

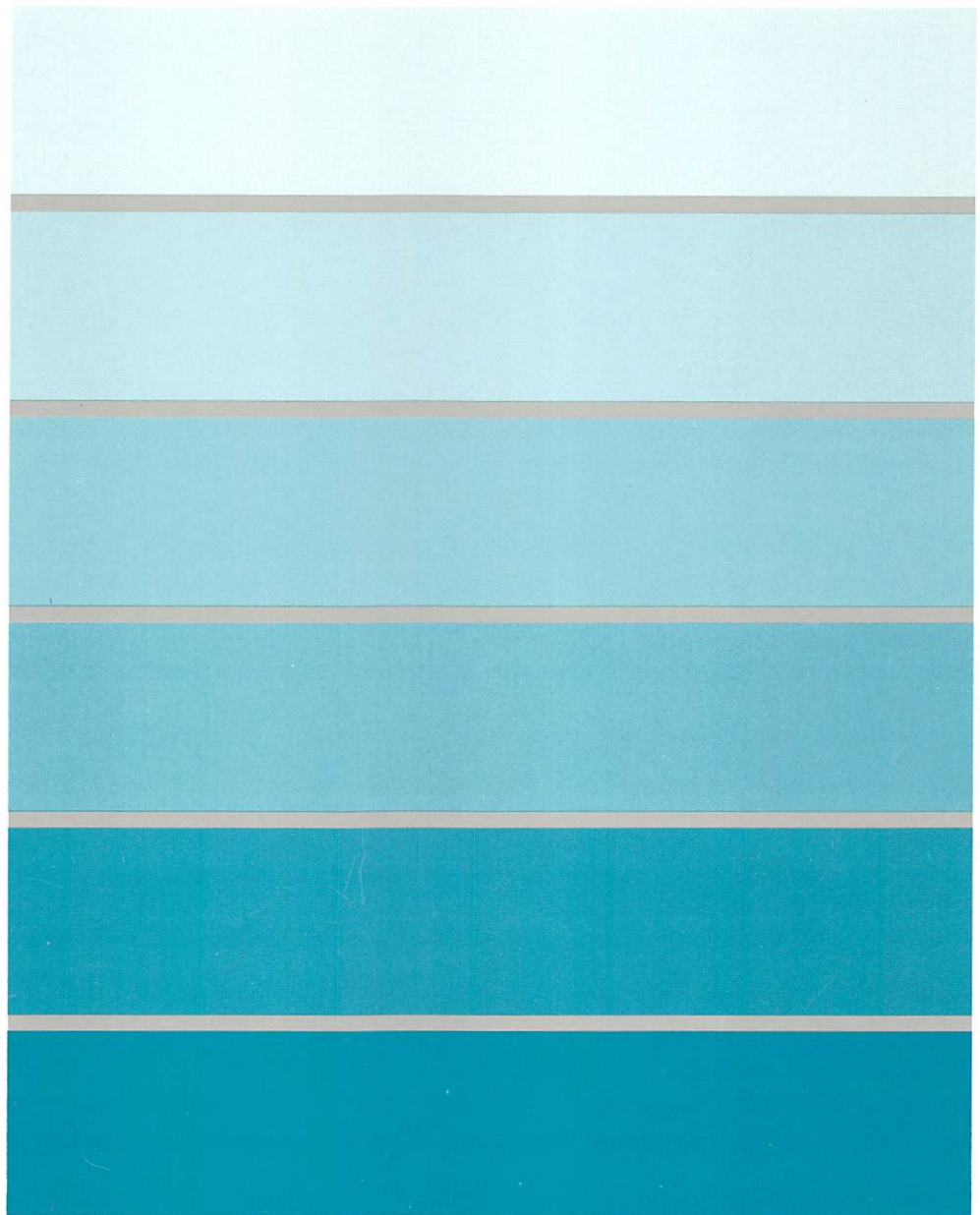


Terminal User's Reference for Expanded Functions

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**3174 Establishment Controller
Terminal User's Reference for
Expanded Functions**

GA23-0332-3

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DEC VT220	Digital Equipment Corporation
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TeleVideo 912	TeleVideo Systems, Inc.
TeleVideo 970	TeleVideo Systems, Inc.
WYSE 50/60	Wyse Technology, Inc.

Preface

This book is for people who use terminals that are connected to a 3174 Establishment Controller and that communicate with IBM and ASCII hosts. The purpose of this book is to help you understand how your terminal works when it is connected to different hosts. For information about using 3270 terminals with IBM hosts, see the *Entry Assist User's Guide* (GA23-0119) and the *3174 Functional Description* (GA23-0218).

How This Book Is Organized

This book has four chapters and two appendixes.

Chapter 1, "Getting Started," discusses multiple host connections for 3270 and ASCII terminals. It also describes some of the editing functions you can use with the 3174.

Chapter 2, "Using a 3270 Terminal to Connect to ASCII Hosts," explains how your 3270 terminal functions when connected to ASCII hosts.

Chapter 3, "Using Your ASCII Terminal," describes how ASCII terminals function when connected to IBM and ASCII hosts.

Chapter 4, "Solving Some Common Problems," describes some common problems that you may encounter with your terminal and suggests actions that you can take to correct these problems.

Appendix A, "Terminal Keyboard Maps," contains keyboard maps for 3270 terminals communicating with ASCII hosts and for ASCII terminals communicating with IBM hosts. You may copy these keyboard maps for your own reference.

Appendix B, "Using a Modem and an ASCII Terminal With the 3174 Asynchronous Emulation Adapter," describes how you can set up modems and ASCII terminals to connect to the 3174.

How You Should Use This Book

You need to read only part of this book, depending on whether you use an ASCII terminal or a 3270 terminal. If you are not certain what type of terminal you are using, ask your system administrator.

If You Are Using a 3270 Terminal:

You need to read Chapter 1, "Getting Started," and Chapter 2, "Using a 3270 Terminal to Connect to ASCII Hosts."

If You Are Using an ASCII Terminal:

You need to read Chapter 1, "Getting Started," and Chapter 3, "Using Your ASCII Terminal."

Choosing the Right Book from the IBM 3174 Library

The IBM 3174 library contains information for installing, customizing, operating, maintaining, and programming the data stream for the 3174 controller. The following list shows the manuals you need to perform these tasks.

To Find Translations of Safety Notices:

Safety Notices, GA27-3824

To Organize Library Materials:

Binders and Inserts, SBOF-0089

Binder, SX23-0331

Inserts, SX23-0332

To Become Familiar with the 3174:

Master Index, GC30-3515

3174 Introduction, GA27-3850

3270 Information Display System Introduction, GA27-2739

To Prepare Your Site for the 3174:

Site Planning, GA23-0213

Physical Planning Template, GX27-2999

To Set Up and Operate the 3174:

Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R User's Guide, GA23-0337

Models 51R, 52R, 53R, 61R, 62R, and 63R User's Guide, GA23-0333

Models 81R, 82R, 91R, and 92R User's Guide, GA23-0313

To Plan for and Customize the 3174:

Configuration Support A and S

Planning Guide, GA27-3844

Utilities Guide, GA27-3853

Central Site Customizing User's Guide, GA23-0342

Configuration Support B

Planning Guide, GA27-3862

Utilities Guide, GA27-3863

Central Site Customizing User's Guide, GA27-3868

Asynchronous Emulation Adapter Description and Reference, GA27-3872

To Install Features or Convert Models on the 3174:

Encrypt/Decrypt Adapter Customer Installation and Removal Instructions, GA23-0262
Fixed Disk Installation and Removal Instructions, GA27-3864
Diskette Drive Installation and Removal Instructions, GA23-0263
Terminal Multiplexer Adapter Installation and Removal Instructions, GA23-0265
Model Conversion Instructions, GA23-0295
Token-Ring Network Feature Installation and Removal Instructions, GA23-0329
Storage Expansion Feature Installation and Removal Instructions, GA23-0330
Communications Adapter Installation and Removal Instructions, GA27-3830
Asynchronous Emulation Adapter Installation and Removal Instructions, GA23-0341
Concurrent Communication Adapter Installation and Removal Instructions, GA27-3851

To Plan for and Use the Asynchronous Emulation Adapter Feature or the Multiple Logical Terminals Function:

Configuration Support A and S

Planning Guide, GA27-3844
Utilities Guide, GA27-3853
Terminal User's Reference for Expanded Functions, GA23-0332

Configuration Support B

Planning Guide, GA27-3862
Utilities Guide, GA27-3863
Terminal User's Reference for Expanded Functions, GA23-0332
Asynchronous Emulation Adapter Description and Reference, GA27-3872

To Perform 3174 Problem Determination:

Customer Problem Determination, GA23-0217
Status Codes, GA27-3832

To Obtain Data Stream Programming and Reference Information:

Functional Description, GA23-0218
Data Stream Programmer's Reference, GA23-0059
Asynchronous Emulation Adapter Description and Reference, GA27-3872
3174 Reference Summary, GX27-3872
3174 Character Set Reference, GA27-3831
3270 Character Set Reference, GA27-2837
3270 X.25 Operation, GA23-0204

To Perform Maintenance (Service Personnel):

Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R Maintenance Information, SY27-2572
Models 51R, 52R, 53R, 61R, 62R, and 63R Maintenance Information, SY27-2573
Models 81R, 82R, 91R, and 92R Maintenance Information, SY27-2584
CE Reference Summary, SX27-3873
Status Codes, GA27-3832

Related Publications

You may find some of the following publications helpful:

- *ADDS Viewpoint /78 User Manual*, 518-32701 (8/83)
- *Data General Dasher D210 and D211 Display Terminals User's Manual*, No. 014-000746
- *DEC LA50 Printer Programmer Reference Manual*
- *DEC VT220 Owner's Manual*, EK-VT220-UG-003
- *DEC VT220 Programmer Pocket Guide*, EK-VT220-HR-002
- *DEC VT220 Programmer Reference Manual*, EK-VT220-RM-002 (8/84)
- *DEC VT240 Programmer Reference Manual*, EK-VT240-RM-001 (10/83)
- *DEC VT100 User's Guide*, EK-VT100-UG003
- *Esprit - Hazeltine 1500 Reference Manual*, HI-1056 (4/79)
- *Esprit Executive 10/78 User's Guide*, 10/78-MRSO15 (8/83)
EK-OLA50-RM-002 (3/83)
- *Hayes Smartmodem 1200 Hardware Reference Manual*, 98-018
- *Hayes Smartmodem 2400 User's Guide*, 98-00331 AA
- *Hewlett Packard 2621B Owner's Manual* (12/82)
- *IBM 3101 Description Manual*, GA18-2033
- *IBM 3151 ASCII Display Station Reference Manual*, GA18-2634
- *IBM 3164 Color Display Station Description*, GA18-2317
- *IBM 3270 Information Display System Entry Assist User's Guide*, GA23-0119
- *IBM 5841 Modem Guide to Operations*, GA27-3649
- *IBM 5842 Modem Guide to Operations*, GA27-3738
- *IBM 5853 Modem Guide to Operations*, GA27-3799
- *Lear Siegler ADM 5 User's Reference Manual*
- *Lear Siegler ADM 11 User's Reference Manual*, DP292088F (8/84)
- *Lear Siegler ADM 1178 User's Reference Manual*, DP2950385F (3/85)
- *Micom DialNet 3000 Data Modem User's Manual*, 800-1218
- *Specifications Techniques d'Utilisation du Minitel 1 Bistandard*, published by France Telecom, November 1986, copyright Teletel.
- *Tektronix Programmers Manual for 4200 Series Computer Display Terminals* 070-6048-01
- *Tektronix Programmers Reference for 4105 Computer Display Terminal*, 070-4526-03
- *Televideo 970 CRT Terminal Installation and User's Guide*, 2244600

Contents

Chapter 1. Getting Started	1-1
About the IBM 3174 Establishment Controller	1-2
Using 3174 Editing Features	1-2
Type Ahead	1-2
Enhanced Null/Space Processing	1-2
Establishing Multiple Host Connections	1-3
Skipping and Restoring Sessions (LTs)	1-3
Session Indicators	1-4
Host Identifier	1-5
Host Descriptor	1-5
Error Messages	1-5
Change-Screen Key Sequence	1-5
Keyboard Extension Mode (Extended Select)	1-6
Pseudo-ALT Keys	1-7
Alternate Extension Mode Key Sequence	1-7
Alternate Change-Screen Key Sequences	1-10
MLT with Personal Computers in 3270-Emulation Mode	1-10
Change-Screen Patches	1-11
Operating Differences When Using PC Emulation Programs	1-11
Chapter 2. Using a 3270 Terminal to Connect to ASCII Hosts	2-1
Introduction	2-2
Differences When Using Your 3270 Terminal as an ASCII Terminal	2-2
Scrolling	2-2
Copy Printers	2-3
Terminal-Attached Printers	2-3
Modem Operations	2-3
Using The ALT Key as the ASCII Control Key	2-3
Nonescaping Keys	2-3
Connecting to an ASCII Host With 3270 Terminals	2-4
Using the Connection Menu	2-4
Using Your 3270 Terminal as an IBM 3101	2-5
Using Your Keyboard	2-6
Understanding Your Status Line	2-6
3101 Character Set Mapping	2-7
316x CS1 and CS2 Character Sets Mapping	2-7
316x ISO 8859-1/2 Character Sets Mapping	2-8
Using Your 3270 Terminal as a DEC VT100	2-9
Using Your Keyboard	2-9
Understanding Your Status Line	2-10
VT100 National Language Support	2-11
Using Your Terminal as a DEC VT220	2-11
Using Your Keyboard	2-11
VT220 National Language Support	2-12
Understanding Your Status Line	2-14
Using Your Terminal as a Data General Dasher D210 Terminal	2-14
Using Your Keyboard	2-15
Function Keys	2-15
Understanding Your Status Line	2-15
Status Line Indicators	2-16
Using 3270 Printers as ASCII Printers	2-17

Chapter 3. Using Your ASCII Terminal	3-1
Introduction	3-2
Differences When Using Your ASCII Terminal as a 3270 Terminal	3-2
Connecting to a 3270 Host	3-2
Using the Connection Menu	3-4
Using Your ASCII Terminal	3-6
The Display Image	3-6
Using Your Keyboard	3-8
Understanding Your Status Line	3-13
Host Control Program Communication	3-19
Light Pen Simulation	3-19
ASCII Display Host Addressable Printer Support	3-20
Using an ASCII Printer as a 3270 Printer	3-21
Printing Screen Images (Local Copy)	3-21
Print ID	3-22
Printer Not Working	3-22
Canceling a Print Request	3-23
Host-Initiated Local Copy	3-23
ASCII Graphics Local Copy	3-23
ASCII Host Communications	3-23
Chapter 4. Solving Some Common Problems	4-1
Common Problems When Using ASCII Terminals with IBM Hosts	4-2
Common Problems When Using 3270 Terminals with ASCII Hosts	4-5
Status Codes	4-6
Appendix A. Terminal Keyboard Maps	A-1
How to Use the Keyboard Maps	A-3
Keyboard Identification	A-5
Extended Graphics Functions (EXGR)	A-7
Keyboard Maps for 3270 Terminals Used as ASCII Terminals	A-10
Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702=1)	A-10
Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702=0)	A-11
Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702=1) ..	A-12
Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702=0) ..	A-13
Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702=1) ..	A-14
Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702=0) ..	A-15
Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702=1) ..	A-16
Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702=0) ..	A-17
Using an IBM PC or PS/2* as an IBM 3101 Keyboard (702=1)	A-18
Using an IBM PC or PS/2 as an IBM 3101 Keyboard (702=0)	A-19
Using a 3270 Base Keyboard as a DEC VT100** Keyboard (702=1)	A-20
Using a 3270 Base Keyboard as a DEC VT100 Keyboard (702=0)	A-21
Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702=1) ..	A-22
Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702=0) ..	A-23
Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702=1) ..	A-24
Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702=0) ..	A-25
Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702=1) ..	A-26
Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702=0) ..	A-27
Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702=1)	A-28
Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702=0)	A-29
Using a 3270 Base Keyboard as a DEC VT220** Keyboard	A-30
Using a 3270 Converged Keyboard as a DEC VT220 Keyboard	A-31
Using a 3270 Enhanced Keyboard as a DEC VT220 Keyboard	A-32
Using an IBM 3270 PC or IBM 3194 as a DEC VT220 Keyboard	A-33
Using an IBM PC or PS/2 as a DEC VT220 Keyboard	A-34

Using a 3270 Base Keyboard as a Data General Dasher D210** Keyboard	A-35
Using a 3270 Converged Keyboard as a Data General Dasher D210 Keyboard	A-36
Using a 3270 Enhanced Keyboard as a Data General Dasher D210 Keyboard	A-37
Using an IBM 3270 PC or IBM 3194 as a Data General Dasher D210 Keyboard	A-38
Using an IBM PC or PS/2 as a Data General Dasher D210 Keyboard	A-39
Keyboard Maps for ASCII Terminals Used as 3270 Terminals	A-40
IBM 3101 (Models 10, 12, 13, 20, 22, 23) (U.S. English)	A-40
IBM 3101 (French)	A-41
IBM 3101 (German)	A-42
IBM 3101 (Italian)	A-43
IBM 3101 (U.K. English)	A-44
IBM 3151, 3161, 3162, 3163, 3164 (U.S. English)	A-45
IBM 3151, 3161, 3162, 3163, 3164 with 3708 Cartridge (U.S. English)	A-46
IBM FTTERM* (Color or Monochrome) (U.S. English)	A-47
IBM 3151, 3161, 3163, and 3164 (Belgian)	A-48
IBM 3151, 3161, 3163, and 3164 (Canadian Bilingual)	A-49
IBM 3151, 3161, 3163, and 3164 (Danish)	A-50
IBM 3151, 3161, 3163, and 3164 (Finnish)	A-51
IBM 3151, 3161, 3163, and 3164 (French)	A-52
IBM 3151, 3161, 3163, and 3164 (German)	A-53
IBM 3151, 3161, 3163, and 3164 (Italian)	A-54
IBM 3151, 3161, 3163, and 3164 (Norwegian)	A-55
IBM 3151, 3161, 3163, and 3164 (Portuguese)	A-56
IBM 3151, 3161, 3163, and 3164 (Spanish)	A-57
IBM 3151, 3161, 3163, and 3164 (Spanish-Speaking)	A-58
IBM 3151, 3161, 3163, and 3164 (Swedish)	A-59
IBM 3151, 3161, 3163, and 3164 (Swiss French)	A-60
IBM 3151, 3161, 3163, and 3164 (Swiss German)	A-61
IBM 3151, 3161, 3163, and 3164 (U.K. English)	A-62
ADDS Viewpoint A2** (U.S. English)	A-63
ADDS Viewpoint /78** (U.S. English)	A-64
Cedar** (U.S. English)	A-65
Cypress** (U.S. English)	A-66
DEC VT52** (U.S. English)	A-67
DEC VT100 (U.S. English)	A-68
DEC VT100 (U.K. English)	A-69
DEC VT220 and VT241** (U.S. English)	A-70
DEC VT220 (Belgian)	A-71
DEC VT220 (Canadian Bilingual)	A-72
DEC VT220 (Danish)	A-73
DEC VT220 (Finnish)	A-74
DEC VT220 (French)	A-75
DEC VT220 (German)	A-76
DEC VT220 (Italian)	A-77
DEC VT220 (Netherlands)	A-78
DEC VT220 (Norwegian)	A-79
DEC VT220 (Spanish)	A-80
DEC VT220 (Spanish-Speaking)	A-81
DEC VT220 (Swedish)	A-82
DEC VT220 (Swiss French)	A-83
DEC VT220 (Swiss German)	A-84
DEC VT220 (U.K. English)	A-85
Esprit Executive 10/78** (U.S. English)	A-86

Hazeltine 1500** Video (U.S. English)	A-87
Hewlett-Packard 2621B** Interactive Terminal (U.S. English)	A-88
Juniper** (U.S. English)	A-89
Lear Siegler ADM 3A Dumb Terminal** (U.S. English)	A-90
Lear Siegler ADM 5 Dumb Terminal** (U.S. English)	A-91
Lear Siegler ADM 11**, ADM 12** (U.S. English)	A-92
Lear Siegler ADM 1178** (U.S. English)	A-93
Minitel 1 Bistandard** (French)	A-94
Tektronix** VT200-Style Keyboard (French)	A-95
Tektronix VT200-Style Keyboard (German)	A-96
Tektronix VT200-Style Keyboard (North American)	A-97
TeleVideo 912** (U.S. English)	A-98
TeleVideo 970** (U.S. English)	A-99
Universal Keyboard Map	A-100
User-Defined Keyboard	A-101
WYSE 50/60** (U.S. English)	A-102

Appendix B. Using a Modem and an ASCII Terminal With the 3174

Asynchronous Emulation Adapter	B-1
Modem Operations	B-2
Modem Specifications and Setup	B-2
IBM 5841, 5842, and 5853 Setup	B-3
Hayes Smartmodem 1200 Setup	B-5
Micom Data Modems	B-6
ASCII Station Setup and Switch Settings	B-7
IBM 3101 Display Terminal	B-7
IBM/PC/FTTERM (Color and Monochrome)	B-8
IBM 3151 ASCII Display Station	B-9
IBM 3161, 3163, or 3164 Display Station	B-10
IBM 3162 Display Station	B-11
ADDS Viewpoint A2	B-12
ADDS Viewpoint /78	B-13
Cypress, Cedar, and Juniper	B-13
DEC VT52 and VT100	B-14
DEC VT220 and VT241	B-15
Esprit Executive 10/78	B-17
Hazeltine 1500 Video Display Terminal	B-18
Hewlett-Packard 2621B Interactive Terminal	B-19
Lear Siegler ADM 3A Dumb Terminal	B-20
Lear Siegler ADM 5 Dumb Terminal	B-21
Lear Siegler ADM 11 and Lear Siegler ADM 12	B-22
Lear Siegler ADM 1178	B-23
Tektronix	B-24
TeleVideo 912	B-25
TeleVideo 970	B-26
WY-50	B-28

List of Abbreviations in this Book	X-1
Glossary	X-3
Index	X-9

Figures

1-1.	Sample Screen Showing OIA/Status Line, and LT Identifier	1-4
1-2.	Keys Active in Keyboard Extension Mode (Base Keyboard)	1-8
1-3.	Keys Active in Keyboard Extension Mode (Enhanced Keyboard)	1-9
1-4.	Keys Active in Keyboard Extension Mode (Converged Keyboard)	1-9
2-1.	Sample Connection Menu	2-4
2-2.	Sample Status Line for IBM 3101	2-6
2-3.	Sample Status Line for a DEC VT100	2-10
2-4.	Sample Status Line for a DEC VT220	2-14
2-5.	Sample Status Line for a Data General D210	2-16
3-1.	Sample Connection Menu (3270 Emulation)	3-5
3-2.	Example of a Display Image (Formatted Screen)	3-7
3-3.	Sample Status Line in 3270 Emulation	3-15
A-1.	IBM Base Keyboard	A-5
A-2.	IBM Enhanced Keyboard	A-5
A-3.	IBM Converged Keyboard	A-6

Tables

1-1.	Alternate Change-Screen and Extension-Mode Key Sequences	1-10
1-2.	Change-Screen Key Patches	1-11
2-1.	IBM 3101 Emulation: 3101 Character Set Mapping Limitations for French	2-7
2-2.	IBM 3101 Emulation: 316x CS1 and CS2 Character Sets Mapping Limitations for German	2-7
2-3.	IBM 3101 Emulation, ISO 8859 Mapping Limitations for Spanish	2-8
2-4.	IBM 3101 Emulation, ISO 8859 Mapping Limitations for all Languages except Spanish	2-9
2-5.	VT100 Emulation: NRC Mapping Limitations for Netherlands	2-11
2-6.	VT220 Emulation: NRC Mapping Limitations for Netherlands	2-13
2-7.	VT220: MCS Mapping Limitations for Spanish	2-13
2-8.	VT220: MCS Mapping Limitations for all Languages Except Spanish	2-14
2-9.	Status Line Indicators	2-16
2-10.	ASCII Control Codes	2-17
3-1.	Status Line Format	3-13
4-1.	Problem Resolution with ASCII Terminals	4-2
4-2.	Status Codes	4-6
B-1.	IBM 584x Modem Switch Settings	B-3
B-2.	IBM 5853 Modem Switch Settings	B-4
B-3.	Hayes Smartmodem 1200 Configuration Switch Settings	B-5
B-4.	Hayes Smartmodem 1200 Register Settings	B-6

Summary of Changes for the Fourth Edition

This book has been revised to include the following changes and enhancements:

- This book supports IBM 3174 Configuration Support B Release 2.
- This book has been reorganized to enhance the retrievability of the material. Specifically, information on 3270 terminals and ASCII terminals is now covered in separate chapters.
- Two editing functions have been added:
 - Type Ahead allows you to continue typing while the host computer is busy processing keystrokes. This helps you to enter keystrokes faster.
 - You can now use a sequence of keys to turn Enhanced Null/Space Processing on and off.

Both of these functions are described in detail in Chapter 1, "Getting Started."

- Additional ASCII terminals can be used to communicate with IBM or ASCII hosts.
- Control codes and escape sequences have been removed from this book and are now contained in *3174 Asynchronous Emulation Adapter Description and Reference*.
- In this release, 3270 terminals can now be used as Data General Dasher D210** or DEC VT220** terminals.
- Appendix A, "Terminal Keyboard Maps," contains additional keyboard maps.
- Appendix B, "Using a Modem and an ASCII Terminal With the 3174 Asynchronous Emulation Adapter," contains switch settings for additional terminals.

Technical changes to the text and illustrations are indicated by vertical lines in the left margin next to the text or illustration.

Chapter 1. Getting Started

About the IBM 3174 Establishment Controller	1-2
Using 3174 Editing Features	1-2
Type Ahead	1-2
Enhanced Null/Space Processing	1-2
Establishing Multiple Host Connections	1-3
Skipping and Restoring Sessions (LTs)	1-3
Session Indicators	1-4
Host Identifier	1-5
Host Descriptor	1-5
Error Messages	1-5
Change-Screen Key Sequence	1-5
Keyboard Extension Mode (Extended Select)	1-6
Pseudo-ALT Keys	1-7
Alternate Extension Mode Key Sequence	1-7
Alternate Change-Screen Key Sequences	1-10
MLT with Personal Computers in 3270-Emulation Mode	1-10
Change-Screen Patches	1-11
Operating Differences When Using PC Emulation Programs	1-11

About the IBM 3174 Establishment Controller

The IBM 3174 Establishment Controller is one of the components of the IBM 3270 Information Display System. In this book, the IBM 3174 Establishment Controller is referred to as the 3174.

The 3174 connects terminals, printers, and personal computers to host processors. The 3174 allows you to use either an ASCII or a 3270 type of terminal to connect to IBM or ASCII hosts.

This book provides information about:

- Using 3270 terminals to communicate with ASCII hosts
- Using an ASCII terminal to communicate with IBM or ASCII hosts.

For information about using 3270 terminals with IBM hosts, see the *Entry Assist User's Guide* and the *3174 Functional Description*.

This chapter contains information about new editing functions and how you can establish multiple host connections.

Using 3174 Editing Features

Two new 3174 editing functions have been added in this release. You may find them helpful when you enter data. These functions are available when you are communicating with an IBM host.

Type Ahead

Type Ahead is a function that allows you to continue typing, even while the host computer is busy processing your keystrokes. Before this release, if:

✘ SYSTEM	X SYSTEM	✘ 	X 0-0 ()
✘ 	X ()	✘  	X 0-0 () ()

appeared on the status line of your terminal, you could not have continued typing. Now, with *Type Ahead*, you can still use your keyboard. If you see ✘ ?+ on your status line when you attempt to type while one of the symbols shown above is displayed, the *Type Ahead* function may be disabled. If this happens, see your system administrator for assistance. See the *3174 Functional Description* for more information about *Type Ahead*.

Enhanced Null/Space Processing

When you are communicating with an IBM host, you can turn Enhanced Null/Space Processing on and off by using the **Extension** key or **Extended Select** and then the **null/space processing** key. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys. Normally, blanks that appear on your screen because you use the cursor movement keys disappear when you press **Enter**. Blanks that appear on your screen when you use the space bar remain when you press **Enter**. For example, if you typed the following three-column entry without using the space bar between columns,

```
GET      INDCB,BUF      A NEW RECORD
```

the characters would be adjusted after you pressed **Enter**, like this:

```
GETINDCB,BUFA NEW RECORD
```

When you use Enhanced Null/Space Processing, blanks never disappear, whether or not they are generated using the cursor movement keys.

Enhanced Null/Space Processing is also useful during insert mode. Normally, you must delete blank spaces (by using ERASE EOF or delete) between the last graphic character and the end of the field before inserting characters. When you use this function, you can simply insert a character without deleting spaces. In the following example, '#' marks the end of the line:

```
The rn in Spain falls mainly on the plain. #
```

If you have accessed Enhanced Null/Space Processing, you can simply insert the "ai" in "rain" without deleting the spaces between "plain" and "#."

For a more detailed description of Enhanced Null/Space Processing, see the 3174 *Functional Description*.

Establishing Multiple Host Connections

Each time you connect your terminal to a host, you establish a *session* with that host. The IBM 3174 term for session is *logical terminal (LT)*. The 3174 allows you to have multiple sessions. From your terminal you can initiate up to five separate host sessions. This is known as *Multiple Logical Terminal (MLT)* support. You can connect to an IBM or ASCII host in each session.

Your terminal screen and keyboard can only show one session at a time; this session is called the *active session*. The other sessions are maintained by the 3174 and are called *background sessions*.

You can access different sessions by using the *change-screen sequence*.

Skipping and Restoring Sessions (LTs)

The following keys are available in extension (or Extended Select) mode:

- The **Skip This LT** key
- The **Restore All Skipped LTs** key.

You can mark an LT as skipped by pressing the **Skip This LT** key, thereby removing it from the change-screen sequence list. Pressing the **Skip This LT** key causes a change-screen sequence to the next LT.

Once you mark an LT as skipped, it is skipped on subsequent change-screen sequences until you press the **Restore All Skipped LTs** key. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys.

Note: On ASCII terminals, skipped LTs are restored when the terminal is turned off and then back on.

Session Indicators

The *logical terminal (LT) identifier* allows you to differentiate between multiple sessions. The LT identifier is located in the fourth column of the lower left corner of your screen. (See Figure 1-1 for an illustration of a typical screen.) Each time you use the Change-Screen key sequence, the indicator reflects which session is active. The following list shows the session number and its related LT identifier.

Session	LT Identifier
First (Primary)	LT-1 or -1
Second	LT-2 or -2
Third	LT-3 or -3
Fourth	LT-4 or -4
Fifth	LT-5 or -5

Note: The LT identifier appears only as a number from -1 to -5 if you have X.21 or X.25 host communication protocol.

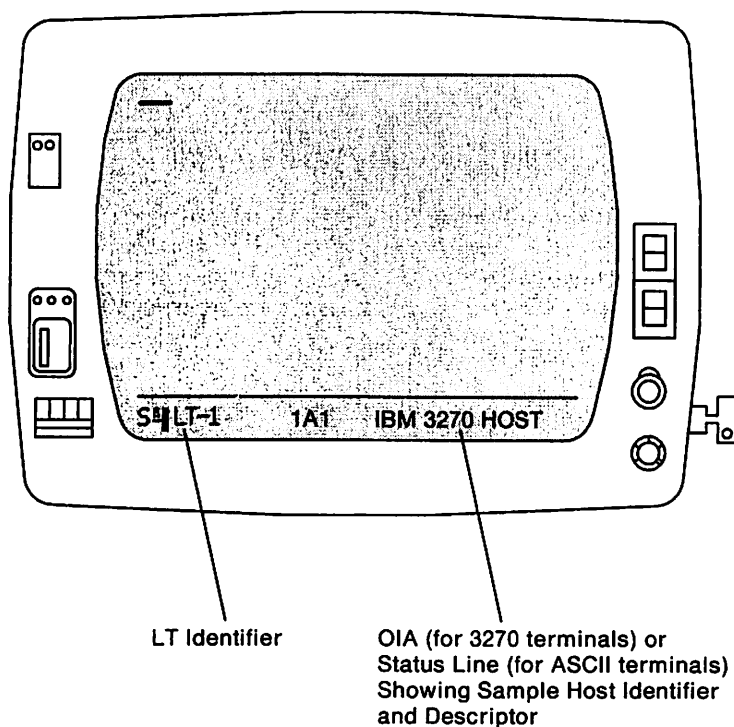


Figure 1-1. Sample Screen Showing OIA/Status Line, and LT Identifier

If you turn on the terminal and only one session is defined, the LT indicator position remains blank. If you turn on the terminal and the controller cannot currently support multiple sessions, the indicator position contains LT-X. This is a signal that the controller may have a configuration error. You should notify your system administrator if this happens.

The following sections describe additional information that may appear in the OIA or status line on your terminal.

Host Identifier

The *host identifier* (*station set identifier* for ASCII hosts) is located in positions 18-20 of the status line (see Figure 1-1 on page 1-4). It gives you additional information about your session and is updated each time you use the Change-Screen key sequence. The host identifier is 3 characters long and qualifies the LT indicator. It differs depending on the type of host the session is communicating with, IBM or ASCII.

When you are using an ASCII terminal with an ASCII host, no host identifier appears.

Host Descriptor

The *host descriptor* (*station set descriptor* for ASCII hosts) is located in positions 31-50 of the status line (see Figure 1-1 on page 1-4). It identifies the host with which a session is in communication. The host descriptor status line area is updated each time you use the Change-Screen key sequence or you make a selection from the 3174 Connection Menu.

Like the host identifier, the host descriptor varies depending on the type of host your session is using to establish communication.

IBM Hosts (3270 type): This field can contain the host descriptor, which has a maximum length of 20 characters.

ASCII Hosts: When you are using a 3270 terminal as an ASCII terminal, the station set descriptor is displayed in this position. If the station set descriptor is longer than 20 characters, only the first 20 characters are displayed.

If an update to any of the areas replaced by the host descriptor occurs while the host descriptor is displayed, the host descriptor is erased and the original areas appear in the status line. In most cases, you can remove the host descriptor by using RESET. If no host descriptor is defined, the indicators normally displayed in this area appear.

Error Messages

If you try to access a session that is not available, you may get one of the following messages:

2%%
399
325.

These error messages indicate that there may be a controller hardware or configuration problem. Notify your system administrator about the error number, and use RESET to use your current active session. If RESET does not work, use the change-screen sequence to access the next LT.

Change-Screen Key Sequence

The *Change-Screen key sequence* allows you to access the different sessions that are defined for your terminal. This key sequence saves the current active session in the background and the next background session becomes the active session, in a round-robin fashion. Background sessions are not affected by anything you key in during the active session.

The Change-Screen key sequence for 3270 terminals is as follows:

Keyboard Type	Key Sequence
Base (Non-Text)	ALT-Insert
Base (Text)	ALT-PA2
Base (Alternative)	ALT-Insert
Converged	ALT-PA2
Enhanced	ALT-Home

For ASCII terminals, see the appropriate keyboard map for your terminal. For 3270 terminals, refer to Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for illustrations of the Change-Screen key locations.

For ASCII terminals, the Change-Screen key sequence is not valid while you are communicating with or attempting to connect to an ASCII host. If you want to change sessions, you must return to the Connection Menu.

If the Change-Screen key sequence does not work, see your system administrator for the correct sequence. The key sequence may have been defined differently during 3174 customizing.

Keyboard Extension Mode (Extended Select)

Keyboard extension mode works like a keyboard shift. The difference is that a shift lasts until you press a key to return the keyboard to its normal state, while keyboard extension mode lasts for only one keystroke. Table 1-1 on page 1-10 tells you how to put your base keyboard into extension mode. For Converged and Enhanced keyboards, the **Extended Select (ExSel)** key shifts the keyboard into extension mode. Refer to the keyboard maps in Appendix A, "Terminal Keyboard Maps," for the key sequence used to enter extension mode on ASCII terminals.

The extension-mode indicator (▶) appears in the operator information area (OIA) when you enter extension mode. When you press another key, you leave extension mode and the indicator disappears.

Not all your keys are active while the keyboard is in extension mode. Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 show the active keys and their functions.

Figure 1-2 on page 1-8 shows the functions that are active in keyboard extension mode. However, the following functions are not available when you are using a 3270 terminal as an ASCII terminal:

- X.21 Direct
- X.21/X.25 Dial
- X.21/X.25 Local
- X.21/X.25 Comm
- X.21/X.25 Disc
- Display RTM LTTI
- Load Matrix
- Null/space processing
- Print ID.

The following functions are not available when you are using a 3270 or ASCII terminal to communicate with an IBM host:

- BREAK
- Long Break
- Control.

Some of the keyboard extension mode functions are not described in this book.

See the 3174 *Functional Description* for information about:

- X.21
- X.25
- RTM LTTI
- Load Matrix.

See *Entry Assist User's Guide* for information about:

- DOC ON OFF
- WRAP
- CHG FMT
- CR POS.

Pseudo-ALT Keys

The **Enter Pseudo-ALT** key puts your keyboard into an alternate shift state and the Pseudo-ALT indicator appears in the operator information area (OIA). This key has the same effect as pressing and holding the **ALT** key. Pseudo-ALT is used when the **ALT** key on your keyboard is used as the control key and/or your terminal does not send that ALT key data and any other data from keys used while you are holding the **ALT** key.

The **Exit Pseudo-ALT** key or pressing and releasing the **ALT** key takes the keyboard out of the alternate shift state and the indicator is removed from the OIA.

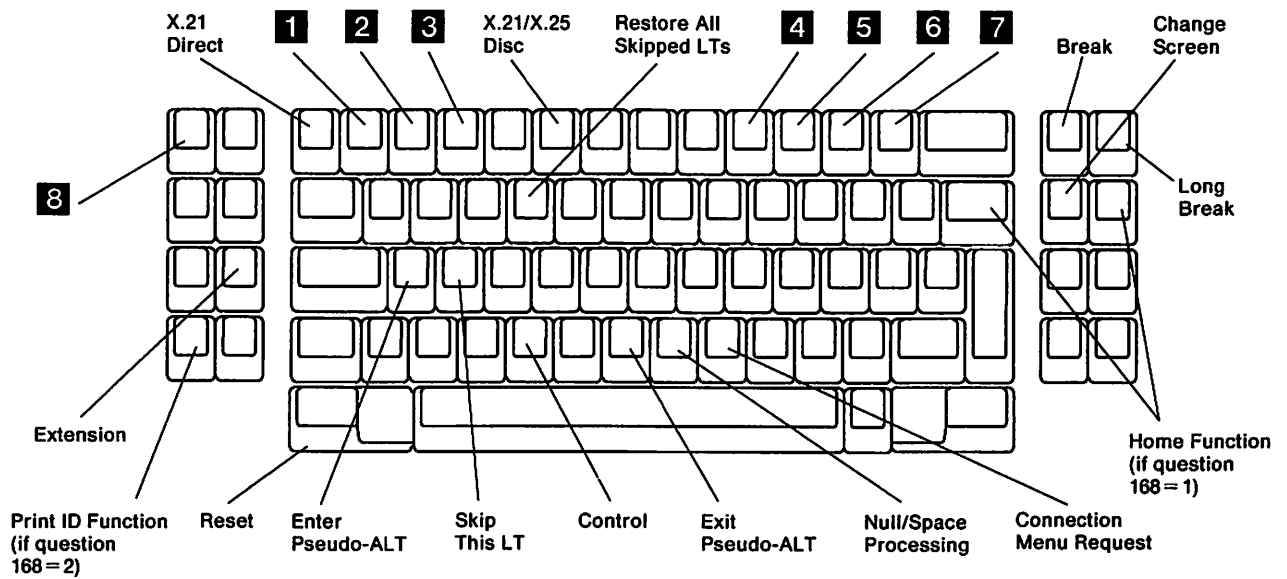
Alternate Extension Mode Key Sequence

An alternate extension mode key sequence is provided. Some terminals do not provide an extension mode key. For these terminals, the 3174 can be customized to allow the **Home** or **Print ID** key to serve as the extension mode key. To enter extension mode, press and release the **Home** or **Print ID** key.

If your **Home** key is being used to serve as the extension mode key, access to the Home function is changed. You must press the **Home** key twice to return the cursor to home. The **Print ID** key is affected the same way if you are using it to serve as the extension mode key.

Note: The information above applies to all 3270 Base keyboards or other keyboards being used to simulate 3278 or 3279 keyboards. This does not apply to Converged Keyboards in native mode, or to Enhanced keyboards.

Keyboard Extension Mode



Note: PS = Pseudo-Shift (D210 only)

- 1** 3270: X.21/X.25 Dial
3270 Used as ASCII Terminal: D210 F13 or with PS is D210 Shift F13
- 2** 3270: X.21/X.25 Local
3270 Used as ASCII Terminal: D210 F14 or with PS is D210 Shift F14
- 3** 3270: X.21/X.25 Comm
3270 Used as ASCII Terminal: D210 F15 or with PS is D210 Shift F15
- 4** 3270: No Function
3270 Used as ASCII Terminal: D210 C1 or with PS is D210 Shift C1
- 5** 3270: No Function
3270 Used as ASCII Terminal: D210 C2 or with PS is D210 Shift C2
- 6** 3270: Display RTM LTTI
3270 Used as ASCII Terminal: D210 C3 or with PS is D210 Shift C3
- 7** 3270: Load Matrix
3270 Used as ASCII Terminal: D210 C4 or with PS is D210 Shift C4
- 8** 3270 Used as an ASCII Terminal: VT100 PF4 when Question 702 = 0

Figure 1-2. Keys Active in Keyboard Extension Mode (Base Keyboard)

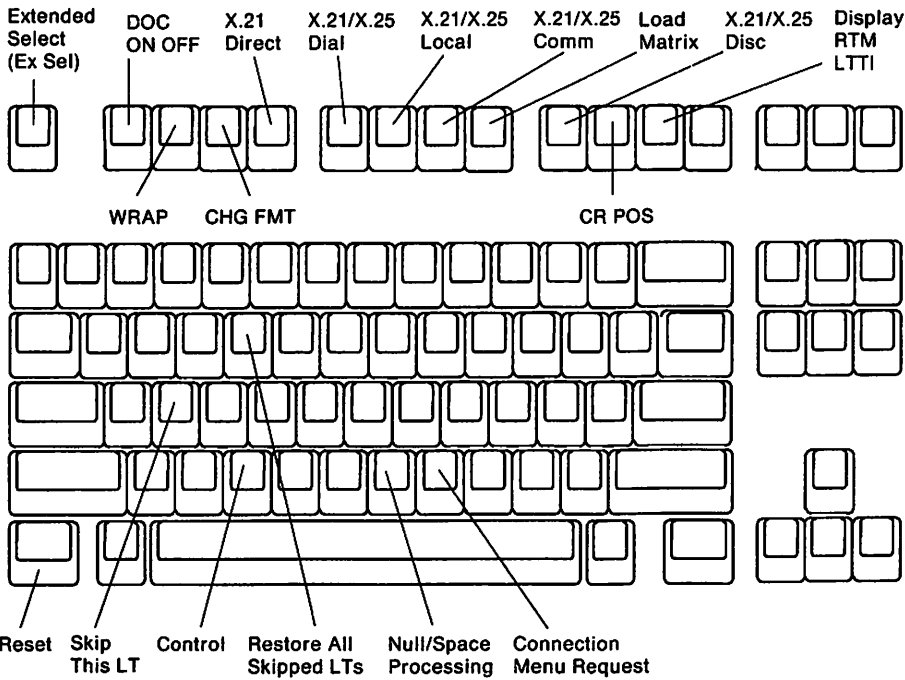


Figure 1-3. Keys Active in Keyboard Extension Mode (Enhanced Keyboard)

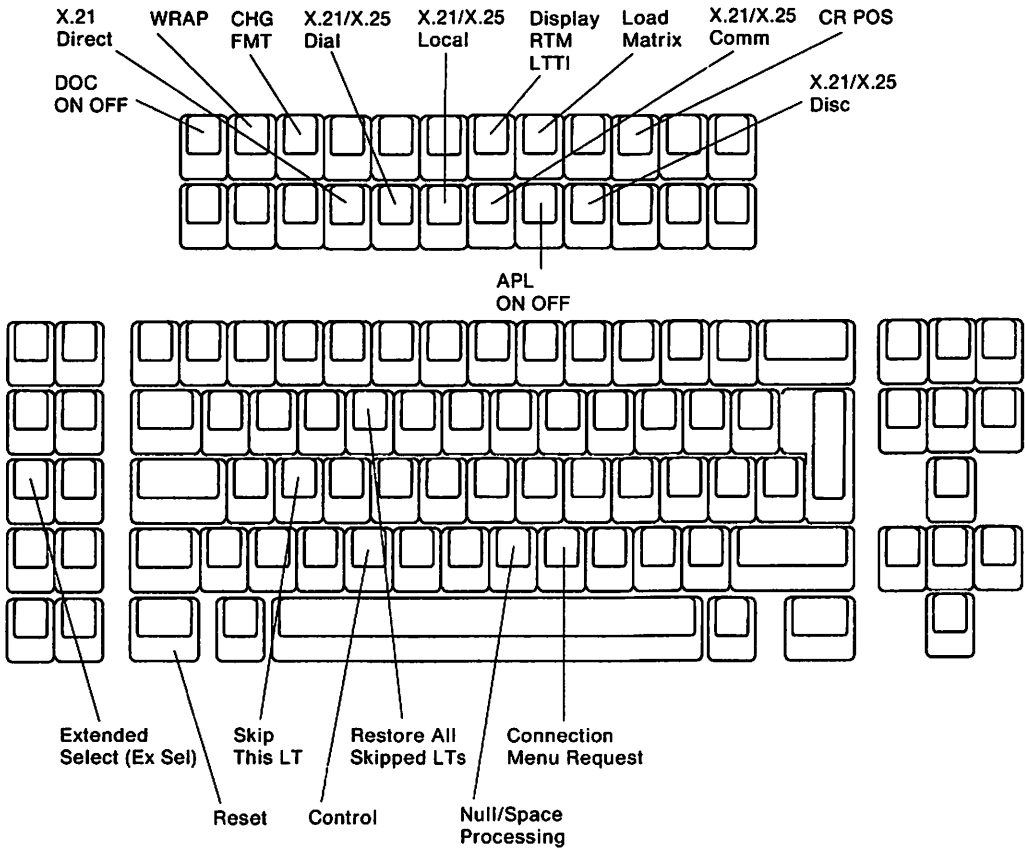


Figure 1-4. Keys Active in Keyboard Extension Mode (Converged Keyboard)

Alternate Change-Screen Key Sequences

The Change-Screen key sequence on a Base (Non-Text) keyboard is as follows:

1. Press and hold **ALT**.
2. Press the **Insert** key (normal Change-Screen key).

If **ALT-Insert** does not perform the Change-Screen function on the terminal, you can use the alternate Change-Screen key sequence that is provided when the keyboard is in extension mode. See Table 1-1 for the MLT Change-Screen key sequence to use for your terminal.

For example, if you are using a 3194, perform the following steps:

1. Press and release the **Extension Mode** key.
2. Press the **Insert** key.

Product	MLT Change-Screen Key	Extension-Mode Key
Base (Non-Text)	Press and hold ALT ; then press the Insert key (normal Change-Screen key).	Press and hold ALT ; then press ERASE EOF .
PC or PS/2 with 3270 Emulation Program, Entry Level, or similar 3270 emulation program	Press and release the Extension Mode key, followed by the Insert key.	Defined in 3174 customizing question 168. See your system administrator.
3270 Personal Computer	Press and release the ExSel key; then press the Insert key.	ExSel .
3194 Display Station	Press and release the ExSel key; then press the Insert key	ExSel .

MLT with Personal Computers in 3270-Emulation Mode

An IBM Personal Computer (PC), Personal System/2* (PS/2), 3270 PC, or 3194 Display Station, emulating a 3270 terminal operating in Control Unit Terminal (CUT) mode, may not send all keystrokes to the 3174 Establishment Controller. For example, many key sequences that require an **ALT-Shift** are ignored by the emulation program and are not sent to the 3174. Because of this feature, you might need to use a different set of keystrokes on a PC emulating a 3270 than on an actual 3270 terminal. In most cases, it is possible to obtain patches or newer source code that passes these expanded function keystrokes to the 3174. It is also possible to use the alternate keystroke sequences defined for these functions when the keyboard is in extension mode.

The Change-Screen key sequence on a 3270 Personal Computer or 3194 Display Station is **Extended Select (ExSel)** followed by the **Insert** key. You can access different sessions from an IBM Personal Computer or Personal System/2 (PS/2) by doing the following:

1. Press and release the **Extension Mode** key.
2. Press the **Insert** key.

If this Change-Screen key sequence does not work, see your system administrator for the correct sequence. The key sequence may have been defined differently during 3174 customization.

Change-Screen Patches

Table 1-2 contains a list of PC products and tells you whether the **ALT-Insert** key sequence works as the Change-Screen key. If it does not, the patch you can put on the PC to make it work is listed. For information regarding patches on products not listed, contact your IBM representative.

Table 1-2. Change-Screen Key Patches			
Product		ALT-Insert Work In Base Product?	Patch Number
PC with 3270 Emulation Program, Entry Level	Version 1.0	No	EE00010
	Version 1.1	No	None
	Version 1.2	No	IR00194
3270 Personal Computer	Version 2.1	No	IR52091
	Version 3.0	No	IR52091
3194 Display Station	Release 1.1	No	KG52091
	Release 2.0	Yes	Not applicable
	Release 2.1	Yes	Not applicable

Operating Differences When Using PC Emulation Programs

PCs that are running their own emulation programs may not operate exactly as this book describes. Operating differences may occur in these areas:

- Operator information area symbols

The symbols generated by these PCs may not match the symbols given in this book, or there may be no symbols generated.

- Function keys

When pressed, **ALT**, **Shift**, and **Caps Lock** keys may only be recognized by the emulation program and not sent to the 3174.

- Keyboard programs and PC code pages.

If an alternate PC code page or keyboard program has been loaded, your keyboard may not operate as shown in the keyboard maps. Keyboard modification utilities may also affect keyboard operations.

Chapter 2. Using a 3270 Terminal to Connect to ASCII Hosts

Introduction	2-2
Differences When Using Your 3270 Terminal as an ASCII Terminal	2-2
Scrolling	2-2
Copy Printers	2-3
Terminal-Attached Printers	2-3
Modem Operations	2-3
Using The ALT Key as the ASCII Control Key	2-3
Nonescaping Keys	2-3
Connecting to an ASCII Host With 3270 Terminals	2-4
Using the Connection Menu	2-4
Using Your 3270 Terminal as an IBM 3101	2-5
Using Your Keyboard	2-6
Typematic Keys	2-6
BREAK Function	2-6
Control Mode/Control Shift	2-6
Understanding Your Status Line	2-6
3101 Character Set Mapping	2-7
316x CS1 and CS2 Character Sets Mapping	2-7
316x ISO 8859-1/2 Character Sets Mapping	2-8
Using Your 3270 Terminal as a DEC VT100	2-9
Using Your Keyboard	2-9
Typematic Keys	2-10
BREAK Function	2-10
Control Mode/Control Shift	2-10
Understanding Your Status Line	2-10
VT100 National Language Support	2-11
Using Your Terminal as a DEC VT220	2-11
Using Your Keyboard	2-11
Typematic Keys	2-11
BREAK Function	2-12
Control Mode/Control Shift	2-12
COMPOSE Key	2-12
VT220 National Language Support	2-12
DEC National Replacement Character (NCR) Set Mapping	2-12
DEC Multinational Character Set (MCS) Mapping	2-13
Understanding Your Status Line	2-14
Using Your Terminal as a Data General Dasher D210 Terminal	2-14
Using Your Keyboard	2-15
Typematic Keys	2-15
BREAK Function	2-15
Control Mode/Control Shift	2-15
Function Keys	2-15
Understanding Your Status Line	2-15
Status Line Indicators	2-16
Using 3270 Printers as ASCII Printers	2-17

Introduction

This chapter provides information about using a 3270 terminal to communicate with ASCII hosts through an IBM 3174 Establishment Controller. The 3174 allows you to do this by making the data entered at your 3270 terminal look as if it were entered from one of these ASCII terminals:

- IBM 3101
- DEC VT100
- DEC VT220
- Data General Dasher D210.

Also described are:

- Using 3270 printers as ASCII printers
- IBM Personal Computers in 3270 Emulation Mode.

When you use a 3270 terminal as an ASCII terminal, you see some differences in how your terminal operates.

Differences When Using Your 3270 Terminal as an ASCII Terminal

As a 3270 terminal user accustomed to the way keystrokes are handled, you may see a difference in keying response time when you are connected to an ASCII host, especially when you are using dial lines. That is, as you type characters on your keyboard you may experience a delay from the time you press the key to when the character appears on your screen. Following are some differences you may see if your terminal is communicating with an ASCII host that uses IBM 3101, DEC VT100, DEC VT200, or the DG D210 data stream.

Scrolling

You can see a difference in screen scrolling. IBM 3270 terminals cannot roll the screen up one line at a time to make room for new data, so the full screen is written from the controller instead. If the controller is used heavily, less frequent and partial updates are used so that performance is not degraded for other users.

You can stop the scrolling by doing the following:

Data Stream	Action
VT100	Use the key shown in your keyboard map for the NO-SCROLL key (Backtab) to stop. Use the NO-SCROLL key (Backtab) again to resume.
VT200	Use the key shown in your keyboard map for the HOLD-SCREEN key (Backtab) to stop. Use the HOLD-SCREEN (Backtab) key again to resume.
3101	Use CTRL-S for XOFF to stop. Use CTRL-Q for XON to resume.

Note: Not all hosts observe this protocol; it is application-dependent.

Copy Printers

The copy printer operation (using the 3270 PRINT key) works with ASCII hosts just as it does in normal 3270 sessions, except that IDENT (used to alter the printer address) must be done in 3270 mode. The copy printer operation is normally limited to display stations and printers both operating in 3270 mode. However, this support is extended to allow a 3270 terminal operating as an ASCII terminal to perform a local copy. The target printer must be in 3270 mode, and the IDENT process that is used to alter the copy printer assignment (if necessary) must be done while the 3270 terminal is in 3270 mode (connected to a normal 3270 host or the Connection Menu).

Terminal-Attached Printers

Some IBM terminals can have directly attached printers. When you are using this type of IBM terminal to communicate with an ASCII host, the host cannot communicate with the attached printer. You can only use the printer to print screen images from the terminal. The information on the terminal is sent from the terminal to the printer.

Modem Operations

When you select an ASCII host from the Connection Menu, the host is usually called automatically. This means that when you select an ASCII host with stored dial digits, the 3174 control unit selects a port that can get to the host. The call is placed by sending the dial string to the modem attached to the port.

You can manually dial an ASCII host by typing the dial digits at the keyboard. When you select a host that must be dialed manually, the 3174 selects a port that can get to the host and establishes a connection between the terminal and the modem as if the modem were a host on a direct connection. You can then type commands to the modem and receive its responses.

Using The ALT Key as the ASCII Control Key

When the 3174 is customized to use the ALT key instead of the CTRL key as the ASCII control key, some functions are limited or operate differently. See your system administrator for your 3174 customization information. This provides an interface to use your 3270 terminal as an ASCII terminal that is the same as the interface provided in microcode releases prior to 3174 Release B2. Following are limitations associated with using the ALT key as the ASCII control key:

- You cannot use your 3270 terminal as a Data General Dasher D210 or a DEC VT220.
- Extended Graphics characters are not supported.
- Control mode and Control Shift are not valid.
- Modified keyboards are mapped as if the keyboard were not modified.
- Control Indicator is not displayed in the OIA.

Nonescaping Keys

Processing an accent character in Extended Graphics mode, or from the main keyboard in most languages, places the keyboard in *nonescape mode*. (In ASCII documentation, this mode is sometimes referred to as *dead-key processing*.) Pressing the accent characters causes an indicator to appear in the OIA showing which accent character was pressed. The cursor on the screen does not move.

These accent functions are referred to as *nonescaping keys*. No character is placed on the screen until the key sequence is completed. When the second character is pressed, the sequence is complete and the OIA indicator disappears. If the second character is valid, a unique composite character is formed. For invalid key sequence combinations an inhibit indicator appears, which must be reset before you can proceed.

Note: Nonescaping keys vary from language to language and with the type of keyboard you are using.

Connecting to an ASCII Host With 3270 Terminals

The following steps tell you how to connect to an ASCII host with a 3270 terminal.

1. Turn on the power for your terminal.
2. The Connection Menu appears on your screen if you are not immediately connected to an IBM or ASCII host. The READY message appears if you are immediately connected to an ASCII host.
3. If you need to connect to a dial host, you may have to key in the dial number manually after you see the READY message on the screen. Your system administrator can tell you what dial number to use.
4. If the host is inactive, you receive the READY message, but no response from the host. If this happens, return to the Connection Menu and try the connection again.

Using the Connection Menu

The Connection Menu shown in Figure 2-1 allows you to connect to the different hosts that your terminal can access. For example, if your terminal can access more than one host, you select the host to which you want to connect from the Connection Menu.

```

                                     CONNECTION MENU
Enter a number (NUM) or a name on the Command Line, then press ENTER

NUM NAME                STATUS   NUM NAME                STATUS
  1 VM SYS 2            UP
  2 VAX VMS             ?
  3 PARTS               ?

PF:3=End                12=Host Disconnect

===>To:
```

Figure 2-1. Sample Connection Menu. Type in the number or name of the host to which you want to connect.

Note: In Figure 2-1, PA2 appears if your terminal does not have a PF12 key.

You can use the Connection Menu to request a different host session or to check the status of a host. The Connection Menu contains a list of all the possible host destinations and provides information you need to connect to a host. If you are authorized, you can select a destination from this menu.

The following list describes the messages that show the status of the host:

Status	Meaning
UP	The host is active and available.
?	Host status cannot be determined. A request to establish a session with the host either succeeds or provides more detailed status information.
DOWN	The host is inactive, or all the ports that can access it are broken.
BUSY	The host is active, but all the ports to it are in use.
DIAL	The host is accessed through a switched port. A request to connect to the host either succeeds or provides more detailed status information.

You can update the Connection Menu by pressing **Enter**. This signals the controller to refresh the status column of the menu.

The following list describes the functions of the PF keys:

PF Keys	Function
PF3	Returns you to the session you left. On an SNA controller, if you press PF3 without connecting to a new host, the previously connected host session resumes. On a non-SNA controller, the previously connected ASCII host session resumes. If the previous connection was to the 3270 host, the connection is re-established. However, it may be necessary for you to log on again.
PF12	Breaks the active session connection between the 3174 and the host if you are connected to an ASCII host. This releases the host port for other users and, if you are using a dial connection, disconnects the switched connection, ending telephone charges. All other background sessions are not affected.

You can get to a host by returning to the Connection Menu and typing in the number or name of the host to which you want to connect. You can return to the Connection Menu by using the extension mode or **Extended Select** key and then pressing the Connection Menu key. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for these keys.

Using Your 3270 Terminal as an IBM 3101

The 3270 terminal operating as a 3101 only operates in character mode. In character mode, all keystrokes are processed by the host before being echoed back and displayed. Block mode is not supported. For more information about actual 3101 operation, refer to the *IBM 3101 Display Terminal Description*.

Using Your Keyboard

The main differences between the 3101 and the 3270 keyboards are in the ASCII bracket and caret symbols. Referring to Appendix A, "Terminal Keyboard Maps," select the 3101 keyboard map that corresponds to the type of 3270 keyboard you are using. For example, if you are using a 3278 keyboard, see the map called "Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702=1)" on page A-10. If you are not sure what type of 3270 keyboard you have, see the keyboard diagrams in Chapter 1, "Getting Started."

Typematic Keys

A *typematic key* is a key that repeats its function when you hold it down. All keys that are typematic on your 3270 keyboard continue to be typematic, including keys pressed with **CTRL**.

BREAK Function

The BREAK function (**Field Mark** or **PA2** on the keyboard) produces a break signal of 500 milliseconds. This function works differently depending upon the application program that you are using. See your system administrator for more information.

Control Mode/Control Shift

Control functions are provided by a control key on keyboards where a control key is available. Depending on the terminal type, the control key provides either a Control Shift or Control Mode function. The Control Shift function allows you to select multiple functions while the control key is pressed. The Control Mode function allows you to enter only one control sequence. Both Control Shift and Control Mode are indicated by a left-facing arrow displayed in the OIA.

On all keyboards, using the extension mode key or the **Extended Select** key followed by the control key invokes the Control Mode on/off function. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys.

Understanding Your Status Line

The status line gives you indications of the operating state of your terminal. Symbols, characters, and numbers appear in the status line to inform you of conditions; for example, if your keyboard is locked, if it is in upper shift, or if the system is busy. Refer to Table 2-9 on page 2-16 for information that can appear in the status line, and what that information means.

Figure 2-2 gives you an example of a possible status line. The characters in the example are explained at the bottom of the figure.

```

S                               3101           □□31
1234567890123456789012345678901234567890123456789012345678901234567890
      1           2           3           4           5           6           7           8
  
```

Figure 2-2. Sample Status Line for IBM 3101

Character	Meaning
S	Attached to the 3174
3101	3101 mode active
□□ 31	Printer 31 assigned

3101 Character Set Mapping

All the characters defined in the French, German, Italian, U.K. English, and U.S. English 3101 character sets are mapped except for one character in French (Table 2-1).

Refer to the *IBM 3101 Description* manual for the layouts of the 3101 national language character sets.

These characters, indicated as "Not mapped" in the following figures, cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as the equivalent non-CECP character on the 3270 screen.

Table 2-1. IBM 3101 Emulation: 3101 Character Set Mapping Limitations for French			
3101 Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
μ	60	Mapped	Not mapped

The characters that are defined in the 3101 character set but not engraved on the 3270 keyboards can be generated by pressing **ALT-Shift** to enter the Extended Graphics mode. This mode allows only one keystroke. Refer to the Extended Graphics keyboard layouts in Appendix A, "Terminal Keyboard Maps."

316x CS1 and CS2 Character Sets Mapping

All the characters defined in the 316x CS1 and CS2 character sets are mapped except for some characters in German.

Refer to the *IBM 3161/3163 Description* or to the *IBM 3164 Description* for the layouts of these character sets.

These characters, indicated as "Not mapped" in the following figures, cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as the equivalent non-CECP character on the 3270 screen.

Table 2-2. IBM 3101 Emulation: 316x CS1 and CS2 Character Sets Mapping Limitations for German			
316x CS1 and CS2	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
²	B2		Not mapped
³	B3		Not mapped
μ	B5		Not mapped
.	D0		Not mapped

The characters that are defined in the 316x CS1 and CS2 character sets but not engraved on the 3270 keyboards can be generated by pressing **ALT-Shift** to enter the Extended Graphics mode. This mode allows only one keystroke. Refer to the Extended Graphics keyboard layouts in Appendix A, "Terminal Keyboard Maps."

316x ISO 8859-1/2 Character Sets Mapping

All the characters defined in the ISO 8859-1/2 character sets are mapped except for the characters shown in the Table 2-3 and Table 2-4.

Refer to the *IBM 3161/3163 Description* or to the *IBM 3164 Description* for the layouts of these character sets.

These characters, indicated as “Not mapped” in the following figures, cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as the equivalent non-CECP character on the 3270 screen.

Table 2-3. IBM 3101 Emulation, ISO 8859 Mapping Limitations for Spanish			
316X ISO Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
©	A9		Not mapped
®	AE		Not mapped
²	B2		Not mapped
³	B3		Not mapped
µ	B5		Not mapped
¹	B9		Not mapped
¼	BC		Not mapped
¾	BE		Not mapped
×	D7		Not mapped
÷	F7		Not mapped

Table 2-4. IBM 3101 Emulation, ISO 8859 Mapping Limitations for all Languages except Spanish			
316x ISO Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
ı	A1		Not mapped
©	A9		Not mapped
ª	AA		Not mapped
«	AB		Not mapped
®	AE		Not mapped
±	B1		Not mapped
²	B2		Not mapped
³	B3		Not mapped
µ	B5		Not mapped
¶	B6		Not mapped
·	B7		Not mapped
¸	B9		Not mapped
	BA		Not mapped
»	BB		Not mapped
¼	BC		Not mapped
½	BD		Not mapped
¾	BE		Not mapped
¿	BF		Not mapped
X	D0		Not mapped
X	D7		Not mapped
Y	DD		Not mapped
þ	DE		Not mapped
>	F0		Not mapped
÷	F7		Not mapped
ÿ	FD		Not mapped
þ	FE		Not mapped

The characters that are defined in the 316x ISO 8859-1/2 character sets but not engraved on the 3270 keyboards can be generated by pressing **ALT-Shift** to enter the Extended Graphics mode. This mode allows only one keystroke. Refer to the Extended Graphics keyboard layouts in Appendix A, "Terminal Keyboard Maps."

Using Your 3270 Terminal as a DEC VT100

When you use a 3270 terminal as a DEC VT100, you can use many applications developed for the actual VT100. For more information about actual VT100 operation, you may want to see the *DEC VT100 User's Guide*.

Using Your Keyboard

Many keys on the 3270 terminal keyboard have different functions when the terminal is acting as a VT100. Referring to Appendix A, "Terminal Keyboard Maps," select the VT100 keyboard map that corresponds to the type of 3270 keyboard you are using. For example, if you are using a Converged keyboard, see the map called "Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702=1)" on page A-22. If you are not sure what type of 3270 keyboard you have, see the keyboard diagrams in Chapter 1, "Getting Started."

Typematic Keys

A *typematic key* is a key that repeats its function when you hold it down. All keys that are typematic on your 3270 keyboard continue to be typematic, including **Tab**, **Return**, and keys pressed with **CTRL**.

BREAK Function

The **BREAK** function acts differently depending on the host application that your system is using. This function produces a short break of 0.2333 second; a Shift **BREAK** function produces a long break of 3.5 seconds. See your system administrator for more information.

The **CTRL-Break** key sequence generates the answerback message VT100 EMULATION ANSWER BACK MSG.

Control Mode/Control Shift

Control functions are provided by a control key on keyboards where a control key is available. Depending on the terminal type, the control key provides either a Control Shift or Control Mode function. The Control Shift function allows you to select multiple functions while the control key is pressed. The Control Mode function allows you to enter only one control sequence. Both Control Shift and Control Mode are indicated by a left-facing arrow displayed in the OIA.

On all keyboards, using the extension mode key or the **Extended Select** key followed by the control key invokes the Control Mode on/off function. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys.

Understanding Your Status Line

The status line gives you indications of the operating state of your terminal. Symbols, characters, and numbers appear in the status line to inform you of conditions; for example, if your keyboard is locked, if it is in upper shift, or if the system is busy. Refer to Table 2-9 on page 2-16 for information that can appear in the status line, and what that information means.

Figure 2-3 shows you an example of a possible status line. The column numbers below the status line tell you in which column a character appears. The characters in the example are explained at the bottom of the figure.

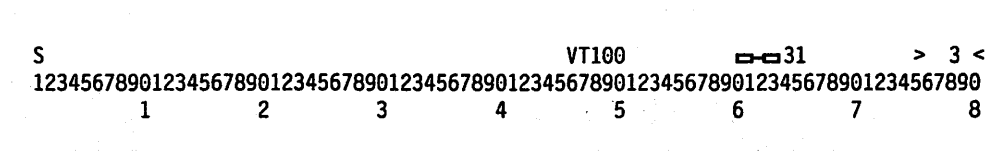


Figure 2-3. Sample Status Line for a DEC VT100

Character	Meaning
S	Attached to the 3174
VT100	VT100 mode active
□□ 31	Printer 31 assigned
> 3 <	LED number 3 is lit

VT100 National Language Support

You can generate characters not engraved on the 3270 keyboard by entering Extended Graphics mode and using the National Replacement Character Set (NRC). Refer to the Extended Graphics keyboard layouts in Appendix A, "Terminal Keyboard Maps."

You can generate all the characters defined in the DEC National Replacement Character (NRC) sets except for five characters in Netherlands (see Table 2-5).

These characters indicated as "Not mapped" in the following figure cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as blanks on the 3270 screen.

DEC NRC Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
¾	40		Not mapped
ij	5B	Not mapped	Not mapped
½	5C		Not mapped
f	7C	Not mapped	Not mapped
¼	7D		Not mapped

You can generate the characters that are defined in the DEC National Replacement Character set (NRC) but not engraved on the 3270 keyboards by pressing **ALT-Shift** to enter Extended Graphics mode. This mode allows only one keystroke.

Using Your Terminal as a DEC VT220

When you use your 3270 terminal as a VT220 you can use many applications developed for the DEC VT220. For more information about actual VT220 operation, refer to the *DEC VT220 User's Guide*.

Using Your Keyboard

Many keys on the 3270 terminal keyboard have different functions when your terminal is acting as a DEC VT220. Referring to Appendix A, "Terminal Keyboard Maps," select the VT220 keyboard map that corresponds to the type of 3270 keyboard you are using. For example, if you are using a Converged keyboard, see the map called "Using a 3270 Converged Keyboard as a DEC VT220 Keyboard" on page A-31. If you are not sure what type of 3270 keyboard you have, see the keyboard diagrams in Chapter 1, "Getting Started."

Typematic Keys

A *typematic key* is a key that repeats its function when you hold it down. All keys that are typematic on your 3270 keyboard continue to be typematic, including **Tab**, **Return**, and keys pressed with **CTRL**.

BREAK Function

The BREAK function acts differently depending on the application program that your system is using. This function produces a short break of 0.2333 second; a Shift BREAK function produces a long break of 3.5 seconds. See your system administrator for more information.

The CTRL BREAK function generates the answerback message of VT200 EMULATION ANSWER BACK MSG.

Control Mode/Control Shift

Control functions are provided by a control key on keyboards where a control key is available. Depending on the terminal type, the control key provides either a Control Shift or Control Mode function. The Control Shift function allows you to select multiple functions while the control key (CTRL) is pressed. The Control Mode function allows you to enter only one control sequence. Both Control Shift and Control Mode are indicated by a left-facing arrow displayed in the OIA.

On all keyboards, using the extension mode key or the **Extended Select** key followed by the control key invokes the Control Mode on/off function. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys.

COMPOSE Key

The VT220 terminal has a COMPOSE key which allows your terminal working in Multinational or National Character Set mode to generate ASCII codes for characters not engraved on its keyboard. These compose sequences are accessed on 3270 keyboards by using Extended Graphics mode. Tables 2-6 through 2-8 show you the characters which you can generate in each language.

VT220 National Language Support

You can generate characters by using the following character sets:

- National Replacement Character Set (NRC)
- Multinational Character Set (MCS).

Note: For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.

DEC National Replacement Character (NCR) Set Mapping

You can generate characters not engraved on the 3270 keyboard by entering Extended Graphics mode and using the National Replacement Character (NRC) Set. Refer to the Extended Graphics keyboard layouts in Appendix A, "Terminal Keyboard Maps."

You can generate all the characters defined in the DEC National Replacement Character (NRC) Sets except for five characters in Netherlands (see Table 2-6 on page 2-13).

The characters indicated as "Not mapped" in the following figure cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as blanks on the 3270 screen.

DEC NRC Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
¾	40		Not mapped
ij	5B	Not mapped	Not mapped
½	5C		Not mapped
f	7C	Not mapped	Not mapped
¼	7D		Not mapped

You can generate the characters that are defined in the DEC National Replacement character set (NRC) but not engraved on the 3270 keyboards by pressing **Alt-Shift** to enter Extended Graphics mode. This mode allows only one keystroke.

DEC Multinational Character Set (MCS) Mapping

All the characters defined in the DEC Multinational Character Set (MCS) are mapped except for those shown in Table 2-7 and Table 2-8.

These characters, indicated as "Not mapped" in the following tables (Table 2-7 and Table 2-8), cannot be displayed on the 3270 screen and cannot be generated from 3270 keyboards. If they are received from the host ASCII application, they appear as blanks on the 3270 screen.

DEC MCS Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
©	A9		Not mapped
²	B2		Not mapped
³	B3		Not mapped
¹	B9		Not mapped
¼	BC		Not mapped
Œ	D7		Not mapped
Ÿ	DD		Not mapped
œ	F7	Not mapped	Not mapped

The characters that are defined in the DEC Multinational Character Set (MCS) but not engraved on the 3270 keyboards can be generated by pressing **Alt-Shift** to enter Extended Graphics mode. This mode allows only one keystroke.

Table 2-8. VT220: MCS Mapping Limitations for all Languages Except Spanish			
DEC MCS Character	ASCII Code Value	CECP-Capable 3270 Terminal	Non-CECP-Capable 3270 Terminal
i	A1		Not mapped
©	A9		Not mapped
à	AA		Not mapped
«	AB		Not mapped
±	B1		Not mapped
²	B2		Not mapped
³	B3		Not mapped
µ	B5		Not mapped
¶	B6		Not mapped
.	B7		Not mapped
ı	B9		Not mapped
ø	BA		Not mapped
»	BB		Not mapped
¼	BC		Not mapped
½	BD		Not mapped
¿	BF		Not mapped
Œ	D7	Not mapped	Not mapped
Ÿ	DD	Not mapped	Not mapped
œ	F7	Not mapped	Not mapped

Understanding Your Status Line

The status line gives you indications of the operating state of your terminal. Symbols, characters, and numbers appear in the status line to inform you of conditions; for example, if your keyboard is locked, if it is in upper shift, or if the system is busy. Refer to Table 2-9 on page 2-16 for information that can appear in the status line, and what that information means.

Figure 2-4 gives you an example of a status line. The column numbers below the status line tell you in which column a character appears. The characters in the example are explained at the bottom of the figure.

```

S                                     VT220          □-□ 31
123456789012345678901234567890123456789012345678901234567890
                1         2         3         4         5         6         7         8
    
```

Figure 2-4. Sample Status Line for a DEC VT220

Character	Meaning
S	Attached to the 3174
VT220	VT220 mode active
□-□ 31	Printer 31 assigned

Using Your Terminal as a Data General Dasher D210 Terminal

If you are using your 3270 terminal as a Data General (DG) Dasher D210 terminal, you cannot use languages other than U.S. English. For more information about the Dasher D210, see the *Data General Dasher D210 and D211 Display Terminals User's Manual*.

Using Your Keyboard

Many keys on the 3270 terminal keyboard function differently when the terminal is acting as a Dasher D210. Referring to Appendix A, "Terminal Keyboard Maps," select the keyboard map that corresponds to the type of 3270 keyboard you are using. For example, if you are using a Converged keyboard, use the map called "Using a 3270 Converged Keyboard as a Data General Dasher D210 Keyboard" on page A-36.

Typematic Keys

A *typematic key* is a key that repeats its function when you hold it down. All keys that are typematic on your 3270 keyboard continue to be typematic. The actual DG D210 has a REPT key which increases the typematic rate to 30 characters per second. The 3270 keys repeat at the rate of the specific keyboard in use.

BREAK Function

The BREAK function acts differently depending on the application program that your system is using. This function produces a short break of 0.2333 second; a Shift BREAK function produces a long break of 3.5 seconds. See your system administrator for more information.

Control Mode/Control Shift

Control functions are provided by a control key on keyboards where a control key is available. Depending on the terminal type, the control key provides either a Control Shift or Control Mode function. The Control Shift function allows you to select multiple functions while the control key is pressed. The Control Mode function allows you to enter only one control sequence. Both Control Shift and Control Mode are indicated by a left-facing arrow displayed in the OIA.

On all keyboards, using the extension mode key or the **Extended Select** key followed by the control key invokes the Control Mode on/off function. See Figure 1-2 on page 1-8 through Figure 1-4 on page 1-9 for the location of these keys.

Function Keys

A Pseudo-shift state is provided to allow shifted versions of PF13 – PF24 on Base and Enhanced keyboards. The Pseudo-shift key is the **DUP** or **PA1** key on the Base and the Enhanced keyboards. An "S" is displayed in column 40 of the status line when you are in Pseudo-shift state.

Pseudo-shift only applies to keys as defined in the keyboard maps. Any other keys pressed during this state cause a keyboard lock. Pressing the **DUP** or **PA1** key again also causes an exit from Pseudo-shift.

Control and Pseudo-shift are not valid at the same time. Therefore, only three states of the PF keys are available: unshifted, shifted (Pseudo-shift) and CTRL (control).

Understanding Your Status Line

The status line gives you indications of the operating state of your terminal. Symbols, characters, and numbers appear in the status line to inform you of conditions; for example, if your keyboard is locked, if it is in upper shift, or if the system is busy. Refer to Table 2-9 on page 2-16 for information that can appear in the status line, and what that information means.

Status Line Indicators

Figure 2-5 gives you an example of a status line. The column numbers below the status line tell you in which column a character appears. The characters in the example are explained at the bottom of the figure.

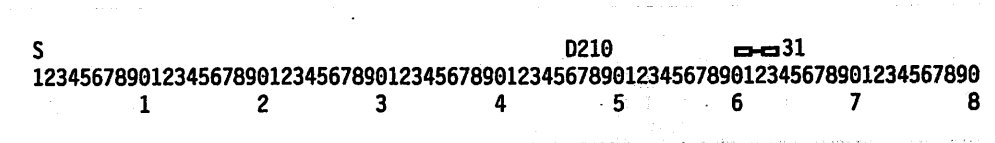


Figure 2-5. Sample Status Line for a Data General D210

Character	Meaning
S	Attached to the 3174
D210	D210 mode active
□□ 31	Printer 31 assigned

Status Line Indicators

This section contains a table which describes the indicators you may see when you are using a 3270 terminal as an ASCII terminal. The first column of the table shows the position of the indicator from left to right on your screen. The second column contains the symbol you may see. The third column indicates how the 3270 uses the symbol. The last column is the meaning of the symbol.

Character Position	3270 Terminal Indicator	Type of Indicator	Meaning
1	S	3174 attach	Attached to the 3174
4	LT- <i>n</i>	MLT indicator	Logical terminal number
9 - 17	X ?+	Input inhibit	Input not accepted
	X - S	Input inhibit	Not displayable
	X □ nnn	Input inhibit	Machine check
	X □	Input inhibit	Security key
	X □ □	Input inhibit	Printer not working
	X □ □ □	Input inhibit	Printer busy
	X □ □ □ □	Input inhibit	Printer very busy
	X - f	Input inhibit	Minus function
	X † at ?	Input inhibit	Invalid key used
18 - 20	nnn	Station set identifier	Specifies the Station Set number of the ASCII host in use by this session
21 - 29	X SYSTEM	SYSTEM COMMAND	Keyboard locked by host command
	X □	Keyboard locked	Keyboard locked because transmit buffer is full. ¹
31 - 50		Station set descriptor	Specifies the name assigned to the ASCII host used by this session

Table 2-9 (Page 2 of 2). Status Line Indicators			
Character Position	3270 Terminal Indicator	Type of Indicator	Meaning
36	▶	Mode	Extended select
40	+	Mode	An Extended Graphics sequence is being performed Pseudo-shift (DG D210 only)
	S	Mode	
42	⤴	Shift	Uppershift mode
43	A	LOCK	Caps Lock
42 – 44	ALT	Mode	Pseudo-ALT
45	←	Mode	Control
46 – 50	3101		3101 mode active
	VT52		VT52 mode active
	VT100		VT100 mode active
	VT220		VT220 mode active
	D210		D210 mode active
	D210A		D210 ANSI mode active
52	^	Mode	Insert mode (VT220 only)
60 – 64	a = _ + ?	Nonescaping key mode	Keyboard is in nonescaping key sequence mode
	□ □ nn	Printer status	Assigned printer
	□ ■ nn	Printer status	Printing
	□ ▣ nn	Printer status	Printer failure
	□ □ ??	Printer status	Printer ID changed
75 – 80	> 1234 <		Programmable LEDs L1, L2, L3, L4 (VT100 only)

Using 3270 Printers as ASCII Printers

The 3174 allows 3287-class printers to emulate ASCII printers. All ASCII characters can be printed by the 3270 printers supported by the 3174 if they are set up to print International Alphabet number 1 or 5. The ASCII graphic character set is a subset of these code sets. Also, the 3174 supports the basic set of ASCII control codes shown in Table 2-10.

Table 2-10 (Page 1 of 2). ASCII Control Codes		
Character	Hex Code	Action Taken
BEL	X'07'	Sound audible alarm
CR	X'0D'	Carriage return
FF	X'0C'	Form feed
HT	X'09'	Tab – Skip to next multiple of 8
LF	X'0A'	New line

¹ The ASCII host has requested that the controller stop sending data. If this condition does not clear, return to the Connection Menu and begin a new session.

Table 2-10 (Page 2 of 2). ASCII Control Codes		
Character	Hex Code	Action Taken
US	X'1F'	Carriage return, line feed
VT	X'0B'	New line
XON (DC1)	X'11'	Resume sending
XOFF (DC3)	X'13'	Stop sending

Advanced ASCII printer capabilities, such as underscoring, programmable fonts, and color, are not supported.

Some ASCII printers send status indications to the host when detecting conditions such as lack of paper, buffer full, and broken parts. The 3174 gives an indication, using flow control indicators, that its buffer is full or that it is not ready to print, but does not otherwise send status to the host. The 3270 printer hold print control stops the host from sending data if the host supports flow control.

Chapter 3. Using Your ASCII Terminal

Introduction	3-2
Differences When Using Your ASCII Terminal as a 3270 Terminal	3-2
Connecting to a 3270 Host	3-2
Using the Connection Menu	3-4
Using Your ASCII Terminal	3-6
The Display Image	3-6
Input Fields	3-7
Numeric Fields	3-7
Protected Fields	3-8
Nondisplay Fields	3-8
Using Your Keyboard	3-8
Keyboard Maps	3-8
Terminal-Controlled Keys	3-9
3270 Functions	3-9
Non-3270 Functions	3-12
Understanding Your Status Line	3-13
Status Line Format	3-13
Status Line Graphics and Meanings	3-15
Host Control Program Communication	3-19
Light Pen Simulation	3-19
Selection Fields	3-19
Attention Fields	3-20
ASCII Display Host Addressable Printer Support	3-20
Using an ASCII Printer as a 3270 Printer	3-21
Printing Screen Images (Local Copy)	3-21
Print ID	3-22
Changing the Print ID	3-22
Printing	3-22
Printer Not Working	3-22
Canceling a Print Request	3-23
Host-Initiated Local Copy	3-23
ASCII Graphics Local Copy	3-23
ASCII Host Communications	3-23

Introduction

This chapter describes the two operating modes you can use for an ASCII terminal. These modes are:

Using your ASCII Terminal as a 3270 terminal: With this function, you can use your ASCII terminal or printer as a 3270 terminal or printer. This allows your ASCII terminal or printer to connect to a 3270 host. See "Using Your ASCII Terminal" on page 3-6 and "Using an ASCII Printer as a 3270 Printer" on page 3-21.

Connecting to an ASCII host: With this function, your ASCII terminal can connect to ASCII hosts or to public data networks through the 3174 Establishment Controller. See "ASCII Host Communications" on page 3-23.

Differences When Using Your ASCII Terminal as a 3270 Terminal

You must become familiar with your specific terminal type to use the functions it provides. Following are some of the differences you may see between using an actual 3270 terminal and using your ASCII terminal as a 3270 terminal.

- Response time may increase because of the line transmission speed.
- Some display station features, such as indicator lines and intensify capabilities, are not available.
- Differences between the ASCII display keyboards and the 3270 keyboards sometimes require a two- or three-key sequence to achieve the effect of pressing one key on a 3270 keyboard.
- For printers, Set Line Density is not available. Also, many printers are limited in the use of PA or Cancel keys and indicator lights.
- Changing the printer address works a little differently. The cursor does not move to the printer address digits in the indicator line when you press the IDENT key, as it would on a 3270 terminal. Instead, the cursor remains where it was, but when the address digits are keyed in, they appear at the proper place in the indicator line.

Connecting to a 3270 Host

The following steps tell you how to connect to a 3270 host with an ASCII terminal.

1. Turn on the power for your ASCII terminal.
 - a. If you are connected through a switched line, dial in.
 - 1) *Auto-call* modem: Enter the dial digits from your keyboard. For example, type **ATD 3853426** for an IBM 5841 or 5842 modem. You may receive messages from the modem. The modem procedures can be found in your modem documentation.
 - 2) *Normal dial* modem: Make the connection from your phone, listen for the answer tone, and switch the phone appropriately.
 - b. If you are connected through a direct or nonswitched line, follow your local log-on procedure.
 - c. If you are not sure what kind of connection you have, ask your system administrator.

2. If you do not see a prompt, follow these steps:

1. Press the **CR** key (carriage return)
2. Type a period (.)
3. Press the **CR** key again.

You may have to repeat this step a few times. Refer to the keyboard map in Appendix A, "Keyboard Maps for ASCII Terminals Used as 3270 Terminals" on page A-40, to see where the CR key is on your keyboard. For example, on an IBM 3101, the CR key is the new line ←| key.

Note: Some, all, or none of the following steps may apply to you. Follow the step only if that menu appears on your display screen.

You must respond to prompts within 30 seconds or you receive a warning. If you still do not respond, then you are disconnected. If you type a response incorrectly, backspace and type the response again. The cursor movement keys do not work. Until you identify the terminal type (step 4), the only keys that work are alphanumerics, the space bar, Backspace, and Carriage Return.

3. Type your password if you see the following prompt:

```
PLEASE ENTER YOUR PASSWORD =====>
```

4. A Terminal Type Menu similar to the following example may appear. Type the two-character code that corresponds to your terminal:

```
TERMINAL TYPE MENU. PLEASE CHOOSE ONE OF THE TERMINAL TYPES DISPLAYED BELOW.
```

```
IBM 3101          I1          DEC VT100          V1
IBM 3163          I3
```

```
ENTER NUMBER THAT CORRESPONDS TO YOUR TERMINAL =====>
```

5. A prompt for the keyboard map you want to use may appear:

```
USE SPECIFIC KEYBOARD MAP (1=YES 0=NO)? =====>
```

Specific Map Type **1** to use the specific map for the terminal type chosen. This map minimizes the number of keystrokes for commonly used functions.

Note: If you enter **FC** (FTTERM Color) or **FM** (FTTERM Mono) on the Terminal Type menu, you must type **1** at the specific keyboard prompt for FTTERM to operate properly.

Universal Map Type **0** to use the universal map. You might want to use the universal map if you use more than one type of terminal. This map is the same for all terminal types, but the correlation between the real key and the mapped key is not always as

apparent as it is in the specific map for each terminal. For example, the universal mapped key for PF1 is ESC 1, but in the ADDS Viewpoint /78 keyboard map, PF1 is mapped to PF1.

6. A prompt for printer attachment may appear:

```
DO YOU HAVE A PRINTER ATTACHED TO THIS TERMINAL? (1=YES 0=NO)? =====>
```

If you are using a terminal with an attached printer, and you want to let the 3174 manage the attached printer as a separate device on the same line, type **1**. Otherwise, type **0**.

At this point, you are normally connected to either an IBM or ASCII host application. You can use your ASCII terminal to act like a 3270 terminal, or to connect to the ASCII host through the 3174. Otherwise, the Connection Menu is displayed and you can request a different host connection.

You can connect to a host by doing the following:

1. Type the number or name of the host to which you want to connect from the Connection Menu.

When you see **READY** on the screen, you are normally connected to the ASCII host.

2. You may have to dial the host manually by typing the dial number. (Consult your system administrator for the dial number.)

Using the Connection Menu

You can use the Connection Menu (see Figure 3-1) to request a different host session or to check the host status. The Connection Menu contains a list of all possible host destinations and provides information you need to connect to a host. If you are authorized, you can select a host destination from this menu.

```

                                CONNECTION MENU
Enter a number (NUM) or a name on the Command Line, then press ENTER

NUM NAME                STATUS  NUM NAME                STATUS
 1 VM SYS 2             UP
 2 VAX VMS              ?
 3 PARTS                ?

```

PF: 3=End 6=Terminal Disconnect 12=Host Disconnect

==>To:

Figure 3-1. Sample Connection Menu (3270 Emulation). Type the number or name of the host connection.

The following list describes the messages that show you the status of the host:

Status	Meaning
UP	The host is active and available.
?	Host status cannot be determined. A request to establish a session with the host will succeed or provide more detailed status information.
DOWN	The host is inactive, or all the ports that can access that host are broken.
BUSY	The host is active, but all the ports to it are in use.
DIAL	The host is accessed through a switched port. A request to connect to the host will succeed or provide more detailed status information.

The following list describes the functions of the PF keys:

PF Keys	Function
PF3	Returns you to the session you left. On an SNA controller, if you press PF3 without connecting to a new host, the previously-connected host session resumes. On a non-SNA controller, the previously connected ASCII host session resumes. If the previous connection was to the 3270 host, the connection is re-established. However, you may need to log on again.
PF6	Breaks the connection between the 3174 and your ASCII terminal. This releases your terminal port for other users and, if you are using a dial connection, disconnects the switched connection, ending telephone charges.
PF12	Breaks the connection between the 3174 and the host if you are connected to an ASCII host. This releases the host port for other users and, if you are using a dial connection, disconnects the switched connection, ending telephone charges.

You can return to the Connection Menu by doing the following:

- If you are connected to an IBM host, use the Connection Menu key sequence which is the extension mode sequence followed by **m**. For example, on an IBM 3161, you press **ALT L m**. On a Lear Siegler ADM 5, you press **ESC B m**.

See the keyboard maps in Appendix A for the appropriate Extension Mode sequence for your keyboard.

- If you are connected to an ASCII host, press **ESC Backspace**, or use **BREAK** to disconnect from the ASCII host (providing your host recognizes BREAK as a disconnect).

Using Your ASCII Terminal

When you use your ASCII terminal as a 3270 terminal, it appears to the host as a 3270 terminal with full-screen edit capabilities. In this mode, you can use your terminal's keyboard to enter all 3270 characters and to perform the 3270 functions listed below:

- ATTN
- Backtab
- Change Screen
- Clear
- Cursor Left
- Cursor Right
- Cursor Up
- Cursor Down
- Cursor Fast Left
- Cursor Fast Right
- CURSR SEL
- Delete
- DEV CNCL
- DUP
- Enter
- Erase EOF
- Erase Input
- Extension Mode
- Field Mark
- Home
- IDENT
- Insert
- New Line
- PA1, PA2, PA3
- PF1 – PF24
- Print
- Reset
- SYS REQ
- Tab
- TEST

The following functions are also provided:

- Break
- Refresh
- Resume Print
- Status On/Off
- Suspend Print.

Each of these functions is described in this chapter. Appendix A, "Keyboard Maps for ASCII Terminals Used as 3270 Terminals" on page A-40, contains the key sequences that you should use for your terminal to request these functions. For example, on many terminals, pressing **ESC 1** invokes the PF1 function.

The Display Image

The screen of your terminal shows you a display image. An example of a display image appears in Figure 3-2. The format of this image varies, depending on the application program you are using. The image might contain areas that you can use to enter data to be processed by the application program. The image might also contain areas that are used only to display information to you. Both of these areas are called *fields*.

When a screen is divided into fields, it is known as a *formatted screen*. A screen that is not divided into fields is known as an *unformatted screen*. Each job that you work on could use a different format or no format at all. Therefore, you might be working with both formatted and unformatted screens.

The screen shown in the sample display image (Figure 3-2) is an example of a formatted screen.

```

                                Employee Information Record

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

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

                                SA?
  
```

Figure 3-2. Example of a Display Image (Formatted Screen)

An actual 3270 terminal has an Operator Information Area (or status line) on the last line of the screen. This area displays operating and status messages associated with your terminal operation. The status line is displayed on line 24 or line 25 of the screen, depending on the type of terminal you are using. If your terminal has only 24 lines, you must type in a key sequence (called *Status On/Off* in the keyboard maps) to view it. The status line is shown as the last line in the example. Refer to "Understanding Your Status Line" on page 3-13 for a description of the status line.

Input Fields

An input field is a field in which you can enter data. Each application program user's guide tells you which are the input fields for that particular job.

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

The quantity and names of fields that you see on your screen depend on the job you are doing and on the application program that is operating in the host system.

Numeric Fields

Numeric input fields are fields that normally accept as input the characters 0–9, the decimal sign, the minus sign, and DUP (or the equivalent of those keys). In the example, the fields following Identification Number: and Salary: are likely to be numeric fields. When you move the cursor into the numeric field, the NUM indicator is displayed in the Operator Information Area.

Operating any other function that generates a displayable character causes an input-inhibited condition. Use the Reset key sequence to enable the keyboard if it is disabled.

You can override the numeric lock restriction on ASCII terminals since the keyboards on these terminals operate like typewriter keyboards. To override the numeric lock restriction, type any character or symbol that corresponds to that character or symbol appearing in the upper shift on a 3270 Base Typewriter Keyboard.

Protected Fields

Protected fields are areas on the screen in which you cannot type data. For example, you cannot change field names. A “go elsewhere” message (X < * >) is displayed on the status line if you attempt to change any data in a protected field. To recover and enter data, use 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. In addition, 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 as *nondisplayable*. A nondisplayable field can be an input field or a protected field. The data in the field is not displayed on the screen. In the example, the salary field is a nondisplayable field; you cannot see the information in the field.

Using Your Keyboard

This section contains a brief discussion of keyboard maps and terminal-controlled keys, and a more detailed description of terminal functions.

Keyboard Maps

On a 3270 terminal, 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 3174 Establishment Controller do not always have a single key to match all the possible 3270 functions. Therefore, you sometimes must press two or more keys to carry out one function. For example, pressing **ESC** and then pressing **1** causes the PF1 function on many of the supported terminals.

Every time you press a key (or sometimes, **ALT** or **CTRL** plus another key) on your terminal, a unique ASCII code representing that key is transmitted to the 3174. These codes identify the function you want to perform. The 3174 may do any of the following to perform requested functions:

- Initiate the transmission of data to the host
- Echo back a data character for display on your screen
- Send other data back to your terminal, causing the cursor to be repositioned.

The keyboard map defined for your terminal type describes what keyboard function the 3174 associates with the key sequences you press on the keyboard. The keyboard maps are found in Appendix A, “Keyboard Maps for ASCII Terminals Used as 3270 Terminals” on page A-40.

Terminal-Controlled Keys

The terminal acts independently of the controller for the following functions (the function of these keys is not altered):

- Typematic operation for some or all keys on the keyboard. When a typematic key is pressed, its function is repeated while the key remains pressed. See your terminal manual for more information about this function.
- Setup keys.
- Local print.
- Cursor mode keys (block or underline).

3270 Functions

ATTN: The ATTN function signals an attention condition to the host (SNA only). 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 messages (X -f) are displayed on the status line. You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

Program Attention Functions (Enter, Clear, PF Keys, and PA Keys): These functions cause the transfer of information to the host. An attention identification (AID) character is sent to the host, which identifies the function causing the transfer. (Note that the AID characters are not typematic.)

The Clear function clears all positions on the screen and positions the cursor in the upper left corner.

Change Screen: Depending on how the 3174 is customized, the Change Screen function allows you to access multiple host sessions. See Chapter 1, "Getting Started" for more details.

Cursor Movement Functions (Cursor Up, Cursor Down, Cursor Right, Cursor Left, Cursor Fast Right, and Cursor Fast Left): Cursor Up, Down, Right, and Left move the cursor one position at a time into any character position. Cursor Fast Right and Fast Left move the cursor two positions at a time. Using these functions, you can move the cursor into any position, including unprotected and protected fields.

All of the following functions can cause 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 an input field:

Tab: Moves the cursor to the first character position of the next input field. In a screen with no input fields, the cursor moves to the upper left corner of the screen.

Backtab: When the cursor is located in 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, the Backtab function moves the cursor to the first position of that field. If there are no input fields, the cursor moves to the upper left corner of the screen.

New Line: Moves the cursor to the first input character position of the following line. If the next line has no input fields, the cursor moves to the next line containing an input field. If the screen contains no input fields, the cursor moves to the upper left corner of the screen.

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

CURSR SEL (Cursor Select): This function allows you to use the selector light pen detection function from the keyboard. See "Light Pen Simulation" on page 3-19 for a description of how you can use this function.

Delete: If the cursor is located in an input field, the Delete function deletes the character at the location 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 location to the left. Empty character locations at the end of the row are filled with nulls. If the input field occupies more than one row, subsequent rows are not affected.

Using this function when the cursor is positioned in a protected field locks the keyboard (the go elsewhere status line message (X < * >) is displayed). You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

DEV CNCL (Device Cancel): If your keyboard is locked because of a printer busy condition (X 0-0() on the status line), and you wish to cancel your print request, you can use the DEV CNCL function.

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

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

If you are typing ahead and you press DEV CNCL to cancel a print job you just sent, the DEV CNCL function does not cancel your print request. It only ends the print ID operation. See "IDENT."

DUP: Using the DUP function causes an asterisk (*) to be displayed at the current cursor location. Also, a Tab key operation is performed, causing the cursor to be moved to the first location 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 positioned in a protected field locks the keyboard (the go elsewhere status line message (X < * >) is displayed). You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

Erase EOF (End of Field): If the cursor is positioned in an input field, this function erases the characters from the cursor to the end of the field. The cursor does not move.

Using this function when the cursor is positioned in a protected field locks the keyboard (the go elsewhere status line message (X < * >) is displayed). You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

Erase Input: This function erases the characters in all input fields and then moves the cursor to the first input location 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.

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

Using this function when the cursor is located in a protected field locks the keyboard (the go elsewhere status line message (X < * >) is displayed). You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

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 3-21.

You can exit the IDENT function by using the Reset key sequence.

Insert: The Insert function places the keyboard into Insert mode. This mode allows you to insert a character or characters into the middle of an input field without changing the characters already displayed in that field. 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 location in the field beyond the cursor, entering a character causes the new character to be entered at the cursor location. 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 location occupied by the cursor at the time of the insert operation is a null, no shift occurs.
- After all null characters at or beyond the cursor location in the field are overwritten, or if there are no null characters, attempting to enter another character locks the keyboard (the greater than indicator (X *>) is displayed on the status line). You can unlock the keyboard by using the Reset key sequence defined for your terminal and repositioning the cursor.

- If the current field spans more than one line of the screen, the insert operates in the entire field.

Print: The Print function causes the current screen to be printed. See “Printing Screen Images (Local Copy)” on page 3-21.

RESET: You can use the Reset function to recover from an inhibited local function that has resulted in a keyboard-locked condition. The Reset function does not reset a locked condition resulting from a command being executed for the terminal (X () on the status line). When your keyboard is locked, symbols appear in the Operator Information Area (OIA) of the display. The Reset function also can be used for the following:

- To clear IDENT
- To turn off Insert mode
- To remove a host descriptor.

If none of these conditions exists, pressing RESET clears any keystrokes previously entered but not yet processed by the 3174.

SYS REQ (System Request): You can use the SYS REQ function to switch from communication with your application program to communication with the host control program (SNA only). On non-SNA attached terminals, X -f is displayed for nonsupported terminals when SYS REQ is pressed. 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 and then enter the logoff command.

See “Host Control Program Communication” on page 3-19 for a description of how your terminal operates when you are communicating with the host control program.

TEST: The TEST function starts and ends some problem determination functions. After the display screen is cleared, the cursor is placed in the first position of the first line. Refer to *3174 Customer Problem Determination* to acquire information about the TEST function.

Non-3270 Functions

The following functions are available by entering key sequences. Although the functions are not normal 3270 functions, they are provided by the 3174.

BREAK: The BREAK function allows you to disconnect from the controller. (The disconnect process may take up to 5 seconds on switched connections.) Switched connections must be re-established; nonswitched connections are re-established immediately. A fresh autobaud and prompting sequence may be necessary for nonswitched connections.

Refresh: The Refresh function causes the 3174 to clear your display screen and send the screen image again. This function is most useful when you are using a dial-in facility and communication errors cause incorrect characters to appear on the screen.

Resume Print: The Resume Print function allows data to be sent to a shared printer.

Status On/Off: The Status On/Off function displays the 3174 status line when your ASCII terminal is connected to an IBM host or when the 3174 Connection Menu is displayed and it does not have a 25th line available for status. If the keyboard is locked, enter the Status On/Off key sequence to see the status. See "Understanding Your Status Line" on page 3-13 for detailed information on the status line.

The Status On/Off function cannot be used if your terminal uses a 25th line for status.

Suspend Print: The Suspend Print function stops data from being sent to a shared printer.

Understanding Your Status Line

The status line monitors the status and performance information associated with your controller and the IBM host. It also notifies you of error conditions.

If your terminal...	Then...
Has a Status On/Off key sequence in the keyboard map	The status line is displayed on the last addressable line.
Does not have a Status On/Off key sequence in the keyboard map	The terminal's status line is used to display the status indicator.

If your terminal does not have a reserved status line:

1. The status line defaults to off when you begin your session.
2. When the status line is not displayed and an input-inhibited condition occurs, the cursor moves to the bottom right corner of the screen. You can then use the Status On/Off function (usually the **ESC ?** key sequence) to display the status line. The information on the status line explains the reason that your keyboard is locked.

Status Line Format

The status line is 80 characters long. The characters are arranged as shown in Figure 3-3 on page 3-15. The first column Table 3-1 tells you in which column of the terminal screen you can find the indicator. The second column shows the indicator you see if your ASCII terminal does not have special graphics characters. Use the third column if your terminal does have special graphics characters that the 3270 uses. The last column provides a brief description of the symbol.

Character Position	Status Line Indicator	3270 Symbol	Meaning
1	S	S	Attached to the 3174
2	A or B	<u>A</u> or <u>B</u>	Non-SNA or SNA
3	?, P or *	☐ ☒ or ■	Connected to the host (?), the SSCP (P), or the application (*)
3 - 7	nTEST	nTEST	Test mode (n=1)
4 - 7	LT-n or -n	LT-n or -n	Tells what session you are in (n=1 to 5 or X; MLT session number)

























Table 3-1 (Page 2 of 2). Status Line Format			
Character Position	Status Line Indicator	3270 Symbol	Meaning
9 - 17	X ()	X 	Wait
	X SYSTEM	X SYSTEM	System wait
	X %nnn	X  nnn	Machine check
	X -Xz_nnn	X  nnn	Communication check
	X PROGnnn	X PROG nnn	Bad host data
	X ?+	X ?+	Input not accepted
	X -f	X -f	Minus function
	X O-%	X 	Printer not working
	X O-O ()	X 	Printer busy
	X O-O () ()	X 	Printer very busy
	X *X	X 	Not authorized
	X < * >	X 	Go elsewhere
	X * >	X 	Too much data
	X *NUM	X 	Numeric data only
	X *#?	X 	Wrong printer ID
	X O-P	X 	Message pending
	X -S	X -S	Minus symbol
	X * > ()	X 	Type ahead buffer is full
18 - 20	Station Set or Host ID		
21 - 29	O -P		Message pending reminder
	() time	 time	RTM last transaction time
	-Xz_nnn	 nnn	Communication reminder
31 - 50	Station Set Descriptor or Host Descriptor		
36 - 45	NUM	NUM	Numeric field
	>		Extension mode entered
52	^		Insert mode
60 - 64	O-Onn	 nn	Assigned printer
	O-*nn	 nn	Printing
	O-%nn	 nn	Printer failure
	O-O_ _	 _ _	Assign printer
	O-O??	 ??	Printer ID changed
66 - 67	N>	N 	Null/Space processing

Figure 3-3 shows you an example of a possible status line. The first line is the sample status line. The column numbers below the status line tell you the column where a character appears. Following the column numbers is an explanation of the characters in the example. For instance, NUM appears in columns 39 through 41, meaning that the cursor is in a numeric field.

```

SB*      X-Xz_505                NUM                0-031

1234567890123456789012345678901234567890123456789012345678901234567890
          1          2          3          4          5          6          7          8

```

Figure 3-3. Sample Status Line in 3270 Emulation

Character	Meaning
S	Attached to the 3174
B	SNA
*	Connected to the application
X -Xz_505	Communication check
NUM	Numeric field
O-O31	Assigned printer is 31

Status Line Graphics and Meanings

The following list describes status line graphics and their related meanings:

Ready Status: The first column always contains an S and indicates that the terminal is ready.

Do Not Enter: The X symbol in location 9 of the status line tells you that you cannot enter any additional information from your keyboard. The symbol to the right of the X explains the reason for the keyboard lock condition. The symbols in this list are 3270 symbols. If your terminal does not have special graphics characters, refer to Table 3-1 to see what status line indicator to use.

X ()

Meaning: Wait. Time is required for the system to perform the requested function. Your keyboard is automatically unlocked by the host application. If the wait symbol results from a delay in host response, and you are using the Type Ahead function, you can continue to type and the keystrokes will be processed when the wait symbol disappears.

Action: Wait for the condition to clear.

X PROG nnn

Meaning: Incorrect host data. A programming error is detected in the data received from the host system. This symbol is accompanied by a three-digit (nnn) number that defines the probable cause of the problem. Refer to *3174 Status Codes* for error numbers.

Action: Use the **Reset** key sequence.

X -Xz_nnn

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

Action: Use the **Reset** key sequence.

X ?+

Meaning: Input not accepted.

Action: Use the **Reset** key sequence defined for your terminal, check your screen, and enter the data again. If the **Reset** key sequence does not remove this indicator and an **ALT** or **Shift** key was used prior to the error, press and release the **ALT** or **Shift** key again and then use the **Reset** key sequence.

X -f

Meaning: Missing function. The function you are attempting to perform is either not allowed or not allowed in the current state of your terminal.

Action: Use the **Reset** key sequence defined for your terminal.

X %nnn

Meaning: Machine check. The error number *nnn* defines the type of machine check. Refer to *3174 Status Codes* for error numbers. If the *nnn* number is between 802 and 818, see the status codes in Table 4-2 on page 4-6.

Action: Use the **Reset** key sequence.

X O-O ()

Meaning: Printer busy. The printer or class you are attempting to use is busy. Your request is queued.

Action: Either wait for the printer to become available or use the **DEV CNCL** key sequence to cancel the request.

X O-O () ()

Meaning: Printer very busy. The printer or class you are attempting to use is busy. Your request is queued. This symbol applies only to **Print** key requests when the printer is allocated to the host.

Action: Either wait for the printer to become available or use the **DEV CNCL** key sequence to cancel the request.

X *X

Meaning: Not authorized. You are requesting a print ID or print class you are not authorized to access.

Action: Use the **Reset** key sequence. Enter another print ID using the **IDENT** function.

X < * >

Meaning: "Go elsewhere." You are attempting an action that is invalid for the screen position of your cursor. For example, you attempted to enter, insert, erase, or delete a character when the cursor is in a protected field or at an attribute location.

Action: Use the **Reset** key sequence.

X * >

Meaning: Too much data. You are trying to enter too much data into a field on your terminal's screen. For example, you attempted to insert in a field that contains no nulls or spaces to replace.

Action: Use the **Reset** key sequence.

X NUM

Meaning: Numeric data only. You are trying to enter a non-numeric character into a numeric field.

Action: Use the **Reset** key sequence.

X *#?

Meaning: You are entering an unacceptable number. This normally occurs when you assign an invalid number while using the IDENT function.

Action: Use the **Reset** key sequence.

Station Set or Host ID (3 characters long)

Meaning: Located in positions 18-20 of the status line, these indicators give you additional information about your session.

Action: None.

Station Set Descriptor or Host Descriptor

Meaning: Located in positions 31-50 of the status line, these indicators identify the host with which you are communicating in this session. The descriptor varies depending on the type of host your session is using.

Action: None.

Mode Indicators: The mode indicators tell you what mode your keyboard is using.

^	Displayed when you are in Insert mode. To exit Insert mode, use the Reset key sequence.
NUM	Displayed when the keyboard is in numeric shift, which allows the 0–9 keys, the decimal sign, the minus sign, and DUP keys only.
N>	Displayed when you are using Enhanced Null/Space Processing.
▶	Displayed when you are in extension mode. To exit extension mode, press a valid key or use the Extension key sequence.

Printer Status messages are displayed in positions 60 through 64 of the status line. The following messages are used during print operations (local copy) and during the IDENT function:

O-Onn

Meaning: Assigned printer. Your display is authorized to use printer ID *nn*. Numbers may range from 01 to 55 for individual printers and from 70 to 85 for printer classes. If you do not have a printer to copy to or do not have one defined, the indicator is not displayed.

Action: None. If you want to use a different printer or class, use the **IDENT** key sequence to redefine your printer access.

O-*nn

Meaning: Printer is printing. The printer identified by *nn* is currently printing your screen.

Action: None.

O-O_ _

Meaning: Printer assignment. This message appears when you use the IDENT key sequence to assign printer access.

Action: Type in the number of the desired printer or class. Refer to “Print ID” on page 3-22.

O-O??

Meaning: Printer ID is changed.

Action: Press the **IDENT** key to display a new printer assignment. Refer to “Print ID” on page 3-22.

O-%nn

Meaning: Printer failure. When the printer stops during a local copy operation (for example, lack of paper or a paper jam; a *data check* on the printer does not fall in this category), the Printer Failure symbol (*nn*) replaces the Printer Is Printing symbol and the print process is terminated. The keyboard locks and the Printer Not Working symbol is displayed, calling the operator’s attention to the failure. The Printer Failure symbol always specifies the failing printer, not the print class.

Action: Use the **DEV CNCL** key sequence to clear the keyboard-locked condition. Try your print request again after starting the printer, or use **IDENT** to change your print ID and request a different printer.

Host Control Program Communication

After you begin an application session, you can communicate with the host control program by using the **SYS REQ** function. When you use the **SYS REQ** key sequence, your screen is cleared.

When you send messages to the control program, you can only type a message beginning at the current cursor location. The message can be up to 256 characters long. When you press **Enter**, the data, beginning with the original cursor location and extending 256 positions or to the end of the screen, is transmitted to the host.

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

When you are using the **SYS REQ** function, the following functions are not available:

- PF1 – PF24
- PA1 – PA3
- ATTN.

If you use one of these key sequences, the keyboard is locked and the invalid function status line message (X -f) is displayed. You can unlock the keyboard by using the **Reset** key sequence defined for your terminal and repositioning the cursor.

You can return to your application program session by entering the **SYS REQ** key sequence again.

A common use of this function is to log off the active application. You can use the **SYS REQ** key sequence to start communication with the host control program, then type a logoff request as defined for your installation.

Light Pen Simulation

A *selector light pen* is a light-sensitive pen that can detect the light emitted from characters displayed on certain 3270 terminals. With the pen, you can select from a list or table of displayed items and then cause those selections to be passed to the application program. The 3174 allows you to simulate this light pen function using the **Cursor Select** function. This simulation 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 defines the field, you obtain various responses. See the keyboard maps in Appendix A, "Keyboard Maps for ASCII Terminals Used as 3270 Terminals" on page A-40 for the **Cursor Select** key sequence.

Selection Fields

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

Attention Fields

An attention field is identified by a space, a null, or an ampersand (&) in the first position of the field. Place the cursor anywhere in the field that you wish to signal as an attention field and then use the **Cursor Select** key sequence. When you use the Cursor Select key sequence and 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.

ASCII Display Host Addressable Printer Support

A printer connected to an auxiliary port on an ASCII terminal that supports remote access to its auxiliary port can be defined as a second host-addressable logical terminal on the 3174 port to which the terminal is connected. You can then use the printer in system mode. This support operates only when you are using your ASCII terminal to communicate with an IBM host.

If a printer is connected to an auxiliary port on a display and is not defined to the 3174, the printer can be used only for screen copy operations that you initiate. Screen copy must be a completely local function.

The following terminals support the ASCII Display Host Addressable Printer:

- ADDS Viewpoint A2, /78** (for the Model A2, only an ADDS Viewpoint printer can be used)
- Cedar**, Cypress**, and Juniper** terminals
- DEC VT101** (as a VT100)**
- DEC VT131** (as a VT100)
- DEC VT220** (as a VT100)
- DEC VT240/1**
- Esprit 1078**
- IBM 3151, 3161, 3162, 3163, 3164 ASCII Display Stations
- IBM File Transfer and Terminal Emulator Program (FTTERM)*, Color and Monochrome
- Lear Siegler ADM11**, ADM12**, 1178**
- Minitel 1B**
- Tektronix 4205**
- TeleVideo 970**
- WYSE 50/60**.

Input from devices that are connected to the auxiliary port of a display is not explicitly supported; any such input is assumed to be from the display.

Using an ASCII Printer as a 3270 Printer

ASCII printers can be used as if they were 3287 printers. They can be used as host printers, shared printers, and local copy printers.

Here are some items you should consider when using this function:

- Some features of the 3287 printer, such as Extended Character Set Adapter and Extended Print Buffer, are not supported.
- The maximum print position (MPP) is 255.
- Lines per inch (LPI) is always set to match the ASCII printer default. It cannot be changed at the host.
- The ASCII printer must provide upper- and lowercase, or be able to convert received characters into all-uppercase or all-lowercase characters.
- The default page length is 66 lines.
- If the printer does not accept form feeds, the controller sends line feeds (LF) until the page length count is reached.
- Printer conditions such as Check and Hold Print can be used, but no indicator lights are provided.
- The ASCII printer cannot bring up the Connection Menu or use the test functions available to the ASCII display station.

IBM 3287 printers provide several operator controls. The ones provided are available only if the ASCII printer has a keyboard. The following table shows you the 3270 printer key with the corresponding ASCII printer mapping.

3270 Printer Key	ASCII Printer Mapping
ATTENTION	CTRL A (Active in SNA SCS mode)
HOLD PRINT	CTRL S
ENABLE PRINT	CTRL Q
CANCEL PRINT	C (Active in SNA SCS mode)
PA1	1 (Active in SNA SCS mode)
PA2	2 (Active in SNA SCS mode)
FORM FEED	CTRL L
INDEX	CTRL J

Printing Screen Images (Local Copy)

The print screen images (local copy) function allows you to obtain a printed copy of your display screen. You can copy to a printer attached to another port of the 3174 controller. The local copy function is controlled by the printer authorization matrix information that is part of the 3174 configuration viewable in online test mode. The matrix defines printer classes to be assigned to particular printers, and it also defines which displays can use which printers.

The copy printer operation is normally limited to terminals and printers both operating in 3270 mode. However, this support is extended to allow a 3270 terminal being used as an ASCII terminal to perform a local copy. The target printer must be in 3270 mode, and the IDENT process that is used to alter the copy printer assignment (if necessary) must be done while the 3270 terminal is connected to a 3270 host or is displaying the Connection Menu.

Print ID

The print ID associated with your terminal is displayed at the right side of the status line. This ID specifies which print class or which printer port to send your local copy requests. The valid IDs are in the ranges 70–85 for print classes and 01–55 for printer ports. Use the 2-character ID provided by your system administrator. When the ID is a class, the first printer in the class that becomes available prints your job. When the ID is a specific printer, your request is sent to the specified printer, and the job prints 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 use a copy printer, you do not see anything on the screen where the print ID is normally displayed.

Changing the Print ID

You can change the print ID associated with your display by using the IDENT function. (It is helpful to display the status line before using the IDENT function.) The IDENT function allows you to specify a new print ID that remains active until you change the ID again. At the right side of the status line is the message 0-0nn. 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 action replaces the 0-0nn with the 0-0_ _ . You can now type the port number or class that you want to have as the new ID. Enter the ID as two characters. That is, for the printer on 1, you enter 01. When you have entered both characters, either the 3174 accepts your assignment or one of the following occurs:

- If your terminal is not authorized to use the printer ID you enter, the status line displays a message indicating that the operator is unauthorized (X *X).
- If you enter an invalid ID, the status line displays a message indicating an invalid function (X -f). The original ID is not changed and is displayed again when you reset.

Note: The cursor remains where it is, but the digits you type replace the underscores.

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 can be queued because the printer or printers are all busy. While print requests are queued, you see a Printer Busy message (X 0-0 ()) on your status line, and your keyboard is locked.

Once the print request is accepted for printing, the 0-0nn indicator on your status line is replaced with 0-*nn. When the print is completed, your print ID is restored and the keyboard is unlocked.

Printer Not Working

Sometimes the printer you request may not be available, because it is not turned on or is not connected to the 3174. In this case, you receive a Printer Not Working message (X 0-%) on your status line. Your request is discarded, and you must use the DEV CNCL key to unlock your keyboard.

Canceling a Print Request

When a local copy is requested but has not yet begun printing, that is, 0-*nn is not displayed, you can cancel it by using the **DEV CNCL** function. Your keyboard is unlocked and the print request is discarded. You can cancel a request while X 0-0 () or X 0-0 () () is displayed on the status line.

Note: If you are typing ahead, DEV CNCL may not take effect. See "DEV CNCL (Device Cancel)" on page 3-10.

Host-Initiated Local Copy

It is possible for the host application you are using to create a local copy of a screen it has sent to your display. When this occurs, X () is displayed on the status line from the time of the initial request to the end of the print. The keyboard is not unlocked until the print is completed or terminated.

ASCII Graphics Local Copy

You can display on your terminal a graphics image with text, but when you create a local copy of your screen (that is, when you print your screen), you will get only text, or alphanumeric data, on the printed copy. The printer does not print the graphics image on a local copy.

ASCII Host Communications

You can begin communicating with the ASCII host when the READY message appears on your screen.

Note: The READY message appears when your terminal is connected to the modem for manual call ports on an ASCII host. On a leased line, the host is assumed to be available and the READY message appears whenever the port is connected.

To connect to an ASCII host, you can use the procedure shown in "Connecting to a 3270 Host" on page 3-2.

The rules that you need to follow when your terminal is communicating with an ASCII host are determined by the ASCII host application. Contact your system administrator if you have questions about the ASCII host.

All key sequences that can be used when you are communicating directly with the ASCII host can also be used when you are communicating through a 3174 controller to an ASCII host, except for the **ESC-Backspace** sequence, which is used to call the Connection Menu.

You do not need to reset all the setup options for your terminal to match the ASCII host to which you are connecting. The 3174 corrects what is configured for that host.

Chapter 4. Solving Some Common Problems

Common Problems When Using ASCII Terminals with IBM Hosts	4-2
Common Problems When Using 3270 Terminals with ASCII Hosts	4-5
Status Codes	4-6

Common Problems When Using ASCII Terminals with IBM Hosts

The following table lists some of the problem symptoms, probable causes and the actions you need to take when you encounter a problem with your ASCII terminal.

Symptom	Probable Cause	Action
Extra, missing, or unintelligible characters on the screen	Incorrect terminal type specified	Use the BREAK function to disconnect and then repeat the connection procedure. When the Terminal Type menu appears, type the number that corresponds to the terminal you are using.
	Incompatible terminal mode	Verify that your terminal is set up to look like the correct terminal type.
	Setup mismatch with customizing	Read the setup information for your terminal by going into setup mode. Refer to Appendix B and verify that your terminal setup matches the information in that appendix. Consult your system administrator.
	Telephone line trouble (or noise)	Enter the REFRESH function key sequence to clear and rewrite the entire screen. Clearing the screen 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 nonswitched connections, contact your telephone company representative.
	Terminal in an unknown state	If this symptom occurs after you have reconnected because your phone connection was broken unexpectedly, turn your terminal off, then turn it back on and retry the connection.
	Terminal receiving too much data from the 3174	Configure the 3174 and the terminal to use the same flow control methods. Consult your system administrator for assistance. Note: If XON/XOFF flow control is already configured, then change the response to question 732 to a 2, or resume sending only after an XON is received. See the 3174 <i>Planning Guide</i> .

Table 4-1 (Page 2 of 3). Problem Resolution with ASCII Terminals		
Symptom	Probable Cause	Action
Nothing appears on the screen.	The controller may be waiting for an autobaud sequence.	Press the Carriage Return (CR) key, type a period (.), and then press the CR key again. You may need to do this several times.
	No connection	Check your cables.
	Setup mismatch with customizing	Read the setup information for your terminal by going into setup mode. Refer to Appendix B and verify that your terminal setup matches the information in that appendix. Consult your system administrator.
	Keyboard locked	Check the status line to determine the cause of the keyboard lock. Press ESC ? to view the status line if your terminal does not have a 25th line. Use your Reset key sequence to clear the condition.
	Flow control hang	Send XON (CTRL Q).
	Modem problems	Check that data is arriving at the 3174, and that it is the same as the data keyed at the ASCII terminal.
Display screen shifted up one line	Incorrect auto-scroll or auto-NL settings	Refer to Appendix B, and verify that your display does not have auto-scroll or auto-newline set to ON.
Keystrokes not accepted	Keyboard locked	Check the status line to determine the cause of the keyboard lock. Press ESC ? to view the status line if your terminal does not have a 25th line. Use your Reset key sequence to clear the condition. Consult your system administrator to determine if Type Ahead has been disabled on this controller through 3174 configuration.
Session ends unexpectedly	Host connection lost	Consult your system administrator.
	Inactivity time-out	You may have left the terminal idle too long. Consult your system administrator for assistance.
Double characters displayed on screen	Incorrect terminal setting	Turn off local echoing of characters by the terminal.
Receiving incorrect characters	Customizing error	Consult your system administrator.
Unable to autobaud	Customizing error	Make sure that the terminal is setup so that the carriage return key sends a CR. Make sure the number of data bits supplied by the terminal matches the 3174 configuration.
File transfer does not work	Customizing error	Make sure that the file transfer aid bit is turned on.

Common Problems

Table 4-1 (Page 3 of 3). Problem Resolution with ASCII Terminals		
Symptom	Probable Cause	Action
PCLINK does not work	Customizing error	Make sure that the file transfer aid bit is turned on.
Some keys do not work as they should	Incorrect terminal type specified	Make sure you have selected the correct terminal type.
	3174 configuration incorrect	Make sure that the number of bits configured in the 3174 and at the terminal match.
	Configuration incorrect	Make sure that the turnaround character is configured correctly.
Highlighting does not show up on terminal screen	Screen display controls may not be adjusted correctly	Make sure intensity is correct in the terminal setup.
Terminal screen scrolls	Scrolling option may not be set correctly	Check the scrolling option.
Status line appears where the cursor is	3174 UDT options may not be set correctly	If you are using a user-defined terminal (UDT), make sure the status on sequence sets the cursor to the start of the status line. If your terminal allows cursor commands on the status line, enable this option on the 3174 UDT attribute panel.
	Terminal may not support 25 lines	Make sure the terminal is in a mode that supports a 25th line.
Terminal appears hung when data is sent to a shared printer.	Printer is offline or power is turned off.	Turn power back on or bring printer online.
	Terminal setup for auxiliary port does not match printer characteristics.	Correct the terminal setup.

Note: For information about printer problems in 3270 emulation, refer to Chapter 3, "Using Your ASCII Terminal."

Common Problems When Using 3270 Terminals with ASCII Hosts

The following table lists problem symptoms, probable causes and the actions you need to take when you encounter a problem with your 3270 terminal.

Symptom	Probable Cause	Action
Extra, missing, or unintelligible characters on the screen	Telephone line trouble (or noise)	For switched connections, hang up and establish a new connection. For nonswitched connections, contact your telephone company representative.
	Host data stream configuration error	Consult your system administrator.
ENTER not accepted	Incorrect turnaround character	Consult your system administrator.
Session ends unexpectedly	Host connection lost	Consult your system administrator.
	Inactivity time-out	You may have left the terminal idle too long. Consult your system administrator for details.
Host does not echo characters	Line problems	For nonswitched connections, the 3174 does not check whether the host is active. Return to the Connection Menu, disconnect, and try the connection again.
No data from host	Host received NO-SCROLL (XOFF)	For VT100 data stream, use the NO-SCROLL key sequence to resume. For VT200 data stream, use the Hold-Screen key sequence to resume. For 3101 data stream, use Ctrl Q to resume.

Status Codes

The status codes listed in Table 4-2 may appear, with the appropriate messages, in the message area of the Connection Menu. If a status code appears that is not listed here, see the *3174 Establishment Controller Status Codes* manual or call your system administrator.

Table 4-2 (Page 1 of 2). Status Codes		
Status Code	Meaning	Action
802 01	You are attempting to connect to a host that you are not authorized to use.	Select only your default host.
802 02	You are attempting to establish communication with an ASCII printer before the 3174 port is available for use. The switched disconnect timer has to expire before this 3174 port becomes available.	Wait until the time-out period is over. Then try to establish the connection.
802 03	You attempted to establish communication with an ASCII host, but all the 3174 ports going to that host are busy.	Try the connection request later.
802 04	An outgoing call on a 3174 port occurred at the same time a call came in.	Try the connection request later.
802 05	The host connection is in progress.	No action is required. Wait until the host connection is completed.
802 06	You pressed PF3 to return to a previous host connection, but a previous host connection does not exist.	Select a host.
802 07	You attempted to test a 3174 port that is being used.	Verify that you are entering the correct port number in the test request.
803 01	You attempted to communicate with an ASCII host, but the keyboard attached to the terminal is not supported for 3270-terminal-to-ASCII-host communication.	Use a terminal that has a keyboard supported for communication with an ASCII host. The supported keyboards are: <ul style="list-style-type: none"> • U.S. English typewriter keyboard • APL keyboard • Text keyboard • Converged keyboard with numeric keypad • IBM Enhanced keyboard with numeric keypad.
803 02	You entered an invalid host number.	Select from the Connection Menu a host number that has a host name next to it, or type the host name you want to use.
803 03	You entered invalid data to select another host. The Connection Menu contains the valid data.	Enter a valid host number or name.
803 04	You pressed an invalid key.	Press a valid key. If the problem continues, check the keyboard map for the terminal you are using.
804 10 804 20	The inactivity timer expired because no data flow activity is occurring on this port. The connection is broken.	Select a host number or name from the Connection Menu.
815 20	The incoming call was received while an outgoing call was in progress on a 3174 port.	Try the connection request.

Table 4-2 (Page 2 of 2). Status Codes		
Status Code	Meaning	Action
818 20	The communication connection was dropped. The host sent the DLE EOT sequence in the 3101 data stream to cause a disconnection.	None: This is a normal operation. Try the connection request.

Appendix A. Terminal Keyboard Maps

How to Use the Keyboard Maps	A-3
Keyboard Identification	A-5
Extended Graphics Functions (EXGR)	A-7
Extended Graphics IBM Base Keyboard	A-7
Extended Graphics IBM Converged Keyboard	A-8
Extended Graphics IBM Enhanced Keyboard	A-9
Keyboard Maps for 3270 Terminals Used as ASCII Terminals	A-10
Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702=1)	A-10
Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702=0)	A-11
Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702=1) ..	A-12
Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702=0) ..	A-13
Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702=1) ..	A-14
Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702=0) ..	A-15
Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702=1) ..	A-16
Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702=0) ..	A-17
Using an IBM PC or PS/2* as an IBM 3101 Keyboard (702=1)	A-18
Using an IBM PC or PS/2 as an IBM 3101 Keyboard (702=0)	A-19
Using a 3270 Base Keyboard as a DEC VT100** Keyboard (702=1)	A-20
Using a 3270 Base Keyboard as a DEC VT100 Keyboard (702=0)	A-21
Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702=1) ..	A-22
Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702=0) ..	A-23
Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702=1) ..	A-24
Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702=0) ..	A-25
Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702=1) ..	A-26
Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702=0) ..	A-27
Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702=1)	A-28
Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702=0)	A-29
Using a 3270 Base Keyboard as a DEC VT220** Keyboard	A-30
Using a 3270 Converged Keyboard as a DEC VT220 Keyboard	A-31
Using a 3270 Enhanced Keyboard as a DEC VT220 Keyboard	A-32
Using an IBM 3270 PC or IBM 3194 as a DEC VT220 Keyboard	A-33
Using an IBM PC or PS/2 as a DEC VT220 Keyboard	A-34
Using a 3270 Base Keyboard as a Data General Dasher D210** Keyboard	A-35
Using a 3270 Converged Keyboard as a Data General Dasher D210	
Keyboard	A-36
Using a 3270 Enhanced Keyboard as a Data General Dasher D210	
Keyboard	A-37
Using an IBM 3270 PC or IBM 3194 as a Data General Dasher D210	
Keyboard	A-38
Using an IBM PC or PS/2 as a Data General Dasher D210 Keyboard	A-39
Keyboard Maps for ASCII Terminals Used as 3270 Terminals	A-40
IBM 3101 (Models 10, 12, 13, 20, 22, 23) (U.S. English)	A-40
IBM 3101 (French)	A-41
IBM 3101 (German)	A-42
IBM 3101 (Italian)	A-43
IBM 3101 (U.K. English)	A-44
IBM 3151, 3161, 3162, 3163, 3164 (U.S. English)	A-45
IBM 3151, 3161, 3162, 3163, 3164 with 3708 Cartridge (U.S. English) ..	A-46
IBM FTTERM* (Color or Monochrome) (U.S. English)	A-47
IBM 3151, 3161, 3163, and 3164 (Belgian)	A-48
IBM 3151, 3161, 3163, and 3164 (Canadian Bilingual)	A-49
IBM 3151, 3161, 3163, and 3164 (Danish)	A-50

IBM 3151, 3161, 3163, and 3164 (Finnish)	A-51
IBM 3151, 3161, 3163, and 3164 (French)	A-52
IBM 3151, 3161, 3163, and 3164 (German)	A-53
IBM 3151, 3161, 3163, and 3164 (Italian)	A-54
IBM 3151, 3161, 3163, and 3164 (Norwegian)	A-55
IBM 3151, 3161, 3163, and 3164 (Portuguese)	A-56
IBM 3151, 3161, 3163, and 3164 (Spanish)	A-57
IBM 3151, 3161, 3163, and 3164 (Spanish-Speaking)	A-58
IBM 3151, 3161, 3163, and 3164 (Swedish)	A-59
IBM 3151, 3161, 3163, and 3164 (Swiss French)	A-60
IBM 3151, 3161, 3163, and 3164 (Swiss German)	A-61
IBM 3151, 3161, 3163, and 3164 (U.K. English)	A-62
ADDS Viewpoint A2** (U.S. English)	A-63
ADDS Viewpoint /78** (U.S. English)	A-64
Cedar** (U.S. English)	A-65
Cypress** (U.S. English)	A-66
DEC VT52** (U.S. English)	A-67
DEC VT100 (U.S. English)	A-68
DEC VT100 (U.K. English)	A-69
DEC VT220 and VT241** (U.S. English)	A-70
DEC VT220 (Belgian)	A-71
DEC VT220 (Canadian Bilingual)	A-72
DEC VT220 (Danish)	A-73
DEC VT220 (Finnish)	A-74
DEC VT220 (French)	A-75
DEC VT220 (German)	A-76
DEC VT220 (Italian)	A-77
DEC VT220 (Netherlands)	A-78
DEC VT220 (Norwegian)	A-79
DEC VT220 (Spanish)	A-80
DEC VT220 (Spanish-Speaking)	A-81
DEC VT220 (Swedish)	A-82
DEC VT220 (Swiss French)	A-83
DEC VT220 (Swiss German)	A-84
DEC VT220 (U.K. English)	A-85
Esprit Executive 10/78** (U.S. English)	A-86
Hazeltine 1500** Video (U.S. English)	A-87
Hewlett-Packard 2621B** Interactive Terminal (U.S. English)	A-88
Juniper** (U.S. English)	A-89
Lear Siegler ADM 3A Dumb Terminal** (U.S. English)	A-90
Lear Siegler ADM 5 Dumb Terminal** (U.S. English)	A-91
Lear Siegler ADM 11**, ADM 12** (U.S. English)	A-92
Lear Siegler ADM 1178** (U.S. English)	A-93
Minitel 1 Bistandard** (French)	A-94
Tektronix** VT200-Style Keyboard (French)	A-95
Tektronix VT200-Style Keyboard (German)	A-96
Tektronix VT200-Style Keyboard (North American)	A-97
TeleVideo 912** (U.S. English)	A-98
TeleVideo 970** (U.S. English)	A-99
Universal Keyboard Map	A-100
User-Defined Keyboard	A-101
WYSE 50/60** (U.S. English)	A-102

How to Use the Keyboard Maps

This appendix contains a full set of keyboard maps for ASCII and 3270 terminals supported by the 3174 Establishment Controller. These keyboard maps allow you to:

- Use the correct keys on an ASCII terminal keyboard to obtain 3270 functions.
- Use the correct keys on a 3270 terminal keyboard to obtain ASCII functions.

If you use several different ASCII terminals on a regular basis, however, you may find it easier to use the universal keyboard map, so that you do not have to remember the specific map for each keyboard. The universal keyboard map is the same for all display station types, but the correlation between the real key and the mapped key is not always as obvious as it is in the specific map for each terminal. If you choose the specific map when you are connecting to the host, and later find that you want to use the universal map, the universal map usually works.

For 3270 terminals being used as either an IBM 3101 or an DEC VT100, the keyboard map you use depends on the 3174 configuration question 702. The keyboard map titles include the response to question 702. Consult your system administrator to find out how the 3174 has been configured.

The keyboard maps are different according to the language being used. For U.S. English, the keyboard maps map character graphics (including space) as the actual character graphic except for the following:

Key	3270 Code
[␣
]	␣
^	␣
␣	␣
␣	␣
␣	␣

Note: DUP and FIELD MARK functions are not supported on ASCII terminals being used as 3270 terminals, when the 3174 is configured for Country Extended Code Page (CECP).

The character translations are made on all ASCII terminal keyboard maps.

The keyboard maps use the following conventions:

- For key sequences that begin with ESC, press and release **ESC** and then press the other key.
- For key sequences that begin with ALT, press and hold **ALT** while pressing the other key.
- For the Control (CTRL) key:
 - For ASCII terminals used as 3270 terminals: On key sequences that begin with CTRL, press and hold **CTRL** while pressing the other key.
 - For some 3270 terminals used as ASCII terminals, the CTRL key puts the keyboard into Control Mode which allows you to do one control function. You do *not* have to hold the **CTRL** key while pressing the other key.

Using the Keyboard Maps

- For some 3270 terminals used as ASCII terminals, a Control Shift is provided that allows you to press and hold the **CTRL** key while pressing other keys when you want to do a series of control functions.
- The keyboard maps indicate which keyboards use the **CTRL** key as described here.

Case usually does not matter. When you see **ESC a**, for example, you can type **A** or **a**. However, if you see an uppercase letter on the keyboard map translation, you *must* type the uppercase letter.

Note: In a few instances the lowercase letter must be used.

For ASCII terminals being used as 3270 terminals, the extension mode key (**ALT Erase EOF**) is mapped for the following functions:

- The Response Time Monitor (RTM) function
- New Extension Mode functions
- X.21/X.25 functions
- Connection Menu request

For more information about the functions, see “Keyboard Extension Mode (Extended Select)” on page 1-6.

Entry Assist functions are not supported from ASCII terminals.

Keyboard Identification

The keyboards shown in Figures A-1 through A-3 are 3270 keyboards. They help you identify whether you have an IBM Base, Converged, or Enhanced keyboard. Look closely at the location of the unshaded cursor movement keys. The layouts of these keys are unique for each keyboard type and should be an aid in identifying your keyboard. The text shown on keys other than the cursor movement keys is not important here.

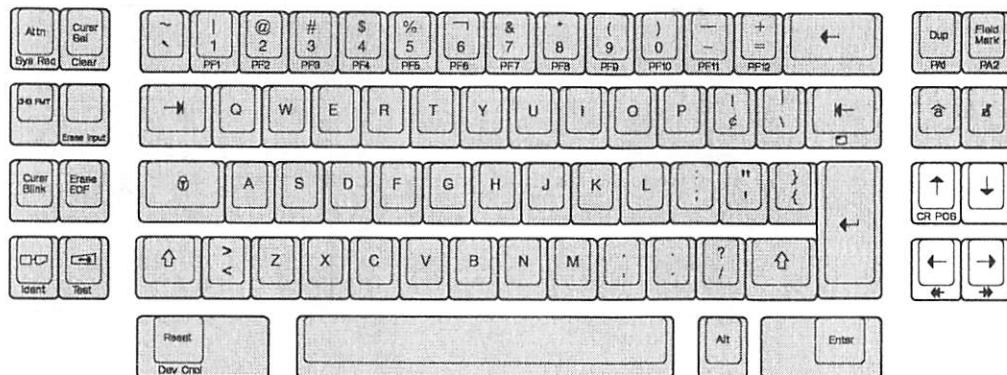


Figure A-1. IBM Base Keyboard

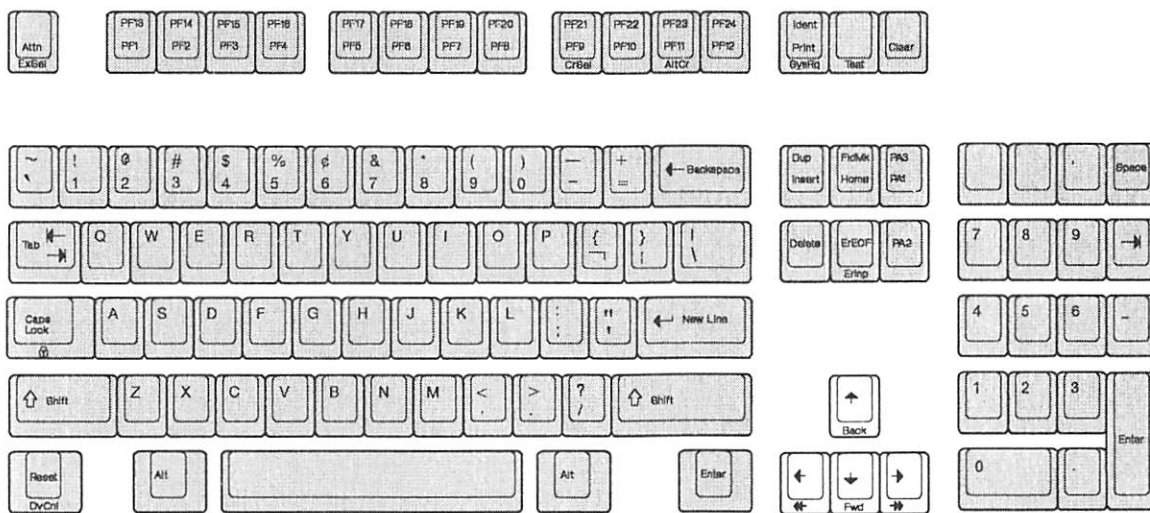


Figure A-2. IBM Enhanced Keyboard

Using the Keyboard Maps

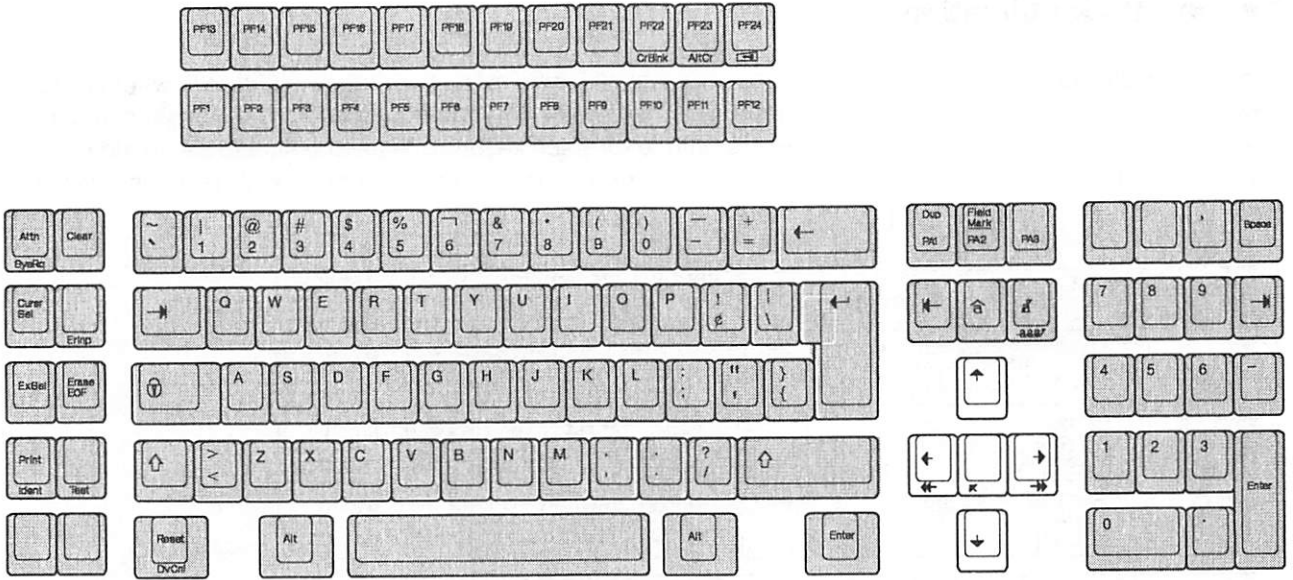
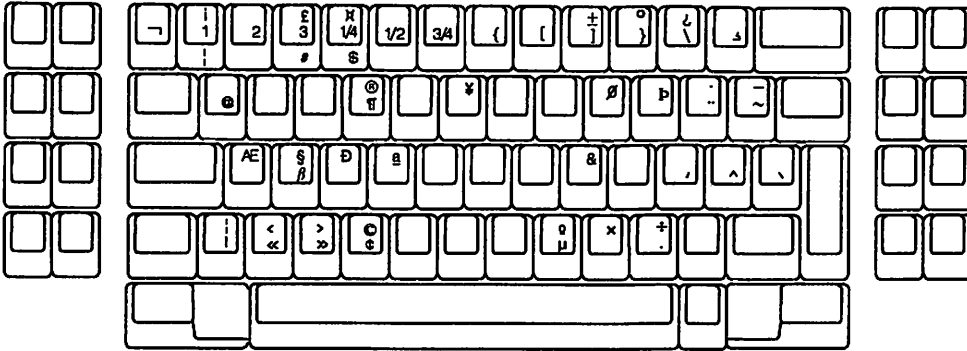


Figure A-3. IBM Converged Keyboard

Extended Graphics Functions (EXGR)

The following keyboards show the characters available when your keyboard is in Extended Graphics mode. Base, Converged, and Enhanced keyboards are shown.

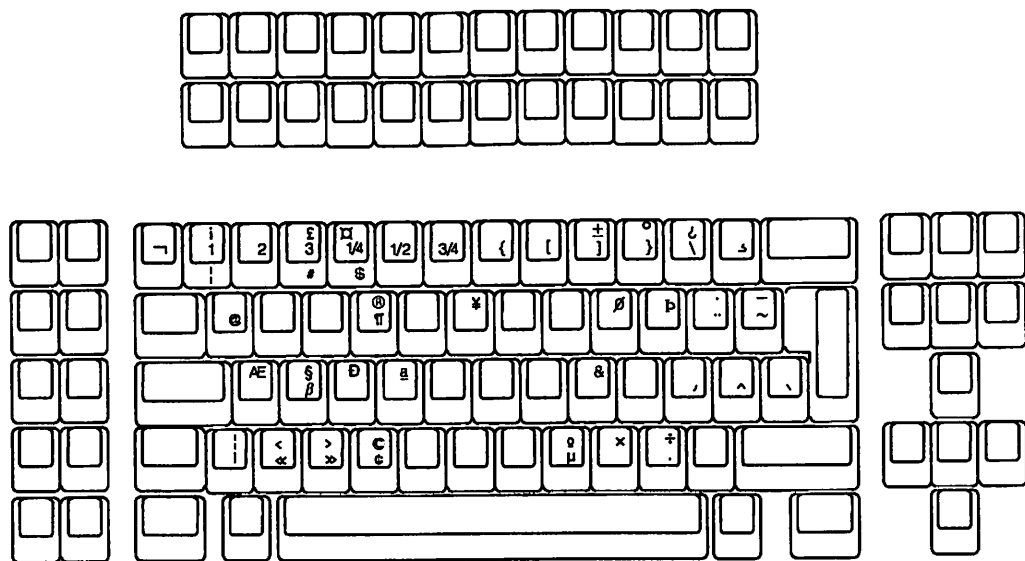
Extended Graphics IBM Base Keyboard



The following languages are supported for this function:

Austrian/German	Q121 = 03	Netherlands	Q121 = 47
Belgian (New)	Q121 = 43	Norwegian	Q121 = 23
Canadian Bilingual	Q121 = 29	Portuguese	Q121 = 28
Danish	Q121 = 07	Spanish	Q121 = 19
English (U.K.)	Q121 = 22	Spanish-Speaking	Q121 = 21
English (U.S.A.)	Q121 = 01	Swedish	Q121 = 24
Finnish	Q121 = 09	Swiss-French (New)	Q121 = 41
French	Q121 = 30	Swiss-German (New)	Q121 = 42
Italian	Q121 = 15		

| **Extended Graphics IBM Converged Keyboard**

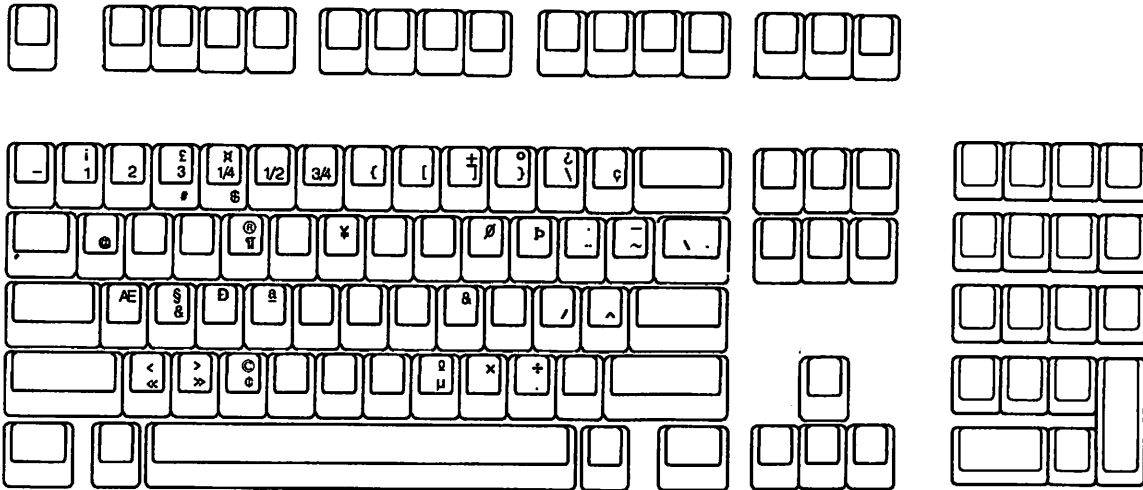


| The following languages are supported for this function:

| Austrian/German	Q121 = 03	Netherlands	Q121 = 47
| Belgian (New)	Q121 = 43	Norwegian	Q121 = 23
| Canadian Bilingual	Q121 = 29	Portuguese	Q121 = 28
| Danish	Q121 = 07	Spanish	Q121 = 19
| English (U.K.)	Q121 = 22	Spanish-Speaking	Q121 = 21
| English (U.S.A.)	Q121 = 01	Swedish	Q121 = 24
| Finnish	Q121 = 09	Swiss-French (New)	Q121 = 41
| French	Q121 = 30	Swiss-German (New)	Q121 = 42
| Italian	Q121 = 15		

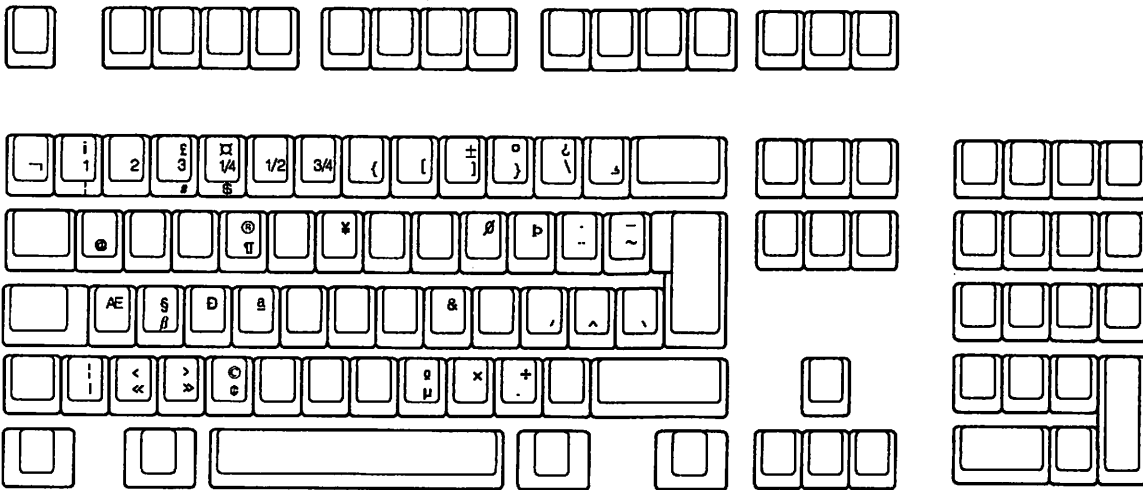
| **Note:** Accents are not diacritic (non escaping keys) for Converged Data Entry Keyboards.

Extended Graphics IBM Enhanced Keyboard



The following language is supported for this function:

English (U.S.A.) Q121=01



The following languages are supported for this function:

Austrian/German	Q121=03	Netherlands	Q121=47
Belgian (New)	Q121=43	Norwegian	Q121=23
Canadian Bilingual	Q121=29	Portuguese	Q121=28
Danish	Q121=07	Spanish	Q121=19
English (U.K.)	Q121=22	Spanish-Speaking	Q121=21
Finnish	Q121=09	Swedish	Q121=24
French	Q121=30	Swiss-French (New)	Q121=41
Italian	Q121=15	Swiss-German (New)	Q121=42

Keyboard Maps for 3270 Terminals Used as ASCII Terminals

Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702 = 1)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard		Keyboard	
ALT A to Z	CTRL A to Z or CTRL a to z	ERASE EOS	Cursor Sel
ALT [	CTRL Space	RESET	Reset
ALT \	CTRL ;	CLICKER	
ALT =	CTRL <	PRINT	Print
ALT {	CTRL =	AllGr	Extended Graphics
ALT -	CTRL >	←→↑↓	←→↑↓
ALT ' (apostrophe)	CTRL ?		
ALT	CTRL	↑	↑
^	~		
[	⌘	Menu Request	EXTM Menu
]	⏏		
DEL		Keypad	
BREAK	Note 6	0 to 9 , .	0 to 9 , .
ESC	ATTENTION	PF1 to PF8	PF1 to PF8
CLEAR	Clear		
ERASE EOL/EOF	Erase EOF		
ERASE INPUT	Erase Input		
	or Enter		

Notes:

1. The *Control* key on a 3270 Base Keyboard is the unlabeled key below the CURSR SEL key.
2. The *Control* key puts your keyboard into Control mode.
3. The *Extended Graphics* key on a 3270 Base Keyboard is ALT .
4. For Extension Mode (EXTM) functions, see Chapter 1.
5. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
6. You should use:
 - PA2 on Text keyboard or keyboard with RPQ 8K0808, 8K1038, 8K1158;
 - Field Mark on other keyboards.

Using a 3270 Base Keyboard as an IBM 3101 Keyboard (702 = 0)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	ALT A to Z or ALT a to z	LINE FEED	ALT ←
ALT [	ALT Space	ERASE EOS	Cursor Sel
ALT \	ALT ⌀	RESET	Reset
ALT =	ALT \	CLICKER	
ALT {	ALT =	PRINT	Print
ALT -	ALT <	↔↗↑↓	↔↗↑↓
ALT '	ALT /	←→| ↘	←→| ↘
ALT	ALT	↑	↑
^	↵	Ⓢ	Ⓢ
[	⌀	Menu Request	EXTM Menu
]	|	Keypad	
DEL	Ⓢ	0 to 9 , .	0 to 9 , .
BREAK	Field Mark	PF1 to PF8	PF1 to PF8
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Erase EOF		
ERASE INPUT	Erase Input		
←	← or Enter		

Notes:

1. The ALT function is CTRL.
2. In ASCII Emulation mode, Text keyboards function as Typewriter or APL keyboards. Text keyboard users should note the following:
 - The Text keyboard ! and ↵ function as an ! on Typewriter keyboards; the ↵ function is shifted numeric 6.
 - The CLEAR and CURSR SEL keys are labeled opposite of how they function on the Text keyboard.
 - PA1 and PA2 keys are the ALT of the marked PA1 and PA2 keys, while DUP and FIELD MARK are unshifted versions of those keys.
 - The TEXT ON/OFF key maps to Back Space on Typewriter keyboards.
 - For Extension Mode (EXTM) functions, see Chapter 1.

Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702 = 1)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard		Keyboard	
ALT A to Z	CTRL A to Z or CTRL a to z	ERASE EOS	Cursor Sel
ALT [	CTRL Space	RESET	Reset
ALT \	CTRL ;	CLICKER	
ALT =	CTRL <	PRINT	Print
ALT {	CTRL =	AltGr	Extended Graphics
ALT -	CTRL >	←→↑↓	←→↑↓
ALT ' (apostrophe)	CTRL ?		
ALT	CTRL		
^	~		
[	¢	Menu Request	ExSel Menu
]	∣		
DEL		Keypad	
BREAK	PA2	0 to 9 , .	0 to 9 , . (Main Keyboard) or Numeric Pad 0 to 9 , .
ESC	ATTENTION	PF1 to PF8	PF1 to PF8
CLEAR	Clear		
ERASE EOL/EOF	Erase EOF		
ERASE INPUT	Erase Input		
	or Enter (Main Keyboard)		

Notes:



- The *Control* key on a 3270 Converged keyboard is the unlabeled key below the TEST key.
If this key is already used for a terminal local function, press ExSel Control.
 - For 3179, 3191, and 3192 terminals, the Control key works as Control mode.
 - For a 3180, the Control key is ExSel Control.
 - For all other terminals, the Control key works as Control Shift.
- The *Extended Graphics* key on a 3270 Converged Keyboard is ALT .
- Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.

Using a 3270 Converged Keyboard as an IBM 3101 Keyboard (702 = 0)

TO PERFORM THIS 3101
FUNCTION

USE

Keyboard





















ALT A to Z	ALT A to Z or ALT a to z
ALT [	ALT Space
ALT \	ALT ϕ
ALT =	ALT \
ALT {	ALT =
ALT -	ALT <
ALT ' /	ALT /
ALT	ALT
^	~
[	ϕ
]	
DEL	ϕ
BREAK	PA2
ESC	ATTENTION
CLEAR	Clear
ERASE EOL/EOF	Erase EOF
ERASE INPUT	Erase Input
	 or Enter (Main Keyboard)

Note: The ALT function is CTRL.

TO PERFORM THIS 3101
FUNCTION

USE

Keyboard

LINE FEED	ALT 
ERASE EOS	Cursor Sel
RESET	Reset
CLICKER	
PRINT	Print
   	   
  	  
	
	
Menu Request	ExSel Menu
Keypad	
0 to 9 , .	0 to 9 , . (Main Keyboard) or Numeric Pad 0 to 9 , .
PF1 to PF8	PF1 to PF8

Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702 = 1)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	CTRL A to Z or CTRL a to z	ERASE EOS	Cursor Sel
ALT [	CTRL Space	RESET	Reset
ALT \	CTRL ;	CLICKER	
ALT =	CTRL <	PRINT	Print
ALT {	CTRL =	ANGr	Extended Graphics
ALT -	CTRL >	←→↑↓	←→↑↓
ALT '	CTRL ?		
ALT	CTRL	↑	↑
^	~		
[	¢	Menu Request	ExSel Menu
]	¡	Keypad	
DEL	⌫	0 to 9 , .	0 to 9 , . (Main Keyboard) or Numeric Pad 0 to 9 , .
BREAK	PA2	PF1 to PF8	PF1 to PF8
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Erase EOF		
ERASE INPUT	Erase Input		
	or Enter (Main Keyboard)		

Notes:

1. The *Control* key on a 3270 Enhanced keyboard (on a 3191 or 3192 terminal) is the ExSel Control key. On an Enhanced keyboard (other than a 3191 or 3192 terminal) it is either the ExSel Control key or the RESET key (when the RESET key is pressed, and if, before it is released another key is pressed, the RESET key is used as a CTRL key). When the RESET key is pressed and released without pressing any other key, the RESET key provides its Reset function.
2. The *Extended Graphics* key on a 3270 Enhanced Keyboard is ALT .
3. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
4. Depending upon the configuration Question 121 language selection, the function may be located at ALT Caps Lock.

Using a 3270 Enhanced Keyboard as an IBM 3101 Keyboard (702 = 0)

TO PERFORM THIS 3101
FUNCTION

USE

Keyboard

ALT A to Z	ALT A to Z or ALT a to z
ALT [	ALT Space
ALT \	ALT ↵
ALT =	ALT \
ALT {	ALT =
ALT -	ALT |
ALT ' /	ALT /
ALT	ALT
^	␣
[␣
]	␣
DEL	␣
BREAK	PA2
ESC	ATTENTION
CLEAR	Clear
ERASE EOL/EOF	Erase EOF
ERASE INPUT	Erase Input
←	← or Enter (Main Keyboard)

TO PERFORM THIS 3101
FUNCTION


USE

LINE FEED	ALT ←
ERASE EOS	Cursor Sel
RESET	Reset
CLICKER	⏪
PRINT	Print
↔↑↓	↔↑↓
← → ↵	← → ↵
↑	↑
⏪	⏪
Menu Request	ExSel Menu
Keypad	
0 to 9 , .	0 to 9 , . (Main Keyboard) or Numeric Pad 0 to 9 , .
PF1 to PF8	PF1 to PF8

Notes:

1. The ALT function is CTRL.
2. ⏪ is located at ALT Caps Lock.

Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702 = 1)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	CTRL A to Z or CTRL a to z	"local screen copy"	Print
ALT [	CTRL Space	ERASE EOS	Cr Sel
ALT \	CTRL ;	RESET	Reset
ALT =	CTRL <	CLICKER	
ALT {	CTRL =	Backspace, tab, home	Backspace, tab, home
ALT -	CTRL >	SHIFT	Shift
ALT '	CTRL ?	←→↑↓	←→↑↓
ALT	CTRL	Menu Request	ExSel M
^	↵	Keypad	
[	⌘	0 to 9 , .	0 to 9 , .
]	⏏	PF1 to PF8	PF1 to PF8
New line	New line or Enter		
DELETE	Delete		
BREAK	Note 2		
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Er EOF		
ERASE INPUT	Er Inp		

Notes:


1. The Control key is ExSel C.
2. FIELD MARK, ExSel PA1, or ExSel DUP, depending upon your emulation program.

Using an IBM 3270 PC or IBM 3194 as an IBM 3101 Keyboard (702 = 0)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	ALT A to Z or ALT a to z	"local screen copy"	Print
ALT [	ALT Space	ERASE EOS	Cr Sel
ALT \	ALT ¢	RESET	Reset
ALT =	ALT \	Backspace, tab, home	Backspace, tab, home
ALT {	ALT =	SHIFT	Shift
ALT -	ALT <	←→↑↓	←→↑↓
ALT '	ALT \	Menu Request	ExSel M
ALT	ALT		
^	¬	Keypad	
[	¢	0 to 9, .	0 to 9, .
]	|	PF1 to PF8	PF1 to PF8
New line	New line or Enter		
LINE FEED	ALT New Line		
DELETE	Delete		
BREAK	Field Mark		
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Er EOF		
ERASE INPUT	Er Inp		

Note: Control is Pseudo-ALT. Refer to Chapter 1.

Using an IBM PC or PS/2* as an IBM 3101 Keyboard (702 = 1)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	CTRL A to Z or CTRL a to z	"local screen copy"	PrtSc
ALT [	CTRL Space	ERASE EOS	Cr Sel
ALT \	CTRL ;	RESET	Reset
ALT =	CTRL <	CLICKER	
ALT {	CTRL =	Backspace, tab, home	Backspace, tab, home
ALT -	CTRL >	SHIFT	Shift
ALT '	CTRL ?	←→↑↓	←→↑↓
ALT	CTRL	Menu Request	EXTM M
^	~	Keypad	
[	⌘	0 to 9, .	0 to 9, .
]	!|	PF1 to PF8	PF1 to PF8
New line	New line or Enter		
DELETE	Delete		
BREAK	Note 3		
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Er EOF		
ERASE INPUT	Er Inp		

Notes:

1. The EXTM is the Extension Mode key (see your system administrator).
2. The *Control* key is EXTM C.
3. FIELD MARK, EXTM PA1, or EXTM DUP, depending upon the emulation program.

Using an IBM PC or PS/2 as an IBM 3101 Keyboard (702 = 0)

TO PERFORM THIS 3101 FUNCTION	USE	TO PERFORM THIS 3101 FUNCTION	USE
Keyboard			
ALT A to Z	ALT A to Z or ALT a to z	"local screen copy"	PrtSc
ALT [	ALT Space	ERASE EOS	Cr Sel
ALT \	ALT ¢	RESET	Reset
ALT =	ALT \	Backspace, tab, home	Backspace, tab, home
ALT {	ALT =	SHIFT	Shift
ALT -	ALT <	←→↑↓	←→↑↓
ALT '	ALT /	Menu Request	EXTM M
ALT	ALT		
^	¬	Keypad	
[	¢	0 to 9 . .	0 to 9 . .
]	¡	PF1 to PF8	PF1 to PF8
New line	ALT New line or Enter		
LINE FEED	ALT New line		
DELETE	Delete		
BREAK	Field Mark		
ESC	ATTENTION		
CLEAR	Clear		
ERASE EOL/EOF	Er EOF		
ERASE INPUT	Er Inp		

Notes:

1. The EXTM is the Extension Mode key (see your system administrator).
2. *Control* is Pseudo-ALT. Refer to Chapter 1.

Using a 3270 Base Keyboard as a DEC VT100** Keyboard (702 = 1)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	CTRL Space	SHIFT BREAK (<i>Long BREAK</i>)	Note 7
CTRL A to Z	CTRL A to Z or CTRL a to z	CTRL BREAK (<i>Answerback</i>)	Note 8
CTRL [	CTRL ;	NO SCROLL	←
CTRL \	CTRL <	Local Screen Copy	Print
CTRL]	CTRL =	Compose Character	<i>Extended Graphics</i>
CTRL ~	CTRL >	SHIFT	↑
CTRL ?	CTRL ?	CAPS LOCK	Caps Lock
CTRL	CTRL	←→↑↓	←→↑↓
^	↵	← →	← →
[	⌀	Menu Request	EXTM Menu
]	⏏	Keypad	
RETURN	← or Enter	0 to 9	CTRL 0 to 9
LINE FEED	CTRL ←	. . -	CTRL . . -
DELETE	⌫	PF1 to PF4	PF1 to PF4
ESC	ATTENTION	ENTER	CTRL Enter
BREAK	Note 6		

Notes:

1. The *Control* key on a 3270 Base Keyboard is the unlabeled key below the CURSR SEL key.
2. The *Control* key puts your keyboard into Control mode.
3. The *Extended Graphics* key on a 3270 Base Keyboard is ALT ↑.
4. For Extension Mode (EXTM) functions, see Chapter 1.
5. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
6. You should use:
 - PA2 on Text keyboard or keyboards with RPQ 8K0808, 8K1038, 8K1158;
 - Field Mark on other keyboards.
7. You should use:
 - Field Mark on Text keyboard or keyboards with RPQ 8K0808, 8K1038, 8K1158;
 - ↑ Field Mark on other keyboards.
8. You should use:
 - Control* PA2 on Text keyboard or keyboards with RPQ 8K0808, 8K1038, 8K1158;
 - Control* Field Mark on other keyboards.
9. You can use ALT ⏏ for Caps Lock.

Using a 3270 Base Keyboard as a DEC VT100 Keyboard (702 = 0)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	ALT Space	SHIFT BREAK (<i>Long BREAK</i>)	⤴ Field Mark
CTRL A to Z	ALT A to Z or ALT a to z	CTRL BREAK (<i>Answerback</i>)	ALT Field Mark
CTRL [	ALT ⌀	NO SCROLL	⏪
CTRL \	ALT \	Local Screen Copy	Print
CTRL]	ALT =	SHIFT	⤴
CTRL ~	ALT <	CAPS LOCK	CapsLock
CTRL ?	ALT /	↔↕	↔↕
CTRL	ALT	← →	← →
Bell	ALT G	Menu Request	EXTM Menu
^	↵	Keypad	
[	⌀	0 to 9	ALT 0 to 9
]	⏪	..-	ALT , . -
RETURN	← or Enter	PF1	CURSOR SEL
LINE FEED	ALT ←	PF2	Erase Input Key
DELETE	⏪	PF3	ERASE EOF
ESC	ATTENTION	PF4	Unlabeled key below ATTN
BREAK	Field Mark	ENTER	DUP

Notes:

- The ALT function is CTRL.
- In ASCII Emulation mode, Text keyboards function as Typewriter or APL keyboards. Text keyboard users should note the following:
 - The Text keyboard ! and ↵ function as an ! on Typewriter keyboards; the ↵ function is shifted numeric 6.
 - The CLEAR and CURSR SEL keys are labeled opposite of how they function on the Text keyboard.
 - PA1 and PA2 keys are the ALT of the marked PA1 and PA2 keys, while DUP and FIELD MARK are unshifted versions of those keys.
 - The TEXT ON/OFF key maps to Back Space on Typewriter keyboards.
- You can use ALT ⏪ for Caps Lock.
- For Extension Mode (EXTM) functions, see Chapter 1.

Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702 = 1)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	CTRL Space	SHIFT	⇧
CTRL A to Z	CTRL A to Z or CTRL a to z	CAPS LOCK	Caps Lock
CTRL [	CTRL ;	←→↑↓	←→↑↓
CTRL \	CTRL <	← →|	← →|
CTRL]	CTRL =	Menu Request	ExSel Menu
CTRL ~	CTRL >	Keypad	
CTRL ?	CTRL ?	0 to 9	Numeric Pad 0 to 9 or CTRL 0 to 9
CTRL	CTRL	. . -	Numeric Pad . . - or CTRL . . -
^	␣	PF1 to PF4	PF1 to PF4
[	⌘	ENTER	Numeric Pad Enter or CTRL Enter (Main Keyboard) or CTRL Enter (Numeric Pad)
]	␣		
RETURN	← or Enter		
LINE FEED	CTRL ←		
DELETE	⌘		
ESC	ATTENTION		
BREAK	PA2		
SHIFT BREAK (Long BREAK)	Note 4		
CTRL BREAK (Answerback)	CTRL PA2		
NO SCROLL	←		
Local Screen Copy	Print		
Compose Character	Extended Graphics		

Notes:

- The *Control* key on a 3270 Converged Keyboard is the unlabeled key below the TEST key.
 If this key is already used for a terminal local function, press ExSel Control. See Chapter 1 for Extended Select functions.
 - For 3179, 3191, and 3192 terminals, the Control key works as Control mode.
 - For a 3180, the Control key is ExSel Control.
 - For all other terminals, the Control key works as Control Shift.
- The *Extended Graphics* key on a 3270 Converged Keyboard is ALT ⇧.
- Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics (see Table 2-5).
- You should use:
 - Field Mark on Typewriter / APL Keyboard.
 - ⇧ PA2 on Data Entry keyboard.
- You can use ALT ⇧ for Caps Lock.

Using a 3270 Converged Keyboard as a DEC VT100 Keyboard (702 = 0)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	ALT Space	SHIFT	↑
CTRL A to Z	ALT A to Z or ALT a to z	CAPS LOCK	CAPS LOCK
CTRL [	ALT ⌘	←→↑↓	←→↑↓
CTRL \	ALT \	← →|	← →|
CTRL]	ALT =	Menu Request	ExSel Menu
CTRL ~	ALT <	Keypad	
CTRL ?	ALT /	0 to 9	Numeric Pad 0 to 9
Bell	ALT G	, . -	Numeric Pad , . -
CTRL	ALT	PF1 to PF4	PF1 to PF4
^	⌘	ENTER	Numeric Pad Enter
[⌘		
]			
RETURN	← or Enter		
LINE FEED	ALT ←		
DELETE	⌘		
ESC	ATTENTION		
BREAK	PA2		
SHIFT BREAK (Long BREAK)	Field Mark		
CTRL BREAK (Answerback)	DUP		
NO SCROLL	|←		
Local Screen Copy	Print		

Notes:

1. The ALT function is CTRL.
2. You can use ALT ⌘ for Caps Lock.




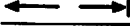

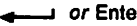



Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702 = 1)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	CTRL Space	SHIFT	↑
CTRL A to Z	CTRL A to Z or CTRL a to z	CAPS LOCK	CAPS LOCK
CTRL [	CTRL ;	←→↑↓	←→↑↓
CTRL \	CTRL <	←→|	←→|
CTRL]	CTRL =	Menu Request	ExSel Menu
CTRL ~	CTRL >	Keypad	
CTRL ?	CTRL ?	0 to 9	Numeric Pad 0 to 9 or CTRL 0 to 9
CTRL	CTRL	. . -	Numeric Pad . . - or CTRL . . -
^	~	PF1 to PF4	PF1 to PF4
[	¢	ENTER	Numeric Pad Enter or CTRL Enter (Main Keyboard) or CTRL Enter (Numeric Pad)
]			
RETURN	← or Enter		
LINE FEED	CTRL ←		
DELETE	⌫		
ESC	ATTENTION		
BREAK	PA2		
SHIFT BREAK (Long BREAK)	Shift PA2		
CTRL BREAK (Answerback)	CTRL PA2		
NO SCROLL	|←		
Local Screen Copy	Print		
Compose Character	Extended Graphics		

Notes:

1. The *Control* key on a 3270 Enhanced Keyboard (on a 3191 or 3192 terminal) is the ExSel Control key. On an Enhanced Keyboard (other than a 3191 or 3192 terminal) it is either the ExSel Control key or the RESET key (when the RESET key is pressed, and if, before it is released another key is pressed, the RESET key is used as a CTRL key). When the RESET key is pressed and released without pressing any other key, the RESET key provides its Reset function.
2. The *Extended Graphics* key on a 3270 Enhanced Keyboard is ALT ↑.
3. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
4. Depending upon the configuration question 121 language selection, the Caps Lock function may be located at ALT Ⓢ.

Using a 3270 Enhanced Keyboard as a DEC VT100 Keyboard (702 = 0)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	ALT Space	SHIFT	
CTRL A to Z	ALT A to Z or ALT a to z	CAPS LOCK	CAPS LOCK
CTRL [	ALT |		
CTRL \	ALT \		
CTRL]	ALT =	Menu Request	ExSel Menu
CTRL ~	ALT |	Keypad	
CTRL ?	ALT /	0 to 9	Numeric Pad 0 to 9
Bell	ALT G	. . -	Numeric Pad . . -
CTRL	ALT	PF1 to PF4	PF1 to PF4
^	⌘	ENTER	Numeric Pad Enter
[⌘		
]			
RETURN	 or Enter		
LINE FEED	ALT 		
DELETE			
ESC	ATTENTION		
BREAK	PA2		
SHIFT BREAK (Long BREAK)	Shift PA2		
CTRL BREAK (Answerback)	DUP		
NO SCROLL			
Local Screen Copy	Print		
Compose Character	<i>Extended Graphics</i>		

Note: The ALT function is CTRL.

Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702 = 1)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	CTRL Space	SHIFT	Shift
CTRL A to Z	CTRL A to Z or CTRL a to z	Backspace, tab	Backspace, tab
CTRL [	CTRL Space	←→↑↓	←→↑↓
CTRL \	CTRL ;	Menu Request	ExSel M
ALT]	CTRL =		
CTRL ~	CTRL >	Keypad	
CTRL ?	CTRL ?	0 to 9	CTRL 0 to 9
CTRL	CTRL	. . -	CTRL . . -
^	→	PF1 to PF4	PF1 to PF4
[	⌀	ENTER	CTRL ENTER
]	↓		
RETURN	New line or Enter		
LINE FEED	CTRL New Line		
DELETE	Delete		
ESC	ATTENTION		
BREAK	Note 2		
SHIFT BREAK (<i>Long BREAK</i>)	Note 3		
CTRL BREAK (<i>Answerback</i>)	Note 4		
NO SCROLL	Backtab		
Local Screen Copy	PrtSc		
Bell	CTRL G		

Notes:

1. Control is ExSel C.
2. Field Mark, EXTM PA1, or EXTM DUP, depending upon the emulation program.
3. Field Mark, EXTM Field Mark, or EXTM PA2, depending upon the emulation program.
4. CTRL Field Mark, CTRL EXTM PA1, or CTRL EXTM DUP, depending upon the emulation program.

Using an IBM 3270 PC or IBM 3194 as a DEC VT100 Keyboard (702 = 0)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	ALT Space	SHIFT	Shift
CTRL A to Z	ALT A to Z or ALT a to z	Backspace, tab	Backspace, tab
CTRL [	ALT ø	←→↑↓	←→↑↓
CTRL \	ALT \	Menu Request	ExSel M
ALT]	ALT =	Keypad	
CTRL ~	ALT <	1 to 9	PF1 to PF9
CTRL ?	ALT /	0	PF10
Bell	ALT G	. . -	ALT . . -
CTRL	ALT	PF1	CrSel
^	¬	PF2	Er Inp
[	ø	PF3	Erase EOF
]	;	PF4	ExSel SYS REQ
RETURN	New line or Enter	ENTER	DUP
LINE FEED	ALT New Line		
DELETE	Delete		
ESC	ATTENTION		
BREAK	EXTM PA1		
SHIFT BREAK (<i>Long BREAK</i>)	EXTM PA2		
CTRL BREAK (<i>Answerback</i>)	PA2		
NO SCROLL	Backtab		
Local Screen Copy	PrtSc		

Note: *Control* is Pseudo-ALT. Refer to Chapter 1.

Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702 = 1)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard			
CTRL Space	CTRL Space	SHIFT	Shift
CTRL A to Z	CTRL A to Z or CTRL a to z	Backspace, tab	Backspace, tab
CTRL [	CTRL Space	←→↑↓	←→↑↓
CTRL \	CTRL ;	Menu Request	EXTM M
ALT]	CTRL =	Keypad	
CTRL ~	CTRL >	0 to 9	0 to 9
CTRL ?	CTRL ?	, . -	CTRL , . -
CTRL	CTRL	PF1 to PF4	PF1 to PF4
^	␣		
[␣		
]	␣		
RETURN	New line or Enter		
LINE FEED	CTRL New Line		
DELETE	Delete		
ESC	ATTENTION		
BREAK	Note 3		
SHIFT BREAK (<i>Long BREAK</i>)	Note 4		
CTRL BREAK (<i>Answerback</i>)	Note 5		
NO SCROLL	Backtab		
Local Screen Copy	PrtSc		
Bell	CTRL G		

Notes:

1. EXTM is the extension-mode key (see your system administrator).
2. *Control* is EXTM C.
3. Field Mark, EXTM PA1, or EXTM DUP, depending upon the emulation program.
4. Field Mark, EXTM Field Mark, or EXTM PA2, depending upon the emulation program.
5. CTRL Field Mark, CTRL EXTM PA1, or CTRL EXTM DUP, depending upon the emulation program.

Using an IBM PC or PS/2 as a DEC VT100 Keyboard (702 = 0)

TO PERFORM THIS VT100 FUNCTION	USE	TO PERFORM THIS VT100 FUNCTION	USE
Keyboard		Keyboard	
CTRL Space	ALT Space	SHIFT	Shift
CTRL A to Z	ALT A to Z or ALT a to z	Backspace, tab	Backspace, tab
CTRL [	ALT ϕ	$\leftrightarrow\updownarrow$	$\leftrightarrow\updownarrow$
CTRL \	ALT \	Menu Request	EXTM M
ALT]	ALT =	Keypad	
CTRL ~	ALT <	1 to 9	PF1 to PF9
CTRL ?	ALT /	0	PF10
Bell	ALT G	. . -	ALT . . -
CTRL	ALT	PF1	Cursor Sel
^	\neg	PF2	Erase Inp
[	ϕ	PF3	Erase EOF
]	|	PF4	EXTM ATTN or EXTM SYS REQ
RETURN	New line or Enter	ENTER	DUP
LINE FEED	ALT New Line		
DELETE	Delete		
ESC	ATTENTION		
BREAK	FIELD MARK		
SHIFT BREAK (<i>Long BREAK</i>)	EXTM PA2		
CTRL BREAK (<i>Answerback</i>)	PA2		
NO SCROLL	Backtab		
Local Screen Copy	PrtSc		

Notes:

1. EXTM is the extension-mode key (see your system administrator).
2. *Control* is Pseudo-ALT. See Chapter 1.

Using a 3270 Base Keyboard as a DEC VT220** Keyboard

TO PERFORM THIS VT220 FUNCTION	USE	TO PERFORM THIS VT220 FUNCTION	USE
Main Keypad		Editing Keypad	
TAB	→|	FIND	CTRL DUP
SHIFT	↑	INSERT HERE	CTRL ⌘
LOCK	CAPS LOCK	REMOVE	CTRL ⌘
RETURN	Enter or ←	SELECT	CTRL PA1
DELETE or CTRL 8	⌘	PREV SCREEN	CTRL ↑
CTRL	CTRL	NEXT SCREEN	CTRL ↓
^	~	←→↑↓	←→↑↓
[	⌘	Menu Request	EXTM Menu
]	|	Top Row Function Keys	
CTRL A to Z	CTRL A to Z	HOLD SCREEN	←
CTRL a to z	CTRL a to z	PRINT SCREEN	Print
CTRL 2 or Space	CTRL Space	BREAK	Note 7
CTRL 3 or [	CTRL ;	SHIFT BREAK (Long BREAK)	Note 8
CTRL 4 or /	CTRL <	CTRL BREAK (Answerback)	Note 9
CTRL 5 or]	CTRL =	F6 to F12	PF6 to PF12
CTRL 6 or ~	CTRL >	F13	PF13 or CTRL PF1
CTRL 7 or ?	CTRL ?	F14	PF14 or CTRL PF2
COMPOSE CHARACTER	Extended Graphics	HELP	PF15 or CTRL PF3
Auxiliary Keypad		DO	PF16 or CTRL PF4
PF1 to PF4	PF1 to PF4	F17	PF17 or CTRL PF5
0 to 9	CTRL 0 to 9	F18	PF18 or CTRL PF6
, . -	CTRL , . -	F19	PF19 or CTRL PF7
ENTER	CTRL Enter	F20	PF20 or CTRL PF8

Notes:

1. The *Control* key on a 3270 Base Keyboard is the unlabeled key below the CURSR SEL key.
2. The *Control* key puts your keyboard into Control mode.
3. The *Extended Graphics* key on a 3270 Base Keyboard is ALT ⌘.
4. PF11 and PF12 do not exist on Data Entry keyboards.
5. For Extension Mode (EXTM) functions, see Chapter 1.
6. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
7. Use PA2 on Text Keyboard or Keyboards with RPQ 8K0808, 8K1038, 8K1158.
Use Field Mark on other keyboards.
8. Use Field Mark on Text Keyboard or Keyboards with RPQ 8K0808, 8K1038, 8K1158.
Use ⌘ Field Mark on other keyboards.
9. Use *Control* PA2 on Text Keyboard or Keyboards with RPQ 8K0808, 8K1038, 8K1158.
Use *Control* Field Mark on other keyboards.
10. You can use ALT ⌘ for Caps Lock.

Using a 3270 Converged Keyboard as a DEC VT220 Keyboard

TO PERFORM THIS VT220 FUNCTION	USE	TO PERFORM THIS VT220 FUNCTION	USE
Main Keypad		Editing Keypad	
TAB	→|	FIND	CTRL |←
SHIFT	↑	INSERT HERE	CTRL ⌘
LOCK	CAPS LOCK	REMOVE	CTRL ⌘
RETURN	Enter (Main Keyboard) or ←|	SELECT	CTRL PA1
DELETE or CTRL 8	⌘	PREV SCREEN	CTRL ↑
CTRL	CTRL	NEXT SCREEN	CTRL ↓
^	~	←→ ↓	←→ ↓
[	⌘	Menu Request	ExSel Menu
]	|	Top Row Function Keys	
CTRL A to Z	CTRL A to Z	HOLD SCREEN	|←
CTRL a to z	CTRL a to z	PRINT SCREEN	Print
CTRL 2 or Space	CTRL Space	BREAK	PA2
CTRL 3 or [	CTRL ;	SHIFT BREAK (Long BREAK)	Note 5
CTRL 4 or /	CTRL <	CTRL BREAK (Answerback)	Control PA2
CTRL 5 or]	CTRL =	F6 to F12	PF6 to PF12
CTRL 6 or ~	CTRL >	F13	PF13 or CTRL PF1
CTRL 7 or ?	CTRL ?	F14	PF14 or CTRL PF2
COMPOSE CHARACTER	Extended Graphics	HELP	PF15 or CTRL PF3
Auxiliary Keypad		DO	PF16 or CTRL PF4
PF1 to PF4	PF1 to PF4	F17	PF17 or CTRL PF5
0 to 9	Numeric Pad 0 to 9 or CTRL 0 to 9	F18	PF18 or CTRL PF6
, . -	Numeric Pad , . - or CTRL , . -	F19	PF19 or CTRL PF7
ENTER	Numeric Pad Enter or CTRL Enter (Main Keyboard) or CTRL Enter (Numeric Pad)	F20	PF20 or CTRL PF8

Notes:

1. The *Control* key on a 3270 Converged Keyboard is the unlabeled key below the TEST key.

If this key is already used for a terminal local function, press ExSel Control. See "Keyboard Extension Mode (Extended Select)" on page 1-6 for Extended Select functions.

- For 3179, 3191, and 3192 terminals, the Control key works as Control mode.
- For a 3180, the Control key is ExSel Control.
- For all other terminals, the Control key works as Control Shift.

2. The *Extended Graphics* key on a 3270 Converged Keyboard is ALT ↑.
3. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
4. Use Field Mark on Typewriter / APL Keyboard.
Use ↑ PA2 on Data Entry keyboard.
5. You can use ALT ⌘ for Caps Lock.

Using a 3270 Enhanced Keyboard as a DEC VT220 Keyboard

TO PERFORM THIS VT220 FUNCTION	USE	TO PERFORM THIS VT220 FUNCTION	USE
Main Keypad		Editing Keypad	
TAB	→|	FIND	CTRL Home
SHIFT	↑	INSERT HERE	CTRL ⌘
LOCK	CAPS LOCK	REMOVE	CTRL ⌘
RETURN	Enter (Main Keyboard) or ←|	SELECT	CTRL PA1
DELETE or CTRL 8	⌘	PREV SCREEN	CTRL ↑
CTRL	CTRL	NEXT SCREEN	CTRL ↓
^	~	←→ ↓	←→ ↓
[	⌘	Menu Request	ExSel Menu
]	|	Top Row Function Keys	
CTRL A to Z	CTRL A to Z	HOLD SCREEN	←|
CTRL a to z	CTRL a to z	PRINT SCREEN	Print
CTRL 2 or Space	CTRL Space	BREAK	PA2
CTRL 3 or [	CTRL ;	SHIFT BREAK (Long BREAK)	Shift PA2
CTRL 4 or /	CTRL <	CTRL BREAK (Answerback)	Control PA2
CTRL 5 or]	CTRL =	F6 to F12	PF6 to PF12
CTRL 6 or ~	CTRL >	F13	PF13 or CTRL PF1
CTRL 7 or ?	CTRL ?	F14	PF14 or CTRL PF2
COMPOSE CHARACTER	Extended Graphics	HELP	PF15 or CTRL PF3
Auxiliary Keypad		DO	PF16 or CTRL PF4
PF1 to PF4	PF1 to PF4	F17	PF17 or CTRL PF5
0 to 9	Numeric Pad 0 to 9 or CTRL 0 to 9	F18	PF18 or CTRL PF6
. . .	Numeric Pad . . . or CTRL . . .	F19	PF19 or CTRL PF7
ENTER	Numeric Pad Enter or CTRL Enter (Main Keyboard) or CTRL Enter (Numeric Pad)	F20	PF20 or CTRL PF8

Notes:

1. The *Control* key on a 3270 Enhanced Keyboard (on a 3191 or 3192 terminal) is the ExSel Control key. On an Enhanced Keyboard (other than a 3191 or 3192 terminal) it is either the ExSel Control key or the RESET key (when the RESET key is pressed, and if, before it is released another key is pressed, the RESET key is used as a CTRL key). When the RESET key is pressed and released without pressing any other key, the RESET key provides its Reset function.
2. The *Extended Graphics* key on a 3270 Enhanced Keyboard is ALT ↑ key.
3. Depending on the character set and on the language used by your ASCII host application and the type of your 3270 terminal (CECP-capable or not), there can be some limitations on the mapping of the ASCII character graphics.
4. Depending upon the configuration question 121 language selection, the CAPS LOCK function may be located at ALT ⌘.

Using an IBM 3270 PC or IBM 3194 as a DEC VT220 Keyboard

TO PERFORM THIS VT220 FUNCTION	USE	TO PERFORM THIS VT220 FUNCTION	USE
Main Keypad		Editing Keypad	
TAB	→|	FIND	CTRL DUP
RETURN	Enter or ←|	INSERT HERE	CTRL Insert
DELETE or CTRL 8	↵	REMOVE	CTRL Delete
CTRL	CTRL	SELECT	CTRL PA1
^	↵	PREV SCREEN	CTRL ↑
[	↵	NEXT SCREEN	CTRL ↓
]	↵	↔ ↵	↔ ↵
CTRL A to Z	CTRL A to Z	Top Row Function Keys	
CTRL a to z	CTRL a to z	HOLD SCREEN	Backtab
CTRL 2 or Space	CTRL Space	PRINT SCREEN	Print
CTRL 3 or [	CTRL ;	BREAK	Note 2
CTRL 4 or /	CTRL <	SHIFT BREAK (<i>Long BREAK</i>)	Note 3
CTRL 5 or]	CTRL =	CTRL BREAK (<i>Answerback</i>)	Note 4
CTRL 6 or ~	CTRL >	F6 to F12	PF6 to PF12
CTRL 7 or ?	CTRL ?	F13	PF13 or CTRL PF1
Menu Request	ExSel M	F14	PF14 or CTRL PF2
Auxiliary Keypad		HELP	PF15 or CTRL PF3
PF1 to PF4	PF1 to PF4	DO	PF16 or CTRL PF4
0 to 9	CTRL 0 to 9	F17	PF17 or CTRL PF5
, . *	CTRL , . *	F18	PF18 or CTRL PF6
ENTER	CTRL Enter	F19	PF19 or CTRL PF7
		F20	PF20 or CTRL PF8

Notes:

1. Control is ExSel C.
2. Field Mark, ExSel PA1, or ExSel DUP, depending upon the emulation program.
3. Field Mark, ExSel Field Mark, or ExSel PA2, depending upon the emulation program.
4. CTRL Field Mark, CTRL ExSel PA1, or CTRL ExSel DUP, depending upon the emulation program.

Using an IBM PC or PS/2 as a DEC VT220 Keyboard

TO PERFORM THIS VT220 FUNCTION	USE	TO PERFORM THIS VT220 FUNCTION	USE
Main Keypad		Editing Keypad	
TAB	→|	FIND	CTRL DUP
RETURN	Enter or ←|	INSERT HERE	CTRL Insert
DELETE or CTRL 8	↵	REMOVE	CTRL Delete
CTRL	CTRL	SELECT	CTRL PA1
^	⏏	PREV SCREEN	CTRL ↑
[	⌞	NEXT SCREEN	CTRL ↓
]	⌟	←→↑↓	←→↑↓
CTRL A to Z	CTRL A to Z	Top Row Function Keys	
CTRL a to z	CTRL a to z	HOLD SCREEN	Backtab
CTRL 2 or Space	CTRL Space	PRINT SCREEN	Print
CTRL 3 or [	CTRL ;	BREAK	Note 3
CTRL 4 or /	CTRL <	SHIFT BREAK (<i>Long BREAK</i>)	Note 4
CTRL 5 or]	CTRL =	CTRL BREAK (<i>Answerback</i>)	Note 5
CTRL 6 or ~	CTRL >	F6 to F12	PF6 to PF12
CTRL 7 or ?	CTRL ?	F13	PF13 or CTRL PF1
COMPOSE CHARACTER	⏏ Field Mark	F14	PF14 or CTRL PF2
Menu Request	EXTM M	HELP	PF15 or CTRL PF3
Auxiliary Keypad		DO	PF16 or CTRL PF4
PF1 to PF4	PF1 to PF4	F17	PF17 or CTRL PF5
0 to 9	CTRL 0 to 9	F18	PF18 or CTRL PF6
, . -	CTRL , . -	F19	PF19 or CTRL PF7
ENTER	CTRL Enter	F20	PF20 or CTRL PF8

Notes:

1. The EXTM is the Extension Mode key (see your system administrator).
2. *Control* is EXTM C.
3. Field Mark, EXTM PA1, or EXTM DUP, depending upon the emulation program.
4. Field Mark, EXTM Field Mark, or EXTM PA2, depending upon the emulation program.
5. CTRL Field Mark, CTRL EXTM PA1, or CTRL EXTM DUP, depending upon the emulation program.

Using a 3270 Base Keyboard as a Data General Dasher D210** Keyboard

To Perform This D210 Function:	Keyboard	Use:
CTRL Space		CTRL Space
CTRL A-Z, CTRL a-z		CTRL A-Z, CTRL a-z
CTRL [		CTRL ;
CTRL \		CTRL <
CTRL]		CTRL =
CTRL ~		CTRL >
CTRL ?		CTRL ?
^		~
[€
]		!
←→↑↓		←→↑↓
SHIFT		↑
ALPHA LOCK		CAPS LOCK
TAB		→
CTRL		CTRL
NEW LINE		←
RETURN		ENTER
DELETE		↵
ESC		ATTENTION
BREAK		Note 4
BREAK (Long)		Note 5
PRINT		PRINT
ERASE PAGE		CLEAR
ERASE EOL		ERASE EOF
HOME		HOME
CMD ESC		CTRL ATTENTION

To Perform This D210 Function:	Keyboard	Use:
F1 to F12		PF1 to PF12
F13		EXTM 1
F14		EXTM 2
F15		EXTM 3
C1		EXTM 9
C2		EXTM 0
C3		Note 8
C4		Note 8
SHIFT F1 to SHIFT F12		PS PF1 to PS PF12
SHIFT F13		PS EXTM 1
SHIFT F14		PS EXTM 2
SHIFT F15		PS EXTM 3
SHIFT C1		PS EXTM 9
SHIFT C2		PS EXTM 0
SHIFT C3		Note 9
SHIFT C4		Note 9
SHIFT ← → ↑ ↓		SHIFT ← → ↑ ↓
CTRL F1 - CTRL F12		CTRL PF1 - CTRL PF12
CTRL F13		CTRL EXTM 1
CTRL F14		CTRL EXTM 2
CTRL F15		CTRL EXTM 3
Menu Request		EXTM Menu
Keypad		
0-9		0-9
..*		..*
ENTER		CTRL ENTER, ENTER

Notes:

1. The *Control* key on a 3270 Base Keyboard is the unlabeled key below the CURSR SEL key.
2. The *Control* key puts your keyboard into Control mode.
3. Pseudo-shift mode (PS) is entered by using DUP.
4. PA2 on Text keyboard or keyboards with RPQ 8K0808, 8K1038, 8K1158.
Field Mark on other keyboards.
5. Field Mark on Text keyboard or keyboards with RPQ 8K0808, 8K1038, 8K1158.
↑ Field Mark on other keyboards.
6. You can use ALT Ⓜ for Caps Lock.
7. PF11 and PF12 do not exist on Data Entry keyboards.
8. See Chapter 1 for Extension Mode (EXTM) functions.
9. See Figure 1-2 on page 1-8.

Using a 3270 Converged Keyboard as a Data General Dasher D210 Keyboard

To Perform This D210 Function:	Use:
Keyboard	
CTRL Space	CTRL Space
CTRL A-Z, CTRL a-z	CTRL A-Z, CTRL a-z
CTRL [	CTRL ;
CTRL \	CTRL <
CTRL]	CTRL =
CTRL ~	CTRL >
CTRL ?	CTRL ?
^	~
[¢
]	¡
←→↑↓	←→↑↓
SHIFT	⇧
ALPHA LOCK	CAPS LOCK
TAB	⇥
CTRL	CTRL
NEW LINE	↵
RETURN	ENTER
DELETE	⌫
ESC	ATTENTION

To Perform This D210 Function:	Use:
Keyboard	
BREAK	PA2
BREAK (Long)	Note 2
PRINT	PRINT
ERASE PAGE	CLEAR
ERASE EOL	ERASE EOF
HOME	HOME
CMD ESC	CTRL ATTENTION
F1 to F15	PF1 to PF15
C1 to C4	PF21 to PF24
SHIFT F1 to SHIFT F15	SHIFT PF1 to SHIFT PF15
SHIFT C1 to SHIFT C4	SHIFT PF21 to SHIFT PF24
SHIFT ← → ↑ ↓	SHIFT ← → ↑ ↓
CTRL F1 - CTRL F15	CTRL PF1 - CTRL PF15
Menu Request	ExSel Menu
Keypad	
0-9	Numeric Pad 0-9
, -	Numeric Pad , -
ENTER	Numeric Pad ENTER

Notes:


- The *Control* key on a 3270 Converged Keyboard is the unlabeled key below the TEST key. If this key is already used for a terminal local function, press ExSel Control.
 - For 3179, 3191, and 3192 terminals, the Control key works as Control mode.
 - For a 3180, the Control key is ExSel Control.
 - For all other terminals, the Control key works as Control Shift.
- Field Mark on Typewriter / APL keyboard.
 - ⇧ PA2 on Data Entry keyboard.
- You can use ALT ⇧ for Caps Lock.

Using a 3270 Enhanced Keyboard as a Data General Dasher D210 Keyboard

To Perform This D210 Function:	Use:
Keyboard	
CTRL Space	CTRL Space
CTRL A-Z, CTRL a-z	CTRL A-Z, CTRL a-z
CTRL [	CTRL ;
CTRL \	CTRL <
CTRL]	CTRL =
CTRL ~	CTRL >
CTRL ?	CTRL ?
^	↵
[⌘
]	⌋
←→[↓	←→↑↓
SHIFT	⇧
ALPHA LOCK	CAPS LOCK
TAB	⇥
CTRL	CTRL
NEW LINE	↵
RETURN	ENTER
DELETE	DELETE
ESC	ATTENTION

To Perform This D210 Function:	Use:
Keyboard	
BREAK	PA2
BREAK (Long)	SHIFT PA2
PRINT	PRINT
ERASE PAGE	CLEAR
ERASE EOL	ERASE EOF
HOME	HOME
CMD ESC	CTRL ATTENTION
F1 to F15	PF1 to PF15
C1 to C4	PF21 to PF24
SHIFT F1 to SHIFT F15	PS PF1 to PS PF15
SHIFT C1 to SHIFT C4	PS PF21 to PS PF24
SHIFT ← → ↑ ↓	SHIFT ← → ↑ ↓
CTRL F1 - CTRL F15	CTRL PF1 - CTRL PF15
Menu Request	ExSel Menu
Keypad	
0-9	Numeric Pad 0-9
, . -	Numeric Pad , . -
ENTER	Numeric Pad ENTER

Notes:

1. The *Control* key on a 3270 Enhanced Keyboard (on a 3191 or 3192 terminal) is the ExSel Control key. On an Enhanced Keyboard (other than a 3191 or 3192 terminal) it is either the ExSel Control key or the RESET key (when the RESET key is pressed, and if, before it is released another key is pressed, the RESET key is used as a CTRL key). When the RESET key is pressed and released without pressing any other key, the RESET key provides its Reset function.
2. Pseudo-shift mode (PS) is entered by pressing the PA1 key.
3. Depending upon the configuration question 121 language selection, the CAPS LOCK function may be located at ALT .

Using an IBM 3270 PC or IBM 3194 as a Data General Dasher D210 Keyboard

To Perform This D210 Function:	Keyboard	Use:
CTRL Space		CTRL Space
CTRL A-Z, CTRL a-z		CTRL A-Z, CTRL a-z
CTRL [		CTRL :
CTRL \		CTRL <
CTRL]		CTRL =
CTRL ~		CTRL >
CTRL ?		CTRL ?
^		~
[¢
]		¡
←→↑↓		←→↑↓
SHIFT		SHIFT
TAB		↵
CTRL		CTRL
NEW LINE		↵
RETURN		ENTER
DELETE		DELETE
ESC		ATTENTION
BREAK		Note 7
BREAK (Long)		Note 8
PRINT		PRINT
ERASE PAGE		CLEAR
ERASE EOL		ERASE EOF
HOME		HOME
CMD ESC		CTRL ATTENTION

To Perform This D210 Function:	Keyboard	Use:
F1 to F12		PF1 to PF12
F13		ExSel 1
F14		ExSel 2
F15		ExSel 3
C1		ExSel 9
C2		ExSel 0
C3		Note 3
C4		Note 4
SHIFT F1 to SHIFT F12		PS PF1 to PS PF12
SHIFT F13		PS ExSel 1
SHIFT F14		PS ExSel 2
SHIFT F15		PS ExSel 3
SHIFT C1		PS ExSel 9
SHIFT C2		PS ExSel 0
SHIFT C3		Note 5
SHIFT C4		Note 6
SHIFT ←→↑↓		PS ←→↑↓
CTRL F1 - CTRL F12		CTRL PF1 - CTRL PF12
CTRL F13		CTRL ExSel 1
CTRL F14		CTRL ExSel 2
CTRL F15		CTRL ExSel 3
Menu Request		ExSel M
Keypad		
0-9		Numeric Pad 0-9
.		Numeric Pad . , -
ENTER		Numeric Pad ENTER

Notes:

1. The *Control* key on the PC keyboard is ExSel C.
2. Pseudo-shift mode (PS) is entered by using DUP or PA1.
3. ExSel PF11 for all languages except Spanish.
ExSel ? or ExSel ' for Spanish.
4. ExSel PF12 for all languages except Spanish.
ExSel ¸ or ExSel ¡ for Spanish.
5. PS ExSel PF11 for all languages except Spanish.
PS ExSel ? or PS ExSel ' for Spanish.
6. PS ExSel PF12 for all languages except Spanish.
PS ExSel ¸ or PS ExSel ¡ for Spanish.
7. Field Mark, ExSel PA1, or ExSel DUP, depending upon the emulation program.
8. Field Mark, ExSel Field Mark, or ExSel PA2, depending upon the emulation program.

Using an IBM PC or PS/2 as a Data General Dasher D210 Keyboard

To Perform This D210 Function:	Keyboard	Use:
CTRL Space		CTRL Space
CTRL A-Z, CTRL a-z		CTRL A-Z, CTRL a-z
CTRL [		CTRL ;
CTRL \		CTRL <
CTRL]		CTRL =
CTRL ~		CTRL >
CTRL ?		CTRL ?
^		~
[¢
]		
←→↑↓		←→↑↓
SHIFT		SHIFT
TAB		→|
CTRL		CTRL
NEW LINE		←|
RETURN		ENTER
DELETE		DELETE
ESC		ATTENTION
BREAK		Note 8
BREAK (Long)		Note 9
PRINT		PRTSCL
ERASE PAGE		CLEAR
ERASE EOL		ER EOF
HOME		HOME
CMD ESC		CTRL ATTENTION

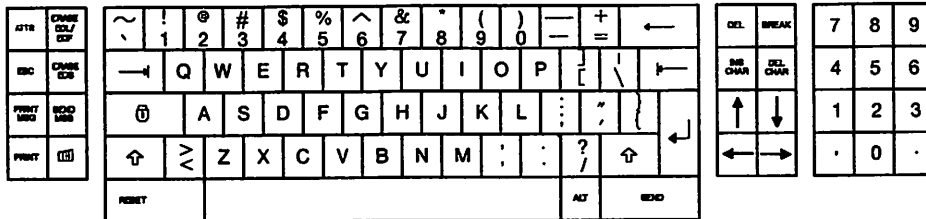
To Perform This D210 Function:	Keyboard	Use:
F1 to F12		PF1 to PF12
F13		EXTM 1
F14		EXTM 2
F15		EXTM 3
C1		EXTM 9
C2		EXTM 0
C3		Note 4
C4		Note 5
SHIFT F1 to SHIFT F12		PS PF1 to PS PF12
SHIFT F13		PS EXTM 1
SHIFT F14		PS EXTM 2
SHIFT F15		PS EXTM 3
SHIFT C1		PS EXTM 9
SHIFT C2		PS EXTM 0
SHIFT C3		Note 6
SHIFT C4		Note 7
SHIFT ←→↑↓		PS ←→↑↓
CTRL F1 - CTRL F12		CTRL PF1 - CTRL PF12
CTRL F13		CTRL EXTM 1
CTRL F14		CTRL EXTM 2
CTRL F15		CTRL EXTM 3
Menu Request		EXTM M
Keypad		
0-9		Numeric Pad 0-9
. . -		Numeric Pad . . -
ENTER		Numeric Pad ENTER

Notes:

1. The EXTM is the extension mode key (see your system administrator).
2. The *Control* key on the PC keyboard is EXTM C.
3. Pseudo-shift mode (PS) is entered by using DUP or PA1.
4. EXTM PF11 for all languages except Spanish.
EXTM ? or ExSel ' for Spanish.
5. EXTM PF12 for all languages except Spanish.
EXTM ¸ or EXTM | for Spanish.
6. PS EXTM PF11 for all languages except Spanish.
PS EXTM ? or PS EXTM ' for Spanish.
7. PS EXTM PF12 for all languages except Spanish.
PS EXTM ¸ or PS EXTM | for Spanish.
8. Field Mark, EXTM PA1, or EXTM DUP, depending upon the emulation program.
9. Field Mark, EXTM Field Mark, or EXTM PA2, depending upon the emulation program.

Keyboard Maps for ASCII Terminals Used as 3270 Terminals

IBM 3101 (Models 10, 12, 13, 20, 22, 23) (U.S. English)




To Perform This 3270 Function:	Use:
ATTENTION	ALT a
BACKTAB	ESC ←
CANCEL PRINT	ESC S
CHANGE SCREEN	ALT y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	ALT v
CURSOR FAST RIGHT	ALT u
CURSOR SELECT	ALT k
DELETE	DEL
DEVICE CANCEL	ALT x
DUPLICATE	ALT d
ENTER	← or ALT m
ERASE EOF	ERASE EOL/EOF
ERASE INPUT	ERASE INPUT
ExSel	ALT l
FIELD MARK	ALT f
HOME	ESC h
IDENT	ESC z
INSERT MODE	ESC DEL
MESSAGE START	ESC E
NEW LINE	← or ALT z
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3

To Perform This 3270 Function:	Use:
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC =
PF13	ESC !
PF14	ESC @
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	ALT p
PRINT LINE	PRINT LINE
PRINT MESSAGE	PRINT MSG
PRINT PAGE	PRINT
REFRESH	ESC r
RESET	ALT r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	←
TEST	ALT t

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. For SYSTEM REQUEST, you must use ESC and a lowercase s.

IBM 3101 (French)

TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	SEL FONCT a
BACKTAB	EXT CODE →|
CANCEL PRINT	EXT CODE S
CHANGE SCREEN	SEL FONCT y
CLEAR	RAB
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	SEL FONCT v
CURSOR FAST RIGHT	SEL FONCT u
CURSOR SELECT	SEL FONCT k
DELETE	SUPPR
DEVICE CANCEL	SEL FONCT x
DUPLICATE	SEL FONCT d
ENTER	←|
ERASE EOF	EFFAC FIN L/C
ERASE INPUT	EFFAC ENTR
EXSEL	SEL FONCT l
FIELD MARK	SEL FONCT f
HOME	
IDENT	EXT CODE z
INSERT MODE	EXT CODE DEL
MESSAGE START	EXT CODE E
NEW LINE	←|
PA1	EXT CODE ,
PA2	EXT CODE .
PA3	EXT CODE /
PF1	EXT CODE 1
PF2	EXT CODE 2
PF3	EXT CODE 3

TO PERFORM THIS 3270 FUNCTION	USE
PF4	EXT CODE 4
PF5	EXT CODE 5
PF6	EXT CODE 6
PF7	EXT CODE 7
PF8	EXT CODE 8
PF9	EXT CODE 9
PF10	EXT CODE 0
PF11	EXT CODE -
PF12	EXT CODE =
PF13	EXT CODE !
PF14	EXT CODE à
PF15	EXT CODE £
PF16	EXT CODE \$
PF17	EXT CODE %
PF18	EXT CODE ^
PF19	EXT CODE &
PF20	EXT CODE *
PF21	EXT CODE (
PF22	EXT CODE)
PF23	EXT CODE _
PF24	EXT CODE +
PRINT	SEL FONCT p
PRINT LINE	IMPR LIGNE
PRINT MESSAGE	IMPR MESS
PRINT PAGE	IMPR
REFRESH	EXT CODE r
RESET	SEL FONCT r
STATUS ON/OFF	EXT CODE ?
SYSTEM REQUEST	EXT CODE s
TAB	→|
TEST	SEL FONCT t

Notes:

- All 3270 characters can be generated from the terminal except: ä, å, ë, ê, ï, î, ö, ô, ù, û, ý, and v.
- EXT CODE:** For key sequences that begin with EXT CODE, press and release EXT CODE and then press the other key.
- SEL FONCT:** For key sequences that begin with SEL FONCT, press and hold SEL FONCT while pressing the other key.
- For SYSTEM REQUEST, you must use EXT CODE and a lowercase s.


IBM 3101 (German)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	ALT a	PF5	ESC 5
BACKTAB	ESC →	PF6	ESC 6
CANCEL PRINT	ESC S	PF7	ESC 7
CHANGE SCREEN	ALT y	PF8	ESC 8
CLEAR	LEER ANZGE	PF9	ESC 9
CURSOR DOWN	↓	PF10	ESC 0
CURSOR LEFT	←	PF11	ESC -
CURSOR RIGHT	→	PF12	ESC =
CURSOR UP	↑	PF13	ESC |
CURSOR FAST LEFT	ALT v	PF14	ESC \$
CURSOR FAST RIGHT	ALT u	PF15	ESC #
CURSOR SELECT	ALT k	PF16	ESC %
DELETE	DEL	PF17	ESC %
DEVICE CANCEL	ALT x	PF18	ESC ^
DUPLICATE	ALT d	PF19	ESC &
ENTER	←	PF20	ESC *
ERASE EOF	LÖSCH ZEILE/FELD	PF21	ESC (
ERASE INPUT	LÖSCH EING	PF22	ESC)
EXSEL	ALT l	PF23	ESC _
FIELD MARK	ALT f	PF24	ESC +
HOME	☐	PRINT	ALT p
IDENT	ESC z	PRINT LINE	DRUCK ZEILE
INSERT MODE	ESC ENTFN ZEICH	PRINT MESSAGE	DRUCK NACHR
MESSAGE START	ESC E	PRINT PAGE	DRUCK
NEW LINE	←	REFRESH	ESC r
PA1	ESC ,	RESET	ALT r
PA2	ESC .	STATUS ON/OFF	ESC ?
PA3	ESC /	SYSTEM REQUEST	ESC s
PF1	ESC 1	TAB	→
PF2	ESC 2	TEST	ALT T
PF3	ESC 3		
PF4	ESC 4		

Notes:

1. All 3270 characters can be generated from the terminal.
2. **ESC**: For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **ALT**: For key sequences that begin with ALT, press and hold ALT while pressing the other key.
4. For **SYSTEM REQUEST**, you must use ESC and a lowercase s.

IBM 3101 (Italian)


TO PERFORM THIS 3270 FUNCTION	USE
ATTENTIONN	FUNZ ALTRN a
BACKTAB	ESC →|
CANCEL PRINT	ESC S
CHANGE SCREEN	FUNZ ALTRN y
CLEAR	ANNUL
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	FUNZ ALTRN v
CURSOR FAST RIGHT	FUNZ ALTRN u
CURSOR SELECT	FUNZ ALTRN k
DELETE	COD CANC
DEVICE CANCEL	FUNZ ALTRN x
DUPLICATE	FUNZ ALTRN d
ENTER	←|
ERASE EOF	CANC FR/FC
ERASE INPUT	CANC IMMIS
EXSEL	FUNZ ALTRN I
FIELD MARK	FUNZ ALTRN f
HOME	
IDENT	ESC z
INSERT MODE	ESC CANC CARAT
MESSAGE START	ESC E
NEW LINE	←|
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3
PF4	ESC 4

TO PERFORM THIS 3270 FUNCTION	USE
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC =
PF13	ESC !
PF14	ESC §
PF15	ESC £
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	FUNZ ALTRN p
PRINT LINE	STAMP RIGA
PRINT MESSAGE	STAMP MSG
PRINT PAGE	STAMP
REFRESH	ESC r
RESET	FUNZ ALTRN r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	→|
TEST	FUNZ ALTRN t

Notes:

1. All 3270 characters can be generated from the terminal.
2. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **FUNZ ALTRN:** For key sequences that begin with FUNZ ALTRN, press and hold FUNZ ALTRN while pressing the other key.
4. For SYSTEM REQUEST, you must use ESC and a lowercase s.

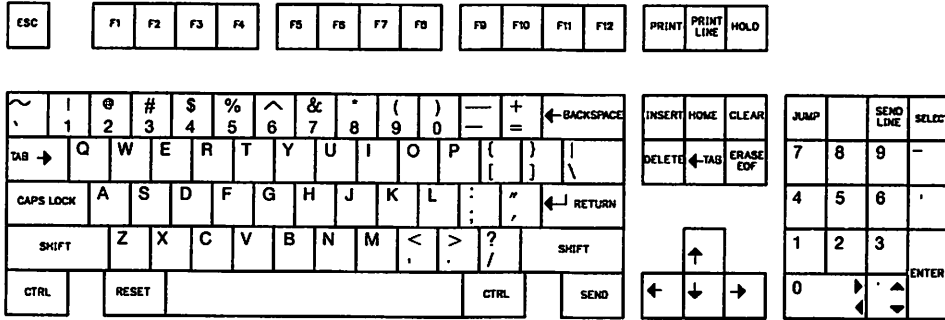
IBM 3101 (U.K. English)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	ALT a	PF5	ESC 5
BACKTAB	ESC →|	PF6	ESC 6
CANCEL PRINT	ESC S	PF7	ESC 7
CHANGE SCREEN	CTRL y	PF8	ESC 8
CLEAR	CLEAR	PF9	ESC 9
CURSOR DOWN	↓	PF10	ESC 0
CURSOR LEFT	←	PF11	ESC -
CURSOR RIGHT	→	PF12	ESC =
CURSOR UP	↑	PF13	ESC !
CURSOR FAST LEFT	ALT v	PF14	ESC @
CURSOR FAST RIGHT	ALT u	PF15	ESC £
CURSOR SELECT	ALT k	PF16	ESC \$
DELETE	DEL	PF17	ESC %
DEVICE CANCEL	ALT x	PF18	ESC ↑
DUPLICATE	ALT d	PF19	ESC &
ENTER	←|	PF20	ESC *
ERASE EOF	ERASE EOL/EOF	PF21	ESC (
ERASE INPUT	ERASE INPUT	PF22	ESC)
EXSEL	ALT I	PF23	ESC _
FIELD MARK	ALT f	PF24	ESC +
HOME		PRINT	ALT p
IDENT	ESC z	PRINT LINE	PRINT LINE
INSERT MODE	ESC DEL	PRINT MESSAGE	PRINT MSG
MESSAGE START	ESC E	PRINT PAGE	PRINT
NEW LINE	←	REFRESH	ESC r
PA1	ESC ,	RESET	ALT r
PA2	ESC .	STATUS ON/OFF	ESC ?
PA3	ESC /	SYSTEM REQUEST	ESC s
PF1	ESC 1	TAB	→|
PF2	ESC 2	TEST	ALT t
PF3	ESC 3		
PF4	ESC 4		

Notes:

1. All 3270 characters can be generated from the terminal except →, # and |.
2. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **ALT:** For key sequences that begin with ALT, press and hold ALT while pressing the other key.
4. For SYSTEM REQUEST, you must use ESC and a lowercase s.

IBM 3151, 3161, 3162, 3163, 3164 (U.S. English)



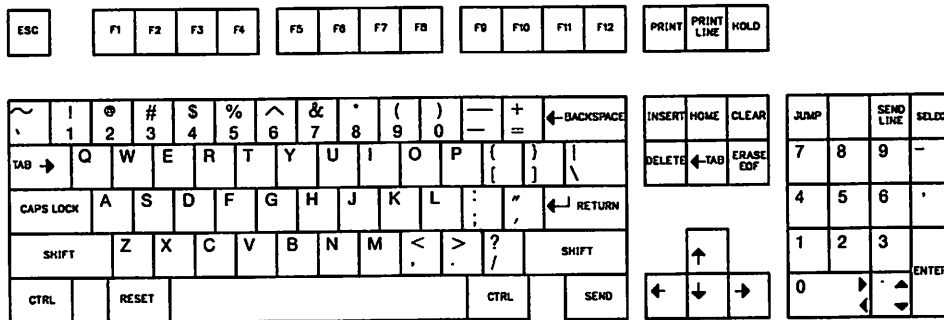
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	←TAB
CHANGE SCREEN	CTRL y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	DELETE
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	ENTER or SEND
ERASE EOF	ERASE EOF
ERASE INPUT	ER INP
ExSel	CTRL l
FIELD MARK	CTRL f
HOME	HOME
IDENT	ESC z
INSERT MODE	INSERT
NEW LINE	RETURN or CTRL z
PA1	PA1
PA2	PA2
PA3	PA3
PF1	F1
PF2	F2
PF3	F3
PF4	F4

To Perform This 3270 Function:	Use:
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	SHIFT F1
PF14	SHIFT F2
PF15	SHIFT F3
PF16	SHIFT F4
PF17	SHIFT F5
PF18	SHIFT F6
PF19	SHIFT F7
PF20	SHIFT F8
PF21	SHIFT F9
PF22	SHIFT F10
PF23	SHIFT F11
PF24	SHIFT F12
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	CTRL c
STATUS ON/OFF	ESC ?
SUSPEND PRINT	CTRL b
SYSTEM REQUEST	ESC s
TAB	TAB→
TEST	CTRL t

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, 3164 with 3708 Cartridge (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	←-TAB
CHANGE SCREEN	CTRL y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	DELETE
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN, ENTER or SEND
ERASE EOF	ERASE EOF
ERASE INPUT	ER INP
ExSel	CTRL I
FIELD MARK	CTRL f
HOME	HOME
IDENT	CTRL z
INSERT MODE	INSERT
NEW LINE	CTRL j
PA1	PA1
PA2	PA2
PA3	PA3
PF1	F1
PF2	F2
PF3	F3
PF4	F4

To Perform This 3270 Function:	Use:
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	SHIFT F1
PF14	SHIFT F2
PF15	SHIFT F3
PF16	SHIFT F4
PF17	SHIFT F5
PF18	SHIFT F6
PF19	SHIFT F7
PF20	SHIFT F8
PF21	SHIFT F9
PF22	SHIFT F10
PF23	SHIFT F11
PF24	SHIFT F12
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	CTRL c
SUSPEND PRINT	CTRL b
SYSTEM REQUEST	ESC s
TAB	TAB→
TEST	CTRL t

- 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 FTTERM* (Color or Monochrome) (U.S. English)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	ALT F5	PF4	F4
BACKTAB	←	PF5	F5
CHANGE SCREEN	CTRL y	PF6	F6
CLEAR	HOME	PF7	F7
CURSOR DOWN	ARROW DOWN	PF8	F8
CURSOR LEFT	ARROW LEFT	PF9	F9
CURSOR RIGHT	ARROW RIGHT	PF10	F10
CURSOR UP	ARROW UP	PF11	SHIFT F1
CURSOR FAST LEFT	CTRL v	PF12	SHIFT F2
CURSOR FAST RIGHT	CTRL u	PF13	SHIFT F3
CURSOR SELECT	CTRL F6	PF14	SHIFT F4
DELETE	DELETE	PF15	SHIFT F5
DEVICE CANCEL	CTRL F10	PF16	SHIFT F6
DUPLICATE	CTRL TAB	PF17	SHIFT F7
ENTER	ENTER or RETURN	PF18	SHIFT F8
ERASE EOF	END or ALT F6	PF19	SHIFT F9
ERASE INPUT	CTRL HOME	PF20	SHIFT F10
ExSel	CTRL I	PF21	ALT F1
FIELD MARK	CTRL PGDN	PF22	ALT F2
HOME	CTRL PGUP	PF23	ALT F3
IDENT	CTRL F7	PF24	ALT F4
INSERT MODE	INSERT	PRINT	CTRL F9
NEW LINE	CTRL RETURN	REFRESH	ESC r
PA1	CTRL F1	RESET	ALT F10
PA2	CTRL F2	RESUME PRINT	ESC p
PA3	ESC /	SUSPEND PRINT	ESC o
PF1	F1	SYSTEM REQUEST	CTRL F5
PF2	F2	TAB	TAB
PF3	F3	TEST	CTRL F8 or CTRL T

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.

IBM 3151, 3161, 3163, and 3164 (Belgian)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	← Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	CLear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er inp	PF21	F21
EXSEL	CTRL I	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163 and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Canadian Bilingual)

TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Sél fonct a
BACKTAB	←
CHANGE SCREEN	Sél fonct y
CLEAR	Effac écran
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	Sél fonct v
CURSOR FAST RIGHT	Sél fonct u
CURSOR SELECT	Sél fonct k
DELETE	Suppr
DEVICE CANCEL	Sél fonct x
DUPLICATE	Sél fonct d
ENTER	Envoi
ERASE EOF	Effac fin zone
ERASE INPUT	EfEnt
EXSEL	Sél fonct l
FIELD MARK	Sél fonct f
HOME	↖
IDENT	ESC z
INSERT MODE	Inser
NEW LINE	Retour
PA1	AP1
PA2	AP2
PA3	AP3
PF1	F1
PF2	F2
PF3	F3
PF4	F4

TO PERFORM THIS 3270 FUNCTION	USE
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	F13
PF14	F14
PF15	F15
PF16	F16
PF17	F17
PF18	F18
PF19	F19
PF20	F20
PF21	F21
PF22	F22
PF23	F23
PF24	F24
PRINT	Sél fonct p
REFRESH	ESC r
RESET	Sél fonct r
RESUME PRINT	CTRL c
STATUS ON/OFF	ESC ?
SUSPEND PRINT	CTRL b
SYSTEM REQUEST	ESC s
TAB	→|
TEST	Sél fonct t

Notes:

- All 3270 characters can be generated from the terminal except *ã*, *ö* and *∇*.
∇ does not have its equivalent on the IBM 3151, 3161, 3163, and 3164 terminals.
ã and *ö* do not have their equivalent on the IBM 3161, 3163, and 3164 terminals, except on 3161, provided it is equipped with an ISO cartridge.
- ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
- Sél fonct:** For key sequences that begin with Sél fonct, press and hold Sél Fonct while pressing the other key.
- The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
- For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Danish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	←Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	Clear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er Inp	PF21	F21
EXSEL	CTRL I	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA2	SUSPEND PRINT	CTRL b
PF1	F1	SYSEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Finnish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	←Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	Clear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er Inp	PF21	F21
EXSEL	CTRL I	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (French)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Sél fonct a	PF5	F5
BACKTAB	←	PF6	F6
CHANGE SCREEN	Sél fonct y	PF7	F7
CLEAR	Effac écran	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	Sél fonct v	PF13	F13
CURSOR FAST RIGHT	Sél fonct u	PF14	F14
CURSOR SELECT	Sél fonct k	PF15	F15
DELETE	Suppr	PF16	F16
DEVICE CANCEL	Sél fonct x	PF17	F17
DUPLICATE	Sél fonct d	PF18	F18
ENTER	Envoi	PF19	F19
ERASE EOF	Effac fin zone	PF20	F20
ERASE INPUT	EfEnt	PF21	F21
EXSEL	Sél fonct l	PF22	F22
FIELD MARK	Sél fonct f	PF23	F23
HOME	↖	PF24	F24
IDENT	ESC z	PRINT	Sél fonct p
INSERT MODE	Inser	REFRESH	ESC r
NEW LINE	Retour	RESET	Sél fonct r
PA1	AP1	RESUME PRINT	CTRL c
PA2	AP2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	→|
PF3	F3	TEST	Sél fonct t
PF4	F4		

Notes:

- All 3270 characters can be generated from the terminal except ä, ö and v. v does not have its equivalent on the IBM 3151, 3161, 3163, and 3164 terminals. ä and ö do not have their equivalent on the IBM 3161, 3163, and 3164 terminals, except on 3161, provided it is equipped with an ISO cartridge.
- ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
- Sél fonct:** For key sequences that begin with Sél fonct, press and hold Sél Fonct while pressing the other key.
- The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
- For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (German)

TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Strg a
BACKTAB	←
CHANGE SCREEN	Strg y
CLEAR	Leer Anz
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	Strg v
CURSOR FAST RIGHT	Strg u
CURSOR SELECT	Strg k
DELETE	⌫
DEVICE CANCEL	Strg x
DUPLICATE	Strg d
ENTER	Send
ERASE EOF	Lö Feld
ERASE INPUT	Lö Eing
EXSEL	Strg l
FIELD MARK	Strg f
HOME	Pos 1
IDENT	ESC z
INSERT MODE	↵
NEW LINE	↵
PA1	PA1
PA2	PA2
PA3	PA3
PF1	F1
PF2	F2
PF3	F3
PF4	F4

TO PERFORM THIS 3270 FUNCTION	USE
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	F13
PF14	F14
PF15	F15
PF16	F16
PF17	F17
PF18	F18
PF19	F19
PF20	F20
PF21	F21
PF22	F22
PF23	F23
PF24	F24
PRINT	Strg p
REFRESH	ESC r
RESET	Strg r
RESUME PRINT	CTRL c
STATUS ON/OFF	ESC ?
SUSPEND PRINT	CTRL b
SYSTEM REQUEST	ESC s
TAB	→|
TEST	Strg t

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **Strg:** For key sequences that begin with Strg, press and hold Strg while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Italian)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Controllo a	PF4	F4
BACKTAB	←	PF5	F5
CHANGE SCREEN	Controllo y	PF6	F6
CLEAR	Annul	PF7	F7
CURSOR DOWN	↓	PF8	F8
CURSOR LEFT	←	PF9	F9
CURSOR RIGHT	→	PF10	F10
CURSOR UP	↑	PF11	F11
CURSOR FAST LEFT	Controllo v	PF12	F12
CURSOR FAST RIGHT	Controllo u	PF13	F13
CURSOR SELECT	Controllo k	PF14	F14
DELETE	⌫	PF15	F15
DEVICE CANCEL	Controllo x	PF16	F16
DUPLICATE	Controllo d	PF17	F17
ENTER	Invio	PF18	F18
ERASE EOF	Canc FC	PF19	F19
ERASE INPUT	CanIm	PF20	F20
EXSEL	Controllo l	PF21	F21
FIELD MARK	Controllo f	PF22	F22
HOME	↖	PF23	F23
IDENT	ESC z	PF24	F24
INSERT MODE	⌘	PRINT	Controllo p
NEW LINE	↵	REFRESH	ESC r
PA1	AP1	RESET	Controllo r
PA2	AP2	RESUME PRINT	CTRL c
PA3	AP3	STATUS ON/OFF	ESC ?
PF1	F1	SUSPEND PRINT	CTRL b
PF2	F2	SYSTEM REQUEST	ESC s
PF3	F3	TAB	→|
		TEST	Controllo t

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **Controllo:** For key sequences that begin with Controllo, press and hold Controllo while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Norwegian)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	←Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	Clear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er Inp	PF21	F21
EXSEL	CTRL I	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Portuguese)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	← Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	Clear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er Inp	PF21	F21
EXSEL	CTRL l	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Spanish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PA2	AP2
BACKTAB	←	PA3	AP3
CHANGE SCREEN	CTRL y	PF1	F1
CLEAR	Borra	PF2	F2
CURSOR DOWN	↓	PF3	F3
CURSOR LEFT	←	PF4	F4
CURSOR RIGHT	→	PF5	F5
CURSOR UP	↑	PF6	F6
CURSOR FAST LEFT	CTRL v	PF7	F7
CURSOR FAST RIGHT	CTRL u	PF8	F8
CURSOR SELECT	CTRL k	PF9	F9
DELETE	Supr	PF10	F10
DEVICE CANCEL	CTRL x	PF11	F11
DUPLICATE	CTRL d	PF12	F12
ENTER	Enviar	PRINT	CTRL p
ERASE EOF	Borra FDC	REFRESH	ESC r
ERASE INPUT	Bor En	RESET	CTRL r
EXSEL	CTRL i	RESUME PRINT	CTRL c
FIELD MARK	CTRL f	STATUS ON/OFF	ESC ?
HOME	Inclo	SUSPEND PRINT	CTRL b
IDENT	ESC z	SYSTEM REQUEST	ESC s
INSERT MODE	Insert	TAB	→|
NEW LINE	Reinicio	TEST	CTRL t
PA1	AP1		

Notes:

1. Following 3270 Characters: ^, [,], {, }, @, |, \, →, ª and º. do not have their equivalent on the IBM 3161, 3163, 3164 terminals, except for the 3161, provided it is equipped with an ISO cartridge.
2. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
5. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Spanish-Speaking)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PA2	AP2
BACKTAB	←	PA3	AP3
CHANGE SCREEN	CTRL y	PF1	F1
CLEAR	Borra	PF2	F2
CURSOR DOWN	↓	PF3	F3
CURSOR LEFT	←	PF4	F4
CURSOR RIGHT	→	PF5	F5
CURSOR UP	↑	PF6	F6
CURSOR FAST LEFT	CTRL v	PF7	F7
CURSOR FAST RIGHT	CTRL u	PF8	F8
CURSOR SELECT	CTRL k	PF9	F9
DELETE	Supr	PF10	F10
DEVICE CANCEL	CTRL x	PF11	F11
DUPLICATE	CTRL d	PF12	F12
ENTER	Enviar	PRINT	CTRL p
ERASE EOF	Borra FDC	REFRESH	ESC r
ERASE INPUT	Bor En	RESET	CTRL r
EXSEL	CTRL l	RESUME PRINT	CTRL c
FIELD MARK	CTRL f	STATUS ON/OFF	ESC ?
HOME	Incio	SUSPEND PRINT	CTRL b
IDENT	ESC z	SYSTEM REQUEST	ESC s
INSERT MODE	Insert	TAB	→|
NEW LINE	Reinicio	TEST	CTRL t
PA1	AP1		

Notes:

1. Following 3270 Characters: ^, [,], {, }, @, |, \, ~, a and q. do not have their equivalent on the IBM 3161, 3163, 3164 terminals, except for the 3161, provided it is equipped with an ISO cartridge.
2. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
5. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Swedish)


TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a
BACKTAB	← Tab
CHANGE SCREEN	CTRL y
CLEAR	Clear
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	Delete
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	Send
ERASE EOF	Erase EOF
ERASE INPUT	Er Inp
EXSEL	CTRL l
FIELD MARK	CTRL f
HOME	Home
IDENT	ESC z
INSERT MODE	Insert
NEW LINE	Return
PA1	PA1
PA2	PA2
PA3	PA3
PF1	F1
PF2	F2
PF3	F3
PF4	F4

TO PERFORM THIS 3270 FUNCTION	USE
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	F13
PF14	F14
PF15	F15
PF16	F16
PF17	F17
PF18	F18
PF19	F19
PF20	F20
PF21	F21
PF22	F22
PF23	F23
PF24	F24
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	CTRL c
STATUS ON/OFF	ESC ?
SUSPEND PRINT	CTRL b
SYSTEM REQUEST	ESC s
TAB	Tab →
TEST	CTRL t

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Swiss French)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Sél fonct a	PF5	F5
BACKTAB	←	PF6	F6
CHANGE SCREEN	Sél fonct y	PF7	F7
CLEAR	Eff Ec	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	Sél fonct v	PF13	F13
CURSOR FAST RIGHT	Sél fonct u	PF14	F14
CURSOR SELECT	Sél fonct k	PF15	F15
DELETE	Suppr	PF16	F16
DEVICE CANCEL	Sél fonct x	PF17	F17
DUPLICATE	Sél fonct d	PF18	F18
ENTER	Envoi	PF19	F19
ERASE EOF	Eff FZ	PF20	F20
ERASE INPUT	Effac	PF21	F21
EXSEL	Sél fonct l	PF22	F22
FIELD MARK	Sél fonct f	PF23	F23
HOME		PF24	F24
IDENT	ESC z	PRINT	Sél fonct p
INSERT MODE	Inser	REFRESH	ESC r
NEW LINE	Retour	RESET	Sél fonct r
PA1	AP1	RESUME PRINT	CTRL c
PA2	AP2	STATUS ON/OFF	ESC ?
PA3	AP3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	→|
PF3	F3	TEST	Sél fonct t
PF4	F4		

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **Sél fonct:** For key sequences that begin with Sél fonct press and hold Sél fonct while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

IBM 3151, 3161, 3163, and 3164 (Swiss German)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Strg a	PF4	F4
BACKTAB	←	PF5	F5
CHANGE SCREEN	Strg y	PF6	F6
CLEAR	Leer Anz	PF7	F7
CURSOR DOWN	↓	PF8	F8
CURSOR LEFT	←	PF9	F9
CURSOR RIGHT	→	PF10	F10
CURSOR UP	↑	PF11	F11
CURSOR FAST LEFT	Strg v	PF12	F12
CURSOR FAST RIGHT	Strg u	PF13	F13
CURSOR SEL	Strg k	PF14	F14
DELETE	⌫	PF15	F15
DEVICE CANCEL	Strg x	PF16	F16
DUPLICATE	Strg d	PF17	F17
ENTER	Send	PF18	F18
ERASE EOF	Lö Feld	PF19	F19
ERASE INPUT	Lö Eing	PF20	F20
EXSEL	Strg l	PF21	F21
FIELD MARK	Strg f	PF22	F22
HOME	Pos 1	PF23	F23
IDENT	ESC z	PF24	F24
INSERT MODE	⌵	PRINT	Strg p
NEW LINE	↵	REFRESH	ESC r
PA1	PA1	RESET	Strg r
PA2	PA2	RESUME PRINT	CTRL c
PA3	PA3	STATUS ON/OFF	ESC ?
PF1	F1	SUSPEND PRINT	CTRL b
PF2	F2	SYSTEM REQUEST	ESC s
PF3	F3	TAB	→|
		TEST	Strg t

Notes:

1. **ESC:** For key sequences that begin with ESC, press and release ESC and then press the other key.
2. **Strg:** For key sequences that begin with Strg, press and hold Strg while pressing the other key.
3. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
4. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

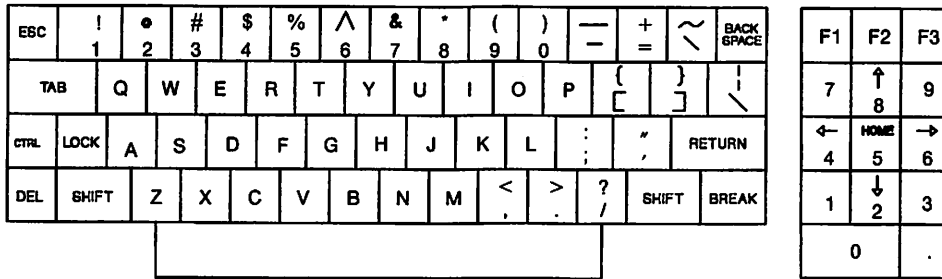
IBM 3151, 3161, 3163, and 3164 (U.K. English)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	F5
BACKTAB	← Tab	PF6	F6
CHANGE SCREEN	CTRL y	PF7	F7
CLEAR	Clear	PF8	F8
CURSOR DOWN	↓	PF9	F9
CURSOR LEFT	←	PF10	F10
CURSOR RIGHT	→	PF11	F11
CURSOR UP	↑	PF12	F12
CURSOR FAST LEFT	CTRL v	PF13	F13
CURSOR FAST RIGHT	CTRL u	PF14	F14
CURSOR SELECT	CTRL k	PF15	F15
DELETE	Delete	PF16	F16
DEVICE CANCEL	CTRL x	PF17	F17
DUPLICATE	CTRL d	PF18	F18
ENTER	Send	PF19	F19
ERASE EOF	Erase EOF	PF20	F20
ERASE INPUT	Er Inp	PF21	F21
EXSEL	CTRL l	PF22	F22
FIELD MARK	CTRL f	PF23	F23
HOME	Home	PF24	F24
IDENT	ESC z	PRINT	CTRL p
INSERT MODE	Insert	REFRESH	ESC r
NEW LINE	Return	RESET	CTRL r
PA1	PA1	RESUME PRINT	CTRL c
PA2	PA2	STATUS ON/OFF	ESC ?
PA3	PA3	SUSPEND PRINT	CTRL b
PF1	F1	SYSTEM REQUEST	ESC s
PF2	F2	TAB	Tab →
PF3	F3	TEST	CTRL t
PF4	F4		

Notes:

1. All 3270 characters have their equivalent except →, and ←.
2. **ESC**: For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **CTRL**: For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. The function keys (F1 to F24) on the IBM 3151, 3161, 3163, and 3164 must be set to their default values.
5. For keys F13 through F24, press and hold Shift while pressing F1 through F12.

ADDS Viewpoint A2 (U.S. English)**



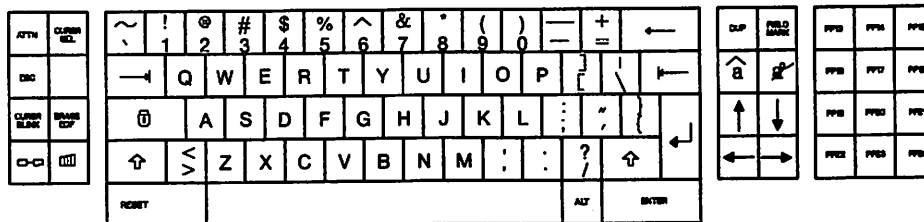
To Perform This 3270 Function:	Use:
ATTENTION	ESC a
BACKTAB	ESC TAB
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	SHIFT ↓
CURSOR LEFT	SHIFT ←
CURSOR RIGHT	SHIFT →
CURSOR UP	SHIFT ↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL n
CURSOR SELECT	ESC k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN
ERASE EOF	CTRL e
ERASE INPUT	ESC i
ExSel	ESC b
FIELD MARK	ESC f
HOME	HOME
IDENT	ESC d
INSERT MODE	ESC DEL
NEW LINE	BACKSPACE
PA1	F1
PA2	F2
PA3	F3
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3
PF4	ESC 4

To Perform This 3270 Function:	Use:
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC =
PF13	ESC |
PF14	ESC @
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	ESC p
STATUS ON/OFF	ESC ?
SUSPEND PRINT	ESC o
SYSTEM REQUEST	ESC s
TAB	TAB
TEST	ESC t

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.

ADDS Viewpoint /78 (U.S. English)**



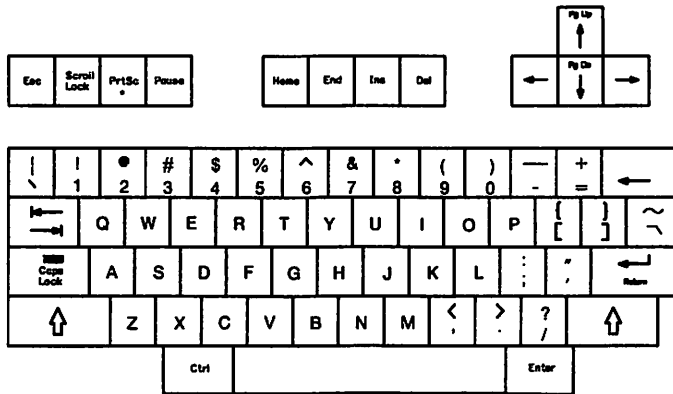
To Perform This 3270 Function:	Use:
ATTENTION	ATTN
BACKTAB	←
CHANGE SCREEN	ALT y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	ALT v
CURSOR FAST RIGHT	ALT u
CURSOR SELECT	CURSR SEL
DELETE	⌫
DEVICE CANCEL	DEV CNCL
DUPLICATE	DUP
ENTER	ENTER
ERASE EOF	ERASE EOF
ERASE INPUT	ERASE INPUT
ExSel	ALT ERASE EOF
FIELD MARK	FIELD MARK
HOME	Home
IDENT	IDENT
INSERT MODE	↕
NEW LINE	↵
PA1	PA1
PA2	PA2
PA3	PA3 (ALT Insert)
PF1	PF1
PF2	PF2
PF3	PF3

To Perform This 3270 Function:	Use:
PF4	PF4
PF5	PF5
PF6	PF6
PF7	PF7
PF8	PF8
PF9	PF9
PF10	PF10
PF11	PF11
PF12	PF12
PF13	PF13
PF14	PF14
PF15	PF15
PF16	PF16
PF17	PF17
PF18	PF18
PF19	PF19
PF20	PF20
PF21	PF21
PF22	PF22
PF23	PF23
PF24	PF24
PRINT	⏏
REFRESH	ALT R
RESET	RESET
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	SYS REQ
TAB	←N
TEST	TEST

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.

Cedar** (U.S. English)



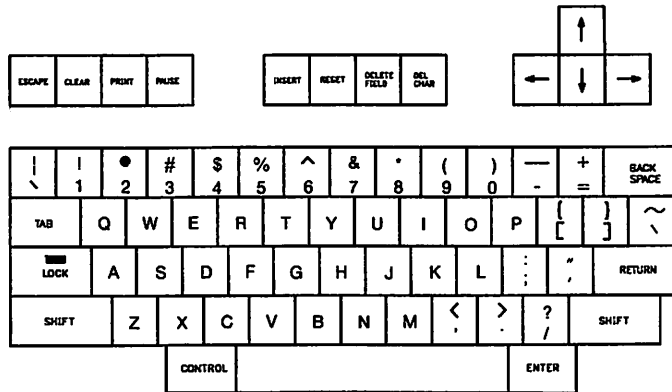
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	SHIFT TAB
CHANGE SCREEN	Esc /
CLEAR	SCROLL LOCK
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL b
CURSOR SELECT	Esc k
DELETE	Del
DEVICE CANCEL	CTRL ' (apostrophe)
DUPLICATE	CTRL d
ENTER	Enter
ERASE EOF	DELETE FIELD
ERASE INPUT	CTRL x
ExSel	Esc b
FIELD MARK	CTRL f
HOME	HOME
IDENT	CTRL ;
INSERT MODE	Ins
NEW LINE	Return
PA1	CTRL j
PA2	CTRL k
PA3	CTRL l
PF1	CTRL 1
PF2	CTRL 2
PF3	CTRL 3
PF4	CTRL 4

To Perform This 3270 Function:	Use:
PF5	CTRL 5
PF6	CTRL 6
PF7	CTRL 7
PF8	CTRL 8
PF9	CTRL 9
PF10	CTRL 0
PF11	CTRL -
PF12	CTRL =
PF13	CTRL q
PF14	CTRL w
PF15	CTRL e
PF16	CTRL r
PF17	CTRL t
PF18	CTRL y
PF19	CTRL u
PF20	CTRL i
PF21	CTRL o
PF22	CTRL p
PF23	CTRL [
PF24	CTRL]
PRINT	Esc l
REFRESH	Esc r
RESET	End
RESUME PRINT	Esc p
STATUS ON/OFF	Esc ?
SUSPEND PRINT	Esc o
SYSTEM REQUEST	Esc Enter
TAB	TAB
TEST	Esc t

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.

Cypress** (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	CONTROL a
BACKTAB	CONTROL TAB
CHANGE SCREEN	ESCAPE /
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CONTROL v
CURSOR FAST RIGHT	CONTROL b
CURSOR SELECT	ESCAPE k
DELETE	DELETE CHAR
DEVICE CANCEL	CONTROL ' (apostrophe)
DUPLICATE	CONTROL d
ENTER	ENTER
ERASE EOF	DELETE FIELD
ERASE INPUT	CONTROL x
ExSel	ESCAPE b
FIELD MARK	CONTROL f
HOME	CONTROL h
IDENT	CONTROL ;
INSERT MODE	INSERT
NEW LINE	RETURN
PA1	CONTROL j
PA2	CONTROL k
PA3	CONTROL l
PF1	CONTROL 1
PF2	CONTROL 2
PF3	CONTROL 3
PF4	CONTROL 4

To Perform This 3270 Function:	Use:
PF5	CONTROL 5
PF6	CONTROL 6
PF7	CONTROL 7
PF8	CONTROL 8
PF9	CONTROL 9
PF10	CONTROL 0
PF11	CONTROL -
PF12	CONTROL =
PF13	CONTROL q
PF14	CONTROL w
PF15	CONTROL e
PF16	CONTROL r
PF17	CONTROL t
PF18	CONTROL y
PF19	CONTROL u
PF20	CONTROL i
PF21	CONTROL o
PF22	CONTROL p
PF23	CONTROL [
PF24	CONTROL]
PRINT	ESCAPE i
REFRESH	ESCAPE r
RESET	RESET
RESUME PRINT	ESCAPE p
STATUS ON/OFF	ESCAPE ?
SUSPEND PRINT	ESCAPE o
SYSTEM REQUEST	ESCAPE ENTER
TAB	TAB
TEST	ESCAPE t

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 CONTROL, press and hold CONTROL while pressing the other key.

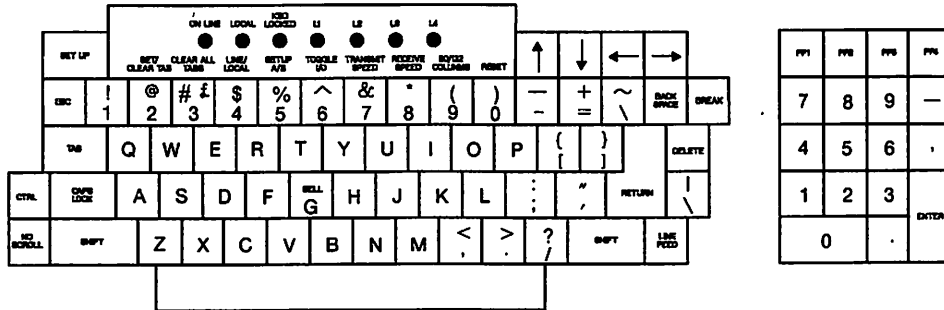
DEC VT52** (U.S. English)

To Perform This 3270 Function:	Use:	To Perform This 3270 Function:	Use:
ATTENTION	CTRL a	PF4	Numeric 4
BACKTAB	Backspace or ESC TAB	PF5	Numeric 5
CHANGE SCREEN	CTRL y	PF6	Numeric 6
CLEAR	CTRL c	PF7	Numeric 7
CURSOR DOWN	↓	PF8	Numeric 8
CURSOR LEFT	←	PF9	Numeric 9
CURSOR RIGHT	→	PF10	Numeric Blue
CURSOR UP	↑	PF11	Numeric Red
CURSOR FAST LEFT	CTRL v	PF12	Numeric Gray
CURSOR FAST RIGHT	CTRL u	PF13	ESC !
CURSOR SELECT	ESC k	PF14	ESC @
DELETE	Delete	PF15	ESC #
DEVICE CANCEL	CTRL x	PF16	ESC \$
DUPLICATE	CTRL d	PF17	ESC %
ENTER	Return or Enter	PF18	ESC ^
ERASE EOF	CTRL e	PF19	ESC &
ERASE INPUT	ESC i	PF20	ESC *
ExSel	CTRL b	PF21	ESC (
FIELD MARK	CTRL f	PF22	ESC)
HOME	ESC h	PF23	ESC _
IDENT	ESC z	PF24	ESC +
INSERT MODE	ESC Del	PRINT	CTRL p
NEW LINE	Line Feed or CTRL z	REFRESH	ESC u
PA1	Numeric 0	RESET	CTRL r
PA2	Numeric .	STATUS ON/OFF	CTRL ?
PA3	Numeric /	SYSTEM REQUEST	ESC s
PF1	Numeric 1	TAB	TAB
PF2	Numeric 2	TEST	ESC t
PF3	Numeric 3		

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 keypad.

DEC VT100 (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	ESC TAB or BACKSPACE
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	DELETE
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN or Num. ENTER
ERASE EOF	CTRL e
ERASE INPUT	ESC i
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	ESC h
IDENT	ESC d
INSERT MODE	ESC DELETE
NEW LINE	LINE FEED or CTRL z
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4

To Perform This 3270 Function:	Use:
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	ESC !
PF14	ESC @
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	ESC p
STATUS ON/OFF	ESC ?
SUSPEND PRINT	ESC o
SYSTEM REQUEST	ESC s
TAB	TAB
TEST	ESC t

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 keypad.
4. For SUSPEND PRINT, you must use ESC and a lowercase o.

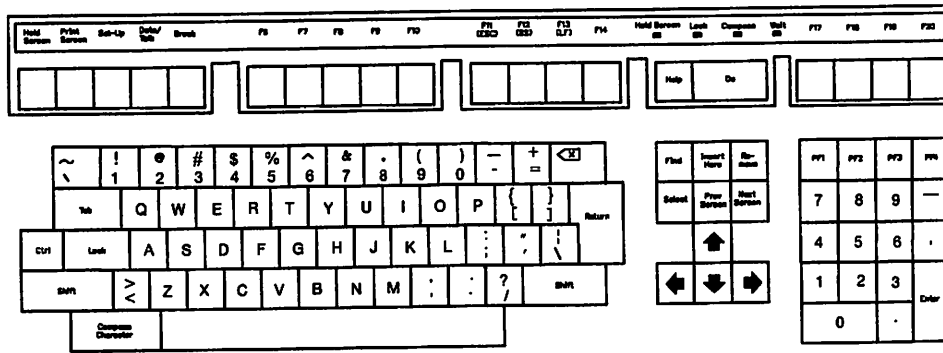
DEC VT100 (U.K. English)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	Numeric 5
BACKTAB	ESC TAB or BACKSPACE	PF6	Numeric 6
CHANGE SCREEN	CTRL y	PF7	Numeric 7
CLEAR	CTRL c	PF8	Numeric 8
CURSOR DOWN	↓	PF9	Numeric 9
CURSOR LEFT	←	PF10	PF1
CURSOR RIGHT	→	PF11	PF2
CURSOR UP	↑	PF12	PF3
CURSOR FAST LEFT	CTRL v	PF13	ESC !
CURSOR FAST RIGHT	CTRL u	PF14	ESC @
CURSOR SELECT	ESC k	PF15	ESC £
DELETE	DELETE	PF16	ESC \$
DEVICE CANCEL	CTRL x	PF17	ESC %
DUPLICATE	CTRL d	PF18	ESC ^
ENTER	Return or Numeric ENTER	PF19	ESC &
ERASE EOF	CTRL e	PF20	ESC *
ERASE INPUT	ESC i	PF21	ESC (
EXSEL	CTRL b	PF22	ESC)
FIELD MARK	CTRL f	PF23	ESC _
HOME	ESC h	PF24	ESC +
IDENT	ESC d	PRINT	CTRL p
INSERT MODE	ESC DELETE	REFRESH	ESC r
NEW LINE	LINEFEED	RESET	CTRL r
SPACE BAR	SPACE BAR	RESUME PRINT	ESC p
PA1	ESC ,	STATUS ON/OFF	ESC ?
PA2	ESC .	SUSPEND PRINT	ESC o
PA3	ESC /	SYSTEM REQUEST	ESC S
PF1	Numeric 1	TAB	TAB
PF2	Numeric 2	TEST	ESC t
PF3	Numeric 3		
PF4	Numeric 4		

Notes:

1. All 3270 characters have their equivalent except -, ~, |, and #.
2. **ESC**: For key sequences that begin with ESC, press and release ESC and then press the other key.
3. **CTRL**: For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Numeric*, press the appropriate key on the numeric keypad.
5. For SUSPEND PRINT, you must use ESC and a lowercase o.

DEC VT220 and VT241** (U.S. English)





To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	Find
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	<X>
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	Return
ERASE EOF	CTRL e
ERASE INPUT	Remove
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insert Here
NEW LINE	Select
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4

To Perform This 3270 Function:	Use:
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Help
PF23	Do
PF24	F17
PRINT	CTRL p
PRINT SCREEN	CTRL 3 [i
REFRESH	Prev Screen
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL l
SYSTEM REQUEST	Next Screen
TAB	Tab
TEST	CTRL t

Notes:

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


DEC VT220 (Belgian)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	Rech.	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	 or Valider	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	Eff. texte	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Aide
HOME	CTRL h	PF23	Exécuter
IDENT	CTRL z	PF24	F17
INSERT MODE	Insérer	PRINT	CTRL p
NEW LINE	SEL	PRINT SCREEN	CTRL 3 [I
SPACE BAR	SPACE BAR	REFRESH	Page précéd
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	Page suiv.
PF3	Auxiliary 3	TAB	Tab
		TEST	CTRL t

Notes:

1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except |, ~, · and ´.
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.


DEC VT220 (Canadian Bilingual)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Crtl a	PF4	Auxiliary 4
BACKTAB	Rech	PF5	Auxiliary 5
CHANGE SCREEN	Crtl y	PF6	Auxiliary 6
CLEAR	Crtl c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	Crtl v	PF12	PF3
CURSOR FAST RIGHT	Crtl u	PF13	F6
CURSOR SELECT	Crtl k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	Crtl x	PF16	F9
DUPLICATE	Crtl d	PF17	F10
ENTER	← or Valider	PF18	F11
ERASE EOF	Crtl e	PF19	F12
ERASE INPUT	Eff. texte	PF20	F13
EXSEL	Crtl b	PF21	F14
FIELD MARK	Crtl f	PF22	Aide
HOME	Crtl h	PF23	Exécuter
IDENT	Crtl z	PF24	F17
INSERT MODE	Insérer	PRINT	Crtl p
NEW LINE	Sélect	PRINT SCREEN	Crtl 3 [i
SPACE BAR	SPACE BAR	REFRESH	Page précéd
PA1	F18	RESET	Crtl r
PA2	F19	RESUME PRINT	Crtl g
PA3	F20	STATUS ON/OFF	Crtl w
PF1	Auxiliary 1	SUSPEND PRINT	Crtl l
PF2	Auxiliary 2	SYSTEM REQUEST	Page suiv
PF3	Auxiliary 3	TAB	Tab
		TEST	Crtl t

Notes:


1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except ←, ↑, and ...
3. **Crtl**: For key sequences that begin with Crtl, press and hold Crtl while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Danish)

TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Kode a
BACKTAB	Seg
CHANGE SCREEN	Kode y
CLEAR	Kode c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	Kode v
CURSOR FAST RIGHT	Kode u
CURSOR SELECT	Kode k
DELETE	
DEVICE CANCEL	Kode x
DUPLICATE	Kode d
ENTER	← or Indlæs
ERASE EOF	Kode e
ERASE INPUT	Slet
EXSEL	Kode b
FIELD MARK	Kode f
HOME	Kode h
IDENT	Kode z
INSERT MODE	Indsæt
NEW LINE	Marker
SPACE BAR	SPACE BAR
PA1	F18
PA2	F19
PA3	F20
PF1	Auxiliary 1
PF2	Auxiliary 2
PF3	Auxiliary 3

TO PERFORM THIS 3270 FUNCTION	USE
PF4	Auxiliary 4
PF5	Auxiliary 5
PF6	Auxiliary 6
PF7	Auxiliary 7
PF8	Auxiliary 8
PF9	Auxiliary 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Hjælp
PF23	Udfør
PF24	F17
PRINT	Kode p
PRINT SCREEN	Kode 3 [i
REFRESH	Forrige Skærn
RESET	Kode r
RESUME PRINT	Kode g
STATUS ON/OFF	Kode w
SUSPEND PRINT	Kode l
SYSTEM REQUEST	Næste Skærn
TAB	→|
TEST	Kode t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters have their equivalent.
With the terminal set up with NRC character set, the 3270 characters ^, \, and  cannot be generated.
2. **Kode:** For key sequences that begin with Kode, press and hold Kode while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.



DEC VT220 (Finnish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	Etsi	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE	⌫	PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	↵ or Syötä	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	Poista	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Opasta
HOME	CTRL h	PF23	Toteuta
IDENT	CTRL z	PF24	F17
INSERT MODE	Lisää	PRINT	CTRL p
NEW LINE	Rajaa	PRINT SCREEN	CTRL 3 [i
SPACE BAR	SPACE BAR	REFRESH	Edell. näyttö
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	Seur. näyttö
PF3	Auxiliary 3	TAB	Tab
		TEST	CTRL t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters have their equivalent. With the terminal set up with NRC character set, the 3270 characters ^, ⌘, and § cannot be generated.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.



DEC VT220 (French)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	Rech.	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	 or Valider	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	Eff. texte	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Aide
HOME	CTRL h	PF23	Exécuter
IDENT	CTRL z	PF24	F17
INSERT MODE	Insérer	PRINT	CTRL p
NEW LINE	Sélect	PRINT SCREEN	CTRL 3 [i
SPACE BAR	SPACE BAR	REFRESH	Page précéd
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL l
PF2	Auxiliary 2	SYSTEM REQUEST	Page suiv.
PF3	Auxiliary 3	TAB	Tab
		TEST	CTRL t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters `..` and `^` cannot be generated. With the terminal set up with NRC character set, the 3270 characters `^`, `â`, `ê`, `î`, `ô`, `û`, `ä`, `ë`, `ï`, `ö`, `ü`, and `ÿ` cannot be generated.
2. **CTRL**: For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.



DEC VT220 (German)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	Auxiliary 5
BACKTAB	Suchen	PF6	Auxiliary 6
CHANGE SCREEN	CTRL y	PF7	Auxiliary 7
CLEAR	CTRL c	PF8	Auxiliary 8
CURSOR DOWN	↓	PF9	Auxiliary 9
CURSOR LEFT	←	PF10	PF1
CURSOR RIGHT	→	PF11	PF2
CURSOR UP	↑	PF12	PF3
CURSOR FAST LEFT	CTRL v	PF13	F6
CURSOR FAST RIGHT	CTRL u	PF14	F7
CURSOR SELECT	CTRL k	PF15	F8
DELETE		PF16	F9
DEVICE CANCEL	CTRL x	PF17	F10
DUPLICATE	CTRL d	PF18	F11
ENTER	 or Einfügen	PF19	F12
ERASE EOF	CTRL e	PF20	F13
ERASE INPUT	Löschen	PF21	F14
EXSEL	CTRL b	PF22	Hilfe
FIELD MARK	CTRL f	PF23	Ausführen
HOME	CTRL h	PF24	F17
IDENT	CTRL z	PRINT	CTRL p
INSERT MODE	Einfügen	PRINT SCREEN	CTRL 3 [i
NEW LINE	Selektieren	REFRESH	↑↑↑ Bild
SPACE BAR	SPACE BAR	RESET	CTRL r
PA1	F18	RESUME PRINT	CTRL g
PA2	F19	STATUS ON/OFF	CTRL w
PA3	F20	SUSPEND PRINT	CTRL I
PF1	Auxiliary 1	SYSTEM REQUEST	↓↓↓ Bild
PF2	Auxiliary 2	TAB	→|
PF3	Auxiliary 3	TEST	CTRL t
PF4	Auxiliary 4		

Notes:

1. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
2. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Italian)


TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Contr a
BACKTAB	Ricer
CHANGE SCREEN	Contr y
CLEAR	Contr c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	Contr v
CURSOR FAST RIGHT	Contr u
CURSOR SELECT	Contr k
DELETE	
DEVICE CANCEL	Contr x
DUPLICATE	Contr d
ENTER	 or Invio
ERASE EOF	Contr e
ERASE INPUT	Cancel
EXSEL	Contr b
FIELD MARK	Contr f
HOME	Contr h
IDENT	Contr z
INSERT MODE	Inser
NEW LINE	Selez
SPACE BAR	SPACE BAR
PA1	F18
PA2	F19
PA3	F20
PF1	Auxiliary 1
PF2	Auxiliary 2
PF3	Auxiliary 3
PF4	Auxiliary 4

Notes:

1. **Contr:** For key sequences that begin with Contr, press and hold Contr while pressing the other key.
2. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

TO PERFORM THIS 3270 FUNCTION	USE
PF5	Auxiliary 5
PF6	Auxiliary 6
PF7	Auxiliary 7
PF8	Auxiliary 8
PF9	Auxiliary 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Guide
PF23	Esecuzione
PF24	F17
PRINT	Contr p
PRINT SCREEN	Contr 3 [i
REFRESH	Scherm prec
RESET	Contr r
RESUME PRINT	Contr g
STATUS ON/OFF	Contr w
SUSPEND PRINT	Contr l
SYSTEM REQUEST	Scherm succ
TAB	Tab
TEST	Contr T


DEC VT220 (Netherlands)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	ZOEK	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	← or VOER IN	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	WISBLOK	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Help
HOME	CTRL h	PF23	VOER OPDR UIT
IDENT	CTRL z	PF24	F17
INSERT MODE	VOEG IN	PRINT	CTRL p
NEW LINE	SEL	PRINT SCREEN	CTRL 3 [i
SPACE BAR	SPACE BAR	REFRESH	VORIG BEELD
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	VOLG BEELD
PF3	Auxiliary 3	TAB	TAB
		TEST	CTRL t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters have their equivalent. With the terminal set up with NRC character set, the 3270 characters `~`, `|`, `@`, `\`, `~`, `¢`, and `#` cannot be generated.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.



DEC VT220 (Norwegian)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	Ktrl a	PF4	Auxiliary 4
BACKTAB	Finn	PF5	Auxiliary 5
CHANGE SCREEN	Ktrl y	PF6	Auxiliary 6
CLEAR	Ktrl c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	Ktrl v	PF12	PF3
CURSOR FAST RIGHT	Ktrl u	PF13	F6
CURSOR SELECT	Ktrl k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	Ktrl x	PF16	F9
DUPLICATE	Ktrl d	PF17	F10
ENTER	↵ or Legg inn	PF18	F11
ERASE EOF	Ktrl e	PF19	F12
ERASE INPUT	Fjern	PF20	F13
EXSEL	Ktrl b	PF21	F14
FIELD MARK	Ktrl f	PF22	Hjelp
HOME	Ktrl h	PF23	Utfør
IDENT	Ktrl z	PF24	F17
INSERT MODE	Insett	PRINT	Ktrl p
NEW LINE	Veig	PRINT SCREEN	Ktrl 3 [i
SPACE BAR	SPACE BAR	REFRESH	Skjerm Tilbake
PA1	F18	RESET	Ktrl r
PA2	F19	RESUME PRINT	Ktrl g
PA3	F20	STATUS ON/OFF	Ktrl w
PF1	Auxiliary 1	SUSPEND PRINT	Ktrl l
PF2	Auxiliary 2	SYSTEM REQUEST	Skjerm frem
PF3	Auxiliary 3	TAB	Tab
		TEST	Ktrl t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters have their equivalent.
With the terminal set up with NRC character set, the 3270 characters ^, \, and X cannot be generated.
2. **Ktrl:** For key sequences that begin with Ktrl, press and hold Ktrl while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Spanish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	Localizar	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE		PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	 or Validar	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	Borrar	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Ayuda
HOME	CTRL h	PF23	Ejecutar
IDENT	CTRL z	PF24	F17
INSERT MODE	Insertar	PRINT	CTRL p
NEW LINE	Selec-Clonar	PRINT SCREEN	CTRL 3 [i
SPACE BAR	SPACE BAR	REFRESH	Pantall. previa
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	Prox. pantall
PF3	Auxiliary 3	TAB	Tabulacion
		TEST	CTRL t

Notes:

1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except —, ‘, and ..
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Spanish-Speaking)

TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a
BACKTAB	Localizar
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	⌫
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	↵ or Validar
ERASE EOF	CTRL e
ERASE INPUT	Borrar
EXSEL	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insertar
NEW LINE	Selec-Clonar
SPACE BAR	SPACE BAR
PA1	F18
PA2	F19
PA3	F20
PF1	Auxiliary 1
PF2	Auxiliary 2
PF3	Auxiliary 3

TO PERFORM THIS 3270 FUNCTION	USE
PF4	Auxiliary 4
PF5	Auxiliary 5
PF6	Auxiliary 6
PF7	Auxiliary 7
PF8	Auxiliary 8
PF9	Auxiliary 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Ayuda
PF23	Ejecutar
PF24	F17
PRINT	CTRL p
PRINT SCREEN	CTRL 3 [i
REFRESH	Pantall. previa
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL I
SYSTEM REQUEST	Prox. pantall
TAB	Tabulacion
TEST	CTRL t

Notes:

1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except →, ′, and ..
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.


DEC VT220 (Swedish)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF4	Auxiliary 4
BACKTAB	Sök	PF5	Auxiliary 5
CHANGE SCREEN	CTRL y	PF6	Auxiliary 6
CLEAR	CTRL c	PF7	Auxiliary 7
CURSOR DOWN	↓	PF8	Auxiliary 8
CURSOR LEFT	←	PF9	Auxiliary 9
CURSOR RIGHT	→	PF10	PF1
CURSOR UP	↑	PF11	PF2
CURSOR FAST LEFT	CTRL v	PF12	PF3
CURSOR FAST RIGHT	CTRL u	PF13	F6
CURSOR SELECT	CTRL k	PF14	F7
DELETE	⌫	PF15	F8
DEVICE CANCEL	CTRL x	PF16	F9
DUPLICATE	CTRL d	PF17	F10
ENTER	↵ or Enter	PF18	F11
ERASE EOF	CTRL e	PF19	F12
ERASE INPUT	Tag bort	PF20	F13
EXSEL	CTRL b	PF21	F14
FIELD MARK	CTRL f	PF22	Hjälp
HOME	CTRL h	PF23	Utför
IDENT	CTRL z	PF24	F17
INSERT MODE	Sätt in	PRINT	CTRL p
NEW LINE	Välj	PRINT SCREEN	CTRL 3 [I
SPACE BAR	SPACE BAR	REFRESH	Föreg bild
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	Nästa bild
PF3	Auxiliary 3	TAB	Tab
		TEST	CTRL t

Notes:

1. With the terminal set up with MCS character set, all 3270 characters have their equivalent. With the terminal set up with NRC character set, the 3270 characters §, ^, and ⌫ cannot be generated.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Swiss French)


TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a
BACKTAB	Rech.
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	← or Valider
ERASE EOF	CTRL e
ERASE INPUT	Eff. texte
EXSEL	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insérer
NEW LINE	Sélect
SPACE BAR	SPACE BAR
PA1	F18
PA2	F19
PA3	F20
PF1	Auxiliary 1
PF2	Auxiliary 2
PF3	Auxiliary 3

TO PERFORM THIS 3270 FUNCTION	USE
PF4	Auxiliary 4
PF5	Auxiliary 5
PF6	Auxiliary 6
PF7	Auxiliary 7
PF8	Auxiliary 8
PF9	Auxiliary 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Aide
PF23	Exécuter
PF24	F17
PRINT	CTRL p
PRINT SCREEN	CTRL 3 [i
REFRESH	Page précéd
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL I
SYSTEM REQUEST	Page suiv.
TAB	Tab
TEST	CTRL t

Notes:

1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except |, ¬, ¨, and ´.
3. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (Swiss German)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a	PF5	Auxiliary 5
BACKTAB	Suchen	PF6	Auxiliary 6
CHANGE SCREEN	CTRL y	PF7	Auxiliary 7
CLEAR	CTRL c	PF8	Auxiliary 8
CURSOR DOWN	↓	PF9	Auxiliary 9
CURSOR LEFT	←	PF10	PF1
CURSOR RIGHT	→	PF11	PF2
CURSOR UP	↑	PF12	PF3
CURSOR FAST LEFT	CTRL v	PF13	F6
CURSOR FAST RIGHT	CTRL u	PF14	F7
CURSOR SELECT	CTRL k	PF15	F8
DELETE		PF16	F9
DEVICE CANCEL	CTRL x	PF17	F10
DUPLICATE	CTRL d	PF18	F11
ENTER	← or Eingabe	PF19	F12
ERASE EOF	CTRL e	PF20	F13
ERASE INPUT	Löschen	PF21	F14
EXSEL	CTRL b	PF22	Hilfe
FIELD MARK	CTRL f	PF23	Ausführen
HOME	CTRL h	PF24	F17
IDENT	CTRL z	PRINT	CTRL p
INSERT MODE	Einfügen	PRINT SCREEN	CTRL 3 [i
NEW LINE	Selek-tieren	REFRESH	↑↑↑
SPACE BAR	SPACE BAR		Bild
PA1	F18	RESET	CTRL r
PA2	F19	RESUME PRINT	CTRL g
PA3	F20	STATUS ON/OFF	CTRL w
PF1	Auxiliary 1	SUSPEND PRINT	CTRL I
PF2	Auxiliary 2	SYSTEM REQUEST	Bild
PF3	Auxiliary 3		↓↓↓
PF4	Auxiliary 4	TAB	→|
		TEST	CTRL t

Notes:

1. For the terminal to display a wider range of 3270 characters, the terminal must be set up with the MCS character set.
2. All 3270 characters have their equivalent except |, ←, →, and ´.
3. **CTRL**: For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

DEC VT220 (U.K. English)

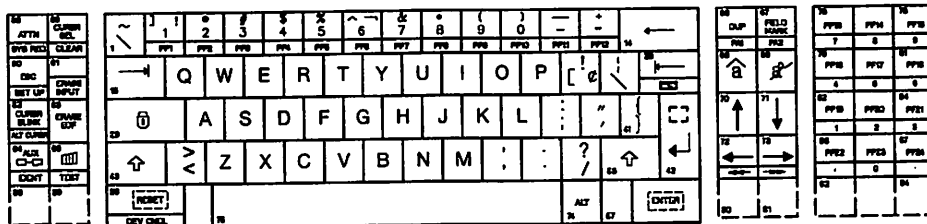
TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	CTRL a
BACKTAB	Find
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	⌫ X
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	↵ or Auxiliary ENTER
ERASE EOF	CTRL e
ERASE INPUT	Remove
EXSEL	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insert here
NEW LINE	Select
SPACE BAR	SPACE BAR
PA1	F18
PA2	F19
PA3	F20
PF1	Auxiliary 1
PF2	Auxiliary 2
PF3	Auxiliary 3

TO PERFORM THIS 3270 FUNCTION	USE
PF4	Auxiliary 4
PF5	Auxiliary 5
PF6	Auxiliary 6
PF7	Auxiliary 7
PF8	Auxiliary 8
PF9	Auxiliary 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Help
PF23	Do
PF24	F17
PRINT	CTRL p
PRINT SCREEN	CTRL 3 [I
REFRESH	Prev. Screen
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL I
SYSTEM REQUEST	Next Screen
TAB	Tab
TEST	CTRL t

Notes:

1. With the terminal set up with the MCS character set, the 3270 characters #, -, ~, and | cannot be generated. With the terminal set up with the NRC character set, the 3270 characters -, ~, and | cannot be generated.
2. **CTRL:** For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
3. For key sequences that contain *Auxiliary*, press the appropriate key on the auxiliary keypad.

Esprit Executive 10/78** (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	ALT a
BACKTAB	↩
CHANGE SCREEN	ALT z
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	ALT v
CURSOR FAST RIGHT	ALT u
CURSOR SELECT	CURSR SEL
DELETE	⌫
DEVICE CANCEL	DEV CNCL
DUPLICATE	DUP
ENTER	ENTER
ERASE EOF	ERASE EOF
ERASE INPUT	ERASE INPUT
ExSel	ALT I
FIELD MARK	FIELD MARK
HOME	Home
IDENT	IDENT
INSERT MODE	↕
NEW LINE	↵
PA1	PA1
PA2	PA2
PA3	ALT /
PF1	PF1
PF2	PF2
PF3	PF3

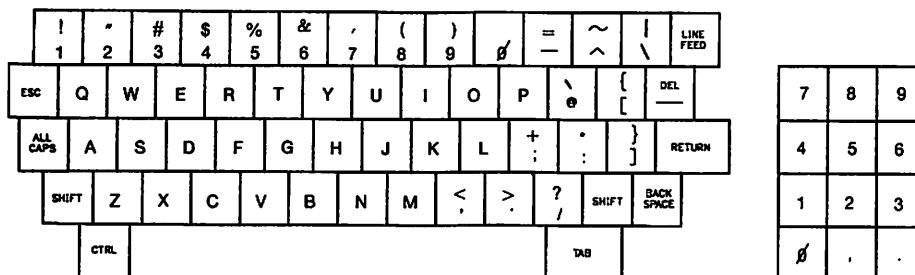
To Perform This 3270 Function:	Use:
PF4	PF4
PF5	PF5
PF6	PF6
PF7	PF7
PF8	PF8
PF9	PF9
PF10	PF10
PF11	PF11
PF12	PF12
PF13	PF13
PF14	PF14
PF15	PF15
PF16	PF16
PF17	PF17
PF18	PF18
PF19	PF19
PF20	PF20
PF21	PF21
PF22	PF22
PF23	PF23
PF24	PF24
PRINT	☐☐
REFRESH	ESC r
RESET	RESET
SYSTEM REQUEST	SYS REQ
TAB	⇠
TEST	TEST

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. For key sequences that contain "Numeric," press the appropriate key on the numeric keypad.
4. For REFRESH, you must use ESC and a lowercase r.

Hazeltine 1500** Video (U.S. English)

HOME	CLEAR	BREAK	RESET
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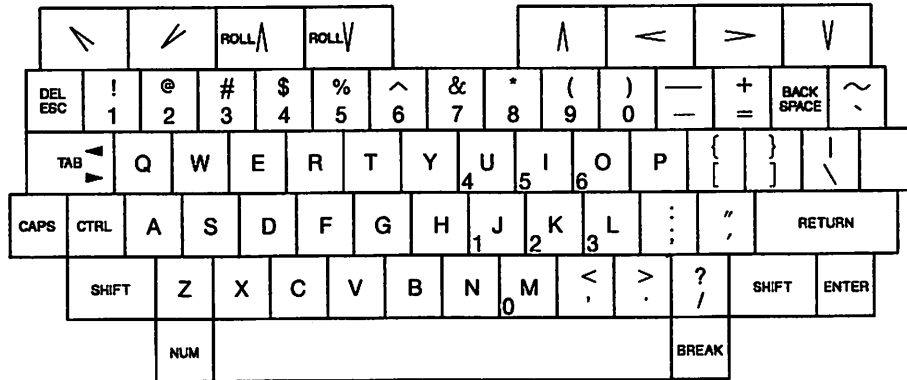
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	ESC TAB
CHANGE SCREEN	CTRL y
CLEAR	CLEAR
CURSOR DOWN	CTRL j
CURSOR LEFT	CTRL h
CURSOR RIGHT	CTRL l
CURSOR UP	CTRL k
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN
ERASE EOF	CTRL e
ERASE INPUT	ESC i
ExSel	ESC b
FIELD MARK	CTRL i
HOME	HOME
IDENT	ESC d
INSERT MODE	ESC DEL
NEW LINE	ESC RETURN
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3

To Perform This 3270 Function:	Use:
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC ^
PF13	ESC !
PF14	ESC ~
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC &
PF19	ESC *
PF20	ESC {
PF21	ESC }
PF22	ESC ;
PF23	ESC =
PF24	ESC LINE FEED
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	TAB
TEST	ESC t

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. The Hazeltine 1500 does not display ~ ; use ■ for the 3270 back quote.

Hewlett-Packard 2621B** Interactive Terminal (U.S English)



To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	SHIFT-TAB
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN
ERASE EOF	CTRL e
ERASE INPUT	ESC e
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	↖
IDENT	ESC d
INSERT MODE	ESC DEL
NEW LINE	BACKSPACE
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2

To Perform This 3270 Function:	Use:
PF3	ESC 3
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC =
PF13	ESC !
PF14	ESC @
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	TAB
TEST	ESC t

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.

Juniper** (U.S. English)

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	

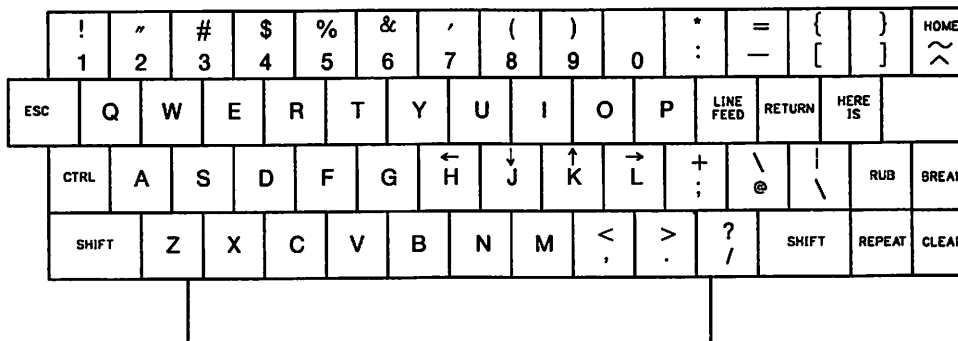
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	SHIFT ←
CHANGE SCREEN	Esc /
CLEAR	SHIFT F1
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL b
CURSOR SELECT	Esc k
DELETE	DEL
DEVICE CANCEL	CTRL '
DUPLICATE	CTRL d
ENTER	ENTER
ERASE EOF	CTRL End
ERASE INPUT	CTRL x
ExSel	Esc b
FIELD MARK	CTRL f
HOME	HOME
IDENT	CTRL ;
INSERT MODE	INSERT
NEW LINE	SHIFT RETURN
PA1	CTRL j
PA2	CTRL k
PA3	CTRL l
PF1	F1
PF2	F2
PF3	F3
PF4	F4

To Perform This 3270 Function:	Use:
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	CTRL -
PF12	CTRL =
PF13	CTRL q
PF14	CTRL w
PF15	CTRL e
PF16	CTRL r
PF17	CTRL t
PF18	CTRL y
PF19	CTRL u
PF20	CTRL i
PF21	CTRL o
PF22	CTRL p
PF23	CTRL [
PF24	CTRL]
PRINT	Esc l
REFRESH	Esc r
RESET	SHIFT F2
RESUME PRINT	Esc p
STATUS ON/OFF	Esc ?
SUSPEND PRINT	Esc o
SYSTEM REQUEST	CTRL RETURN
TAB	←
TEST	Esc t

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** (U.S. English)



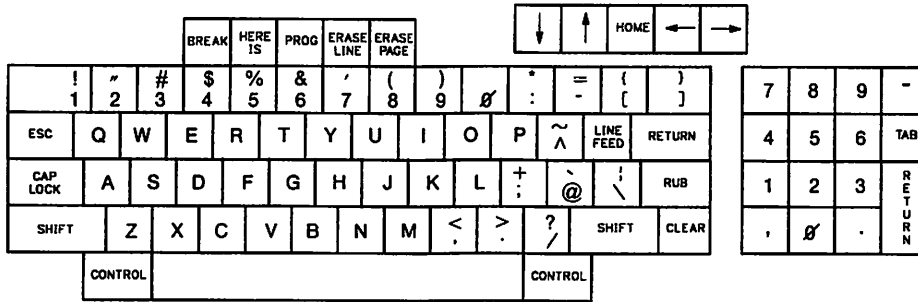
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	ESC CTRL i
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	CTRL j
CURSOR LEFT	CTRL ←
CURSOR RIGHT	CTRL →
CURSOR UP	CTRL ↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	RUB
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN
ERASE EOF	CTRL e
ERASE INPUT	ESC i
ExSel	ESC b
FIELD MARK	CTRL f
HOME	HOME
IDENT	ESC d
INSERT MODE	ESC RUB
NEW LINE	ESC RETURN
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3

To Perform This 3270 Function:	Use:
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC :
PF12	ESC -
PF13	ESC |
PF14	ESC '
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC &
PF19	ESC ^
PF20	ESC (
PF21	ESC)
PF22	ESC {
PF23	ESC *
PF24	ESC =
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	CTRL i
TEST	ESC t

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 5 Dumb Terminal** (U.S. English)



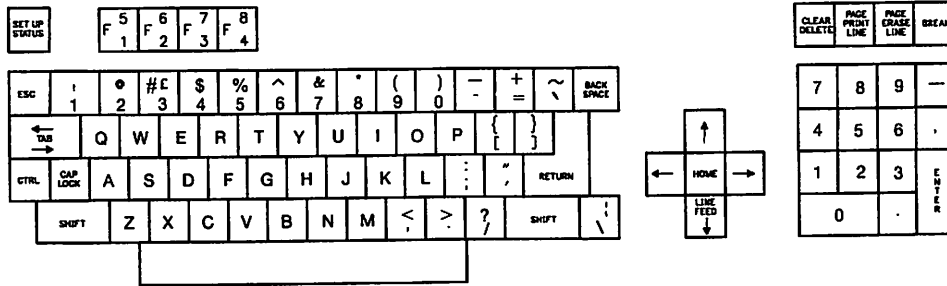
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	ESC CTRL i
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	RUB
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	RETURN
ERASE EOF	ERASE LINE or CTRL e
ERASE INPUT	ERASE PAGE or ESC i
ExSel	ESC b
FIELD MARK	CTRL l
HOME	HOME
IDENT	ESC d
INSERT MODE	ESC RUB
NEW LINE	ESC RETURN
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3

To Perform This 3270 Function:	Use:
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC :
PF12	ESC -
PF13	ESC |
PF14	ESC *
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC &
PF19	ESC '
PF20	ESC (
PF21	ESC)
PF22	ESC {
PF23	ESC *
PF24	ESC =
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	CTRL i
TEST	ESC t

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 11**, ADM 12** (U.S. English)

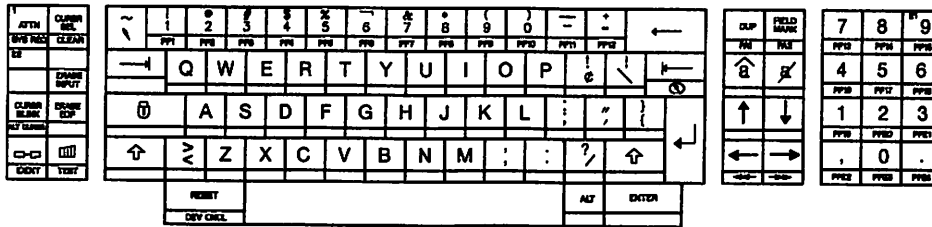


To Perform This 3270 Function:	Use:	To Perform This 3270 Function:	Use:
ATTENTION	ESC a	PF4	ESC 4
BACKTAB	SHIFT TAB	PF5	ESC 5
CHANGE SCREEN	CTRL y	PF6	ESC 6
CLEAR	CLEAR	PF7	ESC 7
CURSOR DOWN	↓	PF8	ESC 8
CURSOR LEFT	←	PF9	ESC 9
CURSOR RIGHT	→	PF10	ESC 0
CURSOR UP	↑	PF11	ESC -
CURSOR FAST LEFT	CTRL v	PF12	ESC =
CURSOR FAST RIGHT	CTRL u	PF13	ESC !
CURSOR SELECT	ESC k	PF14	ESC @
DELETE	DELETE	PF15	ESC #
DEVICE CANCEL	CTRL x	PF16	ESC \$
DUPLICATE	CTRL d	PF17	ESC %
ENTER	RETURN	PF18	ESC ^
ERASE EOF	CTRL e	PF19	ESC &
ERASE INPUT	ERASE PAGE	PF20	ESC *
ExSel	ESC b	PF21	ESC (
FIELD MARK	CTRL f	PF22	ESC)
HOME	HOME	PF23	ESC _
IDENT	PRINT PAGE	PF24	ESC +
INSERT MODE	ESC DELETE	PRINT	PRINT LINE
NEW LINE	ESC RETURN	REFRESH	ESC r
PA1	F1	RESET	CTRL r
PA2	F2	RESUME PRINT	ESC p
PA3	F3	SUSPEND PRINT	ESC o
PF1	ESC 1	SYS REQ	ESC s
PF2	ESC 2	TAB	TAB
PF3	ESC 3	TEST	ESC t

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 keypad.

Lear Siegler ADM 1178** (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	ATTN
BACKTAB	↩
CHANGE SCREEN	ALT y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	⏪
CURSOR FAST RIGHT	⏩
CURSOR SELECT	CURS SEL
DELETE	⌫
DEVICE CANCEL	DEV CNCL
DUPLICATE	DUP
ENTER	ENTER
ERASE EOF	ERASE EOF
ERASE INPUT	ERASE INPUT
ExSel	ALT ERASE EOF
FIELD MARK	FIELD MARK
HOME	⌵
IDENT	IDENT
INSERT MODE	↵
NEW LINE	↵
PA1	PA1
PA2	PA2
PA3	ESC /
PF1	PF1
PF2	PF2
PF3	PF3

To Perform This 3270 Function:	Use:
PF4	PF4
PF5	PF5
PF6	PF6
PF7	PF7
PF8	PF8
PF9	PF9
PF10	PF10
PF11	PF11
PF12	PF12
PF13	PF13
PF14	PF14
PF15	PF15
PF16	PF16
PF17	PF17
PF18	PF18
PF19	PF19
PF20	PF20
PF21	PF21
PF22	PF22
PF23	PF23
PF24	PF24
PRINT	☐
REFRESH	ALT r
RESET	RESET
RESUME PRINT	ALT p
SUSPEND PRINT	ALT o
SYSTEM REQUEST	SYS REQ
TAB	↵
TEST	TEST

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.

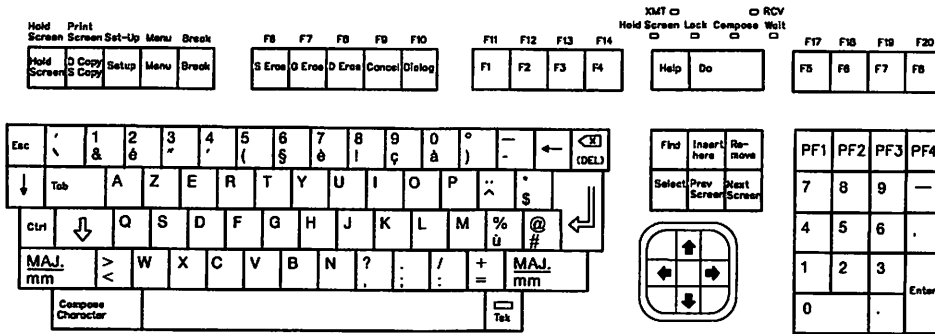
Minitel 1 Bistandard** (French)

TO PERFORM THIS 3270 FUNCTION	USE	TO PERFORM THIS 3270 FUNCTION	USE
ATTENTION	ESC a or CTRL a	PF5	Esc 5
BACKTAB	Retour	PF6	Esc 6
CHANGE SCREEN	CTRL y	PF7	Esc 7
CLEAR	ESC c or CTRL c	PF8	Esc 8
CURSOR DOWN	↓	PF9	Esc 9
CURSOR LEFT	←	PF10	Esc 0
CURSOR RIGHT	→	PF11	Esc *
CURSOR UP	↑	PF12	Esc #
CURSOR FAST LEFT	CTRL v	PF13	Funct 3
CURSOR FAST RIGHT	CTRL u	PF14	Funct 4
CURSOR SELECT	Esc k	PF15	Funct 5
DELETE	Correction or Del	PF16	Funct 6
DEVICE CANCEL	Can	PF17	Funct 7
DUPLICATE	ESC d or CTRL d	PF18	Funct 8
ENTER	ENVOI	PF19	Funct 9
ERASE EOF	Annulation	PF20	Funct 0
ERASE INPUT	Esc i	PF21	Funct 1
EXSEL	Esc b	PF22	Funct 2
FIELD MARK	ESC f or CTRL f	PF23	Esc ↑ (of Numeric Keypad)
HOME	Esc h	PF24	Esc]
IDENT	Esc z	PRINT	ESC p or CTRL p
INSERT MODE	Ins.C	REFRESH	Répétition
NEW LINE	←↵	RESET	Guide
SPACE BAR	Barre Espace	STATUS ON/OFF	Esc ?
PA1	Esc ,	SYSTEM REQUEST	Esc s
PA2	Esc .	TAB	Suite
PA3	Esc /	TEST	Esc t
PF1	Esc 1	MENU REQUEST	Sommaire
PF2	Esc 2		
PF3	Esc 3		
PF4	Esc 4		

Notes:

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

Tektronix** VT200-Style Keyboard (French)



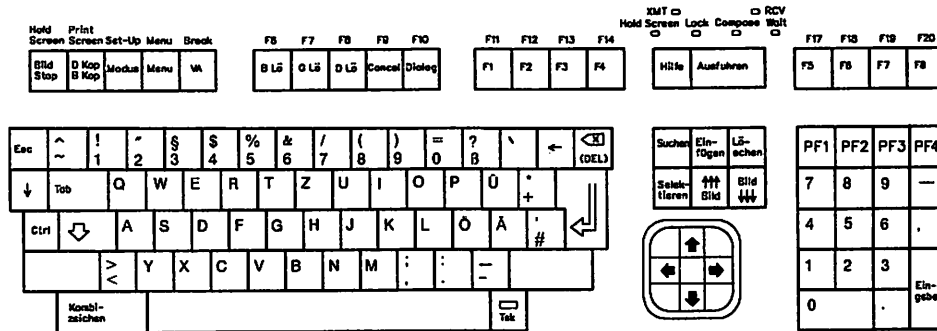
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	Find
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	↵
ERASE EOF	CTRL e
ERASE INPUT	Remove
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insert Here
NEW LINE	Select
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4

To Perform This 3270 Function:	Use:
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Help
PF23	Do
PF24	F17
PRINT	CTRL p
REFRESH	Prev Screen
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL i
SYSTEM REQUEST	Next Screen
TAB	Tab
TEST	CTRL t

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 keypad.

Tektronix VT200-Style Keyboard (German)



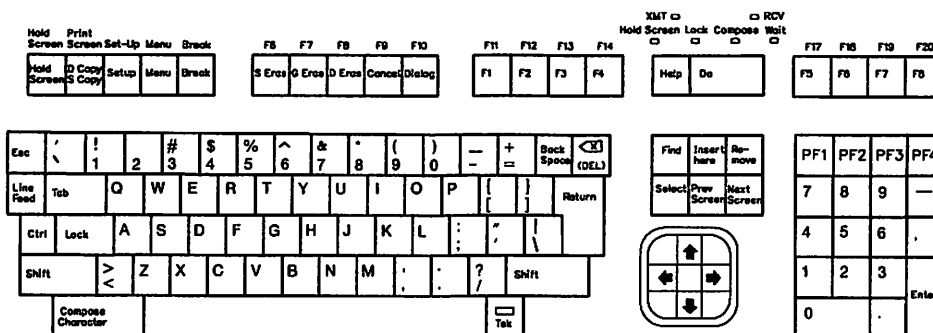
To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	Suchen
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	↵
ERASE EOF	CTRL e
ERASE INPUT	Löschen
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Einfügen
NEW LINE	Selektieren
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4

To Perform This 3270 Function:	Use:
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Hilfe
PF23	Ausführen
PF24	F17
PRINT	CTRL p
REFRESH	Bild ↑↑↑
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL l
SYSTEM REQUEST	Bild ↓↓↓
TAB	Tab
TEST	CTRL t

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 keypad.

Tektronix VT200-Style Keyboard (North American)



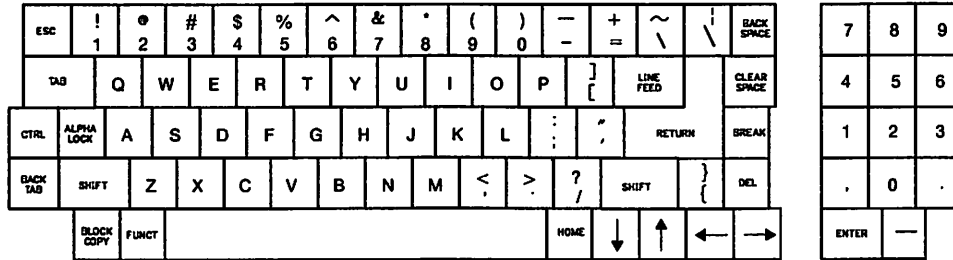
To Perform This 3270 Function:	Use:
ANSI MODE	ESC % 1 1
ATTENTION	CTRL a
BACKTAB	Find
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	CTRL k
DELETE	⌫
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	Return
ERASE EOF	CTRL e
ERASE INPUT	Remove
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	CTRL h
IDENT	CTRL z
INSERT MODE	Insert Here
NEW LINE	Select
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4

To Perform This 3270 Function:	Use:
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Help
PF23	Do
PF24	F17
PRINT	CTRL p
REFRESH	Prev Screen
RESET	CTRL r
RESUME PRINT	CTRL g
STATUS ON/OFF	CTRL w
SUSPEND PRINT	CTRL i
SYSTEM REQUEST	Next Screen
TAB	Tab
TEST	CTRL t

Notes:

1. All functions on this map apply to the North American, Danish/Norwegian, Italian, Spanish, Swedish, and United Kingdom versions of the Tektronix VT200-Style Keyboard.
2. For key sequences that begin with ESC, press and release ESC and then press the other key.
3. For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
4. For key sequences that contain "Numeric," press the appropriate key on the numeric keypad.

TeleVideo 912** (U.S. English)



To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	ESC TAB
CHANGE SCREEN	CTRL y
CLEAR	CTRL c
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	ESC k
DELETE	DEL
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	ENTER or RETURN
ERASE EOF	CTRL e
ERASE INPUT	ESC i
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	HOME
IDENT	ESC z
INSERT MODE	ESC DEL
NEW LINE	ESC RETURN
PA1	ESC .
PA2	ESC .
PA3	ESC /
PF1	ESC 1
PF2	ESC 2
PF3	ESC 3

To Perform This 3270 Function:	Use:
PF4	ESC 4
PF5	ESC 5
PF6	ESC 6
PF7	ESC 7
PF8	ESC 8
PF9	ESC 9
PF10	ESC 0
PF11	ESC -
PF12	ESC =
PF13	ESC !
PF14	ESC @
PF15	ESC #
PF16	ESC \$
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
PRINT	CTRL p
REFRESH	ESC r
RESET	CTRL r
STATUS ON/OFF	ESC ?
SYSTEM REQUEST	ESC s
TAB	TAB
TEST	ESC t

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 970** (U.S. English)

F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16
LOC ESC ESC	!	@	#	\$	%	^	&	*	(	)	-	+	~	|	BACK SPACE
TAB	Q	W	E	R	T	Y	U	I	O	P	]	[	LINE FEED	CLEAR SPACE	
CTRL	ALPHA LOCK	A	S	D	F	G	H	J	K	L	:	;	RETURN	BREAK	
BACK TAB	SHIFT	Z	X	C	V	B	N	M	<	>	?	SHIFT	}	DEL	
PRINT	FNCT								HOME	↓	↑	←	→		

CHAR DELETE	LINE DELETE	LINE ERASE	BLINK NO SCROLL	SEND
CHAR DELETE	LINE DELETE	PAGE ERASE	PAGE	RESET
T A B	7	8	9	-
	4	5	6	.
CE	1	2	3	E REP- E
Ø	ØØ	.		

To Perform This 3270 Function:	Use:
ATTENTION	CTRL a
BACKTAB	BACK TAB
CHANGE SCREEN	CTRL y
CLEAR	CLEAR
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	SHIFT ←
CURSOR FAST RIGHT	SHIFT →
CURSOR SELECT	ESC k
DELETE	CHAR DELETE
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	ENTER or RETURN
ERASE EOF	LINE DELETE
ERASE INPUT	LINE ERASE
ExSel	CTRL b
FIELD MARK	CTRL f
HOME	HOME
IDENT	ESC z
INSERT MODE	CHAR INSERT
NEW LINE	LINE FEED
PA1	FUNCT a or A
PA2	FUNCT b or B
PA3	FUNCT c or C
PF1	F1
PF2	F2
PF3	F3

To Perform This 3270 Function:	Use:
PF4	F4
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	F13
PF14	F14
PF15	F15
PF16	F16
PF17	SHIFT F1
PF18	SHIFT F2
PF19	SHIFT F3
PF20	SHIFT F4
PF21	SHIFT F5
PF22	SHIFT F6
PF23	SHIFT F7
PF24	SHIFT F8
PRINT	PAGE
PRINT SCREEN	ESC 3 [i
REFRESH	ESC r
RESET	CTRL r
RESUME PRINT	ESC p
SUSPEND PRINT	ESC o
SYSTEM REQUEST	ESC s or SEND
TAB	TAB
TEST	ESC t

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 SUSPEND PRINT, you must use ESC and a lowercase o.

Universal Keyboard Map

To Perform This 3270 Function:	Use:	To Perform This 3270 Function:	Use:
ATTENTION	CTRL a	PF5	ESC 5
BACKTAB	CTRL b	PF6	ESC 6
CHANGE SCREEN	CTRL y	PF7	ESC 7
CLEAR	CTRL c	PF8	ESC 8
CURSOR DOWN	CTRL j	PF9	ESC 9
CURSOR LEFT	CTRL h	PF10	ESC 0
CURSOR RIGHT	CTRL l	PF11	ESC -
CURSOR UP	CTRL k	PF12	ESC =
CURSOR FAST LEFT	CTRL v	PF13	ESC ! or ESC |
CURSOR FAST RIGHT	CTRL u	PF14	ESC @ or ESC "
CURSOR SELECT	ESC k	PF15	ESC # or ESC '
DELETE	DEL or RUBOUT	PF16	ESC \$
DEVICE CANCEL	CTRL x	PF17	ESC %
DUPLICATE	CTRL d	PF18	ESC ^ or ESC :
ENTER	RETURN or CTRL m	PF19	ESC &
ERASE EOF	CTRL e	PF20	ESC *
ERASE INPUT	ESC i	PF21	ESC (
ExSel	ESC b	PF22	ESC)
FIELD MARK	CTRL f	PF23	ESC _
HOME	ESC h	PF24	ESC + or ESC ;
IDENT	ESC z or ESC d	PRINT	CTRL p
INSERT MODE	ESC DEL	REFRESH	ESC r
NEW LINE	CTRL z	RESET	CTRL r
PA1	ESC ,	RESUME PRINT	ESC p
PA2	ESC .	STATUS ON/OFF	ESC ?
PA3	ESC /	SUSPEND PRINT	ESC o
PF1	ESC 1	SYSTEM REQUEST	ESC s
PF2	ESC 2	TAB	TAB or CTRL i
PF3	ESC 3	TEST	ESC t
PF4	ESC 4		

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. Some terminals have an ALT key instead of a CTRL key.

User-Defined Keyboard

To Perform This	Use:
3270 Function:	
ATTENTION	
BACKTAB	
CHANGE SCREEN	
CLEAR	
CURSOR DOWN	
CURSOR LEFT	
CURSOR RIGHT	
CURSOR UP	
CURSOR FAST LEFT	
CURSOR FAST RIGHT	
CURSOR SELECT	
DELETE	
DEVICE CANCEL	
DUPLICATE	
ENTER	
ERASE EOF	
ERASE INPUT	
ExSel	
FIELD MARK	
HOME	
IDENT	
INSERT MODE	
NEW LINE	
PA1	
PA2	
PA3	
PF1	
PF2	
PF3	
PF4	

To Perform This	Use:
3270 Function:	
PF5	
PF6	
PF7	
PF8	
PF9	
PF10	
PF11	
PF12	
PF13	
PF14	
PF15	
PF16	
PF17	
PF18	
PF19	
PF20	
PF21	
PF22	
PF23	
PF24	
PRINT	
REFRESH	
RESET	
RESUME PRINT	
STATUS ON/OFF	
SUSPEND PRINT	
SYSTEM REQUEST	
TAB	
TEST	

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.

ASCII Terminals Used as 3270 Terminals

WYSE 50/60** (U.S. English)

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

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

To Perform This 3270 Function:	Use:
ATTENTION	Esc a
BACKTAB	Esc Tab
CHANGE SCREEN	CTRL y
CLEAR	CLR SCRN
CURSOR DOWN	↓
CURSOR LEFT	←
CURSOR RIGHT	→
CURSOR UP	↑
CURSOR FAST LEFT	CTRL v
CURSOR FAST RIGHT	CTRL u
CURSOR SELECT	Esc x
DELETE	DEL CHAR
DEVICE CANCEL	CTRL x
DUPLICATE	CTRL d
ENTER	Return or Enter
ERASE EOF	CTRL e
ERASE INPUT	Esc e
ExSel	Esc b
FIELD MARK	CTRL f
HOME	Home
IDENT	Esc z
INSERT MODE	Esc Del
NEW LINE	Esc Return
PA1	Esc .
PA2	Esc .
PA3	Esc /
PF1	F1
PF2	F2
PF3	F3
PF4	F4

To Perform This 3270 Function:	Use:
PF5	F5
PF6	F6
PF7	F7
PF8	F8
PF9	F9
PF10	F10
PF11	F11
PF12	F12
PF13	F13
PF14	F14
PF15	F15
PF16	F16
PF17	SHIFT F7
PF18	SHIFT F8
PF19	SHIFT F9
PF20	SHIFT F10
PF21	SHIFT F11
PF22	SHIFT F12
PF23	SHIFT F13
PF24	SHIFT F14
PRINT	Print
REFRESH	Esc r
RESET	CTRL r
RESUME PRINT	Esc p
STATUS ON/OFF	Esc ?
SUSPEND PRINT	Esc o
SYSTEM REQUEST	Esc s
Tab	Tab
TEST	Esc t

Notes:

- For key sequences that begin with Esc, press and release Esc and then press the other key.
- For key sequences that begin with CTRL, press and hold CTRL while pressing the other key.
- For the following functions, you must use the lowercase character after the ESC: ATTENTION, ERASE INPUT, ExSel, and SUSPEND PRINT.

Appendix B. Using a Modem and an ASCII Terminal With the 3174 Asynchronous Emulation Adapter

Modem Operations	B-2
Modem Specifications and Setup	B-2
IBM 5841, 5842, and 5853 Setup	B-3
Hayes Smartmodem 1200 Setup	B-5
Micom Data Modems	B-6
ASCII Station Setup and Switch Settings	B-7
IBM 3101 Display Terminal	B-7
IBM/PC/FTTERM (Color and Monochrome)	B-8
IBM 3151 ASCII Display Station	B-9
IBM 3161, 3163, or 3164 Display Station	B-10
IBM 3162 Display Station	B-11
ADDS Viewpoint A2	B-12
ADDS Viewpoint /78	B-13
Cypress, Cedar, and Juniper	B-13
DEC VT52 and VT100	B-14
DEC VT220 and VT241	B-15
Esprit Executive 10/78	B-17
Hazeltine 1500 Video Display Terminal	B-18
Hewlett-Packard 2621B Interactive Terminal	B-19
Lear Siegler ADM 3A Dumb Terminal	B-20
Lear Siegler ADM 5 Dumb Terminal	B-21
Lear Siegler ADM 11 and Lear Siegler ADM 12	B-22
Lear Siegler ADM 1178	B-23
Tektronix	B-24
TeleVideo 912	B-25
TeleVideo 970	B-26
WY-50	B-28

Modem Operations

This chapter describes how you can set up modems and ASCII terminals to connect to a 3174 Asynchronous Emulation Adapter (AEA) port.

Following are some differences that you may see when attaching to a smart modem through the AEA:

- Access to the host you select is not always available, because the connection is made through a port selected from a pool of ports that may already be busy.
- The phone number of the ASCII host you connect to can be stored at 3174 customization time. A call can then be placed automatically when a connection with that host is requested.
- The options of manually dialing (keying in the phone number on your terminal keyboard) and testing modems from a terminal are available.
- Some modem features, such as audible call progress signaling and switch-to-voice features, cannot be used.

Modem Specifications and Setup

IBM 5841, 5842, 5853, Hayes Smartmodem 300 and 1200, and Micom Data Modems Models 3012 and 3024 are auto-call modems supported for communication to ASCII hosts. The dial digits and modem commands can be stored either in the 3174 at customizing or entered from a terminal keyboard (manual dial).

For automatic calling (auto-call), the AEA's interface to IBM, Hayes, and Micom intelligent modems conforms to the specification in the documentation supplied with each modem. For manual calling, the AEA acts only as a conduit for a user-to-modem conversation. The user represents the interface to the auto-call modem and must have a detailed understanding of the modem's commands and responses.

These modems should conform to the following general specifications:

- Asynchronous, EIA 232D transmission
- Auto-answer or auto-call
- 9- to 11-bit character frame (includes 1 start bit, 7 data bits, 1 parity bit [optional], and 1 or 2 stop bits).

IBM 5841, 5842, and 5853 Setup

IBM 5841, 5842, and 5853 modems are operated in Attention Command Set (AT) mode. Any parameters set by commands that are required for operation with the AEA feature are the same as for Hayes modems. However, the switch settings for IBM modems are not compatible with Hayes, and must be set as specified here.

The six front panel switches must be in the Out position. In addition, the eight configuration switches must be set as described in Table B-1 or Table B-2 on page B-4.

Table B-1. IBM 584x Modem Switch Settings			
Switch Number	Option Name	Switch Setting	Description
1	Receive Line Signal Detect (RLSD). (Also known as Carrier Detect [CD] or Data Carrier Detect [DCD])	On	Carrier Detect is raised at connection time.
2	Reset to Default Options on Loss of Data Terminal Ready (DTR)	Off	When this switch is set to OFF, the 3174 can reset the modem to a known state by dropping DTR. If register settings are not required for special installation requirements, this reset can be used to avoid unexpected results that can arise from previous use. Not used on 5841.
3	Transmit Timing Option (Synchronous mode only)	Not relevant	
4	Asynchronous or Synchronous Mode	On	Asynchronous mode is used.
5	Source of Data Terminal Ready (DTR)	On	AEA controls DTR.
6	Transmit Clocking from Remote Modem (Synchronous mode only)	Not relevant	
7	Request to Send (RTS)	Off	AEA controls RTS.
8	Data Set Ready (DSR)	Off (5842) On (5841)	DSR is raised at connection (5842). DSR is always on (5841).

Modem Specifications and Setup

Table B-2. IBM 5853 Modem Switch Settings			
Switch Number	Option Name	Switch Setting	Description
1	Error Checking Link (ECL) Failure Activity	On	If the modem fails to establish an error-checking link, the error-checking link is terminated, or if the inactivity timer times out, the modem changes to a non-ECL connection. Use with the ECL front panel switch.
2	Reset to Default Options on Loss of Data Terminal Ready (DTR)	On	Modem configuration changes are saved and not reset when DTR turns off.
3	Modem-to-Modem Flow Control	ON	The modems send XON and XOFF characters to control data flow between themselves. This switch is ignored if ECL is active.
4	Speed Buffering	On	The modem's AEA interface speed is the same as the modem's telephone line speed.
5	Modem-to-AEA Flow Control	On	The modem uses XON and XOFF characters when it wants the AEA to stop sending data.
6	Receive Line Signal Detect (RLSD)	On	The modem turns on RLSD when it detects carrier from the remote modem.
7	Ready For Sending (RFS)	On	The modem turns on RFS in response to RTS turning on.
8	Data Set Ready (DSR)	On	The modem turns on DSR to signal the AEA that a connection is established.

Hayes Smartmodem 1200 Setup

A Hayes Smartmodem 1200 should be set up as described in Table B-3. Once the Hayes modem is turned on, many of the operating parameters or default values may be overridden by keyboard commands entered during Online Test 12 (/12 test). Refer to *3174 Problem Determination GA23-0217* for Test 12 procedures. In Table B-4 on page B-6, a register number is the Hayes Register number that can be set by sending commands to the modem from the keyboard.

Note: Modems that operate at 2400 bps and some that operate at 1200 bps do not have configuration switches. These modems must be configured prior to attachment to the 3174 and must be consistent with the options shown in Table B-1 on page B-3, Table B-3, and Table B-4 on page B-6.

Table B-3. Hayes Smartmodem 1200 Configuration Switch Settings

Switch Number	Option Name	Switch Setting	Description
1	Data Terminal Ready (DTR)	Up	The station supports DTR.
2	Connection indication state format	Up	The results are sent as messages in English (also see V command).
3	Connection state indication	Down	Results are sent (also see Q command).
4	Command mode echo	Up	All characters sent to the modem while it is in command state are echoed back to the display.
5	Automatic answer	Up	The modem answers incoming calls (after a number of rings specified in register S0 [default = 1]).
6	Carrier Detect (CD) lead handling	Up	Carrier Detect reflects carrier (Down during command mode).
7	Telephone jack	Not relevant	Up = Single-line RJ11 jack Down = Multiple-line RJ12 or RJ13 jack. Should match your installation.
8	Command mode recognition	Down	The modem recognizes its commands before connection and its command mode escape during a connection.

Modem Specifications and Setup

Table B-4. Hayes Smartmodem 1200 Register Settings	
Register Number	Description
0	Ring to answer on. See switch 5 in Table B-3 on page B-5. Not relevant to AEA operation.
2	Escape code. Not relevant to AEA operation.
3	Carriage return code. Command and result code terminator can be changed for non-standard equipment. Set to 13 (default).
4	Line feed code. Line feed follows carriage return when English result codes are selected. Set to 10 (default).
5	Backspace code. Not relevant to AEA operation.
6	Wait for dial tone (default=2 seconds). The amount of time the modem waits for dial tone. Not relevant to AEA operation.
7	Wait for carrier (default=30 seconds). The amount of time the modem waits for the remote station to answer before terminating the call. Not relevant to AEA operation.
8	Pause time (caused by comma in dial string; default=2 seconds). Not relevant to AEA operation.
9	Carrier Detect Delay. Not relevant to AEA operation.
10	Delay time between carrier loss and outage notification (default=0.7 second). Not relevant to AEA operation.
11	Tone dialing speed (default=0.07 second). Should be set to match the central telephone switch or private branch exchange (PBX). Not relevant to AEA operation.
12	Escape to command mode guard time (default=1 second). Not relevant to AEA operation.
16	Self Test mode (default=0). This may be set to 1 by using online Test 12 to run modem tests. For auto-call operation, register 16 must be set to 0 (default).

Micom Data Modems

S1 and S2 switch groups on Micom's 3012 and 3024 modems should be set to OFF. Other setup options can be set by using the modem's configuration menu. This menu is accessed by using online Test 12 (see *3174 Problem Determination* for the procedure). The default settings are suitable to AEA operation.

ASCII Station Setup and Switch Settings

Your terminal should be set with these values when attached to the 3174. 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 for the terminal.

Note: Function keys should be left in their default settings.

The following tables give the required switch settings for the terminals supported by the 3174.

IBM 3101 Display Terminal

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

Notes:

1. This setting must match the configuration of the 3174.
2. The function designated by this switch has no effect on the 3174.
3. User preference: this is a 3101 local option.
4. 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/PC/FTTERM (Color and Monochrome)

Option	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	---	4
INACTIVITY TIME OUT IN MINUTES	---	5
EXTENDED CODES	---	5
NAME OF HOST FILE TRANSFER COMMAND		3

Notes:

1. This setting must match the configuration of the 3174.
2. Choose the communication port that is connected to the 3174.
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 an FTTERM local option.

IBM 3151 ASCII Display Station

Setup Item	Selection	Note
General		
MACHINE MODE	IBM 3151	
SCREEN	---	2
ROW AND COLUMN	24 x 80	
SCROLL	OFF	4
AUTO LF	OFF	
CRT SAVER	---	
LINE WRAP	OFF	
FORCING INSERT	---	
TAB	---	
TERMINAL ID	---	
PRINT	N/A	
Communication		
OPERATING MODE	ECHO	
LINE SPEED (bps)	---	1, 3
WORD LENGTH (bps)	7	
PARITY	---	1, 3
STOP BIT	---	1, 3
TURNAROUND CHARACTER	CR	
INTERFACE	EIA-232C	
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)	---	3
WORD LENGTH (bits)	7	
PARITY	---	3
STOP BIT	---	3
CHARACTERS	---	2

Notes:

1. This setting must match the configuration of the 3174.
2. The function designated by this item has no effect on 3174 operation.
3. The selection for the auxiliary port must match the configuration of the connected printer.
4. SCROLL must be set to either Jump or Smooth.

IBM 3161, 3163, or 3164 Display Station

Setup Item	Selection	Note
MACHINE MODE	---	1
OPERATING MODE	ECHO	
INTERFACE	EIA-232C	
LINE CONTROL	PRTS	
LINE SPEED	---	2, 3
PARITY	---	2, 3
TURNAROUND CHARACTER	CR	
STOP BIT	---	2, 3
WORD LENGTH	7	
RESPONSE DELAY	100	
BREAK SIGNAL	500	
TERMINAL ID	---	4

Select Item	Selection	Note
ENTER	SEND	
RETURN	NEWLINE	
NEWLINE	CR	
TAB	---	4
LINE WRAP	OFF	
CRT SAVER	---	4
AUTO LF	OFF	
SCROLL	OFF	5
SEND	---	4
SEND NULL	---	4
INS CHAR	---	4
TRACE	---	4

Notes:

1. This item must be set to match the machine; for example, set 3161 for a 3161 terminal.
2. This setting must match the configuration of the 3174.
3. Selections for the auxiliary port must match the configuration of the connected printer.
4. The function designated by this switch has no effect on the 3174.
5. If your terminal has programmable function keys, they should be left at their default settings. If the function keys are altered, the 3270 PF key functions do not work correctly.

IBM 3162 Display Station

Setup Item	Selection	Note
MACHINE TYPE	IBM3162	
SCREEN	NORMAL	
ROW & COLUMN	24x80	
SCROLL	NO	
AUTO LF	OFF	
FORCING INSERT	OFF	
CRT SAVER	---	1
LINE WRAP	OFF	
TAB	---	1
TERMINAL ID	---	1
OPERATING MODE	ECHO	
LINE SPEED (bps)	---	2
WORD LENGTH (bits)	7	
PARITY	---	2
STOP BIT	--	2
TURNAROUND CHAR	CR	
INTERFACE	RS-232	
LINE CTL	PRTS	
BREAK SIGNAL (ms)	500	
SEND NULL SUPPRESS	OFF	
PACING	--	1
ENTER	SEND	
RETURN	LF	
NEW LINE	CR	
SEND	---	1
INSERT CHAR	---	1
PRINTER OPTIONS	---	1

Notes:

1. The function designated by this item has no effect on the 3174.
2. This setting must match the configuration of the 3174.
3. If your terminal has programmable function keys, they should be left at their default settings. If the function keys are altered, the 3270 PF key functions do not work correctly.

ADDS Viewpoint A2

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

Notes:

1. This setting must match the configuration of the 3174.
2. The function described by this switch has no effect on the 3174.
3. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.

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	VISUAL	
CURSOR FORMAT	--	3
CHARACTER CASE	UPPER/LOWER	
CURSOR HOME	ENABLED	
KEY CLICK	---	3

Notes:

1. This setting must match the configuration of the 3174.
2. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
3. The function described by this switch has no effect on the 3174.

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 3174.

DEC VT52 and VT100

Switch	Setting	Note
SCROLL	---	1
AUTOREPEAT	---	1
SCREEN	---	1
CURSOR	---	1
MARGIN BELL	---	1
KEY CLICK	---	1
ANSI/VT52	ANSI	2, 3
AUTO XON/XOFF	---	3
#L/3	# or L	7
WRAPAROUND	OFF	
NEWLINE	OFF	
INTERLACE	---	4
PARITY SENSE	---	3
PARITY	---	3
BITS PER CHARACTER	7	
POWER	---	5
T SPEED	---	3, 6
R SPEED	---	3, 6
BRIGHTNESS	---	1
CHARACTERS PER LINE	80	
LINE/LOCAL	LINE	
TABS	---	4

Notes:

1. User preference: this is a VT100 local option.
2. This selection is not an option on the VT52.
3. This setting must match the configuration of the 3174.
4. The function designated by this switch has no effect on the 3174.
5. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
6. The transmit speed and the receive speed must be the same.
7. For U.S. English, set to #.
For U.K. English, set to L.

DEC VT220 and VT241

Setup Item	Selection	Note
On-Line/Local	On-Line	
Set-Up=	---	2
Keyboard	---	2
Columns	80 Columns	
Controls	Interpret Controls	
Auto Wrap	No Auto Wrap	
Scroll	No Scroll	
Text/screen	---	1
Display	---	1
Text cursor	---	
Cursor style	---	1
Mode	VT200, 7- or 8-bit controls	
VT100 mode Term ID	---	3
User defined keys	---	1
User features	---	1
Char set mode	Multinational or National	2,4
Keypad	---	1
Cursor keys	Normal cursor keys	
New line	No new line	
Transmit	---	2
Receive	Receive=transmit	
XOFF	XOFF at 64	
Bits/parity	---	2
Stop bit	---	2
Local echo	No local echo	
Port	---	2
Disconnect/Delay	---	3
Transmit	Limited transmit	3
Printer Set-Up	---	1
Keys	Typewriter Keys	
Lock	---	1
Auto Repeat	---	1
Keyclick	---	1
Margin Bell	No Margin Bell	
Warning Bell	No Warning Bell	

ASCII Station Setup and Switch Settings

Setup Item	Selection	Note
Break	Break	
Auto Answerback	No Auto Answerback	
Answerback=	---	1
Answerback concealed	---	1
Tab Set-Up	---	3
Graphics Set-Up	---	3, 5
4010/4014 Set-Up	---	3, 5

Notes:

1. User preference: this is a VT240 local option.
2. This setting must match the configuration of the 3174.
3. The function designated by this switch has no effect on the 3174.
4. Must be set to Multinational if you use Belgian, Spanish, Swiss French, or Swiss German.
5. Applies only to VT241.

Esprit Executive 10/78

Switch	Position	Note
KEYBOARD	3278	
PF CLUSTER	PF	
LEAD IN	ESC	
COMM MODE	FULL DUPLEX	
ATT MODE	CHAR	
SCROLL	NO	
AUTO NEW LINE	NO	
DIAGNOSTIC	NO	
CURSOR	---	1
FRAME RATE	---	2
BAUD RATE MAIN	---	3
BAUD RATE AUX	---	1
PARITY MAIN	---	3
PARITY AUX	---	1
CAPS LOCK	---	1
LOCAL PRINT	---	1

Notes:

1. User preference: this is a local option.
2. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
3. This setting must match the configuration of the 3174.

Hazeltine 1500 Video Display Terminal

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 3174.
2. User preference: this is a Hazeltine 1500 local option.

Hewlett-Packard 2621B Interactive Terminal

Switch	Position	Note
BAUD RATE	---	1
ECHO	REMOTE	
INVERSE VIDEO/UNDERLINE		2
PRIMARY CHAR SET	ASCII	3
LANGUAGE	USASCII	3
PARITY	---	1
XON/XOFF	ENABLED	1
ENQ/ACK	DISABLED	
AUTO LINE FEED	DISABLED	
LINE/CHARACTER MODE	CHARACTER	
RETURN/ENTER KEY STRING	CR	
DATA SPEED SELECT	--	4
LONG TRANSFER WARNING	DISABLED	
SHORT TRANSFER TRIGGER	DISABLED	
WRAPAROUND CURSOR	DISABLED	
SPACE OVERWRITE LATCH	DISABLED	
ESCAPE SEQUENCE TRANSMISSION	ENABLED	

Notes:

1. This setting must match the configuration of the 3174.
2. If you are using the standard keyboard, switch 5 specifies the highlighting mode (reverse video or underline).
3. This setting must match the keyboard attached to the 2621B.
Only the US ASCII is supported.
4. This allows the operation of modems that support dual-speed data transmissions. If you change line speed, you must reconnect and refresh the autobaud sequence.

Lear Siegler ADM 3A Dumb Terminal

Switch	Setting	Note
BAUD RATE	---	1
HDX-FDX	FDX	
RS232-CL	RS232	
AUTO NL-OFF	DISABLED	
LC EN-UC	LC EN	
PARITY ODD-EVEN	---	1
DATA 7-8	7	
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	---	4
GT-LK	GT	

Notes:

1. This setting must match the configuration of the 3174.
2. The function designated by this switch has no effect because the DATA 7-8 switch is set to 7.
3. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
4. User preference.

Lear Siegler ADM 5 Dumb Terminal

Switch	Setting	Note
BAUD RATE	---	1
AUTO NL	DISABLED	
50 HZ-60 HZ	---	2
RS232 - CUR LP	RS232	
HDX-FDX	FDX	
BIT 8 = 0/1	---	3
ENPR - DISPR	---	1
1 STOP - 2 STOP	---	1
ODD-EVEN	---	1
7 BIT - 8 BIT	7	
EOT	OFF	
ETX	OFF	
CODE	OFF	
202	OFF	
103	103	1
LOCAL	OFF	
GT-LK	GT	
NORM-FILL	NORM	

Notes:

1. This setting must match the configuration of the 3174.
2. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
3. The function designated by this switch has no effect because 7 BIT - 8 BIT is set to 7.

Lear Siegler ADM 11 and Lear Siegler ADM 12

Feature	Selection	Note
CLICK	---	1
ONLINE	Y	
CURSOR BLINK	---	1
STATUS	NORM	
WRAP	N	
NEWLINE	N	
BPS	---	2
BITS	7	
BIT 8	---	1
PTY ENABLE	---	2
PTY	---	2
SET DUPLEX MODE	FDX	
CHRS/FNC	---	1
FNC KEYS	---	1
SO/SI	---	1
FREQ(Hz)	---	3
HANDSHAKE	---	2
REV XON/XOFF	ENA	
BUSY		1
ANSBK	---	1
SCREEN SAVE	---	1
KEYBOARD	US/UK	
ADM3A MODE	N	
MODE	ADM	
LEAD IN	ESC	
SCROLL	N	
580 COMP.	---	1
CURSOR HOME	---	1

Notes:

1. The function designated by this switch has no effect on the 3174.
2. This setting must match the configuration of the 3174.
3. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.

Lear Siegler ADM 1178

Switch	Setting	Note
CLICK	---	1
ONLINE	Y	
CURSOR BLINK	---	1
STATUS	NORM	
WRAP	N	
BPS	---	2
BITS	7	
BIT 8	---	1
PTY ?	---	2
PTY	---	2
DUPLEX	FDX	
HZ	---	3
HANDSHAKE	---	2
XON/XOFF	---	2
BUSY	---	1
ANSBK	---	1
NUMERIC	---	1
SCREEN SAVE	---	1
ATTRIBUTES	---	1
LOCK (alpha/shift)	---	1
INDICATE SHIFT	---	1
LOCK (local/transmit)	---	1
LOCK RELEASE	---	1
KEYBD	3278	
SCROLL	N	

Notes:

1. The function designated by this switch has no effect on the 3174.
2. This setting must match the configuration of the 3174.
3. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.

Tektronix

Use the factory defaults for Tektronix except for the following:

- BAUD RATE -- must match the 3174
- PARITY -- must match the 3174
- QUEUESIZE -- recommended queuesize is 900
- FLAGGING -- Should match the flow control specified in the 3174 configuration.

Note: When you use a shared printer, the HC INTERFACE option must match the printer setup and FLAGGING (Flow Control) should be used.

TeleVideo 912

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

Notes:

1. This setting must match the configuration of the 3174.
2. The character set must match the translate table used in the 3174.
3. This selection must match the power line frequency.
In the U.S.A., this switch is set to 60 Hz.
4. User preference: this is a TeleVideo 912C local option.
5. Refer to the terminal setup manual (*TeleVideo Operator's Manual Models 912C/920, B30001-001*).
6. The function designated by this switch has no effect on the 3174.

TeleVideo 970

Switch	Position	Note
AUTO PG	SINGLE	
AUTOTAB	---	1
AUTOWRAP	NO WRAP	
BAUD (Main Port)	---	2
BAUD (Printer Port)	---	1
BREAK KEY	EXEC	
CHAR/LN	80	
COMM	CNV	
CTRL REP	PROC	
CURSOR ATTR	---	3
CURSOR STYLE	---	3
DATA BITS (Main)	7	
DATA BITS (Printer)	---	1
DUPLEX	FDX	
EDIT BOUND	PG	
EDITING EXT	DSPL	
1ST CHAR SET	U.S.	
GUARDED XFR	---	1
HORZ EDIT	RT	
INS/RPLC	RPLC	
KEYCLICK	---	3
LN ATTR	NOR	
LN XFER	---	1
LF/NEWLN	LN FEED	
LN/PG	24	
MULTI-AREA XFER	---	1
PG XFER	---	1
PARITY (Main)	---	2
PARITY (Printer)	---	1
POWER/HZ	---	4
PRINT STA	---	1
RCV CTRL (Main)	---	2
SCRN BACK	---	3
SCR SAVER	---	1
SCROLL	---	3
2ND CHAR SET	---	1
SEND/RCV	NO ECHO	
STOP BIT (Main)	---	2
STOP BIT (Printer)	---	3
25TH LINE	MSG	

Switch	Position	Note
VERT EDIT	—	3
XFER EXEC	---	3
XFER TERM	—	3
XMIT CTRL (Main)	XON/XOFF	2
XMIT CTRL (Printer)	---	3

Notes:

1. The function designated by this switch has no effect on the 3174.
2. This setting must match the configuration of the 3174.
3. User preference.
4. This selection must match the power line frequency.
In the U.S.A., this switch 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 AEA.
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.

List of Abbreviations in this Book

A

- ACK.** Acknowledge.
- AEA.** Asynchronous Emulation Adapter.
- Alt.** Alternate.
- ANSI.** American National Standards Institute.
- APL.** A Programming Language.
- ASCII.** American National Standard Code for Information Interchange.
- ATTN.** Attention.

B

- bps.** Bits per second.

C

- C.** Celsius.
- char.** Character.
- cncl.** Cancel.
- comm.** Communication.
- CR.** Carriage return.
- CRT.** Cathode-ray tube.
- CTL.** Control.
- ctrl, CTRL.** Control.
- CUT.** Control unit terminal.

D

- dec.** decimal
- DEL.** The delete character.
- dev.** Device.
- DLE.** Data link escape.
- DSR.** Data set ready.

- DTR.** Data terminal ready.

- dup, DUP.** Duplicate.

E

- EIA.** Electronic Industries Association.
- ENQ.** Enquiry.
- EOF.** End of file.
- EOT.** End-of-transmission character.
- ESC.** Escape.
- ETX.** End of Text.

F

- F.** Fahrenheit.
- FCC.** Federal Communications Commission.
- FF.** Form feed.
- FM.** (1) Frequency modulation. (2) Function management. (3) Field mark.

H

- hex.** Hexadecimal.
- HT.** Horizontal Tab.
- Hz.** Hertz.

I

- ID.** Identification, identifier.
- Ident.** Identification.
- INS.** Insert.
- I/O.** Input/output.

K

- KB.** Kilobyte; 1024 bytes.

L

L. Left.

LED. Light-emitting diode.

LF. Line feed.

LT. Logical terminal.

LU. Logical unit.

M

MLT. Multiple logical terminals.

modem. Modulator-demodulator.

MSR. Magnetic stripe reader.

N

NL. New Line.

No. Number.

NUL. Null.

NUM. Numeric.

O

OIA. Operator information area

P

PA. Program access

PAM. Printer authorization matrix.

PBX. Private branch exchange.

PC. Personal Computer.

pF. Picofarad.

PF. Program function.

PS. Programmed symbols.

R

Req. Request.

RTM. Response Time Monitor.

RTS. Request to send.

S

SA. Set attribute

SCS. SNA character string.

SI. Suppress index

SNA. Systems Network Architecture.

SOH. Start-of-heading character.

SSCP. System services control point.

STX. Start of text.

U

U.K. United Kingdom

U.S. United States.

X

XOFF. Transmitter off.

XON. Transmitter on.

Glossary

The terms in this glossary are defined here as they apply to the 3270 Information Display System.

A

active logical terminal (LT). In MLT, the currently displayed logical terminal. Synonymous with *foreground logical terminal*. Contrast with *background logical terminal*.

adapter. A general term for a device that provides some transitional function between two or more devices.

AEA port. A communication connector on the Asynchronous Emulation Adapter (AEA).

American National Standard Code for Information Interchange (ASCII). 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.

application. The use to which an information processing system is put, for example, a payroll application, an airline reservation application, or a network application.

application program. (1) A program written for or by a user that applies to the user's work, such as a program that does inventory control or payroll. (2) A program used to connect and communicate with stations in a network, enabling users to perform application-oriented activities.

ASCII emulation. The ability of a 3270 display station or printer to communicate with an ASCII host using the DEC VT100, DEC VT200, IBM 3101 or the D210 data stream.

ASCII pass-through. The transmission of unmodified data between ASCII display stations or printers and an ASCII host or public data network.

ASCII pass-through mode. For an ASCII device attached to a 3174, a mode of operation in which the device communicates with an ASCII host.

asynchronous. (1) Without regular time relationship; unexpected or unpredictable with respect to the execution of program instructions. (2) In asynchronous data transmissions, data characters may be sent or

received at any time; no modem clocking is used to establish bit timing.

Asynchronous Emulation Adapter (AEA). In the 3174 Establishment Controller, an adapter that enables an ASCII terminal to communicate with a 3270 host using the 3270 data stream, an ASCII terminal to communicate with an ASCII host through the 3174, and a 3270 terminal to communicate with an ASCII host using data streams, such as the DEC VT100 data stream or the IBM 3101 data stream.

attach. To connect a device logically to a 3174 adapter, so that it can communicate over the network.

attention (ATTN). An occurrence external to an operation that could cause an interruption of the operation.

attention field. In the 3270 Information Display System, a detectable field in which the designator character is a null, a space, or an ampersand.

attention identifier (AID). (1) A code in the inbound 3270 data stream that identifies the source or type of data that follows. (2) A character in a data stream indicating that the user has pressed a key, such as Enter, that requests an action by the system.

attribute. (1) A characteristic. (2) A terminal display language or transformation definition language (TDL) keyword that specifies a particular quality for the TDL object with which it is associated.

auto-answer. See *automatic answering*.

autobaud. In the 3174 AEA feature, the process of determining the line speed and parity settings of a connecting display station from a specific sequence of characters (CR . CR) entered from the keyboard. ASCII hosts may also support automatic speed and parity detection, but the character sequence they require may differ.

auto-call. See *automatic calling*.

automatic answering. (1) Answering in which the called data terminal equipment (DTE) automatically responds to the calling signal.

Note: The call may be established whether or not the called DTE is attended.

(2) A machine feature that permits a station to respond without operator action to a call it receives over a

switched line. See also *manual answering*. Contrast with *automatic calling*.

automatic calling. (1) Calling in which the elements of the selection signal are entered into the data network contiguously at the full data signaling rate. (2) A machine feature that permits a station to initiate a connection with another station over a switched line without operator action. (3) Synonymous with auto-call. See also *manual calling*. Contrast with *automatic answering*.

B

background logical terminal (LT). In MLT, any logical terminal that is not currently displayed. Contrast with *active logical terminal (LT)*.

blink. An extended highlighting attribute value (for emphasis) of a field or character.

buffer. (1) A routine or storage used to compensate for a difference in rate of flow of data, or time of occurrence of events, when transferring data from one device to another. (2) An isolating circuit used to prevent a driven circuit from influencing the driving circuit. (3) To allocate and schedule the use of buffers. (4) A portion of storage used to hold input or output temporarily.

C

change-screen key. In MLT, a key or sequence of keys on a display station keyboard used to change sessions, one at a time, with up to five different hosts.

character mode. A mode in which input is treated as alphanumeric data, rather than graphic data.

character position. A location on the screen at which one character can be displayed; also, an addressed location in the buffer at which 1 character can be stored.

character set. (1) A defined collection of characters. (2) A group of characters used for a specific reason, for example, the set of characters a printer can print. (3) The collection of graphic characters required to support a specific language.

command. An instruction that directs a control unit or device to perform an operation or a set of operations.

configuration. The arrangement of a computer system or network as defined by the nature, number, and chief characteristics of its functional units. More specifically, the term *configuration* may refer to a hardware configuration or a software configuration. See also *system configuration*.

Connection Menu. A menu on the screen of a display station attached to the 3174 Establishment Controller, from which a user can select an available host.

controller. A unit that controls input/output operations for one or more devices.

control unit terminal (CUT). A terminal that relies on the 3174 to interpret the data stream. Examples are the 3178, 3179, 3278 Model 2, and 3279 Model S2A.

control unit terminal (CUT) mode. A host-interactive mode that enables an IBM 3270 Personal Computer customized in this mode to run only one session emulating a 3178, 3179, 3278 Model 2, or 3279 Model S2A.

copy operation. An operation that copies the contents of the buffer from one terminal to another terminal attached to the same control unit.

country extended code page (CECP). A function of the 3174 microcode that provides for a code page containing additional code points beyond those available with Table 5A code pages. CECP is supported by a universal character set, Character Set 697, which contains 190 characters.

cursor. (1) A movable, visible mark used to indicate the position at which the next operation will occur on a display surface. (2) A unique symbol that identifies a character position in a screen display, usually the character position at which the next character to be entered from the keyboard will be displayed.

customization. Procedures that tailor the control unit microcode to fit the various types of display stations and printers and the method of host attachment that a particular control unit will handle.

D

Data Entry keyboard. A keyboard layout designed for data entry applications.

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. See also *data stream format*.

data terminal equipment (DTE). That part of a data station that serves as a data source, data sink, or both.

Data Terminal Ready (DTR) flow control. A procedure for a communicating device to signal its readiness to receive data by raising the DTR lead on an EIA 232D interface.

device. A mechanical, electrical, or electronic contrivance with a specific purpose.

display field. (1) An area in the display buffer that contains a set of characters that can be manipulated or operated upon as a unit. (2) A group of consecutive characters (in the buffer) that starts with an attribute character (defining the characteristics of the field) and contains one or more alphanumeric characters. The field continues to, but does not include, the next attribute character.

display station. An input/output device containing a display screen and an attached keyboard that allows a user to send information to or receive information from the system.

duplex. Pertaining to communication in which data can be sent and received at the same time. Synonymous with *full duplex*.

E

EIA communication adapter. A communication adapter conforming to EIA standards that can combine and send information on two lines at speeds up to 19.2 kbps.

EIA 232D. An electrical interface defined by the Electronics Industries Association for establishing connections and controlling data flow between data terminal equipment and data communication equipment. The interface has been adapted to allow communication between DTEs.

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.

emulation. (1) The imitation of all or part of one system by another, primarily by hardware, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated computer system. (2) The use of programming techniques and special machine features to permit a computing system to execute programs written for another system. (3) Imitation; for example, imitation of a computer or device. (4) See *terminal emulation*. (5) Contrast with *simulation*.

F

field. See *display field*.

flow control. (1) In data communication, control of the data transfer rate. (2) In SNA, the process of managing the rate at which data traffic passes between components of the network. The purpose of flow

control is to optimize the rate of flow of message units with minimum congestion in the network, that is, neither to overflow the buffers at the receiver or at intermediate routing nodes nor to leave the receiver waiting for more message units. (3) The methods used to control the flow of information across a network.

foreground logical terminal (LT). Synonym for *active logical terminal (LT)*.

full duplex. Synonym for *duplex*.

H

half-duplex. In data communication, pertaining to transmission in only one direction at a time. Contrast with *duplex*.

hertz (Hz). A unit of frequency equal to 1 cycle per second.

host computer. (1) In a computer network, a computer that provides end users with services such as computation and data bases and that usually performs network control functions. (2) The primary or controlling computer in a multiple-computer installation. (3) A computer used to prepare programs for use on another computer or on another data processing system; for example, a computer used to compile link edit, or test programs to be used on another system. (4) Synonym for *host processor*.

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which resides the access method for the network. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. (5) The processing unit required to create and maintain PSS. (6) Synonymous with *host computer*.

host system. (1) A data processing system used to prepare programs and operating environments for use on another computer or controller. (2) The data processing system to which a network is connected and with which the system can communicate. (3) The controlling or highest-level system in a data communication configuration; for example, a System/38 is the host system for the work stations connected to it.

K

keyboard mapping. A table that defines which keyboard sequences are equivalent to functions on another keyboard.

L

leased line. Synonym for *nonswitched line*.

light pen. A light-sensitive pick device that is used by pointing it at the display surface.

line speed. (1) The rate at which data is transmitted from one point to another over a telecommunication line. (2) The number of binary digits that can be sent over a telecommunication line in 1 second, expressed in bits per second (bps).

logical terminal (LT). In MLT, one of five sessions available to share one display station.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network in order to communicate with another end user and through which the end user accesses the functions provided by system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other logical units.

M

manual answering. (1) Answering in which a call is established only if the called user signals a readiness to receive the call by means of a manual operation. (2) Operator actions to prepare a station to receive a call on a switched line. Contrast with *automatic answering*.

manual calling. (1) Calling that permits the entry of selection signals from a calling data station at an undefined character rate. (2) Operator actions to place a call over a switched line. Contrast with *automatic calling*.

mark. A symbol or symbols that indicate the beginning or the end of a field, a word, an item of data or a set of data such as a file, record, or block.

modem (modulator/demodulator). A device that converts digital data from a computer to an analog signal that can be transmitted on a telecommunication line, and converts the analog signal received to data for the computer.

multidrop (network). A network configuration in which there are one or more intermediate nodes on the path between a central node and an endpoint node.

multiple logical terminal (MLT). In the 3174, a function that provides a 3270 CUT or ASCII display station with the ability to interact with as many as five host sessions. Each session is processed as though it were a separate display station.

N

native mode. A 3179 or 3180 operational mode that uses the full capabilities of those models' display and keyboard.

network. (1) An arrangement of nodes and connecting branches. Connections are made between data stations. (2) A configuration of data processing devices and software connected for information interchange.

nonescaping key. A key that allows a character to be typed without the imprint position being changed.

nonswitched line. (1) A connection between systems or devices that does not have to be made by dialing. Contrast with *switched line*. (2) A telecommunication line on which connections do not have to be established by dialing. Synonymous with *leased line*.

O

online test. A diagnostic test or data collection program that is run without interrupting the normal operation of the 3174 and its associated terminals.

operator information area (OIA). The area below the line near the bottom of the display area where graphics and alphanumeric characters are displayed to define the status of the terminal or the system to the operator.

P

parity. (1) A transmission error-checking scheme in which an extra bit is added to some unit of data, usually a byte, in order to make the total number of one bits even or odd. For the AEA feature, odd, even, mark, space, or no-parity coding is supported. No-parity means that no parity bit is sent or expected. Mark and space mean that the parity position is always set to one or zero, respectively, and that received parity is not checked. (2) The state of being either even-numbered or odd-numbered.

parity bit. (1) A binary digit appended to a group of binary digits to make the sum of all the digits, including the appended binary digit, either odd or even as pre-established. (2) A check bit appended to an array of binary digits to make the sum of all the binary digits, including the check bit, always odd or always even.

port. (1) An access point for data entry or exit. (2) A connector on a device to which cables for other devices such as display stations and printers are attached.

primary session. In MLT, the primary session is the first session defined on a port.

printer authorization matrix (PAM). A matrix stored in the controller that establishes printer assignment and classification.

private branch exchange (PBX). An automatic or manual private telephone exchange for transmission of calls to and from the public telephone network.

program access (PA) key. On a display device keyboard, a key that produces a call to a program that performs display operations. See also *program function (PF) key*.

program function (PF) key. On a display device keyboard, a key that passes a signal to a program to call for a particular display operation. See also *program access (PA) key*.

programmable symbols (PS). Customer-defined symbols. There are a maximum of 190 symbols in a programmed symbol set.

programmed symbol set (PSS). A set of fonts that can be system-defined or defined by the user and to which a code can be assigned.

programmed symbols (PS). In the 3270 Information Display System, an optional feature that stores up to six user-definable, program-loadable character sets of 190 characters each in terminal read/write storage for display or printing by the terminal.

protected field. (1) In word processing, preset data or an area that cannot be changed or overridden by an operator without altering the program. (2) On a display device, a display field in which a user cannot enter, modify, or erase data. Contrast with *unprotected field*.

protocol. (1) A set of semantic and syntactic rules that determine the behavior of functional units in achieving communication. (2) In SNA, the meanings of and the sequencing rules for requests and responses used for managing the network, transferring data, and synchronizing the states of network components.

R

register. A storage device having a specified storage capacity such as a bit, byte, or computer word, and usually intended for a special purpose.

remote. Pertaining to a system, program, or device that is accessed through a telecommunication line.

Response Time Monitor (RTM). A network management tool that measures and records the transaction times of inbound host attention (AID) operations from display stations that communicate with the host.

S

selector pen. A pen-like instrument that can be attached to a display station. When a program using full-screen processing is assigned to the display station, the pen can be used to select items on the screen or to generate an attention. Synonym for *light pen*.

session. (1) In network architecture, an association of facilities necessary for establishing, maintaining, and releasing connections for communication between stations. (2) In MLT, synonymous with logical terminal (LT). (3) In SNA, a logical connection between two network addressable units that can be activated, tailored to provide various protocols, and deactivated as requested.

session limit. In 3174, the total number of logical terminals or defined AEA default destinations for an AEA port set.

simulate. (1) To represent certain features of the behavior of a physical or abstract system by the behavior of another system; for example, to represent a physical phenomenon by means of operations performed by a computer or to represent the operations of a computer by those of another computer. (2) To imitate one system with another, primarily by software, so that the imitating system accepts the same data, executes the same computer programs, and achieves the same results as the imitated system. (3) Contrast with *emulate*.

simulation. (1) The representation of selected characteristics of the behavior of one physical or abstract system by another system. In a digital computer system, simulation is done by software; for example, (a) the representation of physical phenomena by means of operations performed by a computer system, and (b) the representation of operations of a computer system by those of another computer system. (2) Contrast with *emulation*.

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.

station. (1) An input or output point of a system that uses telecommunication facilities; for example, one or more systems, computers, terminals, devices, and associated programs at a particular location that can send or receive data over a telecommunication line. (2) A location in a device at which an operation is performed, for example, a read station. (3) In SNA, a link station.

stop bit. Synonym for *stop signal*.

stop signal. In start-stop transmission, a signal at the end of a character that prepares the receiving device for reception of a subsequent character. Synonymous with *stop bit*.

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

system configuration. A process that specifies the devices and programs that form a particular data processing system.

system services control point (SSCP). In SNA, the focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support and other session services for end users of the network. Multiple SSCPs, cooperating as peers, can divide the network into domains of control, with each SSCP having a hierarchical control relationship to the physical units and logical units within its domain.

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.

T

terminal. In data communication, a display station or printer capable of sending or receiving information.

terminal emulation. The capability of a microcomputer, personal computer, 3270 CUT mode display station, 3270 printer, ASCII display station, or ASCII printer to operate as if it were a particular type of terminal linked to a processing unit and to access data.

terminal port. (1) In a network, the functional unit of a node through which data can enter or leave the network. (2) The part of a processor that is dedicated to a single data channel for the purpose of receiving data from or transferring data to one or more external or remote devices.

terminal type menu. A list of all the available names and terminal types for a given port.

time-out. (1) An event that occurs at the end of a predetermined period of time that began at the occurrence of another specified event. (2) A time

interval allotted for certain operations to occur; for example, response to polling or addressing before system operation is interrupted and must be restarted. (3) A terminal feature that logs off a user if an entry is not made within a specified period of time.

translate table. 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.

U

unprotected field. A displayed field in which a user can enter, modify, or delete data. Contrast with *protected field*.

W

wraparound. The continuation of an operation (for example, a read operation or a cursor movement operation) from the last character position in a buffer to the first character position in the buffer.

X

X.21. In data communication, a recommendation of the International Telegraph and Telephone Consultative Committee (CCITT) that defines the interface between data terminal equipment and public data networks for digital leases and circuit switched synchronous services.

X.25. In data communication, a recommendation of the CCITT that defines the interface between data terminal equipment and packet switching networks.

3

3270 data stream. (1) The commands, control codes, orders, attributes, and data or structured fields for 3270 devices, that are transmitted inbound to an application program or outbound to a terminal. (2) Data being transferred from or to an allocated primary or tertiary device, or to the host system, as a continuous stream of data and 3270 Information Display System control elements in character form.

3270 emulation. The use of a program that allows a device or system such as a personal computer or a System/38 to operate in conjunction with a host system as if it were a 3270-series display station or control unit.

Index

A

- active session 1-3
- AID characters 3-9
- ALT-Insert key sequence 1-11
- ASCII control codes 2-17
- ASCII Display Host Addressable Printer Support 3-20
- ASCII pass-through mode
 - connecting to host 3-2
 - using a modem B-2
- ASCII printer emulation 2-17
- ASCII terminal emulation
 - connecting to a host 2-4
 - connection menu 2-4
 - Dasher D210 emulation 2-14
 - printer emulation 2-17
 - using a modem 2-3
 - VT100 emulation 2-9
 - VT220 emulation 2-11
 - 3101 emulation 2-5
- ASCII terminals
 - Dasher D210 status line 2-15
 - default switch settings B-7
 - host connection 3-2
 - operating mode 3-2
 - VT100 status line 2-10
 - VT220 status line 2-14
 - 3101 status line 2-6
- Asynchronous Emulation Adapter (AEA) B-1
- attention field, light pen 3-20
- attention identification characters
 - See AID characters
- ATTN 3-9
- auto-call modems B-2

B

- Backtab 3-10
- Base keyboard 1-8
- Break 3-12
- BREAK function
 - DG210 2-15
 - VT100 2-10
 - VT220 2-12
 - 3101 2-6

C

- change-screen key sequences
 - alternate 1-10
 - how to use 1-5
 - keyboard extension mode 1-6
 - location on keyboard 1-5
 - patches 1-11

- character graphics translations A-3
- Clear 3-9
- common problems, how to resolve 4-1
- Connection Menu
 - ASCII 2-4
 - connecting to a host 3-2
 - PF keys 2-5, 3-2
 - status indicators 2-5, 3-2
 - 3270 3-4
 - controller, connecting to 3-2
 - Converged keyboard 1-9
 - Cursor Down 3-9
 - Cursor Fast Left 3-9
 - Cursor Fast Right 3-9
 - Cursor Left 3-9
 - Cursor Right 3-9
 - Cursor Select 3-19
 - Cursor Up 3-9
 - CURSR SEL 3-10

D

- Dasher D210 terminal emulation
 - description 2-14
 - status line format 2-16
- Delete 3-10
- DEV CNCL 3-10
- DUP 3-10

E

- Enhanced Null/Space Processing
 - See Null/Space Processing
- Enter 3-9
- Enter key 3-9
- Erase EOF 3-11
- error messages 1-5
- extended select
 - mode description 1-6
 - status line indicator

F

- Field Mark 3-11
- fields
 - nondisplay
 - See nondisplay fields
 - numeric
 - See numeric fields
 - protected
 - See protected fields
- field, light pen attention 3-20
- formatted screen 3-7

function keys, 3270
See keys, 3270 function

H

Home 3-10
host
 addressable printer support 3-20
 communication protocol
 X.21 1-4
 X.25 1-4
 connection 2-4, 3-2
 control program 3-19
Host Descriptor 1-5
Host Identifier 1-5

I

IBM enhanced keyboard 1-9
IDENT 3-11
input fields 3-7
Insert
 key 3-11
 status line indicator
insert mode 1-3

K

keyboard
 base types 1-5
 Dasher D210 emulation functions 2-15
 extension mode 1-6
 location of change-screen keys 1-5
 mode indicators 3-18
 non-3270 functions 3-12
 VT100 emulation functions 2-9
 VT220 emulation functions 2-11
 3101 emulation functions 2-6
 3270 functions 3-9
keyboard maps
 character graphics translations A-3
 definition 3-8
 for ASCII terminal A-41
 for 3270 terminal A-10
 how to use A-3
 universal A-3
keys, 3270 function
 ATTN 3-9
 Backtab 3-10
 Clear 3-9
 Cursor Down 3-9
 Cursor Fast Left 3-9
 Cursor Fast Right 3-9
 Cursor Left 3-9
 Cursor Right 3-9
 Cursor Up 3-9
 CURSR SEL 3-10
 Delete 3-10
 DEV CNCL 3-10

keys, 3270 function (*continued*)

DUP 3-10
Enter 3-9
Erase EOF 3-11
Erase Input 3-11
Field Mark 3-11
Home 3-10
IDENT 3-11
Insert 3-11
New Line 3-10
PA keys 3-9
PF keys 3-9
Print 3-12
Reset 3-12
SYS REQ 3-12
Tab 3-10
TEST 3-12

L

light pen emulation 3-19
local copy print status 3-18
local copy printing
 ASCII 2-3
 3270 3-21

M

menus
 Connection, ASCII 2-4
 Connection, 3270 3-4
 terminal type 3-3
messages, error 1-5
MLT session indicators 1-4
mode indicators 3-18
modem operations
 ASCII emulation 2-3
 Hayes Smartmodem 1200 setup B-5
 IBM 5841 and 5842 setup B-3
 IBM 5853 Modem setup B-3, B-4
 Micom Data Modems setup B-6
 setup B-1, B-2
 specifications B-2
 3270 emulation 3-2
multiple logical terminal (MLT) support
 change-screen key sequence 1-5
 features of 1-3
 session indicators 1-4
 sessions 1-3
 3270 emulation with PCs 1-10

N

New Line 3-10
non-3270 functions
 Break 3-12
 Refresh 3-12
 Status On/Off 3-13

- nondisplay fields 3-8
- nonescape mode 2-3
- Null/Space processing
 - active sessions 1-3
 - background sessions 1-3
 - change-screen key 1-3
 - definition 1-2
- numeric fields
 - description 3-7
 - status line indication

P

- PA keys 3-9
- PC AT A-18, A-19
- PC XT A-18, A-19
- personal computers
 - change-screen patches 1-11
 - 3270 emulation 1-10
- PF keys 3-9
- Print 3-12
- print ID 3-22
- printer
 - ASCII control codes 2-17
 - ASCII Display Host Addressable Printer Support 3-20
 - attached to display 3-20
 - status line messages 3-18
 - 3270-emulation map 3-21
- printing screens 3-21
- problem determination tables
 - ASCII emulation 4-5
 - 3270 emulation 4-2
- problems, resolving 4-1
- protected fields 3-8

Q

- QWERTY keyboard 1-9

R

- refresh of display screen 3-12
- Reset 3-12

S

- screen fields
 - description 3-6
 - light pen emulation 3-19
 - nondisplay 3-8
 - numeric 3-7
 - protected 3-8
 - types of 3-7
- screen, 3270 terminal 3-7
- scrolling, ASCII emulation 2-2
- selection field, light pen 3-19
- session indicators
 - host descriptor 1-5

- session indicators (*continued*)
 - host identifier 1-5
 - LT identifier 1-4
- setting up ASCII terminals B-7
- setting up modems
- station set descriptor
 - See Host Descriptor
- station set identifier
 - See Host Identifier
- status codes, Connection Menu 4-6
- status line 3-13
- status line format
 - ASCII emulation 2-10, 2-14, 2-16
 - D210 emulation 2-16
 - graphics and meanings 3-15
 - mode indicators 3-18
 - printer status 3-18
 - VT100 emulation 2-10
 - VT220 emulation 2-14
 - 3101 emulation 2-6
 - 3270 emulation 3-13
- status line indicators 2-16
- status messages
 - Connection Menu 3-5
 - Connection Menu codes 4-6
 - mode indicators 3-18
 - printer 3-18
 - status line graphics 3-15
- Status On/Off 3-13
- switch settings, terminal B-7
- SYS REQ 3-12, 3-19

T

- Tab 3-10
- terminal keyboard maps A-1
- terminal setup B-7
- terminal switch settings B-7
- Terminal Type Menu 3-3
- terminal-controlled keys 3-9
- TEST 3-12
- Type Ahead 1-2
- typematic keys
 - VT100 2-10
 - 3101 2-6

U

- unformatted screen 3-7
- universal keyboard map
 - how to select 3-4
 - when to use A-3

V

- VT100 terminal emulation
 - description 2-9
 - National Replacement Character Set 2-11
 - status line format 2-10

- VT220 terminal emulation
 - description 2-11
 - Multinational Character Set 2-13
 - National Replacement Character Set 2-12
 - status line format 2-14

X

- X.21 host communication protocol 1-4
- X.25 host communication protocol 1-4

Numerics

- 3101 emulation
 - description 2-5
 - status line format 2-6
- 3101 terminal emulation 2-5
- 3270 display station
 - attached printer support 3-20
 - default switch settings B-7
 - display image, examples 3-6
 - light pen fields 3-19
 - screen fields, types 3-7
 - status line 3-13
 - VT100 emulation 2-9
 - 3101 emulation 2-6
- 3270 display station emulation
 - attached printer support 3-20
 - communicating with host control program 3-19
 - connecting to a host 3-2
 - Connection Menu 3-4
 - MLT with PCs 1-10
 - printer 3-21
 - reading the display 3-6
 - selector light pen emulation 3-19
 - terminal 3-6
 - using controller functions 3-12
 - 3270 keyboard functions 3-6
- 3270 functions 3-6
- 3270 keyboards
 - functions provided by controller 3-12
 - VT100 emulation functions 2-9
- 3270 printer emulation
 - considerations 3-21
 - printing screens 3-21

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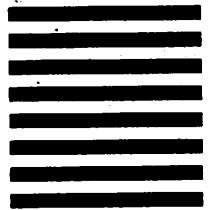
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