

**CIT326**  
Video Display Terminal

User's  
Manual



**C.I.TOH**

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**USER'S MANUAL  
CIT326  
VIDEO DISPLAY TERMINAL**

**C.I.TOH**  
CIE Terminals

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## CHAPTER 1

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## INSTALLATION

### UNPACKING

The CIT326 is shipped complete in one shipping container. Unpack the terminal, as shown in the following figure:

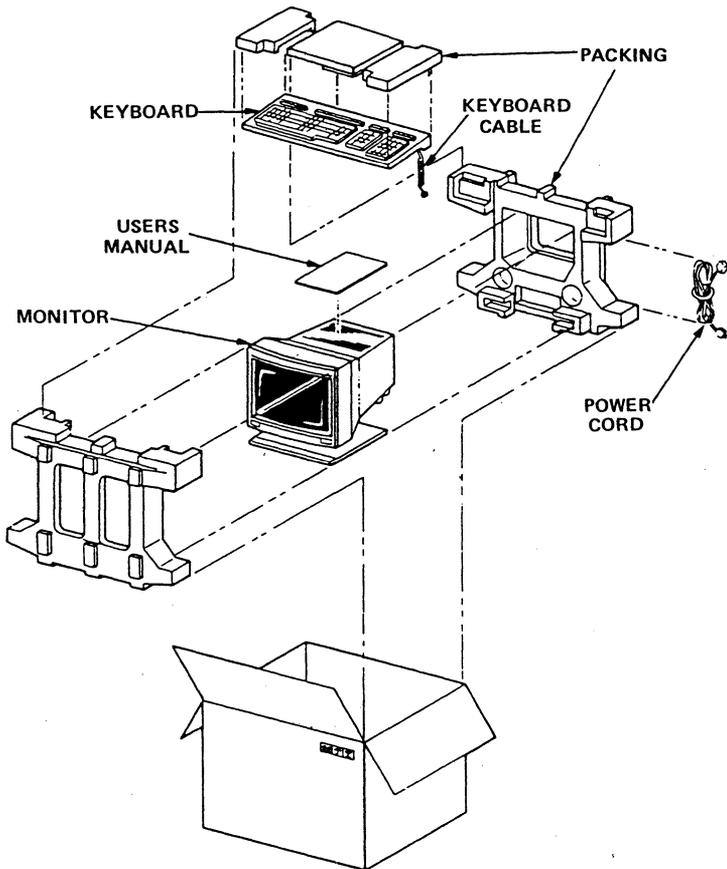


Figure 1-1. Unpacking the CIT326

## CIT326

You should have found the following items:

- a keyboard
- this User's Manual
- a power cord
- the terminal monitor.

If any of these items are missing, contact your dealer.

### INSPECTING FOR DAMAGE

Carefully inspect each component for any signs of shipping damage. All shipping containers have been specially designed to protect their contents and special care has been taken to prevent damage under normal shipping conditions. Mishandling should be evident upon the inspection of the shipping container. If damage is found after visual inspection, take care not to destroy the evidence. If necessary, document the damage with photographs and contact the transport carrier immediately.

### LOCATION

When choosing a location for the CIT326, follow the guidelines listed below:

1. Locate the terminal so that there is free airflow through the top and bottom air vents.
2. Do not place working materials on the air vents.
3. Do not locate the terminal where it can be exposed to direct sunlight or intense heat.
4. Choose a place where the temperature is between 50 and 105 degrees Fahrenheit (10 to 40° C). The relative humidity should be between 5 and 90%.

## CONNECTING THE TERMINAL

In order to get the terminal up and running, you will have to connect the keyboard to the monitor unit, check that the voltage setting is correct, plug in the power, and connect the terminal to the host computer(s).

### Keyboard Cable Attachment

Plug the keyboard cable connector into the jack located at the lower right side of the monitor case, as shown in Figure 1-2.

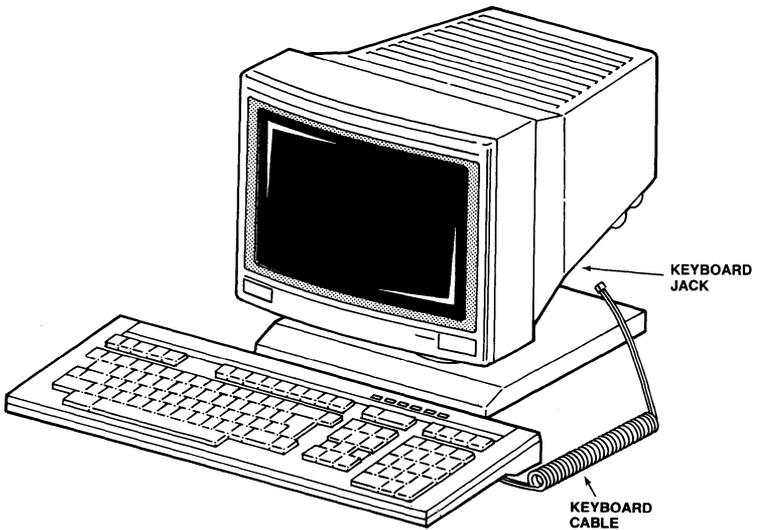


Figure 1-2. Keyboard Cable Attachment

### AC Line Voltage Connection

BEFORE connecting the power, verify that you have the correct power cord and that the CIT326 is set to the correct voltage. The terminal can be set to operate on 110-120V or 220-240V. Five optional power cords are available for use with the higher voltage (220-240V) AC power found in foreign countries and some domestic systems.

The standard power cord used in the United States comes with a standard three prong plug. This plug should be plugged into a properly-grounded three prong receptacle. The correct voltage selector setting for use with this power cord is 110V-120V.

If you intend to use any of the optional power cords, make sure that the plug matches the receptacle you intend to use. The plugs used by these optional power cords are shown in Figure 1-3. The correct voltage selector setting for use with these power cords is 220-240 volts. For more detailed information on these power cords, refer to Appendix E.

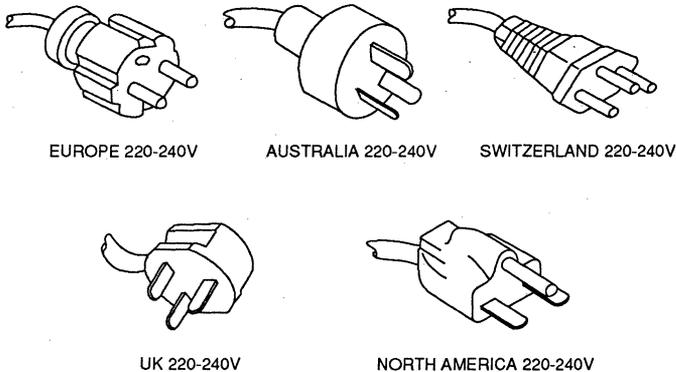


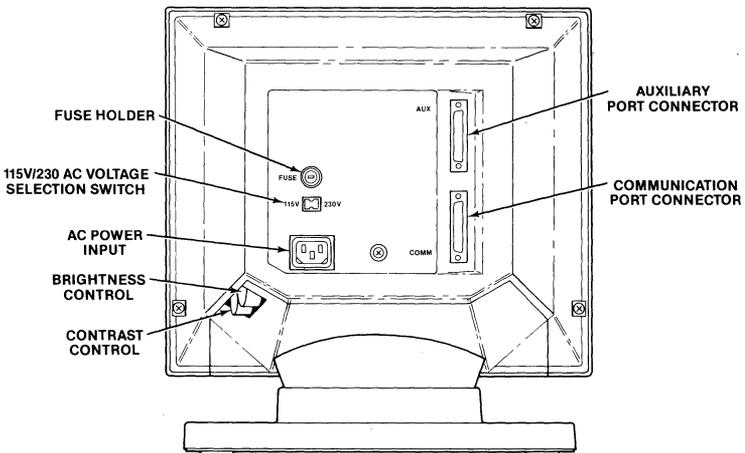
Figure 1-3. Optional Power Cord Plugs

## CAUTION

**DO NOT ATTEMPT TO OPERATE THE CIT326 WITH AN INCORRECT AC VOLTAGE SETTING OR DAMAGE TO THE TERMINAL CAN OCCUR.**

The AC voltage selection switch is shown in Figure 1-4. Make sure that this switch is set to the correct voltage. If it is not correct, use a pen or small screwdriver to set the slide switch to the value of the AC line voltage. Ensure also that the correct fuse is installed for the line voltage setting.

Connect the AC cord to the receptacle at the rear of the video terminal (shown in Figure 1-4). Plug the cord into the correct AC outlet.



**Figure 1-4. The CIT326 Back Panel**

### **Connecting to the Computer**

In most cases, the port labelled COMM is used to connect the CIT326 to the host computer. If the dual host mode is used, you will have to use both the COMM and AUX ports.

To connect the terminal, plug the cable connector into the connector marked "COMM" on the back of the terminal, as shown in Figure 1-4. Secure the connector with the lock screws (if provided).

If you will be using the dual host mode to communicate with two host computers, plug the second host's cable into the AUX port, as shown in Figure 1-4. Secure the connector with the lock screws (if provided).

### **Connecting to a Printer**

To connect the terminal to a printer, plug the cable connector into the connector marked "AUX" on the back of the terminal, as shown in Figure 1-4. Secure the connector with the lock screws (if provided). Plug the other end of the cable into the printer's interface connector, and secure it with lock screws.

## TERMINAL CHECKOUT

Press the power ON/OFF switch located on the front of the terminal, as shown in the following figure. The terminal responds with a beep tone and performs a self-test.

When the test is successfully completed, the message "CIT326 OK" appears on the screen and the terminal is ready for the terminal SET-UP procedures. When a character is received from the host computer, the message is removed. Or, to remove the message, press any key on the keyboard.

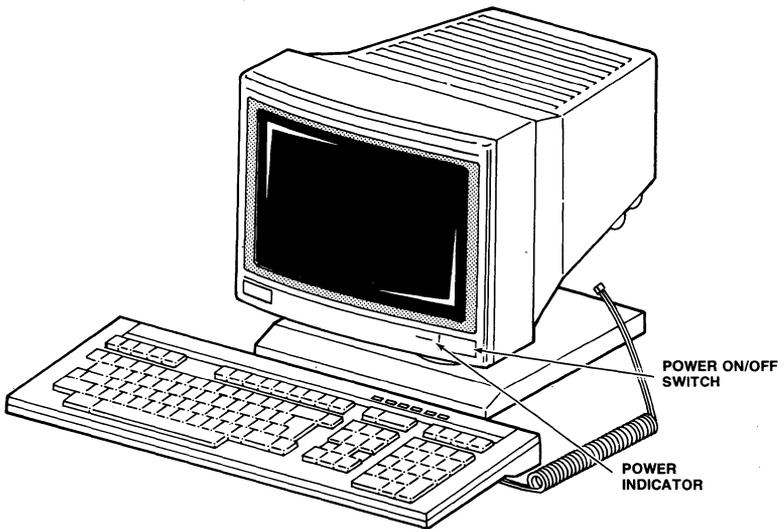


Figure 1-5. The Power Indicator and Power Switch

## COMMUNICATIONS SET-UP

In order for the terminal to communicate correctly with the host computer(s), several operating parameters must be set correctly. These parameters include:

- Host Mode (Single or Dual)
- Emulation Mode (VT200/VT100/VT52)
- Communication Speed
- Protocol
- Parity
- Number of Stop Bits
- Word Structure

If you don't intend to use the terminal with more than one computer or with a modem, chances are that these parameters are already set correctly. The terminal comes with factory settings which will work with most computers. However, it is recommended that you at least check these parameters.

### Changing the Communication Set-Up (Single Host)

To change the communication set-up when communicating with one host computer, perform the following steps:

1. Enter the Set-Up Mode by pressing the SET-UP key.
2. Enter the relevant set-up menus by pressing the appropriate function key or selecting the appropriate parameter. Pressing the F7 key will call up the Terminal Set-Up Menu, where the Emulation Mode can be changed. Pressing the F10 key will call up the Communications Set-Up Menu, where protocol, speed, parity/word length, and stop bits settings can be changed.
3. Press the down arrow (↓) key or the up arrow (↑) key until the appropriate parameter is highlighted, then press the ENTER key until the appropriate selection is highlighted.
4. Return to the Main Set-Up Menu. This can be done by pressing the F6 key.

5. Save the set-up selections. Press the down arrow (↓) key until the "Save Parameters" field is highlighted. Press the ENTER key, and the set-up changes will be saved in non-volatile memory, so that your changes will still be remembered even after the power has been turned off.
6. Exit the Set-Up Mode by pressing the SET-UP key.

### **Changing the Communication Set-Up (Dual Hosts)**

When the dual host mode is selected in the configuration menu (as explained in the following sections), separate set-up modes will be reserved for each host. These set-up modes are independent of each other: they can be saved and recalled separately.

To change the communication set-up when communicating with two host computers, you must first select the dual host mode in the Configuration Set-Up Menu. This menu can be called up by pressing <CTRL> <SET-UP>. Then perform the set-up procedure described in the preceding section twice -- once for each host -- using the MODE/SESSION key to switch between hosts. For more information, refer to the Dual Host Mode explanation in Chapter 2 and Set-Up Mode explanation in Chapter 4.

Note that when in the dual host mode, both ports are considered to be "communications" ports. The Communications set-up menus are used to set the communications parameters for both the AUX port host and the COMM port host. The Auxiliary set-up menus are not available when in the dual host mode.

## CARE AND MAINTENANCE

With the exception of occasional dusting or cleaning, the CIT326 should require very little care or maintenance. When required, the terminal should be cleaned with a dry, lint-free cloth. If the CRT screen or the plastic case need cleaning, remove the AC power cord first to prevent any accidents. Clean the terminal with a cloth dampened with a mild detergent solution. Avoid the use of strong solvent cleaners or detergents which may damage plastic surfaces.

## CHAPTER 2

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## OPERATION

### INTRODUCTION

The CIT326 is a versatile, low cost, multi-functional video display terminal with a 108-key detachable keyboard. The terminal allows the user to communicate with a host computer system via the keyboard and display screen. The CIT326 can be interfaced with a variety of computer systems and peripheral devices.

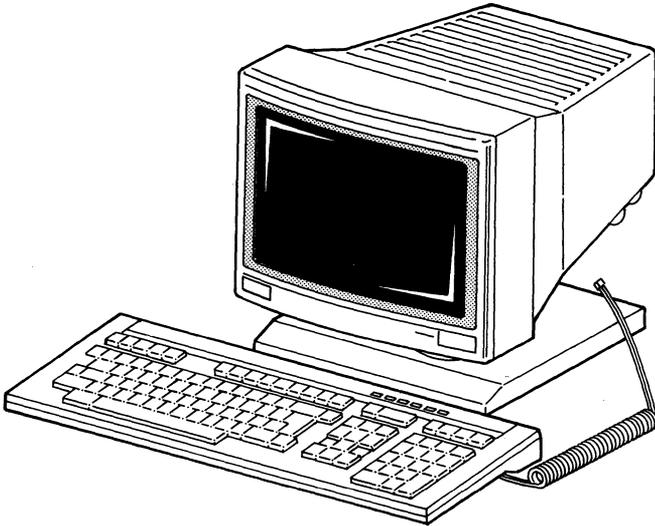


Figure 2-1. CIT326 Video Terminal

## CIT326

The CIT326 operates in either an ANSI mode or a VT52 mode. In the ANSI mode the terminal uses American National Standards Institute (ANSI) programming standards and is compatible with the DEC VT220 and VT100, and CIE Terminals CIT-101e, CIT-101, CIT-220+, and CIT224 video terminals. In the VT52 mode, the CIT326 is compatible with DEC VT52 terminals. For details concerning the various terminal emulation modes, refer to the CIT326 Programmer's Manual.

## FEATURES

Standard features include a full and half duplex communication mode, RS-232C or 20 mA current loop communication interface, and an auxiliary full duplex port. The CRT has a flat 14-inch diagonal screen with a choice of a black and white, green, or amber phosphor. Additional features of the CIT326 include:

- Keyboard layouts available in 15 languages
- A total of 180 programmable keys which can be saved in nonvolatile memory in the VT100 and VT220 emulation modes
- A Function Key Editor which provides local programming of function keys
- A selectable host addressable status line displayed as a 25th display row, or which can be used as a 25th data line
- An optional RS-422/423 interface
- Compatibility with DEC VT200 7- and 8-bit control modes
- Multi-mode bidirectional auxiliary port which can be used to connect to a second host computer or to a printer

- Two- and three-key compose sequences
- Four predefined character sets and a "soft" character set that is down-line loadable from the host
- National Replacement Character (NRC) sets available in 7-bit modes
- Twelve set-up screens which can be used to set or reset terminal parameters, plus a set-up help screen
- A dual host mode which allows the user to interact with two host computers
- A multiple-page memory and a review mode which allow the user to review information which has scrolled off the top of the screen
- The ability to split the screen into two segments, with the second segment used to display information from an alternate host

## COMPONENTS AND CONTROLS

As shown in figures 2-1 and 2-2, the terminal consists of a monitor unit with a tilt and swivel base and a separate, detachable keyboard. The locations of the ON/OFF switch, contrast control, and brightness control are shown in Figure 2-2.

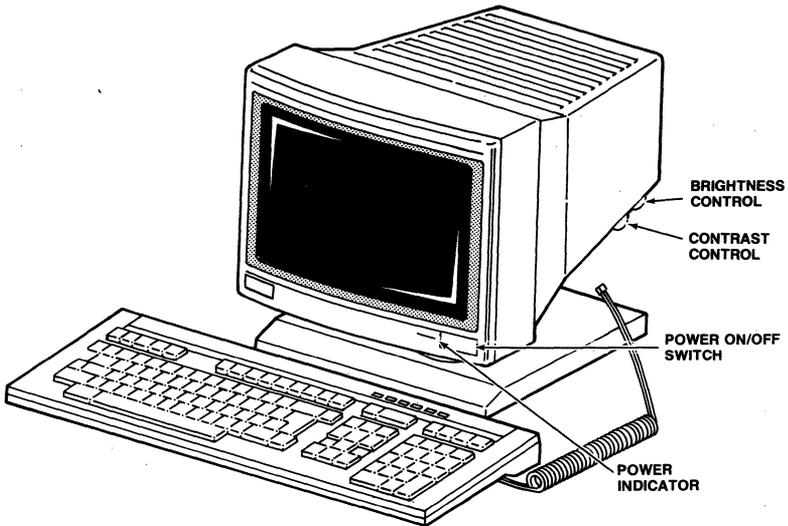


Figure 2-2. CIT326 Monitor Controls

## ADJUSTING THE TERMINAL

The simplest adjustments, such as display brightness and contrast, can be made by using the monitor controls shown in Figure 2-2. If you wish to make other changes (such as turning off the keyclick and changing the smooth scroll rate), you must use the set-up mode. Below is a brief explanation of how to use the set-up mode to make the most common adjustments. For a complete explanation of the set-up mode, refer to Chapter 4.

Any changes made in the set-up mode should be saved permanently. Otherwise, turning the terminal off and on will erase the changes. To do so, perform the following steps after you have made your changes:

- ▶ If you exited the set-up mode, press the SET-UP to reenter it. Otherwise, press the F6 key to return to the main menu.
- ▶ Press the down arrow (↓) key until the "Save Parameters" field is highlighted, and then press the ENTER key. The word "Done" will appear in the set-up mode status line.
- ▶ Press the SET-UP key to exit the set-up mode.

Note that in the dual host mode, the set-up modes used for each host are independent. Changing a parameter in the set-up mode dedicated to the AUX port host does not affect the parameters in the set-up mode dedicated to the COMM port host. In order to make changes for both hosts, you must press the MODE/SESSION key to switch hosts (outside of the set-up mode), and then repeat the set-up process for the second host. For more information, refer to the dual host mode explanation later in this chapter and the set-up mode explanation in Chapter 4.

### Viewing Angle

To adjust the viewing angle, firmly grasp the display on both sides. Tilt and swivel the monitor until it is at the most comfortable viewing angle.

## Brightness and Contrast

As shown in Figure 2-2, the contrast and brightness controls are located on the right side of the terminal. The contrast control is mounted forward of the brightness control.

To adjust the display brightness and contrast, turn the contrast knob until the contrast is correct. Then use the brightness knob to adjust the brightness.

In most cases, the contrast should be set to its maximum. After this has been done, fine tune the display by turning the brightness knob until the brightness is correct.

## Selecting Reverse Video

To change the screen from normal video (light characters on a dark background) to reverse video (dark characters on a light background), perform the following steps:

- ▶ If you have not already done so, enter the set-up mode by pressing the SET-UP key.
- ▶ Press the F8 key.
- ▶ Repeatedly press the down arrow (↓) key until the "Text Display: Light on Dark" field is highlighted.
- ▶ Press the ENTER key until the correct selection appears.

## Changing the Scrolling Rate

The scrolling rate is controlled by several parameters. These parameters include the scroll type (smooth or jump), the smooth scroll increment (1 or 2 scan lines at a time), and the smooth scroll rate (from 1 to 9, with 1 = fast and 9 = slow).

To change the scrolling type, perform the following steps:

- ▶ If you have not already done so, enter the set-up mode by pressing the SET-UP key.
- ▶ If you are not already at the display set-up menu, press the F8 key.
- ▶ Press the up arrow (↑) or down arrow (↓) key until the "Scroll Type" field is highlighted.
- ▶ Press the ENTER key to change the scrolling type.

To change the smooth scroll rate:

- ▶ Press the SET-UP key if you are not already in the set-up mode.
- ▶ Press the F8 key if you are not already at the display set-up menu.
- ▶ Press the up arrow (↑) or down arrow (↓) key until the "Smooth Scroll Increment" field is highlighted.
- ▶ Press the ENTER key to change the scroll increment. Selecting 2 scan lines will increase the smooth scroll speed.
- ▶ Press the down arrow (↓) key until the "Smooth Scroll Rate" is highlighted.
- ▶ Press the ENTER key to change the scroll rate. 1 is the fastest and 9 is the slowest.

### **Changing the Keyboard Auto Repeat Setting**

To turn the keyboard auto repeat off or on, perform the following steps:

- ▶ Press the SET-UP key if you are not already in the set-up mode.
- ▶ Press the F9 key.
- ▶ Press the down arrow (↓) key until the "Auto Repeat" field is highlighted.
- ▶ Press the ENTER key to turn the auto repeat off or on.

To change the auto repeat speed, perform the following steps:

- ▶ Press the SET-UP key if you are not already in the set-up mode.
- ▶ Press the F9 key if you are not already at the keyboard set-up menu.
- ▶ Press the down arrow (↓) key until the "Auto Repeat Rate" field is highlighted.
- ▶ Press the ENTER key to change the auto repeat speed.

### **Turning the Keyclick Off/On**

To turn the keyclick (the electronic click which sounds when a key is pressed) off or on, perform the following steps:

- ▶ Press the SET-UP key if you are not already in the set-up mode.
- ▶ Press the F9 key if you are not already at the keyboard set-up menu.
- ▶ Press the down arrow (↓) key until the "Key Click" field is highlighted.
- ▶ Press the ENTER key to turn the auto repeat off or on.

## Turning the Margin Bell Off/On

By default, the terminal beeps whenever the cursor is eight columns from the right margin. To turn this margin bell off or on, perform the following steps:

- ▶ Press the SET-UP key if you are not already in the set-up mode.
- ▶ Press the F9 key if you are not already at the keyboard set-up menu.
- ▶ Press the ENTER key.
- ▶ Press the down arrow (↓) key until the "Margin Bell" field is highlighted.
- ▶ Press the ENTER key to turn the margin bell off or on.

## EMULATION MODES

The CIT326 has the following four emulation modes:

- VT200, 7-Bit Mode
- VT200, 8-Bit Mode
- VT100 Mode
- VT52 Mode

These modes determine the way the terminal responds to commands. Below is a brief explanation of each mode. For an explanation on how to select these modes, refer to the Terminal Set-Up Menu explanation in Chapter 4.

### VT200, 7-Bit Mode

This mode provides full use of the CIT326's features and conforms to the standard ANSI command format. It sends 7-bit control codes and characters, and accepts both 7- and 8-bit control codes if 8-bits is enabled in the Communications Set-Up menu. All of the character sets of the terminal are supported in this mode.

The VT200, 7-Bit mode accepts most VT100 programs, and is the default mode of the CIT326.

## CIT326

### VT200, 8-Bit Mode

This mode provides full use of the CIT326 features and conforms to the standard ANSI command format. It sends 8-bit control codes and characters, and accepts both 7- and 8-bit control codes if 8-bit parity is enabled in the Communications Set-Up Menu. All of the character sets of the terminal are supported in this mode.

### VT100 Mode

This mode conforms to the standard ANSI command format. When the CIT326 is used with application programs requiring strict compliance to DEC VT100 terminals, this mode should be enabled. Only 7-bit control codes are executed. ASCII, Special Graphics and NRC sets are supported in this mode.

### VT52 Mode

This mode executes non-ANSI DEC private functions, and restricts programs to existing VT52 application programs.

## THE DUAL HOST MODE

When selected for the dual host mode of operation, the terminal supports two fully independent multipage personalities through the COMM and the AUX ports. One personality is selected for each port.

Each personality has its own set-up mode and defaults. The set-up mode is determined by the currently active port. For example, if the COMM port is active, the set-up mode parameters relate to the COMM port host, and vice versa.

The Communications Set-Up menu is used for the configuration of both host ports. When selecting the AUX host communications set-up, the "Modem Control", "DTR Control", and "Disconnect" fields are eliminated. Note that the two terminal personalities are not identical due to the electrical interface differences between the COMM and the AUX ports.

Segmented or contiguous memory display is selected independently through the Display Enhancements menu. For example, the COMM port host may be set to segmented display while the AUX port host is set to contiguous display memory. See the following "Multiple Page Functions" section for additional information.

When in the dual host mode, function key memory is divided equally between the two hosts. The terminal responds to device requests as having "Printer - None" when in the dual host mode of operation. The Auxiliary port set-up menus are not displayed in the dual host mode.

### Host Selection

Once the terminal is set for dual host operation through the Configuration Menu (see the dual host mode set-up explanation in Chapter 4), you may toggle between the two ports by pressing:

<MODE/SESSION>

This action places the currently active port in the "immediate" or "hold" state (depending upon the setting of the "Alternate Host" field in the Configuration Menu). The previously idle port

becomes active. To return to the original port, press the MODE/SESSION key again.

### Port Identification

The active port name is displayed in the dual host display divider line (see "Screen Display" below) and in Field 4 of the set-up status line. The "Comm Host Name" and "Aux Host Name" fields in the Configuration Set-Up Menu allow you to change the active port names assigned to the COMM and AUX hosts. Refer to the Configuration Set-Up Menu explanation in Chapter 4.

For your convenience, the name displayed in the upper right corner of each set-up page is programmable separately for the two set-up modes. To change the displayed name, enter the appropriate set-up mode and press:

<CTRL><SHIFT><HOLD SCREEN>

The displayed name is erased and data keys on the keyboard are enabled. You may type in a new name of up to eleven characters. Press the RETURN key to terminate the entry and return to the set-up mode. Performing a normal "Save" command permanently saves the name for future display.

### Screen Display

When selected for dual host operation, the terminal supports two further display modes - independent mode and split screen mode. These modes define the actual screen display. The selection of the independent or split screen mode of operation is made through the Configuration set-up menu.

### Split Screen Mode

When selected for split screen mode, the terminal displays a portion of the data from each host on the screen at the same time. A divider line (see below) is automatically drawn on the screen to provide a visual separation of the two areas of display.

Action of the MODE/SESSION key to toggle between the hosts moves the cursor from the deactivated portion of the screen to the newly activated area.

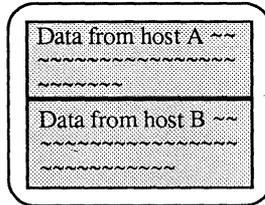


Figure 2-3. Split Screen Mode Display

Note that while two hosts can select different display widths, the terminal can not display different widths simultaneously. The active host will determine the number of columns displayed. For example, if the comm port host is active and the 132 column display width is selected by the comm port host, the entire display width will change to 132 columns. The screen area devoted to the inactive aux host will also be displayed in the 132 column format -- even if the aux host has selected the 80 column format. If the active host is switched to the aux host, the entire screen will then switch back to the 80 column mode.

The "Comm Host" field in the Configuration Set-Up Menu gives you the option of displaying data from the COMM port on the top or the bottom of the screen.

### Independent Mode

When selected for independent mode, the terminal displays a full page of 24 or 25 lines of data from the active host. Action of the MODE/SESSION key to toggle between the active hosts results in a full page display from either host. If the "Data Rows" field in the Display Enhancements Menu is set to "24" or "24 + status" the divider line used in the split screen mode will appear at the bottom of the display.

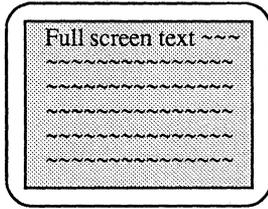


Figure 2-4. Independent Mode Display

Dual Host Divider Line

The following line will be displayed in the split screen and independent display modes:

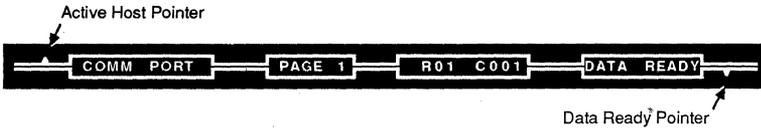


Figure 2-5. Dual Host Divider Line

The divider line contains up to four fields. The first field displays the name of the current host. This name can be changed in the Configuration Set-Up Menu. To the left of this field is the active host pointer, which points to the screen session of the active host.

When the segmented paging style is selected in the Display Enhancements Menu, the second field will display the current memory page.

The third field displays the current row and column. Since only part of the host's screen is displayed in the split screen mode, this field is useful for determining the actual position of the cursor on the host's screen.

If data is received from the inactive port, the fourth field will display "Data Ready". A data ready pointer (shown above) will point to the screen session belonging to the host the data was received from.

### **Moving the Split Screen Divider Line**

In the split screen mode, you can adjust the size of the screen display devoted to each host by moving the divider line. The position of the divider line may be moved from its default position at line 13 with the following procedure.

1. Press <CTRL> and <MODE/SESSION>. A pop up menu will prompt you to use the cursor keys to move the line. A line at the bottom of the screen will also appear, indicating that the split move mode has been activated.
2. Reposition the divider line using the ↑ and ↓ keys.
3. Press the CTRL and MODE/SESSION keys again. The split move mode indicator will disappear.

The divider line may be moved between lines 3 and 22 only.

## MULTIPLE PAGE FUNCTIONS

Multiple page functions add the ability to provide temporary storage of multiple page displays. Two modes of operation are provided -- segmented mode and contiguous mode.

The segmented mode provides four display pages for single-host mode and two display pages per host for dual-host mode -- while one page is displayed, the others are stored. The pages may be either 80 or 132 columns wide.

The contiguous mode has one page of display with up to 100 lines of data for single-host mode and up to 50 lines of data per host for dual-host mode. With the aid of a review mode, you may scroll the entire screen back through data most recently scrolled off the screen.

The display mode is controlled by the "Paging Style" field in the Display Enhancements Menu with a new field.

Note that display data content is lost during page mode changes.

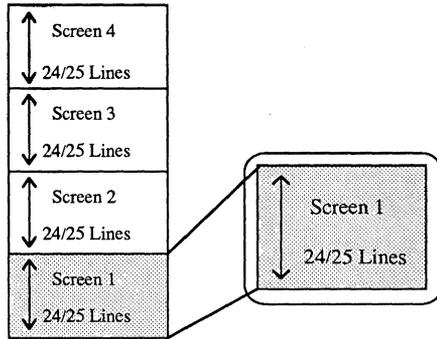
Table 2-1. Display Modes

Page Mode	Single Host	Dual Host
Segmented	<u>4 pages</u> with: 24 lines each, 24 lines + a status line, 25 data rows	<u>2 pages</u> per host with: 24 lines each page, 24 lines + a status line, 25 data rows
Contiguous	<u>1 page</u> with: 99 lines, 99 lines + a status line, 100 data rows	<u>1 page</u> per host with: 49 lines each page, 49 lines + a status line, 50 data rows

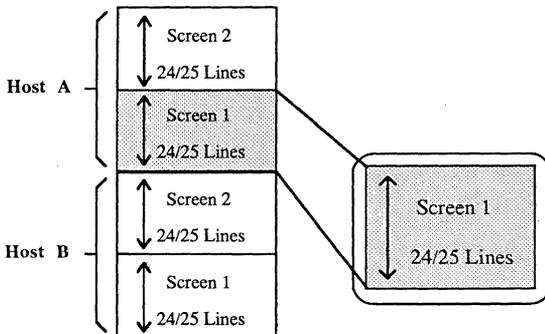
**Segmented Display Mode**

In this mode, the terminal display memory is subdivided into a series of separate pages of 24 or 25 lines each. In the single host mode, the terminal provides four pages of display memory. In the dual host mode, the terminal supports two pages for each host. Each page is considered independent and all editing commands affect the selected page only.

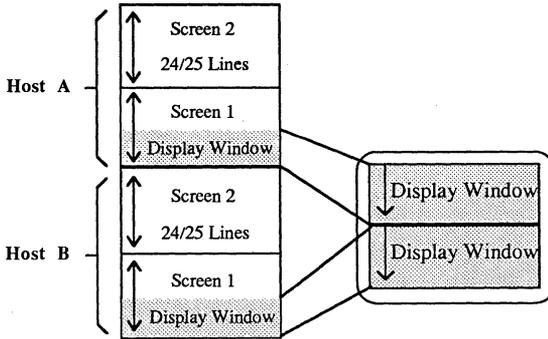
The following figures illustrate the different configurations of segmented display memory.



**Figure 2-6. Segmented Memory - Single Host**



**Figure 2-7. Segmented Memory - Dual Host Independent Mode**



**Figure 2-8. Segmented Memory - Dual Host Split Screen Mode**

Page display is controlled locally through the keyboard or by the host through escape sequences.

### Page Display Control

To view the next page, press the SHIFT and the NEXT SCREEN keys. To view the previous page, press the SHIFT and the NEXT SCREEN keys. The cursor will move to the home position of the next or previous screen.

The action of these keys is controlled by the "Multi-page keys" field provided in the Display Enhancements Menu. This field determines if the action of the key to control local paging operations will be accessed in the shifted or the unshifted mode of the key, thus allowing you to maintain DEC compatibility for normal key usage. Refer to the Display Enhancements Menu explanation in Chapter 4 for more information.

## Contiguous Display Mode

In this mode, terminal memory is allocated as one contiguous page. Memory appears as 99/100 continuous lines in single host mode and 49/50 lines to each of the hosts in dual host mode. The following description is applicable to contiguous memory mode in both single and dual host modes of operation.

Memory is organized such that the display window is located at the bottom of the memory area, allowing any data that is scrolled off the top of the screen to be placed in the additional space, called "review memory". Data is lost if the review memory area becomes full.

The following figures illustrate the different configurations of contiguous display memory.

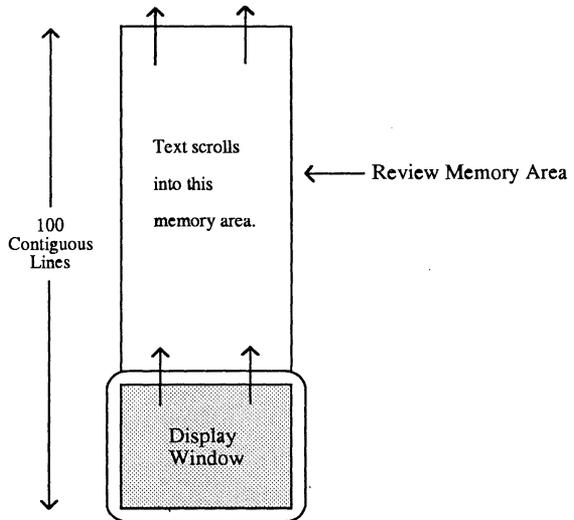


Figure 2-9. Contiguous Memory - Single Host

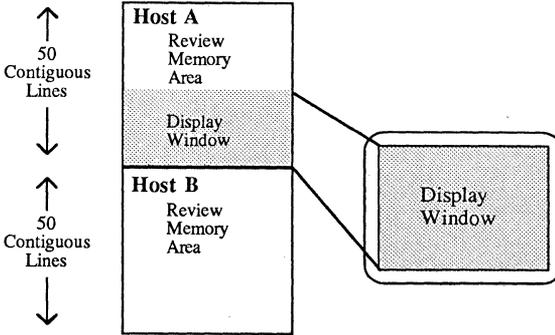


Figure 2-10. Contiguous Memory - Dual Host Independent Mode

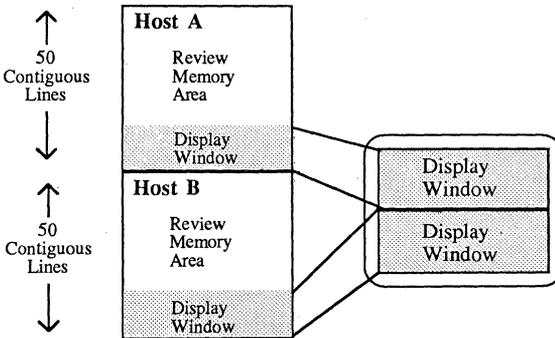


Figure 2-11. Contiguous Memory - Dual Host Split Screen Mode

Review memory is up to 132 characters wide to accommodate the different screen widths. The display of data from the review memory is controlled by the current screen display width of the terminal.

For instance, if the terminal is set for 80 column mode and data to be reviewed is 132 columns wide, only the first 80 columns are seen. Conversely, if the terminal is set for 132 column display, but data previously written in 80 column mode is viewed, then the display shows only 80 columns of data with space to the right of each line.

The host computers are not provided access to the review memory area. This area can only be viewed under manual control of the operator. To access this area, press:

<SHIFT> <MODE/SESSION>

The terminal automatically ceases unloading the receiver buffer for the active host and sends XOFF as required to terminate further host input. While in the review mode, if data is received from the host, the bell sounds three times, giving you the option of exiting the review mode to examine the data.

A pop-up menu temporarily overwrites the last line of data in the active screen area. The one line menu displays the following message:

REVIEW MODE: HIT MODE/SESSION TO EXIT - HOST = COMM
---

If the cursor was located on the last line of data when the pop-up menu was displayed, data on the screen automatically scrolls up one line to ensure that the cursor remains visible.

Use the vertical cursor movement keys (↑ and ↓ arrow keys) to scroll the review memory onto the screen one line at a time. To scroll 24/25 lines at a time, use the NEXT SCREEN and PREV SCREEN keys. The cursor remains visible at all times in the review mode.

Data keys are active in the review mode, allowing data to be written into memory at the current cursor position. This data, however, may not be transmitted to a host.

The SET-UP key and access to set-up mode remain active also, but the function keys and PF keys are disabled.

Single host mode allows printing while in the review mode, but prints only the currently displayed data line or screen of the review memory.

To exit the review mode, press:

<SHIFT> <MODE/SESSION>

The cursor is automatically restored to its original position and the receiver buffer unloads any stored data. If an XOFF had been issued by the terminal while in the review mode, an XON is automatically sent to the host.

## CHAPTER 3

### KEYBOARDS

The CIT326 keyboard is a fully compatible DEC VT220-style keyboard. It includes the usual main and numeric keypads, along with such VT220-compatible features as an editing keypad and programmable function keys.

Functionally, there are four types of keys and two types of indicators on the CIT326 keyboard (shown in Figure 3-1). The basic types include:

1. Standard typewriter keys
2. Editing keypad with cursor control keys
3. A calculator-type numeric keypad with special function control keys
4. Terminal control and function keys (Programmable Keys)
5. Six LED status indicators
6. Two audible indicators: a keyclick and a bell tone

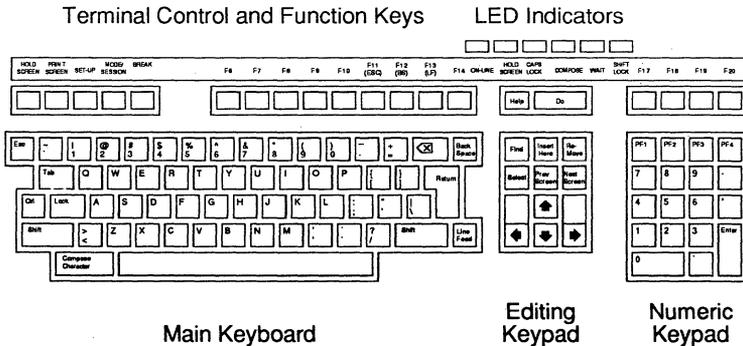


Figure 3-1. CIT326 Keyboard

## MAIN KEYPAD KEYS

The main keypad includes both standard alphanumeric/symbol keys and control keys, as shown below:

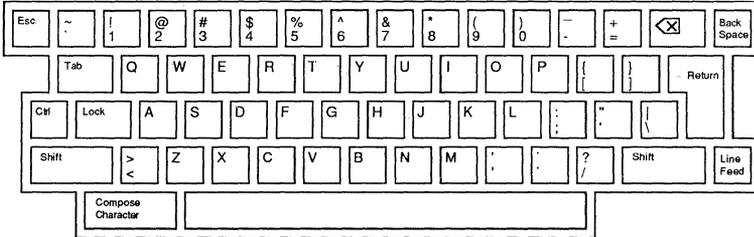


Figure 3-2. Main Keypad

### Standard Keys

In conjunction with the SHIFT and/or LOCK keys, the standard keys can be used to enter all of the uppercase and lowercase letters, numerals, and symbols found in a standard typewriter layout.

### Special Characters

The characters that can be entered by the CIT326's keyboard are not limited to the standard (US ASCII) characters found on a normal typewriter keyboard. Special characters can be entered by selecting a non-English keyboard layout and/or by using the Compose Character mode.

### National and Multinational Characters

The COMPOSE CHARACTER key can be used to enter special international characters, such as characters with accents or umlauts. The range of the characters which can be entered using the COMPOSE CHARACTER key depends upon the National/Multinational character set, emulation mode, and keyboard layout selection.

The Multinational character set is available only in the VT200 emulation modes (as selected in the Terminal Set-Up Menu). When the Multinational character set is selected, the COMPOSE CHARACTER key can be used with any keyboard layout to enter a complete set of international characters.

The National character sets are available in any emulation mode -- but only when a non-English keyboard layout has been selected. When the National character sets are selected, the COMPOSE CHARACTER key can be used to enter a more restricted range of nation-specific characters.

For more information about the COMPOSE CHARACTER key, refer to the Compose Character Sequences section later in this chapter.

### **National Keyboard Layouts**

The CIT326's fifteen national keyboard layouts provide access to international characters without requiring you to use the Compose Character mode's two- and three-character sequences. These keyboard layouts are shown at the end of this chapter, while the set-up selections for these keyboards are explained in Chapter 4.

### **Data Processing and Typewriter Keys**

When any non-English keyboard layout is selected, some of the keys can be used to enter more than one set of characters. These keys have more than two characters on their keycaps, as shown in the keyboard layout illustrations at the end of this chapter. The Keyboard field in the Keyboard Set-Up Menu determines which of these characters can be entered. If the keyboard type is set to Typewriter, the characters shown on the left side of the keycap can be entered. If the Keyboard Type is set to Data Processing, the characters shown on the right side of the key cap can be entered.

## Main Keypad Control Keys

The main keypad control keys are described below.

The <x] (DELETE) key erases one character to the left of the cursor. Pressing <SHIFT-<x]> generates a CAN (Cancel) control character.

**BACK SPACE** This key moves the cursor one position to the left -- until the cursor reaches the first column of the current line.

**COMPOSE CHARACTER** Starts a compose sequence which is used to generate characters that do not exist on the standard keypad. For more information, refer to the Compose Character Sequences section later in this chapter.

**CTRL** This key is used with other keys to generate special control codes.

**ESC** Generates an ESC code which introduces a sequence of key actions that constitute an escape command.

**LINE FEED** Transmits a Line Feed character to the host computer. When in the Line Feed mode, the LINE FEED key causes the cursor to move down one line while maintaining its current column position. When in the New Line Mode, the LINE FEED key causes the cursor to advance to the first position on the next line.

**LOCK** To use the LOCK key to enter uppercase characters, press the LOCK key once. The CAPS LOCK LED will be lit and the Caps Lock or Shift Lock mode will be turned on (depending upon the parameter selected for the Lock Key field in the Keyboard Set-Up Menu). To

return to normal keyboard operation, press the LOCK key a second time.

When the terminal is in the Caps Lock mode, pressing any letter key will cause the shifted (uppercase) version of that letter to be produced.

Note that the Caps Lock mode only affects the letter keys on the main keypad. Pressing any number, symbol, or punctuation mark key will cause the unshifted (normal) character to be produced.

When the terminal is in the Shift Lock mode, pressing any alphanumeric, symbol, or punctuation mark key on the main keypad will cause the shifted character to be produced.

RETURN	Transmits either a Line Feed (LF) character or an LF and a CR character, depending on the set/reset state of Line Feed/New Line mode. (Refer to Terminal Modes in Chapter 3 of the Programmer's Manual.) Pressing RETURN moves the cursor to the next line when editing text, or it is a signal to the system that a particular operation is finished.
SHIFT	Does not transmit a code. This key is used with other keys to generate special function codes or uppercase letters and symbols.
SPACE BAR	Transmits a SPACE character and advances the cursor one position to the right.
TAB	Transmits an HT character. The TAB key moves the cursor to the next tab stop. When used with the SHIFT key, it generates a BACKTAB.

## EDITING KEYPAD

As shown in Figure 3-3, the editing keypad includes both cursor control keys and special editing keys.

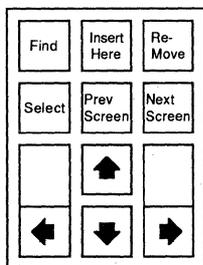


Figure 3-3. Editing Keypad

The cursor control keys (the right, left, up, and down arrow keys) move the cursor up, down, right or left -- usually under host computer control. In the Set-Up mode, the keys allow you to select Set-Up mode parameters for alteration.

In the VT100 or VT52 emulation modes, only the cursor controls keys will work. The editing keys (FIND, INSERT HERE, REMOVE, SELECT, PREV SCREEN, and NEXT SCREEN) are inoperable in VT100 or VT52 modes.

Under host computer control, the editing keys allow you to find specific characters, insert and/or remove data, and advance and/or backup to the next or previous screens.

If more than one page of memory is used, pressing <SHIFT>-<NEXT SCREEN> or <SHIFT>-<PREV SCREEN> will display the next or previous memory page, respectively. If the "Multi-page keys" field in the Display Enhancements set-up menu is changed to "Unshifted", you will not have to use the SHIFT key with the NEXT SCREEN or PREV SCREEN keys to change memory pages. For more information, refer to the Multiple Page Functions section in Chapter 2.

## NUMERIC KEYPAD

The numeric keypad adds versatility and convenience to the CIT326. The keypad permits single key entry of various special control sequences and direct input of decimal or hexadecimal data.

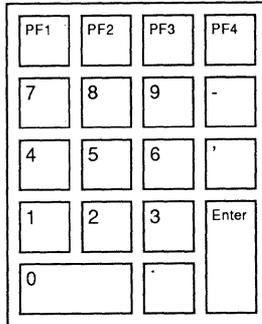


Figure 3-4. Numeric Keypad

The keypad can operate in one of three modes, decimal numeric, hexadecimal numeric, or application. These modes can be selected in the Keyboard Set-Up menus (as explained in Chapter 4), or by software control (as explained in the Programmer's Manual).

### Keypad Numeric Mode

The keypad enters the numeric mode whenever the terminal is powered-up or reset. In this mode, the numeric and punctuation keys function the same as the corresponding keys on the main keyboard. The ENTER key performs the same function as the RETURN key when the edit mode is not on. As with the RETURN key, the action of the ENTER key is affected by the New Line mode. When the New Line mode is off, pressing the ENTER key will generate a carriage return only. When the New Line mode is on, pressing the ENTER key will generate a carriage return and line feed.

The four special function keys (PF1, PF2, PF3, and PF4) generate control sequences, as shown in Appendix B. When pressed in combination with the CTRL and/or SHIFT keys, the PF1 through PF4 keys can be used to control the CIT326's printer port. Refer to the subsequent Printer Port Control section.

The keypad can also be set to work as a hexadecimal keypad. When the Numeric Keypad field in the Keyboard Enhancements Menu is set to hexadecimal, the function of the PF1, PF2, PF3, P4, minus, and comma keys will be changed so that they generate the A through F characters, respectively.

### **Keypad Application Mode**

When set to the keypad application mode, the numeric keypad generates special control sequences. Appendix B lists these sequences.

### **FUNCTION KEYS**

Across the top of the CIT326 keyboard is a row of function keys, as shown in Figure 3-5. These are used for set-up, applications, and control of terminal functions. There are 20 function keys, F1 through F20. Keys F1 through F5 (HOLD SCREEN, PRINT SCREEN, SET-UP, MODE/SESSION, AND BREAK) perform terminal control functions and do not transmit codes.

Keys F6 through F20 are used to generate special control sequences. By using the Programmable Key Editor or software control sequences, the F6 through F20 keys can be redefined to generate up to 180 control or text sequences. For more information on how to program function keys from the keyboard, refer to the Programmable Key Editor section in Chapter 4. The CIT326 Programmer's Manual describes how to use software control sequences to program the terminal's function keys.

Note that in the default state of the VT100 and VT52 emulation modes, all but three of the F6 to F20 function keys are disabled. Only the F11, F12, and F13 keys perform any function. The F11 key generates an Escape code, while the F12 and F13

keys generate a Backspace and a Line Feed, respectively. If the "F6-F20 VT100" field in the Keyboard Enhancements set-up menu is set to "F6-F20 Programmable", the F6-F20 keys will generate VT200-type control sequences.

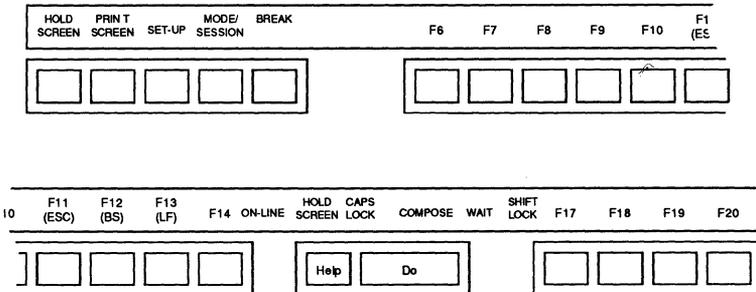


Figure 3-5. Function Keys

A description of the actions of the terminal control and function keys follows.

- |                     |   |
|---------------------|---|
| <b>HOLD SCREEN</b>  | Halts transmission of data to the screen. To unlock the screen, press the key a second time. The HOLD SCREEN key will not work if the "Protocol" field in the Communications Set-Up Menu is set to "No Xoff". |
| <b>PRINT SCREEN</b> | Initiates a printout of the screen display as defined by the Print Area field selection in the Auxiliary Enhancements Set-Up menu. When pressed with the CTRL key, it sets or resets the Auto Print Mode.     |
| <b>SET-UP</b>       | Toggles the Set-Up mode. Press once to enter the Set-Up mode, press again to return to the previous screen display.   |
| <b>MODE/SESSION</b> | When the dual host mode is selected, pressing the MODE/SESSION key will cause the terminal to switch to the inactive host.  |

## CIT326

- BREAK** Transmits a break signal if break is turned on in the Keyboard Set-Up menu. When pressed with the SHIFT key it performs a disconnect. When pressed with the CTRL key it sends the answerback message to the host.
- F6 - F10** These keys are defined by applications programs. They can also be programmed by control sequences (as explained in the Programmer's Manual) or the Programmable Key Editor (as explained in Chapter 4).
- F11 (ESC)** The F11 key can be defined by application programs, or programmed via control sequences or the Programmable Keys Editor. In the VT100 and VT52 emulation modes, the F11 key transmits an ESC character.
- F12 (BS)** This key is defined by application programs, programmed via control sequences or the Programmable Key Editor, or transmits a back space (BS) character in the VT100 and VT52 emulation modes.
- F13 (LF)** The F13 key is defined by application programs, programmed via control sequences or the Programmable Key Editor, or transmits a line feed (LF) character in the VT100 and VT52 emulation modes.
- F14 - F20** These keys are defined by applications programs, or programmed via control sequences or the Programmable Key Editor.

## LED INDICATORS

The CIT326 has the following six LED indicators. These indicators provide status information on the terminal operations.

HOLD SCREEN	Indicates that the display screen is on hold, or locked.
WAIT	Indicates that the keyboard is locked and cannot transmit information. To unlock the keyboard, enable the "Clear Comms Buffer" feature in the Main Set-Up Menu.
COMPOSE	Indicates that a "compose sequence" is being performed. (Refer to the Compose Character Sequences section in later in this chapter.)
ON-LINE	Indicates that the terminal is in the on-line state and ready to communicate with the host computer.
SHIFT LOCK	Indicates that the terminal is in the Shift-Lock mode.
CAPS LOCK	Indicates that the terminal is in the Caps-Lock mode.

## AUDIBLE INDICATORS

The keyboard provides two types of audible indicators, a keyclick and a bell tone. The Keyboard Set-Up Menu controls these indicators, as explained in Chapter 2.

Keyclick	A keyclick sounds when you press any key except the SHIFT and CTRL keys, or when the keyboard is locked and the WAIT indicator is on.
Bell	The terminal sounds a bell tone (or beep) when the cursor approaches the right margin, except when in the insert mode. It also sounds when an error is made during a compose sequence, when the host sends a BEL character to the terminal, or during the power-up self-test.

## KEYBOARD AUTO REPEAT

A key pressed for more than 0.5 seconds automatically repeats when the Auto Repeat Mode is selected. Auto repeat can be enabled or disabled through the Keyboard Set-Up menu or by using the control sequences described in the Programmer's Manual. Note that the following keys do not auto repeat:

HOLD SCREEN	COMPOSE CHARACTER
PRINT SCREEN	SHIFT
SET-UP	RETURN
MODE/SESSION	LOCK
BREAK	CTRL

The rate of auto repeat is set through the Keyboard Enhancements Menu. Auto repeat can be set to slow (about 14 characters per second) or fast (about 21 characters per second).

## PRINTER PORT CONTROL

When the Dual Host mode is not in use, the bidirectional auxiliary port (marked "AUX") is free for other uses. Depending upon which function is selected, you can use the AUX port as a printer port or as an alternate communication port, or even redirect data received at the AUX port to the COMM port. To select these functions, press and hold the SHIFT key and/or the CTRL key, and then press one of the printer function keys (PF1 through PF4) on the numeric keypad. The printer functions available and the keystrokes which select them are explained below:

<SHIFT> <PF1> LINE SEND--Transfers the current display line occupied by the cursor to the auxiliary port. This functions in the on-line or local mode.

<CTRL> <PF1> PAGE SEND--Transfers the entire contents of the display to the auxiliary port. If the origin mode is set only the active portion of the display is output. This function operates in the on-line or local mode.

- <SHIFT> <PF2> KEYBOARD TO AUXILIARY MODE--Directs keyboard data exclusively to the auxiliary port and disables the SHIFT PF3 function.
- <CTRL> <PF2> AUTO AUXILIARY MODE--Transfers the current display line occupied by the cursor to the auxiliary port whenever a line feed code is received from any port input line or the keyboard.
- <SHIFT> <PF3> KEYBOARD TO COMMUNICATION MODE--Directs keyboard data exclusively to the communication port and disables the SHIFT PF2 function.
- <CTRL> <PF3> AUXILIARY CONTROL MODE--Directs data received on any I/O port exclusively to the auxiliary port. Data is not displayed on the screen.
- <SHIFT> <PF4> AUXILIARY OUTPUT DISABLE--Disables all modes directing data to the auxiliary port, except the SHIFT PF2 function.
- <CTRL> <PF4> CONCURRENT AUXILIARY MODE--Directs data at any port to the display and auxiliary port.
- <SHIFT>  
<CTRL> <PF2> AUXILIARY TO COMMUNICATION MODE--Directs data input at auxiliary port to be output at the communications port. This function can be performed concurrently with the SHIFT CTRL PF3 function.
- <SHIFT>  
<CTRL> <PF3> AUXILIARY TO DISPLAY MODE--Directs data from the auxiliary port to the display. This function can be performed concurrently with the SHIFT CTRL PF2 function.
- <SHIFT>  
<CTRL> <PF4> AUXILIARY INPUT DISABLE--Disables SHIFT CTRL PF2 and SHIFT CTRL PF3 functions.

## KEYBOARD GENERATED CONTROL CODES

The alphanumeric keys on the standard keypad can also be used to enter normally invisible control characters. To do so, you must press and hold the CTRL key, and then press an alphanumeric key, as shown in the following table.

Some of these key sequences (such as <CTRL> <I>/Tab) merely duplicate functions already performed by the main keypad control keys. Others generate control codes which can be used to program the terminal or access special system functions (such as <CTRL> <Y>, <CTRL> <Z>, <CTRL> <C>, and <CTRL> <T>).

<u>Key Sequence</u>	<u>Control Code</u>
<CTRL> <2>	NUL
<CTRL> <A>	SOH
<CTRL> <B>	STX
<CTRL> <C>	ETX
<CTRL> <D>	EOT
<CTRL> <E>	ENQ
<CTRL> <F>	ACK
<CTRL> <G>	BEL
<CTRL> <H>	BS (Back Space)
<CTRL> <I>	HT (Horizontal Tab)
<CTRL> <J>	LF (Line Feed)
<CTRL> <K>	VT
<CTRL> <L>	FF
<CTRL> <M>	CR (Carriage Return)
<CTRL> <N>	SO
<CTRL> <O>	SI
<CTRL> <P>	DLE
<CTRL> <Q>	DC1 (XON/Hold Screen Off)
<CTRL> <R>	DC2
<CTRL> <S>	DC3 (XOFF/Hold Screen On)
<CTRL> <T>	DC4
<CTRL> <U>	NAK
<CTRL> <V>	SYN
<CTRL> <W>	ETB
<CTRL> <X>	CAN
<CTRL> <Y>	EM
<CTRL> <Z>	SUB
<CTRL> <[>	ESC
<CTRL> <3>	ESC
<CTRL> <\>	FS
<CTRL> <4>	FS

<u>Key Sequence</u>	<u>Control Code</u>
<CTRL> <J>	GS
<CTRL> <5>	GS
<CTRL> <~>	RS
<CTRL> <6>	RS
<CTRL> <?>	US
<CTRL> <7>	US
<CTRL> <8>	DEL (Delete)

### CONDITIONS THAT CAUSE KEYBOARD LOCK

If the host computer sends a command to lock the keyboard, or if the keyboard's output buffer becomes full, the WAIT indicator lights up, keyclick is disabled, and the keyboard locks up. All keys, except F1 through F5, are disabled.

The keyboard unlocks when one of the following occurs:

- The keyboard's output buffer begins to empty (provided that the keyboard lock command (CSI 2 h) has not been sent from the host)
- The host sends a command to unlock the keyboard (CSI 2 l)
- Entering Set-Up Mode and selecting the "Clear Comms Buffer", "Reset Terminal", "Recall Parameters", or "Default Parameters" fields in the Main Set-Up Menu.
- Performing a hard terminal reset. A hard terminal reset can be performed by turning the terminal off and on, or by issuing the hard terminal reset command (ESC c).

## COMPOSE CHARACTER SEQUENCES

The CIT326 provides a compose character function to create characters that are not available on the keyboard. These characters are created through either two-key or a three-key compose character sequences.

Three-key sequences allow you to generate the widest range of characters. Three-key sequences can be used with all keyboard layouts in all emulation modes.

Although two-key compose sequences are faster than the three-key sequences, the range of characters which you can generate using two-key sequences is limited. Two-key sequences can not be used with the North American keyboard layout.

Compose sequences are divided between the Multinational mode sequences and the National mode sequences. The type of compose sequences available depend upon whether the Multinational or National character sets are selected in the Display Enhancements Menu.

### Entering Three-Key Compose Sequences

To enter a three-key compose character sequence, perform the following steps:

- Press the COMPOSE CHARACTER key. The COMPOSE LED indicator on the keyboard lights up.
- Enter the two characters required to create the desired supplemental character, as shown in Table 3-1 or Table 3-2.
- The supplemental character is generated and the COMPOSE LED indicator is turned off.

Most compose sequences are not order sensitive, unless otherwise noted in the table.

For example, to create an 'a' with a circumflex accent, press the COMPOSE CHARACTER key, enter 'a' and the circumflex character (^). Since this compose sequence is not order sensitive, it can also be entered as follows: <COMPOSE CHARACTER>, <^>, <a>.

If an invalid sequence is entered, the bell sounds (if the warning bell has been enabled in the Terminal Set-Up menu) and the sequence is aborted.

### Entering Two-Key Compose Sequences

To enter two-key compose character sequences, perform the following steps:

- Press one of the following diacritical marks:
  - grave accent (`)
  - circumflex accent (^)
  - acute accent (´)
  - tilde mark (~)
  - diaeresis mark (umlaut) (¨)
- The COMPOSE LED indicator on the keyboard lights up.
- Enter the character required to create the desired supplemental character, as shown in Table 3-1 or Table 3-2.
- The supplemental character is generated and the COMPOSE LED indicator turns off.

For example, to create an 'a' with a circumflex accent, press the key that has the circumflex accent (^) and then enter the 'a'. Because all two-key compose sequences are order sensitive, it is necessary to enter the diacritical mark before the character.

If an invalid sequence is entered, the bell sounds (if the warning bell has been enabled in the Terminal Set-Up menu) and the sequence is aborted.

### **Aborting or Restarting a Compose Sequence**

If the compose mode is entered accidentally, it may be aborted by pressing the <x] (DELETE) key or a function key.

If a mistake is made during a compose sequence, you may restart that sequence, or begin a new one, by pressing the COMPOSE CHARACTER key again. The original entry is aborted and the new entry is executed.

### **Multinational Mode Compose Sequences**

The Multinational mode compose sequences are available if the Multinational character set is selected in the Display Enhancements Menu, as detailed in the set-up mode explanation in Chapter 4.

Note that the widest range of Multinational mode compose sequences is available in either of the VT200 emulation modes. If the VT100 or VT52 emulation mode is selected (in the Terminal Set-Up Menu), the compose sequences will be restricted to the characters normally available with the currently-selected keyboard layout.

Table 3-1. Multinational Compose Sequences

CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
" Quotation Mark	"(sp)	"(sp)
# Number Sign	++	
' Apostrophe	'(sp)	'(sp)
@ Commercial At	aa or AA	
[ Opening Bracket	((	
\ Backslash	// or /<	
] Closing Bracket	))	
^ Circumflex	^(sp)	^(sp)
˘ Single Quote	˘(sp)	˘(sp)
{ Opening Brace	(-	
Vertical Line	/^	
} Closing Brace	)-	
~ Tilde	~(sp)	~(sp)
¡ Inverted !	!!	
¢ Cent Sign	c/ or C/ or c  or C	
£ Pound Sign	l- or L- or l= or L=	
¥ Yen Sign	y- or Y- or y= or Y=	
§ Section Sign	s! or S! or so or So or sO or SO or s0 or S0	
¤ Currency Sign	xo or XO or x0 or X0	
© Copyright Sign	co or CO or c0 or C0	
ª Feminine Ordinal Indicator	a_ or A_	
« Angle Quotation Mark Left	<<	
° Degree Sign	0^ or (sp)^	
± Plus/Minus Sign	+ -	
⁰ Superscript 0	0^	
¹ Superscript 1	1^	
² Superscript 2	2^	
³ Superscript 3	3^	
µ Micro Sign	/u or /U (order sensitive)	
¶ Paragraph Sign	p! or P!	
· Middle Dot	.^	
º Masculine Ordinal Indicator	o_ or O_	
» Angle Quotation Mark Right	>>	
¼ Fraction one-quarter	14 (order sensitive)	
½ Fraction one-half	12 (order sensitive)	

Table 3-1. Multinational Compose Sequences (Cont.)

CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
¿ Inverted ?	??	
À A grave	A`	`A
Á A acute	A´	´A
Â A circumflex	A^	^A
Ã A tilde	A~	~A
Ä A umlaut	A¨	¨A
À Quotation Mark	A*	
Æ AE ligature	A E (order sensitive)	
Ç C cedilla	C,	
È E grave	E`	`E
É E acute	E´	´E
Ê E circumflex	E^	^E
Ë E umlaut	E¨	¨E
Ì I grave	I`	`I
Í I acute	I´	´I
Î I circumflex	I^	^I
Ï I umlaut	I¨	¨I
Ñ N tilde	N~	~N
Ò O grave	O`	`O
Ó O acute	O´	´O
Ô O circumflex	O^	^O
Õ O tilde	O~	~O
Ö O umlaut	O¨	¨O
Œ OE ligature	O E (order sensitive)	
Ø O slash	O/	
Ù U grave	U`	`U
Ú U acute	U´	´U
Û U circumflex	U^	^U
Ü U umlaut	U¨ or U¨	¨U
ÿ Y umlaut	Y¨ or Y¨	¨Y
ß German small sharp s	ss	
à a grave	a`	`a
á a acute	a´	´a
â a circumflex	a^	^a
ã a tilde	a~	~a
ä a umlaut	a¨	¨a
å a ring	a*	
æ ae ligature	a e (order sensitive)	

Table 3-1. Multinational Compose Sequences (Cont.)

CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
ç	c cedilla	c,
è	e grave	e `
é	e acute	e ´
ê	e circumflex	e ^
ë	e umlaut	e" or e¨
ì	i grave	i `
í	i acute	i ´
î	i circumflex	i ^
ï	i umlaut	i" or i¨
ñ	n tilde	n ~
ò	o grave	o `
ó	o acute	o ´
ô	o circumflex	o ^
õ	o tilde	o ~
ö	o umlaut	o" or o¨
œ	oe ligature	oe (order sensitive)
ù	u grave	u `
ú	u acute	u ´
û	u circumflex	u ^
ü	u umlaut	u" or u¨
ÿ	y umlaut	y" or y¨

### National Mode Compose Sequences

National mode compose sequences can only be used if the National character set is selected in the Display Enhancements Menu. The actual sequences available vary according to the Keyboard Layout selection in the Keyboard Set-Up Menu. Because the National character set can not be used with the North American keyboard layout, National mode compose sequences will not be available when the North American keyboard layout is selected.

Table 3-2. National Mode Compose Sequences

CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
British Keyboard		
£ Pound Sign	l- or L- or l= or L=	
/ Backslash	/<	
Flemish Keyboard		
£ Pound Sign	l- or L- or l= or L=	
§ Section	s! or S! or so or So or sO or SO or s0 or S0	
ù u grave	u`	
è e grave	e`	
French Canadian Keyboard		
à a grave	a`	`a
â a circumflex	a^	^a
ç c cedilla	c,	
ê e circumflex	e^	^e
è e grave	e`	`e
î i circumflex	i^	^i
ô o circumflex	o^	^o
ù u grave	u`	`u
û u circumflex	u^	^u
Finnish Keyboard		
# Number Sign	++	
@ Commercial at	aa or AA or aA	
Å A ring	A*	
Ü U umlaut	U*	
é e acute	e´	
å a ring	a*	
ü u umlaut	u*	
Danish Keyboard		
# Number Sign	++	
Ä A umlaut	A"	"A
Å A ring	A*	
Ø O slash	O/	
Ü U umlaut	U"	"U
ä a umlaut	a"	"a
å a ring	a*	
ø o slash	o/	
ü u umlaut	u"	"u

Table 3-2. National Mode Compose Sequences (Cont.)

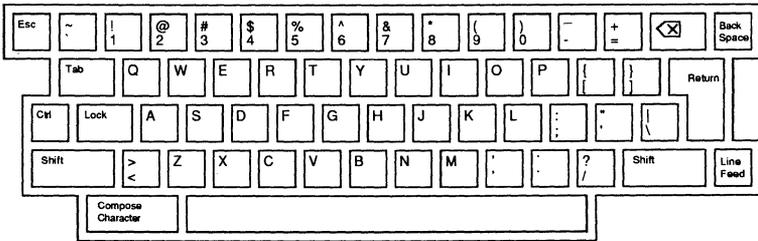
CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
<b>German Keyboard</b>		
Ä A umlaut	A"	
Ü U umlaut	U"	
ä a umlaut	a"	
ü u umlaut	u"	
<b>Dutch Keyboard</b>		
£ Pound Sign	L- or l- or L= or l=	
¾ Three Quarters	34 (order sensitive)	
ij i j sign	ij (order sensitive)	
½ One Half	12 (order sensitive)	
f Florin	f- (order sensitive)	
<b>Italian Keyboard</b>		
£ Pound Sign	L- or l- or L= or l=	
§ Section	s! or S! or so or So or sO or SO or s0 or S0	
à a grave	a`	`a
ç c cedilla	c,	
é e acute	e´	
<b>French/Belgian Keyboard</b>		
£ Pound Sign	L- or l- or L= or l=	
§ Section	s! or S! or so or So or sO or SO or s0 or S0	
è e grave	e`	
ù u grave	u´	
<b>Swiss (French) Keyboard</b>		
ä a umlaut	a"	
ç c cedilla	c,	
ê e circumflex	e^	^e
î i circumflex	i^	^i
ô o circumflex	o^	^o
ö o umlaut	o"	
û u circumflex	u^	^u
ü u umlaut	u"	
ù u grave	u`	`u

Table 3-2. National Mode Compose Sequences (Cont.)

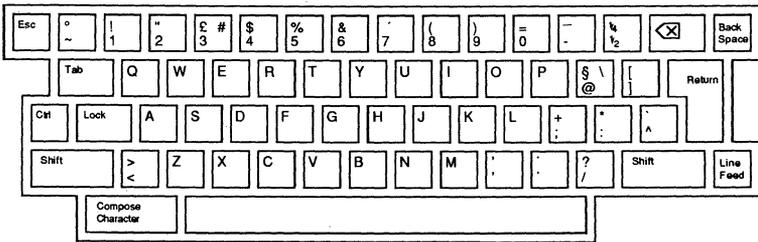
CHARACTER	THREE-KEY SEQUENCE	TWO-KEY SEQUENCE
<b>Swiss (German) Keyboard</b>		
à a grave	a `	` a
ç c cedilla	c ,	
ê e circumflex	e ^	^ e
é e acute	e ´	
è e grave	e `	` e
î i circumflex	i ^	^ i
ô o circumflex	o ^	^ o
û u circumflex	u ^	^ u
ù u grave	u `	` u
<b>Swedish Keyboard</b>		
# Number Sign	++	
Å A ring	A *	
É E acute	E ´	
Û U umlaut	U ¨	
å a ring	a *	
é e acute	e ´	
ü u umlaut	u ¨	
<b>Norwegian Keyboard</b>		
# Number Sign	++	
Å A ring	A *	
Ä A umlaut	A ¨	¨ A
Æ AE ligature	A E (order sensitive)	
Û U umlaut	U ¨	¨ U
ä a umlaut	a ¨	¨ a
æ æ ligature	a e (order sensitive)	
å a ring	a *	
ü u umlaut	u ¨	¨ u
<b>Spanish Keyboard</b>		
£ Pound Sign	L- or l- or L= or l=	
§ Section	s! or S! or so or So or sO or SO or s0 or S0	
¡ Inverted !	!!	
¿ Inverted ?	??	
° Degree Sign	O ^	

**KEYBOARD LAYOUTS**

The various keyboard layouts that are available on the CIT326 terminal are shown on the following pages. The keyboard layouts can be changed by selecting a different parameter for the "Keyboard Layout" field in the Keyboard Set-Up Menu.



**Figure 3-6. North American Keyboard**



**Figure 3-7. British Keyboard**

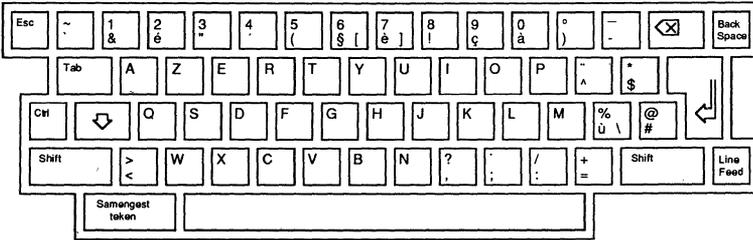


Figure 3-8. Flemish Keyboard



Figure 3-9. Canadian (French) Keyboard

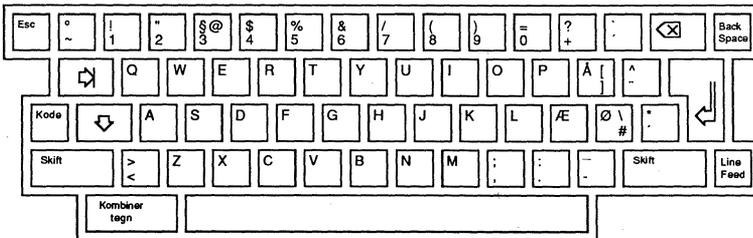


Figure 3-10. Danish Keyboard

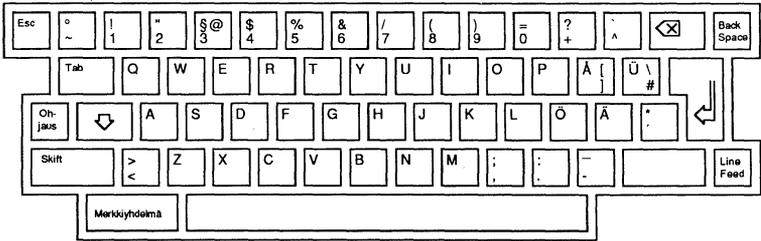


Figure 3-11. Finnish Keyboard

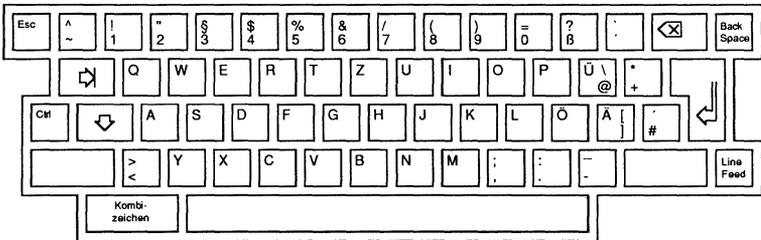


Figure 3-12. German Keyboard

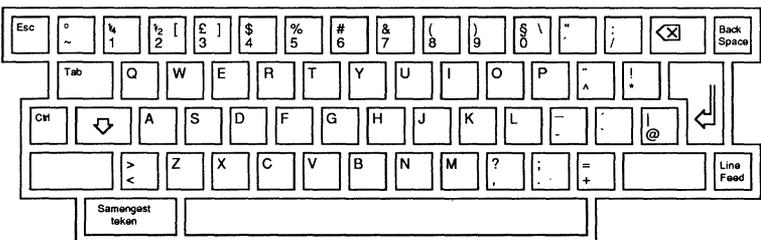


Figure 3-13. Dutch Keyboard

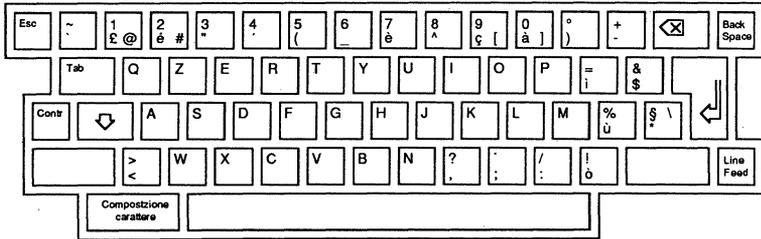


Figure 3-14. Italian Keyboard

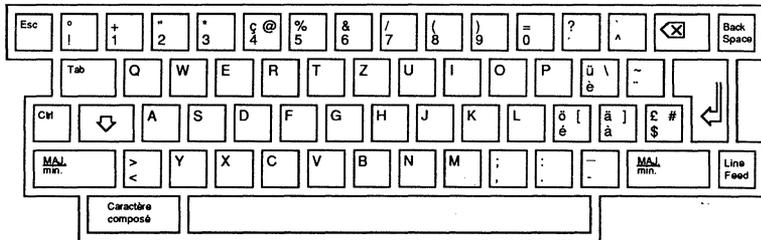


Figure 3-15. Swiss (French) Keyboard

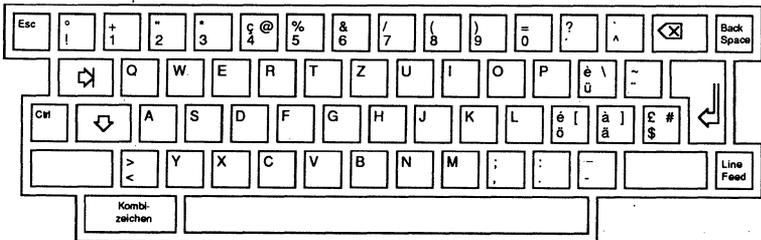


Figure 3-16. Swiss (German) Keyboard

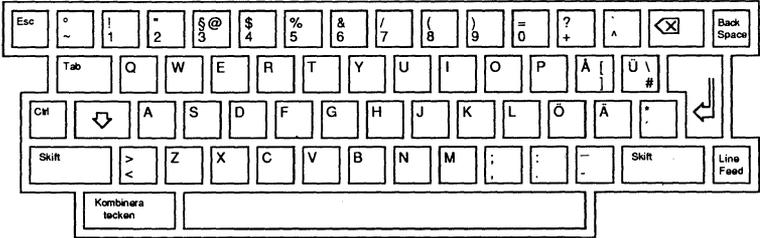


Figure 3-17. Swedish Keyboard

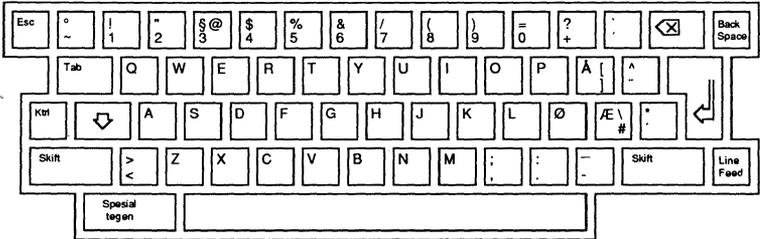


Figure 3-18. Norwegian Keyboard

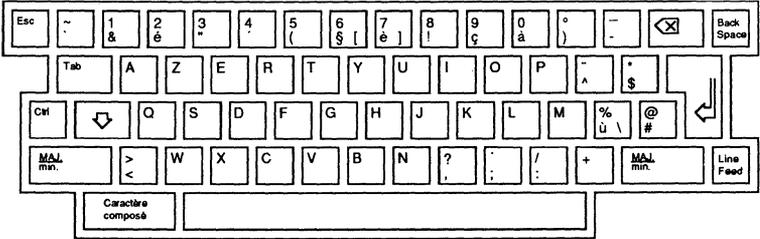


Figure 3-19. French (Belgian) Keyboard

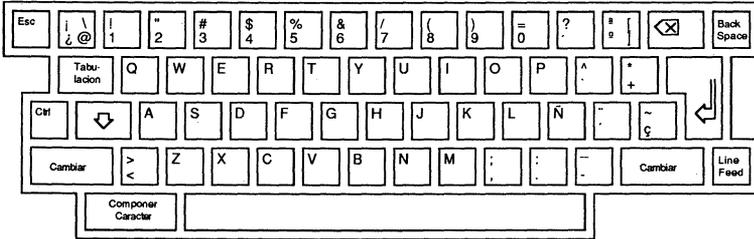


Figure 3-20. Spanish Keyboard

## CHAPTER 4

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### THE SET-UP MODE

The CIT326 Set-Up Mode is used to configure or examine terminal operating features. This section contains information on the CIT326 set-up features and how to examine or change them.

The terminal utilizes special non-volatile memory (NVR) to "remember" individual feature selections, settings and parameters even after power has been removed. The user may choose to set features either temporarily (not saved after power is turned off), or permanently (until changed by the user). A SAVE PARAMETERS operation can be performed in the Main Set-Up Menu.

For convenience, there exists a factory default set of parameters that can easily be restored by selecting the "Default Parameters" option in the Main Set-Up Menu.

### SET-UP MODE ORGANIZATION

There are ten set-up menus in the CIT326's standard set-up mode. These menus allow you to select most of the terminal's operating parameters, such as communications protocol, display parameters, and keyboard parameters. In addition, the CIT326 provides a Set-Up Help Menu (which lists the keys which can be used to select set-up menus) and a Function Key Editor (which allows you to define the CIT326's programmable keys). The terminal also includes a Configuration Set-Up Menu, which allows you to configure the dual host mode and select the screen refresh rate.

The standard set-up mode is entered by pressing the SET-UP key, while the Configuration set-up mode is entered by pressing <CTRL> <SET-UP>.

Once the standard set-up mode has been entered, the terminal immediately enters the Main Set-Up Menu. All other standard set-up menus can be selected through this menu -- including the Help Set-Up menu (accessed by pressing the HELP key) and the Function Key Editor (accessed by pressing the DO key). Once in the set-up menus, select the

"Return to Main Menu" option or press the F6 key to return to the Main Set-Up Menu.

When the CIT326 is in any of the set-up modes, the previous contents of the display are stored internally. If XOFF has been enabled through the Communications Set-Up Menu, no incoming data is lost. Upon exiting set-up mode, the original contents of the display are restored and XON is transmitted (if XON/XOFF protocol were active at the the time set-up mode was entered). Note that the contents of the screen are not saved if host mode or paging style is changed.

Several features are common to all set-up screen menus. These are: the menu title, a terminal identifier, and a status line. A function key labels line also appears at the top of most set-up screens.

The firmware revision number can be accessed by pressing <SHIFT> <ENTER> in any of the set-up menus. The revision is displayed on the status line.

### Menu Title

This feature identifies the current menu displayed. The list below indicates the order in which menus are accessed. Specific menus (with the exception of the Configuration Set-Up Menu) may be accessed directly from the Main Set-Up Menu or by using the F-key equivalents shown in the Main or Help set-up menus.

- Main Set-Up Menu
- Terminal Set-Up Menu
- Display Set-Up Menu
- Display Enhancements Menu
- Tabs Set-Up Menu
- Keyboard Set-Up Menu
- Keyboard Enhancements Menu
- Communications Set-Up Menu
- Auxiliary Set-Up Menu
- Aux Enhancements Menu

Other menus include:

- the Configuration Set-Up Menu
- the Set-Up Help Menu
- the Function Keys Editor menu

### Terminal Identifier

This feature identifies the terminal being used. In this instance, the terminal is a CIT326. This identifier can be changed by pressing <CTRL><SHIFT> <HOLD SCREEN>. Type the new name (up to 11 characters) and press return.

### Function Key Labels Line

This line appears at the top of most screens. It lists most of the function keys which can be used to select the various set-up menus. Pressing any of the keys shown will cause the corresponding menu to appear. Because the Auxiliary set-up menus are not available in the dual host mode, the "F11-AUX" label will not be displayed in the dual host mode.

### Status Line

The status line displays across the bottom of each set-up menu. It consists of five fields which provide messages to the operator indicating the status of certain terminal features. Figure 4-1 shows a typical status line.



Figure 4-1. Set-Up Status Line

The following are the possible status line messages.

#### Message 1 - Insert/Replace Mode

INS MODE

As new data is entered, the old data from the cursor position to the end of the line shifts right one character. Any characters shifted into the right margin are lost unless autowrap is enabled in the Display Set-Up Menu.

## CIT326

REPL MODE                    All new data replaces the old characters from the cursor position. (This is the default setting.)

### Message 2 - Printer Mode

PRNTR:READY                The printer is ready to receive data.  
PRNTR:NOT RDY             The printer is not ready to receive data.  
PRNTR:NONE                There is no printer.  
PRNTR:AUTO                Auto Print mode is active.  
PRNTR:CONTROL            Printer Controller mode is active.  
PRNTR:CONCURR            Concurrent Print mode is active.

### Message 3 - Modem

MODEM:DSR,DATA            The DSR signal on the communications port is active and the modem is able to send and receive data from the host.  
MODEM:NO DSR,DATA        The DSR signal on the communications port is inactive. The modem is not able to send or receive data from the host.

### Message 4 - Keyboard Mode Select

<No Display>             Selected by pressing SHIFT, PF3. Indicates data is directed from the keyboard to the communications port exclusively. This is the normal default mode.  
KYBD TO AUX               Selected by pressing SHIFT, PF2. Indicates data is directed from the keyboard to the auxiliary port exclusively.

COMMS HOST                    In the dual host mode, indicates that the host connected to the COMM port is selected. Note that this name can be redefined in the Configuration Set-Up Menu.

AUX HOST                      In the dual host mode, indicates that the host connected to the AUX port is selected. This name can be redefined in the Configuration Set-Up Menu.

Message 5 - Auxiliary Port Mode

<No Display>                 Selected by pressing <CTRL> <SHIFT> <PF4>. Disables all special auxiliary input routing. This is the default state.

AUX TO COMMS                 Selected in the On-Line operating state by pressing <CTRL> <SHIFT> <PF2>. Data received at the auxiliary port is directed to the communications port.

AUX TO DISPLAY               Selected in the On-Line operating state by pressing <CTRL> <SHIFT> <PF3>. Data received at the auxiliary port is directed to the display screen.

AUX TO COM,DSP               This selection is a combination of the above two features. Data received at the auxiliary port is directed to both the communications port and the display screen.

## SET-UP FIELD PARAMETERS

The field parameters displayed in each of the set-up menus describe the current status of the features or commands available. The parameters allow the operator three possible actions:

1. Direct Command

This type of field parameter (which has only one value) displays a command that is performed when the ENTER key is pressed. For example, pressing ENTER when the cursor is on RESET TERMINAL in the Main Set-Up Menu performs a soft terminal reset.

2. Select Parameter

This type of field parameter contains text that describes the current parameter value selected from two or more possible options. To replace the current value, press the ENTER key and the field advances to the next value.

For example, pressing ENTER when the cursor is on the "Keypad : Numeric" field in the Keyboard Set-Up Menu causes the field to change to "Keypad : Application".

3. Enter Parameter

This type of field parameter allows text entries from the keyboard. The following steps describe how to enter text:

- A. Using the arrow keys, advance the field cursor to the desired parameter.
- B. Press ENTER.
- C. Type in the desired value.
- D. Press ENTER (or, in some cases, RETURN) to set the new value.

To correct a typing error, press the <x] (DELETE) key. The character to the left of the cursor is erased. To abort the field without making any changes, press an arrow key to go to another field parameter.

### **SET-UP FIELD CURSOR**

The CIT326 uses a highlighted field cursor in the set-up mode. It highlights the entire field you want to examine or change. The arrow keys move the field cursor up, down, left or right. When the field cursor is on the last field of a set-up screen, pressing the down arrow key (↓) will return the cursor to the top left field parameter. Similarly, when the field cursor is on the top left field parameter, pressing up arrow key (↑) move the cursor to the bottom right field.

### **SELECTION OF SET-UP SCREEN MENUS**

Press the SET-UP key on the keyboard to enter the standard set-up mode. The Main Set-Up Menu appears on the screen. Additional menus are entered by selecting the corresponding field on the Main Set-Up Menu and then pressing the ENTER key. To return to the Main Set-Up Menu, place the field cursor over the field parameter "Return to Main Menu" and press ENTER. To exit the set-up mode, press the SET-UP key again.

Press the CTRL and SET-UP keys to enter the Configuration Set-Up menu. Pressing the SET-UP key will exit this menu.

## SAVE AND RECALL OPERATIONS

Any changes made in a set-up menu are temporary until permanently stored in memory with a SAVE operation. Temporary changes are lost if power is removed, the terminal is reset, a RECALL operation is performed, or factory default conditions are restored.

Note that save and recall operations in the Configuration Set-Up Menu are independent of save and recall operations in the Main Set-Up Menu. Saving and recalling parameters in the Main Set-Up Menu will not affect configuration parameters.

- |         |   |
|---------|---|
| Save    | Set-up parameters are stored in non-volatile memory (NVR) on a permanent basis by selecting "Save Parameters" in the Main Set-Up Menu or "Save Configuration" in the Configuration Set-Up Menu.   |
| Recall  | The user-stored permanent set-up conditions are automatically restored whenever the terminal is turned on or reset. In addition, a special RECALL operation may be performed to reinstate permanently stored set-up parameters by selecting "Recall Parameters" in the Main Set-Up Menu or "Recall Configuration" in the Configuration Set-Up Menu. |
| Default | The factory established default conditions may be restored by selecting "Default Parameters" in the Main Set-Up Menu or "Default Configuration" in the Configuration Set-Up Menu.   |

**SINGLE HOST MODE SET-UP**

To make set-up changes when communicating with one host computer, perform the following steps:

1. Enter the set-up mode by pressing the SET-UP key. The Main Set-Up Menu will appear.
2. Enter the relevant set-up menus by pressing the appropriate function key or selecting the appropriate parameter.
3. Press the down arrow (↓), up arrow (↑), right arrow (→) or left arrow (←) keys until the appropriate parameter is highlighted, then press the ENTER key to select the parameter. If there is more than one parameter, press the ENTER key until the correct one appears.
4. Return to the Main Set-Up Menu. This can be done by pressing the F6 key.
5. Save the set-up selections. Press the down arrow (↓) key until the "Save Parameters" field is highlighted. Press the ENTER key, and the set-up changes will be saved in non-volatile memory, so that your changes will still be remembered even after the power has been turned off.
6. Exit the set-up mode by pressing the SET-UP key.

## DUAL HOST MODE SET-UP

When the dual host mode is selected in the configuration menu separate set-up modes will be reserved for each host. These set-up modes are independent of each other: they can be saved and recalled separately.

To set-up the dual host mode, perform the following steps:

1. Enter the Configuration Set-Up Menu by pressing and holding the CTRL key, and then pressing the SET-UP key.
2. Press the down arrow (↓) key until the "Host: Single" field is highlighted. Press the ENTER key. The word "Single" will be replaced with the word "Dual". Use the arrow keys to make any other desired selections. For more information, refer to the Dual Host Mode section in Chapter 2 or the following Configuration Set-Up Menu explanation.
3. Save the configuration. Press the the down arrow (↓) key until the "Save Configuration" field is highlighted. Press the ENTER key to save the configuration.
4. Press the SET-UP key to exit the Configuration Set-Up Menu.
5. After waiting a few seconds for the host mode to change, press the SET-UP key again to enter the Main Set-Up Menu.
6. Enter the relevant set-up menus by pressing the appropriate function key or selecting the appropriate parameter.

### NOTE

Use the Communications Set-Up Menu to set-up both ports. When you are in the dual host mode, both ports are considered to be "Communications" ports.

7. Press the up, down, right, or left arrow keys until the appropriate parameter is highlighted, then press the ENTER key until the appropriate selection is highlighted.
8. Enter the relevant set-up menus and make the necessary changes. See the following explanations.
9. Return to the Main Set-Up Menu. This can be done by pressing the F6 key.
10. Press the down arrow (↓) key until the "Save Parameters" field is highlighted. Press the ENTER key to save the settings for the current host.
11. Press the SET-UP key to exit the set-up mode.
12. Press the MODE/SESSION key to switch hosts.
13. Press the SET-UP key to reenter the set-up mode.
14. Enter the relevant set-up menus and make the necessary changes, as described in steps 6 and 7.
15. Press the F6 key to return to the Main Set-Up Menu.
16. Save the set-up selections. Press the right the down arrow (↓) key until the "Save Parameters" field is highlighted. Press the right arrow (→) key. Press the ENTER key to save the settings for the current host.
15. Press the SET-UP key to exit the set-up mode.

#### NOTE

The host which is active at the time the configuration is saved (as explained above in Step 4) is the host which will be active when the terminal is powered up. If you want to change the power-up host, you must use the MODE/SESSION key to switch to the correct host. Then reenter the Configuration Set-Up mode and save the configuration.

## SET-UP MODE MENUS

In the following descriptions of the set-up screen menus, each menu appears with default values as it would display when the terminal is first turned on. Following the screen menu illustrations are listings of the fields, by default values, which are underlined. The available selections follow the default value along with a short description of the function of that particular feature. The Function Keys Editor menu is described in the following section.

### Configuration Set-Up Menu

The Configuration Set-Up Menu allows you to set your terminal for single or dual host communication and for segmented or contiguous memory display.

The Configuration Set-Up Menu is not accessed through the normal set-up mode menus. To bring this menu to the screen, press <CTRL> <SET-UP>

Configuration Set-Up Menu		CIT326
◆ Hosts : <u>Single</u>	Display Mode : <u>Independent Screen</u>	
Alternate Host : <u>Hold</u>	Refresh : <u>60Hz</u>	
Comm Port Display : <u>Top Screen</u>	Save Configuration	
Comm Host Name : <u>Comm</u>	Recall Configuration	
Aux Host Name : <u>Aux</u>	Default Configuration	
Exit Configuration Mode		
Parameters : <u>Single Host, Dual Host</u>		
REPL MODE	PRNTR: NONE	

Figure 4-2. Configuration Set-Up Menu

Default settings are underlined in the descriptions that follow.

Field: Options -- Function

**Hosts:** Single Host, Dual Host -- Selects either single host mode with a printer port, or dual host concurrent operation.

**Alternate Host:** Hold, Immediate -- Selects how the terminal treats received data on the inactive host port when dual host configuration is set. HOLD causes the input buffer of the inactive host port to store incoming data and transmit an XOFF if the buffer fills. IMMEDIATE processes received data and updates the inactive display screen. In the immediate mode, the speed of data throughput is reduced while data is processed at both ports.

**Comm Port Display:** Top Screen, Bottom Screen -- In dual host operation, this field selects whether the COMM port host displays on the top or the bottom of the screen in the split screen mode.

**Comm Host Name:** Comm -- Allows you to enter the name of the host connected to the COMM port. Once this field is selected, type the name (up to 11 characters) and press RETURN. When the COMM host is selected in the dual host mode, the name entered will be displayed in the divider line and set-up mode status line .

**Aux Host Name:** Aux -- Allows you to enter the name of the host connected to the AUX port. Once this field is selected, enter the name (up to 11 characters) by typing the name and pressing RETURN. When the AUX host is selected in the dual host mode, the name entered will be displayed in the divider line and set-up mode status line.

**Exit Configuration Mode** -- Exits the Configuration Menu.

**Display Mode:** Independent Screen, Split Screen -- In dual host operation, INDEPENDENT mode displays a full page of data from one host at a time. SPLIT SCREEN MODE sets the terminal to display a portion of data from each host on the screen at the same time. See "Screen Display" under the Dual Host Mode section for a complete description of these options.

## CIT326

**Refresh:** 60 Hz, 50 Hz -- Determines whether the screen is refreshed 50 or 60 times per second.

**Save Configuration** -- Saves Configuration Set-Up Menu selections in non-volatile memory.

**Recall Configuration** -- Resets the terminal to parameters last saved in non-volatile memory with the Save Configuration feature.

**Default Configuration** -- Restores the original factory default Configuration Menu values.

## Main Set-Up Menu

This is the first menu displayed upon pressing the SET-UP key. From the Main Set-Up Menu, the other set-up menus can be accessed by selecting the corresponding field or pressing the corresponding function key. The Main Set-Up Menu also is used to save or restore changes made in the other set-up menus.

Note that the Main Set-Up Menu and the menus accessed from it are independent of the Configuration Set-Up Menu. Changing, saving, or restoring parameters in the menus accessed from the Main Set-Up Menu does not affect the parameter selections made in the Configuration Set-Up Menu.

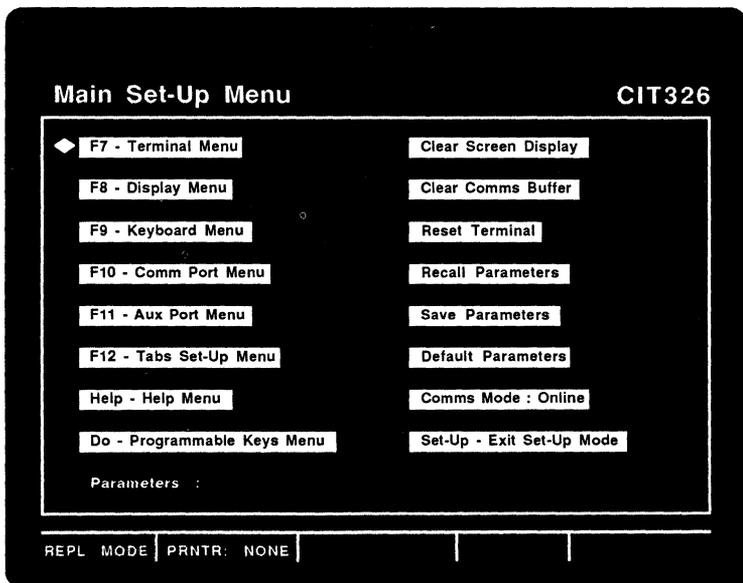


Figure 4-3. Main Set-Up Menu

Field: Options -- Function

**F7 - Terminal Menu** -- Enters the Terminal Set-Up Menu.

**F8 - Display Menu** -- Enters the Display Set-Up Menu. The Display Enhancements Menu can be accessed from this menu.

**F9 - Keyboard Menu** -- Enters the Keyboard Set-Up Menu. A second keyboard menu (the Keyboard Enhancements Menu) can be accessed from the Keyboard Set-Up Menu.

**F10 - Comm Port Menu** -- Enters the Communications Set-Up Menu.

**F11 - Aux Port Menu** -- Enters the Auxiliary Set-Up Menu. A second AUX port menu (the Auxiliary Enhancements Menu) can be accessed from this menu. This field is unavailable in the dual host mode.

**F12 - Tabs Set-Up Menu** -- Enters the Tabs Set-Up Menu.

**Help - Help Menu** -- Enters the Set-Up Help Menu.

**Do - Programmable Keys Menu** -- Enters the Programmable Key Editor.

**Clear Screen Display** -- Clears the display upon exiting the set-up mode. The status line displays the word "Done" while still in the set-up mode.

**Clear Comms Buffer** -- Aborts all communications operations and clears all the buffers. Clears any XOFF condition on both ports. XON is sent to the host port.

**Reset Terminal** -- Resets several operating parameters to default conditions. Performs the same function as the Soft Terminal Reset control sequence.

**Recall Parameters** -- Resets the terminal to parameters last saved in NVR with the SAVE feature. Clears the display screen.

**Save Parameters** -- Saves operator set-up mode selections in NVR. This is inhibited when a print operation is in progress.

**Default Parameters** -- Restores the original factory default set-up values, clears the display, and relocates the cursor at the upper-left corner of the display screen. DEFAULT disconnects communication between the host and the terminal during its operation.

**Comms Mode:** Online, Local -- ONLINE places the terminal in communication with the host computer. LOCAL directs keyboard data to the display screen only; no interaction with the host computer occurs.

**Set-Up - Exit Set-Up Mode** -- Exits the set-up mode and returns the terminal to normal operations.

### Terminal Set-Up Menu

The Terminal Set-Up Menu allows the operator to select various operating parameters as described below.

F6-MAIN F7-TERM F8-DSPLAY F9-KYBD F10-COM F11-AUX HELP DO-KYEDIT	
<b>Terminal Set-Up Menu</b>	
<b>CIT326</b>	
◀ Next Set-Up Menu	Warning Bell : On
Return to Main Menu	Parameter Flag 0000
Emulation Mode : VT200 Mode 7 Bit	Auto Answerback : On
Terminal ID : VT220	Answerback : Not Concealed
User Features : Unlocked	Answerback Message
Set-Up Language : English	
Parameters :	
REPL MODE	PRNTR: NONE

Figure 4-4. Terminal Set-Up Menu

Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Display Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Emulation Mode:** VT200 Mode 7 Bit, VT200 Mode 8 Bit, VT52 Mode, VT100 Mode -- Selects the emulation mode to be used.

The VT200 7 Bit controls mode executes standard ANSI functions. It sends 7-bit control codes and characters and accepts both 7- and 8-bit control codes if 8-bits parity is enabled in the Communications Set-Up Menu.

The VT200 8 Bit Controls mode executes standard ANSI functions. It sends 8-bit control codes and characters and accepts both 7- and 8-bit control codes if 8-bit parity is enabled in the Communications Set-Up menu.

The VT52 mode executes non-ANSI, DEC private functions and restricts programs to existing VT52 applications programs.

The VT100 mode executes standard ANSI functions. This mode is used with application programs requiring strict compliance to CIT-101 or DEC VT100 terminals. Only 7-bit control codes are executed.

**Terminal ID:** VT220, VT100, VT101, VT102 -- Selects the response to an inquiry from the host as to what type of terminal is online.

**User Features:** Unlocked, Locked -- UNLOCKED allows the host to change the following operating parameters. LOCKED prevents the host from changing them.

- Auto Repeat
- Keyboard Lock
- Light/Dark Screen
- Smooth/Jump Scroll
- Tab Stops

## NOTE

Certain application programs require control of these features. Select the UNLOCKED parameter to conform to such programs.

**Set-Up Language:** English, French, German -- Provides a choice between three languages in which the set-up screen menus are displayed.

**Warning Bell:** On, Off -- If the Warning Bell is ON a beep tone will sound if an operating error is detected, or when a CTRL G sequence is received.

**Parameter Flag:** 0000 to 1111 -- The parameter report flag can be set to a value between 0000 and 1111.

**Auto Answerback:** Off, On -- When the Auto Answerback function is on, the answerback message (if present) is sent automatically to the host after power-up, or upon receiving an ENQ from the host.

**Answerback:** Not Concealed, Concealed -- Selecting NOT CONCEALED causes the answerback message to display on the screen. CONCEALED causes the message to be concealed from view. Once this feature is set to CONCEALED, it cannot be changed to NOT CONCEALED until a new answerback message is generated.

**Answerback Message** -- This field allows the operator to enter the Answerback Message. The answerback feature allows the CIT326 terminal to identify itself to the host. The answerback message is entered by the operator during set-up. It is transmitted to the host either automatically (when the host computer requests identification by sending the ASCII ENQ code (05H) to the terminal), or when you press the CTRL and BREAK keys simultaneously. The message may consist of a maximum of 30 ASCII characters. If auto answerback is on, the answerback message is sent to the host when the terminal is turned on.

**Display Set-Up Menu**

The Display Set-Up Menu contains field parameters to set display features as described below.

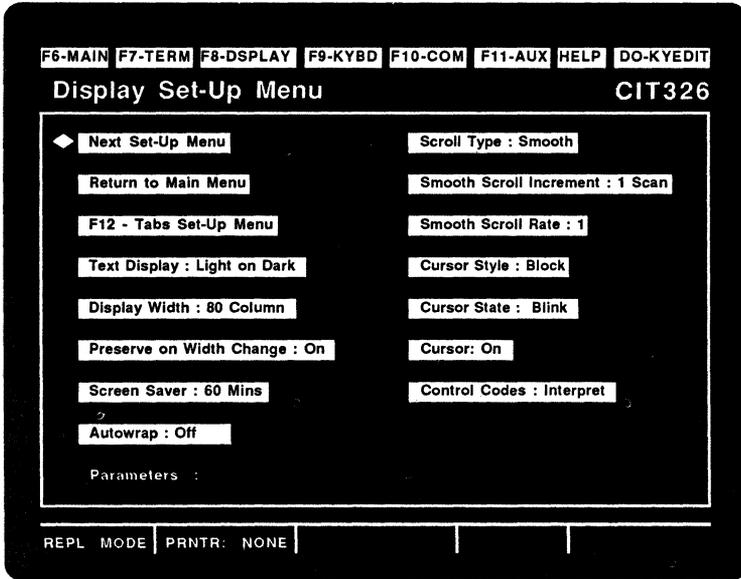


Figure 4-5. Display Set-Up Menu

Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Display Enhancements Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**F12 - Tabs Set-Up Menu** -- Enters the Tabs Set-Up Menu.

**Text Display:** Light on Dark, Dark on Light -- Sets the video display to either a dark screen with light text (normal) or a light screen with dark text (reverse video).

**Display Width:** 80 Column, 132 Column -- Selects either an 80 or a 132 column screen width. When a change is entered, the screen immediately converts to the desired width. The current contents of the display are either preserved or lost depending upon the setting of the PRESERVE ON WIDTH CHANGE selection.

**Preserve on Width Change:** On, Off -- Selects whether screen data is preserved or cleared on changing the screen size between 80 and 132 columns.

**Screen Saver:** 60 Mins., Off, 10, 20, 30, 40, 50 -- Disables the CRT saver feature, or sets the number of minutes of inactivity before the screen brightness diminishes. Pressing any key will restore the display; pressing the SHIFT, CTRL, or CAPS LOCK keys will restore the display without alteration.

**Auto Wrap:** Off, On -- When auto wrap is ON, the cursor automatically moves to column one of the next line down when it reaches the end of the display line. When auto wrap is OFF, the cursor will remain on the last character of the current line. Any received characters overwrite the existing character at that position.

**Scroll Type:** Smooth, Jump -- Smooth scroll sets a constant speed at which new lines scroll on to the screen, causing a steady, controlled scroll. Jump scroll allows the terminal to display data as fast as possible, giving the effect of a "jump" scroll.

**Smooth Scroll Increment:** 1 Scan, 2 Scan Lines -- Sets the number of scan lines to either 1 or 2 when in smooth scroll display. Selecting 2 scan lines results in a faster scroll rate.

**Smooth Scroll Rate:** 1 to 9 -- Selects the speed of the smooth scroll from 1 to 9, where 1 is the fastest and 9 is the slowest.

**Cursor Style:** Block, Underline -- Selects either a block or an underline as the cursor.

**Cursor State:** Blink, Static -- Selects either a blinking or a static cursor.

**Cursor:** On, Off -- Determines whether or not the cursor is visible.

**Control Codes:** Interpret, Display -- If set to INTERPRET, control codes received from the host are interpreted, but not displayed. If set to DISPLAY, control codes are displayed, but not executed.

**Display Enhancements Menu**

The Display Enhancements Menu contains field parameters to set additional display features, as described below.

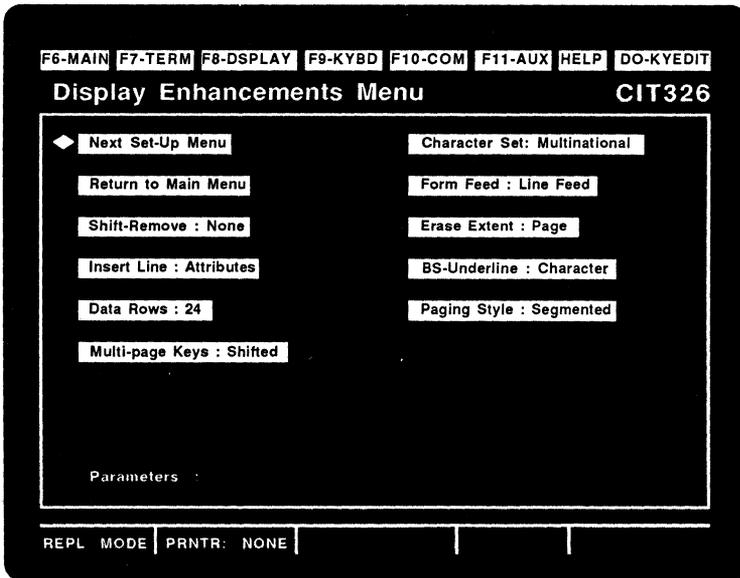


Figure 4-6. Display Enhancements Menu

**Field:** Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Tabs Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Shift-Remove:** None, 1-24, 1-25, 25 -- Pressing the SHIFT and REMOVE keys clears the screen and/or 25th row status line. If set to NONE, no action is taken when pressing the SHIFT REMOVE keys. 1-24 clears the screen and homes the cursor. 1-25 clears the screen and the 25th row status line, and homes the cursor. 25 clears the 25th row status line only.

**Insert Line:** Attributes, Blank -- Allows the operator to select whether an inserted line will have the attributes of the line at which the cursor is positioned, or a blank (no attributes) line.

**Data Rows:** 24, 24 + status line, 25 -- Determines the number of data rows per screen and whether or not a host-addressable status line is available.

**Multi-page Keys:** Shifted, Unshifted -- Determines whether you must the SHIFT key in combination with the PREV SCREEN/NEXT SCREEN keys to view the previous/next page of data in the Segmented page mode. For more information, refer to the Multiple Page Functions section in Chapter 2.

**Character Set:** Multinational, National -- MULTINATIONAL selects the 8-bit multinational characters. NATIONAL selects one of the eleven 7-bit national character sets as chosen from the keyboard field in the Keyboard Set-Up Menu.

#### NOTE

On the North American keyboard, only the multinational character set mode is available.

**Form Feed:** Line Feed, Home & Clear -- Selects the response to a Form Feed (FF) from the host. LINE FEED performs a Line Feed (LF) action, and HOME & CLEAR clears the screen and homes the cursor.

**Erase Extent:** Page, Margins -- Sets the area to be erased on a Clear Screen command: either the entire page or the area defined by margins.

**BS-Underline:** Character, Attribute -- With CHARACTER enabled, a <Char><BS><underline> sequence results in erasure of the character by the

underline character. With ATTRIBUTE enabled, the sequence is automatically converted to a character with the underline attribute set.

**Paging Style:** Segmented, Contiguous -- Sets the terminal for either segmented memory (memory divided into several distinct pages) or contiguous memory (memory contained on one continuous page). For an explanation of these options, see the Multiple Page Functions section in Chapter 2.

### Tabs Set-Up Menu

The Tabs Set-Up Menu displays in ruler fashion the locations of all the currently set tab stop positions (at the currently selected screen width). Each available column is numbered in repeating groups of 1 through 0 for easy location of the tab stops, which display on the screen as uppercase T's.

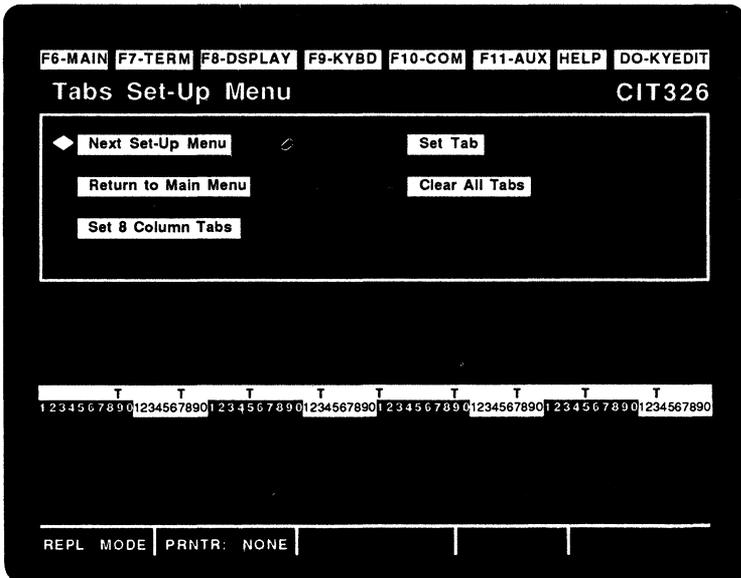


Figure 4-7 Tabs Set-Up Menu

**Field: Options -- Function**

**Next Set-Up Menu** -- Selects the next set-up screen. In this case, the next menu is the Keyboard Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Set 8 Column Tabs** -- Sets a tab every eighth column automatically, beginning with column nine.

**Set Tab** -- Moves the cursor into the tab ruler. Individual tabs can then be set, as explained below.

**Clear All Tabs** -- Clears all tab stop fields.

Individual tabs are set or reset utilizing the field cursor. Use the arrow keys or the TAB key to move the cursor. After selecting a tab stop position press the ENTER key. This places a "T" into the blank field. To remove an existing tab field, position the field cursor on the "T" and press the ENTER key. This action removes the tab stop field.

### Keyboard Set-Up Menu

The Keyboard Set-Up Menu contains field parameters to select operating features pertinent to the keyboard.

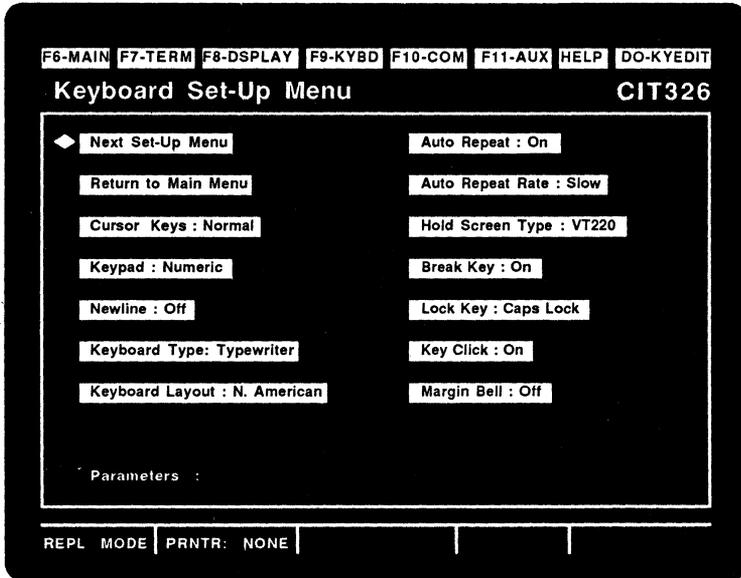


Figure 4-8. Keyboard Set-Up Menu

Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Keyboard Enhancements Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Cursor Keys: Normal, Applications** -- Selecting the Normal mode causes the cursor keys (↑, ↓, ←, →) to generate standard ANSI control codes. Selecting the Applications mode allows the application software to control the keys.

**Keypad:** Numeric, Applications -- In the Numeric mode, the keypad generates the ASCII characters matching the 0-9 number keys, the period key, and the minus sign key. Control functions are generated by the PF1 through PF4 keys. In the Applications mode, the keypad generates special application escape sequences.

**Newline:** Off, On -- When the Newline mode is off, the terminal will execute a carriage return when the RETURN key is pressed or the CR code is received. When the Newline mode is on, pressing the RETURN key or receiving a CR code will cause the terminal to execute a carriage return and a line feed.

**Keyboard Type:** Typewriter, Data Processing -- On some of the international keyboards, some of the keys can produce special characters. These special characters are inscribed on the keycaps to the right of the normal characters. Selecting the Typewriter parameter allows the normal characters to be produced, while selecting the Data Processing parameter allows the special characters to be produced.

**Keyboard Layout:** N. American, British, Flemish, Dutch, German, Italian, Canadian (French), Spanish, Danish, Finnish, Swedish, Norwegian, Swiss (French), Swiss (German), French (Belgian) -- Allows the operator to choose the terminal's operating mode to match the national keyboard used.

**Auto Repeat:** On, Off -- When it is on, the Auto Repeat feature causes a key that is held down for .5 seconds or longer to be repeated automatically until that key is released. Turning this feature off prevents the keys from repeating automatically.

**Auto Repeat Speed:** Slow, Fast -- Sets the auto repeat speed.

**Hold Screen Type:** VT220, VT52 -- When set to VT220, the HOLD SCREEN key toggles between freezing and releasing the screen. When set to VT52, pressing <CTRL> <HOLD SCREEN> causes the terminal to enter the Hold Screen mode. Pressing the HOLD SCREEN key will then cause one line of data to be scrolled onto the screen. Pressing <SHIFT> <HOLD SCREEN> will cause an entire screen to be scrolled.

**Break Key:** On, Off -- When this feature is turned on, pressing the BREAK key will send a break signal to the host computer. When this feature is turned off, pressing the BREAK key will have no effect. Note that the Shift-Break function is not affected by this setting.

**Lock Key:** Caps Lock, Shift Lock -- Determines which keys are affected by the LOCK key. When set to CAPS LOCK and the CAPS LOCK key is pressed, only the alphabetic character keys produce the shifted (capital) characters when pressed. The numeric and special character keys (such as ', \ and ()) will not be affected.

When set to SHIFT LOCK and the CAPS LOCK key is pressed, all keys on the main keypad will produce the shifted characters when pressed.

**Key Click:** On, Off -- Selects whether or not a clicking sound is made when a key is pressed.

**Margin Bell:** Off, On -- The Margin Bell causes a beep tone to occur when the cursor is eight columns from the right margin.

## Keyboard Enhancements Menu

The Keyboard Enhancements Menu provides additional keyboard features, as described below.

F6-MAIN	F7-TERM	F8-DSPLAY	F9-KYBD	F10-COM	F11-AUX	HELP	DO-KYEDIT
<b>Keyboard Enhancements Menu</b>							<b>CIT326</b>
◆ Next Set-Up Menu				Do - Programmable Key Editor			
Return to Main Menu				Programmable Keys : Volatile			
Compose Key Interlock : None				Programmable Keys : Unlocked			
Numeric Keypad : Decimal + PF				F6-F20 VT100 : ESC, BS, LF Only			
Tab Motion : Direct							
Parameters :							
REPL MODE   PRNTR: NONE							

Figure 4-9. Keyboard Enhancements Menu

### Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Communications Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Compose Key Interlock: None, Control** -- Selects whether the COMPOSE CHARACTER key is set to function with the CTRL key or alone -- without having to press another key.

**Numeric Keypad:** Decimal + PF, Hex Keypad --  
Selects the function of the numeric keypad to operate as a decimal keypad or to generate hexadecimal codes.

**Tab Motion:** Direct, Spaces -- When set to DIRECT a tab causes the cursor to move to the next tab stop. When set to SPACES, spaces between stops are filled with the current cursor attribute.

**Do - Programmable Keys Menu** -- When selected, this field takes you to the Programmable Key Editor menu.

**Programmable Keys:** Volatile, Non-volatile --  
Selects whether the programmable keys are stored permanently in non-volatile memory or temporarily in volatile memory. When stored in volatile memory the programmable keys are cleared when a RECALL or RESET operation is performed.

#### NOTE

A SAVE operation must be performed through the Main Set-Up Menu when the NVR option has been selected.

**Programmable Keys:** Unlocked, Locked -- UNLOCKED allows the host computer to change programmable keys that have been defined from the keyboard. LOCKED prevents the host from changing the programmable keys.

**F6-F20 VT100:** ESC, BS, LF Only, Programmable -- If set to ESC, BS, LF ONLY, the F11, F12 and F13 keys will generate ESC, BS and LF codes, respectively. All other function keys will be disabled. If set to Programmable the F6 through F20 function keys will work the same in the VT100 mode as they do in the VT200 mode.

## Communications Set-Up Menu

The Communications Set-Up Menu allows the you to select the operating parameters that control communications between the computer and the terminal.

F6-MAIN	F7-TERM	F8-DSPLAY	F9-KYBD	F10-COM	F11-AUX	HELP	DO-KYEDIT
<b>Communications Set-Up Menu.</b>							<b>CIT326</b>
◆ Next Set-Up Menu				Protocol : Xoff at 64			
Return to Main Menu				Received Xoff : Process			
Transmit Baud Rate : 4800				Receive Baud Rate : = Transmit			
Parity / Word : 8 Bits No Parity				Receive Parity : No Check			
Stop Bits : 1 Bit				Local Echo : Off			
Transmit Control : Limited				Modem Control : Data Leads			
Disconnect Delay : 2 Secs				DTR Control : Normal			
Parameters :							
REPL MODE	PRNTR: NONE						

Figure 4-10. Communications Set-Up Menu

Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Auxiliary Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Transmit Baud Rate:** 4800, 9600, 19200, 75, 110, 150, 300, 600, 1200, 2400 -- Sets the terminal's COMM port transmit speed to equal the host's receive speed.

**Parity / Word:** 8 Bits No Parity, 8 Bits Even Parity, 8 Bits Odd Parity, 7 Bits No Parity, 7 Bits Even Parity, 7 Bits Odd Parity, 7 Bits Mark Parity, 7 Bits Space Parity -- Selects word length and parity parameters the terminal uses to communicate with the host.

**Stop Bits:** 1 Bit, 2 Bits: -- Selects the number of stop bits in the data word to match the host's communication parameters.

**Transmit Control:** Limited, Unlimited -- LIMITED TRANSMIT restricts character transmission to 150-180 characters per second, no matter what the baud rate is set to. This reduces the operating system's interrupt burden. UNLIMITED TRANSMIT removes limits to the character transmission speed.

**Disconnect Delay:** 2 Secs, 60 Ms Disconnect -- Used in conjunction with the COMM port FDX and HDX Modem Controls, this feature causes a disconnect between the terminal and the host when the Received Line Signal Detection (RLSD) is lost for either 60 ms or 2 seconds. It is suggested that all countries, except the United Kingdom, use the 2 second delay parameter. This field is unavailable when the AUX port host is selected in the dual host mode.

**Protocol:** XOFF at 64, XOFF at 128, No XOFF -- Allows the terminal to set the XOFF point at 64 or 128 characters in the receive buffer. NO XOFF disables the automatic XON/XOFF function. Note that if NO XOFF is selected, the HOLD SCREEN key will not work.

**Received Xoff:** Process, Ignore -- Controls whether an incoming XOFF command is ignored or processed.

**Receive Baud Rate:** = Transmit, 75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200 -- Sets the terminal's COMM port receive speed to equal the host's transmit speed.

**Receive Parity:** No Check, On -- Determines whether or not the terminal checks incoming data for parity errors.

**Local Echo:** Off, On -- If the Local Echo mode is on, all keyboard transmissions are sent to the display screen as well as to the host computer. If the Local Echo mode is off, all keyboard transmissions are sent to the host computer only. The host then may or may not send (echo) the data back to the terminal for display.

**Modem Control:** Data Leads FDX Modem Control, HDX Modem Control -- Selects the configuration of the EIA port when communicating with the host. This field is unavailable when the AUX port host is selected in the dual host mode.

Data Leads Only is selected if the terminal connects directly to the host computer through the communications port. If the host computer is set for full duplex communications, No Local Echo should be set (see above). If it is set for half duplex, Local Echo should be enabled.

FDX Modem Control should be selected if a full duplex modem communication is used between the host and the terminal.

HDX Modem Control should be selected if a half duplex modem communication is used between the host and the terminal.

**DTR Control:** Normal, Switched -- Allows control of Data Terminal Ready (pin 20). NORMAL sets DTR to remain active high while the terminal is powered on, except when a <SHIFT> <BREAK> occurs; then RTS and DTR drop for 3.5 seconds. The Break function alone does not drop DTR low. SWITCHED sets DTR low when the terminal is in the Local or set-up modes. The Break function does not drop DTR low. This field is unavailable when the AUX port host is selected in the dual host mode.

**Auxiliary Set-Up Menu**

The Auxiliary Set-Up Menu allows the operator to select the printer (AUX) port parameters, as described below. Note that the Auxiliary Set-Up Menu is not accessible when the dual host mode is selected. AUX Host parameters must be changed by first switching to the AUX Host (using the Mode/Session Key) and then making the necessary changes in the Communications Set-Up Menu.

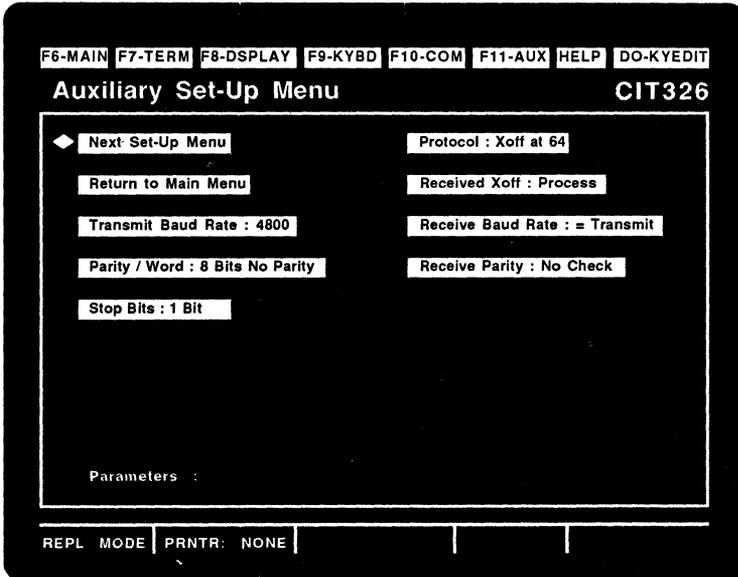


Figure 4-11. Auxiliary Set-Up Menu

Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Auxiliary Enhancements Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Transmit Baud Rate:** 4800, 9600, 19200, 75, 110, 150, 300, 600, 1200, 2400 -- Selects the transmit speed to the printer.

**Parity / Word:** 8 Bits No Parity, 8 Bits Even Parity, 8 Bits Odd Parity, 7 Bits No Parity, 7 Bits Even Parity, 7 Bits Odd Parity, 7 Bits Mark Parity, 7 Bits Space Parity, -- Selects the word length and parity parameters used by the printer port.

**Stop Bits:** 1 Bit, 2 Bit -- Selects the number of stop bits in the data word to match the printer's parameters.

**Protocol:** Xoff at 64, Xoff at 128, No Xoff -- Allows the terminal to set the XOFF point at 64 or 128 characters in the printer buffer. NO XOFF disables the automatic XON/XOFF function at the printer port.

**Received Xoff:** Process, Ignore -- Enables or disables the processing of XOFF commands received on the Aux port.

**Receive Baud Rate:** = Transmit, 75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200 -- Determines the speed at which data can be received at the printer port.

## Auxiliary Enhancements Menu

The Auxiliary Enhancements Menu provides additional auxiliary port selections which are not accessible from the Auxiliary Set-Up Menu. Note that the Auxiliary Set-Up Menu is not accessible when the Dual Host Mode is selected.

F6-MAIN	F7-TERM	F8-DSPLAY	F9-KYBD	F10-COM	F11-AUX	HELP	DO-KYEDIT
<b>Auxiliary Enhancements Menu</b>						<b>CIT326</b>	
◆ Next Set-Up Menu				Print Area : Full Page			
Return to Main Menu				Print Terminator : None			
Print Mode : Normal				Print Non-Fill Character : On			
Print Fonts : National				Print Fill Char. After : CR			
Print Features : VT220				Fill Count = 00			
Double Wide Line Prefix : Off				Nulls : Ignore			
Print Double High Bottoms : Off							
Parameters :							
REPL MODE	PRNTR: NONE						

Figure 4-12. Auxiliary Enhancements Menu

### Field: Options -- Function

**Next Set-Up Menu** -- Advances to the next set-up menu. In this case it is the Terminal Set-Up Menu.

**Return to Main Menu** -- Returns the screen to the Main Set-Up Menu.

**Print Mode: Normal**, Auto Print, Controller Mode, Concurrent Print -- Selects the printer operating mode. (The printer must be connected to the terminal before executing a print command.)

NORMAL PRINT MODE allows the operator to invoke all of the keyboard printing functions (Print Screen, Print Cursor Line, etc.) from the keyboard.

In the AUTO PRINT MODE the current line of data is printed when the cursor is moved off the line by an LF, FF, or a VT. With the auto wrap feature on, as the cursor moves off the line, the completed line of data is printed.

In the CONTROLLER MODE the host has direct control of the printer. All data received from the host is sent to the printer and is not displayed on the monitor screen.

The CONCURRENT PRINT MODE directs data to the monitor screen and to another terminal or printer at the same time.

**Print Fonts:** National, National & Line Drawing, Multinational -- Specifies the character sets supported by the printer.

NATIONAL is compatible with printers supporting multinational or national mode character sets.

NATIONAL AND LINE DRAWING is compatible with printers supporting multinational or national mode and line drawing capabilities.

MULTINATIONAL is compatible with printers supporting multinational mode and line drawing sets only.

**Print Features:** VT220, CIT101 -- Selects the print features of the DEC VT220 or the CIT-101.

**Double Wide Line Prefix:** Off, On -- Enables or disables the output of a prefix (^N) to indicate the data following is a double-wide line.

**Print Double High Bottoms:** Off, On -- Enables or disables the output of a second copy of data to the AUX port representing the bottom row of a double-high line.

**Print Area:** Full Page, Scrolling Region -- If FULL PAGE is selected, a Print Screen operation will cause the entire screen area (including margins) to be printed. If SCROLL REGION is selected, only the screen area between predefined margins will be printed.

**Print Terminator:** None, Form Feed Terminator -- Determines whether or not a Form Feed (FF) code is sent to the printer at the end of a Print Page operation.

**Print Non-Fill Character:** On, Off -- Determines whether or not the Fill After character (CR or LF) selected in the following field is printed.

**Print Fill Char. After:** CR, LF -- Enables the output of a selected number of fill characters to the AUX port after transmitting either a CR or an LF code.

**Fill Count:** 00 to 99 -- Selects the number of fill characters to be transmitted from 0 to 99.

**Nulls:** Ignore, Pass -- Determines whether or not null characters received by the terminal are passed to the AUX port during print operations (such as the Auto Print Mode, Printer Controller mode, and the Concurrent Print Mode.)

#### NOTE

In either setting, when "Display Controls" is selected in the Display Set-Up Menu, the '@' character appears in reverse video whenever a null character is received by the terminal.

## Set-Up Help Menu

Pressing the HELP key while in the set-up mode will bring up the following help menu. The Set-Up Help Menu lists the function key shortcuts which can be used to access the various set-up screens. Pressing any of the listed F-keys will take you to the indicated set-up screen.

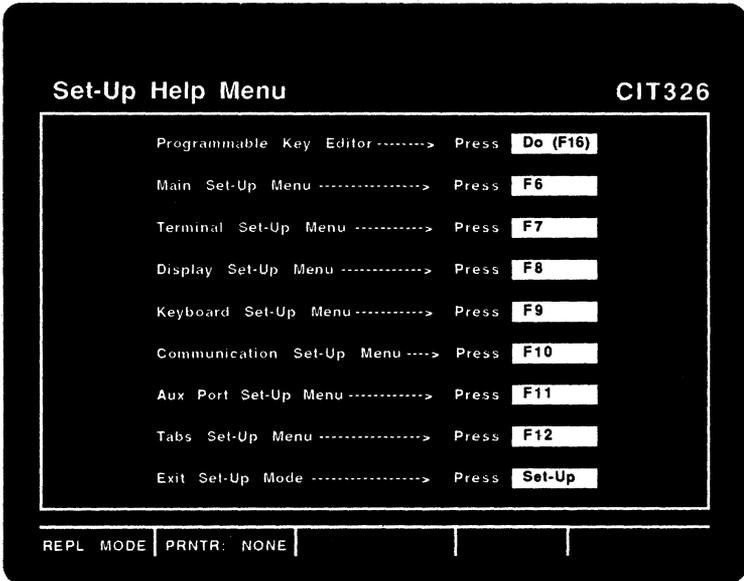


Figure 4-13. The Set-Up Help Menu

## PROGRAMMABLE KEY EDITOR

The CIT326 allows you to program 45 keys with up to 180 functions. Besides allowing you to program the 15 function keys (F6-F20) found across the top of the keyboard, the CIT326 lets you program the keys found on the editing and numeric keypads, plus the BACK SPACE and DELETE keys. Each key can be programmed with up to four functions, corresponding to each of the four keystroke combinations possible with each key (Unshifted, Shifted, Control, and Control/Shifted).

All programmable key definitions can contain any character which can be entered from the main keypad, including control characters. In addition, the programmable key editor allows you to define a pause character and a "dead" character. The routing of the programmed key string can be changed from the host to the terminal screen.

The terminal allows 1024 bytes for storing programmable key definitions. Since one byte is required to store each character entered in the key definition, the sum of the characters contained in all key definitions must not exceed 1024. Programmable keys can be stored temporarily in volatile memory or permanently in non-volatile memory.

When the dual host mode is selected, a complete set of programmable keys can be defined for each host. The space for storing the key definitions is divided between hosts. To program keys for each host, program one set of keys for the first host. Exit the set-up mode, switch hosts, then reenter the set-up mode and program the keys for the other host.

### Programmable Keys Organization

The 45 programmable keys are divided into 5 groups: the Function Key, Edit, Cursor, Numeric, and PF + ENTER groups. Below is a list of the programmable keys. Following this list are explanations of how to enter the editor, program the keys, and save the key definitions.

Table 4-1. Programmable Keys Organization

Group	Key Name	Index Display	Group	Key Name	Index Display
Function Key	F6	F6	Cursor	Up Arrow Left Arrow Down Arrow Right Arrow	UP LEF DWN RIG
	F7	F7			
	F8	F8			
	F9	F9	Numeric	0 1 2 3 4 5 6 7 8 9 . -	N-0 N-1 N-2 N-3 N-4 N-5 N-6 N-7 N-8 N-9 N- N- N- N-
	F10	F10			
	F11	F11			
	F12	F12			
	F13	F13			
	F14	F14			
	F15	F15			
	F16	F16			
	F17	F17			
	F18	F18			
F19	F19				
F20	F20				
Edit	Back Space	B/S	PF + ENTER	PF1 PF2 PF3 PF4 ENTER	PF1 PF2 PF3 PF4 ENT
	Delete	DEL			
	Find	FIN			
	Insert Here	INS			
	Remove	REM			
	Select	SEL			
	Prev Screen	PRE			
Next Screen	NEX				

### Programmable Key Defaults

If they have not been previously programmed, all of the keys listed above generate default codes when pressed. These defaults are listed in Appendix B.

### Entering the Programmable Key Editor Menu

The programmable key editor can be entered from the Main or Keyboard Enhancements set-up menus, or by pressing the DO key while in any set-up menu. To enter the programmable keys editor menu,

- ▶ press the SET-UP key to enter the set-up mode, and
- ▶ press the DO key.



To define the pause character, use the cursor control keys to select the "Define Pause Character" field in the Programmable Key Editor menu, then press the ENTER key. Press the key and its modifier (none, SHIFT, CTRL, or CTRL and SHIFT). To save the pause character, press the ENTER key. The CIT326 will then return you to the Programmable Key Editor menu. To discard the pause character just pressed, press the ESC key. The pause character will revert to its previous definition and the CIT326 will return to the Programmable Key Editor menu.

### **Defining the "Dead" Character**

You can disable any programmable key by including a character in it which is defined to be the "Dead" key. The "dead" key can be any character which can be entered from the main keypad -- including control characters. The default "dead" key is the NUL (CTRL-@) character.

To define the 'dead' key, use the cursor control keys to select the "Define Dead Key Character" in the Programmable Key Editor Menu, and then press the ENTER key. Type the character and its modifier (none, SHIFT, or CTRL). Press the ENTER key to save the 'dead' key or ESC to revert to the previous 'dead' key definition. The CIT326 will return you to Programmable Key Editor menu.

### **Selecting the Key to Be Programmed**

After the "Program Key Content" field is selected, the CIT326 will prompt you to press the key you wish to program. The valid keys are listed in the preceding "Programmable Keys Organization" section. Pressing any of these keys, alone or in combination with the SHIFT, CTRL, or CTRL and SHIFT modifier keys will cause the following editor screen to appear:

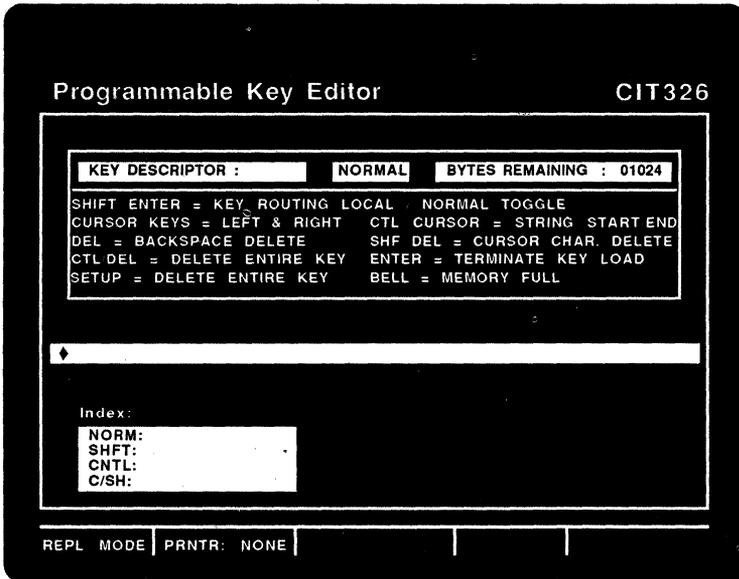


Figure 4-15. Editor Screen

The editor screen is divided into three areas: an informational area on top, a one line editor window in the center, and a key index at the bottom.

The informational area lists the key currently being programmed in the "Key Descriptor" field, where "Nor.", "SHF.", "CON.", and "C/S" designate the normal (unshifted), shifted, control, and control shifted levels of the key, respectively. This informational area also lists the destination of the key (Local or Normal), the amount of memory (in bytes) left for key programming, and the keys used in the key programming process.

The index lists both the key currently being defined and the keys in the current key group which already have been defined. The keys are listed using the abbreviations shown in Table 4-1.

## Editing the Key Definition

The editor window displays the current key string, if any. The end of the character string is marked with a blinking diamond. If the character string extends off to the right or left edge of the editor window, a blinking "+" mark will appear at the right or left edge of the window.

## Entering Characters

Use the main keypad to enter the characters in the key definition. All characters which can be entered by the main keypad are valid for programmable key use -- including control characters.

You can enter more characters in the key definition than can be displayed in the editor window at one time. If this is the case, the text will scroll left to allow you to allow you to enter more characters. The number of characters in the key definition is limited only by the available space. If you run out of space, the terminal will beep.

Note that although the pause character(s) can be distributed throughout the key definition, the character intended to be used as a "dead" key must be the first character in the key definition.

## Deleting Characters

Use the <x] key to delete the character to the left of the cursor. Pressing the SHIFT and <x] keys deletes the character the cursor is on. Pressing the CTRL and <x] keys deletes the entire key sequence.

## Cursor Movement

Use the right and left (→ and ←) cursor movement keys to move the cursor within the character string. If the character string extends off to the right or left edge of the editor window, the window will scroll when you attempt to move the cursor past the right or left edge of the editor window.

To move to the beginning or end of the character string, press the CTRL key and the right or left cursor movement key.

### Changing the Key Destination

To change the key destination, press the SHIFT and ENTER keys. The destination will change from LOCAL to NORMAL or vice versa.

Normally, the character string produced when a programmable key is pressed is sent to the current host computer. This destination can be changed from NORMAL to LOCAL within the function key editor. When set to LOCAL, the character string produced by the programmed key will be directed to the terminal instead of the current host. This feature allows you to bypass the host computer and use the CIT326's programmable keys to modify the terminal's functions and screen display directly.

### Selecting the Next Character

The next key can be edited by using the ENTER key to exit the current key and pressing the next key or key combination.

You can also edit another key in the current group by pressing the up or down (↑ or ↓) cursor movement keys. The next or previous key in the current key group will be selected and its current character string (if any) will appear in the editor window.

Alternatively, press the key or key combination of the next programmable key. By doing so, you can select keys outside of the current key group. All keys can be selected this way, except the BACK SPACE key and the keys used in the editing process (<x], ↑, ↓, →, ←, and ENTER).

### Exiting the Editor Screen

To terminate the current key definition, press the ENTER key. The CIT326 will prompt you to press the next key to be programmed. If you do not want to continue, press the ESC key.

## **Saving the Key Definitions**

The key definitions are automatically saved in volatile memory. The key definitions will remain in memory until the terminal is turned off and on, at which time the key definitions will be erased.

By setting the "Programmable Keys" field in the Keyboard Enhancements Menu to "Non-volatile", you can set the CIT326 so that the key definitions will be automatically saved in non-volatile memory. If this is done, the key definitions will still be available after the terminal is turned off and on. Make sure that this selection is saved (using the "Save Parameters" field in the Main Set-Up Menu). This need be done only once, unless the set-up parameters are re-initialized.

## **Deleting Key Definitions**

In the editor screen, you can use the CTRL and <x> keys to delete key definitions, one by one.

Alternatively, the "Delete Key Group" field in the Programmable Key Editor menu allows you to delete key definitions by group. To do so, use the cursor control keys to select this field and then press the ENTER key. The CIT326 will prompt you to press any key + modifier combination from the desired group. Pressing the ENTER key will then delete that key group. Pressing the ESC key will exit without deleting the selected group. Note that only the specified level (SHIFT, CTRL, CTRL/SHIFT) of the selected group is deleted.

## **Exiting the Programmable Key Editor**

To exit the programmable key editor, you must first (usually) return to the Programmable Key Editor menu. Usually, this can be done by pressing the ENTER or ESC keys. Once this has been done, you can exit to the set-up mode by selecting the "Return to Main Menu" field and pressing the ENTER key. You can also exit both the editor menu and the set-up mode by pressing the SET-UP key.



**APPENDIX A**  
**CODE TABLES**

		COLUMN																																																																																																																																																																			
		0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7																																																																																																																																																				
ROW	0	NUL 00 00	DLE 16 10	SP 32 20	0 48 30	@ 84 40	P 80 50	· 96 60	p 112 70	1	SOH 01 01	DC1 (XON) 17 11	!	33 21	1 49 31	A 65 41	Q 81 51	a 97 61	q 113 71	2	STX 02 02	DC2 18 12	"	34 22	2 50 32	B 66 42	R 82 52	b 98 62	r 114 72	3	ETX 03 03	DC3 (XOFF) 19 13	#	35 23	3 51 33	C 67 43	S 83 53	c 99 63	s 115 73	4	EOT 04 04	DC4 20 14	\$	36 24	4 52 34	D 68 44	T 84 54	d 100 64	t 116 74	5	ENQ 05 05	NAK 21 15	%	37 25	5 53 35	E 69 45	U 85 55	e 101 65	u 117 75	6	ACK 06 06	SYN 22 16	&	38 26	6 54 36	F 70 46	V 86 56	f 102 66	v 118 76	7	BEL 07 07	ETB 23 17	'	39 27	7 55 37	G 71 47	W 87 57	g 103 67	w 119 77	8	BS 08 08	CAN 24 18	(	40 28	8 56 38	H 72 48	X 88 58	h 104 68	x 120 78	9	HT 09 09	EM 25 19	)	41 29	9 57 39	I 73 49	Y 89 59	i 105 69	y 121 79	10	LF 10 0A	SUB 26 1A	*	42 2A	:	58 3A	J 74 4A	Z 90 5A	j 106 6A	z 122 7A	11	VT 11 0B	ESC 27 1B	+	43 2B	;	59 3B	K 75 4B	[ 91 5B	k 107 6B	{ 123 7B	12	FF 12 0C	FS 28 1C	,	44 2C	<	60 3C	L 76 4C	\ 92 5C	l 108 6C	 124 7C	13	CR 13 0D	GS 29 1D	-	45 2D	=	61 3D	M 77 4D	] 93 5D	m 109 6D	} 125 7D	14	SO 14 0E	RS 30 1E	.	46 2E	>	62 3E	N 78 4E	^ 94 5E	n 110 6E	~ 126 7E	15	SI 15 0F	US 31 1F	/	47 2F	?	63 3F	O 79 4F	_ 95 5F	o 111 6F	DEL 127 7F

← CO CODES →
← GL CODES →

**KEY**

Character	#	35	Decimal
		23	Hexadecimal

**Table A-1. 7-Bit Code Table (ASCII Graphics)**

COLUMN																	ROW
8	9	10	11	12	13	14	15										
	128 80	DCS	144 90		160 A0	°	176 B0	À	192 C0		208 D0	à	224 E0		240 F0	0	
	129 81	PU1	145 91	i	161 A1	±	177 B1	Á	193 C1	Ñ	209 D1	á	225 E1	ñ	241 F1	1	
	130 82	PU2	146 92	¢	162 A2	2	178 B2	Â	194 C2	Ò	210 D2	â	226 E2	ò	242 F2	2	
	131 83	STS	147 93	£	163 A3	3	179 B3	Ã	195 C3	Ó	211 D3	ã	227 E3	ó	243 F3	3	
IND	132 84	CCH	148 94		164 A4		180 B4	Ä	196 C4	Ô	212 D4	ä	228 E4	ô	244 F4	4	
NEL	133 85	MW	149 95	¥	165 A5	µ	181 B5	Å	197 C5	Õ	213 D5	å	229 E5	õ	245 F5	5	
SSA	134 86	SPA	150 96		166 A6	¶	182 B6	Æ	198 C6	Ö	214 D6	æ	230 E6	ö	246 F6	6	
ESA	135 87	EPA	151 97	§	167 A7	·	183 B7	Ç	199 C7	Œ	215 D7	ç	231 E7	œ	247 F7	7	
HTS	136 88		152 98	¤	168 A8		184 B8	È	200 C8	Ø	216 D8	è	232 E8	ø	248 F8	8	
HTJ	137 89		153 99	©	169 A9	†	185 B9	É	201 C9	Ù	217 D9	é	233 E9	ù	249 F9	9	
VTS	138 8A		154 9A	ª	170 AA	º	186 BA	Ê	202 CA	Ú	218 DA	ê	234 EA	ú	250 FA	10	
PLD	139 8B	CSI	155 9B	«	171 AB	»	187 BB	Ë	203 CB	Û	219 DB	ë	235 EB	û	251 FB	11	
PLU	140 8C	ST	156 9C		172 AC	¼	188 BC	Ì	204 CC	Ü	220 DC	ì	236 EC	ü	252 FC	12	
RI	141 8D	OSC	157 9D		173 AD	½	189 BD	Í	205 CD	Ý	221 DD	í	237 ED	ý	253 FD	13	
SS2	142 8E	PM	158 9E		174 AE		190 BE	Î	206 CE		222 DE	î	238 EE		254 FE	14	
SS3	143 8F	APC	159 9F		175 AF	¾	191 BF	Ï	207 CF	ß	223 DF	ï	239 EF		255 FF	15	

KEY

Character	æ	230 E6	Decimal Hexadecimal
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Table A-2. 8-Bit Code Table  
(Supplemental Graphics)

		COLUMN															
		0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
ROW	0	NUL	00 00	DLE	16 10	SP	32 20	0	48 30	@	64 40	P	80 50	◆	96 60	—	112 70
	1	SOH	01 01	DC1 (XON)	17 11	!	33 21	1	49 31	A	65 41	Q	81 51	■	97 61	—	113 71
	2	STX	02 02	DC2	18 12	"	34 22	2	50 32	B	66 42	R	82 52	H <sub>T</sub>	98 62	—	114 72
	3	ETX	03 03	DC3 (XOFF)	19 13	#	35 23	3	51 33	C	67 43	S	83 53	FF	99 63	—	115 73
	4	EOT	04 04	DC4	20 14	\$	36 24	4	52 34	D	68 44	T	84 54	C <sub>R</sub>	100 64	┌	116 74
	5	ENQ	05 05	NAK	21 15	%	37 25	5	53 35	E	69 45	U	85 55	L <sub>F</sub>	101 65	└	117 75
	6	ACK	06 06	SYN	22 16	&	38 26	6	54 36	F	70 46	V	86 56	°	102 66	┘	118 76
	7	BEL	07 07	ETB	23 17	'	39 27	7	55 37	G	71 47	W	87 57	±	103 67	┐	119 77
	8	BS	08 08	CAN	24 18	(	40 28	8	56 38	H	72 48	X	88 58	N <sub>L</sub>	104 68		120 78
	9	HT	09 09	EM	25 19	)	41 29	9	57 39	I	73 49	Y	89 59	V <sub>T</sub>	105 69	≤	121 79
	10	LF	10 0A	SUB	26 1A	*	42 2A	:	58 3A	J	74 4A	Z	90 5A	┘	106 6A	≥	122 7A
	11	VT	11 0B	ESC	27 1B	+	43 2B	;	59 3B	K	75 4B	[	91 5B	┐	107 6B	π	123 7B
	12	FF	12 0C	FS	28 1C	,	44 2C	<	60 3C	L	76 4C	\	92 5C	┘	108 6C	≠	124 7C
	13	CR	13 0D	GS	29 1D	-	45 2D	=	61 3D	M	77 4D	]	93 5D	┘	109 6D	£	125 7D
	14	SO	14 0E	RS	30 1E	.	46 2E	>	62 3E	N	78 4E	^	94 5E	+	110 6E	•	126 7E
	15	SI	15 0F	US	31 1F	/	47 2F	?	63 3F	O	79 4F	(BLANK)	95 5F	—	111 6F	DEL	127 7F

← CO CODES →
← GL CODES →

**KEY**

Character	#	35	Decimal
		23	Hexadecimal

Table A-3. Special Graphics

		COLUMN									
		0	1	2	3	4	5	6	7		
ROW	0	NUL <sup>00</sup>	DLE <sup>16</sup>	SP <sup>32</sup>	0 <sup>48</sup>	@ <sup>64</sup>	P <sup>80</sup>	,	p <sup>96</sup>		
	1	SOH <sup>01</sup>	DC1 <sup>17</sup> (XON)	! <sup>33</sup>	1 <sup>49</sup>	A <sup>65</sup>	Q <sup>81</sup>	a <sup>97</sup>	q <sup>113</sup>		
	2	STX <sup>02</sup>	DC2 <sup>18</sup>	" <sup>34</sup>	2 <sup>50</sup>	B <sup>66</sup>	R <sup>82</sup>	b <sup>98</sup>	r <sup>114</sup>		
	3	ETX <sup>03</sup>	DC3 <sup>19</sup> (XOFF)	£ <sup>35</sup>	3 <sup>51</sup>	C <sup>67</sup>	S <sup>83</sup>	c <sup>99</sup>	s <sup>115</sup>		
	4	EOT <sup>04</sup>	DC4 <sup>20</sup>	\$ <sup>36</sup>	4 <sup>52</sup>	D <sup>68</sup>	T <sup>84</sup>	d <sup>100</sup>	t <sup>116</sup>		
	5	ENQ <sup>05</sup>	NAK <sup>21</sup>	% <sup>37</sup>	5 <sup>53</sup>	E <sup>69</sup>	U <sup>85</sup>	e <sup>101</sup>	u <sup>117</sup>		
	6	ACK <sup>06</sup>	SYN <sup>22</sup>	& <sup>38</sup>	6 <sup>54</sup>	F <sup>70</sup>	V <sup>86</sup>	f <sup>102</sup>	v <sup>118</sup>		
	7	BEL <sup>07</sup>	ETB <sup>23</sup>	' <sup>39</sup>	7 <sup>55</sup>	G <sup>71</sup>	W <sup>87</sup>	g <sup>103</sup>	w <sup>119</sup>		
	8	BS <sup>08</sup>	CAN <sup>24</sup>	( <sup>40</sup>	8 <sup>56</sup>	H <sup>72</sup>	X <sup>88</sup>	h <sup>104</sup>	x <sup>120</sup>		
	9	HT <sup>09</sup>	EM <sup>25</sup>	) <sup>41</sup>	9 <sup>57</sup>	I <sup>73</sup>	Y <sup>89</sup>	i <sup>105</sup>	y <sup>121</sup>		
	10	LF <sup>10</sup>	SUB <sup>26</sup>	* <sup>42</sup>	:	J <sup>74</sup>	Z <sup>90</sup>	j <sup>106</sup>	z <sup>122</sup>		
	11	VT <sup>11</sup>	ESC <sup>27</sup>	+ <sup>43</sup>	;	K <sup>75</sup>	[ <sup>91</sup>	k <sup>107</sup>	{ <sup>123</sup>		
	12	FF <sup>12</sup>	FS <sup>28</sup>	, <sup>44</sup>	< <sup>60</sup>	L <sup>76</sup>	\ <sup>92</sup>	l <sup>108</sup>	<sup>124</sup>		
	13	CR <sup>13</sup>	GS <sup>29</sup>	- <sup>45</sup>	= <sup>61</sup>	M <sup>77</sup>	] <sup>93</sup>	m <sup>109</sup>	} <sup>125</sup>		
	14	SO <sup>14</sup>	RS <sup>30</sup>	· <sup>46</sup>	> <sup>62</sup>	N <sup>78</sup>	^ <sup>94</sup>	n <sup>110</sup>	~ <sup>126</sup>		
	15	SI <sup>15</sup>	US <sup>31</sup>	/ <sup>47</sup>	? <sup>63</sup>	O <sup>79</sup>	_ <sup>95</sup>	o <sup>111</sup>	DEL <sup>127</sup>		

← CO CODES →
← GL CODES →

**KEY**

Character	£	35	Decimal
		23	Hexadecimal

Table A-4. British NRC Set  
(British Keyboard)

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL	00 00	DLE	16 10	SP	32 20	0	48 30	à	64 40	P	80 50	,	96 60	p	112 70
	1	SOH	01 01	DC1 (XON)	17 11	!	33 21	1	49 31	A	65 41	Q	81 51	a	97 61	q	113 71
	2	STX	02 02	DC2	18 12	"	34 22	2	50 32	B	66 42	R	82 52	b	98 62	r	114 72
	3	ETX	03 03	DC3 (XOFF)	19 13	£	35 23	3	51 33	C	67 43	S	83 53	c	99 63	s	115 73
	4	EOT	04 04	DC4	20 14	\$	36 24	4	52 34	D	68 44	T	84 54	d	100 64	t	116 74
	5	ENQ	05 05	NAK	21 15	%	37 25	5	53 35	E	69 45	U	85 55	e	101 65	u	117 75
	6	ACK	06 06	SYN	22 16	&	38 26	6	54 36	F	70 46	V	86 56	f	102 66	v	118 76
	7	BEL	07 07	ETB	23 17	'	39 27	7	55 37	G	71 47	W	87 57	g	103 67	w	119 77
	8	BS	08 08	CAN	24 18	(	40 28	8	56 38	H	72 48	X	88 58	h	104 68	x	120 78
	9	HT	09 09	EM	25 19	)	41 29	9	57 39	I	73 49	Y	89 59	i	105 69	y	121 79
	10	LF	10 0A	SUB	26 1A	*	42 2A	:	58 3A	J	74 4A	Z	90 5A	j	106 6A	z	122 7A
	11	VT	11 0B	ESC	27 1B	+	43 2B	;	59 3B	K	75 4B	o	91 5B	k	107 6B	é	123 7B
	12	FF	12 0C	FS	28 1C	,	44 2C	<	60 3C	L	76 4C	ç	92 5C	l	108 6C	ù	124 7C
	13	CR	13 0D	GS	29 1D	-	45 2D	=	61 3D	M	77 4D	§	93 5D	m	109 6D	è	125 7D
	14	SO	14 0E	RS	30 1E	.	46 2E	>	62 3E	N	78 4E	^	94 5E	n	110 6E	..	126 7E
	15	SI	15 0F	US	31 1F	/	47 2F	?	63 3F	O	79 4F	_	95 5F	o	111 6F	DEL	127 7F

← CO CODES →
← GL CODES →

**KEY**

Character	§	93	Decimal
		5D	Hexadecimal

**Table A-5. French NRC Set  
(Flemish and French/Belgian Keyboards)**

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL	00	DLE	16	SP	32	0	48	à	64	P	80	ô	96	p	112
	1	SOH	01	DC1	17	!	33	1	49	A	65	Q	81	a	97	q	113
	2	STX	02	DC2	18	"	34	2	50	B	66	R	82	b	98	r	114
	3	ETX	03	DC3	19	#	35	3	51	C	67	S	83	c	99	s	115
	4	EOT	04	DC4	20	\$	36	4	52	D	68	T	84	d	100	t	116
	5	ENQ	05	NAK	21	%	37	5	53	E	69	U	85	e	101	u	117
	6	ACK	06	SYN	22	&	38	6	54	F	70	V	86	f	102	v	118
	7	BEL	07	ETB	23	'	39	7	55	G	71	W	87	g	103	w	119
	8	BS	08	CAN	24	(	40	8	56	H	72	X	88	h	104	x	120
	9	HT	09	EM	25	)	41	9	57	I	73	Y	89	i	105	y	121
	10	LF	0A	SUB	26	*	42	:	58	J	74	Z	90	j	106	z	122
	11	VT	0B	ESC	27	+	43	;	59	K	75	â	91	k	107	é	123
	12	FF	0C	FS	28	,	44	<	60	L	76	ç	92	l	108	ù	124
	13	CR	0D	GS	29	-	45	=	61	M	77	ê	93	m	109	è	125
	14	SO	0E	RS	30	.	46	>	62	N	78	î	94	n	110	û	126
	15	SI	0F	US	31	/	47	?	63	O	79	—	95	o	111	DEL	127
				1F	2F	3F		4F		5F		6F		7F			

← CO CODES →
← GL CODES →

**KEY**

Character	ç	92	Decimal
		5C	Hexadecimal

Table A-6. French Canadian NRC Set  
(French Canadian Keyboard)

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL 00	DLE 16	SP 32	0 48	Ä 64	P 80	ä 96	p 112								
	1	SOH 01	DC1 (XON) 17	! 33	1 49	A 65	Q 81	a 97	q 113								
	2	STX 02	DC2 18	" 34	2 50	B 66	R 82	b 98	r 114								
	3	ETX 03	DC3 (XOFF) 19	# 35	3 51	C 67	S 83	c 99	s 115								
	4	EOT 04	DC4 20	\$ 36	4 52	D 68	T 84	d 100	t 116								
	5	ENQ 05	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117								
	6	ACK 06	SYN 22	& 38	6 54	F 70	V 86	f 102	v 118								
	7	BEL 07	ETB 23	' 39	7 55	G 71	W 87	g 103	w 119								
	8	BS 08	CAN 24	( 40	8 56	H 72	X 88	h 104	x 120								
	9	HT 09	EM 25	) 41	9 57	I 73	Y 89	i 105	y 121								
	10	LF 10	SUB 26	* 42	: 58	J 74	Z 90	j 106	z 122								
	11	VT 11	ESC 27	+ 43	; 59	K 75	Æ 91	k 107	æ 123								
	12	FF 12	FS 28	, 44	< 60	L 76	Ø 92	l 108	ø 124								
	13	CR 13	GS 29	- 45	= 61	M 77	Å 93	m 109	å 125								
	14	SO 14	RS 30	· 46	> 62	N 78	Ü 94	n 110	ü 126								
	15	SI 15	US 31	/ 47	? 63	O 79	— 95	o 111	DEL 127								

← CO CODES →
← GL CODES →

KEY

Character	Æ	91	Decimal
		5B	Hexadecimal

Table A-7. Norwegian/Danish NRC Set (Norwegian and Danish Keyboards)

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL	00	DLE	16	SP	32	0	48	@	64	P	80	é	96	p	112
	1	SOH	01	DC1 (XON)	17	!	33	1	49	A	65	Q	81	a	97	q	113
	2	STX	02	DC2	18	"	34	2	50	B	66	R	82	b	98	r	114
	3	ETX	03	DC3 (XOFF)	19	#	35	3	51	C	67	S	83	c	99	s	115
	4	EOT	04	DC4	20	\$	36	4	52	D	68	T	84	d	100	t	116
	5	ENQ	05	NAK	21	%	37	5	53	E	69	U	85	e	101	u	117
	6	ACK	06	SYN	22	&	38	6	54	F	70	V	86	f	102	v	118
	7	BEL	07	ETB	23	'	39	7	55	G	71	W	87	g	103	w	119
	8	BS	08	CAN	24	(	40	8	56	H	72	X	88	h	104	x	120
	9	HT	09	EM	25	)	41	9	57	I	73	Y	89	i	105	y	121
	10	LF	0A	SUB	26	*	42	:	58	J	74	Z	90	j	106	z	122
	11	VT	0B	ESC	27	+	43	;	59	K	75	Ä	91	k	107	ä	123
	12	FF	0C	FS	28	,	44	<	60	L	76	Ö	92	l	108	ö	124
	13	CR	0D	GS	29	-	45	=	61	M	77	Å	93	m	109	å	125
	14	SO	0E	RS	30	.	46	>	62	N	78	Û	94	n	110	ü	126
	15	SI	0F	US	31	/	47	?	63	O	79	—	95	o	111	DEL	127

KEY

Character	Ä	91	Decimal
		5B	Hexadecimal

Table A-8. Finnish NRC Set  
(Finnish Keyboard)

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL	00 00	DLE	16 10	SP	32 20	0	48 30	§	64 40	P	80 50	,	96 60	p	112 70
	1	SOH	01 01	DC1 (XON)	17 11	!	33 21	1	49 31	A	65 41	Q	81 51	a	97 61	q	113 71
	2	STX	02 02	DC2	18 12	"	34 22	2	50 32	B	66 42	R	82 52	b	98 62	r	114 72
	3	ETX	03 03	DC3 (XOFF)	19 13	#	35 23	3	51 33	C	67 43	S	83 53	c	99 63	s	115 73
	4	EOT	04 04	DC4	20 14	\$	36 24	4	52 34	D	68 44	T	84 54	d	100 64	t	116 74
	5	ENQ	05 05	NAK	21 15	%	37 25	5	53 35	E	69 45	U	85 55	e	101 65	u	117 75
	6	ACK	06 06	SYN	22 16	&	38 26	6	54 36	F	70 46	V	86 56	f	102 66	v	118 76
	7	BEL	07 07	ETB	23 17	'	39 27	7	55 37	G	71 47	W	87 57	g	103 67	w	119 77
	8	BS	08 08	CAN	24 18	(	40 28	8	56 38	H	72 48	X	88 58	h	104 68	x	120 78
	9	HT	09 09	EM	25 19	)	41 29	9	57 39	I	73 49	Y	89 59	i	105 69	y	121 79
	10	LF	10 0A	SUB	26 1A	*	42 2A	:	58 3A	J	74 4A	Z	90 5A	j	106 6A	z	122 7A
	11	VT	11 0B	ESC	27 1B	+	43 2B	;	59 3B	K	75 4B	Ä	91 5B	k	107 6B	ä	123 7B
	12	FF	12 0C	FS	28 1C	,	44 2C	<	60 3C	L	76 4C	Ö	92 5C	l	108 6C	ö	124 7C
	13	CR	13 0D	GS	29 1D	-	45 2D	=	61 3D	M	77 4D	Ü	93 5D	m	109 6D	ü	125 7D
	14	SO	14 0E	RS	30 1E	.	46 2E	>	62 3E	N	78 4E	^	94 5E	n	110 6E	ß	126 7E
	15	SI	15 0F	US	31 1F	/	47 2F	?	63 3F	O	79 4F	-	95 5F	o	111 6F	DEL	127 7F

← CO CODES →
← GL CODES →

**KEY**

Character	<b>ß</b>	126	Decimal
		7E	Hexadecimal

Table A-9. German NRC Set  
(German Keyboard)

		COLUMN															
		0		1		2		3		4		5		6		7	
ROW	0	NUL	00 00	DLE	16 10	SP	32 20	0	48 30	3/4	64 40	P	80 50	,	96 60	p	112 70
	1	SOH	01 01	DC1 (XON)	17 11	!	33 21	1	49 31	A	65 41	Q	81 51	a	97 61	q	113 71
	2	STX	02 02	DC2	18 12	"	34 22	2	50 32	B	66 42	R	82 52	b	98 62	r	114 72
	3	ETX	03 03	DC3 (XOFF)	19 13	£	35 23	3	51 33	C	67 43	S	83 53	c	99 63	s	115 73
	4	EOT	04 04	DC4	20 14	\$	36 24	4	52 34	D	68 44	T	84 54	d	100 64	t	116 74
	5	ENQ	05 05	NAK	21 15	%	37 25	5	53 35	E	69 45	U	85 55	e	101 65	u	117 75
	6	ACK	06 06	SYN	22 16	&	38 26	6	54 36	F	70 46	V	86 56	f	102 66	v	118 76
	7	BEL	07 07	ETB	23 17	'	39 27	7	55 37	G	71 47	W	87 57	g	103 67	w	119 77
	8	BS	08 08	CAN	24 18	(	40 28	8	56 38	H	72 48	X	88 58	h	104 68	x	120 78
	9	HT	09 09	EM	25 19	)	41 29	9	57 39	I	73 49	Y	89 59	i	105 69	y	121 79
	10	LF	10 0A	SUB	26 1A	*	42 2A	:	58 3A	J	74 4A	Z	90 5A	j	106 6A	z	122 7A
	11	VT	11 0B	ESC	27 1B	+	43 2B	;	59 3B	K	75 4B	ij	91 5B	k	107 6B	-	123 7B
	12	FF	12 0C	FS	28 1C	,	44 2C	<	60 3C	L	76 4C	1/2	92 5C	l	108 6C	f	124 7C
	13	CR	13 0D	GS	29 1D	-	45 2D	=	61 3D	M	77 4D		93 5D	m	109 6D	1/4	125 7D
	14	SO	14 0E	RS	30 1E	.	46 2E	>	62 3E	N	78 4E	^	94 5E	n	110 6E	'	126 7E
	15	SI	15 0F	US	31 1F	/	47 2F	?	63 3F	O	79 4F	_	95 5F	o	111 6F	DEL	127 7F

← CO CODES →
← GL CODES →

**KEY**

Character	£	35	Decimal
		23	Hexadecimal

Table A-10. Dutch NRC Set  
(Dutch Keyboard)

		COLUMN															
		0		1		2		3		4		5		6		7	
R O W	0	NUL	00	DLE	16	SP	32	0	48	§	64	P	80	ù	96	p	112
	1	SOH	01	DC1	17	!	33	1	49	A	65	Q	81	a	97	q	113
	2	STX	02	DC2	18	"	34	2	50	B	66	R	82	b	98	r	114
	3	ETX	03	DC3	19	£	35	3	51	C	67	S	83	c	99	s	115
	4	EOT	04	DC4	20	\$	36	4	52	D	68	T	84	d	100	t	116
	5	ENQ	05	NAK	21	%	37	5	53	E	69	U	85	e	101	u	117
	6	ACK	06	SYN	22	&	38	6	54	F	70	V	86	f	102	v	118
	7	BEL	07	ETB	23	'	39	7	55	G	71	W	87	g	103	w	119
	8	BS	08	CAN	24	(	40	8	56	H	72	X	88	h	104	x	120
	9	HT	09	EM	25	)	41	9	57	I	73	Y	89	i	105	y	121
	10	LF	0A	SUB	26	*	42	:	58	J	74	Z	90	j	106	z	122
	11	VT	0B	ESC	27	+	43	;	59	K	75	o	91	k	107	à	123
	12	FF	0C	FS	28	,	44	<	60	L	76	ç	92	l	108	ò	124
	13	CR	0D	GS	29	-	45	=	61	M	77	é	93	m	109	è	125
	14	SO	0E	RS	30	.	46	>	62	N	78	^	94	n	110	ì	126
	15	SI	0F	US	31	/	47	?	63	O	79	-	95	o	111	DEL	127

← CO CODES →

← GL CODES →

**KEY**

Character	£	35	Decimal
		23	Hexadecimal

Table A-11. Italian NRC Set  
(Italian Keyboard)

		COLUMN																			
		0		1		2		3		4		5		6		7					
ROW	0	NUL	00	DLE	16	10	SP	32	20	0	48	à	64	40	P	80	ô	96	p	112	70
	1	SOH	01	DC1	17	11	!	33	21	1	49	A	65	41	Q	81	a	97	q	113	71
	2	STX	02	DC2	18	12	"	34	22	2	50	B	66	42	R	82	b	98	r	114	72
	3	ETX	03	DC3	19	13	ù	35	23	3	51	C	67	43	S	83	c	99	s	115	73
	4	EOT	04	DC4	20	14	\$	36	24	4	52	D	68	44	T	84	d	100	t	116	74
	5	ENQ	05	NAK	21	15	%	37	25	5	53	E	69	45	U	85	e	101	u	117	75
	6	ACK	06	SYN	22	16	&	38	26	6	54	F	70	46	V	86	f	102	v	118	76
	7	BEL	07	ETB	23	17	'	39	27	7	55	G	71	47	W	87	g	103	w	119	77
	8	BS	08	CAN	24	18	(	40	28	8	56	H	72	48	X	88	h	104	x	120	78
	9	HT	09	EM	25	19	)	41	29	9	57	I	73	49	Y	89	i	105	y	121	79
	10	LF	0A	SUB	26	1A	*	42	2A	:	58	J	74	4A	Z	90	j	106	z	122	7A
	11	VT	0B	ESC	27	1B	+	43	2B	;	59	K	75	4B	é	91	k	107	ä	123	7B
	12	FF	0C	FS	28	1C	,	44	2C	<	60	L	76	4C	ç	92	l	108	ö	124	7C
	13	CR	0D	GS	29	1D	-	45	2D	=	61	M	77	4D	ê	93	m	109	ü	125	7D
	14	SO	0E	RS	30	1E	.	46	2E	>	62	N	78	4E	î	94	n	110	û	126	7E
	15	SI	0F	US	31	1F	/	47	2F	?	63	O	79	4F	è	95	o	111	DEL	127	7F

**KEY**

Character      

ù	35	Decimal
ù	23	Hexadecimal

Table A-12. Swiss NRC Set  
(Swiss/French and Swiss/German Keyboards)

		COLUMN																
		0		1		2		3		4		5		6		7		
ROW	0	NUL 00	DLE 16	SP 32	0 48	É 64	P 80	é 96	p 112									
	1	SOH 01	DC1 (XON) 11	! 33	1 49	A 65	Q 81	a 97	q 113									
	2	STX 02	DC2 18	" 34	2 50	B 66	R 82	b 98	r 114									
	3	ETX 03	DC3 (XOFF) 13	# 35	3 51	C 67	S 83	c 99	s 115									
	4	EOT 04	DC4 20	\$ 36	4 52	D 68	T 84	d 100	t 116									
	5	ENQ 05	NAK 15	% 37	5 53	E 69	U 85	e 101	u 117									
	6	ACK 06	SYN 22	& 38	6 54	F 70	V 86	f 102	v 118									
	7	BEL 07	ETB 17	' 39	7 55	G 71	W 87	g 103	w 119									
	8	BS 08	CAN 18	( 40	8 56	H 72	X 88	h 104	x 120									
	9	HT 09	EM 19	) 41	9 57	I 73	Y 89	i 105	y 121									
	10	LF 0A	SUB 1A	* 42	: 58	J 74	Z 90	j 106	z 122									
	11	VT 11	ESC 1B	+ 43	; 59	K 75	Ä 91	k 107	ä 123									
	12	FF 12	FS 1C	, 44	< 60	L 76	Ö 92	l 108	ö 124									
	13	CR 13	GS 1D	- 45	= 61	M 77	Å 93	m 109	å 125									
	14	SO 14	RS 1E	. 46	> 62	N 78	Û 94	n 110	ü 126									
	15	SI 15	US 1F	/ 47	? 63	O 79	— 95	o 111	DEL 127									

← CO CODES → ← GL CODES →

KEY

Character	É	64	Decimal
		40	Hexadecimal

Table A-13. Swedish NRC Set  
(Swedish Keyboard)

		COLUMN																																																																																																														
		0	1	2	3	4	5	6	7	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F																																																																																							
ROW	0	NUL	DLE	SP	0	\$	P	,	p	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112						
	1	SOH	DC1 (XON)	!	1	A	Q	a	q	11	21	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
	2	STX	DC2	"	2	B	R	b	r	18	28	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112							
	3	ETX	DC3 (XOFF)	£	3	C	S	c	s	19	29	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112								
	4	EOT	DC4	\$	4	D	T	d	t	20	30	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112									
	5	ENQ	NAK	%	5	E	U	e	u	21	31	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112										
	6	ACK	SYN	&	6	F	V	f	v	22	32	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112											
	7	BEL	ETB	'	7	G	W	g	w	23	33	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112												
	8	BS	CAN	(	8	H	X	h	x	24	34	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112													
	9	HT	EM	)	9	I	Y	i	y	25	35	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112														
	10	LF	SUB	*	:	J	Z	j	z	26	36	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112															
	11	VT	ESC	+	;	K	i	k	o	27	37	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112																
	12	FF	FS	,	<	L	Ñ	l	ñ	28	38	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112																	
	13	CR	GS	-	=	M	¿	m	ç	29	39	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112																		
	14	SO	RS	.	>	N	^	n	~	30	40	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112																			
	15	SI	US	/	?	O	—	o	DEL	31	41	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112																				

KEY

Character	Ñ	92	Decimal
		5C	Hexadecimal

Table A-14. Spanish NRC Set (Spanish Keyboard)

## APPENDIX B

## KEYBOARD GENERATED CODES

The CIT326's editing keypad, numeric keypad, and control and function keys can be used to generate a variety of control codes and escape sequences. The codes generated by these key groups vary according to the emulation mode (VT52, VT100, and VT200 7 Bit, or VT200 8 Bit) selected. Also, the codes generated by the numeric keypad depend upon the Keypad Application mode selection. In the VT200 and VT100 emulation modes, the codes generated by the cursor keys vary according to the Cursor Key Application mode selection.

The keyboard generated codes are listed in the following table. Note that in the VT100 emulation mode, the F6 through F20 keys can be set to generate the same codes as they do in the VT200 7-Bit mode. For more information, refer to the Keyboard Enhancements Menu description in Chapter 4.

Table B-1. Keyboard Generated Codes

KEY	CODES GENERATED							
	VT200 8-BIT MODE		VT200 7-BIT MODE		VT100 MODE		VT52 MODE	
	Normal	Application	Normal	Application	Normal	Application	Normal	Application
CURSOR UP	CSI A	SS3 A	ESC [A	ESC O A	ESC [A	ESC O A	ESC A	ESC A
CURSOR DOWN	CSI B	SS3 B	ESC [B	ESC O B	ESC [B	ESC O B	ESC B	ESC B
CURSOR RIGHT	CSI C	SS3 C	ESC [C	ESC O C	ESC [C	ESC O C	ESC C	ESC C
CURSOR LEFT	CSI D	SS3 D	ESC [D	ESC O D	ESC [D	ESC O D	ESC D	ESC D
FIND	CSI 1 ~	CSI 1 ~	ESC [ 1 ~	ESC [ 1 ~				
INSERT HERE	CSI 2 ~	CSI 2 ~	ESC [ 2 ~	ESC [ 2 ~				
REMOVE	CSI 3 ~	CSI 3 ~	ESC [ 3 ~	ESC [ 2 ~				
SELECT	CSI 4 ~	CSI 4 ~	ESC [ 4 ~	ESC [ 3 ~				
PREV SCREEN	CSI 5 ~	CSI 5 ~	ESC [ 5 ~	ESC [ 5 ~				
NEXT SCREEN	CSI 6 ~	CSI 6 ~	ESC [ 6 ~	ESC [ 6 ~				
0	0	SS3 p	0	ESC O p	0	ESC O p	0	ESC ? p
1	1	SS3 q	1	ESC O q	1	ESC O q	1	ESC ? q
2	2	SS3 r	2	ESC O r	2	ESC O r	2	ESC ? r

Table B-1. Keyboard Generated Codes (Continued)

KEY	CODES GENERATED							
	VT200 8-BIT MODE		VT200 7-BIT MODE		VT100 MODE		VT52 MODE	
	Normal	Application	Normal	Application	Normal	Application	Normal	Application
3	3	SS3 s	3	ESC O s	3	ESC O s	3	ESC ? s
4	4	SS3 t	4	ESC O t	4	ESC O t	4	ESC ? t
5	5	SS3 u	5	ESC O u	5	ESC O u	5	ESC ? u
6	6	SS3 v	6	ESC O v	6	ESC O v	6	ESC ? v
7	7	SS3 w	7	ESC O w	7	ESC O w	7	ESC ? w
8	8	SS3 x	8	ESC O x	8	ESC O x	8	ESC ? x
9	9	SS3 y	9	ESC O y	9	ESC O y	9	ESC ? y
PF1	SS3 P	SS3 P	ESC O P	ESC O P	ESC O P	ESC O P	ESC P	ESC P
PF2	SS3 Q	SS3 Q	ESC O Q	ESC O Q	ESC O Q	ESC O Q	ESC Q	ESC Q
PF3	SS3 R	SS3 R	ESC O R	ESC O R	ESC O R	ESC O R	ESC R	ESC R
PF4	SS3 S	SS3 S	ESC O S	ESC O S	ESC O S	ESC O S	ESC S	ESC S
.	.	SS3 m	.	ESC O m	.	ESC O m	.	ESC ? m
.	.	SS3 l	.	ESC O l	.	ESC O l	.	ESC ? l
.	.	SS3 n	.	ESC O n	.	ESC O n	.	ESC ? n
ENTER	CR or CRLF	SS3 M	CR or CRLF	ESC O M	CR or CRLF	ESC O M	CR or CRLF	ESC ? M
HOLD SCREEN								
PRINT SCREEN								
SET-UP								
MODE/SESSION								
BREAK								
F6	CSI 17 ~	CSI 17 ~	ESC [ 17 ~	ESC [ 17 ~				
F7	CSI 18 ~	CSI 18 ~	ESC [ 18 ~	ESC [ 18 ~				
F8	CSI 19 ~	CSI 19 ~	ESC [ 19 ~	ESC [ 19 ~				
F9	CSI 20 ~	CSI 20 ~	ESC [ 20 ~	ESC [ 20 ~				
F10	CSI 21 ~	CSI 21 ~	ESC [ 21 ~	ESC [ 21 ~				
F11	CSI 23 ~	CSI 23 ~	ESC [ 23 ~	ESC [ 23 ~	ESC	ESC	ESC	ESC
F12	CSI 24 ~	CSI 24 ~	ESC [ 24 ~	ESC [ 24 ~	BS	BS	BS	BS
F13	CSI 25 ~	CSI 25 ~	ESC [ 25 ~	ESC [ 25 ~	LF	LF	LF	LF
F14	CSI 26 ~	CSI 26 ~	ESC [ 26 ~	ESC [ 26 ~				
HELP	CSI 28 ~	CSI 28 ~	ESC [ 28 ~	ESC [ 28 ~				
DO	CSI 29 ~	CSI 29 ~	ESC [ 29 ~	ESC [ 29 ~				
F17	CSI 31 ~	CSI 31 ~	ESC [ 31 ~	ESC [ 31 ~				
F18	CSI 32 ~	CSI 32 ~	ESC [ 32 ~	ESC [ 32 ~				
F19	CSI 33 ~	CSI 33 ~	ESC [ 33 ~	ESC [ 33 ~				
F20	CSI 34 ~	CSI 34 ~	ESC [ 34 ~	ESC [ 34 ~				

**APPENDIX C****CONTROL CODES AND CONTROL SEQUENCES**

The is a brief list of the CIT326's control codes and control sequences. For an explanation of these controls, refer to the CIT326 Programmer's Manual.

**7-BIT CONTROL CODES**

Null (Ignored)	NUL
Transmit answerback	ENQ
Sound Bell	BEL
Back Space	BS
Move to next tab stop	HT
Line Feed	LF, VT or FF
Carriage Return	CR
Invoke G1 character set into GR	SO
Invoke G0 character set into GL	SI
Resume transmission	DC1
Halt transmission	DC3
Cancel control sequence	CAN or SUB
Escape sequence introducer	ESC

**8-BIT CONTROL CODES**

Move cursor down one line	IND or ESC D
Move cursor to first column on next line	NEL or ESC E
Set tab stop at cursor position	HTS or ESC H
Move cursor up one line	RI or ESC M
Invoke G2 character set into GL for one character	SS2 or ESC N
Invoke G3 character set into GL for one character	SS3 or ESC O
Device Control String introducer	DCS or ESC P
Control Sequence Introducer Introducer	CSI or ESC [
Device control string terminator	ST or ESC \

**SET EMULATION MODES**

Set VT200, 7-Bit Mode	CSI62;1"p
Set VT200, 8-Bit Mode	CSI62"p or CSI62;0"p or CSI62;2"p
Set VT100 Mode	CSI61"p
Set VT52 Mode	CSI?21

**Set C1 Control Code Transmission**

Translate 8-bit C1 control codes to their equivalent 7-bit codes for transmission to the host. ESCspF  
 (VT200 mode only)

Do not translate 8-bit C1 control codes into their equivalent 7-bit codes. C1 control codes remain 8-bit upon transmission to the host. ESCspG  
 (VT200 mode only)

**TERMINAL MODES****Keypad Application Mode**

Set Keypad Application Mode ESC =  
 Reset Keypad Numeric Mode ESC >

**Keyboard Action Mode**

Set Keyboard Action Mode CSI2h  
 Reset Keyboard Action Mode CSI2l

**Character Insert/Replace Mode**

Set Insert Mode CSI4h  
 Reset Replace Mode CSI4l

**Send-Receive Mode**

Set Send-Receive Mode CSI12h  
 Reset Send-Receive Mode CSI12l

**Line Feed-New Line Mode**

Set New Line Mode CSI20h  
 Reset Line Feed Mode CSI20l

**Cursor Key Application Mode**

Set Cursor Key Appl. Mode CSI?1h  
 Reset to Cursor Key Mode CSI?1l

**Column Mode**

Set to 132 Column Mode	CSI?3h
Reset to 80 Column Mode	CSI?3l

**Scrolling Mode**

Set Smooth Scroll Mode	CSI?4h
Reset Jump Scroll Mode	CSI?4l

**Screen Mode**

Set Reverse Screen Mode	CSI?5h
Reset Normal Screen Mode	CSI?5l

**Cursor Origin Mode**

Set Cursor Origin Mode	CSI?6h
Reset Cursor Origin Mode	CSI?6l

**Auto Wrap Mode**

Set Auto Wrap Mode	CSI?7h
Reset Auto Wrap Mode	CSI?7l

**Auto Repeat Mode**

Set Auto Repeat Mode	CSI?8h
Reset Auto Repeat Mode	CSI?8l

**Print Form Feed Mode**

Set Print Form Feed Mode	CSI?18h
Reset Print Form Feed Mode	CSI?18l

**Print Extent Mode**

Set Print Extent Mode	CSI?19h
Reset Print Extent Mode	CSI?19l

**Text Cursor Enable Mode**

Set Visible Cursor Mode	CSI?25h
Reset Invisible Cursor Mode	CSI?25l

**Character Set Mode**

Set National Mode	CSI?42h
Reset Multinational Mode	CSI?42l

**CURSOR CONTROL SEQUENCES****Relative Cursor Positioning**

Move Cursor Up	CSIPnA
Move Cursor Down	CSIPnB
Move Cursor Right (forward)	CSIPnC
Move Cursor Left (backward)	CSIPnD

**Direct Cursor Positioning**

Position Cursor	CSIPn;PnH or CSIPn;Pnf
-----------------	------------------------------

**Scroll Direction**

Index	ESC D (IND, 84H)
Reverse Index	ESC M (RI, 8DH)

**Next Line**

Next Line	ESC E (NEL, 85H)
-----------	------------------

**Save and Restore Cursor and Attributes**

Save Cursor and Attributes	ESC 7
Restore Cursor and Attributes	ESC 8

**TABULATION****Set Horizontal Tab**

Set Tab Stop	ESC H (HTS, 88H)
--------------	------------------

**Clear Tab(s)**

Clear Tab Stops	CSIPsg
-----------------	--------

Ps = 0	Clear Tab Stop at current column
3	Clear all Tab Stops

**WIDTH/HEIGHT LINE COMMANDS**

Double-height, double-width top	ESC#3
Double-height, double-width bottom	ESC#4
Single-height, single-width (normal)	ESC#5
Single-height, double-width	ESC#6
Double-height, single-width top	ESC#:
Double-height, single-width bottom	ESC#;

**SELECT GRAPHIC RENDITION**

Set Graphic Rendition CSIPs;Ps;Psm

Ps = 0 All attributes off

- 1 Bold intensity
- 4 Underline
- 5 Blinking
- 7 Negative (reverse) image
- 22 Normal intensity
- 24 Not underlined
- 25 Not blinking
- 27 Positive (normal) image

**EDITING COMMANDS**

Insert Line	CSIPnL
Delete Line	CSIPnM
Insert Character	CSIPn@
Delete Character	CSIPnX

**ERASE CONTROL SEQUENCES**

Set Erase Character CSIPns or CSI>Pns

Erase Character(s) CSIPnX

Selective Erase Attribute CSIPs"q

Ps = 0 Attribute off (erasable)

- 1 Non-erasable character (attribute on)
- 2 Erasable character (attribute off)

Erase Window CSI>3;rt;cl;rb;crJ

rt = top row  
 cl = left column  
 rb = bottom row  
 cr = right column

Erase Window Line CSI>3;cl;crK

cl = left column  
 cr = right column

### Erase Screen/Line: Attributes Protected

Erase within Screen CSI?PsJ

Ps = 0 Erase from cursor to end of screen  
 1 Erase from top of screen to cursor  
 2 Erase entire screen

Erase within Line CSI?PsK

Ps = 0 Erase from cursor to end of line  
 1 Erase from start of line to cursor  
 2 Erase entire line

### Erase Screen/Line: Attributes Unprotected

Erase within Screen CSIPsJ

Ps = 0 Erase from cursor to end of screen  
 1 Erase from top of screen to cursor  
 2 Erase entire screen

Erase within Line CSIPsK

Ps = 0 Erase from cursor to end of line  
 1 Erase from start of line to cursor  
 2 Erase entire line

## SCROLLING REGION

Set Scrolling Region CSIPn;Pnr

**PRINT COMMANDS**

Print the Cursor Line	CSI?1i
Print Screen	CSIi or CSI0i

**Auto Print Mode**

Auto Print On	CSI?5i
Auto Print Off	CSI?4i

**Printer Controller Mode**

Printer Controller On	CSI5i
Printer Controller Off	CSI4i

**CIET Private Printer Commands**

The following CIET Private Printer commands are blocked (will not have any effect) while in the DEC printer mode.

Enter Concurrent Auxiliary Mode	ESC0
Enter Auxiliary Control Mode	ESC1
Exit Auxiliary Control Mode	ESC2
Enter Auto Auxiliary Mode	ESC#0
Exit Auto Auxiliary or Concurrent Print Mode	ESC#1
Output cursor line to Auxiliary	ESC#2
Output page to Auxiliary	ESC#7
Keyboard data to communications port	ESC[0z
Keyboard data to auxiliary port	ESC[1z
Auxiliary port to communications port	ESC[2z
Auxiliary port to display	ESC[3z
Cease input from auxiliary port	ESC[4z
Clear auxiliary port output buffer	ESC[5z

**25TH ROW STATUS LINE**

DCS Pn1;Pn2;Pn3;PnN Q Data ST  
ESC P Pn1;Pn2;Pn3;PnN Q Data ESC \



## CHARACTER SET DESIGNATION

Character Set	Designate as:	
ASCII	G0	ESC(B
	G1	ESC)B
	G2	ESC*B
	G3	ESC+B
Supplemental	G0	ESC(<
	G1	ESC)<
	G2	ESC*<
	G3	ESC+<
Special Graphics	G0	ESC(0
	G1	ESC)0
	G2	ESC*0
	G3	ESC+0
NRC Sets		
Dutch	G0	ESC(4
	G1	ESC)4
Finnish	G0	ESC(C or ESC(5
	G1	ESC)C or ESC)5
French	G0	ESC(R
	G1	ESC)R
French Canadian	G0	ESC(Q
	G1	ESC)Q
German	G0	ESC(K
	G1	ESC)K
Italian	G0	ESC(Y
	G1	ESC)Y
Norwegian/Danish	G0	ESC(E or ESC(6
	G1	ESC)E or ESC)6
Spanish	G0	ESC(Z
	G1	ESC)Z
Swedish	G0	ESC(H or ESC(7
	G1	ESC)H or ESC)7
Swiss	G0	ESC(=
	G1	ESC)=

Character Set	Designate as:	
Soft Character Set	G0	ESC(name
	G1	ESC)name
	G2	ESC*name
	G3	ESC+name

## INVOKING CHARACTER SETS

Single shift G2 into GL (VT200 mode only)	ESCN or SS2 (8EH)
Single shift G3 into GL (VT200 mode only)	ESCO or SS3 (8FH)
Invoke G0 into GL (Default)	SI (0FH)
Invoke G1 into GL	SO (0EH)
Invoke G1 into GR (VT200 mode only)	ESC~
Invoke G2 into GL (VT200 mode only)	ESCn
Invoke G2 into GR (VT200 mode only)	ESC}
Invoke G3 into GL (VT200 mode only)	ESCO
Invoke G3 into GR (VT200 mode only)	ESC

## LOADING CHARACTERS

### CIET Method

DCS Pfn;Pcn;Pe w <name> <data> ST

### DEC-Compatible Method

DCS Pfn;Pcn;Pe;Pcms;Pw;Pt { name  
Sx1;Sx2;...;Sx94 ST

**CLEAR CHARACTER SET**

DCS 1;1;2 { sp @ ST

**REPORTS**

<b>Request Device Attributes</b>	CSI c or CSI 0 c
<b>Response with Attributes</b> (VT220 ID)	CSI ? n;n;...n c
<b>Response (VT100 ID)</b>	ESC[?1;2 c
<b>Response (VT101 ID)</b>	ESC[?1;0 c
<b>Response (VT102 ID)</b>	ESC[?6 c
<b>Request Secondary Device Attributes</b>	CSI > c or CSI > 0 c
<b>Response with Attributes</b>	CSI > 1;Pv;Po c
<b>Request for Terminal Status</b>	CSI 5n
<b>Response that terminal is OK</b>	CSI 0n
<b>Response that terminal is not OK</b>	CSI 3n
<b>Request for Cursor Position</b>	CSI 6n
<b>Response with cursor position</b>	CSI Pv;Ph R
<b>Request for Printer Status</b>	CSI ?15n
<b>Response :</b>	
<b>Printer is ready</b>	CSI ?10n
<b>Printer is not ready</b>	CSI ?11n
<b>There is no printer</b>	CSI ?13n
<b>Request for UDK Status</b>	CSI ?25n
<b>Response:</b>	
<b>UDK keys are unlocked</b>	CSI ?20n
<b>UDK keys are locked</b>	CSI ?21n

<b>Request for Keyboard Language</b>	CSI ?26n
Response with keyboard language	CSI ?27;Pn n
<b>Request for Terminal Parameters</b>	CSI<sol>x
Response with parameters:	
	CSI<sol>;<par>;<nbits>;<xspeed>;<rspeed>; <clkmul>;<flag>x
<b>Request Identification</b>	ESC Z

## RESETTING THE TERMINAL

Hard Terminal Reset	ESCc
Soft Terminal Reset	CSI!p

## SELF-TEST DIAGNOSTICS

CSI4;Psy

Ps = 1	Same as power up: ROM, NVR, RAM
2	Dual Channel loop back: Communications Channel to Auxiliary Channel
4	EIA loop back
8	Continuous testing of selected functions

## SCREEN ALIGNMENT

Fill Screen with E's	ESC#8
Fill Screen with Character Assortment	ESC#9

**VT52 MODE ESCAPE SEQUENCES****Cursor Control Sequences**

Move Cursor Up	ESC A
Move Cursor Down	ESC B
Move Cursor Right	ESC C
Move Cursor Left	ESC D
Move Cursor Home	ESC H
Position Cursor	ESC Yrc

**Graphics Mode**

Enter Special Graphics Mode	ESC F
Exit Special Graphics Mode	ESC G

**Scroll**

Reverse Line Feed	ESC I
-------------------	-------

**Erase Control Sequences**

Erase to End of Page	ESC J
Erase to End of Line	ESC K

**Bidirectional Auxiliary Port Control**

Enter Concurrent Auxiliary Mode	ESC U
Output Cursor Line to Printer	ESC V
Enter Printer Controller Mode	ESC W
Exit Printer Controller Mode	ESC X
Output Full Screen to Printer	ESC ]
Enter Auto Print Mode	ESC ^
Exit Auto Print Mode	ESC _

**Keypad Application Mode**

Enter Keypad Application Mode	ESC =
Exit Keypad Application Mode	ESC >

**ANSI Mode**

Enter ANSI Mode	ESC <
-----------------	-------

**Request Identity**

Identify Terminal Type	ESC Z
------------------------	-------

## APPENDIX D

---

### INTERFACING

In the standard system configuration the CIT326 is interfaced with the host via the bidirectional communication port, according to EIA RS-232C or 20 mA current loop conventions. The terminal also provides a bidirectional auxiliary port. This port is RS-232C or current loop compatible and is designed to support a variety of peripheral devices.

The CIT326 will work with modems with standard EIA RS-232C and RS-423 interfaces, and is in accordance with national and international standards and recommendations. The modems at the terminal end and at the host computer end must be compatible with each other.

The male connector, labelled COMM. is used for host communication. The female connector, labelled AUX, is used for peripheral device communication. When the dual host mode is enabled, the AUX port can also be used for communication with a second host computer. The following tables provide the pin assignments for the ports.

Communication parameters, (e.g. baud rates, parity, etc.), are selected in the set-up mode.

Table D-1. COMM Connector Pin Assignments

PIN	FUNCTION	NOTES
1	Signal Ground (SGND)	Chassis and reference ground.
2	Transmit Data (TXD)	Transmits serial data from the terminal.
3	Receive Data (RXD)	Receives serial data into the terminal.
4	Request to Send (RTS)	Asks the host to transmit.
5	Clear to Send (CTS)	Tells the terminal that the host is ready to transmit.
6	Data Set Ready (DSR)	Tells the terminal the host is in the data mode and is ready to exchange RTS, CTS and CD.
7	Signal Ground (SGND)	Chassis and reference ground.
8	Carrier Detect (CD)	Tells the terminal that the signal received on the communication line is of adequate quality to ensure proper demodulation of data. If off, indicates no signal received or signal not suited for demodulation.
20	Data Terminal Ready (DTR)	Tells the host that the terminal is ready to transmit or receive.

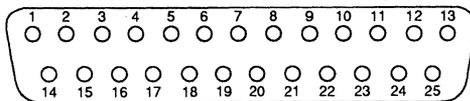


Figure D-1. COMM Connector Pin Locations

Table D-2. AUX Connector Pin Assignments

PIN	FUNCTION	NOTES
1	Protective Ground (PGND)	Chassis ground.
2	Receive Data (RXD)	Receives serial data into the terminal.
3	Transmitted Data TXD	Transmits serial data from the terminal.
7	Signal Ground (SGND)	Chassis and reference ground.
20*	Clear To Send (CTS)	Tells the terminal it is okay to send data to the peripheral.

\* If the printer does not send this signal, pin 20 may be pulled high by jumpering to pin 21 at the terminal connector.

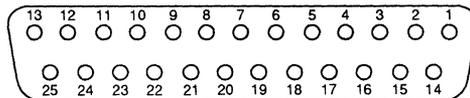


Figure D-2. AUX Connector Pin Locations

## 20 mA CURRENT LOOP

The terminal offers a 20 mA current loop interface as a standard feature. The interface may only be used on one of the two ports at one time. No modifications are required to use the 20 mA current loop since it is implemented via normally unused pins in the two port connectors.

External jumpering, as illustrated in Figures D-3 and D-4, is used to establish the desired current loop configuration. The pins used on the connector are listed below in Tables D-3 and D-4.

The loop has two selectable modes of operation, either active or passive. In the active configuration the terminal is the current source; while in the passive configuration the terminal is the current sink. Selection of either mode requires external jumpering within the connector.

In the passive mode, the XTMR line is optically isolated and goes to a MARK condition when off. In the active mode the XMTR is not optically isolated and goes to a SPACE condition.

Table D-3. COMM Port Current Loop Pin Assignments

Pin	Function	Notes
7	Signal Ground	Reference/Chassis ground
9	Current Loop Receive+	Tied to AUX pin 9
10	Current Loop Receive-	Tied to AUX pin 10
13	Receive Loop Bias	Tied to AUX pin 13
14	Current Loop to EIA in	Tied to AUX pin 14
16	EIA to Current Loop in	Tied to AUX pin 16
21	Transmit Loop Bias	Tied to AUX pin 21
24	Current Loop Transmit+	Tied to AUX pin 24
25	Current Loop Transmit-	Tied to AUX pin 25

Table D-4. AUX Port Current Loop Pin Assignments

Pin	Function	Notes
7	Signal Ground	Reference/Chassis ground
9	Current Loop Receive+	Tied to COMM pin 9
10	Current Loop Receive-	Tied to COMM pin 10
13	Receive Loop Bias	Tied to COMM pin 13
14	Current Loop to EIA in	Tied to COMM pin 14
16	EIA to Current Loop in	Tied to COMM pin 16
21	Transmit Loop Bias	Tied to COMM pin 21
24	Current Loop Transmit+	Tied to COMM pin 24
25	Current Loop Transmit-	Tied to COMM pin 25

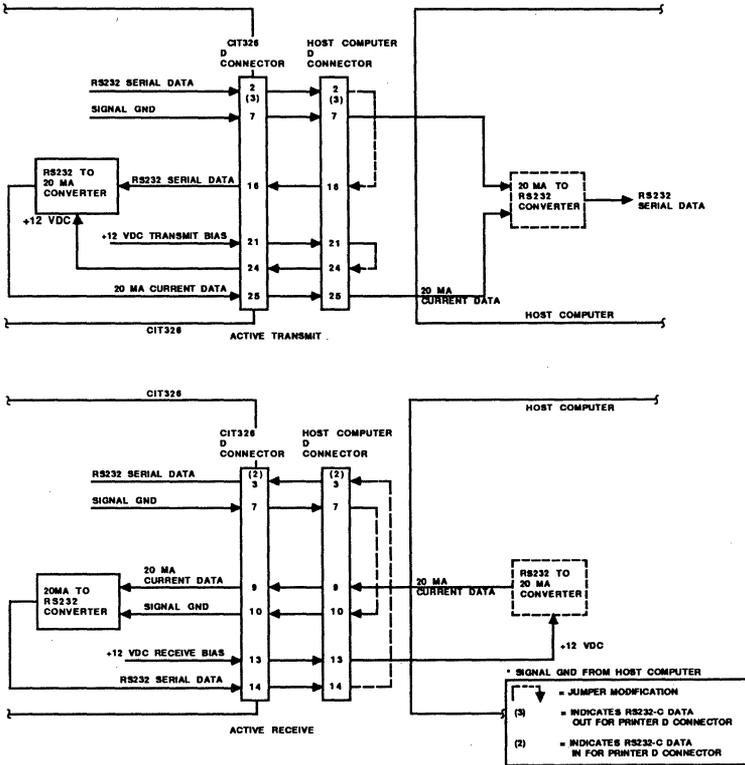


Figure D-3. 20 mA Current Loop Active Configuration

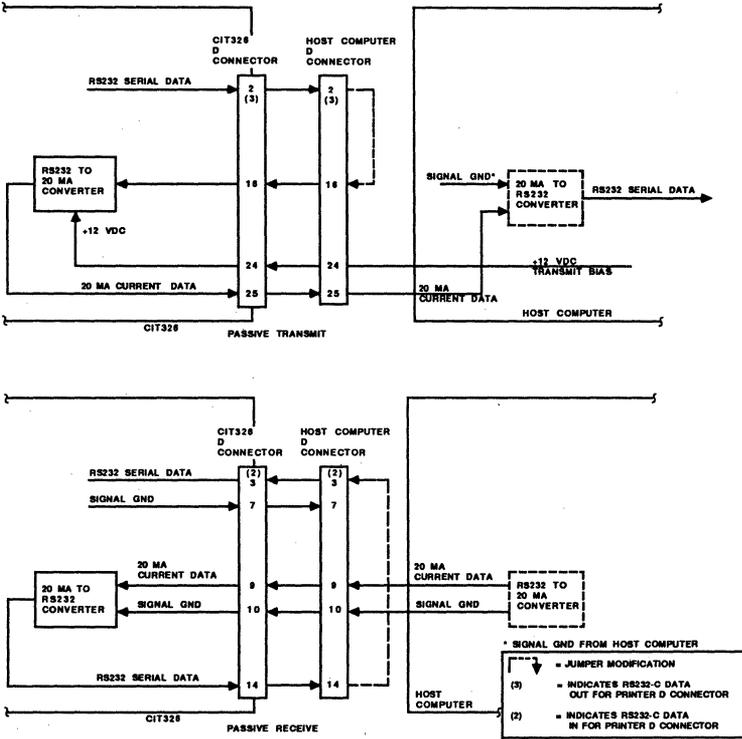


Figure D-4. 20 mA Current Loop Passive Configuration

## COMMUNICATIONS PORT PROTOCOL

The CIT326 terminal utilizes XON/XOFF handshake protocols for control of data flow. The following describes the communications XON/XOFF handshake controls.

Incoming characters are stored by the terminal in a receiver buffer manager that transmits XON/XOFF control. The manager processes the characters on a first-in/first-out basis. It does so on the appropriate transitions of the receiver buffer minimum and maximum thresholds determined by the terminal's logic. When the receiver buffer fills to the maximum number of characters (or 70% of the buffer), the terminal transmits an XOFF character to inhibit the host computer from sending more data.

An XON is asserted to resume communications when the data in the receiver buffer falls below 20% of the buffer space. Additional conditions that transmit XON are:

- A Clear Comm function
- A Recall function
- Completion of the self-test
- Pressing the HOLD SCREEN key to "free" the screen when the receiver buffer is at or below the XON point.

### NOTE

If XOFF is disabled in set-up, the receiver buffer manager is inactive and does not transmit an XOFF character to the host computer. The keyboard HOLD SCREEN key is inactive also. There is no way to ensure that characters will not be lost.

The receiver buffer continues to fill with characters if XOFF is disabled. Any characters received after the buffer has filled up are lost. Reverse question marks appear on the screen replacing the lost characters.

### **Unrecognized XON/XOFF Characters**

Software packages that do not recognize XON/XOFF characters sent from the terminal may access the terminal's features in the following ways:

- through the use of fill characters, or
- by limiting the send/receive rate to 9600 and avoiding the use of an escape code, slow scrolling, the printer port, and the split screen.

### **Modem Connect/Disconnect**

A modem may be used to connect the terminal to the host computer. When connected, all buffers, transmissions in progress, and XOFF's are cleared by the terminal, and the keyboard is unlocked if it is in the locked condition.

To disconnect the communications line, press the SHIFT BREAK keys.

Other actions that cause a disconnect between the host computer and terminal are:

- Executing a Recall or Save operation in the set-up mode
- The loss of a Data Set Ready (DSR) signal
- The loss of a carrier detect signal for 2 seconds (or 60 ms) as determined in the Communications Set-Up Menu
- Lack of a carrier detect signal within 30 seconds after a DSR
- The host sends a self-test directive to the terminal
- Changing from the EIA port to the 20 mA port, or vice versa

## PRINTER PORT PROTOCOL

The CIT326 receives XON/XOFF signals from the printer, but does not send them to it. When the printer buffer becomes full, it transmits an XOFF to the terminal to temporarily halt transmission of data characters. As the buffer empties, the printer sends an XON to the terminal to resume transmission of data.

Selecting Clear Comms Buffer in the Main Set-Up Menu also clears the buffer and sends an XON to the terminal.

### NOTE

If an older printer is being used, it may not acknowledge 8-bit control codes. It is advisable to set the printer port to 7-bit operation through the Auxiliary Set-Up Menu.



## APPENDIX E

---

### SPECIFICATIONS

Physical dimensions, environmental requirements, and certain functional characteristics of the CIT326 terminal are contained in this listing.

#### Display

CRT	14-inch diagonal, non-glare, choice of P4, P31 green, or PLA amber phosphor, 36 MHz dot frequency in 132 mode using a 24 KHz non-interlace CRT
Active Display Size	Approximately 23.0 cm x 17.5 cm (9.0 in. by 6.9 in.)
Format	Light on dark or reverse  24 lines x 80/132 characters (selectable) with selectable host addressable 25th status line or 25 lines x 80/132 characters without status line
Dual Host Screen Modes	Split or Independent
Video Memory	Single Host Mode (segmented): 4 pages with 24 or 25 lines per page  Single Host Mode (contiguous): 1 page with 99 or 100 lines per page.  Dual Host Mode (segmented): 2 pages for each host with 24 or 25 lines per page.  Dual Host Mode (contiguous): 1 page for each host with 49 or 50 lines per page.

Character Matrix	7 x 15 dot matrix within a 10 x 16 cell in 80 column 24 line mode
Character Cell	10 x 16 dot matrix (80 char., 24 rows) 9 x 16 dot matrix (132 char., 24 rows) 10 x 15 dot matrix (80 char., 24 data, 1 status row) 9 x 15 dot matrix (132 char., 24 data, 1 status row)
Cursor Types	Block, underline or invisible (selectable)
Cursor Attributes	Blinking or non-blinking
Video Attributes	Normal, reverse, blinking, underline, bold
Scrolling	Jump, variable speed smooth scroll, and split screen
Character Sets	ASCII, Special Graphics (line drawing), Supple- mental, National Replacement Character Sets, and a User- definable character set
Structure	Tilt = 30°, Swivel = 45° left or right from center

**Keyboard**

General	Low-profile, DIN-standard detachable keyboard with three-position tilt adjust- ment and a 1.8m (6 ft.) coiled cord
Key Layout	108 keys: 80-key main pad, 18-key auxiliary keypad, 6-key editing pad and 4-key cursor control pad

Key Caps	Sculptured key caps with matte textured finish
Home Row Height	30 mm (1.18 in.) above desk surface
Auxiliary Keypad	18-key numeric pad with period, comma, minus, ENTER and 4 function keys or 0-F hexadecimal pad (selectable)
Visual Indicators	Six LEDs: Hold Screen, Wait, Compose, On Line, Shift Lock, and Caps Lock
Audible Indicators	Keyclick: sounds for each keystroke (keyboard selectable)  Bell: Sounds when Ctrl-G (BEL) character is received, when the cursor nears the right margin, and for compose sequence errors.  Multiple Bell: Sounds on error in Set-Up Save or Recall operation

### Communication

Type	Full-duplex asynchronous with selectable local echo and full or half-duplex modem control
Interface	EIA RS-232C, or 20mA current loop (RS-422/423 option)
Speeds	75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19.2K baud (Transmit/Receive speeds can be set separately)
Character Length:	7 or 8 bits with 1 or 2 stop bits (keyboard selectable)
Parity	Even, odd, or none, mark or space (7-bit only) (keyboard selectable)

## CIT326

Buffer Overflow Prevention	XON and XOFF control codes
Control Codes	ASCII, ANSI x3.64, DEC VT220, VT102, VT100 and VT52 compatible

### Auxiliary Port

Specifications	Independent, bidirectional, same as main port in full duplex
----------------	--

### Dimensions

Monitor	Height: 33.0 cm (13.00 inches)
	Width: 32.4 cm (12.75 inches)
	Depth: 34.3 cm (13.50 inches)
Keyboard	Height: 3.5 cm (1.38 inches)
	Width: 53.3 cm (21.00 inches)
	Depth: 17.4 cm (6.87 inches)
	Tilt: 5° maximum

### Weight

Monitor	9.09 kg (20 pounds)
Keyboard	1.82 kg (4 pounds)
Shipping Weight	13.86 kg (30.5 pounds)

### Environment

Operating	Temperature: 10 to 40° C (50 to 105° F)
	Relative humidity: 10 to 90% (non-condensing)
	Altitude: Not to exceed 2.5 Km (8200 ft.)
Non-Operating	Temperature: -40 to 66° C (-40 to 150° F)

Relative humidity: 20 to 95%  
(non-condensing)

Altitude: Not to exceed 9.1  
Km (29,850 ft.)

## Power

Line Voltage	100-120 VAC single phase, 3 wire 220-240 VAC single phase, 3 wire (switch selectable)
Line Frequency	47-63 Hz
AC Input Current	1.1 amps max. @ 90-135 VAC 0.7 amps max. @ 180-270 VAC
Input Power	50 watts
Power Cord (US Standard)	Detachable, 3 conductor, 2m

## Optional Power Cords

See Table E-1 for a list of international power cord approval markings.

Europe	Plug is rated at 240V, 10.16A. Plug and power cord comply with the CEE (7), II, IV, VII, IEC 83, and IEC 127 standards. Power cord type: "<HAR>" or UL Listed Type SVT No. 18/3AWG 300 V, 10A.
UK	Plug is rated at 240V, 6A. Power cord and plug comply with the 82 1363, IEC 83 1363, IEC 83, and IEC 127 standards. Power cord type: "<HAR>" or UL Listed Type SVT No. 18/3AWG 300 V, 10A.
Australia	Plug is rated at 240V, 10A. Power cord and plug comply with the AS C112 and IEC 127 standards. Power cord type: "<HAR>" or UL Listed Type SVT No. 18/3AWG 300 V, 10A.

North American  
(220-240V)

Plug is rated at 240V, 15A. Power cord and plug comply with the ANSI C73.20, NEMA 6-15-P, IEC 83, and UL 198.6 standards. Power cord is UL Listed Type SVT No. 18/3AWG 300V, 10A.

Swiss

Plug is rated at 220V, 6A. Power cord and plug comply with the SEV and IEC 127 standards. Power cord type: "<HAR>" or UL Listed Type SVT No. 18/3AWG 300 V, 10A.

Approval Organization	Approval Marking	Alternative Approval Marking using black-red-yellow thread (length of color sections)
Belgium: Comité Electro-technique Belge (CEBEC)	CEBEC ◁HAR▷	10mm black 30mm red 10mm yellow
Verband Deutscher Elektrotechniker (VDE) e.V., Prüfstelle	◁VDE▷ ◁HAR▷	30mm black 10mm red 10mm yellow
Technique de l'Electricite (UTE)	◁UTE▷ ◁HAR▷	30mm black 30mm red 10mm yellow
Instituto del Marchio Qualita (IMQ)	IEMMEQU ◁HAR▷	10mm black 30mm red 50mm yellow
British Approvals Service for Electric Cables (BASEC)	BASEC ◁HAR▷	10mm black 10mm red 30mm yellow
N.V. tot Keuring van Elektrotechnische Materialen (KEMA)	KEMA-KEUR ◁HAR▷	10mm black 30mm red 30mm yellow
Svenska Elektrisks Materialkontrollanstalter (SEMKO)	SEMKO ◁HAR▷	10mm black 10mm red 50mm yellow
Österreichischer Verband für Elektrotechnik (ÖVE)	◁ÖVE▷ ◁HAR▷	30mm black 10mm red 50mm yellow
Danmarks Elektriske Materielkontroll (DEMKO)	◁DEMKO▷ ◁HAR▷	30mm black 10mm red 30mm yellow
Institute for Industrial Research and Standards (IIRS)	◁IIRS▷ ◁HAR▷	30mm black 30mm red 50mm yellow
Norges Elektriske Materielkontroll (NEMKO)	NEMKO ◁HAR▷	10mm black 10mm red 70mm yellow

**Table E-1. International Power Cord Approval Markings**

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