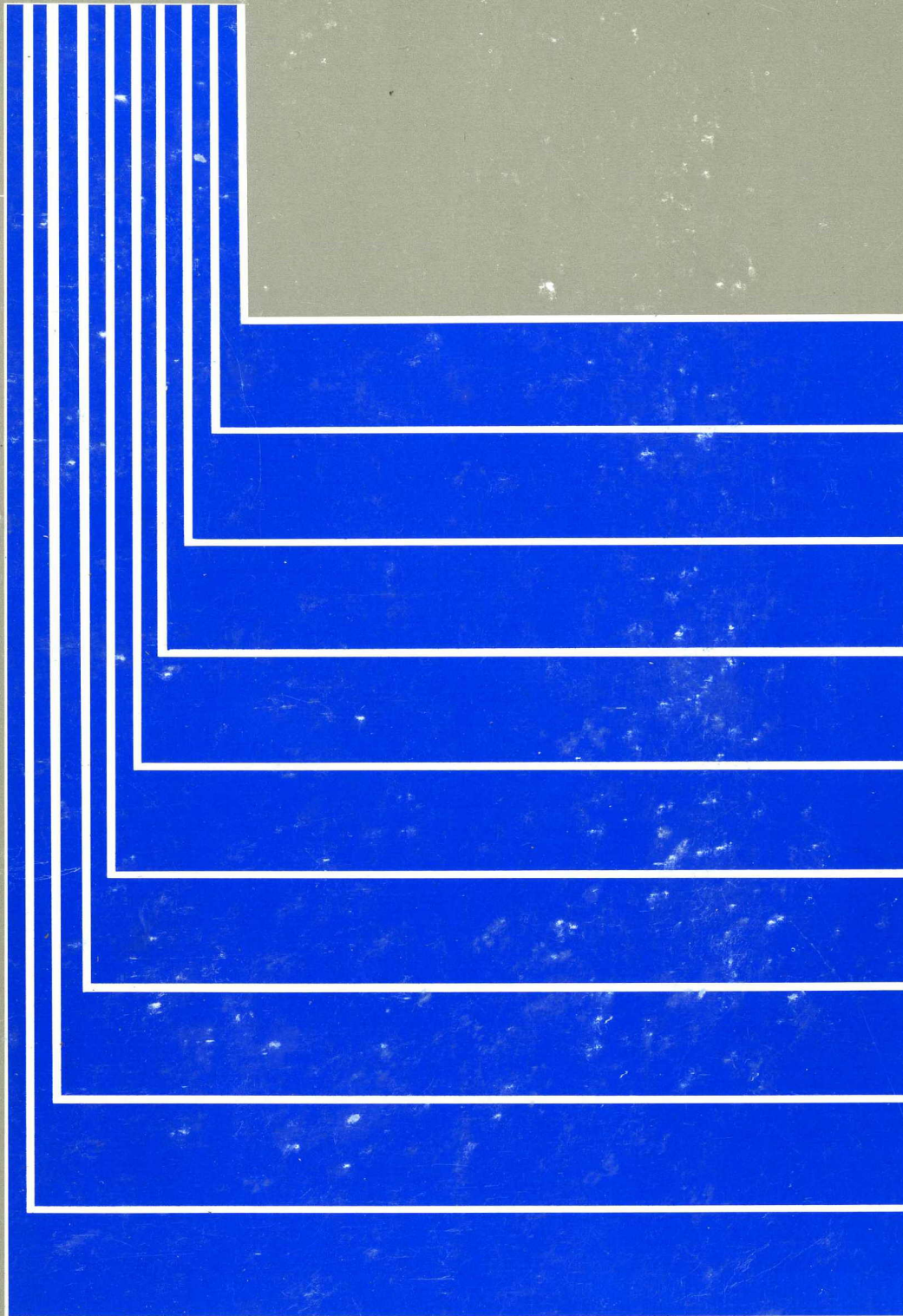


End-User Reference

IBM 3708
Network
Conversion Unit



End-User Reference

IBM 3708 Network Conversion Unit

GA27-3765-01

Second Edition (February 1988)

This edition obsoletes GA27-3765-0.

Changes are made periodically to the information herein; before using this publication in connection with the operation of IBM systems or equipment, consult the latest *IBM System/370, 30XX and 4300 Processors Bibliography*, GC20-0001; *System/38 Bibliography*, GH30-0233; and *8100 Bibliography*, GC20-8100, for the editions that are applicable and current.

Any reference to an IBM licensed program in this document is not intended to state or imply that only IBM's licensed product may be used. Any functionally equivalent program may be used instead. It is possible that this material may contain reference to, or information about, IBM products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that IBM intends to announce such IBM products, programming, or services in your country.

Publications are not stocked at the address given below; requests for IBM publications should be made to your IBM representative or to the IBM branch office serving your locality.

A form for reader's comments is provided at the back of this publication. If the form has been removed, comments may be addressed to IBM Corporation, Communication Products Information Development, Department E02, PO Box 12195, Research Triangle Park, North Carolina, U.S.A. 27709. IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation whatever. You may, of course, continue to use the information you supply.

Federal Communications Commission (FCC) Statement

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Instructions to User: In many instances, shielded cables and connectors must be used for connection to peripherals. Proper IBM cables are available from authorized dealers. The manufacturer is not responsible for any radio or television interference caused by using other than the recommended cables or by unauthorized modifications to this equipment; it is the responsibility of the user to correct such interference.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the following:

FOB Public Contact Branch	Consumer Assistance and
Room 725	Small Business Division
1919 M St. NW	Room 254
Washington, DC 20554	1919 M St. NW
Tele. (202) 634-1940	Washington, DC 20554
	Tele. (202) 632-7000

This manual contains several trademarks and registered trademarks. Viewpoint is a registered trademark of Applied Digital Data Systems, Inc. Beehive is a trademark of Beehive International. Dasher is a registered trademark of the Data General Corporation. DEC is a registered trademark of the Digital Equipment Corporation. ESPRIT I and ESPRIT II are trademarks of Esprit Systems, Inc. FALCO 500 is a registered trademark of Falco Data Products, Inc. Dumb Terminal is a registered trademark of Lear Siegler, Inc. Displayphone is a trademark of Northern Telecom, Inc. TeleVideo is a registered trademark of TeleVideo Systems, Inc. WY-50 is a registered trademark of Wyse Technology.

About This Book

This book is a reference for users of terminals attached to an IBM 3708 Network Conversion Unit. Footnotes in Chapters 1 through 4 are provided for the system administrator or system engineer who is responsible for the 3708. The footnotes may not be of interest to terminal operators and other end users.

How This Book Is Organized

This book contains four chapters and three appendixes:

Chapter 1, “Logging on to the 3708” gives instructions for logging on to the 3708 and lists any error messages that may be displayed.

Chapter 2, “Operating in Full-Screen Mode” describes how to operate in protocol conversion mode (full-screen mode).

Chapter 3, “Operating in Line-by-Line and ASCII Pass-through Modes” describes how to operate in protocol enveloping (line-by-line) and ASCII pass-through modes.

Chapter 4, “Common Problems and What to Do” describes how to solve common problems you may have during logging on or operating in protocol conversion or protocol enveloping modes.

Appendix A, “Flowchart of 3708 Logon Process” contains a flow diagram of the logon process.

Appendix B, “Setting up Your Terminal” contains the recommended switch settings for the supported terminals.

Appendix C, “Terminal Keyboard Maps” contains keyboard maps for the terminals supported by the 3708.

This book also contains a glossary and an index.

Related 3708 Library Information

The following list describes books and information for the 3708:

- *IBM 3708 Network Conversion Unit Planning and Installation*, GA27-3766, describes how you can plan for and install the 3708.
- *IBM 3708 Network Conversion Unit Setup*, GA27-3611, is shipped with the 3708 and describes how to set up and test the 3708, how to handle setup problems, and how to prepare the 3708 for relocation.
- *IBM 3708 Network Conversion Unit Description*, GA27-3768, describes the external interfaces and operational characteristics of the 3708.
- *IBM 3708 Network Conversion Unit Problem Determination*, GA27-3767, provides procedures for solving problems with the 3708.
- Unpacking instructions are printed on the 3708 shipping carton and show how to unpack the 3708.

- *IBM 3708 Network Conversion Unit Problem Report, GA27-3638*, which is shipped with the 3708, provides a means of recording problem diagnosis information, which is used by repair center representatives.
- *IBM 3708 Network Conversion Unit Registration Address Form, GX27-3734*, is shipped with the 3708. This card must be completed and returned to IBM for you to automatically receive notification of changes in the 3708 microcode.
- IBM 3708 reference cards describe the keyboard functions of ASCII displays that can be connected to a 3708 and describe the general procedures for terminal users. See Appendix C, "Terminal Keyboard Maps" for a list of the end-user devices and the reference card order numbers.

Changes Since the Last Edition

This edition contains the following new information:

- Instructions for logging on to the 3708 using the short logon screens
- Descriptions of two new non-3270 functions. The following features are available by entering key sequences:
 - Terminal logon initialization sequence (TLIS) refresh
 - 2/4 color toggle
- Switch settings and keyboard maps for the following terminals
 - FALCO 500®
 - IBM 3151
 - IBM 3163/3164 VT100/3708 Emulation Cartridge (Feature 8313)
 - WY-50®.

Contents

Chapter 1. Logging on to the 3708	1-1
Things to Know Before Logging on	1-1
Full Screen Format and Operation	1-1
Input Area and Responses	1-2
Short Screen Format and Operation	1-3
Operation Without Logon Screens	1-3
Other Features	1-4
Preventing the Display of Entire Screens	1-4
Disconnecting from the 3708	1-4
Logging on	1-5
Step 1. Establishing the Connection	1-5
Step 2. Entering the Port Password	1-5
Step 3. Entering the Terminal Type	1-6
Step 4. Selecting a Host	1-7
SNA Hosts	1-7
ASCII Hosts	1-7
Step 5. Logging on to the SNA Host	1-8
Error Messages	1-9
Chapter 2. Operating in Full-Screen Mode	2-1
Understanding the Display Image	2-2
Input Fields	2-2
Numeric Fields	2-3
Protected Fields	2-4
Nondisplay Fields	2-4
Field Attribute Locations	2-4
Using Your Keyboard	2-5
Keyboard Maps	2-5
Terminal Controlled Keys	2-5
3270 Functions	2-5
Non-3270 Functions	2-10
Reading the Status Line	2-12
Status Line Format	2-12
Ready Status	2-12
Device Emulation	2-12
Session Indicator	2-13
Session Status	2-13
Insert Status	2-16
Null Blank Status	2-16
Type-Ahead Status	2-16
Printer Status	2-16
NNN Codes	2-17
Communicating with the Host Control Program	2-18
Using Light Pen Emulation	2-19
Selection Fields	2-19
Attention Fields	2-19
Printing Screen Images (Local Copy)	2-20
Print ID	2-20
Changing the Print ID	2-20
Printing	2-21
Printer not Working	2-21
Cancelling a Print Request	2-21

Host-Initiated Local Copy	2-21
Using a Display With an Attached Printer	2-22
Functions that Control Data Flow	2-22
Devices Requiring Manual Intervention	2-23
Differences in Function for the 3270 and Terminals Attached to 3708	2-24
Chapter 3. Operating in Line-by-Line and ASCII Pass-through Modes	3-1
Line-by-Line Mode	3-1
ASCII Pass-through Mode	3-2
Chapter 4. Common Problems and What to Do	4-1
Common Problems during 3708 Logon	4-2
Common Problems in Full-Screen Mode (Protocol Conversion)	4-4
Common Problems in Line-by-Line Mode (Protocol Enveloping)	4-6
Appendix A. Flowchart of 3708 Logon Process	A-1
Appendix B. Setting up Your Terminal	B-1
Using Scrolling	B-1
Setting Your Terminal's Switches	B-1
Default Terminal Switch Settings	B-2
ADDS Viewpoint®	B-2
ADDS Viewpoint®/78	B-3
Beehive™ ATL-78	B-4
Data General® D210 Display Terminal	B-5
DEC® VT100 and VT52	B-6
DEC® VT220 (Emulating a VT100)	B-7
DEC® VT220	B-8
FALCO 500®	B-9
Hazeltime ESPRIT I™	B-10
Hazeltime ESPRIT II™	B-11
Hazeltime 1500	B-12
Hewlett-Packard 2621B Interactive Terminal	B-13
IBM PC/FTTERM (Color and Monochrome)	B-14
IBM PC in 3101 Emulation Mode	B-15
IBM 3101 Models 10, 12, 13, 20, 22, 23	B-16
IBM 3151 ASCII Display Station	B-17
IBM 3161 ASCII Display Station	B-19
IBM 3162 ASCII Display Station	B-21
IBM 3163 ASCII Display Station	B-23
IBM 3164 ASCII Display Station	B-25
Lear Siegler ADM 24E Video Display Terminal	B-27
Lear Siegler ADM 3A Dumb Terminal®	B-29
Lear Siegler ADM 31 Intermediate Terminal™ Video Display Unit	B-30
Northern Telecom Displayphone™	B-31
ROLM® Cypress™, Cedar™, and Juniper™	B-32
Teletype 5410 Asynchronous Display Terminal	B-33
Teletype 5420 Buffered Display	B-34
TeleVideo® 910	B-35
TeleVideo® 912C	B-36
TeleVideo® 950	B-37
WY-50®	B-38
Appendix C. Terminal Keyboard Maps	C-1
IBM 3101 (Models 10, 12, 13, 20, 22, 23)	C-2
IBM PC Emulating a 3101	C-3

IBM 3151, 3161, 3162, 3163, and 3164	C-4
IBM 3151, 3161, 3162, 3163, and 3164 (3708 Feature)	C-5
ADDS VIEWPOINT®	C-6
ADDS VIEWPOINT®/78	C-7
BEEHIVE™ ATL-078	C-8
DATA GENERAL DASHER® D210	C-9
DEC® VT52	C-10
DEC® VT100	C-11
DEC® VT220	C-12
DEC® VT220 Emulating a DEC VT100	C-13
FALCO® 500	C-14
HAZELTINE ESPRIT I® and II®	C-15
HAZELTINE 1500	C-16
HEWLETT-PACKARD 2621B	C-17
LEAR SIEGLER ADM 3A Dumb Terminal®	C-18
LEAR SIEGLER ADM 24E	C-19
LEAR SIEGLER ADM 31	C-20
NORTHERN TELECOM DISPLAYPHONE™	C-21
ROLM® CEDAR™	C-22
ROLM® CYPRESS™	C-23
ROLM® JUNIPER™	C-24
TELETYPE 5410	C-25
TELETYPE 5420	C-26
TELEVIDEO® 910	C-27
TELEVIDEO® 912C	C-28
TELEVIDEO® 950	C-29
WY-50®	C-30
USER-DEFINED TERMINAL	C-31
List of Abbreviations	X-1
Glossary	X-5
Index	X-9

Figures

1-1.	A 3708 Logon Screen - Full Screen Format	1-1
1-2.	A 3708 Logon Screen - Short Screen Format	1-3
1-3.	3708 Port Password Screen (C1)	1-5
1-4.	3708 Terminal Type Selection Screen (C2)	1-6
1-5.	3708 Host Selection Screen (C3)	1-7
1-6.	3708 Logon Indication Screen (C4)	1-8
2-1.	Example of a Display Image	2-3
2-2.	IBM 3708 Status Line Format	2-12
A-1.	Flowchart of the IBM 3708 Logon Process	A-2

Chapter 1. Logging on to the 3708

This chapter describes the 3708 logon screens and gives instructions for logging on to the 3708. It also lists error messages that may be displayed.

Things to Know Before Logging on

There are four logon screens:

- C1 - Port Password
- C2 - Terminal Type
- C3 - Host Selection
- C4 - Logon Indication.

Depending on how the 3708 is configured, you may see these logon screens displayed in their full or short screen formats. The 3708 configuration also determines how many of the screens you see. You may see all, none, or only some of the logon screens.

Full Screen Format and Operation

When you log on to the 3708, you might see full screens like this:

```
(1)=====IBM 3708===EC A58809=====RID 3708-008-01-0000222=====PORT 07=====
(2)C3: Type the number of the desired connection:

(3)1-HOSTNAM1
    2-HOSTNAM2
    3-HOSTNAM3
    4-HOSTNAM4

(4) To disconnect from the 3708, type "####."

(5)

(6)====> _
```

Figure 1-1. A 3708 Logon Screen - Full Screen Format

(1) contains the following information:

- EC number — The Engineering Change number for the 3708
- RID number — The Repair Identification number for the 3708
- Port number — The 3708 port to which you are connected.

(2) contains the following information:

- The screen number (for example, C3)
- The instructions for the screen (for example, Type the number of the desired connection:)

(3) contains the responses that you may select (not all logon screens have this area).

(4) contains the message: To disconnect from the 3708 type "####."

(5) is the message line; if you enter an invalid response, an error message is displayed here.

(6) is the input area (the cursor is positioned here automatically when the 3708 completes transmitting the screen to your display).

Note: During the 3708 logon screen processing, your display is not operating in full-screen mode. Full screen editing functions, such as CLEAR SCREEN and HOME cannot be used. Therefore, the data for each screen may not appear at the top of the display.

Input Area and Responses

To type your response, use:

- Alphabetic keys (for example, A, e, P)
- Numeric keys (for example, 1, 2, 3)
- Symbolic keys (for example, %, &, \$)
- The backspace key (the key that sends a backspace character).

You cannot use editing keys (for example, delete or insert).

Note: For many terminals, the key labeled as a Cursor Left key does not send a backspace character, even though it may appear to move the cursor back one position on your screen. For example, if you type "1", "cursor left", and "2", the 1 is not replaced by the 2 unless the cursor left key actually generates a backspace character.

To enter your response, use one of the following keys as the ENTER key:

- A key that generates a carriage return (CR) character (normally, this would be the key marked ENTER, SEND, or NEW LINE)
- A period key (.)
- A key that has been set up for the port as a line turn-around character^{C1}.

The keyboard maps in Appendix C, "Terminal Keyboard Maps" show what characters or functions each key is assigned. Refer to Appendix C or your system administrator if you do not know what key to use.

^{C1} **Configuration Note:** The line turn-around characters are one of the protocol enveloping configuration parameters. For the 3708, the port option OPERATING MODE must be 1 or 2 for the protocol enveloping options to be presented.

Short Screen Format and Operation

If your configuration includes short logon screens, you may see screens like this:

```
(1)=====IBM 3708===EC A58809=====RID 3708-008-01-0000222=====PORT 07=====
(2)C2: Type the number of your terminal:
(3)====> _
```

Figure 1-2. A 3708 Logon Screen - Short Screen Format

(1) contains the following information:

- EC number — The Engineering Change number for the 3708
- RID number — The Repair Identification number for the 3708
- Port number — The 3708 port to which you are connected.

(2) contains the following information:

- The screen number (for example, C2)
- The instructions for the screen (for example, Type the number of your terminal:).

(3) contains the input area (the cursor is positioned here automatically when the 3708 completes transmitting the screen to your device).

Note: During the 3708 logon screen processing, your display is not operating in full-screen mode. Full screen editing functions, such as CLEAR SCREEN and HOME cannot be used.^{C2} Therefore, the data for each screen may not appear at the top of the display.

If the 3708 port has been configured for short logon screens, the 3708 transmits only the screen divider, screen title, and the input line for each screen. If you have a question, enter a question mark (?) to display the information for a full screen. The 3708 also displays the full logon screen if you enter an invalid response. The full-screen display continues until you enter a correct response. After you supply the correct response, the 3708 displays the next logon screen configured for that port.

Operation Without Logon Screens

If you do not have logon screens, the first information normally sent to your terminal (after a physical connection has been established) is a message from your host. At this point, anything you enter at your terminal is sent to the host.^{T1}

^{C2} **Configuration Note:** If the port is configured for protocol conversion mode only, and the terminal type is recognized by the 3708, the screen is cleared before logon screens are displayed. The screen is cleared only if no message is to be displayed on the message line. The terminal types can be chosen by the user at logon or defined during port configuration for default terminal types.

^{T1} **Technical Note:** The SSCP-SLU session is used for this traffic.

Other Features

During the logon process, you can prevent the entire logon screen from being displayed, or you can disconnect from the 3708.

Preventing the Display of Entire Screens

To prevent the entire screen from being displayed, press the BREAK key.^{c3} You may want to do this if you have a remote connection with a slow line speed. After you press the BREAK key, input your response.

Disconnecting from the 3708

To disconnect from the 3708 during the logon process, type #### followed by one of the ENTER keys. (The period is included inside the quotes on the screen because the period can be used as an ENTER key. Refer to "Input Area and Responses" on page 1-2.) The 3708 disconnects your modem or terminal and then attempts to establish the connection again. For a directly attached terminal, there is a short pause (there may be an indication on your device that host communication has been lost), then the first configured logon screen appears again. For a remotely attached terminal, you need to dial the 3708 again to log on.

^{c3} **Configuration Note:** For the BREAK to be accepted, the port must be configured as a half duplex control unit. For the 3708, the protocol enveloping option FULL DUPLEX CONTROL UNIT must be set to 0.

Logging on

The following discussion guides you through the steps required for logging on.

Note: Refer to “Error Messages” on page 1-9 for all logon error messages.

Step 1. Establishing the Connection

If the terminal is directly connected, turn on the power to the terminal. If the terminal is remotely connected, turn on the power to the terminal and modem, then establish the connection through the modem.

After establishing the connection, you should see the first configured logon screen. If you do not see a logon screen, press the carriage return key on your terminal (this could be the ENTER, SEND, or NEW LINE key; see your system administrator if you do not know which key to press). If no logon screens appear or the Logon Indication Screen (C4) appears,^{C4} go to step 5.

Step 2. Entering the Port Password

If a logon screen other than the port password screen (C1)^{C5} appears, go to step 3.

If screen C1 appears, type your password, then press the ENTER key.

```
====IBM 3708===EC  A58809====RID 3708-008-01-0000222====PORT 07====
C1: Type port password

To disconnect from the 3708, type "###."

====> _
```

Figure 1-3. 3708 Port Password Screen (C1)

If you enter the password incorrectly, **INCORRECT PASSWORD** is displayed in the message line, and you can try again several times.^{C6} If you do not enter the correct password before reaching the configured number of tries, the device is disconnected automatically.

^{C4} **Configuration Note:** If the port has been set to run without the 3708 logon screens (LOGON SCREENS EXCLUDED = Y), no logon screens appear. Appendix A, “Flowchart of 3708 Logon Process” is a diagram showing the logon process, including how various configuration options affect the flow through the 3708 logon screens.

^{C5} **Configuration Note:** For the 3708, if port option PASSWORD is set to blanks or the port password screen is suppressed during configuration, the port password screen is not displayed at all.

^{C6} **Configuration Note:** For the 3708, the number of times you can enter a password before being disconnected is determined by port option RETRY LIMIT.

Step 3. Entering the Terminal Type

If a logon screen other than the terminal type screen (C2) appears^{C7} at your terminal, go to Step 4. If screen C2 appears, type in the number that corresponds to your terminal type, then press the ENTER key.

```
=====IBM 3708===EC A58809=====RID 3708-008-01-0000222=====PORT 07=====  
C2: Type the number of your terminal:  
  
1 -IBM 3101                6 -TV 910                16 -HP 2621B  
1A-IBM PC/FTTERM COLOR    7 -TV 950                17 -DG D210  
1B-IBM PC/FTTERM MONO     8 -LS ADM3A             18 -ROLM DISPLAY  
2 -IBM 3161/62/63         9 -ADDS VP              19 -BEEHIVE ATL 078  
2A-IBM 3151/61/62/63 (3708 FEATURE) 10 -HAZEL 1500          20 -UDT01  
2B-IBM 3151              11 -HAZEL ESP I          21 -UDT02  
2C-IBM 3151/62 (MODEL 5 EMULATION) 12 -HAZEL ESP II       22 -UDT03  
3 -IBM 3164              13 -NT DISPLAY          23 -UDT04  
3B-IBM 3164 (3708 FEATURE) 14 -TT 5410            24 -UDT05  
4 -DEC VT52              15 -TT 5420            25 -UDT06  
5 -DEC VT100/220  
5A-DEC VT220  
5B-FALCO 500 (DEC VT200 MODE)  
5C-WYSE 50  
For trademark acknowledgements, see 3708 publications  
  
To disconnect from the 3708, type "####."  
  
====> _
```

Figure 1-4. 3708 Terminal Type Selection Screen (C2)

If you enter an invalid number, **INCORRECT RESPONSE** is displayed on the message line. Enter a valid number. You can try again an unlimited number of times.

The selections shown in Figure 1-4 are examples only. Depending on the 3708 configuration, selection 24 and 25 may not appear on the screen. The selections for user-defined terminals, UDT01 through UDT04, may be replaced with the names defined during configuration.^{C8}

^{C7} **Configuration Note:** For the 3708, if port option **OPERATING MODE** is set to 0, or **DEVICE CLASS** is set to 2, then protocol enveloping is the only mode allowed for the port, and the terminal type screen is not displayed.

^{C8} **Configuration Note:** The user-defined terminal selections 24 and 25 are not supported if the 3708 is configured for enhanced UDTs. To configure a UDT name, you must define enhanced UDTs.

Step 4. Selecting a Host

If a logon screen other than the Host Selection Screen (C3) appears, go to Step 5.

If screen C3 appears, type the number that corresponds to the host to which you want to connect, then press the ENTER key.

```
=====IBM 3708====EC A58809=====RID 3708-008-01-0000222=====PORT 07=====  
C3: Type the number of the desired connection:  
  
1-HOSTNAM1  
2-HOSTNAM2  
3-HOSTNAM3  
4-HOSTNAM4  
  
To disconnect from the 3708, type "####."  
  
====> _
```

Figure 1-5. 3708 Host Selection Screen (C3)

If you enter an invalid number **INCORRECT RESPONSE** is displayed on the message line. Enter a valid number. You can try again for an unlimited number of times.

SNA Hosts

If you choose an SNA host but the host path is unavailable,^{T2} **HOST UNAVAILABLE, RETRY LATER** is displayed on the message line. You can try again at any time.

If you choose an SNA host but the 3708 is unavailable,^{T3} **IBM 3708 RESTRICTING THIS CONNECTION, RETRY LATER** is displayed on the message line. You can try again at any time.

ASCII Hosts

If you choose an ASCII host, but the host is either not connected to the 3708 or is in session with another user, the host selection screen is displayed again with **HOST UNAVAILABLE, RETRY LATER** on the message line. You can try again at any time.

If you choose an ASCII host, and the host is available, a screen is displayed with the message **ASCII HOST CONNECTED**. Refer to "ASCII Pass-through Mode" on page 3-2 for information on how to operate in ASCII pass-through mode.

^{T2} **Technical Note:** The availability of the SNA host is determined by the receipt of an **ACTIVATE LU (ACTLU)** command. If this has not yet been received for the LU associated with your port, the **HOST UNAVAILABLE, RETRY LATER** error message is displayed.

^{T3} **Technical Note:** The 3708 is available as long as a buffer shortage does not exist. Any buffer shortage should be temporary in nature. If the problem persists, the configuration of the 3708 may need to be modified.

Step 5. Logging on to the SNA Host

If the 3708 Logon Indication Screen (C4) is configured, the following screen is displayed.

```
====IBM 3708===EC  A58809====RID 3708-008-01-0000222====PORT 07====  
C4: You can now type your system logon  
  
To disconnect from the 3708, type "####."  
  
====> _
```

Figure 1-6. 3708 Logon Indication Screen (C4)

Note: The logon indication screen may be immediately followed by a screen from your host, depending on your installation.

After the logon indication screen (C4) is displayed (or, if no logon screens are being used), anything entered on the screen is sent to the host. (Four “#” characters (####) followed by an ENTER key can still be used to terminate your connection.)

Normally at this time, you would type in a logon request, or your host might log the terminal on automatically. In both cases, the host sends a command to the 3708 to start the session. The command contains information that tells the 3708 what mode is to be used for the session: line-by-line, or full-screen.^{T4}

See your system administrator to determine which mode you are using. Refer to Chapter 3, “Operating in Line-by-Line and ASCII Pass-through Modes” for information on how to operate your device when in the line-by-line mode, and to Chapter 2, “Operating in Full-Screen Mode” for information on operations in full-screen mode.

^{T4} **Technical Note:** To initiate the SNA session, the host sends a BIND. The Bind contains an LU-type field that tells the 3708 what mode to use: LU type 1 is specified for a line-by-line session, and LU type 2 is used for a full-screen session.

Error Messages

When logging on, the following messages may be displayed in the error message line of the logon screens.

BASIC CONFIGURATION IN USE, CALL SUPERVISOR

Meaning: This message can indicate a 3708 internal error has occurred or a procedural error occurred at your site when powering on the 3708. Your site's 3708 configuration is not in use; the IBM-supplied configuration is active. You cannot access any hosts.

Action: Notify your system administrator or operator.

INCORRECT PASSWORD

Meaning: You did not type in the correct password. This message may also occur if you attempted to use cursor movement keys other than the Backspace key.

Action: Enter your response again.

INCORRECT RESPONSE

Meaning: Your response was unacceptable for some reason. You may have selected a value that is not a valid response. This message may also occur if you attempted to use cursor movement keys other than the Backspace key.

Action: Enter your response again.

HOST UNAVAILABLE, RETRY LATER

Meaning: The host you have selected is not available. For an ASCII host, another user may already be accessing the host. For an SNA host, this normally indicates that the network is not yet initialized or has failed.

Action: Enter your response again. If the problem persists, contact your system administrator.

IBM 3708 RESTRICTING THIS CONNECTION, RETRY LATER

Meaning: There is a temporary buffer shortage within the 3708.

Action: Try again later.

Chapter 2. Operating in Full-Screen Mode

When operating in full-screen mode, your terminal appears to the host as a 3270 terminal with full-screen edit capabilities. (This mode is also called *protocol conversion*.) In this mode, your terminal's keyboard performs the 3270 functions listed below.

- Cursor Left
- Cursor Right
- Cursor Up
- Cursor Down
- Tab
- Backtab
- New Line
- Home
- Erase EOF
- Erase Input
- Insert
- Delete
- Reset
- DUP
- FM
- Enter
- Clear
- PF1 to PF24
- PA1, PA2, PA3
- SYS REQ
- DEV CNCL
- CURSR SEL
- ATTN
- Print
- IDENT.

In full-screen mode, the following functions may also be used:

- Null/Blank
- Type-ahead
- Status On/Off
- Refresh
- Resume Display
- Resume Printer
- Suspend Display
- Suspend Printer
- Terminal Controlled Print Functions
- Terminal Logon Initialization Sequence (TLIS) Refresh
- 2/4 Color Toggle.

Each of these functions is described in this chapter. Appendix C, "Terminal Keyboard Maps" contains the key sequences that you should use for your terminal to cause these functions. For example, on many terminals, pressing ESC then 1 invokes the PF1 function.

Understanding the Display Image

The screen of your terminal shows you a display image. An example of a display image is shown in Figure 2-1 on page 2-3. The format of this image varies according to the application program you are using. The image may contain areas that you use to enter data to be processed by the application program; it may also contain areas that are used only for display of information to you. These areas are called *fields*.

When a screen is divided into fields, it is known as a formatted screen. A screen that the program has not divided into fields is known as an unformatted screen. Each job that you work on could use a different format or none at all; therefore, you may be working with both formatted and unformatted screens.

The screen shown in our sample display image is an example of a formatted screen.

An actual 3270 terminal has a special “operator information area” below the last data line of the screen. This area is used to display operating and status messages that are associated with your terminal operation. The 3708 provides the same type of information in a status line. The status line is displayed in a special area below the last data line of the screen or over the last data line of the screen, depending on the type of terminal you are using. The status line is shown as the last line in the example on page 2-3. Refer to “Reading the Status Line” on page 2-12 for a description of the status line.

Input Fields

An input field is one into which you can enter data. Each application program user’s guide should tell you which fields are input fields for that particular application.

In the example, the area after **Employee Name:** is an input field.

The number and names of fields on your screen depends on the job you are doing and the application program operating in the host system.

```
Employee Information Record

Employee Name: _
Employee Address: _
Identification Number:
Salary:

Enter employee information, then press ENTER.
To exit this function, press PF3.

4BMYJOB P 70
```

Figure 2-1. Example of a Display Image

Numeric Fields

Numeric fields are fields that normally contain only numbers or the characters minus (-), period (.) or DUP. In the example, the fields following **Identification Number:** and **Salary:** would probably have been established as numeric fields.

When a numeric field is defined in the display image, the 3708 allows you to enter any characters except lower case alphabetic characters in the normal way. You can override the numeric attribute of the field by entering a blank character in the first position of the field. Any character (including lower case alphabetic) can be entered while the blank is in the first position of the field. If your input requires a valid character in the first position as well, you must enter this character after having typed all the remaining characters. (If you want to enter a lower case alphabetic character into a numeric field that is only 1 byte long, first enter a blank into the field, and then you can overlay the blank with the lower case alphabetic character.)

Protected Fields

Protected fields are areas on the screen where you cannot type. For example, you cannot change field names. A “go elsewhere” message (X <-OP-> X) is displayed on the 3708's status line if you attempt to change any data in a protected field. (To recover and enter data, press the Reset Key sequence and move the cursor to an unprotected area of the screen.)

In the example, the areas containing **Employee Name:**, **Employee Address:**, **Identification Number:**, and **Salary:** are all protected fields. Also, the area in the second half of the screen that contains instructions to the operator is a protected field.

Nondisplay Fields

The application program can define a field so that the data in the field is not displayed on the screen. A non-display field can be an input field or a protected field. In the example, the salary field is a non-display field; you cannot see the information in the field.

Field Attribute Locations

For each field that the host application defines, one position on the screen is reserved as a field attribute location. This location is used to store the attributes of the field, and therefore, cannot be altered by keystrokes from the terminal. If you attempt to enter a character from your keyboard when the cursor is located on a field attribute location, your keyboard is locked; use the Reset function, and position the cursor elsewhere to enter data.

^{T1} **Technical Note:** Every time you press a key (or in some cases ALT or CTRL plus another key) on your terminal, a hexadecimal (ASCII) code is transmitted to the 3708. These codes are used to identify the function you want to do. The 3708 does what is necessary to perform the function: it may send other hexadecimal codes back to the terminal that cause the cursor to be repositioned, it may initiate the transmission of data to the host, or it may echo back a data character for display on the screen.

Using Your Keyboard

This section describes the keyboard maps shown in Appendix C and the function of the keys on 3270 and non-3270 terminals.

Keyboard Maps

At a 3270 terminal, the keyboard functions are associated with one key on the keyboard. For example, you press the PF1 key for the PF1 function. However, the ASCII terminals that are supported by the 3708 do not have keys labeled to match all the possible 3270 functions. Therefore, you sometimes must press two keys to cause one function (for example, pressing ESC then 1 invokes the PF1 function on many of the supported terminals.)^{T1}

The keyboard map defined for your terminal type describes the function the 3708 associates with a particular key sequence, and it tells you which keys on the keyboard to press to execute each function.

Note: The keyboard maps are found in Appendix C. Your system administrator can obtain, for each terminal type, a reference card that contains the appropriate keyboard map. These cards fold so that they can stand next to your terminal to be used as a convenient reference.

Terminal Controlled Keys

Your terminal may provide typematic operation for some or all keys on the keyboard. (When a typematic key is pressed, its function is repeated as long as the key remains pressed.) See your terminal manual for details. Also, your terminal may have keys such as SHIFT and LOCK. You should refer to the documentation for the terminal for a description of how it supports them. The 3708 does not change the function of these keys.

3270 Functions

This section describes the functions the 3708 associates with each of the keys on the keyboard of a 3270 terminal.

- **Cursor Movement functions (Cursor Up, Cursor Down, Cursor Right, and Cursor Left).**

This set of four functions moves the cursor one location at a time into any character location. Using these functions, the cursor may be moved into any location, including unprotected and protected fields.

The following functions are all capable of causing the cursor to wrap:

- If the cursor is located in the last position of a line and you use the cursor right function, the cursor moves to the first position of the next line.
- If the cursor is located in the first position of a line and you use the cursor left function, the cursor moves to the last position of the previous line.
- If the cursor is located in the first line of the screen and you use the cursor up function, the cursor moves to the last line of the screen, without changing the column position.
- If the cursor is located in the last line of the screen and you use the cursor down function, the cursor moves to the first line of the screen, without changing the column position.

- **Cursor Movement Functions (Tab, Backtab, New Line, and Home)**

The following functions move the cursor to the first position in a field. All four functions can cause the cursor to wrap from the end of the last line on the display to the beginning of the top line.

Tab Moves the cursor to the first character location of the next input field. In a screen with no input fields, the cursor is moved to the upper left hand corner of the screen.

Backtab When the cursor is located in the field attribute location or the first character position of an input field, the backtab function moves the cursor to the first character position of the preceding input field. When the cursor is located in any character position of an input field, other than the first position, this function moves the cursor to the first position of that field. If there are no input fields, the cursor is positioned to the upper left corner of the screen.

New Line Moves the cursor to the first input character position of the next line. If the next line has no input fields, the cursor is moved to the next line containing an input field. If the screen contains no fields, the cursor is repositioned to the first position of the next line.

Home Moves the cursor to the first input character position on the screen. If there are no input fields, the cursor is positioned to the upper left hand corner of the screen.

- **Erase EOF (End of Field)^{OP1}**

If the cursor is located in an input field, this function erases the characters from the cursor to the end of the field (erased characters are set to nulls). If the field spans more than one line, only the remainder of the current line is erased. The cursor does not move.

Using this function when the cursor is located in an attribute character position or in a protected field locks the keyboard. The "go elsewhere" status line message (X <-OP->), is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

- **Erase Input ^{OP1}**

This function erases the characters (sets them to nulls) in all input fields and then moves the cursor to the first input position on the screen. If the screen contains no input fields, nothing is cleared, and the cursor moves to the upper left corner of the screen. If the screen contains no fields at all, the entire screen is cleared and the cursor moves to the upper left corner.

^{OP1} **Operational Note:** The following 3270 functions cannot be used when operating as the 3708 control terminal: Erase EOF, Erase Input, DUP, FM, PA keys, Clear, CURSR SEL, ATTN, SYS REQ and Delete.

- **Insert**

The insert function places the keyboard in insert mode. This mode allows you to insert a character or characters into the middle of an input field without changing the characters that are already displayed there. An insert symbol (^) is displayed in the status line to remind you that insert mode is active.

The following items apply while the keyboard is in Insert mode:

- If the cursor is located in an input field having a null character in any position in the field beyond the cursor, entering a character causes the new character to be entered at the cursor position. All remaining characters within the field (except for null characters and characters to the right of a null character) are shifted one position to the right. If the position occupied by the cursor at the time of the insert operation is a null, no shifting occurs.
- After all null characters at or beyond the cursor position in the field have been overwritten, or if there are no null characters, attempting to enter another character locks the keyboard. The “more than” indicator (X OP > >) is displayed on the status line. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.
- If the current field spans more than one line of the screen, the insert operates only to the end of the current line.
- Using this function when the cursor is located in an attribute character position or is in a protected field locks the keyboard. The “go elsewhere” status line message (X <-OP->) is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.
- If the display is in enhanced null/blank processing mode, characters can be inserted when the field contains either trailing blanks or nulls.

To exit insert mode, press the key sequence for Reset, Enter, Cursor Select, or any other function that causes host communication.

- **Delete^{OP2}**

If the cursor is located in an input field, using the Delete function removes the character at the position occupied by the cursor. The cursor does not move. All remaining characters in the field to the right of the cursor and on the same line shift one position to the left. The empty position at the end of the row or field contains a null character. If the input field occupies more than one row, subsequent rows are not affected.

Using this function when the cursor is located in an attribute character position or is in a protected field locks the keyboard. The “go elsewhere” status line message (X <-OP->X) is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

^{OP2} **Operational Note:** The following 3270 functions cannot be used when operating as the 3708 control terminal: Erase EOF, Erase Input, DUP, FM, PA keys, Clear, CURSR SEL, ATTN, SYS REQ and Delete.

- **Reset**

The Reset function is used to recover from a locked keyboard condition. It does not reset a locked condition that results from the execution of a command for the terminal (X CLOCK on the status line).

Reset ends the IDENT operation (the original printer ID is displayed on the status line) and terminates Insert mode.

- **DUP^{OP2}**

Using the DUP function causes an asterisk (*) to be displayed at the current cursor position. Also, a Tab key operation is performed causing the cursor to be moved to the first position of the next input field. The DUP character provides a means of informing the application program that a duplicate operation is required for the rest of the field in which it is located.

Using this function when the cursor is located in an attribute character position or is in a protected field locks the keyboard. The “go elsewhere” status line message (X <-OP-> X) is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

- **FM (Field Mark)^{OP3}**

Using the FM function causes a semicolon (;) to be displayed at the current cursor position. The field mark character is used to inform the application program of the end of a field (in an unformatted screen) or a subfield (in a formatted screen).

Using this function when the cursor is located in an attribute character position or is in a protected field locks the keyboard. The “go elsewhere” status line message (X <-OP-> X) is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

- **Program Attention Functions (Enter, Clear, PF keys, and PA keys)^{OP3}**

These functions cause the 3708 to transfer information to the host program. An Attention IDentification character (AID) is sent to the host that identifies which of the functions was used to cause the transfer.

The Clear function changes all positions on the screen to nulls and moves the cursor to the upper left hand corner.

Note: Using a PF key or PA key function while SSCP is displayed on the status line, locks the keyboard. The “function not supported” message (X -F) is displayed on the status line. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

^{OP3} **Operational Note:** The following 3270 functions cannot be used when operating as the 3708 control terminal: Erase EOF, Erase Input, DUP, FM, PA keys, Clear, CURSR SEL, ATTN, SYS REQ and Delete.

- **SYS REQ (System Request)^{OP3}**

You can use the SYS REQ function to switch from communication with your application program to communication with the host control program. SYS REQ causes the screen to be cleared.

You can log off your application program using the SYS REQ function. Enter the SYS REQ key sequence to communicate with the host control program, then enter the logoff command.

See “Communicating with the Host Control Program” on page 2-18 for a description of how your terminal operates when you are communicating with the host control program.

- **DEV CNCL (Device Cancel)**

If your keyboard is locked because of a “printer busy” condition (X PRTBSY on the status line), and you wish to cancel your print request, you should use the DEV CNCL function.

Using the DEV CNCL function during a IDENT operation causes the operation to end. The previous printer ID is displayed on the status line.

Once the printing has begun, the DEV CNCL function has no effect.

- **CURSR SEL (Cursor Select)^{OP4}**

This function allows the selector-light-pen-detection function to be performed from the keyboard. See “Using Light Pen Emulation” on page 2-19 for a description of how this function is used.

- **ATTN^{OP4}**

The ATTN function is used to signal an attention condition to the host.

Using ATTN during a print IDENT operation causes the ID operation to end. The keyboard locks, and the previous printer ID and the “function not supported” message (X -F) are displayed on the status line. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

- **Print**

The Print function causes the current screen to be printed. See “Printing Screen Images (Local Copy)” on page 2-20.

- **IDENT**

The IDENT function is used to assign the printer or the print class to be used when a local copy function is initiated. See “Printing Screen Images (Local Copy)” on page 2-20.

^{OP4} **Operational Note:** The following 3270 functions cannot be used when operating as the 3708 control terminal: Erase EOF, Erase Input, DUP, FM, PA keys, Clear, CURSR SEL, ATTN, SYS REQ and Delete.

Non-3270 Functions

The following functions are available by entering key sequences, but they are not normal 3270 functions. These functions are provided by the 3708 to make data entry at your terminal easier, to enable you to use the auxiliary port of your terminal for printing, and to allow you to control the display of the status line.

- **Null/Blank**

The Null/Blank function either sets or resets (toggles) enhanced null/blank processing mode. When the mode is active, **N/B** appears on the status line.

Enhanced null/blank mode allows you to use either the space bar or the cursor movement keys to edit and separate fields. When you enter data, the 3708 converts imbedded nulls (nulls between two characters in a field) to blanks.

When in null/blank mode, the Insert function operates differently. Either trailing nulls or trailing blanks can be pushed off the end of the field when in insert mode. This saves you from having to explicitly delete trailing blanks in order to insert characters.

- **Type-ahead**

The Type-ahead function either sets or resets (toggles) Type-ahead mode. When the mode is active, **TYP** appears on the status line.

Type-ahead mode allows you to queue several characters for processing. You can continue to enter key sequences (data or AID characters) while a previous sequence is being processed. For example, if you wanted to page forward five times in a file-editing program without using Type-ahead, you would have to enter the appropriate PF key sequence once, wait for the screen to be updated with the next page of data, then repeat this process four more times.

Using Type-ahead, you can press the PF key five times, without waiting for the screen update to occur between each. Once the 3708 has received the screen update from the host for the first PF key and has processed it, but before the 3708 begins updating your screen, the next PF key is sent to the host.

Depending on the response time from your host, this may result in a partial screen update occurring, and then being overlaid by a subsequent screen, or intermediate screens may not be displayed at all.

- **Status On/Off**

The Status On/Off function is used to display the 3708 status line. You can turn the status line on or off at almost any time. If the keyboard is locked, enter the Status On/Off key sequence to see the status line. See "Reading the Status Line" on page 2-12 for detailed information on the status line emulation.

The Status On/Off function cannot be used if your terminal supports an addressable area for status messages. If this area is supported, the 3708 always displays the status messages below the last data line. There is no need to toggle this function on and off.

- **Refresh**

The Refresh function causes the 3708 to clear your display screen and send the screen image again. This is most useful when you are using a dial-in facility, and parity errors cause incorrect characters to appear on the screen.

- **Resume Display, Resume Printer, Suspend Display, Suspend Printer**

These functions enable you to control whether the 3708 sends data to the display or to a printer attached to the auxiliary port of your terminal. If the interaction with your display is interrupted too often by data being sent to the printer, you can invoke the Suspend Printer function. This stops traffic to the printer until you use Resume Printer. Similarly, you can speed up printer traffic by using the Suspend Display function.

The only functions that you can use while the display is suspended are: Resume Display, Suspend Printer, and Resume Printer.

Once you have used the Suspend Display function, you must enter the Resume Display key sequence to use your display.

These functions are not available for terminals that do not have an auxiliary port. See "Using a Display With an Attached Printer" on page 2-22 for information about using the auxiliary port printer function.

- **Terminal Controlled Print Functions**

You may be able to use special print keys on your terminal to print screen information on a printer attached to your terminal. For example, with the IBM 3101, the key labeled Print Line can be used to print one line of the display image. See your system administrator to find out if such keys can be used on your terminal.

- **Terminal Logon Initialization Sequence (TLIS) Refresh**

This function enables you to request that the 3708 transmit the initialization sequence configured for your terminal. If there are no initialization sequences defined or coded for a terminal, this function is ignored.

You can use this function to reset your terminal if the setup parameters have been changed accidentally.

- **2/4 Color Toggle**

The 2/4 Color Toggle function can be used to emulate the 2/4 color feature in 3270 displays. When defined for your terminal, you can use this key sequence to toggle between two and four types of color or highlighting for your screen.^{C1}

^{C1} **Configuration Note:** When the toggle is set for four colors, the 3708 transmits the sequences defined for Color 1, 2, 3, and 4. These sequences can be defined as color sequences or any other visual attribute, such as reverse video or underlining. When the toggle is set for two colors, the 3708 transmits the sequences defined for HIGHLIGHT ON and HIGHLIGHT OFF. These sequences can be defined as highlighting sequences or any other visual attribute, such as colors, reverse video, or underlining.

Reading the Status Line

The status line informs you of the status of your host and printer sessions and notifies you of error conditions. If your terminal has a special addressable status line below the last data line on the screen, the 3708 displays status messages there. If your terminal does not support a special addressable status line, the status messages are displayed on the last data line on the screen, and you must use the Status On/Off function to see the status line.

Remember the following facts if you use the last data line on the screen as the status line:

- When a status message is displayed, you can view the application data in the last line by moving the cursor into the line or by entering data. The next time a condition occurs that causes an update, the status line message appears again.
- The status line defaults to “off” when you begin your session.
- When the status line is not displayed and input is inhibited, the cursor moves to the lower right hand corner of the screen, and the terminal’s bell sounds. You may then use the Status On/Off function to display the status line. The message explains why your keyboard is locked.

Status Line Format

The status line is 80 characters long. They are arranged as follows:

1	2	3-10	11-38	39-40	41-44	45-47	61-65	66-80
Ready Status	Device Emulation	Session Indicator	Session Status	Insert Status	Null /Blank Status	Type-ahead Status	Printer Status	Reserved

Figure 2-2. IBM 3708 Status Line Format

The following is a description of the fields and codes in the format:

Ready Status

4

Meaning: The 3708 is running and operating normally.

Action: None

Device Emulation

B

Meaning: The 3708 is using 3270 online B protocols. There are two basic protocol rules that govern communication with 3270 applications: A and B. The 3708 uses B.

Action: None

Session Indicator

MYJOB

Meaning: The session is connected to the host application or to the 3708 control terminal.

Action: None

SSCP

Meaning: The session is connected to the system operator (SSCP control program).

Action: None

Session Status

NNN codes, which can appear in the Session Status field, are described in “NNN Codes” on page 2-17.

X CLOCK

Meaning: The system needs time to perform the requested function. The host application automatically unlocks the keyboard.

Action: Wait for the condition to clear.

X PC *nnn*

Meaning: Program Check. The 3708 detected an SNA data-stream error in the data from the host.

Action: See “NNN Codes” on page 2-17 for information.

X CC *nnn*

Meaning: Communication Check. A condition in the network is preventing communication with the host.

Action: See “NNN Codes” on page 2-17 for information.

X ?+

Meaning: Input not understood.

Action: Press the Reset key sequence defined for the terminal, check the screen, and try to enter the data again.

X -F

Meaning: Minus Function. The requested function is currently unavailable.

Action: Press the Reset key sequence defined for the terminal.

X PRTNW

Meaning: Printer Not Working. The printer assigned to the terminal is not active and no other printers in the class are available. The 3708 discards the print request.

Action: Press the Reset key sequence defined for the terminal, activate the printer, and try the function again.

X PRTBSY

Meaning: Printer Busy. The printer assigned to the terminal is busy and the 3708 has put the request in the queue.

Action: Wait for the printer to finish or press the DEV CNCL key sequence defined for the terminal to cancel the print request.

X OP X

Meaning: Operator Unauthorized. You requested a printer or print class that you are not authorized to use.

Action: Press the Reset key sequence defined for the terminal and retry the IDENT function specifying another print ID. To obtain authorization for that printer, contact the system administrator.

X <-OP-> X

Meaning: That Entry Prohibited Here. The entry you tried is invalid for that position on the screen. For example, entering data into a protected field is invalid.

Action: Press the Reset key sequence defined for the terminal; move the cursor to the correct position on the screen.

X OP >

Meaning: Too Much Data Entered. You tried to enter too much data into a field on the screen.

Action: Press the Reset key sequence defined for the terminal and enter the correct amount of data.

X OP#

Meaning: Numeric. You tried to enter a lowercase alphabetic character into a numeric field.

Action: Press the Reset key sequence for the terminal and enter the correct data in the field. To enter a lowercase alphabetic character in the field, override the numeric lock feature by typing a blank into the first character position of the field. When a blank occupies this position, enter any character into the field.

X OP#?

Meaning: Wrong Number. You entered an unacceptable number. This occurs when you use the IDENT function to assign a printer and the number is out of range or non-numeric.

Action: Press the Reset key sequence for the terminal and enter the correct data into the field.

X PARITY

Meaning: Parity Error. The 3708 detected a parity error in the data coming from the terminal. If the type-ahead key queuing function is on, the 3708 purges all characters that follow the character with the parity error.

Action: Press the Reset key sequence defined for the terminal and enter the data again.

X FRAME

Meaning: Frame Error. The 3708 detected a framing error on data from the terminal. If the type-ahead key queuing function is on, the 3708 purges all characters following the character with the parity error.

Action: Press the Reset key sequence defined for the terminal and enter the data again.

X OVRFLO

Meaning: 3708 Receive Queue Overflow. The receive queue can overflow when the following conditions occur:

- The host response time is very slow
- The 3708 is sending data too fast (for example, doing file transfer applications).

Action: Press the Reset key sequence defined for the terminal and enter the data again.

X STATLN

Meaning: Status Line Required for IDENT. The 3708 requires the status line to be on before assigning printers.

Action: Press the Reset key sequence defined for the terminal, turn on the 3708 status line, and try the IDENT function again.

X WAIT

Meaning: Wait for the 3708 to finish. The 3708 displays this message when you initiate a host data transfer while the 3708 is in slowdown mode. This condition occurs when the 3708 runs low on buffer space because of overloading.

Action: Press the Reset key sequence defined for the terminal. Continue to enter data characters, or try an Enter function. If the slowdown condition has been cleared, the data is sent to the host.

X HOST

Meaning: An upstream link has recorded a Receiver Not Ready (RNR) from host. The host is temporarily unable to accept more data.

Action: Press the Reset key sequence defined for the terminal and try the function again.

Insert Status

^

Meaning: You can insert characters into the middle of fields.

Action: None.

Null Blank Status

N/B

Meaning: Null/blank processing is enabled.

Action: None.

Type-Ahead Status

TYP

Meaning: The type-ahead key queuing function is enabled.

Action: None.

Printer Status

P *nn*

Meaning: Printer Assignment. The display is authorized to use printer address *nn*. Numbers may range from 1 to 31 for individual printers and from 70 to 85 for printer classes.

Action: None. To use a different printer or class, use the IDENT key sequence to redefine the printer access.

PRNT

Meaning: Printer Printing. The printer identified by *nn* is currently printing the information.

Action: None.

P _

Meaning: Printer Assignment. This value appears when you press the IDENT key sequence to assign printer access.

Action: Type in the number of the printer or class.

NNN Codes

The NNN codes appear in the Session Status field when one of the following occurs:

- The host generates an invalid SNA data stream, which is indicated by a Program Check (PC *nnn*).
- The communication link with the host fails, which is indicated by a Communication Check (CC *nnn*).

When the host application or system recovers, the status line is automatically cleared. If it is not cleared, contact the system administrator.

NNN Code	Explanation	-RSP sent to the host
PC 401	Invalid command received.	1003
PC 402	The 3708 received an invalid (out of range) address following an SBA, RA, or EUA command.	1005
PC 403	The 3708 received data after a Read, Read Modified, or EAU command.	1003
PC 404	The data stream ended before the 3708 received all of the required bytes of an SBA, RA, or EAU command.	1005
PC 411	The LU type 1 RU received was longer than in the BIND specification.	1002
PC 413	The 3708 did not try to do the requested function.	1003
PC 422	A NO Response is not allowed.	400A
PC 423	The format indicator (FI) bit is not allowed, or the FI should have been sent but was not.	400F
PC 430	A sequence number error has occurred.	2001
PC 431	A bracket error has occurred.	2002
PC 432	A bracket error has occurred.	2003
PC 433	A data traffic reset has occurred.	2005
PC 434	A direction error has occurred.	2004
PC 440	A session limit has been exceeded.	0815
PC 442	The request is not executable.	081C
PC 443	A change direction is required.	0829
PC 445	ACTLU is not equal to COLD or ERP.	0821
PC 450	A profile error has occurred.	0821
PC 451	A primary protocol error has occurred.	0821
PC 452	A secondary protocol error has occurred.	0821
PC 453	A common protocol error has occurred.	0821
PC 454	A screen size specification error has occurred.	0821
PC 455	An LU profile error has occurred.	0821
PC 456	An LU type-1 error has occurred.	0821
PC 457	BIND for cryptography was specified but is not supported by the 3708.	0821
CC 518	The 3708 received a segment with improperly sequenced TH MPF bits.	8007

Communicating with the Host Control Program

After you start communicating with your application in full-screen mode, you can communicate with the host control program by using the SYS REQ function. When you press the SYS REQ key sequence, your screen clears and SSCP replaces MYJOB in the status line.

When sending messages to the control program, you are no longer in full-screen mode. You can only type in a message (up to 256 characters) beginning at the current cursor position. When you press Enter, the data (excluding nulls) beginning with the original cursor position and extending 256 positions (or extending to the end of the screen) is transmitted to the host.

Data received from the control program is displayed at the current cursor position.

When SSCP is displayed, the following functions are not available:

- PF1 to PF24
- PA1 to PA3
- ATTN.

If you press one of these key sequences, the keyboard is locked, and the “invalid function” status line message (X -F) is displayed. To unlock the keyboard, press the Reset Key sequence defined for your terminal and reposition the cursor.

To return to your application program session, enter the SYS REQ key sequence again. The screen clears, and MYJOB replaces SSCP in the status line.

A common use of this function is to log off the application that is running. You would use the SYS REQ key sequence to start communication with the host control program, then type in a logoff request as defined for your installation.^{OP6}

^{OP6} **Operational Note:** Data transfer while in control program mode occurs on the SSCP-SLU session; application data transfer occurs on the PLU-SLU session.

Using Light Pen Emulation

A *selector light pen* is a light-sensitive pen that can detect the light emitted from characters displayed on certain 3270 displays. With the pen, you can select from a list or table of displayed items and can then cause those selections to be passed to the application program. The 3708 allows you to emulate this light pen function using the Cursor Select function. This is done by positioning the cursor (using normal cursor movement functions) in the field that you wish to select and then entering the Cursor Select key sequence. Depending on the way that the host program has defined the field, you can obtain different results.

Selection Fields

A selection field is identified by a question mark (?) in the first position of a field. To select the field, position the cursor anywhere in the field and press the Cursor Select key sequence. The question mark (?) is changed to a greater than (>) symbol. To reverse your selection, press the Cursor Select key sequence again. The greater than (>) symbol is replaced by a question mark (?).

Attention Fields

An attention field is identified by either a space, null, or ampersand (&) in the first position of the field. Place the cursor anywhere in the field that you wish to attention, then press the Cursor Select key sequence. When you press the Cursor Select key sequence (when the cursor is in an attention field), information about all fields that you have either selected with Cursor Select or modified with normal keyboard input is transmitted to the host program.

Printing Screen Images (Local Copy)

The 3708 emulates the 3270 local copy function. This function allows you to obtain a printed copy of your display screen. You can copy to either a printer attached to another port of the 3708 control unit or to a printer attached to the auxiliary port of your terminal.^{C1} (See “Using a Display With an Attached Printer” on page 2-22 for more information on using a printer attached to your terminal.)

Print ID

The print ID associated with your terminal is displayed at the right side of the status line. This ID specifies to which print class or printer your local copy requests are sent. The valid IDs are in the ranges 70 to 85 for print classes and 01 to 10 for printers. When the ID is a class, the first available printer in that class prints your job. When the ID is a specific printer, your request is sent to that printer. Your job is printed when that printer is available.

The default ID is assigned to your terminal at the beginning of your session. If you are not authorized to access any printers, your ID is 00.

Changing the Print ID

To change the print ID associated with your display, use the IDENT function. (The status line must be displayed before IDENT can work.) The IDENT function allows you to specify a new print ID that remains active until you either log off your host application or change the ID again. At the right side of the status line is the message P *nn*. The *nn* represents the current printer ID assigned to the display.

To change the ID, enter the IDENT key sequence defined for your terminal. This replaces the P *nn* with P . You can now type the port number or class that you want as the new ID. The ID must be entered as two characters; for example, if you are assigning the printer on port 1, enter 01. When you have entered both characters, your assignment is either accepted or one of the following conditions apply:

- If your terminal is not authorized to use the printer or any printer in the class, the status line displays an “operator unauthorized” message (X OP X), and the original ID remains unchanged.
- If you enter an invalid ID, the status line displays an “invalid function” message (X -F), and the original ID remains unchanged.

To exit the IDENT function, use the Reset key sequence.

Note: If your terminal has a special addressable status line below the last data line on the screen, the cursor is positioned at the end of the last data when you use the IDENT function. When you enter the new ID, the characters are displayed as if you actually entered them directly into the ID field in the status line.

^{C1} **Configuration Note:** The local copy function is controlled by the printer authorization matrix information that is part of the 3708 configuration. The matrix defines printer classes to be assigned to particular printers, and it also defines which displays may use which printers.

Printing

When the ID is set, you can start local copies using the PRINT key sequence for your terminal. When you attempt this function, your print request may be queued because the printers are all busy. While queued, a “printer busy” message (X PRTBSY) displays on your status line, and your keyboard is locked.

Once the print request is accepted for printing, the P *nn* indicator on your status line is replaced with PRNT. When the print is completed, your print ID is restored, and the keyboard is unlocked.

Printer not Working

In some cases, the printer you have requested may not be available because the power is not on, or the printer is not connected to the 3708. In this case, a “printer not working” message (X PRTNW) displays on your status line. Your request is discarded. Use the Reset key sequence to unlock your keyboard.

Cancelling a Print Request

When a print request has not started, you can cancel it by using the DEV CNCL (Device Cancel) function. Your keyboard is unlocked, and the print request is removed from the queue. You cannot cancel a request once printing has begun (that is, when PRNT is on the status line).

Host-Initiated Local Copy

It is possible for the host application to cause a local copy of a screen that it has sent to your display. When this occurs, your terminal functions as if you entered the Print key sequence. If the request was queued because the printer is not available, you can cancel it using the Device Cancel function as described above.

Using a Display With an Attached Printer

If your terminal has a locally attached printer, the 3708 can send data to both the display and the printer.^{C2}

Functions that Control Data Flow

The 3708 uses the printer only when the display is operating in full-screen mode. Once your display is operating in full-screen mode, an indication is sent to the host that the printer is available. At this time, the printer can be used for printing host data, for printing copies of screens from your display, or for printing copies of screens from displays on other ports (local copy function).

For most terminal types, the 3708 sends control information to the terminal, which directs subsequent data to either the display or the printer. The 3708 shares the line, sending some data for the display and then some for the printer, when data for both has been received.

In some cases, you may find it inconvenient to have data sent to your printer when you are trying to perform interactive functions at the display. Four keyboard functions are available that allow you to control the data flow to your terminal:

Suspend Display This function prevents data from being sent to the display. It remains in effect until you enter the Resume Display key sequence.

Resume Display This function allows data to be sent to the display.

Suspend Printer This function prevents data from being sent to the printer. It remains in effect until you enter the Resume Printer key sequence.

Note: If data is being printed when this function is issued, the printer might not stop immediately.

Resume Printer This function allows data to be sent to the printer.

You can request these functions at any time from the keyboard, even when a keyboard is locked.

^{C2} **Configuration Note:** For the 3708, the port that you access must be configured with DEVICE TYPE = 4 to allow a terminal of this type to be used. The support provided for this function is called Multiple LU. It allows your display and your printer to simultaneously share a single port while maintaining an appearance of two distinct LUs to an SNA host.

Notes:

1. Some displays allow you to initiate a print of the display screen's contents to the AUX port. (See Terminal Controlled Print Functions in "Non-3270 Functions" on page 2-10.) This is another way to use your auxiliary port printer. Do not attempt this type of copy while the 3708 is sending data to the printer.
2. The printer control functions used for direct attach printers are not allowed in this environment (PA1, PA2, Hold Print/Enable Print, and Cancel Print). All characters received from the terminal are considered by the 3708 to be data from the display, and only valid keyboard functions are allowed.

Devices Requiring Manual Intervention

Some terminals require the operator to select the auxiliary port manually for printing to occur.

Note: Of the default terminal types supported by the 3708, the IBM 3101 and the Hazeltine 1500 operate in this manner. If you are using a User-Defined Terminal (UDT) with a printer attached to it, see your system administrator to learn if your terminal's printer must be controlled this way.

To control this kind of terminal, use the four printer control keyboard functions (Suspend Display, Resume Display, Suspend Printer, and Resume Printer) described in the following paragraphs.

- To allow data to go to the printer, do the following:
 1. Enter the Suspend Display key sequence. This key sequence prevents any data from being sent by the 3708.
 2. Manually turn on the auxiliary port of your terminal.
 3. Enter the Resume Printer key sequence. This action informs the 3708 that data may be sent to the printer.
- When printing is finished or to suspend printing, do the following:
 1. Enter the Suspend Printer key sequence. This key sequence prevents the 3708 from sending any data.
 2. Manually turn off the auxiliary port of your terminal.
 3. Enter the Resume Display key sequence. This informs the 3708 that data may be sent for the display.

For these type terminals, the 3708 assumes the printer is in a suspended condition when the session with the display is started.

Differences in Function for the 3270 and Terminals Attached to 3708

This section describes the differences in function for the 3270 terminals and terminals attached to the 3708. Some of these differences are described previously in this chapter.

- The 3708 provides several functions not available on a 3270. These are described in “Non-3270 Functions” on page 2-10.
- As described previously in this chapter, the terminal that you attach to the 3708 may provide typematic keys and cursor appearance control that differ from an actual 3270 terminal. You must become familiar with your specific terminal type to use the functions that it provides.
- The ERASE EOF function clears only to the end of the current line. On a 3270 terminal, this function clears all characters remaining in the field, including those on subsequent lines.
- The Insert function allows you to insert characters only to the end of the current line. On a 3270 terminal, if you insert characters into the middle of a field that spans more than one line, all characters in the field are shifted. The character on the end of one line is moved to the beginning of the next line.
- When using the Print function, the port number of the printer actually executing the print is not shown on the status line. Instead, PRNT appears in the position where the Print ID is normally shown. On a 3270 terminal, when printing is in progress, the port number of the selected printer is shown instead of the Print ID.

Chapter 3. Operating in Line-by-Line and ASCII Pass-through Modes

This section describes line-by-line and ASCII pass-through modes and defines the break sequence for each.

Line-by-Line Mode

Line-by-line mode means that you send only one line of data to the host at a time. After you receive a read prompt (for example, the command ENTER DATA), you can type a line of data. To send the data to the host, press one of the line turnaround characters that is defined for your system. Typical line turnaround characters are carriage return (CR) and line feed (LF). If you do not know which key to press, see your system administrator.

To interrupt data coming from the host, or signal the host for a specific application, use the BREAK key. The BREAK key can operate in one of the following ways:

- The signal may cause the host to stop sending data to the terminal.
- It may cause the host to send a new line of data.
- It may cause the host to clear the line of data that you have on the current line.

See your system administrator to find out how the break key works for your system.

To communicate with the system services control point (SSCP) session, type the system request simulation string followed by an SSCP message (the default is 99999; see your system administrator if you need help). The SSCP message can be up to 251 bytes long and must end with a defined line turnaround character. The 3708 transmits the message to the SSCP and returns you to your application.^{OP1}

^{OP1} **Operational Note:** If you enter the system request simulation string followed by a line turn around character, VTAM issues a USS message 2 (Command Unrecognized) and return you to your application.

ASCII Pass-through Mode

When you select an ASCII host from the 3708 host selection screen, you are operating in ASCII pass-through mode. When you receive the message ASCII HOST CONNECTION ESTABLISHED, you can begin communicating with the ASCII host. The set of rules that you should follow when in this mode are determined by the ASCII host application. Contact the system administrator if you have questions about the ASCII host.

If a break sequence is defined for the ASCII host, you can use the sequence to terminate the ASCII host session. The break sequence works as follows:

1. Log off the ASCII host.
2. Press the key on the terminal that causes a BREAK.
3. Type in the 3-character break sequence (see the system administrator).

The 3708 ends the session with the ASCII host, and the host selection menu is displayed at the terminal.^{OP2}

Note: The break sequence does not terminate the ASCII host session. To terminate the session with the ASCII host, you must log off the ASCII host, then enter the break sequence.

^{OP2} **Operational Note:** When the termination sequence has been detected by the 3708, the ASCII host is made available for other users. The physical line to the ASCII host is not disconnected.

Chapter 4. Common Problems and What to Do

The sections in this chapter help you determine the action to take when you have a problem. There are three different modes in which problems can occur:

- During 3708 logon
- In full-screen mode (protocol conversion)
- In line-by-line mode (protocol enveloping).

When you have a problem, go to the section for the mode in which you were operating. Check the left column for the symptom. The middle column describes the probable causes and the right column describes the action you should take to resolve your problem.

Common Problems during 3708 Logon

This section describes problems that can occur during the 3708 logon procedure.

Symptom	Probable Cause	Action
Extra, missing, or unintelligible characters on the screen	Incorrect line speed	Check the speed settings on the device (and modem) to verify that they are compatible with the 3708 port speed definition.
	Incorrect parity	Check the parity settings on the device (and modem) to verify that they are compatible with the 3708 port parity definition.
	Line trouble (or noise)	For switched connections, hang up and establish a new connection. For non-switched connections, contact your carrier representative.
Nothing on the display screen	Port defined for auto-baud/auto-parity or EIA 422A connection	Press the carriage return key.
	Terminal inoperative	Verify that your display has power and is operative; use the problem determination documentation associated with your terminal.
	3708 Logon screens excluded	Press your CR key and logon to your host.
	No connection for switched line	Establish a connection to the 3708 through your modem.
	Incorrect modem settings	Verify your modem settings using the documentation associated with your modem.
	Incorrect line speed or parity settings	Verify that your display's speed and parity settings are compatible with the 3708's port.

Symptom	Probable Cause	Action
ENTER not accepted	3708 configuration	Press the period (.) key. See your system administrator.
Characters not displayed at display when typing in	3708 configuration	See your system administrator.
Double characters displayed on screen	Incorrect terminal setting	Turn off local echoing of characters by the terminal.
Cannot dial back into a switched port after hanging up	Modem	See your system administrator.

Common Problems in Full-Screen Mode (Protocol Conversion)

This section describes problems that can occur while in full-screen mode.

Symptom	Probable Cause	Action
Extra, missing, or unintelligible characters on the screen	Incorrect terminal type specified Incompatible terminal mode Line trouble (or noise)	Repeat the logon procedure. When the 3708 Terminal Type Selection screen appears, type the number that corresponds to the terminal you are using. Verify that your terminal is set to emulate the correct terminal type. For example, the IBM 3161 should be set to emulate an IBM 3101 if you are choosing option 1 on the 3708 logon screens. Enter the REFRESH function key sequence to clear the screen. This action should remove incorrect characters resulting from intermittent line hits. If the problem persists or is severe, for switched connections, hang up and establish a new connection. For non-switched connections, contact your carrier representative.
Display screen shifted up one line	Incorrect Auto-scroll or Auto-NL settings	Refer to Appendix B, "Setting up your Terminal" and verify that your display does not have auto-scroll or auto-newline set to on.
ENTER not accepted	Keyboard Locked	Check the 3708 status line to determine cause of keyboard lock. Press your reset key sequence to clear the condition.
Session ends unexpectedly	Host connection lost Inactivity time out (switched, or EIA 422A connections)	See your system administrator. You may have left the terminal idle too long. See your system administrator for details.

Symptom	Probable Cause	Action
Double characters displayed on screen	Incorrect terminal setting	Turn off local echoing of characters by the terminal.
Receiving incorrect characters	3708 configuration	See your system administrator.
Display is disconnected when logging off from host application	3708 configuration	See your system administrator.
Cursor in lower right hand corner, no input allowed	If the 3708 status line is not displayed, the cursor is placed in the lower right corner when a keyboard locked condition exists.	Activate the status line display with the Status On/Off function to view the input inhibited message (refer to "Reading the Status Line" on page 2-12).
IDENT does not work	3708 configuration	See your system administrator.

Common Problems in Line-by-Line Mode (Protocol Enveloping)

This section describes problems that can occur while in line-by-line mode.

Symptom	Probable Cause	Action
Extra, missing, or unintelligible characters on the screen	Line trouble (or noise)	For switched connections, hang up and establish a new connection. For non-switched connections, contact your carrier representative.
ENTER not accepted	Incorrect turnaround character	See your system administrator.
Session ends unexpectedly	Host connection lost Inactivity time out (switched, or EIA 422A connections)	See your system administrator. Redefine or suppress the 3708's inactivity timer.
Characters not displayed at display when typing in	3708 configuration	See your system administrator.
Double characters displayed on the screen	Incorrect terminal setting	Turn off local echoing of characters by the terminal.
Receiving incorrect characters	3708 configuration	See your system administrator.
Display is disconnected when logging off host application	3708 configuration	See your system administrator.
BREAK does not stop data to the display	3708 configuration	See your system administrator.
A CR does not occur at the end of the line	Host configuration	See your system administrator.
Backspace does not work	Host configuration	See your system administrator.

Appendix A. Flowchart of 3708 Logon Process

The flowchart in this appendix takes you through the 3708 logon process, to the point that you enter either Protocol Conversion mode, Protocol Enveloping mode, or ASCII Pass-through mode.

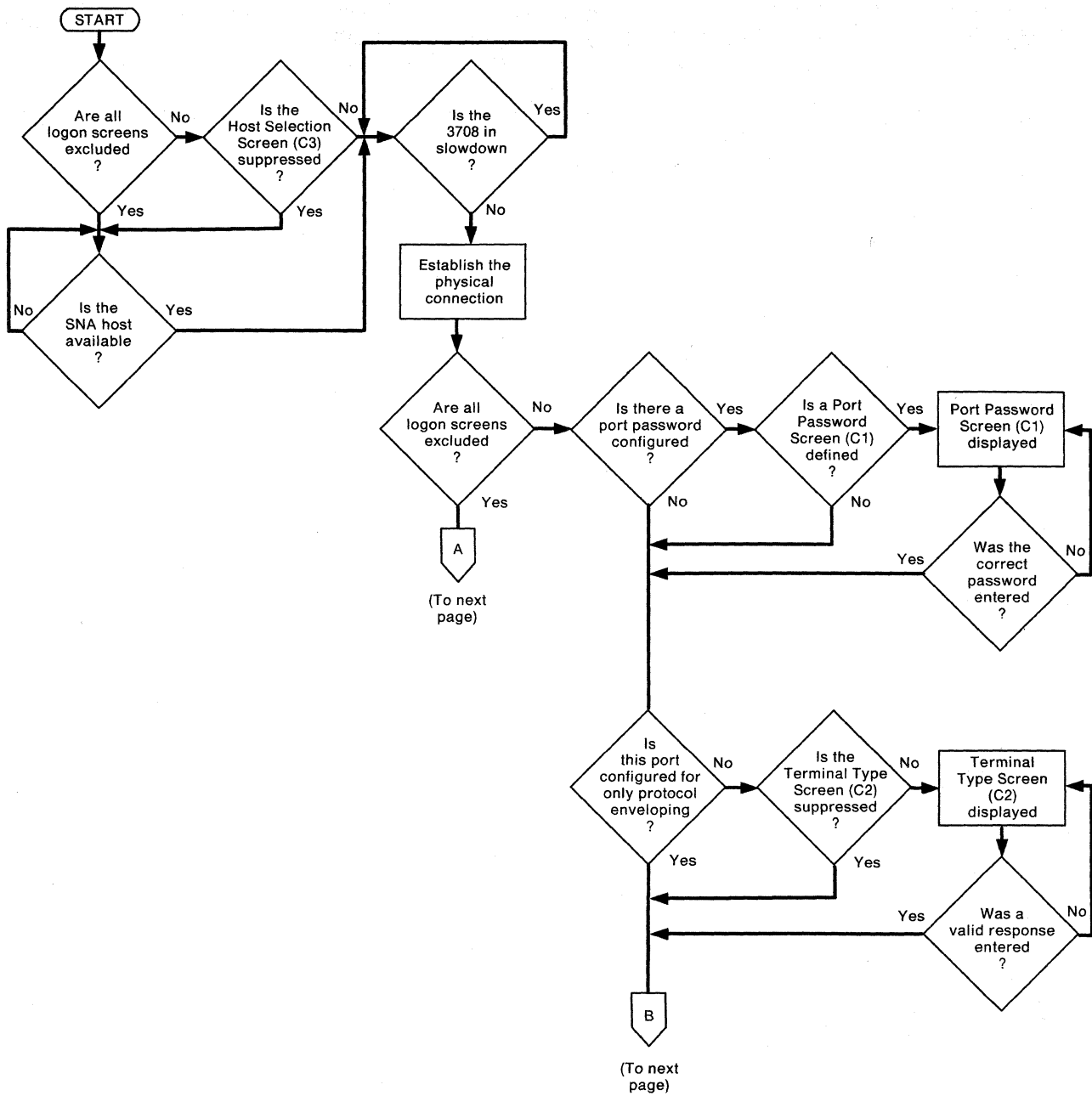


Figure A-1 (Part 1 of 2). Flowchart of the IBM 3708 Logon Process

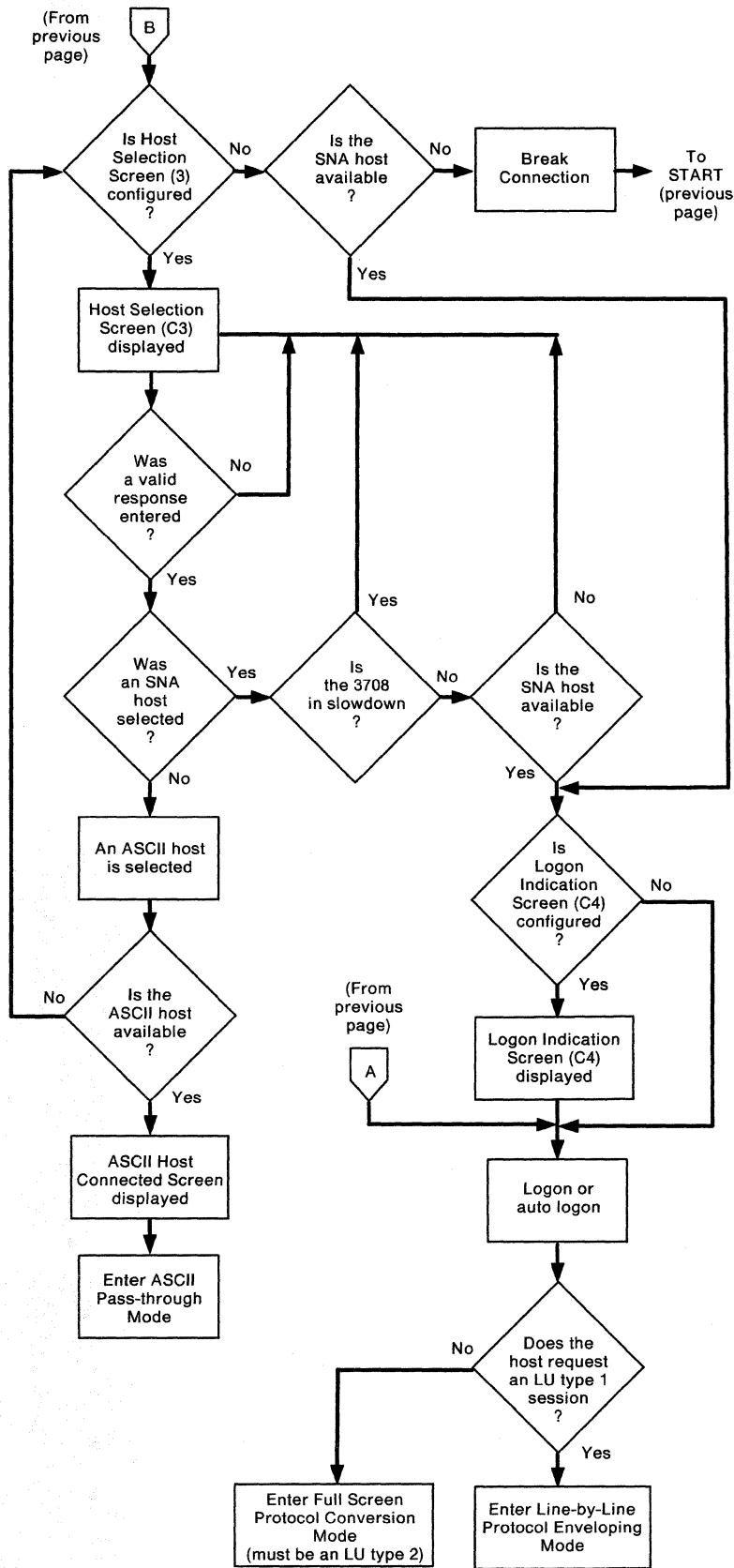


Figure A-1 (Part 2 of 2). Flowchart of the IBM 3708 Logon Process

Appendix B. Setting up Your Terminal

This appendix discusses the advantage of using your terminal's scrolling ability and shows you the switch settings that you should use for your terminals.

Using Scrolling

Using your terminal's scrolling ability makes the logon screens much more readable. When you set scrolling on, a new line displays on the bottom line of the screen and the previous line moves up one. Later, if you use your terminal in full-screen mode, this function may be unavailable. When you operate in full-screen mode, your terminal must not perform an auto linefeed or auto newline function — this means that when a character is displayed in the last column of a line, the terminal should not automatically position the cursor at the beginning of the next line.

Some terminals provide separate settings to control scrolling and the auto linefeed functions; others merge the two into one function. If your device has separate settings, turn the auto linefeed function off and the scrolling function on. For example, for the IBM 3101, setting the following switches enables scrolling during logon, and disables the auto newline function:

Function	Switch Setting
AUTO NL	off
AUTO LF	off
SCROLL	on

Similarly, the setting for the IBM 3151, 3161, 3162, 3163, and 3164 follows:

Function	Switch Setting
AUTO LF	off
SCROLL	jump or smooth

If your device does not have separate settings, and if you plan to use full-screen mode later, set the terminal for AUTO NL off or SCROLL off. Your 3708 logon screens will wrap from the bottom line of the screen to the top.

Setting Your Terminal's Switches

The remainder of this appendix shows you the switch settings to use for your type of terminal. Your terminal should be set with these values when attached to the 3708. For some terminal types, these switch settings are actual switches on the device. For others, the switch settings are values that are set from the keyboard using a setup or configuration mode of the terminal.

Default Terminal Switch Settings

The following tables give the default switch settings for the terminals supported by the 3708.

ADDS Viewpoint®

Switch	Setting	Note
BAUD RATE	---	1
AUTO SCROLL	DISABLED	
AUTO LINEFEED	DISABLED	
LINE MODE	FULL DUPLEX	
PARITY	---	1
CHARACTER DISPLAY	---	2
DISPLAY PARITY ERROR	---	1
SCREEN REFRESH RATE	---	3
CHARACTER SET	---	4
CURSOR DISPLAY	---	2
CURSOR FORMAT	---	2

Notes:

1. This setting must match the configuration of the 3708.
2. The function described by this switch has no effect on the 3708.
3. This selection must match the power line frequency. In the USA, this is set to 60 Hz.
4. The character set must match the translate table used on the 3708.

ADDS Viewpoint®/78

Switch	Setting	Note
BAUD RATE	---	1
VIDEO HIGHLIGHT	FULL	
AUTO SCROLL	DISABLE	
AUTO LINEFEED	DISABLE	
DISPLAY PARITY ERROR	ENABLE	
PARITY	---	1
SCREEN REFRESH RATE	---	2
CURSOR SUPPRESS	---	3
CURSOR FORMAT	---	3
CHARACTER CASE	UPPER/LOWER	
CURSOR HOME	---	3
KEY CLICK	---	3

Notes:

1. This setting must match the configuration of the 3708.
2. This selection must match the power line frequency. In the USA, this is set to 60 Hz.
3. The function designated by this switch has no effect on 3708 operation.

Beehive™ ATL-78

Option	Selection	Note
TRANSMIT BAUD RATE	---	1,2
RECEIVE BAUD RATE	---	1,2
WORD LENGTH	7 BITS	
PARITY	---	1
STOP BITS	---	1
RECEIVED DATA ERROR CHECK	NO	
INTERFACE	EIA 232C	1,3
DUPLEX	FULL	
AUTO-ECHO	NO	
XON/XOFF	---	1
TRANSPARENT PRINTING	YES	
GO ONLINE AFTER BLOCK TRANSMIT	NO	
SLOW TRANSMIT	NO	

Notes:

1. This configuration must match the configuration of the 3708.
2. The transmit baud rate must equal the receive baud rate.
3. EIA 422A can also be chosen.
4. Auxiliary port options must match the attached printer.

Data General® D210 Display Terminal

Switch	Position	Note
BAUD RATE	---	1
PARITY	---	1
50/60 HZ	---	2
TERMINAL MODE	DG	

Notes:

1. This setting must match the configuration of the 3708.
2. This setting must match the power line frequency. In the USA, this is set to 60 Hz.

DEC® VT100 and VT52

Switch	Setting	Note
SCROLL	---	1
AUTOREPEAT	---	1
SCREEN	---	1
CURSOR	---	1
MARGIN BELL	---	1
KEYCLICK	---	1
ANSI/VT52	ANSI	6
AUTO XON/XOFF	---	2
#E/3	---	3
WRAPAROUND	OFF	
NEWLINE	OFF	
INTERLACE	---	3
PARITY SENSE	---	2
PARITY	---	2
BITS PER CHAR	7	
POWER	---	4
T SPEED	---	2,5
R SPEED	---	2,5

Notes:

1. User preference; this is a VT 100 local option.
2. This setting must match the configuration of the 3708.
3. The function designated by this switch has no effect on 3708 operation.
4. This selection must match the power line frequency. In the USA, this is set to 60 Hz.
5. The transmit speed and the receive speed must be the same.
6. Not an option on the VT52.

DEC® VT220 (Emulating a VT100)

Setup Item	Selection	Note
ON LINE/LOCAL	ON LINE	
KEYBOARD LANGUAGE	---	1
80/132 COLUMNS	80	
CONTROL REPRESENTATION	INTERPRET	
AUTO WRAP	NO AUTO WRAP	
TERMINAL MODE	VT-100 MODE	
CURSOR KEYS	NORMAL CURSOR KEYS	
TRANSMIT SPEED	---	2
RECEIVE SPEED	---	2
DATA-BITS/PARITY	---	2
STOP BITS	---	2
LOCAL ECHO	NO LOCAL ECHO	
HOST PORT SELECTION	---	3

Notes:

1. Select the correct terminal operation for the national keyboard being used.
2. This setting must match the configuration of the 3708.
3. DATA LEADS ONLY should be used for a direct-connect line and MODEM CONTROL should be used for a line using an external modem.
4. All other items are determined by user preference or have no effect on 3708 operation.

DEC® VT220

Setup Item	Selection	Note
ON LINE/LOCAL	ON LINE	
KEYBOARD LANGUAGE	---	1
80/132 COLUMNS	80	
CONTROL REPRESENTATION	INTERPRET	
AUTO WRAP	NO AUTO WRAP	
TERMINAL MODE	VT-220 MODE	
CURSOR KEYS	NORMAL CURSOR KEYS	
TRANSMIT SPEED	---	2
RECEIVE SPEED	---	2
DATA-BITS/PARITY	---	2
STOP BITS	---	2
LOCAL ECHO	NO LOCAL ECHO	
HOST PORT SELECTION	---	3

Notes:

1. Select the correct terminal operation for the national keyboard being used.
2. This setting must match the configuration of the 3708.
3. DATA LEADS ONLY should be used for a direct-connect line and MODEM CONTROL should be used for a line using an external modem.
4. All other items are determined by user preference or have no effect on 3708 operation.

FALCO 500®

Switch	Position	Note
WINDOW BEGIN	1	
WINDOW SIZE	39	
SCREEN SIZE	26	
PAGE SIZE	40	
PAGE NUMBER	1	
TERMINAL MODE	VT200 7-bit	
WRAP	NO WRAP	
NEW LINE	NO NEW LINE	
USER KEYS	USER KEYS UNLOCK	
COLUMN	80	
LINES	25	
SCROLL	JUMP or SMOOTH	
DIM PORT	--	3
SCR SAVER	--	3
KEY CLICK	--	3
AUTO REPEAT	--	4
SPEED		1
PARITY		1
BITS	7	
STOP BITS	--	1
MODEM		2
XMIT XOFF		
BUFFERS	--	3
COMM. MODE	ONLINE	
MODE	FDX	
VIDEO	--	3
MARGIN BELL	--	3
STATUS	No Status	

Notes:

1. This setting must match the configuration of the 3708.
2. This option does not affect the 3708.
3. User preference; this is a FALCO 500® local option.

Hazeltine ESPRIT I™

Switch	Position	Note
HI-INTENSITY	ENABLE	
REVERSE VIDEO	---	1
INTERFACE	EIA	
LEAD IN	ESC	
EMULATE	HAZELTINE	
END OF MESSAGE	CR	
BAUD RATE	---	2
PARITY	---	2
ANL TRUNCATE	OFF	
HALF/FULL DUPLEX	FULL DUPLEX	
AUTO LF/CR	CR	

Notes:

1. User preference; this is an ESPRIT I local option.
2. This setting must match the configuration of the 3708.

Hazeltine ESPRIT II™

Switch	Position	Note
INTERFACE	EIA	
BAUD RATE	---	1
LEAD IN	ESC	
COMMUNICATION	FULL DUPLEX	
EMULATION	HAZELTINE	
WRAPAROUND	NO	
LINE FREQUENCY	---	2
PARITY	---	1
AUTO LINE FEED	OFF	
UNDERLINE	OFF	
HIGH INTENSITY	ON	
REVERSE VIDEO	---	3

Notes:

1. This setting must match the configuration of the 3708.
2. This selection must match the power line frequency. In the USA, this is 60 Hz.
3. User preference; this is an ESPRIT II local option.

Hazeltine 1500

Switch	Position	Note
BAUD RATE	---	1
PARITY	---	1
HALF/FULL DUPLEX	FULL DUPLEX	
AUTO LF/CR	CR	
U/L CASE	---	2
STD/REV VIDEO	---	2
INTERFACE	EIA	

Notes:

1. This setting must match the configuration of the 3708.
2. User preference; this is a Hazeltine 1500 local option.

Hewlett-Packard 2621B Interactive Terminal

Switch	Position	Note
BAUD RATE	---	1
ECHO	REMOTE	
KEYBOARD	---	2
PARITY	---	1
XON/XOFF	---	1
ENQ/ACK	DISABLED	
AUTO LINE FEED	DISABLED	
LINE/CHARACTER MODE	CHARACTER	
RETURN/ENTER KEY STRING	CR	
ESCAPE SEQUENCE TRANSMISSION	ENABLED	
SPACE OVERWRITE LATCH	DISABLED	
WRAPAROUND CURSOR	DISABLED	
SHORT TRANSFER TRIGGER	DISABLED	
LONG TRANSFER WARNING	DISABLED	
DATA SPEED SELECT	---	3

Notes:

1. This setting must match the configuration of the 3708.
2. This setting must match the keyboard attached to the 2621B.
3. This allows the operation of modems that support dual speed data transmission.

IBM PC/FTTERM (Color and Monochrome)

Switch	Setting	Note
LINE SPEED	---	1
HALF-DUPLEX	N	
PARITY	---	1
STOP BITS	---	1
AUTOMATIC LINE FEED	N	
CARRIAGE RETURN	Y	
CHARACTER SENT AT END OF MESSAGE	2	1
SCROLLING	N	
PROMPT CHARACTER FROM HOST	0	
START/STOP ENABLED	Y	1
COMMUNICATION PORT	---	2
HOST SYSTEM	---	3
INACTIVITY TIME OUT IN MINUTES	---	4
EXTENDED CODES	---	5
NAME OF HOST FILE TRANSFER COMMAND		3

Notes:

1. This setting must match the configuration of the 3708.
2. Choose the communication port that is connected to the 3708.
3. These are necessary for file transfer operations to function correctly.
4. This pertains to file transfer and may need to be modified for your system.
5. User preference; this is a FTTERM local option.

IBM PC in 3101 Emulation Mode

Switch	Position	Note
LINE SPEED	---	1
BLOCK MODE	N	
HALF-DUPLEX	N	
PARITY	---	1
STOP BITS	---	1
AUTOMATIC NEW LINE	N	
AUTOMATIC LINE FEED	N	
CARRIAGE RETURN	Y	
CHARACTER SENT AT END OF MESSAGE	2	1
SCROLLING	N	
PROMPT CHARACTER FROM HOST	0	
START/STOP ENABLED	Y	1

Note: This setting must match the configuration of the 3708.

IBM 3101 Models 10, 12, 13, 20, 22, 23

Switch	Position	Note
CHAR/BLOCK	CHAR	
HDX/FDX	FDX	
232C/422	232C	1,2
PRTS/CRTS	PRTS	
REVCH	OFF	
TURN AROUND	CR	
DUAL/MONO	DUAL	
STOP1/STOP2	---	2
PARITY	---	2
SEND LINE	---	3
NULL SUPP	---	3
TIME FILL	---	3
AUTO NL	OFF	
AUTO LF	OFF	
CR/CR.LF	CR	
SCROLL	OFF	
REV VIDEO	---	4
BLINK CURSOR	---	4
I/O RATE/MAIN	---	2
I/O RATE AUX	---	5

Notes:

1. EIA 422A can also be chosen for 3101-13 or 3101-23.
2. This setting must match the configuration of the 3708.
3. The function designated by this switch has no effect on 3708 operation.
4. User preference; this is a 3101 local option.
5. When a printer is connected to the auxiliary port, the baud rate configured on the printer must match the baud rate on the 3101.

IBM 3151 ASCII Display Station

Setup Item	Selection	Note
General		
MACHINE MODE	IBM 3151	
SCREEN	--	3
ROW AND COLUMN	24 x 80	6
SCROLL	---	5
AUTO LF	OFF	
CRT SAVER	---	
LINE WRAP	OFF	
FORCING INSERT	---	
TAB	---	
TERMINAL ID	---	
PRINT	N/A	
Communication		
OPERATING MODE	ECHO	
LINE SPEED (bps)	---	2,4
WORD LENGTH (bits)	7	
PARITY	---	2,4
STOP BIT	---	2,4
TURNAROUND CHARACTER	CR	
INTERFACE	EIA-232C	1
LINE CONTROL	PRTS	
BREAK SIGNAL (ms)	500	
SEND NULL SUPPRESS	---	
PACING	N/A	
Keyboard/Printer – Keyboard		
ENTER	RETURN	
RETURN	NEW LINE	
NEW LINE	CR	
SEND	---	
INSERT CHARACTER	SPACE	

Keyboard/Printer — Printer		
LINE SPEED (bps)	---	4
WORD LENGTH (bits)	7	
PARITY	---	4
STOP BIT	---	4
CHARACTERS	---	3

The following feature cartridges are available for the 3151. These cartridges enhance the usability and functional characteristics of the terminals connected to the 3708:

- IBM 3151 Cartridge to Emulate IBM and DEC® Terminals (Feature No. 8235)
- IBM 3151 Connectivity Feature Cartridge (Feature No. 8525)
- IBM 3151 Expansion Feature Cartridge (Feature No. 8535).

The setup for these feature cartridges is as described above with the following exceptions:

Setup Item	Selection	Note
MACHINE MODE	SYSTEM ATTACH	
ROW AND COLUMN	25 x 80 or 28 x 132	6
NUMBER OF VIEWPORTS	1	
NUMBER OF PAGES	1	
PRINT	HOST	
PACING	ON	2
RETURN	SEND	
SEND	CR	

Notes:

1. EIA-422A can be supported for 3151 models 310 and 410.
2. This setting must match the configuration of the 3708.
3. The function designated by this item has no effect on 3708 operation.
4. The selections for the auxiliary port must match the configuration of the connected printer.
5. SCROLL must be set to either Jump or Smooth.
6. The 3151 Model 310 or 410 with the Expansion Feature Cartridge supports Model 5 Emulation (28 x 132).

IBM 3161 ASCII Display Station

Setup Item	Selection		Note
MACHINE MODE	IBM 3161		
OPERATING MODE	ECHO		
	Main Port	Auxiliary Port	
INTERFACE	RS-232C	N/A	1,2
LINE CONTROL	PRTS	N/A	
LINE SPEED	---	---	2,4
PARITY	---	---	2,4
TURNAROUND CHARACTER	CR	N/A	
STOP BIT	---	---	2,4
WORD LENGTH	7	7	
RESPONSE DELAY	100	N/A	
BREAK SIGNAL	500	N/A	
TERMINAL ID	---	---	3

Select Item	Selection	Note
ENTER	RETURN	
RETURN	NEWLINE	
RETURN (2)	CR	
TAB	---	3
LINE WRAP	OFF	
AUTO LF	OFF	
SEND	---	3
SEND NULL	---	3
INSERT	SPACE	
TRACE	---	3
CRT SAVER	---	3
SCROLL	---	5
PRINT	---	3
PRINT NULL	---	3
PRINT EOL	---	3
LINE END	---	3

An **IBM 3161 with Enhanced 3708 Attachment (Feature No. 8371)** is also available. It enhances the usability and functional characteristics of the terminal attached to the 3708. The setup for this cartridge is described above with the following exceptions:

Setup Item	Selection	Note
OPERATING MODE	ECHO*	
ENTER	SEND	
SEND	CR	
PRINT	HOST	

Notes:

1. RS-422A can also be chosen for the 3161 Model 12.
2. This setting must match the configuration of the 3708.
3. The function designated by this item has no effect on 3708 operation.
4. The selections for the auxiliary port must match the configuration of the display.
5. SCROLL must be set to either Jump or Smooth.

IBM 3162 ASCII Display Station

Setup Menu	Selection	Note
General		
MACHINE MODE	IBM 3162	
SCREEN	--	3
ROW AND COLUMN	24 x 80	2
SCROLL	---	5
AUTO LF	OFF	
FORCING INSERT	---	3
CRT SAVER	---	3
LINE WRAP	OFF	
TAB	---	3
TERMINAL ID	---	3
PRINT	N/A	
Communication		
OPERATING MODE	ECHO	
LINE SPEED (bps)	---	2,4
WORD LENGTH (bits)	7	
PARITY	---	2,4
STOP BIT	---	2,4
TURNAROUND CHARACTER	CR	
INTERFACE	RS-232C	1,2
LINE CONTROL	PRTS	
BREAK SIGNAL (ms)	500	
SEND NULL SUPPRESS	---	3
Keyboard/Printer -- Keyboard		
ENTER	RETURN	
RETURN	NEW LINE	
NEW LINE	CR	
SEND	---	3
INSERT CHARACTER	SPACE	

Keyboard/Printer — Printer		
LINE SPEED (bps)	---	4
WORD LENGTH (bits)	7	4
PARITY	---	4
STOP BIT	---	4
CHARACTERS	---	3

An IBM 3162 with 3708/3710 Support Functions (Feature No. 8232) is also available. This cartridge enhances the usability and functional characteristics of the terminal connected to the 3708. The setup for this cartridge is as described above with the following exceptions:

Setup Menu	Selection	Note
ROW AND COLUMN	25 x 80 or 28 x 132	6
PRINT	HOST	
OPERATING MODE	ECHO - 3708/10	
ENTER	SEND	
SEND	CR	

Notes:

1. RS-422A can be supported for the 3162 Model 12/32.
2. This setting must match the configuration of the 3708.
3. The function designated by this item has no effect on 3708 operation.
4. The selections for the auxiliary port must match the configuration of the display.
5. SCROLL must be set to either Jump or Smooth.
6. If IBM 3151/62 (MODEL 5 EMULATION) is chosen as the terminal ID, the screen size 28 x 132 is supported on this feature cartridge.

IBM 3163 ASCII Display Station

Setup Item	Selection		Note
MACHINE MODE	IBM 3163		
OPERATING MODE	ECHO		
	Main Port	Auxiliary Port	
INTERFACE	RS-232C	N/A	1,2
LINE CONTROL	PRTS	N/A	
LINE SPEED	---	---	2,4
PARITY	---	---	2,4
TURNAROUND CHARACTER	CR	N/A	
STOP BIT	---	---	2,4
WORD LENGTH	7	7	
RESPONSE DELAY	100	N/A	
BREAK SIGNAL	500	N/A	
TERMINAL ID	---	---	3

Select Item	Selection	Note
ENTER	RETURN	
RETURN	NEWLINE	
NEWLINE	CR	
TAB	---	3
LINE WRAP	OFF	
AUTO LF	OFF	
SEND	---	3
SEND NULL	---	3
INSERT	SPACE	
TRACE	---	3
CRT SAVER	---	3
SCROLL	---	5
PRINT	---	3
PRINT NULL	---	3
PRINT EOL	---	3
LINE END	---	3

An IBM 3163/3164 VT100/3708 Emulation Cartridge (Feature No. 8313) is also available. It enhances the usability and functional characteristics of the terminal attached to the 3708. The setup for this cartridge is described above with the following exceptions:

Setup Item	Selection	Note
OPERATING MODE	SYSTEM ATTACH	
ENTER	SEND	
SEND	CR	
PRINT	HOST	

Notes:

1. RS-422A can also be chosen for the 3163 Model 12.
2. This setting must match the configuration of the 3708.
3. The function designated by this item has no effect on 3708 operation.
4. The selections for the auxiliary port must match the configuration of the display.
5. SCROLL must be set to either Jump or Smooth.

IBM 3164 ASCII Display Station

Setup Item	Selection		Note
MACHINE MODE	IBM 3164		
OPERATING MODE	ECHO		
	Main Port	Auxiliary Port	
INTERFACE	RS-232C	N/A	1,2
LINE CONTROL	PRTS	N/A	
LINE SPEED	---	---	2,4
PARITY	---	---	2,4
TURNAROUND CHARACTER	CR	N/A	
STOP BIT	---	---	2,4
WORD LENGTH	7	7	
RESPONSE DELAY	100	N/A	
BREAK SIGNAL	500	N/A	
TERMINAL ID	---	---	3

Select Item	Selection	Note
ENTER	RETURN	
RETURN	NEWLINE	
NEWLINE	CR	
TAB	---	3
LINE WRAP	OFF	
AUTO LF	OFF	
SEND	---	3
SEND NULL	---	3
INSERT	SPACE	
TRACE	---	3
CRT SAVER	---	3
SCROLL	---	5
PRINT	---	3
PRINT NULL	---	3
PRINT EOL	---	3
LINE END	---	3

An **IBM 3163/3164 VT100/3708 Emulation Cartridge (Feature No. 8313)** is also available. It enhances the usability and functional characteristics of the terminal attached to the 3708. The setup for this cartridge is described above with the following exceptions:

Setup Item	Selection	Note
OPERATING MODE	SYSTEM ATTACH	
ENTER	SEND	
SEND	CR	
PRINT	HOST	

Notes:

1. RS-422A can also be chosen for the 3164 Model 12.
2. This setting must match the configuration of the 3708.
3. The function designated by this item has no effect on 3708 operation.
4. The selections for the auxiliary port must match the configuration of the display.
5. SCROLL must be set to Jump.

Lear Siegler ADM 24E Video Display Terminal

Feature	Selection	Note
SCROLL METHOD	---	1
FULL SCREEN BACKGROUND	---	2
KEY CLICK	---	2
RETURN KEY CONFIGURATION	CR	
SCROLL MODE	NON-SCROLL	
AUTO NEW LINE	OFF	
KEYBOARD CONFIGURATION	---	1
PRIMARY LANGUAGE GROUP	---	3
LINE 25 DEFINITION	HOST MESSAGES	
LINE 25 DISPLAY	---	1
AUDIBLE BELL	ON	
CURSOR DEFINITION	---	2
FILL 1 SUPPRESSION	OFF	
NUMBER OF LINES FOR PAGE 1	24	
NUMBER OF LINES FOR PAGE 2	---	1
FUNCTION KEY LEGEND NO.	---	1
TYPEWRITER TABS	NONE	
TABBING MODE	---	1
INTERNATIONAL LANGUAGE	---	3
ATTRIBUTES	NON-EMBEDDED	
SEND/PRINT: ATTRIBUTE + LANGUAGE CHANGES IN TEXT	NON-EMBEDDED	
EDIT KEY SEQUENCE TRANSMISSION	ON	
NULL SUPPRESSION	ON	
DEL(ETE) SUPPRESSION	OFF	
FILL CHARACTER #1	SPACE	
FILL CHARACTER #2	NULL	
FILL CHARACTER #3	---	1
FILL CHARACTER #4	---	1
FILL CHARACTER #5	---	1
FILL CHARACTER #6	---	1
FILL CHARACTER #7	---	1
FILL CHARACTER #8	---	1
DUPLEX	FULL	
PARITY (HOST)	---	4

Feature	Selection	Note
BUSY/READY INDICATION (HOST)	XON/XOFF	
BAUD RATE (HOST)	---	4
X-ON CHARACTER (HOST)	DC1	
X-OFF CHARACTER (HOST)	DC3	
PARITY (PRINTER)	---	5
BUSY/READY INDICATION (PRINTER)	---	5
PRINTER BUSY	---	5
BAUD RATE (PRINTER)	---	5
PRINT BUFFER SIZE (NUMBER OF K-BYTES)	---	5
X-ON CHARACTER (PRINTER)	---	5
X-OFF CHARACTER (PRINTER)	---	5
USER PROGRAM PRESENT (P1)	OFF	
USER PROGRAM PRESENT (P2)	OFF	
LINE FREQUENCY	---	6
DATA TRANSMISSION MODE	CONVERSATION	
ANSWERBACK	OFF	
ANSWERBACK MESSAGE	---	1
SCREEN SAVE	---	1
LIGHT PEN (OPTIONAL)	OFF	
MODEM CONTROL (OPTIONAL)	OFF	
FILL 5 PLACEMENT	---	1

Notes:

1. The function designated by this option has no effect on 3708 operation.
2. User preference; this is an ADM 24E local option.
3. The character set must match the translate table used by the 3708.
4. This selection must match the configuration of the 3708.
5. This selection must match the setup of the connected printer.
6. This selection must match the power line frequency. In the USA, this is set to 60 Hz.
7. Function key F1 must be redefined to generate SOH S (X'0153'), and function key F10 must be redefined to generate SOH R (X'0152') instead of the default values to use the ADM 24E terminal.

Lear Siegler ADM 3A Dumb Terminal®

Switch	Setting	Note
BAUD RATE	---	1
HDX-FDX	FDX	
EIA 232CL	EIA 232C	
AUTO NL-OFF	DISABLED	
LC EN-UC	LC EN	
PARITY ODD-EVEN	---	1
DATA 7-8	7 BIT	
STOP 1-2	---	1
PARITY-INH	---	1
BIT 8 0-1	---	2
12 LINE-24 LINE	24 LINE	
50 HZ.-60 HZ.	---	3
DISABLE-CLR SCRN	CLR SCRN	
DISABLE-KB LOCK	DISABLE	
UC DISP-U/L DISP	U/L DISP	
SPACE-ADV	SPACE	
EOT-OFF	OFF	---
ETX-OFF	OFF	---
CODE-SEC	OFF	---
202-OFF	OFF	
103-OFF	103	
LOCAL-OFF	OFF	
CUR CTL-OFF	CUR CTL	
NORM-FILL	NORM	
BEEP ON-OFF	---	2
GT-LK	GT	

Notes:

1. This setting must match the configuration of the 3708.
2. The function designated by this switch has no effect on 3708 operation.
3. This selection must match the power line frequency. In the USA, this is set to 60 Hz.

Lear Siegler ADM 31 Intermediate Terminal™ Video Display Unit

Switch	Setting	Note
BAUD RATE(MODEM)	---	1
BAUD RATE (PRINTER)	---	2
PRINTER BUSY CONTROL	---	2
EIA 232C/DIRECT CONNECT/CURRENT LOOP	EIA 232C	
PRINTER BUSY ACTIVE	---	2
CURSOR	---	3
ATTRIBUTE CHARACTER DISPLAYED	OFF	
DOT STRETCHING MODE	DISABLED	
BLANKING/UNDERLINE	---	4
NULLS	ON	
BREAK KEY	OFF	
REFRESH RATE	---	5
DATA BITS	7 DATA BITS	
PARITY	---	1
STOP BITS	---	1
BIT 8 1/0	---	4
BLOCK/CONVERSATION MODE	CONVERSATION	
FULL/HALF DUPLEX	FULL DUPLEX	
PRINTER PORT SELECTIONS	---	2
POLLING ADDRESS	---	4

Notes:

1. This setting must match the configuration of the 3708.
2. This setting must match the configuration of the connected printer.
3. User preference; this is an ADM 31 local option.
4. The function designated by this switch has no effect on 3708 operation.
5. This selection must match the power line frequency. In the USA, this is set to 60 Hz.

Northern Telecom Displayphone™

Option	Selection	Note
PROTOCOL STANDARD	ANSI	
SCREEN WIDTH	80	
DISPLAY MODE	---	1
DUPLEX	FULL DUPLEX	
PARITY	---	2
BAUD RATE	---	2
TERMINAL ID	---	1

Notes:

1. The function designated by this switch has no effect on 3708 operation.
2. This selection must match the configuration of the 3708.

ROLM® Cypress™, Cedar™, and Juniper™

Option	Selection	Note
TERMINAL TYPE	IBM 3270	
BAUD RATE	---	1
PARITY	---	1
ECHOPLEX	YES	
ENTER-KEY VALUE	CR	

Note: This selection must match the configuration of the 3708.

Teletype 5410 Asynchronous Display Terminal

Option	Selection	Note
SPEED	---	1
PARITY	---	1
DUPLEX	FULL	
SCREEN	80	
RETURN KEY	CR	
RECEIVED LF	INDEX	
LABELS	---	2
MONITOR MODE	OFF	
KEY CLICK	---	2
AUTOWRAP	OFF	
CURSOR	---	2
BUILT-IN MODEM	NO	3

Notes:

1. This selection must match the configuration of the 3708.
2. User preference; this is a Teletype 5410 local option.
3. If the Teletype 5410 internal modem is used, this selection should be YES.

Teletype 5420 Buffered Display

Option	Selection	Note
SPEED	---	1
DUPLEX	FULL	
SEND PARITY	---	1
CHECK PARITY	YES	
132 COLUMNS	OFF	
MEMORY ACCESS	SCROLL	
CLOCK	ASYNCR	
RETURN KEY	CR	
NEWLINE ON LF	NO	
AUTOWRAP	OFF	
CURSOR	---	2
KEYCLICK	---	2
MARGIN BELL	---	2
KEYBOARD MODEL	5420	
TRANSMISSION	CHAR	
LINE SEND	---	3
BLOCK SEND	---	3
SEND FROM	---	3
SEND EDIT SEQ	YES	
SEND GRAPHICS	NO	
ENTER KEY	CR	
FIELD SEPARATOR	---	3
BLOCK TERMINATOR	---	3
ANSWER BACK	---	3
LINES PER PAGE	---	3
PAGINATION	OFF	
PRINTER MODEL	---	4
PRINTER SPEED	---	4
FLOW CONTROL	---	4
ALARM	---	4

Notes:

1. This selection must match the configuration of the 3708.
2. User preference; this is a Teletype 5420 local option.
3. The function designated by this switch has no effect on 3708 operation.
4. When a printer is connected to the auxiliary port, the setting for the 5420 must match the settings on the printer.

TeleVideo® 910

Switch	Position	Note
BAUD RATE	---	1
WORD STRUCTURE	7-BIT WORD STRUCTURE	
PARITY	---	1
EVEN/ODD PARITY	---	1
STOP BITS	---	1
AUTOWRAP	NO WRAPAROUND	
CR/CRLF	CR	
TERMINAL SELECTION	STANDARD 910	
60 HZ/50 HZ	---	2
CURSOR	---	3
HALF/FULL DUPLEX	FULL DUPLEX	
SCREEN	---	3
DSR	CONNECTED	
CARRIER DETECT	CONNECTED	
DTR	CONNECTED	

Notes:

1. This function must match the configuration of the 3708.
2. Must be set to the power line frequency. In the USA, this is set to 60 Hz.
3. User preference; this is a TV 910 local option.

TeleVideo® 912C

Switch	Setting	Note
BAUD RATE	---	1
CHARACTER SET	---	2
HALF/FULL DUPLEX	FULL	
REFRESH	---	3
PARITY	---	
STOP BITS	---	
DATA BITS	7 BITS	
PARITY SELECT	---	1
CURSOR	---	4
DSR	DSR ON P3-6	
DCD	DCD ON P3-8	
DTR	DTR ON WHEN TERMINAL ON	
INTERFACE	EIA 232C INPUT	
AUTO LINE FEED AT CR	JUMPER NOT INSTALLED	
EOT AT END OF SEND	JUMPER NOT INSTALLED	
AUTO LINE FEED IN COL 80	JUMPER INSTALLED	
PAGE/EXTENSION	---	5

Notes:

1. This setting must match the configuration of the 3708.
2. The character set must match the translate table used on the 3708.
3. This selection must match the power line frequency. In the USA, this is set to 60 Hz.
4. User preference; this is a TV912 local option.
5. The function designated by this switch has no effect on 3708 operation.

TeleVideo® 950

Switch	Position	Note
BAUD RATE	---	1
WORD STRUCTURE	7 BIT	
STOP BITS	---	1
PRINTER BAUD RATE	---	2
EDIT MODE	DUPLEX EDIT	
CURSOR	---	3
PARITY	---	1
DISPLAY PRESENTATION	---	3
COMMUNICATION MODE	FULL DUPLEX	
POWER	---	4
KEY CLICK	---	3

Notes:

1. This setting must match the configuration of the 3708.
2. When a printer is attached to the auxiliary port, the baud rate configured on the printer must match the baud rate configured on the TV 950.
3. User preference; this is a TV 950 local option.
4. This selection must match the power line frequency. In the USA, this is set to 60 Hz.

WY-50®

Switch	Position	Note
HANDSHAKE	XON XOFF NONE	
SCREEN	80	
CURSOR	--	3
MODE	FDX	
KEYS?	US/UK	
RET/ENTER	CR/CR	
COMPATIBLE MODE	WY50	
ENHANCED		
SCRL	--	3
STATUS		
SCREEN SAVER	--	3
PROT		
TEXT	OFF	
BLK-END		
AUTO-NL	OFF	
CR	CR	
AUX AUTO-SCROLL	--	2
DATA BIT	7	
STOP BIT	--	1
PARITY BIT	--	1
MODEM PORT BAUD RATE	--	1

Notes:

1. This setting must match the configuration of the 3708.
2. When a printer is attached to the auxiliary port, the baud rate configured on the printer must match the baud rate configured on the WY-50.
3. User preference; this is a WY-50 local option.
4. This function does not affect the 3708.

Appendix C. Terminal Keyboard Maps

This appendix contains a full set of keyboard maps for terminals supported by the IBM 3708.

The following table lists the end-user devices and the corresponding IBM 3708 network conversion unit reference card order number.¹

End-User Device	Form No.
IBM 3101 Display Terminal Models 10, 12, 13, 20, 22, and 23	SX27-3633
IBM Personal Computer (PC) in 3101 Emulation Mode with standard 3101 keyboard functions	SX27-3635
IBM 3151, 3161, 3162, 3163, and 3164	SX27-3862
IBM 3151, 3161, 3162, 3163, and 3164 (3708 Feature)	SX27-3867
ADDS Viewpoint® Display Station	SX27-3636
ADDS Viewpoint®/78	SX27-3706
Beehive™ ATL-078	SX27-3645
Data General Dasher® D210 Display Terminal	SX27-3652
DEC® Model VT52	SX27-3637
DEC® Model VT100	SX27-3638
DEC® Model VT220	SX27-3639
DEC® Model VT220 (Emulating a VT100)	SX27-3790
FALCO 500®	SX27-3864
Hazeltine Esprit I™ and II™	SX27-3640
Hazeltine 1500	SX27-3641
Hewlett-Packard 2621B Interactive Terminal	SX27-3651
Lear Siegler ADM 24E	SX27-3703
Lear Siegler ADM 3A Dumb Terminal®	SX27-3642
Lear Siegler ADM 31™	SX27-3704
Northern Telecom Displayphone™	SX27-3653
ROLM Cedar	SX27-3649
ROLM Cypress	SX27-3648
ROLM Juniper	SX27-3650
Teletype 5410 Async. Display Terminal	SX27-3646
Teletype 5420	SX27-3647
TeleVideo® 910	SX27-3643
TeleVideo® 912C	SX27-3705
TeleVideo® 950	SX27-3644
WY-50®	SX27-3865
User-Defined Terminal	SX27-3654

¹ The list of displays contains several trademarks and registered trademarks. Viewpoint is a registered trademark of Applied Digital Data Systems, Inc. BEEHIVE is a trademark of BEEHIVE International. Dasher is a registered trademark of the Data General Corporation. DEC is a registered trademark of the Digital Equipment Corporation. ESPRIT I and ESPRIT II are trademarks of Esprit Systems, Inc. FALCO 500 is a registered trademark of Falco Data Products, Inc. Dumb Terminal is a registered trademark of Lear Siegler, Inc. Displayphone is a trademark of Northern Telecom, Inc. TeleVideo is a registered trademark of TeleVideo Systems, Inc. WY-50 is a registered trademark of Wyse Technology.

IBM 3101 (Models 10, 12, 13, 20, 22, 23)

ATR	ERASE EOL/EOF	~	!	@	#	\$	%	^	&	*	()	-	=	←
ESC	ERASE EOB	→	Q	W	E	R	T	Y	U	I	O	P	[]	↵
PRINT MSG	SEND MSG	Ⓢ	A	S	D	F	G	H	J	K	L	:	"	{	↵
PRINT		↑	>	Z	X	C	V	B	N	M	:	:	?	↑	↵
		RESET												ALT	SEND

DEL	BREAK	7	8	9
INS CHAR	DEL CHAR	4	5	6
↑	↓	1	2	3
←	→	,	0	.

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	ALT a	PF10	ESC 0
BACKTAB	ESC →	PF11	ESC -
CANCEL PRINT (Note 3)	CANCEL	PF12	ESC =
CLEAR	CLEAR or ALT c	PF13	ESC !
CURSOR SELECT	ESC k	PF14	ESC @
DELETE	DEL	PF15	ESC #
DEV CNCL	ALT x	PF16	ESC \$
DOWN (CURSOR)	↓	PF17	ESC %
DUP	ALT d	PF18	ESC ^
ENTER	↵	PF19	ESC &
ERASE EOF	ERASE EOL/EOF	PF20	ESC *
ERASE INPUT	ERASE INPUT	PF21	ESC (
FIELD MARK	ALT f	PF22	ESC)
HOME	ALT ←	PF23	ESC _
IDENT	ESC z	PF24	ESC +
INSERT MODE	ESC DEL	PRINT	ALT p
LEFT (CURSOR)	←	PRINT LINE (Note 3)	PRINT LINE
NEW LINE	ALT j	PRINT MESSAGE (Note 3)	PRINT MSG
NULL/BLANK	ESC n	PRINT PAGE (Note 3)	PRINT PAGE
PA1	ESC ,	REFRESH	ESC r
PA2	ESC .	RESET	ALT r
PA3	ESC /	RESUME DISPLAY	ALT y
PF1	PF 1 or ESC 1	RESUME PRINTER	ESC p
PF2	PF 2 or ESC 2	RIGHT (CURSOR)	→
PF3	PF 3 or ESC 3	STATUS ON/OFF	ALT w or ESC ?
PF4	PF 4 or ESC 4	SUSPEND DISPLAY	ALT t
PF5	PF 5 or ESC 5	SUSPEND PRINTER	ESC o
PF6	PF 6 or ESC 6	SYS REQ	ESC s
PF7	PF 7 or ESC 7	TAB	→
PF8	PF 8 or ESC 8	TYPE AHEAD	ESC t
PF9	ESC 9	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with ALT, press and hold ALT while pressing the other key.
3. This function is provided on IBM 3101 terminals with Model 2X designations only.

IBM PC Emulating a 3101

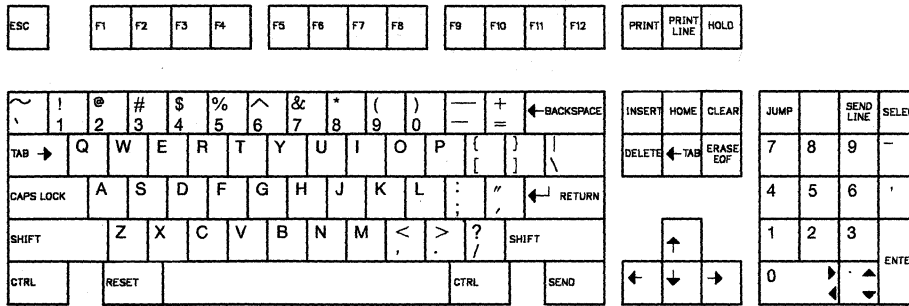
F1	F2	Esc	1	@	#	\$	%	^	&	*	(	)	-	=	←	Num Lock	Scroll Lock		
F3	F4	←	Q	W	E	R	T	Y	U	I	O	P	[	]	←	7 Home	8 ↑	9 PgUp	-
F5	F6	Ctrl	A	S	D	F	G	H	J	K	L	:	"	~	←	4 ←	5	6 →	
F7	F8	↑	|	Z	X	C	V	B	N	M	,	.	?	↑	Print	1 End	2 ↓	3 PgDn	+
F9	F10	Alt													Caps Lock	0 Ins	Del		

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF9	F9 or Esc 9
BACKTAB	← or Esc →	PF10	F10 or Esc 0
CLEAR	Home or Ctrl c	PF11	Esc -
CURSOR SELECT	Esc k	PF12	Esc =
DELETE	Del	PF13	Esc !
DEV CNCL	Ctrl x	PF14	Esc @
DOWN (CURSOR)	↓	PF15	Esc #
DUP	Ctrl d	PF16	Esc \$
ENTER	↵	PF17	Esc %
ERASE EOF	End	PF18	Esc ^
ERASE INPUT	Ctrl Home	PF19	Esc &
FIELD MARK	Ctrl f	PF20	Esc *
HOME	Ctrl PgUp or Esc H	PF21	Esc (
IDENT	Esc z	PF22	Esc)
INSERT MODE	Ins or Esc Del	PF23	Esc _
LEFT (CURSOR)	←	PF24	Esc +
NEW LINE or Ctrl j	Ctrl ↵ or Ctrl j	PRINT	Ctrl p
NULL/BLANK	Esc n	REFRESH	Esc r
PA1	Ctrl F1 or Esc ,	RESET	Ctrl r
PA2	Ctrl F2 or Esc .	RESUME DISPLAY	Ctrl y
PA3	Ctrl F3 or Esc /	RESUME PRINTER	Esc p
PF1	F1 or Esc 1	RIGHT (CURSOR)	→
PF2	F2 or Esc 2	STATUS ON/OFF	Ctrl w
PF3	F3 or Esc 3	SUSPEND DISPLAY	Ctrl t
PF4	F4 or Esc 4	SUSPEND PRINTER	Esc o
PF5	F5 or Esc 5	SYS REQ	Esc s
PF6	F6 or Esc 6	TAB	→
PF7	F7 or Esc 7	TYPE AHEAD	Esc t
PF8	F8 or Esc 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.

IBM 3151, 3161, 3162, 3163, and 3164

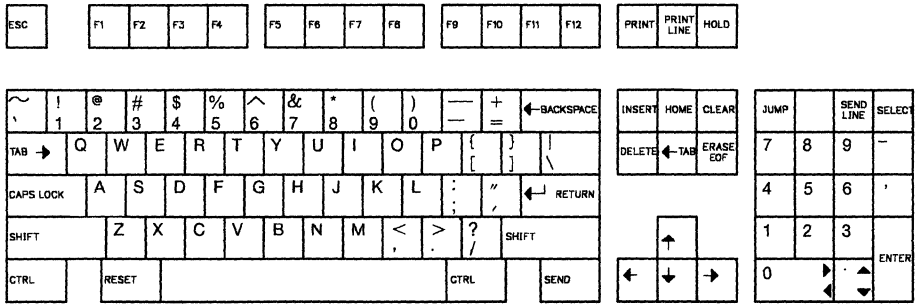


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	F9 or ESC 9
BACKTAB	ESC TAB	PF10	F10 or ESC 0
CLEAR	CLEAR	PF11	F11 or ESC -
CURSOR SELECT	CTRL k	PF12	F12 or ESC =
DELETE	DELETE	PF13	F13 or ESC ~
DEV CNCL	CTRL x	PF14	F14 or ESC @
DOWN (CURSOR)	↓	PF15	F15 or ESC #
DUP	CTRL d	PF16	F16 or ESC \$
ENTER	RETURN	PF17	F17 or ESC %
ERASE EOF	ERASE EOF or CTRL e	PF18	F18 or ESC ^
ERASE INPUT	Er Inp	PF19	F19 or ESC &
FIELD MARK	CTRL f	PF20	F20 or ESC *
HOME	HOME	PF21	F21 or ESC (
IDENT	CTRL z	PF22	F22 or ESC)
INSERT MODE	INSERT	PF23	F23 or ESC _
LEFT (CURSOR)	←	PF24	F24 or ESC +
NEW LINE	CTRL j	PRINT	CTRL p or PRINT (3151 only)
NULL/BLANK	ESC N	REFRESH	ESC r
PA1	PA1 or ESC m RETURN	RESET	CTRL r or RESET (3151 only)
PA2	PA2 or ESC n RETURN	RESUME DISPLAY	CTRL y
PA3	PA3 or ESC o RETURN	RESUME PRINTER	ESC p
PF1	F1 or ESC 1	RIGHT (CURSOR)	→
PF2	F2 or ESC 2	STATUS ON/OFF	CTRL w
PF3	F3 or ESC 3	SUSPEND DISPLAY	CTRL t
PF4	F4 or ESC 4	SUSPEND PRINTER	ESC O
PF5	F5 or ESC 5	SYS REQ	ESC s
PF6	F6 or ESC 6	TAB	TAB
PF7	F7 or ESC 7	TLIS REFRESH (3151/3164)	ESC T
PF8	F8 or ESC 8	TYPE AHEAD	ESC t
		UP (CURSOR)	↑
		2/4 COLOR TOGGLE (3164)	ESC \

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For keys F13 through F24, press and hold SHIFT while pressing F1 through F12.

IBM 3151, 3161, 3162, 3163, and 3164 (3708 Feature)



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	F9 or ESC 9
BACKTAB	← TAB or ESC TAB	PF10	F10 or ESC 0
CLEAR	CLEAR	PF11	F11 or ESC -
CURSOR SELECT	CTRL k	PF12	F12 or ESC =
DELETE	DELETE	PF13	F13 or ESC ~ SEND
DEV CNCL	CTRL x	PF14	F14 or ESC @ SEND
DOWN (CURSOR)	↓	PF15	F15 or ESC # SEND
DUP	CTRL d	PF16	F16 or ESC \$ SEND
ENTER	SEND	PF17	F17 or ESC % SEND
ERASE EOF	ERASE EOF or CTRL e	PF18	F18 or ESC ^ SEND
ERASE INPUT	Er Inp	PF19	F19 or ESC & SEND
FIELD MARK	CTRL f	PF20	F20 or ESC * SEND
HOME	HOME	PF21	F21 or ESC (SEND
IDENT	CTRL z	PF22	F22 or ESC) SEND
INSERT MODE	INSERT	PF23	F23 or ESC _ SEND
LEFT (CURSOR)	←	PF24	F24 or ESC + SEND
NEW LINE	RETURN or CTRL j	PRINT	PRINT or CTRL p
NULL/BLANK	ESC N	REFRESH	ESC r
PA1	PA1	RESET	RESET or CTRL r
PA2	PA2	RESUME DISPLAY	CTRL y
PA3	PA3	RESUME PRINTER	ESC p
PF1	F1 or ESC 1	RIGHT (CURSOR)	→
PF2	F2 or ESC 2	SUSPEND DISPLAY	CTRL t
PF3	F3 or ESC 3	SUSPEND PRINTER	ESC O
PF4	F4 or ESC 4	SYS REQ	ESC s
PF5	F5 or ESC 5	TAB	TAB
PF6	F6 or ESC 6	TYPE AHEAD	ESC t
PF7	F7 or ESC 7	UP (CURSOR)	↑
PF8	F8 or ESC 8	2/4 COLOR TOGGLE (3164)	ESC \

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For keys F13 through F24, press and hold SHIFT while pressing F1 through F12.

ADDS VIEWPOINT®

ESC	!	@	#	\$	%	^	&	*	(	)	_	=	~	BACK SPACE
TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	|	/
CTRL	LOCK	A	S	D	F	G	H	J	K	L	:	"	RETURN	
DEL	SHIFT	Z	X	C	V	B	N	M	<	>	?	/	SHIFT	BREAK

F1	F2	F3
7	↑	9
	8	
←	HOME	→
4	5	6
1	↓	3
0	.	

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	ESC A	PF9	ESC 9
BACKTAB	ESC TAB	PF10	ESC 0
CLEAR	CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC =
DELETE	DEL	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC i	PF19	ESC &
FIELD MARK	ESC f	PF20	ESC *
HOME	HOME	PF21	ESC (
IDENT	ESC d	PF22	ESC)
INSERT MODE	ESC DEL	PF23	ESC _
LEFT (CURSOR)	←	PF24	ESC +
NEW LINE	ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	ESC 1	RIGHT (CURSOR)	→
PF2	ESC 2	STATUS ON/OFF	ESC w or ESC ?
PF3	ESC 3	SUSPEND DISPLAY	CTRL t
PF4	ESC 4	SUSPEND PRINTER	ESC o
PF5	ESC 5	SYS REQ	ESC s
PF6	ESC 6	TAB	TAB
PF7	ESC 7	TYPE AHEAD	ESC a
PF8	ESC 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

Viewpoint is a registered trademark of Applied Digital Data Systems, Inc.

ADDS VIEWPOINT®/78

ATK	CURSOR DEL	~	!	@	#	\$	%	^	&	*	(	)	_	+	←	DUP	FIELD MARK	PF9	PF14	PF16
ESC		1	2	3	4	5	6	7	8	9	0	-	=	→	↵	↵	↵	PF10	PF17	PF18
CURSOR BLINK	ERASE EOF	Q	W	E	R	T	Y	U	I	O	P	;	'	↵	↵	↵	↵	PF19	PF20	PF21
		A	S	D	F	G	H	J	K	L	:	"	}	↵	↵	↵	↵	PF22	PF23	PF24
		↑	<	Z	X	C	V	B	N	M	,	.	?	↵	↵	↵	↵			
		RESET												ALT	ENTER					

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	ATTN	PF9	PF9
BACKTAB	←	PF10	PF10
CLEAR	CLEAR	PF11	PF11
CURSOR SELECT	CURSOR SEL	PF12	PF12
DELETE	↵	PF13	PF13
DEV CNCL	DEV CNCL or ALT x	PF14	PF14
DOWN (CURSOR)	↓	PF15	PF15
DUP	DUP	PF16	PF16
ENTER	ENTER	PF17	PF17
ERASE EOF	ERASE EOF	PF18	PF18
ERASE INPUT	ERASE INPUT	PF19	PF19
FIELD MARK	FIELD MARK	PF20	PF20
HOME	↵	PF21	PF21
IDENT	IDENT	PF22	PF22
INSERT MODE	↵	PF23	PF23
LEFT (CURSOR)	←	PF24	PF24
NEW LINE	↵	PRINT	☐☐
NULL/BLANK	ESC n	REFRESH	ALT r
PA1	PA1	RESET	RESET
PA2	PA2	RESUME DISPLAY	unavailable
PA3	PA3	RESUME PRINTER	unavailable
PF1	PF1	RIGHT (CURSOR)	→
PF2	PF2	STATUS ON/OFF	unavailable
PF3	PF3	SUSPEND DISPLAY	unavailable
PF4	PF4	SUSPEND PRINTER	unavailable
PF5	PF5	SYS REQ	SYS REQ
PF6	PF6	TAB	→|
PF7	PF7	TYPE AHEAD	ESC a
PF8	PF8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with ALT, press and hold ALT while pressing the other key.

Viewpoint is a registered trademark of Applied Digital Data Systems, Inc.

BEEHIVE™ ATL-078

ATTN	CURSOR SEL	~	!	@	#	\$	%	^	&	*	(	)	=	+	←	DUP	FIELD MARK	7	8	9
		1	2	3	4	5	6	7	8	9	0	-	=	←	→	↵	↵	4	5	6
CURSOR BLANK	ERASE EOF	Q	W	E	R	T	Y	U	I	O	P	;	'	]	↵	↵	↵	1	2	3
		↑	<	Z	X	C	V	B	N	M	,	.	?	↵	↵	↵	↵	.	0	.
		RESET														ALT	ENTER			

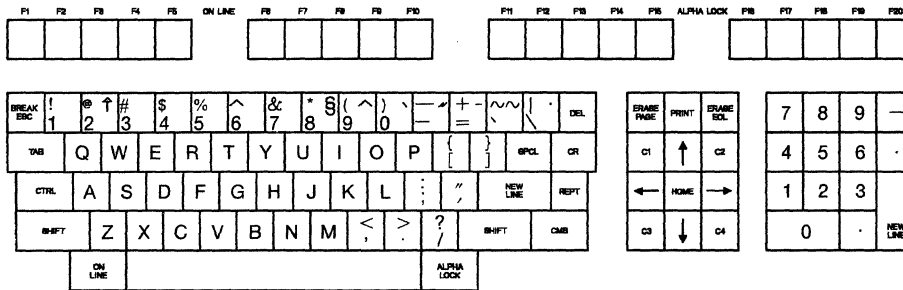
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	ALT a	PF9	PF9
BACKTAB	ESC ←	PF10	PF10
CLEAR	CLEAR or ALT c	PF11	PF11
CURSOR SELECT	CURSOR SEL	PF12	PF12
DELETE	↵	PF13	PF13
DEV CNCL	DEV CNCL	PF14	PF14
DOWN (CURSOR)	↓	PF15	PF15
DUP	DUP	PF16	PF16
ENTER	ENTER	PF17	PF17
ERASE EOF	ERASE EOF	PF18	PF18
ERASE INPUT	ERASE INPUT	PF19	PF19
FIELD MARK	FIELD MARK	PF20	PF20
HOME	↵ or ESC	PF21	PF21
IDENT	IDENT	PF22	PF22
INSERT MODE	↵	PF23	PF23
LEFT (CURSOR)	←	PF24	PF24
NEW LINE	↵	PRINT	ALT p
NULL/BLANK	Esc n	REFRESH	ALT u
PA1	PA1	RESET	RESET
PA2	PA2	RESUME DISPLAY	ALT f
PA3	PA3	RESUME PRINTER	ALT l
PF1	PF1	RIGHT (CURSOR)	→
PF2	PF2	STATUS ON/OFF	unavailable
PF3	PF3	SUSPEND DISPLAY	ALT d
PF4	PF4	SUSPEND PRINTER	ALT k
PF5	PF5	SYS REQ	SYS REQ
PF6	PF6	TAB	→
PF7	PF7	TYPE AHEAD	Esc a
PF8	PF8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc (the unlabeled key immediately below ATTN) and then press the other key.
2. For key sequences that begin with ALT, press and hold ALT while pressing the other key.

BEEHIVE is a trademark of BEEHIVE International.

DATA GENERAL DASHER® D210



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	F9 or ESC 9
BACKTAB	ESC TAB	PF10	F10 or ESC 0
CLEAR	ERASE PAGE	PF11	F11 or ESC -
CURSOR SELECT	ESC k	PF12	F12 or ESC =
DELETE	DEL	PF13	F13 or ESC !
DEV CNCL	ESC X	PF14	F14 or ESC @
DOWN (CURSOR)	↓	PF15	F15 or ESC #
DUP	CTRL d	PF16	SHIFT F1 or ESC \$
ENTER	NEW LINE	PF17	SHIFT F2 or ESC %
ERASE EOF	CTRL e	PF18	SHIFT F3 or ESC ^
ERASE INPUT	ESC I	PF19	SHIFT F4 or ESC &
FIELD MARK	CTRL f	PF20	SHIFT F5 or ESC *
HOME	HOME	PF21	SHIFT F6 or ESC (
IDENT	ESC D	PF22	SHIFT F7 or ESC)
INSERT MODE	ESC DEL	PF23	SHIFT F8 or ESC _
LEFT (CURSOR)	←	PF24	SHIFT F9 or ESC +
NEW LINE	ESC NEW LINE	PRINT	CTRL p
NULL/BLANK	ESC N	REFRESH	ESC R
PA1	C1 or ESC ,	RESET	CTRL r
PA2	C2 or ESC .	RESUME DISPLAY	unavailable
PA3	ESC /	RESUME PRINTER	unavailable
PF1	F1 or ESC 1	RIGHT (CURSOR)	→
PF2	F2 or ESC 2	STATUS ON/OFF	ESC W or ESC ?
PF3	F3 or ESC 3	SUSPEND DISPLAY	unavailable
PF4	F4 or ESC 4	SUSPEND PRINTER	unavailable
PF5	F5 or ESC 5	SYS REQ	ESC S
PF6	F6 or ESC 6	TAB	TAB
PF7	F7 or ESC 7	TYPE AHEA	ESC A
PF8	F8 or ESC 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

DEC® VT52

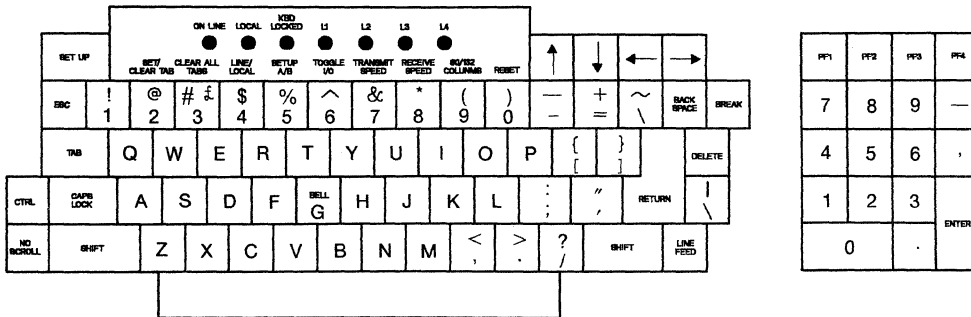
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE:
ATTN	Ctrl a	PF9	Numeric 9 or Esc 9
BACKTAB	Backspace or Esc Tab	PF10	Numeric Blue or Esc 0
CLEAR	Ctrl c	PF11	Numeric Red or Esc -
CURSOR SELECT	Esc k	PF12	Numeric Gray or Esc =
DELETE	Delete	PF13	Esc !
DEV CNCL	Ctrl x	PF14	Esc @
DOWN (CURSOR)	↓	PF15	Esc #
DUP	Ctrl d	PF16	Esc \$
ENTER	Return or Numeric Enter	PF17	Esc %
ERASE EOF	Ctrl e	PF18	Esc ^
ERASE INPUT	Esc i	PF19	Esc &
FIELD MARK	Ctrl f	PF20	Esc *
HOME	Esc H	PF21	Esc (
IDENT	Esc z	PF22	Esc)
INSERT MODE	Esc Del	PF23	Esc _
LEFT (CURSOR)	←	PF24	Esc +
NEW LINE	Linefeed	PRINT	Ctrl p
NULL/BLANK	Esc n	REFRESH	Ctrl u
PA1	Esc ,	RESET	Ctrl r
PA2	Esc .	RESUME DISPLAY	unavailable
PA3	Esc /	RESUME PRINTER	unavailable
PF1	Numeric 1 or Esc 1	RIGHT (CURSOR)	→
PF2	Numeric 2 or Esc 2	STATUS ON/OFF	Ctrl w
PF3	Numeric 3 or Esc 3	SUSPEND DISPLAY	unavailable
PF4	Numeric 4 or Esc 4	SUSPEND PRINTER	unavailable
PF5	Numeric 5 or Esc 5	SYS REQ	Esc S
PF6	Numeric 6 or Esc 6	TAB	Tab
PF7	Numeric 7 or Esc 7	TLIS REFRESH	ESC T
PF8	Numeric 8 or Esc 8	TYPE AHEAD	Esc a
		UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

DEC is a registered trademark of the Digital Equipment Corporation.

DEC® VT100

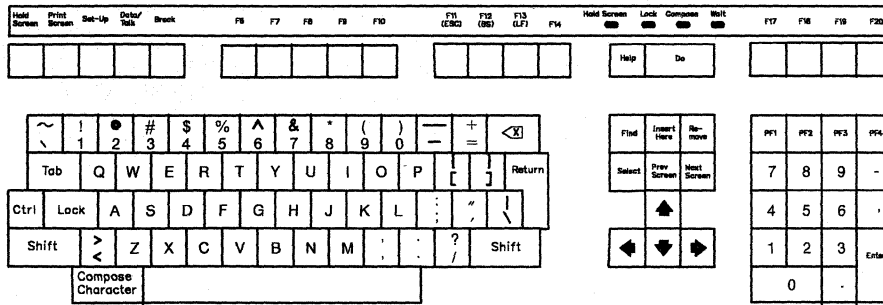


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	Numeric 9 or ESC 9
BACKTAB	BACKSPACE or ESC TAB	PF10	PF1 or ESC 0
CLEAR	CTRL c	PF11	PF2 or ESC -
CURSOR SELECT	ESC k	PF12	PF3 or ESC =
DELETE	DELETE	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN or Numeric ENTER	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC f	PF19	ESC &
FIELD MARK	CTRL f	PF20	ESC *
HOME	ESC H	PF21	ESC (
IDENT	ESC z	PF22	ESC)
INSERT MODE	ESC DELETE	PF23	ESC _
LEFT (CURSOR)	←	PF24	ESC +
NEW LINE	LINE FEED	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	CTRL u
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	Numeric 1 or ESC 1	RIGHT (CURSOR)	→
PF2	Numeric 2 or ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	Numeric 3 or ESC 3	SUSPEND DISPLAY	CTRL t
PF4	Numeric 4 or ESC 4	SUSPEND PRINTER	ESC o
PF5	Numeric 5 or ESC 5	SYS REQ	ESC S
PF6	Numeric 6 or ESC 6	TAB	TAB
PF7	Numeric 7 or ESC 7	TLIS REFRESH	ESC T
PF8	Numeric 8 or ESC 8	TYPE AHEAD	ESC a
		UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

DEC® VT220



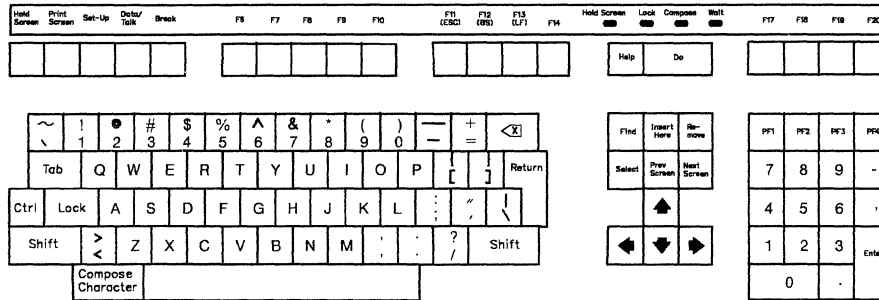
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF10	PF1
BACKTAB	Find or Ctrl b	PF11	PF2 or ESC -
CLEAR	Ctrl c	PF12	PF3
CURSOR SELECT	Ctrl k	PF13	F6
DELETE	<X>	PF14	F7
DEV CNCL	Ctrl x	PF15	F8
DOWN (CURSOR)	↓	PF16	F9
DUP	Ctrl d	PF17	F10
ENTER	Return or Numeric Enter	PF18	F11
ERASE EOF	Ctrl e	PF19	F12
ERASE INPUT	Remove	PF20	F13
FIELD MARK	Ctrl f	PF21	F14
HOME	Ctrl h	PF22	Help
IDENT	Ctrl z	PF23	Do
INSERT MODE	Insert Here	PF24	F17
LEFT (CURSOR)	←	PRINT	PF4 or Ctrl p
NEW LINE	Select	PRINT SCREEN	Print Screen
NULL/BLANK	Ctrl l	REFRESH	Prev Screen
PA1	F18	RESET	Ctrl r
PA2	F19	RESUME DISPLAY	Ctrl y
PA3	F20	RESUME PRINTER	Ctrl v
PF1	Numeric 1	RIGHT (CURSOR)	→
PF2	Numeric 2	STATUS ON/OFF	Ctrl w
PF3	Numeric 3	SUSPEND DISPLAY	Ctrl g
PF4	Numeric 4	SUSPEND PRINTER	Ctrl u
PF5	Numeric 5	SYS REQ	Next Screen
PF6	Numeric 6	TAB	Tab
PF7	Numeric 7	TLIS REFRESH	Ctrl 3 t
PF8	Numeric 8	TYPE AHEAD	Ctrl t
PF9	Numeric 9	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

DEC is a registered trademark of Digital Equipment Corporation.

DEC® VT220 Emulating a DEC VT100

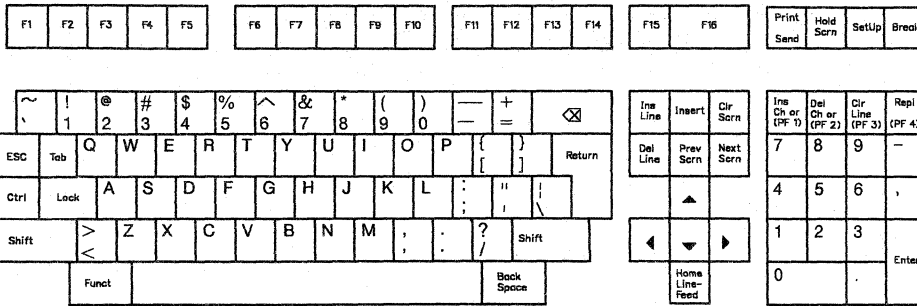


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF10	PF1
BACKTAB	Find or Ctrl b	PF11	PF2 or ESC -
CLEAR	Ctrl c	PF12	PF3
CURSOR SELECT	Ctrl k	PF13	F6
DELETE	<X>	PF14	F7
DEV CNCL	Ctrl x	PF15	F8
DOWN (CURSOR)	↓	PF16	F9
DUP	Ctrl d	PF17	F10
ENTER	Return or Numeric Enter	PF18	F11
ERASE EOF	Ctrl e	PF19	F12
ERASE INPUT	Remove	PF20	F13
FIELD MARK	Ctrl f	PF21	F14
HOME	Ctrl h	PF22	F15
IDENT	Ctrl z	PF23	F16
INSERT MODE	Insert Here	PF24	F17
LEFT (CURSOR)	←	PRINT	PF4 or Ctrl p
NEW LINE	Select	PRINT SCREEN	PRINT SCREEN
NULL/BLANK	Ctrl l	REFRESH	Prev Screen
PA1	F18	RESET	Ctrl r
PA2	F19	RESUME DISPLAY	Ctrl y
PA3	F20	RESUME PRINTER	Ctrl v
PF1	Numeric 1	RIGHT (CURSOR)	→
PF2	Numeric 2	STATUS ON/OFF	Ctrl w or ESC ?
PF3	Numeric 3	SUSPEND DISPLAY	Ctrl g
PF4	Numeric 4	SUSPEND PRINTER	Ctrl u
PF5	Numeric 5	SYS REQ	Next Screen
PF6	Numeric 6	TAB	TAB
PF7	Numeric 7	TLIS REFRESH	ESC T
PF8	Numeric 8	TYPE AHEAD	Ctrl t
PF9	Numeric 9	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

FALCO® 500



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF9	F9
BACKTAB	Ins Line or ESC Tab	PF10	F10
CLEAR	Clr Scrn or Ctrl c	PF11	F11
CURSOR SELECT	Ctrl k	PF12	F12
DELETE	<X>	PF13	F13 or ESC !
DEV CNCL	Ctrl x	PF14	F14 or ESC @
DOWN (CURSOR)	↓	PF15	F15 or ESC
DUP	Ctrl d	PF16	F16 or Numeric 1 or ESC \$
ENTER	Return or Numeric Enter	PF17	Numeric 2 or ESC %
ERASE EOF	Ctrl e	PF18	Numeric 3 or ESC ^
ERASE INPUT	ESC i	PF19	Numeric 4 or ESC &
FIELD MARK	Ctrl f	PF20	Numeric 5 or ESC *
HOME	Home or ESC h	PF21	Numeric 6 or ESC (
IDENT	Ctrl z	PF22	Numeric 7 or ESC)
INSERT MODE	Insert	PF23	Numeric 8 or ESC _
LEFT (CURSOR)	←	PF24	Numeric 9 or ESC +
NEW LINE	LineFeed	PRINT	Repl (PF4) or Ctrl p
NULL/BLANK	ESC n or Numeric .	REFRESH	Prev Scrn
PA1	Ins Ch (PF1) or ESC ,	RESET	Ctrl r
PA2	Del Ch (PF2) or ESC .	RESUME DISPLAY	Ctrl y
PA3	Clr Line (PF3) or ESC /	RESUME PRINTER	ESC p or Numeric 0
PF1	F1	RIGHT (CURSOR)	→
PF2	F2	SUSPEND DISPLAY	ESC d
PF3	F3	SUSPEND PRINTER	ESC o
PF4	F4	SYS REQ	Next Scrn
PF5	F5	TAB	Tab
PF6	F6	TLIS REFRESH	ESC T
PF7	F7	TYPE AHEAD	Ctrl t
PF8	F8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

FALCO is a registered trademark of FALCO Data Products.

HAZELTINE ESPRIT I® and II®

ESC	!	@	#	\$	%	^	&	*	(	)	_	=	~	BACK SPACE
TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	|	BREAK
CAPS LOCK	A	S	D	F	G	H	J	K	L	;	'	/	RETURN	RUB OUT
SHIFT	Z	X	C	V	B	N	M	<	>	?	/	SHIFT	LINE FEED	
	CTRL													

LOCAL	AUX ←	BLOCK →	DEL LINE INS
CLEAR HOME	UC ↑	DC ↓	PGD CLEAR FLD
7	8	9	.
4	5	6	,
1	2	3	ENTER
0	.		

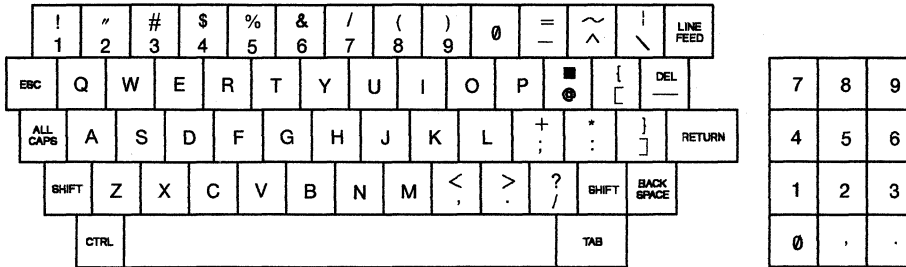
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	Numeric 9 or ESC 9
BACKTAB	SHIFT TAB	PF10	ESC 0
CLEAR	SHIFT CLEAR or CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC =
DELETE	RUB OUT	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN or Numeric ENTER	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC I	PF19	ESC &
FIELD MARK	CTRL f	PF20	ESC *
HOME	HOME	PF21	ESC (
IDENT	ESC d	PF22	ESC)
INSERT MODE	ESC RUB OUT	PF23	ESC _
LEFT (CURSOR)	←	PF24	ESC +
NEW LINE	LINE FEED	PRINT	ESC P
NULL/BLANK	ESC n	REFRESH	ESC R
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	Numeric 1 or ESC 1	RIGHT (CURSOR)	→
PF2	Numeric 2 or ESC 2	STATUS ON/OFF	CTRL w
PF3	Numeric 3 or ESC 3	SUSPEND DISPLAY	CTRL t
PF4	Numeric 4 or ESC 4	SUSPEND PRINTER	ESC o
PF5	Numeric 5 or ESC 5	SYS REQ	ESC S
PF6	Numeric 6 or ESC 6	TAB	TAB
PF7	Numeric 7 or ESC 7	TLIS REFRESH	ESC T
PF8	Numeric 8 or ESC 8	TYPE AHEAD	ESC a
		UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

HAZELTINE 1500

HOME	CLEAR	BREAK	RESET
------	-------	-------	-------

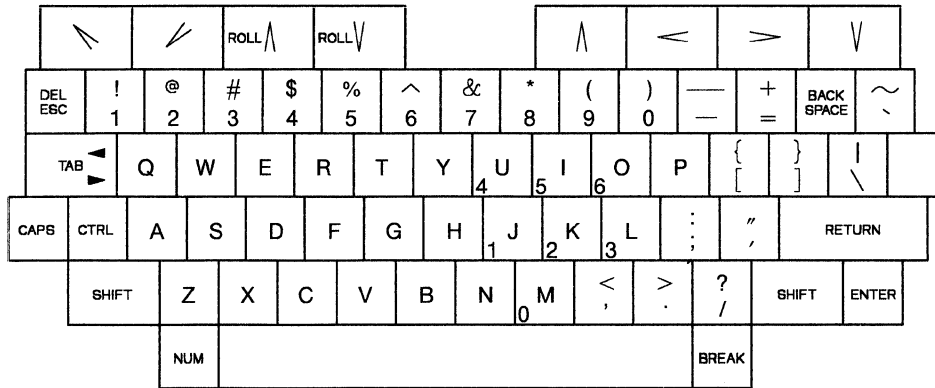


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	ESC 9
BACKTAB	ESC TAB	PF10	ESC 0
CLEAR	CLEAR or CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC ^
DELETE	DEL	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC "
DOWN (CURSOR)	CTRL j	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC &
ERASE INPUT	ESC I	PF19	ESC '
FIELD MARK	CTRL f	PF20	ESC (
HOME	HOME	PF21	ESC)
IDENT	ESC d	PF22	ESC |
INSERT MODE	ESC DEL	PF23	ESC =
LEFT (CURSOR)	CTRL h	PF24	ESC LINEFEED
NEW LINE	ESC RETURN	PRINT	ESC P
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	ESC 1	RIGHT (CURSOR)	CTRL l
PF2	ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	ESC 3	SUSPEND DISPLAY	CTRL t
PF4	ESC 4	SUSPEND PRINTER	ESC o
PF5	ESC 5	SYS REQ	ESC s
PF6	ESC 6	TAB	TAB
PF7	ESC 7	TYPE AHEAD	ESC a
PF8	ESC 8	UP (CURSOR)	CTRL k

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

HEWLETT-PACKARD 2621B

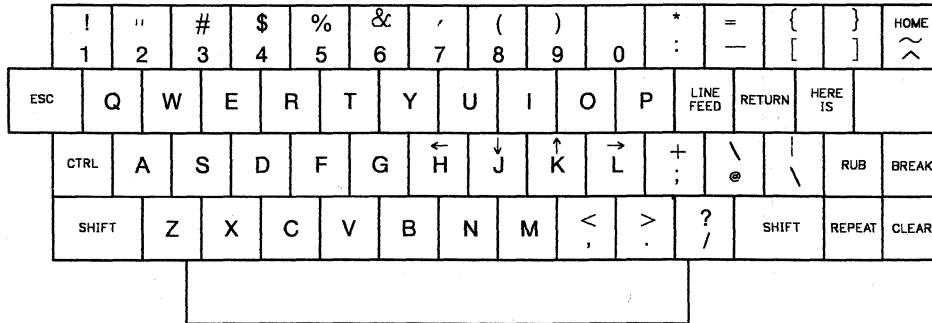


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	ESC 9
BACKTAB	TAB ◀	PF10	ESC 0
CLEAR	CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC =
DELETE	DEL	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓ or CTRL j	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	ENTER or RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC E	PF19	ESC &
FIELD MARK	CTRL f	PF20	ESC *
HOME	↖ or ESC H	PF21	ESC (
IDENT	ESC d	PF22	ESC)
INSERT MODE	ESC DEL	PF23	ESC _
LEFT (CURSOR)	← or CTRL h	PF24	ESC +
NEW LINE	ESC ENTER or ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC R
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	unavailable
PA3	ESC /	RESUME PRINTER	unavailable
PF1	F1 or ESC 1	RIGHT (CURSOR)	→ or CTRL l
PF2	F2 or ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	F3 or ESC 3	SUSPEND DISPLAY	unavailable
PF4	F4 or ESC 4	SUSPEND PRINTER	unavailable
PF5	F5 or ESC 5	SYS REQ	ESC S
PF6	F6 or ESC 6	TAB	TAB ▶
PF7	F7 or ESC 7	TYPE AHEAD	ESC a
PF8	F8 or ESC 8	UP (CURSOR)	↑ or CTRL k

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

LEAR SIEGLER ADM 3A Dumb Terminal®



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	ESC 9
BACKTAB	ESC ← or ESC CTRL i	PF10	ESC 0
CLEAR	CTRL c or SHIFT CLEAR	PF11	ESC :
CURSOR SELECT	ESC k	PF12	ESC -
DELETE	RUB	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC “
DOWN (CURSOR)	CTRL J or ↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC &
ERASE INPUT	ESC i	PF19	ESC `
FIELD MARK	CTRL f	PF20	ESC (
HOME	HOME	PF21	ESC)
IDENT	ESC d	PF22	ESC {
INSERT MODE	ESC RUB	PF23	ESC *
LEFT (CURSOR)	CTRL h or ←	PF24	ESC =
NEW LINE	ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	ESC 1	RIGHT (CURSOR)	CTRL l or →
PF2	ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	ESC 3	SUSPEND DISPLAY	CTRL t
PF4	ESC 4	SUSPEND PRINTER	ESC o
PF5	ESC 5	SYS REQ	ESC s
PF6	ESC 6	TAB	ESC → or CTRL i
PF7	ESC 7	TYPE AHEAD	ESC a
PF8	ESC 8	UP (CURSOR)	CTRL k or ↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that begin with SHIFT, press and hold SHIFT while pressing the other key.

Dumb Terminal is a registered Trademark of Lear Siegler, Inc.

LEAR SIEGLER ADM 24E

ESCAPE	F 17	F 18	F 19	F 20	F 21	F 22	F 23	F 24	F 25	F 26	F 27	F 28	F 29	F 30	F 31	F 32	ALT	SET UP STATUS
	1	2	3	4	5	6	7	8	9	0								

!	@	#	£	\$	%	^	&	*	(	)	-	=	~	BACK SPACE
1	2	3	4	5	6	7	8	9	0					
TAB ←	Q	W	E	R	T	Y	U	I	O	P				LINE FEED
CAP LOCK	A	S	D	F	G	H	J	K	L	:	"	'	/	RETURN
SHIFT	Z	X	C	V	B	N	M	<	>	?			SHIFT	PAGE NEW LINE
CONTROL													CLEAR	

LAND	PAGE ERASE LINE
LINE INSERT CHAR	LINE DELETE CHAR
↑	↓
←	→
HOME	

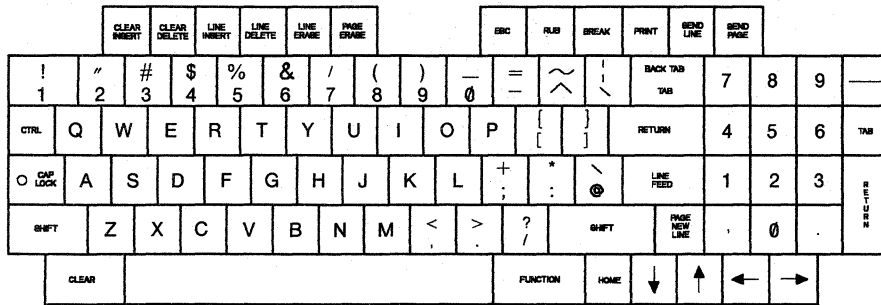
PAGE SEND LINE	PAGE PRINT LINE	DELETE	BREAK
7	8	9	-
4	5	6	.
1	2	3	RIGHT
0			RESET

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL z	PF10	F10 or ESC 0
BACKTAB	TAB ←	PF11	F11 or ESC -
CLEAR	CTRL c	PF12	F12 or ESC =
CURSOR SELECT	ESC k	PF13	F13 or ESC !
DELETE	LINE DELETE CHAR	PF14	F14 or ESC @
DEV CNCL	CTRL x	PF15	F15 or ESC #
DOWN (CURSOR)	↓	PF16	F16 or ESC \$
DUP	CTRL d	PF17	ESC %
ENTER	RETURN or Numeric ENTER	PF18	ESC ^
ERASE EOF	PAGE ERASE LINE	PF19	ESC &
ERASE INPUT	ESC i	PF20	ESC *
FIELD MARK	CTRL f	PF21	ESC (
HOME	HOME	PF22	ESC)
IDENT	ESC d	PF23	ESC _
INSERT MODE	LINE INSERT CHAR	PF24	ESC +
LEFT (CURSOR)	←	PRINT	CTRL p
NEW LINE	ESC RETURN or ESC Numeric ENTER	PRINT LINE	PAGE PRINT LINE
NULL/BLANK	ESC n	PRINT PAGE	SHIFT PAGE PRINT LINE
PA1	ESC ,	REFRESH	ESC r
PA2	ESC .	RESET	CTRL r
PA3	ESC /	RESUME DISPLAY	CTRL y
PF1	F1 or ESC 1	RESUME PRINTER	ESC p
PF2	F2 or ESC 2	RIGHT (CURSOR)	→
PF3	F3 or ESC 3	STATUS ON/OFF	unavailable
PF4	F4 or ESC 4	SUSPEND DISPLAY	CTRL t
PF5	F5 or ESC 5	SUSPEND PRINTER	ESC o
PF6	F6 or ESC 6	SYS REQ	ESC s
PF7	F7 or ESC 7	TAB	TAB →
PF8	F8 or ESC 8	TYPE AHEAD	ESC a
PF9	F9 or ESC 9	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESCAPE and then press the other key.
2. For key sequences that begin with CTRL, press and hold CONTROL while pressing the other key.
3. For key sequences that contain "Numeric," press the appropriate key on the numeric key pad.

LEAR SIEGLER ADM 31



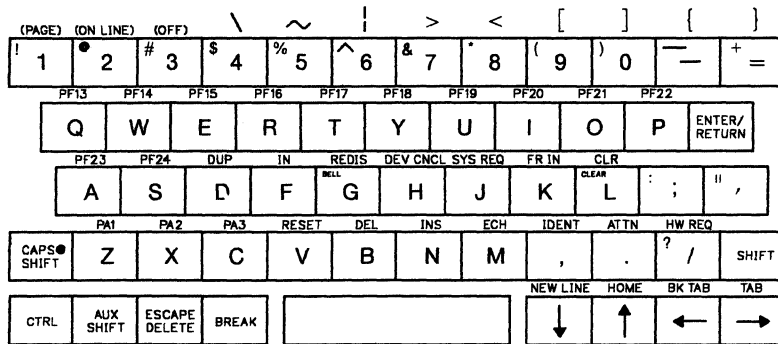
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	ESC t	PF9	Numeric 9 or ESC 9
BACKTAB	BACK TAB	PF10	ESC 0
CLEAR	CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC ^
DELETE	RUB or CHAR DELETE	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC “
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN or Numeric RETURN	PF17	ESC %
ERASE EOF	PAGE ERASE	PF18	ESC &
ERASE INPUT	ESC i	PF19	ESC †
FIELD MARK	CTRL f	PF20	ESC (
HOME	HOME	PF21	ESC)
IDENT	ESC d	PF22	ESC _
INSERT MODE	ESC RUB	PF23	ESC =
LEFT (CURSOR)	←	PF24	ESC ~
NEW LINE	ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	unavailable
PA3	ESC /	RESUME PRINTER	unavailable
PF1	Numeric 1 or ESC 1	RIGHT (CURSOR)	→
PF2	Numeric 2 or ESC 2	STATUS ON/OFF	CTRL w
PF3	Numeric 3 or ESC 3	SUSPEND DISPLAY	unavailable
PF4	Numeric 4 or ESC 4	SUSPEND PRINTER	unavailable
PF5	Numeric 5 or ESC 5	SYS REQ	ESC s
PF6	Numeric 6 or ESC 6	TAB	TAB
PF7	Numeric 7 or ESC 7	TYPE AHEAD	ESC a
PF8	Numeric 8 or ESC 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain “Numeric,” press the appropriate key on the numeric key pad.

Lear Siegler ADM 31 Intermediate Terminal™ Video Display Unit
Intermediate Terminal is a trademark of Lear Siegler, Inc.

NORTHERN TELECOM DISPLAYPHONE™

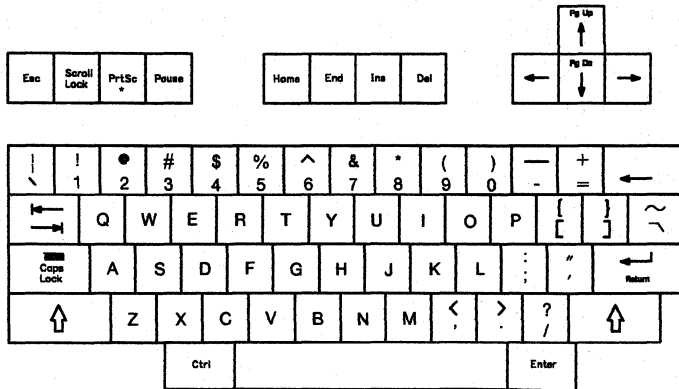


TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	ESCAPE 9
BACKTAB	ESCAPE b or ESCAPE ←	PF10	ESCAPE 0
CLEAR	CTRL c	PF11	ESCAPE -
CURSOR SELECT	ESCAPE k	PF12	ESCAPE =
DELETE	DELETE	PF13	ESCAPE !
DEV CNCL	CTRL x	PF14	ESCAPE @
DOWN (CURSOR)	↓	PF15	ESCAPE #
DUP	CTRL d	PF16	ESCAPE \$
ENTER	ENTER/RETURN	PF17	ESCAPE %
ERASE EOF	CTRL e	PF18	ESCAPE ^
ERASE INPUT	ESCAPE i	PF19	ESCAPE &
FIELD MARK	CTRL f	PF20	ESCAPE *
HOME	ESCAPE H or ESCAPE ↑	PF21	ESCAPE (
IDENT	ESCAPE d	PF22	ESCAPE)
INSERT MODE	ESCAPE DELETE	PF23	ESCAPE _
LEFT (CURSOR)	←	PF24	ESCAPE +
NEW LINE	ESCAPE ENTER/RETURN	PRINT	CTRL p
NULL/BLANK	ESCAPE n	REFRESH	ESCAPE r
PA1	ESCAPE ,	RESET	CTRL r
PA2	ESCAPE .	RESUME DISPLAY	unavailable
PA3	ESCAPE /	RESUME PRINTER	unavailable
PF1	ESCAPE 1	RIGHT (CURSOR)	→
PF2	ESCAPE 2	STATUS ON/OFF	CTRL w or ESCAPE ?
PF3	ESCAPE 3	SUSPEND DISPLAY	unavailable
PF4	ESCAPE 4	SUSPEND PRINTER	unavailable
PF5	ESCAPE 5	SYS REQ	ESCAPE s
PF6	ESCAPE 6	TAB	ESCAPE t or ESCAPE →
PF7	ESCAPE 7	TYPE AHEAD	ESCAPE a
PF8	ESCAPE 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESCAPE, press and release ESCAPE and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

ROLM® CEDAR™



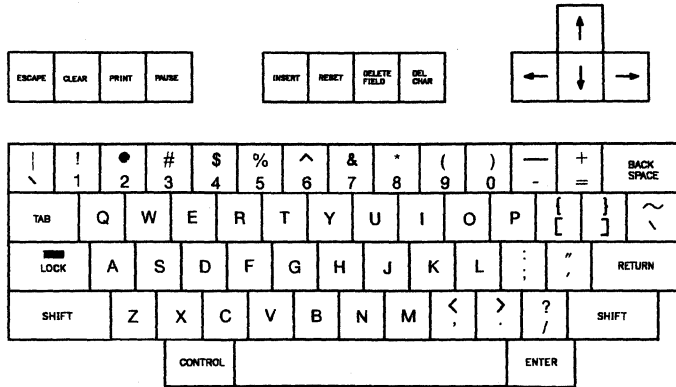
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF9	F9 or Esc 9 or Ctrl 9
BACKTAB	←	PF10	F10 or Esc 0 or Ctrl 0
CLEAR	Scroll Lock	PF11	Esc - or Ctrl -
CURSOR SELECT	Esc k	PF12	Esc = or Ctrl =
DELETE	Del	PF13	Esc ! or Ctrl q
DEV CNCL	Ctrl	PF14	Esc @ or Ctrl w
DOWN (CURSOR)	↓	PF15	Esc # or Ctrl e
DUP	Ctrl d	PF16	Esc \$ or Ctrl r
ENTER	Enter	PF17	Esc % or Ctrl t
ERASE EOF	Del Field	PF18	Esc ^ or Ctrl y
ERASE INPUT	Ctrl x or Esc i	PF19	Esc & or Ctrl u
FIELD MARK	Ctrl f	PF20	Esc * or Ctrl I
HOME	Home or Esc h	PF21	Esc (or Ctrl o
IDENT	Esc d or Ctrl ;	PF22	Esc) or Ctrl p
INSERT MODE	Ins	PF23	Esc _ or Ctrl [
LEFT (CURSOR)	←	PF24	Esc + or Ctrl]
NEW LINE	Return	PRINT	Esc l
NULL/BLANK	Esc n	REFRESH	Esc r
PA1	Esc , or Ctrl j	RESET	End
PA2	Esc . or Ctrl k	RESUME DISPLAY	Esc y or Ctrl b
PA3	Esc / or Ctrl l	RESUME PRINTER	Esc p or Ctrl n
PF1	F1 or Esc 1 or Ctrl 1	RIGHT (CURSOR)	→
PF2	F2 or Esc 2 or Ctrl 2	STATUS ON/OFF	Ctrl s or ESC ?
PF3	F3 or Esc 3 or Ctrl 3	SUSPEND DISPLAY	Esc t
PF4	F4 or Esc 4 or Ctrl 4	SUSPEND PRINTER	Esc o
PF5	F5 or Esc 5 or Ctrl 5	SYS REQ	Esc s or Ctrl Return
PF6	F6 or Esc 6 or Ctrl 6	TAB	→|
PF7	F7 or Esc 7 or Ctrl 7	TYPE AHEAD	Esc a
PF8	F8 or Esc 8 or Ctrl 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.
3. F1 through F10 are soft keys.

ROLM is a registered trademark and Cedar is a trademark of ROLM Corporation.

ROLM® CYPRESS™



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a	PF9	Esc 9 or CTRL 9
BACKTAB	CTRL TAB	PF10	Esc 0 or CTRL 0
CLEAR	CLEAR	PF11	ESC - or CTRL -
CURSOR SELECT	ESC k	PF12	ESC = or CTRL =
DELETE	DELETE CHAR	PF13	ESC ! or CTRL q
DEV CNCL	CTRL	PF14	ESC @ or CTRL w
DOWN (CURSOR)	↓	PF15	ESC # or CTRL e
DUP	CTRL d	PF16	ESC \$ or CTRL r
ENTER	ENTER	PF17	ESC % or CTRL t
ERASE EOF	DELETE FIELD	PF18	ESC ^ or CTRL y
ERASE INPut	CTRL x or ESC i	PF19	ESC & or CTRL u
FIELD MARK	CTRL f	PF20	ESC * or CTRL l
HOME	ESC h or CTRL h	PF21	ESC (or CTRL o
IDENT	ESC d or CTRL ;	PF22	ESC) or CTRL p
INSERT MODE	INSERT	PF23	ESC _ or CTRL [
LEFT (CURSOR)	←	PF24	ESC + or CTRL]
NEW LINE	RETURN	PRINT	ESC l
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC , or CTRL j	RESET	RESET
PA2	ESC . or CTRL k	RESUME DISPLAY	ESC y or CTRL b
PA3	ESC / or CTRL l	RESUME PRINTER	ESC p or CTRL n
PF1	ESC 1 or CTRL 1	RIGHT (CURSOR)	→
PF2	ESC 2 or CTRL 2	STATUS ON/OFF	CTRL S or ESC ?
PF3	ESC 3 or CTRL 3	SUSPEND DISPLAY	ESC t
PF4	ESC 4 or CTRL 4	SUSPEND PRINTER	ESC o
PF5	ESC 5 or CTRL 5	SYS REQ	ESC s or CTRL RETURN
PF6	ESC 6 or CTRL 6	TAB	TAB
PF7	ESC 7 or CTRL 7	TYPE AHEAD	ESC a
PF8	ESC 8 or CTRL 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESCAPE; then press the other key.
2. For key sequences that begin with CTRL, press and hold CONTROL while pressing the other key.
3. F1 through F10 are soft keys.

ROLM is a registered trademark and Cypress is a trademark of ROLM Corporation.

ROLM® JUNIPER™

F1	F2	Esc	1	@	#	\$	%	^	&	*	(	)	-	=	←	Num Lock	Scroll Lock	
F3	F4	←	Q	W	E	R	T	Y	U	I	O	P	[	]	←	7 Home	8 ↑	9 PgUp
F5	F6	Ctrl	A	S	D	F	G	H	J	K	L	:	"	~	←	4 ←	5	6 →
F7	F8	↑	Z	X	C	V	B	N	M	,	.	/	?	↑	.	1 End	2 ↓	3 PgDn
F9	F10	Alt													Caps Lock	0 Ins	Del	

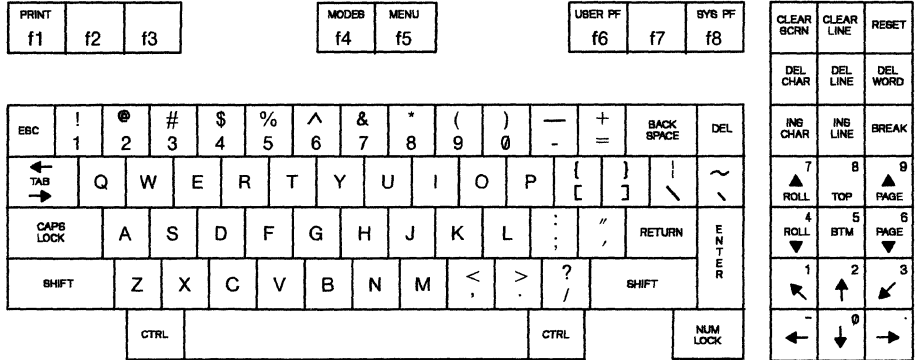
TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF9	F9 or Esc 9 or Ctrl 9
BACKTAB	←	PF10	F10 or Esc 0 or Ctrl 0
CLEAR	Shift F1	PF11	Esc - or Ctrl -
CURSOR SELECT	Esc k	PF12	Esc = or Ctrl =
DELETE	Del	PF13	Esc ! or Ctrl q
DEV CNCL	Ctrl /	PF14	Esc @ or Ctrl w
DOWN (CURSOR)	↓	PF15	Esc # or Ctrl e
DUP	Ctrl d	PF16	Esc \$ or Ctrl r
ENTER	↵	PF17	Esc % or Ctrl t
ERASE EOF	Ctrl End	PF18	Esc ^ or Ctrl y
ERASE INPUT	Ctrl x or Esc i	PF19	Esc & or Ctrl u
FIELD MARK	Ctrl f	PF20	Esc * or Ctrl I
HOME	Home or Esc h	PF21	Esc (or Ctrl o
IDENT	Esc d or Ctrl ;	PF22	Esc) or Ctrl p
INSERT MODE	Ins	PF23	Esc _ or Ctrl [
LEFT (CURSOR)	←	PF24	Esc + or Ctrl]
NEW LINE	Shift ↵	PRINT	Esc l
NULL/BLANK	Esc n	REFRESH	Esc r
PA1	Esc , or Ctrl j	RESET	Shift F2
PA2	Esc . or Ctrl k	RESUME DISPLAY	Esc y or Ctrl b
PA3	Esc / or Ctrl l	RESUME PRINTER	Esc p or Ctrl n
PF1	F1 or Esc 1 or Ctrl 1	RIGHT (CURSOR)	→
PF2	F2 or Esc 2 or Ctrl 2	STATUS ON/OFF	Ctrl s or ESC ?
PF3	F3 or Esc 3 or Ctrl 3	SUSPEND DISPLAY	Esc t
PF4	F4 or Esc 4 or Ctrl 4	SUSPEND PRINTER	Esc o
PF5	F5 or Esc 5 or Ctrl 5	SYS REQ	Esc s or Ctrl ↵
PF6	F6 or Esc 6 or Ctrl 6	TAB	→
PF7	F7 or Esc 7 or Ctrl 7	TYPE AHEAD	Esc a
PF8	F8 or Esc 8 or Ctrl 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.

ROLM is a registered trademark and Juniper is a trademark of ROLM Corporation.

TELETYPE 5410



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Ctrl a	PF9	Esc 9
BACKTAB	BACKSPACE or ESC TAB	PF10	ESC 0
CLEAR	CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC =
DELETE	DEL	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC i	PF19	ESC &
FIELD MARK	CTRL f	PF20	ESC *
HOME	↖	PF21	ESC (
IDENT	ESC d	PF22	ESC)
INSERT MODE	ESC DEL	PF23	ESC _
LEFT (CURSOR)	←	PF24	ESC +
NEW LINE	LINEFEED or ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	ESC 1	RIGHT (CURSOR)	→
PF2	ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	ESC 3	SUSPEND DISPLAY	CTRL t
PF4	ESC 4	SUSPEND PRINTER	ESC o
PF5	ESC 5	SYS REQ	ESC s
PF6	ESC 6	TAB	TAB
PF7	ESC 7	TYPE AHEAD	ESC a
PF8	ESC 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

TELETYPE 5420

f1	f2	f3
----	----	----

f4	f5
----	----

f6	f7	f8
----	----	----

ESC	!	Ⓢ	#	\$	%	^	&	*	()	-	+	BACK SPACE	DEL
TAB	Q	W	E	R	T	Y	U	I	O	P	[	]	|	~
CTRL	A	S	D	F	G	H	J	K	L	:	"	RETURN		
SHIFT	Z	X	C	V	B	N	M	,	.	?	/	SHIFT	LINE FEED	
	CAPS LOCK		CTRL										NUM LOCK	

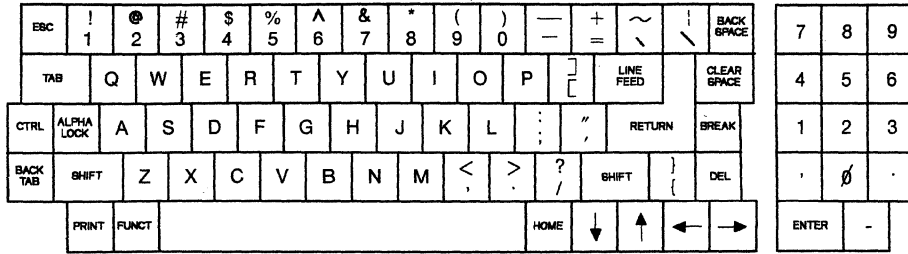
CLR	SET UP	DIS-CON BRK
7	8	9
4	5	6
1	2	3
←	↑	↘
←	↓	→

TO PERFORM THIS FUNCTION	TYPE:	TO PERFORM THIS FUNCTION	TYPE:
ATTN	CTRL a	PF9	Esc 9
BACKTAB	BACKSPACE or ESC TAB	PF10	Esc 0
CLEAR	CTRL c	PF11	ESC -
CURSOR SELECT	ESC k	PF12	ESC =
DELETE	DEL CHAR or DEL	PF13	ESC !
DEV CNCL	CTRL x	PF14	ESC @
DOWN (CURSOR)	↓	PF15	ESC #
DUP	CTRL d	PF16	ESC \$
ENTER	ENTER or RETURN	PF17	ESC %
ERASE EOF	CTRL e	PF18	ESC ^
ERASE INPUT	ESC i	PF19	ESC &
FIELD MARK	CTRL f	PF20	ESC *
HOME	↖	PF21	ESC (
IDENT	ESC d	PF22	ESC)
INSERT MODE	ESC DEL	PF23	ESC _
LEFT (CURSOR)	←	PF24	ESC +
NEW LINE	ESC RETURN	PRINT	CTRL p
NULL/BLANK	ESC n	REFRESH	ESC r
PA1	ESC ,	RESET	CTRL r
PA2	ESC .	RESUME DISPLAY	CTRL y
PA3	ESC /	RESUME PRINTER	ESC p
PF1	ESC 1	RIGHT (CURSOR)	→
PF2	ESC 2	STATUS ON/OFF	CTRL w or ESC ?
PF3	ESC 3	SUSPEND DISPLAY	CTRL t
PF4	ESC 4	SUSPEND PRINTER	ESC o
PF5	ESC 5	SYS REQ	ESC s
PF6	ESC 6	TAB	TAB
PF7	ESC 7	TYPE AHEAD	ESC a
PF8	ESC 8	UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

TELEVIDEO® 910



TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL a or CTRL z	PF10	ESC 0
BACKTAB	ESC TAB	PF11	ESC -
CLEAR	CTRL c	PF12	ESC =
CURSOR SELECT	ESC k	PF13	ESC !
DELETE	DEL	PF14	ESC ~
DEV CNCL	CTRL x	PF15	ESC #
DOWN (CURSOR)	↓	PF16	ESC \$
DUP	CTRL d	PF17	ESC %
ENTER	ENTER or RETURN	PF18	ESC ^
ERASE EOF	CTRL e	PF19	ESC &
ERASE INPUT	ESC i	PF20	ESC *
FIELD MARK	CTRL f	PF21	ESC (
HOME	HOME	PF22	ESC)
IDENT	ESC d or ESC z	PF23	ESC _
INSERT MODE	ESC DEL	PF24	ESC +
LEFT (CURSOR)	←	PRINT	CTRL p
NEW LINE	ESC RETURN	REFRESH	ESC r
NULL/BLANK	ESC n	RESET	CTRL r
PA1	ESC ,	RESUME DISPLAY	CTRL y
PA2	ESC .	RESUME PRINTER	ESC p
PA3	ESC /	RIGHT (CURSOR)	→
PF1	ESC 1	STATUS ON/OFF	CTRL w or ESC ?
PF2	ESC 2	SUSPEND DISPLAY	CTRL t
PF3	ESC 3	SUSPEND PRINTER	ESC o
PF4	ESC 4	SYS REQ	ESC s
PF5	ESC 5	TAB	TAB
PF6	ESC 6	TOGGLE AUX PORT	PRINT
PF7	ESC 7	TYPE AHEAD	ESC t or ESC a
PF8	ESC 8	UP (CURSOR)	↑
PF9	ESC 9		

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

TELEVIDEO® 912C

ESC	!	@	#	\$	%	^	&	*	(	)	_	=	~	|	BACK SPACE	7	8	9
TAB	Q	W	E	R	T	Y	U	I	O	P	]	[	LINE FEED	CLEAR SPACE		4	5	6
CTRL	ALPHA LOCK	A	S	D	F	G	H	J	K	L	:	;	"	RETURN	BREAK	1	2	3
BACK TAB	SHIFT	Z	X	C	V	B	N	M	<	>	?	/	SHIFT	}	DEL	.	∅	.
	BLOCK COPY	FNCT							HOME	↓	↑	←	→		ENTER	-		

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL z	PF10	ESC 0
BACKTAB	ESC TAB	PF11	ESC -
CLEAR	CTRL c	PF12	ESC =
CURSOR SELECT	ESC k	PF13	ESC !
DELETE	DEL	PF14	ESC @
DEV CNCL	CTRL x	PF15	ESC #
DOWN (CURSOR)	↓	PF16	ESC \$
DUP	CTRL d	PF17	ESC %
ENTER	ENTER or RETURN	PF18	ESC ^
ERASE EOF	CTRL e	PF19	ESC &
ERASE INPUT	ESC CTRL e	PF20	ESC *
FIELD MARK	CTRL f	PF21	ESC (
HOME	HOME	PF22	ESC)
IDENT	ESC z	PF23	ESC _
INSERT MODE	ESC DEL	PF24	ESC +
LEFT (CURSOR)	←	PRINT	CTRL p
NEW LINE	ESC ENTER or ESC RETURN	REFRESH	ESC r
NULL/BLANK	ESC n	RESET	CTRL r
PA1	ESC ,	RESUME DISPLAY	unavailable
PA2	ESC .	RESUME PRINTER	unavailable
PA3	ESC /	RIGHT (CURSOR)	→
PF1	ESC 1	STATUS ON/OFF	CTRL w or ESC ?
PF2	ESC 2	SUSPEND DISPLAY	unavailable
PF3	ESC 3	SUSPEND PRINTER	unavailable
PF4	ESC 4	SYS REQ	ESC s
PF5	ESC 5	TAB	TAB
PF6	ESC 6	TYPE AHEAD	ESC t
PF7	ESC 7	UP (CURSOR)	↑
PF8	ESC 8		
PF9	ESC 9		

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

TeleVideo is a registered trademark of TeleVideo Systems, Inc.

TELEVIDEO® 950

SET UP TAB SOURCE	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	CHAR INSERT	CHAR DELETE	LINE INSERT	LINE DELETE	LINE ERASE	PAGE ERASE	SEND		
LOC ESC ESC	!	@	#	\$	%	^	&	*	(	)	_	+	~	|	/	BACK SPACE	7	8	9	
TAB	Q	W	E	R	T	Y	U	I	O	P	]	[	LINE FEED	CLEAR SPACE	4	5	6			
CTRL	ALPHA LOCK	A	S	D	F	G	H	J	K	L	:	"	RETURN	BREAK	1	2	3			
BACK TAB	SHIFT	Z	X	C	V	B	N	M	<	>	?	/	SHIFT	}	{	DEL	.	0	.	
	PRINT	FNCT							HOME	↓	↑	←	→	ENTER	-					

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	CTRL z	PF10	F10 or ESC 0
BACKTAB	ESC TAB	PF11	F11 or ESC -
CLEAR	CTRL c	PF12	SHIFT F1 or ESC =
CURSOR SELECT	ESC k	PF13	SHIFT F2 or ESC !
DELETE	DEL	PF14	SHIFT F3 or ESC @
DEV CNCL	CTRL x	PF15	SHIFT F4 or ESC #
DOWN (CURSOR)	↓	PF16	SHIFT F5 or ESC \$
DUP	CTRL d	PF17	SHIFT F6 or ESC %
ENTER	ENTER or RETURN	PF18	SHIFT F7 or ESC ^
ERASE EOF	CTRL e	PF19	SHIFT F8 or ESC &
ERASE INPUT	ESC CTRL e	PF20	SHIFT F9 or ESC *
FIELD MARK	CTRL f	PF21	SHIFT F10 or ESC (
HOME	HOME	PF22	SHIFT F11 or ESC)
IDENT	ESC z	PF23	ESC _
INSERT MODE	ESC DEL	PF24	ESC +
LEFT (CURSOR)	←	PRINT	CTRL p
NEW LINE	ESC ENTER or ESC RETURN	PRINT PAGE (80 CHAR)	PRINT
NULL/BLANK	ESC n	PRINT PAGE	SHIFT PRINT
PA1	ESC ,	REFRESH	ESC r
PA2	ESC .	RESET	CTRL r
PA3	ESC /	RESUME DISPLAY	CTRL y
PF1	F1 or ESC 1	RESUME PRINTER	ESC p
PF2	F2 or ESC 2	RIGHT (CURSOR)	→
PF3	F3 or ESC 3	STATUS ON/OFF	unavailable
PF4	F4 or ESC 4	SUSPEND DISPLAY	CTRL t
PF5	F5 or ESC 5	SUSPEND PRINTER	ESC o
PF6	F6 or ESC 6	SYS REQ	ESC s
PF7	F7 or ESC 7	TAB	TAB
PF8	F8 or ESC 8	TLIS REFRESH	ESC T
PF9	F9 or ESC 9	TYPE AHEAD	ESC t
		UP (CURSOR)	↑

Notes:

1. For key sequences that begin with ESC, press and release ESC and then press the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.

WY-50®

F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	SetUp	Break
----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-------	-------

Esc	1	@	#	\$	%	^	&	*	(	)	_	+	Backspace	Del	Line INS Char	Line DEL Char	Scrn CLR Line	Ins Repl		
Tab	Q	W	E	R	T	Y	U	I	O	P	{	}	~	Print Send	7	8	9	-			
Ctrl	A	S	D	F	G	H	J	K	L	:	"	'	Return	Prev PAGE Next	4	5	6	,			
Func	Shift	Z	X	C	V	B	N	M	<	>	?	/	Shift	▲	Home	1	2	3	Enter		
Caps Lock														:	◀	▼	▶	0	.		

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN	Esc A	PF9	F9 or Esc 9
BACKTAB	Esc Tab	PF10	F10 or Esc 0
CLEAR	Scrn CLR or Ctrl c	PF11	Shift F11 or Esc -
CURSOR SELECT	Esc x	PF12	Shift F12 or Esc =
DELETE	Line DEL Char	PF13	F13 or Esc !
DEV CNCL	Ctrl x	PF14	Shift F14 or Esc @
DOWN (CURSOR)	↓	PF15	Shift F15 or Esc #
DUP	Ctrl d	PF16	Shift F16 or Esc \$
ENTER	Return or Numeric Enter	PF17	Shift F7 or Esc %
ERASE EOF	Ctrl e	PF18	Shift F8 or Esc ^
ERASE INPUT	Ctrl n	PF19	Shift F9 or Esc &
FIELD MARK	Ctrl f	PF20	Shift F10 or Esc *
HOME	Home	PF21	Shift F11 or Esc (
IDENT	Esc z	PF22	Shift F12 or Esc)
INSERT MODE	Line INS Char or Backspace	PF23	Shift F13 or Esc _
LEFT (CURSOR)	←	PF24	Shift F14 or Esc +
NEW LINE	Ctrl j	Print	PRINT
NULL/BLANK	Esc n	REFRESH	Esc r
PA1	Esc , or Esc u	RESET	Ctrl r
PA2	Esc . or Esc v	RESUME DISPLAY	Ctrl y
PA3	Esc / or Esc 4 w	RESUME PRINTER	Esc p
PF1	F1 or Esc 1	RIGHT (CURSOR)	→
PF2	F2 or Esc 2	STATUS ON/OFF	Esc ? or Ctrl w
PF3	F3 or Esc 3	SUSPEND DISPLAY	Ctrl t
PF4	F4 or Esc 4	SUSPEND PRINTER	Esc o
PF5	F5 or Esc 5	SYS REQ	Esc s
PF6	F6 or Esc 6	TAB	Tab
PF7	F7 or Esc 7	TLIS REFRESH	Esc T
PF8	F8 or Esc 8	TYPE AHEAD	Esc t
		UP (CURSOR)	↑

Notes:

1. For key sequences that begin with Esc, press and release Esc and then press the other key.
2. For key sequences that begin with Ctrl, press and hold Ctrl while pressing the other key.

WY-50 is a registered trademark of Wyse Technology.

USER-DEFINED TERMINAL

TO PERFORM THIS FUNCTION	TYPE	TO PERFORM THIS FUNCTION	TYPE
ATTN		PF9	
BACKTAB		PF10	
CLEAR		PF11	
CURSOR SELECT		PF12	
DELETE		PF13	
DEV CNCL		PF14	
DOWN (CURSOR)		PF15	
DUP		PF16	
ENTER		PF17	
ERASE EOF		PF18	
ERASE INPUT		PF19	
FIELD MARK		PF20	
HOME		PF21	
IDENT		PF22	
INSERT MODE		PF23	
LEFT (CURSOR)		PF24	
NEW LINE		PRINT	
NULL/BLANK		REFRESH	
PA1		RESET	
PA2		RESUME DISPLAY	
PA3		RESUME PRINTER	
PF1		RIGHT (CURSOR)	
PF2		STATUS ON/OFF	
PF3		SUSPEND DISPLAY	
PF4		SUSPEND PRINTER	
PF5		SYS REQ	
PF6		TAB	
PF7		TYPE AHEAD	
PF8		UP (CURSOR)	
		TLIS REFRESH	
		2/4 COLOR TOGGLE	

Notes:

1. For key sequences that begin with ALT, press and hold ALT while pressing the other key.
2. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that begin with ESC, press and release ESC and then press the other key.

List of Abbreviations

ACTLU	activated logical unit	DEV D	device description
ACTPU	activated physical unit	DEVTYPE	device type
ADDS	applied digital data systems	DFC	data flow control
AID	attention identification	DISC	disconnect
ANSI	American National Standards Institute	DM	disconnect mode
APF	Application Productivity Facility	DR	definite response
ASCII	American National Standard Code for Information Interchange	DRS	data rate select
BB	begin bracket	DSC	data stream compatibility
BC	begin chain	DSR	data set ready
BEL	bell function	DTE	data terminal equipment
BETB	between bracket state	DTR	data terminal ready
BIU	basic information unit	DUP	duplicate
BM	bottom margin	EAU	erase all unprotected
BS	back space	EB	end brackets
CBA	current buffer address	EBCDIC	extended binary coded decimal interface character
CD	change direction	EC	end chain, also engineering change
CICS/VS	Customer Information Control System/virtual storage	EEIF	extended error information field
CNM	communication network management	EEPROM	electrically erasable programmable read only memory
CNMI	Communication Network Management Initialization	EFI	expedited flow indicator
CR	carriage return	EM	end of message
CR	command reject	EMPL	Emulation Protocol Layer
CR/LF	command reject/line feed	ENP	enable presentation
CSU	customer setup unit	EOF	end of file
CTLADR	control unit address	EOL	end of line
CTS	clear to send	ERI	exception response indicator
CUD	control unit description	ERP	error recovery procedure
CURSR SEL	cursor select	ESC	escape
DACTLU	deactivate logical unit	EUA	erase unprotected to address
DACTPU	deactivate physical unit	EWA	erase/write alternate
DAF	destination address field	EW	erase/write
DAF'	destination address field prime (local address of SLU)	EX	exception response
DCD	data carrier detect	FCS	frame check sequence
DEC	Digital Equipment Corporation	FDX	full duplex data flow
DEV CNCL	device cancel	FF	form feed
DEVADR	device address	FIC	first in chain
		FID	format identification
		FIS	first in segment

FM	function management	NPDA	Network Problem Determination Application
FMD	function management data	NRM	normal response mode
FR	frame reject	NRZI	non-return to zero inverted
FRMR	frame reject	NS	network services
FTTERM	IBM PC/HOST File Transfer and Terminal Emulator Program	NTO	Network Terminal Option
GE	graphics escape	OAF'	origin address field
HDX	half-duplex data flow	OC	operations check
HT	horizontal tab	OIC	only in chain
IC	insert cursor	OIS	only in segment
IML	initial microprogram load	PA	program access
IMS/VS	Information Management System/Virtual Storage	PC	protocol conversion or personal computer
INB	in bracket	PEND.BB	pending beginning bracket
INP	inhibit presentation	PI	pacing indicator
IRS	interchange record separator	PIU	path information unit
IRS	inter-record separator	PLU	primary logical unit
LED	light emitting diode	PRID	procedure-related identifier
LF	line feed	PRNT	printer printing
LIC	last in chain	PRTS	permanent request to send
LIS	last in segment	PT	program tab
LM	left margin	PU	physical unit
LTA	line turnaround	QRI	queued response indicator
LU	logical unit	RA	repeat to address
LUSTAT	logical unit status	RAM	random access memory
MDT	modified data tag	RAS	reliability, availability, and serviceability
MIC	middle in chain	RB	read buffer
MIS	middle in segment	RCV	receive
MLU	multiple logical unit	RECFMS	record formatted maintenance statistics
MPF	mapping field	REQMS	request maintenance statistics
MPL	maximum presentation line	RH	request/response header
MPP	maximum presentation position	RI	ring indicate
msec	milliseconds	RM	read modified
NC	network control	RMA	read modified all
NCCF	Network Communication Control Facility	RNR	receive not ready
NCP	Network Control Program	RR	received ready
NDAP	Network Determination Aid Processor	RSP	response
NDM	normal disconnect mode	RTM	response time monitoring
NL	new line	RTR	ready to receive
NLDM	Network Logical Data Manager	RTS	request to send
NMVT	network management vector transport	RU	request/response unit

RxC	receive clock	TAF	target address field
RxD	receive data	TC	test control
SA	set attribute	TCAM	telecommunication access method
SBA	set buffer address	TH	transmission header
SC	session control	TM	top margin
SCS	SNA character string	TRN	transparent
SDLC	synchronous data link control	TS	transmission services
SDT	start data traffic	TSO	time sharing option
SF	start field	TSO/VTAM	time sharing option for the Virtual Telecommunication Access Method
SHF	set horizontal format	TxC	transmit clock
SHUTC	shutdown complete	TxD	transmit data
SHUTD	shutdown	UA	unnumbered acknowledgment
SLD	set line density	UDT	user-defined terminal
SLU	secondary logical unit	VCS	vertical channel select
SNA	systems network architecture	VT	vertical tab
SNF	sequence number field	VTAM	virtual telecommunication access method
SNRM	set normal response mode	W	write
SNRT	set normal response time	WCC	write control character
SOH	start of heading	X OP X	input inhibited operator unauthorized
SSCP	system services control point	X PRTBSY	input inhibited printer busy
SVF	set vertical format	X PRTNW	input inhibited printer not working
SYS REQ	system request	XID	exchange identification

Glossary

This glossary contains terms and abbreviations that are used in this manual. It includes terms and definitions from *IBM Vocabulary for Data Processing, Telecommunications, and Office Systems*, GC20-1699. Symbols used in this glossary are as follows:

- An asterisk (*) identifies definitions from the *American National Dictionary for Information Processing*, published by the Computer and Business Equipment Manufacturers Association.
- The symbol (CCITT/ITU) identifies definitions from the *CCITT Sixth Plenary Assembly Orange Book, Terms and Definitions* and working documents published by the International Telecommunication Union, Geneva, 1978.
- The symbol (ISO) identifies definitions from published sections of the *ISO Vocabulary of Data Processing*, developed by the International Standards Organization, Technical Committee 97, Subcommittee 1.
- The symbol (TC97) identifies definitions from drafts and working papers under development by the International Standards Organization, Technical Committee 97, Subcommittee 1.

Advanced Communications Function for the Network Control Program (ACF/NCP). An IBM program product that provides communication controller support for single-domain and multiple-domain networks.

alert. In NetView or NPDA, a notification about a high priority event that warrants immediate attention. This data-base record is generated for certain event types that are defined by user-constructed filters.

ANSI X3.64. American National Standard Additional Controls for use with American National Standard Code for Information Interchange (ASCII). A standard that defines a set of control functions that augments ASCII control functions as described in ANSI X3.4 and that controls input and output for two-dimensional character-imaging devices, such as displays or printers.

ASCII. * American National Standard Code for Information Interchange. A standard code, using a coded character set consisting of 7-bit coded characters (8 bits including parity check), used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

ASCII pass-through. For the 3708, the transmission of unmodified data between an ASCII device and an ASCII host (NCP).

ASCII pass-through mode. For an ASCII device attached to a 3708, a mode of operation in which the device communicates with an ASCII host (NCP).

asynchronous. Without regular time relationship; unexpected or unpredictable with respect to the execution of a program's instructions.

configuration. (1) (TC97) The arrangement of a computer system or network as defined by the nature, number, and the chief characteristics of its functional units. More specifically, the term configuration may refer to a hardware configuration or a software configuration. (2) The devices and programs that make up a system, subsystem, or network.

control terminal. For the 3708, a display attached to a 3708 that enables an operator to communicate with the 3708 to control and monitor the 3708 and to define the 3708 configuration.

control terminal mode. For an ASCII device attached to a 3708, a mode of operation in which the device functions as the control terminal for the 3708.

data link. (1) * The physical means of connecting one location to another for the purpose of transmitting and receiving data. (2) (TC97) The assembly of parts of two data terminal equipments (DTEs) that are controlled by a link protocol, and that, together with the interconnecting data circuit, enable data to be transferred from a data source to a data sink. (3) The interconnecting data circuit between two or more equipments operating in accordance with a link protocol; it does not include the data source and the data sink. (4) In SNA, synonym for link(3).

data link escape character (DLE). (ISO) A transmission control character that changes the meaning of a limited number of contiguously following characters or coded representations and that is used exclusively to provide supplementary transmission control characters.

data stream. (1) All data transmitted through a data channel in a single read or write operation. (2) A continuous stream of data elements being transmitted, or intended for transmission, in character or binary-digit form, using a defined format.

DCE. Data circuit-terminating equipment.

decode. (1) (ISO) To convert data by reversing the effect of some previous encoding. (2) To interpret a code. (3) Contrast with encode.

display. (1) * (ISO) A visual presentation of data. (2) (TC97) In word processing, a device for visual

presentation of information on any temporary character-imaging device. (3) (TC97) To present data visually.

DTE. Data terminal equipment.

duplex. * In data communication, pertaining to a simultaneous two-way independent transmission. Synonymous with full duplex.

EBCDIC. * Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters.

EEPROM. * Electrically erasable programmable read-only memory located in the base unit of the 3708.

EPROM. * Erasable programmable read-only memory located in the cartridge of the 3708.

emulate. (1) To imitate one system with another, primarily by hardware, so that the imitating system accepts the same data, executes the same computer programs, and achieves the same results as the imitated computer system. (2) To use programming techniques and special machine features to permit a computing system to execute programs written for another system.

encode. (1) * (ISO) To convert data by the use of a code or a coded character set in such a manner that reconversion to the original form is possible. Encode is sometimes loosely used when complete reconversion is not possible. (2) * (ISO) Contrast with decode.

full duplex. See duplex.

half duplex. (1) * In data communication, pertaining to an alternate, one way at a time, independent transmission. (2) * Contrast with duplex.

host (NCP). (TC97) A processor that controls all or part of a user application network.

keyboard mapping. For an ASCII device attached to the 3708 in protocol conversion mode, a table that defines which ASCII keyboard sequences are equivalent to 3270 functions.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network to communicate with another end user and through which the end user accesses the functions provided by system services control points (SSCPs).

Network Logical Data Manager (NLDM). An IBM program product that collects and correlates LU-LU session-related data and provides the user with online access to the data. It runs as a Network Communications Control Facility (NCCF) communication network management application program.

Network Problem Determination Application (NetView or NPDA). An IBM program product that helps the user identify network problems from a central control point using interactive display techniques.

Network Terminal Option (NTO). An IBM program product that extends the capabilities of the ACF/NCP to support a select group of non-SNA devices.

nonswitched line. A telecommunication line on which connections do not have to be established by dialing. Contrast with switched line.

spacing. (1) A technique by which a receiving station controls the rate of transmission of a sending station to prevent overrun. (2) In SNA, a technique by which a receiving component controls the rate of transmission of a sending component to prevent overrun or congestion.

physical unit (PU). In SNA, the component that manages and monitors the resources (such as attached links and adjacent link stations) of a node, as requested by an SSCP through an SSCP-SSCP session.

platen. (TC97) The part of a document copying machine, usually in the form of a glass plate that can be curved, upon which the original is placed for copying. A backing, usually cylindrical, against which printing mechanisms strike or otherwise deposit ink to produce an image.

point-to-point connection. A connection established between two data stations for data transmission. The connection may include switching facilities.

primary logical unit (PLU). In SNA, the logical unit (LU) that contains the primary half-session for a particular LU-LU session. Contrast with secondary logical unit.

printer authorization matrix. A matrix stored in the 3274 control unit that establishes printer assignment and classification.

program attention key. On a display device keyboard, a key that produces an interruption to solicit program action.

program function key. (1) (TC97) On a typewriter, a control by which a specified machine function is set, released, or performed. (2) (TC97) In computer graphics, a button or switch that may be operated to send a signal to the computer program controlling the display. (3) On a terminal, a key, such as an ATTENTION or ENTER key, that causes the transmission of a signal not associated with a printable or displayable character. Detection of the signal usually causes the system to perform some predefined function for the operator.

protocol. (1) (CCITT/ITU) A specification for the format and relative timing of information exchanged

between communicating parties. (2) In SNA, the meanings of and the sequencing rules for the following: requests and responses used for managing the network, transferring data, and synchronizing the states of network components.

protocol conversion. For the 3708, the changing of start-stop data sent from an ASCII device to an SNA host (NCP) into 3270 data, or the changing of 3270 data sent from an SNA host (NCP) to an ASCII device into ASCII start-stop data.

protocol conversion mode. For an ASCII device attached to a 3708, a mode of operation in which the device communicates with an SNA host (NCP) as though it were a 3270 device.

protocol enveloping. For the 3708, the adding of SNA headers to data sent from an ASCII device to an SNA host (NCP), or the removing of SNA headers from data sent from an SNA host (NCP) to an ASCII device.

protocol enveloping mode. For an ASCII device attached to a 3708, a mode of operation in which the device communicates with an SNA host (NCP) as though it were an NTO device.

RAM. Random access memory.

routing. (1) The assignment of the path by which a message reaches its destination. (2) In SNA, the forwarding of a message unit along a particular path through a network, as determined by parameters carried in the message unit, such as the destination network address in a transmission header.

secondary logical unit (SLU). In SNA, the logical unit (LU) that contains the secondary half-session for a particular LU-LU session. Contrast with primary logical unit.

switched line. A telecommunication line in which the connection is established by dialing. Contrast with nonswitched line.

SNA character string (SCS). A character string composed of EBCDIC controls, optionally intermixed with end-user data, that is carried within a request/response unit.

Synchronous Data Link Control (SDLC). A discipline 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. SDLC conforms to subsets of the Advanced Data Communication Control Procedures of the American Standards Institute and High-Level Data Link Control (HDLC) of the International Standards Organization.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

translate table. For the 3708, a table that defines the translation of ASCII to EBCDIC and EBCDIC to ASCII and that allows the use of special characters and nonstandard codes.

user-defined terminal. An ASCII display that is attached to the 3708 and that operates in protocol conversion mode using a keyboard map defined by the user.

user-defined terminal table. A table, which contains information for a keyboard map used to define a terminal, that a customer creates in storage.

wraparound. (1) (TC97) In computer graphics, the display at some point on the display space of the display elements whose coordinates lie outside of the display space. (2) (TC97) In display-based word processing equipment, the automatic disposition of a printable line of text onto two or more display lines necessitated by the horizontal limits of the display. (3) The continuation of an operation from the maximum addressable location in storage to the first addressable location. (4) The continuation of register addresses from the highest register address to the lowest.

3270 data stream. Data being transferred from or to an allocated primary or tertiary device, or to the host (NCP) system, as a continuous stream of data and 3270 Information Display System control elements in character form.

3270 data-stream compatibility (DSC). The facility that provides access to System/370 applications that communicate with 3270 Information Display System terminals.

3708 Network Conversion Unit. A device that allows ASCII devices to communicate with an SNA host (NCP) by providing protocol conversion and protocol enveloping and that allows ASCII devices to communicate with an ASCII host (NCP) by providing ASCII pass-through.

Index

A

AID characters 2-8, 2-10
ASCII pass-through mode 3-2
 terminating session 3-2
Attention IDentification characters
 See AID characters
ATTN key 2-9
auto-newline B-1
auto-scroll B-1
auxiliary port functions 2-11, 2-22

B

Backtab key 2-6
basic configuration in use 1-9
BREAK key 3-1

C

Clear key 2-8
color toggle 2/4 2-11
Cursor Down 2-5
Cursor Left 2-5
Cursor Right 2-5
Cursor Select 2-19
Cursor Up 2-5
CURSR SEL key 2-9

D

Delete key 2-7
DEV CNCL key 2-9
DUP key 2-8

E

EC number 1-1, 1-3
enhanced null/blank processing
 how it affects the Insert function 2-7
 status line indication 2-16
Enter key 2-8
Erase EOF
 how it differs from a 3270 terminal 2-24
Erase EOF key 2-6
Erase Input key 2-6

F

fields
 attribute locations 2-4
 input 2-2
 light pen attention 2-19
 light pen selection 2-19
 nondisplay 2-4

fields (*continued*)
 numeric 2-3
 protected 2-4
FM (Field Mark) key 2-8
full logon screens 1-1

H

Home key 2-6
host connection restricted 1-7, 1-9
Host Selection screen 1-7

I

IDENT key 2-9
input fields 2-2
Insert
 how it differs from a 3270 terminal 2-24
 status line indication 2-16
Insert key 2-6

K

keyboard map 2-5
keyboard maps
 reference card order numbers
 supported terminals
keys, 3270 function
 ATTN 2-9
 Backtab 2-6
 Clear 2-8
 Cursor Down 2-5
 Cursor Left 2-5
 Cursor Right 2-5
 Cursor Up 2-5
 CURSR SEL 2-9
 Delete 2-7
 DEV CNCL 2-9
 DUP 2-8
 Enter 2-8
 Erase EOF 2-6
 Erase Input 2-6
 FM (Field Mark) 2-8
 Home 2-6
 IDENT 2-9
 Insert 2-6
 New Line 2-6
 PA keys 2-8
 PF keys 2-8
 Print 2-9
 Reset 2-8
 SYS REQ 2-9
 Tab 2-6

L

- light pen emulation 2-19
- line-by-line mode
 - BREAK key 3-1
- Local Copy 2-20
- logging on to the 3708
 - choosing an SNA host 1-8
 - Enter key 1-2
 - Host Selection screen 1-7
 - Port Password screen 1-5
 - screen and decision flowchart A-1
 - screen scroll B-1
 - Terminal Type Selection screen 1-6
 - use of Backspace key 1-2
 - user input area 1-2, 1-3
 - using full screens 1-1
 - using no screens 1-3
 - using short screens 1-3
 - 3708 Host Selection screen 1-7
 - 3708 Logon Indication screen 1-8
 - 3708 Port Password screen 1-5
 - 3708 Terminal Type Selection screen 1-6
- logon screens
 - full screen format 1-1
 - list of 1-1
 - short screen format 1-3

N

- New Line key 2-6
- NNN codes 2-17
- non-3270 functions 2-10
 - Line Print 2-11
 - Null/Blank 2-10
 - Refresh 2-10
 - Resume Display 2-11
 - Resume Printer 2-11
 - Status On/Off 2-10
 - Suspend Display 2-11
 - Suspend Printer 2-11
 - Type-ahead 2-10
- nondisplay fields 2-4
- Null/Blank processing 2-10
 - effect on Insert mode 2-10
- numeric fields 2-3

P

- PA keys 2-8
- PF keys 2-8
- Print key 2-9
- printing screens
 - terminal controlled 2-11, 2-23
 - 3708 controlled (local copy) 2-20
- protected fields 2-4
- protocol conversion 2-1

R

- refresh of display screen 2-10, 2-11
- Reset key 2-8
- Resume Display 2-11, 2-22, 2-23
- Resume Printer 2-11, 2-22, 2-23
- RID (Repair ID) number 1-1, 1-3

S

- scrolling B-1
- short logon screens 1-3
- status line 2-12
- Status On/Off 2-10
- Suspend Display 2-11, 2-22, 2-23
- Suspend Printer 2-11, 2-22, 2-23
- switch settings, supported terminals B-1
- SYS REQ 2-18
- SYS REQ key 2-9
- system request simulation string 3-1

T

- Tab key 2-6
- terminal controlled printing 2-11
- terminal logon initialization sequence (TLIS)
 - refresh 2-11
- terminal switch settings, supported devices B-1
- Terminal Type Selection screen 1-6
- Type-ahead 2-10
 - status line indication 2-16

Numerics

- 2/4 Color Toggle 2-11

IBM 3708 Network Conversion Unit
End-User Reference
Publication No. GA27-3765-1

READER'S
COMMENT
FORM

This manual is part of a library that serves as a reference source for systems analysts, programmers, and operators of IBM systems. You may use this form to communicate your comments about this publication, its organization, or subject matter, with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

Note: Copies of IBM publications are not stocked at the location to which this form is addressed. Please direct any requests for copies of publications, or for assistance in using your IBM system, to your IBM representative or to the IBM branch office serving your locality.

Possible topics for comment are:

Clarity Accuracy Completeness Organization Coding Retrieval Legibility

If you wish a reply, give your name, company, mailing address, and date:

What is your occupation? _____

Number of latest Newsletter associated with this publication: _____

Thank you for your cooperation. No postage stamp necessary if mailed in the U.S.A.
(Elsewhere, an IBM office or representative will be happy to forward your comments or you may mail directly to the address in the Edition Notice on the back of the title page.)

Reader's Comment Form

Fold and tape

Please Do Not Staple

Fold and tape



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.

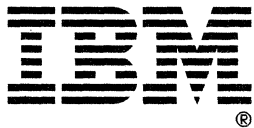
POSTAGE WILL BE PAID BY ADDRESSEE

International Business Machines Corporation
Dept. E02
P.O. Box 12195
Research Triangle Park, N.C. 27709-9990

Fold and tape

Please Do Not Staple

Fold and tape





GA27-3765-01

Printed in the U.S.A.

GA27-3765-01

