HEWLETT-PACKARD

HP Terminal Program
User Manual

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HEWLETT
PACKARD

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Preface

This manual explains how to install and use the HP Terminal Program, and use it to communicate with a host computer, and/or printer or plotter. (Note that you should connect your PC to the host computer, printer or plotter as described in the device's documentation.)

The manual is divided into four chapters and three appendices:

Chapter 1: Installing the HP Terminal Program.
Chapter 2: Configuring Your Terminal.
Chapter 3: Learning About Your Terminal and Keyboard.
Chapter 4: Using your Terminal and Screen Labels.
Appendix A: Error Messages.
Appendix B: Alphanumeric Escape Sequences.
Appendix C: Graphics Escape Sequences.

In many cases, you will be able to use the HP Terminal Program's easy-to-use labels and simple messages to guide you through the functions.

Now turn to Chapter 1 to install your program.

Contents

1

Installing the HP Terminal Program

Introduction

If you have a "Terminal ROM Card", read its installation manual instead of this chapter.

Note

The HP Terminal Program is copyrighted and all rights are reserved by Hewlett-Packard. This means you can make copies of the software for your own use, but it is ILLEGAL to make copies for use by a third party or a colleague.

The HP Terminal Program software is provided on two 5.25 inch (360 Kbyte) flexible discs or two 3.5 inch (720 Kbyte) flexible discs. Install the software on your own disc as explained below:

If you have:	Then go to:
A hard disc.	The section entitled "Installing On a Hard Disc System."
No hard disc.	The section entitled "Installing On a Flexible Disc System."

Installing On a Hard Disc System

Use this installation procedure if you have a system with a hard disc drive. This procedure copies the HP Terminal Program files from your flexible master discs to your hard disc. You will need approximately 210 KBytes of free space on your hard disc to do this.

1. Insert the HP Terminal Program Master #1 disc in flexible disc drive A: of your computer (the top drive, or the left-hand drive on the Portable Vectra CS).

2. On the DOS command line:

   a. Type: `A:` Enter ←.

   b. Type: `INSTALL C:\TERMINAL` Enter ←.

      Where "`C:\TERMINAL`" means the subdirectory `TERMINAL` on your hard disc (C:), where all your files will be stored.

      If you want to create and use a different subdirectory, use its name instead of "`TERMINAL`". If you want to put the program in the root directory of the disc, just type `INSTALL C:` Enter ←.

3. The screen displays a list instructions that guide you through the installation procedure and tell you when to remove Master disc #1 and insert Master disc #2.

   Answer all the screen messages correctly. In particular, ensure you enter the correct type of video adapter. For example, on the Portable Vectra CS, specify "Standard Color Graphics

Adapter". (If you select the wrong adapter, re-do the installation procedure.)

4. When the installation procedure is complete, remove the flexible disc from drive A. Then reset the computer by holding down CTRL and simultaneously pressing Alt and DEL. (This re-loads the operating system.)

On an HP Vectra PC, the HP Terminal Program automatically adds itself to PAM, with TERMINAL appearing on the PAM screen.

This completes the installation procedure. Turn to "Starting Your Terminal" to start the HP Terminal Program.

Installing On a Flexible Disc System

Use this installation procedure if you have flexible discs drives and NO hard disc. This procedure copies the HP Terminal Program onto a flexible work disc.

Note that when creating flexible work discs, use blank discs of the same capacity as your disc drive. The 5.25 inch, 360 Kbyte flexible disc drive has an asterisk (*) embossed below the drive's activity light.

Formatting Your Work Disc

Before starting, you must format a flexible disc to be used as your work disc. To do this:

1. Start the computer and display the PAM screen, or DOS.

2. Type: `FORMAT B:` Enter ←

3. Insert a blank disc (of the correct size) in drive B:. Note that on a system with one disc drive, this drive acts as both drive A: and B:.

When the formatting is complete, install the program as explained in the next section.

Installing the Program

The installation procedure copies the files from your HP Terminal Program master discs to your formatted work disc.

1. Insert the HP Terminal Program Master #1 disc in drive A:.

2. If you have TWO flexible disc drives, insert the blank work disc in the other drive. (If you have one flexible disc drive, skip to step 3.)

3. On the DOS command line:

   Type: `INSTALL B:\TERMINAL` Enter ←.

   This means "install the HP Terminal Program onto the disc in drive B: in the subdirectory `TERMINAL`".

   If you want to create and use a different subdirectory, use its name instead of "`TERMINAL`". If you want to put the program in the root

directory of the disc, just type
`INSTALL B:` Enter ←.

4. Follow the instructions on the screen. These tell you when to remove Master #1 and insert Master #2.

   Answer all the screen messages correctly. In particular, ensure you enter the correct type of video adapter. For example, on the Portable Vectra CS, specify "Standard Color Graphics Adapter". (If you select the wrong adapter, re-do the installation procedure.)

5. When the installation procedure is complete, remove the flexible disc from drive A and insert an operating system disc. Then reset the computer by holding down CTRL and simultaneously pressing Alt and DEL. (This re-loads the operating system.)

This completes the installation procedure. Now start the HP Terminal Program as described in "Starting Your Terminal."

Starting Your Terminal

Before you can use your PC as a terminal, you must start the HP Terminal Program.

Starting from PAM

Display the PAM screen. (Ensure that the HP Terminal Program work disc is in the drive defined in PAM.)

If [Terminal] is listed on the PAM screen:

1. Press [Tab] to highlight the screen box labeled [Terminal].
2. Press [Enter ←] to start the terminal application.

When you start the HP Terminal Program, the terminal main screen appears.

Now turn to Chapter 2 to configure the HP Terminal Program.

Starting from DOS

If you want to start from DOS, at the DOS command line:

1. Change to the drive containing the HP Terminal Program.

   Example: If it is in:

Drive:	Type:
A	A: [Enter ←]
B	B: [Enter ←]
C	C: [Enter ←]

2. If the HP Terminal Program in a subdirectory, change to its subdirectory:

   Type: `CD subdirectory name` Enter ←

   Example: If it is in the "TERMINAL" subdirectory:

   Type: `CD C:\TERMINAL` Enter ←

3. To start the HP Terminal Program:

   Type: `TERM` Enter ←

When you start the HP Terminal Program, the terminal main screen appears.

Now turn to Chapter 2 to configure the HP Terminal Program.

Exiting Your Terminal

When you want to leave your terminal and return to PAM or DOS, you can either:

- Use the "fast exit" facility: Simultaneously press Shift and F8 (or Shift F2 on a non-enhanced keyboard).

Or

- Press F8 several times until the Exit label appears, then press F8 again to return to PAM or DOS.

2

Configuring the HP Terminal Program

Introduction

The HP Terminal Program turns your computer into a terminal. Configuring is the process of telling the terminal which devices are connected — host computer, printer or plotter — and how to communicate with them.

When you first use the terminal it is set to work with:

- An HP host computer connected to your PC via the first available serial port using alphanumeric data.
- A parallel printer connected to your PC via the "PRN" parallel port (usually the first parallel port).

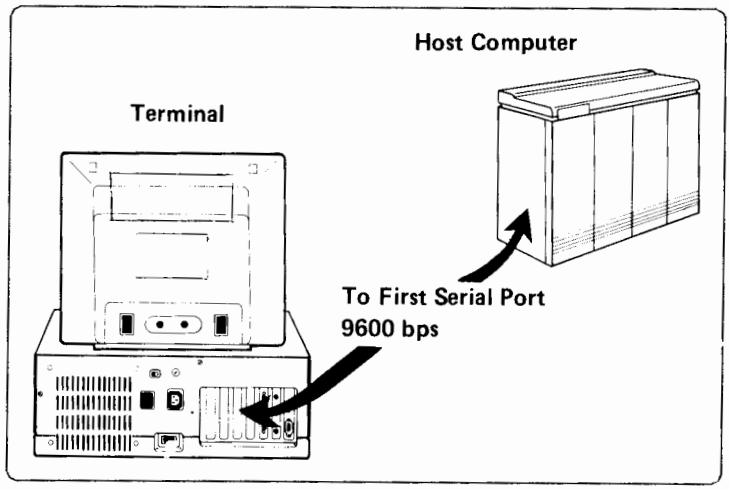


Figure 2-1. Default Configuration

If your system fits this case, then you do NOT normally need to configure the terminal. You can start using it as described in Chapters 3 and 4.

However, if you:

1. Want to use another printer or serial plotter.
2. Or have problems communicating with the host computer.

You must configure the terminal so that it can communicate correctly. You do this by entering configuration information in the following "menus":

- Global - sets the connection for the host computer, printer and plotter, and the video adapter used in your PC.
- Remote - defines how the terminal should communicate with a host computer.
- AdvanceNet - defines how the terminal should communicate with an AdvanceNet computer network.
- Printer - defines how the terminal should communicate with a printer.
- Plotter - defines how the terminal should communicate with a plotter.
- Terminal - sets some of the terminal's features.
- ANSI - specifies how the terminal should work with a DEC computer.
- Color - defines character foreground and background colors.

Using the Configuration Menus

This chapter describes how to use the configuration menus. You are guided step-by-step through each menu so that you can check the information on each screen for your particular configuration.

You display a configuration menu by first pressing F6 Config Keys, then selecting the menu from the screen labels. For each menu, the default values (previously set in the factory) are shown — these values can be used in the majority of cases — plus a description of the parameters.

Changing the Configuration Values

If any of the configuration values are wrong for your needs, you can change them as follows:

1. Use Tab to move the cursor to the highlighted value in the field that you want to change: Tab (on its own) moves the cursor forwards from field to field. Shift Tab moves the cursor backwards.
2. Press F3 Previous Choice or F2 Next Choice to cycle through the possible values. Alternatively, if you want the DEFAULT values for all the fields, press F4 Default Values. Note that with certain fields (such as "Terminal Id"), you must type in the relevant value.
3. When you are SATISFIED with your choices and want to implement them, press F1 Save Config. The terminal main labels appear.
4. But if you decide you want to exit the screen WITHOUT saving the changes, press F8 Done. The configuration labels appear.

Printing a Configuration Menu

Before you can print, you must first ensure the printer is correctly connected and configured. You should then set the printer as the "output" device. That is, on the terminal main labels, select the [Copy Data] label and then the [To Print] label - an asterisk appears on the label to indicate that it is active.

To print a displayed menu, press the print screen key. That is [Print Screen] on an enhanced keyboard or [Shift] [F3] on a non-enhanced keyboard. For the Color Pair Configuration menu, press [Shift] [Print Screen].

Enhanced Versus Non-enhanced Keyboard

The HP Terminal Program can be used on PCs with different keyboards (see Figure 3-5):

- The enhanced keyboard has 12 function keys [F1] to [F12] across the top of the keyboard.
- The non-enhanced keyboard has 10 function keys [F1] to [F10] at the left-hand side of the keyboard.

How you access the terminal's features depends on the keyboard, as explained in the text.

Terminal Main Screen Labels

When you start your terminal, the labels shown below appear. You can also display these labels by pressing F12 (or CTRL F6 on a non-enhanced keyboard).

Each label is controlled by the corresponding function key (F1 to F8).

Modes Label

You must first set the terminal's operating mode so that it can communicate with the host computer.

On the terminal main screen labels, press F4 Modes. These labels appear:

An asterisk (*) in a label means that the function is ON, otherwise the function is OFF.

1. Set the labels as shown above, in particular: Block Mode OFF, Remote Mode* ON, and Auto LF OFF. (These values are retained by the program.)

2. Press F8 Done to return to the terminal main screen labels.

Now check the *Global Configuration Menu.*

Global Configuration

The **Global Configuration Menu** allows you to define the connection used for the host computer, printer and plotter.

On the terminal main screen, press F6 Config Keys. The Configuration labels appear:

Press F1 Global Config. This takes you to the *Global Configuration Menu* shown below. Use the screen "fields" to select the parameters described on the following page. Note that the "HP Mode" field is not available on the Portable Vectra CS.

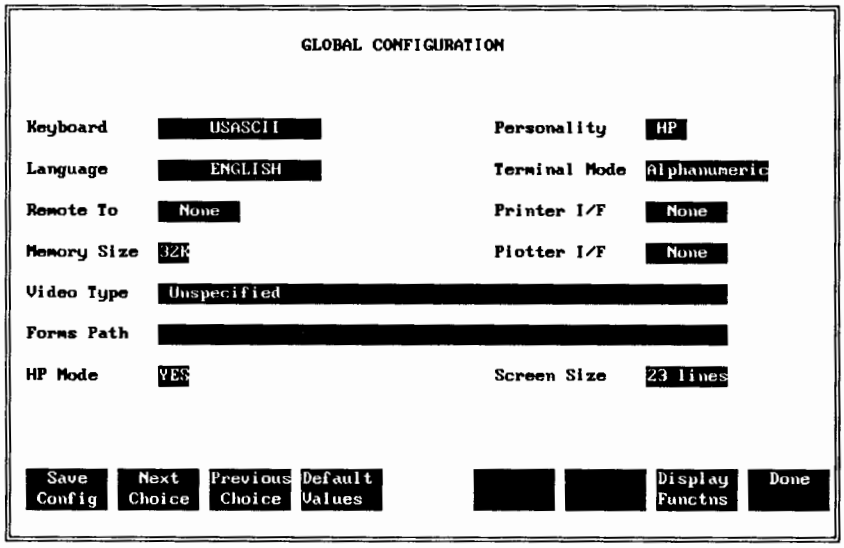


Figure 2-2. Global Configuration Menu (Defaults)

Field:	Selects:	Field:	Selects:
Keyboard	Type of keyboard. e.g. `USASCII` for USA, or `UK` for English.	*Personality*	Type of terminal to emulate: `HP` for HP, `EM52` for VT52 or `ANSI` for VT100.
Language	Language for screen labels and error messages. e.g. `ENGLISH` for English.	*Terminal Mode*	Type of program: alphanumeric only (`Alphanumeric`), or both alphanumeric and graphics (`Graphic`).
Remote To	Serial port on the PC used for the host computer.	*Printer I/F*	Serial or parallel port on the PC used for a printer.
Memory Size	Size of alpha display memory: `16K` for 5 pages, `32K` for 10 pages, `48K` for 15 pages, `64K` for 20 pages.	*Plotter I/F*	Serial port on the PC used for a plotter.
Video Type	Type of display adapter card installed in the PC.	*Forms Path*	Pathname to directory for forms files.
HP Mode	Type of characters: `YES` for HP, `NO` for IBM.	*Screen Size*	Number of lines for text in IBM mode: 23 or 24.

Fields You May Want to Change

The fields which you will most likely change are:

Keyboard: Use this field to select your keyboard.

Before you can use a non-USASCII keyboard, you may need to set the language of your PC using an MS-DOS command, see the MS-DOS manual for details. (If you have a non-US operating system, the MS-DOS command should already be in your PC's AUTOEXEC.BAT file.) Subsequently, you can change the "Keyboard" field to match your keyboard.

Language: This field is not implemented. To change the language, re-install the application and select the language during the installation procedure.

Terminal Mode. Use to configure the terminal for the type of host application you want to access.

Only set the field to [Graphic] if you want to use host-based graphics applications (such as HP Draw). This is because with graphics you have less space available in your PC's RAM memory for other applications (such as MS-Windows, etc.).

The alphanumeric terminal uses 140 KBytes of your PC's RAM. The graphics terminal uses from 215 to 350 KBytes of your PC's RAM, depending on the video adapter and the setting in the "Memory Size" field.

When you change the "Terminal Mode" field, the "Terminal ID" field in the Terminal Configuration Menu will automatically change to a 2392A (alphanumeric terminal), or 150A (monochrome graphics terminal) or 2627A (color graphics terminal) if you have an EGA or VGA card. This means if you had previously set the "Terminal ID" field to your own value, you must reset this value.

Remote To. Use to select the host connection. The setting must correspond to the host computer cable's physical connection and the configuration of your interface adapter card.

Serial ports 2, 3 and 4 are only possible if supported by your PC. AdvanceNet is only possible if your PC is fitted with an HP AdvanceNet Card.

Printer I/F. Use to select the printer connection.

Parallel port 2 and serial ports 2 to 4 are only possible if supported by your PC. If you select PRN, then by default this means parallel port 1. However, if required,

you can re-direct PRN to any other port using the MS-DOS MODE command (refer to your DOS manual).

Memory Size. Use to select the amount of memory the terminal has for alphanumeric data.

Video Type. Use to select the video adapter card that is installed in your PC.

You MUST select the correct type. Selecting the wrong adapter may have adverse effects, such as the cursor disappearing. If you don't know which adapter you have, refer to your System Checklist and Inventory Foldout (or ask your system manager).

If you have a HP Portable Vectra CS, specify Standard Color Graphics Adapter. If you have an IBM Monochrome Adapter, your PC will only work in alphanumeric mode. (You cannot use graphics.)

If you change your video adapter, re-install the application and select your new video adapter.

Forms Path. Use this field to select the directory in which you will store all your "cached" forms. If you leave the field blank, the current (TERMINAL) directory is used.

The forms are saved when you exit the HP Terminal Program, and are "restored" the next time you run the HP Terminal Program.

The forms-cache facility is used with host computer programs that permit you to enter data on pre-defined "forms". Forms caching allows the host computer to download ALL the forms that are used at one time—they are stored in the directory you specify—and display a form as it is needed. This is much faster than the host computer down loading a form each time it is needed.

HP Mode. Use to select the characters displayed by the terminal. (Not available on the Portable Vectra CS.)

Set to [YES] to display characters from the ROMAN8 character set. (With a Mono Plus Adapter or a Color Graphics Adapter, ROMAN8 characters are not available and IBM8 characters are displayed.) In addition, the terminal displays 26 lines: 24 lines of data, and two lines of labels.

Set to [NO] to display IBM8 characters. You may need to use this setting if you experience problems displaying characters when using PC applications that allow context switching (such as MS-Windows). The terminal displays 25 lines.

Note that on a Vectra CS equipped with a Multimode Adapter, 25 lines only are available. If you need 26 lines, an HP-HIL card must be installed and "EXTBIOS" enabled using the SETUP Program.

Screen Size. When HP Mode is set to [NO], the terminal displays 25 lines. The "Screen Size" field controls whether 23 or 24 lines of data are displayed.

When set to [24 lines], [F9] determines whether the screen labels are displayed on one line or two lines. When set to [23 lines], the labels are displayed on two lines. (Remember to deactivate [Memory Lock] before changing the screen size.)

Change the fields as described in "Changing the Configuration Values." Then check the *Remote Configuration Menu.*

Remote Configuration

The **Remote Configuration Menu** allows you to set the communications parameters used with the host computer.

On the terminal main screen, press [F6] [Config Keys]. If you have specified a "Remote To" device in the *Global Configuration Menu,* these configuration labels appear:

Press [F2] [Remote Config]. This takes you to one of the three Remote Configuration screens. (This is because the screen that appears depends on the setting of the "Remote To" field on the *Global Configuration screen.*)

If the "Remote To" value was:

1. A serial port, the *Point-to-Point Configuration* screen appears.

2. ADVANCENET TELNET, the *AdvanceNet TELNET Configuration* screen appears.

3. ADVANCENET HP3000, the *AdvanceNet HP3000 Configuration* screen appears.

   AdvanceNet is only possible if your PC is fitted with an HP AdvanceNet Card and the correct driver has been installed.

These menus are described on the following pages.

Point-to-Point Configuration Menu

The default values for the **Point-to-Point Configuration Menu** are as follows:

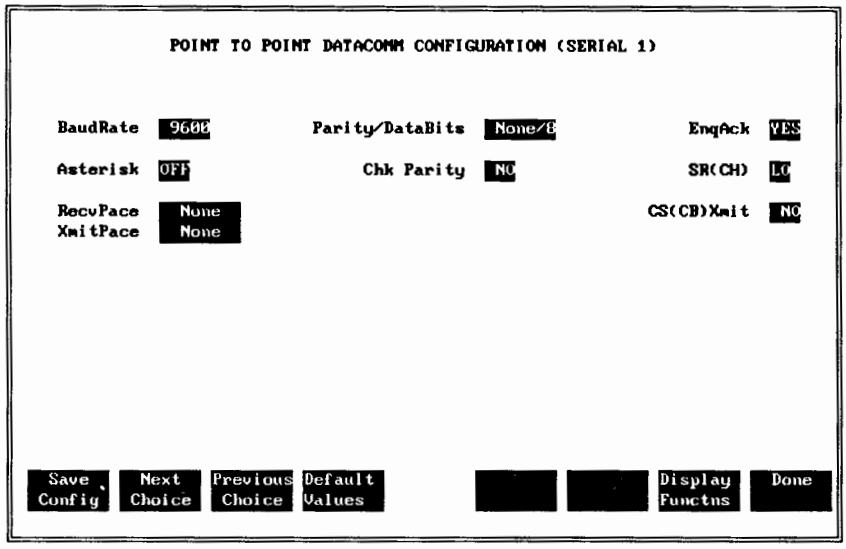


Figure 2-3. Remote Configuration Menu (Defaults)

Fields You May Want to Change

The field which you will most likely change is:

BaudRate. This is the speed of data transmission between your PC and the remote computer. Set the speed according to your host computer (see your computer operator for details).

For the remaining fields, most of the parameters must conform to the setting on the remote host computer. Refer to the reference manual of the terminal you have defined in the "Terminal Id" field in the *Terminal Configuration Menu* or ask your host computer operator.

Change the fields as described in "Changing the Configuration Values." Then check the *Printer Configuration Menu.*

AdvanceNet Configuration Menu

The **AdvanceNet TELNET Configuration** and **AdvanceNet HP3000 Configuration** and menus are shown below:

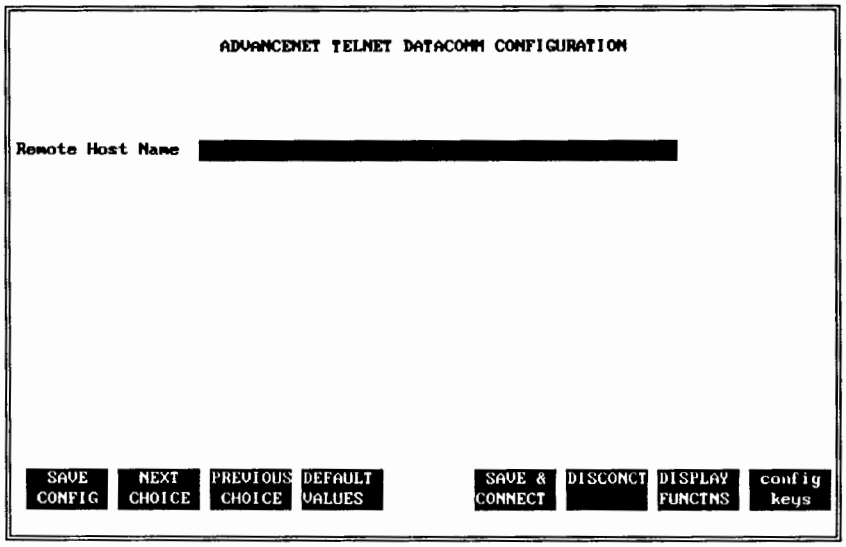


Figure 2-4. AdvanceNet TELNET Menu (Defaults)

Fields You May Want to Change

Remote Host Name. This field contains the name of the remote host computer that you want to log onto. It must start with a letter. (Use only alphanumeric characters and underscore "_ " in the name.) It can be one "string" of characters up to 16 characters long. Or up to three such strings separated by periods (.).

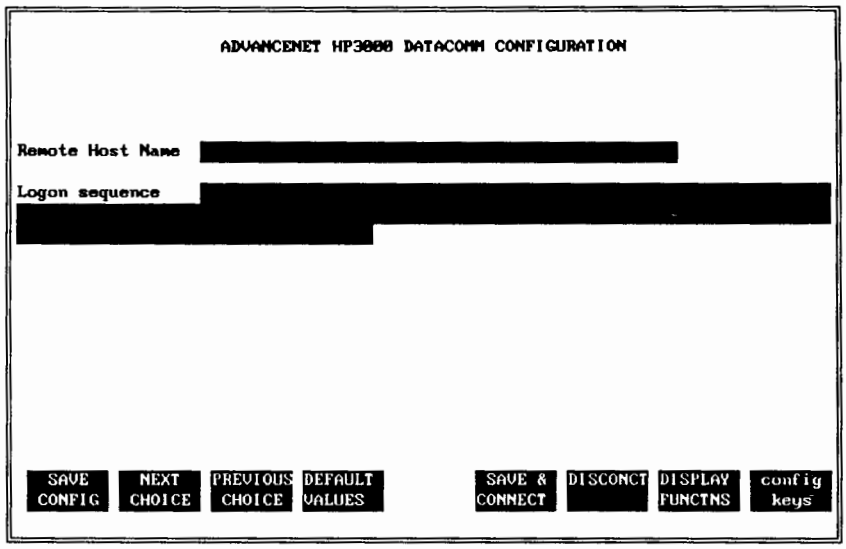


Figure 2-5. AdvanceNet HP3000 Menu (Defaults)

Logon Sequence. Optional field. Contains the sequence used to logon to the remote host computer. If you leave this field blank, you must type in your logon sequence each time you use the network.

If you want to logon to the AdvanceNet system, choose SAVE & CONNECT. This both saves your changes and logs you onto the system. Use DISCONCT to terminate the connection.

If you just want to save your changes, choose SAVE CONFIG. However, if the AdvanceNet connection is active when you select SAVE CONFIG, an error message appears and your changes won't be saved.

Now check the *Printer Configuration Menu.*

Printer Configuration

The **Printer Configuration Menu** allows you to set the communications used with a printer.

On the terminal main screen, press F6 Config Keys. If you have specified a "Printer I/F" device in the *Global Configuration Menu,* these configuration labels appear:

Press F3 Printer Config. The screen displayed depends on the "Printer I/F" value in the *Global Configuration* screen.

If "Printer I/F" value was:

1. A parallel port, the *Parallel Printer Configuration* screen appears:

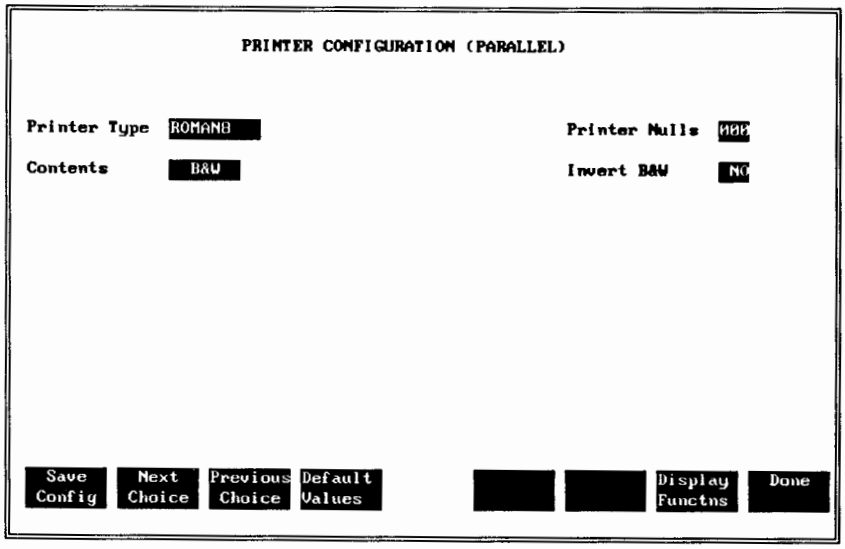


Figure 2-6. Parallel Printer Configuration Menu (Defaults)

2. A serial port, the *Serial Printer Configuration* screen appears. (This screen contains the fields on the *Parallel Printer* screen plus the fields from the *Point-to-Point Datacomm Configuration* screen.)

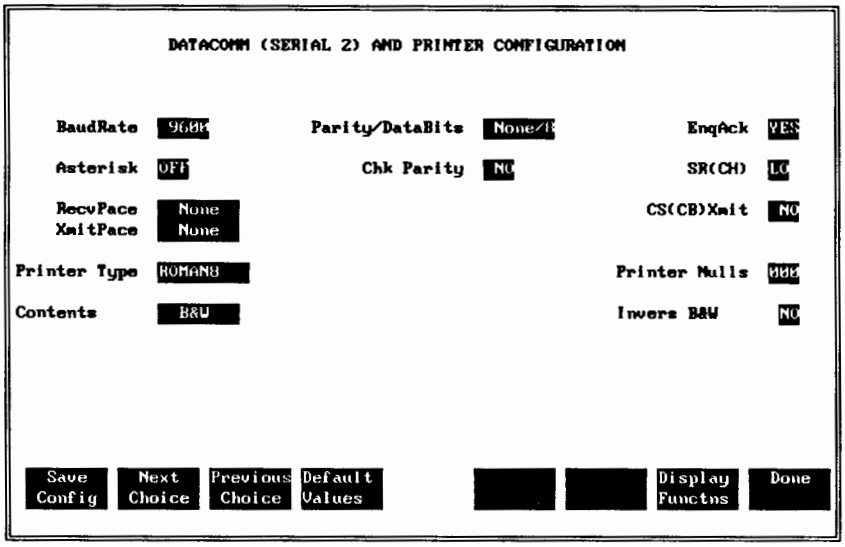


Figure 2-7. Serial Printer Configuration Menu (Defaults)

Fields You May Want to Change

BaudRate. Defines the speed of data transmission between your PC and the serial printer (see your printer manual for details).

CS(CB)Xmit. Specifies if your printer uses the "Clear to Send" handshake signal.

If you find when you are printing long text that the printout is incorrect, then set this field to [YES]. For most HP printers, you should set the field [YES].

Printer Type. Specifies the character set used with your printer. Refer to your printer's documentation for details.

If you have an HP printer, set the field to [ROMAN8]. If you have an "older" HP printer, set the field to [EXT ROMAN].

If your printer uses characters from the IBM character set, set the field to [IBM8]. Note that the ROMAN8 character set has more local characters available than the IBM8 character set.

Contents. Used with a color printer to specify if you want to print *graphics* in black and white only [B&W] or color [COLOR]. Color graphics hardcopy is supported on the HP PaintJet (HP3630A) only.

Invert B&W. When set to [YES], allows you to print *graphics* in "negative".

For the remaining fields, most of the parameters must conform to the settings on the printer. See your printer manual for details. You can also refer to the reference manual of the terminal you have defined in the "Terminal Id" field in the *Terminal Configuration Menu.*

Change the fields as described in "Changing the Configuration Values." Then check the *Plotter Configuration Menu.*

Plotter Configuration

The **Plotter Configuration Menu** allows you to set the communications used with a plotter.

On the terminal main screen, press F6 Config Keys. If you have specified a "Plotter I/F" device in the *Global Configuration Menu,* these configuration labels appear:

Press F4 Plotter Config. The *Serial Plotter Configuration Menu* appears. This screen is similar to that described for the serial printer on "Printer Configuration."

Change the fields as described for the serial printer. Then go to the *Terminal Configuration Menu.*

Terminal Configuration

The **Terminal Configuration Menu** allows you to set some of the terminal's features.

On the terminal main screen, press f6 Config Keys. These configuration labels appear:

Press f5 Terminal Config. The *Terminal Configuration* screen appears:

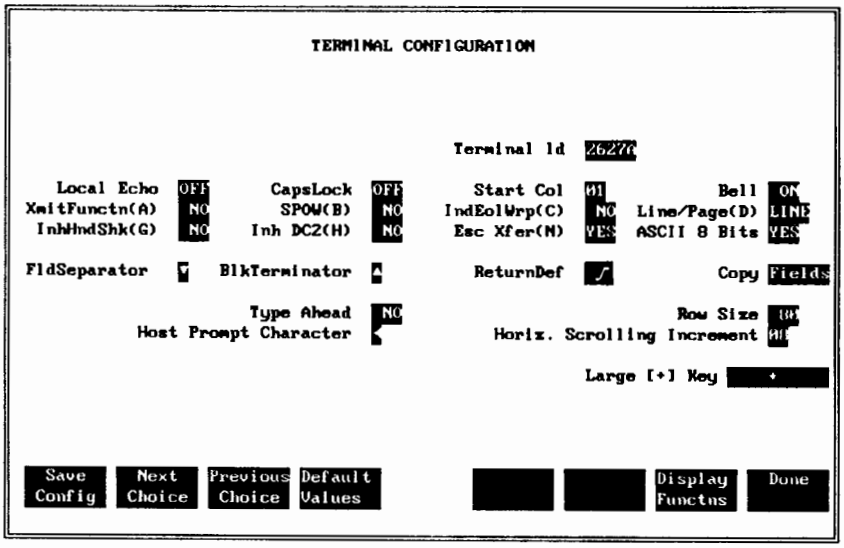


Figure 2-8. Terminal Configuration Menu (Defaults)

Fields You May Want to Change

Terminal ID. This is the terminal identification sent to the host computer in response to a "Terminal ID" request.

The default value depends on the setting of the "Terminal Mode" field (in the *Global Configuration Menu*) and your terminal. It will be automatically set to **2392A** (alphanumeric terminal), or **150A** (monochrome graphics terminal), or **2627A** (color graphics terminal) if you have an EGA or VGA card.

If required, you can change the setting to any value (up to five characters long) by typing it in.

For HP 3000 alphanumeric applications, use 2392A.

For graphics applications, the suitable values are 150A (use a leading blank, " 150A"), 2623A and 2627A (for color graphics). If you use graphics, you must set the "Terminal Mode" field in the *Global Configuration Menu* to [Graphic].

Esc Xfer(N). This field controls whether "escape sequences" are sent to your printer.

When set to [YES], each line is prefaced by the sequence "$S_I E_C$d@" (to stop line drawing and display enhancements), and the line contains any escape sequences that relate to the display (enhancements, color pair, fields or line drawing elements).

If you have an HP printer, set the field to [YES].

If you have a non-HP printer (or your printer prints "garbage"), set the field to [NO].

Copy. This field is used when working in "forms mode" with an HP 3000 computer. It specifies which part of the displayed text is copied to a printer or disc file. This can be either [Fields] (the contents of the unprotected fields on forms only) or [All] (all the screen).

Type Ahead. This field can be used with an HP 3000 computer. It allows you to type characters into the host computer before you receive the computer's prompt.

With the [YES] setting, your keystrokes are stored in the terminal until the computer prompt is received. This allows you to type a command, then type another while the first command is being executed.

Note that under certain circumstances your terminal will wait to receive the computer prompt. In this case, simultaneously pressing [CTRL] [F10] will release the terminal.

Set to [NO] if your host computer does not permit type ahead.

Row Size. Sets the number of screen columns at 80, 132 or 160. For most HP 3000 applications, you should use 80 columns.

Note that however many columns you set, you can only display 80 at a time. If you set 132 or 160, you can scroll the screen left or right using [CTRL] [◄] or [CTRL] [►] respectively.

Horizontal Scrolling Increment. Sets the number of columns your screen scrolls (for row size of 132 or 160 columns) when the cursor reaches the left or right margin or when you press [CTRL] [◄] or [CTRL] [►].

Large [+] *Key.* Determines the operation of the large [+] key on the numeric keypad (right-hand side of the keyboard).

Value:	Meaning:
[+]	"+" (default).
RETURN	Equivalent to [Enter ←] on the alphanumeric keys.
TAB	Equivalent to [Tab] on the alphanumeric keys.
ENTER BLOCK	Equivalent to [Enter] on the numeric keypad (or [F3] on a non-enhanced keyboard).

For the remaining fields, most of the parameters must conform to the setting on the remote host computer. Refer to the reference manual of the terminal you have defined in the "Terminal Id" field in the *Terminal Configuration Menu*, or ask your computer operator.

If you want to use your terminal on a DEC computer, then check the *ANSI Configuration Menu.*

ANSI Configuration

If you specified ANSI or EM52 in the "Personality" field in the *Global Configuration* screen, the configuration labels will show:

Press F6 ANSI Config. This takes you to the ANSI **Configuration** screen.

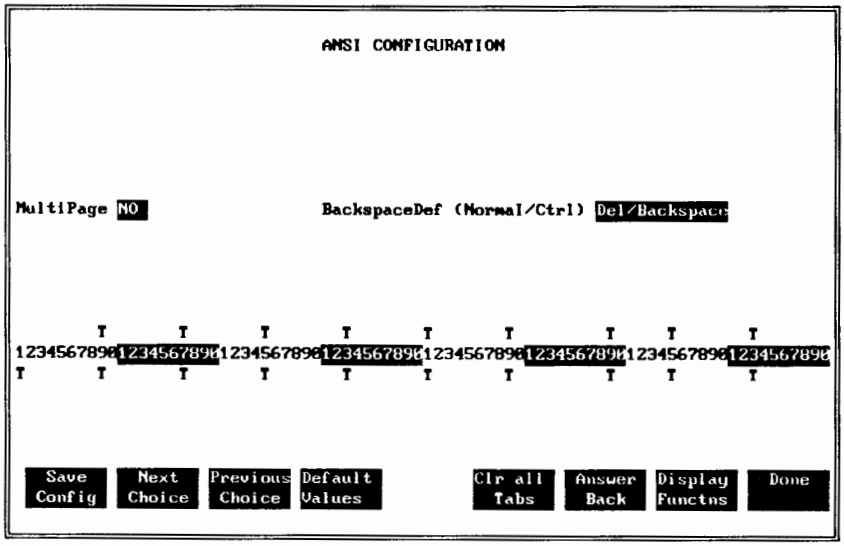


Figure 2-9. ANSI Configuration Menu (Defaults)

Fields You May Want to Change

MultiPage. Sets the size of the terminal's alphanumeric display memory to either:

1. [YES] - the size given in the "Memory Size" field on the *Global Configuration* screen (that is, 5, 10, 15 or 20 pages).

2. Or [NO] - a single page.

Application programs designed for ANSI and EM52 terminals normally require only a single page of memory.

The size of the single page, 23 or 24 lines, depends on the "Screen Size" setting on the *Global Configuration* menu.

Backspace Def (Normal/Ctrl). Defines the operation of the [←] key:

1. With the default setting (*Del/Backspace*), pressing [←] generates a "DEL" character. This normally backspaces the cursor and deletes the backspaced character. Pressing [CTRL] [←] backspaces only.

2. With *Backspace/Del* the functions of [←] and [CTRL] [←] are reversed.

Answerback Message. A user-defined string used by the terminal to identify itself to a host computer. The default is no message.

The "Answerback Message" field is displayed only after you choose the [AnswerBack] function label. You can then enter a message of up to 40 characters. As a security precaution, the value in the field does not appear when you re-display the ANSI menu (after saving the displayed value).

You transmit the answerback message by pressing [CTRL] [F11] ([CTRL] [Break] on a non-enhanced keyboard).

Tab Stops (T's). Sets the tab stops. The default tab stops are in columns 9, 19, 29, 39, 49, 59, 69 and 79.

To set a tab stop in a new column, use [►] or [◄] to move the cursor to the number in that column, then choose [F2] [Next Choice]. To clear a tab stop, move the cursor to the "number" and choose [F3] [Previous Choice].

Use the [Clr All Tabs] function label to clear all tab stops.

This completes the ANSI configuration, and you should now go to Chapter 3.

Color Configuration

If your PC is equipped with a color monitor, the configuration labels will show:

Press F7 Color Config. This takes you to the **Color Pair Configuration** screen.

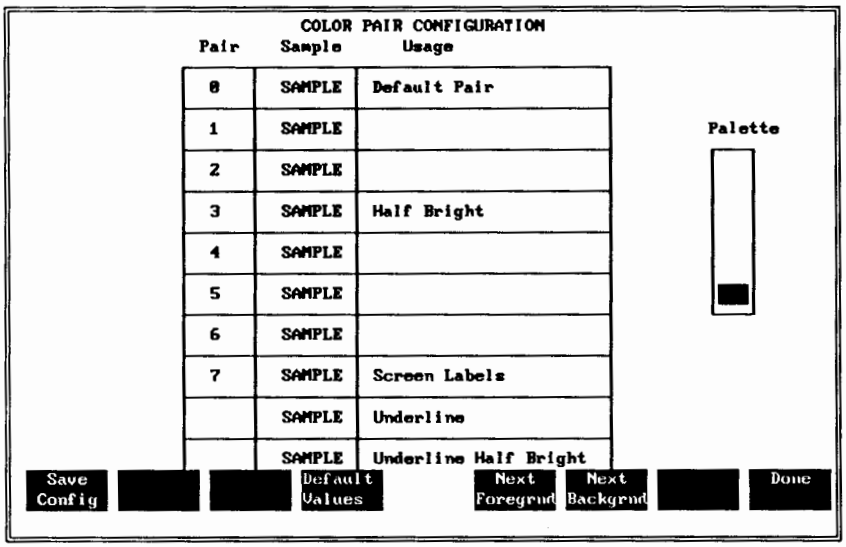


Figure 2-10. Color Pair Configuration Menu (Defaults)

Note: The last two "underline" fields only appear if your video card does not support underlining.

You can use this screen to set the foreground and background color of the:

- Alphanumeric characters ("Default pair").

- Characters displayed in half bright ("Half Bright").

- Labels ("Screen Labels").

Plus, if your video adapter card does NOT support underlining, you can set the foreground and background color of:

- Characters to show they are underlined ("Underline").

- Half-bright characters to show they are underlined ("Underline Half Bright").

The "Pair" column in the menu is for the "color pair" — character foreground and background color — selected by program escape sequences (see Appendix B for details).

To change the value in the menu:

1. Press [Tab] or [▲] or [▼] or [◄] or [►] to move the cursor to the "Pair" field of the character type you want to change (defined under "Usage") - "Default Pair", etc.

2. To change the foreground color, press [F5] [Next Foregrnd]) until foreground color of "SAMPLE" changes to the color you want.

3. To change the background color, press [F6] [Next Backgrnd] until background color of "SAMPLE" changes to the color you want.

4. Alternatively, if you want the default values for the colors, press F4 Default Values.

   The "box" on the right of the screen is a palette of the available colors.

5. When you are satisfied with your choices and want to implement them, press F1 Save Config. The terminal main labels appear.

6. But if you decide you want to exit the screen without saving the changes, press F8 Done. The configuration labels appear.

Note: When you do a hard reset, the user labels re-appear in the color defined by color pair 7 ("Screen Labels"). In addition, any color pair values that have been defined by escape sequences revert to the values saved by Save Config, or that were active when the HP Terminal Program started.

This completes the color configuration, and you should now go to Chapter 3.

User Key Configuration

The "user" key labels appear when you press Alt U or Shift F12 (or Alt F4 on a non-enhanced keyboard).

By default, they are:

The labels are controlled by the corresponding function keys (F1 to F8). By default, they generate characters E_Cp to E_Cw. (Where E_C is the "Escape" control character.)

You can cause F1 to F8 to generate your own characters and the screen to display your own labels through the **User Key Configuration Menu.**

To display the *User Key Configuration Menu,* simultaneously press CTRL and F9. The menu contains eight fields labeled "f1" to "f8", where each field corresponds to a function key.

For example, the contents of the first field is:

```
f1 [ T ]  LABEL [          ] [          ]
EcP
```

The T is controlled by the keys F2 Next choice or F3 Previous Choice, and can have the values T, L, or N.

Where:	Means:
f1	The first function key (F1).
T	Transmit the contents of the function key (the text you will see on the screen will be echoed back from the host computer). The other possible values - selected via Next Choice and Previous Choice - are: L - Local. Display contents of key, but do NOT transmit it. N - Normal. Transmit contents of key as if typed on keyboard.
LABEL	Select contents of the label. Top line first, then bottom line.
E_{CP}	Contents of the key (default).

Example When you use applications on the host computer, to start each application you normally type:

`a string of several characters`, then press Enter ←.

By entering your applications' run commands in the user-key labels, you can start your applications by simply pressing the appropriate function key (F1 to F8).

To set the user-labels to:

1. Press CTRL F9 to display the *User Key Configuration menu.*

2. Set the menu to the following (use Tab to jump from field to field):

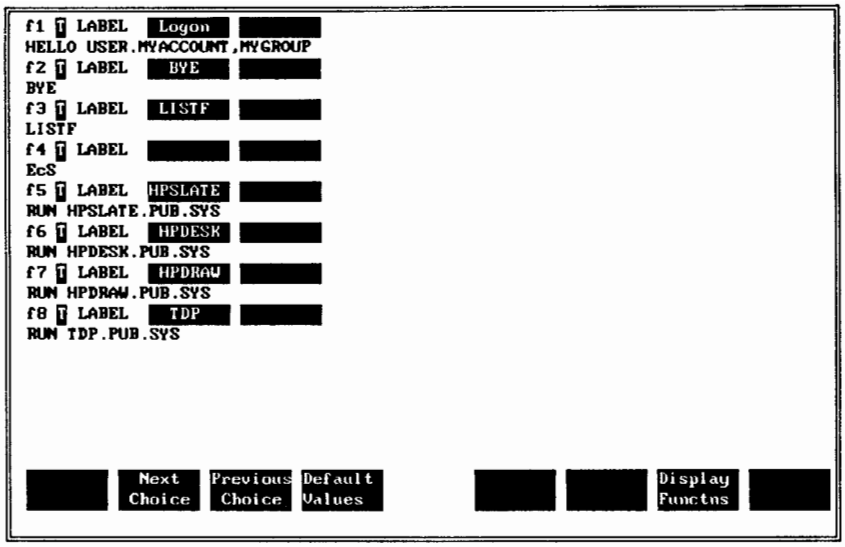


Figure 2-11. Example User Key Configuration Menu

3. Press Alt U to display the user labels.

Help File

The HP Terminal Program is supplied with a help file (called *README.DOC*, on the Master #2 disc) containing configuration information. To display the contents of the file either:

- Select the label [ReadDisc], then type:

  `README.DOC` [Enter ←].

Or

- At the MS-DOS prompt (">"), type:

  `TYPE C:\TERMINAL\README.DOC | MORE` [Enter ←].

3

Learning About Your Terminal and Keyboard

Introduction

To make full use of your PC as a terminal, you need to know how it works as described in this chapter. If you already know how a terminal works, read Chapter 4 to start using it with a computer or printer or local file.

What's a Terminal?

A terminal is a machine that is connected to a larger (host) computer. You communicate with the host computer through the keyboard. The host computer communicates with you through the screen. The program in the host computer controls this process.

The terminal is similar to your PC, except that the operating system and application programs are located in the host computer.

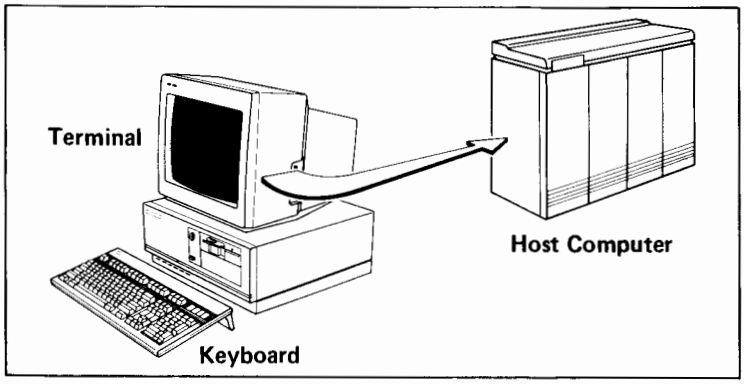


Figure 3-1. Your Terminal

Remote or Local Mode

When your terminal is connected to a host computer, it is called "remote mode". When your terminal is disconnected from a host computer, it is called "local mode". The screen label [Remote Mode] selects whether you work in remote or local mode.

When you are in remote mode, the characters you type on the keyboard are sent directly to the host computer. The characters that appear on the screen are in fact echoed back from the host computer. When you are in local mode, the characters you type on the keyboard are displayed directly on the screen.

The information you see on the screen is actually stored in a part of the terminal called "display memory". This memory can store over 65,000 alphanumeric characters, equivalent to 20 screens full of information. At any one time, you can display 24 adjacent lines of information from this memory. These 24 lines are called a "page" of information.

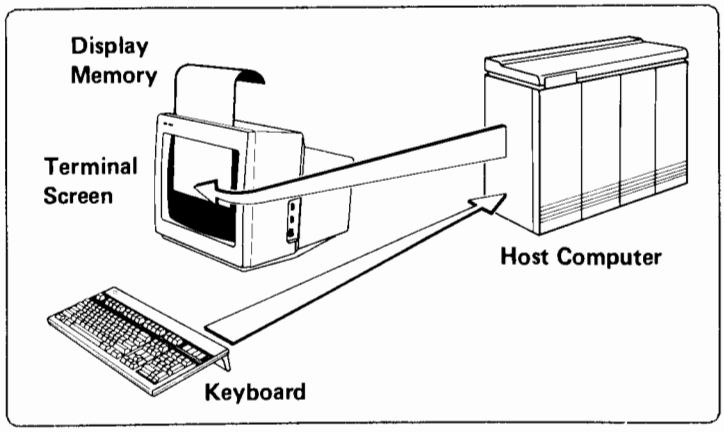


Figure 3-2. Display Memory

Using Your Terminal

Your terminal is basically a keyboard and a screen.

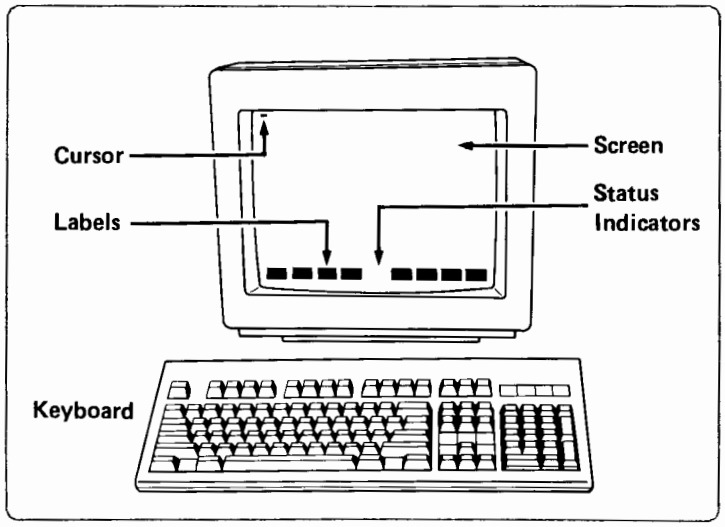


Figure 3-3. Your Terminal's Basic Components

The Screen

When you first start your terminal, the screen shows:

Cursor. The cursor is the flashing underline that indicates where the next character will appear.

Status indicators. The terminal "status" indicators are:

```
  1 * 1
ckin G
```

Symbol:	Means:
1 1	Position of the cursor (line and column).
*	Modem connected and active indicator.
c	CAPITALS - Caps lock pressed. The "Caps lock" indicator on the keyboard is also illuminated.
k	Keyboard locked.
i	Insert ON - Ins pressed.
n	Cursor/numeric keypad set to numeric - Num lock pressed. The "Num lock" indicator on the keyboard is also illuminated.
G	Cursor/numeric keypad set to graphics control - CTRL - pressed.

Labels. The eight screen labels show either:

1. Terminal control labels. When you start your PC or press F12 (or simultaneously press CTRL and F6 on a non-enhanced keyboard), the main terminal labels appear. These labels control the operation of your terminal (see Chapter 4 for details).

2. User control labels. When you press Shift F12 (or Alt F4 on a non-enhanced keyboard), the user labels appear. These labels generate characters defined by the program running in the host computer or by you (see Chapter 2 for details).

Pressing a function key selects the function indicated in the corresponding label.

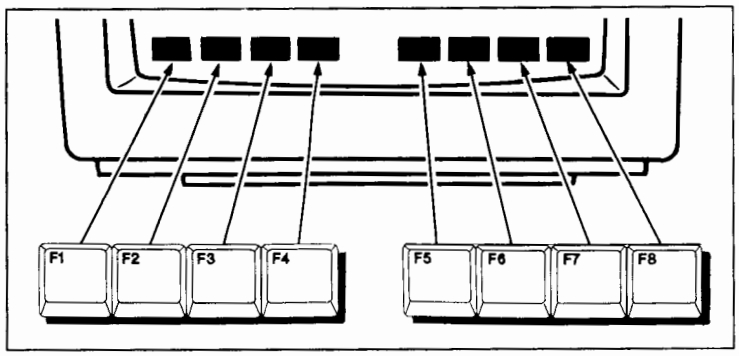


Figure 3-4. Using Screen Labels

The Keyboard(s)

The HP Terminal Program is designed to operate with several different types of keyboard as shown in Figure 3-5.

The HP Terminal Program checks which keyboard is connected and configures itself to work with that keyboard, generating the correct character when you press a key.

If you simultaneously press Alt H, a "help" screen is displayed that explains some of the basic functions of the keyboard.

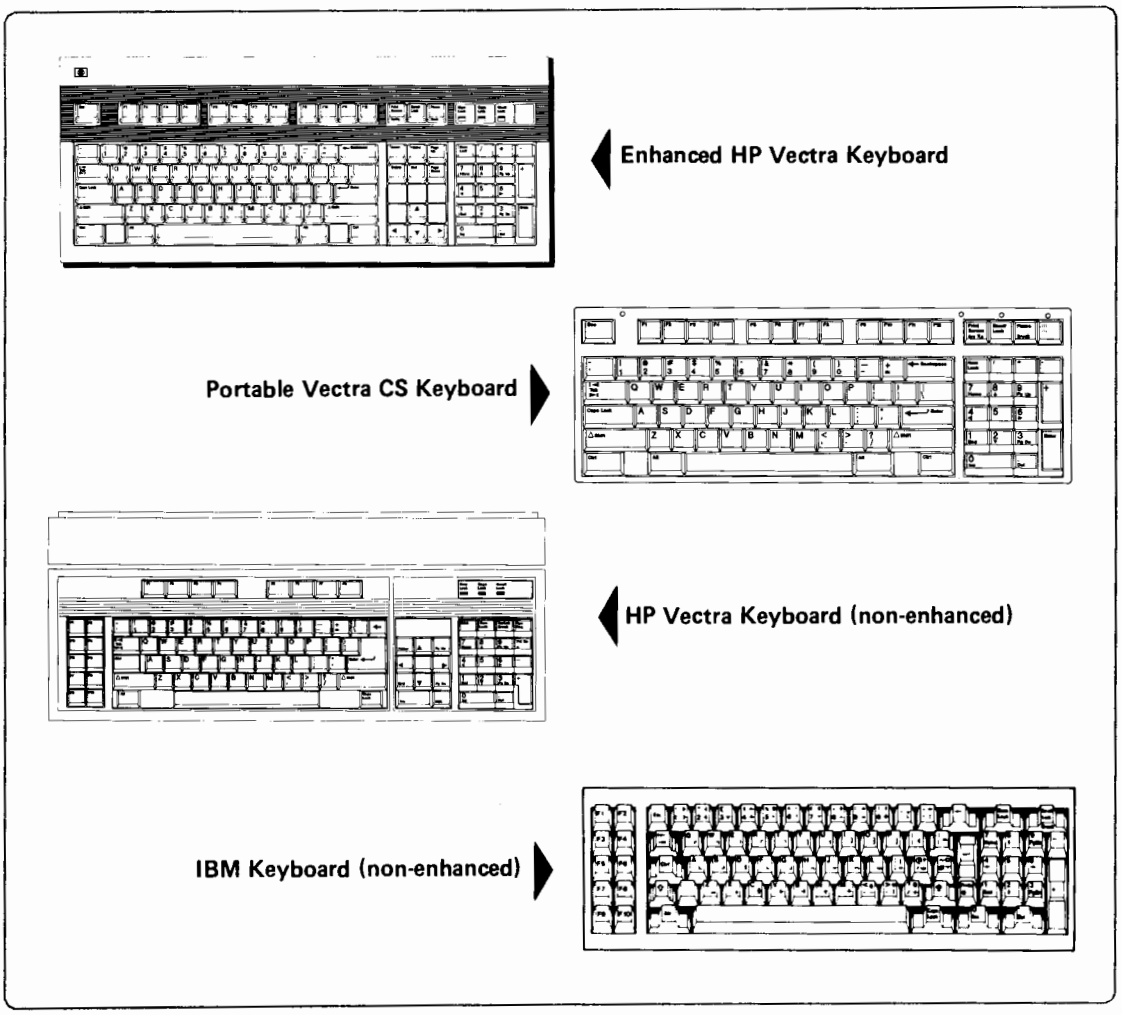


Figure 3-5. The Available Keyboards

The Pause key on the enhanced IBM keyboard is disabled. The AltGr key on non-US enhanced keyboards acceses the characters shown on the front edge of the keys.

Functional Groups

No matter which keyboard you use, it can be divided into five "functional" groups of keys.

- *Alphanumeric keys.* These keys allow you to type alphabetic and numeric characters, as well as mathematical and commercial symbols.
- *Cursor and display control keys.* These keys control the position of the cursor on the screen, and the part of your text in display memory which is displayed on the screen.
- *Edit keys.* These keys allow you to edit the character or line at the cursor position.
- *Cursor/numeric keypad.* These keys can be used to generate numeric characters, or act as alpha or graphics cursor/display control keys.
- *Function keys.* These keys control the screen labels and can be used to perform some terminal control functions.

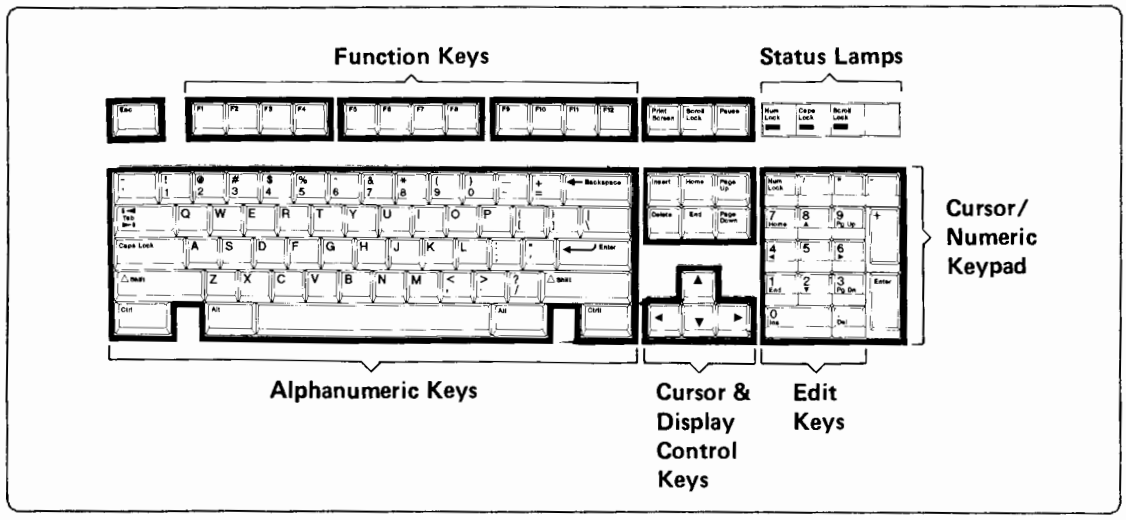


Figure 3-6. The Keyboard's Functional Groups

Alphanumeric Keys

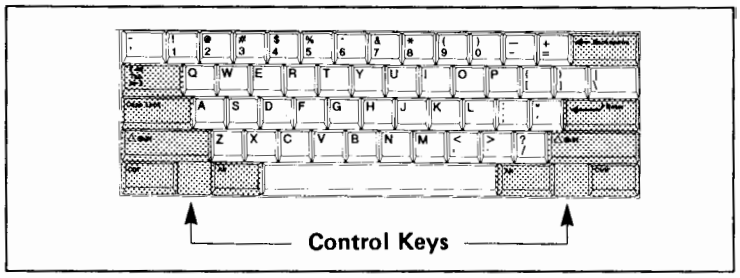


Figure 3-7. Alphanumeric Keys

These keys allow you to type alphabetic and numeric characters, as well as mathematical and commercial symbols.

When you press a key, the character shown on the keycap is sent to the host computer and displayed on the screen.

If you press a key on its own, the lower-case character is displayed. That is, the character shown on the bottom half of the keycap.

If you hold down the Shift key and press another key, the other key is "shifted" so that the UPPER-CASE (capital) character is displayed. That is, the character shown on the top half of the keycap.

Pressing the Caps key sets all the alphabetic characters to upper-case, and causes "c" to appear in the screen status line and the "Caps lock" indicator on the keyboard to illuminate.

When Caps is set, if you then press Shift with an alphabetic key, the keys are "shifted" so that the lower-case character is displayed.

Local Language Keyboards. The terminal can operate with many different local language keyboards. To ensure that your keyboard generates the characters indicated on the keycaps, you must have the "Keyboard" field in the *Global Configuration Menu* set for your keyboard (see Chapter 2).

Local Language Characters. The terminal allows you to generate certain European characters that are not indicated on the keycaps. You do this by simultaneously pressing Shift Alt and an alphabetic key shown in Figure 3-8.

Note that for characters that take an accent - such as a grave (‘) or acute (’) or circumflex (ˆ) or umlaut (..) or tilde (˜) - you must FIRST type the accent and then the appropriate alpha character. The accented character is only displayed if you type the correct combination of accent and character. If you only want the accent, type the accent then a space.

Example: To display ê, simultaneously press Shift Alt Y - nothing appears - then press E, ê appears.

Alternatively, you can display European characters by holding down Alt and typing the decimal code of the character on the numeric keypad (using three digits). The character appears when you release Alt.

Example: To display ê, hold down Alt and press 1, 3 then 6 (on the numeric keypad) - nothing appears - then release Alt, ê appears.

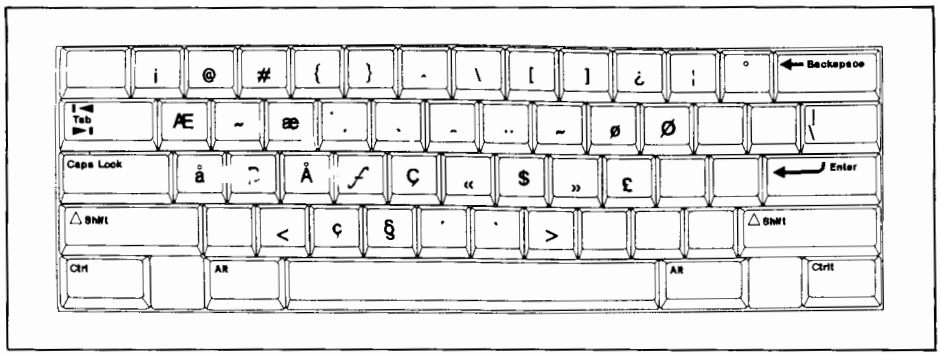
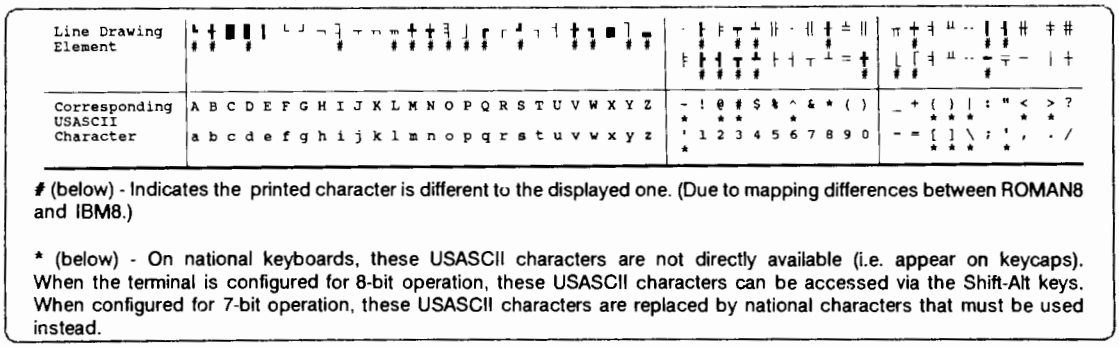


Figure 3-8. European Characters Accessed via Shift Alt

Line Drawing Elements. The terminal also allows you to type "line drawings" elements that can be used to create forms and boxes.

You set the keyboard to generate line elements by simultaneously pressing CTRL N. You can then access the line elements shown in Figure 3-9 and 3-10. Note that not all the line drawing elements available on HP terminals are accessible. The ones that are available depend on your video adapter card.

The keyboard continues to generate line elements until you either start a new line or simultaneously press CTRL O.



(below) - Indicates the printed character is different to the displayed one. (Due to mapping differences between ROMAN8 and IBM8.)

* (below) - On national keyboards, these USASCII characters are not directly available (i.e. appear on keycaps). When the terminal is configured for 8-bit operation, these USASCII characters can be accessed via the Shift-Alt keys. When configured for 7-bit operation, these USASCII characters are replaced by national characters that must be used instead.

Figure 3-9. Line Drawing Elements Accessed via CTRL N

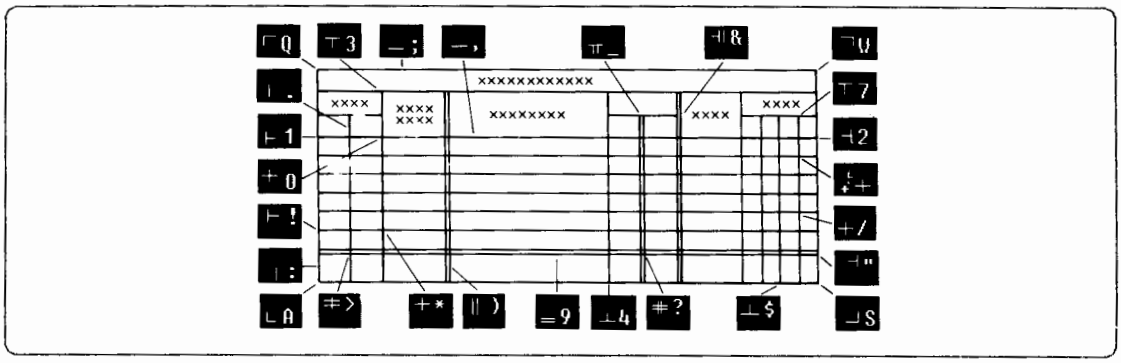


Figure 3-10. Using Line Drawing Elements

Control Keys. Embedded in the alphanumeric keys are seven "control" keys, as listed below:

Key	Operation
Tab	Causes the cursor to "jump" to the next tab stop. (You set the tab stops using the Margins/Tabs/Col label, see Chapter 4.) In a menu or configuration screen, the cursor "jumps" to the next **highlighted** "field".
Shift Tab	Causes the cursor to jump to the previous tab stop or field.
Caps	Switches the alphabetic keys between UPPER and lower-case. When upper-case is selected, "c" appears in the screen status line and the "Caps lock" indicator on the keyboard illuminates.
Shift	Shifts the alphanumeric keys between UPPER and lower-case. You hold down Shift and simultaneously press the other key. Example: Shift A displays capital A.
CTRL	Control key. Used with other keys generate a "control" character that performs a terminal control function. You hold down CTRL and simultaneously press the other key. Example: CTRL - switches the keypad between numeric and graphics operation.
Alt	Alternative key. Used with other keys to perform an additional function. You hold down Alt and simultaneously press the other key. Example: Alt H displays a "help" screen for the keyboard. Alt G displays a representation of the graphics control keys.
←	Backspace. Moves the cursor back one character and, with some host computer programs, deletes the backspaced character from the computer's memory.
Enter ←	End of line. Terminates the line of text you've typed into the host computer, and moves the cursor to the start of the next line.

Cursor and Display Control Keys

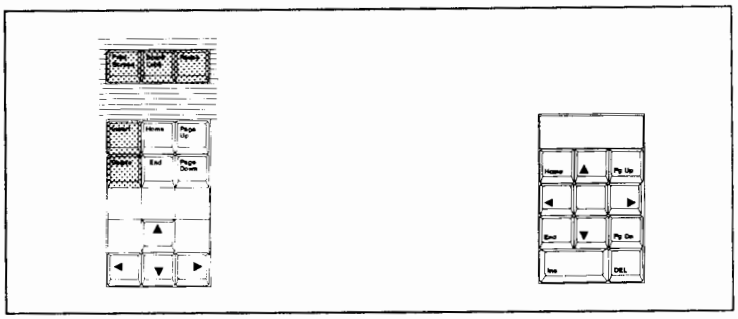


Figure 3-11. Cursor and Display Control Keys

Key	Operation
▲ ◄ ▼ ►	Move the cursor in the direction indicated on the keycap.
Home	Moves the cursor to the TOP of the screen and the top of the text contained in display memory.
End	Moves the cursor to the BOTTOM of the text contained in display memory, rolling the text up the screen (if necessary).
Pg Up	Displays the PREVIOUS page (screen) of text from display memory.
Pg Dn	Displays the NEXT page of text.
CTRL Pg Up or CTRL ▲	Rolls the text UP the screen. Stops when the bottom of the text in display memory reaches the top of the screen.
CTRL Pg Dn or CTRL ▼	Rolls the text DOWN the screen. Stops when the top of the text in display memory is at the top of the screen.
CTRL ◄	Rolls the text LEFT across the screen when the screen size is set to either 132 or 160 columns (via "Row Size" field on the *Terminal Configuration Menu*).
CTRL ►	Rolls 132 or 160 column text to the RIGHT across the screen.

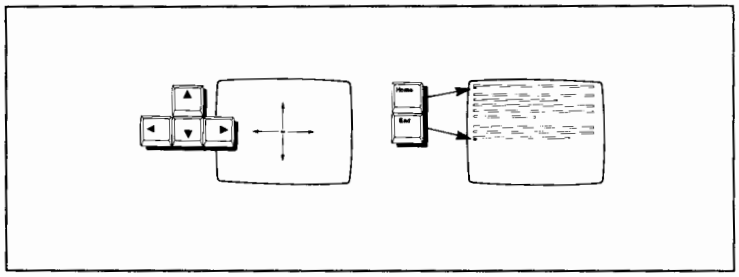


Figure 3-12. Cursor Control

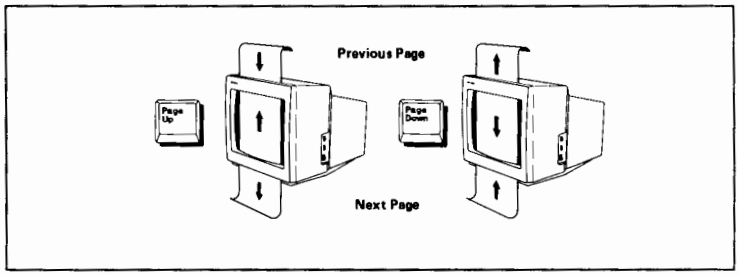


Figure 3-13. Display Control

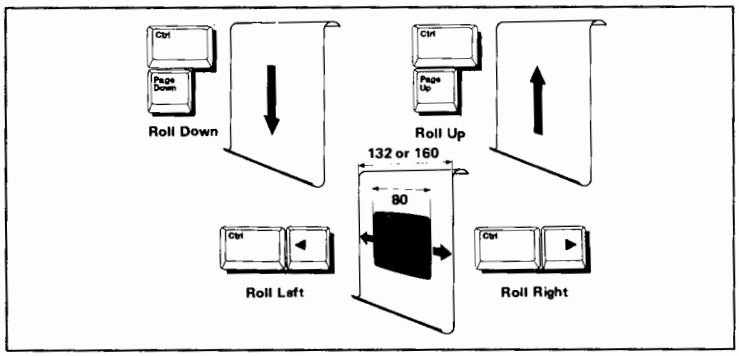


Figure 3-14. Roll Control

Edit Keys

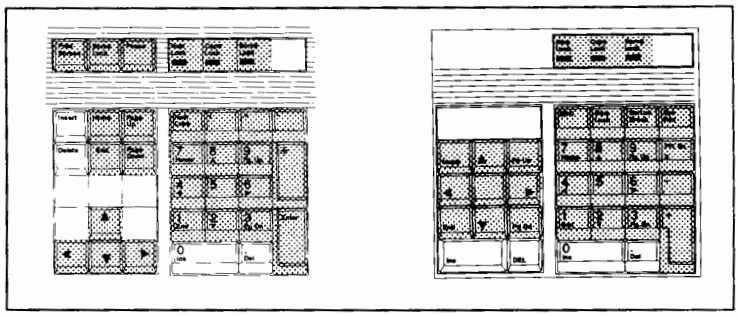


Figure 3-15. Edit Keys

Key	Operation
Ins	Insert character. Characters you type are inserted at the cursor position, and any characters to the right of the cursor are pushed to the right. (Any characters pushed off the right of the screen are "lost".) The cursor appears as a flashing "box".
DEL	Delete character. Deletes the character at the cursor position, and any characters to the right of the cursor move left.

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
Alt I	Alt I or F5	Alt I or Alt F5	Insert line. Inserts a new blank line at the cursor position.
Alt D	Alt D or F6	Alt D or Alt F6	Delete line. Deletes the line at the cursor position.
Alt L	Alt L or F7	Alt L or Alt F7	Clear line. Clears the line of text from the cursor to the end of the line.
Alt S	Alt S or F8	Alt S or Alt F8	Clear screen. Clears the screen from the cursor to end of the display memory.

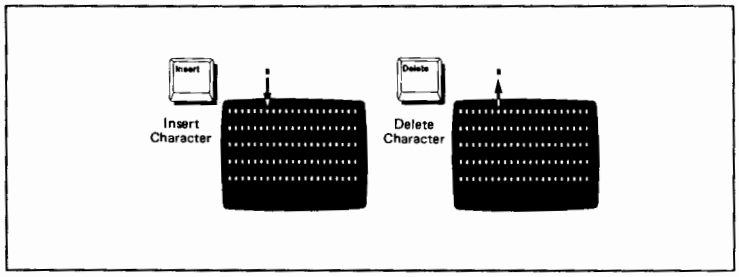


Figure 3-16. Inser/Delete Character

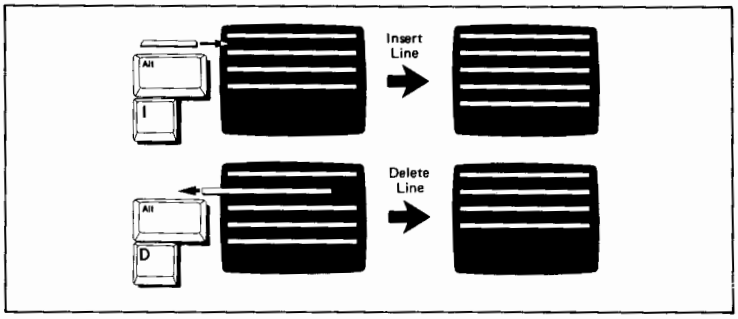


Figure 3-17. Insert/Delete Line

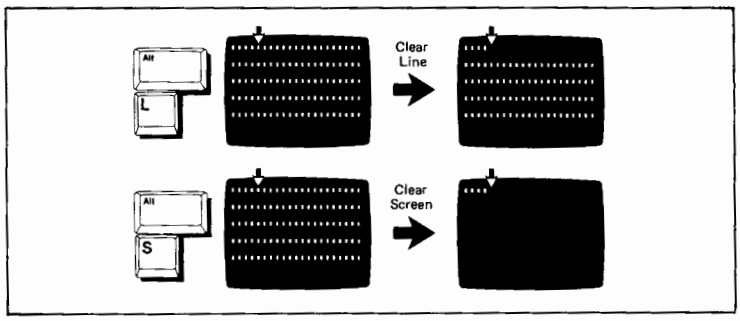


Figure 3-18. Clear Line/Screen

Cursor/Numeric Keypad

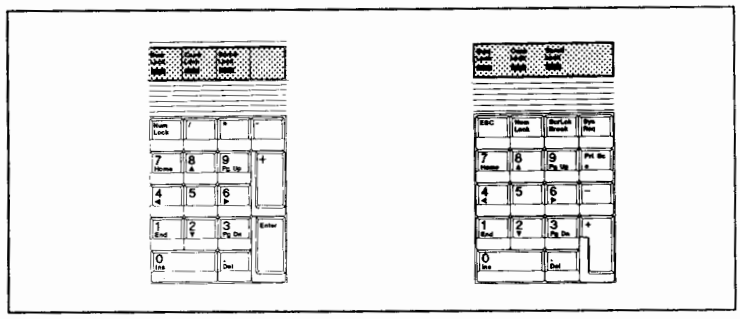


Figure 3-19. Cursor/Numeric Keypad

These keys can be used either as:

- Numeric only keypad.

Or

- Alphanumeric cursor/display control keypad or graphics cursor/display control keypad.

You switch between numeric keys and cursor/display keys by pressing the Num lock key.

When the keypad is set for numeric operation, an "n" appears in the status indicators and the "Num lock" indicator on the keyboard illuminates. The keys operate like the numeric keypad on a calculator, generating the the numeric character shown on the keycaps: 1, 2, etc. The keys at the top of the keypad (/, * and -) provide mathematical symbols.

When the keypad is set for cursor/display control operation, the "n" is removed, and the keys can be used for alphanumeric or graphics cursor/display control functions: End, ▼, etc.

Switching to Graphics. If you want a graphics terminal, you must:

1. Set the "Terminal Mode" field to Graphic in the *Global Configuration Menu* (see Chapter 2),

2. NOT use an IBM Monochrome Adapter card. (With an IBM Monochrome Adapter card, your terminal will only work in alphanumeric mode.)

You can manually switch the keypad between alphanumeric and graphics cursor/display keys by simultaneously pressing CTRL and - (on the numeric keypad).

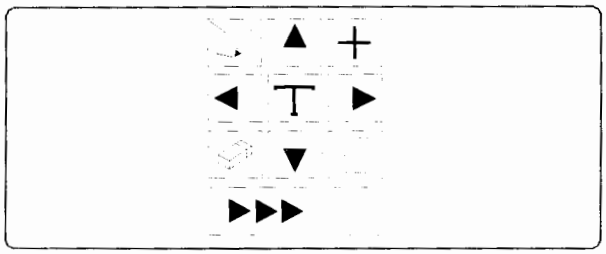
When set as alphanumeric cursor/display keys, the keys perform the control indicated on the keycap: End, ▼, etc.

When set as graphics cursor/display keys, a "G" appears among the status indicators. The keys provide the graphics control functions shown on the next page.

If you use a graphics program on the host computer, it will normally automatically set the keypad to graphics. In addition, with certain graphics programs, the status line symbols do not appear.

If you simultaneously press Alt G (when Terminal Mode is set to Graphic), the screen displays a representation of the graphics control keys. Press any key to remove the representation.

Alt G: representation of graphics control keys



CTRL -: graphics cursor control keys

Home Graphics **display** ON/OFF.	▲ Graphics cursor **UP**.	Pg Up Graphics **cursor** ON/OFF.
◀ Graphics cursor **LEFT**.	5 **Alpha** display ON/OFF.	▶ Graphics cursor **RIGHT**.
End **Clear** graphics display.	▼ Graphics cursor **DOWN**.	Pg Dn **Print** graphics display.
Ins ▶▶▶ Fast graphics cursor. Simultaneously press Ins with ▲, ◀, ▶ or ▼.		DEL

Note

When graphics is enabled: If you press [Home] to switch the screen to a graphics display, the screen may flash. In addition, the display used for graphics is smaller than that used for alphanumerics.

Graphics Operation. When emulating a graphics terminal, you have two separate memories, namely: **Alphanumeric memory** and **Graphics memory.**

Alphanumeric memory is the normal memory you use when you emulate a non-graphics terminal (such as an HP 2392A). It can contain up to 20 pages of alphanumeric characters.

Graphics memory contains graphic text and images generated by your graphics application and has a capacity of ONE screen. It is entirely separate and independent of alphanumeric memory.

Using Graphics. You will normally only use the graphics capability with a graphics application running in the host computer, such as HP Draw, HP EasyChart or DSG/3000. When you start the graphics application, graphics mode is normally automatically enabled, and you should use the graphics keys as explained in the graphics application manual.

When you exit the graphics application, graphics mode may NOT be disabled. In which case, press [Home] to switch off the graphics display, then [CTRL] [-] to disable graphics mode.

Example: If you use HP Draw, use [▼], [◄], [►] and [▲] on the graphics keypad to move the graphics cursor, and use [Enter] (or [F3] on a non-enhanced keyboard) when you

want to select an item. For more details, see Appendix C.

Printing Graphics. To print the contents of graphics memory, first select the Copy Data label then the To Print label. (An asterisk appears on the label to indicate that it is active.)

Then press Pg Dn on the graphics keypad. If your printer supports graphics and it is configured correctly, you will obtain a printout of what you previously entered in graphics memory.

Your keyboard will be locked while the print request is being executed. The time it takes to print graphics memory depends on its contents. You can stop a graphics print request by pressing Enter ←.

Saving/Retrieving Graphics. You can also use Pg Dn, on the graphics keypad, to save the contents of graphics memory to a disc file as follows:

1. First choose the Copy Data label then the To Disc label.

2. You will be asked to enter a filename in which graphics memory will be stored.

   Type in the pathname (directory to contain the file) and filename and press Enter ←.

   The labels re-appear with an asterisk on the To Disc* label to indicate that it is active.

3. Press Pg Dn to send the contents of graphics memory to the specified disc file.

4. When you have finished, de-activate the copy-to-disc feature by choosing the [To Disc] label a second time - the asterisk is removed.

To display a previously-stored graphics screen from a disc file, choose [Read Disc]. Then type in the pathname (directory containing the file) and filename and press [Enter ←].

Example 1. If your graphics file "ART" was stored in the same directory as the HP Terminal Program: To display the file, choose [Read Disc], then type
ART [Enter ←].

Example 2. If your graphics file "ART" was stored in the C:\GALLERY sub-directory: To display the file, choose [Read Disc], then type
C:\GALLERY\ART [Enter ←].

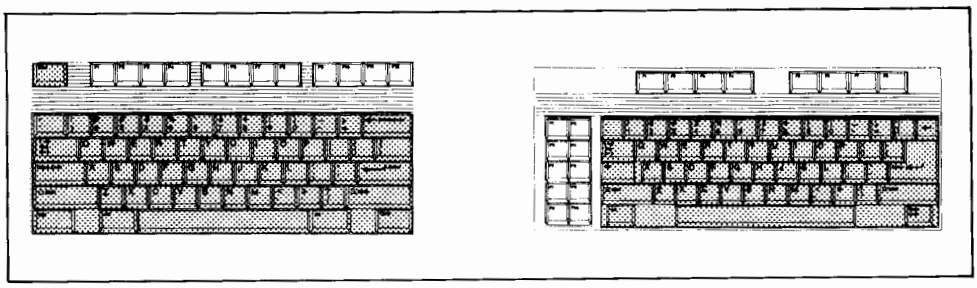


Figure 3-20. Function Keys

The function keys serve two purposes:

1. Pressed on its own, a function key selects the function indicated in the corresponding screen label. Either:
    a. Terminal control labels that perform a terminal control function.
    b. "User" labels that generate a sequence of user-defined characters.
2. Pressed simultaneously with another key, the function key performs a control operation:
    a. Label control.
    b. Terminal control.
    c. Communications Control.
    d. Edit Control.

On the non-enhanced HP keyboard, keys f1 to f8 at the top of the keyboard control the screen labels, and keys F1 to F10 at the left of the keyboard performed terminal control functions.

The terminal control functions are described below.

Label Control Keys

You select the labels that appear on the screen as follows:

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
F11	CTRL F5	CTRL F5	Display main labels.
F12	CTRL F6	CTRL F6	Display main terminal labels.
Shift F12 or Alt U	F4 or Alt U	Alt F4 or Alt U	Display "user" labels.
F9	F9	F9	Switch screen labels ON/OFF.
CTRL F9	CTRL F9	CTRL F9	Display user label configuration menu, see Chapter 2.

If you press F11 or F12 and the terminal beeps and the labels don't change, it means the keys have been locked by the program you are using.

Main Labels (F11):

Main Terminal Labels (F12):

"User" Labels (Alt U):

Terminal Control Keys

There are three terminal control functions:

1. Soft reset. Used to unlock the keyboard and clear any error messages. It also deactivates "display" functions and record mode, stop data transfers to the host computer or printer, and clears any data being received from the host computer.

   Example: The keyboard has been blocked by the program in the host computer (a "k" appears in the status line). Do a soft reset to release it.

2. Hard reset. Equivalent to switching the terminal OFF then ON. It causes a soft reset, plus it clears the display memory, displays the main terminal labels, resets the margins to column 1 and 80, clears any tabs set via [Margins/Tabs/Col], deactivates "insert character", "line modify", "memory lock", and "top/bottom logging".

   Example: You have blocked the keyboard so that you cannot use the terminal. Do a hard reset to release it.

3. Fast exit. Used to exit from the terminal and return to PAM or DOS immediately.

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
Shift ESC	Shift F1	Shift F1	Soft reset.
CTRL ESC	CTRL F1	CTRL F1	Hard reset.
Shift F8	Shift F2	Shift F2	Fast exit. Exit the terminal and return to PAM or DOS.

Communications Control Keys

There are three types of communications:

- Host computer.
- Local disc file.
- Local printer.

Host Communications Control Keys. These keys control how your terminal communicates with the host computer. There are three main communications control functions:

1. Host "break". Used to "interrupt" the communications between your terminal and the host computer. The host computer will normally exit the current application and return to the main program. This allows you to stop an application if something goes wrong.

   Example 1. You have the choice of being connected to one of several host computers via a "data switch", and you want to use a different one. Do a "break" to obtain the data switch, then log onto another computer.

   Example 2. You are using HP Desk or HP Slate and you want to print some text. Do a "break" to obtain the main program, then type in the printer's "file equation". Type "**Resume**" to continue using HP Desk or HP Slate, and use its print command to print your information.

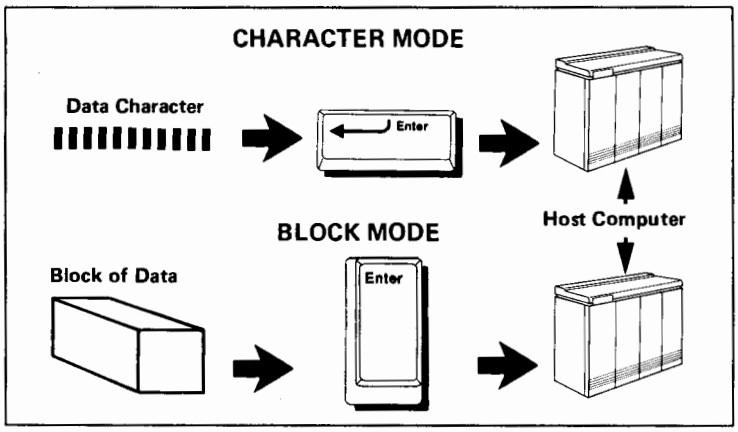
2. Sending data to the host computer.

   When you communicate with a host computer using character mode communications (for example, when using HP Desk or HP Slate), you have to tell the computer when to start interpreting the text you type. You do this by sending a RETURN to the computer. This also moves the cursor to the start of the next line.

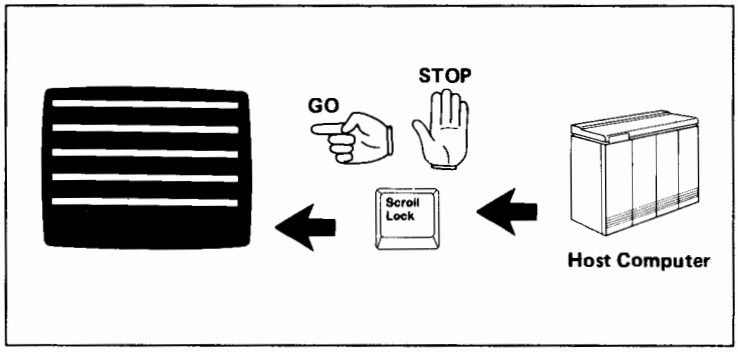
   When you communicate with a host computer using block mode communications (for example, when you create a text message in HP Desk), you create the text on the screen then send it all to the computer as a block, so that the computer interprets the whole block of text at one go. You send it by ENTERING it to the computer.

3. Halting data coming from host computer. When you are communicating with the host computer, you may need to temporarily halt the data as it is displayed on the screen in order to check it in short passages.

   Example: You're reading your HP Desk messages and you only want to see a few of lines at a time. Do a stop data. Read the text. Then do a start data for the next lines, then stop, and so on.



Sending Data to the Host Computer



Halting Data from the Host Computer

Table 3-1. Host Computer Communications Control Keys

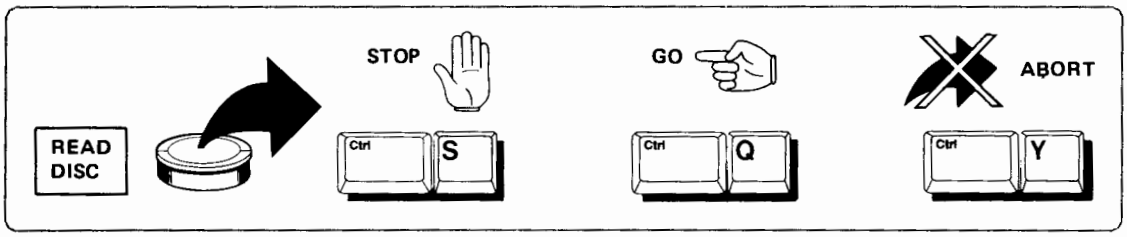
Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
CTRL Break	F1	Alt F1	Host "break".
Shift Break	CTRL F2	CTRL F2	Host "long break" (ANSI mode).
CTRL F11	CTRL Break	CTRL Break	Transmit answerback message (ANSI mode).
ScrLck	F2	Alt F2	Temporarily stop and re-start data from host (if "RecvPace" set to "Xon/Xoff" in the remote configuration menu).
Enter ← (on alphanumeric keys)	Enter ←	Enter ←	RETURN (character mode). Terminate data entry to remote computer.
Enter (on numeric keypad)	F3 or + on numeric keypad (if set in *Terminal Configuration Menu*).	Alt F3 or + on numeric keypad (if set in *Terminal Configuration Menu*).	ENTER BLOCK (block mode). Enter data to remote computer.
F10	F10	F10	Select (when enabled by host computer).
CTRL F10	CTRL F10	CTRL F10	Unlock type ahead (if type ahead set in the *Terminal Configuration Menu*).

File Control Keys. These keys control how your terminal communicates with a local disc file.

When you have used the ReadDisc label to read a local disc file, you may need to temporarily halt the data as it is displayed on the screen in order to read it in short passages. You can do this using the following keys:

Table 3-2. File Control Keys

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
CTRL S	CTRL S	CTRL S	Temporarily stop displaying data from local file after using ReadDisc.
CTRL Q	CTRL Q	CTRL Q	Resume reading local file.
CTRL Y	CTRL Y	CTRL Y	Abort reading of local file.



Halting Data from a Disc File

Printer Control Keys. These keys control how your terminal communicates with a printer.

Note that you must select your printer in the "Printer I/F" field in the *Global Configuration Menu.*

You can print color graphics (on a color printer) by setting the "Contents" field in the *Printer Configuration Menu* to [COLOR] (see Chapter 2). You can print color graphics in "negative" (white on black) by setting the "Invert B&W" field in the *Printer Configuration Menu* to [YES].

To print data, first select the [Copy Data] label then the [To Print] label. (An asterisk appears on the label to indicate that it is active.) Then use the key shown below. You can stop a print request by pressing [Enter ←].

Table 3-3. Printer Control

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
[Print Screen]	[Shift] [F3]	[Shift] [F3]	Print all alphanumeric data in display memory (provided a printer is selected in the *Global Configuration Menu*).
[Shift] [Print Screen]	[Shift] [Prt Sc]	[Shift] [Prt Sc]	Print current alphanumeric screen (25 lines) - DOS print command.
[Pg Dn] (on numeric keyboard)	[Pg Dn] (on numeric keyboard)	[Pg Dn] (on numeric keyboard)	Print graphic data (if numeric keyboard set to graphics)

Edit Control Keys

These keys control how you edit data on the screen.

Table 3-4. Edit Control

Enhanced Keyboard	HP Keyboard	IBM Keyboard	Operation
Alt I	Alt I or F5	Alt I or Alt F5	Insert line.
Alt D	Alt D or F6	Alt D or Alt F6	Delete line.
Alt L	Alt L or F7	Alt L or Alt F7	Clear line.
Alt S	Alt S or F8	Alt S or Alt F8	Clear display.

ANSI Control Keys

If you specified ANSI or EM52 in the Personality field in the *Global Configuration Menu,* then the operation of the numeric keypad changes to match a similar keypad on a DEC VT52 or VT100 terminal. That is:

7	8	9	-
4	5	6	,
1	2	3	Return
0	.		

Program function Keys. In ANSI mode, the main terminal labels include another label Program Keys:

Press F5 Program Keys. These program function key labels appear:

You access these program key labels using function keys F1 to F4 respectively. The operation of the program function keys depends on the application running in the host computer.

In addition, the status line has four extra indicators: 1, 2, 3 and 4. The meaning of the indicators depends on the program running in the host computer.

Answerback Message. Some DEC systems require you to identify yourself via an answerback message. You can set

the answerback message using the ANSI Configuration Menu (see Chapter 2). You transmit this message to the host computer by pressing CTRL F11 (or CTRL Break on a non-enhanced keyboard).

Long Break. Some DEC system require you to transmit a "long break" (3.5 seconds) to the host computer. You do this by pressing Shift Break (or CTRL F2 on a non-enhanced keyboard).

Backspace/Delete. Some DEC systems require that when you press ← the cursor moves backwards and deletes the backspaced character. Other systems require you to press CTRL ← to perform this function. You can set the operation of the ← key using the ANSI Configuration Menu (see Chapter 2).

Disabled Labels and Functions. When using your terminal as a DEC terminal, several labels and functions are disabled (inhibited):

Inhibited Labels	Inhibited functions
Right Margin	Insert line Alt I
Left Margin	Delete line Alt D
Clr All Margins	Insert character Ins
Block Mode	Delete character DEL
	Select F10

In addition, when the terminal is set for a single page, these functions are disabled:

Previous page Pg Up	Roll up CTRL Pg Up
Next page Pg Dn	Roll down CTRL Pg Dn

Getting More Help

If you simultaneously press Alt H, a "help" screen is displayed that explains some of the basic functions of the keyboard.

If the Terminal Mode is set to Graphics, pressing Alt G displays displays a representation of the graphics control keys.

In addition, a "help" file is included that contains configuration information. This file (called `README.DOC`) was copied to the HP Terminal Program directory during the installation procedure. You can display the contents by selecting ReadDisc then typing `README.DOC` Enter ←.

4

Using Your Terminal and Screen Labels

Introduction

This chapter explains how to use your terminal. It assumes you have read Chapter 3 and so are familiar with terminal terminology and the keyboard.

Before you can use your PC as a terminal with a host computer or printer, you must first physically connect the terminal, and then configure the terminal as described in Chapter 2.

If you are connected to the host via a modem, you should read the modem's manual to learn how to install the modem, connect the modem to the terminal, and operate the modem.

Logging On

To log onto the host, if you want to use an HP host computer, you should press the Enter ← key (on the alphanumeric keypad) several times until the host prompt character - a colon (:) - appears.

You should then type in your log on sequence, in the form:

```
HELLO USER.MYACCOUNT,MYGROUP Enter ←
```

Then, if required, type in any passwords for your account.

Alternatively, you can include the password as you type in the logon sequence by using a slash "/" to separate it from the account name.

For example:

```
HELLO USER.MYACCOUNT/PASSWORD,MYGROUP [Enter ←]
```

When you have successfully logged on, a "Welcome" message appears, and you can then start using the applications on the host computer.

To terminate the connection, type: `BYE` [Enter ←].

Using an AdvanceNet System

If you are connected to an AdvanceNet network, then you can use the the AdvanceNet menu (described in Chapter 2) to log onto the system.

Use [SAVE & CONNECT] to both save your changes to the menu and log onto the system. Use [DISCONCT] to terminate the connection.

When to Use Return and Enter

You normally use [Return] with character mode communications and [Enter] with block mode communications.

Character Mode. When you first log onto the host computer, you are "dialoguing" with the operating system (for example, MPE on an HP 3000) using "character mode" communications.

In character mode, when you press a key, the corresponding character is sent DIRECTLY to the host computer. The character you see on the screen is echoed back from the host computer. You tell the host computer you have finished typing a command or line of text by pressing [Enter ←] on the alphanumeric keypad — this is equivalent to the [Return] key on an HP terminal.

If you make a typing error, BEFORE pressing [Enter ←], press [←] to backspace the cursor to the error, then re-type the text and then press [Enter ←]. Do NOT use the cursor keys (or edit keys) as they will be misinterpreted by the host computer.

Block Mode. Once you start using a program, it may change the communications to "block mode" (such as when you create a message using HP Desk Manager).

In block mode, all the characters you type are displayed directly on the screen and are stored locally in the terminal. This means you can edit the text, or change the text as you want - and you use the [Enter ←] key on the alphanumeric keypad to move the cursor to the start of the next line.

When you have finished creating your text, you press [Enter] on the numeric keypad (or [Alt] [F3] on a non-enhanced keyboard). All your text is sent as a block to the host computer.

Using Type Ahead

If you use HP 3000 computer with character mode communications, then the "Type Ahead" field in the Terminal Configuration Menu allows you to set your terminal so that you can type characters into the host computer BEFORE you receive the computer's prompt.

Your keystrokes are stored in the terminal — up to 128 characters — until the computer prompt is received. This allows you to type a command, then type another while the first command is being executed.

Under certain circumstances (for example, after you have logged off the host computer by typing **BYE**) your terminal will wait to receive the computer prompt, and will be "blocked". In this case, simultaneously press [CTRL] [F10] to release the terminal.

Forms Mode

When the host computer activates forms mode, it designates areas of the screen as "protected" fields. This has two effects:

1. You can only enter or edit/delete text in the "unprotected" fields.

    a. [Tab], [Home] and [End] move the cursor to unprotected fields only.

    b. The [DEL], [Ins], [Alt] [L] (clear line) and [Alt] [S] (clear screen) only affect the unprotected fields.

2. [Alt] [I] (insert line) and [Alt] [D] (delete line) are disabled.

In addition, the "Copy" field in the *Terminal Configuration Menu* specifies (that when you copy data) if all the screen data is copied or only the data in the unprotected fields.

When using forms mode with certain applications, the terminal's labels are inhibited. This means you must use the labels BEFORE using the application to specify your "to" device and, if required, your logging operation ([Log Bottom]).

You can still use [Print Screen] (or [Shift] [F3] on a non-enhanced keyboard) to copy displayed data. If you are copying to a disc file, remember to deactivate [To Disc] — to close the file — after you exit the host application.

Screen Labels

When you first start your terminal, these labels appear:

If in the Global Configuration Menu (see Chapter 2), you have set the "HP Mode" field to [NO] and the "Screen Size" field to [24 lines], these labels appear:

Use:	When:
CopyData	You want to copy displayed data to a printer, disc file or the host computer.
Margins/ Tabs/Col	You want to set screen margins or tabs or change the start column.
ReadDisc	You want to display the contents of one of your disc files.
Modes	You want to change the terminal's operating mode.
Config Keys	You want to change the terminal's configuration. Configuration is described in Chapter 2.
Main	You want to exit from the terminal.

An asterisk (*) in a label means that the function is ON, otherwise the function is OFF.

Copying Data

You use the copy data labels to copy displayed text to the host computer, printer or a local file.

On the terminal main screen, press F1 CopyData. These labels appear:

First Select the "to" Device

Before you can copy data, you must first select the device to which you want to copy displayed data to:

1. If you want to copy to a printer, press F2 to put an asterisk in To Print*.

2. If you want to save the text in a local disc file:

   a. Press F3 To Disc*.

   b. Then type in the pathname (directory to contain the file) and the name of a file. The directory must already exist (if it doesn't, use the MS-DOS MKDIR command first to create it). You cannot use more than eight characters in the filename (and three in the extension), and you cannot use " \ /] [: ; | < . + = . or ,

   c. Press Enter ←. (If you decide you don't want a local file, press F8 Done.)

      Example: If you want to store your data in the file "TEXT" in the current

directory (C:\TERMINAL), just type: TEXT [Enter ←].

If you want to store your data in the file "TEXT" in the root directory on your hard disc, type: C:\TEXT [Enter ←].

Note that AFTER you have copied the data (as described below), you must close the file (and store all the data) by pressing [To Disc] a second time to remove the asterisk.

3. If you want to copy the text to the host computer:

   a. Press [F1] [More]. These labels appear: [To Disp] and [To Host].

   b. Make your selection on these labels.

      Note that the [To Disp] label is used in Record Mode only in order to set the display as a "to" device for data received from the computer. For more details on Record Mode, refer to the reference manual of the terminal you have defined in the "Terminal Id" field in the *Terminal Configuration Menu.*

Then Select the Text and Copy It

You can copy the information either using the keys or the screen labels. You can stop a copy request by pressing [Enter ←] on the alphanumeric keypad.

Note that when using colors, the color pair is copied to the disc file or printer but the current palette of colors is not. (This means, if you subsequently read the disc file, the color pair appear in the colors defined by that palette active at that moment.)

Using keys:

1. If you want to copy a complete screen of alphanumeric text, just press the print screen key, **Print Screen**.

2. If you want to copy a screen of graphics, just press **Pg Dn** on the numeric keypad.

Using screen labels:

1. If you want to copy all the alphanumeric text FROM the the line containing the cursor to:

   a. The end of the current line, select **Copy Line**.

   b. The end of the current page (screen), select **Copy Page**.

   c. The end of display memory, select **Copy All**.

2. If you want to copy text as it is received from the host computer:

   a. To copy each new line as it arrives, select **Log Bot**. (The line is copied when the cursor moves to a new line.)

b. Alternatively, to copy text from the top of the display memory when the memory is full, select [Log Top]. (The text is copied as it overflows the display memory.)

3. When you have finished copying, if you were copying to a local file, press [To Disc] a second time to remove the asterisk and close the file.

Record Mode

Use the [Record Mode] label when you want data received from the host computer to be sent in block directly to the "to" device. (The keyboard is disabled, apart from [Shift], [CTRL], [F1] and [F2].)

For more details on Record Mode, refer to the reference manual of the terminal you have defined in the "Terminal Id" field in the Terminal Configuration Menu.

Reading Data

If you want to display the contents of a local disc file (on your hard or flexible disc), use the [ReadDisc] label.

Select [ReadDisc], then type in the name of the disc file (include the full pathname if the file is not in the current directory) and press [Enter ←].

If the file does not exist, either re-type the correct name or delete the name (using [DEL] or space bar) and press [Enter ←]. Then try again.

If you need to temporarily halt the data as it it is displayed on the screen (e.g. to check it in short passages), you can do so using the following keys:

CTRL S	Temporarily stops the display of data from the local file.
CTRL Q	Resumes reading the local file.
CTRL Y	Aborts — permanently stops — reading of local file.

Note that when using a program on the host computer, if you use ReadDisc, the data from the local file is only displayed. It is NOT sent to the host computer.

If you want to send the displayed data to the host computer, select the host as the "to" device then copy the text using the copy labels (described previously).

Margins and Tabs

You can use the margins/tabs/column labels to set the size of the screen margins and the tabs when you are using a program on the host computer.

On the terminal main labels, press f2 Margins/Tabs/Col. These labels appears:

Note: StartCol is described in the modes labels on the next page.

Using Tabs

Tab stops are the columns on the screen where the cursor jumps when you press Tab.

- Tab - moves the cursor to the next right tab stop and down.
- Shift Tab - moves the cursor to the previous left tab stop and up.

You set a tab stop in a column by moving the cursor to the column using (▶ or ◀), then selecting Set Tab.

Use Clr Tab to remove a tab stop from the cursor position, or Clr Tabs to remove all tab stops.

Using Margins

The margins are the left and right sides of the screen: columns 1 and 80 respectively. You can alter these margins if, for example, you want to indent the text you want to type.

You set a margin in a column by moving the cursor to the column (using ▶ or ◀), then using either Left Margin or Right Margin to set the appropriate margin.

If you try to set a left margin to the right of a right margin (and vice-versa), the terminal beeps and the margin is NOT set.

Use Clr All Margins to reset the margins to the left and right sides of the screen (columns 1 and 80).

Modes Labels

The modes labels control the terminal's operating modes.

On the terminal main screen labels press F4 Modes. These labels appears:

Line Modify and Modify All

The Line Modify and Modify All functions simulate block mode communications when the terminal is communicating in character mode.

Line Modify. When active, you can correct the line of text containing the cursor, and then transfer the line to the host computer when you press Enter ← (on the alphanumeric keypad). Pressing Enter ← also deactivates line modify mode.

Example. If you send a line of text to the computer that contains an error, and you receive an error message:

1. Activate Line Modify.
2. Correct the error in the line.
3. Press Enter ←

This is much quicker than re-typing the complete line.

Modify All. When active, you can correct the line of text containing the cursor in the same way as for Line Modify. But this time, modify mode is NOT deactivated when you press Enter ←.

This means you can modify text a line at a time until you select [Modify All] again.

StartCol (on the margins/tabs/column labels). If the line of text you are modifying — using line modify or modify all — originated from the host computer (and not from you), it may contain "leading characters" that you don't want, or vice-versa.

Use [StartCol] to temporarily set the start column for the transfer to the column you want. (The default start column is set on the Terminal Configuration Menu.) Move the cursor to the column you want (using [►] or [◄]), then select [Start Col].

Block and Character Mode

The host computer usually controls whether your terminal should use character mode or block mode communications. The [Block Mode] label allows you to control this as well.

When block mode is selected, there is an asterisk in the [Block Mode*] label, otherwise character mode is selected.

Remote and Local Mode

You must be in remote mode to communicate with the host computer. The [Remote Mode] label allows you to control this.

When remote mode is selected, there is an asterisk in the [Remote Mode*] label, otherwise local mode is selected.

Automatic Linefeed

When the [Auto LF] label is active, a line feed is done with every carriage return (e.g. when you press [Enter ←]).

You should deactivate automatic line feed when using character mode communication as the host computer may misunderstand the line feed character.

In block mode communications, the host computer usually controls the automatic line feed label.

Memory Lock

The host computer usually controls memory lock. The [Memory Lock] label allows you to control it as well.

When memory lock is active, the terminal enters either overflow protect mode or display lock mode, depending on the position of the cursor.

Overflow Protect Mode. This mode is enabled when you activate [Memory Lock] with the cursor in the TOP line on the screen. (It is disabled when you deactivate [Memory Lock].)

When enabled, you can only add data up to the end of the display memory — data can be modified but no new lines can be created (an error message appears if you try).

Display Lock Mode. When [Memory Lock] is enabled with the cursor BELOW the top line of the screen, you

lock the display above the cursor. (It is disabled when you deactivate Memory Lock.)

When enabled, all the lines between the cursor and the top of the screen are locked on the screen. This means that only the unlocked lines move when you roll the screen - the text moves "under" the locked lines.

Display Functions

When Display Functns is active, if you press a control key (like Home or DEL), the corresponding control character is displayed, and the control function does not function.

The one exception is pressing Enter ← which causes a carriage return character to be displayed (C_R), as well as moving the cursor to the start of the next line.

A

Error Messages

Introduction

This appendix describes the error messages and warnings that may appear while you are using the HP Terminal Program.

```
AdvanceNet connection active
Press ENTER to clear
```

Cause: AdvanceNet was active when you attempted to change the configuration.

Remedy: Discontinue using AdvanceNet, then make the changes.

```
AdvanceNet internal error
Press ENTER to clear
```

Cause: Your terminal could not be connected due to an error in the AdvanceNet system.

Remedy: Discontinue using AdvanceNet, then try again. If the error continues, contact your network administrator.

```
Cannot access this card
Press ENTER to clear
```

Cause: On the *Global Configuration Screen,* you set the *Remote To,* or *Printer I/F* or *Plotter I/F* field to a port that is NOT equipped with an adapter card, or equipped with an improperly configured card.

Remedy: Ensure a correctly configured card is connected to the specified port, or specify another port.

```
COLOR.CNF: File not found. You can't configure alphanumeric text color
Press ENTER to clear.
```

Cause: The COLOR.CNF file does not exist in the current directory.

Remedy: Re-install the application.

```
COLOREGA.CNF: File not found. You can't configure alphanumeric text color
Press ENTER to clear.
```

Cause: The COLOREGA.CNF file does not exist in the current directory.

Remedy: Re-install the application.

```
Connection down
Press ENTER to clear
```

Cause: Your connection to AdvanceNet system failed after you established it.

Remedy: Ensure the AdvanceNet equipment is correctly installed in your PC, there is a proper connection to the network and the network is operational. If the problem re-occurs, contact your network administrator.


```
Could not make the connection
Press ENTER to clear
```

Cause: Your terminal could not be connected to the remote computer using AdvanceNet.

Remedy: Ensure the network is operational. If it is and the message re-occurs, contact your network administrator.

```
Default configurations used
Press ENTER to clear
```

Cause: When you started your terminal, the default configuration was used because the previous values had been incorrectly saved.

Remedy: Re-do the changes, then choose F1 Save Config. If the error re-occurs, your PC's RAM memory may be at fault; contact your dealer.

```
Disc full. Retry with another disc.
Press ENTER to clear.
```

Cause: You copied data to a disc and the disc is full.

Remedy: Either delete files you don't need from the disc or insert a new formatted disc of the correct capacity in the drive.

```
Function locked
Press ENTER to clear
```

Cause: The function you attempted to use (e.g. a configuration screen) has been locked out by the program in the host computer.

Remedy: Exit the program, then try again.

```
Incorrect 'Remote to'
Press ENTER to clear
```

Cause: You tried to access an AdvanceNet system when the "Remote to" field in the Global Configuration Menu was NOT set to [AdvanceNet].

Remedy: Change the field to [AdvanceNet], then try again.

```
Inapropriate local filename
Press ENTER to clear
```

Cause: You selected a file or directory that didn't exist, or used invalid characters in the name.

Remedy: Use ← to edit the filename, and ensure the name is correct before pressing Enter ←.

```
Invalid character in node name
Press ENTER to clear
```

Cause: The connection could not be established due to an incorrect character in the "Remote Host Name" field in the AdvanceNet Configuration Menu.

Remedy: Re-type the correct name. It must start with a letter. Use only alphanumeric characters and underscore "_ ".

```
Invalid field length in node name
Press ENTER to clear
```

Cause: You typed an incorrect number of characters in the "Remote Host Name" field in the AdvanceNet Configuration Menu.

Remedy: Re-type the correct name. It can be one "string" of characters up to 16 characters long. Or up to three such strings separated by periods.

```
MEMORY FULL
Press ENTER to clear
```

Cause: When using [Memory Lock] in overflow protect mode, the screen memory is full.

Remedy: You can edit the existing text, but can't add more lines. If necessary, switch off [Memory Lock].

```
Memory size changed. Exit and restart application
to use new value. Press ENTER to clear.
```

Cause: You changed the value of the "Memory Size" field in the *Global Configuration menu.*

Remedy: Press [Shift] [F8] to exit the application, then restart it.

```
Network equipment not present or incomplete
Press ENTER to continue
```

Cause: You tried to set the "Remote To" field in the *Terminal Configuration Menu* to [AdvanceNet] when your PC wasn't equipped with the network software or interface card.

Remedy: If you want to use AdvanceNet, contact your network administrator to order the correct equipment.

```
No remote machine name
Press ENTER to clear
```

Cause: The connection could not be established because the "Remote Host Name" field in the *AdvanceNet Configuration Menu* was blank.

Remedy: Type a valid name in the field.

```
Not enough memory. Alphanumeric terminal used.
Press ENTER to clear.
```

Cause: You tried to set the "Terminal Mode" field in the *Global Configuration menu* to [Graphic] and your PC does not have enough RAM memory to operate as a graphics terminal.

Remedy: Exit the HP Terminal Program and remove any background applications. Then try again.

```
No 'To' device
Press ENTER to clear
```

Cause: You tried to copy, print or log data without setting the printer or disc file as the "to" device.

Remedy: Activate [To Print] or [To Disc].

```
'Plotter I/F'='Printer I/F'
Press ENTER to clear.
```

Cause: You set the "Plotter I/F" and "Printer I/F" fields on the *Global Configuration Menu* to the same value.

Remedy: Change whichever field is incorrectly set.

```
'Plotter I/F'='Remote to'
Press ENTER to clear.
```

Cause: You set the "Plotter I/F" and "Remote To" fields on the *Global Configuration Menu* to the same value.

Remedy: Change whichever field is incorrectly set.

```
Port already used by AdvanceNet
Press ENTER to clear
```

Cause: You set the "Remote To" or "Printer I/F" field on the *Global Configuration Menu* to a port in your PC being used by AdvanceNet.

Remedy: Specify another port.

```
'Printer I/F'='Remote to'
Press ENTER to clear
```

Cause: You set the "Remote To" and "Printer I/F" fields on the *Global Configuration Menu* to the same value.

Remedy: Change whichever field is incorrectly set.

```
Source=Destination
Press ENTER to clear
```

Cause: Only the display was set as the "to" device when you attempted to copy data.

Remedy: Activate [To Print] or [To Disc].

```
This Forms Path does not exist.
Press ENTER to clear
```

Cause: You selected a non existent directory for your forms.

Remedy: Check the name you types. Either use the MS-DOS MKDIR command to create the directory or select an existing directory.

```
23 lines locked
Press ENTER to clear
```

Cause: You tried to change the "Screen Size" field on the *Global Configuration Menu* to 23 lines when [Memory Lock] was active.

Remedy: Deactivate [Memory Lock] before changing the screen size.

```
Unknown remote machine name
Press ENTER to clear
```

Cause: You typed an incorrect name in the "Remote Host Name" field in the *AdvanceNet Configuration Menu.* (A name that does not exist on the network.)

Remedy: Re-type the correct name. Contact your network administrator for a list of names.

```
Video type changed. Exit and restart application.
Press ENTER to clear.
```

Cause: In the *Global Configuration Menu,* you changed the value in the "Video Type" field.

Remedy: Press [Shift] [F8] to exit the application, then restart it.

```
Video type is not consistent with display.
Press ENTER to clear.
```

Cause: In the *Global Configuration Menu,* you set the "Video Type" field to a value unsuitable for the type of display fitted to your PC. For example, you have set "EGA Adapter/Color Display" when you have a monochrome display, or vice-versa.

Remedy: Set the "Video Type" field to the correct value.

```
Video type is unspecified.
Press ENTER to clear.
```

Cause: In the *Global Configuration Menu,* you did not specify a value in the "Video Type" field.

Remedy: Set the "Video Type" field to the correct value.

```
XXXXX.BIN: File not found. Alphanumeric terminal used.
Press ENTER to clear.
```

Cause: You tried to set the "Terminal Mode" field in the *Global Configuration Menu* to `Graphic` and your disc directory did not contain the above file.

Remedy: Re-install the application and ensure you select the correct type of video adapter.

```
XXXXXXXX.FNT: File not found or corrupted.
Press ENTER to clear.
```

Cause: The file could not be found.

Remedy: Re-install the application.

B

Alphanumeric Escape Sequences

Introduction

This appendix lists the escape sequences that control the HP Terminal Program's alphanumeric features.

If you need a more complete explanation of these escape sequences, refer to the reference manual of the alphanumeric terminal you have defined in the "Terminal Id" field in the *Terminal Configuration Menu* (e.g. the HP 2392A).

Escape Sequence Characteristics

An escape sequence is a terminal control sequence that starts with the ASCII escape character (E_C) and is followed by alphanumeric character(s).

Each escape sequence (or a series of sequences) must end with a capital letter. This indicates that the entry is complete and can be executed. If you type a capital letter by mistake, the terminal executes the sequence and treats subsequent characters as normal input. The end of an escape sequence is also assumed when a new escape sequence is encountered.

You may combine several escape sequences of the same group by specifying the common denominator only once as shown in example below:

E_C*m3A and E_C*mP = E_C*m3aP

Note that the escape key is represented by E_C throughout this manual. Always ensure that the final letter is a capital. You may specify the series in any order, provided they belong to the same group and end in a CAPITAL letter.

Table B-1. Terminal Control Functions

Sequence	Description
E_C0	Copy ALL memory to external device
E_C1	Set Tab
E_C2	Clear tab
E_C3	Clear all tabs
E_C4	Set left margin
E_C5	Set right margin
E_C9	Clear all margins
$E_C@$	Delay one second
E_CA	Cursor up
E_CB	Cursor down
E_CC	Cursor right
E_CD	Cursor left
E_CE	Hard reset
E_CF	Cursor Home down
E_CG	Move cursor to left margin
E_CH	Cursor home up
E_CI	Horizontal tab
E_CJ	Clear display from cursor to end of memory
E_CK	Clear line from cursor to end of line
E_CL	Insert line
E_CM	Delete line
E_CP	Delete character
E_CQ	Start insert mode
E_CR	End insert mode
E_CS	Roll up
E_CT	Roll down
E_CU	Next page
E_CV	Previous page
E_CW	Format mode ON
E_CX	Format mode OFF
E_CY	Display function mode ON
E_CZ	Display function mode OFF

Sequence	Description
E_C[	Start unprotected field
E_C]	Stop unprotected field
E_C{	Converted to E_C[
E_C^	Primary terminal status request
E_C'	Sense cursor relative position (on screen). Returns "E_C&a".
E_Ca	Sense cursor absolute position (in memory). Returns "E_C&a".
E_Cb	Unlock keyboard
E_Cc	Lock keyboard
E_Cd	Transmit a block to the computer
E_Cf	Modem disconnect
E_Cg	Soft reset
E_Ch	Cursor home up
E_Ci	Back tab
E_Cj	Begin user key definition mode
E_Ck	End user key definition mode and display user key labels
E_Cl	Begin memory lock mode
E_Cm	End memory lock mode
E_Cp/w	Default definition for user keys
E_Cz	Initiate terminal self test
E_C~	Secondary terminal status request

Cursor Control Operations

"E_C&a" Family. Controls the position of the cursor. (Columns and lines start with 0 as leftmost column and top line).

Table B-2. Cursor Control

Sequence	Description
E_C&a<col>c<line>Y	Move cursor to column <col> (1-80) and line <line> (1-24) on screen (Screen relative addressing)
E_C&a<col>c<line>R	Move cursor to column <col> and line <line) in memory (Memory absolute addressing). Rolls text if necessary
E_C&a+/-<col>c+/-<line>Y	Offset cursor on screen by <col> columns and <line> lines from present position (Screen relative addressing)
E_C&a+/-<col>c+/-<line>R	Offset cursor in memory by <col> columns and <line> lines from present position (Memory absolute addressing)

Display Enhancement Operations

"E_C&d" Family. E_C&d<char> select the display enhancement indicated by <char> (from the cursor to end of line or next enhancement). For example, E_C&dH sets the line from the cursor onwards to half bright.

Table B-3. Display Enhancement Characters

Enhancement	<char>																
	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	S
Half-bright									H	I	J	K	L	M	N	O	
Underline					D	E	F	G					L	M	N	O	
Inverse video			B	C			F	G			J	K			N	O	
Blinking		A		C		E		G		I		K		M		O	
Security field																	S
End enhancement	@																

Color Alphanumerics

On a color monitor, each alphanumeric character cell and user label cell has a foreground and background color - known as a color pair. Table B-4 lists the default colors.

Table B-4. Default Color Pairs

Color Pair #	Foreground	Background
0	White	Black
1	Red	Black
2	Green	Black
3	Yellow	Black
4	Blue	Black
5	Magenta	Black
6	Cyan	Black
7	Black	Yellow

"E_C&v" family. Assigns color values to a "color pair" The escape sequence has the following form:

```
E_C&v<method>m<fclr1>a<fclr2>b<fclr3>c<bclr1>x<bclr2>y<bclr3>z<pair>I
```

Table B-5. Color Pair Definition

Sequence	Description	Default
<method>m	0 = RGB (red, green, blue) 1 = HSL (hue, saturation, luminosity)	0
<fclr1>a	Foreground value for *red* or *hue* (value 0.00 to 1.00)	0
<fclr2>b	Foreground value for *green* or *saturation* (value 0.00 to 1.00)	0
<fclr3>c	Foreground value for *blue* or *luminosity* (value 0.00 to 1.00)	0
<bclr1>x	Background value for *red* or *hue* (value 0.00 to 1.00)	0
<bclr2>y	Background value for *green* or *saturation* (value 0.00 to 1.00)	0
<bclr3>z	Background value for *blue* or *luminosity* (value 0.00 to 1.00)	0
<pair>I	Identity (0-7) of the color pair for which the colors are selected	0

E_C&v<pair>S. Set alphanumeric text (from the cursor to end of line or next color) to color indicated by <pair>. This is either the <pair> set via the escape sequence listed in Table B-5 or (if none sent) the pair defined on the *Color Pair Configuration screen.*

E_C&f<label>k<pair>c<column>x 0L. Set user label to color indicated by <pair>, where:

Sequence	Description	Default
<label>k	Selects function key label: 1 = `f1` to 8 = `f8`	1
<pair>	Color pair (0 to 7). Value -127 to 127 (modulo 7).	7 (3 if half-bright enhancement also used).
<column>x	Column: 1 for top half of label, or 9 for second half.	0 (all the label)

Function Key Definition

"E_C&f" family. Controls the operation of the user keys and user labels. The function key definition escape sequence has the following form:

```
E_C&f<attribute>a<key>k<label length>d<string length>L <label><string>
```

Table B-6. Function Key Definition

Sequence	Description	Default
<attribute>a	Attribute: 0 = N (normal), 1 = L (local), 2 = T (transmit)	0
<key>k	Key: 1 = f1 to 8 = f8	1
<label length>d	No. of chars in label: 0 to 16	0
<string length>L	No. of chars in string: 0 to 80	1
<label><string>	Contents of label and string. -1 clears string	

E_C&f<key>E. Trigger the execution of the key indicated by <key>, where:

-1	= Enter ←
1	= f1
to 8	= f8

You can also include video enhancement parameters (for the screen labels) along with the other definition parameters. The label enhancement escape sequences has the following form:

```
E_C&f<label>k<video enhancement>v<column>X
```

Table B-7. Video Enhancement Parameter

Sequence	Description	Default
<label>k	Label: 1 = **F1** to 8 = **F8**	1
<video enhancement>v	Enhancement: 0 to 15 (see Table B-8 for code).	10
<column>X	Column: 1 for top half of label, or 9 for second half.	

Table B-8. Video Enhancement Code

Code	Blinking	Inv. Video	Under Line	Half Bright	No Enht.
0					X
1	X				
2		X			
3	X	X			
4			X		
5	X		X		
6		X	X		
7	X	X	X		
8				X	
9	X			X	
10		X		X	
11	X	X		X	
12			X	X	
13	X		X	X	
14		X	X	X	
15	X	X	X	X	

Label/Function Key Operation

"E_C&j" family. Controls the operation of the function keys and function labels.

Table B-9. Label Control

Sequence	Description
E_C&j@	Remove screen labels, and enable user function keys.
E_C&jA	Display the modes set of labels.
E_C&jB	Enable the user function keys (the user keys labels are displayed).
E_C&jC	Clear <message> and restore current screen labels.
E_C&jS	Disable function control keys [F11] and [F12], and [Modes] label. If used, the terminal beeps.
E_C&jR	Enable function control keys [F11] and [F12], and [Modes] label.
E_C&j<message length> L<message>	Replace the function keys definition by a <message>. <message length>: 0 to 160 characters. Terminal beeps at end of displayed <message>.
	Labels restored with E_C&jC or by user pressing [Enter ←].

Configuration Operations

"E_C&k" family. Controls the configuration.

Table B-10. Configuration Operation

Sequence	Description	Value
Modes Labels		<x> value
E_C&k<x>A	Auto line feed	0=OFF, 1=ON
E_C&k<x>B	Block mode	0=OFF, 1=ON
E_C&k<x>M	Modify all	0=OFF, 1=ON
E_C&k<x>R	Remote	0=OFF, 1=ON
Terminal Config.		<x> value
E_C&k<x>C	Caps lock	0=OFF, 1=ON
E_C&k<x>D	Bell	0=OFF, 1=ON
E_C&k<x>L	Local echo	0=OFF, 1=ON
Datacomm Config.		<x> value
E_C&k<x>I	7/8 bits use	0=previous parity/7, 1=no parity/8
General		<x> value
E_C&k<x>K	Auto keyboard lock	0=OFF, 1=ON
E_C&k<x>N	Spow latch	0=OFF, 1=ON
E_C&k<x>P	Caps mode (Caps lock)	0=OFF, 1=ON

Configuration Control

"E_C&q" family. Enables/disables user access to the configuration — saved in non-volatile memory.

Table B-11. Configuration Control

Sequence	<x> Value
E_C&q<x>L	0= Unlock all configuration menus. 1= Lock all configuration menus and functions: Modify All, Block Mode, Remote Mode, Auto LF, To Print, To Disc, To Disp and To Host.

Configuration Menu

"E_C&s" family. Controls the configuration menus.

Table B-12. Configuration Menu Control

Sequence	Description	Value
Terminal Menu		<x> value
E_C&s<x>A	XmitFctn(A)	0=NO, 1=YES
E_C&s<x>B	Spow(B)	0=NO, 1=YES
E_C&s<x>C	InhEolWrp(C)	0=NO, 1=YES
E_C&s<x>D	Line/Page(D)	0=LINE, 1=PAGE
E_C&s<x>G	InhHndShk(G)	0=NO, 1=YES
E_C&s<x>H	InhDC2(H)	0=NO, 1=YES
E_C&s<x>N	E_CXfer(N)	0=NO, 1=YES
Datacomm Menu		<x> value
E_C&s<x>X	Data Speed Select/ SR(CH)	0=LO, 1=HI
E_C&s<x>Z	Parity check	0=NO, 1=YES

Display Screen Operation

"E_C&W" family. Controls the display.

Table B-13. Display Control

Sequence	Description
E_C&w12F	Turns ON the display screen (top 24 lines)
E_C&w13F	Turns OFF the display (top 24 lines)

Terminal Status

*"E_C *s" family.* Requests the terminal's identity and capabilities.

Terminal ID Status.

E_C*s^ Causes the terminal to respond by sending back the five-character string defined in the "Terminal ID" field in the Terminal Configuration menu.

Terminal Capabilities Status The Terminal capabilities request causes the terminal to reply with its capabilities, and has the following form: E_C*<x>s^.

Where <x> requests the following information:

<x>	Capabilities
-1	Alphanumeric
-2	Graphics
-3	Amount of RAM
-4	Interface
-5	HP-HIL

Send Cursor Position Mode

"E_C&x" family. Enable/disable send cursor position mode.

Sequence	<x> value
E_C&x<x>C	0=OFF, 1=ON

Data Operations

"E_C&p" family. Controls the devices.

Table B-14. Data operation

Sequence	Description
E_C&p4^	External device status request.
E_C&p6^	Internal printer status request. Terminal response: E_C/p6000<CR> (no printer)
E_C&p[<x>d]<x>D	Selects device <x> as the destination device (displays "*" in selected "to" device screen label and turns off previous "to" device): <x> = 3 display, <x> = 4 external device and [<x>d] = optional.

For the following sequences, if "<x>d" (destination) parameter is not specified, the selected "to" devices in the screen labels are assumed to be the destinations.

Table B-15. Data Control

Sequence	Description
E_C&p<x>d[<x>d]<Y>	Copy "<Y>" amount of data to device "<x>": <x>: 3 = display, 4 = external device. <Y>: Y=B: copy the line where the cursor is located Y=F: Copy the display screen from the line in which the cursor is located to the last displayed line. Y=M: Copy the contents of the display memory from the cursor to the end of the memory.
E_C&p<x>d[<x>d]W<data string>	Transfers the ASCII data string from the computer to the selected "to" device. The string is terminated either by the 256th byte or by an ASCII line feed. <x>: 3 = display, 4 = external device.
E_C&p<x>d[<x>d]<y>W<data string>	Transfers "y" bytes of the data string from the computer to the selected "to" device in binary form. <x>: 3 = display, 4 = external device.
E_C&p<x>p<y>u<z>C	Performs the action specified by "z" on device "y" as shown in Table B-14.

Table B-16. E_C&p<x>p<y>u<z>C Action

Parameter	Description
<z>p	Action
0	Generates one form feed
1	Space "<x>" lines
2-10	Generates one form feed
11	Turn on Log bottom mode
12	Turn on Log Top mode
13	Turn off any logging mode
14-19	Ignored
20	Turn on Record Mode
<y>u	Device
3	Display
4	External device
<x>p	Optional Parameter Defines the character to turn OFF Record Mode. Or it may be used in conjunction with 1C (parameter <z>) to specify the number of lines to advance.

Forms Cache (Storage)

"E_C&q" family. Selects form size.

Sequence	<x> value
E_C&q 4te2{<x>L	Number of 256 byte blocks. A decimal value from 0 to 255.

"E_C&p9" family. Controls the forms cache.

Download forms to cache memory using any of the following formats:

E_C&p9u<<form-name>>n<form#>p<form-size>L<form-contents>

E_C&p9u<<form-name>>n<form#>p<<form-contents>>L

E_C&p9u<form#>p<form-size>L<form-contents>

E_C&p9u<form#>p<<form-contents>>L

Table B-17. Forms Cache Operation

Sequence	Description
E_C&p9u<form#>pF	Copy cached form to screen.
E_C&p9u<form#>p0L or E_C&p9u<form#>pL	Purge form from forms cache.
E_C&p<form-name>n9^ or E_C&p<form#>p9^ or E_C&p9^	Forms cache status request.
E_C&p<>n9^	Request list of stored forms.

Where: form # = decimal value from 1 to 255;
and form-name = string of up to 16 characters.

Remote Command *E_C&oC<AdvanceLink command(s)>*

This sequence is available with AdvanceLink to allow the host computer to download AdvanceLink commands for execution by the AdvanceLink application. (This escape sequence is ignored on the HP Terminal Program.)

C

Graphics Escape Sequences

Introduction

This appendix lists the escape sequences that control the HP Terminal Program's graphics features.

If you need more details on the graphic escape sequences, refer to the reference manual of the graphics terminal you have defined in the "Terminal Id" field in the Terminal Configuration menu.

Enabling Graphics Text Mode

You enter graphics text mode by typing the following escape sequence:

E_C*dS

When you want to exit graphics text mode, type the following escape sequence:

E_C*dT

Remember that the last letter must always be CAPITAL and that the escape sequence you type does not appear on your screen.

Example of Entering Escape Sequences

The following example shows you how to generate graphics text using escape sequences.

1. Type: E_C&k1O

   Sets the numeric keypad to graphics cursor keys (equivalent to pressing CTRL -).

2. Type: E_C*dF

   Switches OFF the alphanumeric display.

3. Type: E_C*dR

   Switches OFF the alphanumeric cursor.

4. Type: E_C*dC

   Turns ON the graphics display.

5. Type: E_C*dK

   Turns ON the graphics cursor.

6. Type: E_C*dS

   Turns ON graphics text mode.

7. Press ◄ to bring the graphics cursor to the left margin.

   Examples:

8. Enter graphics text by first defining the size of the text then typing it in. For example:

   Type: E_C*m4mO HEWLETT-PACKARD

The name *Hewlett-Packard* appears in large slanted characters as specified by the escape sequence preceding it. Anything you type now will appear like this, until you indicate otherwise with another escape sequence.

Note that is you press [Enter ←], the cursor goes to the line below the start of the graphics text.

9. Draw a box by defining its coordinates as follows:

   Type: E_C*m 100, 250, 300, 350 E

   A rectangle with the specified dimensions appears on the screen. In the above sequence, 100 and 250 are the absolute coordinates of the lower left corner and 300 and 350 are the absolute coordinates of the upper right corner of the rectangle.

   Exit Graphics Mode. Return to alphanumeric text mode as follows:

10. Type: E_C&k0O

    Sets the numeric keypad to alphanumeric cursor keys (equivalent to pressing [CTRL] [-]).

11. Type: E_C*deqdiT

    Turns ON the alphanumeric display and cursor, and switches OFF the graphics display, graphics cursor and graphics text mode.

Table C-1. Display Control Escape Sequences (E_C*d)

Function	Sequence
Turn on graphics pad	E_C&k1O
Turn off graphics pad	E_C&k0O
Clear graphics memory	E_C*d<pen #>a
Set graphics memory	E_C*d<pen #>b
Turn on graphics display	E_C*dc
Turn off graphics display	E_C*dd
Turn on alphanumeric display	E_C*de
Turn off alphanumeric display	E_C*df
Turn on graphics cursor	E_C*dk
Turn off graphics cursor	E_C*di
Move graphics cursor absolute	E_C*d<x,y>o
Move graphics cursor incremental	E_C*d<x,y>p
Turn on alphanumeric cursor	E_C*dq
Turn off alphanumeric cursor	E_C*dr
Turn on graphics text mode	E_C*ds
Turn off graphics text mode	E_C*dt
No Operation NOP	E_C*dz

Table C-2. Vector Drawing Mode (E_C*m)

Function	Sequence
Select drawing mode (0-7) *	E_C*m<mode>a
Select line type (1-11)	E_C*m<line type>b
Define line pattern	E_C*m<pattern scale>c
Define area shading pattern	E_C*m<pattern>d
Fill area, absolute	E_C*m<x1,y1,x2,y2>e
Fill area, relocatable	E_C*m<x1,y1,x2,y2>f
Select area pattern (0-10)	E_C*m<area pattern>g
Set area boundary pen **	E_C*m<pen #>h
Select relocatable origin	E_C*m<x,y>j
Set relocatable origin to pen position	E_C*mk
Set relocatable origin to graphics cursor pos	E_C*ml
Set graphics text size (1-8)	E_C*m<size>m
Set graphics text orientation (1-4)	E_C*m<rotation>n
Turn on text slant	E_C*mo
Turn off text slant	E_C*mp
Set graphics text origin	E_C*m<0-9>q
Set graphics default	E_C*m<default flag>r
Define dither pattern **	E_C*m<d1,d2,d3>v
Select dither pattern (1-12) **	E_C*m<dither pattern>w
Set primary pen **	E_C*m<pen #>x
Set secondary pen **	E_C*m<pen #>y
Set background pen **	E_C*e<pen #>b
Set graphics text pen **	E_C*n<pen #>x
Set graphics label	E_C*l<text label> <C_R, C_RL_F, L_FC_R, or L_F>
No Operation NOP	E_C*mz

* Only options 1-4 are supported in B/W emulation. ** Color Only

Table C-3. Plotting Escape Sequences (E_C*p)

Function	Sequence
Lift pen	E_C*pa
Lower pen	E_C*pb
Use graphics cursor as new point	E_C*pc
Draw point at current pen position and lift pen	E_C*pd
Set relocatable origin to current pen position	E_C*pe
Data is ASCII absolute	E_C*pf
Data is ASCII incremental	E_C*pg
Data is ASCII relocatable	E_C*ph
Data is absolute	E_C*pi
Data is short incremental	E_C*pj
Data is incremental	E_C*pk
Data is relocatable	E_C*pl
Starts area fill	E_C*ps
Ends area fill	E_C*pt
Lift area boundary pen	E_C*pu
Lower area boundary pen	E_C*pv
No Operation NOP	E_C*pz

Table C-4. Graphics Status Escape Sequences (E_C*s)

Function	Sequence
Read device ID	E_C*s1^
Read pen position	E_C*s2^
Read graphics cursor position	E_C*s3^
Read cursor position and wait for key	E_C*s4^
Read display size	E_C*s5^
Read graphics capabilities	E_C*s6^
Read graphics text status	E_C*s7^
Read zoom status	E_C*s8^
Read relocatable origin	E_C*s9^
Read reset status	E_C*s10^
Read area shading	E_C*s11^
Read dynamics	E_C*s12^

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