequence of commands is

DSPCUD with OUTPUT(*LIST)
DSPDEVD with OUTPUT(*LIST) for each device description
DLTCUD
DLTDEVD for each device description
CRTCUD
CRTDEVD for each device description

The listings printed by the DSPCUD and DSPDEVD commands can help you enter the parameter values on the CRTCUD and CRTDEVD commands. To reattach the 5251 Model 2 or 12, see the section *Adding a 5251 Model 2 or 12* earlier in this chapter.

MOVING A REMOTE 5250 DISPLAY STATION USING SDLC

To move a remote display station (one that is attached to a 5250 control unit) you must change the DEVADR parameter. You must delete, then re-create the device description; and, if the unit address changes, you must change the work station address switches. Also if you are moving the display station to or from the end of the cable, you must change the setting of the Terminator switch.

Note: In order not to lose the original parameter values, use the following commands:

```
DSPDEVD with OUTPUT(*LIST)
DLTDEVD
CRTDEVD
```

Note on moving a remote 5250 display station to a different 5294 Control Unit: Moving a remote display station to a different 5294 Control Unit changes the configuration of work stations attached to both control units. For each new configuration of work stations, you must power off the 5294 Control Unit, then perform the offline configuration procedure described in the *IBM 5294 Control Unit Setup Procedure.* This manual is shipped with the 5294 Control Unit. You should change Part 2 of the IBM 5294 Control Unit Setup Form to show the new display station. See the *IBM 5250 Information Display System Site Preparation and Planning Guide* for instructions on filling out the form. It might be helpful to review the section *Configuring 5294 Control Units and Work Stations Attached to Them* in Chapter 2 of this manual.

To move a remote work station to a different 5250 control unit, you must change the DEVADR parameter, the CTLU parameter, and, if specified, the PRINTER parameter. To change the DEVADR or CTLU parameter, you must delete, then re-create, the device description.

Note: In order not to lose the original parameter values, use the following commands:

```
DSPDEVD with OUTPUT(*LIST)
DLTDEVD
CRTDEVD
```

To reattach the remote display station to the other 5251 Control Unit, see *Adding a Remote 5250 Display Station to a 5250 Control Unit* earlier in this chapter.

MOVING A 5294 CONTROL UNIT USING SDLC

To move a 5294 Control Unit to another position on the same nonswitched communications line, just move the physical unit and the display stations and work station printers attached to it. No change to device descriptions is necessary.

To move a nonswitched 5294 Control Unit to a different line, you must delete, then re-create, the control unit description for the 5294 Control Unit. In addition, you must delete, then re-create, all device descriptions for all the display stations and work station printers attached to the 5294 Control Unit.

You should first display the control unit description (DSPCUD command) and the device descriptions (DSPDEVD command) before deleting the control unit description and device descriptions. The recommended sequence of commands is

DSPCUD with OUTPUT(*LIST)
DSPDEVD with OUTPUT(*LIST) for each device description
DLTCUD
DLTDEVD for each device description
CRTCUD
CRTDEVD for each device description

The listings printed by the DSPCUD and DSPDEVD commands can help you enter the parameter values on the CRTCUD and CRTDEVD commands. To reattach the 5294 Control Unit, see the section *Adding a 5294 Control Unit* earlier in this chapter.

MOVING A REMOTE 5250 WORK STATION PRINTER USING SDLC

To move a remote work station printer (one that is attached to a 5250 control unit), you must change the DEVADR parameter. You must delete, then re-create, the device description; and, if the unit address changes, you must change the work station address switches. Also, if you are moving the display station to or from the end of the cable, you must change the setting of the Terminator switch.

Note: In order not to lose the original parameter values, use the following commands:

```
DSPDEVD with OUTPUT(*LIST)
DLTDEVD
CRTDEVD
```

Note on moving a remote work station printer to a different 5294 Control Unit: Moving a remote work station printer to a 5294 Control Unit changes the configuration of work stations attached to both control units. For each new configuration of work stations, you must power off the 5294 Control Unit, then perform the offline configuration procedure described in the *IBM 5294 Control Unit Setup Procedure*. This manual is shipped with the 5294 Control Unit. You should change Part 2 of the IBM 5294 Control Unit Setup Form to show the new work station printer. See the *IBM 5250 Information Display System Site Preparation and Planning Guide* for instructions on filling out the form. It might be helpful to review the section *Configuring 5294 Control Units and Work Stations Attached to Them* in Chapter 2 of this manual.

To move a remote work station to a different 5250 control unit, you must change the DEVADR parameter and the CTLU parameter; also, you should change the MSGQ parameter to a display station near the work station printer. To change the DEVADR or CTLU parameter, you must delete, then re-create, the device description.

Note: In order not to lose the original parameter values, use the following commands:

```
DSPDEVD with OUTPUT(*LIST)
DLTDEVD
CRTDEVD
```

To reattach the remote work station printer to the other 5250 control unit, see *Adding a Remote 5250 Display Station to a 5250 Control Unit* earlier in this chapter.

ADDING A REMOTE 3270 CONTROL UNIT

To add a 3270 control unit to an SDLC primary line, first do an offline configuration of the 3270 network, then enter the CRTCUD command. For the IBM 3274 Control Unit, use the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For other 3270 control units and for 3270 emulators, use the documentation supplied by the manufacturer to configure your 3270 network.

On the CRTCUD command, use the following parameters:

Required: CUD, TYPE, MODEL, CTLADR, EXCHID
Required for switched lines: SWITCHED, TELNBR, INLCNN
Needed for operation of switched lines: LINLST
Required for nonswitched lines: LINE
Dependent on installation: SELECT, SWNBKU, DLYFEAT
Recommended: TEXT
Optional: ONLINE, PUBAUT

For example, for an IBM 3274 Control Unit on a nonswitched line:

```
CRTCUD CUD(3270-control-unit-name)
       TYPE(3274)
       MODEL(*NONE)
       CTLADR(address)
       EXCHID(017xxxxx)
       LINE(line-description-name)
       TEXT('Sample 3270 control unit')
```

Additional Considerations

You also need to add at least one 3270 display station (or emulating device). See the following section *Adding a Remote 3270 Display Station.*

For instructions on adding a remote 3270 work station printer, see the section *Adding a Remote 3270 Work Station Printer* later in this chapter.

ADDING A REMOTE 3270 DISPLAY STATION

To add a 3270 display station, first do an offline configuration of the 3270 network, then enter the CRTDEVD command. If you are attaching the 3270 display station to an IBM 3274 Control Unit, use the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For other 3270 control units and for 3270 emulators, use the documentation supplied by the manufacturer to configure your 3270 network.

On the CRTDEVD command, use the following parameters:

Required: DEVD, DEVADR, DEVTYPE, MODEL, CTLU
Required for certain keyboard types (not generally required in the United States and Canada): WSCKBD
Recommended: TEXT
Optional: ONLINE, DROP, WSCKBD, ALWBLN, PUBAUT

For example:

```
CRTDEVD DEVD(3270-display-station-name)
        DEVADR(xxyyyy)
        DEVTYPE(device-type)
        MODEL(*NONE)
        CTLU(3270-control-unit-name)
        TEXT('Sample 3270 display station')
```

Additional Considerations

You might also need to do the following:

- For help in specifying the DEVADR parameter, see the 3270 Remote Display Station work sheet.

- If you do not get a sign-on prompt, make sure the device is varied online (VRYDEV command) and that there is a work station entry in the interactive subsystem that is controlling this display station (the IBM-supplied interactive subsystem is QINTER). To check, use the DSPSBSD command; an entry for the type of work station (such as 3277, 3278, or 3279) satisfies this requirement. To add a new entry, use the ADDWSE command, as in the following example:

```
ADDWSE  SBSD(QINTER)  WRKSTNTYPE(3277)
```

ADDING A REMOTE 3270 WORK STATION PRINTER

To add a 3270 work station printer, first do an offline configuration of the 3270 network, then enter the CRTDEVD command. If you are attaching the 3270 work station printer to an IBM 3274 Control Unit, use the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.* For other 3270 control units and for 3270 emulators, use the documentation supplied by the manufacturer to configure your 3270 network.

On the CRTDEVD command, use the following parameters:

Required: DEVD, DEVADR, DEVTYPE, MODEL, CTLU
Recommended: MSGQ, TEXT
Optional: ONLINE, PUBAUT

For example:

```
CRTDEVD DEVD(3270-work-station-printer-name)
        DEVADR(xxyyyy)
        DEVTYPE(3287)
        MODEL(*NONE)
        CTLU(3270-control-unit-name)
        TEXT('Sample 3270 work station printer')
```

To send operational messages to a display station near the printer, add

```
MSGQ(3270-work-station-name)
```

Additional Considerations

You might also need to do the following:

- For help in specifying the DEVADR parameter, see the 3270 Remote Work Station Printer work sheet.
- If you specify the name of a display station as the MSGQ parameter value, you must first enter a CRTDEVD command for the display station. See *Adding a Remote 3270 Display Station* earlier in this chapter.

PLANNING FOR ADDITIONAL DEVICES

When adding a device to your configuration, you must vary off the controller and interrupt system operations. If you are planning to add more devices to your configuration, you may want to preconfigure for those devices ahead of time to make the procedure of adding new devices much easier.

To preconfigure devices, you need to create device descriptions for nonexistent devices. You must predefine the type of keyboard, the switch settings, and the model as if the devices already exist. Also, the subsystem that receives the device must have an entry for that device.

Once you preconfigure devices, you can add a device to the system while the system is in use by setting the address of the device to match that of a preconfigured device.

If you are adding a new device in the middle of a string, only the devices on the end of the string must be signed off (not varied off) before adding the new device. The terminator switch on the new device should be set correctly before disconnecting and reconnecting the cables.

When the cables are reattached and the terminator switches are set correctly, the sign-on prompt appears.

Since device polling is done by the controller, the description of nonexistent devices has only a small performance impact, similar to that of a device not powered on.

Notes:

1. The procedure for preconfiguring devices for a 5294 Remote Controller requires special considerations. If you are using a 5294 Remote Controller, carefully note the differences in preconfiguring shown in the examples below.

2. It is important to work backward from the end of the line to ensure the proper setting of the terminator switch. This prevents attempted polling of the devices while the cables are being reconnected. Set the terminator switches as described in the examples.

3. Periodically review your future plans and preconfigure devices to adjust configuration to suit your needs.

Examples

As an example of preconfiguring, we will use the following configuration with the connections proceeding from left to right on each port:

Port 1	WS1			
Port 2	WS2	WS3	PRT1	
Port 3	WS5	PRT2	WS6	WS7
Port 4				
5294	RWS1			

After some preplanning, you should decide what the potential addition of devices for your system might be. For example, you may decide to predefine the following configuration:

Port 1	WS1			**WS8**	**WS9**	**PRT3**	
Port 2	WS2	WS3	PRT1		**WS10**	**WS11**	
Port 3	WS5	PRT2	WS6	WS7		**WS12**	**WS13**
Port 4					**WS14**	**WS15**	**PRT4**
5294	RWS1	**RWS2**	**RWS3**				

Note: The device configuration commands do not define the cable thru connections. Also, the addresses assigned for each port do not need to be in sequence.

Assume that the subsystem is specified to acquire the work stations WRKNSTYPE(5250) and the devices are specified as ONLINE(*YES). DSPCTLSTS displays the preconfigured devices as VRYONP (vary-on pending).

You must enter a CRTDEVD command for each predefined device. After that, your system is ready for new devices you add later.

The following examples describe how to make some of the predefined additions.

1 You need to add a device on the end of Port 1. Therefore, WS1 will no longer be at the end of the string.

Two display stations were preconfigured for Port 1 (WS8 and WS9). Use WS8 for the new device.

The port, as defined above, should appear as the following:

Port 1 WS1 **WS8 WS9 PRT3**

To add WS8 to the end of Port 1, do the following:

a. Make sure the terminator switch on WS1 is set to indicate it is the last device on the line.

b. Set the address switches of the new device to match the address assigned to the preconfigured device WS8. Set the terminator switch on WS8 to indicate it is the last device on the line.

c. Connect the cable from WS1 to WS8.

d. Reset the terminator switch on WS1 to indicate it is no longer the last device on the line.

The sign-on prompt now appears on WS1 and WS8.

2 You have decided to add a new device (the preconfigured WS12) to Port 3 between WS5 and PRT2. The predefined port should now appear as:

Port 3 WS5 PRT2 WS6 WS7 **WS12 WS13**

To make the change, do the following:

a. Sign off WS6 and WS7.

b. Make sure PRT2 is not being used. Use the DSPOBJLCK command to determine if any locks are on the device.

c. Set the terminator switch of WS5 to indicate it is the last device on the line.

d. Set the address switches for the new device to match the address assigned to the preconfigured WS12. Set the terminator switch on the new device to indicate it is not the last device on the line.

e. Disconnect the cable between WS5 and PRT2.

f. Connect the cable from WS5 to WS12, and the cable from WS12 to PRT2.

g. Reset the terminator switch on WS5 to indicate that it is no longer the last device on the line.

The sign-on prompt now appears on WS12, WS6, and WS7. PRT2 can be used.

3 You have decided to add a new device to Port 4 (no real devices exist). To make the change, do the following:

a. Set the address switches for the new device to match the address assigned to WS14. Set the terminator switch to indicate that it is the last device on the line.

b. Connect the cable from Port 4 to WS14.

The sign-on prompt will appear on WS14.

5294 Control Unit

The 5294 Control Unit has a unique device configuration process where the attached devices are defined to the control unit itself. You cannot preconfigure devices for that control unit.

However, the future devices can still be defined to your System/38. The only way to attach a new device is to vary off the 5294 Control Unit. Since only the 5294 must be varied off, the same subsystem can be used for both local and remote devices, and a device can be added to the 5294 without terminating the subsystem.

For example, assume that a new device is needed on the remote 5294 Control Unit, and it will be connected to RWS1. Two preconfigured devices were defined for the 5294 (RWS2 and RWS3). RWS2 will be used for the new device. The 5294 should now appear as:

5294 RWS1 **RWS2 RWS3**

To connect a new device to RWS1, do the following:

1. Sign off RWS1.
2. Vary off the 5294 Control Unit.
3. Set the address switches of the new device to match the address of the RWS2 previously preconfigured to the System/38. Set the terminator switch on RWS2 to indicate it is the last device on the line.
4. Connect the cable from RWS1 to RWS2.
5. Set the terminator switch on RWS1 to indicate it is no longer the last device on the line.
6. Configure the new device to the 5294 Control Unit using the 5294 installation procedure.
7. Vary on the 5294.

The sign-on prompt appears on RWS1 and RWS2.

Appendix A. Installation Example

This appendix shows work sheets for a sample installation of a System/38, including the following:

- System unit with the following:
  - A work station controller-extended (WSCE)
  - One communications attachment

- System devices as follows:
  - One diskette magazine drive
  - One 5211 system printer
  - One 5424 card device (MFCU, or multi-function card unit)
  - One 3410/3411 tape drive

- Nine local work stations (attached through the work station controller)

- Eighteen remote work stations (attached through remote work station controllers and the communications attachment)

The system unit, system devices, and local work stations are to be installed in the main office and plant in Chicago, Illinois. The remote work stations are installed in the following cities:

- New York, New York

- Milwaukee, Wisconsin

- Madison, Wisconsin

- Boston, Massachusetts

To plan such an installation, start by drawing the floor layout of the Chicago site. See the *System/38 Installation Manual—Physical Planning* and the *5250 Information Display System Planning and Site Preparation Guide* for:

- Suggested scheduling of site preparation
- Space requirements
- Recommendations about fire protection and lightning protection
- Cabling information
- Electrical requirements
- Humidity and temperature requirements

Figure A-1 shows a sample floor layout.

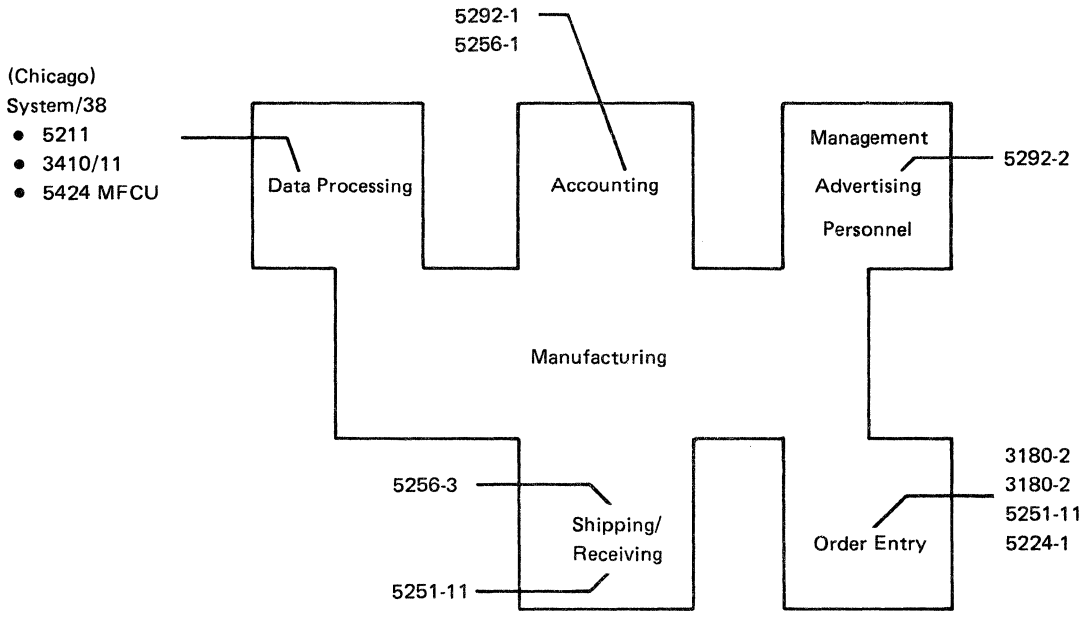


Figure A-1. Floor Layout of the Sample Installation

Draw a system configuration diagram that includes all devices attached to the system (including remote devices):

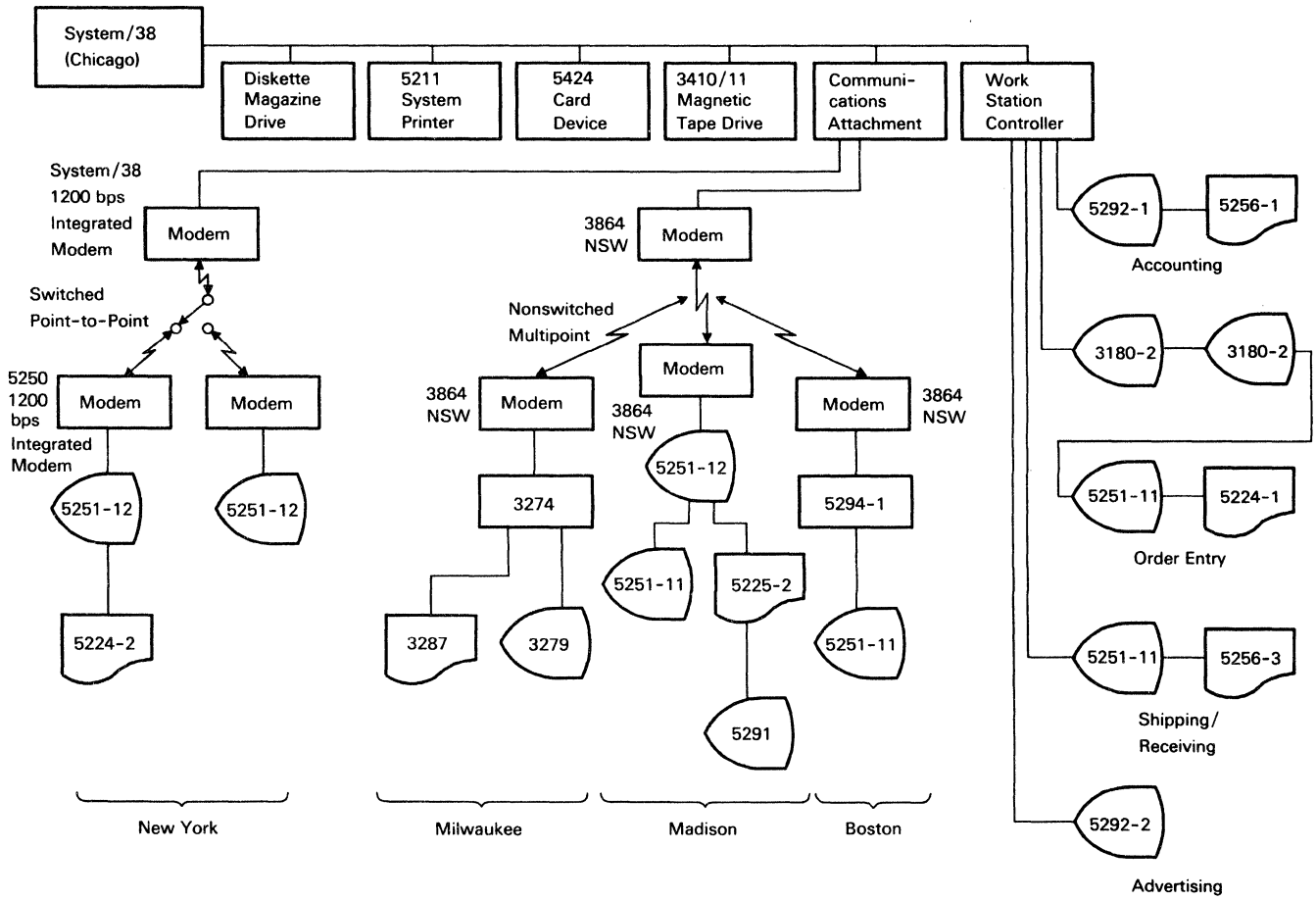


Figure A-2. System Configuration Diagram of the Sample Installation

Have the following manuals ready to use:

- This manual
- *CL Reference Manual*
- *CPF Programmer's Guide*
- *5250 Information Display System Planning and Site Preparation Guide*

If you are configuring remote 3270 work stations, you should also have the appropriate configuration instructions for the control unit and attached devices. For the IBM 3274 Control Unit, you need the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

Make copies of the blank work sheets provided at the back of this manual; fill out the copies for the:

- System devices (Figure A-3)
- Local work stations (Figure A-4)
- Remote work stations (Figure A-5)

You may also find it convenient to establish a numbering scheme for the work sheets (as shown in the sample work sheets in this appendix).

When the work sheets are filled out, you are ready to enter the CL commands that configure the devices.

The following is given as a reminder of the other tasks to be done in completing the installation of a System/38.

Get the local and remote sites ready for the arrival of your System/38 and for the devices to be attached. Make sure the following is done:

- Space is made ready
- Power outlets are installed
- Air conditioning is installed
- Cables are installed, labeled, and tested
- Communications equipment (cables, modems, and lines) is installed
- The devices are set up as they arrive
  - Offline tests are performed.
  - Cables are connected and address switches are set. Use the Local Work Station Configuration Work Sheets and the IBM 5251 Model 12 Communications Network Setup Form, IBM 5294 Control Unit Setup Form, and the 3270 Communications Network Setup Form to determine the switch settings and cable connections.

For suggested physical planning schedules, see the *System/38 Installation Manual—Physical Planning*.

As described in Chapter 3, CPF and other program products are installed after the System/38 arrives. The IBM service representative sets up the system unit and system devices, connects properly identified cables to the system unit, and verifies the proper system unit and system devices. You perform the following tasks as necessary:

- Connect cables to the work station controllers
- Configure devices
- Complete the installation of CPF
- Install and verify other System/38 program products
- Perform any system tailoring
- Save the system
- Begin system operations

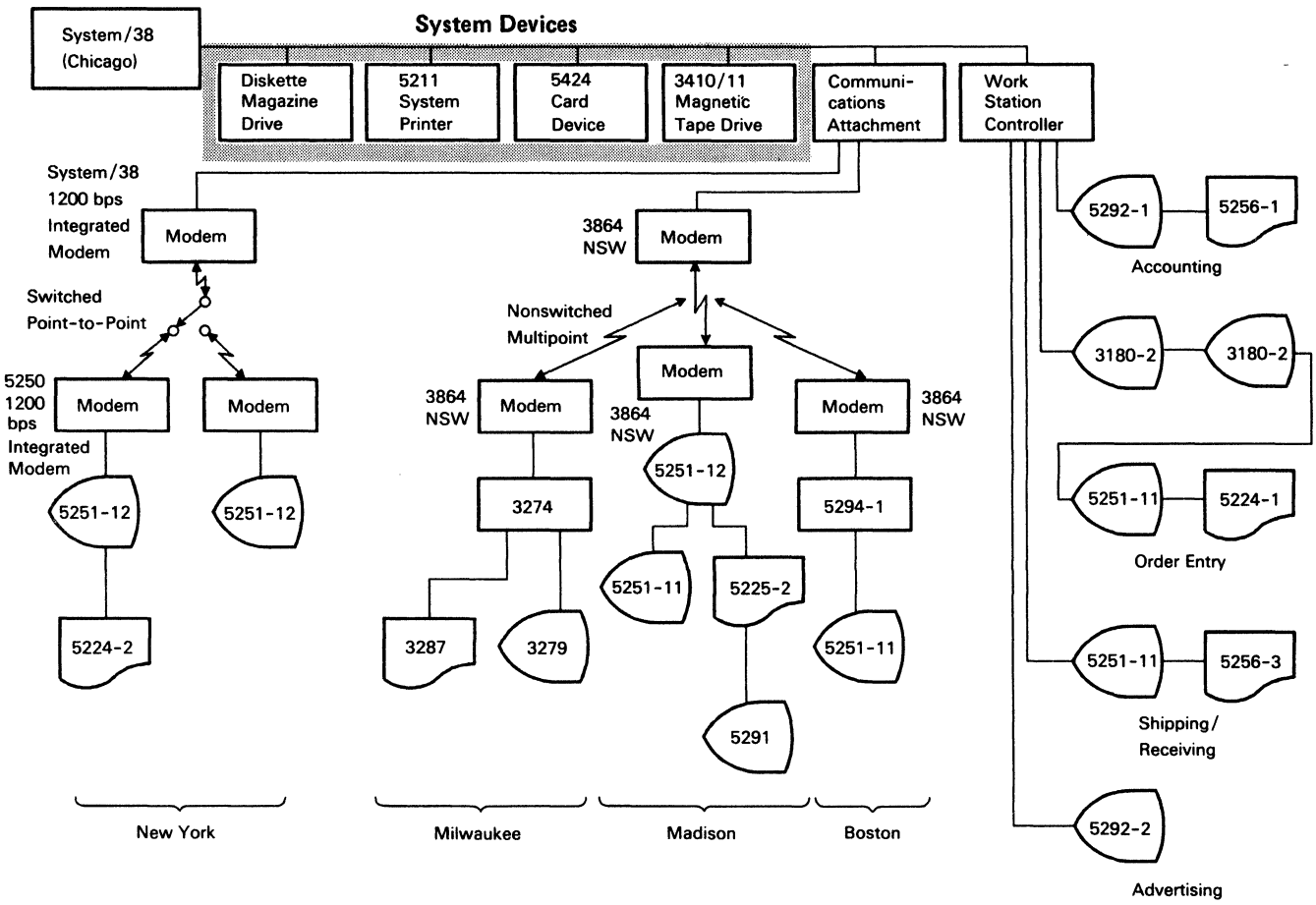


Figure A-3 (Part 1 of 3). System Devices: System Configuration Diagram

DISKETTE MAGAZINE DRIVE
(CRTDEVD command)

Description		Parameter	Entry
Name of the diskette magazine drive (QDKT).	R	DEVD	QDKT
Physical address of the device (000012).	R	DEVADR	000012
Device type (72MD).	R	DEVTYPE	72MD
Device model (1001).	R	MODEL	1001
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
Type of data error and number of times the system should attempt to recover. (Type must be 1 (for read errors); times can be 40-80 (40 is default).)		RETRY Type: Times:	1 40
Type of data error and error threshold values to retry before logging the error. (Type must be 1 (for read errors); threshold can be 1-100 (50 is default).)		THRESHOLD Type: Threshold:	1 50
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.) 'Diskette device'		TEXT	

All values shown on these work sheets are the IBM-supplied values.

Some parameters are required for particular devices. For example, printers require the PRTIMG parameter as well as the four parameters required by the CRTDEVD command.

SYSTEM PRINTER
(CRTDEVD command)

Description		Parameter	Entry
Name of the system printer.	R	DEVD	QSYSPRT
Physical address of the device:	R	DEVADR	000018

Device	Entry
First system printer	
3262 or 5211	000018
3203 or 4245	000040
Second system printer	
3262 or 5211	000058
3203 or 4245	000040 If first system printer is a 3262 or 5211.
3203 or 4245	000041 If first system printer is a 3203 or 4245.

Device type (3262, 5211, 3203, or 4245).	R	DEVTYPE	5211
Device model.	R	MODEL	2

Device Type	Model	Entry
3262	A1	A1
	B1	B1
5211	2	2
3203	5	5
4245	12	12
	20	20

The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
The name of the default print image. (IBM-supplied print image is QSYSIMAGE in QGPL.)		PRTIMG	QSYSIMAGE QGPL
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.) 'System printer'		TEXT	

CARD DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the card device.	R	DEVD	QCARD96
Physical address of the device (000019).	R	DEVADR	000019
Device type (5424).	R	DEVTYPE	5424
Device model (A1, A2, K1, K2, or K3).	R	MODEL	A1
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.) 'Card device'		TEXT	

Figure A-3 (Part 2 of 3). System Devices: Diskette Magazine Drive, System Printer, and Card Device

MAGNETIC TAPE CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	QTAPE
Control unit type identifier (3411 or 3430). The 3422 should be configured as a 3430.	R	TYPE	3411
Model number of the control unit. The 3422 should be configured as a 3430, Model A01.	R	MODEL	1

Device Type	Model	Entry
3411	1	1
	2	2
	3	3
3430	A01	A01

Address of the control unit:	R	CTLADR	0015

Type of Control Unit	Entry
3411	0015
3430	0052
3422	0052

This control unit is to be varied online when CPF is started (*NO or *YES).	ONLINE	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to four 3410, 3430, or 3422 tape drives). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for tape drives, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.	DEV	(A) QTAPE1
This tape control unit has the hardware data compression (HDC) feature installed (*NO *YES). Valid only for TYPE(3430).	DTACPR	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).	TEXT	

'Magnetic Tape Control Unit'

All values shown on these work sheets are the IBM-supplied values.

(A) The value QTAPE1 appears on the work sheet for documentation purposes only. Do not enter this value for the DEV parameter of the CRTCUD command.

MAGNETIC TAPE DRIVE
(CRTDEVD command)

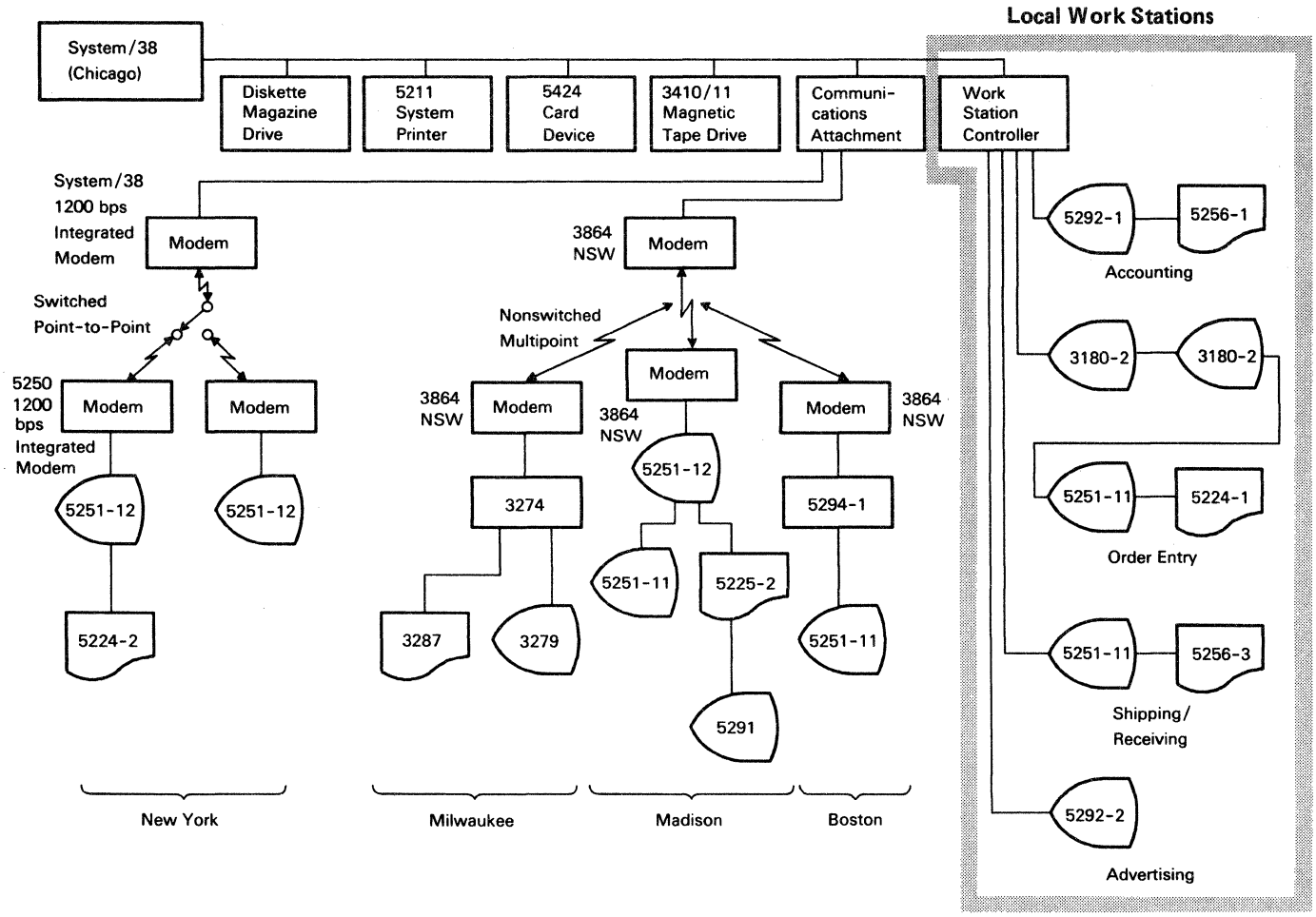
Description		Parameter	Entry
Name of the magnetic tape drive.	R	DEVD	QTAPE1
Physical address of the device:	R	DEVADR	000015

Device	Entry
First unit	000015 for 3410; 000052 for 3430 or 3422
Second unit	010015 for 3410; 010052 for 3430 or 3422
Third unit	020015 for 3410; 020052 for 3430 or 3422
Fourth unit	030015 for 3410; 030052 for 3430 or 3422

Device type (3410 or 3430). The 3422 should be configured as a 3430	R	DEVTYPE	3410
Device model (1, 2, 3 for 3410; A01 for the first 3430 or 3422, which contains the magnetic tape control unit; B01 for the other 3430 or 3422 tape drives).	R	MODEL	1
Name of the associated control unit.		CTLU	QTAPE
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
Type of data error and number of times the system should attempt to recover. (Type: 1 for read errors; 2 for write errors. Times: If type is 1, 10-20 (default is 10). If type is 2, 15-20 (default is 15).)		RETRY Type: Times: Type: Times:	 1 10 2 15
Type of data error and error threshold values to retry before logging the error. (Type: 1 for read errors; 2 for write errors. Threshold: If type is 1, 1-10 (default is 5). If type is 2, 1-64 (default is 32).)		THRESHOLD Type: Threshold: Type: Threshold:	 1 5 2 32
Name of the message queue to which operational messages should be sent (normally QSYSOPR,*LIBL).		MSGQ	QSYSOPR *LIBL
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

'Magnetic tape drive 1'

Figure A-3 (Part 3 of 3). System Devices: Magnetic Tape Drive, and Its Control Unit



For local work stations, fill out the following work sheets:

- Local Work Station Controller
- Four Local Work Station Configuration Work Sheets (one for each port used)
- Work sheets for the display stations and work station printers attached to the work station controller

Figure A-4 (Part 1 of 16). Local Work Stations: System Configuration Diagram

LOCAL WORK STATION CONTROLLER
(CRTCUD command)

Page 1 of 14

Description		Parameter	Entry
Name of the control unit.	R	CUD	QWSCE1
Control unit type identifier (*WSC or *WSCE).	R	TYPE	*WSCE
Model number of the control unit (*NONE):	R	MODEL	*NONE
Address of the control unit:	R	CTLADR	0030

Type	Entry
WSC1 or WSCE1	0030
WSC2 or WSCE2	0070
WSC3 or WSCE3	00B0
WSC4 or WSCE4	00F0
WSCE5	0032
WSCE6	0072
WSCE7	00B2
WSCE8	00F2

The control unit is to be varied online when CPF is started (*YES or *NO).		ONLINE	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 20 on WSC; up to 32 on WSCE). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for display devices and work station printers, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (See the appropriate *Local Work Station Configuration Work Sheet*.)	(A) (B)	DEV	ACCT1 ACCT2 QE1 QE2 QE3 QE4
		RCV1 SHP1 ADV1	
(Use additional sheets if necessary.)			
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the control unit. (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

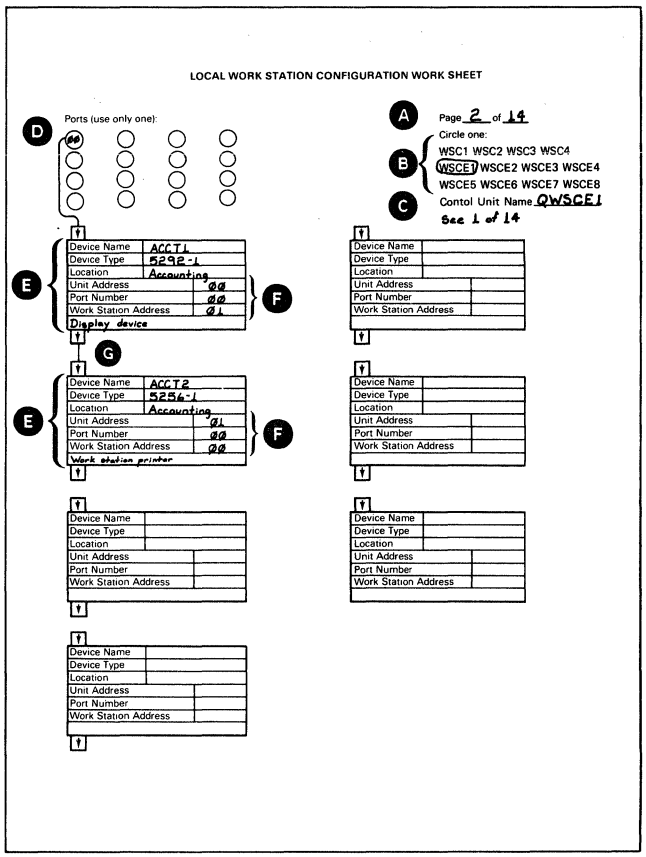
'Basic work station controller'

All values shown on this work sheet (except the DEV parameter) are the IBM-supplied values.

(A) The values specified for the DEV parameter appear on the work sheet for documentation purposes only. Do not enter these values for the DEV parameter of the CRTCUD command.

(B) Additional work station names (DEV parameter) can be written in available space.

Figure A-4 (Part 2 of 16). Local Work Stations: The Local Work Station Controller



A Four ports are used for QWSCE1. Therefore, four Local Work Station Configuration Work Sheets are filled out.

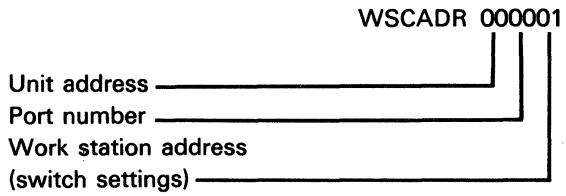
B WSCE1 is circled; its IBM-supplied name is QWSCE1.

C This refers to the local work station work sheet for QWSCE1.

D See Appendix C for the port numbers.

E Fill in the work station blocks as described in Chapter 2.

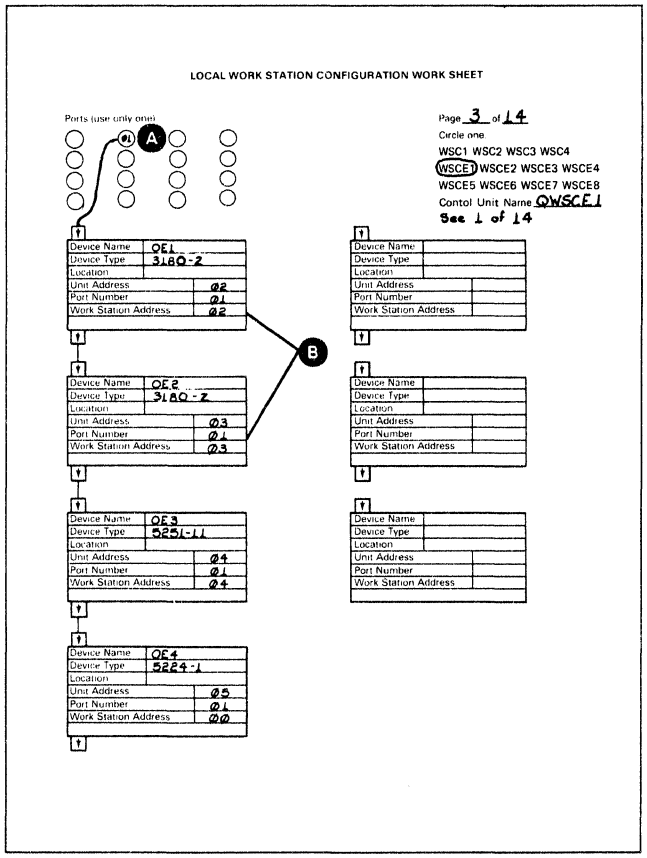
F Unit address, port number, and work station address together make up the WSCADR parameter value, as follows:



In this example, the unit addresses show the sequence of work stations on QWSCE1 (beginning with 00); the work station addresses show the sequence of work stations on each port (beginning with 01; last work station is, by convention, 00).

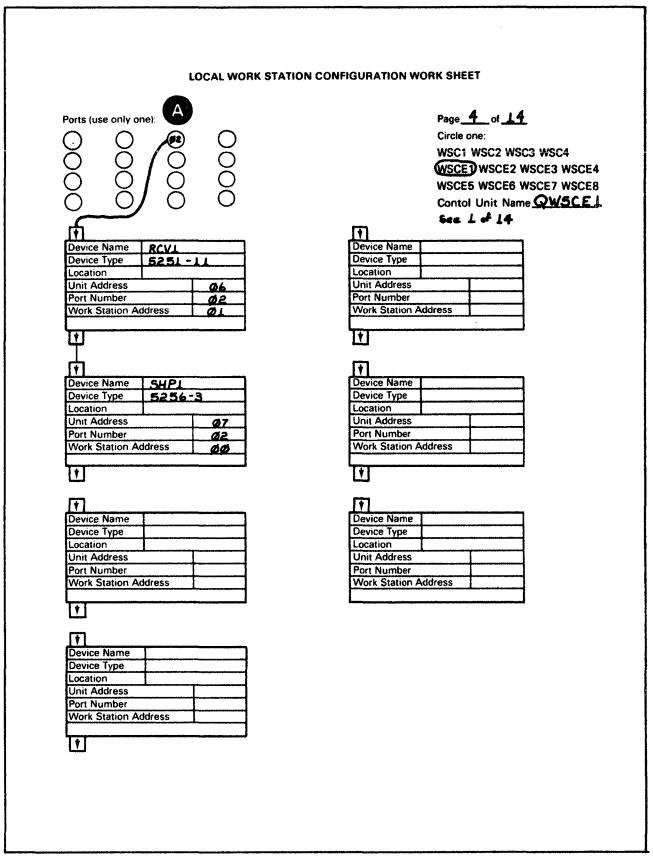
G This line shows a Cable Thru feature connection.

Figure A-4 (Part 3 of 16). Local Work Stations: The First Port on QWSCE1



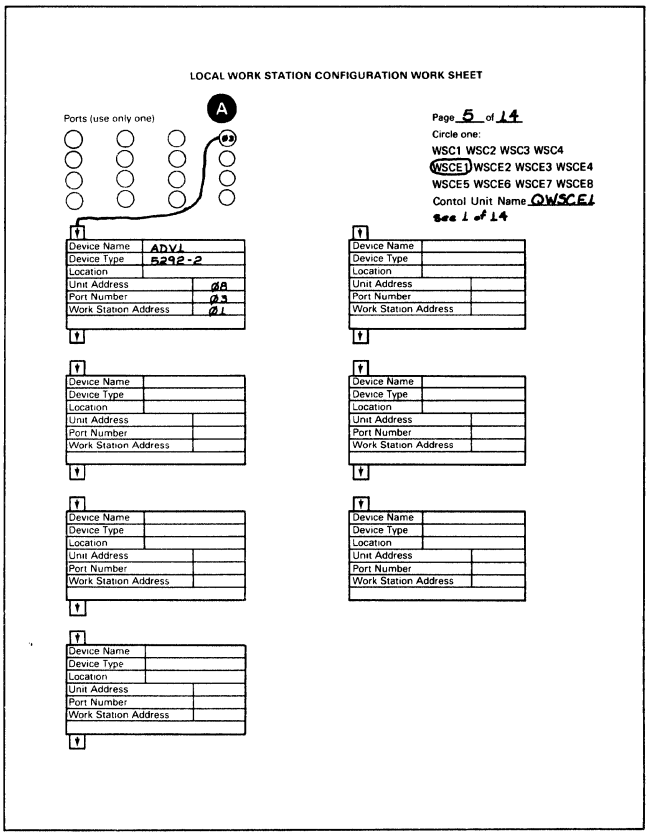
A This work sheet shows only one port (port 01 on QWSCE1). Showing only one port on a work sheet makes it easier to add other work stations to the port.

Figure A-4 (Part 4 of 16). Local Work Stations: The Second Port on QWSCE1



A This work sheet shows only one port (port 02 on QWSCE1). Showing only one port on a work sheet makes it easier to add other work stations to the port.

Figure A-4 (Part 5 of 16). Local Work Stations: The Third Port on QWSCE1



A This work sheet shows only one port (port 03 on QWSCE1). Showing only one port on a work sheet makes it easier to add other work stations to the port.

Figure A-4 (Part 6 of 16). Local Work Stations: The Fourth Port on QWSCE1

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 6 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.	R	DEVD	ACCT1
Physical address of the device:	R	DEVADR	00000000

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy xx — CTLADR parameter value from CRTCUD work sheet yy — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy xx — CTLADR parameter value from CRTCUD work sheet yy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form*.

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5292
Device model:	R	MODEL	1

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Page 6 of 14 (Part 2)

		Imeter	Entry
Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.)	CTLU	CADR	00000001
This device is varied online when CPF is started (*NO or *YES).	ONLINE		*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP		
Name of the associated work station printer (*NONE or device name).	PRINTER		ACCT2
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE		

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

yy — Unit address (00-19 if WSC; 00-31 if WSCE)
(See the appropriate *Local Work Station Configuration Work Sheet*.)

01 =

address set through keyboard = 1

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD — TUSB

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard D for data entry keyboard without proof arrangement P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	'Accounting dept. display station'

Figure A-4 (Part 7 of 16). Local Work Stations: Display Station ACCT1

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Page 7 of 14 (Part 1)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	ACCT2
Physical address of the device:	R	DEVADR	ØØØØØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	5256
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	1

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1	D1
				D2	D2
4214	2	2	5224	1	1
4245	T12	T12		2	2
	T20	T20			
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1	1
				2	2
				3	3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)		CTLU	QWSCE1
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES

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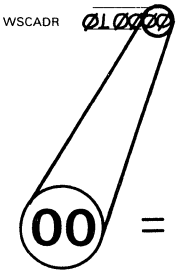
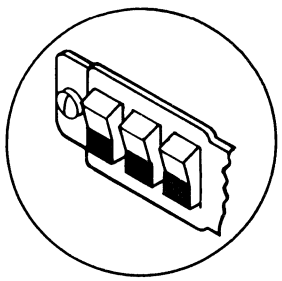
Parameter	Entry
MSGQ	ACCT1
WSCADR	ØLØØØØ





Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVAD	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

'Accounting dept. work station printer'

Figure A-4 (Part 8 of 16). Local Work Stations: Work Station Printer ACCT2

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 8 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	OE1
Physical address of the device:	R	DEVADR	000000

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	3180
Device model:	R	MODEL	2

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	QWSCE1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	
Name of the associated work station printer (*NONE or device name)..	PRINTER	OE4
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

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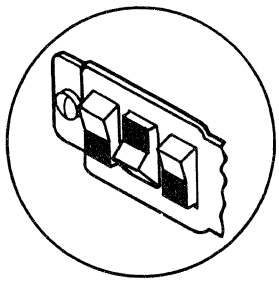
Parameter	Entry
WSCADR	02 01 02

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

02 =



xx — Unit address (00-19 if WSC; 00-31 if WSCE)
(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE):	WSCKBD	PUSB

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Order entry display station 1'

Figure A-4 (Part 9 of 16). Local Work Stations: The First Display of a Dual Display Station (OE1)

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 9 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	OE2
Physical address of the device:	R	DEVADR	ØØØØØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
5294	xxyyyy

xxyyyy — CTLADR parameter value from CRTCUD work sheet

xxyyyy — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.

xxyyyy — CTLADR parameter value from CRTCUD work sheet

xxyyyy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	3180
Device model:	R	MODEL	2

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	QWSCE1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	
Name of the associated work station printer (*NONE or device name)..	PRINTER	OE4
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

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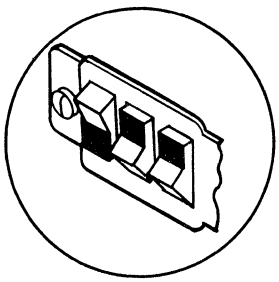
Parameter	Entry
WSCADR	Ø3Ø1Ø3

03 =



WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD PUSB

Device Family	Entry
5250	yzzz
3180	yzzz

yzzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- T for typewriter-like keyboard
- D for data entry keyboard without proof arrangement
- P for data entry keyboard with proof arrangement

yzzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- E for data entry
- P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
- OU number
- Control Unit Station address
- Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Order entry display station 2'

Figure A-4 (Part 10 of 16). Local Work Stations: The Second Display of a Dual Display Station (OE2)

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 10 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	OE3
Physical address of the device:	R	DEVADR	000000

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	QWSCE1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	
Name of the associated work station printer (*NONE or device name)..	PRINTER	OE4
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

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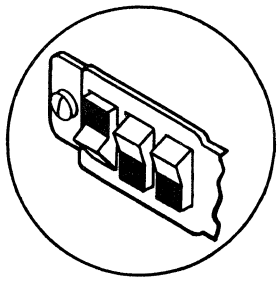
Parameter	Entry
WSCADR	040104

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

04 =



Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD PUSB

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Order entry display station 3'

Figure A-4 (Part 11 of 16). Local Work Stations: Display Station OE3

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Page 11 of 14 (Part 1)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	OE4
Physical address of the device:	R	DEVADR	ØØØØØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	5224
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	1

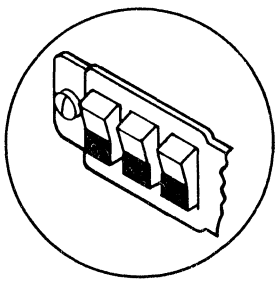
Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1	D1
				D2	D2
4214	2	2	5224	1	1
4245	T12	T12		2	2
	T20	T20			
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1	1
				2	2
				3	3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)		CTLU	QWSCE1
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES

Page 11 of 14 (Part 2)

Parameter	Entry
MSGQ	OE3
WSCADR	Ø5Ø1ØØ

00 =



WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

xx — Unit address (00-19 if WSC; 00-31 if WSCE)
(See the appropriate *Local Work Station Configuration Work Sheet.*)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVAD	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

'Order entry work station printer'

Figure A-4 (Part 12 of 16). Local Work Stations: Work Station Printer OE4

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 12 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	RCV1
Physical address of the device:	R	DEVADR	ØØØØØØ

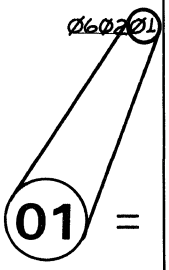
Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

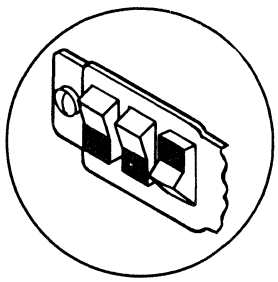
Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Page 12 of 14 (Part 2)

		Parameter	Entry
Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)		CTLU	QWSCE1
This device is varied online when CPF is started (*NO or *YES).		ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	
Name of the associated work station printer (*NONE or device name)..		PRINTER	SHP1
Name of an alternative printer file to be used when no associated work station printer is available.		PRTFILE	





WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): — WSCKBD: DUSB

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Receiving dept. display station'

Figure A-4 (Part 13 of 16). Local Work Stations: Display Station RCV1

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Page 13 of 14 (Part 1)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	SHP1
Physical address of the device:	R	DEVADR	ØØØØØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	5256
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	3

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1	D1
				D2	D2
4214	2	2	5224	1	1
4245	T12	T12		2	2
	T20	T20			
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1	1
				2	2
				3	3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	QWSCE1
The device is to be varied online when CPF is started (*NO or *YES).	ONLINE	*YES

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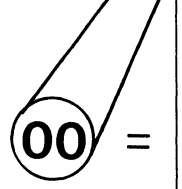
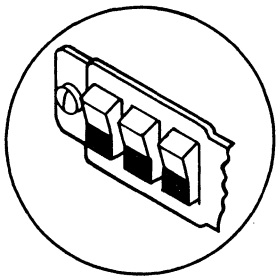
Parameter	Entry
MSGQ	RCV1
WSCADR	Ø702ØØ





xx — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

yyyy — Unit address (00-19 if WSC; 00-31 if WSCE)
(See the appropriate *Local Work Station Configuration Work Sheet.*)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVAD	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

'Shipping dept. work station printer'

Figure A-4 (Part 14 of 16). Local Work Stations: Work Station Printer SHP1

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 14 of 14 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet*, *IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.	R	DEVD	ADV1
Physical address of the device:	R	DEVADR	ØØØØØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy yyyy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form*.

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5292
Device model:	R	MODEL	2

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet*, *IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.)	CTLU	QWSCE1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	
Name of the associated work station printer (*NONE or device name).	PRINTER	
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

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Parameter	Entry
WSCADR	Ø8ØØØ1

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

xx — Unit address (00-19 if WSC; 00-31 if WSCE)
(See the appropriate *Local Work Station Configuration Work Sheet*.)

01 =

address set through keyboard = 1

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE):	WSCKBD	TUSB

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry; P for data processing

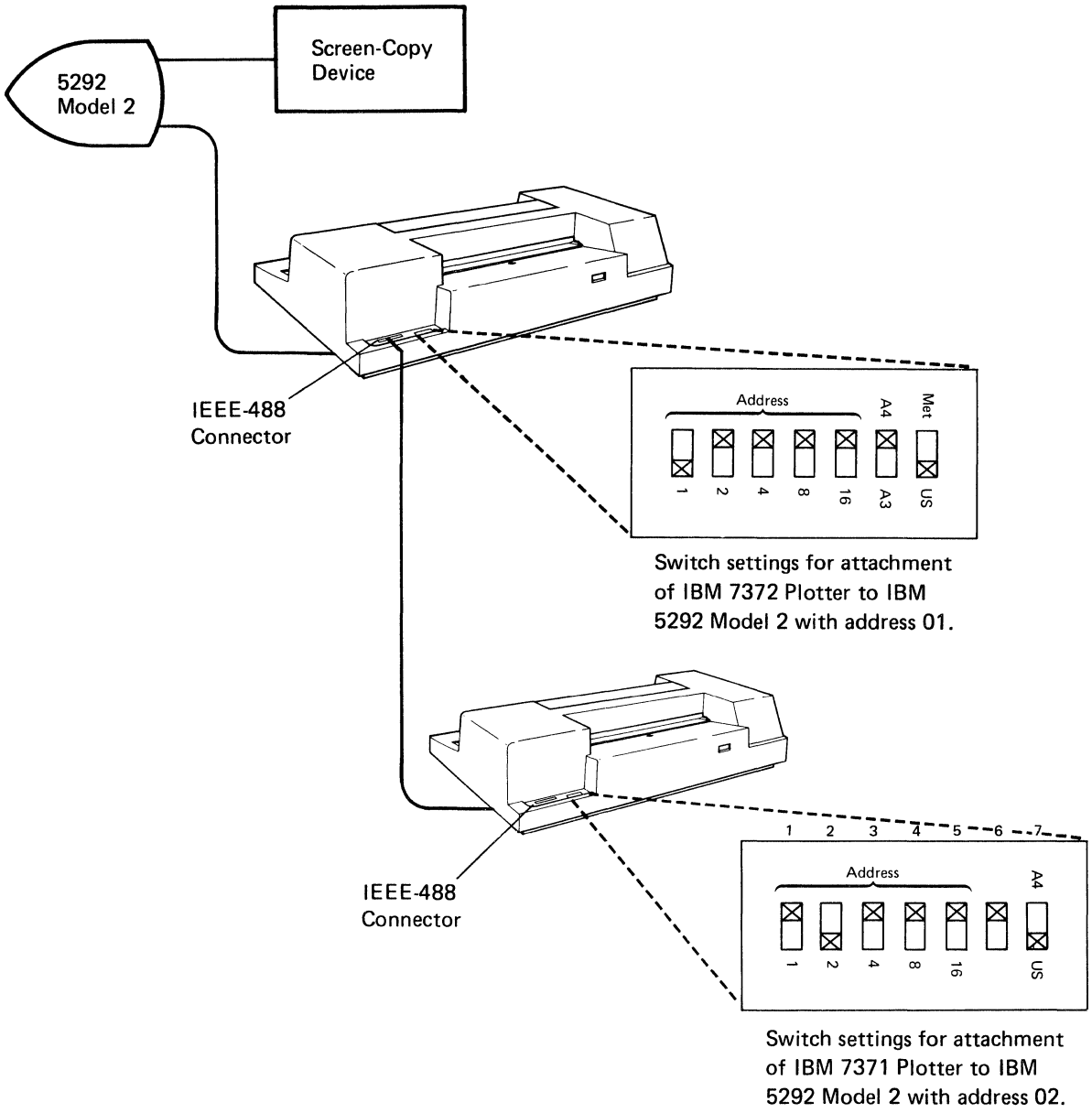
Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC. 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	7372 Ø1
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
zz — OU number
yyyy — Control Unit Station address
xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

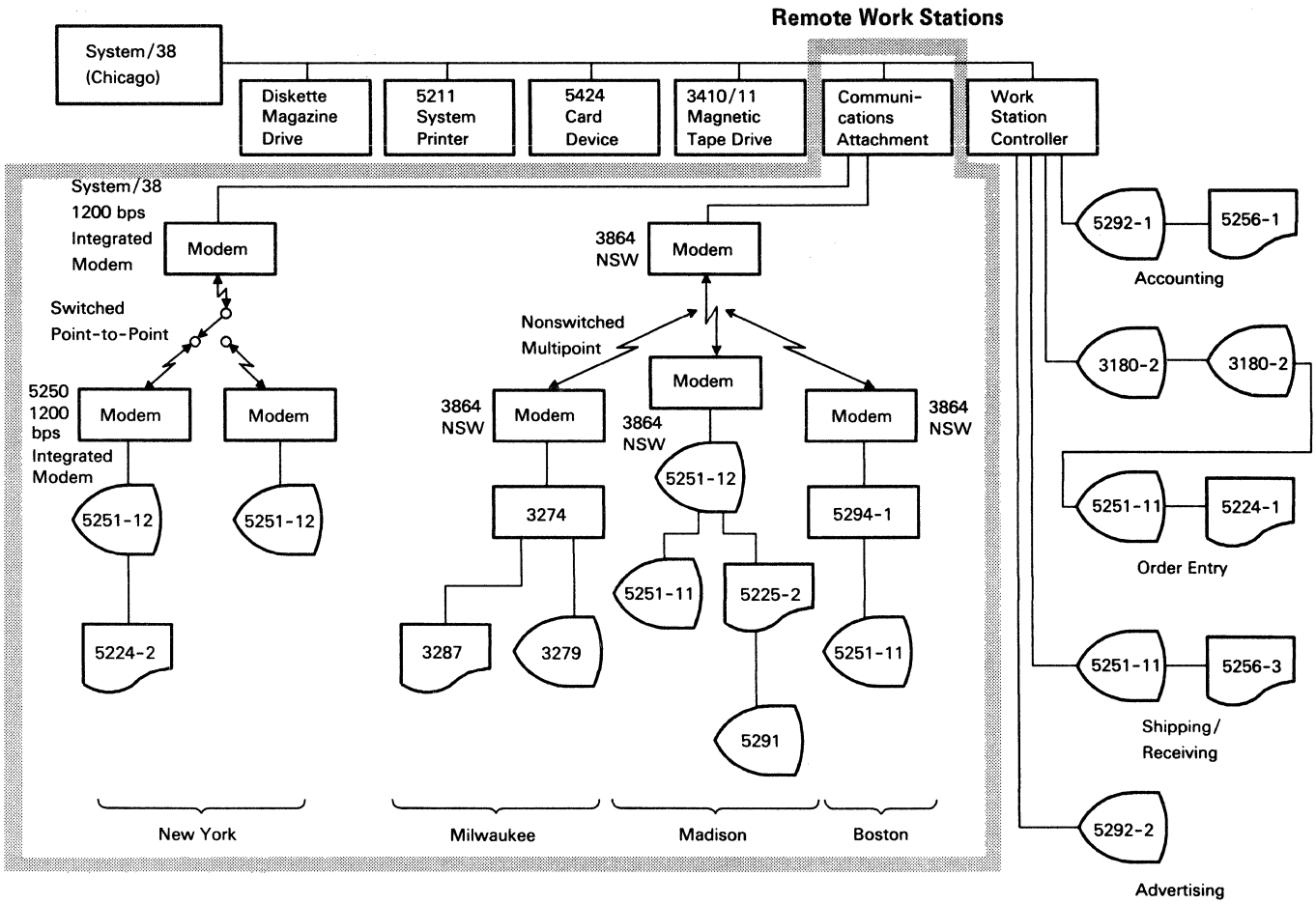
'Advertising dept. display station'

Figure A-4 (Part 15 of 16). Local Work Stations: Display Station ADV1



Note: No separate CRTDEVD command need be entered for the plotter and screen-copy device. Use the AUXDEV type and address parameter on the CRTDEV command of the 5292 Model 2 for the plotter. There is no parameter required for the screen-copy device.

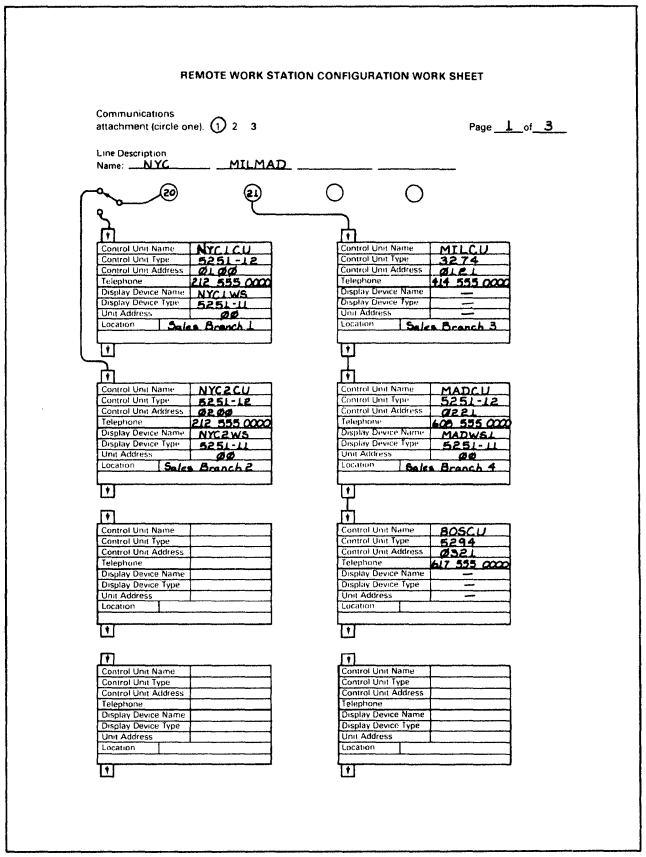
Figure A-4 (Part 16 of 16). Local Work Stations: Physical Arrangement of Auxiliary Devices Attached to 5292 Model 2



For remote work stations, fill out the following work sheets:

- At least one Remote Work Station Configuration Work Sheet
- For each line:
  - One SDLC Primary Line work sheet
- For each 5251 Model 2 or 12 Control Unit:
  - One IBM 5251 Model 12 Communications Network Setup Form
  - One SDLC 5250 Control Unit work sheet
  - One 5250 and 3180 Display Station work sheet
  - One additional 5250 and 3180 Display Station work sheet or 5250 Work Station Printer work sheet for each attached work station (if any)
- For each 5294 Control Unit:
  - One IBM 5294 Communications Network Setup Form
  - One SDLC 5250 Control Unit work sheet
  - One 5250 and 3180 Display Station work sheet or 5250 Work Station Printer work sheet for each attached work station
- For each 3270 control unit:
  - One 3270 Communications Network Setup Form
  - One SDLC 3270 Control Unit work sheet
  - One Remote 3270 Display Station work sheet or Remote 3270 Work Station Printer work sheet for each attached work station

Figure A-5 (Part 1 of 6). Remote Work Stations: System Configuration Diagram



A Two line descriptions (named NYC and MILMAD) are used for three physical lines. Therefore, only two SDLC Line Description Work Sheets are filled out.

B For Communications Adapter 1, the valid OU numbers are

20 21 22 23

For Communications Adapter 2, the valid OU numbers are

60 61 62 63

For Communications Adapter 3, the valid numbers are

A0 A1 A2 A3

Enter the appropriate values in the circles.

C Fill out the control unit blocks as described in Chapter 2.

The upper part of each control unit block refers to the Control Unit Description; the lower part of each control unit block refers to the display station that is part of a 5251 Model 2 or 12 (use a 5250 and 3180 Display Station work sheet for this part).

Control unit address: The first 2 digits are the Controller Station Address from the IBM 5251 Model 12 Communications Network Setup Form or the SDLC Station Address from the IBM 5294 Communications Network Setup Form or the 3270 Communications Network Setup Form. The second 2 digits are the line position. However, because line NYC is a switched line, the last 2 digits must be 00 on NYC1CU and NYC2CU.

Figure A-5 (Part 2 of 6). Remote Work Stations: Remote Work Station Configuration Work Sheet

SDLC PRIMARY LINE (PART 1 OF 2)
(CRTLIND command)

Page 2 of 3
(Part 1)

Description			Parameter	Entry
Name of the line.		R	LIND	NYC
Number that identifies the line:		R	LINNBR	20

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCP).		R	TYPE	*SDLCP
Type of line connection:		R	CNN	*SWT

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	1200
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	*NO
The modem has the data rate select feature (*NO or *YES).		SELECT	*NO
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	*YES
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	*YES
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	*NO
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	*YES
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	*NO
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: 2 Backup:	
Data communications equipment group (*A, *B, or *C).		DCEGRP	*C
Non-IBM modem is used (*NO or *YES).		OEMMDM	*NO
Types of calls for which the line is to be used:		SWTCNN	*ANS

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).		RATETYPE	*FULL
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		DIALMODE	*MANUAL
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		ANSMODE	*AUTO

Figure A-5 (Part 3 of 6). Remote Work Stations: SDLC Primary Line NYC

SDLC PRIMARY LINE (PART 2 OF 2)
(CRTLIND command)

Page 2 of 3
(Part 1)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	1
Number of idle time units (53.3 milliseconds each) needed to satisfy idle state time considerations (0-255; 38 is recommended minimum; if this is a switched line and you will attach a 5294 Control Unit to it, you *must* specify at least 38).	IDLETIME	38
Number of base time units (500 milliseconds each) to receive intelligible data (0-255).	NONPRDRCV	4
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	1
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	*YES
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (up to 50). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create control units that reference this line (through the LINE parameter), the name of the control units are automatically inserted in the CTLU parameter for this line.	CTLU	
(Use additional sheets if necessary.)		
For APPC only. Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	
Line code (*EBCDIC or *ASCII).	CODE	
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Switched line between Chicago and New York City'

Figure A-5 (Part 4 of 6). Remote Work Stations: SDLC Primary Line NYC

SDLC PRIMARY LINE (PART 1 OF 2)
(CRTLIND command)

Page 3 of 3
(Part 1)

Description		Parameter	Entry
Name of the line.	R	LIND	MILMAD
Number that identifies the line:	R	LINNBR	21

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Description			
Type of line (*SDLCP).	R	TYPE	*SDLCP
Type of line connection:	R	CNN	*MP

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

Description			
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	4800
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	*NO
The modem has the data rate select feature (*NO or *YES).		SELECT	*YES
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	*YES
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	*NO
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	*NO
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	*NO
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	*NO
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: 4 Backup:	
Data communications equipment group (*A, *B, or *C).		DCEGRP	*A
Non-IBM modem is used (*NO or *YES).		OEMMDM	*NO
Types of calls for which the line is to be used:		SWTCNN	

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

Description			
The speed at which the line operates (*FULL or *HALF).		RATETYPE	*FULL
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		ANSMODE	

Figure A-5 (Part 5 of 6). Remote Work Stations: SDLC Primary Line MILMAD

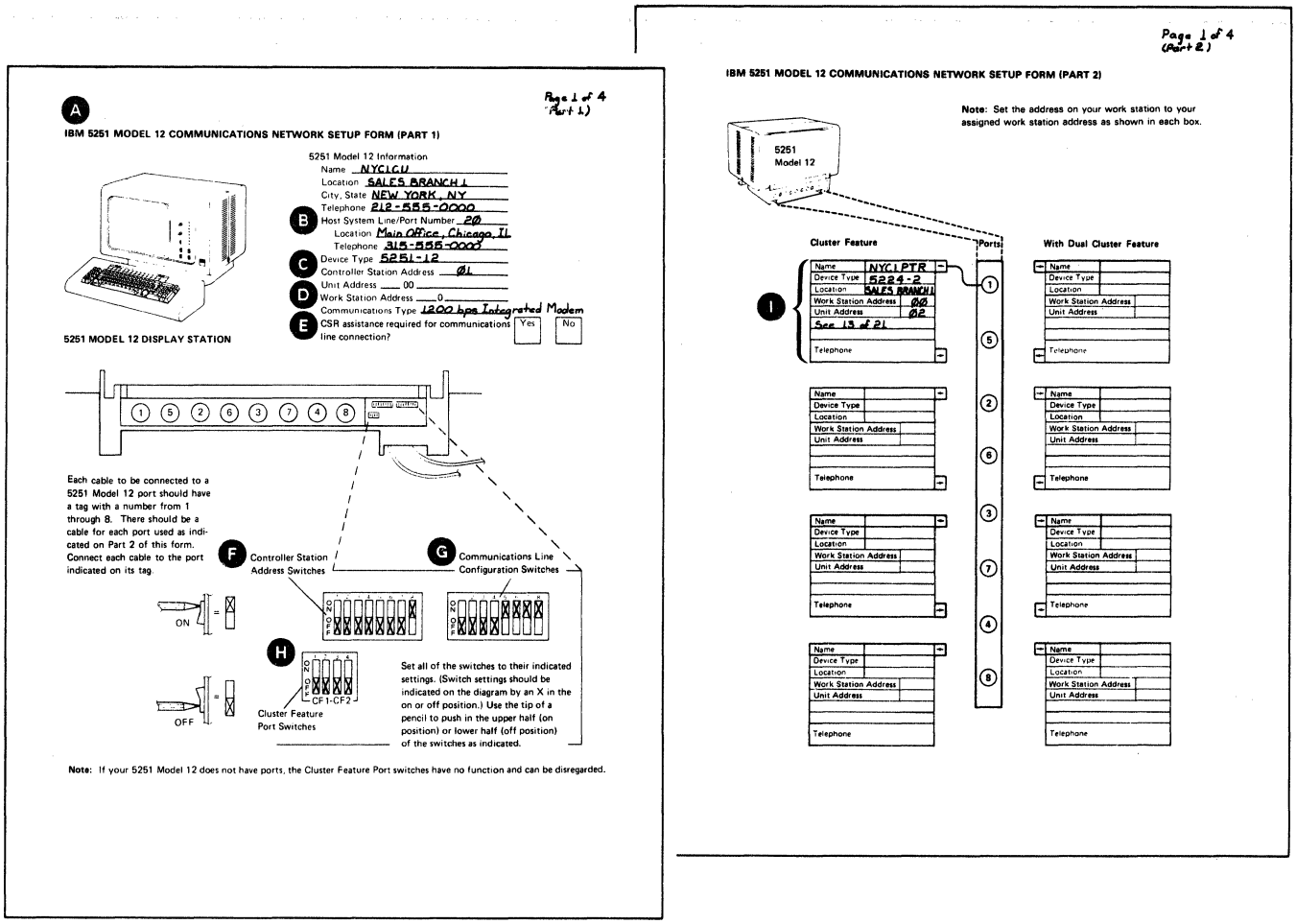
SDLC PRIMARY LINE (PART 2 OF 2)
(CRTLIND command)

Page 3 of 3
(Part 2)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	1
Number of idle time units (53.3 milliseconds each) needed to satisfy idle state time considerations (0-255; 38 is recommended minimum; if this is a switched line and you will attach a 5294 Control Unit to it, you *must* specify at least 38).	IDLETIME	38
Number of base time units (500 milliseconds each) to receive intelligible data (0-255).	NONPRDRCV	2
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	1
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	*YES
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (up to 50). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create control units that reference this line (through the LINE parameter), the name of the control units are automatically inserted in the CTLU parameter for this line.	CTLU	MILCU MADCU BOSCU
(Use additional sheets if necessary.)		
For APPC only. Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	
Line code (*EBCDIC or *ASCII).	CODE	
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'MP line between Chicago, Milwaukee, Madison, and Boston'

Figure A-5 (Part 6 of 6). Remote Work Stations: SDLC Primary Line MILMAD



A In the *5250 Information Display System Planning and Site Preparation Guide*, use Chapter 7, *Remote Work Station Configuration*, to complete this form. Because work stations are attached to this 5251 Model 12, you must complete both Parts 1 and 2.

B This entry (20) identifies the line connection to which this 5251 Model 12 is attached.

C This entry (01) is a hexadecimal value reflecting the setting of the Controller Station Address switches (see **F**). See the *5250 Information Display System Planning and Site Preparation Guide* for a chart of addresses and corresponding switch settings. On the System/38, must be 01 to FE; if the IBM 2400 or 4800 bps Integrated Modem is installed, can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1 through 9.

D These entries are predefined. On System/38, the work station address is 00. Both the unit address and the work station address are used in the DEVADR parameter for the display station that is part of the 5251 Model 12 (in this example, named NYC1WS).

E The communications type depends on the communications feature you order for the line to which this 5251 Model 12 is attached. In this example, a 1200 bps Integrated Modem is attached; the line is switched (CNN parameter on the SDLC Primary Line Work Sheet); and the System/38 provides the clocking function (CLOCK parameter on the SDLC Primary Line Work Sheet). This entry determines the setting of the Communications Line Configuration switches (see **G**), which are set using a chart in the *5250 Information Display System Planning and Site Preparation Guide*.

F The Controller Station Address switches are the hexadecimal representation of the controller station address (see **C**).

G The Communications Line Configuration switches depend on the communications feature you order (see **E**).

H The Cluster Feature Port switches are set to indicate the last port used on the Cluster feature or Dual Cluster feature. In this example, only Cluster feature port 1 is used, so switches 1 and 2 must be set to 0 (switches 3 and 4 have no effect when the Dual Cluster feature is not used).

I Fill in the work station block as described in the *5250 Information Display System Planning and Site Preparation Guide*.

Figure A-6 (Part 1 of 4). Remote Work Stations: 5250 Communications Network Setup Form for One 5251 Model 12 in New York City

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Page 2 of 4

Description			Parameter	Entry
Name of the control unit.		R	CUD	NYC1CU
Control unit type identifier (5251 or 5294).		R	TYPE	5251
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).		R	MODEL	12
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):		R	CTLADR	Ø1ØØ
Type of Line	**Entry**			
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
	and yy =	LINNBR parameter value from CRTLIND work sheet.		
Attached to a switched line (*NO or *YES).			SWITCHED	*YES
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).			LINE	*NONE
The modem has the data rate select feature (*NO or *YES).			SELECT	*NO
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).			TELNBR	212 555 0000
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).			INLCNN	*ANS
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).			EXCHID	Ø2ØØØØØ1
This control unit is to be varied online when CPF is started (*NO or *YES).			ONLINE	*YES
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.			LINLST	NYC
The modem has the switched network (dial) backup feature (*NO or *YES).			SWNBKU	*NO
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).			DLYFEAT	*NO
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)			DEV	NYC1WS NYC1PTR
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.			DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.			LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).			PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).			TEXT	

'NYC Sales Branch 1 5251-12 Control unit'

Figure A-6 (Part 2 of 4). Remote Work Stations: 5251 Control Unit in New York City

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 3 of 4 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	NYC1WS
Physical address of the device:	R	DEVADR	ØØØ1ØØ

address is fixed; must be ØØ

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
	CTLADR parameter value from CRTCUD work sheet
	Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy
	CTLADR parameter value from CRTCUD work sheet
	Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	NYC1CU
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	*YES
Name of the associated work station printer (*NONE or device name)..	PRINTER	NYC1PTR
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	_____

Page 3 of 4 (Part 2)

Parameter	Entry
WSCADR	_____

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD _____

Device Family	Entry
5250	yzzz
	3-character identifier (see CRTDEVD command in *CL Reference Manual*)
	T for typewriter-like keyboard D for data entry keyboard without proof arrangement P for data entry keyboard with proof arrangement
3180	yzzz
	3-character identifier (see CRTDEVD command in *CL Reference Manual*)
	E for data entry P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	 _____ _____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____

xxyyyyzz

- OU number
- Control Unit Station address
- Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	 _____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'NYC Sales Branch Display Station'

Figure A-6 (Part 3 of 4). Remote Work Stations: Display Station That Is Part of 5251 Control Unit in New York City

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Page 4 of 4
(Part 1)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	NYC1PTR
Physical address of the device:	R	DEVADR	02 01 00

depends on position of device on cable network

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy

xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*

5294	xxyyyy

xxyyyy
- xx — CTLADR parameter value from CRTCUD work sheet
- yyyy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).				R	DEVTYPE	5224
Device model (for DEVTYPE (*IPDS) model should be *NONE):				R	MODEL	2

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1	D1
				D2	D2
4214	2	2	5224	1	1
4245	T12	T12		2	2
	T20	T20			
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1	1
				2	2
				3	3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)		CTLU	NYC1CU
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES

Page 4 of 4
(Part 2)

Parameter	Entry
MSGQ	NYC1WS
WSCADR	

- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

- zz — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

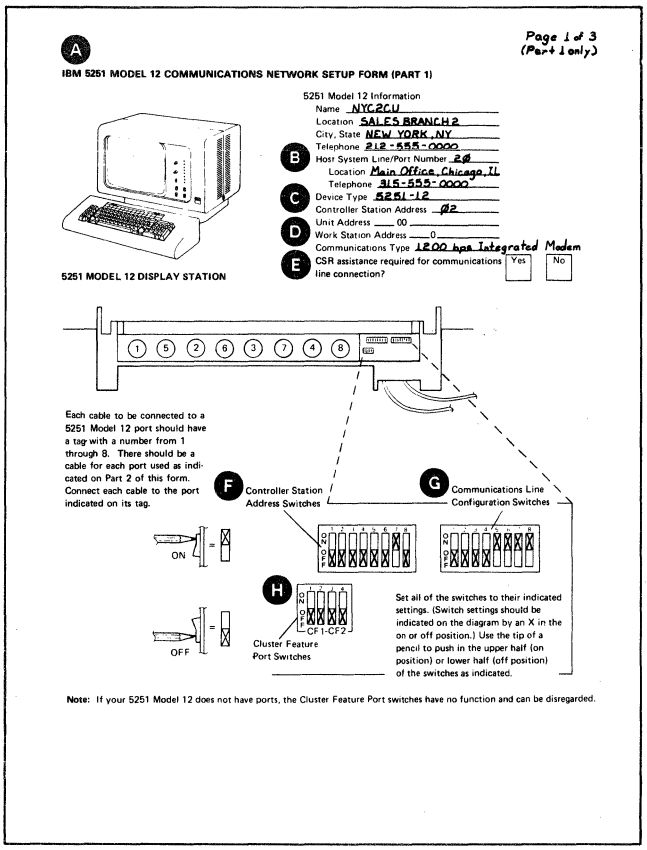
Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVAD	

xxyyyyzz
- xx — OU number
- yyyy — Control Unit Station address
- zz — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

'NYC Sales Branch 1 Work Station Printer'

Figure A-6 (Part 4 of 4). Remote Work Stations: Work Station Printer in New York City



A In the *5250 Information Display System Planning and Site Preparation Guide*, use Chapter 7, *Remote Work Station Configuration* to complete this form. Because no work stations are attached to this 5251 Model 12, you must complete only Part 1.

B This entry (20) identifies the line connection to which this 5251 Model 12 is attached.

C This entry (02) is a hexadecimal value reflecting the setting of the Controller Station Address switches (see **F**). See the *5250 Information Display System Planning and Site Preparation Guide* for a chart of addresses and corresponding switch settings. On System/38, must be 01 to FE; if the IBM 2400 or 4800 bps Integrated Modem is installed, can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1 through 9.

D These entries are predefined. On System/38, the work station address is 00. Both the unit address and the work station address are used in the DEVADR parameter for the display station that is part of the 5251 Model 12 (in this example, named NYC2WS).

E The communications type depends on the communications feature you order for the line to which this 5251 Model 12 is attached. In this example, a 1200 bps Integrated Modem is installed; the line is switched (CNN parameter on the SDLC Primary Line work sheet); and the System/38 provides the clocking function (CLOCK parameter on the SDLC Primary Line work sheet). This entry determines the setting of the Communications Line Configuration switches (see **G**), which are set using a chart in the *5250 Information Display System Planning and Site Preparation Guide.*

F The Controller Station Address switches are the hexadecimal representation of the controller station address (see **C**).

G The Communications Line Configuration switches depend on the communications feature you order (see **E**).

H The Cluster Feature Port switches are set to indicate the last port used on the Cluster feature or Dual Cluster feature. In this example, no Cluster feature port is used, so switches 1 through 4 must be set to 0.

Figure A-7 (Part 1 of 3). Remote Work Stations: 5250 Communications Network Setup Form for the Other 5251 Model 12 in New York City

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Page 2 of 3

Description		Parameter	Entry
Name of the control unit.	R	CUD	NYC2CU
Control unit type identifier (5251 or 5294).	R	TYPE	5251
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).	R	MODEL	12
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):	R	CTLADR	Ø2ØØ
Type of Line **Entry** Switched xx00, where xx = The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.) Nonswitched xxyy, where xx = The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.) and yy = LINNBR parameter value from CRTLIND work sheet.			
Attached to a switched line (*NO or *YES).		SWITCHED	*YES
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	*NONE
The modem has the data rate select feature (*NO or *YES).		SELECT	*NO
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	212 555 0000
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	*ANS
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).		EXCHID	Ø2ØØØØØ2
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	NYC
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	*NO
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).		DLYFEAT	*NO
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	NYC2WS
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.		DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.		LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).		TEXT	

'NYC Sales Branch 2 5251-12 Control Unit'

Figure A-7 (Part 2 of 3). Remote Work Stations: 5251 Control Unit in New York City

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 3 of 3 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet*, *IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.	R	DEVD	NYC2WS
Physical address of the device:	R	DEVADR	000200

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy xx — CTLADR parameter value from CRTCUD work sheet yyyy — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy xx — CTLADR parameter value from CRTCUD work sheet yyyy — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form*.

address is fixed; must be 00

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet*, *IBM 5251 Model 12 Communications Network Setup Form*, or *IBM 5294 Communications Network Setup Form*.)		CTLU	NYC2CU
This device is varied online when CPF is started (*NO or *YES).		ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	*YES
Name of the associated work station printer (*NONE or device name)..		PRINTER	*NONE
Name of an alternative printer file to be used when no associated work station printer is available.		PRTFILE	

Page 3 of 3 (Part 2)

Parameter	Entry
WSCADR	

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD

Device Family	Entry
5250	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement
3180	yzzz zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*) y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO). ALWBLN

Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default). MAXLENRU

Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE. AUXDEV type / address

Physical address of SNA device attached to an X.25 network. NETDEVADR

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

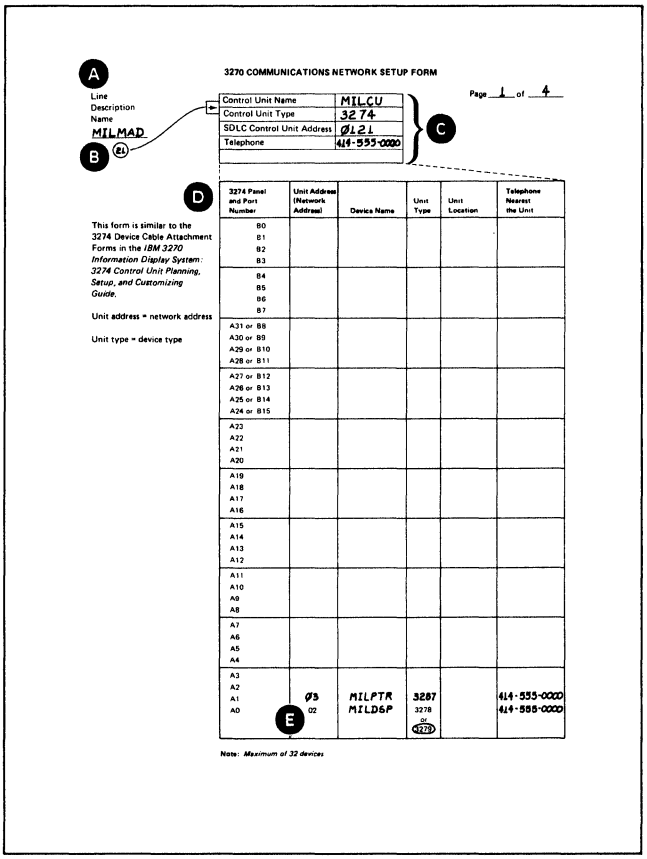
For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default). CHRID char set / code page

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE). PUBAUT *NORMAL

Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.) TEXT

'NYC Sales Branch 2 Display Station'

Figure A-7 (Part 3 of 3). Remote Work Stations: Display Station That Is Part of 5251 Control Unit in New York City



3270 COMMUNICATIONS NETWORK SETUP FORM

Page 1 of 4

Line Description Name: MILMAD (21)

Control Unit Name	MILCU
Control Unit Type	3274
SDLC Control Unit Address	Ø121
Telephone	414-555-0000

This form is similar to the 3274 Device Cable Attachment Forms in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

Unit address = network address

Unit type = device type

3274 Panel and Port Number	Unit Address (Network Address)	Device Name	Unit Type	Unit Location	Telephone Nearest the Unit
B0 B1 B2 B3					
B4 B5 B6 B7					
A31 or B8 A30 or B9 A29 or B10 A28 or B11					
A27 or B12 A26 or B13 A25 or B14 A24 or B15					
A23 A22 A21 A20					
A19 A18 A17 A16					
A15 A14 A13 A12					
A11 A10 A9 A8					
A7 A6 A5 A4					
A3 A2 A1 A0	Ø3 02	MILPTR MILD6P	3287 3278 or 3279		414-555-0000 414-555-0000

Note: *Maximum of 32 devices*

A Complete this form after you do the offline configuration of the 3270 control unit and its attached work stations.

B These entries (MILMAD and 21) identify the line description name and the line connection on the system unit to which the line is attached (LIND and LINNBR parameters on the CRTLIND work sheet).

C Fill in the control unit block as described in Chapter 2 of this manual.

D Fill in this part as you would the 3274 Device Cable Attachment Forms in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

E Port A0 has address 02 for System/38 remote work stations (they are on an SDLC network).

Figure A-8 (Part 1 of 4). Remote Work Stations: 3270 Communications Network Setup Form for 3274 Control Unit in Milwaukee

SDLC 3270 CONTROL UNIT
(CRTCUD command)

Description			Parameter	Entry
Name of the control unit.		R	CUD	MILCU
Control unit type identifier (3274).		R	TYPE	3274
Model number of the control unit (*NONE).		R	MODEL	*NONE
SDLC control unit address:		R	CTLADR	Ø121
Type of Line	**Entry**			
Switched	xx00, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
Nonswitched	xxyy, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
	and yy =	LINNBR parameter value from CRTLIND work sheet.		
Attached to a switched line (*NO or *YES).			SWITCHED	*NO
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).			LINE	MILMAD
The modem has the data rate select feature (*NO or *YES).			SELECT	*NO
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).			TELNBR	*NONE
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).			INLCNN	
Exchange identifier used to identify this control unit to the remote system or device. For switched IBM 3274 Control Units, 017xxxxx, where xxxxx must match the Physical Unit Identification (PUID) keyed in for sequence number 215 in the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For nonswitched units, 01700000. For 3270 control units other than IBM 3274 Control Units, including 3270 emulators, see the documentation for the specific device for the appropriate exchange identifier.			EXCHID	01799999
System services control point identifier. Valid only on switched lines. (Default is 050000000000.)			SSCPID	
This control unit is to be varied online when CPF is started (*NO or *YES).			ONLINE	*YES
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.			LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).			SWNBKU	*NO
If the connection with this control unit is delayed (for instance, if the 3270 control unit is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).			DLYFEAT	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (Up to 64 remote 3270 work stations, depending on the specific type of 3270 control unit and the features installed. See the *3270 Remote Control Unit Work Sheet*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)			DEV	MILWS MILPTR
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.			DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.			LINKTYPE	*SDLCSEC
Type of character coding to be used for this control unit (*LIND, *EBCDIC, or *ASCII). *LIND is the default.			CODE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).			PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).			TEXT	

'Milwaukee Sales Branch 3274 Control Unit'

Figure A-8 (Part 2 of 4). Remote Work Stations: 3274 Control Unit in Milwaukee

3270 REMOTE DISPLAY STATION
(CRTDEVD command)

Page 3 of 4

Description		Parameter	Entry
Name of the display station. (See the appropriate *3270 Remote Control Unit Work Sheet.*)	R	DEVD	MILWS
Physical address of the device:	R	DEVADR	020121

xxyyyy
- yyyy — CTLADR parameter values from CRTCUD work sheet
- xx — Unit address. Also called port address or network address. If the work station is a Category A terminal, specify hexadecimal 03-41. Port address 02 applies to port A0 on the 3274. If the work station is a Category B terminal, specify hexadecimal 0B-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information.

address is set by port attachment; therefore, 02

Device type (3277, 3278, 3279).	R	DEVTYPE	3279
Device model (*NONE).	R	MODEL	*NONE
Name of associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet.*)		CTLU	MILCU
This device is varied online when CPF is started (*NO or *YES).		ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	
Type of keyboard (required only for certain keyboard types; see *CL Reference Manual*).		WSCKBD	

yzzz
- zzz — 3-character keyboard identifier
- y — T for typewriter-like keyboard

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 246, 256, and *CALC; 256 is the default).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a-5 digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Milwaukee Sales Branch Display Station'

Figure A-8 (Part 3 of 4). Remote Work Stations: Display Station in Milwaukee

3270 REMOTE WORK STATION PRINTER
(CRTDEVD command)

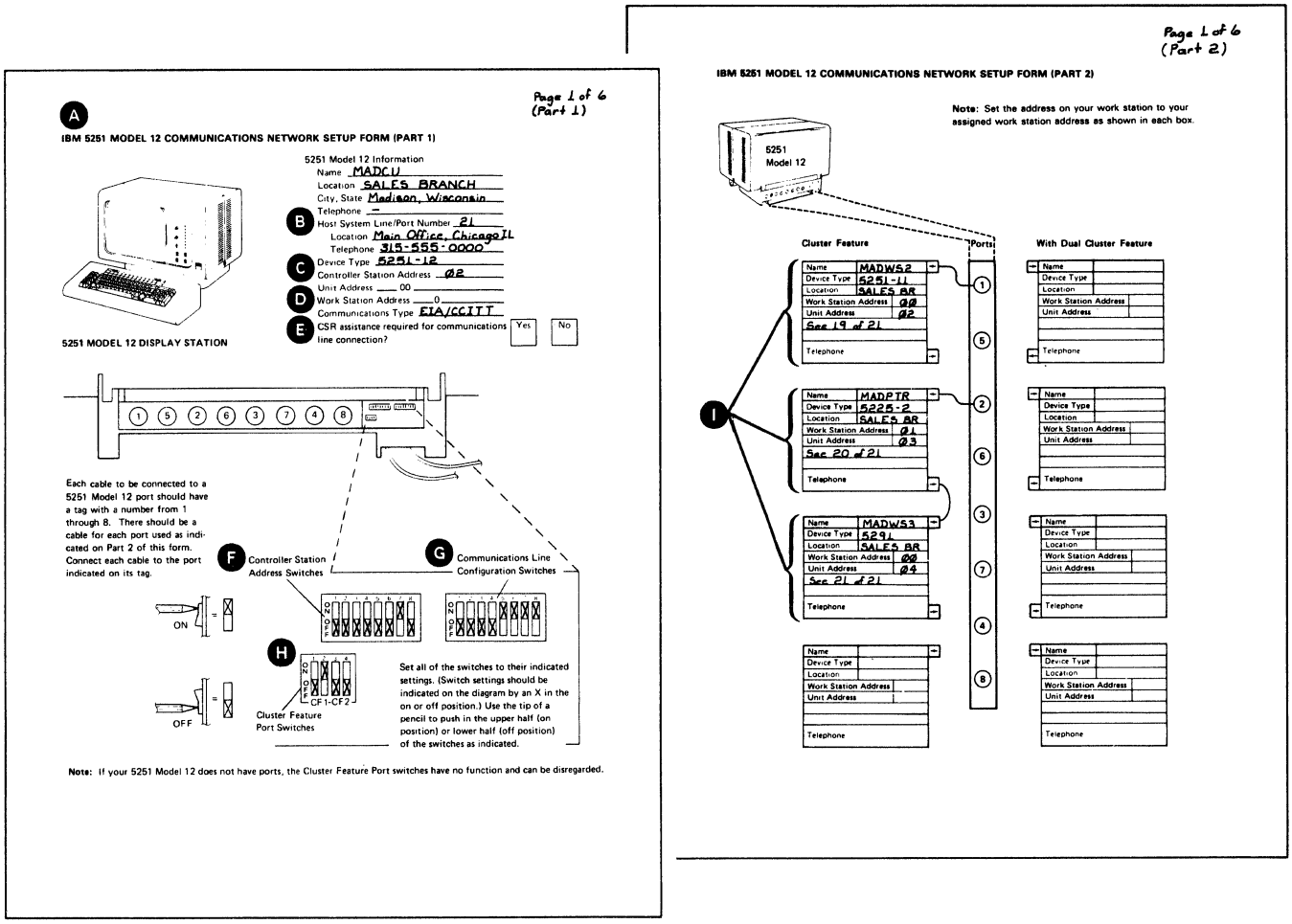
Page 4 of 4

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *3270 Remote Control Unit Work Sheet.*)	R	DEVD	MILPTR
Physical address of the device:	R	DEVADR	Ø3ØI2I
xxyyyy └─CTLADR parameter value from CRTCUD work sheet └─Unit address. Also called port address or network address. If the work station is a Category A terminal, hexadecimal 03-21. Port address 03 applies to port A1 on the 3274. Port A0 is not valid for printers. If the work station is a Category B terminal, specify hexadecimal 0B-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information. (See the appropriate *3270 Remote Control Unit Work Sheet.*)			
Device type (3287).	R	DEVTYPE	3287
Device model (*NONE).	R	MODEL	*NONE
Name of the associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet.*)		CTLU	MILCU
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	*YES
Name of the message queue to which operational messages should be sent.		MSGQ	MILWS
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	
xxyyyyzz └─OU number └─Control Unit Station address └─Unit address (Same as in DEVADR)			
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	*NORMAL
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

'Milwaukee Sales Branch Work Station Printer'

address is set by port attachment; therefore, 03

Figure A-8 (Part 4 of 4). Remote Work Stations: Work Station Printer in Milwaukee



Ⓐ In the *5250 Information Display System Planning and Site Preparation Guide*, use Chapter 7, *Remote Work Station Configuration Using the 5251 Model 12*, to complete this form. Because work stations are attached to this 5251 Model 12, you must complete both Parts 1 and 2.

Ⓑ This entry (21) identifies the line connection to which this 5251 Model 12 is attached.

Ⓒ This entry (02) is a hexadecimal value reflecting the setting of the Controller Station Address switches (see Ⓕ). See the *5250 Information Display System Planning and Site Preparation Guide* for a chart of addresses and corresponding switch settings. On the System/38, must be 01 to FE; if the IBM 2400 or 4800 bps Integrated Modem is installed, can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1 through 9.

Ⓓ These entries are predefined. On System/38, the work station address is 00. Both the unit address and the work station address are used in the DEVADR parameter for the display station that is part of the 5251 Model 12 (in this example, named MADWS1).

Ⓔ The communications type depends on the communications feature you order for the line to which this 5251 Model 12 is attached. In this example, an IBM 3864 nonswitched modem is used to connect the 5251 Model 12 to the communications line. Because this is not an integrated modem, the EIA/CCITT feature must be installed on the 5251 Model 12.

Ⓕ The Controller Station Address switches are the hexadecimal representation of the controller station address (see Ⓒ).

Ⓖ The Communications Line Configuration switches depend on the communications feature you order (see Ⓔ). In Chapter 7 of the *IBM 5250 Information Display System Planning and Site Preparation Guide*, see a chart describing how these switches are set. In this example, the following considerations affect how they are set: the line is nonswitched (CNN parameter on the SDLC Primary Line work sheet); the modem provides the clocking function (modems must provide the clocking function for all speeds except 1200 bps); more than one 5250 control unit is attached to the line; and an IBM modem is used.

Ⓗ The Cluster Feature Port switches are set to indicate the last port used on the Cluster feature or Dual Cluster feature. In this example, two Cluster feature ports 1 and 2 are used, so switch 1 is set off and switch 2 is set on (switches 3 and 4 have no effect when the Dual Cluster feature is not used).

Ⓘ Fill in the work station blocks as described in the *5250 Information Display System Planning and Site Preparation Guide*.

Figure A-9 (Part 1 of 6). Remote Work Stations: 5250 Communications Network Setup Form for 5251 Model 12 in Madison

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Page 2 of 6

Description				Parameter	Entry
Name of the control unit.			R	CUD	MADCU
Control unit type identifier (5251 or 5294).			R	TYPE	5251
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).			R	MODEL	12
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):			R	CTLADR	Ø221
Type of Line	**Entry**				
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)			
	and yy =	LINNBR parameter value from CRTLIND work sheet.			
Attached to a switched line (*NO or *YES).				SWITCHED	*NO
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).				LINE	MILMAD
The modem has the data rate select feature (*NO or *YES).				SELECT	*NO
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).				TELNBR	*NONE
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).				INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).				EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).				ONLINE	*YES
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.				LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).				SWNBKU	*NO
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).				DLYFEAT	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)				DEV	MADWS1 MADWS2 MADPTR MADWS3
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.				DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.				LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).				TEXT	

'Madison Sales Branch 5251-12 Control Unit'

Figure A-9 (Part 2 of 6). Remote Work Stations: 5251 Control Unit in Madison

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 3 of 6 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	MADWS1
Physical address of the device:	R	DEVADR	000221

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy
5294	xxyyyy

5251 xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.

5294 xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

address is fixed; must be 00

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	MADCU
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES)	DROP	
Name of the associated work station printer (*NONE or device name).	PRINTER	MADPTR1
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

Page 3 of 6 (Part 2)

Parameter	Entry
WSCADR	

WSC	Entries	WSCE	Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

- xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD

Device Family	Entry
5250	yzzz
3180	yzzz

5250 yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement

3180 yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network	NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Madison Sales Branch Display Station 1'

Figure A-9 (Part 3 of 6). Remote Work Stations: Display Station That Is Part of 5251 Model 12 in Madison

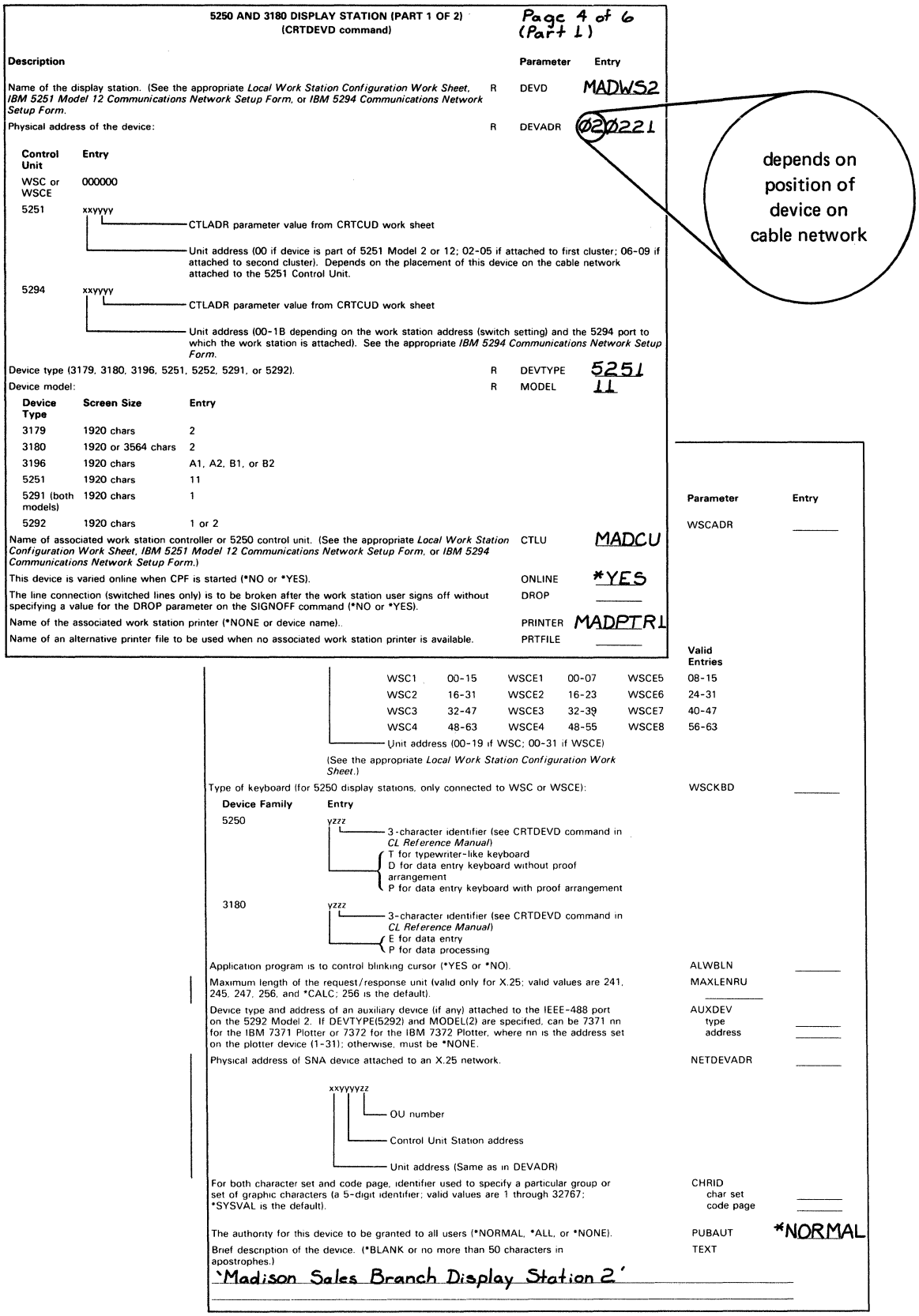


Figure A-9 (Part 4 of 6). Remote Work Stations: Display Station in Madison

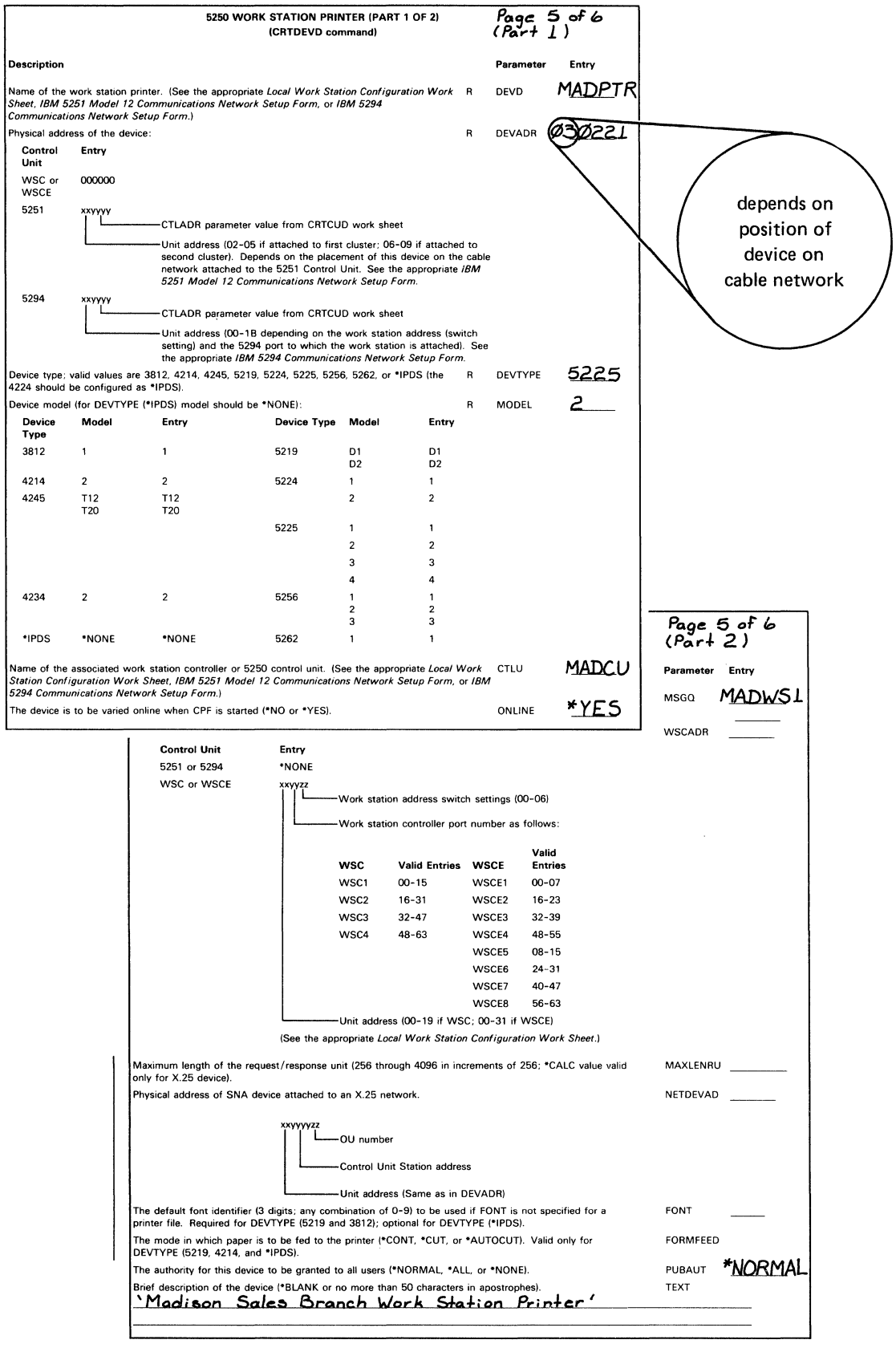


Figure A-9 (Part 5 of 6). Remote Work Stations: Work Station Printer in Madison

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Page 6 of 6 (Part 1)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	MADWS3
Physical address of the device:	R	DEVADR	Ø4Ø221

depends on position of device on cable network

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.

5294	xxyyyy

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	5291
Device model:	R	MODEL	1

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Page 6 of 6 (Part 2)

	Parameter	Entry
Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	MADCU
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	
Name of the associated work station printer (*NONE or device name).	PRINTER	MADPTR1
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	

					Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

- xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet.*)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD

Device Family	Entry
5250	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y:
  - T for typewriter-like keyboard
  - D for data entry keyboard without proof arrangement
  - P for data entry keyboard with proof arrangement

3180	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y:
  - E for data entry
  - P for data processing

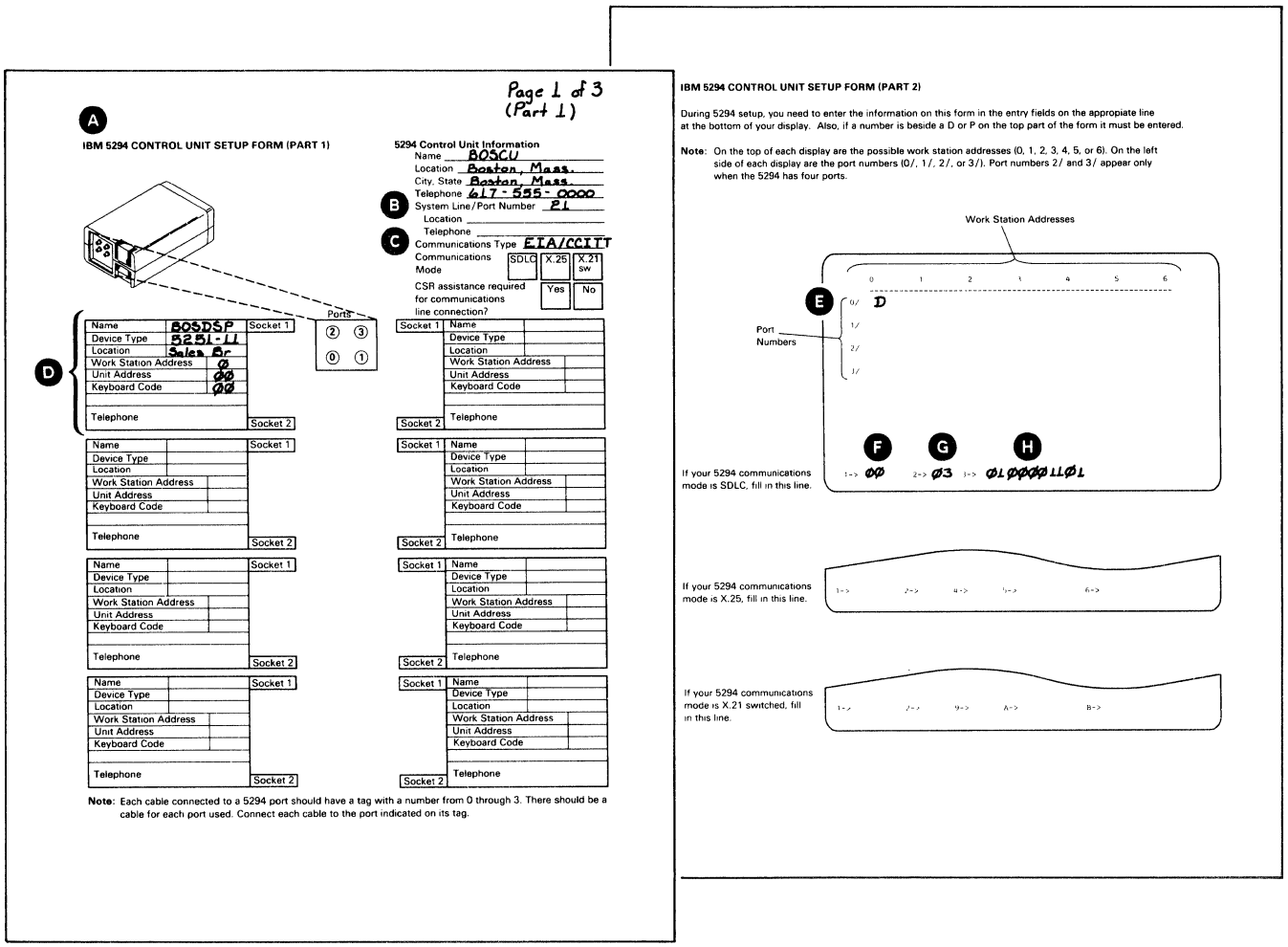
Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	*NORMAL
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Madison Sales Branch Display Station 3'

Figure A-9 (Part 6 of 6). Remote Work Stations: Display Station in Madison



A In the *5250 Information Display System Planning and Site Preparation Guide*, use Chapter 5, *Remote Work Station Configuration Using the 5294*, to complete this form. Complete parts 1 and 2.

B This entry (21) identifies the line connection on the System/38 system unit to which the line is attached (LINNBR parameter on the CRTLIND work sheet).

C The communications type depends on the communications feature you order for the line to which this control unit is attached. In this example, an IBM 3864 nonswitched modem is used to connect the 5251 Model 12 to the communications line.

D Fill in the work station blocks as described in the *5250 Information Display System Planning and Site Preparation Guide*.

E Specify a D for the display station being attached to port 0.

F Specify the keyboard code for the country character set used on the largest number of display stations attached to this control unit. In this case, only one display station is used and it has the character set for United States/Canada (keyboard code 00).

G Specify the SDLC Station Address in this field. This corresponds to xx of xxyy in the Control Unit Address for control unit BOSCU on the Remote Work Station Configuration Work Sheet earlier in this appendix.

H The value entered depends on the type of line, the rate, and the type of modem. In this case, the line is a nonswitched multipoint line with a rate of 4800 bps, and the modem is an IBM 3864 (Model 1, or nonswitched).

Figure A-10 (Part 1 of 3). Remote Work Stations: 5294 Control Unit in Boston

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Description			Parameter	Entry
Name of the control unit.		R	CUD	BOSCU
Control unit type identifier (5251 or 5294).		R	TYPE	5294
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).		R	MODEL	1
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):		R	CTLADR	Ø321
Type of Line	**Entry**			
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
	and yy =	LINNBR parameter value from CRTLIND work sheet.		
Attached to a switched line (*NO or *YES).			SWITCHED	*NO
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).			LINE	MILMAD
The modem has the data rate select feature (*NO or *YES).			SELECT	*NO
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).			TELNBR	*NONE
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).			INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).			EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).			ONLINE	*YES
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note**: For each line name specified, a line description by that name must already exist.			LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).			SWNBKU	*NO
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).			DLYFEAT	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt*. When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)			DEV	BOSDSP
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.			DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.			LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).			PUBAUT	*NORMAL
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).			TEXT	

'Boston Sales Branch 5294 Control Unit'

Figure A-10 (Part 2 of 3). Remote Work Stations: 5294 Control Unit in Boston

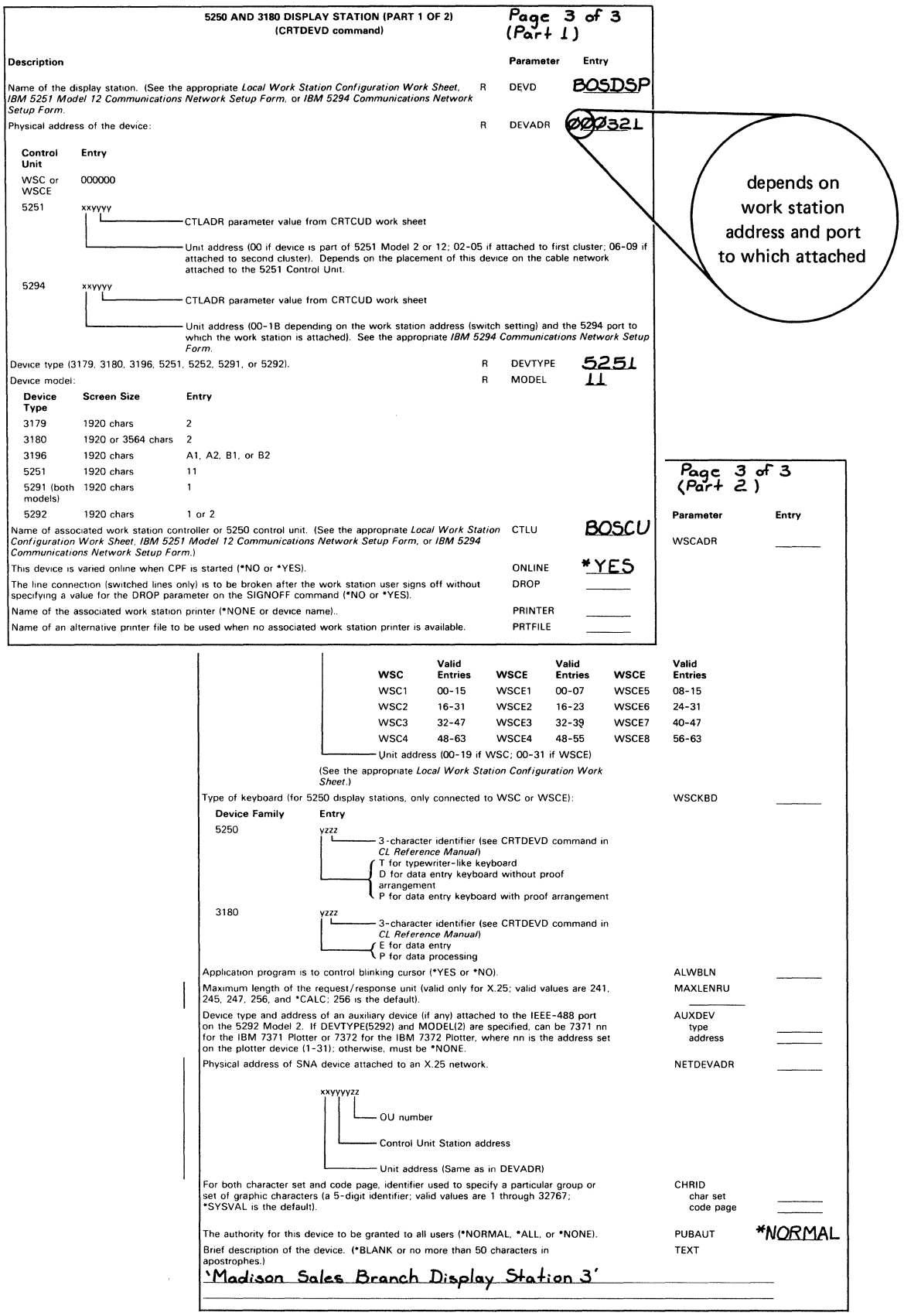


Figure A-10 (Part 3 of 3). Remote Work Stations: Display Station in Boston

Appendix B. Communications Example

This appendix includes filled-out work sheets for five examples from the *Data Communications Programmer's Guide,* as follows:

- LU1: System/38-to-IMS/VS (Figure B-1)
- LU1: System/38-to-CICS/VS (Figure B-2)
- BSC: System/38-to-3741 Data Station (Figure B-3)
- APPC: System/38-to-System/38
  - APPC for a primary system on an APPC network (Figure B-4)
  - APPC for a secondary system on an APPC network (Figure B-5)
  - Display station pass-through (Figure B-6)
- 3270 Emulation Example (Figure B-7)

This appendix also includes filled-out work sheets for the 3270 Emulation example from the *3270 Emulation Reference Manual and User's Guide* (see Figure B-7).

SDLC SECONDARY LINE (PART 1 OF 2)
(CRTLIND command)

Description			Parameter	Entry
Name of the line.		R	LIND	LINIMS
Number that identifies the line:		R	LINNBR	22

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCS).		R	TYPE	*SDLCS
Type of line connection:		R	CNN	*SWT

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	2400
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	*YES
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	*YES
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: / Backup:	
Data communications equipment group (*A, *B, or *C).		DCEGRP	
Non-IBM modem is used (*NO or *YES).		OEMMDM	
Types of calls for which the line is to be used:		SWTCNN	

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).		RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		ANSMODE	*AUTO

Figure B-1 (Part 1 of 4). LU1: System/38-to-IMS/VS

SDLC SECONDARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (only one when TYPE(*SDLCS) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of the control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. The address must be specified as 2 hexadecimal digits within the range of 01 to FE.	STNADR	C1
Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	Ø2242721
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure B-1 (Part 2 of 4). LU1: System/38-to-IMS/VS

SDLC PU2 CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	CTLIMS
Control unit type identifier (*PU2).	R	TYPE	*PU2
Model number of the control unit (0).	R	MODEL	0
Control unit address (00xx, where xx = LINNBR parameter value from CRTLIND work sheet). For SWITCHED(*YES), xx should be 00.	R	CTLADR	ØØØØ
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	15ØØ5551234
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
System services control point identifier (12 characters from 0-9 and A-F, the first two of which must be 05) that identifies this control unit to the host system. This identifier is assigned by the host system in the START procedure for ACF/NCP/VTAM. Required for SWITCHED(*YES) or SWNBKU(*YES).		SSCPID	Ø5ØØØØØØØØØØ1
The SSCPID should be used for security checking (*NO or *YES). The default is *NO. Valid only for SWITCHED(*NO).		SSCPIDCHK	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	LINIMS
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 254 PU2 logical sessions). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
The maximum sixe allowed for the PIU (265 or 521). The default is 521.		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCPRI.		LINKTYPE	*SDLCPRI
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-1 (Part 3 of 4). LU1: System/38-to-IMS/VS

PLU1 DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	DEVIMS
Physical address of the device as follows:	R	DEVADR	Ø1ØØ22

xxyyzz
- zz — LINNBR parameter value from CRTLIND work sheet
- yy — Station address (always 00)
- xx — Logical unit address (must match LOCADDR parameter in the LU macro generated at the host system)

Device type (*PLU1).	R	DEVTYPE	*PLU1
Device model (0 or 1):	R	MODEL	Ø
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	CTLIMS
Type of 327x device to be emulated (3277, 3284, 3286, 3287, or 3288; default is 3277). Valid only when MODEL(1) is specified.		EMLDEVTYP	
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Valid only when MODEL(1) is specified.		EMLKBDTYP	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- zz — OU number
- yy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

Figure B-1 (Part 4 of 4). LU1: System/38-to-IMS/VS

SDLC SECONDARY LINE (PART 1 OF 2)
(CRTLIND command)

Description			Parameter	Entry
Name of the line.		R	LIND	LINCICS
Number that identifies the line:		R	LINNBR	23

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCS).		R	TYPE	*SDLCS
Type of line connection:		R	CNN	*PP

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	9600
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	*YES
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: / Backup:	4 /
Data communications equipment group (*A, *B, or *C).		DCEGRP	
Non-IBM modem is used (*NO or *YES).		OEMMDM	
Types of calls for which the line is to be used:		SWTCNN	

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).	RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).	DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).	ANSMODE	

Figure B-2 (Part 1 of 4). LU1: System/38-to-CICS/VS

SDLC SECONDARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (only one when TYPE(*SDLCS) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of the control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. The address must be specified as 2 hexadecimal digits within the range of 01 to FE.	STNADR	C1
Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	*NONE
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure B-2 (Part 2 of 4). LU1: System/38-to-CICS/VS

SDLC PU2 CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	CTLCICS
Control unit type identifier (*PU2).	R	TYPE	*PU2
Model number of the control unit (0).	R	MODEL	0
Control unit address (00xx, where xx = LINNBR parameter value from CRTLIND work sheet). For SWITCHED(*YES), xx should be 00.	R	CTLADR	0023
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	LINCICS
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
System services control point identifier (12 characters from 0-9 and A-F, the first two of which must be 05) that identifies this control unit to the host system. This identifier is assigned by the host system in the START procedure for ACF/NCP/VTAM. Required for SWITCHED(*YES) or SWNBKU(*YES).		SSCPID	05000000000
The SSCPID should be used for security checking (*NO or *YES). The default is *NO. Valid only for SWITCHED(*NO).		SSCPIDCHK	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 254 PU2 logical sessions). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
The maximum sixe allowed for the PIU (265 or 521). The default is 521.		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCPRI.		LINKTYPE	*SDLCPRI
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-2 (Part 3 of 4). LU1: System/38-to-CICS/VS

PLU1 DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	DEVCICS
Physical address of the device as follows:	R	DEVADR	Ø1ØØ23

xxyyzz
- zz — LINNBR parameter value from CRTLIND work sheet
- yy — Station address (always 00)
- xx — Logical unit address (must match LOCADDR parameter in the LU macro generated at the host system)

Device type (*PLU1).	R	DEVTYPE	*PLU1
Device model (0 or 1):	R	MODEL	Ø
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	CTLCICS
Type of 327x device to be emulated (3277, 3284, 3286, 3287, or 3288; default is 3277). Valid only when MODEL(1) is specified.		EMLDEVTYP	
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Valid only when MODEL(1) is specified.		EMLKBDTYP	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- zz — OU number
- yy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

Figure B-2 (Part 4 of 4). LU1: System/38-to-CICS/VS

BSC LINE WITHOUT RJEF (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	LIN3741
Number that identifies the line:						R	LINNBR	60
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSC).						R	TYPE	*BSC
Type of line connection:						R	CNN	*SWT
Connection Type		**Entry**						
Switched		*SWT						
Nonswitched point-to-point		*PP						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	2400
The modem has the data rate select feature (*NO or *YES).							SELECT	
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOANS	
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).							ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: 2 Backup:	
Data communications equipment group (*A, *B, or *C).							DCEGRP	
Non-IBM modem is used (*NO or *YES).							OEMMDM	
Types of calls for which the line is to be used:							SWTCNN	*CALL
Type		**Entry**						
Both incoming and outgoing calls		*BOTH						
Incoming calls only		*ANS						
Outgoing calls only		*CALL						
The speed at which the line operates (*FULL or *HALF).							RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							ANSMODE	

Figure B-3 (Part 1 of 5). BSC: System/38-to-3741 Data Station

BSC LINE WITHOUT RJEF (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	15
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name of the control unit to be attached to this line (only one when TYPE(*BSC) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of that control unit is automatically inserted in the CTLU parameter for this line.	CTLU	
Valid only for switched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units that can be attached to this line (up to 8). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, ignore the SWTCTLU parameter when first creating the line. Then create control unit(s) that reference this line (through the LINE parameter). Then, you must use the CHGLIND command to enter the names in the SWTCTLU parameter. Valid only if CNN(*SWT) or SWNBKU(*YES) is specified.	SWTCTLU	
(Use additional sheets if necessary.)		
BSC line code (*EBCDIC or *ASCII).	CODE	*EBCDIC
This line description is to be used by the Remote Job Entry Facility (*NO or *YES).	RJE	*NO
An inactive switched line should be disconnected (*YES or *NO).	BSCSWTDSC	
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

Figure B-3 (Part 2 of 5). BSC: System/38-to-3741 Data Station

BSC CONTROL UNIT WITHOUT RJEF (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	CTL3741
Control unit type identifier (*BSC).	R	TYPE	*BSC
Model number of the control unit (0).	R	MODEL	0
Address of the control unit:	R	CTLADR	ØØØØ
Type of Line — **Entry**			
Nonswitched point-to-point — 00xx, where xx = LINNBR parameter value from CRTLIND work sheet			
Switched — 0000			
Attached to a switched line (*NO or *YES).		SWITCHED	*YES
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	15ØØ5554321
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	*CALL
Local identifier (2 to 15 characters) used to identify your System/38 to a remote BSC control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		LCLID	CTL3741
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	VXYZ
(Use additional sheets if necessary.)			
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	

Figure B-3 (Part 3 of 5). BSC: System/38-to-3741 Data Station

BSC CONTROL UNIT WITH RJEF (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.	LINLST	LIN3741
The modem has the switched network (dial) backup feature (*NO or *YES).	SWNBKU	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name of the device to be attached to this control unit (only one when TYPE(*BSC) is specified). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create a device description for the communications device, and you reference this control unit through the CTLU parameter, the device names is automatically inserted in the DEV parameter for this control unit.	DEV	
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	DEVDLY	60
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	PGMDLY	60
This control unit description is to be used by the Remote Job Entry Facility (RJEF) (*NO or *YES).	RJE	*YES
The subsystem type of the host system to which RJEF is connected (*RES, *JES2, *JES3, or *RSCS).	RJEHOST	
The sign-on for the RJEF host system (BSC logon or sign-on text). No more than 80 characters, enclosed in apostophes.	RJELOGON	

```
0         10        20        30        40
|_____|_____|_____|_____|_____|_____|_____|_____|

40        50        60        70        80
|_____|_____|_____|_____|_____|_____|_____|_____|
```

Link protocol and role for the remote controller (*BSC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSC.	LINKTYPE	*BSC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure B-3 (Part 4 of 5). BSC: System/38-to-3741 Data Station

BSC DEVICE WITHOUT RJEF
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	DEV3741
Physical address of the device:	R	DEVADR	000000
Type of Connection **Entry** Switched 000000 Nonswitched point-to-point 0000xx, where xx = LINNBR parameter from CRTLIND work sheet			
Device type (*BSC).	R	DEVTYPE	*BSC
Device model (0).	R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	CTL3741
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (*PRIM or *SEC).		CONT	*PRIM
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-3 (Part 5 of 5). BSC: System/38-to-3741 Data Station

SDLC PRIMARY LINE (PART 1 OF 2)
(CRTLIND command)

Description			Parameter	Entry
Name of the line.		R	LIND	APPCLINE1
Number that identifies the line:		R	LINNBR	20

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCP).		R	TYPE	*SDLCP
Type of line connection:		R	CNN	*PP

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	9600
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: / Backup:	4 /
Data communications equipment group (*A, *B, or *C).		DCEGRP	
Non-IBM modem is used (*NO or *YES).		OEMMDM	
Types of calls for which the line is to be used:		SWTCNN	

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).		RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).		ANSMODE	

Figure B-4 (Part 1 of 5). APPC Primary: System/38-to-System/38

SDLC PRIMARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of idle time units (53.3 milliseconds each) needed to satisfy idle state time considerations (0-255; 38 is recommended minimum; if this is a switched line and you will attach a 5294 Control Unit to it, you *must* specify at least 38).	IDLETIME	____
Number of base time units (500 milliseconds each) to receive intelligible data (0-255).	NONPRDRCV	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	*NO
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (up to 50). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create control units that reference this line (through the LINE parameter), the name of the control units are automatically inserted in the CTLU parameter for this line.	CTLU	_____
(Use additional sheets if necessary.)		
For APPC only. Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	022ØØØØ1
Line code (*EBCDIC or *ASCII).	CODE	_____
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure B-4 (Part 2 of 5). APPC Primary: System/38-to-System/38

SDLC PEER CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	APPCCUD1
Control unit type identifier (*PEER).	R	TYPE	*PEER
Model number of the control unit (0).	R	MODEL	0
Control unit address (xxyy, where xx = controller station address of this control unit and yy = LINNBR parameter value from the CRTLIND work sheet). For SWITCHED(*YES), yy should be 00.	R	CTLADR	Ø12Ø
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	APPCLINE1
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for another System/38, 022xxxxxx, where xxxxxx is any combination of 0-9 and A-F). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		EXCHID	Ø22ØØØØ2
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	*NO
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
If the connection with this control unit is delayed, the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one peer device for switched lines; up to 254 peer devices for nonswitched lines). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Maximum length of the path information unit (521 or 265; default is 521).		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI, *SDLCSEC, or *NONE). If switched (*YES), *NONE must be specified since the role cannot be determined until the control unit is varied on.		LINKTYPE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-4 (Part 3 of 5). APPC Primary: System/38-to-System/38

PEER DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	APPCDEVD1
Physical address of the device as follows:	R	DEVADR	Ø1Ø12Ø

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — A unique identifier (01-FE)

Device type (*PEER).	R	DEVTYPE	*PEER
Device model (0):	R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	APPCCUD1
This device is varied online when CPF is started (*NO or *YES).		ONLINE	*NO
Name of the message queue to which operational messages should be sent.		MSGQ	
Name (up to 8 characters) by which your system is known to other devices in the network.		LCLLU	SYSTEM1
Name (up to 8 characters) by which your system identifies the remote device which this device description represents.		RMTLU	SYSTEM2
The system password to be used to validate incoming BINDS (up to 8 characters or *NONE).		SYSVLDPW	
The remote system should accept incoming requests for security validation (*NO if password will be used for security or *YES if remote system trusts this system and a password will not be used).		SECURELU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- yy — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

Figure B-4 (Part 4 of 5). APPC Primary: System/38-to-System/38

DEVICE MODE ENTRY
(ADDDEVMODE command)

Description		Parameter	Entry
Name of the device.	R	DEVD	APPCDEVD1
Mode name (up to 8 characters; A-Z, 0-9, $, #, and @; first character cannot be 0-9; SNASVCMG not valid).	R	MODE	MODE01
Maximum number of sessions (1-494; default is 2).		MAXSSN	2
Number of prebound sessions (1-494; default is 1).		PREBNDSSN	1
Maximum source sessions (0-247; default is 1).		MAXSRCSSN	1
Maximum conversations (1-494; default is 2).		MAXCNV	2
Inbound pacing value (0-63; default is 7).		INPACING	7
Outbound pacing value (0-63; default is 7).		OUTPACING	7
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	

Figure B-4 (Part 5 of 5). APPC Primary: System/38-to-System/38

SDLC SECONDARY LINE (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	APPCLINE5
Number that identifies the line:						R	LINNBR	60
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*SDLCS).						R	TYPE	*SDLCS
Type of line connection:						R	CNN	*PP
Connection Type		**Entry**						
Switched		*SWT						
Nonswitched point-to-point		*PP						
Nonswitched multipoint		*MP						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	9600
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).							SWNBKU	
The modem has the data rate select feature (*NO or *YES).							SELECT	
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).							NONRTNZ	
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOCALL	
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOANS	
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).							ANSTONE	
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: 4 Backup:	
Data communications equipment group (*A, *B, or *C).							DCEGRP	
Non-IBM modem is used (*NO or *YES).							OEMMDM	
Types of calls for which the line is to be used:							SWTCNN	
Type		**Entry**						
Both incoming and outgoing calls		*BOTH						
Incoming calls only		*ANS						
Outgoing calls only		*CALL						
The speed at which the line operates (*FULL or *HALF).							RATETYPE	
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							DIALMODE	
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							ANSMODE	

Figure B-5 (Part 1 of 5). APPC Secondary: System/38-to-System/38

SDLC SECONDARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	*NO
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (only one when TYPE(*SDLCS) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of the control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. The address must be specified as 2 hexadecimal digits within the range of 01 to FE.	STNADR	Ø1
Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	Ø22ØØØØ2
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

Figure B-5 (Part 2 of 5). APPC Secondary: System/38-to-System/38

SDLC PEER CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	APPCCUD5
Control unit type identifier (*PEER).	R	TYPE	*PEER
Model number of the control unit (0).	R	MODEL	0
Control unit address (xxyy, where xx = controller station address of this control unit and yy = LINNBR parameter value from the CRTLIND work sheet). For SWITCHED(*YES), yy should be 00.	R	CTLADR	Ø26Ø
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	APPCLINE5
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for another System/38, 022xxxxxx, where xxxxxx is any combination of 0-9 and A-F). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		EXCHID	Ø22ØØØØ1
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	*NO
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
If the connection with this control unit is delayed, the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one peer device for switched lines; up to 254 peer devices for nonswitched lines). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Maximum length of the path information unit (521 or 265; default is 521).		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI, *SDLCSEC, or *NONE). If switched (*YES), *NONE must be specified since the role cannot be determined until the control unit is varied on.		LINKTYPE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-5 (Part 3 of 5). APPC Secondary: System/38-to-System/38

PEER DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	APPCDEVD5
Physical address of the device as follows:	R	DEVADR	Ø1Ø26Ø

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — A unique identifier (01-FE)

Device type (*PEER).	R	DEVTYPE	*PEER
Device model (0):	R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	APPCCUD5
This device is varied online when CPF is started (*NO or *YES).		ONLINE	*NO
Name of the message queue to which operational messages should be sent.		MSGQ	
Name (up to 8 characters) by which your system is known to other devices in the network.		LCLLU	SYSTEM2
Name (up to 8 characters) by which your system identifies the remote device which this device description represents.		RMTLU	SYSTEM1
The system password to be used to validate incoming BINDS (up to 8 characters or *NONE).		SYSVLDPW	
The remote system should accept incoming requests for security validation (*NO if password will be used for security or *YES if remote system trusts this system and a password will not be used).		SECURELU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

Figure B-5 (Part 4 of 5). APPC Secondary: System/38-to-System/38

DEVICE MODE ENTRY
(ADDDEVMODE command)

Description		Parameter	Entry
Name of the device.	R	DEVD	APPCDEVD5
Mode name (up to 8 characters; A-Z, 0-9, $, #, and @; first character cannot be 0-9; SNASVCMG not valid).	R	MODE	MODE01
Maximum number of sessions (1-494; default is 2).		MAXSSN	2
Number of prebound sessions (1-494; default is 1).		PREBNDSSN	1
Maximum source sessions (0-247; default is 1).		MAXSRCSSN	1
Maximum conversations (1-494; default is 2).		MAXCNV	2
Inbound pacing value (0-63; default is 7).		INPACING	7
Outbound pacing value (0-63; default is 7).		OUTPACING	7
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	

Figure B-5 (Part 5 of 5). APPC Secondary: System/38-to-System/38

VIRTUAL WORK STATION CONFIGURATION WORK SHEET
(For Display Station Passthrough Only)

Virtual Work Station Controller Name PASSCTLU1

Work Station Name	Work Station Type and Model	WSCADR Parameter Value (xx of xxyyzz; Must Be Unique on This Controller)
VIRTDSP1	5251-11	Ø1ØØØØ
VIRTDSP2	5292-2	Ø2ØØØØ
VIRTDSP3	5251-11	Ø3ØØØØ
VIRTPTR	5256-1	ØØØØØØ

Figure B-6 (Part 1 of 6). Display Station Pass-Through

VIRTUAL WORK STATION CONTROLLER
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	PASSCTLU1
Control unit type identifier (*PASS).	R	TYPE	*PASS
Model number of the control unit (*NONE).	R	MODEL	*NONE
Address of the control unit (00FF).	R	CTLADR	00FF
The control unit is to be varied online when CPF is started (*YES or *NO).		ONLINE	*YES
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 32). *Do not enter values for the DEV parameter on the CRTCUD command prompt*. When you create individual device descriptions for display devices and work station printers, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	VIRTDSP1 VIRTDSP2 VIRTDSP3 VIRTPTR
(Use additional sheets if necessary.)			
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

'Virtual Control Unit for Pass-through Use'

Figure B-6 (Part 2 of 6). Display Station Pass-Through

VIRTUAL DISPLAY STATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station.	R	DEVD	VIRTDSP1
Physical address of the device (000000).	R	DEVADR	000000
Device type (3179, 3180, 3196, 5251, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated virtual work station controller.	CTLU	PASSCTLU1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
Name of the associated virtual work station printer (*NONE or device name).	PRINTER	
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this display station is attached).	WSCADR	01 0000
Type of keyboard:	WSCKBD	TUSB

Entry
yzzz

- 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- T for typewriter-like keyboard
  D for data entry keyboard without proof arrangement
  P for data entry keyboard with proof arrangement

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz

- OU number
- Control Unit Station address
- Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Sample Virtual Display Station'

Figure B-6 (Part 3 of 6). Display Station Pass-Through

VIRTUAL DISPLAY STATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station.	R	DEVD	VIRTDSP2
Physical address of the device (000000).	R	DEVADR	000000
Device type (3179, 3180, 3196, 5251, 5291, or 5292).	R	DEVTYPE	5292
Device model:	R	MODEL	2

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated virtual work station controller.	CTLU	PASSCTLU1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
Name of the associated virtual work station printer (*NONE or device name).	PRINTER	
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this display station is attached).	WSCADR	020000
Type of keyboard:	WSCKBD	TUSB

Entry
yzzz

- 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- T for typewriter-like keyboard
- D for data entry keyboard without proof arrangement
- P for data entry keyboard with proof arrangement

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz

- OU number
- Control Unit Station address
- Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Sample Virtual Display Station'

Figure B-6 (Part 4 of 6). Display Station Pass-Through

VIRTUAL DISPLAY STATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station.	R	DEVD	VIRTDSP3
Physical address of the device (000000).	R	DEVADR	000000
Device type (3179, 3180, 3196, 5251, 5291, or 5292).	R	DEVTYPE	5251
Device model:	R	MODEL	11

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated virtual work station controller.	CTLU	PASSCTLU1
This device is varied online when CPF is started (*NO or *YES).	ONLINE	*YES
Name of the associated virtual work station printer (*NONE or device name).	PRINTER	VIRTPTR
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this display station is attached).	WSCADR	Ø3ØØØØ
Type of keyboard:	WSCKBD	TUSB

Entry
yzzz

- 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- T for typewriter-like keyboard
- D for data entry keyboard without proof arrangement
- P for data entry keyboard with proof arrangement

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz

- OU number
- Control Unit Station address
- Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set	
	code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

'Sample Virtual Display Station'

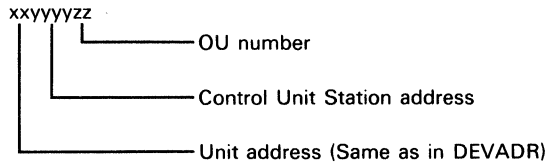
Figure B-6 (Part 5 of 6). Display Station Pass-Through

VIRTUAL WORK STATION PRINTER
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer.	R	DEVD	_____
Physical address of the device (000000).	R	DEVADR	000000
Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262 or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	_____
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	_____

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1 D2	D1 D2
4214	2	2	5224	1	1
				2	2
4245	T12 T20	T12 T20	5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1 2 3	1 2 3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated virtual work station controller.	CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Name of the message queue to which operational messages should be sent.	MSGQ	_____
		_____
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this printer is attached).	WSCADR	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____



The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	_____
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214 and *IPDS).	FORMFEED	_____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	
_____		
_____		

Figure B-6 (Part 6 of 6). Display Station Pass-Through

BSCT LINE WITH 3270 EMULATION (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	EMLLINE1
Number that identifies the line:						R	LINNBR	20
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSCT).						R	TYPE	*BSCT
Type of line connection:						R	CNN	*MP
Connection Type		**Entry**						
Nonswitched point-to-point		*PP						
Nonswitched multipoint		*MP (not valid for TYPE(*BSC))						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	9600
The modem has the data rate select feature (*NO or *YES).							SELECT	
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: Backup:	
Data communications equipment group (*A, *B, or *C).							DCEGRP	
Non-IBM modem is used (*NO or *YES).							OEMMDM	
The speed at which the line operates (*FULL or *HALF).							RATETYPE	*HALF

Figure B-7 (Part 1 of 6). 3270 Emulation Example

BSCT LINE WITH 3270 EMULATION (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name of the control unit to be attached to this line (only one when 3270 emulation is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of that control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. Must be 01-FE. If EML3270(*YES) is specified, should be one of the following: 40 C6 4C D2 D8 5E C1 C7 4D D3 D9 5F C2 C8 4E D4 5A C3 C9 4F D5 5B C4 4A 50 D6 5C C5 4B D1 D7 5D	STNADR	C3
BSC line code (*EBCDIC or *ASCII). For 3270 emulation, must be *EBCDIC.	CODE	*EBCDIC
This line description is to be used for 3270 emulation (*NO or *YES). Valid only for TYPE(*BSCT) and CODE(*EBCDIC).	EML3270	*YES
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

Figure B-7 (Part 2 of 6). 3270 Emulation Example

BSCT CONTROL UNIT WITH 3270 EMULATION
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	EMLCU1
Control unit type identifier (*BSCT).	R	TYPE	*BSCT
Model number of the control unit (0).	R	MODEL	0
Address of the control unit (xxyy, where xx = STNADR parameter from CRTLIND work sheet and yy = LINNBR parameter value from CRTLIND work sheet).	R	CTLADR	C320
Name of the nonswitched line to which this control unit is attached.		LINE	EMLLINE1
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	
(Use additional sheets if necessary.)			
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 32 emulation devices). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	
(Use additional sheets if necessary.)			
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		DEVDLY	
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		PGMDLY	
This control unit description is to be used for 3270 emulation (*NO or *YES).		EML3270	*YES
Link protocol and role for the remote controller (*BSCT or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSCT.		LINKTYPE	*BSCT
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-7 (Part 3 of 6). 3270 Emulation Example

BSCT DEVICE WITH 3270 EMULATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	EMLWS1
Physical address of the device:	R	DEVADR	DLC32Ø

xxyyzz
- yy — LINNBR parameter value from CRTLIND work sheet
- zz — STNADR parameter value from CRTLIND work sheet
- xx — One of the following:

40	C6	4C	D2	D8	5E
C1	C7	4D	D3	D9	5F
C2	C8	4E	D4	5A	
C3	C9	4F	D5	5B	
C4	4A	50	D6	5C	
C5	4B	D1	D7	5D	

Device type (*BSCT).	R	DEVTYPE	*BSCT
Device model (1).	R	MODEL	1
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	EMLCU1
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (for 3270 emulation, must be *SEC).		CONT	*SEC
Type of 327x device to be emulated (3277, 3284, 3286, or 3288; default is 3277).		EMLDEVTYP	
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Used only for EMLDEVTYP(3277).		EMLKBDTYP	*LOWER
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-7 (Part 4 of 6). 3270 Emulation Example

BSCT DEVICE WITH 3270 EMULATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	EMLWS2
Physical address of the device:	R	DEVADR	D2C32Ø

xxyyzz
- zz — LINNBR parameter value from CRTLIND work sheet
- yy — STNADR parameter value from CRTLIND work sheet
- xx — One of the following:

40	C6	4C	D2	D8	5E
C1	C7	4D	D3	D9	5F
C2	C8	4E	D4	5A	
C3	C9	4F	D5	5B	
C4	4A	50	D6	5C	
C5	4B	D1	D7	5D	

Device type (*BSCT).	R	DEVTYPE	*BSCT
Device model (1).	R	MODEL	1
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	EMLCU1
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (for 3270 emulation, must be *SEC).		CONT	*SEC
Type of 327x device to be emulated (3277, 3284, 3286, or 3288; default is 3277).		EMLDEVTYP	
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Used only for EMLDEVTYP(3277).		EMLKBDTYP	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-7 (Part 5 of 6). 3270 Emulation Example

BSCT DEVICE WITH 3270 EMULATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	EMLPTR1
Physical address of the device:	R	DEVADR	D3C32Ø

xxyyzz
- xx — One of the following:

40	C6	4C	D2	D8	5E
C1	C7	4D	D3	D9	5F
C2	C8	4E	D4	5A	
C3	C9	4F	D5	5B	
C4	4A	50	D6	5C	
C5	4B	D1	D7	5D	

- yy — STNADR parameter value from CRTLIND work sheet
- zz — LINNBR parameter value from CRTLIND work sheet

Device type (*BSCT).	R	DEVTYPE	*BSCT
Device model (1).	R	MODEL	1
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	EMLCUL
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (for 3270 emulation, must be *SEC).		CONT	*SEC
Type of 327x device to be emulated (3277, 3284, 3286, or 3288; default is 3277).		EMLDEVTYP	3288
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Used only for EMLDEVTYP(3277).		EMLKBDTYP	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

Figure B-7 (Part 6 of 6). 3270 Emulation Example

Appendix C. Work Station Controllers

The work station controllers (WSC) and work station controllers-extended (WSCE) provide for the local attachment of the following work stations:

Display Stations:

5251 Display Station Model 1	WSC only
5251 Display Station Model 11	WSC and WSCE
5252 Dual Display Station Model 1	WSC only
5291 Display Station Model 1 and 2	WSC and WSCE
5292 Color Display Station Model 1 and 2	WSC and WSCE
3180 Display Station Model 2	WSC and WSCE
3179 Color Display Station Model 2 with the IBM Enhanced keyboard	WSCE only
3179 Color Display Station Model 2 with the IBM 1A keyboard	WSC and WSCE
3196 Display Station Models A1, A2, B1 and B2, Personal Computer	WSCE only WSC and WSCE

Work Station Printers:

5219 Printer Models D1 and D2	WSC and WSCE
5224 Printer Models 1 and 2	WSC and WSCE
5225 Printer Models 1, 2, 3, and 4	WSC and WSCE
5256 Printer Models 1, 2, and 3	WSC and WSCE
5262 Printer Model 1	WSC and WSCE
4214 Printer Model 2	WSC and WSCE
3812 Pageprinter Model 1	WSC and WSCE
4224 Printer Models 101, 102, 1E2, 1C2	WSCE only
4234 Printer Model 2	WSC and WSCE
4245 Printer Models T12 and T20	WSCE only

Up to 80 work stations can be attached to the System/38 through work station controllers (WSC). Up to 256 work stations can be attached to the System/38 through work station controllers-extended (WSCE).

Common-carrier-provided services are not needed to attach the work stations. The limitations of telecommunications data rates do not pertain to the work station controller.

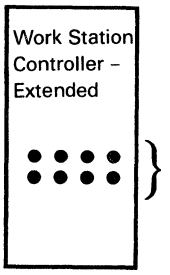
You can have as many as four work station controllers or as many as eight work station controllers-extended on your system. On existing systems, a work station controller-extended (WSCE) can be installed in any of eight positions. You can no longer order a work station controller (WSC).

Note: If you are upgrading from a WSC to a WSCE, delete the WSC control unit description before saving your system. Otherwise your device descriptions for the devices attached to that control unit will be lost.

WORK STATION CONTROLLER-EXTENDED (WSCE)

In place of any standard work station controller (WSC), you can order the work station controller-extended (WSCE). You can also order four additional work station controllers-extended to allow for the attachment of up to 256 devices on your system. For more information about the additional work station controllers-extended, see *Work Station Controllers-Extended 5, 6, 7, and 8* later in this appendix.

The work station controller-extended (WSCE) permits the direct attachment (in single and cable-thru arrangements) of up to 32 work stations on eight ports. You cannot install either the Device Control Expansion feature or the Device Interface Expansion feature with a work station controller-extended.



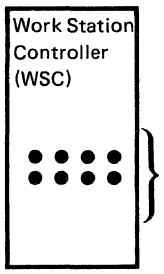
Note: The support for 32 work stations on eight ports requires the use of the Cable Thru feature on some of the work stations.

Support for 32 Work Stations on Eight Ports

Figure C-1. Work Station Controller-Extended (WSCE)

WORK STATION CONTROLLER (WSC)

This work station controller provides eight ports for attaching work stations. These eight ports permit the direct attachment (in single and cable-thru arrangements) of up to 12 work stations (Figure C-2).



Note: The support for 12 work stations on eight ports requires the use of the Cable Thru feature on some of the work stations.

Support for 12 Work Stations on Eight Ports

Figure C-2. Work Station Controller (WSC)

TWINAXIAL CABLE

Twinaxial cable allows a maximum length of 1525 meters (5000 feet) and up to seven stations can be attached to a single port. Figure C-3 shows an example of attaching work stations on one twinaxial cable. This cabling arrangement requires use of the 5250 Cable Thru feature.

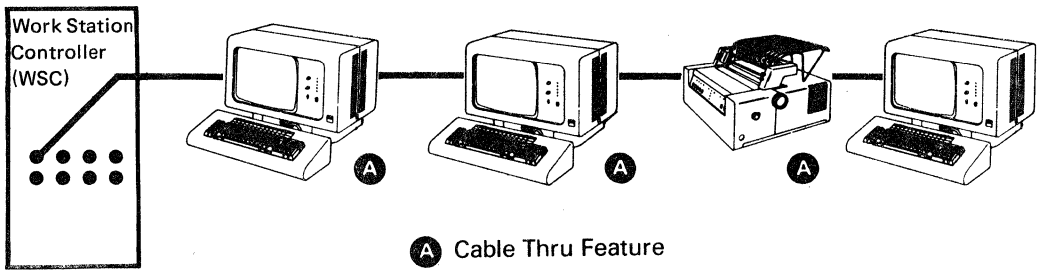


Figure C-3. Example Using Twinaxial Cable

IBM CABLING SYSTEM

The IBM Cabling System allows a maximum length of 1525 meters (5000 feet) and up to seven stations can be attached to a single port. Figure C-4 shows an example of attaching work stations to the IBM Cabling System.

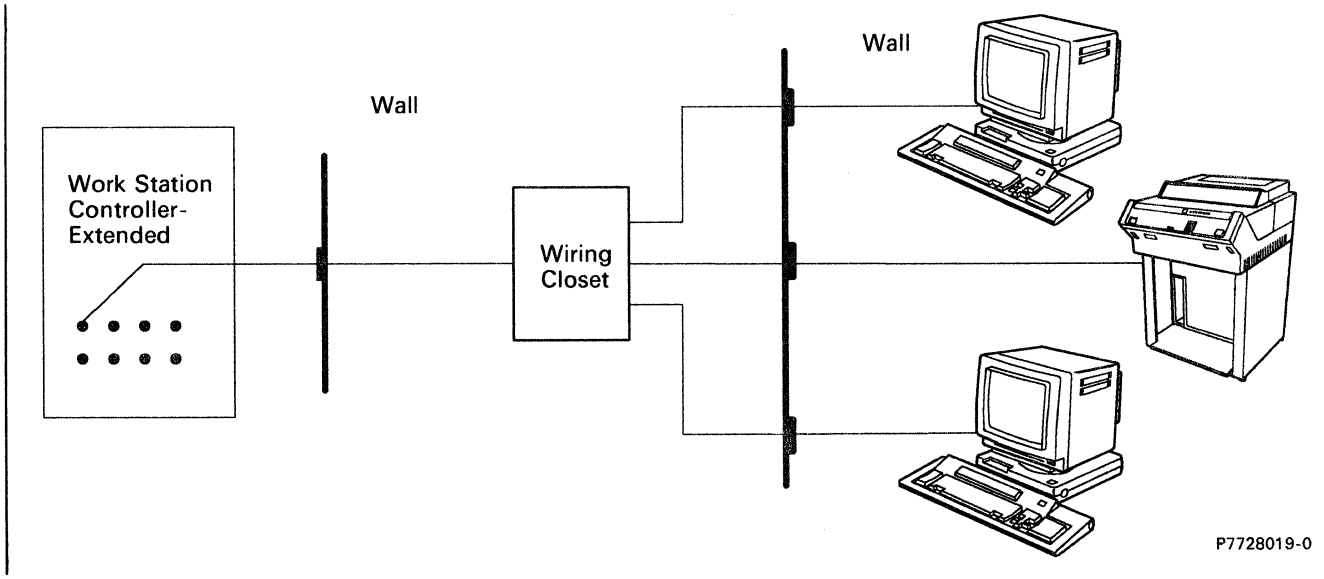


Figure C-4. Example Using IBM Cabling System

DEVICE CONTROL EXPANSION FEATURE

This special feature permits the work station controller to support up to eight additional work stations. This feature does not provide any additional ports but provides the necessary control storage to support eight additional work stations attached through the ports supplied with the work station controller (Figure C-5).

Note: This feature cannot be installed with the Device Interface Expansion feature.

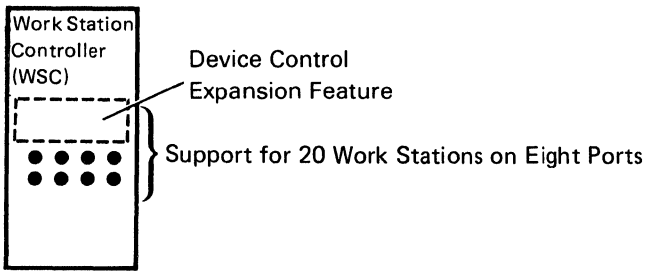


Figure C-5. Device Control Expansion

DEVICE INTERFACE EXPANSION FEATURE

This special feature provides the necessary control and eight more ports for the attachment of additional work stations (Figure C-6).

Note: This feature cannot be installed with the Device Control Expansion feature.

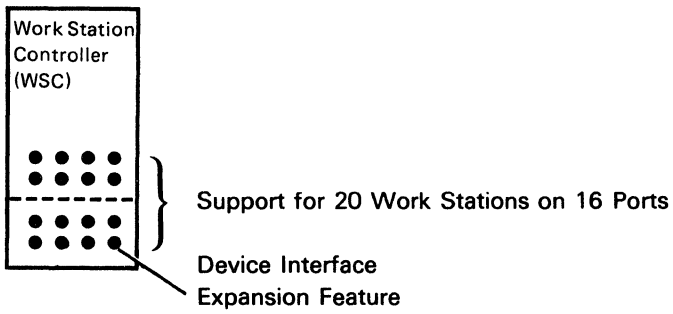


Figure C-6. Device Interface Expansion

WORK STATION CONTROLLER 1

Work station controller 1 is *standard* on all models of System/38. On existing systems, it can be either a work station controller (WSC) or a work station controller-extended (WSCE). If it is a work station controller (WSC), it can have the Device Control Expansion feature or the Device Interface Expansion feature. For a description of these features, see the discussions under *Device Control Expansion Feature* and *Device Interface Expansion Feature*.

WORK STATION CONTROLLER 2

Work station controller 2 is a special feature available on all models of System/38. It can be a work station controller (WSC) or work station controller-extended (WSCE). If it is a work station controller (WSC), it can have the Device Control Expansion feature or the Device Interface Expansion feature. For a description of these features, see the discussions under *Device Control Expansion Feature* and *Device Interface Expansion Feature.*

Figure C-7 shows the port numbering scheme for work station controllers 1 and 2.

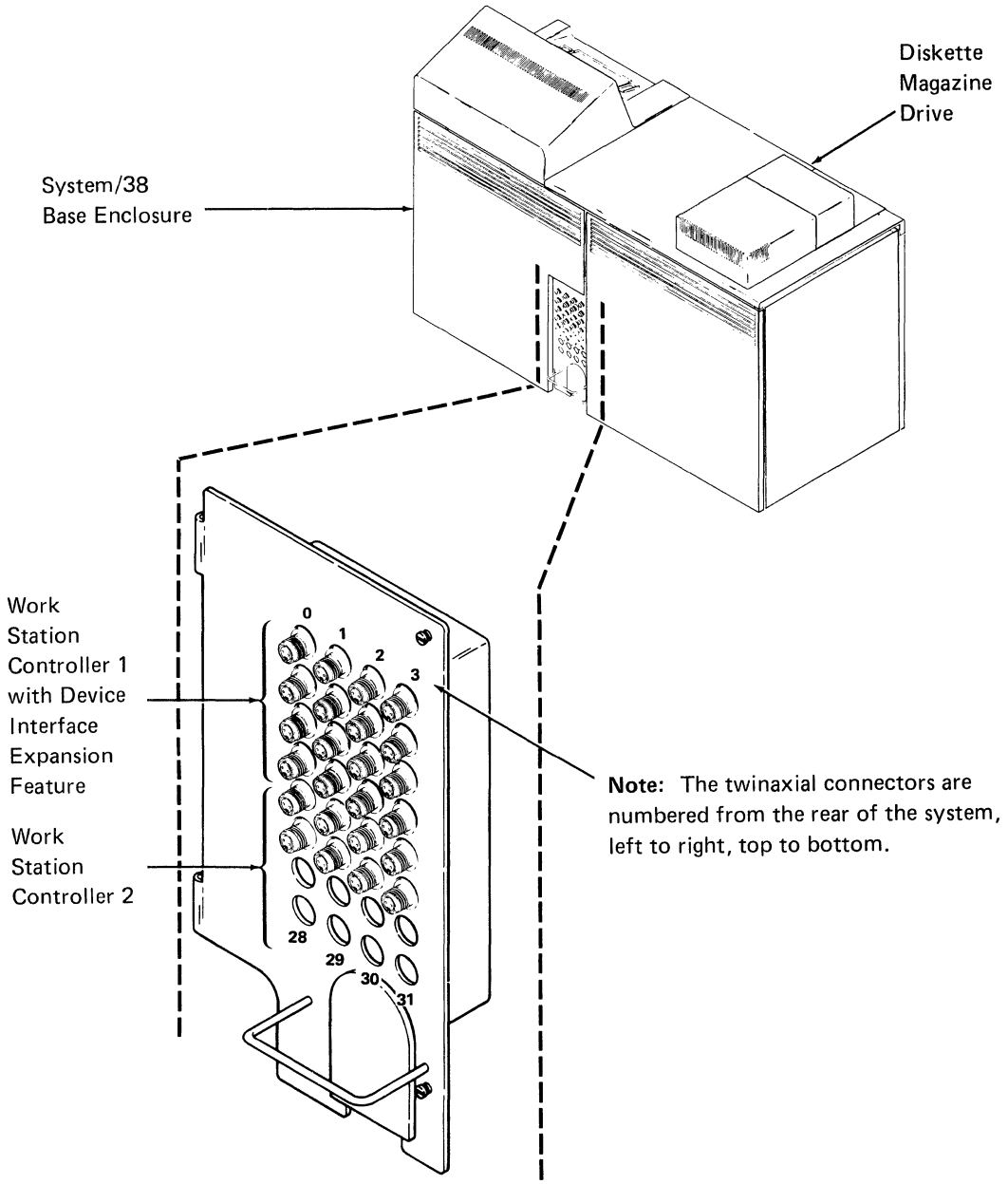


Figure C-7. Work Station Controller Port Number Scheme

WORK STATION CONTROLLERS 3 AND 4

The work station controllers 3 and 4 are special features located in the expansion enclosure. They can be a work station controller (WSC) or work station controller-extended (WSCE). If work station controller 3 or 4 is a work station controller (WSC), it can have the Device Control Expansion feature or the Device Interface Expansion feature.

Figure C-8 shows the port numbering scheme for work station controllers 3 and 4.

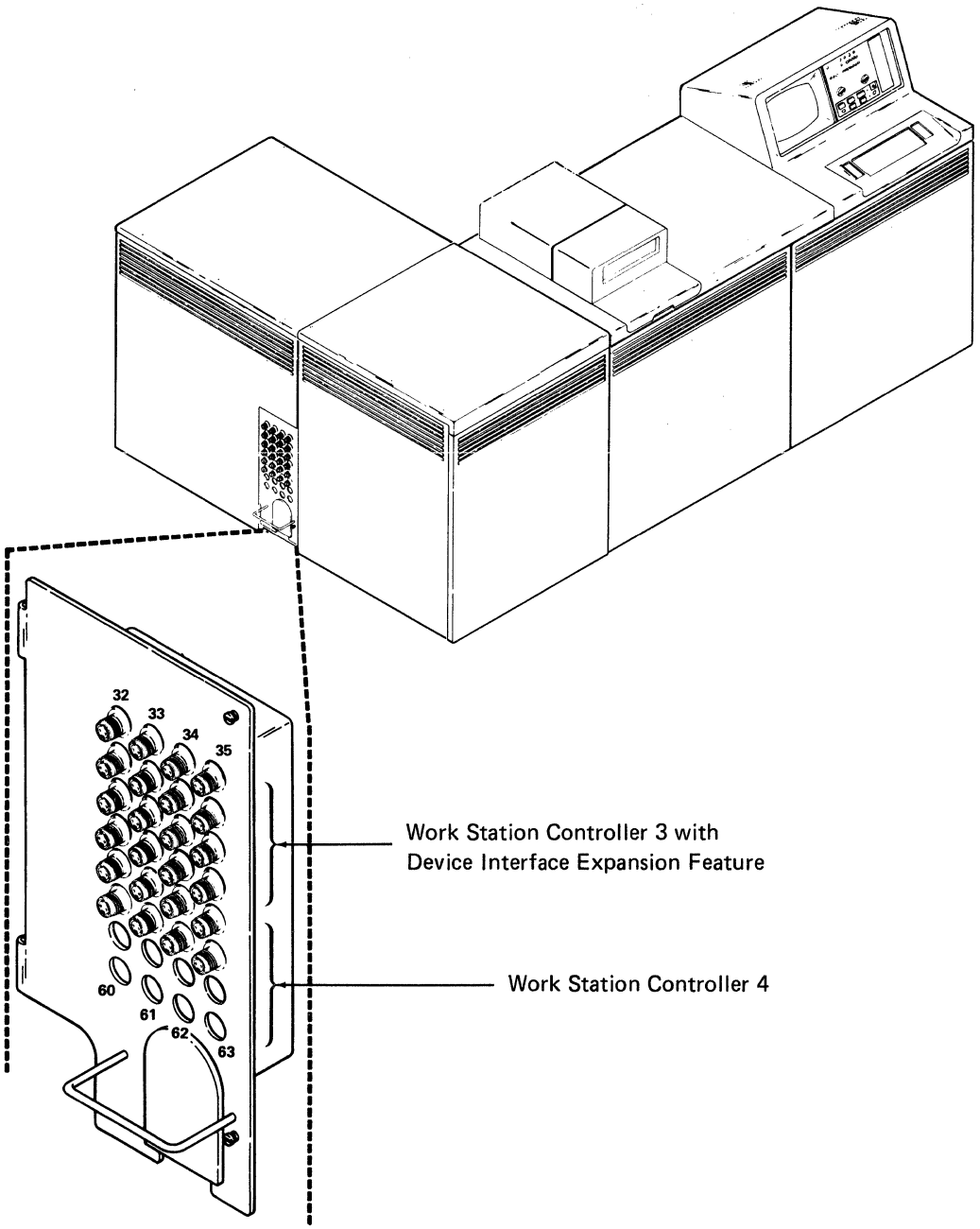


Figure C-8. Third and Fourth Work Station Controller

WORK STATION CONTROLLERS-EXTENDED 5, 6, 7, AND 8

Work station controllers-extended 5, 6, 7, and 8 are special features that can be used to attach up to 256 work stations to the System/38. Work station controllers-extended 5 and 6 are located in the System/38 base enclosure. Work station controllers-extended 7 and 8 are located in the expansion enclosure. Work station controllers-extended have the following limitations:

- You cannot have WSCE1 or WSCE5 if you have WSC1. You must have WSCE1 before you can have WSCE5.
- You cannot have WSCE2 or WSCE6 if you have WSC2. You must have WSCE2 before you can have WSCE6.
- You cannot have WSCE3 or WSCE7 if you have WSC3. You must have WSCE3 before you can have WSCE7.
- You cannot have WSCE4 or WSCE8 if you have WSC4. You must have WSCE4 before you can have WSCE8.

Any other combinations of WSC and WSCE are allowed.

Figures C-9 and C-10 show the port numbering scheme for all the work station controllers-extended.

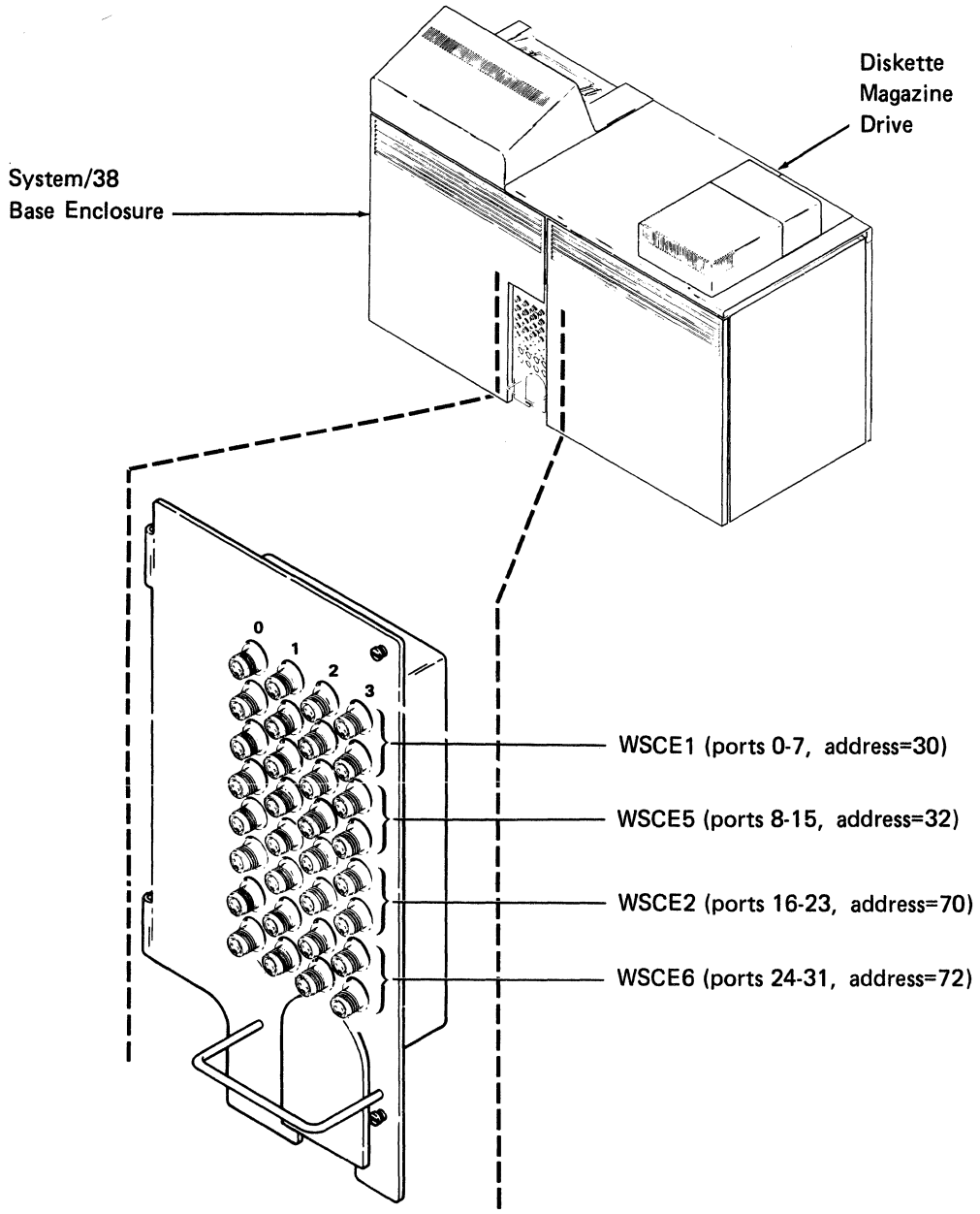


Figure C-9. Work Station Controllers-Extended 1, 5, 2, and 6.

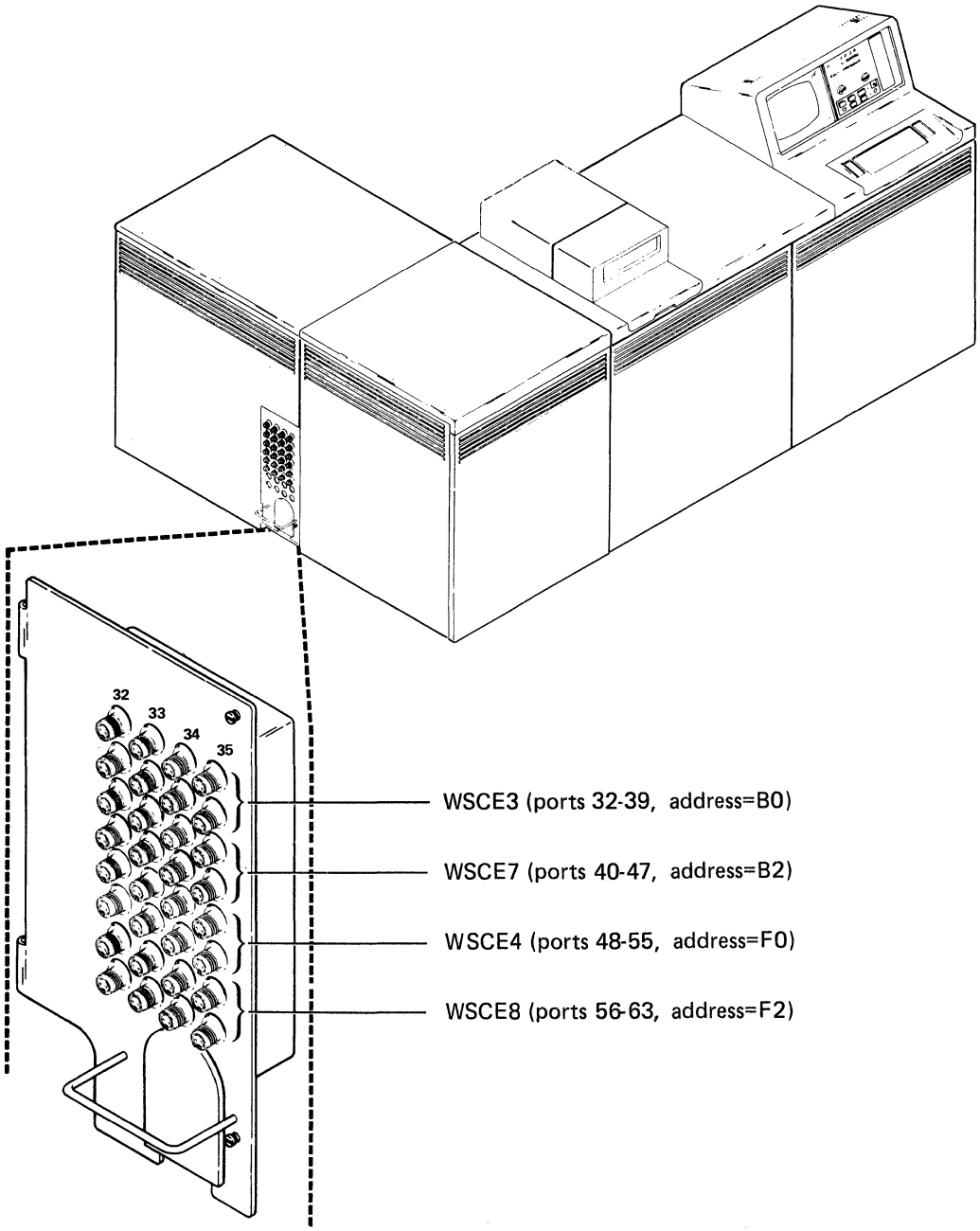


Figure C-10. Work Station Controllers-Extended 3, 7, 4, and 8.

Appendix D. Work Station Addressing Example

This example illustrates one possible method for assigning work station addresses. It is intended to be used as a further aid in determining the WSCADR parameter on the CRTDEVD command. In this example, 44 devices will be supported by two work station controllers-extended. Work Station Controller-Extended 1 will support 32 devices, the maximum allowed, and Work Station Controller-Extended 2 will support only 12 devices, even though 32 are allowed. The port arrangement for such a configuration appears below in Figure D-1.

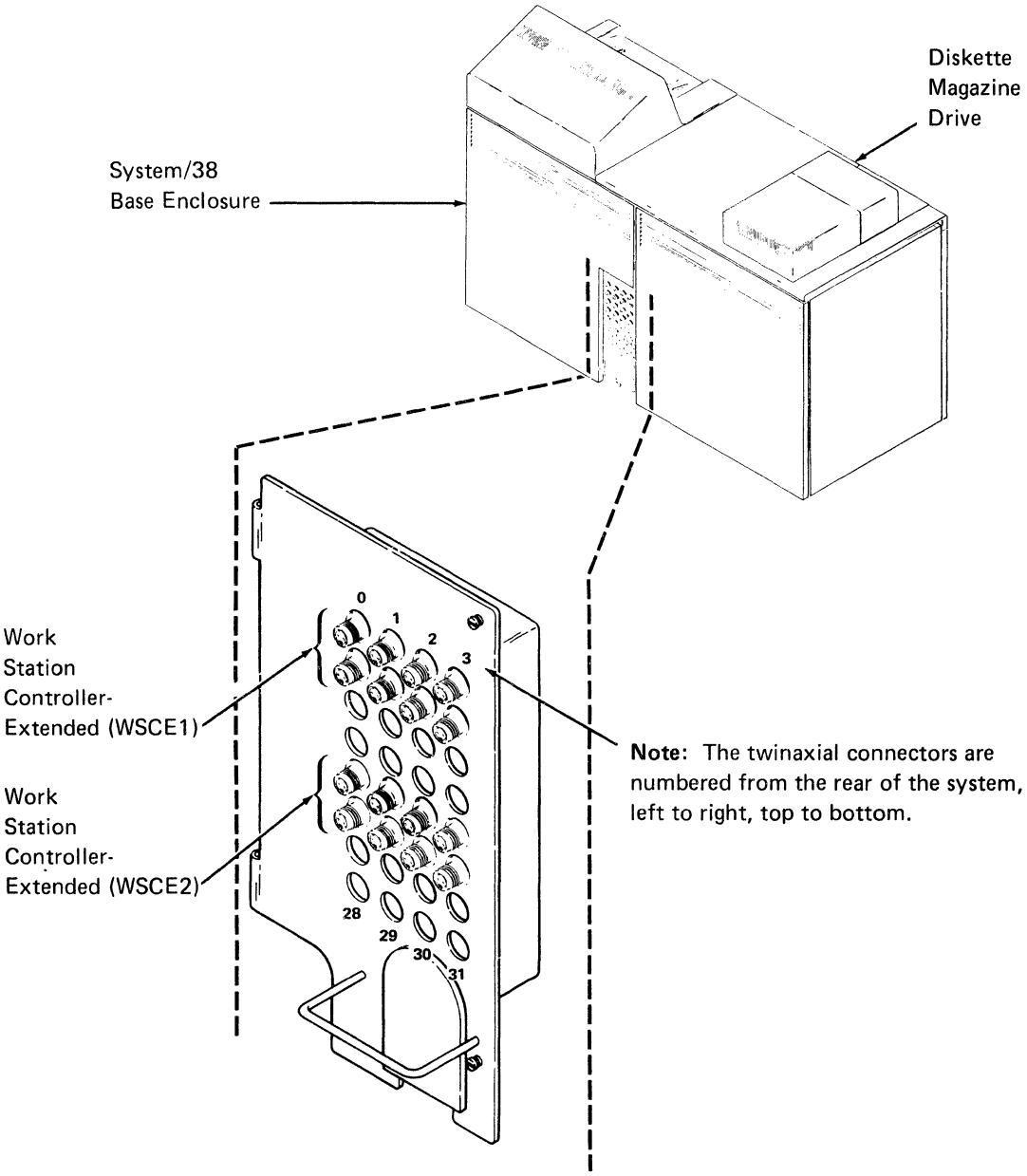


Figure D-1. Work Station Controllers-Extended 1 and 2

The illustrations show the configuration for WSCE1 and WSCE2. Note the following items:

Ⓐ There are 16 ports in this configuration. The ports are numbered 00 through 07 for WSCE1 and 16 through 23 for WSCE2. All eight ports (00 through 07) are used for WSCE1; only three ports (16 through 18) are used for WSCE2.

Ⓑ The unit address must be unique within the range of 00 through 31 for each work station controller. In this example, the first display station on a work station controller-extended (WS1 on WSCE1 and WS41 on WSCE2) is assigned unit address 01. For each subsequent work station, the next available unit address is used. Further, in this example only one work station printer is configured for each work station controller, and 00 is assigned as its unit address.

The work station address must be unique within the range of 00 through 06 on each port. In this example, 01 is used for the first work station on a port, 02 for the second, and so on to show their relative positions on the cable path. Work station WS19 is an exception to this scheme, because in this example WS19 does not have the Cable Thru feature. Therefore WS19 must be the last work station on a cable path and have work station address 00.

Ⓒ The work station devices are named WS1 through WS31 and WS41 through WS51 to achieve a correlation between unit address and device name. For example, device name WS3 and WS43 both have unit address 03.

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):

Page 1 of 8

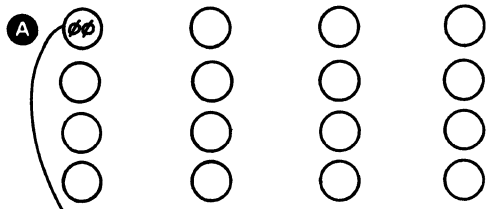
Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1



Device Name	WS1
Device Type	5291
Location	
Unit Address	Ø1
Port Number	ØØ
Work Station Address	Ø1

B

Device Name	WS2
Device Type	3180
Location	
Unit Address	Ø2
Port Number	ØØ
Work Station Address	Ø2

Device Name	WS3
Device Type	5291
Location	
Unit Address	Ø3
Port Number	ØØ
Work Station Address	Ø3

Device Name	WS4
Device Type	5291
Location	
Unit Address	Ø4
Port Number	ØØ
Work Station Address	Ø4

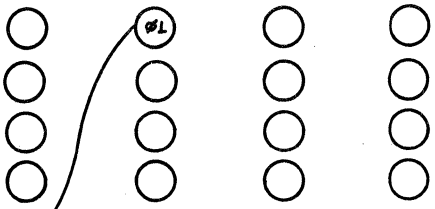
Device Name	WS5
Device Type	3180
Location	
Unit Address	Ø5
Port Number	ØØ
Work Station Address	Ø5

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS6
Device Type	3180
Location	
Unit Address	06
Port Number	01
Work Station Address	01

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS7
Device Type	3180
Location	
Unit Address	07
Port Number	01
Work Station Address	02

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

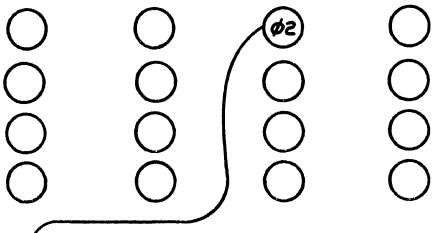
Device Name	WS8
Device Type	3180
Location	
Unit Address	08
Port Number	01
Work Station Address	03

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS9
Device Type	3180
Location	
Unit Address	Ø9
Port Number	Ø2
Work Station Address	Ø1

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS10
Device Type	3180
Location	
Unit Address	10
Port Number	Ø2
Work Station Address	Ø2

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

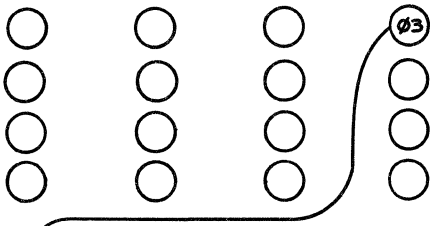
Device Name	WS11
Device Type	3180
Location	
Unit Address	11
Port Number	Ø2
Work Station Address	Ø3

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS12
Device Type	5291
Location	
Unit Address	12
Port Number	Ø3
Work Station Address	Ø1

Device Name	WS13
Device Type	5291
Location	
Unit Address	13
Port Number	Ø3
Work Station Address	Ø2

Device Name	WS14
Device Type	5291
Location	
Unit Address	14
Port Number	Ø3
Work Station Address	Ø3

Device Name	WS15
Device Type	3180
Location	
Unit Address	15
Port Number	Ø3
Work Station Address	Ø4

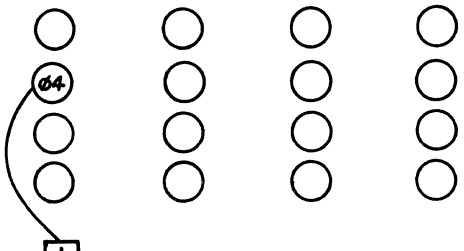
Device Name	WSPR1
Device Type	5219
Location	
Unit Address	ØØ
Port Number	Ø3
Work Station Address	Ø5

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS16
Device Type	5291
Location	
Unit Address	16
Port Number	Ø4
Work Station Address	Ø1

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS17
Device Type	5291
Location	
Unit Address	17
Port Number	Ø4
Work Station Address	Ø2

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

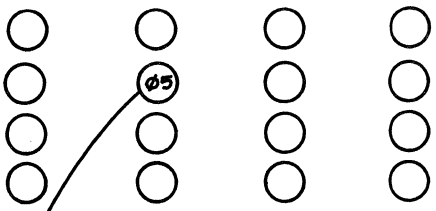
Device Name	WS18
Device Type	3180
Location	
Unit Address	18
Port Number	Ø4
Work Station Address	Ø3

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS19
Device Type	3180
Location	
Unit Address	19
Port Number	Ø4
Work Station Address	ØØ

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS20
Device Type	3180
Location	
Unit Address	20
Port Number	05
Work Station Address	01

Device Name	WS21
Device Type	3180
Location	
Unit Address	21
Port Number	05
Work Station Address	02

Device Name	WS22
Device Type	3180
Location	
Unit Address	22
Port Number	05
Work Station Address	03

Device Name	WS23
Device Type	3180
Location	
Unit Address	23
Port Number	05
Work Station Address	04

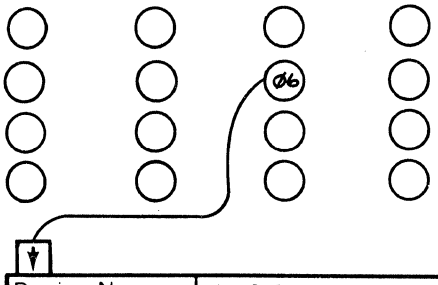
Device Name	WS24
Device Type	3180
Location	
Unit Address	24
Port Number	05
Work Station Address	05

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Page 7 of 8

Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS25
Device Type	3180
Location	
Unit Address	25
Port Number	06
Work Station Address	01

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS26
Device Type	3180
Location	
Unit Address	26
Port Number	06
Work Station Address	02

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

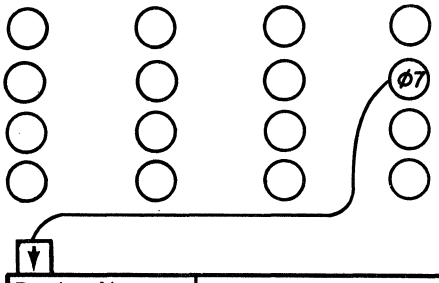
Device Name	WS27
Device Type	3180
Location	
Unit Address	27
Port Number	06
Work Station Address	03

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS28
Device Type	3180
Location	
Unit Address	28
Port Number	06
Work Station Address	04

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4

(WSCE1) WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE1

Device Name	WS29
Device Type	5291
Location	
Unit Address	29
Port Number	07
Work Station Address	01

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS30
Device Type	5291
Location	
Unit Address	30
Port Number	07
Work Station Address	02

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

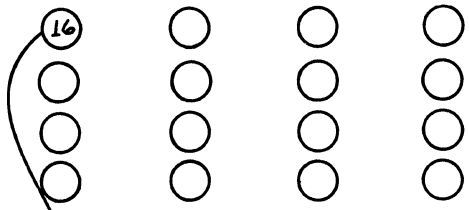
Device Name	WS31
Device Type	5291
Location	
Unit Address	31
Port Number	07
Work Station Address	03

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Page 1 of 3

Circle one:

WSC1 WSC2 WSC3 WSC4

WSCE1 (WSCE2) WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE2

Device Name	WS41
Device Type	5291
Location	
Unit Address	Ø1
Port Number	16
Work Station Address	Ø1

Device Name	WS42
Device Type	5292
Location	
Unit Address	Ø2
Port Number	16
Work Station Address	Ø2

Device Name	WS43
Device Type	5291
Location	
Unit Address	Ø3
Port Number	16
Work Station Address	Ø3

Device Name	WS44
Device Type	5291
Location	
Unit Address	Ø4
Port Number	16
Work Station Address	Ø4

Device Name	WSPR2
Device Type	4214
Location	
Unit Address	ØØ
Port Number	16
Work Station Address	Ø5

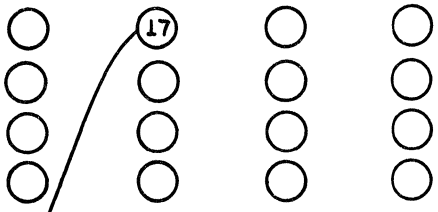
Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Page 2 of 3

Ports (use only one):



Circle one:

WSC1 WSC2 WSC3 WSC4
WSCE1 (WSCE2) WSCE3 WSCE4
WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE2

Device Name	WS45
Device Type	5291
Location	
Unit Address	05
Port Number	17
Work Station Address	01

Device Name	WS46
Device Type	5291
Location	
Unit Address	06
Port Number	17
Work Station Address	02

Device Name	WS47
Device Type	5291
Location	
Unit Address	07
Port Number	17
Work Station Address	03

Device Name	WS48
Device Type	5291
Location	
Unit Address	08
Port Number	17
Work Station Address	04

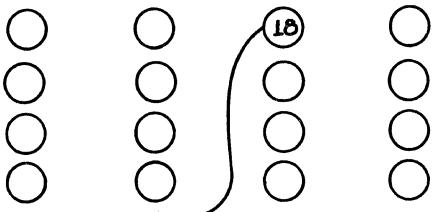
Device Name	WS49
Device Type	5291
Location	
Unit Address	09
Port Number	17
Work Station Address	05

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Page 3 of 3

Circle one:

WSC1 WSC2 WSC3 WSC4
WSCE1 (WSCE2) WSCE3 WSCE4
WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name QWSCE2

Device Name	WS5Ø
Device Type	3180
Location	
Unit Address	1Ø
Port Number	18
Work Station Address	Ø1

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	WS5L
Device Type	3180
Location	
Unit Address	11
Port Number	18
Work Station Address	Ø2

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

This list provides a cross-reference between work station controllers, device names, and device addresses used in this example configuration. Once your configuration has been determined, physical locations or even user names can be added to the list to aid in identifying your system components.

Controller	Device	WSCADR Parameter
WSCE1	WS1	010001
WSCE1	WS2	020002
WSCE1	WS3	030003
WSCE1	WS4	040004
WSCE1	WS5	050005
WSCE1	WS6	060101
WSCE1	WS7	070102
WSCE1	WS8	080103
WSCE1	WS9	090201
WSCE1	WS10	100202
WSCE1	WS11	110203
WSCE1	WS12	120301
WSCE1	WS13	130302
WSCE1	WS14	140303
WSCE1	WS15	150304
WSCE1	WSPR1	000305
WSCE1	WS16	160401
WSCE1	WS17	170402
WSCE1	WS18	180403
WSCE1	WS19	190400
WSCE1	WS20	200501
WSCE1	WS21	210502
WSCE1	WS22	220503
WSCE1	WS23	230504
WSCE1	WS24	240505
WSCE1	WS25	250601
WSCE1	WS26	260602
WSCE1	WS27	270603
WSCE1	WS28	280604
WSCE1	WS29	290701
WSCE1	WS30	300702
WSCE1	WS31	310703

Controller	Device	WSCADR Parameter
WSCE2	WS41	011601
WSCE2	WS42	021602
WSCE2	WS43	031603
WSCE2	WS44	041604
WSCE2	WSPR2	001605
WSCE2	WS45	051701
WSCE2	WS46	061702
WSCE2	WS47	071703
WSCE2	WS48	081704
WSCE2	WS49	091705
WSCE2	WS50	101801
WSCE2	WS51	111802

Appendix E. Specifying Line Interfaces and Modem Features

Figure E-1 provides the Create Line Description (CRTLIND) command parameter values that are related to IBM modems.

Recommended values for the IDLETIME and NONPRDRCV parameters, which are specified with the CRTLIND command, are also included in this appendix.

	Modem[1]	Line Description Parameters															
										WIRE[7]		DCEGRP[8] A, B, C					
		RATE	SWNBKU	SELECT	NONRTNZ[4]	CLOCK	AUTOCALL	AUTOANS	ANSTONE	NORMAL	BACKUP	IF US/CANADA	IF NOT US/CANADA	RATETYPE[9]	DIALMODE[10]	ANSMODE[11]
IBM Integrated Modem	SW MA 1200 bps	1200	NO	YES	YES	YES	NO	NO	NO	2	N/A	C	N/A	OPT	MAN	MAN
	SW AA 1200 bps	1200	NO	YES	YES	YES	NO	YES	NO	2	N/A	C	A	OPT	MAN	OPT
	NSW 1200 bps	1200	NO	YES	YES	YES	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	NSW SNBU 1200 bps	1200	YES	YES	YES	YES	NO	YES	NO	4	2	C	N/A	OPT	MAN	OPT
	IBM DDS[2] Adapter	OPT[3]	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	A	FULL	N/A	N/A
	IBM X2IT HS NSW	56000	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	N/A	OPT	MAN	OPT
	IBM V.35 HS NSW	OPT[3]	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	N/A	FULL	N/A	N/A
	SW AA 2400 bps	2400	NO	YES	YES	NO	NO	YES	NO	2	N/A	C	A	OPT	MAN	OPT
	NSW 2400 bps	2400	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	SW AA 4800 bps	4800	NO	YES	YES	NO	NO	YES	NO	2	N/A	C	A	OPT	MAN	OPT
	NSW 4800 bps	4800	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
or Equivalent	IBM 3976-3 SW	1200	NO	YES	YES	YES	NO	OPT[6]	NO	2	N/A	N/A	B	OPT	MAN	OPT
	IBM 3976-3 NSW	1200	NO	YES	YES	YES	NO	NO	NO	OPT	N/A	N/A	A	OPT	N/A	N/A
	IBM 3872 SW	2400	NO	YES	YES	NO	OPT[5]	YES	NO	2	N/A	C	B	OPT	OPT	OPT
	IBM 3872 NSW	2400	NO	YES	YES	NO	NO	NO	NO	OPT	N/A	A	A	OPT	N/A	N/A
	IBM 3872 NSW SNBU	2400	YES	YES	YES	NO	NO	OPT[6]	NO	OPT	2	C	B	OPT	MAN	OPT
	IBM 3874 SW	4800	NO	YES	YES	NO	OPT[5]	YES	NO	2	N/A	C	B	OPT	OPT	OPT
	IBM 3874 NSW	4800	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	IBM 3874 NSW SNBU	4800	YES	YES	YES	NO	NO	OPT[6]	NO	4	2	C	B	OPT	MAN	OPT
	IBM 3875 NSW	7200	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	IBM 3875 NSW SNBU	7200	YES	YES	YES	NO	NO	OPT[6]	NO	4	2	C	B	OPT	MAN	OPT
	IBM 3863 SW	2400	NO	YES	YES	NO	NO	YES	NO	2	N/A	C	B	OPT	MAN	OPT
	IBM 3863 NSW	2400	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	IBM 3863 NSW SNBU	2400	YES	YES	YES	NO	NO	NO[12]	NO	4	4	C	B	OPT	MAN	MAN
	IBM 3864 SW	4800	NO	YES	YES	NO	NO	YES	NO	2	N/A	C	B	OPT	MAN	OPT
	IBM 3864 NSW	4800	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	IBM 3864 NSW SNBU	4800	YES	YES	YES	NO	NO	NO[12]	NO	4	4	C	B	OPT	MAN	MAN
	IBM 3865 NSW	9600	NO	YES	YES	NO	NO	NO	NO	4	N/A	A	A	OPT	N/A	N/A
	IBM 3865 NSW SNBU	9600	YES	YES	YES	NO	NO	NO[12]	NO	4	4	C	B	OPT	MAN	MAN
	Local DDS[13] Attachment	OPT[14]	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	A	FULL	N/A	N/A
	Local High-Speed[15] Attachment	56000	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	A	FULL	N/A	N/A
	X.25 Network (X.21 or X.21 bis interface)	OPT[16]	NO	NO	NO	NO	NO	NO	NO	4	N/A	A	A	FULL	N/A	N/A

Figure E-1 (Part 1 of 2). CRTLIND Command Parameter Values Related to IBM Modems

[1]System/38 modem abbreviations:
AA = Autoanswer
MA = Manual answer
SW = Switched
NSW = Nonswitched
HS = High Speed
[2]DDS = Digital Data Service. See Note 13 for use as a local high-speed interface.
[3]OPT = Optional DDS rates are 56,000, 9600, 4800, or 2400 bps. Enter the rate that was specified at the time of system order/installation. Optional V.35 rates are 48,000 bps for a remote connection and 56,000 bps for a local connection.
[4]NONRTNZ(*YES) must be specified for SDLC lines requiring System/38-supplied (internal) clock, for SDLC lines using IBM 3872 modems, and for SDLC lines configured for V.26 bis operation when using IBM SW AA 2400 bps integrated modems or IBM 3863 modems.
NONRTNZ entries shown for other IBM modems are not mandatory. However, all SDLC lines and modems that communicate with each other must specify the same NRZI/NRZ coding option. NONRTNZ parameter must be left blank for BSC or BSCT lines.
[5]OPT = Specify AUTOCALL(*YES) if an autocall feature is installed for use with this line.
[6]OPT = Specify AUTOANS(*YES) if the modem has the capability to automatically answer an incoming call.
[7]2 = Two-wire.
4 = Four-wire.
OPT = Two-wire or four-wire may be specified depending on the network line facilities.
N/A = Not applicable (no backup connection is possible).
[8]N/A = Modem not available for this geographic category.
[9]OPT = Full or half rate may be specified. End-to-end rate type consistency must be maintained (with all lines and modems that communicate with each other).
[10]N/A = Not applicable.
MAN = Manual call.
OPT = Either manual call or autocall operation can be specified for lines having AUTOCALL(*YES) specified.
[11]N/A = Not applicable.
MAN = Manual answer.
OPT = Either manual answer or autoanswer operation can be specified for lines having AUTOANS(*YES) specified.
[12]The modem has auto answer capability, but auto answer on this type of modem is not supported by System/38.
[13]For local connection of System/38 to System/38 or System/38 to System/34. See Note 2 for connection to a digital data service network.
[14]OPT = 56,000, 9600, 4800, or 2400 bits per second.
[15]For local connection of Series/1 to System/38 only.
[16]OPT = 56 000, 48 000, 19 200, 9600, 4800, 2400, or 1200 bits per second

Figure E-1 (Part 2 of 2). CRTLIND Command Parameter Values Related to IBM Modems

RECOMMENDED VALUES FOR LINE DESCRIPTION PARAMETERS: IDLETIME AND NONPRDRCV

System/38, as a primary SDLC station, has the responsibility for the orderly, continuous operation of a data link or line, and it must check for responses to its commands. As a secondary SDLC station, System/38 is responsible for proper line operation in the event of time-outs or periods of inactivity on the line. Two basic time-outs, or time intervals after which System/38 will check conditions, are used for this purpose:

- Idle detect (SDLC primary line)
- Nonproductive receive (SDLC primary and secondary)

System/38, when communicating with an X.25 network, has the ability to control the maximum amount of time that the system should wait for acknowledgment from the network for each frame transmission. This is a consideration between the System/38 and the local DCE and is not dependent on the far end connection across the network. The basic time-out, or time interval after which the System/38 will check conditions, that is used for this purpose is idle detect (link level timer for X.25 called HDLC-T1).

The two parameters used to specify these time intervals are IDLETIME and/or NONPRDRCV on the line description work sheet. For more information on the idle state time and nonproductive receive time, refer to the *IBM Synchronous Data Link Control General Information* manual or the *X.25 Interface for Attaching SNA Nodes to Packet Switched Data Networks* manual.

Note: For switched lines to which one or more 5294 Control Units are attached, a value of 0 is not recommended for the IDLETIME parameter; instead, specify a value of 38.

IDLETIME Parameter For SDLC Lines

For SDLC primary lines, the IDLETIME value should be set larger than the maximum time one would expect to wait (upon completing the primary station transmission) for the beginning of the secondary station response. This time should be greater than the sum of:

- Propagation time to the secondary station.
- Processing time at the secondary station control unit. This is the time that the control unit takes to respond (not including customer programs or operator response time).
- Clear-to-send time at the secondary station modem.
- Propagation time from the secondary station.

Each unit of value adds 53.3 milliseconds. Allowable values are 0-255 (or 0-13.6 seconds). A recommended minimum time is 2 seconds (a value of 38). As the default condition, if 0 is specified or if the IDLETIME parameter value is not specified, the machine will use a time of 0.5 second.

For SDLC secondary lines, this parameter should be ignored.

IDLETIME Parameter For X.25 Lines

For X.25 networks, the IDLETIME value should be set to the value prescribed by the network provider (X.25 DCE) for the link level timer called HDLC-T1.

Each unit of value adds represents .1 seconds. Allowable values are 3-99 (or .3-9.9 seconds). As a default condition, if no value is specified, the machine will use a value of 6 giving a time of 0.6 seconds.

Since the time-out is a function of line speed and maximum frame size, the following table represents the minimum recommended values to be specified for each line speed.

Line Speed (kbps)	Value	Time (seconds)
19.2 to 64	3	.3
9.6	6	.6
4.8	12	1.2
2.4	20	2.0
1.2	30	3.0

NONPRDRCV Parameter for SDLC Primary Lines

As the primary station, the System/38 must provide a time-out facility for receive operations to monitor nonidle, nonproductive conditions (such as bits being received over the transmission facility that do not result in idle or productive frames). For example, these conditions could be caused by secondary station malfunctions that cause continuous transmission.

Because the nonproductive receive (NONPRDRCV) is data dependent, it becomes line-speed dependent. Use the following table for recommended NONPRDRCV parameter values.

	For 5250 or PLU1 Devices		For Peer Devices	
Line Speed	**NONPRDRCV Timer**	**Parameter Value to Enter**	**NONPRDRCV Timer**	**Parameter Value to Enter**
600	5.5 seconds	11	11 seconds	22
1200	3.0 seconds	6	6 seconds	12
2400	2.0 seconds	4	4 seconds	8
4800	1.0 second	2	2 seconds	4
9600	1.0 second	2	1.0 second	2
48 000	0.5 second	1	0.5 second	1
56 000	0.5 second	1	0.5 second	1

If a line can run at dual speeds, enter the value for the lower speed.

NONPRDRCV Parameter For SDLC Secondary Lines

As the secondary station, the System/38 must provide a time-out facility for disconnecting switched lines in the event of long periods of line inactivity. A switched line is disconnected if valid frames of information are not received within the specified time-out value.

The time-out value (0 through 255) specifies, in 500 millisecond intervals, the length of inactivity allowed. Normally 30 seconds (a value of 60) is adequate. The maximum value of 255 specifies a time-out of 127.5 seconds. If zero is specified, the system assigns a default time of 128 seconds.

RECOMMENDED VALUES FOR CONTROL UNIT DESCRIPTION PARAMETER: NETRSPTMR

The NETRSPTMR parameter specifies the time-out value to be used for the logical link level time-out condition known as X.25/LT1. Values from 1 to 255 may be specified where each unit represents 1 second. If no value is specified, a default time-out of 30 seconds will be provided.

To determine the recommended value for this time-out, refer to the product documentation for X.25 support on the particular product that this controller object represents. The following examples are provided for guidance only:

CUD TYPE	X.25/LT1 Recommendation
5294	10 seconds
PEER (S/36)	10 seconds
PEER (S/38)	30 seconds
PU2 (3725 NCP/NPSI)	30 seconds
PU2 (4300)	30 seconds

TELEPHONE NUMBERS IN REMOTE CONTROLLER DESCRIPTIONS FOR SDLC OR BSC NETWORKS

For SDLC or BSC networks, when specifying values for the TELNBR (telephone number) parameter for the Create Control Unit Description (CRTCUD) command, only the following characters are valid:

- The digits 0 through 9
- The separator character (SEP), which is keyboard entry ' (apostrophe)
- The end-of-number character, which is keyboard entry * (asterisk)
- Four other special characters, which are the following keyboard entries:

  : , + ?

If any character other than the digits 0 through 9 is specified in the TELNBR parameter value, the entire telephone number must be enclosed in apostrophes.

You cannot specify a hyphen (-) in the TELNBR parameter, even if you enclose the parameter value in apostrophes.

You must verify with your autocall equipment supplier that special characters are valid in telephone numbers.

Separator Character

The separator character can be used with some autocall equipment to provide a pause between dial digits to wait for a second dial tone. Specify the separator character in the digit position where the pause is required.

End-of-Number Character

The end-of-number character is valid only with autocall equipment that requires its use. System/38 does not support the end-of-number character with autocall equipment that transfers control to the associated modem without verifying that an answer tone has been returned.

Other Special Characters

Certain types of autocall equipment may require that additional special characters be used in the TELNBR parameter. If additional special characters are required, use the following table to determine the correct character to use:

Hex Value Sent to Autocall Equipment	Binary Value	Keyboard Entry
A	1010	:
B	1011	' (apostrophe)
E	1110	+
F	1111	?

TELEPHONE NUMBERS IN REMOTE CONTROLLER DESCRIPTIONS FOR X.25 NETWORKS

For X.25 networks, the TELNBR field is used to define the remote DTE address for switched virtual circuit (SVC) attached remote control units. This address is provided by the X.25 network supplier. Only decimal digits 0-9 are allowed. If the TELNBR is not unique between various control units, the NETCNNPWD value will be linked with the TELNBR to provide a unique identifier for incoming and outgoing calls to each control unit.

Appendix F. Print Images and Translate Tables

For each system printer, the print image (PRTIMG) parameter on the Create Device Description (CRTDEVD) command identifies which print image is used by the printer in normal operations. (The print image specified can be overridden for special printing jobs using the CRTPRTF, CHGPRTF, or OVRPRTF command; the print belt or train may also need to be changed.) A translate table is associated with each print image. When you first install your system, IBM supplies a print image and translate table (both named QSYSIMAGE) in the QGPL library shipped with CPF.

On the 4245 Printer, you do not need to create a print image and translate table for an IBM-supplied print band. Since the 4245 can sense which print image is mounted, the System/38 data management does not need to down load the print image to the printer.

However, you do need to create a print image and translate table for special order print bands.

To create a print image and translate table for non-IBM print belts or train arrangements, see the *CPF Programmer's Guide*.

To create a print image and translate table for IBM-supplied print belts or train arrangements, you need only create a print image. Use the Create Print Image (CRTPRTIMG) command, and specify the BELTNBR parameter instead of the SRCFILE and SRCMBR parameters. A translate table is automatically created for you. The print image and the translate table have the same name (the name you specify for the print image) and are stored as different object types (*PRTIMG and *TBL) in the library you specify.

To change a translate table and print image, delete the old ones before using the Create Print Image (CRTPRTIMG) command. For example, once the system is installed and operational, you find it necessary to replace the existing print image. Do the following steps:

1. Place your message queue in break mode to receive system operator messages. If you have created a unique system operator message queue, you must use its name instead of QSYSOPR. Otherwise enter:

   ```
   CHGMSGQ  QSYSOPR  *BREAK
   ```

2. Key in DLTPRTIMG QSYSIMAGE.QGPL, then press the Enter key.

3. Key in DLTTBL QSYSIMAGE.QGPL, then press the Enter key.

4. Key in CRTPRTIMG PRTIMG(QSYSIMAGE.QGPL) BELTNBR(NNNNNNN)
   DEVTYPE 3262
   5211
   3203

   where NNNNNNN = belt number or train arrangement

5. After the print image and translate table are created, the system printer (QSYSPRT or QSYSPRT2) must be varied offline and varied online again to properly load the translate table and print image. Also, any writer currently active for the system printer must be canceled.

   Enter the following commands:

   a. CNLWTR printer-name *IMMED
   b. VRYDEV printer-name *OFF
   c. VRYDEV printer-name *ON

   where printer-name is QSYSPRT or QSYSPRT2.

Use the following tables to determine the belt numbers and train arrangements. For example, if you have a 3262 Printer (Model A1 or Model B1) with a print belt containing 96 EBCDIC characters and the characters are .095 inches high, use BELTNBR(8629684).

3262 PRINTERS

Model	Language Group	Character Set	Height	Belt Number
3262 A1, B1	Austria/Germany	48 EBCDIC	.095	8629672
3262 A1, B1	Austria/Germany	48 EBCDIC	.079	8629583
3262 A1, B1	Austria/Germany	48 EXT EBCDIC	.095	8629698
3262 A1, B1	Austria/Germany	48 EXT EBCDIC	.079	8629699
3262 A1, B1	Austria/Germany	64 EBCDIC	.095	8629554
3262 A1, B1	Austria/Germany	64 EBCDIC	.079	8629569
3262 A1, B1	Austria/Germany	64 OPT EBCDIC	.095	8629620
3262 A1, B1	Austria/Germany	64 OPT EBCDIC	.079	8629604
3262 A1, B1	Austria/Germany	96 EBCDIC	.095	8629685
3262 A1, B1	Belgium	48 EBCDIC	.095	8629673
3262 A1, B1	Belgium	48 EBCDIC	.079	8629584
3262 A1, B1	Belgium	64 EBCDIC	.095	8629555
3262 A1, B1	Belgium	64 EBCDIC	.079	8629570
3262 A1, B1	Belgium	64 OPT EBCDIC	.095	8629621
3262 A1, B1	Belgium	64 OPT EBCDIC	.079	8629605
3262 A1, B1	Belgium	96 EBCDIC	.095	8629686
3262 A1, B1	Brazil	64 EBCDIC	.095	8281343
3262 A1, B1	Brazil	64 EBCDIC	.079	8281342
3262 A1, B1	Brazil	64 OPT EBCDIC	.095	8629622
3262 A1, B1	Brazil	64 OPT EBCDIC	.079	8629606
3262 A1, B1	Brazil	96 EBCDIC	.095	8281344
3262 A1, B1	Canadian French	48 EBCDIC	.095	8629669
3262 A1, B1	Canadian French	48 EBCDIC	.079	8629668
3262 A1, B1	Canadian French	64 EBCDIC	.095	8629556
3262 A1, B1	Canadian French	64 EBCDIC	.079	8629571
3262 A1, B1	Canadian French	64 OPT EBCDIC	.095	8629623
3262 A1, B1	Canadian French	64 OPT EBCDIC	.079	8629607
3262 A1, B1	Canadian French	96 EBCDIC	.095	8629687
3262 A1, B1	Canadian French	116 EBCDIC	.095	8281345
3262 A1, B1	Denmark/Norway	48 EBCDIC	.095	8629675
3262 A1, B1	Denmark/Norway	48 EBCDIC	.079	8629586
3262 A1, B1	Denmark/Norway	64 EBCDIC	.095	8629557
3262 A1, B1	Denmark/Norway	64 EBCDIC	.079	8629572
3262 A1, B1	Denmark/Norway	64 OPT EBCDIC	.095	8629624
3262 A1, B1	Denmark/Norway	64 OPT EBCDIC	.079	8629608
3262 A1, B1	Denmark/Norway	96 EBCDIC	.095	8629688
3262 A1, B1	Finland/Sweden	48 EBCDIC	.095	8629676
3262 A1, B1	Finland/Sweden	48 EBCDIC	.079	8629587
3262 A1, B1	Finland/Sweden	64 EBCDIC	.095	8629558
3262 A1, B1	Finland/Sweden	64 EBCDIC	.079	8629573
3262 A1, B1	Finland/Sweden	64 OPT EBCDIC	.095	8629625
3262 A1, B1	Finland/Sweden	64 OPT EBCDIC	.079	8629609
3262 A1, B1	Finland/Sweden	96 EBCDIC	.095	8629689
3262 A1, B1	France	48 EBCDIC	.095	8629677
3262 A1, B1	France	48 EBCDIC	.079	8629588
3262 A1, B1	France	64 EBCDIC	.095	8629559
3262 A1, B1	France	64 EBCDIC	.079	8629574
3262 A1, B1	France	64 OPT EBCDIC	.095	8629626
3262 A1, B1	France	64 OPT EBCDIC	.079	8629610
3262 A1, B1	France	96 EBCDIC	.095	8629690
3262 A1, B1	International	48 EBCDIC	.095	8629674
3262 A1, B1	International	48 EBCDIC	.079	8629585
3262 A1, B1	International	64 EBCDIC	.095	8629565
3262 A1, B1	International	64 EBCDIC	.079	8629580
3262 A1, B1	International	64 OPT EBCDIC	.095	8629619
3262 A1, B1	International	64 OPT EBCDIC	.079	8629603
3262 A1, B1	International	96 EBCDIC	.095	8629696
3262 A1, B1	Italy	48 EBCDIC	.095	8629678
3262 A1, B1	Italy	48 EBCDIC	.079	8629589
3262 A1, B1	Italy	64 EBCDIC	.095	8629560
3262 A1, B1	Italy	64 EBCDIC	.079	8629575
3262 A1, B1	Italy	64 OPT EBCDIC	.095	8629627
3262 A1, B1	Italy	64 OPT EBCDIC	.079	8629611
3262 A1, B1	Italy	96 EBCDIC	.095	8629691
3262 A1, B1	Japan	48 EBCDIC	.095	8629683
3262 A1, B1	Japan	48 EBCDIC	.079	8629594
3262 A1, B1	Japan	64 EBCDIC	.095	8629566
3262 A1, B1	Japan	64 EBCDIC	.079	8629581
3262 A1, B1	Japan	64 OPT EBCDIC	.095	8629628
3262 A1, B1	Japan	64 OPT EBCDIC	.079	8629612
3262 A1, B1	Japan	96 EBCDIC	.095	8629697
3262 A1, B1	Katakana	96 Katakana	.095	8281337
3262 A1, B1	Katakana	128 EBCDIC	.095	8629637
3262 A1, B1	Multinational	64 EBCDIC	.095	8629665
3262 A1, B1	Multinational	96 EBCDIC	.095	8629664
3262 A1, B1	Multinational	188 EBCDIC	.095	8629663
3262 A1, B1	Portugal	48 EBCDIC	.095	8629679
3262 A1, B1	Portugal	48 EBCDIC	.079	8629590
3262 A1, B1	Portugal	64 EBCDIC	.095	8629561
3262 A1, B1	Portugal	64 EBCDIC	.079	8629576
3262 A1, B1	Portugal	64 OPT EBCDIC	.095	8629629
3262 A1, B1	Portugal	64 OPT EBCDIC	.079	8629613
3262 A1, B1	Portugal	96 EBCDIC	.095	8629692
3262 A1, B1	Spain	48 EBCDIC	.095	8629680
3262 A1, B1	Spain	48 EBCDIC	.079	8629591
3262 A1, B1	Spain	64 EBCDIC	.095	8629562
3262 A1, B1	Spain	64 EBCDIC	.079	8629577
3262 A1, B1	Spain	64 OPT EBCDIC	.095	8629630
3262 A1, B1	Spain	64 OPT EBCDIC	.079	8629614
3262 A1, B1	Spain	96 EBCDIC	.095	8629693
3262 A1, B1	Spanish Speaking	48 EBCDIC	.095	8629681
3262 A1, B1	Spanish Speaking	48 EBCDIC	.079	8629592
3262 A1, B1	Spanish Speaking	64 EBCDIC	.095	8629563
3262 A1, B1	Spanish Speaking	64 EBCDIC	.079	8629578
3262 A1, B1	Spanish Speaking	64 OPT EBCDIC	.095	8629631
3262 A1, B1	Spanish Speaking	64 OPT EBCDIC	.079	8629615
3262 A1, B1	Spanish Speaking	96 EBCDIC	.095	8629694
3262 A1, B1	United Kingdom	48 EBCDIC	.095	8629682
3262 A1, B1	United Kingdom	48 EBCDIC	.079	8629593
3262 A1, B1	United Kingdom	64 EBCDIC	.095	8629564
3262 A1, B1	United Kingdom	64 EBCDIC	.079	8629579
3262 A1, B1	United Kingdom	64 OPT EBCDIC	.095	8629632
3262 A1, B1	United Kingdom	64 OPT EBCDIC	.079	8629616
3262 A1, B1	United Kingdom	96 EBCDIC	.095	8629695
3262 A1, B1	US ASCII	64 ASCII	.095	8629567
3262 A1, B1	US ASCII	64 ASCII	.079	8629582
3262 A1, B1	US ASCII	64 OPT ASCII	.095	8629618
3262 A1, B1	US ASCII	64 OPT ASCII	.079	8629602
3262 A1, B1	US ASCII	96 ASCII	.095	8629600
3262 A1, B1	Brazil	48 EBCDIC	.079	8630314
3262 A1, B1	Brazil	48 EBCDIC	.095	8630315

Model	Language Group	Character Set	Height	Belt Number
3262 A1, B1	US EBCDIC	48 EBCDIC	.095	8629671
3262 A1, B1	US EBCDIC	48 EBCDIC	.079	8629670
3262 A1, B1	US EBCDIC	60 S/38 Special	.095	8629661
3262 A1, B1	US EBCDIC	60 S/38 Special	.079	8629662
3262 A1, B1	US EBCDIC	64 EBCDIC	.095	8629553
3262 A1, B1	US EBCDIC	64 EBCDIC	.079	8629568
3262 A1, B1	US EBCDIC	64 OPT EBCDIC	.095	8629617
3262 A1, B1	US EBCDIC	64 OPT EBCDIC	.079	8629601
3262 A1, B1	US EBCDIC	96 EBCDIC	.095	8629684

3262 A1, B1 Optical Character Reader Belt Images and Translate Tables

Model	Characters and Language Group	OCR-A Font	OCR-B Font
3262 A1, B1	48 US/Canada	8630370	8630378
3262 A1, B1	48 Denmark/Norway	8630371	8630379
3262 A1, B1	48 Finland/Sweden	8630372	8630380
3262 A1, B1	48 France	8630373	8630381
3262 A1, B1	48 Italy	8630374	8630382
3262 A1, B1	48 United Kingdom	8630375	8630383
3262 A1, B1	48 Spanish Speaking	8630376	
3262 A1, B1	48 Japan		8630384
3262 A1, B1	48ext Austria/Germany	8630377	8630385
3262 A1, B1	128 Katakana		8630386

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Model	Language Group	Character Set	Height	Belt Number
5211 2	Austria/Germany	48 EBCDIC	.095	8629492
5211 2	Austria/Germany	48 EBCDIC	.079	1794703
5211 2	Austria/Germany	48 EXT EBCDIC	.095	1795030
5211 2	Austria/Germany	48 EXT EBCDIC	.079	1794695
5211 2	Austria/Germany	48 EXT OCR-A	.095	8268844
5211 2	Austria/Germany	48 EXT OCR-B	.095	8268767
5211 2	Austria/Germany	64 EBCDIC	.095	1795301
5211 2	Austria/Germany	64 EBCDIC	.079	1795304
5211 2	Austria/Germany	96 EBCDIC	.095	1794670
5211 2	Belgium	48 EBCDIC	.095	8629493
5211 2	Belgium	48 EBCDIC	.079	1794927
5211 2	Belgium	64 EBCDIC	.095	1794671
5211 2	Belgium	64 EBCDIC	.079	1794933
5211 2	Belgium	96 EBCDIC	.095	1794672
5211 2	Brazil	48 EBCDIC	.079	8629522
5211 2	Brazil	48 EBCDIC	.095	8629523
5211 2	Brazil	64 EBCDIC	.095	8629513
5211 2	Brazil	64 EBCDIC	.079	8629512
5211 2	Brazil	96 EBCDIC	.095	8629514
5211 2	Canadian French	48 EBCDIC	.095	8629491
5211 2	Canadian French	48 EBCDIC	.079	1794975
5211 2	Canadian French	64 EBCDIC	.095	1794624
5211 2	Canadian French	64 EBCDIC	.079	1794976
5211 2	Canadian French	96 EBCDIC	.095	1794625
5211 2	Canadian French	116 EBCDIC	.095	8268851
5211 2	Denmark/Norway	48 EBCDIC	.095	8629494
5211 2	Denmark/Norway	48 EBCDIC	.079	1794935
5211 2	Denmark/Norway	48 OCR-A	.095	8268845
5211 2	Denmark/Norway	48 OCR-B	.095	8268769
5211 2	Denmark/Norway	64 EBCDIC	.095	1794820
5211 2	Denmark/Norway	64 EBCDIC	.079	1794937
5211 2	Denmark/Norway	96 EBCDIC	.095	1794876

Model	Language Group	Character Set	Height	Belt Number
5211 2	Finland/Sweden	48 EBCDIC	.095	8629495
5211 2	Finland/Sweden	48 EBCDIC	.079	1794939
5211 2	Finland/Sweden	48 OCR-A	.095	8268846
5211 2	Finland/Sweden	48 OCR-B	.079	8268771
5211 2	Finland/Sweden	64 EBCDIC	.095	1794877
5211 2	Finland/Sweden	64 EBCDIC	.079	1795060
5211 2	Finland/Sweden	96 EBCDIC	.095	1794878
5211 2	France	48 EBCDIC	.095	8629496
5211 2	France	48 EBCDIC	.079	1794688
5211 2	France	64 EBCDIC	.095	1794879
5211 2	France	64 EBCDIC	.079	1794693
5211 2	France	96 EBCDIC	.095	1794880
5211 2	International	48 EBCDIC	.095	8629488
5211 2	International	48 EBCDIC	.079	1794986
5211 2	International	64 EBCDIC	.095	1794988
5211 2	International	64 EBCDIC	.079	1794952
5211 2	International	96 EBCDIC	.095	1794955
5211 2	Italy	48 EBCDIC	.095	8629497
5211 2	Italy	48 EBCDIC	.079	1794697
5211 2	Italy	48 OCR-A	.095	8268847
5211 2	Italy	48 OCR-B	.095	8268773
5211 2	Italy	64 EBCDIC	.095	1794881
5211 2	Italy	64 EBCDIC	.079	1794836
5211 2	Italy	96 EBCDIC	.095	1794882
5211 2	Japan	48 EBCDIC	.079	8629498
5211 2	Japan	48 EBCDIC	.079	1794979
5211 2	Japan	48 OCR-B	.095	8268774
5211 2	Japan	64 EBCDIC	.095	1794883
5211 2	Japan	64 EBCDIC	.079	1794985
5211 2	Japan	96 EBCDIC	.095	1794884
5211 2	Katakana	96 Katakana	.095	8268818
5211 2	Katakana	128 Katakana	.095	1794991
5211 2	Multinational	64 EBCDIC	.095	8629485
5211 2	Multinational	96 EBCDIC	.095	8629486
5211 2	Multinational	188 EBCDIC	.095	8629487
5211 2	Portugal	48 EBCDIC	.095	8629499
5211 2	Portugal	48 EBCDIC	.079	1794908
5211 2	Portugal	64 EBCDIC	.095	1794887
5211 2	Portugal	64 EBCDIC	.079	1794910
5211 2	Portugal	96 EBCDIC	.095	1794888
5211 2	Spain	48 EBCDIC	.095	8629500
5211 2	Spain	48 EBCDIC	.079	1794912
5211 2	Spain	64 EBCDIC	.095	1794889
5211 2	Spain	64 EBCDIC	.079	1794914
5211 2	Spain	96 EBCDIC	.095	1794890

Model	Language Group	Character Set	Height	Belt Number
5211 2	Spanish Speaking	48 EBCDIC	.095	8629501
5211 2	Spanish Speaking	48 EBCDIC	.079	1794971
5211 2	Spanish Speaking	48 OCR-A	.095	8268849
5211 2	Spanish Speaking	64 EBCDIC	.095	1794915
5211 2	Spanish Speaking	64 EBCDIC	.079	1794972
5211 2	Spanish Speaking	96 EBCDIC	.095	1794916
5211 2	United Kingdom	48 EBCDIC	.095	8629502
5211 2	United Kingdom	48 EBCDIC	.079	1794929
5211 2	United Kingdom	48 OCR-A	.095	8268850
5211 2	United Kingdom	48 OCR-B	.095	8268777
5211 2	United Kingdom	64 EBCDIC	.095	1794963
5211 2	United Kingdom	64 EBCDIC	.079	1794930
5211 2	United Kingdom	96 EBCDIC	.095	1794962
5211 2	US ASCII	64 EBCDIC	.095	1794952
5211 2	US ASCII	64 ASCII	.079	1794988
5211 2	US ASCII	96 EBCDIC	.095	1794955
5211 2	US EBCDIC	38 SPECIAL	.079	1794993
5211 2	US EBCDIC	38 SPECIAL	.095	1795023
5211 2	US EBCDIC	42 NUMERIC	.079	8268762
5211 2	US EBCDIC	42 NUMERIC	.095	8269490
5211 2	US EBCDIC	48 EBCDIC	.095	8629488
5211 2	US EBCDIC	48 EBCDIC	.079	1794986
5211 2	US EBCDIC	48 OCR-A	.095	8268843
5211 2	US EBCDIC	48 OCR-B	.095	8268764
5211 2	US EBCDIC	60 S/38 Special	.095	8629476
5211 2	US EBCDIC	60 S/38 Special	.079	8629477
5211 2	US EBCDIC	64 EBCDIC	.095	1794622
5211 2	US EBCDIC	64 EBCDIC	.079	1794987
5211 2	US EBCDIC	96 EBCDIC	.095	1794623

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Model	Language Group	Character Set	Train Arrangement Identification (see Note 1)
3203 5	Katakana	127 Katakana Long	KATLG
3203 5	Katakana	107 Katakana Short	KATSH
3203 5	US EBCDIC	48 EBCDIC	AN
3203 5	US EBCDIC	48 EBCDIC	HN
3203 5	US EBCDIC	48 OCR-A	OAA
3203 5	US EBCDIC	48 OCR-A Numeric	ODA
3203 5	US EBCDIC	48 OCR-A Numeric	ONA
3203 5	US EBCDIC	48 OCR-B	OAB
3203 5	US EBCDIC	120 EBCDIC (162 Graphics-library)	ALA
3203 5	US EBCDIC	60 EBCDIC (63 Graphics)	GN
3203 5	US EBCDIC	60 EBCDIC (Numerics preferred)	PCSAN
3203 5	US EBCDIC	60 EBCDIC (Numerics preferred)	PCSHN
3203 5	US EBCDIC	60 EBCDIC (PL1)	PN
3203 5	US EBCDIC	48 EBCDIC (PL1–Scientifically preferred)	QN
3203 5	US EBCDIC	48 EBCDIC (PL1–Commercially preferred)	QNC
3203 5	US EBCDIC	48 EBCDIC (FORTRAN-COBOL)	RN
3203 5	US EBCDIC	80 EBCDIC (Text printing–commercial;	SN
3203 5	US EBCDIC	120 EBCDIC (Text printing–scientific)	TN
3203 5	US EBCDIC	40 EBCDIC (High-speed alphameric)	YN
3203 5	US EBCDIC	48 EBCDIC (AN or HN)	DUAL (see Note 2)

Notes:

1. The train arrangement identification letters are used in the BLTNBR parameter of the Create Print Image (CRTPRTIMG) command to create print images and translate tables for the 3203 print trains.
2. The DUAL image and translate table can be used with either the AN or HN trains. These two trains are identical except for four special characters:

   AN train: % ¤ @ #
   HN train: ( ) ' =

   When the DUAL image and translate table are used, the special character printed depends on the train installed. For example, print data containing the EBCDIC code for a percent sign '%' prints a percent sign if the AN train is installed or prints a left parenthesis '(' if the HN train is installed.

LANGUAGE ID AND BAND IMAGES SELECTION FOR THE 5262 PRINTER

Because the 5262 Printer is configured as a work station printer, print images and translate tables are not specified on the CRTDEVD command as is required with the 3262, 5211, and 3203 Printers. The parameters PRTIMG and TRNTBL are ignored for the 5262 Printer.

A 5262 print band must be selected by switches on the 5262 operator's panel. You must use these switches to select both a language identifier (ID) and band image. Use the following table to determine language ID and band image switch settings.

For more information on the 5262 Printer, see the *IBM 5262 Printer Model 1 Operator's Guide.*

Note: For the 5262 Printer, no system programming support is provided for notifying the operator when a print belt or train changes on a job basis. The system operator must mount the correct print band if a nonstandard print band is needed on a job-by-job basis.

Use the switches on the 5262 operator's panel to select any of the following character sets from printer storage.

48 Characters (.079 in.)

Part No.	Character Set	Language ID	Band Image
8281254	International	0000	00000
8281264	US, EBCDIC	0001	00000
8281253	Belgium	0011	00000
8630354	Brazil	0100	00000
8281254	Canadian French	0101	00000
8281255	Denmark/Norway	0110	00000
8281256	Finland/Sweden	0111	00000
8281257	France	1000	00000
8281258	Italy	1001	00000
8281263	Japan	1010	00000
8281259	Portugal	1100	00000
8281260	Spain	1101	00000
8281261	Spanish-Speaking	1110	00000
8281262	United Kingdom	1111	00000

48 Characters (.095 in.)

Part No.	Character Set	Language ID	Band Image
8281267	International	0000	00000
8281250	US, EBCDIC	0001	00000
8281266	Belgium	0011	00000
8630353	Brazil	0100	00000
8281267	Canadian French	0101	00000
8281268	Denmark/Norway	0110	00000
8281269	Finland/Sweden	0111	00000
8281270	France	1000	00000
8281271	Italy	1001	00000
8281276	Japan	1010	00000
8281272	Portugal	1100	00000
8281273	Spain	1101	00000
8281274	Spanish-Speaking	1110	00000
8281275	United Kingdom	1111	00000

63 Characters (.079 in.)

Part No.	Character Set	Language ID	Band Image
8629603	International	0000	00001
8629601	US, EBCDIC	0001	00001
8629604	Austria/Germany	0010	00111
8629605	Belgium	0011	00001
8629606	Brazil	0100	00001
8629607	Canadian French	0101	00001
8629608	Denmark/Norway	0110	00001
8629609	Finland/Sweden	0111	00001
8629610	France	1000	00001
8629611	Italy	1001	00001
8629612	Japan	1010	00001
8629613	Portugal	1100	00001
8629614	Spain	1101	00001
8629615	Spanish-Speaking	1110	00001
8629616	United Kingdom	1111	00001

63 Characters (.095 in.)

Part No.	Character Set	Language ID	Band Image
8629619	International	0000	00001
8629617	US, EBCDIC	0001	00001
8629620	Austria/Germany	0010	00111
8629621	Belgium	0011	00001
8629622	Brazil	0100	00001
8629623	Canadian French	0101	00001
8629624	Denmark/Norway	0110	00001
8629625	Finland/Sweden	0111	00001
8629626	France	1000	00001
8629627	Italy	1001	00001
8629628	Japan	1010	00001
8629629	Portugal	1100	00001
8629630	Spain	1101	00001
8629631	Spanish-Speaking	1110	00001
8629632	United Kingdom	1111	00001

64 Characters (.079 in.)

Part No.	Character Set	Language ID	Band Image
8281305	International	0000	00010
8281293	US, EBCDIC	0001	00010
8281294	Austria/Germany	0010	01000
8281295	Belgium	0011	00010
8630355	Brazil	0100	00010
8281296	Canadian French	0101	00010
8281297	Denmark/Norway	0110	00010
8281298	Finland/Sweden	0111	00010
8281299	France	1000	00010
8281300	Italy	1001	00010
8281306	Japan	1010	00010
8281301	Portugal	1100	00010
8281302	Spain	1101	00010
8281303	Spanish-Speaking	1110	00010
8281304	United Kingdom	1111	00010

64 Characters (.095 in.)

Part No.	Character Set	Language ID	Band Image
8281291	International	0000	00010
8281279	US, EBCDIC	0001	00010
8281280	Austria/Germany	0010	01000
8281281	Belgium	0011	00010
8630356	Brazil	0100	00010
8281282	Canadian French	0101	00010
8281283	Denmark/Norway	0110	00010
8281284	Finland/Sweden	0111	00010
8281285	France	1000	00010
8281286	Italy	1001	00010
8281292	Japan	1010	00010
8281286	Portugal	1100	00010
8281288	Spain	1101	00010
8281289	Spanish-Speaking	1110	00010
8281290	United Kingdom	1111	00010

96 Characters

Part No.	Character Set	Language ID	Band Image
8281251	International	0000	00011
8281309	US, EBCDIC	0001	00011
8281310	Austria/Germany	0010	01001
8281311	Belgium	0011	00011
8630357	Brazil	0100	00011
8281312	Canadian French	0101	00011
8281313	Denmark/Norway	0110	00011
8281314	Finland/Sweden	0111	00011
8281315	France	1000	00011
8281316	Italy	1001	00011
8281321	Japan	1010	00011
8281338	Katakana	1011	01101
8281317	Portugal	1100	00011
8281318	Spain	1101	00011
8281319	Spanish-Speaking	1110	00011
8281320	United Kingdom	1111	00011

52 Characters (.079 in. to .095 in high)

Part No.	Character Set	Language ID	Band Image
8281278	Austria/Germany (.079)	0010	00110
8281277	Austria/Germany (.095)	0010	00110

116 Characters

Part No.	Character Set	Language ID	Band Image
8281308	Canadian French	0101	01100

128 Characters

Part No.	Character Set	Language ID	Band Image
8281307	Katakana	1011	01110

188 Characters

Part No.	Character Set	Language ID	Band Image
1509872	International	0000	01111
1509872	US, EBCDIC	0001	01111
1509872	Austria/Germany	0001	01111
1509872	Belgium	0011	01111
1509872	Brazil	0100	01111
1509872	Canadian French	0101	01111
1509872	Denmark/Norway	0110	01111
1509872	Finland/Sweden	0111	01111
1509872	France	1000	01111
1509872	Italy	1001	01111
1509872	Japan	1010	01111
1509872	Portugal	1100	01111
1509872	Spain	1101	01111
1509872	Spanish-Speaking	1110	01111
1509872	United Kingdom	1111	01111

48 Characters OCR-AON

Part No.	Character Set	Language ID	Band Image
8630327	US, EBCDIC	0001	00100
8630328	Denmark/Norway	0110	00100
8630329	Finland/Sweden	0111	00100
8630349	France	1000	00100
8630330	Italy	1001	00100
8630332	Spanish Speaking	1110	00100
8630331	United Kingdom	1111	00100

48 Characters OCR-BON

Part No.	Character Set	Language ID	Band Image
8630341	US, EBCDIC	0001	00101
8630342	Denmark/Norway	0110	00101
8630343	Finland/Sweden	0111	00101
8630351	France	1000	00101
8630344	Italy	1001	00101
8630346	Japan	1010	00101
8630363	Katakana	nxx0	0101
8630345	United Kingdom	1111	00101

52 Characters OCR

Part No.	Character Set	Language ID	Band Image
8630333	Austria/Germany AON	0010	01010
8630347	Austria/Germany AON	0010	01011

Notes:

1. 0=OFF; 1=ON
2. Language ID switches 1 through 4 always remain off.
3. Band Image switches 1 through 3 always remain off.
4. When installing a print band, set the Band Image and Language ID Select switches for the new band; then press the Test key.

Appendix G. Glossary

abbreviated install. A process in which the object verification and damage correction part of CPF installation is done without replacing the previously installed version of CPF. Contrast with *normal install.*

abnormal termination. System termination by a means other than the successful execution of the Power Down System (PWRDWNSYS) command. See also *system termination* and *normal termination.*

access path. The means by which CPF provides a logical organization to the data in a data base file so that the data can be processed by a program. See also *arrival sequence access path* and *keyed sequence access path.*

ACF. See *Advanced Communications Function.*

address. (1) The location in the storage of a computer where particular data is stored. Also, the digits that identify such a location. (2) In data communications, the unique code assigned to each device or system work station connected to a network.

ADM. See *administrative management.*

administrative management. An IBM-supplied OFFICE/38 program that facilitates such common office tasks as the creation and maintenance of document logs, calendar, message-processing, and dictionary functions. Abbreviated ADM.

adopted authority. Object rights available to a user profile for the duration of the execution of a program that was created with the USRPRF(*OWNER) option.

Advanced Communications Function. A group of IBM products that use the concepts of SNA, including distribution of function and resource sharing. Abbreviated ACF.

Advanced Program-to-Program Communications. Data communications support that allows a System/38 to communicate with other systems having compatible communications support. APPC is the System/38 implementation of the SNA/SDLC LU6.2 protocol. Using APPC, System/38 can start programs on another system, or another system can start programs on the System/38.

AIPL. See *alternative initial program load.*

alphabetic character. Any one of the letters A through Z (uppercase and lowercase) or one of the characters #, $, or @.

alphameric. See *alphanumeric characters.*

alphameric character. Any one of the alphabetic characters, one of the digits 0 through 9, or the character _ (underscore) as defined in CPF.

Alt IMPL. See *alternative initial microprogram load.*

Alt IMPL Abbr. See *alternative initial microprogram load abbreviated.*

alternative initial microprogram load. The process of loading the System/38 microprogramming code from diskettes (rather than auxiliary storage) and then activating the code. Abbreviated Alt IMPL on the operator/service panel.

alternative initial microprogram load abbreviated. The process of loading the System/38 microprogramming code from a diskette (rather than auxiliary storage) and then activating the code to perform system startup, bypassing certain hardware tests. Abbreviated Alt IMPL Abbr on the operator/service panel.

alternative initial program load. A process, when combined with the IMPL sequence, that prepares the system for operation and installs CPF from diskette magazine or tape drive. Abbreviated AIPL on the operator/service panel.

APPC. See *advanced program-to-program communication.*

arrival sequence access path. An access path that is based on the order in which records are stored in a physical file. See also *keyed sequence access path* and *access path.*

authority. The right to access objects, resources, or functions. For example, in PS/38, the authority to view or work with another user's calendar.

autoanswer. See *automatic answer.*

autocall. See *automatic call.*

automatic answer. A machine feature that permits a station to respond to a call it receives over a switched line without operator action. Abbreviated autoanswer.

automatic call. A machine feature that permits a station to initiate a connection with another station over a switched line without operator action. Abbreviated autocall.

auxiliary storage. All addressable storage other than main storage. Auxiliary storage is located in the system's nonremovable disk enclosures.

base storage pool. A storage pool that contains all unassigned main storage on the system and whose minimum size is specified in the system value QBASPOOL. The system-recognized identifier is *BASE.

basic data exchange. A format for exchanging data on diskettes between systems or devices.

basic telecommunications access method. A non-System/38 access method that permits read/write communications with remote devices. Abbreviated BTAM.

BGU. See *business graphics utility.*

binary synchronous communications. A form of communications line control that uses transmission control characters to control the transfer of data over a communications line. Abbreviated BSC. Contrast with *Synchronous Data Link Control.*

bps. Bits per second.

BSC. See *binary synchronous communications.*

BSC 3270 device emulation. A System/38 control program that allows a System/38 to appear to a BSC host system as a 3271 control unit.

BTAM. See *basic telecommunications access method.*

business graphics utility. An IBM-supplied OFFICE/38 utility that provides a menu-driven means of using the System/38 chart functions without programming knowledge. Abbreviated BGU.

byte. A group of eight adjacent binary digits that represents one EBCDIC character.

CF key. See *command function key.*

CICS/VS. See *Customer Information Control System for Virtual Storage.*

CL. See *control language.*

CMS. See *conversational monitor system.*

code page ID. A 5-digit registered identifier used to specify a particular assignment of graphic characters to code points. On System/38, the code page ID is the second part of the QCHRID system value or the CHRID parameter value. See also *graphic character set ID.*

coded graphic character set ID. A 10-digit identifier (two 5-part identifiers separated by a space) that is the combination of graphic character set ID and code page ID. See also *graphic character set ID* and *code page ID.*

cold start. A process in which all noninstalled objects (CPF objects created by CPF after installation) are deleted and re-created as a group.

command. (1) A statement used to request a function of the system. A command consists of the command name, which identifies the requested function, and parameters. (2) In SNA, any field set in the transmission header (TH), request header (RH), and sometimes portions of a request unit that initiates an action or that begins a protocol.

command function key. At a work station, a keyboard key that is used with the command (CMD) function control key to request preassigned functions. At the system console, a keyboard key, called a CF key, that is used to request preassigned functions.

common carrier. A government or private company that furnishes the general public with telecommunication facilities. Examples are: the government-regulated telephone and telegraph companies in the USA, the General Post Office in the United Kingdom, the Bundespost in Germany, and Nippon Telephone and Telegraph Public Corporation (NTT) in Japan.

communications adapter. A hardware feature that enables System/38 to become part of a data communications network.

communications line. The physical link (such as a wire or a telephone circuit) that connects one or more work stations to a communications control unit, or connects one control unit to another. Contrast with *data link.*

compilation. Translation of a source program (such as RPG or COBOL specifications) into an executable program.

compile. To translate a source program into an executable program (an object).

compiler listing. A printout that is produced by compiling a program or creating a file and that optionally includes, for example, a line-by-line source listing, a cross-reference list, diagnostic information, and for programs, the description of externally described files. See also *source listing.*

completion message. A message that conveys completion status of work.

configuration. The arrangement of the machines, devices, and programs that make up a computer system.

control character. A character whose occurrence in a particular context initiates, modifies, or stops any operation that affects the recording, processing, transmission, or interpretation of data (such as carriage return, font change, and end of transmission). Contrast with *graphic character.*

control language. The set of all commands with which a user requests functions. Abbreviated CL.

control language program. An executable object that is created from source consisting entirely of control language commands.

Control Program Facility. The system support licensed program for System/38. It provides many functions that are fully integrated in the system such as work management, data base data management, job control, message handling, security, programming aids, and service. Abbreviated CPF.

control unit. Circuitry or a device that coordinates and controls the operation of one or more input/output devices (such as work stations) and synchronizes the operation of such devices with the operation of the system as a whole. Same as *controller.* Abbreviated CTL or CTLU.

control unit description. An object that contains a description of the features of a control unit that is either directly attached to the system or attached to a communications line. The system-recognized identifier for the object type is *CUD. Abbreviated CUD.

controller. See *control unit.*

controlling subsystem. An interactive subsystem that is started automatically when the system is started and through which the system operator controls the system. IBM supplies one controlling subsystem: QCTL.

conversational monitor system. A virtual machine operating system that provides general interactive time sharing, problem solving, and program development capabilities, and operates only under the control of the VM/370 control program. Abbreviated CMS.

Conversion Reformat Utility. A System/38 licensed program that allows a user to run System/3-style sort programs on System/38.

CPF. See *Control Program Facility.*

CPU. Central processing unit. See *processor.*

CTF. See *consumer transaction facility.*

CTL. See *control unit.*

CTLU. See *control unit.*

CUD. See *control unit description.*

cursor. A movable spot of light that shows where the next character will appear on the work station screen when a key on the keyboard is pressed.

Customer Information Control System for Virtual Storage. A non-System/38 program product that can be used in a communications network. Abbreviated CICS/VS.

data base file. An object that contains descriptions of how input data is to be presented to a program from internal storage and how output data is to be presented to internal storage from a program. See also *physical file* and *logical file.*

data communications. The transmission of data between systems and/or remote devices over a communications line.

data description specifications. A description of the user's data base or device files that is entered into the system using a fixed-form syntax. The description is then used to create files. Abbreviated DDS.

data file. Any nonsource file. A data file is created by the specification of FILETYPE(*DATA) on a create file command.

data file utility. The utility of the Interactive Data Base Utilities licensed program that is used to maintain and display records in a data base file. Abbreviated DFU.

data link. The communications lines, modems, control units, work stations, and other communications equipment used for the transmission of data between a receiving station and a transmitting station in a data network. Contrast with *communications line.*

DDM. See *Distributed Data Management.*

DDS. See *data description specifications.*

default reply. A system-assigned reply to an inquiry or notify message that is used when the message queue at which the message arrives is in default delivery mode.

default value. A value given by the system when no value has been specified.

DEVD. See *device description.*

device class. The generic name for a group of device types. For example, all display stations belong to the same device class. Contrast with *device type.*

device description. An object that contains information describing a particular device that is attached to the system. The system-recognized identifier for the object type is *DEVD. Abbreviated DEVD.

device file. An object that contains a description of how input data is to be presented to a program from an external device and/or how output data is to be presented to the external device from the program. External devices can be display stations, card devices, printers, diskette magazine drives, tape drives, or a communications line.

device name. The symbolic name of an individual device. The name is specified when the device is defined to the system by the Create Device Description (CRTDEVD) command.

DFU. See *data file utility.*

DHCF. See *distributed host command facility.*

DIA. See *document interchange architecture.*

DIA document distribution services. The set of services that enables office users to send and receive electronic mail.

diagnostic message. A message that contains information about errors in the execution of an application program or a system function.

digit. Any of the numerals from 0 through 9.

diskette location. The slot into which the diskette is inserted before being read or written.

diskette magazine drive. A diskette drive that can hold two magazines, each containing 10 diskettes, plus individual diskettes in three separate slots. It is used to transfer information between system internal storage and removable diskettes.

display. A visual presentation of information on a work station screen, usually in a specific format. Display is often used as a shortened version of information display. Sometimes called a screen.

display emulation. The part of 3270 emulation support that converts 3270 data streams into 5250 data streams and 5250 data streams into 3270 data streams, thereby allowing a 52xx display station to appear to the host as a 3277 display device.

display station. An input/output device containing a display screen and an attached keyboard that lets a user send information to or receive information from the system.

display station pass-through. A communications feature that allows a user to sign on to one system (either a System/38 or System/36) from another system (either a System/38 or System/36) and access that remote system's resources. Sometimes called pass-through.

Displaywriter user. A person who operates a Displaywriter with the Electronic Document Distribution licensed program to communicate with other office products.

Distributed Data Management (DDM). A program product that allows an application program or user on a source system to access data files on remote systems connected by a communications network that also uses DDM.

distributed host command facility. That part of a System/38 that helps to create the communication link between a System/370 terminal and a System/38 application. Abbreviated DHCF.

distribution services. The support provided by CPF to receive, route, and send distributions in a SNADS network.

Document Interchange Architecture. The specification of rules and a data structure that is necessary for the predictable, coherent exchange of information between application processes. Document interchange architecture includes document library services and document distribution services. Abbreviated DIA.

EBCDIC. Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters.

EDD. See *electronic document distribution.*

edit description. An object that contains a description of a user-defined edit code. The system-recognized identifier for the object type is *EDTD.

edit display. The display used to make changes to a source member or document by adding, changing, or removing text.

electronic document distribution. The name of an IBM program product that implements DIA on the Displaywriter system.

emulation program. A non-System/38 control program that allows a local 3704 or 3705 Communications Controller to emulate the function of an IBM 2701 Data Adapter Unit, an IBM 2702 Transmission Control, or an IBM 2703 Transmission Control. Abbreviated EP. See also *network control program.*

enter. To press the Enter/Rec Adv key (on a work station keyboard) or the Enter key (on the system console) or a command function key to transfer keyed-in information to the system for processing. See also *key in.*

EP. See *emulation program.*

escape message. A message that can be monitored for and that describes a condition for which a program terminates without completing the requested function.

execute. To cause a program, command, utility, or other machine function to be performed.

execution. The carrying out of the instructions of a computer program by a processing unit.

file. A generic term for the object type that refers to a data base file, a device file, or a set of related records treated as a unit. The system-recognized identifier for the object type is *FILE.

finance device. A device used for performing functions specifically related to the finance industry, such as the 4700 Finance Communications System devices and the 3694 Document Processor. The 3180, 3270, and 5250 work stations are not finance devices.

finance support. The System/38 program support that allows a System/38 to be used as a host to which finance devices can be attached.

first-level message. The initial message that is presented to the user. The initial message contains general information or designates an error. Contrast with *second-level message.*

function key. A keyboard key that is used to request a specific system function. See also *command function key.*

GDDM. See *graphical data display manager.*

general-purpose library. The library provided by CPF to contain user-oriented, IBM-provided objects and user-created objects that are not explicitly placed in a different library when they are created. Named QGPL.

generic name. The initial characters common to object names that can be used to identify a group of objects. A generic name ends with an * (asterisk). For example, ORD* identifies all objects whose names begin with the characters ORD.

graphic character set. A particular set of graphic characters in a code page.

graphic character set ID. A 5-digit registered identifier used to specify a graphic character set. On System/38, the code page ID is the first part of the QCHRID system value or the CHRID parameter value. See also *code page ID.*

graphical data display manager. A group of routines with API that allows pictures to be defined and displayed procedurally through graphics routines that correspond to graphics primitives. Abbreviated GDDM. Contrast with *presentation graphics routines.*

graphics. (1) The making of charts and pictures. (2) Pertaining to charts, tables, and their creation.

HASP. See *Houston automatic spooling program.*

HCF. See *host command facility.*

help text. Information that is associated with an information display, a menu, or a prompt that explains options or values displayed. Help text is requested by pressing the Help key.

hexadecimal. Pertaining to a numbering system with a base of 16. Valid numbers are the digits 0 through 9 and the characters A through F, where A represents 10 and F represents 15.

hexadecimal number. The 1-byte hexadecimal equivalent of an EBCDIC character.

high-level language. A programming language that relieves the programmer from the rigors of machine level or assembler level programming; for example, RPG III, CL, BASIC, PL/I, and COBOL. Abbreviated HLL.

high-speed line. A feature that allows a System/38 to communicate at speeds of up to 56 000 bits per second.

HLL. See *high-level language.*

host command facility. An IBM program product on a System/370 host system that enables a user on the System/370 to access applications on a System/38 or other systems. Abbreviated HCF.

host system. The controlling or highest level system in a data communications configuration. For example, a System/38 is the host system for the work stations connected to it.

Houston automatic spooling program. A non-System/38 computer program that provides supplementary job management, data management, and task management functions such as control of job flow, ordering of tasks, and spooling. Abbreviated HASP.

IDU. See *Interactive Data Base Utilities.*

IMPL. See *initial microprogram load.*

IMPL Abbr. See *initial microprogram load abbreviated.*

IMS/VS. See *Information Management System for Virtual Storage.*

independent work station. A work station that can operate independently of a host system, but that can also communicate with a host system. A Displaywriter is an example of an independent work station.

Information Management System for Virtual Storage. A non-System/38 program product that can be used in a communications network. Abbreviated IMS/VS.

informational message. A message that conveys information about the normal condition of a function.

initial microprogram load. The process that loads the system microprogram code from the system auxiliary storage, then checks system hardware and prepares system programming for user operations. Abbreviated IMPL.

initial microprogram load abbreviated. A shorter version of the IMPL sequence that bypasses certain hardware tests. Abbreviated IMPL Abbr.

initial program. A program, specified in a user profile, that is to be executed when the user signs on and the command processor program QCL is invoked. QCL invokes the initial program.

initialize. To set to a starting position or value.

inquiry message. A message that conveys information and that requests a reply.

intelligent work station. See *independent work station.*

interactive. Pertaining to a program or system that alternately accepts input and then responds. An interactive system is conversational; that is, a continuous dialog exists between the user and the system.

Interactive Data Base Utilities. A System/38 licensed program that consists of DFU, SEU, query, and SDA. Abbreviated IDU.

interactive subsystem. A subsystem in which interactive jobs are to be processed. IBM supplies three interactive subsystems: QCTL, QINTER, and QPGMR.

I/O port. System hardware that supports the attachment of I/O devices.

I/O slot. One of three locations in the diskette magazine drive where individual diskettes can be inserted for input/output operations. Same as *manual slot.*

IPDS. See *intelligent printer data stream.*

intelligent printer data stream. An all-points-addressable data stream that allows users to position text, images, and graphics at any defined point on a printed page. Abbreviated IPDS.

JES. See *Job Entry Subsystem.*

job. A single identifiable sequence of processing actions that represents a single use of the system. A job is the basic unit by which work is identified on the system. An example of a job is a user's interactive session.

Job Entry Subsystem. A host system (non-System/38) subsystem that receives jobs into the system and processes all output data produced by the jobs. Abbreviated JES.

job log. A record of requests submitted to the system by a job, the messages related to the requests, and the actions performed by the system on the job. The job log is maintained by CPF.

job queue. An object that contains a list of batch jobs submitted to the system for execution and from which the batch jobs are selected for execution by CPF. The system-recognized identifier for the object type is *JOBQ.

K. The primary unit of measure for storage capacity; 1 K = 1024 bytes.

K bytes. A unit of measure for bytes; 1 K byte = 1024 bytes.

key in. The action of pressing keys on a keyboard to specify information that is to be processed. See also *enter.*

keyed sequence access path. An access path to a data base file that is ordered according to the contents of key fields contained in the individual records. See also *arrival sequence access path* and *access path.*

label. The name of a file on a diskette or tape.

library. An object that serves as a directory to other objects. A library is used to group related objects and to find objects by name when they are used. The system-recognized identifier for the object type is *LIB. See also *text library, document library, archive,* and *filed document.*

library list. An ordered list of library names used to find an object. The library list indicates which libraries are to be searched and the order in which they are to be searched. The system-recognized identifier is *LIBL. *LIBL specifies to the system that a job's current library list is to be used to find the object.

licensed program. An IBM-written program that performs functions related to processing user data.

LIND. See *line description.*

line. See *communications line, multipoint line, nonswitched line, point-to-point line,* and *switched line.*

line description. An object that contains a description of a communications line to the system. The system-recognized identifier for the object type is *LIND. Abbreviated LIND.

listing. A printout usually containing the input and output of the compilation of a program, the creation (compilation) of an object, or the execution of a program. See also *compiler listing.*

load. To move data or programs into storage.

local work station. A work station that is connected directly to System/38 without need for data transmission facilities. Contrast with *remote work station.*

logical unit. In SNA, one of three types of network addressable units. It is a port through which a user accesses the SNA network in order to communicate with another user and through which the user accesses the functions provided by the system services control point. Abbreviated LU. See also *physical unit, system services control point, primary logical unit,* and *secondary logical unit.*

logical unit description. An MI object that is created as the result of executing the Create Device Description (CRTDEVD) command. Abbreviated LUD.

LU. See *logical unit.*

machine storage pool. A storage pool used by the machine and certain highly shared CPF programs and whose size is specified in the system value QMCHPOOL.

magazine. A container that holds up to 10 diskettes and is inserted into a diskette magazine drive.

manual answer. Operator actions to make a station ready when a station receives a call on a switched line.

manual call. Operator actions to make a connection with a station on a switched line.

manual slot. See *I/O slot.*

MB. See *megabyte.*

medium. The tape or diskette used to store information in a save or restore operation.

megabyte. A unit of measure for bytes.
1 megabyte = 1 048 576 bytes = 1K K bytes.

member. A description of a named subset of records in a physical or logical file. Each member conforms to the characteristics of the file and has its own access path. All I/O requests are directed to a specific member of a data base file.

menu. A display in which a list of options is shown.

message. A communication sent from one person or program to another person or program.

message description. The information describing a particular message. A message description is stored in a message file.

message queue. An object on which messages are placed when they are sent to a person or program. The system-recognized identifier for the object type is *MSGQ.

microcode. The instructions that provide the basic machine functions and support the machine interface.

modem. A mechanism that modulates and demodulates signals transmitted over data communications facilities.

MRJE. See *multi-leaving remote job entry.*

MTAM. See *multi-leaving telecommunications access method.*

multi-leaving remote job entry. The fully synchronized, two-directional transmission of a variable number of data streams between two computers using BSC facilities.

multi-leaving telecommunications access method. An access method that supports System/38 MRJE functions.

multifunction rotary switches. Two switches on the operator/service panel, each of which can be set to one of 16 different positions by rotating them in either a clockwise or counterclockwise direction.

Multiple Virtual Storage. An alternative name for OS/VS2. Abbreviated MVS. See also *operating system* and *virtual storage.*

multipoint line. A line or circuit interconnecting several stations. Contrast with *point-to-point line.*

MVS. See *Multiple Virtual Storage.*

NCP. See *network control program.*

network. Two or more systems that are connected via communication lines.

network control program. A non-System/38 program transmitted to and stored in a communications controller (such as the IBM 3704/3705) that controls the operations of that controller. Abbreviated NCP. See also *emulation program.*

next system table. In SNADS, a table identifying all the next systems connected to the local system.

node. One of the systems or devices in a network.

node ID. (1) In communications, a unique string of characters that identifies a node to your system. (2) In SNADS, a two-part name by which a node is known within a SNADS network.

node ID qualifier. In SNADS, the second part of a node ID.

nonswitched line. A connection between systems or devices that does not have to be made by dialing. Contrast with *switched line.*

normal install. A process in which the CPF contained on diskettes is installed in auxiliary storage, replacing the CPF (if any) that is currently in the system. Contrast with *abbreviated install.*

normal termination. System termination that results from the successful execution of the Power Down System (PWRDWNSYS) command. See also *abnormal termination* and *system termination.*

notify message. A message that describes a condition for which a program requires a reply from its caller, or a default reply is sent to the program.

numeric character. Any one of the digits 0 through 9.

object. A named unit that consists of a set of attributes (that describe the object) and, in some cases, data. An object is anything that exists in and occupies space in storage and on which operations can be performed. Some examples of objects are programs, files, and libraries.

object distribution. A function that allows a user to send source and data files, online save files, job streams, spooled files, and messages to another user, either locally or on a SNADS network.

object name. The name of an object. Contrast with *qualified object name.*

object type. The attributes that define the purpose of an object within the system. Each object type has associated with it a set of commands with which to process that type of object.

office product. An office-oriented program product that supports DIA. See also *OFFICE/38 Personal Services/38* and *electronic document distribution.*

OFFICE/38 Personal Services/38. An office-oriented program product written for the IBM System/38 that includes calendar scheduling, user directory/list support, document distribution, electronic mail, document retrieval, text editing, and administration.

offline. Pertaining to the operation of a functional unit that is not under the continual control of the system. Contrast with *online.*

online. Pertaining to the operation of a functional unit that is under the continual control of the system. Contrast with *offline.*

operating system. Non-System/38 computer programs that control the execution of programs; an operating system may provide services such as resource allocation, scheduling, input/output control, and data management. Abbreviated OS.

operator. See *system operator.*

operator/service panel. A panel located adjacent to the system console on the system unit. This panel contains lights and switches that are used primarily when the system is started or serviced.

OS. See *operating system.*

output. (1) Data that has been processed. (2) Data transferred from storage to an output device.

output queue. An object that contains a list of output files to be written to an output device by a writer. The system-recognized identifier for the object type is *OUTQ.

pass-through. See *display station pass-through.*

password. A unique string of characters that a system user enters to identify himself to the system. See also *personal document password.*

PC. See *programming change.*

Personal Services/38. See *OFFICE/38 Personal Services/38.*

Personal Services/38 administrator. An administrator for Personal Services/38.

physical unit. In SNA, one of three types of network addressable units. A physical unit exists in each node of an SNA network to manage and monitor the resources (such as attached links and adjacent link stations) of a node, as requested by an SSCP-LU session. Abbreviated PU.

PLU. See *primary logical unit.*

point-to-point line. A data link that connects a single remote station to a data processing system; it can be either switched or nonswitched. Contrast with *multipoint line.*

poll. To determine if any remote device on a communications line is ready to transmit data.

port. See *I/O port.*

primary logical unit. In SNA, the logical unit that contains the primary half-session for a particular LU-LU session. Abbreviated PLU. See also *logical unit.* Contrast with *secondary logical unit.*

primary node ID. In SNADS, the system name of a System/38. Contrast with *secondary node ID.*

print image. An object that contains a description of the print belt or train on a printer. The system-recognized identifier for the object type is *PRTIMG.

printer. A device that writes output data from a system on paper.

printer emulation. The part of 3270 emulation support that converts 3270 and SCS data streams intended for a 328x printer into data streams that can be recognized by a System/38 printer.

printer file. A device file created by the user to support a printer device.

problem determination. The process of determining the source of a problem as a component problem, a machine failure, a common carrier link, a user-supplied element, or a user error.

problem determination procedure. A prescribed sequence of steps taken to identify the source of a problem.

processing unit. See *processor.*

processor. The functional unit that interprets and executes instructions. Same as *CPU* and *processing unit.*

program. An object that contains a set of instructions that tell a computer where to get input, how to process it, and where to put the results. A program is created as a result of a compilation. The system-recognized identifier for the object type is *PGM.

programmer user profile. The CPF-supplied user profile that has the authority necessary for system and application programmers and the special authorities of save system rights and job control rights. Named QPGMR.

programming change. A modification to an IBM-supplied program. Abbreviated PC.

programming change log. A log of information about the application of program changes and patches to IBM products. Named QCHG.

programming service representative user profile. The CPF-supplied user profile that has the authority necessary for the programming service representative to service the system's programming and the special authorities of save system rights and job control rights. Named QPSR.

prompt. A displayed request for information or user action. The user must respond to allow the program to proceed.

PU. See *physical unit.*

public. The collection of all system users.

public authority. The authority to an object granted to all users.

QGPL. See *general-purpose library.*

qualified object name. An object name and the name of the library containing the object. Contrast with *object name.*

query. (1) A utility that is part of the Interactive Data Base Utilities licensed program. (2) A request to extract, from a file, one or more records based upon some combination of data.

queue. A line or list formed by items in the system waiting for service; for example, work to be performed or messages to be displayed. See also *output queue* or *message queue.*

receive time-out. For BSC, an indication that no data has been received by this communications adapter in a given period of time.

record. An ordered set of fields that make up a single occurrence of the basic unit of data transferred between a file and a program.

recovery. The act of resetting the system, or data stored in the system, to an operable state following damage.

recovery library. The library containing information related to recovery of data base operations from system failures. Named QRECOVERY.

remote device. A device whose control unit is connected to a System/38 through a data link.

remote entry services. In OS/VS1, the set of functions added to the Job Entry Subsystem (JES) that allows jobs and their associated data to be entered from remote devices (System/38), processed at the central system, and then transmitted back to the remote devices. Abbreviated RES.

remote equipment. The modem and control unit equipment that provides the communications connection between a communications line and a remote device or station. This remote equipment is at the other end of a data link from the host System/38. For System/38, the remote equipment could be partially or totally contained within a 5251 Model 2 or Model 12 work station/control unit.

Remote Job Entry Facility. A System/38 licensed program that provides a data link with a remote host system. Abbreviated RJEF.

Remote Spooling Communications Subsystem. The component of VM/370 that transfers spooled files between VM/370 users, remote stations (System/38), and remote and local batch stations through HASP-compatible telecommunications facilities. Abbreviated RSCS.

remote terminal access method. A non-System/38 facility that controls operations between the Job Entry Subsystems (JES2 and JES3) and remote work stations (System/38). Abbreviated RTAM.

remote work station. A work station whose connection to the processing system uses modems and common carrier or private data transmission facilities. Contrast with *local work station.*

RES. See *remote entry services.*

restore. To transfer data from tape or diskette to online storage. Contrast with *save.*

RJEF. See *Remote Job Entry Facility.*

RSCS. See *Remote Spooling Communications Subsystem.*

RTAM. See *remote terminal access method.*

save. To duplicate specific objects or libraries by transferring them from internal storage to magnetic media such as diskettes or tape. Contrast with *restore.*

save system rights. The authority to save all objects.

screen design aid. The utility of the Interactive Data Base Utilities licensed program that is used to interactively design, create, and maintain display record formats and menus. Abbreviated SDA.

SCS. See *SNA character string.*

SDA. See *screen design aid.*

SDLC. See *Synchronous Data Link Control.*

secondary logical unit. In SNA, the logical unit that contains the secondary half-session for a particular LU-LU session. Abbreviated SLU. See also *logical unit.* Contrast with *primary logical unit.*

secondary node ID. In SNADS, an alternative node ID that can be used to identify a System/38 in a SNADS network. See also *secondary node ID table.* Contrast with *primary node ID.*

secondary node ID table. In SNADS, the table containing all the node IDs that can be used to identify the local system for distributions arriving on the system.

second-level message. A message that provides additional information to that already provided in a first-level message. See also *second-level message display.*

second-level message display. A display containing the second-level message text (if any) and additional message information. This display is obtained by pressing the Help key while a first-level message is displayed.

security. The control of access to, or use of, data or functions.

security officer. The individual at an installation who is designated to control the authorization of functions and data in System/38.

security officer user profile. The CPF-supplied user profile that has authority to control the authorization of functions and data used in the installation. Named QSECOFR.

service library. The library provided in CPF that is used temporarily for loading IBM-supplied programming changes and assembling data for APAR submission. Named QSRV.

SEU. See *source entry utility.*

sign off. To enter a command or to select an option from a menu at a work station that instructs the system to end an interactive job.

sign on. To enter a password that identifies the user to the system and instructs the system to establish an interactive job at a work station.

simple object name. Same as *object name.*

single-level sign-on. A method to gain access to the System/38 requiring a password. Contrast with *two-level sign-on.*

slot. See *I/O slot.*

SNA. See *Systems Network Architecture.*

SNA character string. In SNA, a data stream composed of EBCDIC controls, optionally intermixed with end-user data, which is carried within a request/response unit. Abbreviated SCS.

SNA distribution services. An IBM architecture that defines a set of rules and protocols used to receive, route, and send distributions in a network of systems. Abbreviated SNADS.

SNA network. In SNA, the part of the user application network that conforms to the formats and protocols of SNA. The SNA network consists of network addressable units, boundary function components, and the path control network.

SNA remote job entry. The portion of RJEF that allows the user to communicate with a host system in an SNA environment.

SNA 3270 device emulation. A System/38 control program that allows a System/38 to appear as an SNA 3274 Control Unit.

SNADS. See *system network architecture distribution services.*

SNADS network. A communications network connecting two or more systems that communicate with each other using SNA distribution services (SNADS).

source. In advanced program-to-program communications, the system or program that starts jobs on another system.

source entry utility. The utility of the Interactive Data Base Utilities licensed program that is used to create and change source members. Abbreviated SEU.

source listing. A portion of a compiler listing that contains source statements and, optionally, diagnostics. See also *compiler listing.*

source program. A set of instructions, written in a programming language such as RPG or COBOL, that represents a particular job as defined by a programmer. A source program is used as input to the compiler to create an executable program.

spelling aid dictionary. A list of words used to verify word choice and verify and correct spelling when the document spelling check function is invoked, and to provide hyphenation points for words when the automatic hyphenation function is used. A number or dictionaries are available with the system, such as United States English and United Kingdom English, but users may create their own permanent user dictionary using the CRTSPADCT (Create Spelling Aid Dictionary) command.

spooled file. A generic term for three types of files: a device file that provides access to an inline data file or that creates a spooled output file, an inline data file, or a spooled output file.

spooling. The CPF-provided execution-time support that reads and writes input and output streams on an intermediate device in a format convenient for later processing or output.

spooling subsystem. A subsystem that provides the operating environment needed by the CPF programs that read jobs onto job queues and write files from the output queues. IBM supplies one spooling subsystem: QSPL.

SRJE. See *SNA remote job entry.*

SSCP. See *system services control point.*

SSCP ID. In SNA, a number uniquely identifying a system services control point. The SSCP ID is used in activation requests sent to physical units and other system services control points.

status message. A message that describes the status of the work done by a program.

subsystem. An operating environment, defined by a subsystem description, through which CPF coordinates work flow and resource usage.

subsystem attributes. Specifications in a subsystem description that specify the amount of main storage available to the subsystem and the number of jobs that can execute concurrently in the subsystem.

subsystem description. An object that contains information defining a subsystem and that CPF uses to control the subsystem. The system-recognized identifier for the object type is *SBSD.

switched line. A connection between two stations that is established by dialing. Contrast with *nonswitched line.*

Synchronous Data Link Control. A discipline conforming to subsets of the Advanced Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-level Data Link Control (HDLC) of the International Standards Organization (ISO), for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. Abbreviated SDLC. Contrast with *binary synchronous communications.*

system console. The keyboard and display screen on the system unit that serve as a work station for communicating with and controlling the system. See also *operator/service panel* and *work station.*

system date. The date established for the system when it is started.

system library. The library provided by CPF to contain system-oriented objects provided as part of CPF. Named QSYS.

system operator. The person who operates the system and looks after the peripheral equipment necessary to initiate computer runs or finalize the computer output in the form of completed reports and documents.

system operator message queue. The message queue used by the system operator to receive and reply to messages from the system, work station users, and application programs. Named QSYSOPR.

system operator user profile. The CPF-supplied user profile that has the authority necessary for the system operator and the special authorities of save system rights and job control rights. Named QSYSOPR.

system services control point. In SNA, a network addressable unit that provides configuration, maintenance management, and session services through sessions with physical units, logical units, and other system services control points. Abbreviated SSCP.

system termination. The state in which all processing on the system is stopped. Depending on the cause of the termination, system power could be shut off (such as by a power interruption or by entering the Power Down System (PWRDWNSYS) command) or could remain on (such as caused by a machine error condition). See also *abnormal termination* and *normal termination.*

system time. The elapsed time from the point where the system was started to the current time. If the system time is changed to the local time when the system is started, the current system time is the local time of day.

system unit. The main unit of the system, which contains the processing unit, the system console keyboard/display, the operator/service panel, the diskette magazine drive, main storage, auxiliary storage, the work station controller, and the communications subsystem.

system value. A value that contains control information for the operation of certain parts of the system. A user can change the system default value to tailor the system to his working environment. System date and library list are examples of system values.

Systems Network Architecture. The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of Systems Network Architecture networks. Abbreviated SNA. **Note:** The layered structure of SNA allows the ultimate origins and destinations of information (that is, the end users) to be independent of, and unaffected by, the specific SNA network services and facilities used for information exchange.

target. In advanced program-to-program communications, the program or system to which a request for processing is directed.

TCAM. See *telecommunications access method.*

telecommunications access method. A non-System/38 access method used to transfer data between main storage and terminals (local or remote). Abbreviated TCAM.

temporary library. A library that is automatically created for each job to contain temporary objects that are created by that job. The objects in the temporary library are deleted when the job ends. Named QTEMP.

terminal. In data communications, same as *work station.*

termination. The act of putting the system or an element of the system (such as CPF or a subsystem) in the state where it no longer performs its normal function. See also *system termination.*

time-sharing option. An option on the operating system for a System/370 that provides interactive time sharing from remote terminals.

translate table. An object that contains a set of hexadecimal characters used to translate one or more characters of data. For example, unprintable characters can be translated to blanks, and lowercase alphabetic characters can be translated to uppercase characters. The system-recognized identifier for the object type is *TBL.

tributary station. A secondary device on a multipoint line.

TSO. See *time-sharing option.*

two-level sign-on. A method to gain access to the System/38 that requires a password and a user ID (user profile name). Contrast with *single-level sign-on.*

uninterruptible power supply. A buffer between the utility power (or other power source) and machine that requires uninterrupted, precise power. Abbreviated UPS.

unit-of-work. In advanced program-to-program communications, the amount of processing that is initiated directly or indirectly by a source program.

unit-of-work identifier. In advanced program-to-program communications, a unique label assigned to the unit-of-work. The ID is established when the source program is started and is carried through to each of the target jobs as they are started. The unit-of-work identifier provides an end-to-end audit trail within an APPC network.

user. The ultimate source or recipient of information flowing through a distribution system.

user password. A unique string of characters that a system user enters to identify himself to the system.

user profile. An object that contains a description of a particular user or group of users. A user profile contains a list of authorizations to objects and functions. The system-recognized identifier for the object type is *USRPRF.

vary off. To make a device, control unit, or line unavailable for its normal intended use.

vary on. To make a device, control unit, or line available for its normal intended use.

virtual device. A device description that does not have physical hardware associated with it. It is used to form a connection between a user and a physical work station attached to a remote system. A virtual device can be a virtual work station or a virtual work station printer. See also *virtual work station controller.*

virtual machine. A functional simulation of a computer and its associated devices. Each virtual machine is controlled by a suitable operating system (see, for example, *conversational monitor system*). VM/370 controls the concurrent execution of multiple virtual machines on a single System/370.

virtual storage. The combination of main storage and auxiliary storage, treated as a single addressable unit. Abbreviated VS.

virtual work station controller. A work station controller that has the property of a locally attached work station controller but does not occupy an operational unit number on the hardware. See also *virtual device.*

volume. A storage medium that is mounted and demounted as a unit; for example, magnetic tape or diskette.

VS. See *virtual storage.*

VTAM. See *virtual telecommunications access method.*

work station. A device that lets a person transmit information to or receive information from a computer as needed to perform his job.

work station controller. A device in the system unit that provides for a direct connection of local work stations to the system.

work station entry. A work entry in a subsystem description that specifies the work stations from which users can sign on to the subsystem or from which interactive jobs can transfer to the subsystem.

work station user. A person who uses a work station to communicate with System/38.

work station user profile. The CPF-supplied user profile that has the authority necessary for work station users. Named QUSER.

X.25. In data communications, a specification of the CCITT that defines the interface to an X.25 (packet-switching) network.

X.25 feature. The feature that allows System/38 to connect to an X.25 network.

3180 display station. Any display station that is a member of the IBM 3180 Information Display System.

3270 display station. Any display station that is a member of the IBM 3270 Information Display System.

3270 emulation. The System/38 program support that allows a System/38 to appear as a 3271 Control Unit in a BSC multipoint network or as a 3274 Control Unit in an SDLC/SNA network. See also *device emulation, display emulation*, and *printer emulation.*

5250 display station. Any display station that is a member of the IBM 5250 Information Display System, or the 3180 Information Display System. The system console is not a 5250 display station, and a 3270 display station is not a 5250 display station.

Appendix W. Blank Work Sheets

This appendix includes one blank work sheet of each type, in alphabetical order. You can copy these blank work sheets (before filling them out) when planning your device configuration.

The following is a list of the work sheets in this appendix:

- BSC Control Unit with RJEF
- BSC Control Unit without RJEF
- BSC Device with RJEF
- BSC Device without RJEF
- BSC Line with RJEF
- BSC Line without RJEF
- BSCT Control Unit with 3270 Emulation
- BSCT Control Unit without 3270 Emulation
- BSCT Device with 3270 Emulation
- BSCT Device without 3270 Emulation
- BSCT Line with 3270 Emulation
- BSCT Line without 3270 Emulation
- Card Device
- Device Mode Entry
- Diskette Magazine Drive
- Finance Device
- IBM 5251 Model 12 Communications Network Setup Form
- IBM 5294 Control Unit Setup Form
- Local Work Station Configuration Work Sheet
- Local Work Station Controller

- Magnetic Tape Control Unit
- Magnetic Tape Drive
- Peer Device
- PLU1 Device
- Remote Work Station Configuration Work Sheet
- RJE Configuration Work Sheet
- SDLC Finance Control Unit
- SDLC Peer Control Unit
- SDLC PU2 Control Unit
- SDLC Primary Line
- SDLC Secondary Line
- SDLC 3270 Control Unit
- SDLC 5250 Control Unit
- System Printer
- Virtual Display Station
- Virtual Work Station Configuration Work Sheet
- Virtual Work Station Controller
- Virtual Work Station Printer
- X.25 Communications Network Line
- X.25 Finance Control Unit
- X.25 Peer Control Unit
- X.25 PU2 Control Unit
- X.25 3270 Control Unit
- X.25 5250 Control Unit
- 3270 Communications Network Setup Form
- 3270 DHCF Remote Display Station

- 3270 Remote Display Station
- 3270 Remote Work Station Printer
- 5250 and 3180 Display Station
- 5250 Work Station Printer

BSC CONTROL UNIT WITH RJEF (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (*BSC).	R	TYPE	*BSC
Model number of the control unit (0).	R	MODEL	0
Address of the control unit:	R	CTLADR	_____
Type of Line **Entry** Nonswitched point-to-point: 00xx, where xx = LINNBR parameter value from CRTLIND work sheet Switched: 0000			
Attached to a switched line (*NO or *YES).		SWITCHED	_____
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	_____
The modem has the data rate select feature (*NO or *YES).		SELECT	_____
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	_____
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	_____
Local identifier (2 to 15 characters) used to identify your System/38 to a remote BSC control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		LCLID	_____
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	_____ _____ _____ _____ _____
(Use additional sheets if necessary.)			_____
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____

BSC CONTROL UNIT WITH RJEF (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.	LINLST	_____ _____ _____ _____ _____ _____
The modem has the switched network (dial) backup feature (*NO or *YES).	SWNBKU	_____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name of the device to be attached to this control unit (only one when TYPE(*BSC) is specified). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create a device description for the communications device, and you reference this control unit through the CTLU parameter, the device names is automatically inserted in the DEV parameter for this control unit.	DEV	_____
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	DEVDLY	_____
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	PGMDLY	_____
This control unit description is to be used by the Remote Job Entry Facility (RJEF) (*NO or *YES).	RJE	*YES
The subsystem type of the host system to which RJEF is connected (*RES, *JES2, *JES3, or *RSCS).	RJEHOST	_____
The sign-on for the RJEF host system (BSC logon or sign-on text). No more than 80 characters, enclosed in apostophes. 0 10 20 30 40 40 50 60 70 80	RJELOGON	_____
Link protocol and role for the remote controller (*BSC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSC.	LINKTYPE	*BSC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

BSC CONTROL UNIT WITHOUT RJEF (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (*BSC).	R	TYPE	*BSC
Model number of the control unit (0).	R	MODEL	0
Address of the control unit:	R	CTLADR	_____
Type of Line **Entry** Nonswitched point-to-point: 00xx, where xx = LINNBR parameter value from CRTLIND work sheet Switched: 0000			
Attached to a switched line (*NO or *YES).		SWITCHED	_____
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	_____
The modem has the data rate select feature (*NO or *YES).		SELECT	_____
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	_____
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	_____
Local identifier (2 to 15 characters) used to identify your System/38 to a remote BSC control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		LCLID	_____
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	_____
			_____
			_____
			_____
			_____
(Use additional sheets if necessary.)			_____
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____

BSC CONTROL UNIT WITHOUT RJEF (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.	LINLST	_____ _____ _____ _____ _____ _____
The modem has the switched network (dial) backup feature (*NO or *YES).	SWNBKU	_____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one when TYPE(*BSC) is specified). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create an individual device description for a communications device, and you reference this control unit through the CTLU parameter, the device name is automatically inserted in the DEV parameter for this control unit.	DEV	_____
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	DEVDLY	_____
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).	PGMDLY	_____
This control unit description is to be used by the Remote Job Entry Facility (RJEF) (*NO or *YES).	RJE	*YES
The subsystem type of the host system to which RJEF is connected (*NONE, *RES, *JES2, *JES3, or *RSCS).	RJEHOST	*NONE
The sign-on for the RJEF host system (*NONE, BSC logon, or sign-on text). No more than 80 characters, enclosed in apostophes. 0 10 20 30 40 |*NONE|_____|_____|_____|_____|_____|_____|_____| 40 50 60 70 80 |_____|_____|_____|_____|_____|_____|_____|_____|	RJELOGON	_____
Link protocol and role for the remote controller (*BSC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSC.	LINKTYPE	*BSC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	
_____ _____		

BSC DEVICE WITH RJEF
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	
Physical address of the device:	R	DEVADR	

Type of Connection **Entry**

Switched — xxyyzz

- zz — Operational unit number (00)
- yy — Controller station address (always 00)
- xx — One of the following:

01 = Console input	11 = Reader 1	21 = Printer 1	31 = Punch 1
02 = Console output	12 = Reader 2	22 = Printer 2	32 = Punch 2
	13 = Reader 3	23 = Printer 3	33 = Punch 3
	14 = Reader 4	24 = Printer 4	34 = Punch 4
	15 = Reader 5	25 = Printer 5	35 = Punch 5
	16 = Reader 6	26 = Printer 6	36 = Punch 6
	17 = Reader 7	27 = Printer 7	37 = Punch 7

Nonswitched point-to-point — xxyyzz

- zz — Operational unit number (LINNBR parameter from CRTLIND work sheet)
- yy — Controller station address (always 00)
- xx — One of the following:

01 = Console input	11 = Reader 1	21 = Printer 1	31 = Punch 1
02 = Console output	12 = Reader 2	22 = Printer 2	32 = Punch 2
	13 = Reader 3	23 = Printer 3	33 = Punch 3
	14 = Reader 4	24 = Printer 4	34 = Punch 4
	15 = Reader 5	25 = Printer 5	35 = Punch 5
	16 = Reader 6	26 = Printer 6	36 = Punch 6
	17 = Reader 7	27 = Printer 7	37 = Punch 7

Device type (*BSC).	R	DEVTYPE	*BSC
Device model (1).	R	MODEL	1
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

BSC DEVICE WITHOUT RJEF
(CRTDEVD command)

Description			Parameter	Entry
Name of the remote communications device.		R	DEVD	
Physical address of the device:		R	DEVADR	
Type of Connection	**Entry**			
Switched	000000			
Nonswitched point-to-point	0000xx, where xx = LINNBR parameter from CRTLIND work sheet			
Device type (*BSC).		R	DEVTYPE	*BSC
Device model (0).		R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.			CTLU	
The device is to be varied online when CPF is started (*NO or *YES).			ONLINE	
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (*PRIM or *SEC).			CONT	
Name of the message queue to which operational messages should be sent.			MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).			PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)			TEXT	

BSC LINE WITH RJEF (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	_____
Number that identifies the line:						R	LINNBR	____
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSC).						R	TYPE	*BSC
Type of line connection:						R	CNN	_____
Connection Type		**Entry**						
Switched		*SWT						
Nonswitched point-to-point		*PP						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	_____
The modem has the data rate select feature (*NO or *YES).							SELECT	_____
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	_____
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOCALL	_____
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOANS	_____
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).							ANSTONE	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: ____ Backup: ____	
Data communications equipment group (*A, *B, or *C).							DCEGRP	____
Non-IBM modem is used (*NO or *YES).							OEMMDM	_____
Types of calls for which the line is to be used:							SWTCNN	_____
Type		**Entry**						
Both incoming and outgoing calls		*BOTH						
Incoming calls only		*ANS						
Outgoing calls only		*CALL						
The speed at which the line operates (*FULL or *HALF).							RATETYPE	_____
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							DIALMODE	_____
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							ANSMODE	_____

BSC LINE WITH RJEF (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (only one when TYPE(*BSC) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of the control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
Valid only for switched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units that can be attached to this line (up to 8). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, ignore the SWTCTLU parameter when first creating the line. Then create control unit(s) that reference this line (through the LINE parameter). Then, you must use the CHGLIND command to enter the names in the SWTCTLU parameter. Valid only if CNN(*SWT) or SWNBKU(*YES) is specified.	SWTCTLU	_____ _____ _____ _____ _____ _____ _____
(Use additional sheets if necessary.)		_____
BSC line code (*EBCDIC or *ASCII). For RJEF, must be *EBCDIC.	CODE	*EBCDIC
This line description is to be used by the Remote Job Entry Facility (*NO or *YES).	RJE	*YES
An inactive switched line should be disconnected (*YES or *NO).	BSCSWTDSC	_____
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

BSC LINE WITHOUT RJEF (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	_____
Number that identifies the line:						R	LINNBR	____
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSC).						R	TYPE	*BSC
Type of line connection:						R	CNN	_____
Connection Type		**Entry**						
Switched		*SWT						
Nonswitched point-to-point		*PP						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	_____
The modem has the data rate select feature (*NO or *YES).							SELECT	_____
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	_____
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOCALL	_____
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOANS	_____
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).							ANSTONE	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: ____ Backup: ____	
Data communications equipment group (*A, *B, or *C).							DCEGRP	____
Non-IBM modem is used (*NO or *YES).							OEMMDM	_____
Types of calls for which the line is to be used:							SWTCNN	_____
Type		**Entry**						
Both incoming and outgoing calls		*BOTH						
Incoming calls only		*ANS						
Outgoing calls only		*CALL						
The speed at which the line operates (*FULL or *HALF).							RATETYPE	_____
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							DIALMODE	_____
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							ANSMODE	_____

BSC LINE WITHOUT RJEF (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name of the control unit to be attached to this line (only one when TYPE(*BSC) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of that control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
Valid only for switched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units that can be attached to this line (up to 8). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, ignore the SWTCTLU parameter when first creating the line. Then create control unit(s) that reference this line (through the LINE parameter). Then, you must use the CHGLIND command to enter the names in the SWTCTLU parameter. Valid only if CNN(*SWT) or SWNBKU(*YES) is specified.	SWTCTLU	_____
(Use additional sheets if necessary.)		_____
BSC line code (*EBCDIC or *ASCII).	CODE	_____
This line description is to be used by the Remote Job Entry Facility (*NO or *YES).	RJE	*NO
An inactive switched line should be disconnected (*YES or *NO).	BSCSWTDSC	_____
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

BSCT CONTROL UNIT WITH 3270 EMULATION
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*BSCT).	R	TYPE	*BSCT
Model number of the control unit (0).	R	MODEL	0
Address of the control unit (xxyy, where xx = STNADR parameter from CRTLIND work sheet and yy = LINNBR parameter value from CRTLIND work sheet).	R	CTLADR	
Name of the nonswitched line to which this control unit is attached.		LINE	
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	
(Use additional sheets if necessary.)			
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 32 emulation devices). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	
(Use additional sheets if necessary.)			
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		DEVDLY	
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		PGMDLY	
This control unit description is to be used for 3270 emulation (*NO or *YES).		EML3270	*YES
Link protocol and role for the remote controller (*BSCT or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSCT.		LINKTYPE	*BSCT
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

BSCT CONTROL UNIT WITHOUT 3270 EMULATION
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*BSCT).	R	TYPE	*BSCT
Model number of the control unit (0).	R	MODEL	0
Address of the control unit (xxyy, where xx = STNADR parameter from CRTLIND work sheet and yy = LINNBR parameter value from CRTLIND work sheet).	R	CTLADR	
Name of the nonswitched line to which this control unit is attached.		LINE	
List of identifiers (2 to 15 characters each; maximum of 32 identifiers; can be *ANY or *NOID) used to identify remote BSC control units to your System/38.		RMTID	
(Use additional sheets if necessary.)			
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 24 BSCT logical sessions). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	
(Use additional sheets if necessary.)			
Number of seconds the system will continue receiving BSC WACK sequences or TTD sequences due to remote device delays. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		DEVDLY	
Number of seconds the system will continue to send WACKs or TTD sequences due to delays cause by application program issuing READ or WRITE requests. Default is 120 seconds. A value of 999 means indefinite (delay is not ended by this parameter).		PGMDLY	
This control unit is to be used for 3270 emulation (*NO or *YES).		EML3270	*NO
Link protocol and role for the remote controller (*BSCT or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *BSCT.		LINKTYPE	*BSCT
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

BSCT DEVICE WITH 3270 EMULATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

xxyyzz
- zz — LINNBR parameter value from CRTLIND work sheet
- yy — STNADR parameter value from CRTLIND work sheet
- xx — One of the following:

40	C6	4C	D2	D8	5E
C1	C7	4D	D3	D9	5F
C2	C8	4E	D4	5A	
C3	C9	4F	D5	5B	
C4	4A	50	D6	5C	
C5	4B	D1	D7	5D	

Device type (*BSCT).	R	DEVTYPE	*BSCT
Device model (1).	R	MODEL	1
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	_____
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (for 3270 emulation, must be *SEC).		CONT	*SEC
Type of 327x device to be emulated (3277, 3284, 3286, or 3288; default is 3277).		EMLDEVTYP	_____
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Used only for EMLDEVTYP(3277).		EMLKBDTYP	_____
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
Name of the message queue to which operational messages should be sent.		MSGQ	_____
			_____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

_____

_____

BSCT DEVICE WITHOUT 3270 EMULATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	
Physical address of the device:	R	DEVADR	

xxyyzz
- xx — Any 2 hexadecimal characters (0-1 and A-F) other than the following:

01	26
02	2D
03	32
10	37
1D	3D
1F	

- yy — STNADR parameter value from CRTLIND work sheet
- zz — LINNBR parameter value from CRTLIND work sheet

Device type (*BSCT).	R	DEVTYPE	*BSCT
Device model (0).	R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	
Specifies whether your System/38 is primary or secondary for contention on point-to-point lines (*PRIM or *SEC).		CONT	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

BSCT LINE WITH 3270 EMULATION (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	_____
Number that identifies the line:						R	LINNBR	____
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSCT).						R	TYPE	*BSCT
Type of line connection:						R	CNN	_____
Connection Type		**Entry**						
Nonswitched point-to-point		*PP						
Nonswitched multipoint		*MP (not valid for TYPE(*BSC))						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	_____
The modem has the data rate select feature (*NO or *YES).							SELECT	_____
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: Backup:	 ____ ____
Data communications equipment group (*A, *B, or *C).							DCEGRP	____
Non-IBM modem is used (*NO or *YES).							OEMMDM	_____
The speed at which the line operates (*FULL or *HALF).							RATETYPE	_____

BSCT LINE WITH 3270 EMULATION (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name of the control unit to be attached to this line (only one when 3270 emulation is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of that control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. Must be 01-FE. If EML3270(*YES) is specified, should be one of the following: 40 C6 4C D2 D8 5E C1 C7 4D D3 D9 5F C2 C8 4E D4 5A C3 C9 4F D5 5B C4 4A 5D D6 5C C5 4B D7 D7 5D	STNADR	_____
Line code (*EBCDIC or *ASCII).	CODE	_____
This line description is to be used for 3270 emulation (*NO or *YES). Valid only for TYPE(*BSCT).	EML3270	*YES
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

BSCT LINE WITHOUT 3270 EMULATION (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	_____
Number that identifies the line:						R	LINNBR	____
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*BSCT).						R	TYPE	*BSCT
Type of line connection:						R	CNN	_____
Connection Type		**Entry**						
Nonswitched point-to-point		*PP						
Nonswitched multipoint		*MP (not valid for TYPE(*BSC))						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	_____
The modem has the data rate select feature (*NO or *YES).							SELECT	_____
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: Backup:	 ____ ____
Data communications equipment group (*A, *B, or *C).							DCEGRP	____
Non-IBM modem is used (*NO or *YES).							OEMMDM	_____
The speed at which the line operates (*FULL or *HALF).							RATETYPE	_____

BSCT LINE WITHOUT 3270 EMULATION (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name of the control unit to be attached to this line (only one when TYPE(*BSCT) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of that control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. Must be 01-FE.	STNADR	_____
Line code (*EBCDIC or *ASCII).	CODE	_____
This line description is to be used for 3270 emulation (*NO or *YES). Valid only for TYPE(*BSCT).	EML3270	*NO
The authority for this line to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

CARD DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the card device.	R	DEVD	QCARD96
Physical address of the device (000019).	R	DEVADR	000019
Device type (5424).	R	DEVTYPE	5424
Device model (A1, A2, K1, K2, or K3).	R	MODEL	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

DEVICE MODE ENTRY
(ADDDEVMODE command)

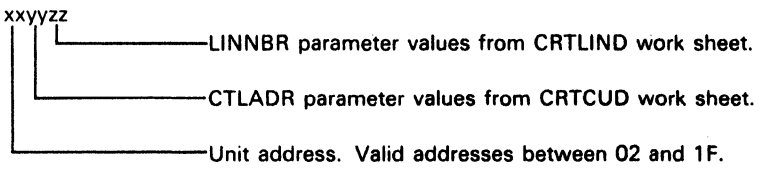
Description		Parameter	Entry
Name of the device.	R	DEVD	_____
Mode name (up to 8 characters; A-Z, 0-9, $, #, and @; first character cannot be 0-9; SNASVCMG not valid).	R	MODE	_____
Maximum number of sessions (1-494; default is 2).		MAXSSN	____
Number of prebound sessions (1-494; default is 1).		PREBNDSSN	____
Maximum source sessions (0-247; default is 1).		MAXSRCSSN	____
Maximum conversations (1-494; default is 2).		MAXCNV	____
Inbound pacing value (0-63; default is 7).		INPACING	____
Outbound pacing value (0-63; default is 7).		OUTPACING	____
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	____

DISKETTE MAGAZINE DRIVE
(CRTDEVD command)

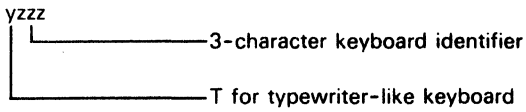
Description		Parameter	Entry
Name of the diskette magazine drive (QDKT).	R	DEVD	QDKT
Physical address of the device (000012).	R	DEVADR	000012
Device type (72MD).	R	DEVTYPE	72MD
Device model (1001).	R	MODEL	1001
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Type of data error and number of times the system should attempt to recover. (Type must be 1 (for read errors); times can be 40-80 (40 is default).)		RETRY Type: Times:	
Type of data error and error threshold values to retry before logging the error. (Type must be 1 (for read errors); threshold can be 1-100 (50 is default).)		THRESHOLD Type: Threshold:	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

FINANCE DEVICE
(CRTDEVD command)

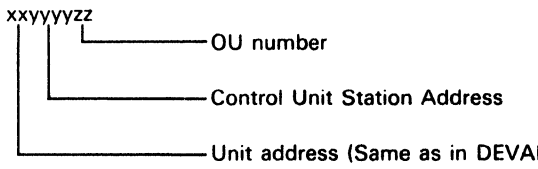
Description		Parameter	Entry
Name of the display station. (See the appropriate *SDLC Finance Control Unit Work Sheet.*)	R	DEVD	
Physical address of the device:	R	DEVADR	



Device type (4704, 3624, 3694). Specify 3694 only with 3694 control unit. Device type (3277, 3278, 3279, 3287). with 3270 emulation.	R	DEVTYPE	
Device model (*NONE).	R	MODEL	*NONE
Name of associated finance control unit control unit. (See the appropriate *Finance Control Unit Work Sheet.*)		CTLU	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	
Type of keyboard (required only for certain keyboard types; see *CL Reference Manual*).		WSCKBD	

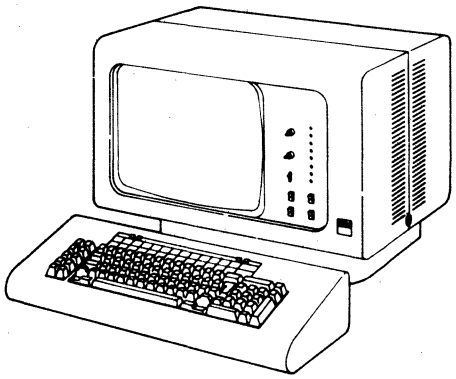


Application program is to control blinking cursor (*YES or *NO).		ALWBLN	
Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).		MAXLENRU	
Physical address for SNA device attached to an X.25 network:		NETDEVADR	



The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE). Specify *NONE to restrict access to this device.		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

IBM 5251 MODEL 12 COMMUNICATIONS NETWORK SETUP FORM (PART 1)



5251 MODEL 12 DISPLAY STATION

5251 Model 12 Information

Name _____

Location _____

City, State _____

Telephone _____

Host System Line/Port Number _____

Location _____

Telephone _____

Device Type _____

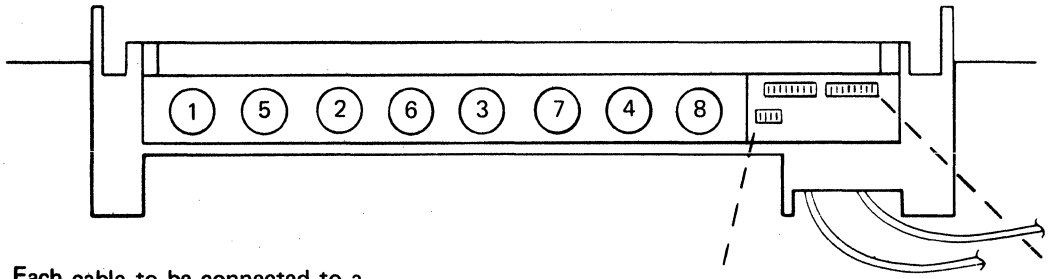
Controller Station Address _____

Unit Address ____ 00 _____

Work Station Address ____0 _____

Communications Type _____

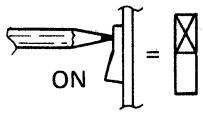
CSR assistance required for communications line connection? Yes ☐ No ☐

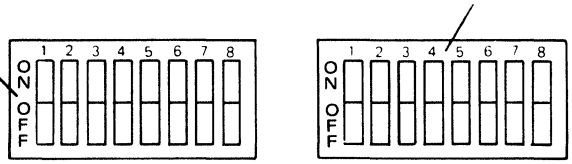


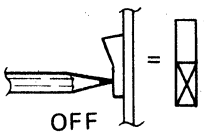
Each cable to be connected to a 5251 Model 12 port should have a tag with a number from 1 through 8. There should be a cable for each port used as indicated on Part 2 of this form. Connect each cable to the port indicated on its tag.

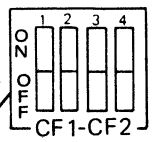
Controller Station Address Switches

Communications Line Configuration Switches









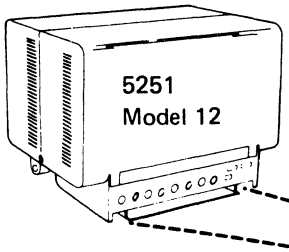
Cluster Feature Port Switches

Set all of the switches to their indicated settings. (Switch settings should be indicated on the diagram by an X in the on or off position.) Use the tip of a pencil to push in the upper half (on position) or lower half (off position) of the switches as indicated.

Note: If your 5251 Model 12 does not have ports, the Cluster Feature Port switches have no function and can be disregarded.

IBM 5251 MODEL 12 COMMUNICATIONS NETWORK SETUP FORM (PART 2)

Note: Set the address on your work station to your assigned work station address as shown in each box.



Cluster Feature

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Ports

1
5
2
6
3
7
4
8

With Dual Cluster Feature

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

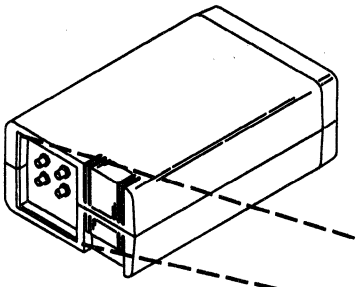
Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

Name	
Device Type	
Location	
Work Station Address	
Unit Address	
Telephone	

IBM 5294 CONTROL UNIT SETUP FORM (PART 1)

5294 Control Unit Information

Name _____
Location _____
City, State _____
Telephone _____
System Line/Port Number _____
Location _____
Telephone _____
Communications Type _____
Communications Mode [SDLC] [X.25] [X.21 SW]
CSR assistance required for communications line connection? [Yes] [No]



Ports: ② ③ ⓪ ①

Name		Socket 1
Device Type		
Location		
Work Station Address		
Unit Address		
Keyboard Code		
Telephone		Socket 2

Socket 1	Name	
	Device Type	
	Location	
	Work Station Address	
	Unit Address	
	Keyboard Code	
Socket 2	Telephone	

Name		Socket 1
Device Type		
Location		
Work Station Address		
Unit Address		
Keyboard Code		
Telephone		Socket 2

Socket 1	Name	
	Device Type	
	Location	
	Work Station Address	
	Unit Address	
	Keyboard Code	
Socket 2	Telephone	

Name		Socket 1
Device Type		
Location		
Work Station Address		
Unit Address		
Keyboard Code		
Telephone		Socket 2

Socket 1	Name	
	Device Type	
	Location	
	Work Station Address	
	Unit Address	
	Keyboard Code	
Socket 2	Telephone	

Name		Socket 1
Device Type		
Location		
Work Station Address		
Unit Address		
Keyboard Code		
Telephone		Socket 2

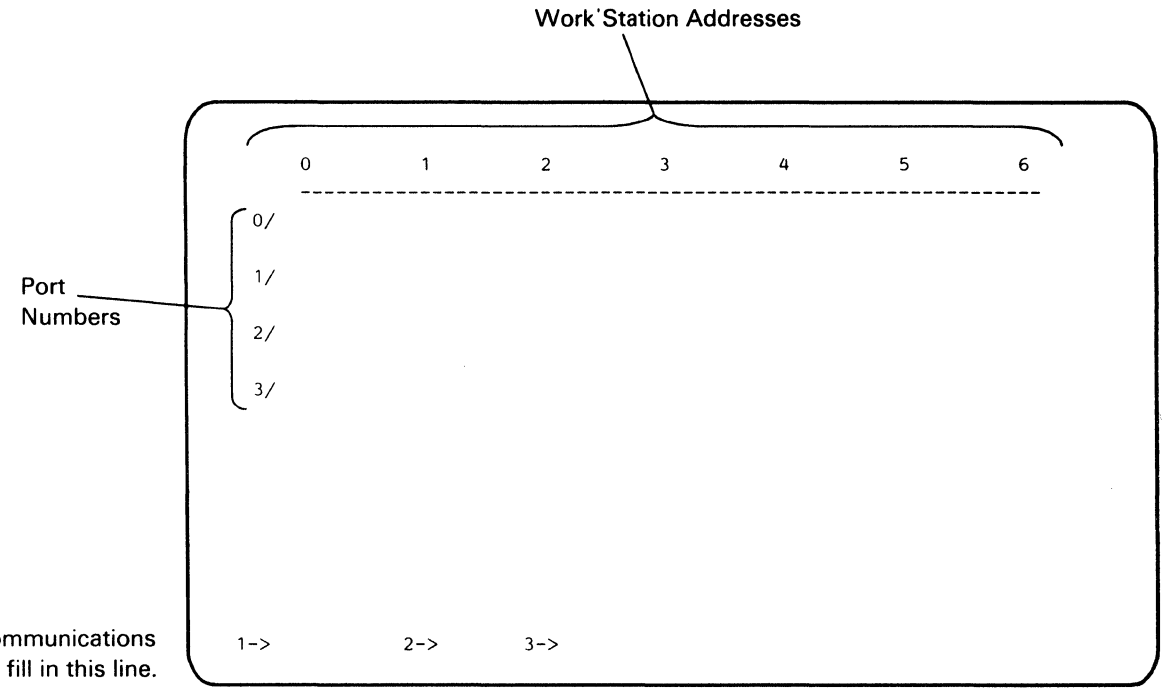
Socket 1	Name	
	Device Type	
	Location	
	Work Station Address	
	Unit Address	
	Keyboard Code	
Socket 2	Telephone	

Note: Each cable connected to a 5294 port should have a tag with a number from 0 through 3. There should be a cable for each port used. Connect each cable to the port indicated on its tag.

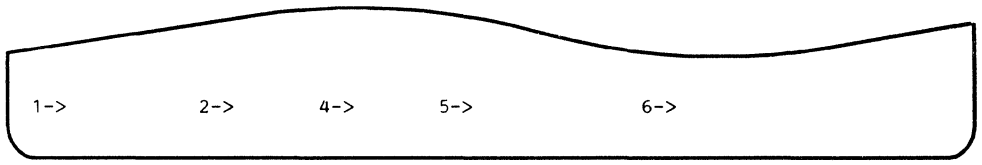
IBM 5294 CONTROL UNIT SETUP FORM (PART 2)

During 5294 setup, you need to enter the information on this form in the entry fields on the appropiate line at the bottom of your display. Also, if a number is beside a D or P on the top part of the form it must be entered.

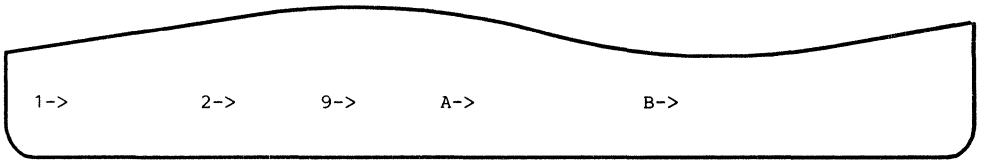
Note: On the top of each display are the possible work station addresses (0, 1, 2, 3, 4, 5, or 6). On the left side of each display are the port numbers (0/, 1/, 2/, or 3/). Port numbers 2/ and 3/ appear only when the 5294 has four ports.



If your 5294 communications mode is SDLC, fill in this line.



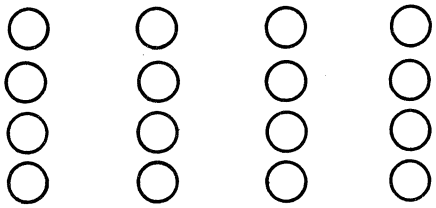
If your 5294 communications mode is X.25, fill in this line.



If your 5294 communications mode is X.21 switched, fill in this line.

LOCAL WORK STATION CONFIGURATION WORK SHEET

Ports (use only one):



Page_____ of_____

Circle one:

WSC1 WSC2 WSC3 WSC4

WSCE1 WSCE2 WSCE3 WSCE4

WSCE5 WSCE6 WSCE7 WSCE8

Contol Unit Name_____

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

Device Name	
Device Type	
Location	
Unit Address	
Port Number	
Work Station Address	

LOCAL WORK STATION CONTROLLER
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (*WSC or *WSCE).	R	TYPE	_____
Model number of the control unit (*NONE):	R	MODEL	_____
Address of the control unit:	R	CTLADR	_____

Type	Entry
WSC1 or WSCE1	0030
WSC2 or WSCE2	0070
WSC3 or WSCE3	00B0
WSC4 or WSCE4	00F0
WSCE5	0032
WSCE6	0072
WSCE7	00B2
WSCE8	00F2

The control unit is to be varied online when CPF is started (*YES or *NO).	ONLINE	____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 20 on WSC; up to 32 on WSCE). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for display devices and work station printers, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (See the appropriate *Local Work Station Configuration Work Sheet.*)	DEV	_____ _____ _____ _____ _____ _____
(Use additional sheets if necessary.)		_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

MAGNETIC TAPE CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (3411 or 3430). The 3422 should be configured as a 3430.	R	TYPE	_____
Model number of the control unit. The 3422 should be configured as a 3430, Model A01.	R	MODEL	____

Device Type	Model	Entry
3411	1	1
	2	2
	3	3
3430	A01	A01

Address of the control unit:	R	CTLADR	_____

Type of Control Unit	Entry
3411	0015
3430	0052
3422	0052

This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to four 3410, 3430, or 3422 tape drives). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for tape drives, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	_____ _____ _____ _____
This tape control unit has the hardware data compression (HDC) feature installed (*NO *YES). Valid only for TYPE(3430).		DTACPR	_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).		TEXT	

_____

_____

MAGNETIC TAPE DRIVE
(CRTDEVD command)

Description		Parameter	Entry
Name of the magnetic tape drive.	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

Device	Entry
First unit	000015 for 3410; 000052 for 3430 or 3422
Second unit	010015 for 3410; 010052 for 3430 or 3422
Third unit	020015 for 3410; 020052 for 3430 or 3422
Fourth unit	030015 for 3410; 030052 for 3430 or 3422

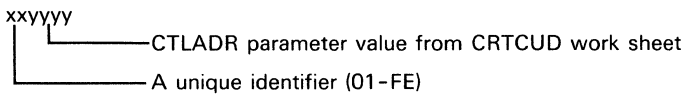
Device type (3410 or 3430). The 3422 should be configured as a 3430.	R	DEVTYPE	_____
Device model (1, 2, 3 for 3410; A01 for the first 3430 or 3422, which contains the magnetic tape control unit; B01 for the other 3430 or 3422 tape drives).	R	MODEL	____
Name of the associated control unit.		CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____
Type of data error and number of times the system should attempt to recover. (Type: 1 for read errors; 2 for write errors. Times: If type is 1, 10-20 (default is 10). If type is 2, 15-20 (default is 15).)		RETRY Type: Times: Type: Times:	 ____ ____ ____ ____
Type of data error and error threshold values to retry before logging the error. (Type: 1 for read errors; 2 for write errors. Threshold: If type is 1, 1-10 (default is 5). If type is 2, 1-64 (default is 32).)		THRESHOLD Type: Threshold: Type: Threshold:	 ____ ____ ____ ____
Name of the message queue to which operational messages should be sent (normally QSYSOPR.*LIBL).		MSGQ	_____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

_____

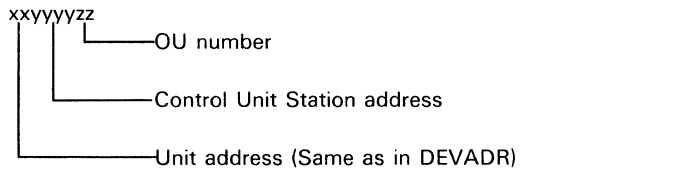
_____

PEER DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	
Physical address of the device as follows:	R	DEVADR	



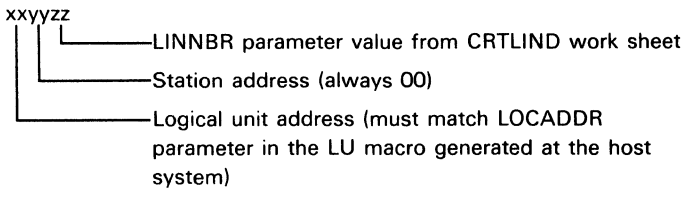
Device type (*PEER).	R	DEVTYPE	*PEER
Device model (0):	R	MODEL	0
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Name (up to 8 characters) by which your system is known to other devices in the network.		LCLLU	
Name (up to 8 characters) by which your system identifies the remote device which this device description represents.		RMTLU	
The system password to be used to validate incoming BINDS (up to 8 characters or *NONE).		SYSVLDPW	
The remote system should accept incoming requests for security validation (*NO if password will be used for security or *YES if remote system trusts this system and a password will not be used).		SECURELU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	



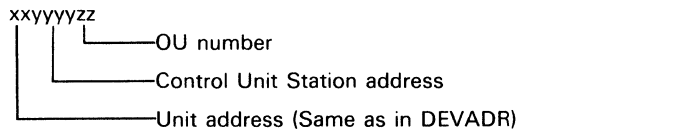
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

PLU1 DEVICE
(CRTDEVD command)

Description		Parameter	Entry
Name of the remote communications device.	R	DEVD	
Physical address of the device as follows:	R	DEVADR	



Device type (*PLU1).	R	DEVTYPE	*PLU1
Device model (0 or 1):	R	MODEL	
Name of associated control unit. If the control unit is located within the device, the control unit and the device must still have different names.		CTLU	
Type of 327x device to be emulated (3277, 3284, 3286, 3287, or 3288; default is 3277). Valid only when MODEL(1) is specified.		EMLDEVTYP	
Type of 3270 keyboard to be emulated (*UPPER or *LOWER; default is *UPPER). Valid only when MODEL(1) is specified.		EMLKBDTYP	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Maximum length of the request/response unit (256 through 4096 in increments of 256 for non-X.25 devices; 241 through 4096 and *CALC for X.25 devices; 241, 245, 247, 497, 501, 503, and *CALC values are valid only for X.25; default is 256).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	



The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).		TEXT	

REMOTE WORK STATION CONFIGURATION WORK SHEET

Communications
attachment (circle one): 1 2 3

Page _____ of _____

Line Description
Name: _____ _____ _____ _____

○ ○ ○ ○

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
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Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

Control Unit Name	
Control Unit Type	
Control Unit Address	
Telephone	
Display Device Name	
Display Device Type	
Unit Address	
Location	

RJE Configuration Work Sheet (CRTRJECFG)

DESCRIPTION		PARAMETER	ENTRY
Name of the RJEF session that is being configured as well as the session description, subsystem description, and message queue that is being created.		SSN	
Logon or sign on value that the host system is expecting (up to 80 characters). If LINTYP(*SDLCS), you may specify *NONE. The default is *PROMPT.	(A)	LOGON	
Name of the library where objects other than the line, control unit, and device descriptions will be created. The default is QRJE.		CFGLIB	
Type of the host system to which the System/38 RJEF is to be connected (*JES2, *JES3, *RES, *RSCS, *PWR). The default is *JES2.	(A)	TYPE	
The number of RJEF readers to be supported by the RJEF session (0 through 15 depending on the host and the line protocol).		RJERDRS	
The number of RJEF printers to be supported by the RJEF session (0 through 15 depending on the host and the line protocol).		RJEPRTS	
The number of RJEF punches to be supported by the RJEF session (0 through 15 depending on the host and the line protocol).		RJEPUNS	
For *BSC: BLKLEN is the maximum length (in bytes) in which data is to be transmitted. This value must agree exactly with the value expected at the host system. The default is 400. For *SDLCS: The maximum length Request/Response unit value is assigned to the BLKLEN parameter. This value must agree exactly with the value expected at the host system. The default is 256.		BLKLEN	
Data transparency is to be used in the transmission of files (*NO or *YES). Do not enter this parameter for an SDLC configuration or if data compression is to be performed. The default is *NO.		TRNSPY	
Data compression is to be performed (*YES or *NO). The default is *YES.		DTACPR	
Name of the Forms Control Table that is to be referenced in the session description. Note: Naming an FCT in the FCT parameter does not create an FCT. The default is *NONE.		FCT	
The output queue to be used for the printed output in this RJE session. Note: Naming an output queue in the output queue parameter does not create an output queue. The default is QPRINT.*LIBL.		OUTQ	
Number that identifies the System/38 line	(B)	LINNBR	
The 2-character configuration identifier used in the naming of RJEF objects. The default is *LINNBR (the value specified in the LINNBR parameter).		CFGID	
The type of communication line (*BSC, *SDLCS, or *X25). The default is *BSC.	(B)	LINTYP	
The names of one or more devices to be attached to this control unit. If *GEN is specified, the device descriptions, line description, and control unit description (DEVD, LIND, and CUD) are created. If a list of devices is entered, then DEVD, LIND and CUD are not created. The devices in the list will be used by the RJE session.		DEV	
The name of the control unit that is attached to the line number. If *GEN is specified, the DEVD, the LIND, and the CUD are created. If a control unit name is specified only the devices are created.		CTLU	

DESCRIPTION		PARAMETER	ENTRY
Type of line connection			
Connection type:	Entry:		
Nonswitched point-to-point	*PP		
Switched	*SWT		
Multipoint nonswitched	*MP (not valid for BSC)		
The default is *PP		CNN	
The data rate (speed) for the line that is to be used by the RJEF session. The default is 9600.		RATE	
For nonswitched line modems only, the modem has the switched network backup feature (*NO or *YES). The default is *NO.		(B) SWNBKU	
The modem has the data rate select function (*NO or *YES). The default is *NO, signifying that the modem cannot operate at half speed.		SELECT	
For LINTYP(*SDLCS) only, the data communications equipment on the line requires the NRZI transmission method (*NO or *YES). The value specified here must match the value specified for the NRZI parameter of the GROUP macroinstruction during ACF/NCP/VTAM generation at the host.		(A) NONRTNZ	
Specify whether the clocking function is provided by the System/38 or the (DCE) data communication equipment (*NO or *YES). The default is *NO, signifying that the clocking function is provided by the DCE.		CLOCK	
The physical connection is 2-wire or 4-wire (2 or 4, and 2 or 4). The defaults are: Normal: 2		(B) WIRE	
Backup: 2			
Non-IBM-supplied modem is used (*NO or *YES). The default is *NO.		OEMMDM	
For LINTYP(*SDLCS), the logical unit address(es), defined at the host in hexadecimal for LU to LU session in an SNA environment, can be generated by the CRTRJECFG command. The default is *GEN. Unit addressing ranges from '01'x through '2E'x when the default is accepted.		UNITADR	
For LINTYP(*SDLCS), the station address used by the host system to communicate with the System/38. This is a required parameter. The value specified here must match the value specified for the ADDR parameter of the PU macroinstruction during ACF/NCP/VTAM generation at the host.		STNADR	
Note: The UNITADR and STNADR values must agree exactly with the values expected at the host.		(A)	
For LINTYP(*SDLCS), the SSCP (system service control point) identifier of the host system. The SSCPID value must agree exactly with the value expected at the host system. This parameter is necessary and valid only for PU2 controllers. The identifier is a 12-digit hexadecimal value with the first two digits '05'x.		SSCPID	
Specifies whether an exchange identifier is needed (for SNA only). The default is *NONE. The identifier is an eight-digit hexadecimal value with three digits for the block number and five digits for the specific control unit. The value specified here must match the value specified for the IDBLK and IDNUM parameters of the PU macroinstruction at the host system during NCP/VTAM generation.		EXCHID	
For LINTYP (*SDLCS), the maximum size of the PIU (Path Information Unit) (265 or 521). The default is 521		MAXLENPIU	
Telephone number (1 to 16 digits) of the remote control unit. Required, and only valid for, switched or nonswitched backup. The default is *NONE.			
____5____10____15_		(C) TELNBR	
For BSC, the identifier (2 to 15 characters) to be used by the host system control unit for the remote system. Required, and only valid for, switched or nonswitched line with switched backup. The default is *NONE.		(A) RMTID	

DESCRIPTION	PARAMETER	ENTRY
Specifies whether the automatic calling feature is installed (*NO or *YES). The default is *NO. *YES is valid only for switched or nonswitched line with switched backup.	(B)— AUTOCALL	_____
Specifies whether the automatic answer modem feature is installed (*NO or *YES). The default is *NO. *YES is valid only for switched and nonswitched line with switched backup.	AUTOANS	_____
Specifies whether the System/38 provides an answer-tone signal (*NO or *YES). The default is *NO. *YES is valid only if the autoanswer feature is installed.	ANSTONE	_____
DCE group specifies the type of modem that can be used on this line (*A or *B or *C). If DCEGRP is not specified, the default is *C for switched lines and *A for nonswitched lines.	DCEGRP	_____

(A) Use the parameter value, obtained from the host system programmer, that was entered on the host system programmer's work sheet.

(B) Use the parameter value that was entered on the line description work sheet.

(C) Use the parameter value that was entered on the control unit description work sheet.

SDLC FINANCE CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (4701 or 3694).	R	TYPE	_____
Model number of the control unit (*NONE).	R	MODEL	*NONE
Control unit address.	R	CTLADR	____

yyzz
- LINNBR parameter value from CRTLIND work sheet
- Control unit address. For control unit TYPE(3694), yy matches the controller address specified via Finance Communication Language Instructions. For control unit TYPE(4701), yy matches the address set through the address switches on the 4701 operator's panel or specified within the configuration program.

Attached to a switched line (*NO or *YES).	SWITCHED	_____
Name of the nonswitched line to which this control unit is attached. LIND parameter from the CRTLIND command; *NONE if attached to a switched line.	LINE	_____
The modem has the data rate select feature (*NO or *YES).	SELECT	_____
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).	TELNBR	_____
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).	INLCNN	_____
Exchange identifier used to identify this control unit to the remote system or device (*NONE for nonswitched lines; for TYPE(3694) on switched lines, specify 02FXXXXX; for TYPE(4701) on switched lines, specify 057XXXXX. In both cases, XXXXX must be recognized by both the System/38 application and the control unit application program).	EXCHID	_____
System services control point identifier (specify the default value, 050000000000).	SSCPID	_____
This control unit is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.	LINLST	_____ _____ _____ _____ _____ _____
The modem has the switched network (dial) backup feature (*NO or *YES).	SWNBKU	_____
If the connection with this control unit is delayed the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).	DLYFEAT	_____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)	DEV	_____ _____ _____ _____ _____ _____
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit descrition with LINKTYPE *SDLCSEC.	LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

SDLC PEER CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*PEER).	R	TYPE	*PEER
Model number of the control unit (0).	R	MODEL	0
Control unit address (xxyy, where xx = controller station address of this control unit and yy = LINNBR parameter value from the CRTLIND work sheet). For SWITCHED(*YES), yy should be 00.	R	CTLADR	
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for another System/38, 022xxxxxx, where xxxxxx is any combination of 0-9 and A-F). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
If the connection with this control unit is delayed, the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one peer device for switched lines; up to 254 peer devices for nonswitched lines). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Maximum length of the path information unit (521 or 265; default is 521).		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI, *SDLCSEC, or *NONE). If switched (*YES), *NONE must be specified since the role cannot be determined until the control unit is varied on.		LINKTYPE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

SDLC PU2 CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*PU2).	R	TYPE	*PU2
Model number of the control unit (0).	R	MODEL	0
Control unit address (00xx, where xx = LINNBR parameter value from CRTLIND work sheet). For SWITCHED(*YES), xx should be 00.	R	CTLADR	
Attached to a switched line (*NO or *YES).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 16 digits) of this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).		INLCNN	
System services control point identifier (12 characters from 0-9 and A-F, the first two of which must be 05) that identifies this control unit to the host system. This identifier is assigned by the host system in the START procedure for ACF/NCP/VTAM. Required for SWITCHED(*YES) or SWNBKU(*YES).		SSCPID	
The SSCPID should be used for security checking (*NO or *YES). The default is *NO. Valid only for SWITCHED(*NO).		SSCPIDCHK	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).		SWNBKU	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 254 PU2 logical sessions). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
The maximum sixe allowed for the PIU (265 or 521). The default is 521.		MAXLENPIU	
Link protocol and role for the remote controller (*SDLCPRI or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCPRI.		LINKTYPE	*SDLCPRI
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

SDLC PRIMARY LINE (PART 1 OF 2)
(CRTLIND command)

Description							Parameter	Entry
Name of the line.						R	LIND	_____
Number that identifies the line:						R	LINNBR	____
Line Position	**Entry**	**Line Position**	**Entry**	**Line Position**	**Entry**			
First	20	Fifth	60	Ninth	A0			
Second	21	Sixth	61	Tenth	A1			
Third	22	Seventh	62	Eleventh	A2			
Fourth	23	Eighth	63	Twelfth	A3			
Type of line (*SDLCP).						R	TYPE	*SDLCP
Type of line connection:						R	CNN	_____
Connection Type		**Entry**						
Switched		*SWT						
Nonswitched point-to-point		*PP						
Nonswitched multipoint		*MP						
The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).						R	RATE	_____
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).							SWNBKU	_____
The modem has the data rate select feature (*NO or *YES).							SELECT	_____
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).							NONRTNZ	_____
System/38 provides clocking function for the line (*NO or *YES).							CLOCK	_____
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOCALL	_____
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).							AUTOANS	_____
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).							ANSTONE	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).							WIRE: Normal: ____ Backup: ____	
Data communications equipment group (*A, *B, or *C).							DCEGRP	____
Non-IBM modem is used (*NO or *YES).							OEMMDM	_____
Types of calls for which the line is to be used:							SWTCNN	_____
Type		**Entry**						
Both incoming and outgoing calls		*BOTH						
Incoming calls only		*ANS						
Outgoing calls only		*CALL						
The speed at which the line operates (*FULL or *HALF).							RATETYPE	_____
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							DIALMODE	_____
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).							ANSMODE	_____

SDLC PRIMARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of idle time units (53.3 milliseconds each) needed to satisfy idle state time considerations (0-255; 38 is recommended minimum; if this is a switched line and you will attach a 5294 Control Unit to it, you *must* specify at least 38).	IDLETIME	____
Number of base time units (500 milliseconds each) to receive intelligible data (0-255).	NONPRDRCV	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	_____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (up to 50). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create control units that reference this line (through the LINE parameter), the name of the control units are automatically inserted in the CTLU parameter for this line. (Use additional sheets if necessary.)	CTLU	_____ _____ _____ _____ _____ _____
For APPC only. Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	_____
Line code (*EBCDIC or *ASCII).	CODE	_____
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

SDLC SECONDARY LINE (PART 1 OF 2)
(CRTLIND command)

Description			Parameter	Entry
Name of the line.		R	LIND	_____
Number that identifies the line:		R	LINNBR	____

Line Position	Entry	Line Position	Entry	Line Position	Entry
First	20	Fifth	60	Ninth	A0
Second	21	Sixth	61	Tenth	A1
Third	22	Seventh	62	Eleventh	A2
Fourth	23	Eighth	63	Twelfth	A3

Type of line (*SDLCS).		R	TYPE	*SDLCS
Type of line connection:		R	CNN	_____

Connection Type	Entry
Switched	*SWT
Nonswitched point-to-point	*PP
Nonswitched multipoint	*MP

The line rate in bits per second (1200, 2000, 2400, 4800, 7200, 9600, 48000, or 56000).	R	RATE	_____
The modem has the switched network (dial) backup feature (*NO or *YES). Not valid for CNN(*SWT).		SWNBKU	_____
The modem has the data rate select feature (*NO or *YES).		SELECT	_____
Nonreturn to zero inverted transmission decoding method is required (*NO or *YES).		NONRTNZ	_____
System/38 provides clocking function for the line (*NO or *YES).		CLOCK	_____
Autocall feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOCALL	_____
Autoanswer feature is installed (*NO or *YES). *YES is valid only with CNN(*SWT).		AUTOANS	_____
System/38 provides answer tone signal to the modem (*NO or *YES). *YES is valid only with CNN(*SWT).		ANSTONE	_____
The physical connection is by 2-wire or 4-wire link (2 or 4).		WIRE: Normal: ____ Backup: ____	
Data communications equipment group (*A, *B, or *C).		DCEGRP	____
Non-IBM modem is used (*NO or *YES).		OEMMDM	_____
Types of calls for which the line is to be used:		SWTCNN	_____

Type	Entry
Both incoming and outgoing calls	*BOTH
Incoming calls only	*ANS
Outgoing calls only	*CALL

The speed at which the line operates (*FULL or *HALF).	RATETYPE	_____
Line connection is dialed manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).	DIALMODE	_____
Incoming calls are answered manually (*MANUAL) or automatically (*AUTO). Valid only for CNN(*SWT).	ANSMODE	_____

SDLC SECONDARY LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
Number of delay time units (200 milliseconds each) before the system ends the operation that resets the data terminal ready condition (0-15; 1 is recommended).	DTRDLY	____
Number of receive time-out units (200 milliseconds each) between time-outs (0-127). For most networks, 3 seconds (value = 15) is appropriate.	RCVTMR	____
Number of retries to be performed before the line is considered inoperative (0-21).	RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).	ONLINE	____
Valid only for nonswitched lines. List *on this work sheet only* (not on the CRTLIND command prompt) the name(s) of the control units to be attached to this line (only one when TYPE(*SDLCS) is specified). The normal order of configuring communications is CRTLIND, CRTCUD, then CRTDEVD. If you follow this order, when you create a control unit that references this line (through the LINE parameter), the name of the control unit is automatically inserted in the CTLU parameter for this line.	CTLU	_____
The System/38 station address, assigned by the host system. The address must be specified as 2 hexadecimal digits within the range of 01 to FE.	STNADR	____
Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).	EXCHID	_____
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

SDLC 3270 CONTROL UNIT
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (3274).	R	TYPE	3274
Model number of the control unit (*NONE).	R	MODEL	*NONE
SDLC control unit address:	R	CTLADR	

Type of Line	Entry	
Switched	xx00, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)
Nonswitched	xxyy, where xx =	The SDLC control unit address from the *3270 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)
	and yy =	LINNBR parameter value from CRTLIND work sheet.

Attached to a switched line (*NO or *YES).	SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).	LINE	
The modem has the data rate select feature (*NO or *YES).	SELECT	
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).	TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).	INLCNN	
Exchange identifier used to identify this control unit to the remote system or device. For switched IBM 3274 Control Units, 017xxxxx, where xxxxx must match the Physical Unit Identification (PUID) keyed in for sequence number 215 in the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For nonswitched units, 01700000. For 3270 control units other than IBM 3274 Control Units, including 3270 emulators, see the documentation for the specific device for the appropriate exchange identifier.	EXCHID	
System services control point identifier. Valid only on switched lines. (Default is 050000000000.)	SSCPID	
This control unit is to be varied online when CPF is started (*NO or *YES).	ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.	LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).	SWNBKU	
If the connection with this control unit is delayed (for instance, if the 3270 control unit is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).	DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (Up to 64 remote 3270 work stations, depending on the specific type of 3270 control unit and the features installed. See the *3270 Remote Control Unit Work Sheet*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)	DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.	DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.	LINKTYPE	*SDLCSEC
Type of character coding to be used for this control unit (*LIND, *EBCDIC, or *ASCII). *LIND is the default.	CODE	
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).	TEXT	

SDLC 5250 CONTROL UNIT
(CRTCUD command)

Description			Parameter	Entry
Name of the control unit.		R	CUD	
Control unit type identifier (5251 or 5294).		R	TYPE	
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).		R	MODEL	
Control unit address (see the appropriate Remote Work Station Configuration Work Sheet):		R	CTLADR	
Type of Line	**Entry**			
Switched	xx00, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on your system. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
Nonswitched	xxyy, where xx =	The controller station address from the *IBM 5250 Communications Network Setup Form* or the *IBM 5294 Communications Network Setup Form*. On System/38, must be 01-FE and must be unique on the line. (For IBM 2400 or 4800 bps Integrated Modems, xx can be one of the following values: 04, 05, 06, 07, 08, 09, or xA, xB, xC, xD, xE, or xF, where x = 1-9.)		
	and yy =	LINNBR parameter value from CRTLIND work sheet.		
Attached to a switched line (*NO or *YES).			SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).			LINE	
The modem has the data rate select feature (*NO or *YES).			SELECT	
Telephone number (4 to 16 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES) or SWNBKU(*YES).			TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES) or SWNBKU(*YES).			INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).			EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).			ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES) or SWNBKU(*YES). **Note:** For each line name specified, a line description by that name must already exist.			LINLST	
The modem has the switched network (dial) backup feature (*NO or *YES).			SWNBKU	
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO).			DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)			DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.			DEVWAIT	
Link protocol and role for the remote controller (*SDLCSEC or *NONE). *NONE is the default. If the default is specified, the system will supply the control unit description with LINKTYPE *SDLCSEC.			LINKTYPE	*SDLCSEC
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).			PUBAUT	
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).			TEXT	

SYSTEM PRINTER
(CRTDEVD command)

Description				Parameter	Entry
Name of the system printer.			R	DEVD	_____
Physical address of the device:			R	DEVADR	_____
Device	**Entry**				
First system printer					
3262 or 5211	000018				
3203 or 4245	000040				
Second system printer					
3262 or 5211	000058				
3203 or 4245	000040	If first system printer is a 3262 or 5211.			
3203 or 4245	000041	If first system printer is a 3203 or 4245.			
Device type (3262, 5211, 3203, or 4245).			R	DEVTYPE	_____
Device model.			R	MODEL	_____
Device Type	**Model**	**Entry**			
3262	A1	A1			
	B1	B1			
5211	2	2			
3203	5	5			
4245	12	12			
	20	20			
The device is to be varied online when CPF is started (*NO or *YES).				ONLINE	_____
The name of the default print image. (IBM-supplied print image is QSYSIMAGE in QGPL.)				PRTIMG	_____
					_____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).				PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)				TEXT	_____
_____					
_____					

VIRTUAL DISPLAY STATION
(CRTDEVD command)

Description				Parameter	Entry
Name of the display station.			R	DEVD	
Physical address of the device (000000).			R	DEVADR	000000
Device type (3179, 3180, 3196, 5251, 5291, or 5292).			R	DEVTYPE	
Device model:			R	MODEL	
Device Type	**Screen Size**	**Entry**			
3179	1920 chars	2			
3180	1920 or 3564 chars	2			
3196	1920 chars	A1, A2, B1, or B2			
5251	1920 chars	11			
5291 (both models)	1920 chars	1			
5292	1920 chars	1 or 2			
Name of associated virtual work station controller.				CTLU	
This device is varied online when CPF is started (*NO or *YES).				ONLINE	
Name of the associated virtual work station printer (*NONE or device name).				PRINTER	
Name of an alternative printer file to be used when no associated work station printer is available.				PRTFILE	
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this display station is attached).				WSCADR	
Type of keyboard:				WSCKBD	

Entry
yzzz

- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — T for typewriter-like keyboard
  D for data entry keyboard without proof arrangement
  P for data entry keyboard with proof arrangement

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	
Maximum length of the request/response unit (valid only for X.25; values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	
Physical address of SNA device attached to an X.25 network.	NETDEVADR	

xxyyyyzz

- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

VIRTUAL WORK STATION CONFIGURATION WORK SHEET
(For Display Station Pass-Through Only)

Virtual Work Station Controller Name _____	Work Station Name	Work Station Type and Model	WSCADR Parameter Value (xx of xxyyzz; Must Be Unique on This Controller)

VIRTUAL WORK STATION CONTROLLER
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	_____
Control unit type identifier (*PASS).	R	TYPE	*PASS
Model number of the control unit (*NONE).	R	MODEL	*NONE
Address of the control unit (00FF).	R	CTLADR	00FF
The control unit is to be varied online when CPF is started (*YES or *NO).		ONLINE	____
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (up to 32). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for display devices and work station printers, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit.		DEV	_____
			_____
			_____
			_____
			_____
			_____
(Use additional sheets if necessary.)			_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	_____
Brief description of the control unit. (*BLANK or no more than 50 characters, enclosed in apostrophes.)		TEXT	

_____

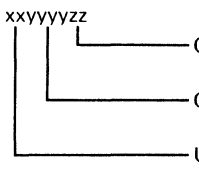
_____

VIRTUAL WORK STATION PRINTER
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer.	R	DEVD	_____
Physical address of the device (000000).	R	DEVADR	000000
Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262 or *IPDS (the 4224 should be configured as *IPDS).	R	DEVTYPE	_____
Device model (for DEVTYPE (*IPDS) model should be *NONE):	R	MODEL	_____

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1 D2	D1 D2
4214	2	2	5224	1	1
				2	2
4245	T12 T20	T12 T20	5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1 2 3	1 2 3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated virtual work station controller.	CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).	ONLINE	_____
Name of the message queue to which operational messages should be sent.	MSGQ	_____ _____
Address of device (xx0000, where xx = 00-31 and must be unique on the virtual work station controller to which this printer is attached).	WSCADR	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____



The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	_____
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214 and *IPDS).	FORMFEED	_____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

_____

_____

X.25 COMMUNICATIONS NETWORK LINE (PART 1 OF 2)
(CRTLIND command)

Description		Parameter	Entry
Name of the line.	R	LIND	_____
Number that identifies the line: **Line Position** / **Entry** First / 5C Second / 5E	R	LINNBR	____
Type of line (*X25 or *X25DCE)	R	TYPE	_____
Type of line connection (*PP)	R	CNN	*PP
The line rate in bits per second (1200, 2400, 4800, 9600, 19200, 48000, or 56000).	R	RATE	_____
The physical connection is by 4-wire link.		WIRE normal backup	 4 ____
Data communications equipment group (*A).		DCEGRP	*A
Number of idle time units (.1 seconds each) needed to satisfy idle state time considerations (3-99). 6 is the default; the recommended minimum is based on line rate.		IDLETIME	____
Number of retries to be performed before the line is considered inoperative (0-21). Uses multiplier of 7; 0,1,2,3 represent 0, 7, 14, and 21 retries respectively. Any value greater than 3 has 21 retries as the maximum. 1 is the default, using 7 retries.		RETRY	____
The line is to be varied online when CPF is started (*NO or *YES).		ONLINE	____
Exchange identifier used to identify your System/38 to the remote system (022xxxxx, where xxxxx is any combination of characters 0-9 and A-F; or *NONE, in which case System/38 generates an identifier based on the machine serial number).		EXCHID	_____
The line description is to be used for 3270 emulation (*NO or * YES).		EML3270	_____

X.25 COMMUNICATIONS NETWORK LINE (PART 2 OF 2)
(CRTLIND command)

Description	Parameter	Entry
The type of network support (0101 is the default):	X25NETTYPE	_____

Type	Entry
normal network (local initiation option)	0101
networks requiring immediate initiation option (some Northern Telecom)	0111
networks with immediate initiation and 128 packet sequence numbering (Japanese DDX)	0112
networks requiring remote initiation (SIEMANS)	0121

Local X.25 network address. (The address can be specified with up to 15 digits.)	LCLNETADR	_____
Default packet size to be used (64, 128, 256, 512, or 1024). 128 is the default.	DFTPKTSIZE	_____
Maximum packet size used by any control unit (64, 128, 256, 512, 1024 or *DFTPKTSIZE). *DFTPKTSIZE uses the value specified in the DFTPKTSIZE parameter. Must be greater than or equal to DFTPKTSIZE in all attached control units. *DFTPKTSIZE is the default.	MAXPKTSIZE	_____
Default window size to be used (2-7 on types 0101, 0111, or 0121; 2-15 on type 0112). 2 is the default.	DFTWDWSIZE	____
Maximum PIU size used by any control unit (MAXLENPIU parameter value from the CRTCUD worksheet; default is 521).	NETMAXPIU	_____
Entries for each logical channel (up to 32). One entry should be made for each logical channel. If you enter *PROMPT when doing the CRTLIND command, the chart shown at the bottom of this work sheet will appear and can be used for this parameter. *PROMPT is the default for interactive jobs; *NONE is the default for batch jobs.	LGLCHLE	
	grpnbr	_____
	chlnbr	_____
	type	_____
	attached pvc ctlu	_____
The authority for this line description to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the line description (*BLANK or no more than 50 characters in apostrophes).	TEXT	

Entry NBR	LGLCHLE GRPNBR	LGLCHLE CHLNBR	LGLCHLE Type	ATTACHED PVC CTLU
01	__	____	_____	_____
02	__	____	_____	_____
03	__	____	_____	_____
04	__	____	_____	_____
05	__	____	_____	_____
06	__	____	_____	_____

Up to 32 entries

X.25 FINANCE CONTROL UNIT (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (4701 or 3694).	R	TYPE	
Model number of the control unit (*NONE).	R	MODEL	*NONE
Control unit address (always 0000 for X.25).	R	CTLADR	0000
Attached to a switched line (*NO for X.25 PVC; or *YES for X.25 SVC).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
X.25 SVC remote DTE address. Valid only for SWITCHED(*YES).		TELNBR	
Method to be used to make the initial connection between the X.25 line and the control unit (*ANS or *CALL) Valid only for SWITCHED(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device. (*NONE for nonswitched lines; for TYPE(3694) on switched lines, specify 02FXXXXX; for TYPE(4701), specify 057XXXXX. In both cases, XXXXX must be recognized by both the System/38 application program and the control unit application program.)		EXCHID	
System services control point identifier (specify the default value, 050000000000).		SSCPID	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO), indicating an X.25 PVC connection.		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Link protocol and role for the remote controller (*X25LLS).		LINKTYPE	*X25LLS
Type of character coding to be used for this control unit (*EBCDIC or *ASCII). *EBCDIC is the default.		CODE	

X.25 FINANCE CONTROL UNIT (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
X.25 control unit address (If SWITCHED(*YES), X25ADR should be all zeros). 0xyyzz └ LINNBR parameter from CRTLIND work sheet └ LGLCHLE CHLNBR parameter from the CRTLIND work sheet └ LGLCHLE GRPNBR parameter from the CRTLIND work sheet	X25ADR	_____
Packet size to be used with this control unit (64, 128, 256, 512, 1024, or *LIND).	DFTPKTSIZE	_____
Window size to be used with this control unit (2-7 for modulo 8-packet sequence numbering; 2-15 for modulo 128-packet sequence numbering; or *LIND).	DFTWDWSIZE	_____
X.25 logical link control protocol (*PSH, *QLLC, OR *ELLC)	NETPCL	_____
Time-out value to be used for the logical link level time-out condition (1-255). 30 is the default.	NETRSPTMR	_____
Valid for SVC connections only. Specifies whether reverse charging should be accepted on incoming requests (first parameter, *NO/*ACCEPT) and whether charges should be requested on outgoing call requests packets (second parameter *NO/*REQUEST)	NETRVSCRG incoming outgoing	_____ _____
Valid for SVC connections only. Specifies closed user group identification. *NONE is the default.	NETCUGID	_____
Valid for SVC connections only. Specifies the X.25 network connection password (up to 8 characters). *NONE is the default.	NETCNNPWD	_____
Valid for SVC connections only. Specifies the X.25 network optional user facility codes (up to 126 input digits; 0-9, A-F). *NONE is the default.	NETUSRFCL	_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	_____

X.25 PEER CONTROL UNIT (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*PEER).	R	TYPE	*PEER
Model number of the control unit (0).	R	MODEL	0
Control unit address (always 0000 for X.25).	R	CTLADR	0000
Attached to a switched line (*NO for X.25 PVC; or *YES for X.25 SVC).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
X.25 SVC remote DTE address. Valid only for SWITCHED(*YES).		TELNBR	
Method to be used to make the initial connection between the X.25 line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for another System/38, 022xxxxxx, where xxxxxx is any combination of 0-9 and A-F). Valid only for SWITCHED(*YES).		EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
If the connection with this control unit is delayed, the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO), indicating an X.25 PVC connection.		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one peer device for switched lines; up to 254 peer devices for nonswitched lines). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Maximum length of the path information unit (521 or 265; default is 521).		MAXLENPIU	
Link protocol and role for the remote communications controller (*X25LLP or *X25LLS).		LINKTYPE	
Type of character coding to be used for this control unit (*EBCDIC or *ASCII). *EBCDIC is the default.		CODE	

X.25 PEER CONTROL UNIT (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
X.25 control unit address (If SWITCHED(*YES), X25ADR should be all zeros). 0xyyzz └ LINNBR parameter from CRTLIND work sheet └ LGLCHLE CHLNBR parameter from the CRTLIND work sheet └ LGLCHLE GRPNBR parameter from the CRTLIND work sheet	X25ADR	_____
Packet size to be used with this control unit (64, 128, 256, 512, 1024, or *LIND).	DFTPKTSIZE	_____
Window size to be used with this control unit (2-7 for modulo 8-packet sequence numbering; 2-15 for modulo 128-packet sequence numbering; or *LIND).	DFTWDWSIZE	_____
X.25 logical link control protocol (*PSH, *QLLC, OR *ELLC). *QLLC is the default.	NETPCL	_____
Time-out value to be used for the logical link level time-out condition (1-255). 30 is the default.	NETRSPTMR	_____
Valid for SVC connections only. Specifies whether reverse charging should be accepted on incoming requests (first parameter, *NO/*ACCEPT) and whether charges should be requested on outgoing call requests packets (second parameter *NO/*REQUEST)	NETRVSCRG incoming outgoing	_____ _____
Valid for SVC connections only. Specifies closed user group identification. *NONE is the default.	NETCUGID	_____
Valid for SVC connections only. Specifies the X.25 network connection password (up to 8 characters). *NONE is the default.	NETCNNPWD	_____
Valid for SVC connections only. Specifies the X.25 network optional user facility codes (up to 126 input digits; 0-9, A-F). *NONE is the default.	NETUSRFCL	_____
The authority for this control unit is to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	_____

X.25 PU2 CONTROL UNIT (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (*PU2).	R	TYPE	*PU2
Model number of the control unit (0).	R	MODEL	0
Control unit address (always 0000 for X.25).	R	CTLADR	0000
Attached to a switched line (*NO for X.25 PVC; or *YES for X.25 SVC).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
X.25 SVC remote DTE address. Valid only for SWITCHED(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES).		INLCNN	
System services control point identifier (12 characters from 0-9 and A-F, the first two of which must be 05) that identifies this control unit to the host system. This identifier is assigned by the host system in the START procedure for ACF/NCP/VTAM. Required for SWITCHED(*YES).		SSCPID	
The SSCPID should be used for security checking (*YES or *NO). The default is *NO. Valid only for SWITCHED(*NO).		SSCPIDCHK	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that can be connected to this control unit. Valid only for SWITCHED(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit (only one peer device for switched lines; up to 254 peer devices for nonswitched lines). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
Maximum length of the path information unit (521 or 265; default is 521).		MAXLENPIU	
Link protocol and role for the remote communications controller (*X25LLP).		LINKTYPE	*X25LLP
Type of character coding to be used for this control unit (*EBCDIC or *ASCII). *EBCDIC is the default.		CODE	

X.25 PU2 CONTROL UNIT (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
X.25 control unit address. (If SWITCHED(*YES), X25ADR should be all zeros.)	X25ADR	_____
0xyyzz └ LINNBR parameter from CRTLIND work sheet └ LGLCHLE CHLNBR parameter from the CRTLIND work sheet └ LGLCHLE GRPNBR parameter from the CRTLIND work sheet		
Packet size to be used with this control unit (64, 128, 256, 512, 1024, or *LIND).	DFTPKTSIZE	_____
Window size to be used with this control unit (2-7 for modulo 8-packet sequence numbering; 2-15 for modulo 128-packet sequence numbering; or *LIND).	DFTWDWSIZE	_____
X.25 logical link control protocol (*PSH, *QLLC, OR *ELLC)	NETPCL	_____
Time-out value to be used for the logical link level time-out condition (1-255). 60 is the default.	NETRSPTMR	_____
Valid for SVC connections only. Specifies whether reverse charging should be accepted on incoming requests (first parameter, *NO/*ACCEPT) and whether charges should be requested on outgoing call requests packets (second parameter *NO/*REQUEST)	NETRVSCRG incoming outgoing	_____ _____
Valid for SVC connections only. Specifies closed user group identification. *NONE is the default.	NETCUGID	_____
Valid for SVC connections only. Specifies the X.25 network connection password (up to 8 characters). *NONE is the default.	NETCNNPWD	_____
Valid for SVC connections only. Specifies the X.25 network optional user facility codes (up to 126 input digits; 0-9, A-F). *NONE is the default.	NETUSRFCL	_____
The authority for this control unit is to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).	TEXT	_____

X.25 3270 CONTROL UNIT (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (3274).	R	TYPE	3274
Model number of the control unit (*NONE).	R	MODEL	*NONE
Control unit address (always 0000 for X.25).	R	CTLADR	0000
Attached to a switched line (*NO for X.25 PVC; or *YES for X.25 SVC).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
X.25 SVC remote DTE address. Valid only for SWITCHED(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device. For switched IBM 3274 Control Units, 017xxxxx, where xxxxx must match the Physical Unit Identification (PUID) keyed in for sequence number 215 in the customizing procedure described in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide*. For nonswitched units, 01700000. For 3270 control units other than IBM 3274 Control Units, including 3270 emulators, see the documentation for the specific device for the appropriate exchange identifier.		EXCHID	
System services control point identifier. Valid only for SWITCHED(*YES). (Default is 050000000000.)		SSCPID	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
If the connection with this control unit is delayed (for instance, if the 3270 control unit is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO), indicating an X.25 PVC.		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (Up to 64 remote 3270 work stations, depending on the specific type of 3270 control unit and the features installed. See the *3270 Remote Control Unit Work Sheet*). *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.		DEVWAIT	
Link protocol and role for the remote controller (*X25LLS).		LINKTYPE	*X25LLS
Type of character coding to be used for this control unit (*EBCDIC or *ASCII). *EBCDIC is the default.		CODE	

X.25 3270 CONTROL UNIT (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
X.25 control unit address (If SWITCHED(*YES), X25ADR should be all zeros). 0xyyzz └── LINNBR parameter from CRTLIND work sheet └── LGLCHLE CHLNBR parameter from the CRTLIND work sheet └── LGLCHLE GRPNBR parameter from the CRTLIND work sheet	X25ADR	_____
Packet size to be used with this control unit (64, 128, 256, 512, 1024, or *LIND).	DFTPKTSIZE	_____
Window size to be used with this control unit (2-7 for modulo 8-packet sequence numbering; 2-15 for modulo 128-packet sequence numbering; or *LIND).	DFTWDWSIZE	_____
X.25 logical link control protocol (*PSH, *QLLC, OR *ELLC)	NETPCL	_____
Time-out value to be used for the logical link level time-out condition (1-255). 60 is the default.	NETRSPTMR	_____
Valid for SVC connections only. Specifies whether reverse charging should be accepted on incoming requests (first parameter, *NO/*ACCEPT) and whether charges should be requested on outgoing call requests packets (second parameter *NO/*REQUEST)	NETRVSCRG incoming outgoing	_____ _____
Valid for SVC connections only. Specifies closed user group identification. *NONE is the default.	NETCUGID	_____
Valid for SVC connections only. Specifies the X.25 network connection password (up to 8 characters). *NONE is the default.	NETCNNPWD	_____
Valid for SVC connections only. Specifies the X.25 network optional user facility codes (up to 126 input digits; 0-9, A-F). *NONE is the default.	NETUSRFCL	_____
The authority for this control unit is to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes.)	TEXT	_____

X.25 5250 CONTROL UNIT (PART 1 OF 2)
(CRTCUD command)

Description		Parameter	Entry
Name of the control unit.	R	CUD	
Control unit type identifier (5251 or 5294).	R	TYPE	
Model number of the control unit (for TYPE(5251), 2 or 12; for TYPE(5294), must be 1).	R	MODEL	
Control unit address (always 0000 for X.25).	R	CTLADR	0000
Attached to a switched line (*NO for X.25 PVC; or *YES for X.25 SVC).		SWITCHED	
Name of the nonswitched line to which this control unit is attached (*NONE if attached to a switched line).		LINE	
The modem has the data rate select feature (*NO or *YES).		SELECT	
Telephone number (4 to 15 digits) of this control unit. (See appropriate Remote Work Station Configuration Work Sheet.) Valid only for SWITCHED(*YES).		TELNBR	
Method to be used to make the initial connection between a switched line and the control unit (*ANS or *CALL). Valid only for SWITCHED(*YES).		INLCNN	
Exchange identifier used to identify this control unit to the remote system or device (for TYPE(5251), specify 020000xx; for TYPE(5294), 045000xx. In both cases, xx is the same as xx in the CTLADR parameter).		EXCHID	
This control unit is to be varied online when CPF is started (*NO or *YES).		ONLINE	
List of line names that identify the lines that can be connected to this control unit. Valid only for SWITCHED(*YES). **Note:** For each line name specified, a line description by that name must already exist.		LINLST	
If the connection with this control unit is delayed (for instance, if the 5251 Model 2 or 12 is powered off), the system attempts to make a connection periodically (*NO or *YES). Valid only for SWITCHED(*NO), indicating an X.25 PVC connection.		DLYFEAT	
List *on this work sheet only* (not on the CRTCUD command prompt itself) the name(s) of the devices to be attached to this control unit. (For 5251 Control Units, 1-9 remote work stations; see the *IBM 5250 Communications Network Setup Form*. For 5294 Control Units, up to 8 remote work stations; see *IBM 5294 Communications Network Setup Form*.) *Do not enter values for the DEV parameter on the CRTCUD command prompt.* When you create individual device descriptions for communications devices, and you reference this control unit through the CTLU parameter, those device names are automatically inserted in the DEV parameter for this control unit. (Use additional sheets if necessary.)		DEV	
The device wait time-out value. Number of seconds (2 through 600) or *TYPE. *TYPE is the default.		DEVWAIT	
Link protocol and role for the remote controller (*X25LLS).		LINKTYPE	*X25LLS
Type of character coding to be used for this control unit (*EBCDIC or *ASCII). *EBCDIC is the default.		CODE	

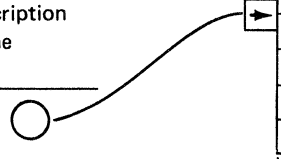
X.25 5250 CONTROL UNIT (PART 2 OF 2)
(CRTCUD command)

Description	Parameter	Entry
X.25 control unit address (If SWITCHED(*YES), X25ADR should be all zeros). 0xyyzz └─ LINNBR parameter from CRTLIND work sheet └─ LGLCHLE CHLNBR parameter from the CRTLIND work sheet └─ LGLCHLE GRPNBR parameter from the CRTLIND work sheet	X25ADR	_____
Packet size to be used with this control unit (64, 128, 256, 512, 1024, or *LIND).	DFTPKTSIZE	_____
Window size to be used with this control unit (2-7 for modulo 8-packet sequence numbering; 2-15 for modulo 128-packet sequence numbering; or *LIND.	DFTWDWSIZE	_____
X.25 logical link control protocol (*PSH, *QLLC, OR *ELLC)	NETPCL	_____
Time-out value to be used for the logical link level time-out condition (1-255). 60 is the default.	NETRSPTMR	_____
Valid for SVC connections only. Specifies whether reverse charging should be accepted on incoming requests (first parameter, *NO/*ACCEPT) and whether charges should be requested on outgoing call requests packets (second parameter *NO/*REQUEST)	NETRVSCRG incoming outgoing	_____ _____
Valid for SVC connections only. Specifies closed user group identification. *NONE is the default.	NETCUGID	_____
Valid for SVC connections only. Specifies the X.25 network connection password (up to 8 characters). *NONE is the default.	NETCNNPWD	_____
Valid for SVC connections only. Specifies the X.25 network optional user facility codes (up to 126 input digits; 0-9, A-F). *NONE is the default.	NETUSRFCL	_____
The authority for this control unit to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the control unit (*BLANK or no more than 50 characters in apostrophes).	TEXT	_____

3270 COMMUNICATIONS NETWORK SETUP FORM

Line Description Name

_____



Control Unit Name	
Control Unit Type	
SDLC Control Unit Address	
Telephone	

Page _____ of _____

This form is similar to the 3274 Device Cable Attachment Forms in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide.*

Unit address = network address

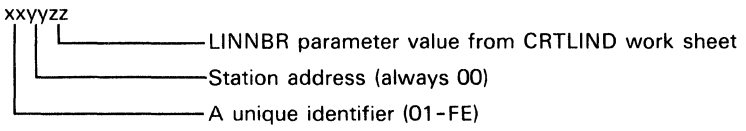
Unit type = device type

3274 Panel and Port Number	Unit Address (Network Address)	Device Name	Unit Type	Unit Location	Telephone Nearest the Unit
B0 B1 B2 B3					
B4 B5 B6 B7					
A31 or B8 A30 or B9 A29 or B10 A28 or B11					
A27 or B12 A26 or B13 A25 or B14 A24 or B15					
A23 A22 A21 A20					
A19 A18 A17 A16					
A15 A14 A13 A12					
A11 A10 A9 A8					
A7 A6 A5 A4					
A3 A2 A1 A0	02		3278 or 3279		

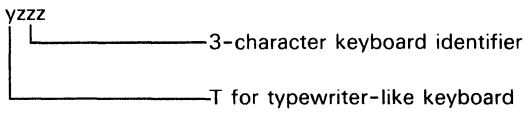
Note: *Maximum of 32 devices*

3270 DHCF REMOTE DISPLAY STATION
(CRTDEVD command)

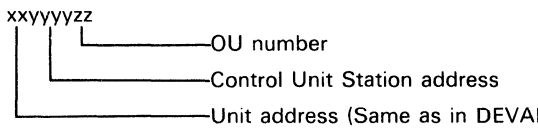
Description		Parameter	Entry
Name of the display station. (See the *PU2 Control Unit Work Sheet*.)	R	DEVD	
Physical address of the device (For SWITCHED(*YES), zz should be 00):	R	DEVADR	



Device type (3277).	R	DEVTYPE	*3277
Device model (*DHCF).	R	MODEL	*DHCF
Name of associated 3270 control unit. (See the *PU2 Control Unit Work Sheet*.)		CTLU	
This device is varied online when CPF is started (*NO or *YES).		ONLINE	
Type of keyboard (required only for certain keyboard types; see *CL Reference Manual*).		WSCKBD	



Application program is to control blinking cursor (*YES or *NO).		ALWBLN	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	



For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).		CHRID char set code page	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)		TEXT	

3270 REMOTE DISPLAY STATION
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *3270 Remote Control Unit Work Sheet.*)	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

xxyyyy
- xx — CTLADR parameter values from CRTCUD work sheet
- yyyy — Unit address. Also called port address or network address. If the work station is a Category A terminal, specify hexadecimal 03-41. Port address 02 applies to port A0 on the 3274. If the work station is a Category B terminal, specify hexadecimal 0B-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information.

Device type (3277, 3278, 3279).	R	DEVTYPE	_____
Device model (*NONE).	R	MODEL	*NONE
Name of associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet.*)		CTLU	_____
This device is varied online when CPF is started (*NO or *YES).		ONLINE	_____
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).		DROP	_____
Type of keyboard (required only for certain keyboard types; see *CL Reference Manual*).		WSCKBD	_____

yzzz
- yzz — 3-character keyboard identifier
- T for typewriter-like keyboard

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 246, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____

xxyyyyzz
- xx — OU number
- yyyy — Control Unit Station address
- zz — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a-5 digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	 _____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

3270 REMOTE WORK STATION PRINTER
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *3270 Remote Control Unit Work Sheet*.)	R	DEVD	
Physical address of the device:	R	DEVADR	

xxyyyy
- yyyy — CTLADR parameter value from CRTCUD work sheet
- xx — Unit address. Also called port address or network address. If the work station is a Category A terminal, hexadecimal 03-21. Port address 03 applies to port A1 on the 3274. Port A0 is not valid for printers. If the work station is a Category B terminal, specify hexadecimal 0B-1F, depending on the last Category A port actually used. The first Category B port is the next sequential address after the last Category A port used. See the chart describing Category A and B terminal relationships in the *IBM 3270 Information Display System: 3274 Control Unit Planning, Setup, and Customizing Guide* for more information.

(See the appropriate *3270 Remote Control Unit Work Sheet*.)

Device type (3287).	R	DEVTYPE	3287
Device model (*NONE).	R	MODEL	*NONE
Name of the associated 3270 control unit. (See the appropriate *3270 Remote Control Unit Work Sheet*.)		CTLU	
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	
Name of the message queue to which operational messages should be sent.		MSGQ	
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).		MAXLENRU	
Physical address of SNA device attached to an X.25 network.		NETDEVADR	

xxyyyyzz
- zz — OU number
- yyyy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).		PUBAUT	
Brief description of the device (*BLANK or no more than 50 characters, enclosed in apostrophes).		TEXT	

5250 AND 3180 DISPLAY STATION (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the display station. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy CTLADR parameter value from CRTCUD work sheet Unit address (00 if device is part of 5251 Model 2 or 12; 02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit.
5294	xxyyyy CTLADR parameter value from CRTCUD work sheet Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type (3179, 3180, 3196, 5251, 5252, 5291, or 5292).	R	DEVTYPE	_____
Device model:	R	MODEL	____

Device Type	Screen Size	Entry
3179	1920 chars	2
3180	1920 or 3564 chars	2
3196	1920 chars	A1, A2, B1, or B2
5251	1920 chars	11
5291 (both models)	1920 chars	1
5292	1920 chars	1 or 2

Name of associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	CTLU	_____
This device is varied online when CPF is started (*NO or *YES).	ONLINE	_____
The line connection (switched lines only) is to be broken after the work station user signs off without specifying a value for the DROP parameter on the SIGNOFF command (*NO or *YES).	DROP	_____
Name of the associated work station printer (*NONE or device name)..	PRINTER	_____
Name of an alternative printer file to be used when no associated work station printer is available.	PRTFILE	_____

5250 AND 3180 DISPLAY STATION (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Address of device:	WSCADR	_____

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- xx — Work station address switch settings (00-06)
- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07	WSCE5	08-15
WSC2	16-31	WSCE2	16-23	WSCE6	24-31
WSC3	32-47	WSCE3	32-39	WSCE7	40-47
WSC4	48-63	WSCE4	48-55	WSCE8	56-63

- zz — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Type of keyboard (for 5250 display stations, only connected to WSC or WSCE): WSCKBD _____

Device Family	Entry
5250	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — T for typewriter-like keyboard; D for data entry keyboard without proof arrangement; P for data entry keyboard with proof arrangement

3180	yzzz

yzzz
- zzz — 3-character identifier (see CRTDEVD command in *CL Reference Manual*)
- y — E for data entry; P for data processing

Application program is to control blinking cursor (*YES or *NO).	ALWBLN	_____
Maximum length of the request/response unit (valid only for X.25; valid values are 241, 245, 247, 256, and *CALC; 256 is the default).	MAXLENRU	_____
Device type and address of an auxiliary device (if any) attached to the IEEE-488 port on the 5292 Model 2. If DEVTYPE(5292) and MODEL(2) are specified, can be 7371 nn for the IBM 7371 Plotter or 7372 for the IBM 7372 Plotter, where nn is the address set on the plotter device (1-31); otherwise, must be *NONE.	AUXDEV type address	 _____ _____
Physical address of SNA device attached to an X.25 network.	NETDEVADR	_____

xxyyyyzz
- xx — OU number
- yyyy — Control Unit Station address
- zz — Unit address (Same as in DEVADR)

For both character set and code page, identifier used to specify a particular group or set of graphic characters (a 5-digit identifier; valid values are 1 through 32767; *SYSVAL is the default).	CHRID char set code page	 _____ _____
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device. (*BLANK or no more than 50 characters in apostrophes.)	TEXT	

_____

_____

5250 WORK STATION PRINTER (PART 1 OF 2)
(CRTDEVD command)

Description		Parameter	Entry
Name of the work station printer. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)	R	DEVD	_____
Physical address of the device:	R	DEVADR	_____

Control Unit	Entry
WSC or WSCE	000000
5251	xxyyyy yy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (02-05 if attached to first cluster; 06-09 if attached to second cluster). Depends on the placement of this device on the cable network attached to the 5251 Control Unit. See the appropriate *IBM 5251 Model 12 Communications Network Setup Form.*
5294	xxyyyy yy — CTLADR parameter value from CRTCUD work sheet xx — Unit address (00-1B depending on the work station address (switch setting) and the 5294 port to which the work station is attached). See the appropriate *IBM 5294 Communications Network Setup Form.*

Device type; valid values are 3812, 4214, 4245, 5219, 5224, 5225, 5256, 5262, or *IPDS (the 4224 should be configured as *IPDS).			R	DEVTYPE	_____
Device model (for DEVTYPE (*IPDS) model should be *NONE):			R	MODEL	_____

Device Type	Model	Entry	Device Type	Model	Entry
3812	1	1	5219	D1	D1
				D2	D2
4214	2	2	5224	1	1
4245	T12	T12		2	2
	T20	T20			
			5225	1	1
				2	2
				3	3
				4	4
4234	2	2	5256	1	1
				2	2
				3	3
*IPDS	*NONE	*NONE	5262	1	1

Name of the associated work station controller or 5250 control unit. (See the appropriate *Local Work Station Configuration Work Sheet, IBM 5251 Model 12 Communications Network Setup Form,* or *IBM 5294 Communications Network Setup Form.*)		CTLU	_____
The device is to be varied online when CPF is started (*NO or *YES).		ONLINE	_____

5250 WORK STATION PRINTER (PART 2 OF 2)
(CRTDEVD command)

Description	Parameter	Entry
Name of the message queue to which operational messages should be sent.	MSGQ	_____
		_____
Address of device:	WSCADR	_____

Control Unit	Entry
5251 or 5294	*NONE
WSC or WSCE	xxyyzz

xxyyzz
- zz — Work station address switch settings (00-06)
- yy — Work station controller port number as follows:

WSC	Valid Entries	WSCE	Valid Entries
WSC1	00-15	WSCE1	00-07
WSC2	16-31	WSCE2	16-23
WSC3	32-47	WSCE3	32-39
WSC4	48-63	WSCE4	48-55
		WSCE5	08-15
		WSCE6	24-31
		WSCE7	40-47
		WSCE8	56-63

- xx — Unit address (00-19 if WSC; 00-31 if WSCE)

(See the appropriate *Local Work Station Configuration Work Sheet*.)

Maximum length of the request/response unit (256 through 4096 in increments of 256; *CALC value valid only for X.25 device).	MAXLENRU	_____
Physical address of SNA device attached to an X.25 network.	NETDEVAD	_____

xxyyyyzz
- zz — OU number
- yy — Control Unit Station address
- xx — Unit address (Same as in DEVADR)

The default font identifier (3 digits; any combination of 0-9) to be used if FONT is not specified for a printer file. Required for DEVTYPE (5219 and 3812); optional for DEVTYPE (*IPDS).	FONT	_____
The mode in which paper is to be fed to the printer (*CONT, *CUT, or *AUTOCUT). Valid only for DEVTYPE (5219, 4214, and *IPDS).	FORMFEED	
The authority for this device to be granted to all users (*NORMAL, *ALL, or *NONE).	PUBAUT	_____
Brief description of the device (*BLANK or no more than 50 characters in apostrophes).	TEXT	

_____

_____

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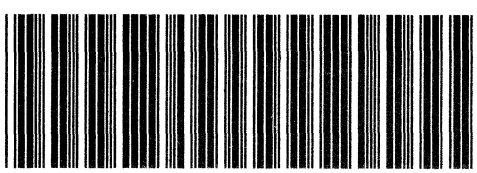

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