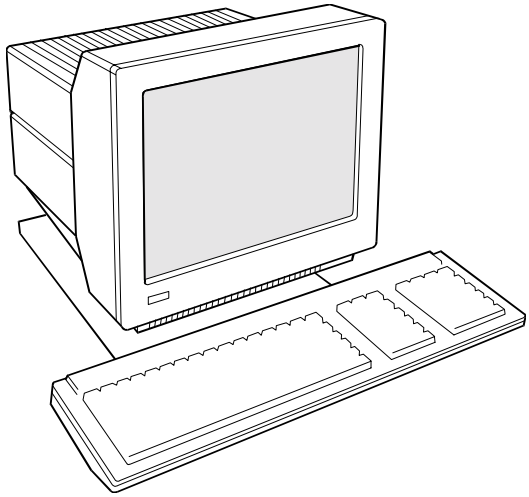
User's Manual

C1099A Alphanumeric Terminal



HEWLETT® PACKARD

Legal Notices

It is the policy of Hewlett-Packard to improve products as new technology, components, software, and firmware become available. Hewlett-Packard, therefore, reserves the right to change specifications without prior notice.

All features, functions, and operations described herein may not be marketed by Hewlett-Packard in all parts of the world. In some instances, photographs are of equipment prototypes. Therefore, before using this document, consult your Hewlett-Packard representative or Hewlett-Packard office for information that is applicable and current.

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Restricted Rights Legend. Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 for DOD agencies, and subparagraphs (c) (1) and (c) (2) of the Commercial Computer Software Restricted Rights clause at FAR 52.227-19 for other agencies.

HEWLETT-PACKARD COMPANY
3000 Hanover Street
Palo Alto, California 94304 U.S.A.

Trademarks and Service Marks

The table below indicates which companies own which product names, as denoted by ™ in this publication:

Term	Trademark Owner
Centronics	Centronics Data Computer Corporation
DEC	Digital Equipment Corporation
IBM	International Business Machines Corporation
TVI 925	TeleVideo Systems, Inc.
ADDS Viewpoint	Boundless Technologies, Inc.
VT320/220/100	Digital Equipment Corporation
WYSE 50/60/120/150	Wyse Technology, Inc.

Electronic Emission Notices

This product has not been evaluated for connection to an "IT" power system (ac distribution system having no direct connection to earth according to IEC 950).

Locate the terminal near an AC outlet! The ac power cord is this product's main ac disconnect device and must be easily accessible at all times.

Battery Notice

This product contains a Lithium battery. This battery is not to be removed or replaced by the user. If the battery needs to be replaced, contact your Hewlett-Packard authorized service personnel.

Federal Communication Commission (FCC) Statement

The United States Federal Communications Commission has specified that the following notice be brought to the attention of users of this product:

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

Hewlett-Packard's system verification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your product. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment. Cables used with this device must be properly shielded to comply with the requirements of the FCC.

Canada RFI Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

European Union RFI Statement

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

NOTE The display quality of the C1099A may be degraded by external sources of electromagnetic fields. Display attributes such as luminance uniformity and geometry may be noticeably affected. Sources of electromagnetic fields include:

- transformers,
- motors,
- printers,
- wireless devices, and
- other displays.

If such interference is suspected, it can usually be corrected by separating the equipment and/or reorienting the display. If the problem cannot be corrected, an alternate display technology that does not use a CRT (i.e., LCD) should be considered.

Japan RFI Statement

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Japan Harmonic Statement

高調波ガイドライン適合品

Korean RFI Statement

사용자 안내문 (A 급기기)

이 기기는 업무용으로 전자파 장해검정을 받은 기기이오니, 만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환 하시기 바랍니다.

Taiwan RFI Statement

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

United Kingdom Telecom Statement

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

Ergonomics Statement For Germany

. This equipment has been tested in accordance with the requirements of the Equipment Safety Law and carries the GS Safety Mark. The following characteristics may be software influenced:

- ZH 1/618 Font Set
- Refresh Rate

- Positive and Negative Polarity
- Column Width

Therefore, it was only possible to verify the basic capabilities of these ergonomics requirements. The user will have to assure that the characteristics stated above meet with the individually-used software.

Acoustics

Acoustic noise level per ISO 9296 (25° C):
LpAm <25dB (operators position) No Fan installed

Geräuschemission nach ISO 9296 (25° C):
LpAm <25dB (Arbeitsplatz) Kein Ventilator eingebaut

Australian C-Tick Label

Conformity

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Internet & Applications Systems Division

Manufacturer's Address: 8000 Foothills Blvd.
Roseville, CA 95747
USA

declares, that the product

Product Name: Display Terminal

Model Number(s): C1099A

Product Options: N/A

conforms to the following Product Specifications:

Safety: IEC 60950:1991+A1+A2 +A3 +A4 /
EN 60950: 1992+A1+A2 +A3 +A4 +A11
GB 4943-1995

EMC: CISPR 22:1997 / EN 55022:1998 Class A 1)
CISPR 24:1997 / EN 55024:1998

IEC 61000-3-2:1995 / EN 61000-3-2:1995 +A14
IEC 61000-3-3:1994 / EN 61000-3-3:1995
GB 9254-1988

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

1) The product was tested in a typical configuration with a Hewlett-Packard host computer.

Roseville, 6/1/01

Frank D. Dembski Jr., Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE, Herrenberger Straße 130, D-71034 Böblingen (FAX: + 49-7031-14-3143)

Chinese CCIB Statement

HP 显 示 器 使 用 安 全 手 册

使用须知

欢迎使用惠普显示器，为了您及仪器的安全，请您务必注意如下事项：

1. 仪器要和地线相接，要使用有正确接地插头的电源线，使用中国国家规定 的 220V 电源。本显示器电源额定值为：交流115-230V,0.6-0.3A, 50/60Hz。
2. 避免高温和尘土多的地方，否则易引起仪器内部部件的损坏。
3. 避免接近高温，避免接近直接热源，如直射太阳光、暖气等其它发热体。
4. 不要有异物 或 液体落入机内，以免部件短路。
5. 不要将磁体放置于仪器附近。

警告

为 防 止 火 灾 或 触 电 事 故， 请 不 要 将 该 机 放 置 于 淋 雨 或 潮 湿 处。

保修及技术支持

如果您按照以上步骤操作时遇到了困难，或想了解其它产品性能，请按以下 方式与 我们联络。

如是硬件故障:

1. 与 售 出 单 位 或 当 地 维 修 机 构 联 系。
2. 中 国 惠 普 有 限 公 司 维 修 中 心 地 址:
   北 京 市 海 淀 区 知 春 路 49号 希格玛大厦
   联 系 电 话：010-62623888 转 6101
   邮 政 编 码：100080

如是软件问题：

1. 惠 普 用 户 响 应 中 心 热 线 电 话：010-65645959
2. 传 真 自 动 回 复 系 统：010-65645735

Contents

1. Introduction and Description

Introduction 1-15
Compatibility 1-15
Technical Support 1-15
Description of C1099A Features 1-15
Display 1-15
Character Sets 1-16
Communications 1-16
Keyboard 1-16
Desk Accessories 1-16
Terminal Physical Features 1-17
Keyboard 1-17
Usage Notes 1-18
How to Connect or Disconnect the Terminal 1-19
Installation 1-19
Default Configuration 1-20
Reset to defaults 1-20
Installation Steps 1-20
Host DCE 1-22
Host DTE 1-22
RS-232 with Modem 1-22
RS-232-C with Modem 1-23
RS-232-C Printer 1-23
Parallel Printer 1-23
Common Configuration 1-23

2. Using Menus

Quick Menu (F1) 2-25
Emulation 2-25
Enhanced 2-25
Comm Mode 2-26
EIA Baud Rate 2-26
AUX Baud Rate 2-26
Language 2-26
EIA Data Format 2-26
AUX Data Format 2-27
Host/Printer 2-27
General Menu (F2) 2-28

Contents

Emulation 2-28
Enhanced 2-28
Auto Wrap 2-28
Auto Scroll 2-28
Monitor Mode 2-28
Screen Saver 2-28
Bell Volume 2-29
Warning Bell 2-29
Bell Length 2-29
Setup Lang 2-29
Auto Font Load 2-29
Auto Page 2-29
Display Menu (F3) 2-30
Page Length 2-30
Screen Length 2-30
Screen Video 2-30
Display Cursor 2-30
Cursor 2-31
Auto Adjust Cursor 2-31
Columns 2-31
Width Change Clear 2-31
Speed 2-31
Scroll 2-31
Refresh Rate 2-31
Overscan Borders 2-32
Keyboard Menu (F4) 2-33
Language 2-33
Char Set 2-33
Key Mode 2-33
Keyclick 2-33
Key Repeat 2-33
Key Rate 2-34
Margin Bell 2-34
Key Lock 2-34
Caps Lock 2-34
Num Lock 2-34
Code Page 2-35
Keys Menu (F5) 2-36

Enter Key 2-36
NumPad Enter 2-36
Return Key 2-36
Alt Key (left) 2-36
Pound Key 2-37
Return Key Repeat 2-37
Local Leadin 2-37
User Defined Keys (UDKs). 2-37
Disconnect 2-37
Backspace 2-37
Desk Acc 2-38
Enter Keys. 2-38
Ports Menu (F6) 2-39
EIA Baud Rate 2-39
EIA Data Format 2-39
EIA (Aux) Parity Check 2-39
AUX Baud Rate. 2-40
AUX Data Format 2-40
EIA (Aux) Recv 2-40
EIA (Aux) Xmit 2-40
Xmt Pace 2-41
Parity Check 2-41
Host Menu (F7) 2-42
Comm Mode. 2-42
Receive <CR> 2-42
Receive <DEL> 2-42
Send ACK 2-42
Null Suppress 2-43
Break 2-43
Modem Control 2-43
Disconnect 2-43
Asterisk 2-43
Send Line Term. 2-43
CS(CB) Xmit 2-44
Local 2-44
Send Block Term 2-44
Send End 2-44
Send Region. 2-44

Contents

Alt Input Data 2-44
Local Echo 2-44
Ignore CTS 2-45
Block Terminator 2-45
Field Separator 2-45
Print Menu (F8) 2-46
Print 2-46
Escape Transfer 2-46
CS(CB) Xmit 2-46
Print Mode (ANSI Emulations) 2-46
Print Block Term 2-46
Print Region 2-47
Print Line Term 2-47
Secondary Recv 2-47
Print (ANSI) 2-47
Print (HPTerm Only) 2-47
Printer Nulls = 000 (HPTerm Only) 2-47
Emulation Menu (F9) 2-48
HPTerm Emulation 2-48
ASCII Emulations 2-49
ANSI Emulations 2-50
Tabs Menu (F10) 2-52
Auto Init Tabs 2-52
Default Tabs 2-52
Tab (HPTerm Only) 2-53
Answerback Menu (F11) 2-54
Answerback Mode 2-54
Answerback Conceal 2-54
Answerback Message 2-54
Program Menu (F12) 2-56
Program 2-56
Key Dir 2-56
Text 2-57
Label 2-57
Key 2-57
Execute Menu (Prnt Scrn) 2-58

3. Accessories

Desk Accessories 3-59
Overview 3-59
Desk Accessory Menu 3-59
Moving an Accessory Window 3-59
Exiting an Accessory Window 3-60
Blocking Access 3-60
Calendar 3-61
Clock 3-62
Calculator 3-64
ASCII Chart 3-66
Diagnostic Window 3-67
Local Keys 3-68
Non-HPTerm Emulation Local Keys 3-68
HP Emulation Local Key Layout 3-70
Page Configurations 3-71

4. Communications

Communications Capabilities 4-73
Understanding Communications 4-73
Receive Flow Control 4-73
Transmit Flow Control 4-73
Host/Printer Port 1 4-74
Host/Printer Port 2 4-74
Parallel Printer Port 4-75
Terminal to Modem (DCE) or Host 4-76
Terminal to Host (DTE) or Printer 4-76
Screen Display 4-77
Understanding Screen Display and Pages 4-77
Bottom Status/Label Line Display 4-77
Visual Effects of Screen and Page Lengths 4-77

5. HPTerm

HPTERM Emulation 5-79
HPTERM Emulation Terminal Configuration 5-79
Selecting Operating Modes 5-79
HPTERM Print Screen 5-80
Using the Terminal with a Printer 5-80

Contents

Selecting the Printer as the Destination 5-80
Data Logging 5-80

A. Function Keys

What Are Function Keys? A-81
Uppercase labels A-81
Lowercase labels A-81
System Labels A-82
Device Control Labels A-83
Device Modes Labels A-84
Margins, Tabs, and Column Labels A-85
Modes Labels A-86
Enhance Video Labels A-87
Format Mode A-88
Defining Fields A-89
Protected Fields A-89
Unprotected Fields A-89
Transmit-Only Fields A-89

B. Installation Note

Note to Installers B-91
Site Preparation B-91

1 Introduction and Description

Introduction

The C1099A represents Hewlett-Packard's latest terminal for HP9000 and HP3000 systems. It can be used as the system console or as a user data entry station. C1099A can emulate HPTerm, and industry standard ASCII and ANSI terminals. PCTERM and SCO Console emulations are also supported. It uses a standard PC-type keyboard and features a clock, calendar, calculator, ASCII chart, and diagnostic accessories.

Setup is easy – with emulation-dependent menus. A 'Quick' menu presents common terminal settings for a one screen setup.

Compatibility

The C1099A terminal is compatible with the following terminals:

- HP 700/96 (factory default)
- Wyse™ 60, Wyse 50/50+
- ADDS – Viewpoint™
- DEC™ VT-320, VT-220, VT-100
- PC Terminal
- TVI™ - 925
- SCO™ Console.

Technical Support

Questions about this product should be directed to the Technical Support Department of the distributor from which you obtained your Hewlett-Packard equipment. When requesting assistance, please have all pertinent information available including any error messages that may have appeared either on the terminal or the host.

Description of C1099A Features

The features found on the C1099A are described below:

Display

The C1099A has the following display features:

- 100 Hz refresh rate (flicker-free)
- Selectable overscan borders
- Selectable screen saver
- 26, 30, 44, or 52 row display with top and bottom status lines
- 80 or 132 column display

- Double high/double wide display
- Up to 8 pages of memory
- Small footprint, tilt and swivel base.

Character Sets

The C1099A supports the following character sets:

- Numerous standard, graphic, and supplemental character sets
- Support for different keyboard languages:

US (English)	Portuguese	Italian
UK (English)	Spanish	Latin American
Danish	Brazilian	Swiss-French
Finnish	Swedish	Swiss-German
French	Dutch	
German	Belgian-Flemish	
Norwegian	French-Canadian	

- Support for the Euro symbol: €

Communications

The C1099A features the following communication ports:

- Serial RS-232-C host/printer port 1, operating from 110 to 134,400 baud
- Serial RS-232-C host/printer port 2, operating from 110 to 38,400 baud
- Parallel IBM™/Centronics™ compatible printer port.

Keyboard

The C1099A keyboard includes the following features:

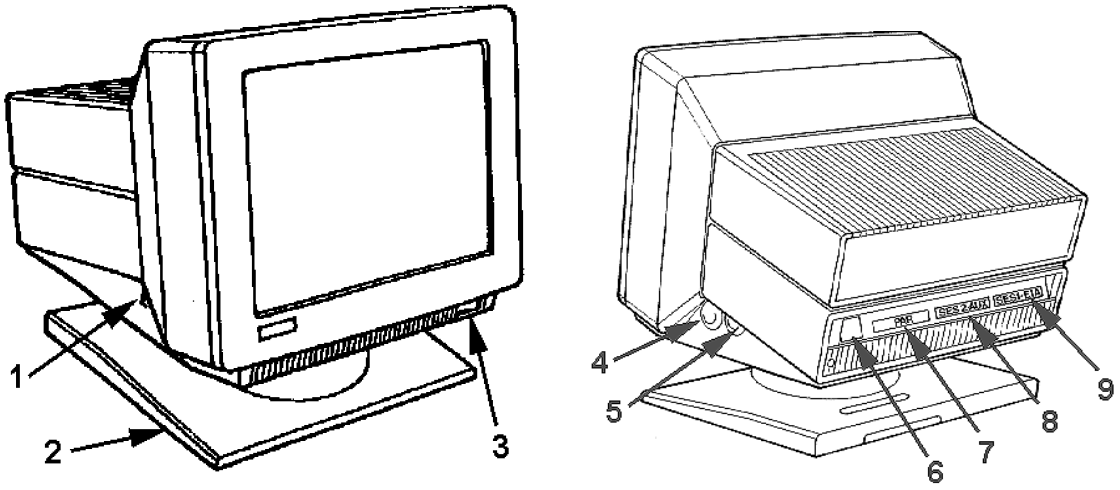
- PC 104 keyboard for use in the US and internationally
- Up to 35 shiftable and programmable edit and function keys.

Desk Accessories

The C1099A includes the following desktop accessories:

- Calculator capable of transmitting results
- Monthly Calendar
- Clock with alarm settings
- ASCII and Diagnostic charts.

Terminal Physical Features



1. Keyboard Connector – insert the keyboard connector here, flat side facing down.

2. Tilt and Swivel Base – to adjust the viewing angle. Grasp the lower corners of the terminal and push up or down, or twist left or right.

3. Power Switch – "0" is off; "1" is on.

4. Contrast Dial – adjust the contrast between characters of different intensities by rotating the dial.

5. Brightness Dial – adjust the overall screen brightness by rotating the dial.

6. Power Connection – plug the power cord into this connector then into a grounded receptacle.

7. PAR – connect the cable from the IBM/Centronics-compatible parallel printer to this parallel printer port.

8. AUX – connect the cable from a serial printer here. May also be used as an auxiliary host port.

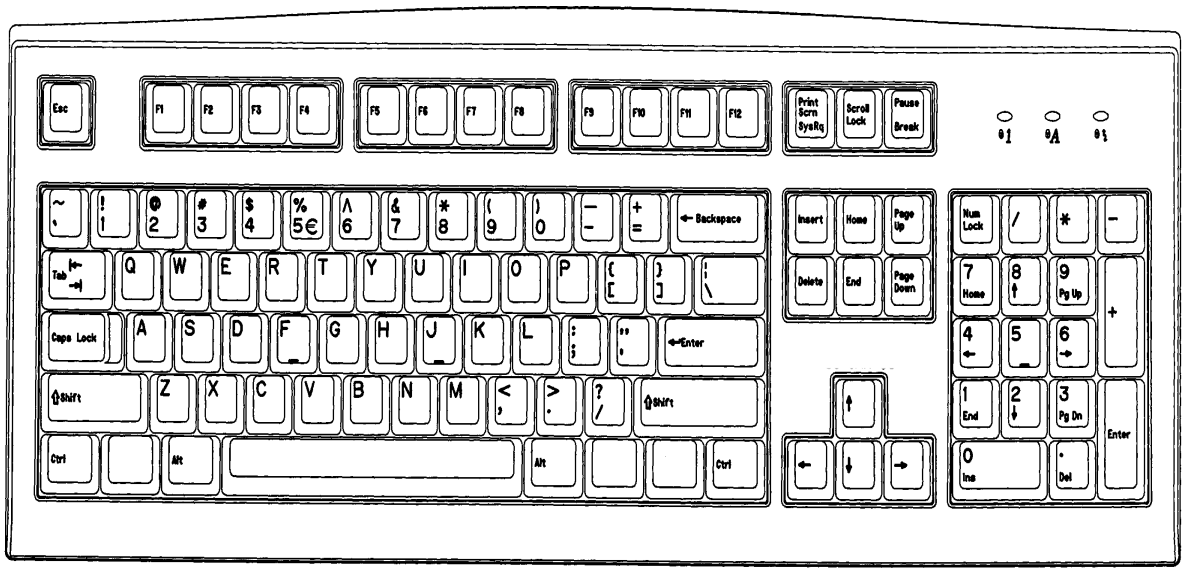
9. EIA – connect the cable from the default host or serial printer here.

Keyboard

The keyboard is similar to a standard PC 104-key PC style keyboard in that it features similar key groups. The keyboard has a set of local "hot-keys" that perform a variety of terminal functions, such as "Print Screen." The keyboard, shown in the illustration below, is divided into the following logical groups:

- The alphanumeric keypad is the main typewriter keypad.
- The function key group lies along the top of the keyboard and can be programmed locally or by downloading from the host.
- The numeric keypad is the calculator-style set of keys on the right-hand side of the keyboard, used to enter numeric data.
- The cursor and edit keypads, located to the left of the numeric keypad, allow users to edit text and move around in the document.
- The communication key group, above the edit keypad, is used to control communications with the host or printer.

104-key PC Keyboard - U.S.



NOTE This terminal supports the Euro symbol (€) locally.

Usage Notes

The following notations and symbols may be found in this manual:

Ctrl+F1: Press the Ctrl key and the F1 key simultaneously.

1-num or 1-alpha: Specifies that the number may be generated either from the numeric or alphanumeric keypads.

23h The number 23 is a hexadecimal (hex) number (23h is 35 in decimal notation).

ASCII Applies to ASCII emulations only: Wyse 50+, Wyse 60, PC Term, ADDS-VP and TVI-925.

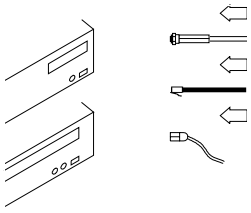
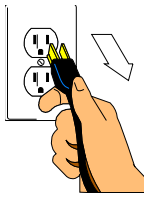
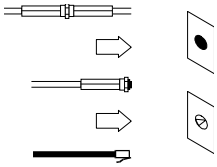
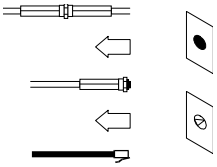
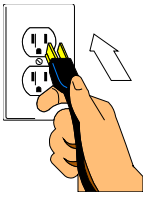
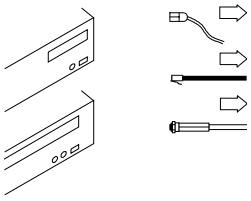
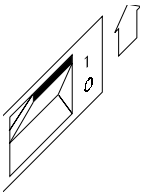
ANSI Applies to ANSI emulations only: VT300/8, VT300/7, VT200/8, VT200/7, and VT100

PARA Applies to parallel attribute emulations only: includes all emulations except ADDS-VP, TVI 925 and Wyse 50+ (which are field attribute emulations).

/ASCII\ Applies to ASCII key mode only.

/SCAN\ Applies only to scan code key mode.

How to Connect or Disconnect the Terminal

To Connect:	To Disconnect:
First, turn everything OFF. 	First, turn everything OFF. 
Attach all cables to devices. 	Remove power cord from outlet. 
Attach signal cables to receptacles. 	Remove signal cables from receptacles. 
Attach power cord to outlet. 	Remove all cables from devices. 
Turn device on. 	You may now take the device with you. 
Note: In the UK, by law, the telephone cable must be connected after the power cord.	Note: In the UK, by law, the power cord must be disconnected after the telephone line cable.

Installation

This section covers how to physically connect your terminal to a host computer and a printer, as well as to configure the terminal to the most common configuration.

NOTE All three ports cannot be assigned simultaneously. Only one datacomm connection can be used at a time and, only one printer connection can be used at a time.

Default Configuration

Emulation =	HPTerm
Comm mode =	character (vs. Block)
Host/Printer =	EIA/Para
Baud Rate =	9600
Data Format =	8/1/N.

With these default settings the terminal will function as the system console on all HP9000s and HP3000s.

Reset to defaults

The factory default setting is HPTerm emulation. To return to the default settings and reset the terminal, perform the following actions:

- Proceed to the setup menu. (Press **F10** then **F8**).
- Select the Execute function key (**Print Scrn / SysRq**).
- Use the arrow keys to select **Default Terminal**.
- Press **Enter** to execute the action.
- Exit the setup menu by pressing the **Esc** key. The blinking prompt,

  `Save all? (Y/N)`

  will appear in the upper right corner of the menu. Press **Y** to return to the session.

Installation Steps

The following steps will lead you through the installation process.

Step 1. Determine Your Devices.

a. First, determine what type of serial ports you are connecting to the terminal. The *Understanding Communications* section describes the differences between a DTE and a DCE serial device.

b. Then determine what type of devices you are using (a DTE host, a DCE modem, a DTE printer, a parallel printer, etc.).

Step 2. Choose a Host Port.

a. First, decide which serial port to assign to your host (either EIA, or Aux. The default is EIA).

b. Next, determine which port to use as the printer port (either Aux, EIA, Parallel, or None. The default is Parallel).

NOTE If you opt not to install a printer you must set the Printer portion of the Host/Printer selection in the Quick (**F1**) Setup menu to “None”.

Step 3. Determine Your Serial Port Protocol. Determine the communication settings on the serial devices you are connected to, including:

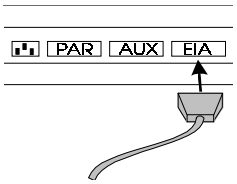
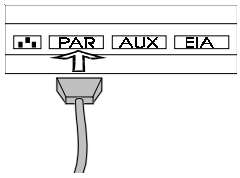
- EIA (or Aux) baud,

- data bits,
- stop bits,
- parity,
- parity checking on/off, and
- transmit and receive flow control protocol.

Step 4. Access Communications Setup.

NOTE To access the Setup menu in the default HPTerm emulation, press **F10** and then **F8.** To exit Setup, press the **Esc** key. For all other emulations, press **Ctrl+Scroll Lock** to enter setup and **Esc** to exit.

Host DTE and Parallel Printer ports. In the *Setup Quick* (**F1**) menu, set the "Host/Printer" selection as shown below.

Default Host	**Parallel Printer**
	
Connect the host directly to the EIA port.	Connect the printer cable to the PAR port.
In the Ports (**F6**) menu, set the proper communications settings.	In the Print (**F8**) menu, set the way printing is controlled.

Step 5. Use Emulation Setup. This step requires setting a selection in the Setup menu to configure the "Emulation" of the terminal. Determine the emulation for your application, then set the "Emulation" parameter in the *Setup Quick* (**F1**) menu to match your requirements.

Step 6. Using Additional Setup Options. Refer to Chapter 2, "Using Menus," to set up your own selections for any other parameters, such as those for the display, keyboard, function/edit keys, and tabs.

Step 7. Saving Parameters. Save your Setup parameters in permanent memory, so that they can be recovered if the terminal is powered down. To exit the Setup menu, press **Esc**. When the prompt, `Save all? (Y/N)` appears in the upper right corner of the screen, press **Y**.

Step 8. Establishing Communications. Your installation is now complete. By pressing the **Return** or **Enter** key, you should be able to communicate with the host computer(s). The printer should respond to the local print command, which is **Shift+Ctrl+Del** (on the numeric keypad). If, for some reason, your installation was not successful, make sure that:

- Your physical connections are secure.

- The communications protocol settings match your devices.
- You chose the Setup selections that provide a proper interface between the terminal and your devices.

If you continue to have problems installing the terminal, call your local dealer for technical support

Host DCE

Enter the Setup menu. In the *Setup Quick* (**F1**) menu, set the *Host* portion of the "Host/Printer" selection to "EIA" without changing the current Printer option ("EIA/xxxx"). You can set the printer in a different connection procedure, if necessary.

In the *Ports* (**F6**) menu, set the proper communications settings for the:

- EIA Baud,
- EIA Data Format,
- EIA Parity Check,
- EIA Recv, and
- EIA Xmt selections.

Refer to Chapter 2, "Using Menus," for more information on the individual settings.

Host DTE

Enter the *Setup* menu. In the *Setup Quick* (**F1**) menu, set the *Host* portion of the "Host/Printer" selection to "Aux" without changing the current Printer option ("Aux/xxxx"). You can set the printer in a different connection procedure, if necessary. In the *Ports* (**F6**) menu, set the proper communications settings for the:

- Aux Baud,
- Aux Data Format,
- Aux Parity Check,
- Aux Recv, and
- Aux Xmt.

Refer to *Chapter 2, "Using Menus,"* for more information on the individual settings.

RS-232 with Modem

Enter the Setup menu. In the Setup Quick (press F1) menu, set the *Host* portion of the "Host/Printer" selection to "EIA" without changing the current Printer option ("EIA/xxxx"). You can set the printer in a different connection procedure, if necessary.

In the *Ports* (**F6**) menu, set the proper communications settings for the:

- EIA Baud,
- EIA Data Format,
- EIA Parity Check,
- EIA Recv, and
- EIA Xmt selections.

Refer to *Chapter 2, "Using Menus,"* for more information on the individual settings. If you are connecting to a modem, set the *Modem Control* parameter to "On" in the *Host* (**F7**) menu.

RS-232-C with Modem

Enter the *Setup* menu. In the *Setup Quick* (**F1**) menu, set the *Host* portion of the "Host/Printer" selection to "Aux" without changing the current Printer option ("Aux/xxxx"). You can set the printer in a different connection procedure, if necessary. In the *Ports* (**F6**) menu, set the proper communications settings for the:

- Aux Baud,
- Aux Data Format,
- Aux Parity Check,
- Aux Recv, and
- Aux Xmt.

Refer to *Chapter 2, "Using Menus,"* for more information on the individual settings. If you are connecting to a modem, set the *Modem Control* parameter to "On" in the Host (**F7**) menu.

RS-232-C Printer

Enter the *Setup* menu. In the *Setup Quick* (**F1**) menu, set the *Printer* portion of the "Host/Printer" selection to "Aux" without changing the current Host option ("xxxx/Aux"). In the *Ports* (**F6**) menu, set the proper communications settings for the:

- Aux Baud,
- Aux Data Format,
- Aux Parity Check,
- Aux Recv, and
- Aux Xmt.

Refer to *Chapter 3: Using Setup* for more information on the individual settings.

Parallel Printer

Enter the *Setup* menu. In the *Setup Quick* (**F1**) menu, set the *Printer* portion of the "Host/Printer" selection to "Para" without changing the current Host option ("xxxx/ Para").

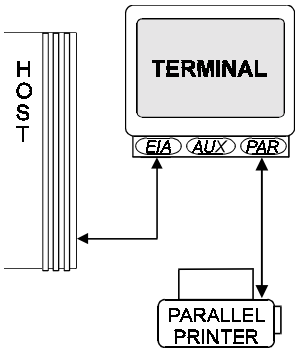
Refer to *Chapter 2, "Using Menus,"* for more information on the individual settings.

Common Configuration

The illustration below shows the most common arrangements for connecting a terminal to a Hewlett-Packard

host and to a parallel printer.

Host/Printer Connection Guide



Host/Printer = EIA/Para.

EIA Baud, EIA Data Format, etc. matches the host

NOTE Most host computers and serial printers are configured as a DTE device.

---

2 Using Menus

Quick Menu (F1)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

The example shown below is a representation of the screen display for this menu.

Parameters		
Emulation=HPTerm	EIA Baud Rate=9600	EIA Data Format=8/1/N
Enhanced=On	Aux Baud Rate=9600	Aux Data Format=8/1/N
Comm Mode=Character	Language=U.S	Host/Printer=EIA/Para
Choices		
ADDS VP Wyse 60 Wyse 50+ PC Term TVI 925 VT300/7 VT300/8 VT200/7 VT200/8 VT100 HPTerm SCO Console		
Select		
←↑→↓: Parameter	Enter/S-Enter: Next/Prev Choice	Exit : Esc Key

Emulation

Select the terminal emulation desired. The options are:

ADDS VP	Wyse 60	Wyse 50+	PC Term	TVI 925	VT300/7
VT300/8	VT200/7	VT200/8	VT100	**HPTerm**	SCO console

NOTE All associated defaults are loaded when the emulation is changed. Some defaults may vary depending on the selected emulation.

Enhanced

The terminal response to a set of commands that correspond to the emulation selected. The options are:

On	Off

Comm Mode

Select the method of communication that matches the host computer. The options are:

Full Duplex	Half Duplex	Full Block	Half Block	**Character**	Block

EIA Baud Rate

Select the number of bits communicated per second to match the speed at which the primary host or printer will communicate. The options are:

134400	115200	76800	57600
38400	19200	**9600**	4800
2400	2000	1800	1200
600	300	150	110

AUX Baud Rate

Select the speed at which the secondary host or serial printer communicates. The options are:

38400	19200	**9600**	4800
2400	2000	1800	1200
600	300	150	134.5
110			

Language

Select the language type that matches your keyboard's layout. The options are:

U.S.	U.K.	Danish	Finnish	French	German
Norwegian	Portuguese	Spanish	Brazilian	Swedish	Dutch
Belg.-Flemish	Fr.-Canadian	Italian	Latin American	Swiss-French	Swiss-German

EIA Data Format

Select a data bits/stop bits/parity combination that matches the data format of the primary host or printer. The options are:

7/1/N	7/1/O	7/1/E	7/1/M	7/1/S
7/2/N	7/2/O	7/2/E	7/2/M	7/2/S
8/1/N	8/1/O	8/1/E	8/1/M	8/1/S
8/2/N	8/2/O	8/2/E	8/2/M	8/2/S

Parity abbreviations are:

O = odd
E = even
S = space
M = mark
N = none

AUX Data Format

Select a data bits/parity bits/stop combination that matches the data format of the secondary host or printer. The options are:

7/1/O	7/1/E	7/1/M	7/1/S
7/2/N	7/2/O	7/2/E	7/2/M
7/2/S	**8/1/N**	8/1/O	8/1/E
8/1/M	8/1/S	8/2/N	

Parity abbreviations are:

O = odd
E = even
S = space
M = mark
N = none

Host/Printer

The first part of the selection indicates the host (either the EIA port or the AUX port). The second part of the selection indicates the printer port. If a serial printer is used, either the EIA or Aux port can be used to connect to the printer. If a parallel printer is being used, select the PAR port. The options are:

EIA/Aux	**EIA/Para**	EIA/None	Aux/EIA	Aux/Para
Aux/None	None/EIA	None/Aux	None/Para	None

General Menu (F2)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Emulation

Select the type of terminal to be emulated. Refer to the *Quick (F1)* menu for emulation options

Enhanced

Select whether or not the terminal will respond to commands beyond the limitations of the current emulation. The options are:

On	Off

Auto Wrap

Select whether or not the cursor will automatically wrap to the next line when it reaches the right margin. The options are:

On	Off

Auto Scroll

Select whether or not the terminal rolls up one line (the top line disappears) to show the next line of information when the cursor moves down from the last line of data (a new bottom line appears). The options are:

On	Off

Monitor Mode

Select whether or not control codes appear as their graphic representations or are acted upon as terminal/cursor commands. The options are:

Off	On

Screen Saver

Select whether or not the screen will go blank after lack of activity (from the keyboard or the host) for the selected period of time. The first key typed at the keyboard when the screen is blank reactivates the display, but the key is not transmitted to the host. The Caps Lock LED flashes when Screen Saver is active. The

options are:

Off	2 min	5 min	**15 min**	30 min

Bell Volume

Select bell volume from off [0] to high [9]. This sets the volume for alarm tones, warning bells, and keyclicks. The options are:

0	**1**	2	3	4	5	6	7	8	9

Warning Bell

Select whether or not a warning bell is sounded when errors (such as an invalid compose sequence) are encountered. The options are:

On	Off

Bell Length

Denotes the length of time that the bell will sound. The options are:

140 ms	350 ms	570 ms	780 ms

Setup Lang

NOTE The *Setup Lang* option is not available at this time.

Affects setup and status lines. The options are:

U.S.	French	German	Italian	Spanish

Auto Font Load

Select whether or not the four font banks (0-3) will automatically load when the screen size or the emulation is changed. The options are:

On	Off

Auto Page

Select whether or not a new page is automatically displayed when the cursor scrolls off of the last line of the current screen. Pages are numbered from 0 to 7 and displayed at the top of the screen. The options are:

On	Off

Display Menu (F3)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Page Length

Select the number of lines per page. Up to eight pages (0-7) are available, but the number of pages in memory depends on the number of lines per page, the type of emulation, and whether or not the 80-Only columns option (the 80-only option provides more pages in memory for a given page length by disallowing changes to 132-column displays). The total lines used (Lines/Page times Number of Pages) cannot exceed 200.

Page lengths that are multiples of 24 or 25 and those that are multiples of 42 or 43 are displayed by default on a 26-line or 44-line screen, respectively. The extra one or two empty lines on the screen can be used as status lines.

If you select a page length preceded by an asterisk (*24, *25, *42, or *43), the total number of pages will be two, where the first page contains the number of lines in the selection (24,25,42, or 43) and the second page contains the remaining allowable lines. The options are:

24	25	28	39	42	43	48	50	56
58	84	86	96	100	112	116	168	172
192	200	*24	*25	*28	*29	*42	*43	

Screen Length

Select the number of lines that can be displayed on the screen at one time. The page length affects the default screen length. The options are:

26 Lines	30 Lines	44 Lines	52 Lines

Screen Video

Select either bright characters on a dark background (normal) or dark characters on a bright background (reverse). The options are:

Normal	**Reverse**

Display Cursor

Select whether or not the cursor will be displayed. The options are:

On	Off

Cursor

Select the appearance of the cursor. The options are:

Blink Block	Steady Block	Blink Line	Steady Line

Auto Adjust Cursor

Select whether or not the screen automatically adjusts the scroll speed to keep the cursor in view when scrolling down a page. The options are:

On	Off

Columns

Select the number of columns that the screen can display. 80-Only provides more pages in memory for a given page length by disallowing changes to 132-column display. The options are:

80	132	80-Only

Width Change Clear

Select whether or not the screen is to be cleared when the number of columns on the screen is changed from 80 to 132 or vice versa. The options are:

On	Off

NOTE Changing columns from or to the *80-only* option forces the screen to clear whether the *Width Change Clear* option is enabled or disabled.

Speed

Selecting *fast* improves the speed at which the screen display occurs at the expense of minor, temporary distortion of text called “tearing.” The options are:

Fast	**Normal**

Scroll

Select whether or not the data on the screen scrolls smoothly or “jumps” to accommodate data at the rate it is received. The options are:

Jump	Smooth 1	Smooth 2	Smooth 4	Smooth 8

Refresh Rate

Select the rate (number of times per second) at which the image on your terminal’s display is updated. This

selection is only available in 26 or 30 line display mode. The options are:

60 Hz	**71 Hz**	82 Hz	100 Hz

Overscan Borders

Select whether or not the overscan borders option is active. When active, this option extends video from one edge of the screen to the next (To see the borders, select reverse for Screen Video.). The options are:

On	Off

Keyboard Menu (F4)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Language

Select the language type that matches characters shown on the Keycaps on your keyboard. The options are:

U.S.	U.K.	Danish	Finnish	French	German
Norwegian	Portuguese	Spanish	Brazilian	Swedish	Dutch
Belg.-Flemish	Fr.-Canadian	Italian	Latin American	Swiss-French	Swiss-German

Char Set

Select either the 7-bit national chart character set or the 8-bit multinational chart character set when the language selected is not U.S. If you select U.S., the character set becomes Multinational. The options are:

National	Multinational

Key Mode

Select the key mode required. The options are:

ASCII	ScanCode

Keyclick

Select whether or not to make the keyclick sound audible as you type. The options are:

On	Off

Key Repeat

Select whether or not keys, including function keys, repeat when pressed for more than half a second. The options are:

On	Off

NOTE This setting does not affect the following keys:

Caps Lock Scroll Lock Num Lock Shift keys Ctrl keys

Alt keys Return Prnt Scrn Pause

Key Rate

When *Key Repeat* is on, a key that is pressed for more than half a second will automatically repeat. This selection allows you to choose the number of characters that are generated per second when a key is auto repeating. The options are:

15 cps	**20 cps**	30 cps

Margin Bell

Select whether or not a bell tone will sound when the cursor is nine positions away from the right margin. The options are:

On	Off

Key Lock

This setting determines the state of alphanumeric keys when **Caps Lock** is engaged.

- When the *Caps* option is selected, alphabetic keys print in uppercase only, whether the **Shift** key is usd or not.
- When the *Reverse* option is used, you can use the **Shift** key to print alphabetic characters in lowercase.
- When the *Shift* option is selected, keys print in **Caps Lock** (uppercase) (or shifted to the alternative character, in the case of numbers). However, if the **Shift** key is pressed while the *Shift* option is selected, Caps-Lock will automatically disengage.

The options are:

Caps	Reverse	Shift

Caps Lock

This setting determines the state of the **Caps Lock** key. When set to *always on* or *always off*, the key lock has no effect. When set to toggle, the terminal will power on in the *off* mode and pressing the key will alternate between the *off* mode and the *on* mode. The options are:

Toggle	Always On	Always Off

Num Lock

This setting effects the state of the **Num Lock** key. When set to *always on* or *always off*, the key lock has no effect. When set to toggle, the terminal will power on in the *off* mode and pressing the key will alternate between the *off* mode and the *on* mode. The options are:

Toggle	Always On	Always Off

Code Page

This option is only available in 8-bit emulations in Multinational Mode. The default code page is based upon language and emulation selected. The Euro symbol (€) is available with Code Pages CP 850/858 and ISO-9. The options are:

CP 437	CP 850/858	CP 852	CP 860	CP 861	CP 863
CP 865	ISO-1	ISO-2	ISO-9	DEC Multi	**ROMAN 8**

Keys Menu (F5)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Enter Key

Select the code in which the numeric keypad **Enter** key transmits. The options for all emulations but HPTerm are:

CR	CR-LF	TAB

NumPad Enter

Only available in HPTerm emulation, this selection allows you to select the function of the keypad **Enter** key.

Tab	**Return**	Enter

Return Key

Select the code in which the main alphanumeric keypad *Return* key transmits. The options for all emulations but HPTerm are:

CR	CR-LF	TAB

Options for HPTerm emulationare:

Return Key	Enter Key

Alt Key (left)

Select left **ALT** key operation. The options are:

Meta	Compose	Funct	Scroll-Lock	Alt Key

- The *Meta* option sets the most significant bit for the next character and allows 8-bit data to be generated from the keyboard.
- The *Compose* option precedes sequences of keys to create a character that is not on the keyboard but is available in the active character set.
- The *Funct* option causes the **Alt** key to function as the **Func** key.
- The *Scroll-Lock* option causes the **Alt** key to function as the **Scroll Lock** key, and is a toggle to hold/free data on the screen. It requires the use of flow control for the host port receive protocol. (In the *Ports* menu (F6), “EIA Recv” and “Aux Recv” need to be other than “No Protocol”.)

- The *Alt Key* option causes the left **Alt** key to function identically to the right **Alt** key.

Pound Key

Select whether or not the character transmitted for 23h is the US pound (#) or the British pound (£). The options are:

U.S.	British

Return Key Repeat

Select whether or not the **Enter** key located on the alphanumeric keypad will repeat when held down for more than half a second (only selectable when "Key Repeat" = On). The options are:

On	**Off**

Local Leadin

You can select this parameter only when the *Key Mode* option (in the Keyboard menu) is *ScanCode*. If the *Local Leadin* option is off, the only local function,, is **Ctrl** + **Scroll Lock** to enter Setup. If the *Local Leadin* option is on, the Setup keystroke function disguises the keystroke as local and local functions can be generated. For example, to enter Setup when *ScanCode* and *Local Leadin* are on, press **Ctrl** + **Scroll Lock** to introduce this as a local function ("LEAD" appears in the status line). Then press **Ctrl** + **Scroll Lock** to enter Setup. The options are:

On	Off

NOTE *Local Leadin* does not work if the *Comm Mode* is set to *Half Block* or *Full Block*.

User Defined Keys (UDKs)

Select whether or not the UDKs are defaulted when the host changes the emulation. The options are:

Emul Dependent	User Dependent

Disconnect

Select the keystroke that will disconnect a modem. The options are:

Disabled	**Pause**	Alt+Pause

Backspace

Select the codes transmitted by the backspace key in both the normal and the shifted positions.

BS/DEL	DEL/BS	DEL/CAN	BS/BS

Desk Acc

Select the method of accessing the Desk Accessories function. Pressing the default key combination (**Ctrl** + ←) displays a menu that allows the desk accessories to be accessed and displays a menu from which you can select a specific accessory menu item by pressing function keys **F1** through **F5**. Once a desk accessory is displayed, you can access any other desk accessory by pressing the function key associated with it. The options are:

Ctrl + ←	Disabled

Enter Keys

Only available in HPTerm emulation, thia selection enables the first key inside the two (left and right) **Ctrl** keys to become **Enter** keys. Used for block mode data entry. The options are:

Disabled	Enabled

Ports Menu (F6)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

EIA Baud Rate

Select the number of bits communicated per second to match the speed at which the primary host or printer expects to communicate. The options are:

134400	115200	76800	57600
38400	19200	**9600**	4800
2400	2000	1800	1200
600	300	150	110

EIA Data Format

Select a data bits/stop bits/parity combination that matches the data format of the primary host or printer. The options are:

7/1/N	7/1/O	7/1/E	7/1/M	7/1/S
7/2/N	7/2/O	7/2/E	7/2/M	7/2/S
8/1/N	8/1/O	8/1/E	8/1/M	8/1/S
8/2/N	8/2/O	8/2/E	8/2/M	8/2/S

Parity abbreviations are:

O = odd
E = even
S = space
M = mark
N = none

EIA (Aux) Parity Check

Select whether or not the parity bit will be checked. When parity check is on and the parity bit received is inconsistent with the data received, an asterisk (*) 2Ah is displayed instead of the character to indicate an error in communications. The options are:

On	**Off**

AUX Baud Rate

Select the speed at which the secondary host or serial printer expects to communicate. The options are:

38400	19200	**9600**	4800
2400	2000	1800	1200
600	300	150	134.5
110			

AUX Data Format

Select a data bits/parity bits/stop combination that matches the data format of the secondary host or printer. The options are:

7/1/O	7/1/E	7/1/M	7/1/S
7/2/N	7/2/O	7/2/E	7/2/M
7/2/S	**8/1/N**	8/1/O	8/1/E
8/1/M	8/1/S	8/2/N	

Parity abbreviations are:

O = odd
E = even
S = space
M = mark
N = none

EIA (Aux) Recv

Select the form of flow control for data received from the primary or secondary host. Software flow control uses Xon-Xoff DC1 (11h) and DC3 (13h). XPC is used by *Scan Code* mode because it uses DC1 and DC3 as data. Xany-Xoff (XPC) is similar to Xon-Xoff, except that any character transmitted to the host is treated as an Xon, so data from the terminal is buffered, rather than being sent to the host. DTR (DSR for Aux) relies on the hardware signal DTR or DSR (pin 20 or pin 6) from the device. Xany-Xoff/DTR (DSR) uses software and hardware flow control. The options are:

No Protocol	Xon-Xoff (XPC)	Xany-Xoff (XPC)	DTR (DSR)	Xany-Xoff/DTR (DSR)

NOTE Flow control is recommended to protect against data loss.

EIA (Aux) Xmit

This selection is similar to *EIA (Aux) Recv*, except that it applies to the data transmitted from the terminal to the primary or secondary host or printer. Data Set Ready (DSR) is the hardware signal for pin 6. The options are:

No Protocol	Xon-Xoff	DSR (DTR)	Both

Xmt Pace

Defines the maximum number of characters per second that the terminal can transmit. When a character limit (35 cps, 60 cps, or 135 cps) is set, the delays are averaged between characters for the selected baud rate. This is also known as “pacing.” The Baud option provides no pacing, allowing data to be transmitted at the specified baud rate.

Baud	35 cps	60 cps	150 cps

Parity Check

Selects either checking or ignoring parity for each received data byte.

On	**Off**

Host Menu (F7)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Comm Mode

Select the desired communications mode. The following options are available in all emulations but HPTerm:

Full Duplex	Half Duplex	Full Block	Half Block

The following options are available in HPTerm emulation:

Character	Block

NOTE Character and block modes are only available in HPTerm emulation and HPTerm emulation operates in full duplex mode only.

Full and half Duplex and full and half Block modes are available in all emulations except HPTerm.

Receive <CR>

Select the way in which carriage returns will be interpreted when received . The options are:

<CR>	<CR><LF>

Receive <DEL>

This selection allows you to either ignore the DEL control code (7Fh) when received, or to treat it as a Destructive Backspace (BS) code. The options are:

Ignore	Destruct BS

Send ACK

This selection allows you to decide whether or not the terminal should respond to inquiry (05h) or, when certain terminal functions are performed (i. e., configuring the EIA (Aux) ports), with the ACK (06h)

character. The options are:

Off	On

Null Suppress

In the default mode (*On*), the host ignores all received nulls (00 hex). When you select the *Off* option, the terminal accepts all received nulls and acts according to the selected emulation. The options are:

On	Off

Break

Select the duration of the break signal in milliseconds. This is an interruption in data flow and can be disabled. The options are:

250 ms	**170 ms**	500 ms	Off

Modem Control

If you use a modem to communicate with the primary or secondary host, you should turn on modem control. To perform a disconnect, the terminal drops the DTR signal. In full duplex, the terminal keeps RTS high and checks for a CD signal before sending data to the modem. In half duplex, it raises RTS and awaits a clear-to-send (CTS) signal from the modem before sending data. The options are:

On	**Off**

Disconnect

Select the maximum time period that the modem can be disconnected (or the modem line can be down) before the terminal performs a Modem Disconnect. This occurs if EIA (Aux) Modem Control is on. The options are:

2sec	60ms

Asterisk

Selects whether you want the line transmission indicator (*) to appear in the status line or not. The options are:

Off	CS	DM	RR

Send Line Term

Select which line terminator is to be sent:

- <US> is 1Fh
- <CR><LF> is 0Dh 0Ah.

The options are:

<US>	<CR><LF>

CS(CB) Xmit

Selects the appropriate state for the transmission control line. The options are:

Off	On

Local

Select whether or not keyed data is interpreted locally by the terminal and not sent to the host. Data sent by the host is lost if the Local function is on. The ability to print data is not affected by this mode. The options are:

Off	On

Send Block Term

- **ASCII Emulations**. Select which ASCII character indicates the end of a block. The options are:

<ETX>	<CR>

- **ANSI Emulations.** Select which ANSI character indicates the end of a block. Select the <*FF*> ANSI character to indicate the end of a block. If no option is selected (*None*), the end of block indicator will not be set. The options are:

None	<FF>

Send End

Select the scroll region or cursor location to indicate the *End*. The options are:

Cursor	Region

Send Region

Select *screen* or *scroll* as the region from which the terminal sends data. The options are:

Screen	Scroll

Alt Input Data

Select whether or not data from the second serial port is sent to the host. The options are:

On	Off

Local Echo

The *On* option specifies that the characters you type are displayed on the screen and sent to the host computer. The *Off* option specifies that the typed characters are not displayed on the screen but are sent to the computer (although most computers echo them back to the screen). The options are:

Off	On

Ignore CTS

Select whether or not to process the *Clear To Send (CTS)* signal from the host. Selecting the *Off* option begins the process. The options are:

On	Off

Block Terminator

Specifies the character that the terminal transmits at the end of a transfer operation.

RS	Enter keyboard data to change the value

Field Separator

Specifies the character that the terminal transmits at the end of each protected field in *Block* mode when you press **Enter**.

US	Enter keyboard data to change the value

Print Menu (F8)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Print

HPTerm only. Specifies how your printer handles national characters. The options are:

Ext Roman	ROMAN8

Escape Transfer

HPTerm only. Controls the transfer of escape sequences to a printer. The options are:

Off	On

CS(CB) Xmit

HPTerm only. Sets the correct state for the transmission control line. The options are:

Off	On

Print Mode (ANSI Emulations)

Select print control. The options are:

Normal	Auto	Controller

Print options are listed below:

- The *Normal* option indicates that printing is to occur when a print request (such as print screen) is received.
- The *Auto* option prints a line when the terminal receives a LF, a FF, or a VT code, or when autowrap occurs.
- The *Controller* option indicates that host data is sent to the printer (pass-through mode). The host computer controls printing.

Print Block Term

- **ASCII Emulations.** Select the character that tells the printer that the block of data to be printed has terminated.

<EXT>	<CR>

- **ANSI Emulations.** Select the character that tells the printer that the block of data to be printed has terminated.

None	<FF>

Print Region

Select the area of the screen that is to be printed. The *Screen* option selects the entire screen for printing. The *scroll* option selects that limited portion of the screen designated by applications programs (such as word processors) for printing. The options are:

Screen	Scroll

Print Line Term

Select the option that indicates the <R> character designated to terminate a line of print. The options are:

<US>	<CR><LF>

Secondary Recv

When you select the *On* option, the data received from the serial printer goes to the port assigned to the host and will not appear on the screen. When you select the *Off* option, the data received from the printer port is ignored. The options are:

Off	On

Print (ANSI)

Select the set of characters used when printing the ANSI character set. The options are:

National	Line Drawing	Multinational

Print (HPTerm Only)

Specifies whether or not you send all of a form or just the unprotected and transmit-only fields to a printer.

Fields	Off

Printer Nulls = 000 (HPTerm Only)

Selects the number of null codes to be transmitted to a printer after each ASCII control code. The options are:

0 to 255

Emulation Menu (F9)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

The parameters displayed in this menu depend on the current emulation. This section includes parameters for HPTerm, ASCII, and ANSI emulations.

HPTerm Emulation

- **Xmit Functions**. Specifies that escape code functions are to be executed either at the terminal (*No*) or transmitted to the host computer (*Yes*). The options are:

No	Yes

- **Inhibit Handshake**. Determines the type of handshaking to be used when transferring blocks of data to a computer. The options are:

No	Yes

- **Block Xfer Trigger**. The *DC1* option specifies that it is recognized as the block transfer character. The *DC4* option specifies that it is the block transfer character. The *Both* option specifies that both DC1 and DC4 are recognized as block transfer characters. The options are:

<DC1>	<DC4>	Both

- **Space Overwrite**. Specifies whether or not spaces entered at the keyboard write over (erase) existing characters. The options are:

No	Yes

- **Inhibit DC2**. Determines the block transfer handshaking method. The options are:

No	Yes

- **Start Column**. When selected, the terminal ignores any characters to the left of the start column you specify in this field. The options are:

1 - 80

- **Terminal ID**. Identifies the terminal for computer applications. Enter data required for your task.
- **Xmit Extent**. Specifies *line* or *page* transmission when the terminal is in *Block* mode.

Line	Page

- **Enq/Ack Pacing**. Selects whether or not the Enquire (Enq) or Acknowledge (Ack) type of handshaking protocol is used.

Yes	No

- **Inh Eol Wrp**. *No* specifies that the characters entered automatically wrap to the next line after the right margin is reached. *Yes* inhibits end-of-line wrap.

No	Yes

ASCII Emulations

- **Page Edit**. When page edit is *On*, edit features, such as *insert*, are active to the end of the current text page. The options are:

Off	On

- **WPRT Intensity**. Select the intensity of write protected characters . The *Suppress* option indicates that the character's foreground is the same as its background, thereby "suppressing" output. The options are:

Dim	Normal	Suppress	Dim-Supp

- **WPRT Underline**. Select the write-protected character underline function. The options are:

Off	On

- **WPRT Blink**. Select the write-protected character blink function. The options are:

Off	On

- **WPRT Reverse**. Select the write-protected character reverse-video display function.

  The options are:

Off	On

- **Fkey Speed**. Select the speed at which function keys and labels are programmed by the host. *Fast* mode increases the speed for *Wyse 50* compatibility but limits the amount of space in each function key and answerback message to 8 bytes. The edit keys are not available for programming in fast mode. Changing this selection changes the defaults for all the function keys, edit keys, and function key labels. The options are:

Fast	Normal

- **Save Labels**. When *On*, labels that are downloaded by the host will be saved in non-volatile memory. If this selection and Display NV Labels are *Off,* labels written by the host are lost upon entry to and exit from Setup. The options are:

Off	On

- **Attribute**. Select the extent to which attributes are propagated (The only parallel ASCII emulations are

PC Term and *Wyse 60*.). The options are:

Char	Line	Page

- **Display NV Labels**. Select on which line the labels in non-volatile memory will appear. When you select the *Off* option, any existing labels remain on the screen until you select the *On* option, when they refresh. Labels are displayed as follows:
  - ❏ On a 26-line screen, they appear below line 24.
  - ❏ On a 44-line screen, labels appear below line 42.
  - ❏ On a 52-line screen, they appear below line 50. (The top line is the top status line and cannot be used for data.)
  - ❏ If the page length used is a multiple of 25 (instead of 24) and the screen length is 26 lines, then the last data line is used for data and labels do not appear, regardless of this setting.
  - ❏ If the page length used is a multiple of 43 (instead of 42) with a screen length of 44 lines.

  The options are:

Off	On

- **Status Line**. Select the type of status line. In the *Standard* mode, cursor row and column, emulation indicator, print indicator, Caps Lock, and communications mode appear. In the *Extended* mode, only emulation indicator, Caps Lock, communications mode, protect, and write protect appear. The options are:

Standard	Extended	Off

- **Char Set**. Select either the 7-bit national chart character set or the 8-bit multinational chart character set when the language selected is not U.S. If you select U.S., the character set becomes Multinational. The options are:

Multinational	National

- **Bright Video**. Provides a brighter display when set to Mode 1 or Mode 2. In Mode 1, normal and dim text is brighter than in the standard mode. In Mode 2, normal text is brighter, resulting in greater contrast between normal and dim text. The options are:

Off	Mode 1	Mode 2

ANSI Emulations

- **Numeric Kpd**. Select either numeric or application data strings to be sent by the numeric keypad. The options are:

Numeric	Application

- **Cursor Kpd**. Select either numeric or application data strings to be sent by the Cursor Control keypad. The options are:

Cursor	Application

- **Send Data**. Select whether or not the data sent to the host is *All* data (erasable and selectively erasable) or only those characters tagged as *Erasable*. The options are:

All	Erasable

- **ANSI-ID**. Provide identification for the terminal. The options are:

VT100	VT101	VT102	VT220	VT320

- **Function Key Lock**. Function keys may be locked or modified by the host. The options are:

Off	On

- **Char Set**. Select either the 7-bit *National* chart character set or the 8-bit *Multinational* chart character set when the language selected is not U.S. If you select U.S., the character set becomes Multinational except when the emulation is VT100. The options are:

Multinational	National

- **Feature Lock**. When on, the host cannot change the following user features:

key repeat	scroll speed	screen background	tab stops	keyboard lock.

Off	On

- **Status Line**. Specify the way in which the status line is to be used for host messages. The options are:

Off	Indicator	Host-Write	Both

Tabs Menu (F10)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

The example shown below is a representation of the screen display for this menu.

Parameters		
Auto Init tabs - Off	**Default Tabs**	**Tab=Field**
10 20 40 50 60		
. . . . : . . . . ? . . . . : . . . . ? . . . . : . . . . ? . . . . : . . . . ? . . . . : . . . . ? .		

Choices		
Off On		
Select		
←↑→↓ : Parameter	Enter/S-Enter : Next/Prev Choice	Exit : Esc Key

Auto Init Tabs

When on, tab settings always default at power up as described under the next setting. The options are:

On	**Off**

Default Tabs

This action field sets tabs at every eighth column starting at column 9.

When the cursor is placed in the Tab Map, the keys below will appear in the Choices field:

<Space>[a] –	Clears the current tab setting.
<Shift> <Backspace> –	Clears all tab settings.
<T >[b] –	Sets a tab at the current location.

< ← ↑ → ↓ > –	Moves the cursor on the Tab map or back to a Parameter field above the map.

a. The Space bar may not be labeled. It is the long bar at bottom center of the alphanumeric keypad.
b. Either upper or lower case character may be used.

Tab (HPTerm Only)

Specifies the **Tab** key for generation of ASCII space codes or ASCII tab codes for applications requiring this function. The options are:+

Tab	Spaces

Answerback Menu (F11)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

Parameters		
Answerback Mode = Off	Answerback Conceal	
Answerback message: _____ Bytes Remaining: 0542		
Choices		
Off On		
Select		
←↑→↓ : Parameter	Enter/S-Enter : Next/Prev Choice	Exit : Esc Key

Answerback Mode

Select the answerback message (sent to the host at terminal reset or power up) mode. This mode can be used to log-in to the system. The options are:

On	**Off**

Answerback Conceal

Selecting this action parameter displays *Concealed* in the answerback edit field. Once it is concealed, the message cannot be re-displayed. This parameter is a security measure for those who use answerback to send their login names and passwords to the host.

Answerback Message

This is a 30-character field that can be edited (Refer to *Fkey Speed* under the *Emulation Menu (F9)*).

NOTE When ASCII Fkey Speed is set to *Fast* in the *Emul (F9)* menu, the answerback edit field is

limited to 8 bytes.

Program Menu (F12)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

The example shown below is a representation of the screen display for this menu.

Parameters		
Key = F1	Program = F/Key	Key Dir = comm Dependent
Text: _____ _____ _____ _____ Label: _____		Bytes Remaining: 0542
Choices		
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12		
Select		
: ←↑→↓ Parameter	Enter/S-Enter : Next/Prev Choice	Exit : Esc Key

Program

Specify the type of key to be programmed -- function or edit; normal or shifted.

NOTE When ASCII Fkey Speed is set to *Fast* in the *Emul (F9)* menu, the program menu options are F/Key and Shift-F/Key.

Key Dir

Select the destination of the contents of the function or edit key. *Comm Dependent* will cause the direction of the key data to correspond with the *Comm Mode* of the current emulation. For example, if the *Comm Mode* is *Full Block*, the contents of the key will be channeled to the screen only. However, if *Comm Mode* is *Full Duplex*, the contents would be sent to the host only. The options are:

Comm Depend	**Host**	Printer	Printer & Host	Screen	Host & Screen	Printer & Screen	All

Text

The text field is an edit field that permits entry of up to 255 characters. Once the overall text limit (up to 542 characters) is reached, the terminal beeps and will accept no more text. If text is deleted with the backspace key, then the text limit default code is no longer on. Shift+Backspace restores the default. Refer to *Fkey Speed* under the *Emulation Menu (F9)*.

Label

You can type a label of up to 16 characters for function keys in HPTerm emulations.

You can type a label of up to 7 characters for function keys in all othe emulations. See “Display NV Labels” under the *Emulation Menu (F9).* The following options apply:

<Backspace> --	delete
<Shift> <Back> --	default field

Key

Select the key to be programmed. The keys that are listed as choices depend on Program parameters, as shown below:

When Program = F/Key or Sh-F/Key, the choices are:	**F1**, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12.
When Program = Edit Key or Sh-Edit Key, the choices are:	**Tab**, Esc, Backspace, Delete, Return, Home, ←↑→↓ , EnterKpd, Insert, PageDown, PageUp, End, Print.

TIP To program an ESC (escape) character into the key text, press **Ctrl+[**. To program a DEL character into the text field, press **Ctrl+Shift+*** (alphanumeric keypad). To program a carriage return or line feed into the key text field, press either **Ctrl+M** or **Ctrl+J**.

To program the **Print Screen** key to perform a local print screen (page) function: press **Ctrl+[** and then **P** in the key text field. Next, set the, *Key Dir=Screen* option.

NOTE The **Print Screen** key programming function is not available with HPTerm.

Execute Menu (Prnt Scrn)

NOTE This section lists all parameters for this menu and all selections for each parameter. Depending on the emulation selected and the key mode (ASCII or ScanCode), Setup will only present the valid set of parameters and options in each menu.

The factory default emulation is HPTerm. Default options are shown in **bolded** text.

This menu consists entirely of action parameters. Terminal parameters affect all settings, including the emulation. Emulation options affect only settings that relate to the selected emulation.

- **Save Terminal:** Saves all settings in non-volatile (permanent) memory.
- **Recall Terminal:** Reverts to all terminal settings that were saved in nonvolatile memory. This command also performs a "reset terminal" action.
- **Reset Terminal:** Initializes all terminal parameters. This command also resets pages and restores the default modes. Called a hard reset, it has the same effect as turning the terminal off and back on.

  Page resets are executed when the terminal is reset or defaulted. When a page reset is performed, it affects all pages, and the following events occur:

  - ❏ The page is erased, the cursor is homed, and scrolling regions are defaulted.
  - ❏ All line attributes (such as double-high/wide, locked lines) are reset to normal.
  - ❏ The protect mode is turned off.

- **Default Terminal:** Loads all the defaults associated with HPTerm emulation.
- **Save Emulation:** Saves all the settings associated with the selected emulation.

- **Reset Emulation:** Initializes all settings. Called a Soft Reset, this action resets many of the terminal's opeating parameters to the default settings. It does not alter the terminal's nonvolatile memory, character set selection, or user-programmed keys. It does not cause a host disconnect.
- **Recall Emulation:** Loads the previously saved settings associated with the chosen emulation.
- **Default Emulation:** Loads all the defaults associated with the selected emulation.

- **Reset Ports:** Clears the transmit buffers for the host and printer port and the receive buffer for the host port. Unlocks the keyboard and clears its buffer data.

- **Clear Screen:** Clears the screen and the entire page.

- **Default UDKs:** Sets the contents of all the function and edit keys associated with the selected emulation to their factory default states.

3 Accessories

Desk Accessories

Overview

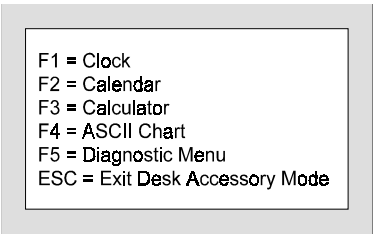
This terminal features five desk accessories that can be opened individually through pop-up windows.

Desk Accessory Menu

To see a menu listing the five desk accessories, press **Ctrl** + ← . Desk Accessories are assigned to function keys as shown in the following table:

This function key:	Displays this accessory:
F1	Clock
F2	Calendar
F3	Calculator
F4	ASCII Chart
F5	Diagnostic Menu

The menu that includes this information is displayed in a screen similar to the following:



NOTE To access this menu, the selection, Desk Acc = **Ctrl** + ← must be selected in the KEYS (F5) Setup menu.

Moving an Accessory Window

To reposition any desk accessory window on your screen, hold down the **Shift** key while pressing a cursor control (arrow) key.

Exiting an Accessory Window

To exit any window and restore the original screen, press **Esc**.

Blocking Access

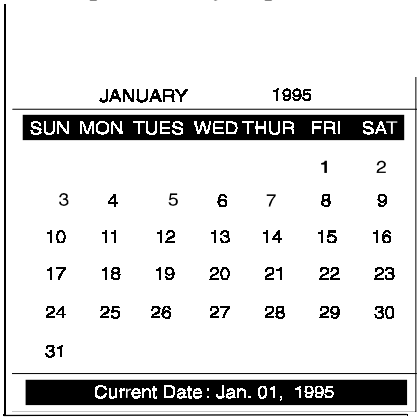
You can block access to the desk accessories by selecting the *Disabled* value for the *Desk Acc* option in the *Keys (F5)* Setup menu.

Calendar

This desk accessory consists of a calendar for any month from the years 1900 to 2099. The current date is displayed at the bottom. The following keys control the calendar:

Press this key:	To do this:
→ (right arrow)	Display the previous month
← (left arrow)	Display the next month
↑ (up arrow)	Display the same month of the previous year
↓ (down arrow)	Display the same month of the next year
Esc	Close the Calendar window

The calendar (an example is shown below) updates as you press the arrow keys.

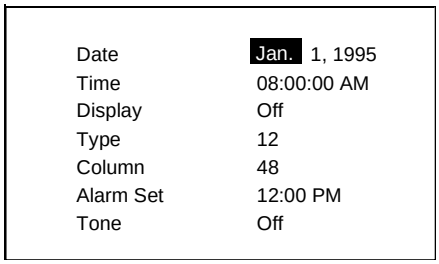


Clock

The following table describes the values you can set in the various fields of the clock menu:

This field	lets you:
Date	Set the current date. The host can also set the date.
Time	Set the current time. The host can also set the time.
Display	Select the Time only, the Date only, or both the Time and Date to appear on the top status line. You can also turn off the Date/Time display. The host can set the date display
Type	Select a 12- or a 24-hour display.
Column	Set the column (36–99) in which the date/time appears
Alarm Set	Select the time for an alarm (a 1-2 second bell tone) to sound.
Tone	Set alarm intervals: on the hour, on the Alarm setting only, or both on the Alarm setting and hourly. You can also turn off the alarm.

The clock menu is similar to the display shown below:



NOTE The terminal resets the clock to 08:00 AM at power-up. Also, due to hardware limitations, the clock may drift by 15 seconds per day. We recommend setting the terminal's time as part of the system login process.

The following table shows the keys you can use to change the values of the fields:

Press this key:	To do this:
→ (right arrow)	Highlight the previous field
← (left arrow)	Highlight the next field

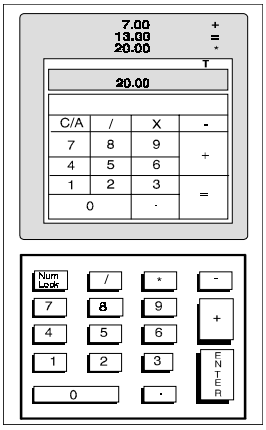
Press this key:	To do this:
 (up arrow)	Highlight the previous line
 (down arrow)	Highlight the next line
Spacebar	Choose the previous option for the highlighted field
Shift+spacebar	Choose the next option for the highlighted field
Enter (numeric keypad)	Revert to the default setting for the current field
Esc	Save your changes and close the window

Calculator

The calculator can process up to 10 digits to the left of the decimal point and up to 9 to the right. When you press a number or number operator, it momentarily highlights on the display. The following table shows the number operators:

This operator:	Does this:
+, -, /, *	Adds, subtracts, divides, or multiplies.
MS	Stores the displayed value in memory.
MR	Displays the stored value.
M+	Adds the displayed value to the value in memory.
+/-	Make a number positive if it is negative and negative if it is positive.
C/A	Displays 0.0 when pressed once. When pressed twice, it clears memory.

The numeric keypad located on the right side of the keyboard serves as your calculator. The figure below relates the display to the keys on the numeric keypad that control it.



Calculator Display (EPC Keyboard)

In addition to the numbers and operators on the keypad, you can use some keys on the alphanumeric portion of the keyboard, as described in the following table:

Press this key:	To do this:
T	Toggle Tape mode on and off. The results of your calculations scroll above the display.
P	Toggle Printer mode on and off. The results of your calculations go to the printer.
X	Transmit your most recent result to the current application and closes the calculator.
Ctrl+n (numeric keypad number)	Specify the precision, where the number of decimal places to be displayed is equal to the number pressed with the **Ctrl** key.

Press this key:	To do this:
Esc	Close the calculator.

NOTE Use the printer option only when a printer is connected. Press **Ctrl** + **Shift** + **Tab** to clear a printer error.

ASCII Chart

Characters in the ASCII Chart window (shown below the following table) appear in decimal, octal, hexadecimal, and binary number representations. The CHAR column contains the ASCII representation of the character. Use the following keys to control and change the display of the ASCII chart:

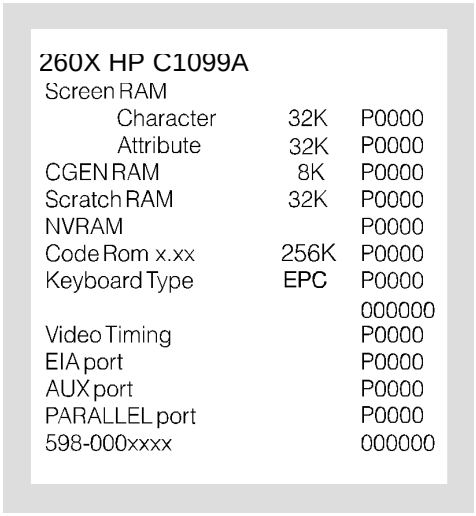
Press this key:	To do this:
↑	Move to the previous character in the ASCII Chart.
↓	Move to the next character in the ASCII Chart.
←	Move to the previous font in the terminal's font list.
↓	Move to the next font in the terminal's font list.
CTRL+↑	Move the cursor up one line. The ASCII Chart moves to re-center itself on the new character.
CTRL+↓	Move the cursor down one line. The ASCII Chart moves to re-center itself on the new character.
CTRL+←	Move the cursor to the previous character. The ASCII Chart moves to re-center itself on the new character.
CTRL+→	Move the cursor to the next character. The ASCII Chart moves to re-center itself on the new character.
ESC	Close the Chart window.

When you open the ASCII Chart window (shown below), it appears centered on the character on which your cursor was last placed, and that character is highlighted.

NOTE Upon exit, the cursor will be restored to its previous location at the time of entry to the desk accessories.

Diagnostic Window

This desk accessory (shown below) lets you see terminal configuration information, such as the amount of Random Access Memory (RAM) in the terminal, the style of keyboard that you are using, and the firmware revision level.



If you require technical support, this menu provides a means for our support team to quickly assess your terminal installed options.

To close the Diagnostics window, press **Esc**.

Local Keys

Non-HPTerm Emulation Local Keys

Action	Scan Code Mode	PC Keyboard
Toggle Caps Lock	No	Caps Lock
Toggle Num Lock	No	Num Lock
Toggle Scroll Lock[a]	No	Scroll Lock
Toggle Auto Print[b]	Yes	Ctrl+Print Screen
Toggle Block Mode	Yes	Ctrl+Shift+Pause
Toggle Monitor Mode	Yes	Ctrl+Shift+1 or Ctrl+Shift+End
Toggle Ins/Replace	No	Ctrl+Insert
Instant Screen Saver[c]	Yes	Ctrl+Shift+Num Pad*
Soft Reset[d]	No	Shift+Scroll Lock
Hard Reset (Power On)	No	Ctrl+Shift+ Scroll Lock
Break[e]	Yes	Ctrl+Pause
Modem-Disconnect[f]	No	Pause
Send Answerback	No	Shift+Pause
Print Page	Yes	Ctrl+Shift+Num Pad+ Del
Increment Scroll Rate[g]	Yes	Ctrl+Shift+ ↑
Decrement Scroll Rate[g]	Yes	Ctrl+Shift+ ↓
Change Status Line[h]	Yes	Ctrl+ →
Home & Clear Page	Yes	Ctrl+Shift+Home
Enter Desk Accessory Mode	Yes	Ctrl+ ←
Enter Setup Mode[i]	Yes	Ctrl+Scroll Lock
Exit Setup Mode[i]	Yes	Pause
Exit Any Desk Accessory	Yes	Esc
Display Page 0[j]	No	Ctrl+0\Ins

Action	Scan Code Mode	PC Keyboard
Display Page 1[j]	No	Ctrl+1\End
Display Page 2[j]	No	Ctrl+2\↓
Display Page 3[j]	No	Ctrl+3\Page Down
Display Page 4[j]	No	Ctrl+4\←
Display Page 5[j]	No	Ctrl+5
Display Page 6[j]	No	Ctrl+6\→
Display Page 7[j]	No	Ctrl+7\Home
Program Banner	No	Ctrl+Tab
Roll-Window-Up[k]	Yes	Ctrl ↑
Roll-Window-Down[k]	Yes	Ctrl ↓
Auto Adjust Window	Yes	Ctrl+Home

a. This function is operational only if EIA (Aux) Recv = Xon-Xoff/XPC or DTR.
b. In ANSI emulations, this keystroke toggles the Print Mode between Auto and Normal.
c. This function is operational even if Screen Saver is set to off.
d. This function unlocks the keyboard, turns off all print modes and re-initializes the serial ports for setup parameters.
e. The length of the Break Signal is dependent on the setup parameter of “Break” in the “Host” menu.
f. This keystroke is dependent on the “disconnect” setting in the “Keys” (F5) setup menu.
g. The Increment Scroll Rate toggles the scroll rate to the fastest smooth scroll. This function also stops at the jump scroll. The Decrement Scroll Rate toggles from jump scroll to the fastest smooth scroll toward the slowest smooth scroll.
h. The Change Status Line function will toggle in the status line display from “Indicator” to “Host Write” to “Both” to “Off” in ANSI Emulations and “Standard” to “Extended” to “Off” on ASCII Emulations.
i. For other keystrokes for these functions, refer to Chapter 2, “Using Menus.”
j. These keys select the next or previous pages. Wrapping takes place from the last page to the first and vice versa.
* Not available with HPTerm.
k. Not available with ANSI emulations.

NOTE In Scan Code Mode, this chart applies only when Local Leadin is on.

HP Emulation Local Key Layout

HP KEY FUNCTIONS	PC EQUIVALENT
ESC	ESC
F1	F1
F2	F2
F3	F3
F4	F4
F5	F5
F6	F6
F7	F7
F8	F8
Menu	F9
User/System	F10
Clear Line	F11
Clear Display	F12
Stop	Scroll Lock
Break - 180 ms	Ctrl + Break
Break - 2 sec	Ctrl + Shift + Break
Soft Reset	Ctrl + SysRq
Hard Reset	Ctrl + Shift + SysRq
Insert Char	Insert
Delete Char	Delete
Wrap Insert Char	Shift + Insert
Wrap Delete	Shift + Delete
Insert Line	Ctrl + Insert
Delete Line	Ctrl + Delete
Prev	Page Up
Next	Page Down
Home Down	Home
Home Up	End
Scroll Down	Shift + ↓
Scroll Up	Shift + ↑
Extend Char	Alt
Toggle Caps-Lock	Caps Lock
Toggle Num-Lock	Num Lock
Toggle Monitor-Mode	Ctrl + Shift + End\1
Print-Page	Ctrl + Shift + Del\.
Instant Screen-Saver	Ctrl + Shift + * (num)
Program Banner	Ctrl + Tab
Print	Shift + Print Screen
Block Mode Enter	The keys next to the Ctrl keys

Page Configurations

Lines per Page	Number of Pages	
	80/132	80-only
24	8	10
48	4	5
96	2	2
192	1	1
*24	2 (24/176)	2 (24/200)
25	8	9
50	4	4
100	2	2
200	1	1
*25	2 (25/175)	2 (25/200)
42	5	5
84	2	2
168	1	1
*42	2 (42/158)	2 (42/198)
43	5	5
86	2	2
172	1	1
*43	2 (43/157)	2 (43/197)

NOTE When a page length (in the first column) is preceded by an asterisk (*), two pages are available. The first page contains the selected number of lines and the second page contains the remaining allowable lines in memory. For those combinations, this chart lists the number of lines as first page/second page, (for example, (43/57).

4 Communications

Communications Capabilities

Understanding Communications

This terminal is equipped with three data communication ports. The two serial ports are used for connecting a single host/modem and a serial printer. Only one datacomm connection can be used at a time. The remaining port is a Centronics-compatible printer port. The port you use as the printer port depends on whether you have a serial or a parallel interface to the printer.

The first host/printer serial port (SES1-EIA) can communicate with your computer or printer at a baud rate of 110 to 134,400 baud.

The second host/printer serial port (SES2-AUX) can communicate at speeds from 110 baud to 38,400 baud. Either port can be used to connect to a single host computer/modem or serial printer.

You can use either the second serial port or the parallel printer port as your printer interface. Refer to the following sections for further information on these ports.

Receive Flow Control

Because devices can receive data faster than they can process it, data flow control (selectable in the *Ports* menu of Setup) should be used to prevent data loss. Software flow control relies on the Xon and Xoff characters (“g” and “e” characters in Scan Code key mode) to indicate when the terminal is able or unable to store further data. The Xon signal transmits the DC1 character (11h) and the Xoff signal transmits DC3 (13h).

When you set “EIA (or Aux) Rcv” in the Setup menu for PORTS to “Xon-Xoff,” the terminal issues an Xoff character, signalling the host to stop transmitting data. The terminal will continue to process data until its receive buffer is empty. It then issues an Xon character to the host, indicating that it can resume sending data to the terminal.

NOTE If you set the “EIA (or Aux) Rcv” in Setup to “No Protocol”, the terminal will continue to accept characters into its receive buffer until it is full. Additional characters will be lost. Xon-Xoff protocol must also be set on the host computer or printer for proper handshaking.

The serial/host printer ports support both software- and hardware-based “receive” flow control (Xon-Xoff). The SES1-EIA port has an outgoing Data Terminal Ready (DTR) signal. If you set “EIA Rec” to “DTR” in Setup and the terminal’s receive buffer fills to the level mentioned above, the terminal will set the DTR signal low to inform the host (serial) device to stop sending data. On the SES2-AUX port, if you set “Aux Recv” to “DSR” in Setup, the outgoing Data Set Ready (DSR) notifies the host (serial) device that the terminal is not ready to receive more data.

Transmit Flow Control

Similar to the *Receive Flow Control* description above, the terminal understands the Xon and Xoff requests from the host when it is transmitting data (provided you set the “EIA (or Aux) Xmt” to “Xon-Xoff” in Setup.

This arrangement is referred to as “transmit” flow control.

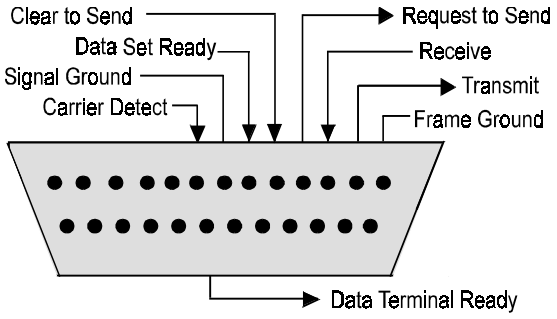
This terminal stops transmitting data to the host or printer when it receives an Xoff (DC3) code. However, if the terminal needs to send a receive protocol character, it transmits that character even if it has received an Xoff code. When the terminal stops transmitting, data are stored in the transmit buffer. Once the buffer is full, additional keyboard data is lost. When an Xon (DC1) character is received, the terminal can again send data to the attached serial device.

The serial host/printer ports supports both software- and hardware-based “transmit” flow control (Xon-Xoff). To control the flow of data to the serial/host ports, enable DSR on the SES1-EIA port and DTR on the SES2-AUX port monitor serial (provided EIA and AUX Xmit are “DSR” and “DTR”, respectively, in Setup).

For parallel printers, this terminal monitors the BUSY and ERROR signals that are sent by the printer to determine when data transmission should be stopped or resumed.

Host/Printer Port 1

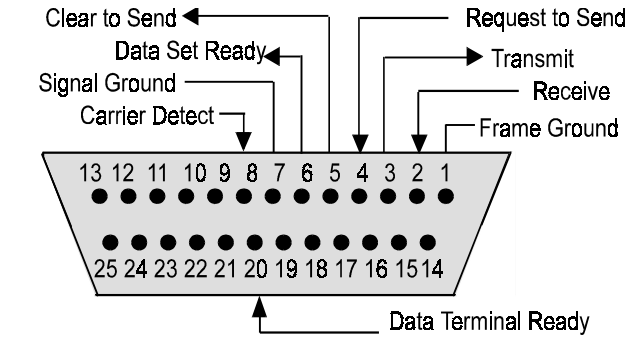
This port, labeled “SES1-EIA,” is designed for connection to the host (computer or modem) or a serial printer via a 25-pin D-shell (DB25P) female connector. This port uses an RS-232-C communication interface, is configured as a DTE (Data Terminal Equipment) device, and can operate from 110 to 134,400 baud. The supported pins are shown below:



Host/Printer Port 1 Pin Assignments

Host/Printer Port 2

This port, labeled “SES2-AUX,” is designed to connect to a host connection (computer or modem) or a serial printer, and can operate from 110 to 38,400 baud. This port uses an RS-232-C interface via a DB25P female connector, and is configured as a DCE (Data Communication Equipment) device. The following illustration shows the pins assignments:

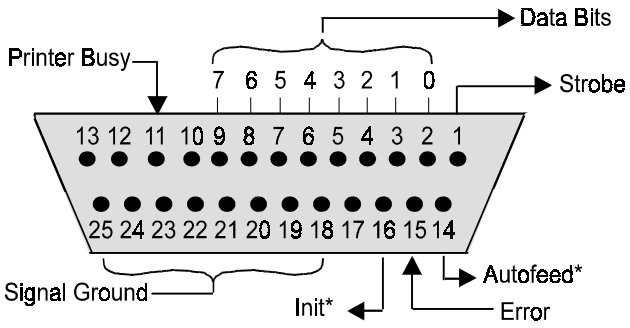


Host/Printer Port 2 Pin Assignments

NOTE Refer to the *Installation* section for details on connecting ports to serial devices (hosts, modems, or printers).

Parallel Printer Port

This port, labeled "PAR," is designed for connection to a parallel printer with a Centronics™ interface with a 25-pin D-shell female connector. This port, unlike the others, is a uni-directional device—it only sends data to the printer. It cannot receive data. The following illustration shows the supported pins and signals:



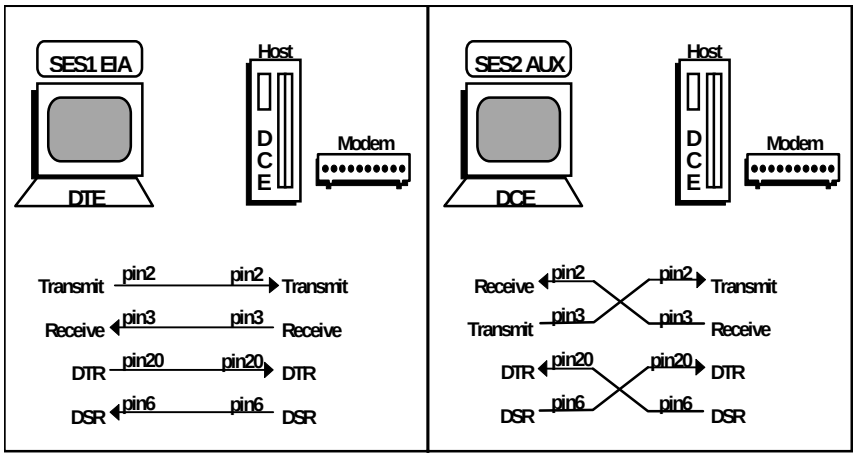
Parallel Port Pin Assignments

* These signals are held high, in an inactive state.

NOTE If you use a parallel printer but it is not connected, an error message will appear on the status line for each PRINT operation. To clear the message, press **Ctrl** + **Shift** + **Tab**.

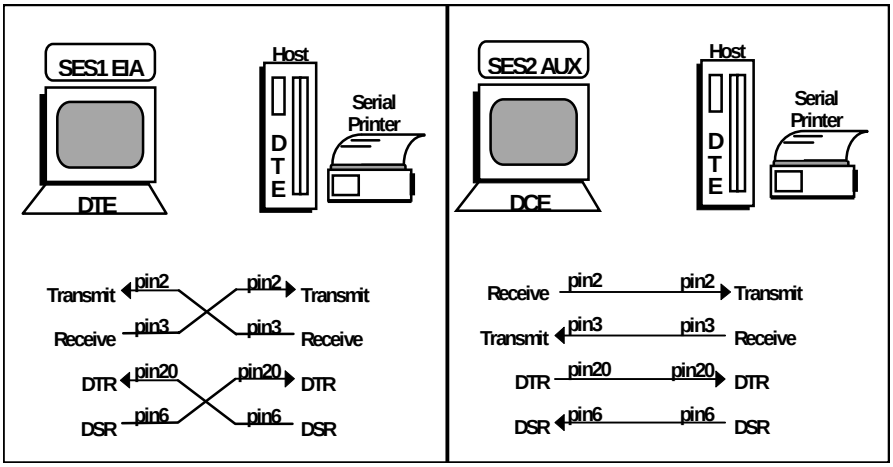
Terminal to Modem (DCE) or Host

Refer to the diagram below to understand why you may need a null modem adapter when connecting the second serial port (SES2-AUX) to a modem or a DCE host. The first host connects directly without a null modem since it is a DTE device.



Terminal to Host (DTE) or Printer

Refer to the diagram below to understand why a null modem adapter may be needed when connecting the first serial port (SES1-EIA) to a host port without a modem (most serial printers are DTE devices and most hosts are not). The second port (AUX) will connect directly, without a null modem, since it is a DCE device.



Screen Display

Understanding Screen Display and Pages

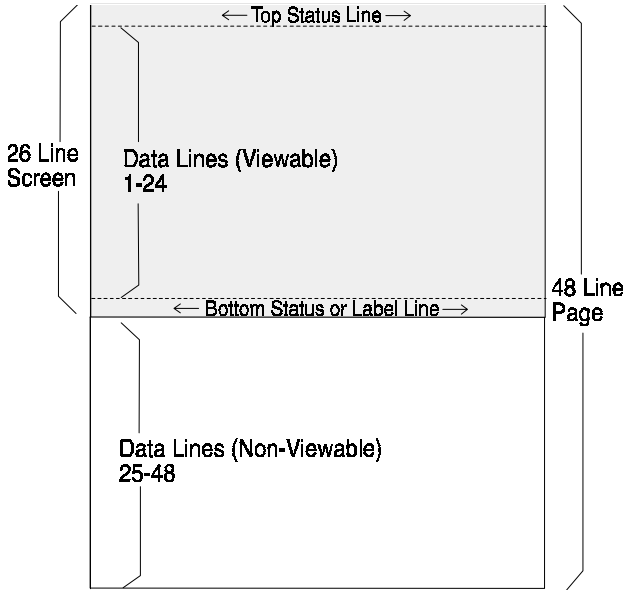
This terminal offers a variety of screen lengths, including 26, 30, 44, or 52 lines. These numbers include the top and bottom status lines (or label line), as well as the lines used to display data. A “page” of terminal memory represents the total number of lines that can be accessed, whether or not they are all viewable on the screen at once.

The page length is comprised of a base page length multiplied by 1,2,4, or 8. For instance, in certain modes, 24 (24x1), 48 (24x2), and 96 (24x4) are available, the same way that 25(25x1), 50 (25x2), and 100 (25x4) are. The base page length and the screen size determine whether a bottom status line (or label line) is displayed or not.

Bottom Status/Label Line Display

With a screen length of “26 lines,” the page lengths that are multiples of 24 allow the bottom status/label line to appear, while those that are multiples of 25 do not. The same idea applies with the 44-line screen size. A page length with 42 lines as a base page size leaves room for a label line, while the 43 line base page length does not. The label line appears if the screen length is significantly larger than the page size, such as if the screen is 44 lines and the page length is 25 lines.

The figure below represents the entire page memory of a 48 line page (24 base page length times a multiplier of 2) and the portion of the page that is viewable on the display screen, when “26 Lines” is selected. Notice that the label line is visible in this mode.



Visual Effects of Screen and Page Lengths

The interaction of page and screen lengths influences the number of displayable data lines. For example, if the page length is 50 (25 x 2), and the screen length is 44 lines, the number of data lines that are visible at any one time is 43, with no label line (the other line is used for the top status line). On a 52-line screen, 50 of the 52 data lines are visible at one time in single session mode.

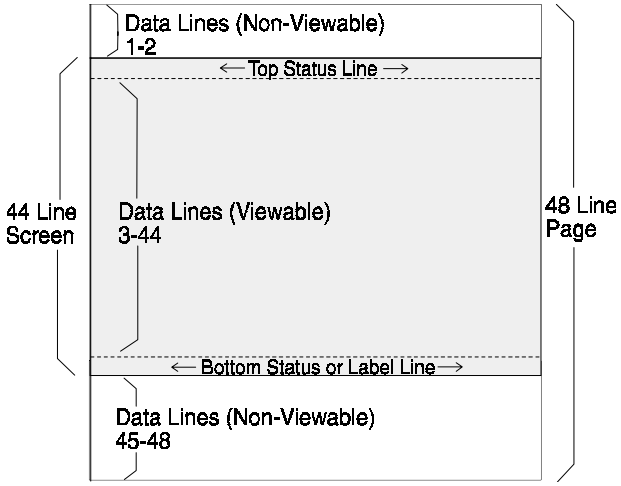
If the page length is shorter than the screen length, blank lines are present below the data line or status/label line. If the page length is larger than the allowable number of data lines, some of the rows are out of view. In order to bring them into view, scroll up or down as necessary.

NOTE An important difference exists between scrolling and panning. when you scroll with (↑) or (↓) you cannot return to the text that scrolls of the screen. When you pan with Ctrl + ↑ or ↓), you can retrieve text that has disappeared from view.

Scrolling or panning causes a new line to come into view when the cursor advances past the last or first row on the page. If the cursor moves beyond the last row, the top row of text disappears.

If the current page or portion of the page is longer than the screen display or window in which it is displayed, use Ctrl + ↑ and ↓) arrow keys to scroll the page up or down.

The figure below represents the display screen with a 48-line page length on a 44-line screen, after scrolling the window down two lines.



5 HPTerm

HPTERM Emulation

HPTERM Emulation Terminal Configuration

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

The terminal must be configured to operate correctly. This chapter shows the configuration menus available. Consult your Data Processing department or your system documentation for the terminal configuration parameter values required for your application.

Selecting Operating Modes

The terminal can be operated in several modes when connected to a computer. These modes are described in the following paragraphs. To display the modes labels, press F10, then *MODES*, then select a mode.

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

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

Select the mode required for your application. When Block mode is active, an asterisk appears in the label for example, *Block Mode**. When Character mode is selected the asterisk does not appear.

Auto LF
The *AUTO LF* function key selects whether or not a line feed is generated when the **Enter** key is pressed. When you select automatic line feed, an asterisk appears in the label (for example, *Auto LF**).

HPTERM Print Screen

Using the Terminal with a Printer

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

Selecting the Printer as the Destination

The destination is the “to” device for a data transfer. Selecting the printer as the “to” device allows data to be sent to it from the screen. To select a printer as the “to” device:

1. Select the System menu (F10), then press the*device control* function key.
2. Press the *TO EXT DEV* function key.

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

Data Logging

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

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

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

Screen Copy. To copy data that is currently on the screen, use the device control function keys (refer to “Device Control Labels” on page 83 or the Print key).

To use the function keys, select the System menu (F10), then the *device control* function key. Selct the function you want by pressing the appropriate function key shown in the following list.

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

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

A Function Keys

What Are Function Keys?

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

Uppercase labels

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

Lowercase labels

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

System Labels

The *System* key (F10) displays the system function labels.

System Labels Table	
Label	**New Label Set Function**
device control	Defines how you print information to a printer connected to the terminal.
margins/tabs/col	Formats the display of information on the screen.
modes	Selects the operating modes.
enhance video	Selects one or more video enhancements.
define fields	Provides field choices for creating forms.
config. keys	Calls up menus to select the operating characteristics

Device Control Labels

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

Device Control Labels Table	
Label	**Function**
device modes	Defines how you print information to a printer connected to the terminal.
TO EXT DEV	Sets the terminal to print data to a connected printer.
TO DISPLAY	Sets terminal to print data to the display. (Valid only when Record mode is on.)
ADVANCE PAGE	Advances the printer to a new page.
ADVANCE LINE	Advances paper in printer one line.
COPY ALL	Prints all the data from the line containing the cursor to the last line of data in memory.
COPY PAGE	Prints all data from the line containing the cursor to the last line displayed on screen.
COPY LINE	Prints the line containing the cursor.

Device Modes Labels

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

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

Margins, Tabs, and Column Labels

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

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

Modes Labels

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

Modes Labels Table	
Label	**Function**
LINE MODIFY	Allows editing of text without having to retype the entire line. Operates only while Remote mode is active and Block mode is off. To edit a line, press Line Modify, edit the text, then press Return or Enter to transmit the edited line to the computer (Line Modify automatically turns off).
MODIFY ALL	Allows editing of the entire text. Modify All mode remains on after you press the Return or Enter key. Press MODIFY ALL again to exit Modify All mode.
BLOCK MODE	In Remote mode operation, sends text to the computer all in one block. Characters appear on the screen as you type them, but are not transmitted to the computer until you press the Enter key. When Block mode is off, the terminal transmits characters to the computer as you type them.
REMOTE MODE	Sets the terminal to operate "online" with the host computer. Turning off Remote mode puts the terminal offline for Local mode operation.
SMOOTH SCROLL	Sets the display to scroll your information in an even flow, rather than "jumping" the lines.
MEMORY LOCK	**Overflow Protection**: To ensure against data loss when memory is full, select Memory Lock while the cursor is in the first screen line. When the end of memory is reached, the keyboard locks, the terminal beeps and the message, *MEMORY FULL*, appears on the screen. To continue entering text, press Return to unlock the keyboard, then delete some text or turn off Memory Lock. **Display Lock:** You can also "freeze" data on the screen by turning on Memory Lock in a line of text. All lines above the cursor's current line become locked in place on the screen. Then enter data normally. When the screen fills up, any further data entered forces the first line of unfrozen text to scroll under the frozen data. Lines scrolled off the screen are inserted into memory immediately preceding the first frozen line.
DISPLAY FUNCTNS	Allows you to enter control characters on the screen without having the terminal perform the control operations indicated (carriage return and linefeed are displayed and executed.)
AUTO LF	Sets the terminal to advance the cursor to the next line when you press Return, which normally places the cursor at the beginning of the current line.

Enhance Video Labels

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

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

Format Mode

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

You use the define fields set to logically define fields within a form.

Defining Fields

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

Protected Fields

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

Unprotected Fields

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

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

Transmit-Only Fields

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

B Installation Note

Note to Installers

This equipment complies with the FCC Regulation for Class A devices, Subpart J of Part 15. Shielded, grounded interface cables were used on all ports for FCC radiated emission testing. Only qualified service personnel should perform installations.

The manufacturer is not responsible for any violation of the FCC Regulation for Class A devices that is caused by unauthorized modification of the equipment, or caused by equipment installation not in accordance with the instructions in this manual.

This equipment generates, uses, and can radiate radio frequency energy and may cause radio or television interference. All user equipment that interfaces with other products should be connected with shielded cables. (Contact a local dealer for more information on shielded cable assemblies and their availability.)

There is no guarantee that interference will not occur. If radio or television interference occurs (this can be determined by turning the equipment off and on while the radio or television is on), the user is solely responsible for correcting the interference and is encouraged to take one or more of these measures:

- Reorient the receiving antenna.
- Relocate the equipment, or move the equipment away from the receiver.
- Plug the equipment into a different outlet so the unit and receiver are on different branch circuits.
- Consult the dealer or an experienced radio/television technician.

It is also suggested that the user read the FCC booklet entitled “How to Identify and Resolve Radio-TV Interference Problems.” The booklet is available from the US Government Printing Office, Washington, DC 20402. (When ordering the booklet, specify stock number 04-000-00345-4.)

Site Preparation

The screen display geometry on terminal products is aligned using magnetic devices. External magnetic fields created by other types of electronic equipment, such as printers, in very close proximity to the terminal, may cause minor display distortion.

Examples of display distortion include:

- Shaky video
- Wavy lines
- Tilted display

This magnetic field interaction only occurs over a very short distance, normally less than twelve inches, and can be corrected by separating the equipment and/or slightly reorienting the display.

A

Accessories, Desk, 3-59
Accessory Window
  Blocking Access, 3-60
  Exiting, 3-60
  Moving, 3-59
Accessory, Desk
  ASCII Chart, 3-66
  Calculator, 3-64
  Calendar, 3-61
  Clock, 3-62
  Diagnostic Window, 3-67
Accessory, Desk, Menu, 3-59
ASCII Chart (Desk Accessory), 3-66
ASCII Emulation (F9 - Emulation Menu), 2-49

B

Blocking Access (to Accessory Windows), 3-60
Bottom Status/Label Line Display, 4-77

C

Calculator (Desk Accessory), 3-64
Calendar (Desk Accessory), 3-61
Choosing a Port (Installing), 1-20
Clock (Desk Accessory), 3-62
Common Configurations, 1-23
Communications, Establishing (Installing), 1-21
Configurations, Common, 1-23
Connect or Disconnect the Terminal, How to, 1-19
Control, Flow
  Receive, 4-73
  Transmit, 4-73

D

Desk Accessories, 3-59
Desk Accessory
  ASCII Chart, 3-66
  Calculator, 3-64
  Calendar, 3-61
  Clock, 3-62
  Diagnostic Window, 3-67
Desk Accessory Menu, 3-59
Determining Your Devices (Installing), 1-20
Determining Your Serial Port Protocol (Installing), 1-20
Devices, Determining (Installing), 1-20
Diagnostic Window (Desk Accessory), 3-67
Disconnect or Connect the Terminal, How to, 1-19
Display, Bottom Status/Label Line, 4-77

E

Emulations, ASCII (F9 - Emulation Menu), 2-49
Establishing Communications (Installing), 1-21
Exiting an Accessory Window, 3-60

F

F2 (General Menu), 2-28
F9 - Emulation Menu (ASCII), 2-49
Flow Control
  Receive, 4-73
  Transmit, 4-73

G

General Menu (F2), 2-28

H

Host (DTE) or Printer, Terminal to, 4-76
Host DCE, Setting, 1-22
Host DTE, Setting, 1-22
Host or Modem (DCE), Terminal to, 4-76
Host/Printer Port 1, 4-74
Host/Printer Port 2, 4-74
How to Connect or Disconnect the Terminal, 1-19

I

Installers, Note to, B-91
Installing, 1-19
  (Host DCE), 1-22
  Choosing a Port, 1-20
  Determining Your Devices, 1-20
  Determining Your Serial Port Protocol, 1-20
  Establishing Communications, 1-21
  Setting (Host DTE), 1-22
  Setting (Parallel Printer), 1-23
  Setting (RS-232 with Modem), 1-22

K

Keys, Setup, 2-25

L

Label Line/Bottom Status, Display, 4-77

M

Map, Setup, 2-25
Menu
  Desk Accessory, 3-59
  General (F2), 2-28
Modem (DCE) or Host, Terminal to, 4-76
Moving an Accessory Window, 3-59

N

Note to Installers, B-91
Notes, Usage, 1-18

P

Pages and Screen Display, Understanding, 4-77
Parallel Printer Port, 4-75
Parallel Printer, Setting, 1-23
Port
  Choosing (Installing), 1-20
  Parallel Printer, 4-75
Port 1, Host/Printer, 4-74
Port 2, Host/Printer, 4-74
Preparation, Site, B-91
Printer or Host (DTE), Terminal to, 4-76
Printer Port, Parallel, 4-75

R

Receive Flow Control, 4-73
RS-232 with Modem, Setting, 1-22

S

Screen Display and Pages, Understanding, 4-77
Serial Port Protocol, Determining (Installing), 1-20
Setting
  Connections Parallel Printer, 1-23
  Host DCE, 1-22
  Host DTE, 1-22
  RS-232 with Modem, 1-22
Setup
  Map, 2-25
  Note to Installers, B-91
  Site Preparation, B-91
Site Preparation, B-91

T

Terminal
  How to Connect or Disconnect, 1-19
Terminal to Host (DTE) or Printer, 4-76
Terminal to Modem (DCE) or Host, 4-76
Transmit Flow Control, 4-73

U

Understanding
  Screen Display and Pages, 4-77
Usage Notes, 1-18

W

Window, Accessory
  Exiting, 3-60
  Moving, 3-59