HP700/92
HP700/94

USER'S MANUAL

Part Number 5957-9971
November 1987

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For USA

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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 Germany

Electromagnetic Interference Regulations

This equipment was tested in a typical system configuration and meets the General License requirements in Germany (FTZ 1046/84). As a proof of compliance it carries the VDE Radio Protection Mark with the index 0871-B/P for peripherals.

If this equipment is to be operated with a system,

- and if the General License is being claimed, the complete system has to comply with the General licensing requirements.
- which has its own FTZ-Serial-License, and for which an operating license has been granted or requested, usually no further steps are necessary.

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This product 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 ergonomic requirements.

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

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Printing History

First Edition – June 1987 (Printed in Singapore)
Second Edition – November 1987 (Printed in Singapore)

Preface

Welcome

Your **HP 700/92** or **HP 700/94** display terminal has many features to make your work easier.

This book describes how to install and operate your terminal. Inside you will find tasks your terminal can perform when you press the right [k][e][y][s].

How to Use this Book

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 to follow if the terminal malfunctions.
International Keyboards	*Appendix A* illustrates international keyboard layouts.

Where to Find More Information

The **HP 700/92 and HP 700/94 Display Terminals Reference Manual** (PN 5957-9982) contains further operating information for programmers, system managers and other computer professionals.

VT220, VT100 and VT52 are products of Digital Equipment Corporation.

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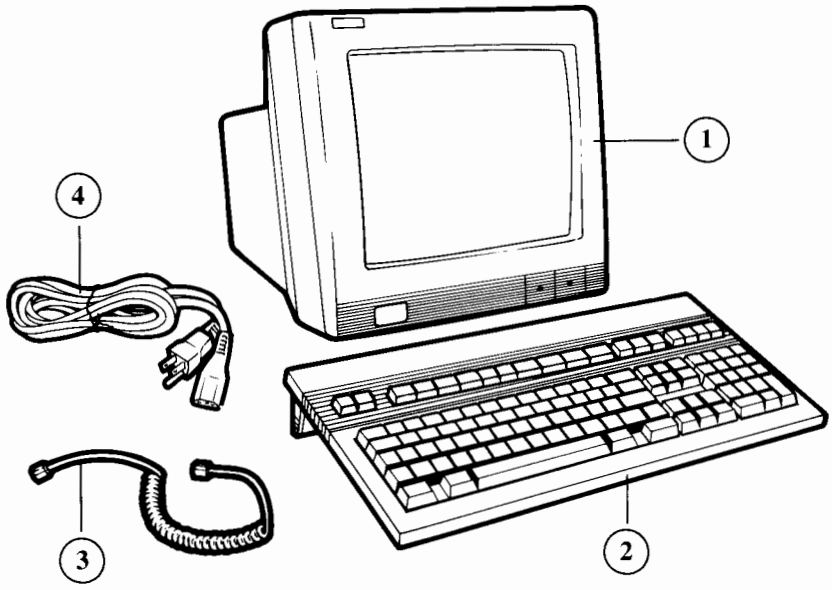
1

Installation

Introduction

This chapter tells 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, as this blocks the unit's air vents.

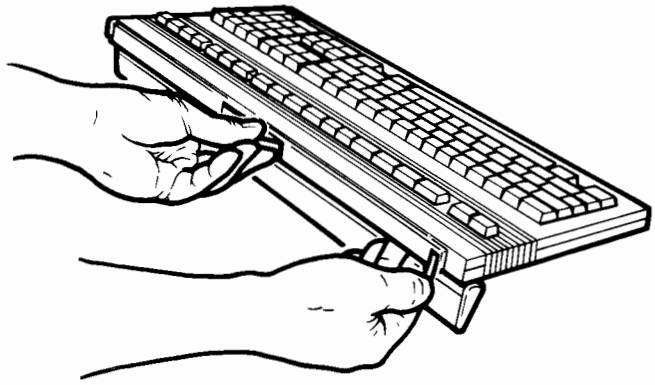
Keyboard Cable

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.

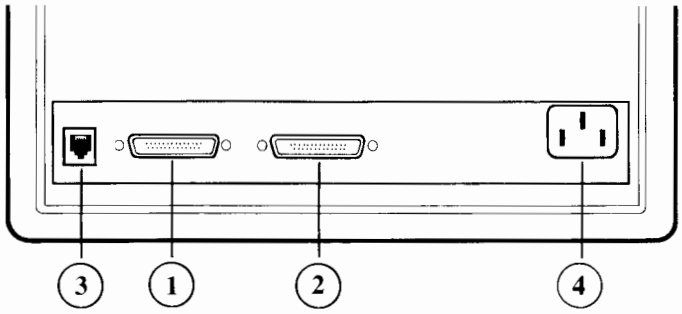
Figure 1-2. Connecting and Routing Keyboard Cable



Making Terminal Rear Panel Connections

Refer to Figure 1-3 when making all cable connections on the terminal's rear panel.

Figure 1-3. Terminal Rear Panel Connections



1) Port 1 (Datacomm) **2) Port 2 (Printer)**
3) Keyboard Connector **4) Power Connector**

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 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 an RS232C datacomm cable.

To connect the datacomm cable to your terminal, perform the following steps:

1. Insert the RS232C connector into the socket provided in port 1 on the terminal. The connector shell is shaped so that it fits onto the socket in the correct position.

2. After fully inserting the connector into the socket on the terminal, tighten the two screws that secure the connection.

NOTE

If you use Port 2 for your datacomm connection, be sure to configure your terminal properly (see Chapter 2).

Printer Connection

Port 2 provides a standard RS232C connector for connecting a printer. To connect a printer cable to Port 2, follow the instructions for connecting a datacomm cable (the connectors are the same in both cases). Remember, if you use Port 2 as your datacomm rather than Port 1, be sure to configure the terminal appropriately.

Power Cable Connection

An appropriate power cable is supplied with your terminal.

WARNING

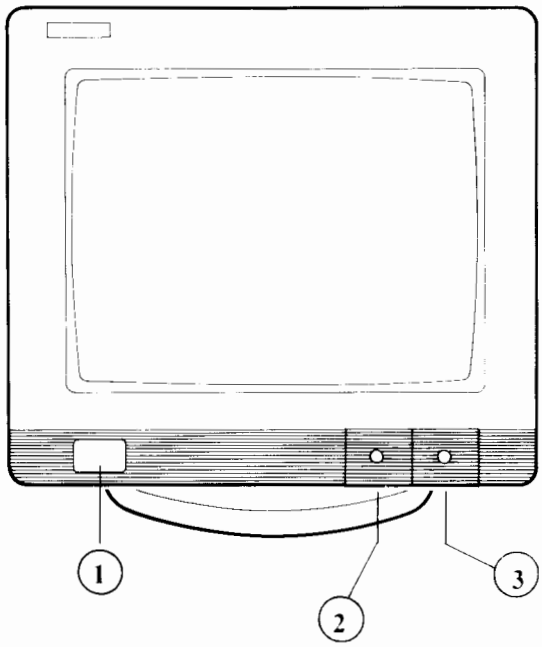
Turn the terminal off before applying power. The power button on the front lower left-hand corner of the terminal is flush with the front panel when the terminal is off (see Figure 1-4). Also, for your safety, use only power cords with a 3-prong connector.

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

To turn on the terminal, make sure it is connected to a power source. Press 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 twice. After approximately 10 seconds, when the terminal has successfully performed its power-on self-test, the bell sounds a third time.

Use the brightness and contrast slide controls (under the right-front corner of the terminal) to adjust the display for comfortable viewing.

The terminal is now ready for use. If the terminal does not power 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 and/or sent to an external 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. Press System, then modes to display the MODES labels, then proceed with your selections.

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 is removed.

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.

Making Menu Selections

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

- Press Tab repeatedly until the cursor is in the field containing the setting you want to change.
- 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 saving settings restores the previously displayed values, exits the menu and returns the config keys labels to 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 (these are either settings 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 function key screen-labels for available menus.
- Press global config to display the GLOBAL CONFIGURATION menu.
- To make your selections, see *Making Menu Selections* at the beginning of this chapter.

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

GLOBAL CONFIGURATION

Frame Rate 72	Display OFF 15	Light Background NO
Columns 80	Cursor Type LINE	Keyclick ON
Auto Repeat ON	Warning Bell ON	Static Cursor NO

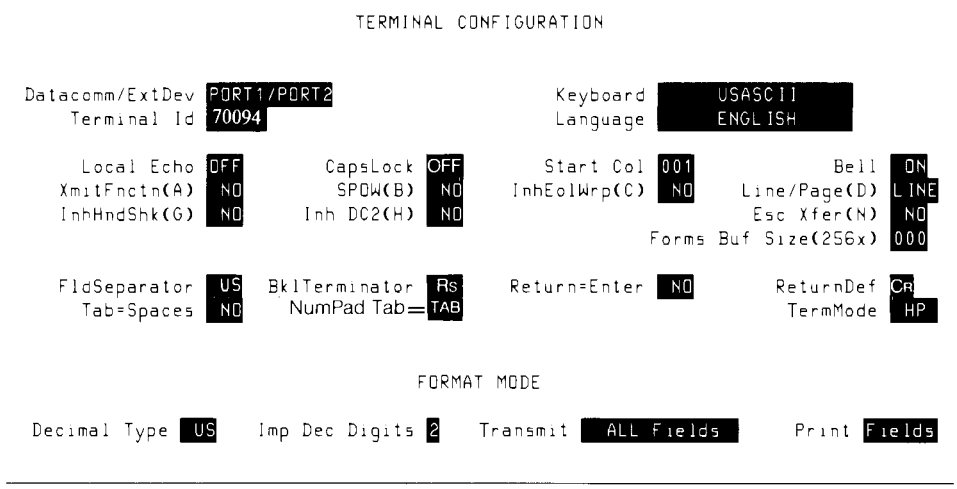
Menu Field	Description
Frame Rate	50Hz, 60Hz or 72Hz. Select the rate that gives you a flicker-free screen display.
Display OFF	Choose 5, 10, 15 or NO. This activates the screen-saver option that automatically turns off the display after the prescribed time interval. No data is lost. To redisplay, press [Shift].
Light 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 when you change this field and save it).
Cursor Type	LINE for blinking line or BLOCK for blinking box cursor.
Key Click	ON turns on audible keyclick. OFF suppresses it.
Auto Repeat	YES makes keys repeat when pressed and held down, NO disables this function.
Warning Bell	ON makes bell tone sound when an internal error occurs (or the computer sends a warning tone). OFF disables this function.

Terminal Configuration Menu

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

- Press System, then config keys to display the labels for available menus.
- Press terminal config to display the TERMINAL CONFIGURATION menu.
- To make your selections, see *Making Menu Selections* at the beginning of this chapter.

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



NOTE

Some fields in the Terminal Configuration Menu appear only in the HP 700/94.

Menu Field	Description
Datacomm/ExtDev	PORT1 PORT2 selects port 1 as the line of communication to the computer, port 2 to an attached printer. PORT2 PORT1 selects port 2 for computer, port 1 for printer.
Keyboard	USASCII specifies the US keyboard is in use. Select another setting if you're using a national language option keyboard other than USASCII.
Terminal Id	Identifies 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 characters you type are both displayed onscreen and sent to host computer; OFF specifies that typed characters are not displayed as they are sent to the computer (although most computers "echo" them back to the screen).
Caps Lock	ON makes all characters uppercase letters, OFF allows you to choose upper or lower case letters using Caps key.
Start Col	Under certain conditions, the terminal ignores any characters to the left of the start column you select here.
Bell	ON allows bell to tone when cursor nears right margin, OFF disables it.
XmitFnctn(A)	Specifies whether escape code functions are executed at the terminal or transmitted to the host computer.
SPOW(B)	Specifies whether or not spaces entered at the keyboard write over (erase) existing characters.
InhEolWrp(C)	Specifies whether or not characters you type automatically wrap to the next line after the right margin is reached (i.e., inhibit 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.

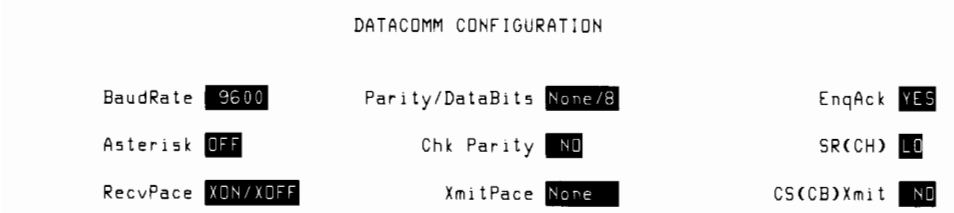
Menu Field	Description
InhHnsShk(G)	Determines handshaking type to be used when transferring blocks of data to a computer.
Inh DC2(H)	Determines block transfer handshaking method.
Esc Xfer(N)	Controls the transfer of escape sequences to a printer.
FormsBufSize(256x)	Selects amount of terminal memory allocated to forms cache, which decreases available display memory **(HP 700/94 only)**.
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. Normal HP operation requires a NO setting.
Term Mode	HP, EM100, EM52 or EM220. Select the mode for your application.
FORMAT MODE:	
Decimal Type	Specifies whether the US (.) or European (,) decimal notation is used **(HP 700/94 only)**.
Imp Dec Digits	Specifies the number of places to the right of the decimal in an implied decimal field **(HP 700/94 only)**.
Transmit	Specifies whether you want all fields or only those fields which you have modified to be transmitted from a form **(HP 700/94 only)**.
Print	Specifies whether you send all of a form or only the unprotected and transmit-only fields to a printer for hardcopy output.

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 [System], then datacomm config to display the DATACOMM CONFIGURATION menu.
- To make your selections, see *Making Menu Selections* at the beginning of this chapter.

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



Menu Field	Description
BaudRate	Selects the transmission rate (bits per second) you need for communication with your computer.
Parity/DataBits	Selects the type of parity and number of bits per byte that fits 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 modem transmission.
RecvPace	Selects the desired method of "handshaking" for terminal-to-computer communication.
XmitPace	As in RecvPace, selects appropriate handshaking method.
CS(CB)Xmit	Selects the appropriate state for transmission control line.

External Device Configuration Menu

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

- Press [System], then config keys to display the labels for available menus.
- Press [System], then datacomm config to display the EXTERNAL DEVICE CONFIGURATION menu.
- To make your selections, see *Making Menu Selections* at the beginning of this chapter.

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

```
                    EXTERNAL DEVICE CONFIGURATION

   BaudRate 2400          Parity/DataBits None/8          PrinterNulls 000
PrinterType ROMAN8            SRRXmit NO                  SRRInvert NO
  XmitPace None            CS(CB)Xmit NO
```

Menu Field	Description
BaudRate	Selects the transmission rate (bits per second) you need for communication with your printer.
Parity/DataBits	Selects the type of parity and number of bits per byte that fits your printer application.
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 terminal and printer.
CS(CB)Xmit	Selects the appropriate state for transmission control line.

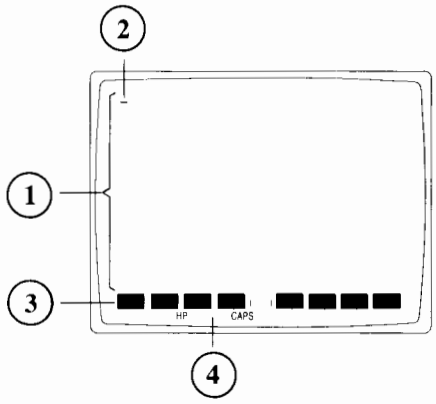
3

Using the Terminal

Screen Display

When you first turn the terminal on, the screen display looks like this:

Figure 3-1. Initial Screen Display



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

1. **Your work area.** Lines 1 through 24 display your work area, where letters and symbols appear as you type them on the keyboard.
2. **The cursor.** A blinking underline or block that locates the place on the screen that the next letter you type will appear.
3. **Function key labels.** Lines 25 and 26 display labels that identify the functions that keys [f1] through [f8] currently perform.
4. **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, so you can cycle through all available functions. Two numbers between the labels for [F4] and [F5] tell where the cursor is: the first is the row, the second the column.

Status Line Indicators

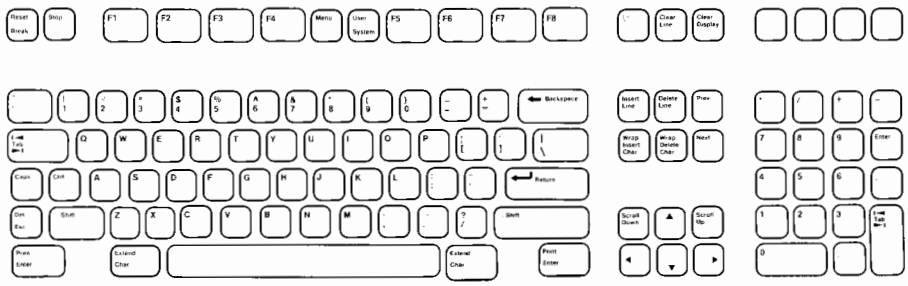
The status line displays these indicators:

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. The "*" 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 aleady 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 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.

Figure 3-2. Terminal Keyboard



1) Typewriter keys 2) Numeric keypad 3) Display control
4) Edit keys 5) Terminal control 6) Function keys

Typewriter Keys

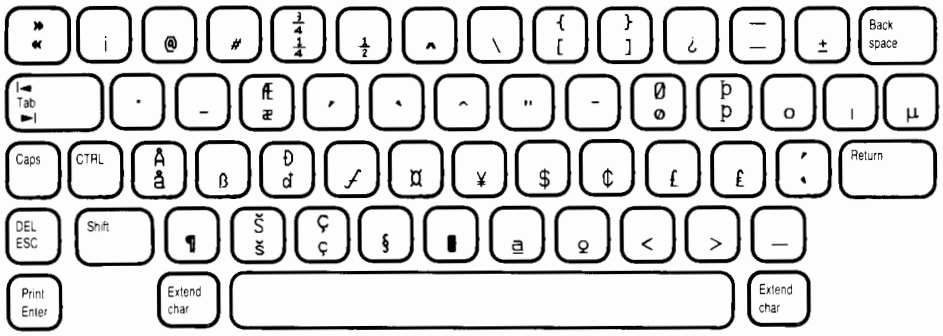
The typewriter keys function like a standard typewriter. The keys include capital and small letters, numbers, punctuation marks and commercial symbols. Several typewriter keys perform special tasks described in the following paragraphs.

[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). 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 set tab. Shift Tab moves the cursor back to the previous set tab. In a menu or a form with protected fields, 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, Return moves the cursor to the left margin of the next line. Normally, a host computer generates the automatic line feed, so you don't have to turn on AUTO LF.
Back Space	Moves the cursor back one space at a time. Back Space spaces over characters without deleting them. In some computer applications, Back Space erases characters as it moves backwards.
Ctrl	Press with another key or series of keys to control terminal functions. For example, Ctrl G makes the terminal beep. Ctrl combinations require pressing and holding down all keys in the combination simultaneously.
Extend Char	Press and hold down as you press a character key to display a character from the extended character set (Figure 3-3). `Ext Char` message 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 3-3. 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 on the right side 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 (see Chapter 5).

Display Control Keys

Display control keys either move the cursor around the screen or bring a different portion of your data onto the screen.

▶	Moves the cursor to "home position"—the left margin of line 1 of the screen (and display memory). Shift ▶ moves the cursor to the left margin of line following the last line of your data.
▲	Moves the cursor up one line (after it hits the top line, the cursor reappears at the bottom of the screen). Shift ▲ does the same thing 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 (after it hits the bottom line, the cursor reappears at the top of the screen). Shift ▼ does the same thing 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. You can keep moving left from the first space of a line to the last space of the previous line.
▶	Moves the cursor right one space. You can keep moving right from the last space of a line to the first space of the next line.
Next	Displays the next segment of your data that was below the screen window (up to 24 lines).
Prev	Displays the previous segment of your data that was above the screen window (up to 24 lines).

Editing Keys

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

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 home position (the 1st column of the 1st 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 following lines move down.
Delete Line	Deletes the line containing the cursor and moves the following lines up.
Insert Char	Activates Insert Character mode. (`Ins char` appears at the bottom of the screen.) All subsequent characters you type are inserted at the cursor. 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 are wrapped to the next line. `Ins Wrap` appears in 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.

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 (see Chapter 6). Ctrl Break causes a long break (2 seconds).

Stop — Temporarily stops data coming to the display from a computer when `RecvPace` in the Datacomm Configuration Menu is set to XON XOFF. Ctrl Stop initiates a long 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 from a computer program. Consult the Reference Manual 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 text on the screen and any not currently being displayed.

Function Keys

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

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 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).

Using the Terminal with a Printer

This section describes how you can obtain hardcopy of what is on your terminal screen by sending the data to a printer.

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 via the External Device Configuration Menu (see Chapter 2).

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:

- Press [System], then press device control.
- 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 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 is rolled off the top of memory by new lines added at the bottom.

Log Bottom

A line of data is sent to the printer when the cursor leaves that line to begin a new line.

Screen Copy

To copy data that is currently on the screen, you use the device control function keys or the [Print] key.

To use the function keys press [System], then device control. Choose the function you desire by pressing the appropriate function key listed below:

- 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 key functions.

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 that display 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 labels 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.

Label	New Label Set Function
	Defines how you print information to a printer connected to the terminal.
	Formats the display of information on the screen.
	Performs several terminal tests.
	Selects the operating modes you desire.
	Selects one or more video enhancement.
	Provides field choices for creating forms.
	Calls up menus to select precisely the operating characteristics you desire.

Device Control Labels

The device control labels control printing functions described below.

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 your information, starting with the line containing the cursor.
COPY PAGE	Prints all the information on the screen, starting with the line containing the cursor.
COPY LINE	Prints the line containing the cursor.

Device Modes Labels

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

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 (continuous logging).
LOG TOP	Prints each line as it scrolls off the top of the workspace (continuous logging).

Margins/Tabs/Col Labels

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

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.

Service Key Labels

The service keys set allows you to perform various tests of the terminal's functions.

Label	Function
TERMINAL TEST	Performs a test of the terminal.
IDENTIFY ROMS	Lists the ROM installed in the terminal, indicating its part number.
PORT1 TEST	Tests data communications on Port 1.
PORT2 TEST	Tests data communications on Port 2.

Modes Labels

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

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	Similar to Line Modify, except that 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 a 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.
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 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 in 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 keyboard control of available video enhancements.

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 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	Inverts display intensity: e.g., changes dark background with bright characters to dark characters on bright background.
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

Through the config keys labels you access the terminal's five configuration menus.

Label	Function
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).
global config	Displays the Global Configuration Menu.

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 these 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 (HP 700/94 Only)

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 might be the day'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 700/94 Only)

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

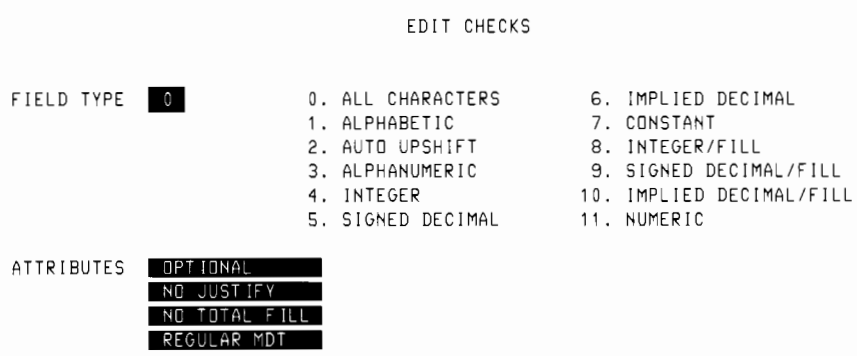
To have the terminal perform edit checks, you must define fields with edit-checking capabilities.

Define Fields Labels

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

Label	Function
erhance 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	(HP 700/94 only.) 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 700/94 only.) Defines the start of each edited field.
define edits	(HP 700/94 only.) Displays the field definition menu (Figure 4-1).
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 otherwise using the Define Fields function keys. 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 700/94 Only)



Define Edits Labels (HP 700/94 Only)

The labels are displayed along with the Field Definition Menu.

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.

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

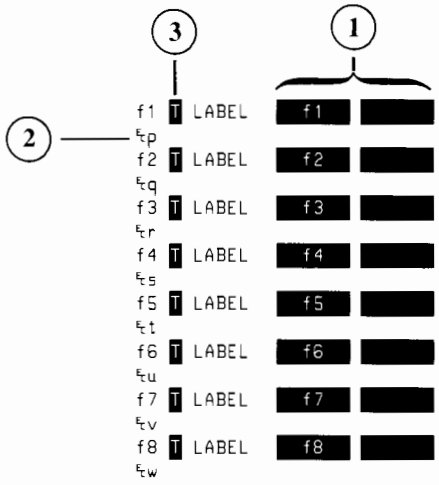
You can define keys [F1] through [F8] to perform your own unique tasks. With the user-defined key feature, you can customize your terminal to suit many applications.

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 tells 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 term "ANSI" appearing here 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:

1. EM100 Mode—the terminal functions like a VT100 terminal when using software on a DEC computer system written specifically for the VT100.

2. EM220 Mode—the terminal operates like a VT220 terminal when using software for the VT220.

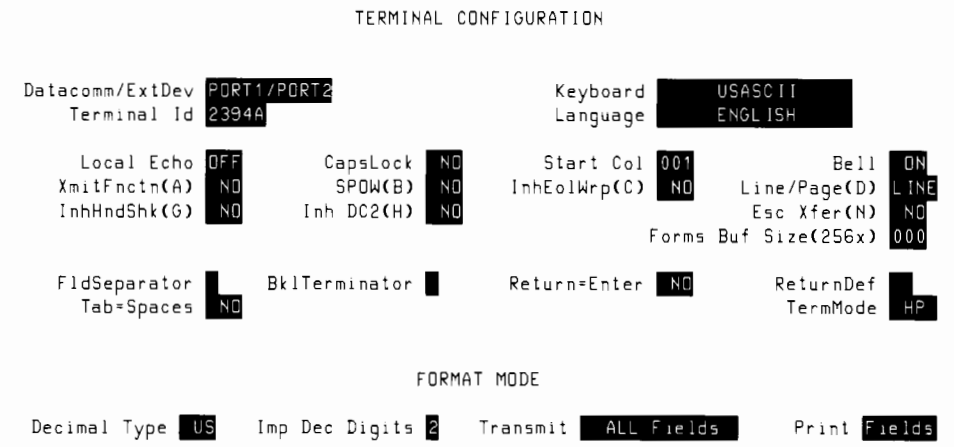
3. EM52 Mode—the terminal operates like a VT52 terminal when using software on a DEC system written for the VT52.

How to Select Operating Modes

Choose the operating mode you desire in the Term Mode field of the TERMINAL CONFIGURATION menu.

- Press [System], then config keys, then terminal config to display the menu (Figure 5-1).

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



To select the desired operating mode:

- Use the [Tab] or cursor control keys to position the cursor in the Term Mode field.
- Press NEXT CHOICE or PREVIOUS CHOICE to display the desired setting. Choose EM100, EM52 or EM220 to operate in the emulation mode you require.
- Press SAVE CONFIG to enter the selected operating mode. This step 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. This leaves the screen blank except for function key labels and status indicators. 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 make certain configuration settings.

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

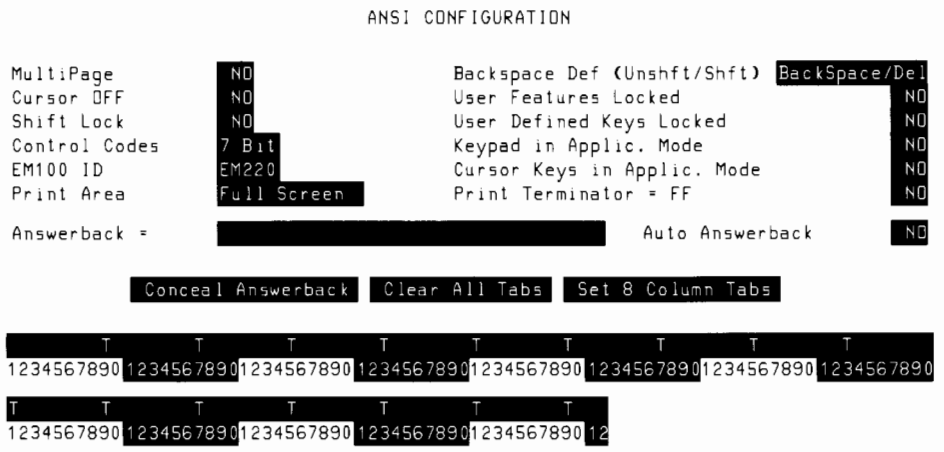
Using the ANSI Configuration Menu

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 information on how to make menu selections.

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

Menu Field	Description
Multipage	Specifies amount of display memory available. NO indicates subsequent applications use a single page of memory (24 lines). YES indicates all available memory is used.
BackspaceDef (Unshft/Shft)	Defines Back Space key functions for use in software applications. BackSpace Del indicates Back Space pressed by itself functions as a normal Back Space key, and Shift Back Space 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 lets you lock in these features so they can only be changed from the keyboard: Auto Repeat, Smooth scroll, Light background, Tab stops and Keyboard lock. NO allows computer to change them in a software application.
Shift Lock	Affects Caps key operation. NO sets Caps to function normally, that is, locking alphabetic keys to uppercase without affecting number and symbol keys. YES selects another function for the Caps key: alphabetic keys still generate uppercase characters, but now number/symbol keys generate the top character shown on the key. When YES is active, you can access 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 via software applications. NO lets a computer change them.
Control Codes	7 Bit or 8 Bit. Selects whether 7 bit or 8 bit control codes are transmitted in response to status requests from the computer.
Keypad in Applic. Mode	NO specifies normal use of the numeric keypad. YES puts the numeric keypad into 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.

Menu Field	Description
Cursor Keys in Applic. Mode	NO specifies normal cursor key functions (in EM100, EM52 and EM220 modes). YES redefines cursor keys as Application Mode cursor keys that generate special escape sequences.
Print Area	Affects 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 print page operations are terminated with no character NO or with a form feed character YES.
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 this 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 and return the keys to generating normal characters.)
Auto Answerback	Allows the answerback message to be sent to the computer automatically after a communications line is established. YES turns on this function, NO turns it off.
Conceal Answerback	Pressing Enter when the cursor is in this field turns on the "conceal answerback" function. When you activate this function, the message ‹Concealed› displays instead of the defined answerback message.
Clear All Tabs	Pressing Enter when the cursor is in this field clears all tabs set via the ANSI Configuration Menu.
Set 8 Column Tabs	Pressing Enter when the cursor is in this field sets a tab stop in every 8th 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 Enter to activate a T in that column. The lower line of numbers in this 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. See 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 inform you 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 with new functions include:

1. The keys [*], [/], [+] and [-]. These keys act as program function keys [PF1], [PF2], [PF3] and [PF4], whose functions vary with the application program being used. The [*] key also generates a line feed character.

2. The [Enter] key. This key becomes the [-] key.

3. The [Tab] key. This numeric pad key becomes the [Enter] key, operating like the [Return] key does 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 in EM100, EM220 and EM52 Modes. These keys include the following:

1. The [Back Space] key. This key functions as a normal backspace or as a delete key.

2. The [Insert Line] and [Delete Line] keys. These 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 (see the *Configuring The Terminal For ANSI Operations* section earlier in this chapter).

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:

- [Shift] [Delete Line] equals the VT220 **Select** key.
- [Shift] [Insert Line] equals the VT220 **Find** key.
- [Shift] [Insert Char] equals the VT220 **Insert Here** key.
- [Shift] [Delete Char] equals the VT220 **Remove** key.
- [Shift] [Prev] equals the VT220 **Prev Screen** key.
- [Shift] [Next] equals the VT220 **Next Screen** key.

On the numeric keypad, these key equivalents are available:

- [*] equals the VT220 **PF1** key.
- [/] equals the VT220 **PF2** key.
- [+] equals the VT220 **PF3** key.
- [-] equals the VT220 **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 these 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 equivalents produced 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

6

Troubleshooting and Maintenance

Included in this chapter are procedures to follow if the terminal should happen to malfunction.

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. However, some errors result from incompatible settings in the configuration menus.

The error messages appear on lines 25 and 26; they replace the function key labels. Pressing the Return key clears the error message, restores the function key labels, and unlocks the keyboard.

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

Message	Meaning
`Default configs used; Press RETURN to clear`	Configuration settings stored in non-volatile 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 tranfer.
`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.

If the Terminal Malfunctions

Some terminal problems may arise during normal operation. You should conduct the following procedures (in their presentation order) 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 non-volatile memory and destroys all data in workspace memory. (That is, a hard reset returns the terminal to its power-on condition.)

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

SOFT RESET. You perform a soft reset by pressing [Shift] [Reset]. A soft reset has these 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. You perform a hard reset by simultaneously pressing the [Ctrl], [Shift], and [Reset] keys. A hard reset has these 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:

  A. Display Functions
  B. Line Modify
  C. Insert Character
  D. Memory Lock
  E. CAPS Mode
  F. Record Mode
  G. Monitor Mode
  H. Any special datacomm modes
  I. Extended Characters Mode
  J. Top or Bottom Logging

Terminal Self-Test

Press [System], service keys, then TERMINAL TEST to initiate the terminal's self-test.

When the test completes successfully, the terminal displays a test pattern on the screen. If the test pattern does not appear or if an error message replaces the function key labels, contact your nearest Hewlett-Packard sales and service office for assistance.

Preventive Maintenance

One simple procedure which helps 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. These cleaners may harm the plastic surfaces.

A

International Keyboards

Figure A-1. French Canadian

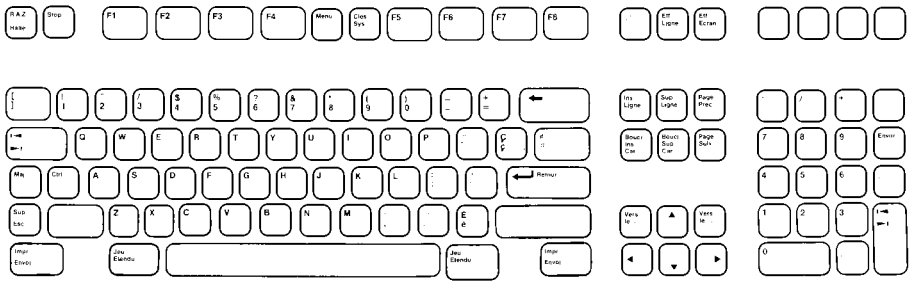


Figure A-2. German

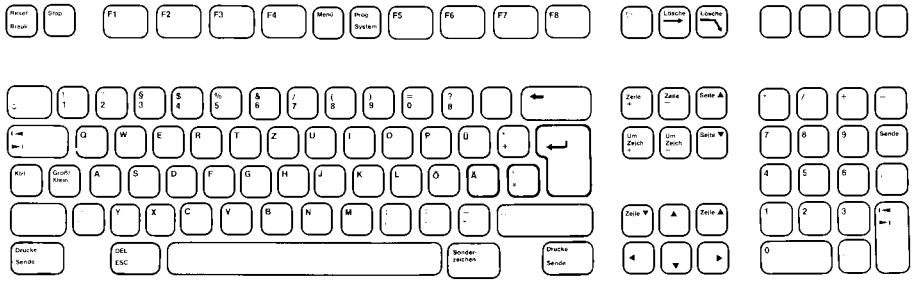


Figure A-3. Spanish

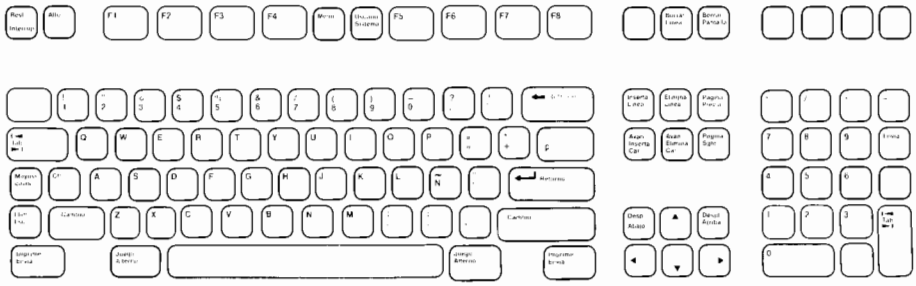


Figure A-4. French

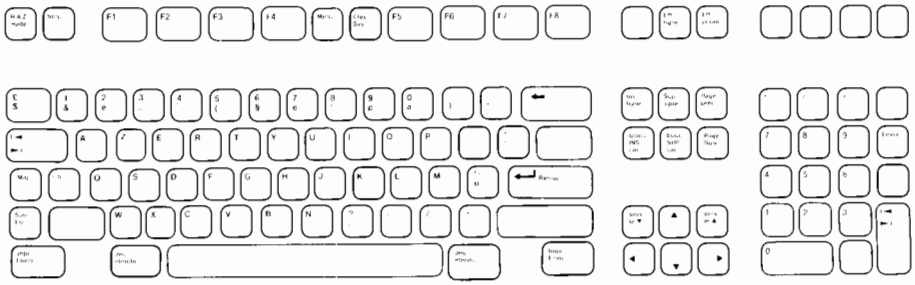


Figure A-5. Dutch

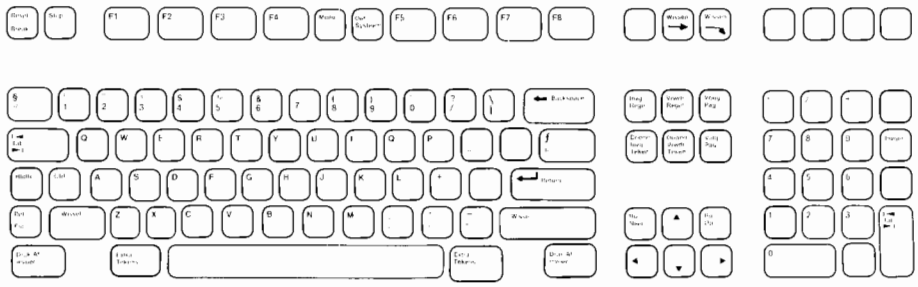


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Figure A-6. English Canadian

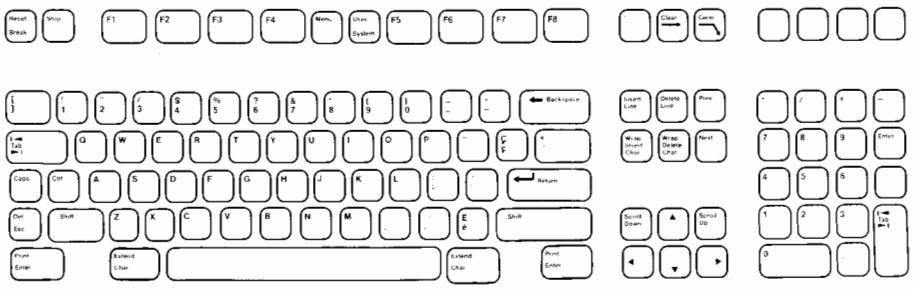

Figure A-7. Spanish (Latin America)

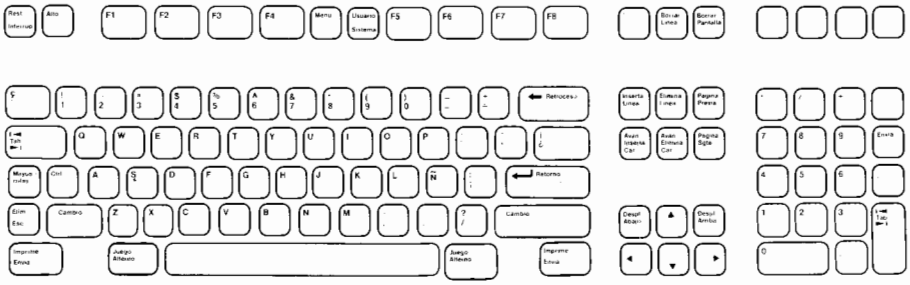

Figure A-8. Norwegian

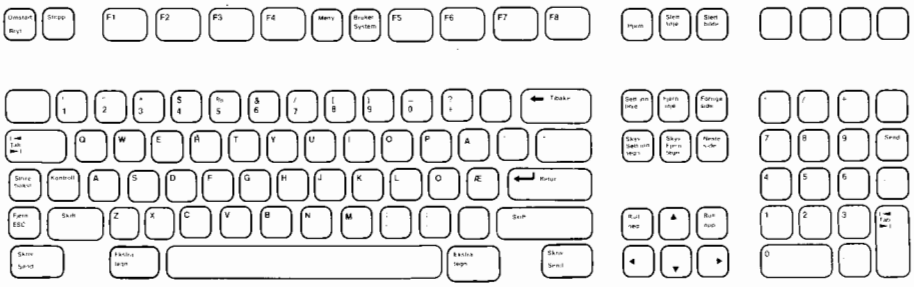

Figure A-9. Swiss German

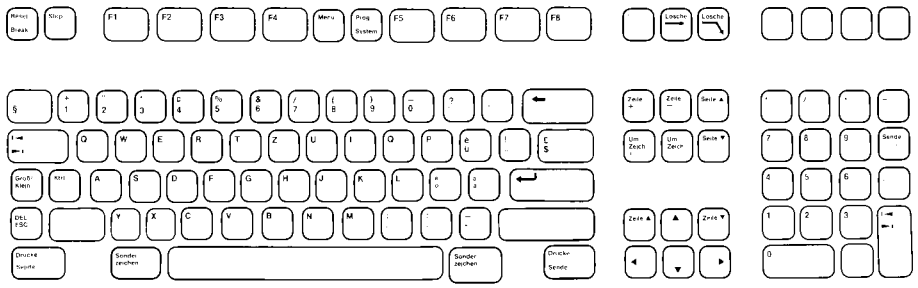

Figure A-10. Swiss French

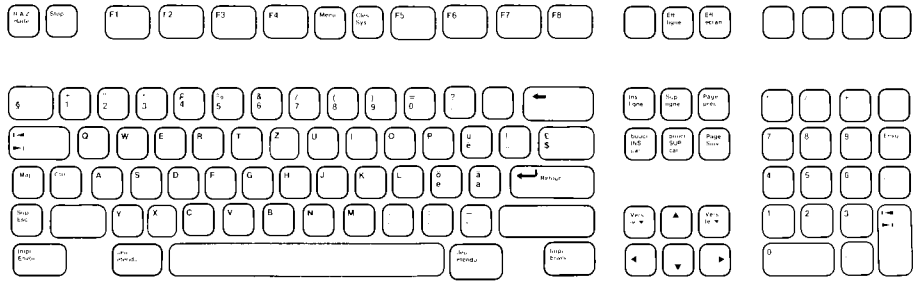

Figure A-11. Swedish

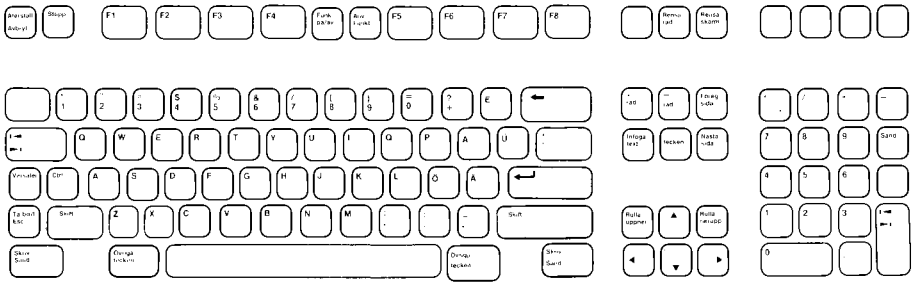

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Figure A-12. English (UK)

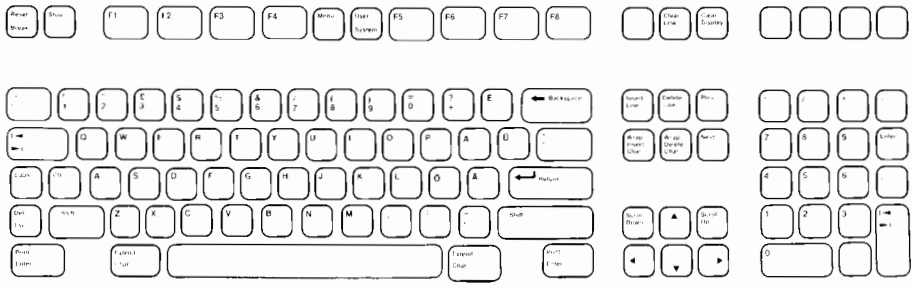


Figure A-13. Flemish

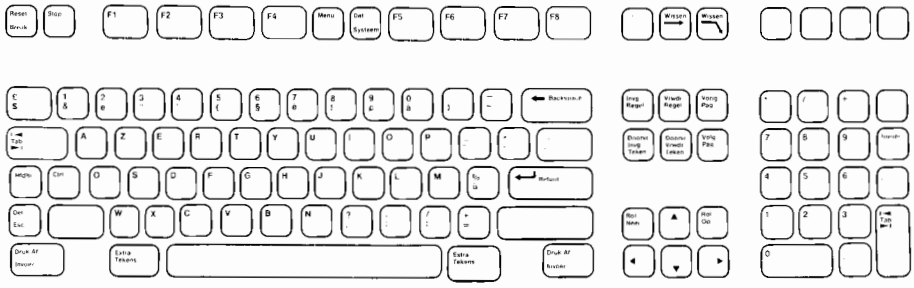


Figure A-14. Finnish

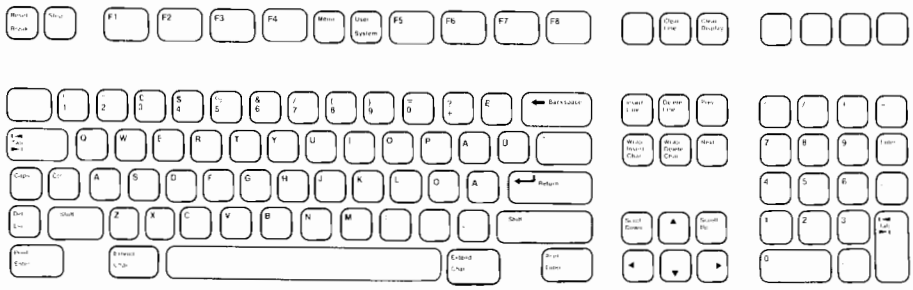


Figure A-15. Danish

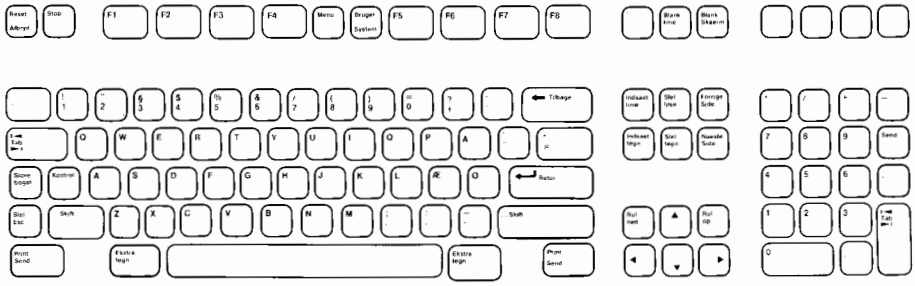
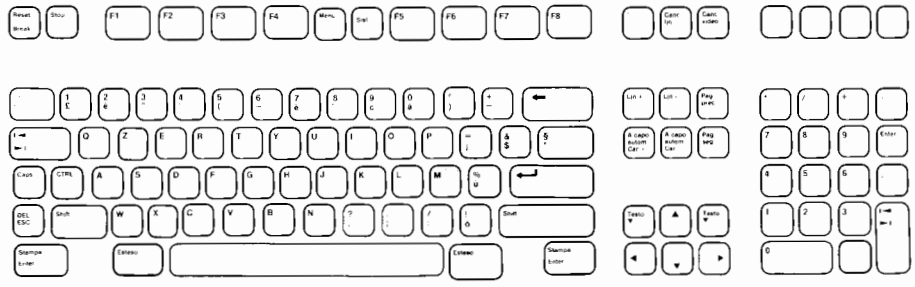


Figure A-16. Italian



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