HP700/96 HP700/98 User's Manual

HEWLETT PACKARD

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For USA

FCC RFI Statement

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

For Canada

This apparatus complies with the CLASS "A" limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations.

Cet appareil est conforme aux normes CLASS "A" D'Interference radio tel que specifier par le Ministere Canadien des communications dans les reglements D'Interference Radio.

For Germany

Ergonomics Statement

This equipment has been tested in accordance with the requirements of the Equipment Safety Law and carries the GS Safety Mark.

The following characteristics:

- ZH 1/618 Font Set
- Refresh Rate
- Positive and Negative Polarity
- Column Width

may be software influenced. Therefore, it was only possible to verify the basic capabilities of these ergonomics requirements.

The user will have to assure that the characteristics stated above meet with the individually-used software.

Acoustics

LpA < 25 db	LpA < 25 db
Operator position	am Arbeitsplatz
Normal position	normaler Betrieb
Per ISO 7779	nach DIN 45635 T. 19
No Fan installed	Kein Ventilator einge baut

United Kingdom Telecom Statement

Interconnection directly, or by way of other apparatus of ports marked "WARNING. CONNECT ONLY APPARATUS COMPLYING WITH BS6301 TO THIS (THESE) PORT(S)" with ports not so marked, may produce hazardous conditions on the network, and advice should be obtained from a competent engineer before such a connection is made. Connection to the network must not be handwired. This apparatus complies with BS6301. Connect only apparatus complying with BS6301 to the ports of this apparatus.

DECLARATION OF CONFORMITY

(according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name	Hewlett-Packard Co.
Manufacturers Address	8000 Foothills Blvd. Roseville, CA 95678 U.S.A.

declares, that the product

Product Name:	Data Terminals
Model Number's:	HP700/60, HP700/96, and HP700/98

conforms to the following Product Specifications:

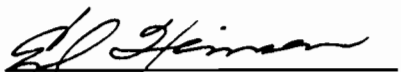
Safety: EN 60950, IEC 950

EMI: EN 55022 Class B

EMC: EN 55101-2, 4kV Contact Discharge, 8kV Air Discharge
EN 55101-3, 3 V/m

Ergonomics: ZH1/618

Supplementary Information: With or Without the Following Keyboards:
C1400A, C1401A, C1402A, C1403A,
C1008A, C1409A, C1411A, C1417A,
C1421A, C1422A, C1424A, or C1425A.

Roseville, California	12/3/91	
Location	Date	Signature / QA Manager

For Japan

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しかし，本装置をラジオ，テレビジョン受信機に近接してご使用になると，受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Preface

Welcome

Your HP 700/96 or HP 700/98 display terminal has many features to make your work easier.

This manual describes how to install and operate your terminal. Inside you will find tasks your terminal can perform when you press the right keys.

How to Use This Manual

Installation	*Chapter 1* tells how to install your terminal and prepare it for use.
Terminal Configuration	*Chapter 2* guides you through setting up your terminal using its configuration menus.
Using the Terminal	*Chapter 3* provides in-depth information on how your terminal functions.
Function Keys	*Chapter 4* describes operations you can access using the terminal's function keys.
ANSI Operation	*Chapter 5* tells how the terminal functions with computers that use ANSI protocol.
Troubleshooting and Maintenance	*Chapter 6* contains procedures on how to maintain the terminal and how to investigate problems.
Terminal Command Summary	*Appendix A* illustrates international keyboard layouts.
International Keyboards	*Appendix B* illustrates international keyboard layouts.

Where to Find More Information

The *HP 700/96 HP 700/98 Reference Manual* (HP Part Number 5959-5072) contains further operating information for programmers, system managers and other computer professionals. You can obtain the reference manual by contacting your local HP Sales Office. Or, call HP's Direct Marketing Division at (800) 538-8787.

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1

Installation

Introduction

This chapter describes how to install the terminal and prepare it for use.

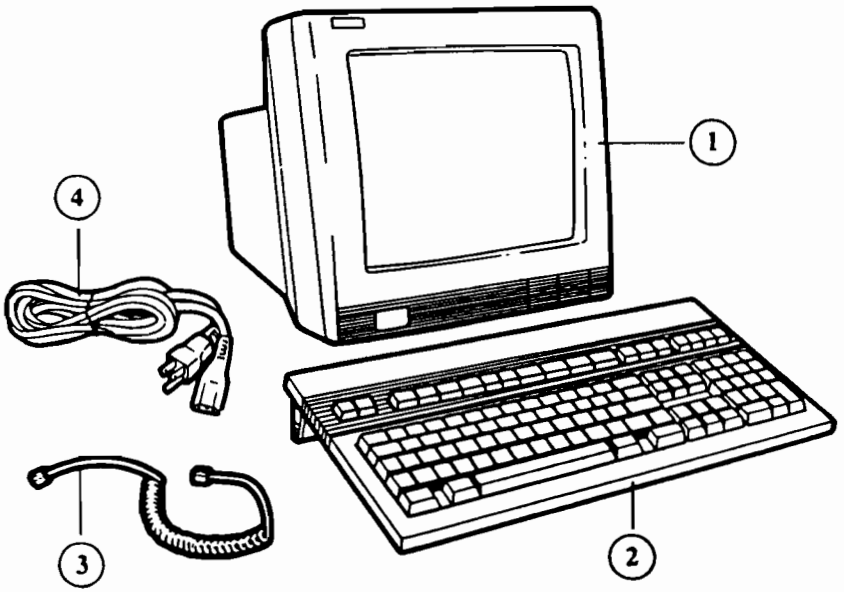

Figure 1-1. Terminal Components

1) Display Unit 2) Keyboard 3) Keyboard Cable 4) Power Cable

Choosing a Site for Your Terminal

Place the terminal on a hard level surface such as a desk, table or stand designed for this purpose.

Caution

Do not place objects on top of the display unit, it may block the unit's air vents.

Keyboard Cable

To connect the keyboard cable to the keyboard:

1. Unwrap the cable. Take the longest flat portion of the cable and plug the connector into the jack at the rear of the keyboard (recessed in the center back).
2. Route the cable to the right or left as desired. Tuck the flat portion of the cable under the cable channel protector at the rear of the keyboard. Direct the cable through the slot at the end of the cable channel.

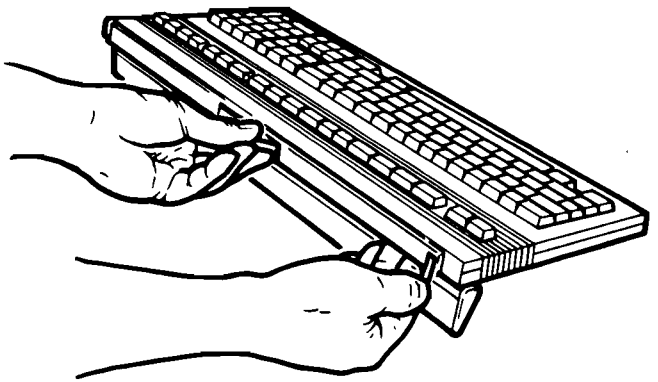

Figure 1-2. Connecting and Routing Keyboard Cable

Attaching Cables to the Terminal

Refer to Figure 1-3 when attaching cables to the terminal's rear panel.

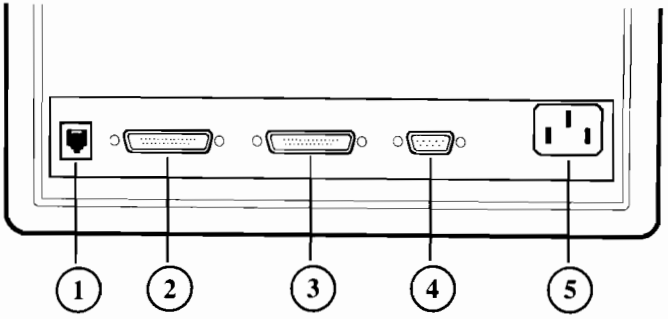

Figure 1-3. Terminal Rear Panel Connections

1) Keyboard Connector 2) Port 1 (Serial) 3) Port 2 (Parallel) 4) Port 3 (Serial) 5) Power Connector

The terminal is equipped with two serial ports and one parallel port. A serial or a parallel port can be used to connect a printer and one serial port has to be used for the datacomm connection to the host computer. Ports 1 and 3 are serial ports (and are so marked on the back of the terminal) and port 2 is a parallel port.

Terminal Keyboard Connection

One end of the keyboard cable is connected to the keyboard as described earlier in this chapter. Connect the other end to the terminal's rear panel. The connector clicks into place when it is installed correctly.

Datacomm Connection

The Datacomm cable is the link from your terminal to a host computer. In its standard configuration, the terminal communicates with a computer through Port 1 over a 25-pin, RS232C datacomm cable. The terminal also supports datacomm through Port 3 over a 9-pin, RS232C cable. (Only one datacomm connection can be used at a time.) One of the following datacomm cables can be used:

PORT	CABLE
1	40242M (25-pin serial)
3	24542M (9-pin serial)

To connect the datacomm cable to your terminal:

1. Insert the RS232C connector into the socket provided in Port 1 (for a 25-pin cable) or Port 3 (for a 9-pin cable). The connector shell is shaped so that it fits onto the socket in the correct position.
2. Tighten the two screws that secure the connection.

Note

If you want to use Port 3 for datacomm, and/or if you want to use a serial port for printer connections, then you must change the terminal's configuration. Refer to the Datacomm/ExtDev field (Terminal Configuration menu) description in Chapter 2.

Printer Connections

You can connect a printer to the terminal using either a parallel or serial interface.

Port 2 is a parallel port and can be used to connect the terminal to a printer. Ports 1 and 3 are serial ports; they, too, can be used to connect a printer. The terminal supports only one printer connection at a time. Printer cables are listed below:

PORT	CABLE
2	24542D (25/30 pin parallel)
3	24542G (9-pin serial)

To connect a printer cable to any of the terminal's ports, insert the cable's connector into the port socket and tighten the screws that secure the connection.

Power Cable Connection

An appropriate power cable is supplied with your terminal.

Warning

Turn the terminal off before applying power. The power button on the front lower left-hand corner of the terminal is flush with the front panel when the terminal is off (see Figure 1-4). Also, for your safety, use only a power cord with a 3-prong connector.

Insert one end of the power cord into the AC socket on the back of the terminal. Then plug the 3-prong connector on the other end of the cable into an electrical outlet.

Terminal Controls

Before you turn on the terminal, make sure it is connected to a power source. Turn on the terminal by pressing the power button shown in Figure 1-4. The button remains depressed in the ON position.

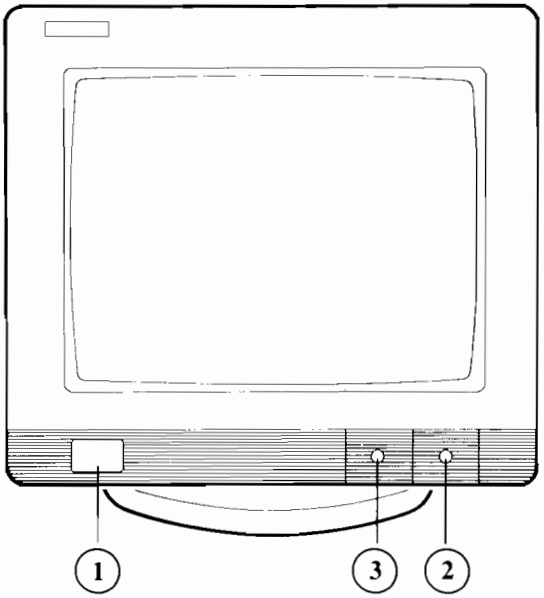

Figure 1-4. Terminal Controls

1) Power 2) Brightness 3) Contrast

When the terminal turns on, its bell sounds. After approximately 10 seconds, when the terminal has successfully performed its power-on self-test, the bell sounds a second time.

Use the brightness and contrast slide controls to adjust the display for comfortable viewing.

The terminal is now ready for use. If it does not turn on as described, refer to Chapter 6 for troubleshooting procedures.

Note

The display unit is equipped with a circular base that swivels 180 degrees. Be sure that the base is centered properly (so that you can turn the display 90 degrees to the left or right).

2

Terminal Configuration

Introduction

Most of the time your terminal is used online with a host computer. Data entered at the keyboard is sent to a computer for processing, and data from the computer is displayed on the screen or sent to a printer.

The terminal must be configured to operate correctly. This chapter shows the configuration menus available (except for ANSI configuration, which is described in Chapter 5). Consult your Data Processing department or your system documentation for the terminal configuration parameter values required for your application.

Selecting Operating Modes

The terminal can be operated in several modes when connected to a computer. These modes are described in the following paragraphs. To display the modes labels, press System, then **modes** , then select a mode.

Remote Mode

Press **REMOTE MODE** to activate remote mode, allowing your terminal to communicate with your host computer. When Remote mode is activated, an asterisk appears in the label **REMOTE MODE***.

Block Mode

BLOCK MODE selects whether data is sent to the computer in blocks of characters (Block mode) or character-by-character as they are typed (Character mode). In Block mode, pressing Enter sends the data to the computer.

Choose the mode required for your application. When Block mode is active, an asterisk appears in the label **BLOCK MODE***. When Character mode is selected the asterisk does not appear.

Auto LF

AUTO LF selects whether or not a line feed is generated when the Return key is pressed. When you select automatic line feed, an asterisk appears in the label **AUTO LF***. If your terminal is communicating with a computer in character mode, automatic line feed should normally be deactivated.

Entering Field Values on Menus

The procedure for making selections from any of the menus is essentially the same. After you display the menu you want, follow these steps:

1. Press System, then **config keys** to display the labels for the menus available.
2. Press the function key label associated with the menu you want to display.
3. When the menu appears, press Tab until the cursor is in the field containing the setting you want to change.
4. Press **NEXT CHOICE** or **PREVIOUS CHOICE** to cycle through predefined selections in a menu field until the selection you want is displayed in the field. For a menu field with no predefined values, type in your selection directly.

Saving Your Selections

Press **SAVE CONFIG** to save and activate your selections and return to normal operation.

Note

Pressing **config keys** before you save the terminal's settings restores the previously displayed values, exits the menu, and redisplays the **config keys** labels on the screen.

More Selection Options

While a menu is displayed on the screen, you can:

- Press **DEFAULT VALUES** to display the default settings (the factory-set values stored in memory).
- Press **POWER ON VALUES** to display the settings that are active when you turn the terminal on. The settings are either the ones you've already saved in memory or the default settings.
- Press **ACTIVE VALUES** to recall currently active menu settings. A program from a host computer can change current menu settings. Press **ACTIVE VALUES**, then **POWER ON VALUES**, to compare the current settings with the power-on settings and identify any changed values.

Global Configuration Menu

Perform the following steps to choose operating features in the menu:

- Press (System), then **config keys** to display the labels for available menus.
- Press **global config** to display the Global Configuration menu.
- To make your selections, refer to "Entering Field Values on Menus" earlier in this chapter.

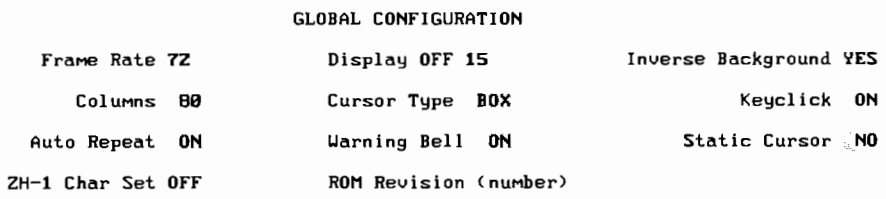

Figure 2-1. Global Configuration Menu (Default Values Shown)

Table 2-1. Global Configuration Menu Selections

Menu Field	Description
Frame Rate	50Hz, 60Hz or 72Hz. Select the rate that gives you a flicker-free screen display.
Display OFF	Choose 5, 10, 15 or NO. If you select a time, the screen-saver option automatically turns off the display after the prescribed time interval. No data is lost. To redisplay, press (Shift).
Inverse Background	YES for dark characters displayed on a white screen or NO for light characters on a dark screen.
Columns	Choose between 80 or 132 column display. Screen data is lost if you change this field and save it.
Cursor Type	LINE for blinking line or BLOCK for blinking box cursor.
Keyclick	YES turns on an audible keyclick; NO suppresses it.
Auto Repeat	ON enables keys repeating when held down; OFF disables if.
Warning Bell	ON causes a bell tone to sound when an internal error occurs (or the computer sends a warning tone); OFF disables the function.
Static Cursor	YES causes thecursor to remain on; NO causes cursor to blink.
ZH-1 Char Set	ON indicates that the displayed characters meet the ZH-1 specifications for Germany. OFF means that the normal characters are displayed.
ROM Revision	The terminal's firmware version number.

Terminal Configuration Menu

To define the specific terminal operating conditions you want for your application:

1. Press (System), then **config keys** to display the labels for available menus.

2. Press **terminal config** to display the Terminal Configuration menu.

To make your selections, refer to "Entering Field Values on Menus" at the beginning of this chapter.

```
                          TERMINAL CONFIGURATION

Datacomm/extDev SERIAL(1)/SERIAL(2)          Keyboard    USASCII
    Terminal Id 70096                        Language    ENGLISH

     Local Echo OFF        CapsLock OFF      Start Col  001          Bell  ON
   XmitFnctn(A)  NO      SPOW(B)  NO     InhEolWrp(C)  NO   Line/Page(D) LINE
   InhHndShk(G)  NO   Inh DCZ(H)  NO     BlkXfer Trigr DC1    Esc Xfer(N)  NO
                                                  Forms Buf Size(256x) 000
                 U                 R                                      C
   FldSeparator  S   BlkTerminator  S     Return=Enter  NO       ReturnDef  R
    Tab=Spaces  NO    NumPad Tab =  Tab                          TermMode  HP

                              FORMAT MODE

Decimal Type US    Imp Dec Digits 2    Transmit   ALL Fields    Print Fields
```

Figure 2-2. Terminal Configuration Menu (Default Values Shown)

Table 2-2. Terminal Configuration Menu Selections

Menu Field	Description
Datacomm/ExtDev	This field specifies which port (Port 1, Port 2, or Port 3) is assigned to the host computer (for example, the datacomm line), and which port is assigned to a connected printer (for example, the external device line). The choices are: ■ Serial(1)/Serial(2) sets Port 1 (serial, 25-pin port) as the computer port and Port 3 (serial,9-pin port) as the printer port. ■ Serial(2)/Serial(1) sets Port 3 for the computer, Port 1 for the printer. ■ Serial(1)/Parallel(1) sets Port 1 (serial, 25-pin port) for the computer, Port 2 (parallel, 25-pin port) for the printer. ■ Serial(2)/Parallel(1) sets Port 3 for the computer, Port 2 for the printer. All three ports cannot be assigned simultaneously. Port 2 can never be assigned to the computer.
Keyboard	USASCII specifies that the US keyboard is in use. Select another setting if you're using a national language option keyboard other than USASCII. See Appendix B to see illustrations of international keyboards available for the terminal.
Terminal Id	Identifies the terminal for computer applications. Type in the setting you need for your task.
Language	ENGLISH specifies the national language the terminal is currently operating in. Select the national language option you intend to use.
Local Echo	ON specifies that the characters you type are both displayed on the screen and sent to the host computer; OFF specifies that the typed characters are not displayed on the screen but are sent to the computer (although most computers *echo* them back to the screen).
Caps Lock	ON makes all characters uppercase letters; OFF lets you choose upper or lower case letters using the Caps key.

Table 2-2. Terminal Configuration Menu Selections (continued)

Menu Field	Description
Start Col	Under certain conditions, the terminal ignores any characters to the left of the start column you specify in this field.
Bell	ON enables the bell to sound when the cursor nears right margin, OFF disables it.
XmitFnctn(A)	NO or YES. Specifies whether escape code functions are executed at the terminal or transmitted to the host computer.
SPOW(B)	NO or YES. Specifies whether or not spaces entered at the keyboard write over (erase) existing characters.
InhEolWrp(C)	YES specifies that the characters you type automatically wrap to the next line after the right margin is reached; NO inhibits end-of-line wrap.
Line/Page(D)	Specifies whether a line or a page of data is transmitted when the terminal is in Block mode.
InhHndShk(G)	Determines the type of handshaking to be used when transferring blocks of data to a computer.
Inh DC2(H)	NO or YES. Determines the block transfer handshaking method.
BlkXfer Trigr	Block transfer trigger. DC1 specifies that only DC1 is recognized as the block transfer character. DC4 specifies that only DC4 is the block transfer character. BOTH specifies that both DC1 and DC4 are recognized as block transfer characters.
Esc Xfer(N)	Controls the transfer of escape sequences to a printer.
FormsBufSize(256x)	Selects the amount of terminal memory allocated to forms cache, which decreases available display memory **(HP 700/98 only)**.

Table 2-2. Terminal Configuration Menu Selections (continued)

Menu Field	Description
Fld Separator	Specifies the field separator character the terminal transmits at the end of each protected field in Block mode when you press [Enter].
BlkTerminator	Specifies the block terminator character the terminal transmits at the end of a transfer operation.
Return &=; Enter	Specifies whether or not the [Return] key functions as the [Enter] key.
ReturnDef	Specifies the definition of the [Return] key.
Tab &=; Spaces	Specifies whether or not the [Tab] key generates ASCII space codes for applications requiring this function. For normal HP operation, use the NO setting.
NumPad Tab &=;	Sets the [Tab] key on the numeric keypad to function as either [Tab], [Enter] or [Return].
Term Mode	HP, EM100, EM52 or EM220. Select the mode for your application.
Decimal Type	Specifies whether the US (.) or European (,) decimal notation is used **(HP 700/98 only)**.
Imp Dec Digits	Specifies the number of places to the right of the decimal in an implied decimal field **(HP 700/98 only)**.
Transmit	Specifies whether you want all fields or only those fields which you have modified to be transmitted from a form **(HP 700/98 only)**.
Print	Specifies whether you send all of a form or only the unprotected and transmit-only fields to a printer.

Datacomm Configuration Menu

Make menu selections as described in this section to allow your terminal and computer to *talk* to each other.

- Press (System), then **config keys** to display the labels for available menus.
- Press **datacomm config** to display the Datacomm Configuration menu.
- To make your selections, see "Entering Field Values on Menus" at the beginning of this chapter.

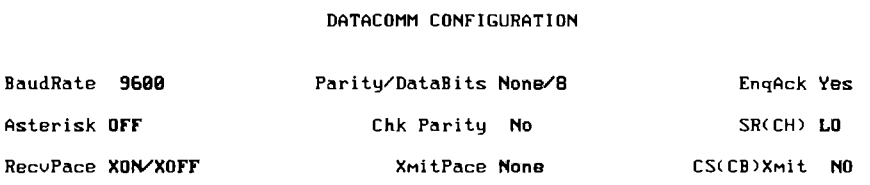

Figure 2-3. Datacomm Configuration Menu (Default Values Shown)

Table 2-3. Datacomm Configuration Menu Selections

Menu Field	Description
BaudRate	Selects the transmission rate (bits per second) you need for communicating with your computer.
Parity/DataBits	Selects the type of parity and number of bits per byte that matches your computer application.
EnqAck	Selects whether or not the Enquire / Acknowledge type of handshaking protocol is to be used.
Asterisk	Selects whether you want the line transmission indicator (*) to appear in the status line or not.
Chk Parity	Selects checking or ignoring parity for each received data byte.
SR(CH)	Selects the desired state for transmitting over a modem.
RecvPace	Selects the desired method of *handshaking* for terminal-to-computer communication.
XmitPace	As in RecvPace, this field lets you select the appropriate handshaking method.
CS(CB)Xmit	Selects the appropriate state for the transmission control line.

External Device Configuration Menu

Make menu selections as described in this section to allow your terminal to communicate with your printer.

- Press (System), then **config keys** to display the labels for available menus.
- Press (System), then **ext dev config** to display the External Device Configuration menu.
- To make your selections, see "Entering Field Values on Menus" at the beginning of this chapter.

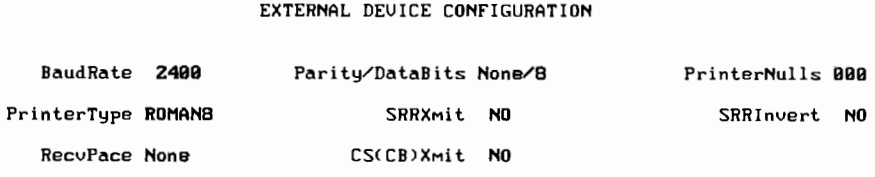

Figure 2-4. External Device Configuration Menu (Default Values Shown)

Table 2-4. External Device Configuration Menu Selections

Menu Field	Description
BaudRate	Selects the transmission rate (bits per second) you need for communicating with your printer.
Parity/DataBits	Selects the type of parity and number of bits per byte that fits your printer application. Datacomm/
Printer Nulls	Selects the number of null codes to be transmitted to a printer after each ASCII control code.
Printer Type	Select EXT ROMAN or ROMAN 8 to specify how your printer handles national characters. Consult your printer's manual to determine the appropriate setting.
SRRXmit	Specifies the control line for transmitting data.
SRRInvert	When SRRXmit is set to YES, specifies whether or not the true state of the control line is inverted from +12V to -12V.
Xmit Pace	Specifies the type of handshaking protocol to be used between the terminal and printer.
CS(CB)Xmit	Selects the appropriate state for the transmission control line.

Note

The Printer Nulls and Printer Type fields apply to both parallel and serial print connections. The other fields apply only to serial print connections.

By default, Port 2 is assigned as the printer port. Port 2 is a parallel port. If you want to use a serial print connection, you must change the terminal's configuration to make either Port 1 or Port 3 the printer port. Ports 1 and 3 are serial ports. If you want to change the port assignments, use the Datacomm ExtDev field on the Terminal Configuration menu.

3

Using the Terminal

Screen Display

The following illustration shows what appears on the screen when you turn the terminal on.

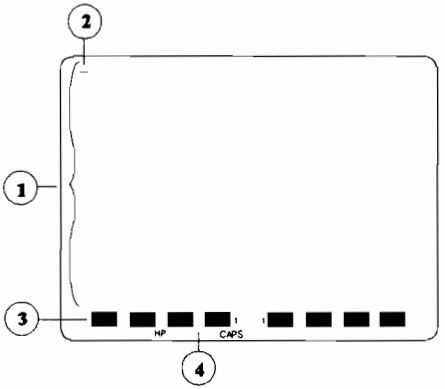

Figure 3-1. Initial Screen Display

1) Your Work Area 2) Cursor 3) Function Key Labels 4) Status Line

- **Your work area.** Lines 1 through 24 display your work area, where letters and symbols appear as you type them on the keyboard.
- **The cursor.** A blinking underline or box that shows where the next letter you type will appear.
- **Function key labels.** Lines 25 and 26 display labels that identify the functions that keys F1 through F8 currently perform.
- **The status line.** Line 27 is the status line. Indicators tell which of several operating states are currently active.

Screen Labels for Function Keys

The eight function key labels tell what tasks the corresponding eight function keys currently perform. An uppercase label indicates a performable task. An asterisk in a label tells you it is active (more than one function at a time can be active). A lowercase label indicates that pressing the corresponding function key displays another label set. The two numbers between the labels F4 and F5 tell where the cursor is: the first number is the row, the second is the column.

Status Line Indicators

The status line displays these indicators:

KB Lockd	The keyboard is locked while the terminal performs a task. The message clears when the task is completed.
*	A modem is being used for data transmission. An asterisk appears only when the Asterisk field in the Datacomm Configuration menu is enabled.
Blank EM100 EM220 EM52	Tells the active operating mode. Blank = normal operation; EM100 = VT100 emulation; EM220 = VT220 emulation; EM52 = VT52 emulation.
CAPS	All typed letters are uppercase (press Shift with a key for lowercase). Press Caps to turn on or off.
Ins Char	Characters are inserted at the cursor (normally they replace existing characters). If the line is already full, overflow characters are lost. Press Insert Char to turn on or off.
Ins Wrap	Same as Ins Char, except when you insert characters in a line that is already full, the characters that overflow the margin wrap to the beginning of the next line. If the next line becomes full, a new line is inserted.
STOP	The Stop key has been pressed, halting communication to and from the host computer. Press Stop again to resume transmission.
L1L2L3L4	These replace the LED indicators on a VT100. Their meanings depend on the currently running host program (see Chapter 5).

The Keyboard

The terminal's keyboard consists of several groups of keys. This section describes the functions of the keys in each group.

Typewriter Keys

The typewriter keys function like a standard typewriter. The keys include capital and small letters, numbers, punctuation marks and commercial symbols. Several typewriter keys perform special tasks. Those tasks are described in the following table.

Table 3-1. Special Keys on the Typewriter Keypad

Key Name	Description
Shift	When pressed with another key, produces uppercase letters or the top symbol on keys with two symbols. When pressed with a function key, performs the function indicated on the top of the key (for example, Shift Break resets the terminal).
Caps	Activates CAPS mode. Makes all letters you type on the screen capitals. (Number and symbol keys remain unaffected). The message **CAPS** appears at the bottom of the screen. While in CAPS mode, use the Shift key to type individual lowercase letters. Press Caps again to return to normal operation.
Tab	Moves the cursor to the next tab. Shift Tab moves the cursor to the previous tab. In a menu or a form with protected fields, pressing Tab moves the cursor from one unprotected field to another. (The Tab key on the numeric keypad functions the same as the typewriter Tab key.)
Return	Moves the cursor to the first column of the current line. When automatic line feed (AUTO LF) is on, pressing Return moves the cursor to the left margin of the next line. Normally, the host computer generates the automatic line feed, so you don't have to turn on AUTO LF.
Backspace	Moves the cursor back one space at a time. Backspace spaces over characters without deleting them. In some computer applications, Backspace erases characters as it moves backward.
Ctrl	Press with another key or series of keys to control terminal functions. For example, Ctrl G makes the terminal beep. Ctrl key combinations require pressing and holding down all keys in the combination simultaneously.

Table 3-1. Special Keys on the Typewriter Keypad (continued)

Key Name	Description
Extend Char	Press and hold down as you press a character key to display a character from the extended character set (Figure 3-3). the message **Ext Char** appears in screen status line. The extended characters and symbols are from national languages other than English. To type an accented character, first press the desired accent (the r, t, y, u and i keys are accents), then press the vowel you want accented.

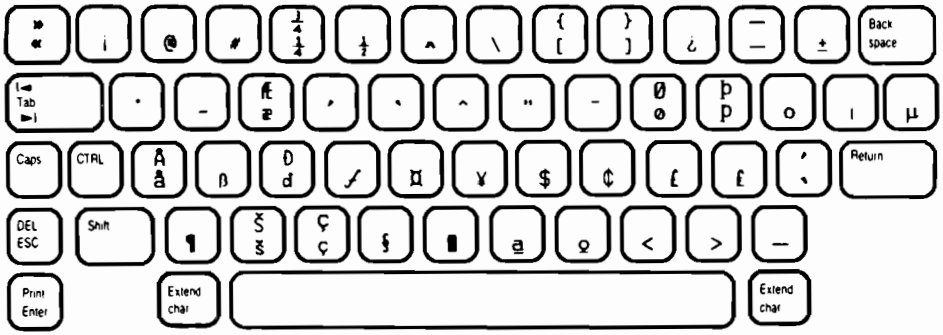

Figure 3-2. Extended Character Set

Note

To use extended characters, set Parity/DataBits to **None/8** in the Datacomm Configuration menu. To print extended characters, set Parity/DataBits to **None/8** in the External Device Configuration menu.

Numeric Keypad

The numeric keypad, located at the lower-right of the keyboard, contains number and symbol keys arranged like an adding machine or calculator. The numeric keypad generates other characters in EM100, EM52 and EM220 Modes. For more information on the other characters you can generate, refer to Chapter 5.

Display Control Keys

Use the Display Control keys to move the cursor around the screen or bring a different portion of your data onto the screen.

Table 3-2. Display Control Keys

Key Name	Description
↖	Moves the cursor to the *home* position — the left margin of line 1 of the screen (and display memory). Shift ↖ moves the cursor to the left margin of the line following the last line of your data.
▲	Moves the cursor up one line. (If the cursor is on the top line when you press ▲, the cursor reappears at the bottom of the screen). Shift ▲ performs the same action as Scroll Up.
Scroll Up	Scrolls lines of text up the screen, displaying lines that were below the screen window.
▼	Moves the cursor down one line. If the cursor is on the bottom line when you press ▼, the cursor reappears at the top of the screen). Shift ▼ performs the same action as Scroll Down.
Scroll Down	Moves lines of text down on the screen, displaying lines that were above the screen window.
◀	Moves the cursor left one space. If the cursor is at the first space of a line, pressing ◀ moves the cursor to the last space of the previous line.
▶	Moves the cursor right one space. If the cursor is at the last space of a line, pressing ▶ moves the cursor to the first space of the next line.
Next	Displays the next 24 lines of data on the screen.
Prev	Displays the previous 24 lines of data on the screen.

Editing Keys

The terminal has editing capabilities that allow you to modify data on the screen.

Table 3-3. Editing Keys

Key Name	Description
Clear Line	Erases all data in a line from the cursor's position to the end of the line. Shift Clear Line moves the cursor to the beginning of the line and erases the entire line of data.
Clear Display	Deletes all characters from the cursor's position to the end of your data (including those not currently displayed). Shift Clear Display moves the cursor to the home position (the first column of the first line) and then performs the clear display function.
Insert Line	Inserts a new blank line above the current line. The cursor moves to the left margin of the new line and the lines following the new line move down.
Delete Line	Deletes the line containing the cursor and moves the lines following the deleted line up.
Insert Char	Activates Insert Character mode. The message `Ins char` appears at the bottom of the screen. All subsequent characters you type are inserted at the cursor position. If the line becomes full, the letters pushed to the right margin are lost. Press Insert Char again to return to normal operation. Shift Insert Char functions like Insert Char, except letters pushed to the right margin wrap to the next line. The message `Ins Wrap` appears on the status line. If the next line becomes full, a new line is inserted.
Delete Char	Deletes the character at the current cursor position. Characters in front of the right margin move left to fill the gap. Shift Delete Char deletes the character at the current cursor position *and* replaces the last character of the line with the character from the left margin of the next line.

Terminal Control Keys

Two keys control specific terminal functions: Break and Stop.

Table 3-4. Terminal Control Keys

Key Name	Description
Break	Sends a *break* signal to the computer, which usually ends the application currently running. Shift Break performs a soft reset of the terminal. Ctrl Shift Break performs a hard reset of the terminal. Ctrl Break causes a break of about 2 seconds. For more information on resetting the terminal, refer to "Resetting the Terminal" in Chapter 6.
Stop	If the RecvPace field on the Datacomm Configuration menu is set to **XON/XOFF**, pressing this key temporarily prevents the terminal from receiving data from a remote computer. Ctrl Stop initiates a break in transmission to and from the host computer.
Esc	Use in combination with other characters to control terminal operations. Esc key combinations (escape sequences) are used to control the terminal by a computer program. Consult the *HP700/96 HP700/98 Reference Manual* (HP Part Number 5959-5072) for details on escape sequence programming. Shift Esc sends a DELETE character to the host computer. Its meaning depends on the application program.
Enter	Sends a block of data to the host computer when the terminal is operating in Block mode. Shift Enter prints all your data, including the text on the screen and in screen memory.

Function Keys

The function keys provide control of many important terminal operations. Chapter 4 describes how to access these operations. Two keys provide access to the function keys.

Table 3-5. Function Keys

Key Name	Description
Menu	Turns the display of the function key labels (along the bottom of the screen) on and off. The user keys are active even when the labels are not displayed. Ctrl Menu displays the user keys menu. You can define the eight function keys as user keys to perform repetitive tasks or you can type frequently used key sequences. Chapter 4 describes how to define and operate the user keys.
System	Displays the primary set of system labels. Shift System displays the labels for and activates the user function keys. Ctrl System displays VT220 user keys (see Chapter 5).

Print Key

The Print key lets you print the contents of display memory on a printer.

Using the Terminal with a Printer

This section describes how you can print a hardcopy of what is on your terminal screen.

Configuring the Terminal

Terminal-to-printer communications must be properly configured so that the terminal can correctly transmit data.

You select the proper operating characteristics by choosing a setting for the Datacomm/ExtDev field on the Terminal Configuration menu and appropriate

fields of the External Device Configuration menu. Refer to Chapter 2 for information on these settings and menus.

Selecting the Printer as the Destination

The destination is the "to" device for a data transfer. Selecting the printer as the "to" device allows data to be sent to it from the screen.

To select a printer as the "to" device:

1. Press (System), then press **device control**.
2. Press **TO EXT DEV**.

   This specifies a printer as the destination. (**TO DISPLAY**, which sets the terminal screen as the destination for data, functions only when the terminal is in Record mode.)

Logging Data

Data logging causes data entered from the keyboard or received from the host computer to be sent automatically to the "to" device (a printer, for example). To activate data logging, press **device modes**, then press **LOG BOTTOM** or **LOG TOP**. Pressing the key again deactivates the function.

Log Top

The top line of data in display memory is sent to the printer as it rolls off the top of memory.

Log Bottom. When the cursor moves to a new line, the previous line prints on the printer.

Screen Copy

To copy data that is currently on the screen, use the device control function keys (refer to "Device Control Labels" in Chapter 4) or the (Print) key (refer to "Terminal Control Keys" earlier in this chapter).

To use the function keys, press System, then **device control**. Choose the function you want by pressing the appropriate function key shown in the following list:

- Press **COPY ALL** to copy all the data from the line containing the cursor to the last line of data in memory.
- Press **COPY PAGE** to copy all the data from the line containing the cursor to the last line displayed on the screen.
- Press **COPY LINE** to copy the line containing the cursor.
- Press **ADVANCE PAGE** to make the printer skip to the top of the next page.
- Press **ADVANCE LINE** to make the printer skip a line.

Using The Print Key. If the terminal is set for local mode, pressing Shift Print copies the contents of memory to the printer.

Note

Refer to the Print field in the Terminal Configuration menu (described in Chapter 2) for more information on how the print function works.

4

Function Keys

What Are Function Keys?

The eight function keys at the top of the keyboard perform the functions indicated by the eight corresponding labels displayed at the bottom of the screen.

Uppercase labels perform the indicated function. An asterisk appears in a label to show the function is active. Several labels in a set can be active at the same time. When two keys activate mutually exclusive functions, turning on one label removes the asterisk in the other.

Lowercase labels lead to other label sets, allowing you to cycle through all the functions available.

System Labels

The System key displays the system function labels.

Table 4-1. System Labels

Label	New Label Set Function
`device control`	Defines how you print information to a printer connected to the terminal.
`margins/ tabs/col`	Formats the display of information on the screen.
`modes`	Selects the operating modes you desire.
`enhance video`	Selects one or more video enhancements.
`define fields`	Provides field choices for creating forms. For a discussion of the Define Fields labels, refer to Table 4-8.
`config keys`	Calls up menus to select precisely the operating characteristics you desire.

Device Control Labels

The device control labels that control printing functions are described below.

Table 4-2. Device Control Labels

Label	Function
device modes	Displays the labels that control logging of data and record mode.
TO EXT DEV	Sets the terminal to print data to a connected printer.
TO DISPLAY	Sets terminal to print data to the display. (Valid only when Record mode is on).
ADVANCE PAGE	Advances the printer to a new page.
ADVANCE LINE	Advances paper in printer one line.
COPY ALL	Prints all the data from the line containing the cursor to the last line of data in memory.
COPY PAGE	Prints all the data from the line containing the cursor to the last line desplayed on the screen.
COPY LINE	Prints the line containing the cursor.

Device Modes Labels

You can automatically route information to a printer using the device modes set:

Table 4-3. Device Modes Labels

Label	Function
device control	Displays the **device control** labels.
RECORD MODE	Turns Record mode on and off. Copies data from display memory or datacomm to the configured destination device.
LOG BOTTOM	As the cursor enters a new line, the previous line prints on a printer.
LOG TOP	Prints the top line of data in display memory as it is rolled off the top of the memory by new lines added at the bottom.

Margins, Tabs, and Column Labels

This set of labels determines how the information on the screen is formatted.

Table 4-4. Margins, Tabs, and Column Labels

Label	Function
START COLUMN	Sets start column to current cursor column. You can then send information to a computer beginning with the column specified. **REMOTE MODE** must be on, and you must use Line Modify or Modify All mode. Press Enter or Return to start transmitting data.
SET TAB	Sets tab at the current cursor column.
CLEAR TAB	Clears tab at the current cursor column.
CLR ALL TABS	Clears all tabs.
LEFT MARGIN	Sets left margin at the current cursor column.
RIGHT MARGIN	Sets right margin at the current cursor column.
CLR ALL MARGINS	Sets left margin at column 1, right margin at column 80.
TAB= SPACES	Sets TAB key to spaces. When you press the TAB key, it replaces the existing text with spaces.

Modes Labels

The **modes** labels control many of the terminal's operating conditions.

Table 4-5. Modes Labels

Label	Function
LINE MODIFY	Allows editing of a line of text without having to retype the entire line. Operates only while Remote mode is active and Block mode is off. To edit a line, press **Line Modify**, edit the text, then press Return or Enter to transmit the edited line to the computer (Line Modify automatically turns off).
MODIFY ALL	Allows editing of the entire text. Modify All mode remains on after you press the Return or Enter key. Press **MODIFY ALL** again to exit Modify All mode.
BLOCK MODE	In Remote mode operation, sends text to the computer all in one block. Characters appear on the screen as you type them, but are not transmitted to the computer until you press the Enter key. When Block mode is off, the terminal transmits characters to the computer as you type them.
REMOTE MODE	Sets the terminal to operate "online" with the host computer. Turning off Remote mode puts the terminal offline for Local mode operation.
SMOOTH SCROLL	Sets the display to scroll your information in an even flow, rather than "jumping" the lines.

Table 4-5. Modes Labels (continued)

Label	Function
MEMORY LOCK	■ **Overflow Protection:** To ensure against data loss when memory is full, select Memory Lock while the cursor is in the first screen line. When the end of memory is reached, the keyboard locks, the terminal beeps and the message MEMORY FULL appears on the screen. To continue entering text, press (Return) to unlock the keyboard, then delete some text or turn off Memory Lock. ■ **Display Lock:** You can "freeze" data on the screen by turning on Memory Lock in a line of text. All lines above the cursor's current line become locked in place on the screen. Then enter data normally. When the screen fills up, any further data entered forces the first line of unfrozen text to scroll under the frozen data. Lines scrolled off the screen are inserted into memory immediately preceding the first frozen line.
DISPLAY FUNCTNS	Allows you to enter control characters on the screen without having the terminal perform the control operations indicated (carriage return and linefeed are displayed *and* executed).
AUTO LF	Sets the terminal to advance the cursor to the next line when you press (Return), which normally places the cursor at the beginning of the current line.

Enhance Video Labels

The **enhance video** labels give the keyboard control of the available video enhancements.

Table 4-6. Enhance Video Labels

Label	Function
define fields	Displays the **define fields** labels for creating forms.
SET ENHANCMT	Activates the currently selected state (either on or off) for every enhancement. Use to enable or disable any enhancement.
SECURITY VIDEO	Inhibits display of characters entered in this field. Use this key to define password fields. When you type a password, the characters display as blank spaces but the information is sent to the computer. (Remote mode must be on.)
INVERSE VIDEO	Changes dark background with bright characters to dark characters on bright background or vice versa.
BLINK VIDEO	Causes the characters in the field to blink on and off.
UNDRLINE VIDEO	Underlines all characters, including blanks.
HALF BRIGHT	Displays all characters in the field at half intensity.

Config Keys Labels

The functions corresponding to the config keys labels let you access the terminal's five configuration menus.

Table 4-7. Config Keys Labels Labels

Label	Function
global config	Displays the Global Configuration menu.
datacomm config	Displays Datacomm Configuration menu.
ext dev config	Displays the External Device Configuration menu.
terminal config	Displays the Terminal Configuration menu.
ansi config	Displays the ANSI Configuration menu (not displayed in HP mode).

Format Mode

This section describes the function key label sets that allow you to define fields using the keyboard (rather than escape sequences from a host computer program).

You use the **define fields** set to logically define fields within a form. Within this label set you access the **define edits** menu to let you define precisely the field edit characteristics you desire (see Figure 4-1).

Defining Fields

You can use the label sets described in this section to define three field types: Protected Fields, Unprotected Fields and Transmit-Only Fields.

Protected Fields

When the terminal is in Format mode, it safeguards any information that occurs in a protected field. You cannot enter data into these fields. If you press a character key, the cursor advances to the next unprotected field before the terminal accepts the character. All areas that you do not explicitly define as either unprotected or transmit-only fields become protected fields.

Unprotected Fields

These fields accept data. The terminal positions the cursor to the next unprotected field under the following conditions:

- you request the next field by pressing the Tab key.
- you have entered a character in the last character position of the current field.
- you attempt to enter data in a protected area.

Transmit-Only Fields

The information in these fields rarely changes. Each time you transmit data to the computer, the terminal sends this information, but it also retains a copy on the terminal screen in preparation for the next transfer. Thus, you need not fill in these fields on every form. (Common examples are today's date or the identification number of the keyboard operator who is filling out the forms.) Most cursor movements (such as those automatically generated by the terminal or your pressing the Tab key) skip transmit-only fields. To change the entry in a transmit-only field, you must move the cursor to the field by using the cursor-positioning keys.

Data Checking (HP 700/98 Only)

Your terminal can test data entered at the keyboard to verify that it is either alphabetic or numeric. If an input character fails the test, the terminal gives a warning sound (beep), displays an error message indicating what type of data the field accepts, and locks the keyboard. Pressing the Return key clears the error condition. You may then enter the correct information.

To have the terminal perform edit checks, you must define fields with edit-checking capabilities.

Define Fields Labels

You can use the define fields set to specify field types when designing a form.

Table 4-8. Define Fields Labels

Label	Function
enhance video	Displays the **enhance video** set of labels.
START UNPROTCT	Defines all character positions between the cursor and either the start of the next field, a stop field marker, or the end of the line (whichever comes first) as an unprotected field. Any character can be entered in an unprotected field. Data in unprotected fields can be transmitted to the computer in Remote mode. An unprotected field is ended by either a stop field marker (produced with the **STOP FIELD** key) or the end of the line.
START XMIT FLD	Defines all character positions between the cursor and the start of the next field, a stop field marker, or the end of the line (whichever comes first) as a transmit-only field. In Remote mode, data in a transmit-only field is transmitted to the computer along with data in any unprotected field. In Format mode, the Tab keys skip over transmit-only fields. Data can be entered in a transmit-only field by cursor positioning keys. The **STOP FIELD** key must be used to end a transmit-only field. Transmit-only fields can be further defined as alphanumeric, alphabetic only, numeric only, or any combination of these fields.
STOP FIELD	Defines the end of any unprotected or transmit-only type field (by generating a stop field marker).
START EDITS	(HP 700/98 only.) Defines the start of each edited field.
define edits	(HP 700/98 only.) Displays the field definition menu. Refer to Figure 4-1).

Table 4-8. Define Fields Labels (continued)

Label	Function
FORMAT MODE	Turns on Format mode. In this mode, the fields (defined using the Define Fields label set) are activated. When Format mode is entered, all memory is protected unless specifically defined using the Define Fields function keys. The normal procedure is to define the display enhancements, field, and character sets, then enter Format mode and enter data into the fields.

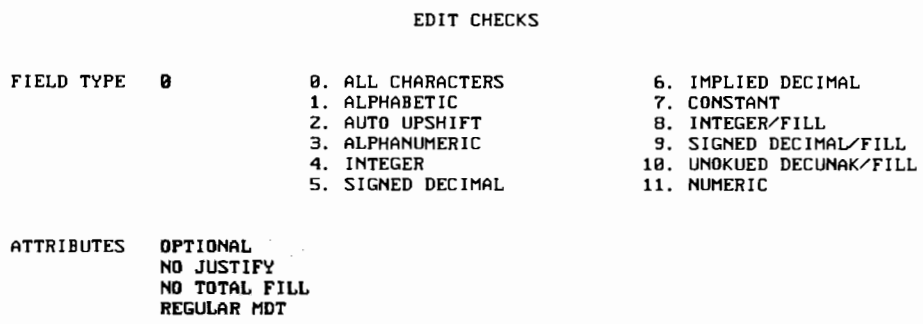

Figure 4-1. Field Definition Menu (HP 700/98 Only)

Define Edits Labels (HP 700/98 Only)

The labels are displayed along with the Field Definition menu.

Table 4-9. Define Edit Labels

Label	Function
SAVE EDITS	Turns on the desired field type and explicit attributes.
NEXT CHOICE	Cycles forward through the values of each of the highlighted fields to select the choice for display in that field.
PREVIOUS CHOICE	Cycles backward through the values of each of the highlighted fields to select the choice for display in that field.
DEFAULT EDITS	Displays the default values for the field type and attributes.

Table 4-10. Attributes by Field Type (Field Definition menu)

Field Type	Valid Input Characters
ALL CHARACTERS	All characters
ALPHABETIC	Uppercase and lowercase alphabetic characters and spaces
AUTO UPSHIFT	All characters
ALPHANUMERIC	Uppercase and lowercase alphabetic characters, digits, spaces, periods, dashes, commas and plus signs
INTEGER	Digits and spaces
SIGNED DECIMAL	Digits, minus sign or plus sign, decimal point or comma, and spaces
IMPLIED DECIMAL	Digits, plus sign or minus sign, decimal point or comma, and spaces
CONSTANT	None
INTEGER/FILL	Digits and spaces
SIGNED DECIMAL/FILL	Digits, minus sign or plus sign, decimal point or comma, and spaces
IMPLIED DECIMAL/FILL	Digits, plus sign or minus sign, decimal point or comma, and spaces
NUMERIC	Digits, spaces, periods, commas, minus sign, and plus sign

User-Definable Function Keys

You can define keys F1 through F8 to perform your own unique tasks. With the user-defined key feature, you can customize your terminal to suit many applications.

Until you enter your own definitions, the user-definable function keys have predefined default definitions.

Defining Keys F1 Through F8

To define [F1] through [F8], press the [Ctrl] and [Menu] keys together to display the definition menu (Figure 4-2).

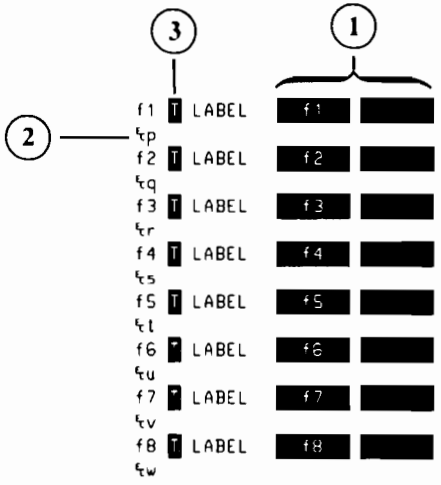

Figure 4-2. User-Defined Key Menu

1) Label Line 2) Definition Line 3) Type Field

You define three fields for each user key: the transmission *type character,* the label, and the key definition itself. **TYPE CHARACTER.** This tells the terminal how to interpret your key definition. The three type characters are L, T and N:

- L (local execution)-the terminal performs the function locally; nothing is transmitted to the computer.
- T (transmit)-the terminal transmits the definition string to the computer; nothing happens locally.
- N (normal keyboard operation)-the terminal interprets the definition string as though you entered it directly from the keyboard. Position the cursor in the type field for key [F1]. Press **NEXT CHOICE** or **PREVIOUS CHOICE** until the desired selection is displayed in that field.

LABEL FIELD. Assign a label to each function key to remind you which function that key performs. The maximum label size is 16 characters: 8 characters in the label's upper half, and 8 characters in the label's lower half.

On the definition menu, the label field is in two 8-character blocks. The first block forms the upper half of the label; the second block, the lower half. The default labels for the keys are the titles "F1" through "F8."

Position the cursor in the first block of the first key's label field and type the top half of your first label. Then type the bottom half of the label.
DEFINITION FIELD. Position the cursor on the line below the label blocks. Now type the definition for the first user key. The definition can be up to 80 characters long.

Use **DISPLAY FUNCTNS** to enter keys that have special functions. When **DISPLAY FUNCTNS** is on, the function of a special key is inhibited so that you can include the special key in your definition. The symbol for that special key appears in the definition line.

When you have finished defining keys [F1] through [F8], press [System] to exit the definition menu and display the last set of function labels you used.

Using Your Newly-Defined Keys F1 Through F8

You activate the user-defined keys F1 through F8 by pressing Shift+System to display the user-defined function key labels. Press a function key and your definition is executed.

5

ANSI Operation

This chapter explains how to use your terminal in ANSI X3.64 operations. The features provided in ANSI X3.64 mode are in addition to the HP mode features already described in this book.

Note

The use of the term *ANSI* does not imply endorsement of this product by the American National Standards Institute. ANSI refers specifically to Institute's X3.64 1979 Standard, which defines a set of terminal control sequences known as the ANSI Standard.

ANSI X3.64 operation implements control sequences from the ANSI Standard used by DEC terminals. Certain DEC private control codes are also implemented. This allows the terminal to run most applications written for the VT100, VT52 and VT220 terminals.

Three modes are available in ANSI X3.64 operation:

- EM100 mode — the terminal functions like a VT100 terminal when using software on a DEC computer system written specifically for the VT100.
- EM220 mode — the terminal operates like a VT220 terminal when using software for the VT220.
- EM52 mode — the terminal operates like a VT52 terminal when using software on a DEC system written for the VT52.

How to Select Operating Modes

To choose the operating mode you want: in the **Term Mode** field of the Terminal Configuration menu.

1. Press (System), then **config keys**, then **terminal config**.

   Terminal Configuration menu appears.

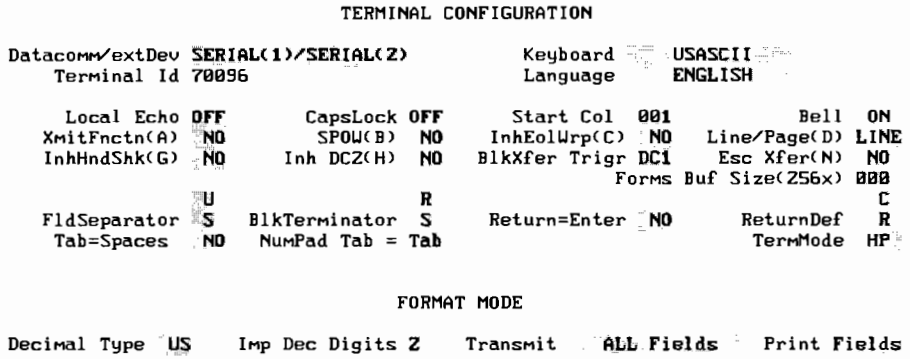

Figure 5-1. Terminal Configuration Menus (Default Values Shown)

2. Use the (Tab) or cursor control keys to position the cursor in the Term Mode field.
3. Press **NEXT CHOICE** or **PREVIOUS CHOICE** to display the desired setting.

   Choose EM100, EM52 or EM220 to operate in the emulation mode you require.
4. Press **SAVE CONFIG** to enter the selected operating mode.

   Pressing **SAVE CONFIG** also saves the selection in nonvolatile memory and returns the System labels to the screen.

When the operating mode is changed from HP to an emulation mode or vice versa, display memory is cleared. The screen is blank except for function key labels and status indicators and the cursor moves to the upper left-hand corner of the screen.

Configuring the Terminal for ANSI Operations

Before using the terminal in EM100, EM52 or EM220 mode, you must check, and in some cases change, certain configuration settings.

Make sure your terminal is in Remote mode and that the datacomm is configured correctly for your system.

Using the ANSI Configuration Menu

The ANSI Configuration menu allows you to tailor the terminal for specific application programs running on a standard DEC computer system.

To display the ANSI Configuration menu:

- Ensure that the terminal is currently operating in EM100, EM52 or EM220 mode (check the status line). If the terminal is in HP mode, change Modes by following the procedures described in the previous section.
- Press (System), then **config keys**, then **ansi config** to display the ANSI Configuration menu shown in Figure 5-2. Settings made in this menu apply to EM100, EM52, and EM220 mode operations.

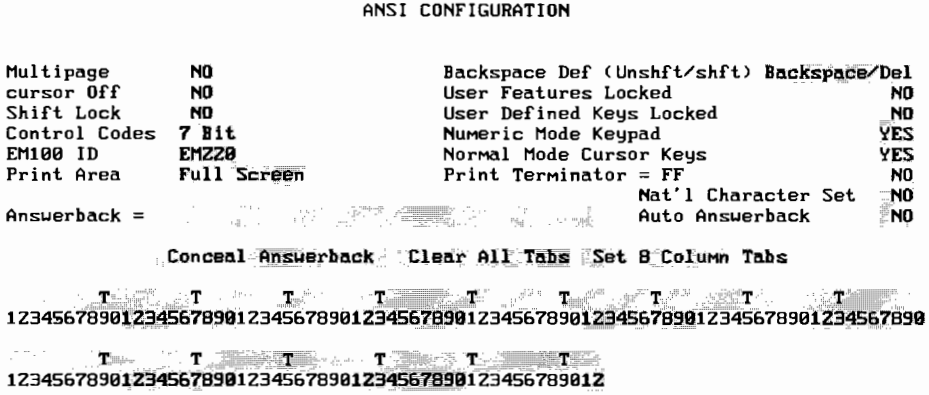

Figure 5-2. ANSI Configuration Menu (Default Values Shown)

Refer to Chapter 2 for how to enter field values on menus.

The ANSI Configuration menu allows you to define the following fields:

Table 5-1. ANSI Configuration Menu

Menu Field	Description
Multipage	Specifies the amount of display memory available. NO indicates that subsequent applications use a single page of memory (24 lines). YES indicates that all available memory is used.
BackspaceDef (Unshft/Shft)	Defines [Backspace] key functions for use in software applications. BackSpace/Del indicates that when [Backspace] is pressed by itself, it will function as a normal [Backspace] key. [Shift] [Backspace] provides a DELETE key function.
Cursor OFF	YES turns off the cursor; NO allows it to display normally.
User Features Locked	YES prevents user convenience features from being changed by the computer. This setting lets you lock in these features so they can only be changed from the keyboard: auto repeat, smooth scroll, inverse background, tab stops, and keyboard lock. NO lets the computer change these features in a software application.
Shift Lock	Affects [Caps] key operation. NO sets [Caps] to function normally, that is, it locks the alphabetic keys to uppercase without affecting the number and symbol keys. YES selects another function for the [Caps] key: alphabetic keys still generate uppercase characters, but number and symbol keys generate the top character shown on the key. When YES is active, you can access the lowercase alphabetic keys and the bottom characters on number or symbol keys by pressing the [Shift] key.
User Defined Keys Locked	YES prevents a host computer from changing user-defined key definitions with software applications. NO lets the host computer change the definition.

Table 5-1. ANSI Configuration Menu (continued)

Menu Field	Description
Control Codes	7 Bit or 8 Bit. Selects whether 7- or 8-bit control codes are transmitted in response to status requests from the host computer.
Numeric Mode Keypad	YES specifies normal use of the numeric keypad. NO sets the numeric keypad to Application mode, and the keys generate escape sequences used in specific software applications.
EM100 ID	Supplies terminal identification for host computer applications. Choose EM100, EM101, EM102, or EM220 as needed for your application.
Normal Mode Cursor Keys	YES specifies normal cursor key functions (in EM100, EM52 and EM220 modes). NO redefines the cursor keys as Application mode cursor keys that generate special escape sequences.
Print Area	Affects the print page command in DEC software applications. Full Screen selects the entire page for printing. Scroll Region specifies just the area within the scroll boundaries for printing. The scroll region is defined by the application.
Print Terminator = FF	Selects whether the print page operations are terminated with no character (NO) or with a form feed character (YES).
Nat'l Character Set	This field can be changed only if the Keyboard field is not set to USASCII. NO indicates that characters will be selected from the USASCII and supplemental character sets (8-bit mode). YES selects the character set that is appropriate for the keyboard specified in the Keyboard field (7-bit mode).

Table 5-1. ANSI Configuration Menu (continued)

Menu Field	Description
Answer Back	Certain ANSI applications require a message for response from a host computer enquiry. You can enter a message in this field up to 30 characters long. (Ctrl Break) sends the message from the keyboard.) The first character typed in the field clears the old message and starts a new one. Press **DISPLAY FUNCTIONS** to enter control characters into the message, where they are displayed as the appropriate symbols. (Remember to press **DISPLAY FUNCTIONS** again to turn off Display Functions mode, which allows the keys to generate normal characters.)

Table 5-1. ANSI Configuration Menu (continued)

Menu Field	Description
Auto Answerback	Allows the answerback message to be sent to the computer automatically after a communications line is established. YES turns on the function, NO turns it off.
Conceal Answerback	Pressing **NEXT CHOICE** when the cursor is in the field turns on the Conceal Answerback function. When you activate the function, the message `Concealed` appears instead of the defined answerback message.
Clear All Tabs	Pressing **NEXT CHOICE** when the cursor is in the field clears all tabs set using the ANSI Configuration menu.
Set 8 Column Tabs	Pressing **NEXT CHOICE** when the cursor is in the field sets a tab stop in every eighth column.
12345678901234567890	To set or clear a tab stop in a particular column, position the cursor in that column using the cursor movement keys. Then press **NEXT CHOICE**. A "T" appears in that column. The lower line of numbers in the field represent columns 81 through 132.

Status Line Indicators

EM100, EM52 and EM220 mode operations add special indicators to the terminal's status line. The following section describes the functions of the new indicators. Refer to "Status Line Indicators" in Chapter 3 for information about all other displayable status line indicators.

EM100 Mode Indicators

In EM100 mode, the terminal mode indicator **EM100** appears in the status line. This shows that the terminal is currently operating in EM100 mode.

The Status Line can also display up to four additional symbols in EM100 mode, **L1**, **L2**, **L3**, or **L4**, which are activated by a program running on the host computer. These four symbols are provided to simulate the four LED indicators on a VT100 keyboard, allowing applications utilizing these LED indicators to run without modification on your terminal. The meaning of symbols L1 through L4 depends on the program used.

EM52 Mode Indicator

In EM52 mode, the Status Line displays the indicator EM52 to inform you that the terminal is operating in EM52 mode.

EM220 Mode Indicator

In EM220 mode, the Status Line displays the indicator **EM220** to indicate that that the terminal is operating in EM220 mode. As in EM100 mode, L1 through L4 display when activated by a host computer program.

Keyboard Operation in Emulation Modes

The functions of several keys are changed when the terminal is operating in EM100, EM220, or EM52 mode.

Numeric Keypad

A numeric keypad overlay is supplied for use in emulation modes. The overlay indicates the new functions of the numeric pad keys.

The keys on the numeric keypad that can have new functions include:

1. The keys [*], [/], [+] and [-] that act as program function keys [PF1], [PF2], [PF3] and [PF4]. The functions of these keys vary with the application program being used. The [*] key also generates a line feed character.
2. The [Enter] key becomes the [-] key.
3. The [Tab] key becomes the [Enter] key, operating like the [Return] key in normal HP mode operation.

In addition, the numeric keys on the keypad can be set by a host computer program to perform special functions. These functions vary with the program being used. Their meanings are defined and explained by the software controlling them.

Alphanumeric Keys

Certain keys on the alphanumeric or *typewriter* portion of the keyboard are affected when the terminal is in EM100, EM220 or EM52 modes. These keys include the following:

1. The [Backspace] key functions as a normal backspace key.
2. The [Insert Line] and [Delete Line] keys are disabled.
3. The [Enter] key, located on the lower left portion of the keyboard, duplicates the operation of the [Return] key. When in an emulation mode, you may press either [Enter] or [Return] for a carriage return.
4. The [Next], [Prev], [Shift] [▲] [Shift] [▼], [Scroll Up] and [Scroll Down] keys are disabled when the terminal is set for single-page operations. Refer to "Configuring The Terminal for ANSI Operations" earlier in this chapter for more information.

In addition, the following two-key sequences are added to the terminal's operating features:

- Press the [Ctrl] and [Break] keys simultaneously to transmit the user-configured answerback message to the host computer.
- Press the [Ctrl] and [Stop] keys simultaneously to transmit a 3.5 second *break* to the host computer.

Using the Keyboard in VT220 Applications

The terminal keyboard emulates VT220 keyboard functions when the terminal is operating in EM100, EM220 or EM52 mode.

On the main keypad, the following edit key equivalents are available:

Edit Keys	VT220 Equivalent
Shift Delete Line	**Select** key
Shift Insert Line	**Find** key
Shift Insert Char	**Insert Here** key
Shift Delete Char	**Remove** key
Shift Prev	**Prev Screen** key
Shift Next	**Next Screen** key

Numeric Keypad Keys	VT220 Equivalent
*	**PF1** key
/	**PF2** key
+	**PF3** key
-	**PF4** key

The top row of keys on your keyboard emulate VT220 user keys. Press Ctrl System to activate the new VT220 functions. Press System to return the keys to their HP mode user definitions.

The new VT220 function keys F6 through F20 perform operations defined by the application program in use.

The following table shows the key when you press Ctrl System:

Stop = Hold Screen	F1 = F6	F2 = F7	F3 = F8
F4 = F9	F5 = F10	F6 = F11	F7 = F12
F8 = F13	↘ = F14	Clear Line = Help	Clear Display = Do
F9 = F17	F10 = F18	F11 = F19	F12 = F20

Composing Characters (EM220 Mode Only)

In EM220 mode, the terminal's [Extend Character] key allows you to generate native-language characters which don't appear on the keyboard. Such characters are supported in 7-bit or 8-bit Character modes, but cannot be composed in EM52 or EM100 modes. The set of characters composable in 8-bit Characters mode is different from the sets for 7-Bit Characters mode.

To compose a character, press the [Extend Character] key, then the character-defining keys (listed in the tables on the following pages). Press the keys serially. Invalid compose character sequences turn off the mode and the bell sounds. The following keys, if pressed as the second or third character in a compose character sequence, will cancel the sequence:

- [Backspace]
- [Return]
- [F1]-[F8](shifted or unshifted, defined or undefined)
- All cursor keypad keys (Application or Normal mode)
- All numeric keypad keys (Application or Numeric mode)

8-Bit Characters Mode

In 8-bit Characters mode, all characters in the following table are accessible regardless of the configured keyboard language.

Table 5-2. Compose Character Sequences, 8-Bit Mode

Character	Description	Key Sequence
#	Number sign	++
'	Acute accent	'<sp> <sp>'
@	At sign	aa aA Aa AA
[	Opening bracket	((
\	Backslash	/< </ //
]	Closing bracket	))
^	Circumblex	^<sp> <sp>^
`	Grave accent	`<sp> <sp>`
{	Opening brace	-((-
|	Vertical line	/^ ^/
}	Closing brace	)- -)
~	Tilde	~<sp> <sp>~
¡	Inverted !	!!
¢	Cent sign	|c c| |C C| /c c/ /C C/
£	Pound sign	-l l- -L L- =l l= =L L=
¥	Yen sign	-y y- -Y Y- =y y= =Y Y=
§	Section sign	so os sO Os s0 0s s! !s So oS SO OS S0 0S S! !S
¤	Currency sign	ox xo oX Xo Ox xO XO OX x0 0x X0 0X
©	Copyright sign	oc co oC Co Oc CO OC c0 0c C0 0C
ª	Female ordinal sign	_a a_ _A A_
<<	opening angle quotes	<<
°	Degree sign	0^ ^0 <sp>* *<sp>
±	Plus/minus sign	-+ +-
²	Superscript 2	^2 2^
³	Superscript 3	^3 3^
µ	Micro sign	/u u/
¶	Paragraph sign	!p p! !P P!
•	Middle dot	^. .^
¹	Superscript 1	^1 1^
º	Male ordinal sign	_o o_ _O O_
>>	Close angle quotation	>>
¼	Fraction, one-quarter	14
½	Fraction, one-half	12
¿	Inverted ?	??

Table 5-2.
Compose Character Sequences, 8-Bit Mode (continued)

Character	Description	Key Sequence
À	A grave	‘A A‘
Á	A acute	’A A’
Â	A circumflex	^A A^
Ã	A tilde	~A A~
Ä	A umlaut	“A A”
Å	A degree	*A A*
Æ	AE ligature	AE
Ç	C cedilla	,C C,
È	E grave	‘E E‘
É	E acute	’E E’
Ê	E circumflex	^E E^
Ë	E umlaut	“E E”
Ì	I grave	‘I I‘
Í	I acute	’I I’
Î	I circumflex	^I I^
Ï	I umlaut	“I I”
Ñ	N tilde	~N N~
Ò	O grave	‘O O‘
Ó	O acute	’O O’
Ô	O circumflex	^O O^
Õ	O tilde	~O O~
Ö	O umlaut	“O O”
Œ	OE ligature	OE
Ø	O slash	/O O/
Ù	U grave	‘U U‘
Ú	U acute	’U U’
Û	U circumflex	^U U^
Ü	U umlaut	“U U”
Ÿ	Y umlaut	“Y Y”

Table 5-2.
Compose Character Sequences, 8-Bit Mode (continued)

Character	Description	Key Sequence
♯	Sharp s (German)	ss
à	a grave	‘a a‘
á	a acute	’a a’
â	a circumflex	^a a^
ã	a tilde	~a a~
ä	a umlaut	“a a”
å	a degree	*a a*
æ	ae ligature	ae
ç	c cedilla	,C C,
è	e grave	‘e e‘
é	e acute	’e e’
ê	e circumflex	^e e^
ë	e umlaut	“e e”
ì	i grave	‘i i‘
í	i acute	’i i’
î	i circumflex	^i i^
ï	i umlaut	“i i”
ñ	n tilde	~n n~
ò	o grave	‘o o‘
ó	o acute	’o o’
ô	o circumflex	^o o^
õ	o tilde	~o o~
ö	o umlaut	“o o”
oe	oe ligature	oe
ø	c slash	/o o/
ù	u grave	‘u u‘
ú	u acute	’u u’
û	u circumflex	^u u^
ü	u umlaut	“u u”
ÿ	y umlaut	“y y”

7-Bit Characters Mode

In 7-Bit Characters mode, the number of characters available is drastically reduced when compared to 8-bit Characters mode. A substitution process is used in 7-Bit Characters mode, where certain symbols in the character range from 00 hex to 7F hex are replaced with symbols necessary to support the configured language. Only characters that are part of the 7-bit set for that language can be composed. This is different from 8-Bit Characters mode in which all characters are accessible regardless of the configured keyboard language.

The tables below illustrate all 7-Bit Characters mode compose character sequences for each keyboard language. The <sp> symbol in the tables represents the space character 20 hex.

Table 5-3.
Canadian French Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
"	Quotation marks	<sp> " " <sp>
#	Number sign	++
'	Acute accent	<sp>' '<sp>
@	At sign	`a a`
[	Opening bracket	^a a^
\	Backslash	,c c,
]	Closing bracket	^e e^
^	Circumblex	^i i^
`	Grave accent	^o o^
{	Opening brace	'e e'
|	Vertical line	`u u`
}	Closing brace	`e e`
~	Tilde	^u u^

Table 5-4.
Danish/Norwegian Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
#	Number sign	++
´	Acute accent	<sp>’ ’<sp>
@	At sign	AA Aa aA aa
Æ	AE ligature	AE
Ø	O slash	/O O/
Å	A degree	A* *A
^	Circumflex	<sp>^ ^<sp>
`	Grave accent	<sp>‘ ‘<sp>
æ	ae ligature	ae
ø	o slash	/o o/
å	a degree	*a a*
~	Tilde	<sp>~ ~<sp>

Table 5-5.
Finnish Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
#́	Number sign Acute accent	++ <sp>’ ’<sp>
@	At sign	AA Aa aA aa
Ä	A umlaut	“A A”
Ö	O umlaut	“O O”
Å	A degree	A* *A
Ü	U umlaut	“U U”
é	e acute	’e e’
ä	a umlaut	“a a”
ö	o umlaut	“o o”
å	a degree	*a a*
ü	u umlaut	“u u”

Table 5-6.
French/Flemish Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp> <sp>˜ ˜<sp>
£	Pound sign	-l l- -L L- =l l= =L L=
´	Acute accent	<sp>’ ’<sp>
`	a grave	‘a a‘
º	Degree sign	<sp>*.*<sp> <sp>˚ ˚<sp> 0ˆ ˆ0
ç	c cedilla	,c c,
§	Section sign	os so oS So Os sO OS SO 0s s0 0S S0 !s s! !S S!
ˆ	Circumflex	<sp>ˆ ˆ<sp>
`	Grave accent	<sp>‘ ‘<sp>
é	e acute	’e e’
ù	u grave	‘u u‘
è	e grave	‘e e‘

Table 5-7.
German Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
#	Number sign	++
´	Acute accent	<sp>’ ’<sp>
§	Section sign	os so oS So Os sO OS SO 0s s0 0S S0 !s s! !S S!
Ä	A umlaut	“A A”
Ö	O umlaut	“O O”
Ü	U umlaut	“U U”
^	Circumflex	<sp>^ ^<sp>
`	Grave accent	<sp>‘ ‘<sp>
ä	a umlaut	“a a”
ö	o umlaut	“o o”
ü	u umlaut	“u u”
♯	Sharp s	ss

Table 5-8.
Italian Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
£	Lira sign	-l l- -L L- =l l= =L L=
´	Acute accent	<sp>’ ’<sp>
§	Section sign	os so oS So Os sO OS SO 0s s0 0S S0 !s s! !S S!
°	Degree sign	<sp>*.*<sp> <sp>˜ ˜<sp> 0ˆ ˆ0
ç	c cedilla	,c c,
é	e acute	’e e’
ˆ	Circumflex	<sp>ˆ ˆ<sp>
ù	u grave	’u u’
à	a grave	’a a’
ò	o grave	’o o’
è	e grave	’e.e’
ì	i grave	’i.i’

Table 5-9.
Portuguese Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
´	Acute accent	<sp>’ ’<sp>
@	At sign	AA Aa aA aa
Ã	A tilde	~A A~
Ç	C cedilla	,C C,
Õ	O tilde	~O O~
^	Circumflex	<sp>^ ^<sp>
`	Grave accent	<sp>‘ ‘<sp>
ã	a tilde	a~ ~a
ç	c cedilla	,c c,
õ	o tilde	~o o~
~	tilde	<sp>~ ~<sp>

Table 5-10.
Spanish Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
£	Pound sign	-l l- -L L- =l l= =L L=
´	Acute accent	<sp>’ ’<sp>
§	Section sign	os so oS So Os sO OS SO 0s s0 0S S0 !s s! !S S!
¡	Inverted !	!!
Ñ	N tilde	~N N~
¿	Inverted ?	??
^	Circumflex	<sp>^ ^<sp>
`	Grave accent	<sp>‘ ‘<sp>
º	Degree sign	<sp>*.*<sp> <sp>~ ~<sp>
ñ	n tilde	~n n~
ò	o grave	’o o’
ç	c cedilla	,c c,
~	Tilde	<sp>~ ~<sp>

Table 5-11.
Swedish Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
#	Pound sign	++
´	Acute accent	<sp>’ ’<sp>
É	E accute	’E E’
Ä	A umlaut	“A A”
Ö	O umlaut	“O O”
Å	A degree	A* *A
Ü	U umlaut	“U U”
é	e acute	’e e’
ä	a umlaut	“a a”
ö	o umlaut	“o o”
å	a degree	*a a*
ü	u umlaut	“u u”

Table 5-12.
Swiss Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
ù	u grave	‘u u‘
´	Acute accent	<sp>’ ’<sp>
à	a grave	‘a a‘
é	e acute	’e e’
ç	c cedilla	,c c,
ê	e circumflex	^e e^
û	u circumflex	^i i^
è	e grave	‘e e‘
ô	o circumflex	^o o^
ä	a umlaut	“a a”
ö	o umlaut	“o o”
ü	u umlaut	“u u”
û	u circumflex	^u u^

Table 5-13.
U.K. Compose Character Sequences, 7-Bit Characters Mode

Character	Description	Key Sequence
”	Quotation marks	<sp> ” ” <sp>
£	Pound sign	-l l- -L L- =l l= =L L=
´	Acute accent	<sp>’ ’<sp>
@	At sign	AA Aa aA aa
[	Opening bracket	((
\	Backslash	/< </
]	Closing bracket	))
^	Circumblex	<sp>^ ^<sp>
‘	Grave accent	<sp>‘ ‘<sp>
{	Opening brace	(- -(
|	Vertical line	/^ ^/
}	Closing brace	)- -)
~	Tilde	<sp>~ ~<sp>

6

Troubleshooting and Maintaining the Terminal

Included in this chapter are procedures to follow if you have difficulties with the terminal.

Note

A qualified service engineer should perform all maintenance procedures that require opening this unit. The controls available to you are readily accessible. Under no circumstances should you open your terminal to expose its internal circuitry.

Error Messages

The terminal generates several kinds of status checks and diagnostic error messages. Most error messages occur when you enter data that the terminal was not expecting or request a service that the terminal cannot perform. Some errors, however, result from incompatible settings in the configuration menus.

The error messages appear on lines 25 and 26. They replace the function key labels. Press the Return key to clear the error message, restore the function key labels, and unlock the keyboard.

Here is a list of the terminal's error messages and their meanings:

Table 6-1. Error Messages

Message	Meaning
`Default configs used; Press RETURN to clear`	Configuration settings stored in nonvolatile memory have been reset to their default values. If this condition persists, call your HP service representative.
`No "TO" device; Press RETURN to clear`	You have attempted to perform a data transfer operation without first defining the destination ("to" device).
`Source &=; destination; Press RETURN to clear`	You have defined the same device as the source and the destination for a data transfer.
`MEMORY FULL; Press RETURN to clear`	Display memory is full and Overflow Protect is preventing accidental loss of data. Either disable Memory Lock or delete some lines from the workspace.
`Function locked; Press RETURN to clear`	The terminal function you attempted has been disabled.

Solving Terminal Problems

Some terminal problems may arise during normal operation. You should conduct the following procedures (in the order given here) before calling a service representative.

Configuration Checking

What sometimes appears to be a terminal malfunction may be an incorrect terminal-computer configuration. When the terminal appears to malfunction, before resetting the terminal or conducting any tests, you should verify that the parameters in each configuration menu are correct for the task at hand.

Resetting the Terminal

Occasionally, you may find it necessary to reset the terminal to clear an error condition. There are two types of reset: a soft reset and a hard reset. Both types temporarily halt printer datacomm operations. Additionally, a hard reset activates the configuration values stored in nonvolatile memory and destroys all data in workspace memory; that is, a hard reset returns the terminal to the condition it was in when it was turned on.

For these reasons, you should use discretion when considering a reset operation.

SOFT RESET. To perform a soft reset, press Shift Reset. A soft reset produces the following effects:

- The terminal bell rings.
- The active configuration values remain in effect.
- The terminal preserves all data stored in workspace memory.
- The window maintains the current screen display.
- The terminal unlocks the keyboard.
- If Display Functions is enabled, the terminal disables it.
- If Record mode is active, the terminal cancels its selection.
- The terminal stops all operations by devices (such as printers) which it controls.
- The terminal stops transferring data to the datacomm line.

HARD RESET. To perform a hard reset press the Ctrl, Shift, and Reset keys simultaneously. A hard reset produces the following effects:

- The terminal bell rings.
- The terminal resets all configuration parameters to the values stored in non-volatile memory.
- The terminal destroys any data stored in workspace memory.
- The terminal unlocks the keyboard.
- The terminal displays the Modes set of function key labels.

- The terminal sets the left margin to column 1 and the right margin to the workspace width.
- The terminal clears all tabs.
- If enabled, resets all the following:
  - Display Functions
  - Line Modify
  - Insert Character
  - Memory Lock
  - CAPS mode
  - Record mode
  - Monitor mode
  - Any special datacomm modes
  - Extended Characters mode
  - Top or Bottom Logging

If a hard reset fails to correct the error condition, try turning on the terminal while pressing [D]. If the condition persists, the terminal requires service by a qualified technician.

Preventive Maintenance

One way to ensure the proper operation of your terminal is to keep the screen and keyboard clean.

Cleaning the Screen and Keyboard

You should regularly clean your terminal to remove dust and grease. First, dust lightly using a damp, lint-free cloth. (Paper towels are fine.) The cloth should be just damp enough to pick up dust. Avoid wiping dust or lint into the keyboard area.

If smudges or fingerprints persist, you can use a mild solution of soap and water.

Remember to wring the cloth thoroughly; otherwise, rubbing the dirty areas will drip water over the terminal. Avoid getting any liquid between the keys.

Caution

Never use petroleum-based cleaners, such as lighter fluid, or cleaners containing benzene, trichloroethylene, dilute ammonia, ammonia, or acetone. Such cleaners may harm the plastic surfaces.

A

Terminal Command Summary

Introduction

This appendix lists the HP 700/96 and HP 700/98 Display Terminal's commands. If you want more detailed information on the terminal's commands, refer to the *HP 700/96 and HP 700/98 Reference Manual* (HP Part Number 5959-5072).

HP Mode Escape Sequences

All HP mode sequences begin with the escape character **Esc**, followed by the body of the sequence. The body can consist of one or more of the keyboard letters and symbols. Most escape sequences can also be performed by entering them from the keyboard.

Note

If the body of an escape code consists of more than one character and ends in a letter, *the terminating letter must be capitalized;* otherwise, the escape code will not be recognized as such. For example, **Esc&dA** (*not* **Esc&da**).

To set configuration parameters using escape codes, use an **Esc&k, Esc&q**, **Esc&s**, or **Esc)** sequence, depending on which parameters you want to set. The **Esc&k** and **Esc&s** sequences alter the parameter in the menu, but they do not alter the content of nonvolatile memory. The **Esc&q** sequences alter both the menu and nonvolatile memory.

If a configuration menu appears on the screen on receiving an escape sequence, the sequence is stored in the terminal's datacomm buffer, and is not executed until the menu is cleared from the screen.

As an example of escape code use, you can change the values of the Local Echo, Caps Lock, and SPOW parameters using an escape sequence of the following form:

LocalEcho=No:	**Esc&k 0L**
LocalEcho = Yes:	**Esc&k 0L**
Caps Lock = No:	**Esc&k 0C**
Caps Lock = Yes:	**Esc&K 1C**
SPOW = No:	**Esc&s 0B**
SPOW = Yes:	**Esc&s 1B**

You may combine these and other **Esc&k** parameters within one escape sequence. If you do, the final identifier (such as **L** or **C** or **N**) must be uppercase and all preceding identifiers must be lowercase. For example, to set Local Echo = Yes and Caps Lock = Yes, you could use either of the following escape sequences:

Esc&1l 1C

Esc&k 1c 1L

In this manual, spaces are inserted in escape sequences for clarity. However, when used in a program, no spaces should be used in the escape sequences, unless specifically shown as an intergral part of the sequence.

To indicate that a space is required in a sequence, the sequence is written in this text with the characters **Space** or **Sp.**

Terminal Control

Esc 1	Set tab
Esc 2	Clear tab
Esc 3	Clear all tabs
Esc I	Horizontal tab
Esc i	Backtab
Esc 4	Set left margin
Esc 5	Set right margin
Esc 9	Clear all margins
Esc E	Hard reset (power on reset)
Esc g	Soft reset
Esc Y	Display Functions mode on
Esc Z	Display Functions mode off
Esc b	Unlock keyboard
Esc c	Lock keyboard
Esc z	Initiate terminal self test
Esc&q 0L	Unlock all configuration menus
Esc&q 1L	Locks all configuration menus, in addition to modes: Modify All, Block, Remote, and Auto Linefeed

Cursor Control

Esc*dQ	Cursor on
Esc*dR	Cursor off
Esc*d 0Q	Selects underline cursor
Esc*d 1Q	Selects block cursor
Esc A	Cursor up
Esc B	Cursor down
Esc C	Cursor right
Esc D	Cursor left
Esc H	Cursor home up
Esc h	Cursor home up (ignoring transmit fields)
Esc F	Cursor home down
Esc G	Move cursor to left margin

Display Control

Esc&w 12F	Turns on display
Esc&w 13F	Turns off display
Esc S	Roll up
Esc T	Roll Down
Esc U	Next page
Esc V	Previous page
Esc&w 6f80X	Selects 80-column display (default)
Esc&w 6f132X	Selects 132-column display
Esc*d 1E	Inverse display
Esc&k <x>[	Turns Smooth Scroll mode on/off:
	x Action
	0 Smooth Scroll mode off
	1 Smoooth Scroll mode on
Esc 1	Begin Memory Lock mode
Esc m	End Memory Lock mode

Format Mode

Esc W	Format mode on
Esc X	Format mode off
Esc 6	Starts an alphabetic-only field (700/98 only)
Esc 7	Starts a numeric-only field (700/98 only)
Esc 8	Starts an unrestricted (all characters) field (700/98 only)
Esc [	Starts an unprotected field
Esc {	Starts a transmit-only field
Esc]	Ends a field

Function keys

Esc p Default definition for user definable function key f1

Esc q Default definition for user definable function key f2

Esc r Default definition for user definable function key f3

Esc s Default definition for user definable function key f4

Esc t Default definition for user definable function key f5

Esc u Default definition for user definable function key f6

Esc v Default definition for user definable function key f7

Esc w Default definition for user definable function key f8

Display Enhancements

To start and end display enhancements:

Esc&d<> Selects the display enhancement indicated by **char** to begin at the present cursor position.

Table A-1.

	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	S
Half-Bright									x	x	x	x	x	x	x	x	
Underline					x	x	x	x					x	x	x	x	
Inverse Video			x	x			x	x			x	x			x	x	
Blinking		x		x		x		x		x		x		x		x	
Security																	x
End Enhancement	x																

B

International Keyboards

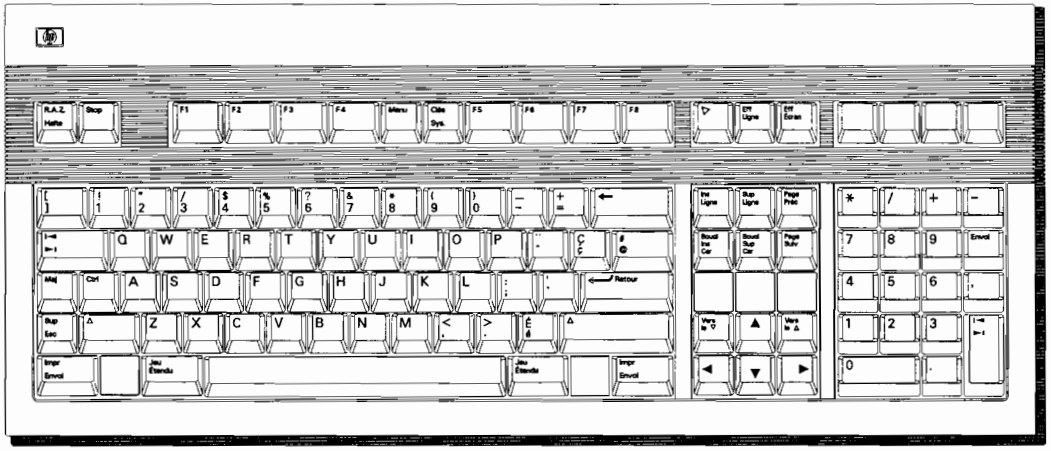

Figure B-1. French Canadian

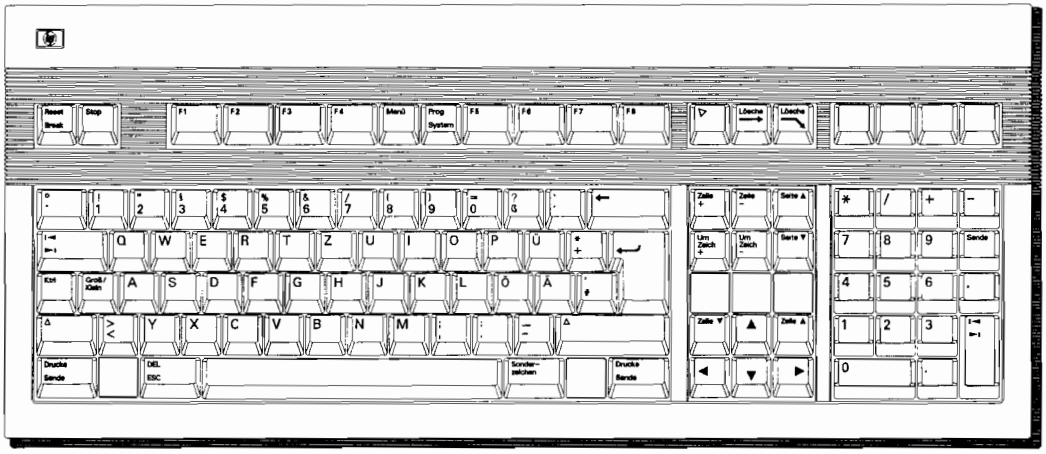

Figure B-2. German

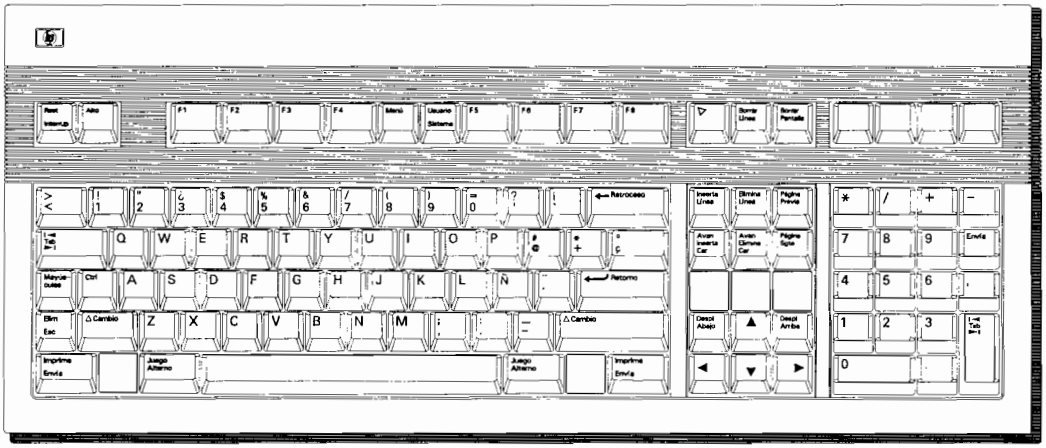

Figure B-3. Spanish

B-2 International Keyboards

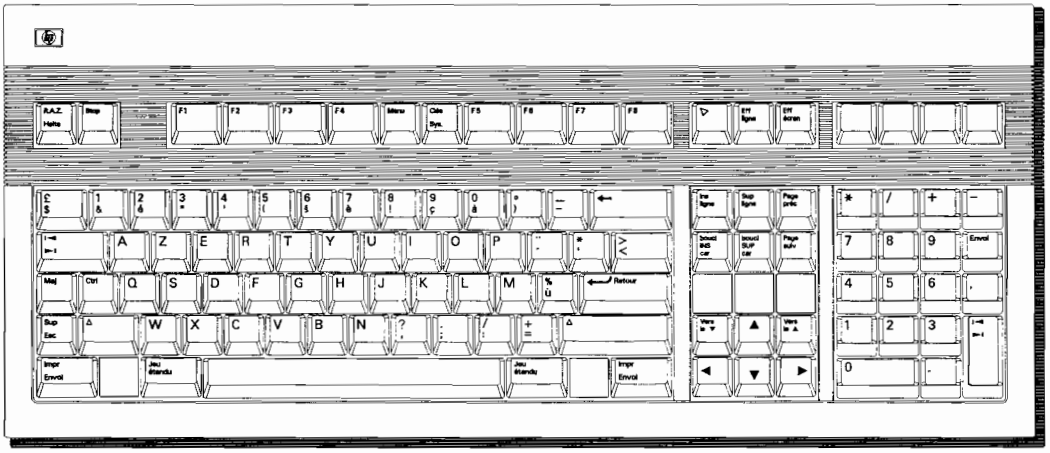

Figure B-4. French

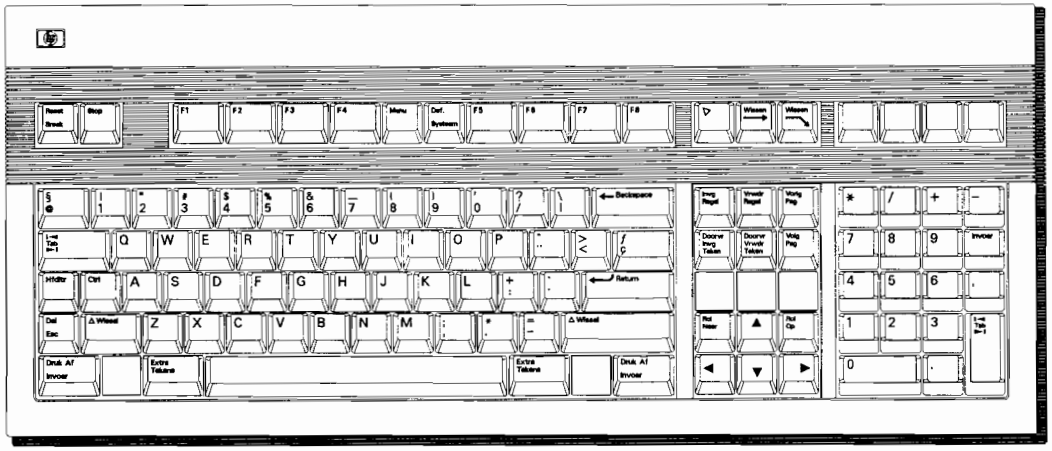

Figure B-5. Dutch

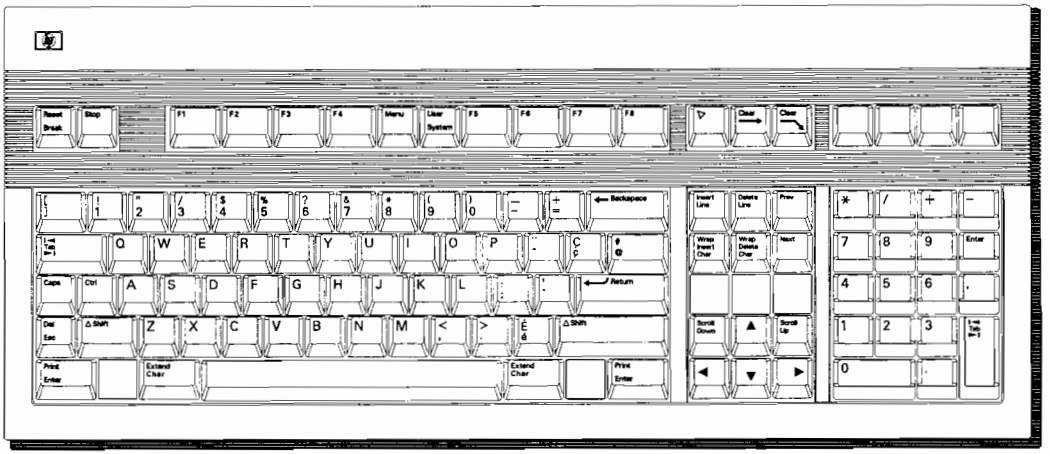

Figure B-6. English Canadian

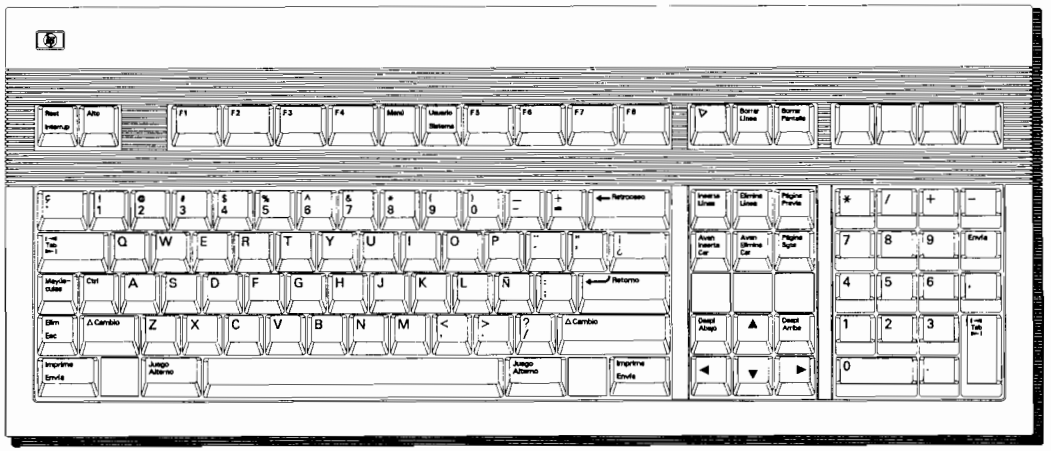

Figure B-7. Spanish (Latin American)

B-4 International Keyboards

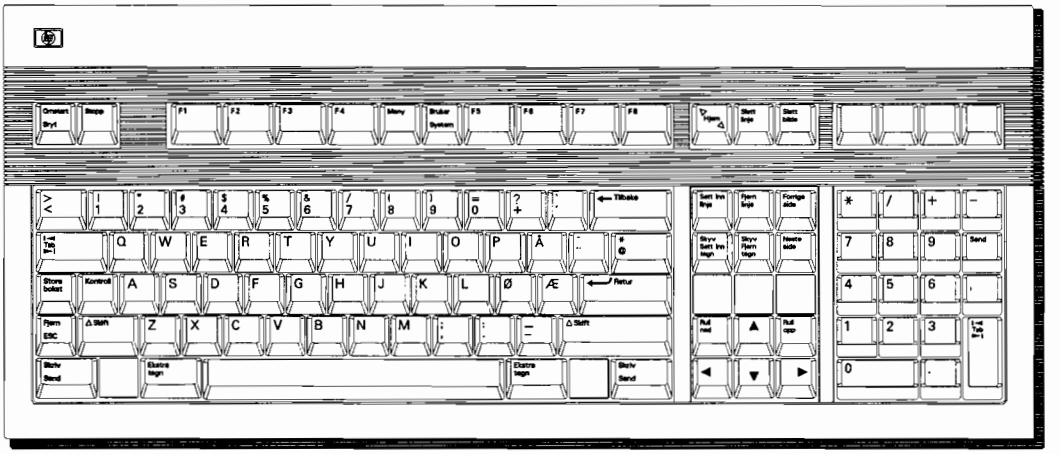

Figure B-8. Norwegian

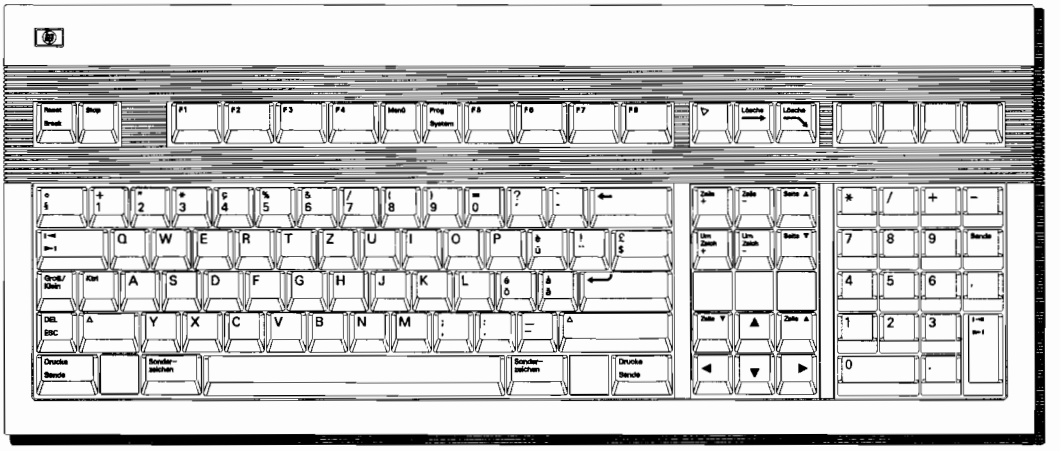

Figure B-9. Swiss German

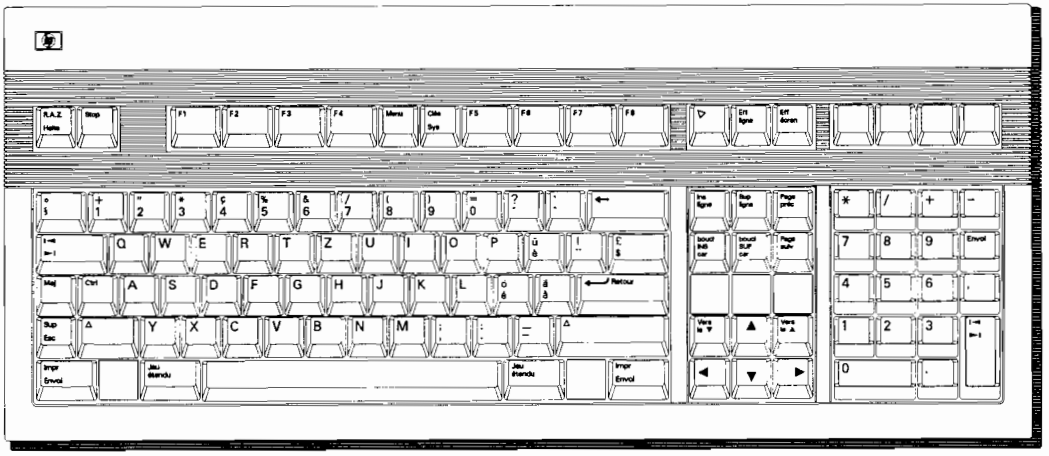

Figure B-10. Swiss French

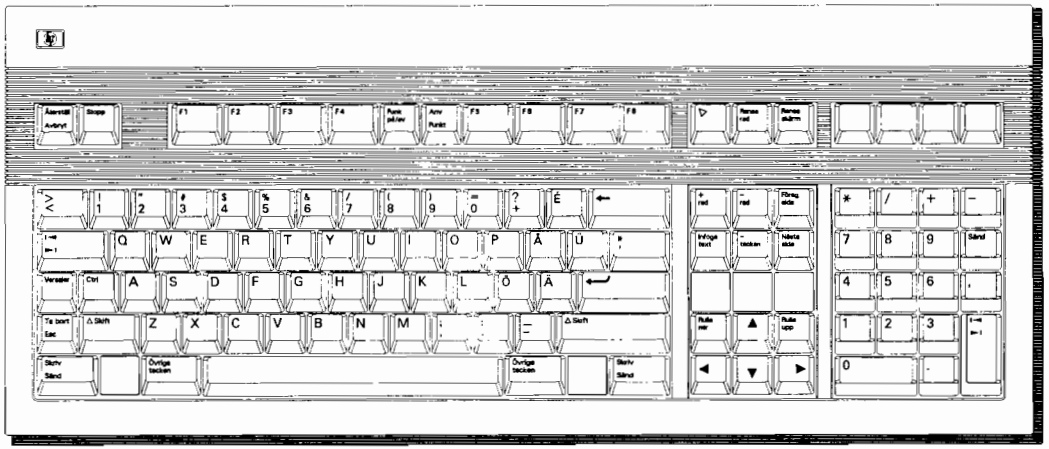

Figure B-11. Swedish

B-6 International Keyboards

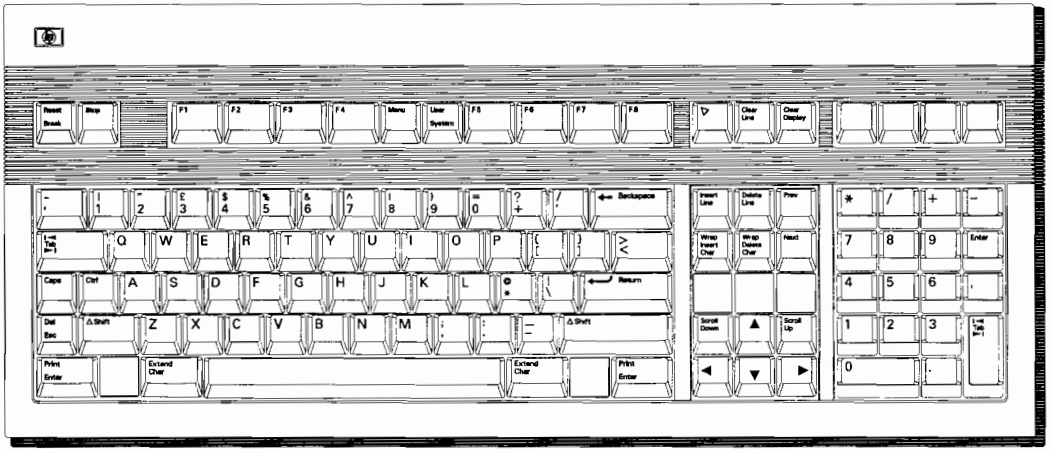

Figure B-12. English (UK)

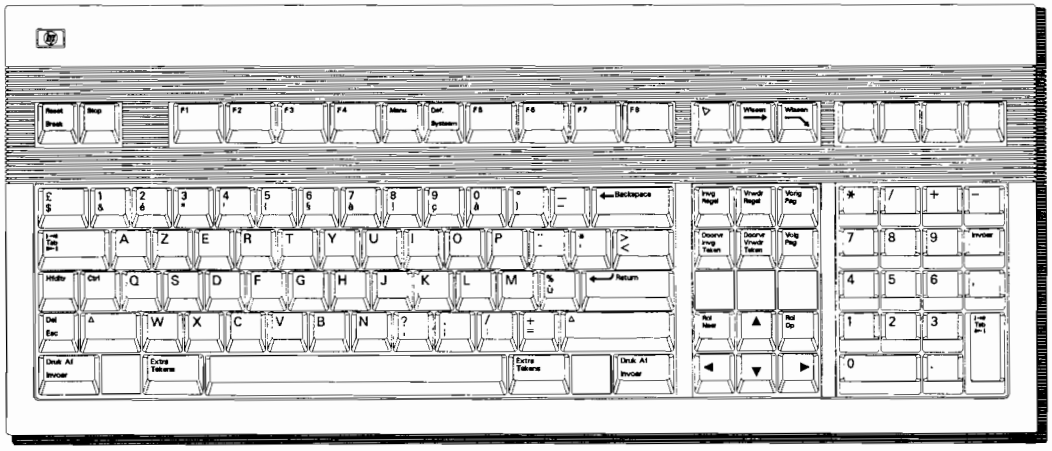

Figure B-13. Flemish

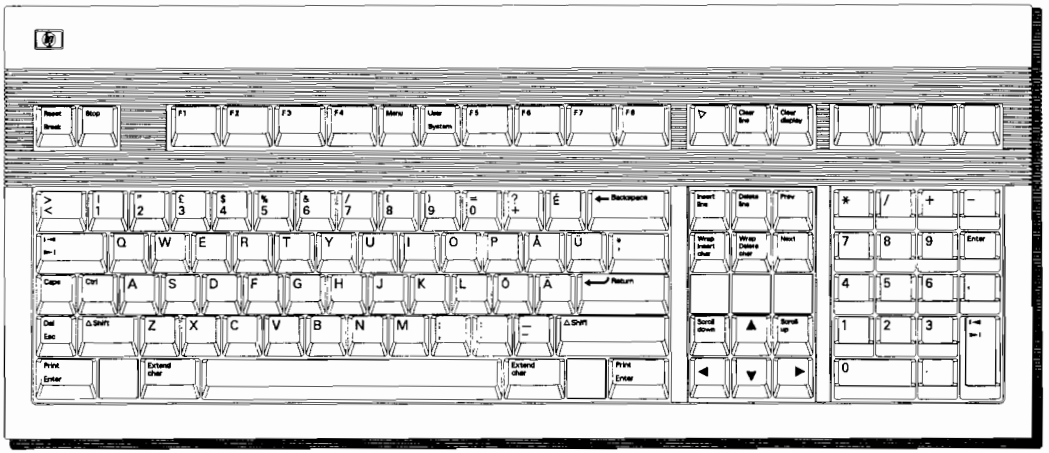

Figure B-14. Finnish

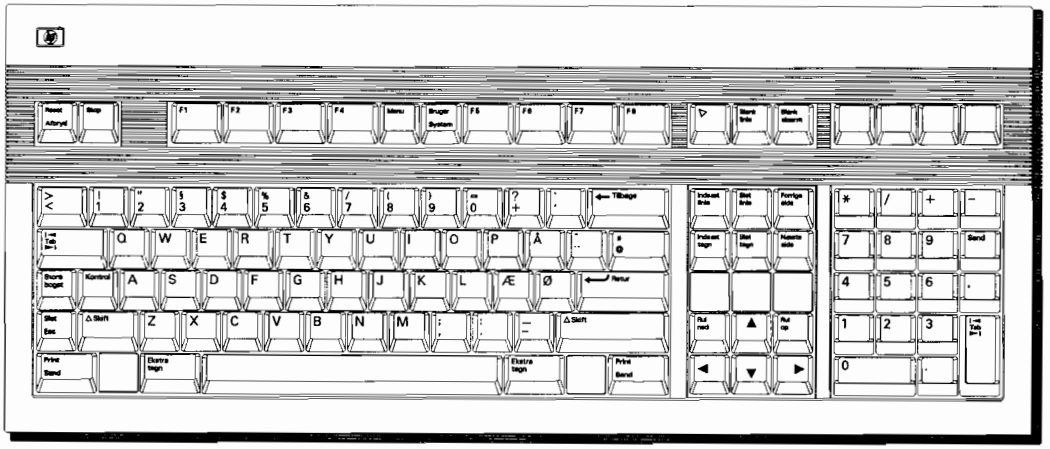

Figure B-15. Danish

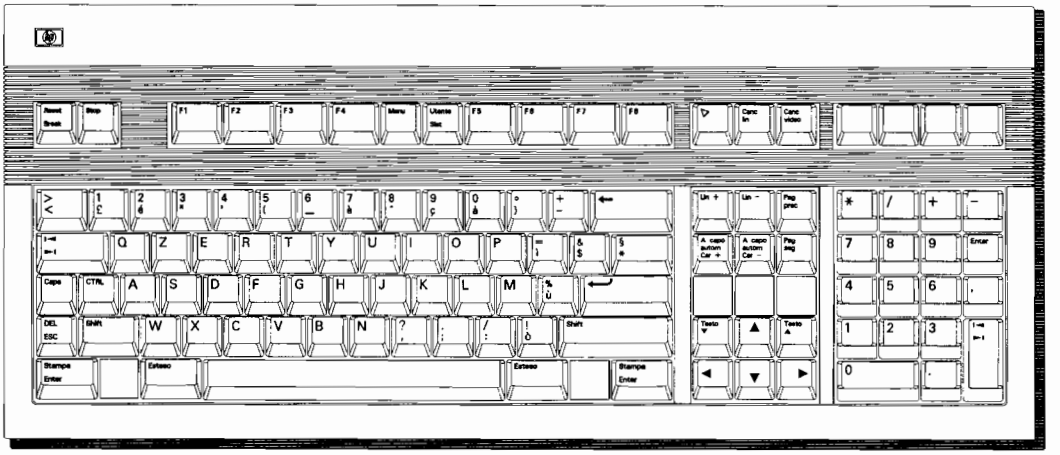

Figure B-16. Italian

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