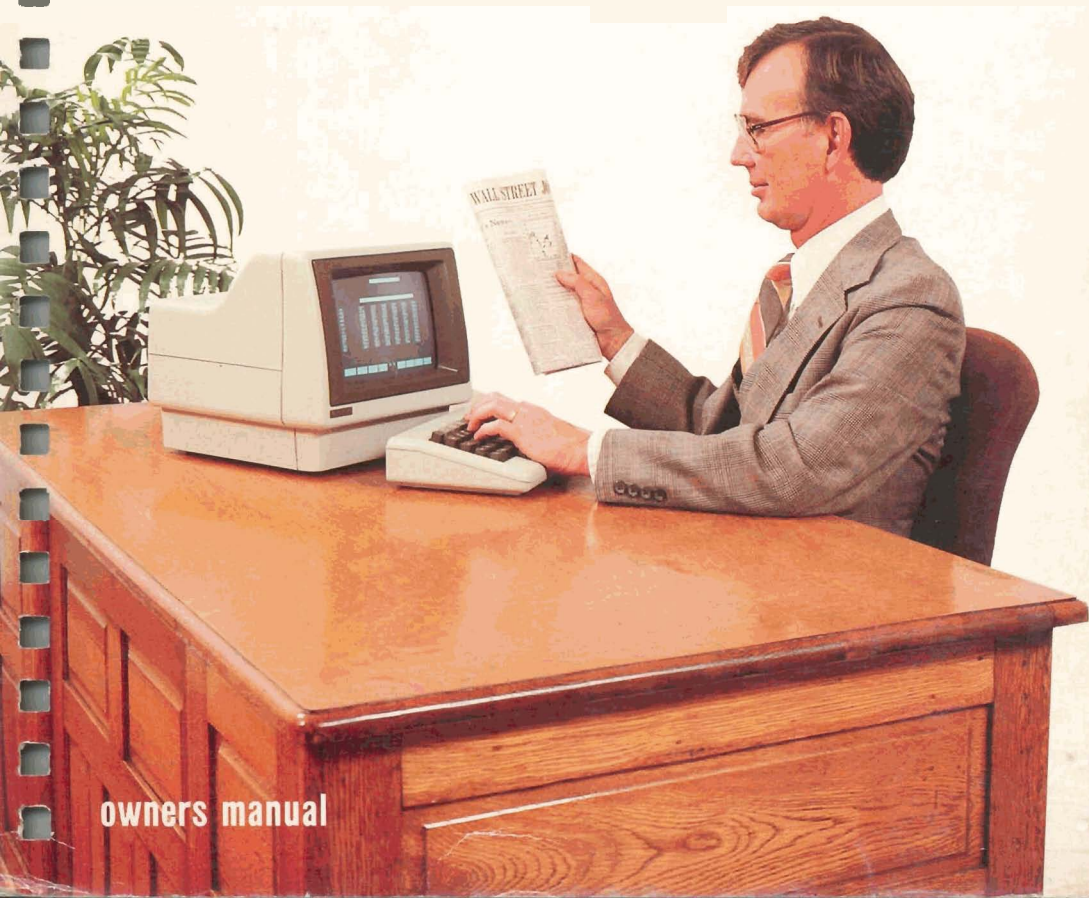


2382A

Office Display Terminal

 HEWLETT
PACKARD



owners manual

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

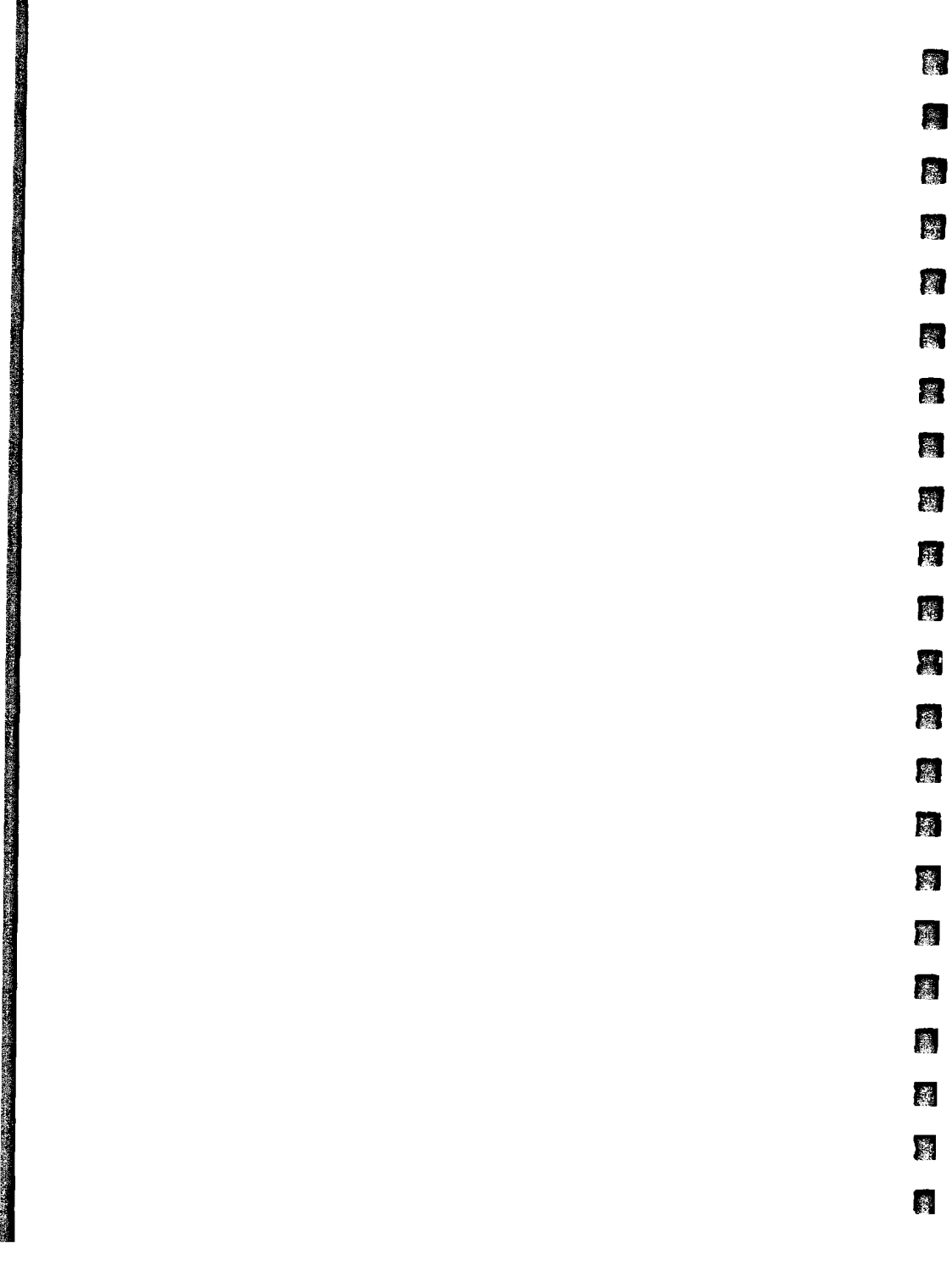
**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE
STATEMENT**

The Federal Communications Commission (in Subpart J, of Part 15, Docket 20780) has specified that the following notice be brought to the attention of the users of this product.

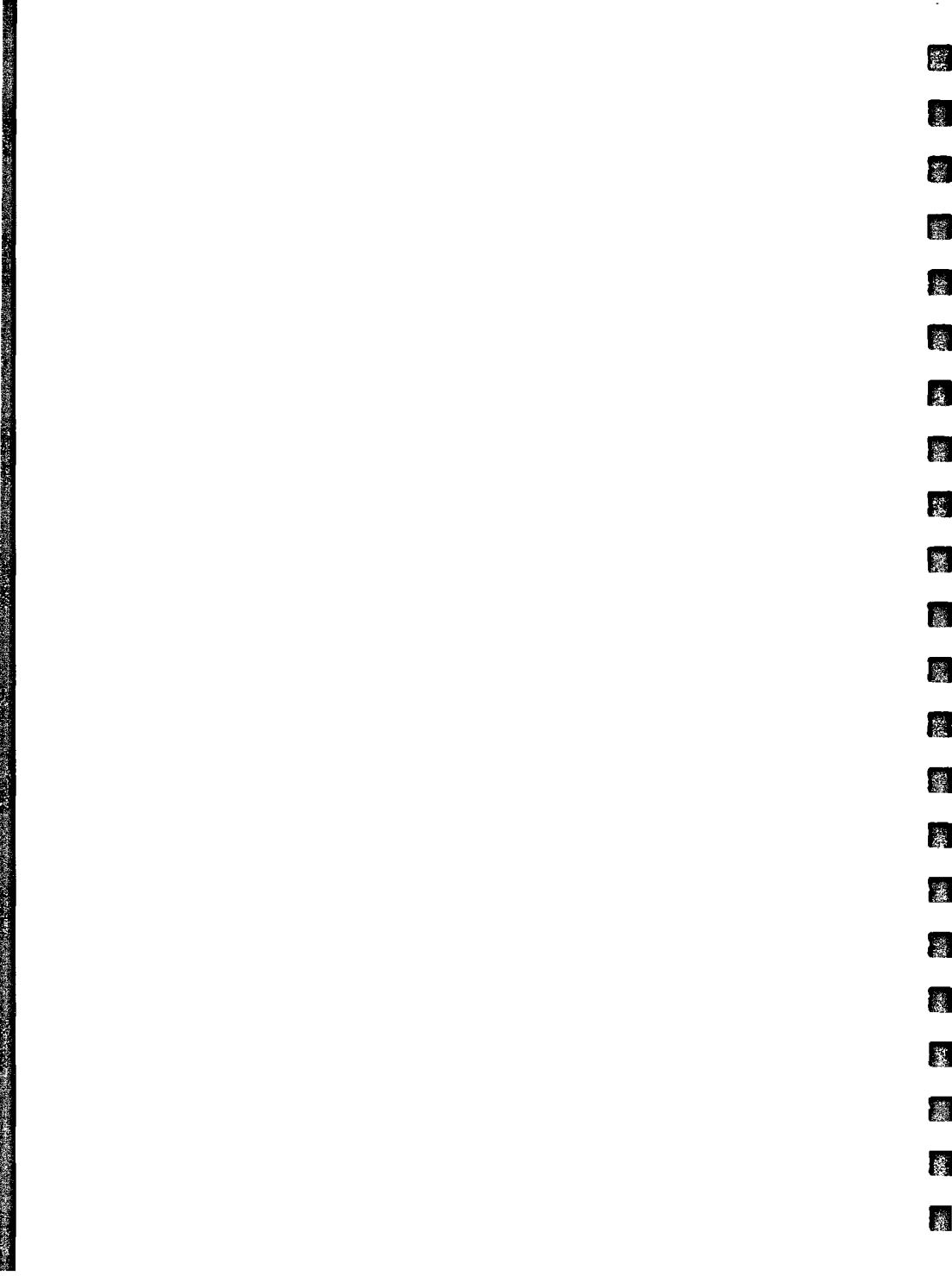
WARNING

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.





Introducing The HP 2382A
Getting To Know Your Terminal
The Keyboard
Function Keys
Configuring The Terminal
Using The Terminal By Itself
Using The Terminal With A Computer
Maintenance
In Case Of Difficulty
Keyboards and Character Sets
Index



How To Use This Manual

This manual is written as an introduction to the terminal. It describes most of the terminal's features so that you can become familiar with its capabilities without worrying about all of the functional details. Once you have become familiar with the terminal, or if you desire detailed information on specific features, you can refer to the Reference Manual. If you are already familiar with HP 2382A series terminals, you need not read the entire manual. You can use the index at the back of the manual to locate answers to specific questions you may have.

This manual consists of the following sections and appendixes.

Section 1—*Introducing The HP 2382A.* This section provides a general description of the terminal and briefly describes its capabilities.

Section 2—*Getting To Know Your Terminal.* This section explains how to identify terminal options and accessories. In addition, it gives instructions for preparing your terminal for use.

Section 3—*The Keyboard.* This section gives the location and describes the function of each of the major key groups.

Section 4—*Function Keys.* This section describes and tells how to use the function keys; eight keys to which various functions can be assigned.

Section 5—*Configuring Your Terminal.* This section describes how to configure your terminal to suit your needs.

Section 6—*Using Your Terminal By Itself.* This section gives step-by-step examples of using the terminal in typical operations. These operations can be performed without peripheral devices or a computer system.

Section 7—*Using Your Terminal With A Computer.* This section explains how to use the terminal with a computer system.

Section 8—*Maintaining Your Terminal.* This section gives instructions for cleaning the terminal.

Section 9—*In Case Of Difficulty.* This section explains what to do if the terminal does not work properly.

Appendix A—Appendix A contains information on the national keyboards and alternate character sets, which are offered as options.

Index—An index is provided for quick access to all information contained in the manual.

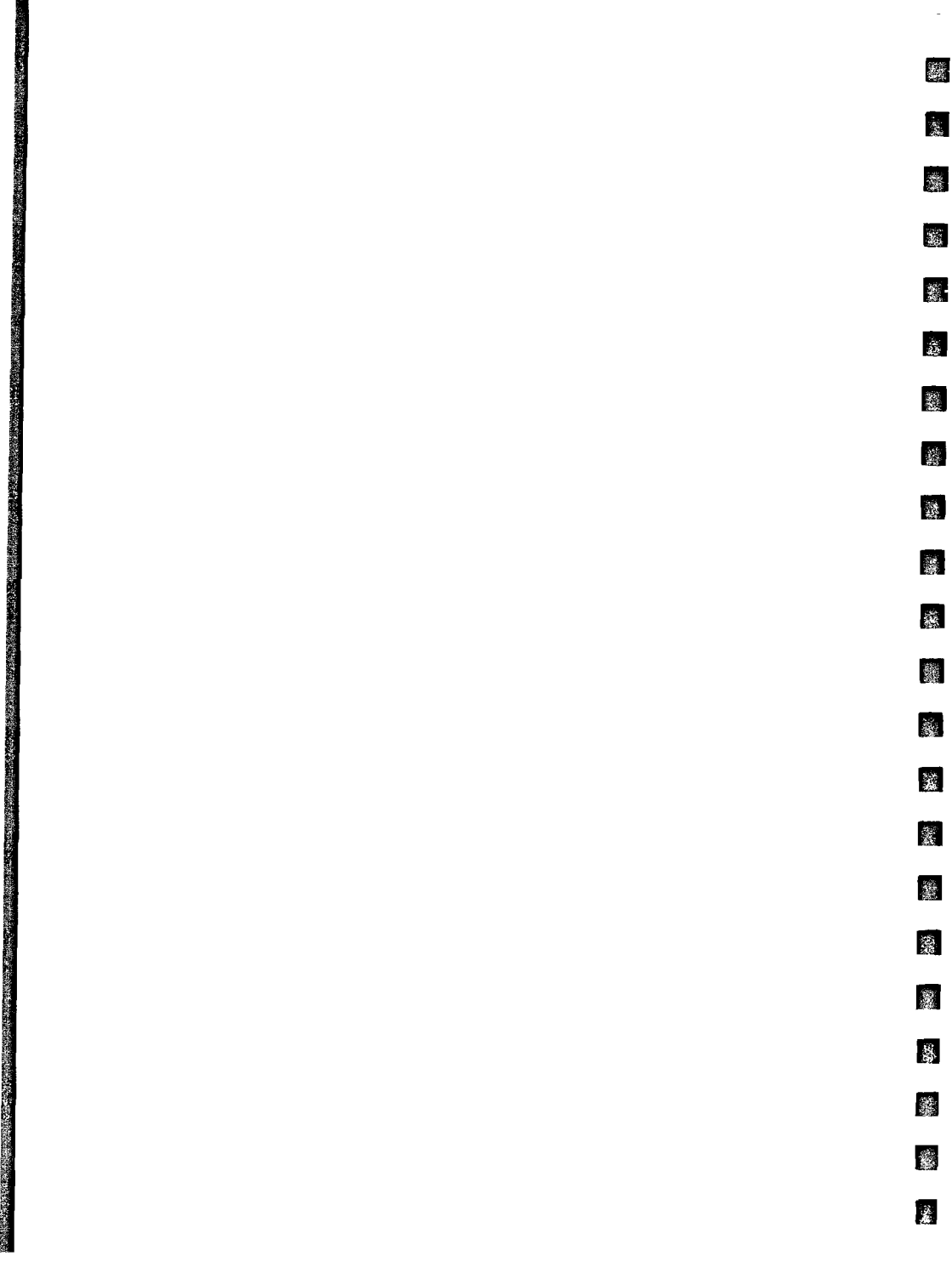
Terms Used In This Manual

A brief glossary of terms that you should know is given in the following table. Being familiar with these terms will help you to better understand the material presented in this manual.

TERM	DESCRIPTION
CURSOR	The blinking underline on the display that tells you where the next character or space will appear when entered.
DATA COMM	Abbreviation for "data communication" (transfer of data between the terminal and a computer).
DATA TRANSFER OPERATION	The process of transferring (or copying) data from one device to another.
DESTINATION DEVICE	The device that receives the data in a data transfer.
FUNCTION KEYS	Eight keys located at the top of the keyboard which are used in association with eight labels displayed along the bottom of the screen. The function of each key can be changed by changing the associated label.
LINE	A row of characters; may be thought of as a line of text in a book.
LOCAL MODE	Operating the terminal without the aid of a computer system (that is, "off-line").
PAGE	The number (24) of display memory lines which can be displayed on the screen.
REMOTE MODE	Operating the terminal with the aid of a computer system (that is, "on-line").
SOURCE DEVICE	The device that supplies the data in a data transfer.



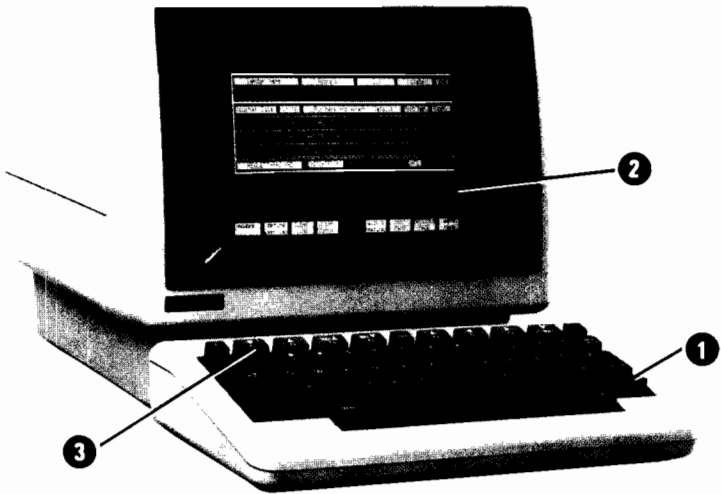
Introducing the HP 2382A	1-1
High Resolution Display	1-3
Display Memory	1-3
Keyboard	1-4
Function Keys	1-4
Function Control Key	1-4
Configuration	1-5
Data Communications	1-5
Self Test	1-5



Introducing The HP 2382A

1

The HP 2382A Display Terminal is a versatile Character or Block Mode terminal. In addition to typical terminal features, the terminal has a Format Mode for data entry applications. Forms may be displayed and enhanced by the optional Line Drawing Set.



Highlights of the HP 2382A are:

1 Versatile keyboard:

- Easy to use.
- Eight variable function keys.
- 68-key typewriter-style keyboard layout.
- Terminal control key.
- Display control keys.
- Optional extended keyboard with separate numeric pad.

2 High resolution display screen:

- Bright, clear screen display.
- Enhanced 7 x 11 dot characters in a 9 x 15 dot cell.
- 24-line by 80-character screen; 48-line by 80-character display memory.
- Display enhancements include:
 - Inverse Video.
 - Blinking characters.
 - Underline characters.
 - Half Bright.
- Displayable control code characters.

3 Special function keys:

Eight multi-function keys with functions selectable using the **AIDS** key and one of the following function keys: **aids & features**, **modes**, **define user keys**, **edit keys**.

- **aids & features** — Redefinable configuration, service keys, margin/tab/start column selection, enhance video, define fields.
- **modes** — Local/remote operating mode selection, block mode, modify mode, automatic line feed, memory lock, display functions, line mode, terminal test mode.
- **define user keys** — Enables user to define functions for the eight function keys.
- **edit keys** — Allows user to insert or delete characters or lines of information.

Configuration:

- Local:


Configurable through easily accessible hardware switches, by computer program, or configuration menus.

Screen displayable configuration data.

Redefinable configuration using function keys.

Keyboard feature selectable: caps lock.

Configuration memory protection.

User-programmable  key.

- Remote:

Data transfer rates up to 9,600 baud.

Character, line or page block data transfers.

EIA RS-232-C data communications interface.

Self test:

- Exhaustive terminal and data communications tests.

High Resolution Display

The HP 2382A Display Terminal has a screen with a 114.3 mm by 162 mm (4.5 inches by 6.4 inches) viewing area capable of displaying up to 1920 characters on 24 lines of 80 characters. In addition, there are two lines of function key labels at the bottom of the screen. Each character is formed by a 7 x 11 dot matrix within a 9 x 15 dot cell. This permits the precise formation of complex character symbols with ample separation between adjacent characters, both vertically and horizontally.

Display Memory

The HP 2382A Display Terminal display memory can store 3840 characters (48 lines of 80 characters each), regardless of how many enhancements are associated with each character.

Keyboard

The HP 2382A keyboard is a separate unit that is linked to the display portion of the terminal by a flexible cable. The keyboard layout is similar to that used for standard office typewriters. It has 68 keys that include eight function keys and one key for specifying the family of functions to be assigned to the function keys. Most of the remaining keys support the ASCII-coded character set.

An optional Line Drawing Set ROM can be installed and assigned to the keyboard keys.

An optional extended keyboard with a separate numeric pad is available to speed data entry.

Function Keys

The function keys (**f1** — **f8**) are located across the top of the keyboard. These keys perform the functions indicated by screen labels assigned to each key. The screen labels are displayed in half bright, inverse video across the bottom of the screen (rows 25 and 26).

Function Control Key

The **AIDS** key is used to select the family of functions available through the function keys.

Pressing the **AIDS** key then the **modes** function key brings up the modes family of function key labels. The modes function key labels allow the user to select operating modes of the terminal.

Pressing the **AIDS** key then the **aids & features** function key brings up the aids & features family of function key labels. The aids & features function key labels access a tree of functions assignable to the function keys by user selection. This tree comprises most of the functions assignable to the function keys.

Pressing the **AIDS** key then the **define user** key function key, brings up the define user key menu. This menu allows each of the function keys to be assigned a string of up to 80 characters selected by the user, as well as a function key label.

Pressing the **AIDS** key then the **edit keys** function key, brings up the edit keys family of function key labels. The edit keys labels allow the user to assign editing functions to the function keys such as inserting and deleting characters and inserting and deleting lines.

Configuration

The HP 2382A can be configured through easily accessible hardware switches at the back of the terminal. The current configuration can then be displayed on the terminal screen for the user's convenience. It is possible to temporarily change the current configuration directly from the keyboard. However, this temporary configuration will be replaced by the default configuration values of the hardware switches when the terminal's power is turned off.

Refer to Section 5 for more detailed information on terminal configuration.

Data Communications

You can transfer data to and from a computer in Character Mode (one character at a time), Block Line Mode (one line at a time), or Block Page Mode (the entire contents of the display). In Block Line or Block Page Mode, you can compose text and edit it before sending it to the computer.

The terminal operates at a transfer rate of up to 9,600 baud and offers full-duplex, asynchronous, point-to-point communications using the EIA RS-232-C communications interface specifications. Connection to a computer is direct or through a modem.

Section 7 contains further information on data communications.

Self Test

This terminal is engineered for high reliability, ease of testing, and, if required, rapid repair. By using the test function, you get a go/no-go indication of the terminal's operating condition. Refer to Section 9 for further information on the terminal's self test function.



2

Getting To Know Your Terminal	2-1
How to Identify Options and Accessories	2-1
Preparing Your Terminal for Use	2-2
Turning the Terminal On and Off	2-5
On	2-5
Off	2-5



Getting To Know Your Terminal 2

How To Identify Options And Accessories

Any options you request when you order the terminal are delivered installed within the terminal. Accessories, such as data communication cables, are delivered with the terminal, usually in the same carton but packaged separately. Upon delivery of the terminal, verify that the options and/or accessories you ordered are included in the shipment received.

An identification label is located on the underside of your terminal (see figure 2-1). The first section of this label states the power requirements of the terminal. The next section states the model number and the serial number. The third section lists any options included with the terminal.

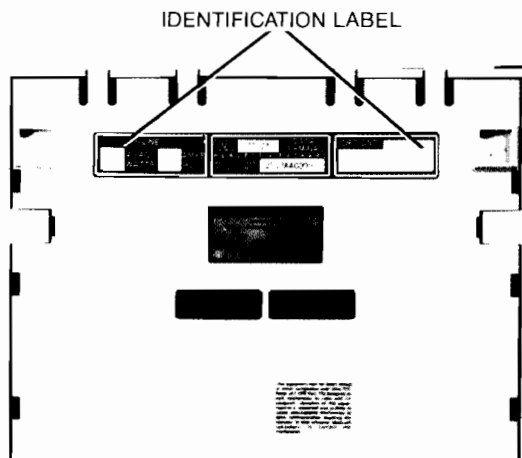


Figure 2-1. HP 2382 Identification Label. Underside of Terminal

Table 2-1 is a list of options available for the HP 2382A Display Station.

Table 2-1. HP 2382A Options

OPTION	DESCRIPTION
001	Swedish/Finnish Keyboard and ROM
002	Danish/Norwegian Keyboard and ROM
003	French Keyboard and ROM
004	German Keyboard and ROM
005	United Kingdom Keyboard and ROM
006	Spanish Keyboard and ROM
013	50 Hz, 240 V Power
014	60 Hz, 100 V Power
015	50 Hz, 220 V Power
016	50 Hz, 100 V Power
100	Extended Keyboard
202	Line Drawing Character Set

When communicating with Hewlett-Packard regarding your terminal, specify the model, serial, and the option numbers to ensure accurate identification by Hewlett-Packard. A list of Hewlett-Packard Sales and Service Offices is included at the back of this manual.

NOTE

If your terminal is already installed, you can ignore the following material and proceed to "Turning the Terminal On and Off".

Preparing The Terminal For Use

This terminal is designed to operate in a wide range of environments. It is self-contained and provides easy access to the operator controls so that normal installation does not require that you open the unit. The terminal should be opened only by a qualified service person (refer to the HP 2382A Service Manual, HP Part No. 02382-90003).

To install the terminal, complete the following steps.

- 1 Place the terminal on any sturdy, convenient surface such as a desk, table, or stand designed for such a purpose. Avoid having the terminal back against a wall or surface which would restrict the flow of air through the vents in the back of the terminal (figure 2-2).

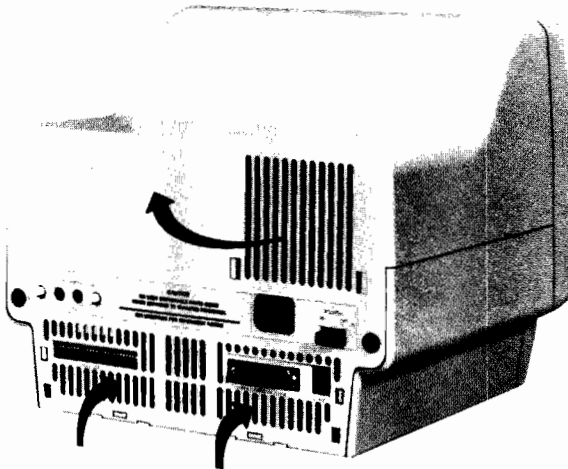


Figure 2-2. Cooling Airflow Through the Terminal

2. The keyboard is connected to the terminal through a modular plug and jack system. Insert the plug at the end of the keyboard cable into the jack at the back of the terminal (see figure 2-3). DO NOT insert any telephone equipment into this jack.

Note: if the keyboard is plugged in while the power is on, false characters may be placed on the screen or sent to the computer.

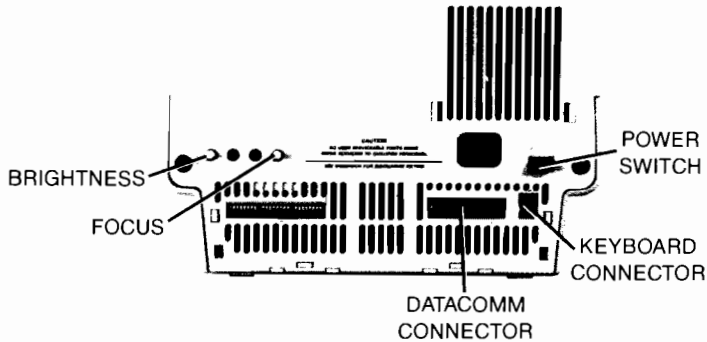


Figure 2-3. HP 2382A Power Switch and Connector Positions

3. This step is required to connect the terminal to an external data processing device, such as a computer. Connect and secure the data communications cable connector to the datacomm socket connector on the terminal's rear panel (see figure 2-3). Connect the other end of this cable to the appropriate external device.
4. Set the main power switch on the terminal's rear panel (see figure 2-3) to the OFF position.
5. Connect the power cord to the connector located beside the main power switch. Ensure that the voltage to be supplied matches your terminal's power requirements (see the power requirements label on the underside of the terminal).
6. Plug the 3-prong connector into the outlet for the main power source.

WARNING

For your safety, a 3-prong grounded power outlet must always be used.

Turning The Terminal On And Off

ON

When the installation of the terminal is completed, push in on the power switch on the rear panel (see figure 2-3). When you hear the switch click, let go of it. After approximately 15 seconds, the terminal is ready to use. If the terminal beeps more than twice during power up, the terminal may be faulty. Refer to Section 9, Terminal Test, to check operation. Figure 2-4 illustrates the condition of the display screen as it appears following the initial application of power to the terminal.

When the terminal is ready to use, the cursor is displayed in screen column 1, row 1. In addition to the cursor, the primary level of function key labels is displayed across the bottom of the screen (figure 2-4).

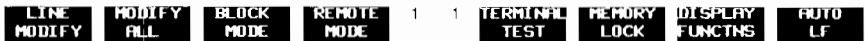


Figure 2-4. HP 2382A Initial Screen Display

OFF

To shut off your terminal, simply push in on the power switch until you hear it click, then let go of it.

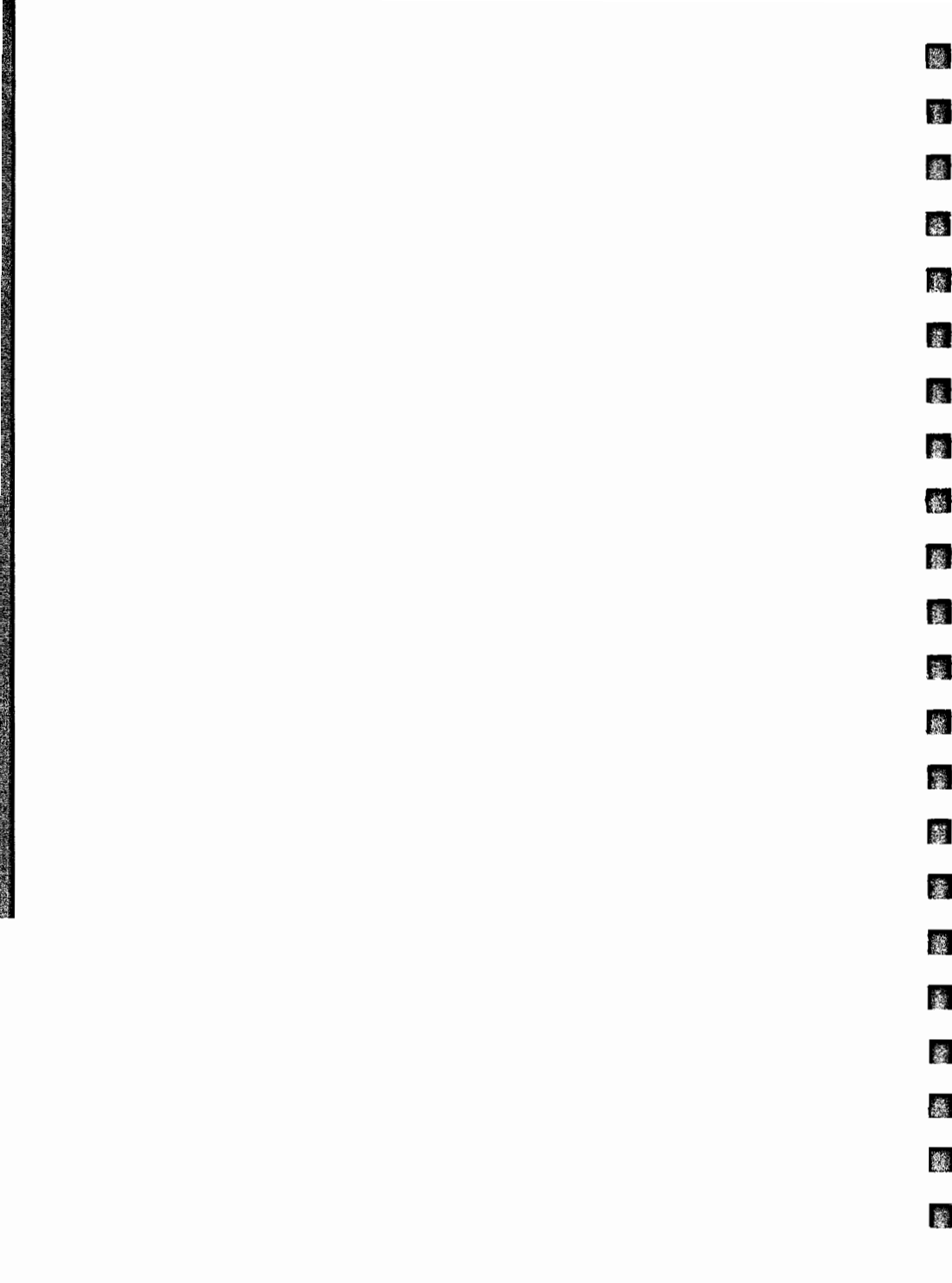
Adjusting Display Screen

If the focus or brightness of the terminal's display screen needs adjustment, refer to Section 9 of this manual for adjustment procedures.



3

The Keyboard	3-1
Character Set Group	3-3
ESC Key Operations	3-3
CTRL Key Operations	3-4
ENTER Key Operations	3-4
Function/Display Group	3-4
Function Keys Group	3-4
Display Control Group	3-5
Terminal Control Key	3-8
Reset Key	3-8
Break Key	3-9
Function Control Key	3-9
What to Do in Case of Difficulty	3-9



The Keyboard

3

Before learning to utilize other terminal features, you should become familiar with the keyboard. Figure 3-1 shows the keyboard layout. The keyboard consists of the following functional groups:

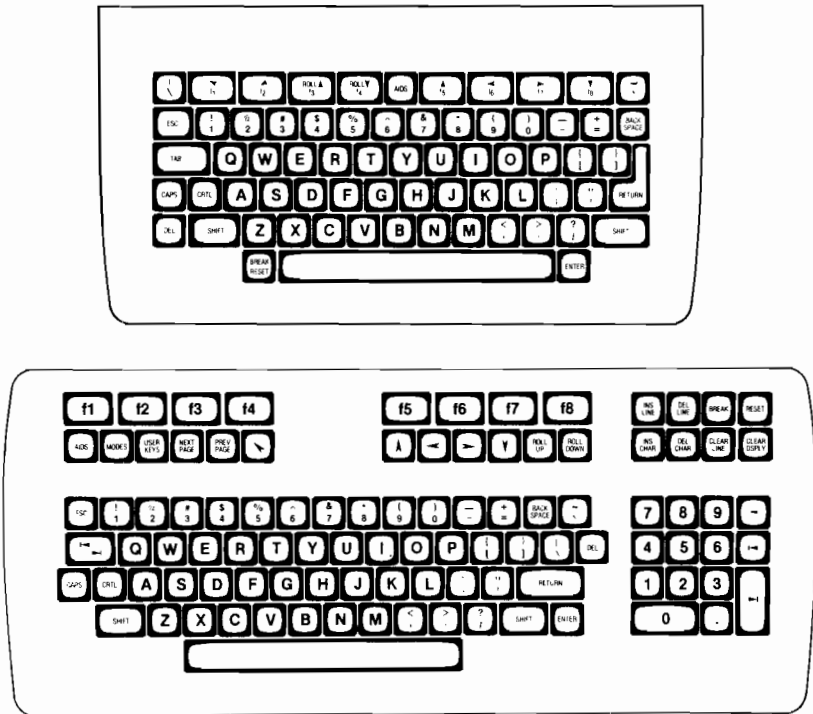


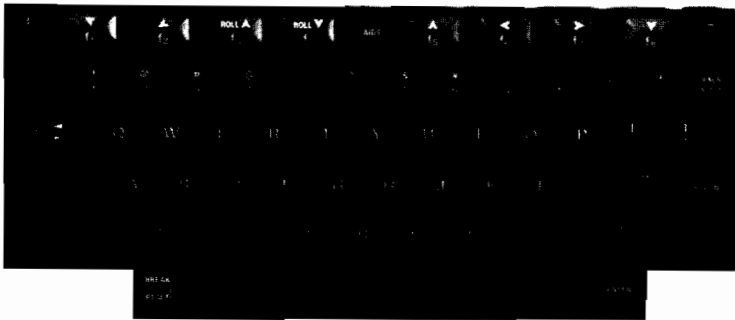
Figure 3-1. Terminal Keyboards

- **Character Set Group.** This group of keys is similar to a standard typewriter keyboard. It is used for entering data into the terminal workspaces.
- **Function/Display Group.** This group of keys is responsible for two separate types of operations. When you press any of the keys **f1** – **f8** by themselves, they operate as function keys. When you press the **SHIFT** key and then any of the keys **f1** – **f8**, they operate as display control keys. This order can be reversed by setting the **ShiftFunctionKeys** field in the terminal configuration to "YES". (The extended keyboard contains separate display control keys.)

As the function keys, this group can either be assigned a function from a selection of functions or be assigned a unique function by the user. As the display control keys, this group controls movement of the display to view or operate on portions of the display memory. It also controls the cursor position.

- **Terminal Control Key.** The **RESET / BREAK** key is the terminal control key. When used by itself, this key operates as the **RESET** key, and is used to initialize the terminal. When used with the **SHIFT** key, it operates as the **BREAK** key, and is used to interrupt data communications operations while in remote mode. The extended keyboard provides separate **BREAK** and **RESET** keys.
- **Function Control Key.** The **AIDS** key is the function control key and is used, along with a function key, to select one of four separate families of functions to be assigned to the function keys.

The remainder of this section briefly describes each of the keyboard groups.



Character Set Group

The alphabetic, numeric, and symbol keys are all located in the character set group. This is the largest group of keys on the keyboard. The basic character set is

made up of 128 characters. This includes uppercase and lowercase alphabetic characters, punctuation, and some commercial symbols. In addition, several non-displaying characters are also available. The non-displaying characters are used primarily for special applications. Refer to the Reference Manual for additional information on non-displaying characters.

The standard or base character set is indicated on the keys. On the standard keyboard the **SHIFT** key selects upper case or shifted characters and is also used for adding a function to several other keys **f1** - **f8** , **RESET** / **BREAK** , and **DIS** . The **BACK SPACE** and **RETURN** keys are used in the same manner as on a typewriter. The **TAB** key, at the left side of the keyboard, can be used to tab either left or right. When it is pressed, the cursor moves to the next tab stop to the right. **SHIFT** **TAB** moves the cursor to the next tab stop to the left. The **CAPS** key selects all capital letters. However, the CapsLock selection in the terminal configuration overrides the **CAPS** key on the keyboard.

EXERCISE

Try typing a few lines of text to get used to the keyboard. Remember, this part of the terminal works very much like a typewriter. Note that, by using the **BACK SPACE** key, you can overwrite and change characters.

The **ESC** and **CTRL** keys are used to provide additional character codes and to generate special control codes for various terminal operations. The use of the **ESC** and **CTRL** keys is explained below.

ESC Key Operations

The **ESC** key is used to extend the operating functions of the terminal. Unlike the **CTRL** key, the **ESC** key is pressed first, then released, before pressing any other keys. Some functions require only that one key be pressed following the **ESC** key to perform the function; while other functions require a sequence of character keys be pressed following the **ESC** key. These sequences must always be terminated with an uppercase character, rather than a lowercase character, to tell the terminal that the sequence has ended. A complete discussion of escape code functions is given in the Reference Manual.

CTRL Key Operations

The **CTRL** key together with the **SHIFT** key can be used to add another function to the **RESET / BREAK** key and the **AIDS** key. The **CTRL** key is also used together with other keys to generate ASCII control codes. Be sure to hold down the **CTRL** key while pressing the other key.

ENTER Key Operations

When the terminal is set for Remote (on-line) Mode, the **ENTER** key allows you to send blocks of data to a computer. The **ENTER** key functions differently depending on the **BLOCK MODE**, **FORMAT MODE**, and **REMOTE MODE** function key settings. Refer to the Reference Manual for information on use of the **ENTER** key in Remote Mode.



Function/Display Group

















When you press any of the keys **f1** – **f8**, they operate as function keys. When you press the **SHIFT** key with any of the keys **f1** – **f8**, they operate as display control keys. This order can be reversed by setting the **ShiftFuncnKeys** field in the terminal configuration to "YES". (The extended keyboard provides separate display control keys.)



Function Keys Group

The function keys group consists of keys **f1** through **f8**. The eight function key labels along the bottom of the display are associated with keys **f1** through **f8** in a positional relationship. For example, the third label from the left is associated with the third key from the left (**f3**). When the key is pressed, the function suggested by the label is performed. By changing the functions assigned to the labels, each key can be made to perform multiple functions. The functions assigned to the labels are changed using the **AIDS** key and certain function keys.

Many of the functions needed for routine data entry (and which are normally initiated by keyboard keys) are incorporated into the function keys on the HP 2382A terminal. Refer to Section 4, Function Keys, for information on accessing these functions.

Display Control Group

The display group consists of the , , , , , , , and  keys. The , , , , ,  keys are used to position the cursor and the  and  keys are used to control the display.

The display screen holds up to 24 lines of 80 characters each. This is called a "page" and you can select the previous page and the next page through the PREVIOUS PAGE and NEXT PAGE function keys (see Section 4). When the display has been filled with data, the top line rolls off the screen. As you type each line, the display will roll up to make room for the new line. This continues until display memory (which holds 48 lines) is filled. At this point, if you enter another line, one line will be lost from display memory to make room for the new line. The  and  keys allow you to scroll through the display memory to display characters that have rolled off the screen.

Moving the Cursor













The cursor position is controlled by six keys. The  and  keys move the cursor in the vertical dimension, the  and  keys move it in the horizontal dimension, and the  and  keys home the cursor up and down respectively.

Table 3-1 describes the function of each key.



Table 3-1. Cursor Control Key Functions

KEY	FUNCTION
	Cursor Up—Moves the cursor up one row each time the key is pressed. If the key is held down, the cursor moves up until either the key is released or it reaches the top row of the display page where it wraps around to row 24 of the screen.
	Cursor Down—Moves the cursor down one row each time the key is pressed. If the key is held down, the cursor moves down until either the key is released or the last row of the display page is reached where it wraps around to row 1 of the screen.
	Cursor Left—Moves the cursor left one column each time the key is pressed. If the key is held down, the cursor moves left until either the key is released or the first column of the display is reached. If the key is held down after the first column is reached, the cursor moves to the last column of the preceding row. This action continues as long as the key is held down or until column 1 of the first line of text on the display page is reached; then, the cursor moves to column 80 of row 24.
	Cursor Right—Moves the cursor right one column each time the key is pressed. If the key is held down, the cursor moves right until either the key is released or the last column of the display is reached. If the key is held down after the last column is reached, the cursor moves to the first column of the following row. This action continues as long as the key is held down or until column 80 of the last line of text on the display page is reached; then, the cursor moves to column 1 of row 1.
	Home Cursor—The cursor is moved to the left margin of the first row of the display memory and rolls the text in display memory down as far as possible so that the first line of text in memory appears in row 1 of the screen.
	Cursor Home Down—The cursor is moved to the left margin of the row following the last used row in the display memory. If the cursor line is not displayed when the keys are pressed, the display is scrolled up until the cursor line is displayed.

Scanning The Display Memory

The display is controlled by the **ROLL ▲** and **ROLL ▼** keys. With these keys, the contents of the display memory can be scrolled vertically past the display screen (Figure 3-2).

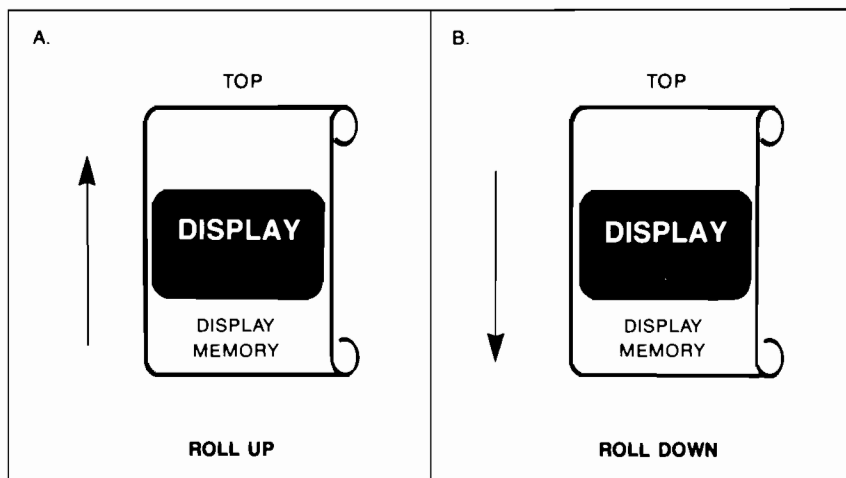


Figure 3-2. Operation of **ROLL ▲** and **ROLL ▼** Keys

Table 3-2 describes the function of the **ROLL ▲** and **ROLL ▼** keys.

Table 3-2. Display Control Key Functions

KEY	FUNCTION
RDLL V	Scrolls the contents of display memory down one row each time the key is pressed. If the key is held down, the contents of display memory is scrolled down until either the key is released or the first row of display memory is displayed as the first row of the display screen.
RDLL A	Scrolls the contents of display memory up one row each time the key is pressed. If the key is held down, the content of display memory is scrolled up until either the key is released or the last row of display memory is displayed as the first row of the display screen.



Terminal Control Key


The **RESET / BREAK** key is the terminal control key. It is located at the left side of the space bar. This key is used to reset the terminal and to temporarily interrupt datacomm operations. When you press the **RESET / BREAK** key by itself, it operates as the RESET key. When you press **SHIFT**, **RESET / BREAK** it operates as the BREAK key. The extended keyboard has separate **BREAK** and **RESET** keys.

RESET Key

SOFT RESET. Pressing the **RESET** key once results in a "soft reset" which unlocks the keyboard, clears any error messages, turns off Display Functions mode, stops data communication transfers, and rings the terminal's bell.




HARD RESET. Pressing the **SHIFT**, **CTRL**, and **RESET** keys simultaneously produces a "hard reset". This causes the terminal to be set to the configuration values which have been saved in memory. It causes the datacomm channel to be reinitialized, the screen to be cleared, the user keys to be reset to the default values, and the terminal's bell to be rung. This key should not be used unless necessary to clear the terminal (refer to Section 9, In Case of Difficulty).



BREAK Key







The BREAK key () can be used to interrupt the operation of the terminal's data communication function to the computer. Refer to the Reference Manual for additional information.



FUNCTION CONTROL KEY

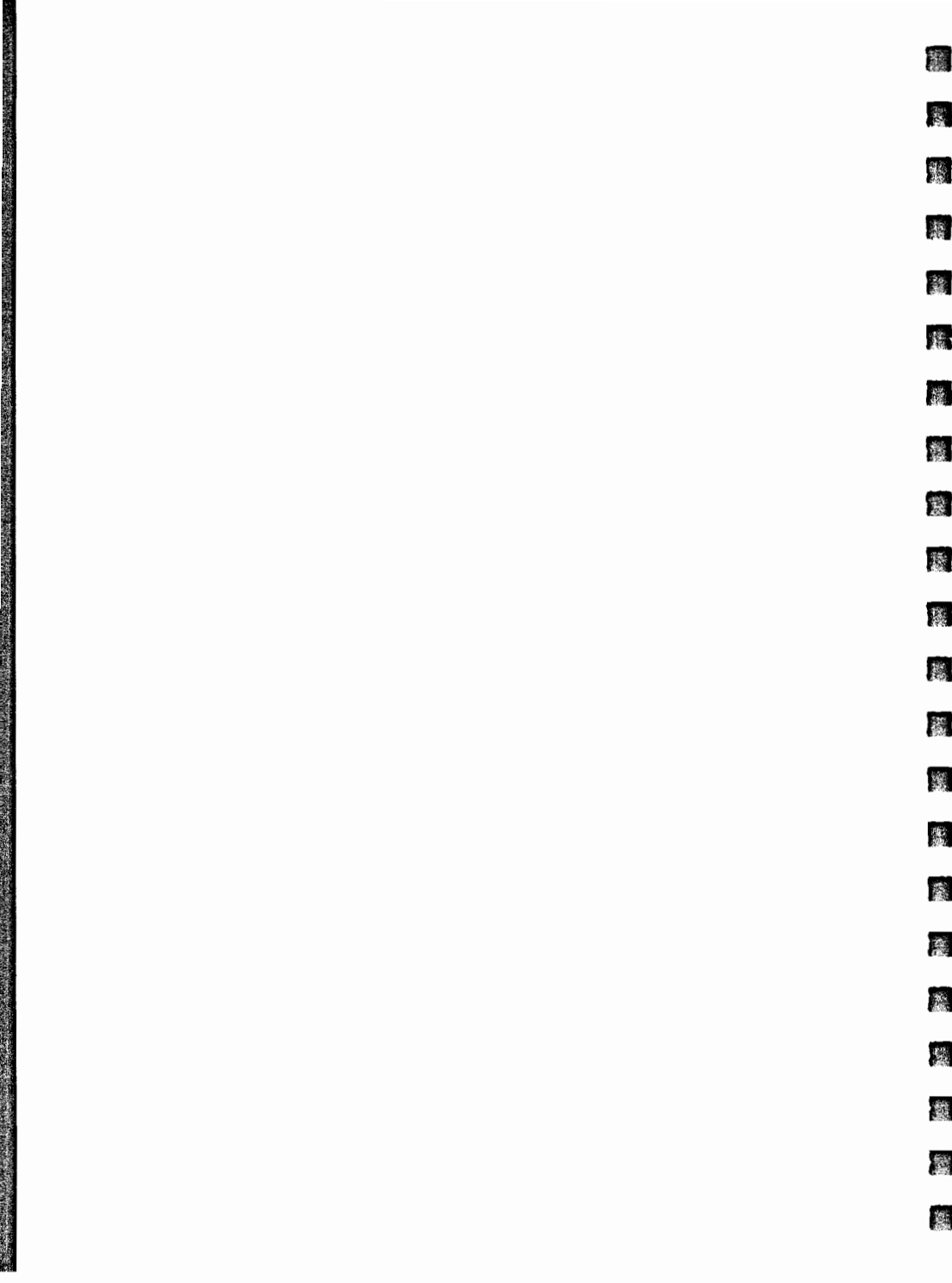
On the standard keyboard, the  key is the function control key. The  key together with one of the function keys (*modes*, *aids & features*, *define user key*, or *edit keys*) is used to select the family of functions available to the function keys. Refer to Section 4 for a more detailed explanation of the relationship of the  key to the function keys.

Pressing the  ,  keys causes the function key labels for the user keys (f1 - f8) to be displayed at the bottom of the display screen.

Pressing the  ,  ,  ( ,  on the extended keyboard) keys causes the function key labels at the bottom of the display screen to disappear completely. Pressing the  key causes the primary level of softkeys to reappear on the screen.

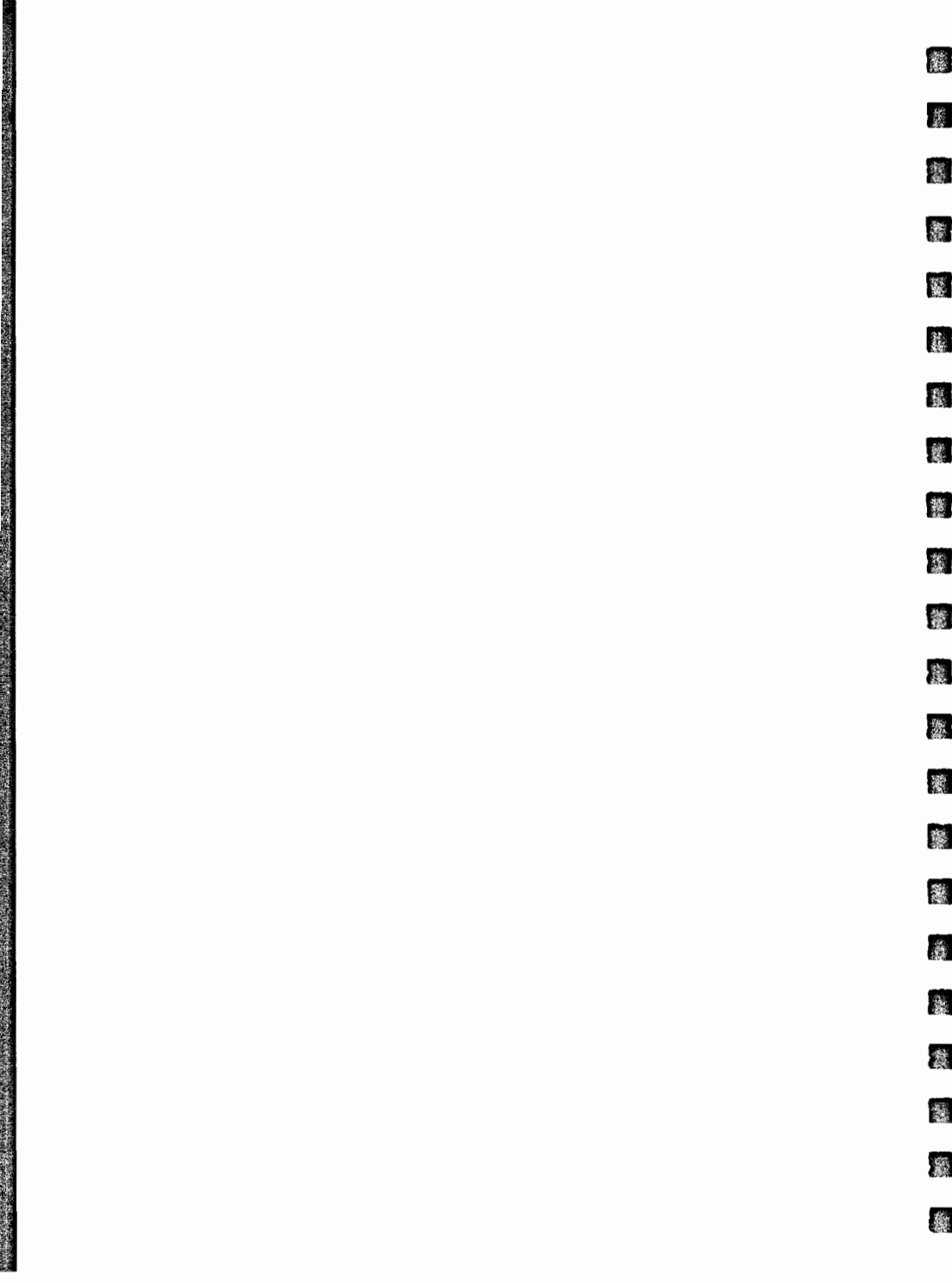
What To Do In Case Of Difficulty

If the key or function you try does not work properly, refer to Section 9. It contains information about error recovery, testing the terminal, and where to get service assistance if you should require it.



4

Function Keys	4-1
Modes Function Key Labels	4-4
Aids and Features Function Key Labels	4-6
Labels Uppercase and Lowercase	4-8
Labels with an Asterisk	4-8
Aids and Features Set	4-8
Margin/Tab/Col Set	4-10
Service Set	4-11
Enhance Video Set	4-12
Define Fields Set	4-13
Configuration Set	4-14
User Definable Function Keys	4-16
User Key Modes	4-17
Definition Mode	4-17
User Mode	4-18
Edit Function Key Labels	4-19



Function Keys

The function keys consist of keys **f1** through **f8** located along the top of the keyboard. They are used in association with function key labels displayed along the bottom of the screen. The function suggested by the label is performed when the associated key is pressed. The association between the labels and the function keys is positional. For example, the third label from the left is associated with the third key from the left (**f3**) (see figure 4-1).

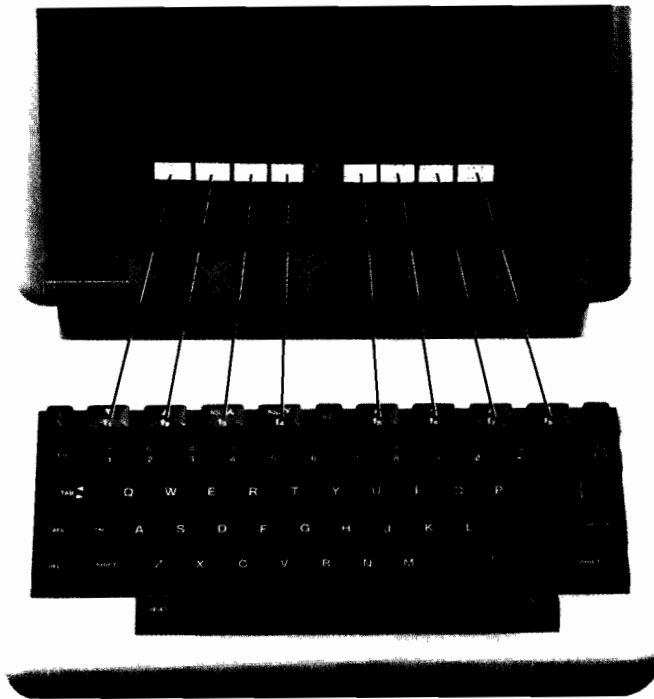


Figure 4-1. Function Keys and Labels

Each function key can be made to perform various functions by changing the corresponding function key label. The function key labels are changed using the **AIDS** and **SHIFT** keyboard keys, and the function keys themselves (**f1** - **f8**). There are four groups of function key labels:

- Modes function key labels.
- Aids & features function key labels.
- User-definable function key labels.
- Edit function key labels.

NOTE

The extended keyboard provides separate **MODES** , **USER KEYS** , and display control keys.

The modes function key labels, which are accessed through the **AIDS** key and the **modes** function key (**f1**), enable selection of seven modes in which the terminal can operate. These labels also appear on the screen after a hard reset or power-on operation.

The aids & features function key labels are accessed through the **AIDS** key and the **aids & features** function key (**f5**). Included in this group of function key labels are the following: margins and tab functions, service keys, video enhancements, field definition, and config keys. A detailed description of the predefined function key labels is given later in this section.

The user-definable function key labels are accessed through the **AIDS** key and the **define user key** function key (**f2**). The user-definable function key capability enables the user to assign functions and labels of his own choosing to the eight function keys (**f1** - **f8**).

The edit function key labels are accessed through the **AIDS** key and the **edit keys** function key (**f8**). Text can be easily changed using the insert and delete functions of the edit group.

AIDS Key

Pressing the **AIDS** key displays the primary set of function key labels as follows:

[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]
modes	define user key	CLEAR LINE	CLEAR DISPLAY	aids & features	NEXT PAGE	PREVIOUS PAGE	edit keys

This set of function key labels allows you to access the four major groups of function key labels: modes, aids & features, user definable, and edit. Anytime you

Table 4-1. Primary Function Key Labels

LABEL	FUNCTION
modes	The modes function key selects only one set of function labels which are used to select terminal operating modes. These are Line Modify, Modify All, Block Mode, Remote Mode, Test mode, Memory Lock mode, Display Functions mode, and Auto Linefeed mode. The labels for these modes are also displayed when the terminal is initialized after a power-on or hard reset.
define user key	The define user key function key enables you to assign up to 80 characters of data to each function key (f1 - f8). You can also assign a label of up to 16 characters to each of the function keys, and specify the disposition of the data assigned to each key. The data can be specified for local use at the terminal only, for transmission to the computer only, or to be treated as data entered normally from the keyboard.
CLEAR LINE	Clears the line from the cursor to the end of the line.
CLEAR DISPLAY	Clears the display from the cursor position to the end of the workspace.
aids & features	The aids & features function key accesses multiple sets of function key labels (eight labels in a set, one for each function key). Most of the terminal functions are accessed through the aids & features function key.
NEXT PAGE	Allows you to move the display 24 lines. The next 24 lines following the last line currently displayed are displayed.
PREVIOUS PAGE	Allows you to move the display 24 lines. The 24 lines of text preceding the first line currently displayed are displayed.
edit keys	The edit keys function keys allow you to edit data by inserting or deleting characters or lines, deleting the portion of a line to the right of the cursor, or deleting all data in display memory beginning at the cursor position.

MODES Function Key Labels

Pressing the **MODES**, **F1** keys displays the Modes Set of function key labels, as follows:

[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]
LINE MODIFY	MODIFY ALL	BLOCK MODE	REMOTE MODE	TERMINAL TEST	MEMORY LOCK	DISPLAY FUNCTNS	AUTO LF

Except for TERMINAL TEST, these labels are used to activate or deactivate the major terminal modes. Each of the function keys, when these labels are displayed, can activate the mode denoted by the label (the label contains an asterisk when the mode is active). Alternately pressing the function key produces and deletes the asterisk. Table 4-2 describes the functions of the function keys when the modes labels are displayed.

Table 4-2. Modes Function Key Labels

LABEL	FUNCTION
LINE MODIFY	Used only in Remote Mode. When enabled, this mode allows editing a line of data while in Character Mode, then using the ENTER or RETURN key to transmit the line to the computer as a block. Line modify mode ends when the ENTER or RETURN key is pressed.
MODIFY ALL	Similar to LINE MODIFY except that modify all mode is not ended by the ENTER or RETURN key. Modify all mode transmits a line to the computer as a block. When modify all mode is active, an asterisk is present in the label. When modify all mode is not selected, the asterisk is absent from the label.
BLOCK MODE	This label is used only in Remote Mode. When active, (asterisk present in the label), typed data is displayed but not sent to the computer until after the ENTER key has been pressed. Otherwise, the terminal is in Character Mode and each character is transmitted to the computer as typed.
REMOTE MODE	When selected (an asterisk present in the label), the terminal is in Remote Mode (prepared for communications with the computer). When not selected (asterisk is absent from label), the terminal is selected for Local Mode.

Table 4-2. Modes Function Key Labels (Continued)

LABEL	FUNCTION
TERMINAL TEST	Initiates a go/no go test of overall terminal operation. On completion of the test, a test pattern, which includes all character sets the terminal is capable of displaying, is displayed on the screen.
MEMORY LOCK	Operates in two modes; overflow protect and display lock. Overflow Protect. When memory lock mode is activated and the cursor is in the first line of the display, data can be entered to the end of display memory. When the end of memory is reached, no more data can be entered and the bell sounds. Display Lock. Invoked by activating memory lock mode; deactivated by turning off memory lock mode. When display lock mode is entered, all data between the first line displayed and the line in which the cursor is located is frozen. Then, when new data is entered following the displayed data, the new data, when it is entered beyond the last line on the screen, scrolls up under the frozen data and the lines scrolled up off the screen are inserted in memory immediately preceding the first line of frozen data. When the ROLL A key is pressed in Display Lock mode, the lines succeeding the frozen lines roll up under the frozen lines.
DISPLAY FUNCTION	When ON, the action normally produced by any keyboard control key, such as RETURN , TAB , or any of the display keys is not performed. Instead, an ASCII character or escape sequence representing the function is displayed on the screen.
AUTO LF	When on, generates a line feed with every carriage return (pressing the RETURN key).

AIDS and FEATURES Function Key Labels

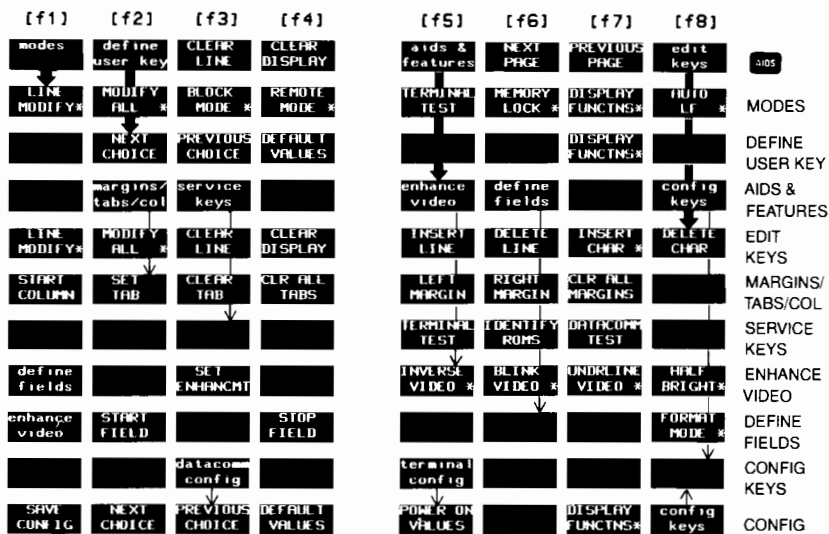
Most of the terminal capabilities are accessed through this group of function key labels. Some of these capabilities are listed below:

- Set or clear margins.
- Set or clear tabs.
- Select the start column for data transmissions.
- Enable terminal self test.
- Select display enhancements (blink, inverse video, and underline).
- Enable format mode.
- Select either of two types of configuration menus for configuration changes.

The following set of function key labels are accessed by pressing the **VIDS** key and then the **aids & features** function key **F5**.

[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]
	margins/ tabs/col	service keys		enhance video	define fields		config keys

The remaining sets of labels are accessed, directly or indirectly, through this set. Figure 4-2 illustrates how to access each set of function key labels.



NOTE

Those labels which include an asterisk (*) signify functions which, when enabled, include the asterisk to indicate that the function is enabled.


Figure 4-2. Function Key Labels Accessed Through the Aids and Features Function Key.

Labels—Uppercase And Lowercase

The titles in the function key labels are written in both uppercase and lowercase letters. Those written in lowercase letters are used only to change to another set of function key labels. Those written in uppercase letters perform the function suggested in the label.

Labels With An Asterisk

Function key labels which contain an asterisk indicate functions which can be changed from on to off ("toggled"). Alternate presses of keys that can be "toggled" display an asterisk in the associated label. The asterisk indicates that the function displayed in the label is selected; absence of the asterisk indicates the function is not selected. In some cases, a "set" function key must be pressed to activate the selection.

To return the terminal to normal operation after using the predefined function keys, simply press the  key. Any selections you have made using toggling function keys will still be in effect, and the Aids set of labels will be displayed.

Aids & Features Set

The Aids & Features Set of function key labels is used only to access other sets of labels. Each label in the Aids & Features Set names another set of labels. Table 4-3 describes the functions of the Aids & Features Set of labels.

Table 4-3. Aids & Features Set of Function Key Labels

LABEL	FUNCTION																
margins/ tabs/cu	<p>Displays the following set of labels which enable control of margins, tabs, and selection of the start column for transmission of data to a computer in Remote Mode:</p> <table border="1"> <tr> <td>[f1]</td> <td>[f2]</td> <td>[f3]</td> <td>[f4]</td> <td>[f5]</td> <td>[f6]</td> <td>[f7]</td> <td>[f8]</td> </tr> <tr> <td>START COLUMN</td> <td>SET TAB</td> <td>CLEAR TAB</td> <td>CLR ALL TABS</td> <td>LEFT MARGIN</td> <td>RIGHT MARGIN</td> <td>CLR ALL MARGINS</td> <td></td> </tr> </table>	[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]	START COLUMN	SET TAB	CLEAR TAB	CLR ALL TABS	LEFT MARGIN	RIGHT MARGIN	CLR ALL MARGINS	
[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]										
START COLUMN	SET TAB	CLEAR TAB	CLR ALL TABS	LEFT MARGIN	RIGHT MARGIN	CLR ALL MARGINS											
service keys	<p>Displays the following set of service labels which allow for a terminal test, identification of all ROMs used in the terminal, and a datacomm test:</p> <table border="1"> <tr> <td>[f1]</td> <td>[f2]</td> <td>[f3]</td> <td>[f4]</td> <td>[f5]</td> <td>[f6]</td> <td>[f7]</td> <td>[f8]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TERMINAL TEST</td> <td>IDENTIFY ROMS</td> <td>DATACOMM TEST</td> <td></td> </tr> </table>	[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]					TERMINAL TEST	IDENTIFY ROMS	DATACOMM TEST	
[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]										
				TERMINAL TEST	IDENTIFY ROMS	DATACOMM TEST											
enhance video	<p>Displays the following set of labels which enable display enhancements (inverse video, blinking, underline, and half bright). It also includes the SET ENHANCEMENT label which must be pressed after selection of your choice of display enhancements to enable the enhancements.</p> <table border="1"> <tr> <td>[f1]</td> <td>[f2]</td> <td>[f3]</td> <td>[f4]</td> <td>[f5]</td> <td>[f6]</td> <td>[f7]</td> <td>[f8]</td> </tr> <tr> <td>define fields</td> <td></td> <td>SET ENHANCMT</td> <td></td> <td>INVERSE VIDEO</td> <td>BLINK VIDEO</td> <td>UNDERLINE VIDEO</td> <td>HALF BRIGHT</td> </tr> </table>	[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]	define fields		SET ENHANCMT		INVERSE VIDEO	BLINK VIDEO	UNDERLINE VIDEO	HALF BRIGHT
[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]										
define fields		SET ENHANCMT		INVERSE VIDEO	BLINK VIDEO	UNDERLINE VIDEO	HALF BRIGHT										
define fields	<p>Displays the following set of field enhancement labels:</p> <table border="1"> <tr> <td>[f1]</td> <td>[f2]</td> <td>[f3]</td> <td>[f4]</td> <td>[f5]</td> <td>[f6]</td> <td>[f7]</td> <td>[f8]</td> </tr> <tr> <td>enhance video</td> <td>START FIELD</td> <td></td> <td>STOP FIELD</td> <td></td> <td></td> <td></td> <td>FORWARD MODE</td> </tr> </table>	[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]	enhance video	START FIELD		STOP FIELD				FORWARD MODE
[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]										
enhance video	START FIELD		STOP FIELD				FORWARD MODE										
config keys	<p>Displays the following set of key labels for selecting the datacomm or terminal configuration menus:</p> <table border="1"> <tr> <td>[f1]</td> <td>[f2]</td> <td>[f3]</td> <td>[f4]</td> <td>[f5]</td> <td>[f6]</td> <td>[f7]</td> <td>[f8]</td> </tr> <tr> <td></td> <td></td> <td>datacomm config</td> <td></td> <td>terminal config</td> <td></td> <td></td> <td></td> </tr> </table>	[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]			datacomm config		terminal config			
[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]										
		datacomm config		terminal config													

Margins/Tabs/Col Set

The Margins/Tabs/Col Set of keys is accessed by pressing



and consists of the following set of labels:



This set is used to set or clear tabs, to set or clear the left and right margins, and to set the start column. Table 4-4 describes the functions of the Margins/Tabs/Col Set.

Table 4-4. Margins/Tabs/Col Set of Function Key Labels

LABEL

FUNCTION

**START
COLUMN**

Sets the start column to the column that the cursor is in when the key is pressed. This value is stored in memory. The start column feature is used only in line modify or modify all mode. In Remote Mode (provided the terminal is not in Format or Block mode), for the last line in the display memory on which text is entered, a logical start-of-text pointer is set at the column of the line in which the user types the first character. Then, when the user presses the **ENTER** or **RETURN** key, the terminal starts transmitting from the column indicated by the logical start-of-text pointer. If the line on which data was entered was not the last line in memory, or if the line is entered by the computer, no logical start-of-text pointer is generated by the terminal. In this case the terminal starts transmitting text from the column indicated in the **Start Col** field of the Terminal Configuration menu.

**SET
TAB**

Sets a tab in the column in which the cursor is located.

**CLEAR
TAB**

Clears the tab set in the column in which the cursor is located.

**CLR ALL
TABS**

Clears all tabs.

**LEFT
MARGIN**

Sets the left margin at the column in which the cursor is positioned.

**RIGHT
MARGIN**

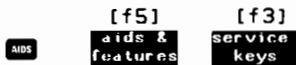
Sets the right margin at the column in which the cursor is positioned.

**CLR ALL
MARGINS**

Sets the left margin at column 1 and the right margin at column 80 (the default left and right margins).

Service Set

The Service Set of keys is accessed by pressing






and consists of the following set of labels:



This set is used to run the self tests shown above. Table 4-5 describes the functions of the Service Set of keys.

Table 4-5. Service Set of Function Key Labels

LABEL	FUNCTION
	Performs a test of the terminal.
	Displays a list of the ROMs installed in the terminal, supplying their part numbers and identifying their contents.
	Initiates the data communications test. Requires the Datacomm Self Test Hood (part no. 02620-60062 mounted on the datacomm connector at the rear of the terminal.

Enhance Video Set

The Enhance Video set is accessed by pressing



and consists of the following set of labels:



This set includes the labels for the display enhancements (Inverse Video, Blink Video, Underline Video, and Half Bright), and a SET ENHANCMT label which must be pressed after selection of your choice of display enhancements to enable the enhancements. Table 4-6 describes the functions of the Enhance Video Set.

Table 4-6. Enhance Video Set of Function Key Labels

LABEL	FUNCTION
	Selects the following Define Fields Set of function key labels:
	Selects the currently selected state (whether on or off) of every enhancement. This key must be used to activate or deactivate any enhancement. Pressing this key will remove the asterisk from all four enhancement labels (INVERSE VIDEO, BLINK VIDEO, etc.).
	Inverts the intensity of the background and all characters in the field. The characters are made dark on a light background, instead of the normal light characters on a dark background.
	Causes all characters and underlining in the field to blink on and off.
	Underlines all characters (including blanks).
	Sets the intensity of the inverse video field to half bright.

Define Fields Set

This set is accessed by pressing



and consists of the following set of labels:



The Define Fields Set enables selection of Enhance Video, Start Unprotected Field, Stop Unprotected Field, and Format Mode. Table 4-7 describes the functions of the Define Fields Set.

Table 4-7. Define Fields Set of Key Labels

LABEL	FUNCTION
enhance video	Selects the following set of Enhance Video key labels:
[f1] define fields	[f2] [f3] SET ENHANCMT
START FIELD	Defines all character positions between the cursor and the start of the next field or a "stop field" marker (whichever comes first) as an unprotected field (data can be entered into the field). If the last position of line A is an unprotected field, and you start another unprotected field at the beginning of line A + 1, then the field on line A continues on to line A + 1. Tabbing will not move the cursor to line A + 1, however, and a backtab on line A + 1 will not move the cursor to the beginning of that line. When data is transmitted from such a continued field, it is treated as one string of data.
STOP FIELD	Defines the end of a data field by generating a "stop field" marker.
FORMAT MODE	In this mode, the fields (defined using the Define Fields function key label set) are made active. When Format Mode is entered, all memory is protected unless specifically defined otherwise, using the START FIELD, STOP FIELD function keys. Normal procedure is to define the display enhancements and fields, then activate Format Mode and enter data into the fields. An asterisk in the Format Mode label indicates the mode is active. Alternate pressing of the FORMAT MODE function key activate and deactivate the mode.

Config Set

The Config Set of keys consists of two sets of labels; the first set is accessed by pressing



and consists of the following set of labels:



Once the above set of key labels is accessed, pressing either **f3** or **f5** will access the following set of labels:



The first set of labels above is used to select two configuration menus: datacomm config and terminal config. The second set of labels above is used to set values in the specific configuration menu. Refer to Section 5 and the Reference Manual for more information on configuration. The functions of the Configuration Set are described in table 4-8.

Table 4-8. Configuration Set of Function Key Labels

LABEL	FUNCTION								
<code>datacom config</code>	Displays the datacomm configuration menu.								
<code>terminal config</code>	Displays the terminal configuration menu.								
<code>SAVE CONFIG</code>	Saves the current configuration until the terminal's power is turned off, and removes the menu from the screen.								
<code>NEXT CHOICE</code>	Used with the configuration menus. If the cursor is positioned in one of the menu fields, the NEXT CHOICE key selects the next parameter of the list for that field.								
<code>PREVIOUS CHOICE</code>	Selects the previous parameter of a field in the configuration menu.								
<code>DEFAULT VALUES</code>	Displays the configuration menu's default values.								
<code>POWER ON VALUES</code>	Displays the configuration values set in the hardware switches at the back of the terminal. If one or more fields in the menu have no corresponding switch at the back of the terminal, the menu's default value is used for that field. After the terminal has been turned off, the values set in the hardware switches (plus the menu default values for any parameters not represented by the switches) are used to initialize the configuration parameters.								
<code>config keys</code>	Displays the following configuration key labels:								
	<table border="1"> <tr> <td data-bbox="288 906 361 954"><code>[f1]</code></td> <td data-bbox="361 906 434 954"><code>[f2]</code></td> <td data-bbox="434 906 507 954"><code>[f3]</code> <code>datacom config</code></td> <td data-bbox="507 906 580 954"><code>[f4]</code></td> <td data-bbox="580 906 654 954"><code>[f5]</code> <code>terminal config</code></td> <td data-bbox="654 906 727 954"><code>[f6]</code></td> <td data-bbox="727 906 800 954"><code>[f7]</code></td> <td data-bbox="800 906 873 954"><code>[f8]</code></td> </tr> </table>	<code>[f1]</code>	<code>[f2]</code>	<code>[f3]</code> <code>datacom config</code>	<code>[f4]</code>	<code>[f5]</code> <code>terminal config</code>	<code>[f6]</code>	<code>[f7]</code>	<code>[f8]</code>
<code>[f1]</code>	<code>[f2]</code>	<code>[f3]</code> <code>datacom config</code>	<code>[f4]</code>	<code>[f5]</code> <code>terminal config</code>	<code>[f6]</code>	<code>[f7]</code>	<code>[f8]</code>		



User Definable Function Keys

Each function key can be programmed with a character string of up to 80 characters. A type character (L, T, or N) is assigned to the character strings. The type can be defined for local use only (with the letter "L" assigned to it), for transmission to the computer only (with the letter "T" assigned to it), or to act as data entered normally from the keyboard (with the letter "N" assigned to it). Programmed this way, the function keys are useful for entering (with only a couple of keystrokes) any often-used character string of up to 80 characters.

Each of the eight function keys can be assigned a label of up to 16 characters. The label can serve as a reminder of the content of the character string when the character string is not displayed.

The function keys have default assignments which become effective whenever the terminal is turned on, a hard reset is performed, or the **DEFAULT VALUES** function key is pressed. These assignments are shown in figure 4-3. The default character string assignments for the eight function keys consist of two characters each (the **f** character and one lower-case letter). The default type character for all function keys is "T", as shown in the figure. The default character strings have no preassigned meanings. One use for them is to transmit them to a computer where they can be interpreted by a program. The program can apply any desired interpretation to the character string, thus accomplishing a complex operation with a couple of keystrokes. For example, the program might be designed to output a complex data entry form to the terminal when prompted by receipt of the character string from one of the function keys.

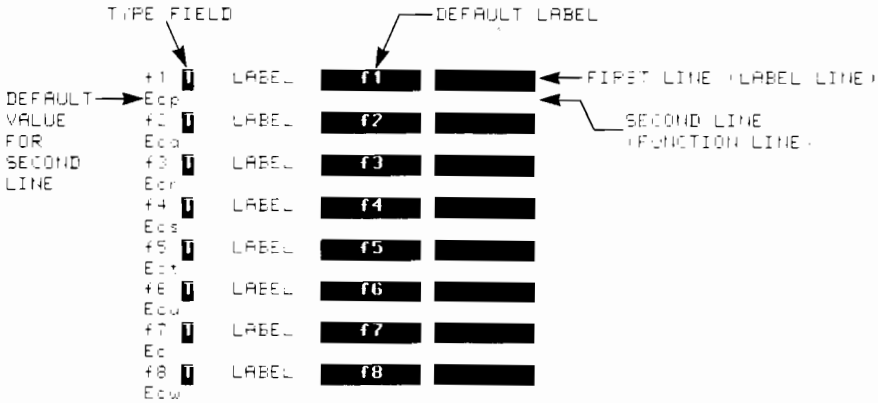


Figure 4-3. User Definable Function Key Menu with Default Values

User Key Modes

The function keys are associated with user-definable functions in two modes: Definition mode and User mode. In Definition mode, the function keys are assigned labels, type characters, and character strings. In User mode, the keys are made active so that, when the key is pressed, the character string assigned to the key is "L" or "N" and the terminal is in Local mode). (If the type character is "T" and the terminal is in Remote Mode, the character string will be transmitted to the computer. However, the character string will not be displayed on the terminal screen.) When User mode is entered (by pressing **SNP 1** **AIDS**), the labels assigned to the keys appear along the bottom of the screen in the normal label position.

Definition Mode

INITIATING DEFINITION MODE. To initiate Definition Mode, press the **AIDS** key, then the **define user key** function key (**f2**). This causes the current key assignments to be displayed. Use the tab key or cursor-positioning keys to position the cursor for making entries on the User Keys menu.

DEFINING A FUNCTION KEY. To define a function key, first choose the type character (L for local use only, T for transmit only, and N for normal treatment, as though it was entered from the keyboard). Use either the **PREVIOUS CHOICE** or the **NEXT CHOICE** function key to select your choice of entry. The default field type is T.

Next, enter the label to be assigned to the function key. The label appears on the definition menu as two 8-character blocks. The first block appears on the screen located above the second block when the label is displayed at the bottom of the screen in User mode. The default labels for the keys are the labels f1 through f8.

Finally, type in the character string on the line below the label blocks. Use the **DISPLAY FUNCTNS** function key to enter keystrokes from the Display group of keyboard keys. When entered in Display Functions mode, the keystroke operation will not be performed until the function key to which it is assigned is pressed. For example, if a **↵** keystroke is assigned to one of the function keys in Display Functions mode, the cursor will be homed up when the function key is pressed in User mode.

LEAVING DEFINITION MODE. Definition mode can be terminated by pressing the **AIDS** key. The **AIDS** key returns the terminal to the normal screen display. To enter User mode, refer to the following paragraph.

User Mode

INITIATING USER MODE. To initiate User mode, press and hold down the **SHIFT** key while you also press the **AIDS** key.

EXAMPLE

This example assigns a company name and address to key **f1** to appear as follows:

```
ACME Co.  
1000 Star Rt.  
New York, NY
```

- Press the **AIDS** key, then the **modes** function key (**f1**), and check whether an asterisk is present in any of the function key labels. If so, press the associated function key to remove the asterisk.
- Press the **AIDS** key, then the **define user key** function key (**f2**). This initiates Definition mode and displays the User Key menu.
- Locate the cursor under the type field for **f1** and press the **NEXT CHOICE** function key until an "L" appears in the field. This indicates the character string is for use at the terminal only.
- Move the cursor to the label line and type in your choice of label for the function key.
- Move the cursor to the left margin of the character string field.
- Press the **DISPLAY FUNCTNS** function key to produce an asterisk in the **DISPLAY FUNCTNS** label.
- Type "ACME Co. **RETURN** 1000 Star Rt. **RETURN** New York, NY **RETURN**".
- Press the **DISPLAY FUNCTNS** function key to remove the asterisk from the label. (This turns off Display Functions mode.)

- Press the **SHIFT** key, then the **modes** function key (**f1**) to bring up the modes set of function key labels. Press the **AUTO LF** function key to add an asterisk to the label. (This turns on Auto LF mode.)
- Press the **SHIFT** key and hold it down while pressing the **SHIFT** key in order to bring up the user keys function key labels (f1-f8). Note that your label has replaced the "f1" label. Press the function key with your label on it. The data you typed into the function line on the User Keys menu should appear on the screen. Note that because AUTO LF is selected, a line feed is added following each **RETURN** when the function key is pressed in User mode.

LEAVING USER MODE. To leave User mode and display the formerly displayed set of labels, simply press the **SHIFT** key.

Edit Function Key Labels

Pressing the **SHIFT** key, then the **edit keys** function key (**f8**), displays the edit set of function key labels. The labels appear as follows:

[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]
LINE MODIFY	MODIFY ALL	CLEAR LINE	CLEAR DISPLAY	INSERT LINE	DELETE LINE	INSERT CHAR	DELETE CHAR

The extended keyboard provides separate editing keys.

Displayed data can be edited by inserting or deleting characters or lines, deleting the portion of a line to the right of the cursor, or deleting all data in display memory beginning at the cursor position. Each of the function keys, when the edit labels are displayed, can activate the function denoted by the label (the label contains an asterisk when the function is active). Alternately pressing the function key produces and deletes the asterisk. Table 4-9 describes the functions of the function keys when the edit labels are displayed.

Table 4-9. Edit Function Key Labels

LABEL	FUNCTION
LINE MODIFY	Used only in Remote Mode. When enabled, this mode allows editing a line of data while in Character Mode, then using the ENTER or RETURN key to transmit the line to the computer as a block. Line modify mode ends when the ENTER or RETURN key is pressed.
MODIFY ALL	Similar to LINE MODIFY except that modify all mode is not ended by the ENTER or RETURN key. When modify all mode is active, an asterisk is present in the label. When modify all mode is not selected, the asterisk is absent from the label.
CLEAR LINE	Clears the line from the cursor to the end of the line.
CLEAR DISPLAY	Clears the display from the cursor position to the end of display memory.
INSERT LINE	Inserts a blank line preceding the one in which the cursor is located. The line in which the cursor is located and subsequent lines are pushed down one line and the cursor is moved to the left margin of the blank line.
DELETE LINE	Deletes the line in which the cursor is located. Subsequent lines are scrolled up to take its place and the cursor is moved to the left margin.
INSERT CHAR	This function key allows you to insert characters into a line without overwriting existing characters. The new characters are inserted at the cursor position. The existing characters are shifted right one character position for each character entered. Characters shifted past the right margin are lost. When this insert character function is enabled, the characters "IC" are displayed in the status line at the bottom of the screen, and an asterisk appears in the label.
DELETE CHAR	This function key deletes the character at the cursor position. When you press down the DELETE CHAR function key (F8), characters to the right of the deleted character (up to the right margin) will be shifted left one character position for each character deleted.

5

Configuring The Terminal	5-1
Introduction	5-1
Switch Configuration	5-2
Switch Configuration/Keyboard Configuration ..	5-4
Configuration from Keyboard	5-6
How to Display a Menu	5-6
Configuring	5-8
To Return to Normal Operation	5-8
Terminal Configuration	5-9
Datacomm Configuration	5-9



Configuring The Terminal

5

Introduction

The terminal's configuration values which are present when the terminal is turned on, are set through the switches at the back of the terminal. These values remain valid after the terminal's power has been turned off and is turned on again. The terminal can also be configured through the keyboard, but these configuration values are lost when the terminal's power is turned off.

Sufficient information is supplied in this section to enable you to configure the terminal provided you know the function or purpose of each configuration parameter. Detailed information on the configuration parameters is available in the Reference Manual.

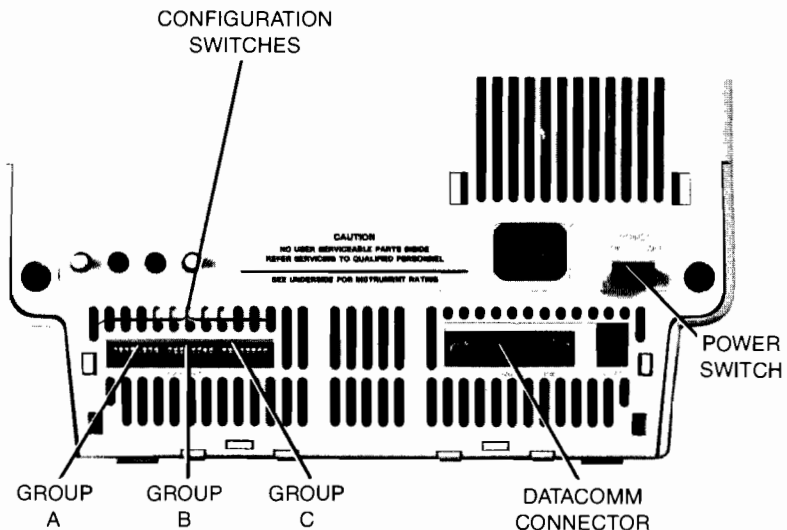


Figure 5-1. Position of Switches

Switch Configuration

At the back of the terminal are 24 switches (three groups of eight switches each). The switches are broken into groups A, B, and C. Group A contains the 8 switches nearest the side of the terminal where there are no connectors. Group C contains the 8 switches nearest the datacomm connector and the power switch. Group B contains the eight switches inbetween groups A and C. Refer to Figure 5-1 for a picture showing the position of the switches in relationship to the back of the terminal.

These switches work on an ON/OFF basis. When the switch is pointing down toward the table, it is in the OFF position. When the switch is pointing up toward the top of the terminal, it is in the ON position.

Table 5-1 lists each switch, and gives its associated configuration parameter.

Table 5-1. Terminal Switches

SWITCH GROUP	SWITCH NUMBER	DEFAULT SETTING	CONFIGURATION PARAMETER
G	1	DOWN	} BaudRate
R	2	UP	
O	3	UP	
U	4	UP	} **Parity
P	5	DOWN	
A	6	DOWN	} EnqAck
	7	DOWN	
	8	UP	
G	1	DOWN	Chk Parity
R	2	DOWN	SR(CH)
O	3	DOWN	RecvPace
U	4	DOWN	CS(CB)Xmit
P	5	DOWN	BLOCK MODE
	6	UP	REMOTE MODE
B	7	DOWN	AUTO LF
	8	DOWN	FrameRate
G	1	DOWN	LocalEcho
R	2	DOWN	CapsLock
O	3	DOWN	XmitFunctn(A)
U	4	DOWN	Line/Page(D)
P	5	DOWN	InhHndShk(G)
	6	DOWN	Inh DC2(H)
C	7	DOWN	*** Blk Terminator /FldSeparator
	8	DOWN	ShiftFunctnKeys

¶Baud Rate

Note that when describing the state of a switch the following is true: Down=Off=0 and Up=On=1.

Switches 1234	Baud Rate
0000	110
0001	134.5
0010	150
0011	300
0100	600
0101	1200
0110	1800
0111	2400 (DEFAULT)
1000	4800
1001	9600

Other switch combinations will be set for 2400 Baud. If all four Baud Rate switches are up when the terminal's power is turned on, the terminal will automatically enter Manufacturing Test mode.

¶¶Parity

Switches 567	Parity
000	0's (DEFAULT)
001	ODD
010	1's
011	EVEN
100	NONE (7 Bit)
101	NONE (8 Bit)

Other switch combinations will not change (or affect) the Parity.

¶¶¶BlkTerminator /FldSeparator Switch

Switch Position	BlkTerminator	FldSeparator
Down (HP Compatible)	R ₅	L ₅
UP (DEC Compatible)	R ₄	R ₅

When you change a switch setting in the back of the terminal, the changed value of the configuration parameter shows up immediately in the particular configuration menu: terminal configuration or datacomm configuration. To access the terminal configuration menu, press the following keys: **AltS** , **F5** , **F8** , **F5** . To access the datacomm configuration menu, press: **AltS** , **F5** , **F8** , **F3** . This is true even if the configuration menu is not presently being displayed on the screen.

Switch Configuration/Keyboard Configuration

The switches at the back of the terminal contain the essential configuration parameters which when set will probably remain constant over time. The terminal configuration menus, which allow the user to configure the terminal from the keyboard, contain many of the same parameters and some additional ones. Table 5-2 shows a comparison of those configuration parameters which can only be set through the keyboard, and those which can be set either way. The critical thing to remember is that when a parameter is configured from the keyboard, it will revert to its default value or switch setting after the terminal's power has been turned off.

Table 5-2. Switch Configuration/Keyboard Configuration

CONFIGURATION PARAMETER	SWITCH CONFIGURATION	KEYBOARD CONFIGURATION
BaudRate	X	X
BlkTerminator**	X	X
BLOCK MODE*	X	X
CapsLock	X	X
Chk Parity	X	X
CS(CB)Xmit	X	X
EnqAck	X	X
FldSeparator**	X	X
FrameRate	X	X
Inh DC2(H)	X	X
InhEolWrp(C)	X	X
InhHndShk(G)	X	X

Table 5-2. Switch Configuration/ Keyboard Configuration (Continued)

CONFIGURATION PARAMETER	SWITCH CONFIGURATION	KEYBOARD CONFIGURATION
Line/Page(D)	X	X
LocalEcho	X	X
Parity	X	X
RecvPace	X	X
REMOTE*	X	X
ReturnDef		X
ShiftFunctnKeys	X	X
SPDw(B)		X
SR(CH)	X	X
Start Col		X
XmitFunctn(A)	X	X
XmitPace		X

* REMOTE, AUTO LF, and BLOCK MODE can be configured in the hardware switches at the back of the terminal, or they can be configured through the modes set of function keys. The modes function keys are described in Section 4.

**When `BlkTerminator` and `FldSeparator` are configured in the hardware switches at the back of the terminal, they can only take on two values:

Switch Position		<code>BlkTerminator</code>	<code>FldSeparator</code>
Down/Off	(HP Compatible)	␣	␣
Up/On	(DEC Compatible)	␣	␣

When `BlkTerminator` and `FldSeparator` are configured through the Terminal Configuration Menu, these parameters can assume any one character value that the user assigns.



Configuration From Keyboard

All configuration requirements for the terminal are contained in two menus; the terminal configuration menu and the datacomm configuration menu. The terminal configuration menu is for enabling selection of terminal characteristics. The datacomm configuration menu is used for selecting datacomm protocol. A menu is a list of configuration parameters which are displayed on the screen. Each parameter has an associated space for a value which you select. Many of the parameters have a system-defined list of values. For others, you must enter the value from the keyboard. For parameters with system-defined values, two function key labels are displayed with the menu to enable you to scroll forward NEXT CHOICE or backward PREVIOUS CHOICE through the list of values.

How To Display A Menu

To display a menu, perform the following:

1. Press the **aid** key to display the Primary set of function key labels.
2. Press the **aid & features** function key (**f5**).
3. Press the **config keys** function key (**f8**) to display the configuration set of function key labels shown below.



4. Press **datacomm config** (**f3**) or **terminal config** (**f5**) key to display the next set of function key labels shown below.



Table 5-3 lists the function key labels and their functions.

Table 5-3. Configuration Mode Function Key Labels

LABEL	FUNCTION
SAVE CONFIG	Saves the displayed configuration parameters in memory, makes the set of parameters the active configuration set, and returns to normal operating mode with the aids & features set of function key labels displayed.
NEXT CHOICE	Most of the fields on the menus have a list of acceptable values (some have only two). These keys scroll forward or backward through the list.
PREVIOUS CHOICE	Selects the previous parameter of a menu field.
DEFAULT VALUES	Displays the default values for each field in the configuration menu.
POWER ON VALUES	Displays the configuration values set in the hardware switches at the back of the terminal, or the default values if no switch is associated with that parameter. After the terminal has been turned off, the values set in the hardware switches take precedence over values selected from the keyboard through the configuration menus.
IDENTIFY FUNCTNS	When on, the action normally produced by any keyboard control key, such as RETURN , TAB , or any of the display keys is not performed. Instead an ASCII character representing the function is displayed on the screen. DISPLAY FUNCTNS is also used to define the <code>ReturnDef</code> , <code>BLK Terminator</code> , and <code>FldSeparator</code> fields.
config keys	Ends Configuration mode without saving the displayed values. Any changes made in the menu, through the keyboard, are lost if they have not been saved. However, if any hardware switch position was changed, it remains effective even though you did not press the SAVE CONFIG function key. Pressing the config keys function key returns the terminal to normal operating mode with the Configuration set of function key labels displayed.

Configuring

To change a selection on a menu, perform the following steps:

1. Place the cursor at the character position to be changed. This can be done using the **TAB** key or the cursor-positioning keys. The **TAB** key moves the cursor to the next selection field each time the key is pressed.
2. If the choices are restricted to a system-defined list of selections (such a field is underlined), use either the **NEXT CHOICE** or **PREVIOUS CHOICE** function key to cycle through the list of selections until the desired one is displayed.
3. If the choices are not restricted to a system-defined list (not underlined), enter the desired value from the keyboard. Use the display functions mode, if needed.
4. To save the new menu values until the terminal's power is turned off, press the **SAVE CONFIG** function key.

To Return To Normal Operation

Pressing the **SAVE CONFIG** function key will return the previous display contents to the display and save the displayed configuration values until the terminal's power is turned off. However, if you wish to return the previous display contents to the display without saving the displayed configuration values, you can press the **ABORT** key to do so.

Terminal Configuration

Figure 5-2 illustrates the terminal configuration and the default values. Refer to the Reference Manual for a description of the menu fields.

Language	USASCII	FrameRate	60				
ReturnDef	CR						
LocalEcho	OFF	CapsLock	OFF	StartCol	01	ASCII 8 Bits	NO
AutoEcho	NO	BF0H/BI	NO	InkEd/InkP	NO	Line PageDr	LINE
CtrlH/Ink/Gr	NO	Ink/EOH	NO				
FileSeparator	FILE	PA/Termination	PA	Shift Function Keys	NO		

Figure 5-2. Terminal Configuration Menu

Datacomm Configuration

The datacomm configuration menu is shown in figure 5-3. The values shown are default values. Refer to the Reference Manual for a description of all menu fields.

BaudRate	2400	Parity	ODS	EndPar	YES
		Ctrl Parity	NO	SRICH	LO
Flow Ctrl	None			IS/CR/Line	NO
Flow Ctrl	None				

Figure 5-3. Typical Default Datacomm Configuration Menu



6

Using Your Terminal By Itself	6-1
Introduction	6-1
Screen	6-1
Entering Data	6-2
Correcting Data	6-2
Technique of Data Entry	6-2
Tabs	6-2
Setting Tabs	6-2
Using Tabs	6-2
Clearing Tabs	6-3
Margins	6-3
Left Margin	6-3
Right Margin	6-3
Moving a Block of Text	6-4
Display Features	6-5
Using Display Enhancements	6-6
Using Alternate Character Sets	6-7



Using The Terminal By Itself

6

Introduction

The terminal can store up to 3,840 characters (48 lines of 80 characters each) and can be used without being connected to a computer (Local mode). It can be used alone when first learning to use it or when preparing data for transmission to the computer.

We will use the terminal in Local mode to learn how to enter and correct data. Once you have been introduced to the basic terminal, later sections will describe how to use the terminal with a computer.

Screen

The display screen is capable of displaying up to 24 contiguous lines of display memory data. These 24 lines of data are considered to be one page of data.

The screen actually provides 26 rows of 80 character positions each for the display. Rows 1 through 24 are used to display the content of one page of display memory. Rows 25 and 26, at the bottom of the screen, are used to display the currently active set of function key labels, a current cursor position column and row indicator, and "IC" for indicating Insert Character Mode. The status indicator locations are shown in figure 6-1.

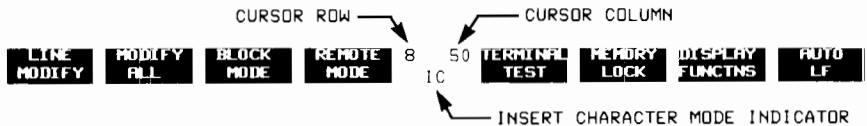


Figure 6-1. Status Indicator Locations.

Entering Data

One of the most important uses of the terminal is data entry. Data is entered using the keyboard, and can then be sent to a computer.

As an example, enter the following name and date:

```
Karissa Grandtr          July 7, 1973
```

Correcting Data

If you make an error or wish to change an entry you have made, you can use any of the cursor keys or edit function keys discussed earlier. For example, to add the middle initial "L" to the entry in the previous example, move the cursor under the "G". Turn on the insert character function by pressing the **AIDS** key, edit keys function key (**f8**), and INSERT CHAR function key (**f7**). The characters "IC" are displayed in the status line at the bottom of the screen. Type "L."

```
Karissa L. Grandtr      July 7, 1973
```

Press the INSERT CHAR function key again to return to normal overwrite mode. Press the **AIDS** key to get back to the primary function key labels.

Techniques Of Data Entry

To simplify data entry, you can use tabs, margins, and data forms. The following text describes how to use tab stops and margins. Refer to the Reference Manual for information on data forms.

Tabs

SETTING TABS. To set a tab, move the cursor to the desired column and press the **AIDS** key and the aids & features function key (**f5**). Then press the margins/tabs/col function key to display the Margin/Tab/Col set of function key labels. Now press the SET TAB function key. Once a tab is set, the **TAB** key can be used to move the cursor to the next tab setting.

USING TABS. Once tab positions have been set, you can tab using the **TAB** key in the same manner that you would on a typewriter. You can tab backwards to the previous tab position by pressing the **TAB** key while holding down the **SHIFT** key. When you are at the first tab position in a line and you backtab, the cursor moves to the last tab position in the previous line. Once the cursor has reached the first tab position in the first line of memory, no further backtabbing movement is made.

CLEARING TABS. You can clear individual tabs by moving the cursor to the tab position, accessing the Margin/Tab/Col set of labels, and pressing the CLEAR TAB function key. All of the tab stops can be cleared at once without having to position the cursor. Simply press the CLR ALL TABS function key.


Margins

You can set the left and right margins to make the entry of data easier. When the terminal is turned on or a hard reset is performed, the margins are set at columns 1 and 80. You can set new margins as described below.

LEFT MARGIN. Move the cursor to the desired left margin setting. With the Margin/Tab/Col labels displayed, press the LEFT MARGIN key.

RIGHT MARGIN. Move the cursor to the desired right margin setting. With the Margin/Tab/Col labels displayed, press the RIGHT MARGIN key.

If the cursor is moved as a result of hitting an alphanumeric character key or the space bar, the following events will occur. The terminal will beep when you are eight characters from the right margin. When the right margin is reached, the cursor will move to the left margin of the next line if end-of-line wraparound is selected (InhEolWrp(☐) =NO in terminal configuration menu).


If the cursor is moved using the  key, the terminal will not beep when you are near the right margin. When column 80 is reached, the cursor will move to the left margin of the new line whether or not end-of-line wraparound is selected.

The left margin cannot exceed the right margin. An invalid margin setting will not be accepted and will cause the terminal to beep.

EXAMPLE

Set the margins for a 40 column page centered on the screen.

With the Margin/Tab/Col labels displayed, move the cursor to column 20 and press the LEFT MARGIN function key. Then move the cursor to column 59 and press the RIGHT MARGIN function key.

Place the cursor back at column 20 by pressing  and begin typing.

Margins are changed by setting new margins (or restored to the default left margin at column 1 and the right margin at column 80 by a hard reset). They are cleared by pressing the CLR ALL MARGINS function key. Also, the margins are set to their default values when Format Mode is entered.





Moving A Block Of Text

You can move blocks of text using Memory Lock mode.

For example, in the following text, move the paragraphs into the proper order.


Initial order:


(Top of screen) 3. This is paragraph 3. It should be last in the group.
 2. This is paragraph 2. It should be second.
 1. This is paragraph 1. It should be first.

1. Press the  key and type in the paragraphs as shown. Be sure to press  following the last line.
2. Position the cursor in the first line of paragraph 2.
3. Press the **MODES** key, then press the **MEMORY LOCK** function key to turn on Memory Lock mode.
4. Use the  key until the remaining paragraphs have rolled up under the cursor position and off the screen.
5. Turn off Memory Lock mode by pressing the **MEMORY LOCK** function key so the asterisk disappears from the label.
6. Press the  key.

The display should appear as follows:

(Top of screen) 2. This is paragraph 2. It should be second.
 1. This is paragraph 1. It should be first.
 3. This is paragraph 3. It should be last in the group.



7. Now move paragraph 1 by positioning the cursor in the first line of paragraph 1 and turning on Memory Lock mode as described in step 3.
8. Use the  key until the cursor is in the first line of paragraph 3.

9. Turn off Memory Lock mode (as described in step 5), and press the  key. The paragraphs should now be in order.

The display should appear as follows:

(Top of screen)

1. This is paragraph 1. It should be first.
2. This is paragraph 2. It should be second.
3. This is paragraph 3. It should be last in the group.

Note that if the data is not on the first page of memory, the  key can be used instead of the  key to view the newly ordered text.

Display Features

The terminal provides the following display features:

- **DISPLAY ENHANCEMENTS**—Parts of the display can be underlined, blinking, inverse video, or half bright or any combination of these.
- **LINE DRAWING CHARACTER SET**—The keyboard can be used to select characters from the Line Drawing character set, if your terminal has the line drawing character set option.

The following features are available in Format mode:

- **PROTECTED FIELDS**—Data cannot be entered and changed. Data will not be sent to the computer.
- **UNPROTECTED FIELDS**—Data can be entered and changed. Data will be sent to the computer.

Forms can be created with these features to make data entry easier. The forms used are similar to paper forms except that they are displayed on the terminal screen. Forms are made by defining "fields" of one or more characters. Each character can be given one or more of the display features. Once a form is created, it can be stored in the computer and displayed as needed. Refer to the Reference Manual for additional information on using these features.

Using Display Enhancements

The terminal includes as a standard feature the following display enhancement capabilities:

- **Half Bright**—characters are displayed at half intensity (grey).
- **Underline**—an underline is displayed below the normal character.
- **Inverse Video**—the screen is white and characters are black.
- **Blinking**—characters including the inverse video, underline, and half bright features blink.

The various display enhancements are enabled and disabled from the keyboard by pressing the **AIDS** key, the **aids & features** function key (**f5**), and the **enhance video** function key (**f5**) in sequence. This changes the function key labels to the following:

[f1]	[f2]	[f3]	[f4]	[f5]	[f6]	[f7]	[f8]
define fields		SET ENHANCMT		INVERSE VIDEO	BLINK VIDEO	UNDERLINE VIDEO	HALF BRIGHT

Table 6-1 lists these function key labels along with their functions.

Table 6-1. Enhance Video Set

LABEL	FUNCTION
define fields	Selects the Define fields set of Enhancement group key labels.
SET ENHANCMT	Activates the currently selected state (whether on or off) of every enhancement. This key must be used to activate or deactivate any enhancement.
INVERSE VIDEO	Inverts the intensity of the background and all characters in the field. The characters are made dark on a light background instead of the normal light characters on a dark background.
BLINK VIDEO	Causes characters in the field to blink on and off.
UNDERLINE VIDEO	Underlines all characters (including blanks).
HALF BRIGHT	Causes characters in the field to be displayed at half intensity (grey).

EXAMPLE

This example defines columns 10 through 14 of line 5 to be inverse video and blinking.

1. Press the **ANS** key to display the primary set of function keys, then press the **aid & features** function key (**f5**) and the **enhance video** function key (**f5**). This will cause the video enhancement labels to be displayed.
2. Press the **INVERSE VIDEO** (**f5**) and **BLINK VIDEO** (**f6**) function keys to enable these enhancements. When enabled, an asterisk is present in these key labels.
3. Position the cursor at column 10 in line 5.
4. Press the **SET ENHANCMT** (**f3**) function key. The selected enhancements take effect when characters are contained in display memory. Notice, the enhancements begin at the cursor position and continue through the end of the line or through the next subsequent column in which another display enhancement begins.
5. Position the cursor at column 15 in line 5.
6. Press the **SET ENHANCMT** function key (**f3**) to deactivate the display enhancements.
7. Type the word **TERMINAL** beginning in column 9 of line 5. It should appear as shown below.

```
      1      1  
      0      5  
      ↓      ↓  
T*E*R*M*I*N*A*L
```

Using The Alternate Character Set

If your terminal has option 020 (Line Drawing Set), it can display 128 Line Drawing Set characters in addition to the standard ASCII set.

Switching from the base character set to the Line Drawing Set can be done on a character-by-character basis. For example, a line drawing character can be displayed next to characters in the base set. This is done by defining one or more character positions in a line to be from Line Drawing sets. (Each group of characters can be thought of as a field).

To shift to the Line Drawing Set, position the cursor where you want the Line Drawing Set character. Press the **CTRL** , **SHIFT** keys (shift out to alternate character set) followed by the key for the desired character. (A keyboard layout for the line drawing characters is shown in APPENDIX A.)

To shift back to the base set, position the cursor and press the **CTRL** , **ENTER** keys (shift in to the base set).

Since the Line Drawing Set is the only alternate character set used with this terminal, it is always defined as alternate character set B. To find out if the Line Drawing Set is present in your terminal, press the **ADB** key, the **modes** function key (**F1**), and then **TERMINAL TEST** (**F5**). If the Line Drawing Set is present, the pattern will look like figure 9-2.

Defining Fields In Format Mode

In Format Mode the cursor automatically moves to the start of the first unprotected field in the form. Therefore, you can only enter data into those portions of the display screen which lie within unprotected fields.

Protected Fields

Fields can be protected so that displayed data cannot be overwritten or sent to a computer. When the terminal is placed in Format Mode all character positions on the screen are protected except those fields that have been specifically defined as unprotected.

Unprotected Fields

Data can be written into unprotected fields in the normal manner. After reaching the end of an unprotected field, the cursor moves to the beginning of the next unprotected field. The **TAB** key can be used to move the cursor to the beginning of the previous unprotected field.



Using The Terminal With A Computer	7-1
Introduction	7-1
Preparing the Terminal for Use On-Line	7-1
Reconfiguring the Datacomm Port	7-1
Selecting Operating Modes	7-4
Remote	7-4
Block Mode	7-4
Auto LF	7-5
Caps Lock	7-5
If a Modem is Used	7-6
Sending Data to the Computer	7-6
Character Mode	7-6
Normal Operation	7-6
Modify Mode	7-6
Using Start Column	7-7
Block Mode	7-9



Using The Terminal With A Computer

7

Introduction

The HP 2382A can be connected to a computer system either directly or through a modem.

Preparing The Terminal For Use On-Line


Preparing the terminal for use on-line consists of reconfiguring the datacomm, if necessary, and selecting the operating modes. The following procedures are not complete; they consist only of those procedures most likely to be needed. For complete information on configuring the terminal/computer link, refer to the Reference Manual.

Reconfiguring The Datacomm Port

Following is a suggested procedure for selecting the configuration values to be associated with the datacomm port on the HP 2382A terminal.

- Display the Config set of function key labels by pressing



- Display the datacomm menu by pressing the datacomm config key ().

- The datacomm menu shows the current values of the datacomm configuration parameters. Make any necessary changes to these parameters by changing the switch settings in the back of the terminal. Once the switch settings are changed, the configuration values will remain valid even if the terminal's power is turned off. The values of the changed switch settings are reflected immediately in the datacomm configuration menu which you have on your terminal screen. Table 7-1 lists the position of the various switches, and the configuration parameter which each switch represents. When the switch is pointing down toward the table, the switch is in the "Down" or "Off" position. When the switch is pointing up toward the top of the terminal, the switch is in the "Up" or "On" position.

Table 7-1. Terminal Switches

SWITCH GROUP	SWITCH NUMBER	CONFIGURATION PARAMETER
G R O U P A	1	} BaudRate
	2	
	3	
	4	
	5	} Parity
	6	
	7	
	8	
G R O U P B	1	Chk Parity
	2	SR(CH)
	3	RecvPace
	4	CS(CB)Xmit
	5	BLOCK MODE
	6	REMOTE MODE
	7	AUTO LF
	8	FrameRate
G R O U P C	1	LocalEcho
	2	CapsLock
	3	XmitFunctn(A)
	4	Line/Page(D)
	5	InhHndShk(G)
	6	Inh DC2(H)
	7	BlkTermnator/FldSeparator
	8	ShiftFunctnKeys

*Baud Rate

Note that when describing the state of a switch the following is true: Down=Off=0 and Up=On=1.

Switches 1234	Baud Rate
0000	110
0001	134.5
0010	150
0011	300
0100	600
0101	1200
0110	1800
0111	2400
1000	4800
1001	9600

Other switch combinations will not change (or affect) the Baud Rate. If all four Baud Rate switches are up when the terminal's power is turned on, the terminal will automatically enter Manufacturing Test mode.

**Parity

Switches 567	Parity
000	0's
001	ODD
010	1's
011	EVEN
100	NONE (7 Bit)
101	NONE (8 Bit)

Other switch combinations will not change (or affect) the Parity.

***BlkTerminator/FldSeparator Switch

Switch Position	BlkTerminator	FldSeparator
Down (HP Compatible)	$\frac{R}{S}$	$\frac{L}{S}$
UP (DEC Compatible)	$\frac{C}{R}$	$\frac{R}{S}$

When you change a switch setting in the back of the terminal, the changed value of the configuration parameter shows up immediately in the particular configuration menu: terminal configuration or datacomm configuration. To access the terminal configuration menu, press the following keys: **AIDS** , **f5** , **f8** , **f5** . To access the datacomm configuration menu, press: **AIDS** , **f5** , **f8** , **f3** . This is true even if the configuration menu is not presently being displayed on the screen.

Selecting Operating Modes

Remote mode, Block mode, Auto Linefeed mode, and Caps Lock mode can be set either through the switches at the back of the terminal or through the function keys on the keyboard. If any of these modes are going to be used on a permanent basis, they should be set through the switches at the back of the terminal. The switch settings remain valid when the terminal's power is turned off and then back on. The values set through the function keys are destroyed when the terminal's power is turned off. The position of the switches representing these modes is given in Table 7-1.

REMOTE. For the terminal to communicate with the computer, Remote mode must be selected. To select Remote mode through the switch settings, set switch 6 in group B to the Up position (see Table 7-1). To select Remote mode through the function keys, press the **AIDS** , **f1** keys. If no asterisk is present in the REMOTE MODE label, press the **f4** key to produce an asterisk in the label.

BLOCK MODE. Block mode is used to select whether data will be sent to the computer character-by-character or in blocks of characters. When Block mode is not selected, the characters are sent to the computer as they are typed. This mode of operation is used for conversational exchanges with the computer. In Block mode, the characters are stored in the terminal as they are typed. They are not sent to the computer until the **ENTER** key is pressed. This enables you to edit your data before sending it to the computer. The block is sent by pressing the **ENTER** key. The block can be one of two sizes; a line or a page.

To select the block size through the switch settings, use switch number 4 in group C. To select "line", the switch should be down. To select "page", the switch should be up. Refer to Table 7-1 if more information is needed.

To select the block size through the function keys, display the terminal configuration menu by pressing in sequence

[f5] [f8] [f5]
AIDS aids & config terminal
features keys config

Then place the cursor in the Line/Page field and use the NEXT CHOICE key to display your choice of block size. With your choice displayed, press the SAVE CONFIG key to store the displayed configuration values in memory.

AUTO LF. Normally, automatic line feed is not selected when communicating with a computer. To select it with the switch settings, set switch number 7 in group B to the up position (see Table 7-1). To select Auto LF through the function keys, display the Modes labels by pressing the **AIDS**, **f1** keys. If no asterisk is present in the AUTO LF label, press the **f8** key once to produce an asterisk in the label.

CAPS LOCK. Unless the computer system to which your terminal is connected accepts lower-case letters, Caps Lock mode should be selected. To select Caps Lock mode through the switches, set switch number 2 in group C to the up position. To select Caps Lock mode through the terminal configuration menu, press

[f5] [f8] [f5]
AIDS aids & config terminal
features keys config

With the menu displayed, position the cursor at the Caps Lock field and use the NEXT CHOICE key to display your choice of ON or OFF; then press the SAVE CONFIG key to store the configuration values in memory.

When Caps Lock mode is enabled, the terminal generates only Teletype-compatible codes: uppercase ASCII (00-5F, hex) and DEL (7F, hex). Unshifted alphabetic keys (a-z) generate the codes for their uppercase equivalents, the { , , and } keys generate the codes for [, \ , and] (respectively), and the ~ and ` keys are ignored.

Caps lock mode is different than Caps Mode. Caps Mode is enabled by pressing the **CAPS** key. When Caps Mode is enabled, all unshifted alphabetic keys generate uppercase letters and all shifted alphabetic keys generate lowercase letters. This mode is used primarily as a typing convenience and only affects the 26 alphabetic keys. Caps lock mode overrides the **CAPS** key.

If A Modem Is Used

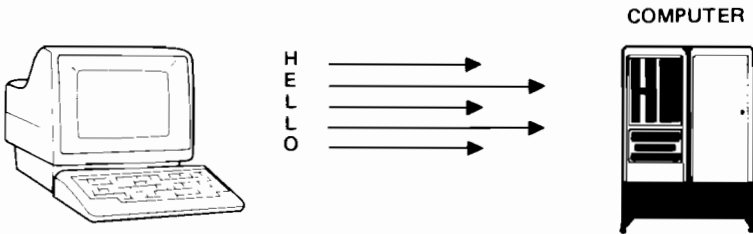
If a modem is used, it may be necessary to turn on the modem, make modem speed and parity settings, or dial a telephone number. Baud rate and parity settings should be the same values used for the terminal. These settings can be observed by displaying the datacomm configuration menu.

Sending Data To The Computer

Data can be sent to the computer from the keyboard in either Character or Block mode. Block mode enables editing the data before sending it. Modify mode is available for editing data before transmission while operating in Character mode.

Character Mode

NORMAL OPERATION. In Character mode, each character is sent to the computer, automatically, as it is typed into the keyboard.



MODIFY MODE. While operating in Character mode, Modify mode can be used to edit data already displayed on the screen before sending it to the computer.

For example, if you have transmitted to the computer a string of data which contains an error and the computer returns an error message, instead of retyping the data you can enter Line Modify mode, correct the error using the keyboard edit keys, and retransmit the string by pressing the **RETURN** or **ENTER** key.

There are two ways of executing modify mode: by pressing **LINE MODIFY** or by pressing **MODIFY ALL**.

Modify All mode is used in the same manner as Line Modify mode except that, unlike Line Modify mode, Modify All mode does not end when the **RETURN** or **ENTER** key is pressed. To enter Line Modify mode, press



The mode is ended when the **ENTER** or **RETURN** key is pressed. An asterisk is present in the LINE MODIFY label until the mode is ended.

To enter Modify All mode, press



An asterisk is present in the MODIFY ALL label when the mode is activated. Pressing the MODIFY ALL key while in Modify All mode ends the mode and removes the asterisk from the label.

USING START COLUMN. The start column feature is used only in Line Modify or Modify All mode. Provided certain conditions are met, the start column feature can be used to transmit data to the computer, ignoring any data to the left of a selected column.

Here is a description of how the start column feature works. Under the following conditions, the terminal firmware sets a "logical start-of-text" pointer for each line of text.

1. The terminal must be in Remote mode, and may be in Block or Format mode when the line is entered.
2. The character to which the pointer applies must be entered from the keyboard (not from the computer).
3. At the time the line is entered, it must be the bottommost, non-blank line in the workspace.

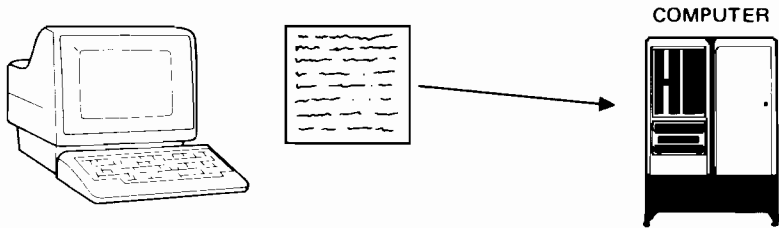
This logical start-of-text pointer is set at the leftmost column in which a character is typed from the keyboard. Then, when you press the **ENTER** or **RETURN** key to transmit the text to the computer, transmission starts at the column indicated by the pointer. However, if no pointer exists for the line, transmission starts at the column specified in the **Start Col** field of the Terminal Configuration menu or the **START COLUMN** set in tabs/margins level of the function keys.

Block Mode

In Block mode, data is stored in the terminal until the **ENTER** key is pressed, then it is transmitted as a block of data. The block size can be either a line or a page, as discussed under "Block Mode" earlier in this section. To select Block Mode through the switch settings, set switch number 5 in group B to the up position (see Table 7-1). To select Block mode through the function keys, press



An asterisk is present in the BLOCK MODE label while Block mode is active. To return to Character mode, remove the asterisk from the label by pressing the BLOCK MODE key again.





8

Maintenance	8-1
Introduction	8-1
Cleaning	8-1





Maintenance

8

Introduction

Maintenance of the terminal consists of cleaning the screen, plastic housing, and keyboard to remove dust and grease.

Cleaning

First, dust lightly using a damp, lint-free cloth. The cloth should not be wet, but just damp enough to pick up dust. Paper towels are fine. Avoid wiping dust or lint into the keyboard area.

CAUTION

Do not use petroleum-based cleaners, such as lighter fluid, or cleaners containing benzene, trichloroethylene, dilute ammonia, ammonia, or acetone. These cleaners could harm the plastic surfaces. Also, avoid spraying cleaner between the keyboard keys.

Smudges and fingerprints can be removed using most conventional cleaners (such as "SNAP" glass and plastic cleaner, manufactured by Mist Products Inc., 16 Watch Hill Rd., Croton-on-Hudson, N.Y. 10520).



9

In Case Of Difficulty	9-1
Introduction	9-1
Malfunction at Power-On	9-1
Configuration Checking	9-1
Resetting the Terminal	9-2
Soft Reset	9-2
Hard Reset	9-2
Terminal Test	9-3
How to Get Help	9-4
Adjusting Display Screen	9-4



In Case Of Difficulty

9

Introduction

This section contains instructions for determining if a malfunction has actually occurred, error recovery instructions, and testing information. Once you have determined that the terminal is not functioning properly, procedures for requesting service are included at the end of this section under the heading "How To Get Help".

Malfunction At Power-On

When the power switch is set to ON, the terminal should beep once. Then, a power-on test should be performed for about 15 seconds. After a successful test, it should beep once again and bring up the modes function key labels.

If the terminal beeps continuously 1 to 11 times (after the initial beep), and the primary level of function key labels do not come up, refer to "How To Get Help".

Configuration Checking

Sometimes what appears to be a terminal malfunction may be caused by incorrect configuration for the job you are trying to do. When the terminal appears to malfunction, the usual procedure is to reset the terminal. If the problem isn't corrected, a terminal test is performed. If the test fails, a call for service is made. However, resetting the terminal disrupts datacomm operations, and during a hard reset all of the data in display memory is destroyed. Therefore, it is wise to check the configurable items before doing a hard reset to ensure that the configuration is compatible with the task you are trying to perform. Refer to Section 5 for configuration instructions.

Resetting the Terminal

It may be necessary to use the reset key to clear the terminal of an error condition. There are two types of reset: a soft reset and a hard reset. Either type resets datacomm operations. In addition, a hard reset destroys all of the data in display memory which clears the display screen. For these reasons, you may not wish to hard reset the terminal unless you are quite certain it is necessary.

Soft Reset

A soft reset is performed by pressing the **RESET** / **BREAK** key. The effects are listed below. Currently active configuration values are preserved during a soft reset.

- The terminal's bell rings.
- The keyboard is unlocked.
- If the Display Functions capability is active, it is turned off.
- Line modify mode is turned off.
- All datacomm transfers are cancelled and any data stored in the datacomm buffer is cleared out.
- The screen is not cleared.

Hard Reset

A hard reset is performed by simultaneously pressing the **CTRL**, **SHIFT**, and **RETURN** keys. A hard reset has the following effects:

- User keys (**f1** – **f8**) are reset to default values.
- All data in display memory is destroyed.
- All configurations are reset to the values saved in memory.
- The keyboard, if disabled, is enabled.
- Caps mode is turned off.
- The screen displays the modes level of function key labels.

- The left margin is set to column 1 and the right margin is set to column 80.
- All tabs are cleared.
- The following capabilities, if on, are turned off:
 1. Display functions.
 2. Line Modify mode.
 3. Insert character.
 4. Memory Lock mode.

Terminal Test

The terminal test will tell whether or not the terminal is operating correctly. The test can be initiated by either one of the procedures listed below.

1. Press the following keys, in sequence:

2. Press, in sequence:

If the test is successful, indicating the terminal is operating correctly, a test pattern will appear on the screen. Figure 9-1 shows the terminal test pattern for the standard terminal. Figure 9-2 shows the terminal test pattern for option 202 which contains the Line Drawing Character Set. Note that the first two lines of the test pattern are displayed only with the Line Drawing Character Set. Note also, the numbers on the bottom of the test pattern depend on the particular settings of the terminal at the time of the test. Therefore, your numbers may differ from the figure.

If the test pattern does not appear, refer to the "How To Get Help" paragraph at the end of this section.

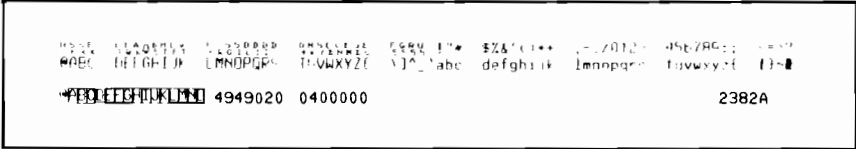


Figure 9-1. Terminal Test Pattern (Standard Terminal)

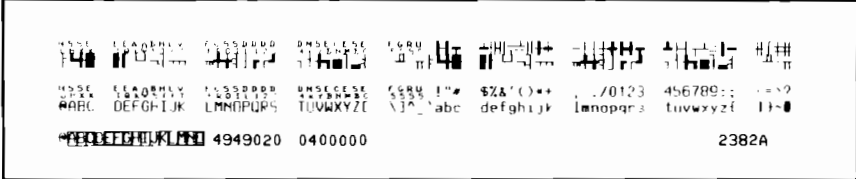


Figure 9-2. Terminal Test Pattern (Option 202)

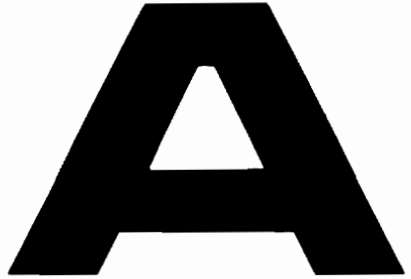
How to Get Help

If the terminal doesn't complete the terminal test correctly, the terminal is probably malfunctioning. At this point you can either perform further tests, as described in the Reference Manual, or contact your nearest Hewlett-Packard service office.

Adjusting Display Screen

To adjust the focus and brightness of the characters on your display screen proceed as follows:

1. Put some characters on the display screen.
2. Adjust the FOCUS adjustment (figure 2-3) for uniform clarity across the screen.
3. Adjust the BRIGHT adjustment (figure 2-3) for the desired brightness.



Keyboards and Character Sets	A-1
National Keyboards	A-4
7-Bit vs. 8-Bit Operation	A-7
Alternate Character Set Selection	A-7
ISO/USASCII Character Set	A-9
Extended Roman Character Set	A-9
Line Drawing Set	A-10



Keyboards and Character Sets

Depending on the option selected, a terminal comes with one of three types of character ROM installed, as shown below:

OPTION	CHARACTER SET(S)
Standard	USASCII
001-007	USASCII, Extended Roman, and Line-Drawing sets
202	USASCII and Line-Drawing sets

Figures A-1 through A-7 show the national keyboards which are available as options 001 through 007. These options also include the extended Roman character set ROM. This ROM contains many characters used in the languages represented in options 001 through 007 but not found in the USASCII character set (see tables A-1 and A-2).

Table A-1. Standard ISO/ASCII Character Codes

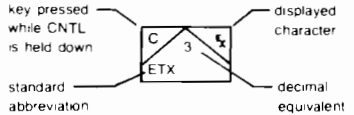
BIT 4321	CONTROL (CNTL) CHARACTERS				DISPLAYABLE CHARACTERS					
	0 0	0 1	0 1	0 1	0 1	0 1	0 1	0 1		
0000	@ NUL	N DL	P DLE		SP	0	@	P	'	D
0001	A SOH	1 SH	Q DC1	17 D1	I	I	A	Q	a	q
0010	B STX	2 SX	R DC2	18 D2	"	2	B	R	b	r
0011	C ETX	3 EX	S DC3	19 D3	=	3	C	S	c	s
0100	D EOT	4 ET	T DC4	20 D4	\$	4	D	T	d	t
0101	E ENG	5 EG	U NAK	21 NK	%	5	E	U	e	u
0110	F ACK	6 AK	V SYN	22 SY	&	6	F	V	f	v
0111	G BEL	7 BELL	W ETB	23 EB	.	7	G	W	g	w
1000	H BS	8 BS	X CAN	24 CN	{	8	H	X	h	x
1001	I HT	9 HT	Y EM	25 EM	}	9	I	Y	i	y
1010	J LF	10 LF	Z SUB	26 SB	*	:	J	Z	j	z
1011	K VT	11 VT	[ESC	27 EC	+	:	K	[k	
1100	L FF	12 FF	\ FS	28 FS	.	<	L	\	l	
1101	M CR	13 CR	^ GS	29 GS	-	=	M	^	m	
1110	N SO	14 SO	_ RS	30 RS	.	>	N	_	n	~
1111	O SI	15 SI	~ US	31 US	/	?	O	~	o	DEL

Table A-2. Extended Roman Character Codes

		B ₈ = 1							
		EXTENDED ROMAN CHARACTERS							
BIT	7 6 5	0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
0000				/	-	â	À		
0001						ê	Î		
0010						ô	Ø		
0011					•	û	Œ		
0100						á	à		
0101					ç	é	í		
0110					ñ	ó	ø		
0111					ñ	ú	æ		
1000			•	•	ı	à	Ä		
1001			•	•	ç	è	ì		
1010			•	•	œ	ò	Ö		
1011			•	•	£	ù	ü		
1100			~			ä	É		
1101					§	ë	ï		
1110						ö	ß		
1111					£	ü			

- ACKNOWLEDGE
- BELL
- BACKSPACE
- CANCEL LINE
- CARRIAGE RETURN
- DATA LINK ESCAPE
- DEVICE CONTROL 1
- DEVICE CONTROL 2
- DEVICE CONTROL 3
- DEVICE CONTROL 4
- DELETE
- END OF MEDIUM
- ENQUIRY
- END OF TRANSMISSION
- ESCAPE
- END OF BLOCK
- END OF TEXT
- FORM FEED
- FILE SEPARATOR
- GROUP SEPARATOR
- HORIZONTAL TAB
- LINE FEED
- NEGATIVE ACKNOWLEDGE
- RECORD SEPARATOR
- SHIFT IN
- SHIFT OUT
- SPACE
- START OF HEADING
- START OF TEXT
- SUBSTITUTE
- SYNCHRONOUS IDLE
- UNIT SEPARATOR
- VERTICAL TAB

Control Character Legend



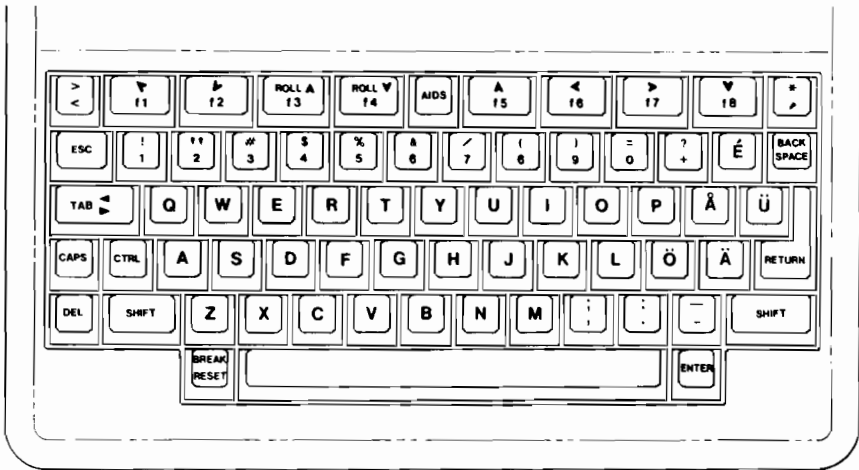


Figure A-1. Swedish/Finnish Keyboard (Option 001)

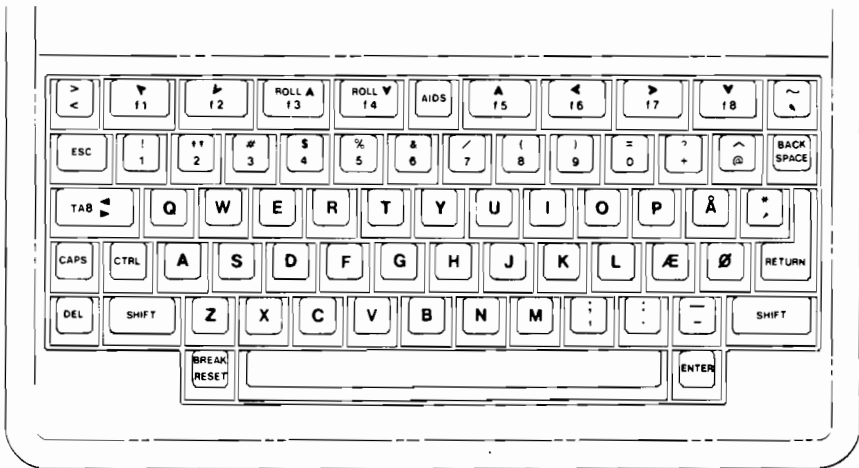


Figure A-2. Danish/Norwegian Keyboard (Option 002)

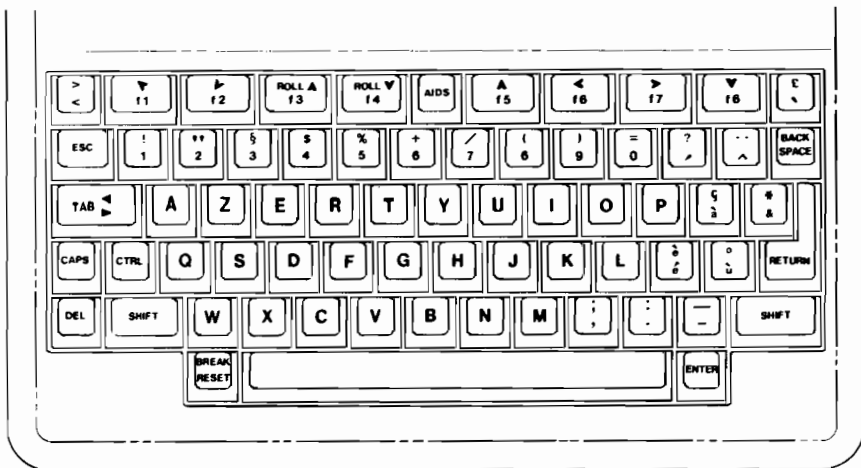


Figure A-3. French Keyboard (Option 003), AZERTY Layout

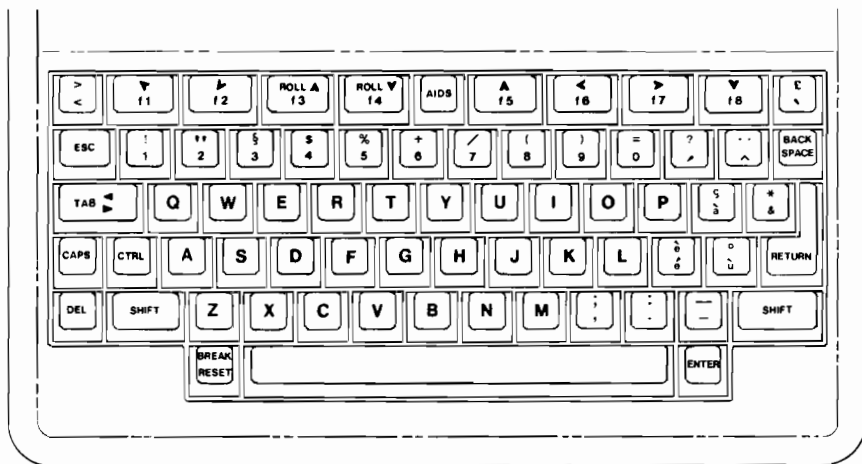


Figure A-4. French Keyboard (Option 007), QWERTY Layout

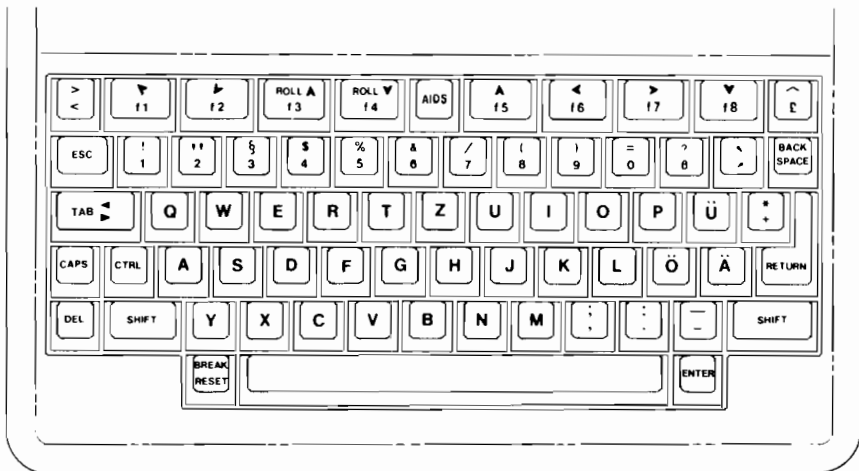


Figure A-4. German Keyboard (Option 004)

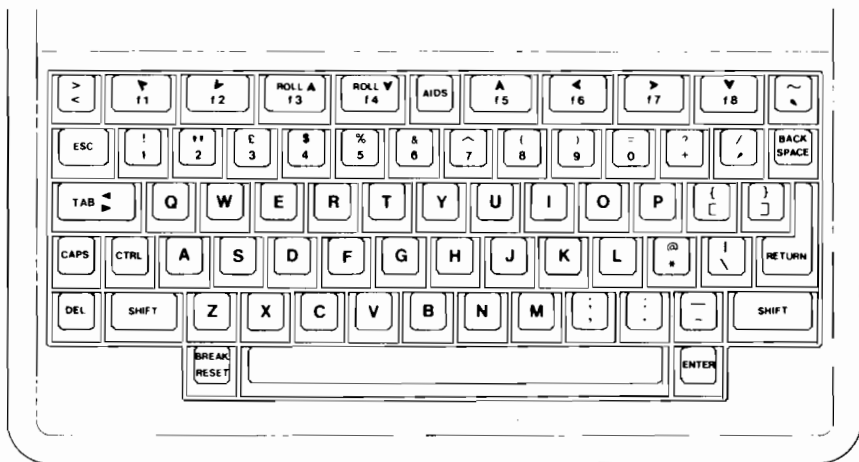


Figure A-5. United Kingdom Keyboard (Option 005)

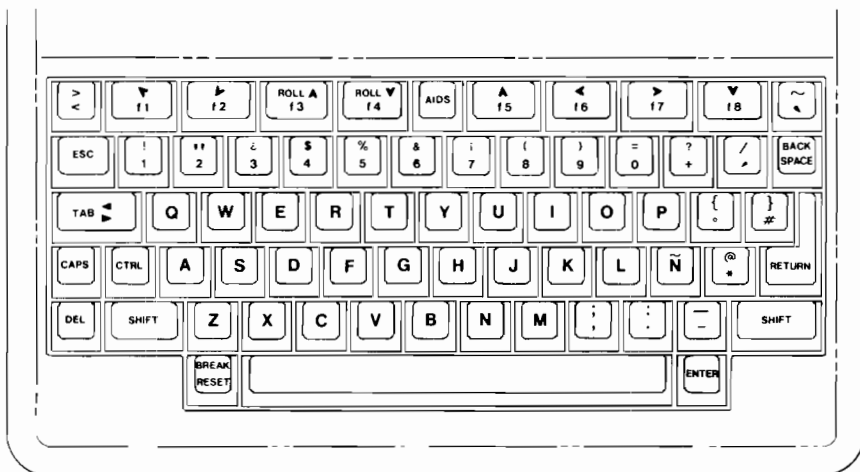


Figure A-6. Spanish Keyboard (Option 006)



7-Bit Vs. 8-Bit Operation

The terminal can operate in 7-bit or 8-bit mode. It is configured for 7-bit operation by setting switches 5, 6, 7 in group A to 1, 0, 0 respectively, or by setting the ASCII 8 bit field of the Terminal Configuration menu to "NO". The terminal is configured for 8-bit operation by setting switches 5, 6, 7 in group A to 1, 0, 1 respectively, or by setting the ASCII 8 bit field of the Terminal Configuration menu to "YES". Parity operation is allowed only in 7-bit mode.

Alternate Character Set Selection

The "base" language for the terminal is the language selected on the Terminal Configuration menu. The alternate character set can be the line-drawing set (which comes with options 001 through 007 and option 202) or the extended Roman character set (which comes with options 001 through 007).

One of these two sets is selected as the “active” alternate character set using an escape sequence, which can be entered from either a program or the keyboard. Here is a list of the appropriate escape sequences:

- ␣) @ Base set
- ␣) A Extended Roman Set (only in 8 bit mode)
- ␣) B Line Drawing Set

Note that in 7 bit mode, the extended Roman set cannot be chosen as the “active” alternate character set.

At power-up time or after a hard reset, the terminal defaults to the extended Roman character set as the active alternate character set if the terminal is configured for 8-bit operation and to the line-drawing set if the terminal is configured for 7-bit operation.

Pressing the **CTRL** and **N** keys simultaneously selects the active alternate character set as the character set accessed by the keyboard keys. Pressing the **CTRL** and **O** keys simultaneously returns the terminal to the base language.

When the terminal is in 7-bit mode and the active alternate character set is selected, it remains the character set accessed by the keyboard through the end of the current line. The alternate character set must be selected anew for each line.

When the terminal is in 8-bit mode and the active alternate character set is selected, it remains the character set accessed by the keyboard until the base set is reselected with a **CTRL** **O**.

ISO/USASCII Character Set

If the terminal is equipped with the ROM containing the extended Roman character set (table A-2), and is configured for 7-bit operation, the characters #, @, [, \ ,], ^, ^, {, |, }, and ~ in table A-1 are replaced on the screen with one of the following sets of characters, depending on the national language selected on the Terminal Configuration menu.

LANGUAGE	KEYBOARD		DECIMAL VALUE										
	OPTION #		35	64	91	92	93	94	96	123	124	125	126
USASCII	(standard)	#	@	[\]	^	^	{		}	~	
Swedish/Finnish	001	#	f	A	O	A	u	e	a	o	A	u	
Danish/Norwegian	002	#	@	f	Ø	A	^	^	ø	o	A	~	
French	003/007	{	à	'	ç	§	^	^	é	ù	è		
German	004	f	§	A	O	u	^	^	a	o	u	B	
United Kingdom	005	{	@	[\]	^	^	{		}	~	
Spanish	006	#	@	i	N	ç	'	^	{	ñ	}	~	

Extended Roman Character Set

All USASCII (table A-1) and extended Roman characters (table A-2) are accessible using the keyboard keys under the following conditions:

- The terminal is configured for 8-bit operation.
- The extended Roman character set is selected as the active alternate character set.
- The ASCII <S0> code (or **CTRL** **N** from the keyboard) and the ASCII <S1> code (or **CTRL** **O**) are used to flip back and forth between the USASCII and Extended Roman character sets.

In 8-bit mode, the eighth data bit is used by the firmware code to select either the USASCII or extended Roman character set. If the terminal is configured for 8-bit mode but does not include the 8K character ROM which contains the extended Roman character set, the eighth bit is still used for selection of the USASCII character set, but any keystrokes which would access the extended Roman characters, if the appropriate ROM was present, display spaces.

If the terminal is configured for 7-bit operation, and the extended Roman character set is selected as the active alternate character set, the terminal defaults to the base character set.

Line-Drawing Set

The line-drawing set consists of various line segments. Using it, you can construct data entry forms by combining different line segments. Each line segment is associated with one of the keyboard keys as shown in figures A-8 and A-9.

The line-drawing set line segments are accessed by selecting the line-drawing set as the active alternate character set using the escape sequence $\text{ESC } \text{D} \text{B}$ and then selecting it as the character set accessed by the keyboard keys by pressing the **CTRL** and **N** keys, simultaneously.

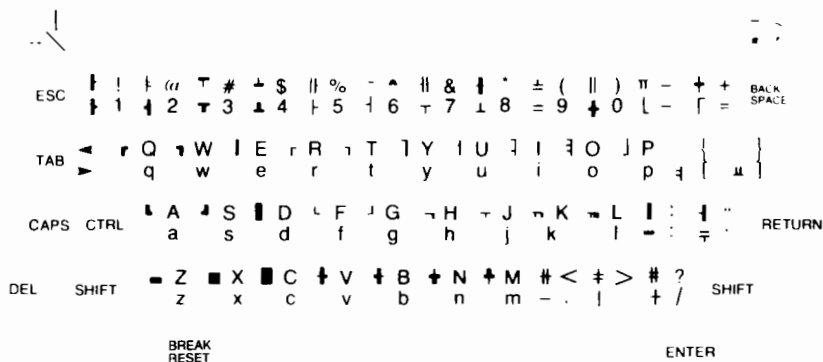
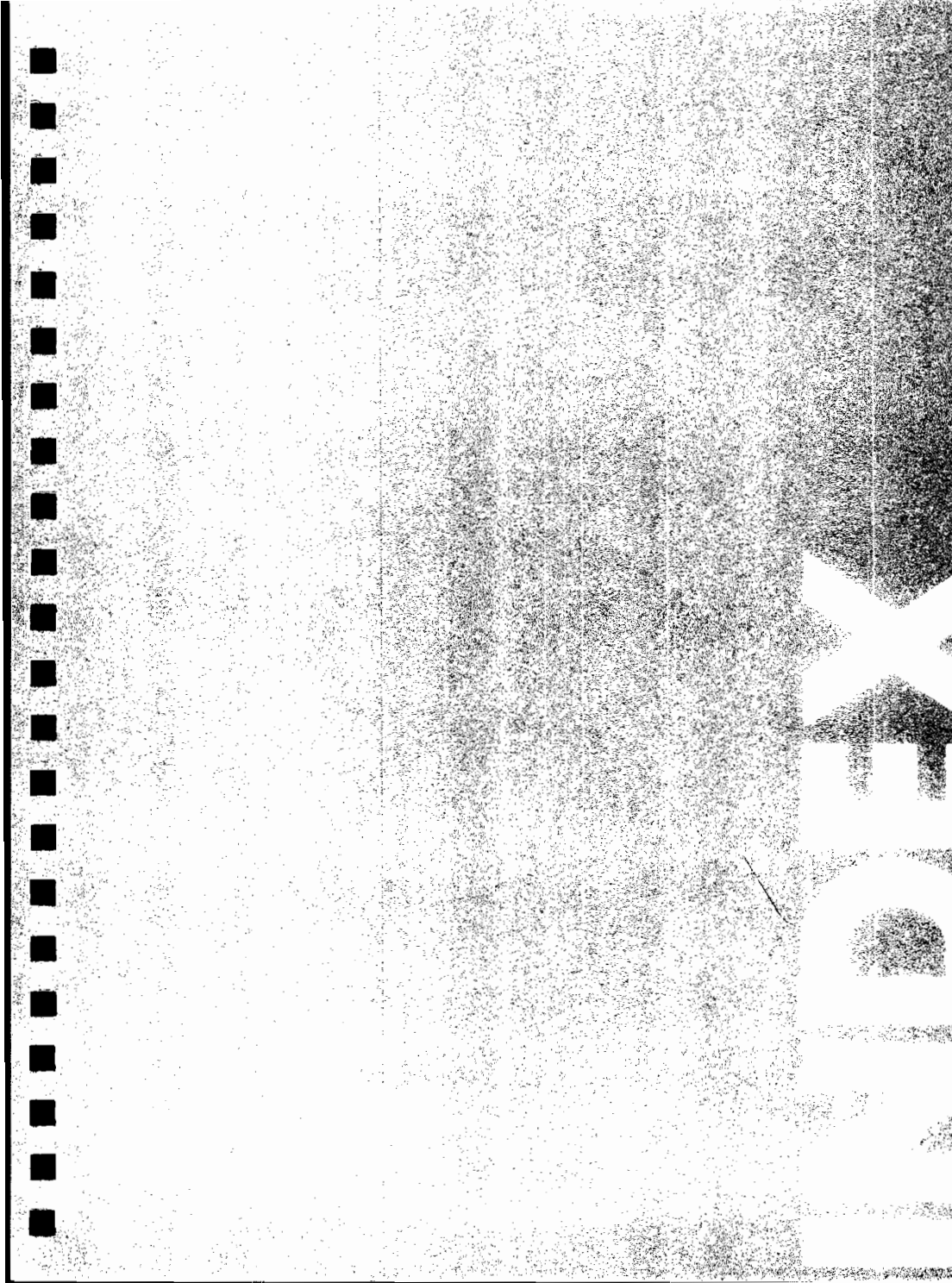


Figure A-8. Line-Drawing Set Elements







Index

adjusting display screen	9-4
AIDS key	1-4, 3-9, 4-2
aids & features function key labels	4-6
alternate character set	6-7
AUTO LF	7-5
blinking	6-6
block mode	7-4, 7-9
BREAK key	3-9
caps lock mode	7-5
character mode	7-6
cleaning terminal	8-1
clearing tabs	6-3
configuration	1-5
configuration checking	9-1
configuration, local	1-3
configuration, remote	1-3
configuration from keyboard	5-6
configuring the terminal	5-1, 5-8
correcting data	6-2
CTRL key operations	3-4
cursor down key	3-6
cursor left key	3-6
cursor home down key	3-6
cursor home up key	3-6
cursor right key	3-6
cursor up key	3-6

data communications	1-5
data communications cable	2-4
datacomm configuration	5-9
display control keys	3-5
display enhancements	6-6
data entry, techniques of	6-2
defining fields in format mode	6-8
display features	6-5
display memory	1-3
display screen	1-2, 6-1
edit function key labels	4-19
ENTER key operations	3-4
entering data	6-2
ESC key operations	3-3
format mode, defining fields	6-8
function keys	1-2, 1-4, 3-4, 4-1
function key labels, aids & features set	4-8
config set	4-14
define fields set	4-13
edit set	4-19
enhance video set	4-12
margins/tabs/col set	4-10
modes set	4-4
service set	4-11
half bright	6-6
hard reset	3-8, 9-2
how to display a menu	5-6
in case of difficulty	9-1
identification label	2-1
installing the terminal	2-3
inverse video	6-6
keyboard	1-2, 1-4, 3-1
keyboard, character set group	3-2
function control key	3-2
function/display group	3-2
terminal control key	3-2

labels with an asterisk	4-8
labels—uppercase and lowercase	4-8
left margin	6-3
maintenance	8-1
malfunction at power-on	9-1
margins	6-3
model number	2-1
modem usage	7-6
modes function key labels	4-4
moving a block of text	6-4
moving the screen	3-5
options	2-2
options, how to identify	2-1
preparing the terminal for use on-line	7-1
primary function key labels	4-3
power cord	2-4
protected fields	6-8
reconfiguring the datacomm port	7-1
remote mode	7-4
RESET key	3-8
resetting the terminal	9-2
return to normal operation	5-8
right margin	6-3
roll down key	3-8
roll up key	3-8
scanning display memory	3-7
selecting operating modes	7-4
self-test	1-3, 1-5
sending data to the computer	7-6
serial number	2-1
setting tabs	6-2
soft reset	3-8, 9-2
start column, using	7-7
switch configuration	5-2
switch configuration/keyboard configuration	5-4

tabs	6-2
terminal configuration	5-9
terminal test	9-3
terminal, turning on and off	2-5
underline	6-6
unprotected fields	6-8
user definable function keys	4-16
user key modes	4-17
using the terminal by itself	6-1
using the terminal with a computer	7-1

