

UNISYS

T 27

**Programming
Reference Manual**

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Keyboards

The ROM packs for the T 27 1.2 firmware are configured for a K5 keyboard at the factory. If you are using a K3 keyboard, you will notice that the Reverse Tab key and the Clear/Home key functions become interchanged once the ROM packs are installed. In order for these key functions to work properly with the K3 keyboard, access the System Keyboard and Screen menu and change the Keyboard Style option from K5 to K3 (see the *T 27 Configuration Guide* and Section 1 in the *T 27 Programming Reference Manual*).

Environment Datacomm Options Menu

The DCOM Early Fill option in the Environment Datacomm Options menu is designed for use with low baud rates (less than or equal to 1200 bps) and when escape sequences are not used. Using the default value (No) for this option holds the characters of an incoming message in a buffer until the entire message is received, and then displays the complete message on your screen. Entering *Yes* allows you to see each character of the incoming message as it is received, instead of initially seeing a complete message.

If you select *Yes* and use escape sequences or high baud rates (more than 1200 bps), your screen display may become corrupt (text overwritten or incorrectly placed on the screen). To fix this problem, reconfigure the T 27 and enter *No* in the DCOM Early Fill option of the Environment Datacomm Options menu. See the *T 27 Configuration Guide* and Section 1 in the *T 27 Programming Reference Manual* for more information on the Environment DataComm Options menu.



About This Manual

This manual is for technical users familiar with programming terminals. Refer to the manual when you configure the T 27 and write application programs for the T 27.

This manual does not discuss installing the T 27 hardware. For information on that subject, refer to the *T 27 Installation and Operations Guide*.

Conventions

Many of the keys on the T 27 keyboard are imprinted with graphic legends, such as arrows. In the text, however, these keys are called by names. The following table shows the imprinted keyboard graphic along with the name used in the text of this manual:

Graphic	Name
	Home
	Tab
	Return
	Backspace
	Reverse Tab
	Environment 1
	Environment 2
	Environment 3
	Scroll Up
	Scroll Left
	Scroll Right
	Scroll Down
	US delimiter
	GS delimiter
	FS delimiter
	RS delimiter

The following typographic conventions are used throughout this manual:

RETURN	Keys you press are shown in uppercase.
SHIFT-	Shifted key functions are preceded by SHIFT-, in all uppercase letters. For example, SHIFT-LOCK means to hold the SHIFT key down and then press the LOCK key.
<ESC>	Indicates an escape sequence.
Typemo	Text you type is shown in bold.
<i>sp</i>	Control characters are shown in lowercase italics.

The following acronyms and abbreviations are used throughout this manual. Refer to the glossary for definitions of each.

BSEL	Broadcast Select
DCP	DataComm Pointer
FS	File Separator
FSEL	Fast Select
GS	Group Separator
GSEL	Group Select
KBC	KeyBoard Cursor (used interchangeably with <i>cursor</i> .)
LED	Light Emitting Diode
LTAI	Line Transmission Activity Indicator
ROM	Read-Only Memory
RS	Record Separator
US	Unit Separator

Organization

This manual consists of eleven sections:

Section 1, "Set-Up Mode," describes how to configure the T 27.

Section 2, "Keyboard Functions," describes the function of keys and key combinations.

Section 3, "Escape Sequences and Data Communications Control Codes," describes available escape sequences and control codes and how they operate under various conditions.

Section 4, "The Screen," describes how the T 27 screen is used and explains how to view multiple windows.

Section 5, "Monitor Mode," describes how to examine traffic on the data communication line.

Section 6, "Forms Mode," describes how to build forms.

Section 7, "Search Mode," describes how to search for characters within an environment's display store buffer.

Section 8, "Key Programming," describes how to program keys.

Section 9, "Data Sharing," describes how data can be copied among T 27 environments.

Section 10, "Printer and Auxiliary I/O," lists the supported printers, describes printer commands, and explains how auxiliary input devices may be used.

Section 11, "International Support," describes the available character sets and how to construct diacritical characters.

Related Product Information

T 27 Installation and Operations Guide

T 27 Configuration Guide

T 27 Programming Reference Card

A function control strip and control strip cover provide a way for operators to indicate what the function keys are currently programmed to do.

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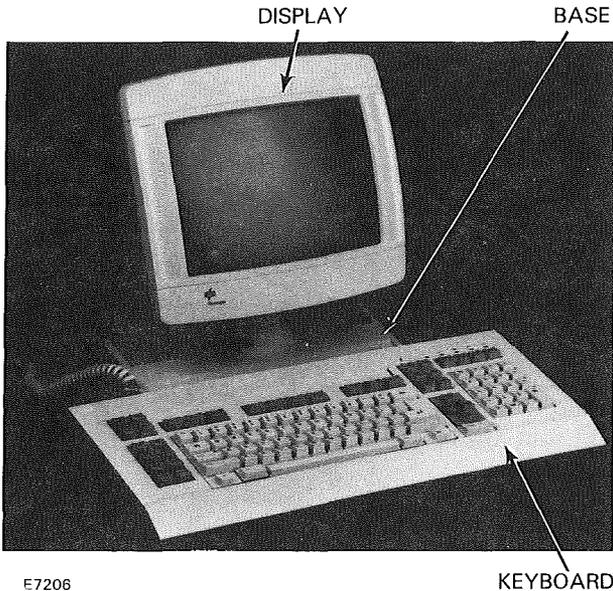
Overview

The T 27 is a fixed-function terminal, primarily for use with host systems supporting Unisys poll/select protocols. The standard T 27 interfaces are RS-232 and Unisys Two-wire Direct Interface (TDI). An optional version of the T 27 supports Burroughs Direct Asynchronous Access (BDAA).

Functionally compatible with the ET 1000 series of Unisys terminals, the T 27 can coexist with terminals in the TD 800, MT 900, and SR 100 series.

The T 27 consists of a display monitor, keyboard, and base, as shown in Figure 0-1.

Figure 0-1 The T 27 Terminal



Display Monitor

The display features and characteristics of both the 12-inch and 15-inch monitor are:

- 2400 characters total capacity
- Maximum 30 lines of display

Overview-2

- Character widths of 40 or 80 characters per line
- Character heights of one or two lines
- Character format of 7x9 in a 9x16 cell
- Multiple horizontal windows that may be viewed simultaneously

Keyboard

The T 27 uses a terminal version of either the K3 or K5 keyboards. Several new features enable maximum flexibility and ease of use:

- Numeric pad for rapid numeric input
- Cursor control pad with duplicate transmit key
- Window management keypad assists in window configuration and selection of windows and viewing options
- Three groups of terminal function keys
- Ten function keys with legend holder

Base

The T 27 base contains the power supply, main logic circuits, and all connectors required for operation.

The T 27 uses an 8Mhz Z80H processor and 256Kb memory chip technology. A total of 64Kb of ROM is provided for firmware storage and a total of 64Kb of RAM.

Switchable Power Supply

The power supply module is switchable for use in both low-voltage (nominal 100-127 v at 60 Hz) and high-voltage (nominal 200-240 v at 50 Hz) countries. The module is preset to the voltage specified on your order. A label affixed to the power receptacle warns you to check the voltage setting before inserting the line cord.

Communication Ports

Either four or five communication ports are at the rear of the base:

- RS-232 printer/auxiliary port
- TDI/BDAA data communication port upstream toward host
- RS-232 data communication port upstream toward host
- RS-232 data communication port downstream to other terminals
- T 27-to-B 27 upgrade port
- Combined TDI/BDAA data communication port and T 27-to-B 27 upgrade port

The printer/auxiliary and data communication ports are all 25-pin D-type connectors, compatible with existing TD/MT/ET data comm cables.

ROM Packs

In a compartment in the top of the base is the ROM pack, a single circuit board containing the firmware and font PROM. Access the ROM pack by removing a door at the top-rear of the unit. The ROM pack has a handle to allow the circuit board to be removed vertically.

Monitor Assembly

The top of the base houses the tilt/swivel mechanism for the monitor. A diagram molded into the neck assembly indicates the correct method of connection. The monitor can be removed for maintenance.

New and Enhanced Features

Multienvironment Capability

The T 27 can support up to three separately configurable screen environments. This multienvironment capability enables simultaneous access to more than one host application. In addition, a fourth address may be used for Printer Pass-Through or auxiliary input.

Multindow Capability

The T 27 provides a horizontal multiwindowing feature that enables you to view up to three environments on the screen at any time. One window may be a concurrent monitor mode.

Data Sharing

Data can be copied in and among environments, using a procedure similar to the cut-and-paste feature found on word processors.

Menu Set-Up

The T 27 may be configured using a series of menus. This makes configuration easier, more efficient, and less prone to error.

Configuration Security

The T 27 has a user-definable, three-level security system that reduces the possibility of unauthorized reconfiguration.

Screen Attributes

- Screen-saver feature that automatically turns off the screen after a configurable delay has elapsed
- Virtual 132 column mode
- Configuration for invisible forms delimiters

Editing Features

Enhanced INSERT key functionality A new option on the T 27 enables two ways for the INSERT key to function. In one way, the INSERT key automatically places a space on the screen before inserting a character. In the other way, no space is placed on the screen. This new option also enables cursor movement without exiting insert mode.

Enhanced RETURN key functionality When the T 27 is in forms mode, a new system level option enables the operator to choose whether RETURN moves the cursor to the next line of a multiple-line field or exits the field.

Transmission Number Checking

Transmission number checking is available on all data communication addresses.

Printer Pass-Through Space Compression

The T 27 uses the ANSI standard algorithm for space compression, which can significantly reduce data comm traffic in print tasks.

Enhanced Version Number Display

The version number display (CTRL SPACEBAR V CTRL or ESC sp V) now includes the product identification for the T 27, after the release and version data. With this information, the host can identify the product and respond accordingly. T1 is the product identifier for the T 27. T1 identifies the hardware as a Unisys T 27, and is not to be used by software or firmware running on any other hardware configuration.

International Language Support

The T 27 is available in 19 language versions.

Upgrade to a B 27 Workstation

A kit is available to convert your T 27 into a B 27.

Additional Features and Capabilities

Data Communications

Rates

The T 27 supports the following data communication rates:

- 75 to 38,400 bits per second asynchronous, using Unisys TDI/BDAA or RS-232 interfaces
- 75 to 19,200 bits per second synchronous, using RS-232

Procedures and Protocols

The T 27 supports standard Unisys data communication procedures:

- Poll
- Select
- Fast Select
- Contention
- Broadcast Select
- Group Select
- Group Poll

The T 27 also supports Unisys point-to-point protocol for use with mainframe and specialized systems as an operator display terminal (ODT).

Variable Data Transmission

The T 27 supports several methods of data transmission:

- Line-at-a-time or block
- Variable start and stop positions

RS-232

The RS-232 upstream data comm port provides the interface to circuits employing EIA RS-232 and CCITT V24 and V28 standard for data interchange. The downstream port enables interface to other Unisys terminals through their RS-232 ports.

The RS-232 interface can transmit either synchronously or asynchronously. The maximum distance between the modem and the first system in a concatenated string is 100 feet. Similarly, the distance between terminals must not exceed 100 feet.

TDI

The maximum total length of a TDI line is 1000 feet including local line drops. Up to nine terminals may be attached to the line. The maximum baud rate on the line depends on the length of the line:

Baud	Maximum Length (feet)
9600	1000
19200	500
38400	250

BDAA

The maximum length of a BDAA line is 15,000 feet. Up to 64 terminals may be attached to the line.

Concatenation and Bypass

The concatenation feature of the T 27, like the ET 1000, enables terminals to be strung together in a daisy-chain, rather than with each terminal connected to the host.

Concatenation enables the first terminal in a string to be connected via TDI, BDAA, or RS-232 to a data communication system, with subsequent terminals connected to each other via the RS-232 upstream/downstream ports.

Concatenation bypass enables a string of terminals to continue functioning even if one of the terminals in the string is turned off, provided power is still available to the terminal.

Under these circumstances, the T 27 automatically bypasses that terminal to ensure that communication with other downstream terminals is not disrupted. However, if the first terminal in a string is turned off, the bypass capability functions only if the method of connectivity is RS-232.

Editing Capabilities

The T 27 provides extensive editing capability for easy, efficient data entry. Features include:

Character Insert/Delete Individual characters may be inserted or deleted on a line or page basis.

Clear to end of line/page Data may be cleared from the cursor position to the end of the line or to the end of the page.

Scrolling The display may be scrolled vertically through different pages. Horizontal scrolling provides virtual 132 column capability.

Paging Movement between pages is simplified by the use of the NEXT and BACK keys.

Line move up/down Lines of data may be moved up or down within the page, exchanging with the line above or below.

Search mode Enables you to locate a specified character within the text.

Variable end of page alarm An alarm may be sounded when the cursor reaches a predetermined position on the page. This position is configurable for each environment from the keyboard or host.

Page wraparound inhibit Cursor advancement is prevented beyond the last character on a page, for each environment.

Automatic key repeat The operator can set the repeat rate and the repeat delay.

Forms Mode

In forms mode, the T 27 can display a data entry form consisting of protected and unprotected areas. The operator cannot overwrite protected areas, which consist of headings, prompts, and messages. The operator types data into unprotected areas.

Optional invisible delimiters You can select whether forms delimiters are displayed literally or as blanks. This enables you to build clearer, less cluttered screens.

New delimiter shapes T 27 delimiter characters have been redesigned as solid characters that are smaller and neater.

Variable justification Data fields may be either left- or right-justified, to more accurately reflect alphanumeric or numeric input. Different field delimiters are used for each field type.

Field overflow inhibit You can select whether the cursor moves automatically to the next field when an end-of-field delimiter is reached during data entry.

Alternate delimiter selection You can specify any two characters to be changed to delimiters to begin and end fields on the screen when the T 27 enters forms mode.

Monitor Mode

The T 27 can monitor line activity, displaying messages being transmitted to and from stations on the data communication line to which the T 27 is attached. This function does not apply to data sent from an upstream, concatenated terminal to the host.

In monitor mode, highlight characters do not perform their function; they are displayed as their graphic character to ensure readability. The T 27 character set provides meaningful characters, rather than symbols. For example, *Escape* displays as the single character *EC*.

Monitor mode may be displayed in either full- or split-screen view. Split-screen is useful for diagnosing problems. You can interact with the host in one portion of the screen while you monitor line activity in the remainder of the screen.

ET 1000 Compatibility

The functionality of most operations and the interpretation of most control and escape sequences are identical to those used in the ET 1100, firmware level 7.3. However, significant new capabilities and features dictate that the T 27 cannot be completely compatible with the ET 1100, particularly when the T 27 is configured for multienvironment operation. Regardless of the number of enabled environments, the operational differences are:

- Because the T 27 uses a more advanced Z80 processor interface, the CTRL RE and ESC RE sequences are not supported. These sequences enabled the execution of downline loaded Z80 assembler code in the ET 1100; they do not run on the T 27.
- The T 27 restricts the use of ESC RH, ESC RT, CTRL RH, and CTRL RA to the key programming buffer and temporary storage.

- The version number display (CTRL SPACEBAR V CTRL or ESC sp V) has been enhanced to include the product identification for the T 27, after the release and version data.
- Translation of SO/SI to ESC 3/ESC 4 on transmission is not supported. This removes the ambiguity with the CTRL number number XMIT sequence.
- The option to enable a three-bit delay in dropping RTS is not required, because the T 27 does this automatically.
- Under some conditions, when exiting a local configuration, screen data is preserved and six asterisks are not displayed, even though the configuration was successful.
- To reflect the increased security of the T 27, passwords cannot be incorporated within a key program.

The following operational differences are necessary limitations in a multienvironment operating mode. The integrity of each environment is respected by ensuring that operation is not interrupted by activity or reconfiguration in another environment.

- The host cannot cause a hard reset of the terminal if more than one environment is enabled.
- Host reconfiguration of system level items is not allowed. The six-asterisk message is returned to the host to allow operation with existing programs. The only items that can be changed are those that are individually configurable for the environment.

Some physical changes have also affected compatibility:

- The T 27 has separate numeric and cursor control keypads. The ET 1000 NUM LOCK key and function are not required, nor is the auxiliary keypad (ET 5200).
- To ensure the integrity of the confidence test routine, the T 27 must have a keyboard attached during power-up.
- The alarm level and key click on the T 27 can be *on* or *off* only; they cannot be varied.
- To ensure password security, holding down SPACEBAR during power-up does not load default configuration values; it results in a confidence test routine error.

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Set-Up Mode

Set-up mode enables you to configure the T 27 to suit your needs. Configuration is accomplished by selecting items from menus or by directly altering the contents of the temporary storage area.

Easy-to-use menus are a new feature of the T 27 and are the focus of this section. To maintain compatibility with previous Unisys terminals, byte configuration has been retained. See Appendix E, "Byte Configuration," for more information.

Access to set-up mode is protected by a three-level security system. This enables the system administrator to control user access to menus. The security system has default settings that are in effect when you receive the T 27. Make sure you know how the security system works before you configure the T 27.

Language Version

The first thing you must do with a new terminal is match the internal language version number with the one imprinted on a label on the underside of your keyboard. To accomplish this, do the following (see the note following if your keyboard shows language version 3, 4, or 14):

- 1 Press **CTRL RW** to select set-up mode (*RW* must be uppercase).
- 2 Type **LEV1**, the default level 1 password for a new terminal (*LEV* must be uppercase).
- 3 Use the arrow keys to select the System Partitions and International menu, and then press **RETURN**.
- 4 Check the language version number (first selection on the System Partitions and International menu). If it does not match the number from your keyboard label, type the correct number.
- 5 Use the arrow keys to select the Main menu, and then press **RETURN**.

- 6** When the Main menu returns, use the arrow keys to select *EXIT/SAVE TO PERMANENT*, and then press RETURN. The keyboard environment will return.

Note: If you need to configure your terminal for language versions 3, 4, or 14, your new terminal default is language version 1 and must be changed. However, your keyboard mapping will be incorrect for the above procedure. Use the following translations to enter the procedure:

Versions 3 and 4: type *RW* as **RZ** and *LEV1* as **LEV1**.

Version 14: type *RW* as **IG** and *LEV1* as **L(diacritic)GC1**.

Once the correct language version has been saved to permanent memory, the keyboard will work correctly.

The Security System

The T 27 has three levels of security that provide three levels of set-up capability:

Level I, the highest security level, enables access to all menus. Level I users control the menus available to level II and level III users. The default level I password is *LEV1*.

Level II, the middle security level, enables access to all menus not specifically protected by a level I user. Any menus accessible to level II users may be protected from level III users. The default level II password is *MODE*.

Level III, the lowest security level, does not require a password. Level III users cannot restrict access to menus.

The default protection levels make all menus available to users with level I or level II passwords; however, you may change the protection.

Users with level I passwords may protect those menus to be accessed with level I passwords only. Users with level II passwords may unprotect menus that are to be accessible without a password. Menus not accessible at a given security level do not appear on the Main menu.

Resetting Passwords

Passwords are changed by entering the new password in the System Messages menu. The password displayed in the menu depends on how you access the menu:

Level I access:	The level I password is displayed.
Level II access:	The level II password is displayed.
Level III access:	The field does not appear on the menu.

The level I password may be changed only from the System Messages menu (not through the byte configuration method). The level II password is changed from the System Messages menu or by using the level I password to enter byte configuration mode (see Appendix E). The password can then be changed directly in the temporary storage area.

Passwords are permanently stored, and the security system prevents unauthorized access to permanent storage. If the level I password is forgotten or maliciously changed, it can be reset only by a qualified Unisys field engineer, who must physically reset the T 27 to clear the unknown password. In this case, the security settings and configuration of the T 27 default to those of a new device.

For these reasons, reserve the level I password for use only by the company's installation personnel. When set, this level I password should be stored in a secure place, where it can be referenced by installation personnel only. This prevents the need to reset when an employee leaves the company.

To reset the level I or level II password:

- 1 Press CTRL **RW**, using all uppercase characters. The password prompt is displayed.
- 2 Type the default password, using all uppercase letters, for the level you want to access. The default for level I is *LEVI*; the default for level II is *MODE*. An asterisk is displayed for each character you type.
- 3 Press RETURN. The Main Set-Up menu is displayed (see Figure 1-1 for level 1 Main menu).
- 4 Use the arrow keys to select *MESSAGES*. *MESSAGES* is displayed in reverse video.

- 5 Press RETURN. The System Messages menu is displayed.
- 6 Use the arrow keys to select *Password*.
- 7 Type your new password (any four characters).
- 8 Press RETURN. The cursor moves to the first letter of the new password to indicate that the entry is locked in.
- 9 Use the down arrow key to select the Main Menu command.
- 10 Press RETURN. The Main Set-Up menu is displayed.
- 11 Use the down arrow key to select *EXIT/SAVE TO PERMANENT*.
- 12 Press RETURN. You exit set-up mode having changed the password.
- 13 Document the new password and store it in a safe place.

Accessing the Main Menu

To view the Main menu, press CTRL **RW**, using all uppercase characters. The center of the screen shows the prompt *Password:* and a four-character text field displayed in reverse video. Enter a password in the reverse video field.

At the password prompt, the operator has four options:

- 1 Press LOCAL to cancel the set-up request.
- 2 Enter the level I or level II password and press CTRL to use byte configuration. (Refer to Appendix E for more information.)
- 3 Press RETURN to access menus that do not require a password.
- 4 Type the level I or level II password. Then press RETURN to access menus that are associated with the password level.

As the password is typed, asterisks are displayed in the text field. The password is locked in when RETURN or CTRL is pressed. An invalid password is treated as though no password had been entered.

When the password menu is displayed, the T 27 responds with a negative acknowledgment character to all types of selects. Communication resumes when you exit set-up mode.

After you type the password and then press RETURN, the screen displays the Main menu for the level of security at which you accessed it. Figure 1-1 shows the Main menu for level I.

Figure 1-1 Main Menu for Level I

```

                                MAIN SET-UP MENU

ENVIRONMENT MENUS
  DATACOMM OPTIONS
  BUFFERS
  TAB OPTIONS

SYSTEM MENUS
  DATACOMM OPTIONS
  MESSAGES
  PERIPHERAL OPTIONS

VIDEO OPTIONS
  KEYBOARD OPTIONS

PARTITIONS AND INTERNATIONAL
  KEYBOARD AND SCREEN

Access Mode:      NORMAL

Extent of LOAD/SAVE:  ENVIRONMENT

LOAD FROM TEMPORARY      LOAD FROM PERMANENT      LOAD DEFAULT OPTIONS
EXIT/SAVE TO TEMPORARY  EXIT/SAVE TO PERMANENT  EXIT/ABORT ALL CHANGES
  
```

Fields

Information Fields list the menu types available for configuration. Menus are divided into two categories: environment and system. Environment menus must be set up separately for each environment and affect only that environment. System menus control options that affect all environments. An additional information field, Extent of Load/Save, shows the scope of configuration:

- *ENVIRONMENT* indicates that only the current environment is affected.
- *SYSTEM* indicates that all environments and all system configuration options may be affected.

Whenever you access set-up mode, the extent of load/save field displays *ENVIRONMENT*. The display changes to *SYSTEM* if you access:

- A nonkeyboard environment
- Any system menu
- Security mode

Access Mode Field toggles between *NORMAL* and *SECURITY* to specify how you want to use the Main menu. See "Menu Protection" in this section for more information.

Command Fields execute a command. The command fields available on the Main menu are:

- **All Menu Titles** invoking them takes you to the specified menu.
- **LOAD FROM TEMPORARY** aborts all changes made since invoking set-up and loads the values currently in the temporary storage area. The T 27 remains in set-up mode.
- **LOAD FROM PERMANENT** aborts all changes made during the current session and loads values from permanent storage. The T 27 remains in set-up mode.
- **LOAD DEFAULT OPTIONS** aborts any changes made during the current set-up session and loads the default values for all parameters. The T 27 remains in set-up mode. At the default security level, this field is available only to level I users.
- **EXIT/SAVE TO TEMPORARY** saves changes to a temporary storage area and exits set-up mode. These changes are lost when the T 27 is turned off.
- **EXIT/SAVE TO PERMANENT** saves changes to a permanent storage area and exits set-up mode.
- **EXIT/ABORT ALL CHANGES** aborts any changes made during the current set-up session and takes the T 27 out of set-up mode.

Note: Load or save operations done from within the Main menu may be either an environment or system operation, depending on the status of the extent of load/save field.

Menu Protection

The menu-protection procedure changes the security level of a menu for levels II and III. If a menu cannot be restricted from the lower levels, this message appears: *Item Is At Maximum Security Level*. If a menu cannot be made available to the lower levels, this message appears: *Item Is At Minimum Security Level*.

When security protection is removed from a menu using the level I password, it is removed for level II users only; protection remains in effect for level III users. To remove the protection for level III users, you must remove the protection using the level II password.

- 1 Press CTRL **RW**, using all uppercase characters. The screen displays *Password*.
- 2 Type the level I password. (The default passwords use all uppercase letters.) An asterisk is displayed for each character you type. Then press RETURN. You access the Main menu.
- 3 Use the arrow keys to select the access mode field. The current choice is *NORMAL*.
- 4 Press RETURN. The choice is now *SECURITY*. Certain fields in the Main menu appear bright. These items are unavailable to users at the level below you.
- 5 Use the arrow keys to select the menu item you want to protect. That item is displayed in reverse video.
- 6 Press MARK to toggle the security level until the field is bright. The menu item is now restricted from the levels below you.
- 7 Use the down arrow key to again select access mode.
- 8 Press RETURN to access normal.
- 9 Use the down arrow key to select *EXIT/SAVE TO PERMANENT*.
- 10 Press RETURN. The change is written to permanent storage and the T 27 exits set-up mode.
- 11 To verify that the newly protected field is not shown on the Main menu, repeat step 1, using the level II password.

Using the Set-Up Menus

Figure 1-2 Typical Set-Up Menu

```

ENVIRONMENT BUFFERS 1

BUFFERS

Total Environment Memory:      24000
Total Remaining Memory:       17568
Display Store Size:           03840
Display Page Overhead:        00288

Keyboard:                      00000
Datacomm:                     02048
Key Program Temporary:        0256

DISPLAY

Lines Per Page:(t)            024
Chars Per Line:               80
Number of Pages:(t)          02

MAIN MENU   NEXT MENU   PREV MENU   NEXT ENV   RESTORE ENTRIES
  
```

Fields

- **Information Fields** display menu titles and buffer sizes. Information fields cannot be changed by the operator.
- **Choice Fields** display a sequential list of options, only one of which may be chosen. RETURN displays the next available option.
- **Text Fields** are those into which text can be typed. A blinking underlined text cursor within the field indicates where text can be typed. When you type the first character, the current contents of the field are cleared, and then the character you typed is displayed.

- **Command Fields** execute a command. All menus contain these command fields:

MAIN MENU takes you to the Main menu.

NEXT MENU cycles through the menus in the order in which they appear on the Main menu.

PREV MENU cycles through the menus in the reverse order in which they appear on the Main menu.

RESTORE ENTRIES restores the fields to the values that they contained prior to invoking the menu. This is useful to abort all changes made to a menu. You may then return to the Main menu.

In addition, the environment menus contain this command field:

- **NEXT ENV** cycles through all three environments for the current menu, in numerical order.

Keys Used with the Menus

The current field is displayed in reverse video. When a set-up menu is displayed, the first noninformation field is the current field. These keys can be used to access and change the field:

- **RETURN** In a choice field, RETURN displays and locks-in the next available choice. In a command field, RETURN executes the command. In a text field, RETURN locks-in the value currently displayed in the field, if the value is valid. When text is locked-in, the text cursor moves to the beginning of that field. The arrow keys may then be used to exit the field.

All field entries are verified when RETURN is pressed. If an entry is invalid, an appropriate error message is displayed. You may then choose to correct the entry or move to another field. If you move to another field, the old value is restored. However, the menu cannot be exited until all entries are valid.

- **UP ARROW** moves the field cursor upward. In a text field in which RETURN has not locked-in a new value, UP ARROW restores the text field to its previous value. In the top text field, UP ARROW has no effect.
- **DOWN ARROW** moves the field cursor downward. In a text field in which RETURN has not locked-in a new value, DOWN ARROW restores the text field to its previous value. In the bottom text field, DOWN ARROW restores text and moves field cursor to command field.
- **LEFT ARROW** or **REVERSE TAB** moves the field cursor leftward. In a text field in which RETURN has not locked-in a new value, these keys restore the text field to its previous value. In the leftmost field, this key has no effect.
- **RIGHT ARROW** or **TAB** moves the field cursor rightward. In a text field in which RETURN has not locked-in a new value, these keys restore the text field to its previous value. In the rightmost field, this key has no effect.

- **LOCK** enables entry of lowercase characters.
- **SHIFT-LOCK** disables entry of lowercase characters.
- **HOME** in a command field or a choice field, moves the field cursor to the top leftmost field on the menu. In a text field, HOME moves the text cursor to the beginning of the field.
- **BACKSPACE** moves the text cursor one position to the left.
- **CHARACTER INSERT** toggles between overtyped characters or inserted characters. When you insert characters in a text field, data pushed beyond the end of the field is lost.
- **DELETE** removes the character on which the text cursor is positioned and moves all characters to the right of the cursor one space left.
- **SPACEBAR** functions like RIGHT ARROW in all fields except text. In a text field, SPACEBAR causes a space to be displayed.
- **SHIFT CTRL hh** (in which *h* = any hex digit, 0 - F) enables entry of control characters and extended characters. For example, to enter the DC1 character (11 hex), press SHIFT-CTRL, release both keys, and then type *11*. The screen then displays the DC1 character.
- **PRINT** sends the entire current Set-Up menu to the printer, regardless of cursor position.

Exiting Set-Up Mode

When you've finished with the menus and are ready to exit set-up mode, follow these steps:

- 1 Use the arrow keys to move the cursor to the Main Menu field, and then press RETURN.
- 2 Use the arrow keys to select the appropriate command field. Each command field is explained under "Fields" in this subsection.

Normally, the display store buffer is then cleared and the T 27 displays six asterisks or an error code in the home position of the keyboard environment. Under some conditions, the T 27 returns to the screen it displayed before it entered set-up mode, including the same cursor position. The previous display is preserved if these conditions are met:

- The T 27 detects no reconfiguration errors as it exits set-up mode.
- No options affecting the display store buffer or display page parameters were changed.
- Only one environment is enabled, or several environments are enabled but the scope of the reconfiguration is environment (see Extent of Load/Save under "Information Fields").

The screen display is never preserved in byte configuration or when reconfiguration is initiated from the host.

Set-Up Menu Field Definitions

This section describes the set-up menus used to configure the T 27. Each menu description consists of:

- A listing of the items available for configuration, their default values, and optional values
- A listing of the temporary storage location for each menu item
- Notes about the menu

Menus are listed in this order:

Environment Datacomm Options
Environment Video Options
Environment Buffers
Environment Keyboard Options
Environment Tab Options
System Datacomm Options
System Partitions and International
System Messages
System Keyboard and Screen
System Peripheral Options

Environment Datacomm Options

Menu Item	Default	Options
Address	E _T E _T	Any two characters, except NUL or SYNC
DC1 Function	STAY IN RCV	LINE CLR
DC2 Function	TOGGLE FORMS	ADVANCES DCP
CR Interpretation	CR/LF	CR
LF Interpretation	LF	CR/LF
RCV Mode Hold	ON	OFF
FF Clears Tabs	OFF	ON
Xmit Printer Status	OFF	ON
DCOM Early Fill	OFF	ON
VT Page Advance	OFF	ON
SO/SI XLT	OFF	ON
SO/SI XTN	OFF	ON
SOH Clears Screen	OFF	ON
SOH Exits FORMS	YES	NO
ETX Advance	OFF	ON
Line At A Time Xmit	OFF	ON
Form Xmit To Cursor	ON	OFF

Notes

VT Page Advance is set to *off* when you exit this menu if Lines Per Page in the Environment Buffers menu is not set to 32.

Using one address for more than one environment results in an error while exiting set-up mode. The error does not affect any other changes made.

Definitions

Address Any two characters, except NUL and SYNC, that uniquely identify a T 27 environment in a data comm network.

DC1 Function Specifies how the T 27 is to respond to the DC1 character (hex 11).

DC2 Function Specifies how the T 27 is to respond to the DC2 character (hex 12).

CR Interpretation Specifies how the T 27 is to respond to a carriage return character (hex 0D).

LF Interpretation Specifies how the T 27 is to respond to a line feed character (hex 0A).

RCV Mode Hold When *on*, it holds the T 27 in receive mode after a message from the host has been received. If you use the buffer enabled option on the Environment Keyboard menu, either leave this option *off* or be sure that the host sends an ESC = in the message to the T 27.

FF Clears Tabs Specifies how the T 27 is to respond to a form feed character (0C hex).

Xmit Printer Status Specifies whether the T 27 should inform the host of the current printer status.

DCOM Early Fill Specifies when the T 27 is to begin interpreting incoming data comm messages.

VT Page Advance If the T 27 is set up for 32 lines per page, vertical tabs are set on lines 1, 9, 17, and 25.

SO/SI XLT and SO/SI XTN Refer to Appendix I.

SOH Clears Screen Specifies how the T 27 is to respond to the SOH character (01 hex).

SOH Exits FORMS Specifies whether the T 27 should automatically exit forms mode whenever it receives an SOH character.

ETX Advance Specifies how the T 27 is to respond to an ETX character (03 hex).

Line At A Time Xmit Specifies how much data the T 27 is to transmit at a time. With this option *off*, the T 27 can transmit a message as large as one full page of data. With this option *on*, the T 27 transmits only the line containing the keyboard cursor.

Form Xmit To Cursor Specifies how the XMIT key works in forms mode.

Environment Video Options

Menu Item	Default	Options
Alternate US Char	1F	00 - FF hex
Alternate RS Char	1E	00 - FF hex
Lines Per Full-Screen	24	12
Environment Id	ENVMNT 1	8 characters
Form Delimiters Visible	YES	NO
CR Character Display:		
From DATACOMM	OFF	ON
From Keyboard	OFF	ON
HT Displayed on TAB FUNCTION:		
From DATACOMM	OFF	ON
From Keyboard	OFF	ON
Cursor Display	BLOCK	UNDERLINE or INVISIBLE
Blinking Cursor	OFF	ON
DATACOMM ETX Display	OFF	ON
Auto FORM Field Advance	ON	OFF

Definitions

Alternate US Character Specifies a character to be used as the unit separator. The T 27 converts this character into a US character when you invoke forms mode.

Alternate RS Character Specifies a character to be used as the record separator. The T 27 converts this character into an RS character when you invoke forms mode.

Lines Per Full-Screen Selects the number of text lines to be displayed, either 24 normal-height lines or 12 double-height lines.

Environment Id A name used to identify each environment.

Forms Delimiters Visible Specifies whether forms delimiter characters are to be displayed as a graphic or as a blank.

CR Character Display from DATACOMM Specifies whether carriage return characters are displayed when received from data comm.

CR Character Display from Keyboard Specifies whether carriage return characters are displayed when typed at the keyboard.

HT Displayed on TAB FUNCTION from DATACOMM

Specifies whether an HT character is to be displayed when the T 27 receives a tab character in a message from the host.

HT Displayed on TAB FUNCTION from Keyboard

Specifies whether an HT character is to be displayed when the operator presses the TAB key.

Cursor Display Specifies the type of cursor to be displayed.

Blinking Cursor Specifies whether the cursor should blink.

DATACOMM ETX Display Specifies whether an ETX character should be stored at the DCP location when the T 27 is in nonforms mode.

Auto FORM Field Advance Specifies whether the KBC moves to the next unprotected field when the current unprotected US field is filled.

Environment Buffers

Menu Item	Default	Options
Total Environment Memory	24000	
Total Remaining Memory	17568	
Display Store Size	03840	
Display Page Overhead	00288	
Keyboard	00000	Five-digit decimal number
Datacomm	02048	Five-digit non-zero decimal number
Key Program Temporary	0256	Four-digit decimal number
Lines Per Page	024	1 to 256
Chars Per Line	80	40 or 132
Number of Pages	02	Two-digit nonzero decimal number, up to 24

Notes

VT Page Advance, in the Environment Datacomm Options menu, is ignored if Lines Per Page is not set to 32.

The combined size of these buffers must be less than or equal to the overall size allotted to the environment. You determine the overall size of each environment by accessing set-up mode and selecting the System Partitions and International menu. In that menu, environments are enabled and their sizes defined.

You may encounter a problem if you work first in this menu and then return to the System Partitions and International menu to reconfigure environment sizes. If you do not allot sufficient memory to the environments, the buffers in the Environment Buffer menu will be automatically reduced to default sizes. You will not have what you expect when you access the environment.

Although the key program temporary buffer can be configured for up to 9999 bytes, the permanent storage for key programs is limited to 1,200 bytes for all three environments. Be careful with the size of the temporary storage if you rely on permanent storage of key programs.

Definitions

Total Environment Memory Taken from the System Partitions and International menu beside the environment 1, 2, or 3 option. You fill in the size of the entire environment there. That number influences all the calculations made in this menu.

Total Remaining Memory Automatically calculated; the amount of memory still available to you in this environment. The amount of remaining memory is calculated as the total environment memory minus the sum of the following:

- Keyboard Buffer
- Data comm Buffer
- Key Program Temporary Buffer
- Display Store Size
- Display Page Overhead

This sum is recalculated each time you reconfigure an item in this menu.

Display Store Size Automatically calculated as the product of:

- Chars/Line
- Lines/Page
- Number of Pages

The display store buffer:

- Stores the data displayed on the screen
- Receives data from the data comm buffer and keyboard
- Transfers data to the data comm, printer, and data sharing buffers

However, the receiving buffer must be large enough to hold all the data being sent. You will lose data if the amount of data being transmitted is larger than the amount the data comm buffer can hold.

To enable an environment, it must be allotted at least enough display store buffer space to fill all lines on the screen. The minimum number of bytes to allot depends on the number of lines per page and the number of characters per line.

Display Page Overhead Automatically calculated as six times the product of:

- Lines/Page
- Number of Pages

Keyboard The number of keystrokes stored during a keyboard lockout when the T 27 is receiving or transmitting.

Datacomm The maximum number of bytes that can be sent to or received from the host, per data comm transmission block.

Key Program Temporary The number of bytes allocated to temporary key programs.

Lines Per Page The number of lines allocated to each logical page of data.

Chars Per Line Configures the width of a page.

Number of Pages Determines the number of pages in each environment.

Environment Keyboard Options

Menu Item	Default	Options
CLR Function	CLEAR UNPROTECTED	CLEAR ALL
Cursor Wrap Around	ON	OFF
RET Function	CR/LF	CR
Column End Alarm	133	1 to 132
Row End Alarm	025	1 to 256
Lower Case Lockout	OFF	ON
Buffer Enabled	OFF	ON
SPCFY Key Sends Page Number	OFF	ON
SPCFY Key Sends	ASCII	HEX
Insert Key Inserts Space	ON	OFF

Definitions

CLR Function Specifies how the page-clearing function is to perform.

Cursor Wrap Around Specifies where the cursor moves after it reaches the last column of the bottom row of the page.

RET Function Specifies how the T 27 is to respond to the RETURN key.

Column End Alarm and Row End Alarm Together these options specify a page location at which an alarm sounds. To use this feature, the alarm option in the System Keyboard and Screen menu must be *on*.

Lower Case Lockout Specifies whether the LOCK key should be *on*, enabling uppercase characters only.

Buffer Enabled Specifies whether the keyboard buffer is to be used. When using the T 27 with this option *on* and with a nonzero keyboard buffer size, operators can use the keyboard during transmission and reception of data comm messages. However, keystrokes are not displayed until the keyboard buffer is unlocked.

SPCFY Key Sends Page Number Selects whether the SPECIFY key transmits the page number, in addition to the column and row information normally sent.

SPCFY Key Sends Selects whether the SPECIFY key transmits in hexadecimal or ASCII.

Insert Key Inserts Space Specifies how the T 27 responds to the Insert key.

Environment Tab Options

Menu Item	Default	Options
Tabs	FIXED	VARIABLE
Retain Tabs On Configuration	OFF	ON
Tab Ruler Display	OFF	ON
Clear Variable Tabs		

Notes

When the fixed tab option is chosen, any tab stops you enter into the tab array are ignored.

The clear variable tabs command field has no effect when fixed tabs are selected. To clear fixed tabs, select variable tabs for the tab option; this automatically clears all tabs.

Use this procedure to set variable tabs:

- 1 Use the arrow keys to select the tabs field.
- 2 Press RETURN to select variable tabs.
- 3 Use the arrow keys to move the field cursor to the appropriate row of tab stops: the top row is for setting tabs in columns 1-72; the bottom row is for columns 73-132.
- 4 Press the spacebar until the text cursor is in the column at which you want to set a tab. If you pass the column you want, use BACKSPACE to move the text cursor. You may then overtype previously entered tabs or press DELETE CHAR to delete tabs and spaces between tabs.
- 5 When you're at the appropriate column, press any alphanumeric key to set a tab. The key you press is echoed on the screen.
- 6 Repeat steps 4 and 5 until all the tab stops you want are set.
- 7 Press RETURN to lock-in your tab settings. The text cursor returns to the beginning of the field. If you do not press RETURN before moving the field cursor, all tab stops are restored to their previous setting.
- 8 Repeat steps 3-7 to set tabs in the other row of tab stops.
- 9 Set the Retain Tabs on Configuration field to On, and then exit the menu.

Definitions

Tabs Specifies the type of horizontal tab stops to be used. With the fixed tabs option, tabs are automatically set at each eighth column. With the variable tabs option, tabs may be set in any column. To set variable tabs, see the notes for this menu.

Retain Tabs On Configuration Specifies whether variable tab stops are retained each time the T 27 is reconfigured.

Tab Ruler Display Specifies whether the twenty-fifth line of the screen displays a tab ruler.

Clear Variable Tabs Clears all tab stops entered into both rows of the variable tabs array.

System Datacomm Options

Menu Item	Default	Options
Electrical Interface Protocol	TDI/BDAA POL/SEL	RS232 POINT-TO-POINT, see Notes
Transmission Mode	ASYNCH	SYNCH
Opt Pol/Sel	STANDARD	OPTIONAL
Circuit 116	OFF	ON
Circuit 111/126	OFF	ON
Turn Around Delay	000	1 to 255 milliseconds
Transmission Number	00	See Notes
Check Parity	ON	OFF
Fast Select Enable	ON	OFF
Beep On NAK	ON	OFF
Baud Rate	9600	See Notes
CTS Delay	005	0 to 255 milliseconds
Group Select Character	E _T	See Notes
Group Poll Address	E _T E _T	Any two characters

Notes

If you select the POINT-TO-POINT protocol option, you can enable one environment only.

Transmission numbers:

- 00 = None
- 01 = 0/1 no checking
- 02 = @/A no checking
- 03 = 0/1 checking
- 04 = @/A checking
- 05 = 0/1, with * reset
- 06 = @/A with * reset
- 07 = 0-9
- 08 = 0-99
- 09 = 0-999
- 10 = 0-9 with * reset
- 11 = 0-99 with * reset
- 12 = 0-999 with * reset

The * reset option enables the host or T 27 to resequence by sending an asterisk, for example, after a system failure, to ensure that the terminal and the host are synchronized.

The available baud rates are 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, and for asynch only, 38400.

The group select character may be any character except those with hex codes 00, 16, 70, 71, 73, 74. If the Opt Pol/Sel option in this menu is set to Optional, you also cannot use 7B and 7C.

Definitions

Electrical Interface The type of connection to the host computer or to an upstream terminal.

Protocol Specifies how the host is to communicate with a group of terminals.

Transmission Mode Specifies the type of character formatting — synchronous or asynchronous.

Opt Pol/Sel Specifies whether the T 27 is to use the optional poll select sequence, 7B 7C hex, instead of the standard sequence 70 71.

Circuit 116 and Circuit 111/126 Together these options specify the use of an alternate baud rate.

Turn Around Delay The delay between termination of transmission and beginning of reception.

Transmission Number A sequence of numbers used to ensure correct sequencing of messages sent between the T 27 and the host.

Check Parity Specifies whether the T 27 is to check receive parity. Regardless of how this option is set, longitudinal parity is always checked.

Fast Select Enable Specifies whether the T 27 should accept fast select, group select, and broadcast select messages while not in receive ready mode.

Beep On NAK Specifies whether the T 27 should beep when it sends a negative acknowledgment of a select received from the host.

Baud Rate Data transmission speed in bits per second.

CTS Delay The delay, in milliseconds, between generation of RTS and recognition of CTS.

Group Select Character A single character address that enables the host to simultaneously transmit to all terminals with that address.

Group Poll Address A two-character address that enables the host to simultaneously poll all terminals with that address.

System Partitions and International

Menu Item	Default	Options
Language Version	01	See Section 11 for a complete list of available language versions
Total System Memory	40000	
Total Remaining Memory	12032	
Environment 1 (Address 1)	24000	Any 5-digit number greater than 7499
Environment 2 (Address 2)	00000	Any 5-digit number greater than 7499
Environment 3 (Address 3)	00000	Any 5-digit number greater than 7499
Printer Buffer	02048	Any 5-digit number
Data Sharing Buffer	1920	Any 4-digit number
PPT Buffer	0000	Any 4-digit number
Monitor Mode Buffer	00000	Any 5-digit number greater than 1919

Key Programming Permanent

Environment 1	1200	0, 400, 600 (see Notes)
Environment 2	0000	400, 600, 1200
Environment 3	0000	400, 600, 1200

Notes

The total amount of memory available for permanent key programs is 1200 bytes. Any environment may use all 1200 bytes, or the 1200 bytes may be divided among environments.

Changes made to this menu may require adjustments to other menus.

Setting an environment's partition to zero automatically disables it.

Disabling environment 1 is not allowed; an error message is displayed.

If the keyboard environment is disabled, the keyboard environment will be environment 1 when set-up mode is exited.

Setting the monitor mode buffer to zero automatically disables this feature.

Definitions

Language Version A two-digit code signifying which character set is to be used.

Total System Memory A constant value: 40,000 bytes.

Total Remaining Memory A value calculated as the total system memory minus the number of bytes allocated to all environments and system buffers.

Environment An area of memory reserved for exclusive use by any one application.

Printer Buffer An area of memory that stores information received from the display store buffer and the data comm buffer to send to a device attached to the printer port.

Data Sharing Buffer An area of memory reserved for messages to be copied among environments.

PPT Buffer An area of memory reserved for Printer Pass-Through transmissions from the host.

Monitor Mode Buffer An area of memory used to display data comm activity.

Key Programming Permanent An area of permanent memory reserved for key programs.

System Messages

Menu Item	Default	Maximum Characters
Column Indicator	COL	3
Insert Page Indicator	INS/PG	6
Page Indicator	PAGE	4
Control Mode Indicator	CTRL	4
ENQ Mode Indicator	ENQ	3
Search Mode Indicator	SEARCH	6
Row Indicator	ROW	3
Insert Line Indicator	INS/LN	6
Receive Mode Indicator	RCV	3
Forms Mode Indicator	FORM	4
Password	MODE (level II)	4 (See Notes)
Monitor Mode Id	MONITOR	8
Buffer Overflow	BUFFER OVERFLOW	16
Printer Error	PRINTER ERROR	16
Receive Error	RECEIVE ERROR	16
Keystroke Lost	KEYSTROKE LOST	16
Receiving Page	RECEIVING-P.	16
Trans Num Error	MESSAGE LOST	16
Mark Error	MARK MISSING	16
Bound Error	BOUND MISSING	16
Buffer Empty	BUFFER EMPTY	16
Mark/Bound Error	MARK AFTER BOUND	16

Caution: Do not allocate a monitor mode buffer if your T 27 is used under the following conditions:

- In a synchronous RS232 concatenated environment
- The host fills the line with SYN characters, rather than allowing it to go idle
- It is not the last terminal on the line

If all of these conditions are met and a monitor mode buffer has been allocated, the T 27 will occasionally miss polls and selects. It may also interfere with data comm to downstream terminals.

Notes

The default password shown on this menu depends on the security level from which you access the menu. For example, when you access the menu with level I security, the menu shows the default level I password, *LEVI*. Or, when you access the menu with level III security, the password field is not shown on the menu.

The receiving page message may be specified as 16 characters; all 16 characters will be displayed, however, characters 13, 14, and 15 will be overwritten by the page number.

System Keyboard and Screen

Menu Item	Default	Options
Style	K5	K3
Repeat Rate (Chars/Sec)	15	See Note
Repeat Delay (x 100 ms.)	5	0 to 15 milliseconds
Alarm	ON	OFF
Click	ON	OFF
Return Key in Forms	EXIT FIELD	NEXT LINE
Screen Saver Delay (Minutes)	10	OFF, 5, 20, or 30
Byte Configuration Available	NO	YES

Note

The available repeat rates are: 0, 5, 7, 9, 11, 13, 15, 17, 19, 21, 25, 30, 40, 50, 60, and 70 characters per second.

The Style option appears only in release levels 1.2 and higher.

Definitions

Style Specifies the keyboard style (K3 or K5) currently in use.

Repeat Rate The number of times a keystroke will be repeated during each second that the key is pressed.

Repeat Delay Elapsed time between pressing a key until it automatically starts to repeat its assigned function.

Alarm Specifies whether the T 27 should sound an alarm when certain conditions are met.

Click Specifies whether each key is to click when pressed.

Return Key in Forms Specifies the effect of the RETURN key in forms mode.

Screen Saver Delay At the end of this delay period, the screen goes blank until there is activity from the keyboard, data comm, or the auxiliary port.

Byte Configuration Available Specifies whether configuration can be performed by the byte configuration method.

System Peripheral Options

Menu Item	Default	Options
Baud Rate	9600	See Notes
Bits/Char	8	5, 6, or 7
Stop Bits	1	2
Printer XON/XOFF	D ₁ , D ₃	Any two characters
Printer Busy Status	1	0
Extend Line	OFF	ON
Parity Bit Required	NO	YES
Parity Type	EVEN	ODD
Parity Check	YES	NO
Aux Input To	DCOM	SCREEN
Translate CTRL Char	YES	NO
Control Code Mapping	Not Used	00-FF hex
PPT	DISABLE	ENABLE
PPT Address	E _T E _T	Any two characters except NUL and SYNC
Filter Control Codes	NO	YES
Logical ACK Char	E _T	Any character except ETX
Xmit To Host On	E _X	Any character
Space Compression	ON	OFF

Note

The available baud rates are 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, and 9600.

The Space Compression option appears only in release levels 1.2 and higher.

Definitions

Baud Rate Data transmission speed, in bits per second.

Bits/Char Specifies the number of data bits in each byte to be transmitted to the peripheral device.

Stop Bits Specifies the number of bits used to mark the end of a data word.

Printer XON/XOFF Specifies any two characters to be used in handshaking between the T 27 and the peripheral device.

Printer Busy Status Specifies how the RTS line is to indicate that the printer is busy. If you select *zero*, the printer is busy when RTS is high. If you select *one*, the printer is busy when RTS is low.

Extend Line Specifies whether a carriage return is to be sent at the end of every line.

Parity Bit Required Specifies whether a parity bit is to be included in each character frame.

Parity Type Specifies the parity scheme required by the peripheral device.

Parity Check Specifies whether to check the parity on auxiliary input data.

AUX Input To Specifies where input from the auxiliary port is to be sent.

Translate CTRL Char Specifies whether control codes should be mapped to spaces.

Control Code Mapping Specifies alternate meanings for control codes to be sent to the peripheral device. The alternate meanings are used only if the Translate CTRL character option is set to NO.

PPT Specifies whether the host may access the PPT peripheral device. Enabling the PPT device will fail if the PPT buffer has not been set to a value greater than zero (System Partitions and International Set-Up menu).

PPT Address Specifies the two-byte address of the PPT peripheral device.

Filter Control Codes Specifies whether control codes should be stripped from messages to the PPT printer.

Logical ACK Char A character to be sent to the host from the PPT address to indicate that the PPT buffer is empty and ready to receive more data.

Xmit To Host On Specifies the character used to indicate when a message should be sent to the host.

Space Compression Specifies whether the Space Compression option for the printer is turned on or off.

Setting Up Multiple Environments

The T 27 can display up to three concurrent environments or two concurrent environments and monitor mode. Two procedures are required to display multiple environments.

First, use the *multiple environment set-up worksheet* to configure the T 27. This procedure is described in the remainder of this section. Then, use the *window configuration menu* to display multiple environments. The window configuration menu is described in Section 4.

Using the Multiple Environment Set-Up Worksheet

The T 27 has a fixed amount of memory available to users. Because this memory must be shared among many buffers, you may have difficulty planning the optimum set-up. The following procedure helps organize your planning.

- 1 Remove the *multiple environment set-up worksheet* and photocopy it. Work with a copy and return the original to this manual. You may want to use the worksheet again if you reconfigure.
- 2 The first heading on the worksheet is Total Remaining Memory. Under this heading, the first line is filled in for you with the value 40,000. This is the number of bytes of memory available to users. Each time you allot memory to a buffer, subtract that amount of memory from the total remaining memory and write the new value in one of the blanks provided. If the total remaining memory is ever less than zero, you must reduce the size of at least one buffer.
- 3 Start with the system buffers and allot a legal value to each buffer. The set-up menu field definitions in this section lists the default values and the range of legal values. If you use the default value for any buffer, be sure to subtract that value from the total remaining memory.
- 4 For each environment you want to enable, to a maximum of three, fill in the blanks for each buffer. The last two buffers in each environment, display store size and display page overhead, require a calculation. The bottom of the worksheet shows the variables in each calculation.

For example, to calculate the display store size, multiply the number of characters per line by the number of lines per page, and then multiply the result by the number of pages. Each of these variables is configurable. You may need to juggle these variables, particularly the number of pages, to arrive at an optimum set-up.

- 5 When you're satisfied with the set-up for each environment, add the size of each buffer in that environment and then write the total in the appropriate blank; for example, Environment 1:
 .
- 6 Access set-up mode, select the appropriate menu for each system buffer, and then set each buffer to the value shown on the worksheet.
- 7 Select the Systems Partitions and International menu and set the size of each environment. Use the total you wrote next to the environment number on the worksheet. If there is not enough memory available, an error message is displayed; you cannot exit the menu until the error is corrected. Go back to the worksheet and try to find the error there.
- 8 Access the Environment 1 Buffers menu and fill in the values from the worksheet.
- 9 Use the Next Env field to access the next environment and fill in the values from the worksheet. Repeat this step, if necessary, for a third environment. An error message is displayed if you set up the buffers to be larger than total available space; you cannot exit this menu until the error is corrected. If this occurs, you probably made a mistake in entering values from the worksheet. Check the values you entered against what appears on the worksheet.

One more step is required to run host applications in each environment. You must give each environment a valid address.

- 10 Access each Environment Datacomm Options menu and fill in a valid address for that environment. This tells the host where applications and data are to be sent, and from where data is to be received. The address comprises two characters.

Multiple Environment Set-Up Worksheet

Total Remaining Memory:

40,000

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

System Buffers:

Printer _____
 Data Sharing _____
 Monitor Mode _____

Environment 1: _____ **Environment 2:** _____ **Environment 3:** _____

Keyboard	_____	Keyboard	_____	Keyboard	_____
Datacomm	_____	Datacomm	_____	Datacomm	_____
Key Program	_____	Key Program	_____	Key Program	_____
Temporary	_____	Temporary	_____	Temporary	_____
Display Store	_____	Display Store	_____	Display Store	_____
Size	_____	Size	_____	Size	_____
Display Page	_____	Display Page	_____	Display Page	_____
Overhead	_____	Overhead	_____	Overhead	_____

Display Store Size	=	Chars/Line	x	Lines/Page	x	Number of Pages	_____
_____	=	_____	x	_____	x	_____	_____
_____	=	_____	x	_____	x	_____	_____
_____	=	_____	x	_____	x	_____	_____
Display Page Overhead	=	Lines/Page	x	Number of Pages	x	6	_____
_____	=	_____	x	_____	x	6	_____
_____	=	_____	x	_____	x	6	_____
_____	=	_____	x	_____	x	6	_____

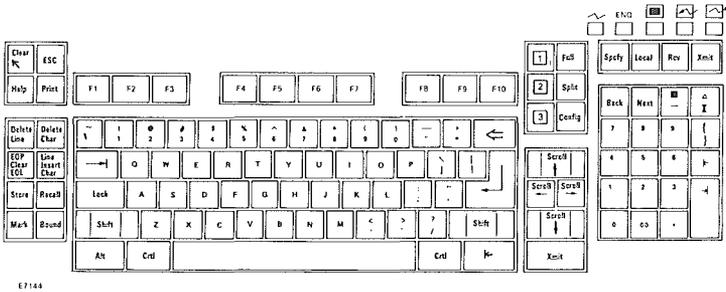
The Keyboard

This section discusses the keyboard and details the functionality of each of the keys. Control sequences are also listed.

Data entered from the keyboard is stored in the display buffer and displayed on the screen. The keyboard has different types of keys and indicators to perform different functions:

- **Light Emitting Diodes (LEDs)** indicate the status of the keyboard environment.
- **Clicks and Alarm** provide an audio feedback system to ease typing and alert you to errors.
- **Function keys** (programmable).
- **Cursor control and editing keys** change the operating mode of the terminal, move the cursor, insert and delete lines, etc.
- **Window configuration keys** configure the T 27 screen for a split-screen view and select either a full- or split-screen view.
- **Text keys** enable general alphanumeric input.

Figure 2-1 The T 27 Keyboard



Text Keys and Auto Repeat

The text keys work almost as they do at any workstation, so they are not explained in depth here. However, they do provide an auto repeat function. If you hold a text key down, for example **d**, the terminal will continue to type *dddddddddd* until you lift your finger from the key. The delay before the repeat starts and the rate at which the character is repeated are set through T 27 set-up. See the System Keyboard and Screen menu in Section 1.

Keyboard Clicks and Alarm

The T 27 monitor generates an alarm and clicking sound. The alarm sounds when the terminal receives a BEL code from the host, when the page alarm is sounded, or if an error occurs within the terminal. You can turn the alarm off or on through set-up mode. See the Alarm option in the System Keyboard and Screen menu in Section 1.

Note: The keyboard alarm will beep on RCV errors, regardless of alarm option.

Concatenated Devices

The T 27 does not support input from any device concatenated to its keyboard.

Errors

The keyboard is automatically reinitialized if it detects a parity error or if it is unplugged then plugged in again. During reinitialization, *KEYSTROKE LOST* appears on the status line. Two keyboard-related error messages could appear on the screen after reinitialization:

Message	Meaning
Kybd ROM Faulty	Keyboard detected an error in its ROM.
Kybd Missing	An illegal device, such as a mouse, has been attached in place of a keyboard.

LEDs

Figure 2-3 LEDs

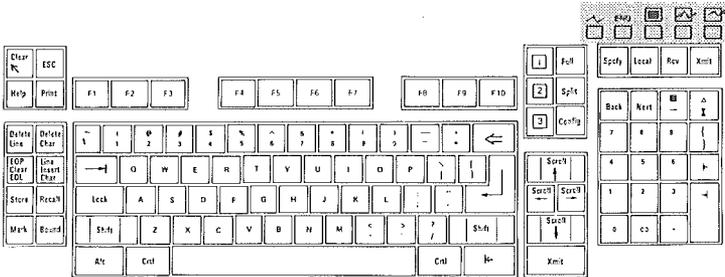


Figure 2-4



E7150

LTAI

On: The data comm line is active, but the terminal doesn't have an active address.

Off: No line activity; or the terminal transmitted a character to the host; or the operator pressed LOCAL.

Blinking: The data comm line is active and your terminal has an active address.

ENQ

On: The host wants to send a message to the terminal's keyboard environment but can't; to enable the keyboard environment to receive data, press RCV.

Off: The DCP page went into receive mode; or the operator pressed LOCAL.

LOCAL

On: The operator pressed LOCAL; *or* the operator pressed a key when the cursor and the DCP were in the same page.

Off: The T 27 is switched to transmit or receive mode.

RCV

On: The keyboard environment is in receive mode (ready to receive data) or is receiving data from the host; *or* FSL, GSL, BSL was received while the T 27 was in transmit or local mode and the Fast Select Enable option is set *on* (in the System Datacomm Options menu); *or*, after power up, the RCV Mode Hold option was set *on* (in the Environment Datacomm Options menu).

Off: Data has been successfully received and the RCV Mode Hold option is set *off* (in the Environment Datacomm Options menu); *or* the T 27 went into transmit mode by use of XMIT or SPECIFY; *or* the cursor and DCP are in the same page upon data entry.

XMIT

On: The keyboard environment is transmitting data to the host or is ready to transmit data.

Off: Transmission has been successfully completed or the T 27 is switched to local mode.

LOCK

On: Lowercase lock-out is enabled (see Environment Keyboard Options menu), and letters will be displayed in uppercase.

Off: Lowercase lock-out is disabled, and lowercase letters will be displayed in lowercase.

Some function keys (F1, F2, F3, F8, F9, F10) also have LEDs, but they function only to display CTR error codes upon initialization.

Key Functions

This subsection describes the functions of the T 27 keys in nonforms and forms mode, and how those functions are affected by set-up options. (See Section 1 for more information on each option). Key functions in other modes are described in the sections for those modes. The keys are listed alphabetically.

Some keys have second functions when pressed with SHIFT. Because the functions are alphabetized, these functions may be described separately. For example, CLEAR (SHIFT-HOME) is described before HOME, although both functions are generated by the same key. However, CLEAR includes a reminder that it is the SHIFT-HOME key. (See "About This Guide" for more information on how keys are treated in the text.)

ALT Key

Nonforms/Forms

For keys that can generate three or four character codes, ALT shifts the key to generate the alternate codes. *ALT* appears on the status line.

Press ALT plus the key to display the alternate character. Press ALT plus SHIFT-key to display the shifted alternate character. ALT also cancels ALT lock mode (see ALT in Section 11).

SHIFT-ALT

Nonforms/Forms

Sets ALT lock mode. All keys pressed enter the alternate character generated by that key. *ALT* appears on the status line in reverse video. (Press ALT to cancel ALT lock mode.)

ARROW Keys

Nonforms/Forms

Moves cursor in direction of arrow. If the cursor moves outside the range of the screen, the screen is scrolled to keep the cursor in view.

SHIFT-ARROW Keys

See SCROLL.

BACK**Nonforms/Forms**

Displays the preceding page of the keyboard environment. If the cursor is in the first page, the last page is displayed. The status lines and LEDs reflect the status of the new page.

SHIFT-BACK

Same as BACK.

BACKSPACE**Nonforms/Forms**

Moves the cursor one space left (same as left arrow).

SHIFT-BACKSPACE

Same as BACKSPACE.

BOUND**Nonforms/Forms**

In data sharing, marks end of data to be transferred to data sharing buffer. Displays an EOT character on the screen. See Section 9 for information on how this key works in a forms mode page.

SHIFT-BOUND

Same as BOUND.

CLEAR (SHIFT-HOME)**Nonforms**

Clears the page and moves the cursor to the home position (column 1, line 1 of the page).

Forms

When the CLR Function is set to *clears all*:

<i>Cursor Moves to</i>	<i>Key Function</i>
Home	Clears the entire page and puts it into nonforms mode

When the CLR Function is set to *clears unprotected*:

<i>Cursor Moves to</i>	<i>Key Function</i>
First data entry position of the first unprotected field	Clears unprotected fields

CLEAR EOL**Nonforms**

Clears data from the cursor to the end of the line.

Forms

<i>Cursor Position</i>	<i>Key Function</i>
In protected field	None
In a US field	Clears data from the cursor position to the end of the field
In a GS field and not in the data entry position	None
In a GS field and in the data entry position	Clears the entire field

CLEAR EOP (SHIFT-CLEAR EOL)**Nonforms**

Clears data from the cursor to the end of the page.

Forms

Clears data in the unprotected fields from the cursor to the end of the page.

<i>Cursor Position</i>	<i>Key Function</i>
In a protected field	None
In a GS field and not in the data entry position	None
In a GS field and in the data entry position	Clears the entire field and all unprotected fields from the cursor to the end of the page

CONFIG**Nonforms/Forms**

Invokes the window configuration menu, where you specify the number of windows and the size of each window that will appear when you press SPLIT.

SHIFT-CONFIG

Same as CONFIG.

CTRL**Nonforms/Forms**

Sets control mode and begins a control sequence. *CTRL* is displayed on the status line. Also cancels control lock mode. (See the "Control Sequences" subsection.)

SHIFT-CTRL

Enters control lock mode. Terminal remains in control mode after a valid control sequence has ended. However, an invalid control sequence cancels control mode. Press CTRL to cancel control lock mode.

DELETE CHAR**Nonforms**

Deletes character at cursor location and shifts all characters from the cursor to the end of the line left.

Forms

<i>Cursor Position</i>	<i>Key Function</i>
In a protected field	None
In a US field	Deletes the character at the cursor position and shifts all characters from the cursor to the end of the field to the left
In a GS field and not in the data entry position	None
In a GS field and in the data entry position	Deletes the character at the cursor position and shifts all characters in the field to the right

DELETE LINE**Nonforms**

Deletes the line containing the cursor, and all lines in the page are shifted up one line. The cursor moves to the beginning of the line. A blank line is inserted at the end of the page.

Forms

No function.

SHIFT-DELETE LINE**Nonforms**

Same as DELETE LINE.

Forms

No function.

THE ENVIRONMENT KEYS**Nonforms/Forms**

Changes the keyboard environment to the one specified by the key, if the environment is enabled.

SHIFT-Environment Keys

Same as the environment keys.

ESC**Nonforms/Forms**

Displays an escape character and advances the cursor.

SHIFT-ESC

Same as ESC.

⌘ ETX

Nonforms

Displays an ETX character, which affects the data comm buffer loading algorithm (see XMIT). (Related option: ETX Advance option in the Environment Data Comm Options menu.)

Option: Line at a Time XMIT

<i>Option Status</i>	<i>Cursor Moves to</i>
<i>On</i>	Mobile home column of the current line (see Environment Data Comm Options menu)
<i>Off</i>	Present mobile home column and row

Forms

<i>Cursor Position</i>	<i>Key Function</i>
In a protected field	The alarm sounds if enabled
In a US field	Same as in nonforms
In a GS field and not in the data entry position	The alarm sounds if enabled
In a GS field and in the data entry position	Same as in nonforms

SHIFT-ETX

See GS delimiter.

FULL

Nonforms/Forms

Displays a full-screen view of the keyboard environment.

SHIFT-FULL

Same as FULL.

(GS delimiter) (SHIFT-ETX)**Nonforms**

Displays a GS character at the cursor location and advances the cursor.

Forms

Sounds the alarm.

HELP

No function.

SHIFT-HELP

No function.

HOME**Nonforms**

The cursor moves home (line 1, column 1 of the page) or to the mobile home. For more information on mobile home, see CTRL HOME in "Control Sequences" subsection.

Forms

The cursor moves to the data entry position of the first unprotected field in the page: the left side in US fields, the right side in GS fields.

INSERT CHAR**Nonforms**

<i>Condition</i>	<i>Key Function</i>
Not in insert mode	Inserts a single space at the cursor position and data entered shifts existing data in the line to the right
In insert mode	Takes the terminal out of insert mode
Another function key	Cancels insert mode and the function corresponding to that key is performed

Options

If the Insert Key Inserts Space option is set *off*, no space is inserted when you press INSERT CHAR. Press INSERT CHAR to cancel this mode.

Forms

In addition to the effects that occur in nonforms mode, forms mode has these additional effects:

<i>Cursor Position</i>	<i>Key Function</i>
In a protected field	None
In a US field and insert mode is <i>off</i>	Inserts a space at the cursor position and data entered shifts existing data in the field to the right
In a GS field and insert mode is <i>off</i>	None

Options

Same as in nonforms mode.

LINE INSERT (SHIFT-INSERT CHAR)

Nonforms

Inserts a line at the cursor location and shifts the remaining lines in the page down. The cursor moves to the beginning of the inserted line. The last line of the page is lost.

Forms

No function.

LOCAL

Nonforms/Forms

Puts the terminal in local mode.

Turns the LOCAL LED on and the ENQ, RCV, XMIT and LTAI LEDs off.

Terminal exits control mode if it was in control mode when the key was pressed.

Clears error messages on the system status line.

Keystrokes in the keyboard buffer are discarded if the Buffer Enabled option is set *on* (see Environment Keyboard Options in Section 1).

If the terminal is interpreting received data, this key has no effect.

LOCK**Nonforms/Forms**

Cancels CAPS lock mode and turns LOCK LED off.

SHIFT-LOCK

Enables CAPS lock mode and turns LOCK LED on. Lowercase letters are converted to uppercase.

MARK**Nonforms/Forms**

In data sharing, marks beginning of data to be transferred to data sharing buffer. Displays an STX character on the screen. See Section 9 for more information on how this key works in a forms mode page.

SHIFT-MARK

Same as MARK.

NEXT**Nonforms/Forms**

Displays the next page of the keyboard environment. If the cursor is in the last page, the first page is displayed. The status lines change to reflect the status of the new page.

SHIFT-NEXT

Same as NEXT.

PRINT**Nonforms**

Data from home to the cursor is sent to the printer with a form feed. If the cursor is in the home position, the entire page is printed.

Options

See the System Peripheral Option menu in Section 10.

Forms

Data in unprotected fields from home to the cursor is sent to the printer with a form feed. Protected data is printed as blanks.

If the cursor is in the first data entry position of the page or before it, data in all unprotected fields in the page is printed.

Options

Same as in nonforms mode.

PRINT (SHIFT-PRINT)**Nonforms**

Data from home to the cursor is sent to the printer with a form feed. If the cursor is in the home position, the entire page is printed.

Options

See the System Peripheral Option menu in Section 10.

Forms

Data in protected and unprotected fields from home to the cursor is printed, with a form feed. If the cursor is in the data entry position of the first unprotected field or before it, data in all unprotected and protected fields is printed. The printing procedures are the same as in nonforms.

Options

Same as in nonforms mode.

RCV**Nonforms/Forms**

The terminal is put into receive mode, if the terminal was in local mode. It turns off the LOCAL and ENQ LEDs and turns on the RCV LED. The DCP is aligned to the cursor position.

The key has no effect if the terminal is in transmit mode.

RECALL**Nonforms**

In data sharing, transfers data from the data sharing buffer to the keyboard environment beginning at the cursor location (see Section 9).

Forms

Data is written into unprotected fields only (see Section 9).

SHIFT-RECALL

Same as RECALL.

RETURN

The cursor moves to the beginning of the line.

Option: RET Function

<i>Option Status</i>	<i>Cursor Moves to</i>
Set to <i>CR</i>	The first column of the same line
Set to <i>CR/LF</i>	The first column of the next line; the cursor is on the last line it moves to the first line

Option: CR Character Display from Keyboard

<i>Option Status</i>	<i>CR Character</i>
<i>On</i> and the control mode is <i>on</i>	Not displayed
<i>On</i> and the control mode is <i>off</i>	Displayed at the cursor position before the cursor is moved
<i>Off</i>	Not displayed

Forms**Option: CR Character Display from Keyboard**

<i>CR Option</i>	<i>CR Character</i>
<i>On</i> and control mode is <i>on</i>	Not displayed
<i>On</i> , Control mode is <i>off</i> , and the cursor is in a protected field	Not displayed
<i>On</i> , Control mode is <i>off</i> , and the cursor is in a US field	Displayed at cursor position
<i>On</i> , Control mode is <i>off</i> , and the cursor is in a GS field but not in a data entry position	Not displayed
<i>On</i> , Control mode is <i>off</i> , and the cursor is in a GS field at a data entry position	Displayed at cursor position

If the CR Character Display from Keyboard option is set to *off*, the CR character is not displayed (see the Environment Video Options menu).

If the RET Function option is set to *CR*, the cursor moves to the data entry position of the first unprotected field of the same line.

If the RET Function option is set to *CR/LF*, the cursor moves to the data entry position of the next unprotected field. If the cursor is in the last unprotected field in the page, it will move to the first unprotected field in the page. If the Return Key in Forms option is also set to *NEXT LINE*, the cursor will move to the next line of a multiple line field.

REVERSE-TAB**Nonforms**

The cursor moves left to the previous tab if tabs are set. If no tabs are set, the cursor moves home. If the cursor is at the first tab stop in the page, it moves to the last tab stop.

Forms

The cursor moves left to the first data entry position of the previous unprotected field. If the cursor is in the first unprotected field in the page, it moves to the last unprotected field.

SHIFT-REVERSE TAB

Same as REVERSE TAB.

SCROLL (SHIFT-Arrow Keys)

Scrolls the data in direction of the arrow. If the cursor moves to another page, the status lines and LEDs are updated to reflect the status of that page.

SHIFT**Nonforms/Forms**

Generates the shift code for the key pressed with it.

SPCFY

Sends cursor location to host.

Nonforms**Option: SPCFY Key Sends**

<i>Option Status</i>	<i>Transmission Format</i>
Set to <i>ASCII</i>	ESC " <i>c r</i> where " = 22 hex <i>c</i> = cursor column + 31 <i>r</i> = cursor row + 31 If the column or row number is greater than 96, <i>c</i> or <i>r</i> is set to 1F hex
Set to <i>HEX</i> when characters/line or lines/page are greater than 96	ESC " <i>cc rr</i> where: " = 22 hex <i>cc</i> = cursor column in hex starting from 01 <i>rr</i> = cursor row in hex starting from 01

Option: SPCFY Key Sends Page Number

<i>Option Status</i>	<i>Transmission Format</i>
<i>On</i> (page number and cursor position are sent to host) and SPCFY Key Sends set to <i>ASCII</i>	ESC " <i>c r p</i> where: " = 22 hex <i>c</i> = cursor column + 31 <i>r</i> = cursor row + 31 <i>p</i> = page number + 31 If the column or row number is greater than 96, <i>c</i> or <i>r</i> is set to 1F hex
<i>On</i> and SPCFY Key Sends set to <i>HEX</i>	ESC " <i>cc rr pp</i> where: " = 22 hex <i>cc</i> = cursor column in hex starting from 01 <i>rr</i> = cursor row in hex starting from 01 <i>pp</i> = page number in hex starting from 01

SPLIT**Nonforms/Forms**

Displays a split-screen view (the split-screen must already be configured—see CONFIG).

SHIFT-SPLIT

Same as SPLIT.

STORE**Nonforms**

In data sharing, transfers data delimited by MARK and BOUND to the data sharing buffer (see Section 9).

Forms

In forms mode, only data in unprotected fields is transferred to the data sharing buffer (see Section 9).

SHIFT-STORE

Same as STORE.

TAB**Nonforms**

Tabs the cursor right to the next tab stop if tabs are set. If no tabs are set, it moves the cursor home.

Option: HT Displayed on TAB FUNCTION from Keyboard

<i>Option Status</i>	<i>HT Character</i>
<i>On</i>	Displayed at the cursor position before the cursor moves to the next tab stop or home
<i>Off</i>	Not displayed

Forms

Option: HT Displayed on TAB FUNCTION from Keyboard

<i>Option Status</i>	<i>HT Character</i>
<i>On</i> and the cursor is in a US field	Displayed at the cursor position and the cursor moves to the first data entry position of the next field If the next field is a GS field, another HT character is written at the left side of this field and the cursor is moved right to the data entry position
<i>On</i> and the cursor is in a GS field	Not displayed If the next field is a GS field, HT character is written at the left side of this field and the cursor is moved right to the data entry position
<i>Off</i>	Cursor moves to the data entry position of the next unprotected field

SHIFT-TAB

Same as TAB.

In search mode, advances cursor to next instance of search character (see Section 7).

XMIT

Nonforms/Forms

Note: The scope of any transmit function is the cursor page.

<i>Terminal Mode</i>	<i>Key Function</i>
Receiving data	None
Local or Receive	DCP is moved to the cursor position and the data in the page is transferred into the data comm buffer LOCAL and RCV LEDs are turned off XMIT LED is turned on

Option: Line at a Time XMIT

<i>Option Status</i>	<i>Data Transmitted</i>
<i>On</i>	One line at a time
<i>Off</i>	As much as one page at a time, depending on the cursor position and how other options are set (see Appendix K)

If the data comm buffer overflows, the data that did not fit into the buffer is lost and the terminal enters XMIT mode. The error message *BUFFER OVERFLOW* appears on the environment status line.

For more information on how this key works, buffer loading procedures, and scanning procedures in forms and nonforms mode, see Appendix K.

Control Sequences

The following subsection details the control sequences and their functions. The keys are listed by topic:

- Set-up mode
- Highlighting
- Monitor mode
- Forms mode
- Search mode
- Pointer movement
- Editing
- Key programming
- Byte configuration
- Printer
- Text entry
- Miscellaneous

The sequences are listed alphabetically by topic. Control sequences in which CTRL is followed by a single letter in uppercase are equally valid if you use the lowercase letter. For example, the command *CTRL A* is listed, but *CTRL a* performs the same function.

Decision Tables

Many control sequences are explained in detail with the use of decision tables. Each column in a table describes a set of conditions and the outputs those conditions produce when the control sequence is issued.

Under conditions, *Y* means the condition is true. *N* means it is not true. A dash (-) means the condition is irrelevant.

Under outputs, *X* means the corresponding output will occur as a result of the control sequence and the conditions listed in that column. A dash means the corresponding output is unaffected.

Example

Activated by: CTRL V
Function: Move Line Up

Conditions:			
FORMS Page	Y	N	N
KBC on Page Row 1	-	Y	N

Outputs:			
Exchange KBC Line with Line Above It	-	-	X
Exchange KBC Line with Last Line	-	X	-
Move KBC to Previous Row	-	-	X
Move KBC to Last Row	-	X	-
Update Row Indicator	-	X	X
No Response	X	-	-

All conditions and outputs pertain to CTRL V.

Column One

Conditions: *Y* means the page is in forms mode. The dash means that KBC on page row 1 is irrelevant.

Outputs: No output is applicable except No Response. In other words, when the page is in forms mode, CTRL **V** has no effect.

Column Two

Conditions: *N* means the page is not in forms mode. *Y* means the KBC is on row 1 of the page.

Outputs: The KBC line is exchanged with the last line of the page; the KBC moves to the last row, and the row indicator is updated.

Column Three

Conditions: The page is not in forms mode and the KBC is not in row 1 of the page.

Outputs: The KBC line is exchanged with the line above, the KBC moves to the previous row, and the row indicator is updated.

Set-Up Mode

Activated by: CTRL **RW**

Function: Enters Set-Up mode. (**RW** must be typed in uppercase and password prompt appears.)

Activated by: SHIFT-CTRL **##**

Function: Enables entry of characters not available on keyboard, where **##** is the hex character code.

Highlighting

Activated by: CTRL Hx
Function: Character Translation

Conditions:

FORMS Page	Y Y Y Y Y - - - - -
KBC In Protected Field	Y N N N N N N N N N N N
x is "<"	- Y - - - - -
x is "="	- - Y - - - - -
x is "?"	- - - Y - - - - -
x is ">"	- - - - Y - - - - -
Char x is in ASCII Col. 0, Row h	- - - - - Y - - - - -
Char x is in ASCII Col. 1, Row h	- - - - - Y - - - - -
Char x is in ASCII Col. 2, Row h	- - - - - Y - - - - -
Char x is in ASCII Col. 3, Row h	- Y Y Y Y - - - Y - - - -
Char x is in ASCII Col. 4, Row h	- - - - - - - - Y - - - - -
Char x is in ASCII Col. 5, Row h	- - - - - - - - - Y - - - -
Char x is in ASCII Col. 6, Row h	- - - - - - - - - - Y - - -
Char x is in ASCII Col. 7, Row h	- - - - - - - - - - - Y - -
ASCII Code of x is > 128	- - - - - - - - - - - - Y
ASCII Code of x is < 32 (except for GS character 30)	- - - - - Y Y - - - - -

Outputs:

Display ASCII Col. 0, Row h Char	- - - - - X - - - - -
Display ASCII Col. 1, Row h Char	- - - - - - X - - - - -
Display ASCII Col. 2, Row h Char	- - - - - - - - - - -
Display ASCII Col. 3, Row h Char	- - - - - - - - - - -
Display ASCII Col. 4, Row h Char	- - - - - - - - X - X - -
Display ASCII Col. 5, Row h Char	- - - - - - - - - X - X -
Display NULL (#00)	- - - - - X X - - - - - X
No Response	X X X X X - - - - -

Note x above is a literal character.
 h is a hex value from 0 to F.

In nonforms mode, this sequence allows you to display the control characters that appear in columns 0 and 2 of the character tables (see appropriate Language Version table in Appendix D). Type CTRL Hx to display the character n, where x is any character in columns 2 and 3 and n is the respective translated character in columns 0 and 1.

Activated by:	CTRL H :
Function:	Starts bright highlight.
Activated by:	CTRL H /
Function:	Starts underline highlight.
Activated by:	CTRL H .
Function:	Starts reverse highlight.
Activated by:	CTRL H =
Function:	Displays a GS forms field starting delimiter.
Activated by:	CTRL H 7
Function:	Ends highlight.
Activated by:	CTRL H 8
Function:	Starts Blinking highlight.
Activated by:	CTRL H 9
Function:	Starts secure highlight (characters typed are hidden by a reverse video blank image).
Activated by:	CTRL I
Function:	Sets cursor page to normal video.
Activated by:	CTRL U
Function:	Sets cursor page to reverse video.

Monitor Mode

Activated by: CTRL J M
Function: Enters monitor mode (J and M must be in uppercase)

Activated by: CTRL J n
Function: Exit monitor mode (and return to environment specified by n).

Forms Mode

Activated by: CTRL H <
Function: Starts protected field. See CTRL H x under Highlighting.

Activated by: CTRL H ?
Function: Starts left-justified field. See CTRL H x under Highlighting.

Activated by: CTRL H >
Function: Ends form field and ends highlight.
 See CTRL H x under Highlighting.

Activated by: CTRL O
Function: Reset forms mode

Conditions:
 FORMS Page Y N

Outputs:

Exit FORMS Mode	X	-
Remove FORMS Indicator from Status Line	X	-
Move KBC to Home Position	X	X
Update Row Indicator	X	X
Update Column Indicator	X	X

Activated by: CTRL W
Function: Set Forms Mode

Conditions:

FORMS Page	Y N N N N N N N N N N N
Alternate US Char on Page	- N Y N Y Y Y Y Y Y Y
Alternate RS Char on Page	- N N Y Y Y Y Y Y Y Y
GS Followed by Nondelimiter on Page	- N N N N Y Y Y Y Y Y
US or Alternate US Followed by Nondelimiter on Page	- N N N N Y Y Y Y Y Y
Search Mode Set	- - - - - N N N Y Y Y Y
First UPF on Page Is GS Field	- - - - - Y Y N Y Y N -
'HT Displayed on TAB FUNCTION' From Keyboard	- - - - - N Y - N Y - -
Search Char before First UPF on Page	- - - - - - - - N N N Y

Outputs:

Replace Alternate US with US	- - X - X X X X X X X X
Replace Alternate RS with RS	- - - X X X X X X X X X
Move KBC to Home Position	- X - X - - - - - - -
Put Page in FORMS Mode	- - X - X X X X X X X X
Put FORMS Indicator in Status Line	- - X - X X X X X X X X
Store HT at Leftmost Position of First UPF on Page	- - - - - X - - X - -
Move KBC to Leftmost Position of First UPF on Page	- - X - X - - X - - X -
Move KBC to Rightmost Position of First UPF on Page	- - - - - X X - X X - -
Move KBC to Search Character	- - - - - - - - - - X
Initiate Search	- - - - - - - - - - X
Terminate Search	- - - - - - - - X X X -
Update Row Indicator	- X X X X X X X X X X X
Update Column Indicator	- X X X X X X X X X X X
No Response	X - - - - - - - - - -

Search Mode

Activated by: CTRL A
Function: Set Search Mode

Conditions:
Forms Page N Y

Outputs:
Search Scanning Enabled X -
Search Scanning Begins at Home - X

Activated by: CTRL E *x*
Function: Specifies search character where *x* is the character searched for. Default search character is broken vertical bar.

Activated by: SHIFT-TAB
Function: Search scanning operation

Conditions:
Search Mode Set N Y Y Y Y Y
Forms Page - N N Y Y Y
Search Character on Page - Y N Y Y Y
Search Character before Next Field - - - Y N N
Next Field Is GS Field - - - - N Y

Outputs:
Search Begins at Home Position - - - X X X
Search Begins at KBC Position - X X - - -
Search Scanning Does Not Take Place X - - - - -
KBC Moves to Search Character - X - X - -
KBC Moves to Home Position - - X - - -
Search Initiated - X - X - -
Skip Flag Reset - - X - X X
KBC Moves to 1st Position Next Field - - - - X -
KBC Moves to Rightmost Position of Next Field - - - - - X

Activated by: CTRL S
Function: Reset Search Mode

Conditions:

Forms Page	-	-	-	-
Search Initiated	Y	Y	N	N
Search Character Is "|" (7C)	N	Y	Y	N

Outputs:

Reset Search Mode	X	X	X	X
Terminate Search	X	X	-	-
Reset Search Character to "|" (7C)	X	-	-	X

Pointer Movement

Activated by: CTRL B
Function: Move Line Down

Conditions:

Forms Page	Y	N	N
KBC on Last Page Line	-	Y	N

Outputs:

Exchange KBC Line with Line below	-	-	X
Exchange KBC Line with Line 1	-	X	-
Move KBC to Next Row	-	-	X
Move KBC to Row 1	-	X	-
Update Row Indicator	-	X	X
No Response	X	-	-

Activated by: CTRL BACK
Function: Previous enabled environment becomes the keyboard environment.

Activated by: CTRL HOME
Function: Sets mobile home at the cursor location.

Activated by: CTRL M
Function: Roll Page Down

Conditions:
Forms Page Y N

Outputs:
Shift Entire Page Down 1 Line - X
Move Bottom Line to Top Line - X
No Response X -

Activated by: CTRL N
Function: Roll Page Up

Conditions:
Forms Page Y N

Outputs:
Shift Entire Page Up 1 Line - X
Move top Line to Bottom Line - X
No Response X -

Activated by: CTRL NEXT
Function: Next environment becomes keyboard environment provided more than one environment is enabled.

Activated by: CTRL V
Function: Move Line Up

Conditions:
Forms Page Y N N
KBC on Page Row 1 - Y N

Outputs:
Exchange KBC Line with Line above It - - X
Exchange KBC Line with Last Line - X -
Move KBC to Previous Row - - X
Move KBC to Last Row - X -
Update Row Indicator - X X
No Response X - -

Activated by: CTRL RETURN
Function: Carriage Return

This sequences has the same effect as RETURN, except that no CR character is stored under any condition (see RETURN).

Activated by: CTRL >
Function: Align KBC to DCP

Conditions:

KBC Page Is Forms Page	N	Y	N	N	Y	Y
DCP and KBC on Same Page	Y	Y	N	N	N	N
DCP Page Is Forms Page	-	-	N	Y	N	Y

Outputs:

Move KBC to DCP Location	X	X	X	X	X	X
Update Page Indicator	-	-	X	X	X	X
Update Row Indicator	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X
Set Forms Indicator	-	-	-	X	-	-
Reset Forms Indicator	-	-	-	-	X	-

Note This operation does not cross page boundaries.

Activated by: CTRL right arrow

Function: Vertical Tab Down

Conditions:

KBC In Page Row 1-8	Y Y Y N N N N N N N N N N N N N N N
KBC In Page Row 9-16	N N N Y Y Y N N N N N N N N N N N N N
KBC In Page Row 17-24	N N N N N N Y Y Y Y Y N N N N N N N
KBC In Page Row 25-32	N N N N N N N N N N N N Y Y Y Y Y Y
KBC In Page Col. 1	N N Y N N Y N N Y N N Y N N Y N N Y N
Page Line 1 on Screen	- - - - - - - - - - - Y Y Y N N N
Page Line 25 on Screen	- - - - - Y Y Y N N N - - - - - - -
Page Col. 1 on Screen	N Y - N Y - N Y - N Y - N Y - N Y -
Forms Page	- - - - - - - - - - - - - - - - -

Outputs:

Scroll Page Up	- - - - - - - - X X X - - - - - -
Scroll Page Down	- - - - - - - - - - - - - - X X X
Scroll Page Right	X - - X - - X - - X - - X - - X - -
Move KBC to Page Line 1	- - - - - - - - - - - X X X X X X
Move KBC to Page Line 9	X X X - - - - - - - - - - - - - - -
Move KBC to Page Line 17	- - - X X X - - - - - - - - - - - -
Move KBC to Page Line 25	- - - - - X X X X X X - - - - - - -
Move KBC to Page Column 1	X X - X X - X X - X X - X X - X X -
Update Row Indicator	X X X X X X X X X X X X X X X X X
Update Column Indicator	X X - X X - X X - X X - X X - X X -

Note VT Page Advance option must be set.
 Display store must be configured for 32-line pages.

Activated by: CTRL left arrow

Function: Vertical Tab Up

Conditions:

KBC in Page Row 1	Y Y Y Y Y Y N N N N N N N N N N N N N N
KBC in Page Row 2-9	N N N N N N Y Y Y Y Y N N N N N N N N N
KBC in Page Row 10-17	N N N N N N N N N N N Y Y Y N N N N N N
KBC in Page Row 18-25	N N N N N N N N N N N N N N N Y Y Y N N N
KBC in Page Row 26-32	N N N N N N N N N N N N N N N N N Y Y Y
KBC in Page Col. 1	N N Y N N Y N N Y N N Y N N Y N N Y N N Y
Page Row 1 on Screen	- - - - - Y Y Y N N N - - - - - - - - -
Page Row 25 on Screen	Y Y Y N N N - - - - - - - - - - - Y Y Y
Page Col. 1 on Screen	N Y - N Y - N Y - N Y - N Y - N Y - N Y -
Forms Page	- - - - - - - - - - - - - - - - - - - -

Outputs:

Scroll Page Up	- - - X X X - - - - - - - - - - - - - -
Scroll Page Down	- - - - - - - - - X X X - - - - - - - - -
Scroll Page Right	X - - X - - X - - X - - X - - X - - X - -
Move KBC to Page Row 1	- - - - - X X X X X X - - - - - - - - -
Move KBC to Page Row 9	- - - - - - - - - - - - X X X - - - - - -
Move KBC to Page Row 17	- - - - - - - - - - - - - - - X X X - - -
Move KBC to Page Row 25	X X X X X X - - - - - - - - - - - X X X
Update Row Indicator	X X X X X X X X X X X X X X X X X X X X
Update Column Indicator	X X - X X - X X - X X - X X - X X - X X -

Note VT Page Advance option must be set.
 Display store must be configured for 32-line pages.

Activated by: CTRL right arrow

Function: Next Page

Note If the cursor moves to one of the first ten pages of an environment, it will return to the last position it held in that page. If the cursor moves to page 11 or beyond, the truth table pertains.

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	
KBC on Last Page	-	-	Y	Y	Y	N	N	N	-	Y	Y	Y	N	N	N
Next Page Is Forms Page	-	-	-	-	-	Y	Y	N	-	-	-	-	Y	Y	N
First Page Is Forms Page	-	-	Y	Y	N	-	-	-	-	Y	Y	N	-	-	-
First UPF Current Page Is GS	Y	N	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Next Page Is GS	-	-	-	-	Y	N	-	-	-	-	-	-	Y	N	-
First UPF Page 1 Is GS	-	-	Y	N	-	-	-	-	-	Y	N	-	-	-	-

Outputs:

Move KBC to Home, Current Page	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Move KBC to Leftmost Position of First UPF, Current Page	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Rightmost Position of First UPF, Current Page	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Home, Next Page	-	-	-	-	-	-	-	X	-	-	-	-	-	-	X
Move KBC to Leftmost Position of First UPF, Next Page	-	-	-	-	-	-	X	-	-	-	-	-	-	X	-
Move KBC to Rightmost Position of First UPF, Next Page	-	-	-	-	X	-	-	-	-	-	-	-	X	-	-
Update Page Indicator	-	-	X	X	X	X	X	X	-	X	X	X	X	X	X
Update Row Indicator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Display Forms Indicator in Status Line	-	-	-	-	-	-	-	-	-	X	X	-	X	X	-
Remove Forms Indicator from Status Line	-	-	-	-	X	-	-	X	-	-	-	-	-	-	-

Note VT Page Advance option must be set to *off*.

Activated by: CTRL left arrow

Function: Back Page

Note If the cursor moves to one of the first 10 pages of an environment, it will return to the last position it held in that page. If the cursor moves to page 11 or beyond, the following truth table pertains.

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
KBC on First Page	-	-	Y	Y	N	N	N	-	Y	Y	Y	N	N	N
Previous Page Is Forms Page	-	-	-	-	Y	Y	N	-	-	-	Y	Y	N	N
Last Page Is Forms Page	-	-	Y	Y	N	-	-	-	Y	Y	N	-	-	-
First UPF Current Page Is GS	Y	N	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Prev. Page Is GS	-	-	-	-	Y	N	-	-	-	-	-	Y	N	-
First UPF Last Page Is GS	-	-	Y	N	-	-	-	-	Y	N	-	-	-	-

Outputs:

Move KBC to Home, Current Page	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Move KBC to Leftmost Position of First UPF, Current Page	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Rightmost Position of First UPF, Current Page	X	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Home, Prev. Page	-	-	-	-	-	-	X	-	-	-	-	-	-	X
Move KBC to Leftmost Position of First UPF, Prev. Page	-	-	-	-	-	-	X	-	-	-	-	-	-	X
Move KBC to Rightmost Position of First UPF, Prev. Page	-	-	-	-	-	X	-	-	-	-	-	X	-	-
Move KBC to Home, Last Page	-	-	-	-	X	-	-	-	-	-	X	-	-	-
Move KBC to Leftmost Position of First UPF, Last Page	-	-	-	X	-	-	-	-	-	X	-	-	-	-
Move KBC to Rightmost Position of First UPF, Last Page	-	-	X	-	-	-	-	-	X	-	-	-	-	-
Update Page Indicator	-	-	X	X	X	X	X	X	-	X	X	X	X	X
Update Row Indicator	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Display Forms Indicator in Status Line	-	-	-	-	-	-	-	-	X	X	-	X	X	-
Remove Forms Indicator from Status Line	-	-	-	-	X	-	-	X	-	-	-	-	-	-

Note VT Page Advance option must be set to *off*.

Activated by: CTRL @ *h k*
Function: Position Pointer

Conditions:

Both <i>hh</i> and <i>kk</i> are valid	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<i>hh</i> Value Is out of Range	Y	Y	N	-	-	-	-	-	-	-	-	-	-
<i>kk</i> Value Is out of Range	Y	N	Y	-	-	-	-	-	-	-	-	-	-
New Location Is on Screen	-	-	-	Y	N	N	N	N	N	N	N	N	N
New Location Is above Screen	-	-	-	-	Y	N	N	N	Y	Y	N	N	-
New Location Is below Screen	-	-	-	-	N	Y	N	N	N	N	Y	Y	-
New Location Is Right of Screen	-	-	-	-	N	N	Y	N	Y	N	Y	N	-
New Location Is Left of Screen	-	-	-	-	N	N	N	Y	N	Y	N	Y	-

Outputs:

Scroll Page Up	-	-	-	-	-	X	-	-	-	-	X	X	-
Scroll Page Down	-	-	-	-	X	-	-	-	X	X	-	-	-
Scroll Page Left	-	-	-	-	-	-	X	-	X	-	X	-	-
Scroll Page Right	-	-	-	-	-	-	-	X	-	X	-	X	-
Move KBC to Indicated Location	-	-	-	X	X	X	X	X	X	X	X	X	X
Update Row Indicator	-	-	-	X	X	X	X	X	X	X	X	X	X
Update Column Indicator	-	-	-	X	X	X	X	X	X	X	X	X	X
No Response	X	X	X	-	-	-	-	-	-	-	-	-	-

Note *hh* represents the desired column in hex and starts from 01.
kk represents the desired line in hex and starts from 01.

Activated by: CTRL < *c r*
Function: Position Pointer

Conditions:

Both <i>c</i> and <i>r</i> are valid	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<i>c</i> Value Is out of Range	Y	Y	N	-	-	-	-	-	-	-	-	-	-
<i>r</i> Value Is out of Range	Y	N	Y	-	-	-	-	-	-	-	-	-	-
New Location Is on Screen	-	-	-	Y	N	N	N	N	N	N	N	N	N
New Location Is above Screen	-	-	-	-	Y	N	N	N	Y	Y	N	N	-
New Location Is below Screen	-	-	-	-	N	Y	N	N	N	N	Y	Y	-
New Location Is Right of Screen	-	-	-	-	N	N	Y	N	Y	N	Y	N	-
New Location Is Left of Screen	-	-	-	-	N	N	N	Y	N	Y	N	Y	-

Outputs:

Scroll Page Up	-	-	-	-	X	-	-	-	-	X	X	-	-
Scroll Page Down	-	-	-	-	X	-	-	-	X	X	-	-	-
Scroll Page Left	-	-	-	-	-	X	-	X	-	X	-	-	-
Scroll Page Right	-	-	-	-	-	-	X	-	X	-	X	-	-
Move KBC to Indicated Location	-	-	-	X	X	X	X	X	X	X	X	X	X
Update Row Indicator	-	-	-	X	X	X	X	X	X	X	X	X	X
Update Column Indicator	-	-	-	X	X	X	X	X	X	X	X	X	X
No Response	X	X	X	-	-	-	-	-	-	-	-	-	-

Note *c* represents the cursor column plus 31.

r represents the cursor row plus 31.

Example: CTRL < ! + positions the KBC to column 2, row 12.

Character	ASCII Code	Value
!	33	33-31=2
+	43	43-31=12

Activated by: CTRL up arrow

Function: Scroll Up

Conditions:

KBC on Forms Page	-	N	N	Y	Y	-
KBC on Last Line of Page	N	Y	Y	Y	Y	-
Next Page Is Forms Page	-	N	Y	N	Y	-
Last Display Store Line displayed at Bottom of Page	N	N	N	N	N	Y

Outputs:

Remove top Line	X	X	X	X	X	-
Move All Lines Up 1 Row	X	X	X	X	X	-
Display Next Display Store Line at Bottom of Screen	X	X	X	X	X	-
Update Row Indicator	X	X	X	X	X	-
Update Page Indicator	-	X	X	X	X	-
Set Forms Indicator	-	-	X	-	-	-
Reset Forms Indicator	-	-	-	X	-	-
No Response	-	-	-	-	-	X

Activated by: CTRL down arrow

Function: Scroll Down

Conditions:

KBC on Forms Page	-	N	N	Y	Y	-
KBC on First Line of Page	N	Y	Y	Y	Y	-
Previous Page Is Forms Page	-	N	Y	N	Y	-
First Display Store Line Displayed at Top of Screen	N	N	N	N	N	Y

Outputs:

Remove Bottom Line	X	X	X	X	X	-
Move All Lines Down 1 Row	X	X	X	X	X	-
Move Previous Display Store Line to Screen Row 1	X	X	X	X	X	-
Update Row Indicator	X	X	X	X	X	-
Update Page Indicator	-	X	X	X	X	-
Set Forms Indicator	-	-	X	-	-	-
Reset Forms Indicator	-	-	-	X	-	-
No Response	-	-	-	-	-	X

Editing

Activated by: CTRL CHAR DEL
Function: Delete Character by Page

Conditions:

Forms Page	N	Y	Y	Y	Y	Y
KBC In US Field	-	N	N	N	Y	N
KBC at Rightmost Position of GS Field	-	N	N	N	N	Y
KBC In Protected Field	-	N	Y	N	N	N
KBC on Delimiter	-	Y	N	N	N	N

Outputs:

Delete Character at KBC	X	-	-	-	X	X
Shift Chars from KBC to End of Page Left	X	-	-	-	-	-
Insert Blank at End of Page	X	-	-	-	-	-
Shift Chars from KBC to End of Field Left	-	-	-	-	X	-
Insert Blank at End of Field	-	-	-	-	X	-
Shift Chars in Field Right	-	-	-	-	-	X
Insert Blank at Beginning of Field	-	-	-	-	-	X
No Response	-	X	X	X	-	-

Activated by: CTRL CHAR INSERT
Function: Insert Character by Page

Conditions:

Page in INSERT Mode	N	N	N	N	Y
Forms Page	N	Y	Y	Y	-
KBC In Protected Field	-	Y	N	N	-
KBC at End of GS or US Field	-	-	Y	N	-

Outputs:

Insert Blank at KBC Location	X	-	-	X	-
Shift Chars from KBC To End of Page Right One Space	X	-	-	-	-
Last Character on Page Lost	X	-	-	-	-
Shift Chars from KBC to End of Field Right One Space	-	-	-	X	-
Last Char in Field Lost	-	-	-	X	-
Display INSERT Indicator in Status Line	X	-	-	X	-
Remove INSERT Indicator from Status Line	-	-	-	-	X
No Response	-	X	X	-	-

Activated by: CTRL O

Function: Clears Variable Tabs (If Tabs option is set to *variable* (see Environment Tab Options menu in Section 1).

Activated by: CTRL P

Function: Sets or resets (toggles) tab stop at cursor position if Tab option is set to *variable* (see Environment Tab Options menu in Section 1).

Activated by: CTRL T

Function: SHIFT LOCK off. Enables lowercase characters to be displayed on screen (has equivalent key).

Activated by: CTRL Y

Function: SHIFT LOCK on. Disables lowercase characters from appearing on the screen when entered from the keyboard (has equivalent key).

Key Programming

Activated by: CTRL SPACE A CTRL

Function: Enters Menu Key Programming
See Section 8 for more information.

Activated by: CTRL space L CTRL

Function: Nonmenu key programming.

Byte Configuration

Activated by: CTRL RA

Function: (*hhhh* is scratchpad address in hex.) Displays scratchpad at address for 16 bytes in character format for editing. Only valid in byte configuration mode.

Activated by: CTRL RCxxxx

Function: Stores byte configuration data in temporary scratchpad.

Activated by: CTRL RH

Function: (*hhhh* is scratchpad address in hex.) Displays scratchpad at address for 16 bytes in hexadecimal format for editing. Only valid in byte configuration mode.

Activated by: CTRL RLxxxx

Function: Displays error log.

Conditions:

Forms Page	N	Y
Configuration Menu Displayed	N	N

Outputs:

Page Data Cleared	X	X
Error Log Displayed	X	X
Exit Forms Mode	-	X
Exit Configuration Mode	-	-
Update Row Indicator	X	X
Update Column Indicator	X	X

Activated by: CTRL RPxxxx

Function: Transfers temporary scratchpad and key programs to permanent storage. Sequence is accessible only in byte configuration mode.

Printer

Activated by: CTRL :

Function: Prints data from home to cursor, with form feed. Forms mode: prints data in unprotected fields from home to cursor, with form feed. (See the PRINT key.)

Activated by: CTRL ;

Function: Prints data from home to cursor, with form feed. Forms mode: prints data in protected and unprotected fields from home to cursor, with form feed. (See the SHIFT-PRINT key.)

Activated by: CTRL]

Function: Prints data from home to cursor, no form feed. Forms mode: prints data in protected and unprotected fields from home to cursor, without form feed.

Activated by: CTRL PRINT XMIT

Function: Transmits the screen data on the PPT address up to 1000 characters. It follows the same algorithm as transmitting on the screen address. See Appendix K.

Activated by: CTRL SPACE F CTRL

Function: Initiates printer interface test. In multiple environments, affects the keyboard environment.

Text Character Entry

Keyboard Text Entry

The *conditions* and *outputs* that apply to text entry operation depend upon the source of the text characters. Decision tables are provided here for text character entry from the *keyboard*; Section 3 contains decision tables for text character entry from the host, via *data communications*.

Function: Text Character Entry

Activated by: Keyboard

Conditions:

Forms Page	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Search Initiated	N	N	N	N	N	N	N	N	N	N	N	N	N	N
KBC @ Last Screen Column	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC @ Last Screen Row	-	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC @ Last Page Column	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC @ Last Page Row	-	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Page > 80 Cols./Line	-	Y	Y	N	N	Y	-	Y	N	Y	N	Y	N	N
Page > 24 Lines	-	-	-	-	Y	Y	-	N	Y	Y	N	Y	N	N
'Cursor Wrap Around'	-	-	-	-	-	-	Y	N	N	N	N	N	N	N

Outputs:

Store Char @ KBC Location	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	-	-	X	X	-	-	-	-	-	-	-	-
Scroll Page Down	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Scroll Page Left	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Right	-	-	X	-	-	X	-	X	-	X	-	-	-	-
Move KBC Right One Position	X	X	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Column 1, Next Line	-	-	X	X	X	X	-	-	-	-	-	-	-	-
Move KBC to Home Position	-	-	-	-	-	-	-	X	X	X	X	X	X	X
Update Row Indicator	-	-	X	X	X	X	-	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	-	X	X	X	X	X	X	X

Function: Text Character Entry

Activated by: Keyboard (Cont'd)

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC on GS, US, or RS	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Character Is GS, US, or RS	Y	-	N	N	N	N	N	N	N	N	N	N	N	N
KBC on Last Screen Column	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KBC on Last Page Column	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KBC on Last Screen Row	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KBC on Last Page Row	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Search Initiated	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
'Auto Form Field Advance'	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Character after KBC Is GS, US, or RS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is GS Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is above Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is below Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Search Character on Page	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Search Character Right of Screen	-	-	N	Y	N	N	N	Y	Y	N	N	N	N	N
Search Character Left of Screen	-	-	N	N	Y	N	N	N	N	Y	Y	Y	Y	Y
Search Character above Screen	-	-	N	N	N	Y	N	Y	N	Y	N	Y	N	N
Search Character below Screen	-	-	N	N	N	N	Y	N	Y	N	Y	N	Y	Y
Page > 80 Characters per Line	-	-	-	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y
Page > 24 Lines	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y

Outputs:

Store Character at KBC Location	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Scroll Page Right	-	-	-	-	X	-	-	-	-	X	X	-	-	-
Scroll Page Left	-	-	-	X	-	-	-	X	X	-	-	-	-	-
Scroll Page Up	-	-	-	-	-	-	X	-	X	-	X	-	-	-
Scroll Page Down	-	-	-	-	-	X	-	X	-	X	-	-	-	-
Move KBC Right 1 Column	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Column 1, Next Line	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Home Position	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Write HT at Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Rightmost Position Next UPF	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move KBC to Search Character	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Terminate Search	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Update Row Indicator	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Update Column Indicator	-	-	X	X	X	X	X	X	X	X	X	X	X	X
No Response	X	X	-	-	-	-	-	-	-	-	-	-	-	-

Function: Text Character Entry

Activated by: Keyboard (Cont'd)

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC on GS, US, or RS	N	N	N	N	N	N	N	N	N	N
Character Is GS, US, or RS	N	N	N	N	N	N	N	N	N	N
KBC on Last Screen Column	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC on Last Page Column	N	N	Y	Y	Y	Y	Y	Y	Y	Y
KBC on Last Screen Row	-	-	N	N	Y	Y	Y	Y	Y	Y
KBC on Last Page Row	-	-	N	N	N	N	Y	Y	Y	Y
Search Initiated	N	N	N	N	N	N	N	N	N	N
'Auto Form Field Advance'	N	N	N	N	N	N	N	N	N	N
Character after KBC Is GS, US, or RS	N	N	N	N	N	N	-	-	-	-
Next UPF Is GS Field	-	-	-	-	-	-	-	-	-	-
Next UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-
Next UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-
Next UPF Is above Screen	-	-	-	-	-	-	-	-	-	-
Next UPF Is below Screen	-	-	-	-	-	-	-	-	-	-
Search Character on Page	-	-	-	-	-	-	-	-	-	-
Search Character Right of Screen	-	-	-	-	-	-	-	-	-	-
Search Character Left of Screen	-	-	-	-	-	-	-	-	-	-
Search Character above Screen	-	-	-	-	-	-	-	-	-	-
Search Character below Screen	-	-	-	-	-	-	-	-	-	-
Page > 80 Characters Per Line	-	Y	Y	N	Y	N	N	Y	Y	-
Page > 24 Lines	-	-	-	-	Y	Y	N	Y	N	Y

Outputs:

Store Character at KBC Location	X	X	X	X	X	X	X	X	X	X
Scroll Page Right	-	-	X	-	X	-	-	X	X	-
Scroll Page Left	-	X	-	-	-	-	-	-	-	-
Scroll Page Up	-	-	-	-	X	X	-	-	-	-
Scroll Page Down	-	-	-	-	-	-	-	X	-	X
Move KBC Right 1 Column	X	X	-	-	-	-	-	-	-	-
Move KBC to Column 1, Next Line	-	-	X	X	X	X	-	-	-	-
Move KBC to Home Position	-	-	-	-	-	-	X	X	X	X
Move KBC to Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-	-
Write HT at Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-	-
Move KBC to Rightmost Position Next UPF	-	-	-	-	-	-	-	-	-	-
Move KBC to Search Character	-	-	-	-	-	-	-	-	-	-
Terminate Search	-	-	-	-	-	-	-	-	-	-
Update Row	-	-	X	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	X	X	X	X
No Response	-	-	-	-	-	-	-	-	-	-

Function: Text Character Entry

Activated by: Keyboard (Cont'd)

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC on GS, US, or RS	N	N	N	N	N	N	N	N	N
Character Is GS, US, or RS	N	N	N	N	N	N	N	N	N
KBC on Last Screen Column	-	-	-	-	-	-	-	-	-
KBC on Last Page Column	-	-	-	-	-	-	-	-	-
KBC on Last Screen Row	-	-	-	-	-	-	-	-	-
KBC on Last Page Row	-	-	-	-	-	-	-	-	-
Search Initiated	N	N	N	N	N	N	N	N	N
'Auto Form Field Advance'	N	N	N	N	N	N	N	N	N
Character after KBC Is GS, US, or RS	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is GS Field	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is Right of Screen	N	Y	N	N	N	Y	Y	N	N
Next UPF Is Left of Screen	N	N	Y	N	N	N	N	Y	Y
Next UPF Is above Screen	N	N	N	Y	N	Y	N	Y	N
Next UPF Is below Screen	N	N	N	N	Y	N	Y	N	Y
Search Character on Page	-	-	-	-	-	-	-	-	-
Search Character Right of Screen	-	-	-	-	-	-	-	-	-
Search Character Left of Screen	-	-	-	-	-	-	-	-	-
Search Character above Screen	-	-	-	-	-	-	-	-	-
Search Character below Screen	-	-	-	-	-	-	-	-	-
Page > 80 Characters Per Line	-	Y	Y	-	-	Y	Y	Y	Y
Page > 24 Lines	-	-	-	Y	Y	Y	Y	Y	Y

Outputs:

Store Character at KBC Location	X	X	X	X	X	X	X	X	X
Scroll Page Right	-	-	X	-	-	-	-	X	X
Scroll Page Left	-	X	-	-	-	X	X	-	-
Scroll Page Up	-	-	-	-	X	-	X	-	X
Scroll Page Down	-	-	-	X	-	X	-	X	-
Move KBC Right 1 Column	-	-	-	-	-	-	-	-	-
Move KBC to Column 1, Next Line	-	-	-	-	-	-	-	-	-
Move KBC to Home Position	-	-	-	-	-	-	-	-	-
Move KBC to Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-
Write HT at Leftmost Position Next UPF	M	M	M	M	M	M	M	M	M
Move KBC to Rightmost Position Next UPF	X	X	X	X	X	X	X	X	X
Move KBC to Search Character	-	-	-	-	-	-	-	-	-
Terminate Search	-	-	-	-	-	-	-	-	-
Update Row Indicator	X	X	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	X	X	X
No Response	-	-	-	-	-	-	-	-	-

Note M in the outputs field means:

- X if HT Displayed on TAB FUNCTION From Keyboard is set *on*;
- if HT Displayed on TAB FUNCTION From Keyboard is set *off*.

Function: Text Character Entry

Activated by: Keyboard (Cont'd)

Conditions:

Forms Page	Y	Y	Y	Y	Y	Y	Y	Y	Y
KBC on GS, US, or RS	N	N	N	N	N	N	N	N	N
Character Is GS, US, or RS	N	N	N	N	N	N	N	N	N
KBC on Last Screen Column	-	-	-	-	-	-	-	-	-
KBC on Last Page Column	-	-	-	-	-	-	-	-	-
KBC on Last Screen Row	-	-	-	-	-	-	-	-	-
KBC on Last Page Row	-	-	-	-	-	-	-	-	-
Search Initiated	Y	Y	Y	Y	Y	Y	Y	Y	Y
'Auto Form Field Advance'	N	N	N	N	N	N	N	N	N
Character after KBC Is GS, US, or RS	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is GS Field	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is Right of Screen	N	Y	N	N	N	Y	Y	N	N
Next UPF Is Left of Screen	N	N	Y	N	N	N	N	Y	Y
Next UPF Is above Screen	N	N	N	Y	N	Y	N	Y	N
Next UPF Is below Screen	N	N	N	N	Y	N	Y	N	Y
Search Character on Page	N	N	N	N	N	N	N	N	N
Search Character Right of Screen	-	-	-	-	-	-	-	-	-
Search Character Left of Screen	-	-	-	-	-	-	-	-	-
Search Character above Screen	-	-	-	-	-	-	-	-	-
Search Character Below Screen	-	-	-	-	-	-	-	-	-
Page > 80 Characters Per Line	-	Y	Y	-	-	Y	Y	Y	Y
Page > 24 Lines	-	-	-	Y	Y	Y	Y	Y	Y

Outputs:

Store Character at KBC Location	X	X	X	X	X	X	X	X	X
Scroll Page Right	-	-	X	-	-	-	-	X	X
Scroll Page Left	-	X	-	-	-	X	X	-	-
Scroll Page Up	-	-	-	-	X	-	X	-	X
Scroll Page Down	-	-	-	X	-	X	-	X	-
Move KBC Right 1 Column	-	-	-	-	-	-	-	-	-
Move KBC to Column 1, Next Line	-	-	-	-	-	-	-	-	-
Move KBC to Home Position	-	-	-	-	-	-	-	-	-
Move KBC to Leftmost Position Next UPF	-	-	-	-	-	-	-	-	-
Write HT at Leftmost Position Next UPF	M	M	M	M	M	M	M	M	M
Move KBC to Rightmost Position Next UPF	X	X	X	X	X	X	X	X	X
Move KBC to Search Character	-	-	-	-	-	-	-	-	-
Terminate Search	X	X	X	X	X	X	X	X	X
Update Row Indicator	X	X	X	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X	X	X	X
No Response	-	-	-	-	-	-	-	-	-

Note M in the "Outputs" field means:

- X if HT Displayed on TAB FUNCTION From Keyboard is set on;
- if HT Displayed on TAB FUNCTION From Keyboard is set off.

Miscellaneous

Activated by: CTRL ?

Function: Toggles alarm.

Note This sequence will toggle between on and off only if the menu alarm option is set to *on*. If the option is set to *off*, then the CTRL ? sequence has no effect.

Activated by: CTRL SPACEBAR C CTRL

Function: Display Character Set

Conditions:

Forms Page	N	Y
------------	---	---

Outputs:

Page Data Cleared	X	X
Character Set Displayed	X	X
Exit Forms Mode	-	X
Exit Configuration Mode	-	-
Update Row Indicator	X	X
Update Column Indicator	X	X

Activated by: CTRL SPACEBAR D CTRL

Function: Terminal Restart; in multiple environments, resets the keyboard environment. If the main menu command field "Load from Permanent" is protected in security mode, this control sequence will have no effect but to cause the terminal to beep.

Activated by: CTRL SPACEBAR E CTRL

Function: Carries out memory read/write test. In multiple environments, no action occurs.

Activated by: CTRL SPACEBAR H CTRL

Function: Sets baud to 600 and restarts data comm. If the System Data Comm Options menu is protected in security mode, this control sequence will have no effect but to cause the terminal to beep.

Activated by: CTRL SPACEBAR J CTRL
Function: Sets baud to 1200 and restarts data comm. If the System Data Comm Options menu is protected in security mode, this control sequence will have no effect but to cause the terminal to beep.

Activated by: CTRL SPACEBAR K CTRL
Function: Sets baud to 1800 for asynchronous or 2400 for synchronous and starts data comm. If the System Data Comm Options menu is protected in security mode, this control sequence will have no effect but to cause the terminal to beep.

Activated by: CTRL SPACEBAR M CTRL
Function: Display video alignment (display fills with Es)

Activated by: CTRL SPACEBAR V CTRL
Function: Display firmware version

Conditions:
Forms Page N Y

Outputs:

Page Data Cleared	X	X
Software Version Displayed	X	X
Exit Forms Mode	-	X
Exit Configuration Mode	-	-
Update Column Indicator	X	X
Update Row Indicator	X	X

Note A firmware version is formatted like this:

VERSION R*x.y.zzzz**T1RP*abbb*

The *x.y.zzzz* gives you the firmware revision level. The T1 is specific to the Unisys T 27 terminal. RP*abbb* is specific to the ROM pack.

Activated by: CTRL *nn* SPCFY

Function: Sends ESC *n n* to host (where *n* is a number from 0 to 9) along with cursor position. Can also send page number if the SPCFY Key Sends Page Number option is set *on* (see the Environment Keyboard Options menu in Section 1).

Activated by: CTRL *nn* XMIT

Function: Sends ESC *n n* to host (where *n* is a number from 0 to 9).

Activated by: CTRL XMIT

Function: Aligns DCP to the cursor and loads the data on the cursor line into the data comm buffer. If the cursor is at the beginning of the line, the entire line of data is loaded. If the cursor is not at the beginning of the line, the data between the beginning of the line and the last character before the cursor is loaded. Equivalent to the XMIT key if the Line At A Time Xmit option is set *on* (in the Environment Data Comm Options menu). See Appendix K for more information.

Escape Sequences and Data Communications Codes

This section consists of decision tables that describe the boundary conditions of the T 27. Each decision table includes the following fields:

- Function:** This field identifies the function being selected, for example, "Position Pointer".
- Activated By:** This field describes the way this function is invoked, for example, "<ESC> ^ hh kk".
- Conditions:** This field identifies all of the conditions that apply to the selected function. Y indicates that the condition is true, N indicates that the condition is false, and a hyphen indicates that the condition is irrelevant. Each column specifies *one* set of conditions.
- Output:** Each column in this field identifies the T 27 state that results from the conditions identified in the column directly above it. X specifies the effect of executing the conditions, and a hyphen indicates no effect. Thus, for each set of *conditions* (one column) there is a unique set of *outputs* (corresponding column) in the table.
- Note:** If the "Activated by" escape sequence or control code can perform another function, then reference to that function is made. For example, <DC2> can "Toggle Forms" or "Move Point Right" — refer also to the other function.

How to Read Decision Tables

Many of the escape sequences and data comm control codes are documented in detail by the use of decision tables. Each column in such a table describes a set of *conditions* and the *outputs* those conditions produce when the sequence or code is executed.

Under *conditions*, Y means the condition is true, N means the condition is not true, and - means the condition is irrelevant.

Under *outputs*, X means the corresponding output will occur as a result of the conditions listed in that column, and - means the corresponding output is unaffected.

Example

Function: Reset Forms Mode

Activated By: <ESC> X

Conditions:

Forms Mode	Y	Y	N
DCP on KBC Page	N	Y	-

Outputs:

Exit Forms Mode	X	X	-
Remove Forms Indicator from Status Line	-	X	-
Move DCP to Home	X	X	X

Column One

Conditions: Y means the page is in forms mode; N means the DCP is *not* on the KBC page.

Outputs: X means that the forms mode is exited; - means the forms indicator did not previously appear on the status line and thus cannot be *removed*; X means that the DCP moves to the home location.

Column Two

Conditions: Y means the page is in forms mode; Y means the DCP is on the KBC page.

Outputs: The forms mode is exited, the forms indicator is removed from the status line, and the DCP moves to the home location.

Column Three

Conditions: The page is not in forms mode and the DCP is not on the KBC page.

Outputs: The DCP moves to the home location.

Data Communications Text Entry

Decision tables are provided here for text character entry from the host.

Function: Text Character Entry

Activated By: SOH (01), STX (02), ENQ (05), ACK (06), DLE (10), NAK (15), ETB (17), CAN (18), EM (19), SUB (1A), FS (1C), GS (1D), RS (1E), US (1F), and SYN (16), which applies only if terminal is in asynchronous mode

Conditions:

Forms Mode	N	N	N	N	N	N	N	N	N	N
DCP at Last Screen Column	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP at Last Page Column	N	N	Y	Y	Y	Y	Y	Y	Y	Y
DCP at Last Screen Row	-	-	N	N	Y	Y	Y	Y	Y	Y
DCP at Last Page Row	-	-	N	N	N	Y	Y	Y	Y	Y
Search Initiated	-	-	-	-	-	-	-	-	-	-
Page > 80 Characters per Line	-	Y	N	Y	N	Y	N	Y	N	Y
Page > 24 Lines	-	-	-	-	Y	Y	N	N	Y	Y

Outputs:

Store Character at DCP Location	X	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	-	-	X	X	-	-	-	-
Scroll Page Down	-	-	-	-	-	-	-	X	X	-
Scroll Page Left	-	X	-	-	-	-	-	-	-	-
Scroll Page Right	-	-	-	X	-	X	-	X	-	X
Move DCP Right 1 Column	X	X	-	-	-	-	-	-	-	-
Move DCP to Column 1, Next Line	-	-	X	X	X	X	-	-	-	-
Move DCP to Page Home Position	-	-	-	-	-	-	X	X	X	X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Text Character Entry

Activated By: SOH (01), STX (02), ENQ (05), ACK (06), DLE (10),
NAK (15), ETB (17), CAN (18), EM (19), SUB (1A), FS (1C),
GS (1D), RS (1E), US (1F), and SYN (16),
which applies only if terminal is in asynchronous mode

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Character Is GS, US, FS, or RS	Y	N	N	N	N	N	N	N	N	N	N
DCP on GS, US, FS, or RS	-	Y	N	N	N	N	N	N	N	N	N
Char after DCP Is GS, US, FS, or RS	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP at Last Screen Column	-	-	-	-	-	-	-	-	-	-	-
DCP at Last Page Column	-	-	-	-	-	-	-	-	-	-	-
DCP at Last Screen Row	-	-	-	-	-	-	-	-	-	-	-
DCP at Last Page Row	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Right of Screen	-	-	N	Y	N	N	N	Y	Y	N	N
Next UPF Is Left of Screen	-	-	N	N	Y	N	N	N	N	Y	Y
Next UPF Is above Screen	-	-	N	N	N	Y	N	Y	N	Y	N
Next UPF Is below Screen	-	-	N	N	N	N	Y	N	Y	N	Y
Page > 80 Characters per Line	-	-	-	Y	Y	-	-	Y	Y	Y	Y
Page > 24 Lines	-	-	-	-	-	Y	Y	Y	Y	Y	Y

Outputs:

Store Character at DCP Location	-	-	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	-	-	-	-	X	-	X	-	X
Scroll Page Down	-	-	-	-	-	X	-	X	-	X	-
Scroll Page Left	-	-	-	X	-	-	-	X	X	-	-
Scroll Page Right	-	-	-	-	X	-	-	-	-	X	X
Move DCP Right 1 Column	-	-	-	-	-	-	-	-	-	-	-
Move DCP to Column 1, Next Line	-	-	-	-	-	-	-	-	-	-	-
Move DCP to Leftmost Position Next UPF	-	-	X	X	X	X	X	X	X	X	X
No Response	X	X	-	-	-	-	-	-	-	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page.
Occurance and placement of <ESC> & or <ESC> 6 in message will
determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Text Character Entry

Activated By: SOH (01), STX (02), ENQ (05), ACK (06), DLE (10),
NAK (15), ETB (17), CAN (18), EM (19), SUB (1A), FS (1C),
GS (1D), RS (1E), US (1F), and SYN (16),
which applies only if terminal is in asynchronous mode

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Character Is GS, US, FS, or RS	N	N	N	N	N	N	N	N	N	N
DCP on GS, US, FS, or RS	N	N	N	N	N	N	N	N	N	N
Char after DCP Is GS, US, FS, or RS	N	N	N	N	N	N	N	N	N	N
DCP at Last Screen Column	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
DCP at Last Page Column	Y	Y	Y	Y	N	N	Y	Y	Y	Y
DCP at Last Screen Row	Y	Y	Y	Y	-	-	N	N	Y	Y
DCP at Last Page Row	Y	Y	Y	Y	-	-	N	N	N	N
Next UPF Is Right of Screen	N	N	N	N	-	-	-	-	-	-
Next UPF Is Left of Screen	N	Y	N	Y	-	-	-	-	-	-
Next UPF Is above Screen	N	N	Y	Y	-	-	-	-	-	-
Next UPF Is below Screen	N	N	N	N	-	-	-	-	-	-
Page > 80 per Line	-	Y	-	Y	-	Y	N	Y	N	Y
Page > 24 Lines	-	-	Y	Y	-	-	-	-	Y	Y

Outputs:

Store Character at DCP Location	X	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	-	-	-	-	-	-	X	X
Scroll Page Down	-	-	X	X	-	-	-	-	-	-
Scroll Page Left	-	-	-	-	X	-	-	-	-	-
Scroll Page Right	-	X	-	X	-	-	X	-	X	-
Move DCP Right 1 Column	-	-	-	-	X	X	-	-	-	-
Move DCP to Column 1, Next Line	-	-	-	-	-	X	X	X	X	-
Move DCP to Leftmost Position Next UPF	X	X	X	X	-	-	-	-	-	-
No Response	-	-	-	-	-	-	-	-	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Forms Operations

Decision tables for set forms mode, reset forms mode, and toggle forms mode are provided here.

Function: Set Forms Mode

Activated By: <ESC> W

Conditions:

Forms Mode	Y	N	N	N	N	N	N	N	N	N
Alternate US Char on Page	-	N	Y	N	Y	Y	Y	Y	Y	Y
Alternate RS Char on Page	-	N	N	Y	Y	Y	Y	Y	Y	Y
GS Followed by Non-Delimiter on Page US or Alternate US Followed by Non-Delimiter on Page	-	N	N	N	N	Y	Y	Y	Y	Y
Search Mode Set	-	-	-	-	-	N	N	Y	Y	Y
First UPF on Page Is GS Field	-	-	-	-	-	Y	N	Y	N	-
Search Char before First UPF on Page	-	-	-	-	-	-	-	N	N	Y

Outputs:

Replace Alternate US with US	-	-	X	-	X	X	X	X	X	X
Replace Alternate RS with RS	-	-	-	X	X	X	X	X	X	X
Move DCP to Home Position	-	X	-	X	-	-	-	-	-	-
Put Page in Forms Mode	-	-	X	-	-	X	X	X	X	X
Put Forms Indicator in Status Line	-	-	X	-	X	M	M	M	M	M
Move DCP to Leftmost Position of First UPF on Page	-	-	X	-	X	-	X	-	X	-
Move DCP to Rightmost Position of First UPF on Page	-	-	-	-	-	X	-	X	-	-
Move DCP to Search Character	-	-	-	-	-	-	-	-	-	X
Initiate Search	-	-	-	-	-	-	-	-	-	X
Terminate Search	-	-	-	-	-	-	-	X	X	-
No Response	X	-	-	-	-	-	-	-	-	-

Note M in the "Outputs" field means:

X if the DCP is on the KBC page;

-if the DCP is not on the KBC page.

May cause col/row to be updated at ETX time if DCP is on KBC page.
Occurance and placement of <ESC> & or <ESC> 6 in message will
determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Reset Forms Mode

Activated By: <ESC> X

Conditions:

Forms Mode	Y	Y	N
DCP on KBC Page	N	Y	-

Outputs:

Exit Forms Mode	X	X	-
Remove Forms Indicator from Status Line	-	X	-
Move DCP to Home	X	X	X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Toggle Forms Mode

Activated By: <DC2>

Conditions:

Forms Mode	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
Alternate US Char on Page	-	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Alternate RS Char on Page	-	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
GS Followed by Non-Delimiter on Page	-	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
US or Alternate US Followed by Non-Delimiter on Page	-	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Search Mode Set	-	-	-	-	-	N	N	Y	Y	Y	Y	Y	Y	Y
First UPF on Page Is GS Field	-	-	-	-	-	Y	N	Y	N	-	-	-	-	-
Search Char before First UPF on Page	-	-	-	-	-	-	-	N	N	Y	-	-	-	-

Outputs:

Exit Forms Mode	X	-	-	-	-	-	-	-	-	-	-	-	-	-
Remove Forms Indicator From Status Line	M	-	-	-	-	-	-	-	-	-	-	-	-	-
Replace Alternate US with US	-	-	X	-	X	X	X	X	X	X	X	X	X	X
Replace Alternate RS with RS	-	-	-	X	X	X	X	X	X	X	X	X	X	X
Move DCP to Home Position	-	X	X	X	X	-	-	-	-	-	-	-	-	-
Put Page in Forms Mode	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Put Forms Indicator in Status Line	-	-	-	-	-	M	M	M	M	M	M	M	M	M
Move DCP to Leftmost Position of First UPF on Page	-	-	-	-	-	-	X	-	X	-	-	-	-	-
Move DCP to Rightmost Position of First UPF on Page	-	-	-	-	-	-	X	-	X	-	-	-	-	-
Move DCP to Search Character	-	-	-	-	-	-	-	-	-	-	-	-	-	X
Initiate Search	-	-	-	-	-	-	-	-	-	-	-	-	-	X
Terminate Search	-	-	-	-	-	-	-	X	X	-	-	-	-	-

Note M in the "Outputs" field means:

- X if the DCP is on the KBC page;
- if the DCP is not on the KBC page.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Move Pointer Right" function.

Function: Exit Forms Mode

Activated By: <SOH>

Note Menu option "SOH Exits FORMS" must be set to YES.

This function does not apply to any <SOH> within a message, but only to <SOH> in protocol header.

If DCP page is in forms mode, then forms mode is exited, and DCP is moved to home position.

If DCP is on KBC page, then FORM indicator on status line is cleared.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

Refer also to "Clear Page" function.

Search Operations

Decision tables for the set search mode and the reset search mode are provided here.

Function: Set Search Mode

Activated By: <ESC> E

Conditions:

Forms Mode	N	Y
------------	---	---

Outputs:

Search Scanning Enabled	X	-
Search Scanning Begins at HOME	-	X

Note Search message appears on status line.

Function: Set Search Character

Activated By: <ESC> - x
 <ESC> - <ESC> <SO> z <ESC> <SI>

Note If the search character is less than 80 hex, then use the first sequence; x is the search character.

Example: <ESC> - q defines the search character to be "q" (71 hex).

If the search character is an extended character (greater than 7F hex), then use the second sequence; z is the character, which, when OR'ed with 80 hex, yields the search character.

Example: <ESC> - <ESC><SO> q <ESC><SI> defines the search character to be F1 hex. (The graphic representation of this character depends on the character set of the language version in use.)

Function: Reset Search Mode

Activated By: <ESC> F

Conditions:

Forms Mode	-	-	-	-	-
Search Initiated	Y	Y	N	N	-
Search Character is "|" (7C)	N	Y	Y	N	-
DCP Is on KBC Page	Y	Y	Y	Y	N

Outputs:

Reset Search Mode and					
Clear Search Indicator from Status Line	X	X	X	X	-
Terminate Search	X	X	-	-	-
Reset Search Character to "|" (7C)	X	-	-	X	-

Pointer Movement

Decision tables for the pointer movement operations are provided here.

Function: Move Pointer Up

Activated By: <DC3>

Conditions:

DCP on Screen Row 1	Y	Y	N	Y	Y	Y	N	Y
DCP on Page Row 1	Y	N	N	Y	Y	N	N	Y
Page > 24 Lines	N	Y	-	Y	N	Y	-	Y
Forms Mode	-	-	-	-	-	-	-	-
DCP on KBC Page	N	N	N	N	Y	Y	Y	Y

Outputs:

Scroll Page Down	-	X	-	-	-	X	-	-
Scroll Page Up	-	-	-	X	-	-	-	X
Move DCP Up 1 Row	-	X	X	-	-	X	X	-
Move DCP to Last Page Row	X	-	-	X	X	-	-	X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Move Pointer Down

Activated By: <LF>

Conditions:

DCP on Last Screen Row	Y	Y	N	Y	Y	Y	N	Y
DCP on Last Page Row	Y	N	N	Y	Y	N	N	Y
Page > 24 Lines	N	Y	-	Y	N	Y	-	Y
Forms Mode	-	-	-	-	-	-	-	-
DCP on KBC Page	N	N	N	N	Y	Y	Y	Y

Outputs:

Scroll Page Up	-	X	-	-	-	X	-	-
Scroll Page Down	-	-	-	X	-	-	-	X
Move DCP Down 1 Row	-	X	X	-	-	X	X	-
Move DCP to First Page Row	X	-	-	X	X	-	-	X

Note Menu option "LF Interpretation" must be set to LF.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Carriage Return" function.

Function: Move Pointer Right

Activated By: <ESC> C

Conditions:

DCP at Last Screen Column	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
DCP at Last Screen Row	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	-
DCP at Last Page Column	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	-
DCP at Last Page Row	Y	Y	Y	Y	Y	Y	Y	N	N	-	N	N	-	-	-	-
DCP at End Page Alarm																
Position	Y	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	N	N
Page > 80 Chars/Line	Y	Y	N	N	Y	Y	N	N	Y	Y	-	-	-	-	-	-
Page > 24 Lines	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	-	-

Outputs:

Scroll Page Up	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-
Scroll Page Down	X	X	-	-	X	X	-	-	-	-	-	-	-	-	-	-
Scroll Page Left	-	-	-	-	-	-	-	-	-	-	X	-	-	X	-	-
Scroll Page Right	X	X	X	X	-	-	-	-	-	X	-	X	-	-	-	-
Move DCP to Next Page Column	-	-	-	-	-	-	-	-	-	-	X	-	-	X	X	-
Move DCP to Next Page Row	-	-	-	-	-	-	-	-	X	X	-	X	X	-	-	-
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	X	-	X	X	-	-	-
Move DCP to Page Row 1	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Move Pointer Right

Activated By: <DC2>

Conditions:

DCP at Last Screen Column	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
DCP at Last Screen Row	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	-
DCP at Last Page Column	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	-
DCP at Last Page Row	Y	Y	Y	Y	Y	Y	Y	N	N	-	N	N	-	-	-
DCP at End Page Alarm Position	Y	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	N
Page > 80 Chars/Line	Y	Y	N	N	Y	Y	N	N	Y	Y	-	-	-	-	-
Page > 24 Lines	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	-

Outputs:

Scroll Page Up	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-
Scroll Page Down	X	X	-	-	X	X	-	-	-	-	-	-	-	-	-
Scroll Page Left	-	-	-	-	-	-	-	-	-	-	X	-	-	X	-
Move DCP to Next Page Column	-	-	-	-	-	-	-	-	-	X	-	-	X	X	-
Move DCP to Next Page Row	-	-	-	-	-	-	-	X	X	-	X	X	-	-	-
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	-	X	X	-	-	-
Move DCP to Page Row 1	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-
Scroll Page Right	X	X	X	X	-	-	-	-	X	-	X	-	-	-	-
Sound Alarm	X	-	X	-	X	-	X	-	-	-	-	-	-	-	-

Note Menu option "DC2 Function" must be set to ADVANCES DCP.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Toggle Forms" function.

Function: Move Pointer Left (Backspace)

Activated By: <BS>

Note Moves DCP left by one column.

If DCP is at column 1, <BS> moves it to last column on previous row.

If DCP is at home position, <BS> moves it to last column on last row of page.

Function: Align KBC To DCP

Activated By: <ESC> &

Conditions:

KBC Page Is Forms Page	N	Y	N	N	Y	Y
DCP & KBC on Same Page	Y	Y	N	N	N	N
DCP Page Is Forms Page	-	-	N	Y	N	Y

Outputs:

Move KBC to DCP Location	X	X	X	X	X	X
Update Page Indicator	-	-	X	X	X	X
Update Row Indicator	X	X	X	X	X	X
Update Column Indicator	X	X	X	X	X	X
Set Forms Indicator	-	-	-	X	-	-
Reset Forms Indicator	-	-	-	-	X	-

Note Set "SOH Exits FORMS" Option to YES.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Tab Right

Activated By: <HT>

Conditions:

Forms Mode	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Menu Option "Tabs" set to VARIABLE	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y
Tab Stops Are Set	-	-	-	-	-	-	-	-	-	N	N	N	N	N
DCP on Last Tab Stop Column	N	N	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-
DCP on Last Page Line	-	-	N	N	N	N	Y	Y	Y	-	-	-	-	-
Next Tab Stop Column on Screen	Y	N	-	-	-	-	-	-	-	-	-	-	-	-
Next Page Line on Screen	-	-	Y	N	Y	N	-	-	-	-	-	-	-	-
First Tab Stop Column on Screen	-	-	Y	Y	N	N	Y	Y	N	N	-	-	-	-
Page Line 1 on Screen	-	-	-	-	-	-	Y	N	Y	N	Y	N	Y	N
Page Column 1 on Screen	-	-	-	-	-	-	-	-	-	-	Y	Y	N	N

Outputs:

Store HT at DCP Location	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Scroll Page Up	-	-	-	X	-	X	-	-	-	-	-	-	-	-
Scroll Page Down	-	-	-	-	-	-	-	X	-	X	-	X	-	X
Scroll Page Left	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	-	-	X	X	-	-	X	X
Move DCP to Next Tab Stop	X	X	-	-	-	-	-	-	-	-	-	-	-	-
Move DCP to First Tab Stop, Next Line	-	-	X	X	X	X	-	-	-	-	-	-	-	-
Move DCP to First Tab Stop, Page Line 1	-	-	-	-	-	-	X	X	X	X	-	-	-	-
Move DCP to Home Position	-	-	-	-	-	-	-	-	-	-	X	X	X	X

Note M in the "Outputs" field means:

X if menu option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;
 - if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.

May cause col/row to be updated at ETX time if DCP is on KBC page.
 Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Tab Right
Activated By: <HT> (Cont'd)

Conditions:

Forms Mode	N	N	N	N	N	N	N	N	N	N
Menu Option "Tabs" set to VARIABLE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tab Stops Are Set	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP on Last Tab Stop Column	N	N	Y	Y	Y	Y	Y	Y	Y	Y
DCP on Last Page Line	-	-	N	N	N	N	Y	Y	Y	Y
Next Tab Stop Column on Screen	Y	N	-	-	-	-	-	-	-	-
Next Page Line on Screen	-	-	Y	N	Y	N	-	-	-	-
First Tab Stop Column on Screen	-	-	Y	Y	N	N	Y	Y	N	N
Page Line 1 on Screen	-	-	-	-	-	-	Y	N	Y	N
Page Column 1 on Screen	-	-	-	-	-	-	-	-	-	-

Outputs:

Store HT at DCP Location	M	M	M	M	M	M	M	M	M	M
Scroll Page Up	-	-	-	X	-	X	-	-	-	-
Scroll Page Down	-	-	-	-	-	-	-	X	-	X
Scroll Page Left	-	X	-	-	-	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	-	-	X	X
Move DCP to Next Tab Stop	X	X	-	-	-	-	-	-	-	-
Move DCP to First Tab Stop, Next Line	-	-	X	X	X	X	-	-	-	-
Move DCP to First Tab Stop, Page Line 1	-	-	-	-	-	-	X	X	X	X
Move DCP to Home Position	-	-	-	-	-	-	-	-	-	-

Note M in the "Outputs" field means:

X if option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;
 - if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.

May cause col/row to be updated at ETX time if DCP is on KBC page.
 Occurrence and placement of <ESC> & or <ESC> 6 in message will
 determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Tab Right
Activated By: <HT> (Cont'd)

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP in or Past Last UPF	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Next UPF Is on Screen	Y	N	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Next UPF Is Right of Screen	-	Y	-	Y	N	N	Y	N	-	Y	-	Y	N	N	Y	N
Next UPF Is Left of Screen	-	-	-	N	Y	N	N	Y	-	-	-	N	Y	N	N	Y
Next UPF Is below Screen	-	-	-	N	N	Y	Y	Y	-	-	-	N	N	Y	Y	Y
First UPF Is on Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is above Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Outputs:

Scroll Page Up	-	-	-	-	X	X	X	-	-	-	-	-	X	X	X
Scroll Page Down	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Left	-	X	-	X	-	-	X	-	-	X	-	X	-	-	X
Scroll Page Right	-	-	-	-	X	-	-	X	-	-	-	-	X	-	-
Move DCP to Leftmost Position of Next UPF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Note M in the "Outputs" field means:

- X if option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;
 - if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.
- May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.
- ETX time = when ETX code is processed.

Function: Tab Right
Activated By: <HT> (Cont'd)

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP in or Past Last UPF	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is GS Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is US Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is GS Field	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
First UPF Is US Field	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is on Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is below Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is on Screen	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
First UPF Is Right of Screen	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N	Y
First UPF Is Left of Screen	N	N	Y	N	Y	N	N	N	Y	N	Y	N	Y	N
First UPF Is above Screen	N	Y	N	N	Y	Y	N	Y	N	N	Y	N	Y	Y

Outputs:

Scroll Page Up	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Down	-	X	-	-	X	X	-	X	-	-	X	-	X	X
Scroll Page Left	-	-	-	X	-	X	-	-	-	X	-	X	-	X
Scroll Page Right	-	-	X	-	X	-	-	-	X	-	X	-	X	-
Move DCP to Leftmost Position of First UPF	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Note M in the "Outputs" field means:

X if option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;

- if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.

May cause col/row to be updated at ETX time if DCP is on KBC page.

Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Tab Right

Activated By: <HT> (Cont'd)

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP in or Past Last UPF	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Next UPF Is GS Field	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
Next UPF Is US Field	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
First UPF Is GS Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is US Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is on Screen	Y	N	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Next UPF Is Right of Screen	-	Y	-	Y	N	N	Y	N	-	Y	-	Y	N	N	Y	N
Next UPF Is Left of Screen	-	-	-	N	Y	N	N	Y	-	-	-	N	Y	N	N	Y
Next UPF Is below Screen	-	-	-	N	N	Y	Y	Y	-	-	-	N	N	Y	Y	Y
First UPF Is on Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is above Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Outputs:

Scroll Page Up	-	-	-	-	X	X	X	-	-	-	-	-	X	X	X
Scroll Page Down	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Left	-	X	-	X	-	-	X	-	X	-	X	-	-	X	-
Scroll Page Right	-	-	-	-	X	-	-	X	-	-	-	-	X	-	-
Move DCP to Leftmost Position of Next UPF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Note M in the "Outputs" field means:

- X if option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;
 - if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.
- May cause col/row to be updated at ETX time if DCP is on KBC page.
 Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.
 ETX time = when ETX code is processed.

Function: Tab Right

Activated By: <HT> (Cont'd)

Conditions:

Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP in or Past Last UPF	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is GS Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is US Field	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is GS Field	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
First UPF Is US Field	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Next UPF Is on Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Right of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is Left of Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Next UPF Is below Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First UPF Is on Screen	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
First UPF Is Right of Screen	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N	Y
First UPF Is Left of Screen	N	N	Y	N	Y	N	N	N	Y	N	Y	N	Y	N
First UPF Is above Screen	N	Y	N	N	Y	Y	N	Y	N	N	Y	N	Y	Y

Outputs:

Scroll Page Up	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Down	-	X	-	-	X	X	-	X	-	-	X	X	-	-
Scroll Page Left	-	-	-	X	-	X	-	-	-	X	-	X	-	-
Scroll Page Right	-	-	X	-	X	-	-	-	X	-	X	-	-	-
Move DCP to Leftmost Position of First UPF	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Note M in the "Outputs" field means:

- X if option "HT Displayed on TAB FUNCTION: From DATACOMM" is ON;
- if option "HT Displayed on TAB FUNCTION: From DATACOMM" is OFF.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Clear Variable Tabs

Activated By: <ESC> #

Resets all variable tab stops.

Note Menu option "Tabs" must be set to VARIABLE.

Function: Vertical Tab Down

Activated By: <VT>

Conditions:

DCP in Page Row 1-8	Y Y Y N N N N N N N N N N N N N N N N
DCP in Page Row 9-16	N N N Y Y Y N N N N N N N N N N N N N N
DCP in Page Row 17-24	N N N N N N Y Y Y Y Y Y N N N N N N N N
DCP in Page Row 25-32	N N N N N N N N N N N N N N Y Y Y Y Y Y
DCP in Page Col. 1	N N Y N N Y N N Y N N Y N N Y N N Y N N Y
Page Line 1 on Screen	- - - - - - - - - - - - - - - Y Y Y N N N
Page Line 25 on Screen	- - - - - Y Y Y N N N - - - - - - - - -
Page Col. 1 on Screen	N Y - N Y - N Y - N Y - N Y - N Y -
Forms Mode	- - - - - - - - - - - - - - - - - - -

Outputs:

Scroll Page Up	- - - - - - - - - X X X - - - - - - -
Scroll Page Down	- - - - - - - - - - - - - - - - X X X
Scroll Page Right	X - - X - - X - - X - - X - - X - -
Move DCP to Page Line 1	- - - - - - - - - - - - - X X X X X X
Move DCP to Page Line 9	X X X - - - - - - - - - - - - - - - -
Move DCP to Page Line 17	- - - X X X - - - - - - - - - - - - - -
Move DCP to Page Line 25	- - - - - X X X X X X - - - - - - - -
Move DCP to Page Column 1	X X - X X - X X - X X - X X - X X -

Note Menu option "VT Page Advance" must be set to ON.

Menu option "Lines Per Page" must be set to 32.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Toggle Variable Tabs" function.

Function: Home
Activated By: <DC4>

Conditions:

Forms Mode	N N N N N N N N N	Y Y Y Y Y Y Y Y Y
DCP on Page Row 1	Y Y Y N N N N N N	- - - - - - - - -
DCP on Page Column 1	Y N N Y Y N N N N	- - - - - - - - -
Page Row 1 on Screen	Y Y Y Y N Y Y N N	- - - - - - - - -
Page Column 1 on Screen	Y Y Y Y N Y Y N N	- - - - - - - - -
DCP on Column of 1st		
Pos. 1st UF	- - - - - - - - -	Y Y N N N N N N N N
DCP on Row of 1st		
Pos. 1st UF	- - - - - - - - -	Y N Y N N N N N N N
1st UF Right Of Screen	- - - - - - - - -	N N N Y N N N Y Y N N
1st UF Left Of Screen	- - - - - - - - -	N N N N Y N N N N Y Y
1st UF above Screen	- - - - - - - - -	N N N N N Y N Y N Y N
1st UF below Screen	- - - - - - - - -	N N N N N Y N Y N Y

Outputs:

Scroll Page Up	- - - - - - - - -	- - - - - X - X - X
Scroll Page Down	- - - - X - - X X	- - - - X - X - X -
Scroll Page Right	- - X - - - X - X	- - - - X - - - X X
Scroll Page Left	- - - - - - - - -	- - - X - - - X X - -
Move DCP to Row 1		
Col. 1	- X X X X X X X X	- - - - - - - - -
Move DCP to 1st		
Pos. 1st UF	- - - - - - - - -	X X X X X X X X X X
No Response	X - - - - - - - -	X - - - - - - - - -

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.
 ETX time = when ETX code is processed.

Function: Jump To Page n

Activated By: <ESC> \$ n

Conditions:

Page n Exists	N	Y	Y
Page n Is Forms Page	-	N	Y

Outputs:

Move DCP to Home of Page n	-	X	-
Move DCP to Leftmost Position of First UPF on Page n	-	-	X
No Response	X	-	-

Note n must be a character (*not* a number) whose value is $v-31$, where v is the integer value of that character's ASCII code.

Example: <ESC> \$! causes a jump to page 2. Character "!", has ASCII code 33; thus $33 - 31 = 2$.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Position Pointer

Activated By: <ESC> ^ hh kk

Conditions:

Both hh and kk are valid	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
hh Value Is Out of Range	Y	Y	N	-	-	-	-	-	-	-	-	-	-
kk Value Is Out of Range	Y	N	Y	-	-	-	-	-	-	-	-	-	-
New Location Is on Screen	-	-	-	Y	N	N	N	N	N	N	N	N	N
New Location Is above Screen	-	-	-	-	Y	N	N	N	Y	Y	N	N	-
New Location Is below Screen	-	-	-	-	N	Y	N	N	N	N	Y	Y	-
New Location Is Right of Screen	-	-	-	-	N	N	Y	N	Y	N	Y	N	-
New Location Is Left of Screen	-	-	-	-	N	N	N	Y	N	Y	N	Y	-

Outputs:

Scroll Page Up	-	-	-	-	-	X	-	-	-	-	-	X	X
Scroll Page Down	-	-	-	-	X	-	-	-	X	X	-	-	-
Scroll Page Left	-	-	-	-	-	-	X	-	X	-	X	-	-
Scroll Page Right	-	-	-	-	-	-	-	X	-	X	-	X	-
Move DCP to Indicated Location	-	-	-	X	X	X	X	X	X	X	X	X	X
No Response	X	X	X	-	-	-	-	-	-	-	-	-	-

Note hh is a hex value that represents the desired column. kk is a hex value that represents the desired row.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Position Pointer

Activated By: <ESC> " c r

Conditions:

Both c and r are valid	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
c Value Is Out of Range	Y	Y	N	-	-	-	-	-	-	-	-	-
r Value Is Out of Range	Y	N	Y	-	-	-	-	-	-	-	-	-
New Location Is on Screen	-	-	-	Y	N	N	N	N	N	N	N	N
New Location Is above Screen	-	-	-	-	Y	N	N	N	Y	Y	N	N
New Location Is below Screen	-	-	-	-	-	N	Y	N	N	N	N	Y
New Location Is Right of Screen	-	-	-	-	-	N	N	Y	N	Y	N	Y
New Location Is Left of Screen	-	-	-	-	-	N	N	N	Y	N	Y	N

Outputs:

Scroll Page Up	-	-	-	-	-	X	-	-	-	-	X	X
Scroll Page Down	-	-	-	-	X	-	-	-	X	X	-	-
Scroll Page Left	-	-	-	-	-	-	X	-	X	-	X	-
Scroll Page Right	-	-	-	-	-	-	-	X	-	X	-	X
Move DCP to Indicated Location	-	-	-	X	X	X	X	X	X	X	X	X
No Response	X	X	X	-	-	-	-	-	-	-	-	-

Note c and r must be characters, whose value is v-31, where v is the integer value of the character's ASCII code. The c indicates the desired column; the r indicates the desired row.

Example: <ESC> " ! + would position the DCP to Column 2, Row 12.

In "132-column mode", only the first 97 columns and rows are accessible via this function.

Character	ASCII Code	Value
!	33	33-31=2
+	43	43-31=12

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Carriage Return

Activated By: <CR>

Conditions:

Option "CR Character Display: From DATACOMM" Is ON	N	N	N	N	N	N	N	N	N	N	N
Option "CR Interpretation" Is CR/LF	N	N	N	N	N	N	N	N	Y	Y	
Forms Mode	-	-	-	-	-	-	-	-	-	-	-
DCP on Delimiter	-	-	-	-	-	-	-	-	-	-	-
Page Column 1 on Screen	Y	Y	Y	Y	N	N	N	N	Y	N	
DCP on Last Screen Row	Y	Y	Y	N	Y	Y	Y	N	-	-	
DCP on Last Page Row	Y	Y	N	N	Y	Y	N	N	-	-	
Page > 24 Lines	N	Y	Y	-	N	Y	Y	-	-	-	

Outputs:

Write CR Char at DCP Location	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Up	-	-	X	-	-	-	X	-	-	-	-
Scroll Page Down	-	X	-	-	-	X	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	X	X	-	X	
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	X	
Move DCP to Page Row 1	X	X	-	-	X	X	-	-	-	-	
Move DCP Down 1 Row	-	-	X	X	-	-	X	X	-	-	

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Carriage Return
Activated By: <CR> (Cont'd)

Conditions:

Option "CR Character Display: From DATACOMM" Is ON	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Option "CR Interpretation" Is CR/LF	N	N	N	N	N	N	N	N	N	Y	Y
Forms Mode	N	N	N	N	N	N	N	N	N	N	N
DCP on Delimiter	-	-	-	-	-	-	-	-	-	-	-
Page Column 1 on Screen	Y	Y	Y	Y	N	N	N	N	N	Y	N
DCP on Last Screen Row	Y	Y	Y	N	Y	Y	Y	N	-	-	-
DCP on Last Page Row	Y	Y	N	N	Y	Y	N	N	-	-	-
Page > 24 Lines	N	Y	Y	-	N	Y	Y	-	-	-	-

Outputs:

Write CR Char at DCP Location	X	X	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	X	-	-	-	X	-	-	-	-
Scroll Page Down	-	X	-	-	-	X	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	X	X	-	X	-
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	X	X
Move DCP to Page Row 1	X	X	-	-	X	X	-	-	-	-	-
Move DCP Down 1 Row	-	-	X	X	-	-	X	X	-	-	-

Function: Carriage Return
Activated By: <CR> (Cont'd)

Conditions:

Option "CR Character Display: From DATACOMM" Is ON	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Option "CR Interpretation" Is CR/LF	N	N	N	N	N	N	N	N	N	Y	Y
Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DCP on Delimiter	N	N	N	N	N	N	N	N	N	N	N
Page Column 1 on Screen	Y	Y	Y	Y	N	N	N	N	N	Y	N
DCP on Last Screen Row	Y	Y	Y	N	Y	Y	Y	N	-	-	-
DCP on Last Page Row	Y	Y	N	N	Y	Y	N	N	-	-	-
Page > 24 Lines	N	Y	Y	-	N	Y	Y	-	-	-	-

Outputs:

Write CR Char at DCP Location	X	X	X	X	X	X	X	X	X	X	X
Scroll Page Up	-	-	X	-	-	-	X	-	-	-	-
Scroll Page Down	-	X	-	-	-	X	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	X	X	-	X	-
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	X	X
Move DCP to Page Row 1	X	X	-	-	X	X	-	-	-	-	-
Move DCP Down 1 Row	-	-	X	X	-	-	X	X	-	-	-

Function: Carriage Return

Activated By: <CR> (Cont'd)

Conditions:

Option "CR Character Display:																				
From DATACOMM" Is ON	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Option "CR Interpretation" Is CR/LF	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y					
Forms Mode	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
DCP on Delimiter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
Page Column 1 on Screen	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N					
DCP on Last Screen Row	Y	Y	Y	N	Y	Y	Y	Y	N	-	-									
DCP on Last Page Row	Y	Y	N	N	Y	Y	N	N	-	-										
Page > 24 Lines	N	Y	Y	-	N	Y	Y	-	-	-										

Outputs:

Write CR Char at DCP Location	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Up	-	-	X	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Down	-	X	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scroll Page Right	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Move DCP to Page Column 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Move DCP to Page Row 1	X	X	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Move DCP Down 1 Row	-	-	X	X	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-

Function: Carriage Return

Activated By: <LF>

Conditions:

Forms Mode	-	-	-	-	-	-	-	-
Page Column 1 on Screen	Y	Y	Y	Y	N	N	N	N
DCP on Last Screen Row	Y	Y	Y	N	Y	Y	Y	N
DCP on Last Page Row	Y	Y	N	N	Y	Y	N	N
Page > 24 Lines	Y	N	Y	-	Y	N	Y	-

Outputs:

Scroll Page Up	-	-	X	-	-	-	X	-
Scroll Page Down	X	-	-	-	X	-	-	-
Scroll Page Right	-	-	-	-	X	X	X	X
Move DCP to Page Column 1	X	X	X	X	X	X	X	X
Move DCP to Page Row 1	X	X	-	-	X	X	-	-
Move DCP Down 1 Row	-	-	X	X	-	-	X	X

Note Menu option "LF Interpretation" must be set to CR/LF.

May cause col/row to be updated at ETX time if DCP is on KBC page.
Occurance and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Move Pointer Down" function.

Function: Prevent Align in Cursor Page

Activated By: <ESC> 6

Conditions:

<ESC> & in DCOM Message	N	Y	Y
<ESC> & after <ESC> 6 in Message	-	N	Y

Outputs:

Align KBC to DCP	-	-	X
Do Not Align KBC to DCP	X	X	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "End of Text Processing" function.

Editing Sequences

Decision tables for the editing operations are provided here.

Function: Insert Character By Line

Activated By: <ESC> !

Conditions:

Forms Mode	N	Y	Y	Y
DCP in Protected Field	-	Y	N	N
DCP at End of GS or US Field	-	-	Y	N

Outputs:

Insert Blank at DCP Location	X	-	-	X
Shift Chars from DCP to End of Line				
Right One Space	X	-	-	-
Last Char on Line Lost	X	-	-	-
Shift Chars From DCP to End of Field				
Right One Space	-	-	-	X
Last Char in Field Lost	-	-	-	X
No Response	-	X	X	-

Function: Insert Character By Page

Activated By: <ESC> @

Conditions:

Forms Mode	N	Y	Y	Y
DCP in Protected Field	-	Y	N	N
DCP at End of GS or US Field	-	-	Y	N

Outputs:

Insert Blank at DCP Location	X	-	-	X
Shift Chars from DCP to End of Page				
Right One Space	X	-	-	-
Last Char on Page Lost	X	-	-	-
Shift Chars From DCP to End of Field				
Right One Space	-	-	-	X
Last Char in Field Lost	-	-	-	X
No Response	-	X	X	-

Function: Delete Character By Line

Activated By: <ESC> %

Conditions:

Forms Mode	N	Y	Y	Y	Y	Y
DCP in US Field	-	N	N	N	Y	N
DCP at Rightmost Position of GS Field	-	N	N	N	N	Y
DCP in Protected Field	-	N	Y	N	N	N
DCP on Delimiter	-	Y	N	N	N	N

Outputs:

Delete Character at DCP	X	-	-	-	X	X
Shift Chars from DCP to End						
of Line Left	X	-	-	-	-	-
Insert Blank at End of Line	X	-	-	-	-	-
Shift Chars from DCP TO End						
of Field Left	-	-	-	-	X	-
Insert Blank at End of Field	-	-	-	-	X	-
Shift Chars in Field Right	-	-	-	-	-	X
Insert Blank at Beginning of Field	-	-	-	-	-	X
No Response	-	X	X	X	-	-

Function: Delete Character By Page

Activated By: <ESC> P

Conditions:

Forms Mode	N	Y	Y	Y	Y	Y
DCP in US Field	-	N	N	N	Y	N
DCP at Rightmost Position of GS Field	-	N	N	N	N	Y
DCP in Protected Field	-	N	Y	N	N	N
DCP on Delimiter	-	Y	N	N	N	N

Outputs:

Delete Character at DCP	X	-	-	-	X	X
Shift Chars from DCP to End of Page Left	X	-	-	-	-	-
Insert Blank at End of Page	X	-	-	-	-	-
Shift Chars from DCP TO End of Field Left	-	-	-	-	X	-
Insert Blank at End of Field	-	-	-	-	X	-
Shift Chars in Field Right	-	-	-	-	-	X
Insert Blank at Beginning of Field	-	-	-	-	-	X
No Response	-	X	X	X	-	-

Function: Line Insert

Activated By: <ESC> L

Conditions:

Forms Mode	Y	N	N	N
DCP in Page Column 1	-	Y	N	N
Page Column 1 on Screen	-	Y	Y	N

Outputs:

Insert Blank Line at DCP Row	-	X	X	X
Scroll Page Right	-	-	-	X
Move DCP to Column 1	-	-	X	X
Last line on Page Lost	-	X	X	X
No Response	X	-	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Line Delete

Activated By: <ESC> M

Conditions:

Forms Mode	Y	N	N	N	N	N	N	N
DCP in Column 1	-	Y	Y	Y	N	N	N	N
Page > 24 Lines	-	N	Y	Y	N	Y	Y	Y
Last Page Line on Screen	-	Y	N	Y	Y	N	Y	Y

Outputs:

Move DCP to Column 1	-	-	-	-	X	X	X	X
Delete DCP Line	-	X	X	X	X	X	X	X
Move Lines from DCP to End of Page up 1 Row	-	X	X	X	X	X	X	X
Insert Blank line at End of Page Next Line from Display Store	-	X	X	X	X	X	X	X
Displayed at end of screen	-	-	X	-	-	X	-	-
No Response	X	-	-	-	-	-	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Move Line Up

Activated By: <ESC> >

Conditions:

Forms Mode	Y	N	N
DCP on Page Row 1	-	Y	N

Outputs:

Exchange DCP Line with Line above It	-	-	X
Exchange DCP Line with Last Line	-	X	-
Move DCP to Previous Row	-	-	X
Move DCP to Last Row	-	X	-
No Response	X	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Move Line Down

Activated By: <ESC> <

Conditions:

Forms Mode	Y	N	N
DCP on Last Page Line	-	Y	N

Outputs:

Exchange DCP Line with Line below It	-	-	X
Exchange DCP Line with Line 1	-	X	-
Move DCP to Next Row	-	-	X
Move DCP to Row 1	-	X	-
No Response	X	-	-

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Clear to End Of Line

Activated By: <ESC> K

Conditions:

Forms Mode	N	Y	Y	Y
DCP in Protected Field	-	Y	N	N
DCP in GS Field	-	N	Y	N
DCP in US Field	-	N	N	Y

Outputs:

Write Blanks from DCP to End of Line	X	-	-	-
Write Blanks from DCP to End of Field	-	-	X	X
No Response	-	X	-	-

Function: Clear to End Of Line

Activated By: <DC1>

Conditions:

Forms Mode	N	Y	Y	Y
DCP in Protected Field	-	Y	N	N
DCP in GS Field	-	N	Y	N
DCP in US Field	-	N	N	Y

Outputs:

Write Blanks from DCP to End of Line	X	-	-	-
Write Blanks from DCP to End of Field	-	-	X	X
No Response	-	X	-	-

Note Menu option "DC1 Function" must be set to LINE CLR.

Function: Clear To End Of Page

Activated By: <ESC> J

Conditions:

Forms Mode	N	Y	Y
DCP in Protected Field	-	N	Y

Outputs:

Write Blanks from DCP to End of Page	X	-	-
Write Blank in all UPFs From DCP To End of Page	-	X	-

Function: Roll Page Up

Activated By: <ESC> S

Conditions:

Forms Mode Y N

Outputs:

Shift Entire Page Up 1 Line - X

Move Top Line to Bottom Line - X

No Response X -

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Roll Page Down

Activated By: <ESC> T

Conditions:

Forms Mode Y N

Outputs:

Shift Entire Page Down 1 Line - X

Move Bottom Line to Top Line - X

No Response X -

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Clear Page

Activated By: <SOH>

Conditions:

Forms Mode	N	Y	Y
DCP on KBC Page	-	N	Y

Outputs:

Fill Page with Blanks	X	X	X
Move DCP to Home Position	X	X	X
Reset Forms Indicator	-	-	X

Note Menu option "SOH Clears Screen" must be set to ON.

This function does not apply to any <SOH> within a message, but only to <SOH> in protocol header.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Refer also to "Exit Forms Mode" function.

Function: Clear Page

Activated By: <FF>

Conditions:

Forms Mode	N	N	N	Y	Y	Y
Menu Option "FF Clears Tabs" Is ON	N	Y	Y	N	Y	Y
Variable Tabs in Effect	-	N	Y	-	N	Y
DCP on KBC Page	-	-	-	N	N	N

Outputs:

Fill Page with Blanks	X	X	X	-	-	-
Fill Unprotected Fields with Blanks	-	-	-	X	X	X
Move DCP to Home Position	X	X	X	X	X	X
Clear Variable Tabs	-	-	X	-	-	X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Clear Page

Activated By: <ESC> <FF>

Conditions:

Forms Mode	N	Y
------------	---	---

Outputs:

Fill Page with Blanks	X	-
Fill Unprotected Fields with Blanks	-	X
Move DCP to Home Position	X	X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Printer Command Sequences

Function: Print All

Activated By: <ESC>]

Prints DCP page from home position to DCP position (in either forms or nonforms mode).

For additional information refer to "Printer And Auxiliary I/O" in Section 10.

Function: Print All with Form Feed

Activated By: <ESC> ;

Prints DCP page from home position to DCP position (in either forms or nonforms mode). A form feed is executed following the last line of print.

For additional information refer to "Printer And Auxiliary I/O" in Section 10.

Function: Print Unprotected Data

Activated By: <ESC> :

Conditions:

Forms Mode	Y	N
------------	---	---

Outputs:

All Text in Unprotected Fields From Home to DCP Printed	X	-
All Text From Home to DCP Printed	-	X
Form Feed Generated After Last Line	X	X

For additional information refer to "Printer And Auxiliary I/O" in Section 10.

Function: Query Print Status

Activated By: <ESC>) 1

Note This sequence returns status of printer to host in following format:

<ESC>) 1 x

where x = 1 if printer is not ready, and x = 0 if printer is ready.

Function: Printer Space Compression

Activated By: <ESC> [n a

Note This function applies to printer passthrough (PPT) only.

n is ASCII representation of number (from 0 to 32767) of spaces to be compressed, and a terminates the escape sequence. (Filter algorithm reinserts appropriate spaces before data is sent to printer.)

Video Attribute Sequences

Function: Underline Video Highlight

Activated By: <ESC> 3

Note Starts underline video highlight. Stores <SI> at DCP location and advances DCP by one column.

If <SI> is used, menu option "SO/SI XTN" must be set to OFF.

Function: Reverse Video Highlight

Activated By: <ESC> 4

Note Starts reverse video highlight. Stores <SO> at DCP location and advances DCP by one column.

If <SO> is used, menu option "SO/SI XTN" must be set to OFF.

Function: End Highlight

Activated By: <ETB>

Note Turns off highlight. Stores ETB code at DCP as space and advances DCP one column.

Function: Start Video Blink

Activated By: <CAN>

Note Turns on video blinking. Stores CAN code at DCP as space and advances DCP one column.

Function: Start Secure Video

Activated By:

Note Starts secure highlight (characters typed are hidden by reverse video blank image). Stores EM code at DCP as space and advances DCP one column.

Function: Start Bright Video

Activated By: <SUB>

Note Turns on bright video. Stores SUB code at DCP as space and advances DCP one column.

Function: Set Reverse Video

Activated By: <ESC> N

Note Changes DCP page to reverse video (black on green). If DCP page is in forms mode, unprotected fields remain in normal video.

Function: Set Normal Video

Activated By: <ESC> 0

Note Restores DCP page to green on black.

Terminal Reconfiguration Sequences

Function: Store ASCII Codes as Data

Activated By: <ESC> R A aaaa cc dd...dd

Note aaaa = Starting address (in hex) where data is to be stored

cc = Length of data (number of bytes to be stored, in hex)

dd...dd = Data (hex-coded ASCII characters to be stored)

If specified character data is outside permitted range of 0 through F hex, this escape sequence is cancelled; however, all codes preceding "bad" character will be stored.

Any attempt to write to memory other than temporary storage area or KPT buffer will not be successful.

Follow this escape sequence by an <ESC> R C sequence.

Refer to "Byte Configuration" — Appendix E — for limitations that apply when multiple environments are in effect.

Function: Configure Data Comm, Screen, and KPT Buffers

Activated By: <ESC> R B mmm nnnn ppp

Note mmm = Data comm buffer size (in hex)

nnnn = Screen buffer size (in hex)

ppp = KPT buffer size (in hex)

When configuration is successful, six asterisks are displayed on page 1, beginning at column 1 of line 1, and then transmitted to host.

When configuration is not successful, following error code is displayed and then transmitted to host (refer to Appendix A):

CD hhhh (where hhhh is address of error)

Function: Reconfigure Terminal

Activated By: <ESC> R C

Note Causes reconfiguration of terminal. Use this escape sequence following an <ESC> R A or <ESC> R H sequence.

When configuration is successful, six asterisks are displayed on page 1, beginning at column 1 of line 1, and then transmitted to host.

When configuration is not successful, following error code is displayed and then transmitted to host (refer to Appendix A):

CD hhhh (where hhhh is address of error)

Refer to "Byte Configuration" — Appendix E — for limitations that apply when multiple environments are in effect.

Function: Selective Key Programming

Activated By: <ESC> R D hh pp...p 00 ii qq...q 00 nn zz...z 00 00

Keys on the terminal keyboard can be programmed from the host. Such programs are stored in the terminal's KPT buffer (or they may be saved to the terminal's permanent storage). Refer to Section 8, Key Programming, for detailed information.

Note hh = Hex value of first key to be programmed (refer to Appendix F)
pp...p = Program for first key
00 = End of first key program
ii = Hex value of second key to be programmed
qq...q = Program for second key
00 = End of second key program
nn = Hex value of nth key to be programmed
zz...z = Program for nth key
00 = End of nth key program
00 = End of escape sequence

Function: Store Data in Hexadecimal Codes

Activated By: <ESC> R H aaaa cc hhhh...hh

Note aaaa = Starting address(in hex) where data is to be stored

cc = Length of data (number of bytes to be stored, in hex)

hhhh...hh = Data (hexadecimal codes to be stored)

Used to write to temporary storage area or KPT buffer (refer to Section 8, Key Programming, for detailed information).

Follow this escape sequence by <ESC> R C sequence.

Refer to "Byte Configuration" — Appendix E — for limitations that apply when multiple environments are in effect.

Function: Program Function Keys f1 Through F10

Activated By: <ESC> R K ppp hh kk...k A9 ii qq...q A9
nn zz...z A9 A9

Keys on the terminal keyboard can be programmed from the host. Such programs are stored in the terminal's KPT buffer (or they may be saved to the terminal's permanent storage). Refer to Section 8, Key Programming, for detailed information.

Note ppp = Hex-coded ASCII value that defines length (in bytes) of key programming data that follows

hh = Hex value of first key to be programmed (refer to Appendix F)

kk...k = Program for first key (f1)

A9 = End of first key program

ii = Hex value of second key to be programmed

qq...q = Program for second key (f2)

A9 = End of second key program

nn = Hex value of nth key to be programmed

zz...z = Program for nth key (Fn)

A9 = End of nth key program

A9 = End of escape sequence

If key program length exceeds buffer size, escape sequence will end when size is *just* exceeded, and "buffer overflow" message is displayed on screen and transmitted to host.

Function: Transmit Error Log

Activated By: <ESC> R L

Note Terminal transmits error log to host immediately upon receipt of this escape sequence. Any message information that follows this sequence is lost.

Error log information is composed of 10 bytes of hex-coded ASCII data, as follows:

0 x 0 0 0 0 0 0 0 0

where x is any value between 30 hex and 3F hex.

Example 1: x = 0 (30 hex)

Example 2: x = ? (3F hex)

Function: Copy Temporary Storage into Nonvolatile RAM

Activated By: <ESC> R P

Note Copies contents of temporary storage into permanent storage, then performs following reconfiguration sequence:

Performs confidence test

Copies contents of permanent storage into temporary storage

Reconfigures terminal as described in <ESC> R C sequence, then displays six asterisks and transmits them to host.

If error occurs, error message is displayed and transmitted to host.

Refer to "Byte Configuration" — Appendix E — for limitations that apply when multiple environments are in effect.

Function: Display Message in Environmental User Status Line

Activated By: <ESC> R S cc dd...d

Note cc = Number of bytes (in hex) to be stored
dd...d = Data (message to be displayed)

Clears environmental user status line (columns one through 80) and displays message, beginning with column one. If cc exceeds 80 bytes, excess data is ignored. If cc is not expressed as specified (0 through 9, or A through F), this escape sequence is cancelled.

Function: Transmit Memory (Temporary Storage) Contents to Host

Activated By: <ESC> R T aaaa cc

Enables host to read terminal's temporary storage. Terminal transfers data into data comm buffer (in hex-coded ASCII), then goes into transmit mode.

Note aaaa = Starting address (in hex) from which data is to be read
cc = Number of memory bytes (in hex) to be transmitted

Any attempt to read memory outside of byte configuration area or KPT buffer area will cause space characters (20 hex) to be transmitted.

Miscellaneous Sequences

Function: Start Escape Sequence

Activated By: <ESC>

Note Incomplete by itself. Must be followed by any of the various escape-sequence codes in this section. DCP is not affected.

Function: Set Shift Out (To Extended Character Set)

Activated By: <ESC> <SO>
<SO>

Note If <SO> is used, menu option "SO/SI XTN" must be set to ON. Shifts out so that subsequent display characters are mapped through extended (secondary) character set. That is, terminal is "shifted out" to extended character set.

Refer to "Extended Characters and Highlights" — Appendix I — for detailed information.

Function: Reset Shift Out (Shift In)

Activated By: <ESC> <SI>
<SI>

Note If <SI> is used, menu option "SO/SI XTN" must be set to ON. Shifts in so that subsequent display characters are mapped through primary character set. That is, terminal is "shifted in" to primary character set.

Refer to "Extended Characters and Highlights" — Appendix I — for detailed information.

Function: Character Translation

Activated By: <ESC> ' x

Note In nonforms mode, stores logical product of DF hex and character x at DCP location and advances DCP one column.

In forms mode, same function is performed, but values of x from 1C to 1F hex are ignored.

Example:

Highlights can be written to DCP page for following values of x:

x = : (bright)

x = / (underscore)

x = . (reverse)

x = 7 (end highlight)

x = 8 (blink)

x = 9 (secure)

Function: Reset Keystroke Lockout

Activated By: <ESC> =

Note Unlocks keyboard buffer. Sets terminal to LOCAL mode and contents of keyboard buffer are interpreted.

Function: Fill with x

Activated By: <ESC> _ x

Note Fills the DCP page with character x and returns DCP to home position. However, if DCP is in a forms-mode page, only unprotected fields are filled with x, and DCP returns to data entry position of first unprotected field.

May cause col/row to be updated at ETX time if DCP is on KBC page. Occurrence and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.

ETX time = when ETX code is processed.

Function: Xmit Terminal Screen to Host

Activated By: <ESC> (

Note DCP page is put into transmit mode.

Refer to "Transmit Function" — Appendix K.

Function: Toggle Audible Alarm

Activated By: <ESC> ?
<BEL>

Note Activates audible alarm, if it has been enabled.

Function: Display Character Set

Activated By: <ESC> space C

Conditions:

Forms Mode N Y Y

Outputs:

DCP Page Cleared X X X

Character Set Displayed X X X

Exit Forms Mode - X X

Note May cause col/row to be updated at ETX time if DCP is on KBC page. Occurance and placement of <ESC> & or <ESC> 6 in message will determine if update is to be performed.
ETX time = when ETX code is processed.

Function: Load Contents of Permanent Storage and Reconfigure

Activated By: <ESC> space D

Note When single environment is enabled:
T 27 executes confidence tests, then loads system and environmental configuration parameters from permanent storage and reconfigures terminal (if no errors occur).
When more than one environment is enabled:
T 27 loads environmental configuration parameters from permanent storage and reconfigures that environment.
In either case, T 27 returns either six asterisks or error message to host.

Function: Continuous Confidence Test

Activated By: <ESC> space E

Note When single environment is enabled:
T 27 performs continuous confidence test (terminal must be turned off to terminate test).

When more than one environment is enabled:
No action occurs.

Function: Printer Interface Test

Activated By: <ESC> space F

Note When single environment is enabled:
T 27 performs printer interface test, then performs full system reconfiguration and returns either six asterisks or error message to host.

When more than one environment is enabled:
T 27 performs environmental reconfiguration only and returns either six asterisks or error message to host.

Any error messages returned to host are described in "Printer Test Error Codes" table in Appendix A.

Function: Display Firmware Version

Activated By: <ESC> space V

When transmitted via data comm, the response displayed on the terminal will be as follows:

```
Rx.y.zzaa*TbRPcddd
```

Where:

- R = Release (Replaced by S for Special Release)
- x = Version number (2 bytes, 1 to 99)
- .
- y = Release number (2 bytes, 1 to 99)
- .
- zzaa = Internal Burroughs tracking number (2 bytes, 0 to 99)
- * = Permanently displayed separator
- T = Machine type
- b = Machine type number (1 byte, 1 to 9)
- RP = ROM pack
- c = ROM pack number (1 byte, 1 to 9)
- ddd = ROM pack version number (3 bytes, 0 to 999)

Function: Toggle Variable Tabs

Activated By: <ESC> .

Conditions:

Forms Mode	-	-
Tab Stop Set at DCP Position	Y	N
Menu Option "Tabs" set to VARIABLE	Y	Y

Outputs:

Tab Stop Set	-	X
Tab Stop Reset	X	-

Note Menu Option "Tabs" must be set to VARIABLE.

Function: Toggle Variable Tabs

Activated By: <VT>

Conditions:

Forms Mode	-	-
Tab Stop set at DCP Position	Y	N

Outputs:

Tab Stop Set	-	X
Tab Stop Reset	X	-

Note Menu option "Tabs" must be set to VARIABLE.

Menu option "VT Page Advance" must be set to OFF.

Refer also to "Vertical Tab Down" function.

Function: Set Mobile Home

Activated By: <ESC> D

Note Mobile home position is set to column and row of DCP. Mobile home position is significant as start-of-transmission point for outgoing messages.

Function: Lower Case Disable

Activated By: <ESC> Y

Note Enables keyboard "LOCK" function, whose internal LED is lighted.

Function: Lower Case Enable

Activated By: <ESC> Z

Note Disables keyboard "LOCK" function, whose internal LED is turned off.

Function: End of Text Processing

Activated By: <ETX>

The <ETX> not only signifies the end of the message, but also stores an ETX code at the current location of the DCP, if the DCP page is not in forms mode, and menu option "DATACOMM ETX Display" is set to ON.

Moreover, if ETX has been stored, and menu option "ETX Advance" is set to ON, the DCP moves one space to the right.

If the DCP is located in the same page as the KBC, and the message does not contain a sequence that aligns the pointer and the cursor (either <ESC> & or <ESC> 6), the cursor is aligned with the DCP.

If a transmission number error has occurred, the "message lost" error is displayed on the status line. In addition, if the DCP page is not on the KBC page, and the DCP page is on pages 1 through 10, then stationary cursor information is maintained so that the keyboard cursor will be placed at a position that corresponds to the DCP when that page is entered at a later time.

If the DCP page is on the DBC page, then the col/row indicator on the status line is updated to correspond to the keyboard cursor's column and row.

Function: End of Transmission

Activated By: <EOT>

Note An EOT code in text causes a sequence error. Terminal goes into "waiting to be polled or selected" state.

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The Screen

This section describes how the T 27 displays terminal data and status information.

Screen Characteristics

The T 27 screen consists of horizontal lines of characters, with 30 normal-height lines on the screen. The 30 lines are organized into three distinct areas:

Environment window area	Top 26 lines
Borderline area	Line 27
Status line area	Lines 28-30

Environment Window Area

An environment window displays text from an environment's display store buffer for text editing, transmitting, and receiving. The T 27 can have up to three enabled environments and monitor mode, each with a display store buffer and corresponding window. The environment window area displays windows in either full-screen or split-screen view, selectable by the operator. Of the 26 lines, 24 display window data; the remaining two are used as separator lines between windows.

In full-screen view, the two separator lines are blank and are placed at the top of the screen (lines 1 and 2). The next 24 lines are dedicated to a single window from the keyboard environment.

In split view, the environment window area is divided into up to three horizontal windows. The separator lines are placed between these horizontal windows.

Columns 72-80 of each separator line contains a configurable environment ID that is displayed in reverse video. The default IDs are:

- ENVMNT 1
- ENVMNT 2
- ENVMNT 3
- MONITOR

Each separator line displays the ID for the environment whose window appears directly above that separator line. For example, the ENVMENT 2 ID appears on the separator line directly below the environment 2 window. If the ID is configured to be blanks only, the field in columns 72-80 is normal video, not reverse video.

Monitor Mode Window

The monitor window displays the contents of the monitor mode buffer. The monitor mode buffer functions as a single page, with 80 normal-height characters for each line. Monitor mode page size (number of lines) depends on the monitor mode buffer size (24 lines minimum).

Displayed data does not have highlighting features; that is, all control codes in the monitor mode buffer are displayed with the correct control code graphic.

Borderline Area

The borderline area consists only of line 27. This line acts as a horizontal separator between the environment window area and the status line area. This line usually contains a separator line with the *ENVMENT n* indication, to form a visual borderline. However, the programmer has a set-up option to switch line 27 to display the tab ruler, an indicator of the current tab stop locations of the current keyboard environment.

Status Line Area

Lines 28-30 consist of three status lines:

- Application (user) status line (28)
- Environment status line (29)
- System status line (30)

Each of these lines is described in more detail in the following subsections.

Application Status Line

The application status line displays information supplied by the host application program. Each environment has an application status line, but only the application line from the keyboard environment is displayed on line 28.

Environment Status Line

The environment status line displays information relating to the current environment. Table 4-1 shows the function of each column in the environment status line.

Table 4-1 Environment Status Line Columns

Column	Description	Function
1-16	System Messages	Displays messages indicating environment conditions, such as buffer overflow, receive error, or receipt of data from host system.
18-25	ENV ID	Indicates which environment is the keyboard environment.
27-30	Control Mode	Displays <i>CTRL</i> when control mode is active.
32-35	Forms Mode	Displays <i>FORM</i> indicating that the T 27 is in forms mode.
37-42	Insert Mode	Displays messages indicating that the T 27 is in page insert (<i>INS/PG</i>), line insert (<i>INS/LM</i>) or overwrite mode (indicated by a blank in these columns).
44-49	Search Mode	Displays <i>SEARCH</i> to indicate that the T 27 is in search mode.
51-56	Key Programming	During key programming, displays <i>B=xxxx</i> to indicate the number of bytes remaining in the temporary key programming buffer.
58-64	Column	Displays <i>COL</i> and the current KBC column position.
66-72	Row	Displays <i>ROW</i> and the current KBC row position.
74-80	Page	Displays <i>PAGE</i> and the current KBC page number.

System Status Line

The system status line contains one field only, the ENQ/RCV status, in columns 33-52. This field indicates when nonkeyboard environments are receiving or denying messages from the host. The appropriate environment number is displayed in reverse video to the right of:

ENQ text if selects are denied

RCV text if messages are received

The RCV number is highlighted until that environment has finished interpreting the message from the host. The ENQ highlight remains until that environment goes into receive mode. The ENQ/RCV status indicators are displayed only when more than one environment is enabled. Only enabled environments have their number displayed. The keyboard environment is not shown on this status line.

Viewing Information

Column Formats

Each environment's display store buffer can be configured for 40, 80, or 132 characters per line. One window can display a virtual 132 columns while other windows display 40 or 80 columns. This can be done even if all windows are displayed simultaneously in a split view.

132-Column Format

The 132-column display is virtual, displaying 80 characters at a time. Use horizontal scrolling to view the entire window.

To ensure that the keyboard cursor is always visible on the screen, the 80-column window for a 132-column line is automatically scrolled horizontally. That is, when the cursor moves beyond the left or right edge of the 80-column window, the entire window scrolls horizontally, one column at a time with the cursor. If the cursor moves in response to a move cursor command, the 80-column window moves a minimal distance to bring the cursor onto the screen.

You can control the movement of the 80-column window by using `SCROLL LEFT` and `SCROLL RIGHT`. This does not alter the position of the cursor on the screen, only the location of the window.

In general, all keyboard cursor movement results in automatic horizontal scrolling of the 80-column window, when needed, to ensure that the cursor is visible. This includes cursor movements resulting from tab operations, `CR/LF` operations, `CLEAR/HOME` keys, and all cursor movements while in forms mode.

Horizontal scrolling of the window may cause highlight codes to scroll off the screen to the left of displayed characters. If this occurs, the highlight code remains in effect for that line.

Highlight Characters

Table 4-2 Highlight Characters

Command	Hex Code	ASCII Symbol	Description
<code>CTRL H .</code>	0E	SO	Reverse
<code>CTRL H /</code>	0F	SI	Underline
<code>CTRL H 8</code>	18	CAN	Blink
<code>CTRL H 9</code>	19	EM	Secure (invisible)
<code>CTRL H :</code>	1A	SUB	Bright
<code>CTRL H ></code>	1E	RS	Ends highlight field (otherwise highlighting ends at end of line)
<code>CTRL H 7</code>	17	ETB	Ends highlight field (otherwise highlighting ends at end of line)

Background Video Toggle

You can also select the default background screen by page. If you select a light background, reverse or secure video highlights have opposite attributes.

	Keyboard	Data Comm
Dark characters/light background	CTRL U	<ESC N>
Light characters/dark background	CTRL I	<ESC O>

T 27 Window Characteristics

Full-Screen and Split-Screen Views

In full-screen view, a single window is dedicated to the keyboard environment. In split view, the display is divided horizontally into either two or three windows, depending on the number of windows you want to view simultaneously.

In split view, windows are always allocated to the environments in numerical order, from the top of the screen to bottom. Table 4-3 shows the order in which environments are always displayed. In this table, *mm* indicates the monitor mode window.

Table 4-3 Environment Display Order

Three environments:	(1,2,3)
Two environments and monitor mode:	(1,2,mm); (1,3,mm); (2,3,mm)
Two environments:	(1,2); (2,3); (1,3)
One environment and monitor mode:	(1,mm); (2,mm); (3,mm)

The number of enabled environments determines the number of windows that can be displayed in split view. For example, when only one environment is enabled, only one window is displayed. In this case, both full- and split-screen views are the same.

Window Configuration

A split view can be configured. Full-screen view requires no configuration; it always dedicates all 24 lines to the keyboard environment. Window configuration is accessible only from the keyboard, not from the host. It is not affected by set-up mode security.

To configure a window, press CONFIG. The application status line, environment status line, and system status line (lines 28-30) are temporarily replaced with this three-line window configuration menu:

```

                                Window Configuration Menu
Lines E1 _____ Lines E2 _____ Lines E3 _____
Lines Mon. Mode _____ TOTAL LINES/SCREEN = 24  EXIT MENU

```

This menu operates similarly to the menus available in set-up mode. Notice the information field labeled *TOTAL LINES/SCREEN = 24* in the example. The number in this field (24) changes to reflect the current sum of the number of lines in the four choice fields on the menu.

The top line of the menu displays the environment choice fields. In the example, all three environments are enabled. However, if an environment is not enabled, no choice field for its window is displayed.

The fourth choice field, prefaced by the text *Lines Mon. Mode*, is displayed only if monitor mode is enabled.

On entry to the menu each environment's (and monitor mode's) choice fields reflect the number of lines currently dedicated to its window in split view. Although the *Lines Mon. Mode* field may create a total of four fields, the split view is limited to a maximum of three windows. In this case, one of the fields must be set to zero. Setting the field to zero eliminates that window from split view. However, it is always available in full-screen view.

To configure windows, use the arrow keys to move among choice fields. When selected, choice fields are displayed in reverse video. To change the number of lines for that window, press RETURN to cycle through the even numbers from 0-24.

The number of lines per window is limited to even numbers to ensure that double-height lines are correctly displayed. The menu choice numbers represent normal-height lines. Selecting zero for a window line count removes that window from the split view.

As you change numbers in the choice fields, the information field *TOTAL LINES/SCREEN* = is updated. With a valid configuration, you can exit the window configuration menu by selecting the *EXIT MENU* field and then pressing RETURN.

If the configuration is invalid, the message *Invalid Window Configuration* is displayed on the borderline. You cannot exit the window configuration menu until the total number of lines equal 24 and a maximum of three windows are enabled.

No changes occur to the window sizes of the screen while the window configuration menu is displayed. When you exit from the menu, the new configuration is in effect. Also after exit, the status line area is restored. If the keyboard environment window is not available in the split view because its line count was set to zero, the keyboard environment is displayed in full-screen view.

In some cases, you may want to save the window configuration to permanent storage. To do this:

- 1 Access set-up mode.
- 2 From the Main menu, use the arrow keys to select any system menu, and then press RETURN.
- 3 Use the arrow keys to select the main menu command field, and then press RETURN.
- 4 Use the arrow keys to select the *EXIT/SAVE TO PERMANENT* command field, and then press RETURN. The configuration is now permanently stored.

Switching T 27 Split and Full-Screen View

When the keyboard environment's window is in split view, you can temporarily switch this window to a full-screen view by pressing FULL.

You can then edit this window in a full-screen view. The screen returns to split view when you press SPLIT.

When you switch keyboard input to another window, and the screen is already in a split view, the new keyboard window may be already on the screen. Switching environments activates the keyboard cursor in that new window, in split view.

Editing a Page in Its Window

Generally, the lines displayed in a window scroll up or down as necessary to ensure that the cursor is located on one of the window lines. This is true for both full and split screens, whenever the number of lines in the displayed window is smaller than the page size it is displaying.

For example, executing the clear function clears the full page, regardless of whether every line in the full page is currently visible. However, the clear function also homes the keyboard cursor. This adjusts the window to display the top of the page, with the keyboard cursor visible in the home position.

Another example is the NEXT key, which switches from the current page to a new page within a given window. When the new page is displayed, the cursor is displayed at the same position on the page. This feature may be described as a stationary cursor. The stationary cursor is in effect for the first ten pages only. For the eleventh page and subsequent pages, the cursor moves to the home position.

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Monitor Mode

Field engineers, system analysts, and advanced programmers use monitor mode to view data transmissions for analysis and debugging.

Display of Data

When monitor mode is in effect, the screen displays data that is transmitted to and from each terminal on the serial line. This does not include data that is sent from upstream terminals to the host. Data transmission is constantly updated; you can invoke monitor mode at any time and see current data transmissions, regardless of when you last invoked monitor mode.

The display of data begins in the home position and proceeds from left to right, top to bottom. When data fills the buffer, which can be larger than the screen, data begins overwriting previously displayed data starting from the home position.

You cannot change the left-to-right, top-to-bottom display pattern. You can position the cursor anywhere on the screen and the pattern will not change. Even if you clear the screen, new data is displayed starting from where it left off, not from the home position.

To clear the screen, press SHIFT-HOME. To halt the display of incoming data, press LOCAL. To resume the display of incoming data, press RECEIVE. For additional information, see the descriptions of these keys later in this section.

Highlight Characters

For the sake of easier readability, each highlight character is displayed as its graphic character and does not perform its highlight function.

Scrolling

By moving the cursor to the top or bottom of the window, it is possible to scroll the display. For example, by moving the cursor to the bottom of the screen, and pressing the down arrow, the data scrolls up. Scrolling is possible only if the buffer is larger than the window.

Split-Screen View and Full-Screen View

To use monitor mode, access the System Partition and International menu and allocate at least 1920 bytes of memory to the monitor mode buffer. For additional information, see Section 1, "Set-Up Mode."

Caution: Do not allocate a monitor mode buffer if your T 27 is used under the following conditions:

- In a synchronous RS232 concatenated environment
- The host fills the line with SYN characters, rather than allowing it to go idle
- It is not the last terminal on the line

If all of these conditions are met and a monitor mode buffer has been allocated, the T 27 will occasionally miss polls and selects. It may also interfere with data comm to downstream terminals.

Monitor mode operates in full-screen view or split-screen view. Operating in split-screen view is particularly useful in that you can interact with the host in an environmental window while monitoring line activity in the monitor mode window. To display monitor mode in split view, see Section 4, "The Screen," for window configuration.

The SPLIT and FULL keys are not functional in monitor mode. To change view, exit to an enabled environment, press SPLIT or FULL, and then reinvoke monitor mode.

Invoking Monitor Mode

To invoke monitor mode, press CTRL SHIFT-JM.

You can invoke monitor mode from any environment. After you invoke monitor mode, the status lines at the bottom of the screen continues to display information about the environment that you came from.

Monitor Mode Key Functions

The following keys are functional in monitor mode:

- The environment 1, 2, and 3 keys: To exit from monitor mode
- BACKSPACE: Same function as left arrow key
- Arrow keys: To move the cursor
- HOME: To move the cursor to the home position
- SHIFT-HOME (CLEAR): To clear the screen
- LOCAL: To halt the display of incoming data
- RECEIVE: To resume the display of incoming data

Note: The LTAI LED is the only functional LED in monitor mode. Therefore, when you press LOCAL or RECEIVE, their LEDs do not turn on.

Arrows and HOME

You can move the cursor anywhere without affecting the position where data is displayed. It is possible to scroll the display by moving the cursor to the top or bottom of the window. For example, to make the display scroll up, move the cursor to the bottom of the window and press the down arrow. Scrolling is possible only if the buffer is larger than the window.

SHIFT-HOME (CLEAR)

Press SHIFT-HOME to clear the buffer and move the cursor to the home position.

When the display is halted (LOCAL is pressed), the screen remains clear until RECEIVE is pressed. See "LOCAL and RECEIVE" (the following subsection) for additional information.

When the display is not halted, previously displayed data is cleared and new data is displayed as it is transmitted or received, continuing from the location where data was last displayed.

LOCAL and RECEIVE

- Press LOCAL to halt the display.
- Press RECEIVE to resume the display.

Halting the display allows you to do the following:

- Analyze data before it is overwritten (see “Display of Data,” earlier in this section).
- Isolate the data that you want to analyze.

Exiting Monitor Mode

To exit monitor mode, return to a specific environment by pressing the appropriate key. (For example, to return to environment 1, press the environment 1 key.)

Note: When you reinvoke monitor mode after exiting, the display may appear in one of two conditions, depending on whether LOCAL or RECEIVE was pressed before exiting:

- If the display was halted, you see the same halted data that was displayed when monitor mode was last exited.
- If the display was not halted, you see current data as it is received or transmitted.

Forms Mode

Forms mode provides a structured data entry capability for communicating with host application programs. A typical form consists of various fields containing headings, prompts, messages, and data entry areas. Some fields are protected in that they cannot be overwritten. Only data entry fields are unprotected. The fields in a form can be selectively sent to the host when data is transmitted. See Figure 6-1 for an example of a form with protected and unprotected fields.

Note; The sample forms in this section include boxes as a means for identifying fields. It is not possible to reproduce these boxes when creating forms.

Creating Forms

Forms can be created from the keyboard or from the host. A form must have at least one unprotected field, since the purpose of a form is to provide keyboard operators with data entry fields.

Each form must be created in nonforms mode, using delimiters to begin and end each field. (See "Delimiters" later in this section for information on entering delimiters.)

Figure 6-1 Sample Form with Protected and Unprotected Fields

INTEROFFICE MEMO

DATE September 1, 1986

TO Christopher Thompson

FROM Suzanne Cohen

SUBJECT Expenses

Here are last month's expenses from
the Data Processing Department.

Enter Items:	Enter Amounts:
Paper	\$ 350.00
Office Supplies	\$ 50.00
TOTAL \$	400.00

Regards,

- Shaded Text** Protected; transmittable
- Normal Text Protected; nontransmittable
- Left justified; unprotected
- Right justified; unprotected

Forms Fields

A forms page can contain up to four types of fields:

- Left justified (unprotected US field)
- Right justified (unprotected GS field)
- Transmittable (protected FS field)
- Nontransmittable (protected)

To create each unprotected field (US or GS) in nonforms mode, enter the following:

- 1 A starting delimiter (US or GS character)
- 2 Enough spaces to allow data entry
- 3 An ending delimiter (RS character or another starting delimiter — see “Contiguous Fields” later in this section)

To create each transmittable protected field, enter the following:

- 1 A starting delimiter (FS character)
- 2 The text to be protected (prompt, heading, etc.). These fields cannot be overwritten in forms mode
- 3 An ending delimiter (RS character or another starting delimiter—see “Contiguous Fields” later in this section)

To create each nontransmittable protected field, do not enter delimiters. Enter text in one or more of the following areas:

- Between home and the first delimiter
- Between the ending delimiter of one field and the starting delimiter of the next field
- Between the last ending delimiter and the end of the page

Nontransmittable fields cannot be overwritten in forms mode.

For additional information on delimiters, see “Delimiters” later in this section.

Forms Field Characteristics

Each field can begin on one line and end on another line, or continue to the end of the page. Note that if a field is not ended with a delimiter, the end of the page ends the field.

Unprotected fields (US and GS): Keyboard operators use these fields to enter data in forms mode. Unprotected fields are transmittable. For additional information on transmitting forms to the host, see "Data Transmission" later in this section.

Transmittable protected fields usually serve as prompts or labels for unprotected fields (such as Last Name, First Name, and so on).

Nontransmittable protected fields usually serve as headings, titles, or information about the form; they are protected and cannot be transmitted to the host unless search mode is in effect. See Section 7 for additional information on search mode.

Delimiters

Delimiters must be entered to begin and end each field. Each field begins with a unique starting delimiter:

- ▶ US character starts each left-justified field (unprotected US).
- ▲ GS character starts each right-justified field (unprotected GS).
- ◆ FS character starts each transmittable field (protected).
- ◀ RS character can end all fields.

The graphic symbol for each delimiter appears on the screen both when a form is created (in nonforms mode) and when it is used (in forms mode).

Delimiter Characteristics

- Delimiters cannot be overwritten in forms mode.
- Delimiters cannot be added to the form in forms mode.
- Delimiter graphic symbols can be configured to be invisible. For additional information, see Section 1, “Set-Up Mode” on using the Forms Delimiter Option within the Environment Video Options menu.
- Alternate delimiters can be configured. See “Alternate Delimiters” later in this section.

Entering Delimiters

Enter delimiters from the keyboard by using control sequences or alternate delimiters. To enter delimiters from the host, the appropriate hex code must be sent.

From the Keyboard

To specify delimiters from the keyboard, enter CTRL H *x* where *x* is one of the following characters: < ? = >

CTRL H ?	▶ US begins left-justified unprotected fields.
CTRL H =	▲ GS begins right-justified unprotected fields.
CTRL H <	◆ FS begins transmittable protected fields.
CTRL H >	◀ RS can end all transmittable fields.

Depending on the keyboard language version, it may also be possible to enter the GS character ▲ by pressing SHIFT-ETX instead of entering CTRL H =Ⓢ

From the Host

To send delimiters from the host, use the hex code for that delimiter (see Table 6-1). The host can also send hex codes for characters that are configured as alternate delimiters.

Table 6-1 Delimiters

Delimiter Character & Graphic Symbol	Description	Keyboard Sequences	Hex Code From Host	Alternate Delimiter
US ►	Begins left-justified unprotected fields	CTRL H ? SHIFT-ETX	1F	Allowed
GS ▲	Begins right-justified unprotected fields	CTRL H = or SHIFT-ETX	1D	None
FS ◆	Begins transmittable protected fields	CTRL H <	1C	None
RS ◀	Can end all fields	CTRL H >	1E	Allowed

Compare Figure 6-2 with Figure 6-3 to relate the delimiter characters to their graphic symbols.

Note: It is also possible to enter delimiters and fields by copying them. See Section 9, "Data Sharing," for additional information.

Contiguous Fields

To create a form that contains several contiguous fields, use the starting delimiter of each field to end the preceding field. For example, to create contiguous left- and right-justified fields, do the following:

- 1 Enter a US delimiter (▶).
- 2 Enter enough spaces for data entry.
- 3 Enter a GS delimiter (▲) for the next field.
- 4 Repeat steps 1 and 2 for each field that you want to create.
- 5 To end the last field, enter an RS character (◀).

The following is an example of five contiguous left- and right-justified fields.

▶Left-▲and right-justified▶unprotected▲contiguous fields◀

Alternate Delimiters

It is possible to configure a character as an alternate delimiter for the US character (▶) and the RS character (◀). Doing so allows the use of a single character (instead of a CTRL H sequence) to enter a delimiter.

To set each alternate delimiter, choose a character that will not be used anywhere else on the form. Enter that character in the US Alternate Delimiters option in the Environment Video Options menu. Enter a different character in the RS Alternate Delimiters option. See Section 1 for additional information on using the Environment Video Options menu.

In nonforms mode, the characters are displayed. When forms mode is invoked, the characters are converted to US and RS characters and their graphic symbols are displayed.

Any character can be set as an alternate delimiter; however, it should be chosen carefully. For example, selecting the blank character is not recommended because a page of blanks could result in a page of delimiters (no fields).

Forms Options

The following options affect forms mode operations. See Section 1, "Set-Up Mode" for information on using each menu.

Auto FORM Field ADVANCE (resides in the Environment Video Options menu): See Section 2, "Keyboard Functions" for additional information.

SOH Exits Forms (resides in the Environment Datacomm Options menu): See Section 3, "Escape Sequences and Data Communications Codes" for additional information.

DC2 Function (resides in the Environment Datacomm Options menu): See Section 3 for additional information.

Forms Delimiter Invisible (resides in the Environment Video Options menu)

Return Key in Forms (resides in the System Keyboard and Screen menu): See Section 2 for additional information.

Using Forms

Each form is created in nonforms mode and then used in forms mode. To invoke forms mode, a form must be displayed. (A page must contain at least one unprotected field to be considered a form.) If a form is not displayed when an attempt is made to invoke forms mode, nonforms mode remains in effect and the cursor moves to the home position.

Invoking Forms Mode

When forms mode is invoked, the cursor moves to the form's Home position, which is the first data entry position in the first unprotected field.

From the Keyboard

- CTRL W

When forms mode is successfully invoked and the cursor page is in forms mode, the environment status line displays *FORM*.

From the Host

- <ESC> W

To invoke forms mode from the host, the DCP page must contain a form. *FORM* is displayed in the environment status line only if the DCP page is the same as the cursor page. If not, *FORM* be displayed until the cursor is moved to that page.

Exiting Forms Mode From the Keyboard

- CTRL Q

See Section 2, "Keyboard Functions," for additional information.

Exiting Forms Mode from the Host

- <ESC> X
- DC2
- SOH

See Section 3, "Escape Sequences and Data Communications Codes," for additional information.

Data Entry From the Keyboard

If the cursor page is in forms mode, only unprotected fields can be used for data entry. Delimiters are the only characters that cannot be entered.

Left Justified (Unprotected US Field)

Keyboard operators use these fields to enter left-justified data.

The first data entry position is the leftmost position of the field; data can be entered from any position.

As each character is entered, it is displayed at the cursor position and the cursor moves one position right.

See Section 2 for descriptions of keyboard functions in forms mode.

Right Justified (Unprotected GS Field)

Keyboard operators use these fields to enter right-justified data (usually numbers).

The *only* data entry position is the rightmost position of the field.

As each character is entered, the cursor remains at the data entry position and previously entered data moves left one position.

When the field is full, each additionally entered character forces the leftmost character to be discarded.

Data Entry from the Host

If the DCP page is in forms mode, the host can enter text into both protected and unprotected fields; however, it cannot overwrite delimiters. When the host enters data into unprotected fields, the data is entered from left to right, regardless of whether the field is right- or left-justified. See Section 3, "Escape Sequences and Data Communications Codes" for additional information.

Data Transmission

Depending on several conditions, different data is transmitted. All options that affect data transmission are in the Environment Datacomm Options menu. Details are provided in Appendix K, "Transmit Function." Some highlights are as follows:

- If the Form Xmit to Cursor option is on, transmittable data between the mobile Home position and the cursor is sent to the host.
- If an ETX character is on the page, transmittable data from the home position to the ETX character is sent to the host.
- If the Form Xmit to Cursor option is on, and an ETX character is on the page, transmittable data from the cursor to the ETX character is sent to the host. If, however, the cursor is positioned after the ETX character, only the data before the ETX is sent to the host.

- If the Line At A Time Xmit option is on, transmittable data from the left margin of the cursor line to the cursor is sent to the host.
- CTRL XMIT always sends transmittable data on a line-at-a-time basis. Its operation is identical to that of Line At A Time Xmit when that option is on.
- If search mode is in effect, all fields including “nontransmittable fields” are sent to the host.

From the Keyboard

To transmit a form's data to the host, the cursor can be in any location in the form. The keyboard operator can do either of the following:

- Press XMIT.
- Press CTRL XMIT to transmit a line at a time.

From the Host

If the DCP page is in forms mode, the host can send the following sequence to transmit that form's data:

- <ESC> (

The criteria for loading the data comm buffer is similar to the transmit operation from the keyboard. The only difference is that the DCP is used instead of the cursor. If the menu option DC1 Function is configured to STAY IN RCV, and both the DC1 and an <ESC> (occur in the same message, <ESC> (takes precedence. This means that rather than staying in receive mode, the T 27 transmits data.

(

(

(

Search Mode

Keyboard operators can use search mode to locate a specified character within a page of text. While search mode is in effect, it is possible to search one character and then choose whether or not to overwrite it.

Search Mode Operations

The default search character is a vertical bar: | (7C hex).

Each search is conducted on a one-page basis; when a search reaches the end of a page, it continues from the home position of that page. When no more search characters exist, the cursor returns to the home position (in nonforms mode).

To search other pages, press NEXT or BACK and then reactivate the search by pressing SHIFT-TAB.

When searching for a lowercase character, uppercase characters will not be found. Similarly, when searching for an uppercase character, lowercase characters will not be found.

The following table describes search mode operations. For information on using search mode in forms mode, see "Nonforms Mode Vs. Forms Mode" later in this section.

Note: Invoking search mode and specifying the search character can be performed in either order.

Operation	From the Keyboard	From the Host
To invoke search mode	CTRL A The environment status line displays <i>SEARCH</i> .	<ESC> E The environment status line displays <i>SEARCH</i> .
To specify the search character	CTRL E x Note: <i>x</i> represents the search character.	<ESC> - x Note: <i>x</i> represents the search character.
To activate the search	SHIFT-TAB The cursor automatically moves to the first search character.	
To overwrite	Type the character. The search character is overwritten and the cursor moves to the next search character. To deactivate the search, press a nontext key (such as CTRL). The search will not continue unless it is reactivated by pressing SHIFT-TAB.	
To exit search mode	CTRL S The environment status line no longer displays <i>SEARCH</i> .	<ESC> F To exit search mode, the KBC page and the DCP page must be the same. The environment status line no longer displays <i>SEARCH</i> .

Programmed Keys

If the operator specifies the search character using a key that has been programmed, the first character of the key program will be used as the search character. If the program contains more than one character, the remaining characters in the key program will be interpreted as if entered from the keyboard.

Nonforms Mode Vs. Forms Mode

Search mode operations vary, depending on whether search mode is invoked when the page is in forms mode or nonforms mode.

Search Operations In Nonforms Mode

When search mode is invoked, you must activate the search by pressing SHIFT-TAB. The search begins from the cursor position on the screen. The cursor moves to the first character found in the search, moving left to right, top to bottom.

You can specify the search character either before or after invoking search mode. You can also use the default search character (vertical bar: |).

Search Operations In Forms Mode

When search mode is invoked, the search is automatically activated. The search begins from the cursor position, moving left to right, top to bottom.

Because search mode is automatically activated when search is invoked, the default search character (vertical bar: |) is used. If, however, you specify a search character before invoking search mode, that search character is used.

Search Operations In Nonforms Mode

If a search character still exists, the cursor moves to the first search character.

If the search character is not overwritten, press SHIFT-TAB to move the cursor to the next search character.

If the search character is overwritten, the cursor moves to the next search character.

Search Operations In Forms Mode

If a search character still exists, the cursor moves to the first search character, including both protected and unprotected fields. The cursor also moves to the first data entry position in unprotected fields, whether they are search characters or not. When this happens, press SHIFT-TAB to reactivate the search.

If the search character is found, and it is not overwritten, press SHIFT-TAB to move the cursor to the next search character.

If the search character is overwritten, the cursor moves to the next search character.

You cannot search right-justified fields.

You can search left-justified fields from any position within the field, provided you press SHIFT-TAB when you first enter the field.

If a search character does not exist, the cursor moves to the home position.

If a search character does not exist, the cursor moves to the home position, which is the data entry position in the first unprotected field. The search is deactivated.

If a form is transmitted while both search mode and forms mode are in effect, all fields are transmitted to the host, including "nontransmittable protected fields."

Key Programming

Key programming allows you to assign a sequence of keystrokes to one key. Once the key is programmed, pressing it sends the entire sequence to the display. This feature is helpful for quickly entering any sequence of keystrokes that you use frequently, such as a log-on procedure or a commonly used form.

If the T 27 is configured for multiple environments, a key program exists only in the environment in which it was created. Thus, a single key can be programmed differently in each of the three environments.

This section explains how key programs are stored and methods for programming keys locally from the keyboard and remotely from the host computer.

Creating and Storing Key Programs

Key programs are created as a string of bytes and can be placed in either temporary or permanent storage. The first byte of the string defines the location value for the key being programmed (see Appendix F for a keyboard layout with the location values for each key). The last byte terminates the program for that key. All other bytes are the key sequence that subsequently pressing the key will produce.

All keys except those listed in Table 8-1 can be programmed. The function keys (F1 through F10) and SHIFT-F1 through F10 have no default assigned values and are ideal for key programming.

Table 8-1. Nonprogrammable Keys

STORE	SHIFT-1 (Numeric keypad)
RECALL	SHIFT-2 (Numeric keypad)
MARK	SHIFT-3 (Numeric keypad)
BOUND	SHIFT-7 (Numeric keypad)
FULL	SHIFT-8 (Numeric keypad)
SPLIT	SHIFT-9 (Numeric keypad)
CONFIG	SHIFT-0 (Numeric keypad)
ALT	SHIFT-00 (Numeric keypad)
SCROLL UP	SHIFT-
SCROLL DOWN	SHIFT-TAB (Numeric keypad)
SCROLL LEFT	SHIFT (both keys)
SCROLL RIGHT	Environment keys 1, 2 & 3

Some of the keys that can be programmed should not be, except in special applications. This will become apparent as you become more familiar with key programming.

Temporary Storage

Initially, key programs are stored in the Key Programming Temporary (KPT) buffer and remain there as long as the terminal is on. If the T 27 is turned off, this temporary buffer is purged. To prevent losing key programs, a procedure is available (in menu key programming) for saving them to permanent storage.

Key programs are executed only from the KPT buffer. When the T 27 is turned on, any key programs in permanent storage are copied to the KPT buffer. For this to be possible, the KPT buffer must be large enough to hold the key programs in permanent storage. The default size of the KPT buffer is 256 bytes; however, it may be set to any size up to 9,999 bytes (see Environment Buffers menu in Section 1).

If the KPT buffer size is 256 bytes or less, the buffer will be located in a memory area outside of the user store (the area available for environment buffers). A KPT buffer larger than 256 bytes will be located in the user store area.

The size of the KPT buffer may be restricted by other factors. For example, a particular host application may require that the KPT buffer be located in the temporary storage area outside of the user store. This inherently limits the KPT buffer size to 256 bytes maximum.

Caution: Menu key programs stored in a KPT buffer residing in the user store area may also be lost if you reconfigure any of the environment buffer sizes. If you must reconfigure environment buffers, ensure that all key programs are saved to permanent storage (via menu key programming) before doing so.

Permanent Storage

The T 27 has 1,200 bytes of memory available for permanent storage of key programs, which can be allocated among three environments in Set-Up mode (System Partitions and International menu). Key programs can be saved to permanent storage using menu key programming from the keyboard or an escape sequence from the host, as described later in this section.

Key Programming from the Keyboard

From the keyboard, you can use one of two methods: Simple key programming is faster, executes the key program as it is entered, does not allow editing, and uses only the KPT buffer. Menu key programming, however, does not execute the program, allows thorough editing, and offers the option of saving the program to permanent storage.

Simple Key Programming

With the following procedure, the key program is executed as you enter it and is stored in the KPT buffer.

- 1 Press CTRL SPACEBAR L CTRL

This initiates the simple key programming process. The status line displays $B=nnnn$ where $nnnn$ is the number of bytes available in the KPT buffer.

- 2 Press a valid key to be programmed (see Table 8-1 for a list of those that are nonprogrammable).

The KPT byte count is decremented by two, assigning one byte for the key location value at the beginning of the program, and one byte for the end character value.

The LOCK key does not affect the key you program. For example, even with LOCK on, you must press SHIFT to select *A* as the programmable key.

If you press one of the keys listed in Table 8-1, key programming terminates and the *B=nnnn* field disappears.

- 3 Enter one or more keystrokes as the key program.

Until you terminate the program (step 4), all additional key strokes are part of the program. If you use the arrow keys to edit on the screen, these keystrokes are included in the key program.

Notice that the KPT byte count decrements once for each character entered. If the byte count reaches 0000 and you press another key, the message *BUFFER OVERFLOW* is displayed, key programming terminates, and the unfinished key program is lost.

- 4 Press LOCAL to terminate the key program.

Restrictions

Key programs cannot be concatenated. For example, suppose that the *X* key is programmed to display *ABC*. If you program the F1 key to display *X*, you will get only *X* and not the key program *ABC*.

All key sequences are executed as they are entered into the key program, except for the following:

- CTRL SPACEBAR A CTRL: The sequence for initiating menu key programming
- CTRL RW: The sequence for initiating set-up mode
- The CONFIG key

However, if these sequences are entered in a key program, they are executed later when the programmed key is pressed.

Simple Program Deletions

A key program may be deleted from the KPT buffer and the key returned to its original function as follows:

- 1 Press CTRL SPACEBAR L CTRL
- 2 Press *twice* the key to be deprogrammed
- 3 Press LOCAL

Note: Be sure to press the key to be deprogrammed twice.

Menu Key Programming

With menu key programming, the key program is created in the KPT buffer, but is not executed. A variety of options allow you to create, edit or delete key programs, and to save them to permanent storage.

The procedure for creating or editing a key program is as follows:

- Type the control sequence to enter menu key programming
- Use view mode to select the key to be programmed
- Use edit mode to create or edit the key program
- Use permanent storage mode to save the key program to permanent storage and/or exit menu key programming

Entering Menu Key Programming

To get started, press CTRL SPACEBAR A CTRL.

This brings up the menu key programming screen, which consists of three menu windows and a status window. Refer to Figure 8-1 as you read the following descriptions.

- **Menu Window 1:** The key program edit window. Programs are displayed here for the programmable key selected, if the key has been programmed. New and existing programs may be edited when this window is selected.
- **Menu Window 2:** The mnemonics window. Display attributes and control functions may be entered into the key program when this window is selected.

- **Menu Window 3:** The permanent storage/exit window. The key program in window 1 or all key programs in the KPT buffer can be saved to permanent memory when this window is selected. Key programs can also be restored from permanent storage to the KPT buffer. When you finish an editing session, you exit menu key programming from this window.

Figure 8-1. Menu Key Programming Windows

KEY PROGRAM							
HIGHLIGHTS	MISC	FORMS	DISPLAY	CONTROLS			
HL.END	TAB.SET	FLD.LEFT	ROLL.DWN	SOH	STX	ETX	EOT ENQ ACK
REVERSE	TAB.CLR	FLD.RGHT	MOVE.DWN	BEL	BS	HT	LF VT FF
UNDLINE	ALIGN	FLD.PROT	ROLL.UP	CR	SO	SI	DLE DC1 DC2
BLINK	ECC	FLD.END	MOVE.UP	DC3	DC4	NAK	SYN ETB CAN
SECURE		FORMS.EN	000	EM	SUB	ESC	FS GS RS
BRIGHT		FORMS.DI		US			
MNEMONICS							
SAVE	RESTORE	PERMANENT STORAGE		VIEW ANOTHER	EXIT		
		SAVE ALL	RESTORE ALL				
ENVMT 1							
VIEW	Not Programmed	LOC= 95	FUNC= f1	SIZE= 0000	PERM	STG= 1200	
	ENVMT 1		B=0238	COL 34	ROW 22	PAGE 1	
		ENQ 2 3	RCV 2 3				

- **Status Window.** In addition to the normal environment status information, this window indicates the currently active mode and function, defines the key selected for programming, and provides statistical data relative to size and storage of the key program.

The three available modes are view, edit, and permanent storage. These modes, as well as the other information in the status window, are defined in the following subsections.

View Mode

When you first enter menu key programming, view mode is active. The mode label *VIEW* appears in reverse video at the left end of the status line. Other information on the status line describes the currently selected key and shows the remaining space in the KPT and permanent storage buffers. A key is always selected and described when menu key programming is active.

Look at Figure 8-1. To the right of the label *VIEW* is the description *Not Programmed*, followed by *LOC= 95*, *FUNC= f1*, *SIZE= 0000*, and, just below *SIZE*, *B=0256*. To the far right in the first line is *PERM STG= 1200*.

This information tells you that the key with location value 95 (hexadecimal), which has the default function assignment of F1, is not programmed; therefore its size is 0000. *B=* tells you how many unused Bytes remain in the KPT buffer. Assuming that the KPT buffer size is the default value of 256 bytes (can be changed in set-up mode), the value *B=0256* in Figure 8-1 indicates that there are currently no key programs in the KPT buffer.

Similarly, *PERM STG=* tells you how many bytes are left in the key programming permanent storage buffer. Assuming that the permanent storage buffer size is the default value of 1200 bytes for the current environment (can be changed in set-up mode), the value *PERM STG= 1200* in Figure 8-1 indicates that there are currently no key programs saved in permanent storage.

When you first enter view mode, function key F1 is always selected, whether it is programmed or not. The top window of the display shows the program for the selected key, if one exists. The example in Figure 8-1 shows no program, agreeing with the status line message *Not Programmed*.

The following status line messages may appear in view mode:

Not Programmed indicates that the selected key is not currently programmed, but it can be.

Programmed indicates that the selected key is programmed. The program appears in menu window 1.

Nonprogrammable indicates that the selected key cannot be programmed. Additionally, when a nonprogrammable key is pressed in view mode, the keyboard alarm beeps (unless the key has a specific function in view mode). (Nonprogrammable keys are listed in Table 8-1.) The following keys have specific functions in view mode:

RECALL Selects the next programmed key. The search begins at the current key location and runs in an ascending key location value order. If no higher keys are programmed, the keyboard alarm beeps. Because SPACEBAR has the lowest numbered key value location (03h), you can make a complete search by first pressing the SPACEBAR and then pressing RECALL until either you find the programmed key that you are looking for or you get a beep.

BOUND Displays key location values of all programmed keys in the edit window. Figure 8-2 shows a keyboard outline with key location values designated for each key.

SCROLL DOWN (SHIFT-down arrow) Scrolls the key program down if the program displays more than one line and the first line is off the screen.

SCROLL UP (SHIFT-up arrow) Scrolls the key program up if the program displays more than one line and at least two lines of it are on the screen.

MARK RECALL BOUND A key sequence that deletes all key programs from the KPT buffer but does not affect the key programming permanent storage.

MARK PRINT Sends the text of the entire menu key programming screen to the printer.

WINDOW 1 is the same key as the one used to select environment 1 in regular terminal operations and is located to the right of the function keys. From view mode, this key selects edit mode and places a blinking cursor at the first character position in window 1.

WINDOW 3 is the same key as the one used to select environment 3 in regular terminal operations and is located to the right of the function keys. From view mode, this key selects permanent storage mode, indicated by the word *EXIT* in window 3 changing to reverse video.

Edit Mode

Edit mode is entered from view mode by the window 1 (environment 1) key. The mode label *EDIT* appears in reverse video at the left end of the status line, followed by the description *Modify Program*.

If you have chosen to edit an existing key program, no other status line information changes at this point, and a blinking cursor appears at the first character position of the displayed key program. However, if you have chosen to program a valid unprogrammed key, the following indications occur:

- *SIZE=* shows a program length of two bytes, one byte for the key location value and one for the program end character.
- *B=* shows a decrement of two bytes from the KPT buffer.
- *nu* (the program end character, NUL, having a hexadecimal value of 00) appears in window 1 along with the blinking cursor.

The *SIZE=* and *B=* values are updated as each character is entered into the program. All text characters and many functions (such as RETURN, PRINT, XMIT, etc.) may be entered at this point. When the program is displayed, functions are represented by mnemonics in reverse video. However, when the program is subsequently executed, the functions will perform the same as if they were entered by pressing the respective key.

The cursor can be moved to any location within the program using the cursor keys. When the cursor is positioned over a mnemonic in reverse video, the mnemonic changes to full bright characters in normal video. Mnemonics that do not fit on the current line are placed on the next line with the remainder of the current line highlighted in reverse video. This distinguishes between placement of mnemonics and actual spaces in the program.

Special Mnemonics

Special functions and data comm control codes can be entered into a key program by selecting window 2, the mnemonics menu. Select and use the special function mnemonics as follows:

- 1 Press the window 2 (environment 2) key.
- 2 Use the cursor keys to move the reverse video highlight to select the function you desire.
- 3 Press RETURN to enter the mnemonic into your key program in the edit window.
- 4 Press window 1 (environment 1) key to return to the edit window.

Edit Function Keys

Following are keys and key sequences and their editing functions:

DELETE CHAR deletes character at the current cursor position and closes up the space.

BACKSPACE deletes the character to the left of the current cursor position and closes up the space.

UP ARROW moves the cursor up one line; when the cursor is at the top of the window, the key is ignored.

DOWN ARROW moves the cursor down one line; when the cursor is in the last line of the key program or at the bottom of the window, the key is ignored.

LEFT ARROW moves the cursor left one space; it may wrap to end of the previous line.

RIGHT ARROW moves the cursor right one space; it may wrap to the beginning of the next line.

HOME positions the cursor at the beginning of the key program.

CLEAR HOME deletes the displayed key program.

STORE saves the displayed program to the KPT buffer and exits to view mode.

RECALL LOCAL deletes the displayed key program from the KPT buffer, restores the selected key to its default function, and exits to view mode.

RECALL (followed by any other key) cancels the recall function and returns control to the edit window.

MARK signals that the next key pressed (if it is an edit-function key) is to be entered as a function mnemonic instead of performing its edit function.

SCROLL UP (SHIFT-up arrow) Scrolls key program up if the program displays as more than one line and at least two lines of it are on the screen.

SCROLL DOWN (SHIFT-down arrow) Scrolls key program down if the program displays as more than one line and the first line is off the screen.

SHIFT-CTRL nn allows entering a character into a key program by using its hexadecimal code (see character codes in Appendix D). For example: SHIFT-CTRL 4A enters *J* into the key program. This control sequence is provided for use with the Extended Character Code (ECC) function code.

WINDOW 2 is the same key as the one used to select environment 2 in regular terminal operations and is located to the right of the function keys. From edit mode, this key moves the cursor to the mnemonics menu in window 2 and allows you to enter special functions and data comm codes in your key program (see Special Mnemonics earlier in this subsection).

Permanent Storage Mode

Permanent storage (commands in window 3) is accessible only from view mode. These commands allow saving programs from the KPT buffer to permanent storage, restoring programs from permanent storage to the KPT buffer and exiting menu key programming. When permanent storage mode is entered, the status line displays the label *PERM* and the message *Select Option*.

Use the left and right arrow keys to move the highlight to the desired function, and then press RETURN to select it. The following functions are available from the permanent storage menu:

SAVE places the displayed key program into permanent storage. When a program is saved, *Perm Stg=* is updated to show how many bytes remain after the save is completed (see *Notes* that follow these definitions).

RESTORE copies a key program from permanent storage to the KPT buffer (assuming that a program for the selected key exists in permanent storage). If there is not enough space in the KPT buffer, *BUFFER OVERFLOW* appears on the status line and the program is not copied.

SAVE ALL copies all key programs in the KPT buffer into permanent storage. This is a byte-by-byte copy done in the same order in which the programs were created in the KPT buffer. If permanent storage is filled before all programs are copied, those remaining are not copied, and the last one copied may be truncated.

RESTORE ALL copies all key programs in permanent storage to the KPT buffer. Programs that were in the KPT buffer before the Restore All command was issued are overwritten and lost.

VIEW ANOTHER transfers control to view mode.

EXIT exits menu key programming.

Notes:

The following comments apply to the save function:

- 1 If the key program is larger than the space available in permanent storage, *BUFFER OVERFLOW* appears on the status line, the keyboard alarm beeps, and the key program is not saved.
- 2 When the byte count of a new program exceeds the permanent storage available, you may still be able to save a key program there if the following conditions are met:
 - a The new program is for a key that has been previously programmed and will therefore overwrite the existing program.
 - b The byte count for the new program does not exceed the combined byte count of the old program and the byte count of the remaining space in permanent storage.

- 3 If you try to overwrite an old program with a new program that exceeds the requirements defined in 2b, the old program is deleted from permanent storage, the new one is not saved there, and other indications will be as in 1.

Menu Program Deletions

To delete an individual key program from permanent storage:

- 1 Use VIEW ANOTHER to exit to view mode.
- 2 Press the key that selects the key program to be deleted.
- 3 Press the window 1 key to enter edit mode.
- 4 Press RECALL LOCAL to delete the key program from the KPT buffer, restore the key to its default function, and exit to view mode.
- 5 Press the window 3 key to return to permanent storage mode.
- 6 Select SAVE and press RETURN. The program is now deleted from the KPT buffer and permanent storage, and the key has its default function restored.

Menu Key Programming Example

As an example of menu key programming, assume that no keys are programmed and that you want to program the F9 key to display *T 27 Terminal* with *Terminal* in reverse video.

- 1 Press CTRL SPACEBAR A CTRL to begin menu key programming. You are now in view mode; *VIEW* appears on the status line.
- 2 Press F9. In this example you can assume that F9 is a programmable key that is not currently programmed, so *VIEW Not Programmed*, *LOC=9D*, and *FUNC=f9* are displayed on the status line.
- 3 Press the environment 1 key. *EDIT Modify Program* is now displayed on the status line and the cursor is positioned at the first key in the program. The *nu* (null) character marks the end of the key program.
- 4 Type **T 27**. The null character and the cursor moves to the right.

- 5 Press the environment 2 key to move to the mnemonics window. *EDIT Select Mnemonic* appears on the status line. The cursor location is indicated by a reverse video field within the mnemonics area.
- 6 Use the down arrow key to select *REVERSE* (reverse video), press RETURN (notice that *REVERSE* is displayed in window 1), and press the environment 1 key to exit the mnemonics window.
- 7 *EDIT Modify Program* appears on the status line. Type **Terminal**.
- 8 Press the environment 2 key. Press RETURN to select *HL.END* (highlight end). Press the environment 1 key.
- 9 Press STORE to save the key program into the KPT buffer.
- 10 Press the environment 3 key to move to the Permanent Storage window. *PERM Select Option* is displayed on the status line.
- 11 Press the right arrow key to move the cursor to *SAVE*, and press RETURN to save the key program to permanent storage. This brings you to view mode. *VIEW Programmed* is displayed on the status line.
- 12 Press the environment 3 key and RETURN to exit menu key programming.

You have now programmed the F9 key to display *T 27 Terminal* whenever it is pressed, with *Terminal* in reverse video. Press F9 to test your program. You have also saved this key program to permanent storage; the program will be saved even when you turn off the terminal.

Key Programming from the Host

Keys can also be programmed from the host using escape sequences. There are three methods of key programming via data comm, but only methods 1 and 2 are recommended. All three methods use the <ESC> RB sequence to allocate space in memory for the KPT buffer, if necessary.

Note that with any data comm method, *KEYSTROKE LOST* is displayed on the status line if you try to program a nonprogrammable key.

Method 1 (<ESC> RK)

Method 1 programs only the function keys. This method deletes all programs in the KPT buffer before programming the F1 through F10 and SHIFT-F1 through SHIFT-F10 keys to their default values (follow steps 1 through 6).

- 1 <ESC> RK*ppp*
- 2 Code for any key location value
- 3 Key program character and function codes
- 4 Key program end code (A9)
- 5 Repeat steps 2 through 4 for each key program
- 6 Escape sequence end code (A9)

In step 1, *ppp* specifies a 3-byte field that indicates the number of byte pairs (in hex) to be sent to the terminal. If it is greater than the size of the KPT buffer, *BUFFER OVERFLOW* will be displayed and the key programs in the KPT buffer will be deleted.

Step 2 provides a hex value for the key location being programmed (use any value except A8 or A9).

Step 3 contains the character and function codes of the program. In the following example, F1 is programmed to display *ABCD*, and F2 is programmed to display *A* and to perform a return (see Appendix F):

Command	ASCII	Hex (via Data Comm)
<ESC>	EC	1B
RK	RK	52, 4B
O0B	O0B	30, 30, 42
f1	01	30, 31
A	41	34, 31
B	42	34, 32
C	43	34, 33
D	44	34, 34
Key Program End Code	A9	41, 39
f2	02	30, 32
A	41	34, 31
RETURN	AE	41, 45
Key Program End Code	A9	41, 39
Escape Sequence End Code	A9	41, 39

<ESC> RK programming ignores key location values and assigns programs to the F1 through SHIFT-F10 keys in order.

Step 4 ends the key program. Use A8 or A9.

Step 5 programs additional function keys.

Step 6 terminates the escape sequence.

Method 2 (<ESC> RD)

Method 2 is the most versatile way to program from the host. It provides these advantages over other data comm methods:

- Key programming is not restricted to the F1 through F10 and SHIFT-F1 through SHIFT-F10 keys.
- You can program any number of keys in any order in one escape sequence without losing all the key programs in the KPT buffer.
- When you enter a new key program into the KPT buffer, it automatically overwrites the old program for that key.
- It checks for a possible KPT buffer overflow.

Any key except those noted in Table 8-1 can be programmed through data comm by using the following <ESC> RD sequence:

- 1 <ESC> RD
- 2 Key location value for key being programmed (as per Appendix F)
- 3 Key program character and function codes (see Appendix F)
- 4 Key program end code (00)
- 5 Repeat steps 2 through 4 for each key being programmed
- 6 Escape sequence end code (00)

All the steps are the same as those described in the <ESC> RK sequence except for step 1, which begins the escape sequence, and the end codes, which use 00 instead of A8 or A9.

In the following example, SHIFT-F1 is programmed to display *ABC* and *a* is programmed to display *T27*.

Command	ASCII	Hex
<ESC>	EC	1B
RD	RD	52, 44
F1	95	39, 35
A	41	34, 31
B	42	34, 32
C	43	34, 33
Key Program End Code	00	30, 30
a	32	33, 32
T	54	35, 34
2	32	33, 32
7	37	33, 37
Key Program End Code	00	30, 30
Escape Sequence End Code	00	30, 30

Method 3 (<ESC> RH)

Method 3 is not recommended because all the keys must be programmed in one escape sequence. Any key except those noted in the list of nonprogrammable keys in this section can be programmed through data comm by using the following sequence:

- 1 <ESC> RT010202
- 2 <ESC> RH
- 3 Code for key being programmed
- 4 Key program function codes
- 5 Key program end code (00)
- 6 Repeat steps 3 through 5 until all keys are programmed
- 7 Key program end code (00)
- 8 <ESC> RC

Step 1 causes the T 27 to transmit the contents of the hex locations 102 and 103, which is the start address of the KPT buffer.

In step 2, *hhhh* is the hex value of the KP T buffer start address obtained in Step 1. *kk* is a 2-byte field that indicates the hex length of the byte pairs that follow.

Example: The following sequence causes these results when the KPT buffer begins at 0180H:

Keys to be programmed are **a**, **A** and **F1**; key contents are *0125*, *ABCD*, *CLEAR HOME_x*.

```
<ESC> RH 0180 11 32 30 31 32 35 00 42 41 42 43 44 00 95 80 7
8 00 00<ESC> RC
```

Saving Key Programs to Permanent Storage via Data Comm

The <ESC> RP command saves all key programs in the KPT buffer to permanent storage. This command works the same way that the SAVE ALL command works in menu key programming, except that the command is issued from the host.

Transmitting Key Programs from KPT Buffer via Data Comm

The <ESC> RT command enables the host to read all the key programs from the KPT buffer. The host does this by specifying the start address of the KPT buffer.

In the following example, assume that the KPT buffer starts at 0180H and is 10 bytes long, and that SHIFT-F1 is programmed to display *ABCDEFGF*.

```
1 <ESC> RT 01 02 04
2 018A - 0180 = 0A length
3 <ESC> RT 0180 0A
4 95 41 42 43 44 45 46 47 00 00
   F1 A B C D E F G NULL NULL
```

Step 1 returns the starting address and ending address of the KPT buffer.

Step 2 determines the length of the KPT buffer by subtracting the the beginning address from the end address.

In step 3, the starting address and the length of the KPT buffer are sent to the T 27, which responds by sending the contents of the KPT buffer to the host.

The result of step 3 is the ASCII code shown in step 4, which is sent to the host. Also in step 4, *00 00* marks the end of the key program area.

Key Programming Notes

Key Program Execution with LOCK

If a programmed key is pressed when LOCK is enabled for the keyboard, the key program is displayed in uppercase letters.

Extended Character Code Function

You can enter extended characters into key programs by using the Extended Character Code (ECC). An ECC indicates that the code that follows is a character code, not a function code. For extended characters generated by a single keystroke, press the key to add the ECC and character to the program. In menu key programming only, for constructed extended characters, select the ECC function and then use the SHIFT-CTRL *nn* sequence to generate the hex code for the character. The host must always send an ECC and the extended character code.

Tips and Shortcuts

- 1 If you accidentally program the CTRL key, press
SHIFT-CTRL SPACEBAR L SHIFT-CTRL CTRL CTRL
LOCAL
to delete the error.
- 2 To restrict data entry to uppercase characters:
Set lowercase lockout to *on* (see Section 1). Program the LOCK key to perform no function. LOCK no longer disables the lock function.
- 3 To view all the key programs in the KPT buffer, one key at a time, move to view mode of menu key programming. Then press SPACEBAR and RECALL.

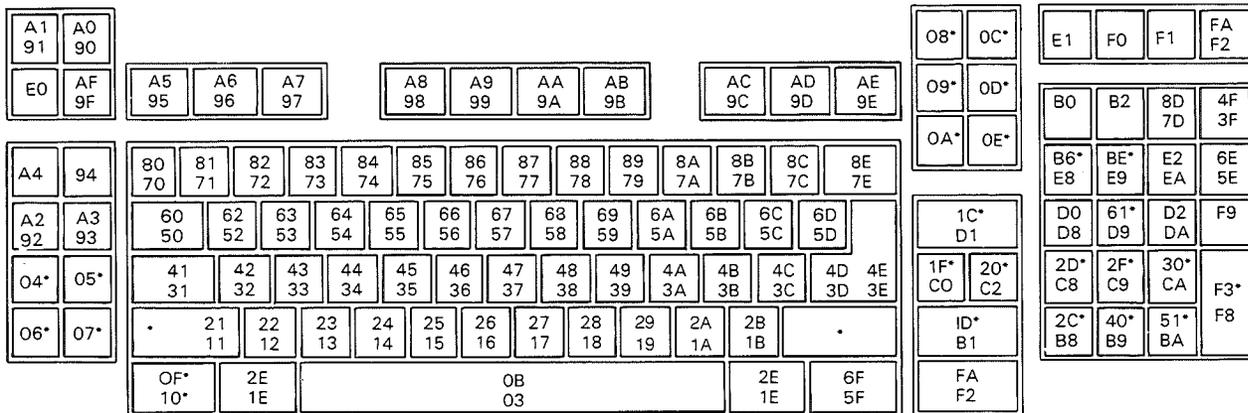
- 4 To delete all key programs in permanent storage, move to view mode of menu key programming. Press MARK-RECALL-BOUND, move to window 3, and select *SAVE ALL*.
- 5 To save time during data entry, enter frequently used forms into key programs. You will then be able to generate a particular form with a single keystroke. There are three ways of programming keys to contain forms:

The host transmits the key programs that contain forms to the terminals at the start of each workday.

Use menu key programming to save the key programs that contain forms to permanent storage.

If you need more storage than is available in permanent storage, have the host transmit the key programs that contain forms to the terminals, and store them in the KPT buffer. Then use the screen-saver option of the T 27 to keep the terminals running all the time. The key programs containing forms will remain intact until the terminals are turned off.
- 6 Do not program the LOCAL key.
- 7 To change your BACKSPACE key into a destructive BACKSPACE key, program it to perform a cursor left function followed by a delete function.

Figure 8-2. Programmable Key Locations



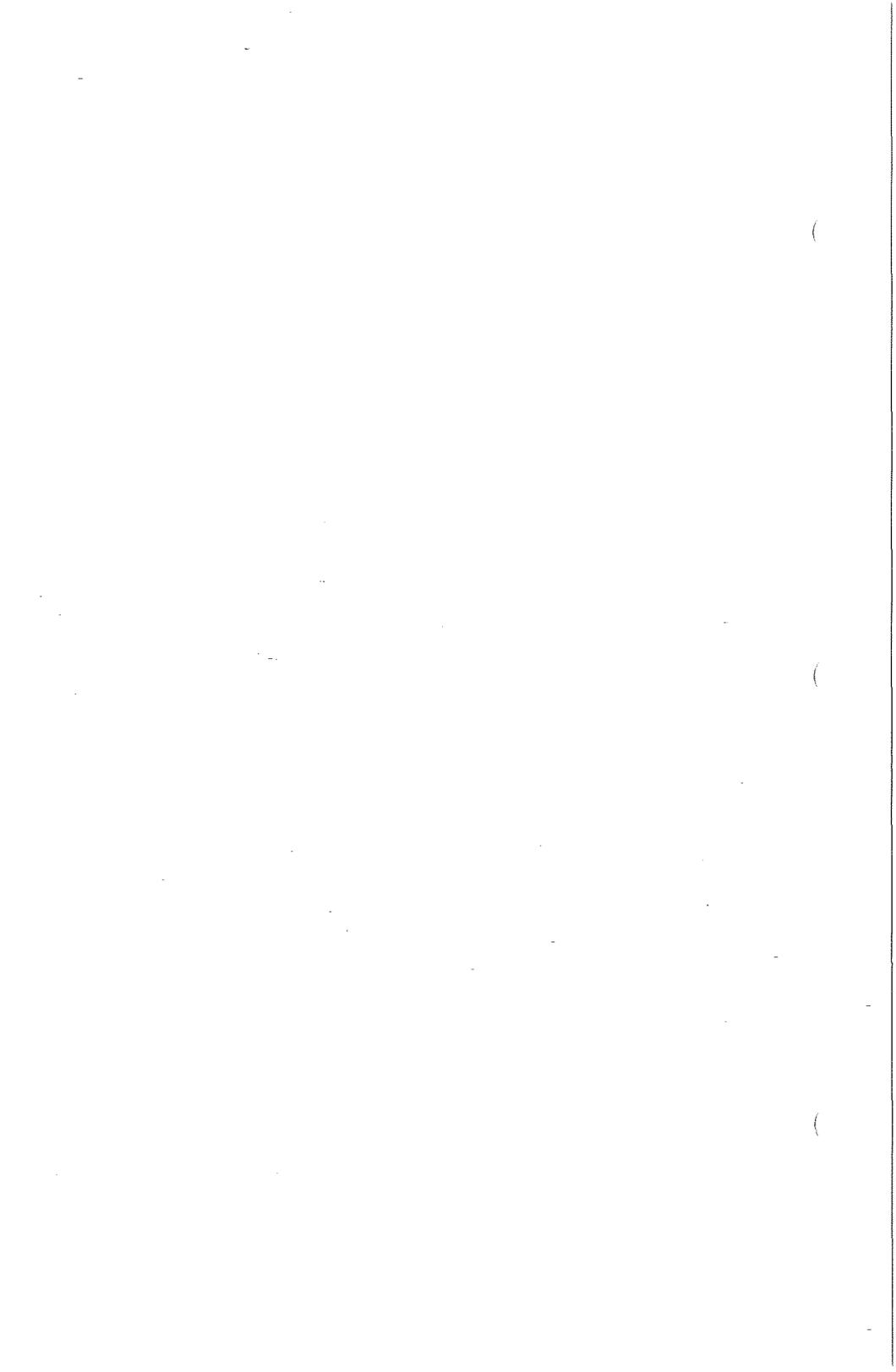
T 27 Programmable Key Locations

* Matrix Code is nonprogrammable
: Key can be split

Note:

1. If only one code appears on a key, then that code is generated in both shifted and unshifted positions.

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Data Sharing

Data sharing is a function that enables you to copy data within an environment, or from one environment to another. It is similar to the copy function found in many word processing systems, except that it uses multiple environments and a data sharing buffer.

The following example gives you an overview of how data sharing works. You will copy the word *Unisys* from environment 3 to environment 1 (see Figure 9-1).

- 1 Press the environment 3 key to move to environment 3.
- 2 Type **Unisys**.
- 3 Move the cursor to the beginning of the word *Unisys* and press MARK.
- 4 Move the cursor to the end of the word *Unisys* and press BOUND.
- 5 Press STORE to save *Unisys* to the data sharing buffer.
- 6 Press the environment 1 key to move to environment 1.
- 7 Move the cursor to the position where you want *Unisys* to be copied.
- 8 Press RECALL to copy *Unisys* from the data sharing buffer to the cursor location in environment 1.

Setting the Boundaries

The first step in the data sharing process is *setting the boundaries*; in this step you specify the start and the end of the data to be copied. Whenever you press MARK or BOUND, the following occurs:

- The keyboard environment is put in the local state, and the other two environments are put in the local state temporarily. The nonkeyboard environments return to their original states when STORE or LOCAL is pressed.
- All selects from the host are denied.
- All keys are disabled, except for MARK, BOUND, STORE, LOCAL, HOME, and arrow (cursor) keys.
- All CTRL sequences are ignored.
- The LOCAL key cancels the data sharing operation. The start and end markers disappear from the screen and the original characters are restored.

MARK and BOUND Keys

MARK indicates the start of the boundary by displaying the start character (or "marker") on the screen. BOUND marks the end of the boundary by displaying the end marker on the screen. Both markers temporarily obscure the character at the marked position, but the obscured character is included when the data is transferred to the buffer. The obscured character reappears when STORE, LOCAL, or another marker of the same type is pressed.

You may copy a single character by moving the cursor to the character location, pressing MARK, and then pressing BOUND. *SOH* is displayed on the screen. Then press STORE to copy the single character to the data sharing buffer.

Only one start marker and one end marker is displayed on the screen at any one time. For example, if there is already a start marker on the screen and you press MARK, the previous start marker disappears and the new start marker appears at the cursor location.

The start marker must always be before or on the end marker. If the order is incorrect, the alarm sounds, the *MARK AFTER BOUND* error message is displayed, and the second marker that was entered is ignored.

The characters used as start and end markers are:

- SOH (01 hex): Marker for a single character to be copied
- STX (02 hex): Start marker of the data to be copied
- EOT (04 hex): End marker of the data to be copied

Note: STX, SOH, or EOT characters within the bounded area are treated like any other ASCII characters, not as start or end characters.

STORE Key

Pressing STORE copies the data marked by the boundary markers (including the two characters obscured by the markers) to the data sharing buffer in the following steps:

- 1 The data sharing buffer is cleared.
- 2 The marked data is copied to the data sharing buffer.
- 3 The start and end markers disappear, and the obscured characters are restored.

Conditions Applying to the STORE Command

When STORE is pressed, the T 27 begins copying the data from the start marker and continues copying until either the end marker is reached or the data sharing buffer is filled. If the data sharing buffer is filled, the remaining data is not copied, the T 27 alarm sounds, and the screen displays the *BUFFER OVERFLOW* error message.

If STORE is pressed but one of the markers is missing, the *MARK MISSING* or *BOUND MISSING* error message is displayed and the data is not copied.

If the page from which data is being copied is in forms mode, only the unprotected data is copied to the buffer. The protected fields falling between the markers are ignored.

Use the following procedures to copy a forms mode page to a new location with its forms mode delimiters intact.

- 1 Press CTRL Q to put the page into nonforms mode.
- 2 Use the MARK, BOUND, and STORE keys to copy the page of data to the data sharing buffer.
- 3 Press CTRL W to put the environment page back into forms mode.
- 4 Move to the environment where the page of data will be copied.
- 5 Put the page that contains the location where the data will be copied into nonforms mode.
- 6 Press RECALL to copy the data from the data sharing buffer to the new location.
- 7 Put the new page of data in forms mode.

RECALL Key

After you have copied the marked data to the data sharing buffer, you must position the cursor where you want the data to appear. When you have done this, press RECALL to copy the data to the cursor location.

RECALL copies data from the data sharing buffer within an environment or between environments. The data is copied into the environment, beginning at the cursor location, exactly as if it were characters being entered from the keyboard. If the page to which data is copied is in forms mode, all forms delimiters (FS, GS, RS, and US) in the data sharing buffer are ignored.

The contents of the data sharing buffer are not affected by RECALL. This data can be copied any number of times by positioning the cursor and pressing RECALL.

The data being copied is formatted according to the configuration of the new environment. For example, if the data being copied was in 40-column format but the new environment is configured for 80-column format, the data is displayed in the 80-column format of the new environment.

If there is no data in the data sharing buffer when you press RECALL, the T 27 alarm sounds and the *BUFFER EMPTY* error message is displayed. No data is copied.

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Printer and Auxiliary I/O

The printer/AUX port on the T 27 provides an RS-232C interface for use with serial printers and other RS-232C equipment. The port operates as a data communications equipment (DCE) device. It can support data rates up to 9600 baud through a standard 25-pin, D-type female connector. (See Appendix C for connector pin designations.)

A printer attached to the T 27 can be used as either a local printer or pass-through printer (see "Printer Pass Through" in this section). The printer/AUX port is configurable from the System Peripheral Options menu from 75 to 9600 baud, with options as follows:

- 5 to 8 data bits/character
- 1 or 2 stop bits
- Printer busy (0 or 1)
 - 0 - busy line high = printer busy
 - 1 - busy line low = printer busy
- XON/XOFF printer flow control
- Even, odd or (data input only) no parity check
- Control code mapping
- Auxiliary input to screen or DCOM

Supported Unisys Printers

The T 27 can be attached to only one printer at a time. The Supported Unisys printers are shown in Table 10-1. (See Appendix G for printer configuration data.)

Table 10-1 Supported Unisys Printers

Style ID	Description
AP1305	132 column, 55 CPS letter quality
AP1311	80 column, 160/45 CPS color dot matrix
AP1312	80 column, 120 CPS dot matrix
AP1314	80 column, 200/50 CPS dot matrix
AP1354	132 column, 200/50 CPS dot matrix
AP1351	132 column, 200/110/35 CPS color dot matrix
AP1351-1	132 column, 400/200/70 CPS color dot matrix
AP9208	80 column, 8 page/minute laser

Note: There may be system issues to be considered before installing any printer. This is especially true when installing in an existing network. See "Printer Control Codes" in this section.

Printer Commands

The T 27 performs three types of print operations, which are controlled by print commands. These commands are shown in Table 10-2, along with the corresponding control and escape sequences that initiate them. (CTRL sequences are from keyboard input and ESC sequences, shown in parentheses, are from data comm input.)

Table 10-2 Printer Commands

Initiated via	Print from Forms mode	Print from Nonforms mode
PRINT key CTRL : (ESC :)	Home to cursor (DCP) unprotected only with FF	Home to cursor (DCP) with FF
Shifted PRINT key CTRL ; (ESC ;)	Home to cursor (DCP) unprotected and protected with FF	Home to cursor (DCP) with FF
CTRL] (ESC])	Home to cursor (DCP) unprotected and protected with no FF	Home to cursor (DCP) with no FF

The position at which printing stops is determined by the cursor (DCP) position at the time the T 27 receives the print command. If the cursor (DCP) is ahead of or at the home position, printing stops at the end of the page. Each print command is active until the printing is completed. If you press LOCAL before printing is completed, printing aborts. Pressing any key other than LOCAL has no effect.

In the Set Up menu, screen data can be printed by executing the print command. In menu key programming, screen data can be printed by executing the mark print command. In both cases, the entire screen is printed regardless of the cursor location. Also, once the command is initiated in either of these cases, printing cannot be aborted with the LOCAL key.

If the print buffer size is 0 (entered via the Set Up Menu) and a screen print command is given, *BUFFER OVERFLOW* is displayed and the command is ignored.

During a page print, if the display buffer size is greater than the print buffer size, no keyboard input is recognized (except LOCAL key) until the page content is completely transferred to the print buffer. Pressing LOCAL under these conditions aborts the printing.

PRINTER ERROR is displayed if a print operation is initiated while the printer is not ready or if a printer system fault occurs. Printing is initiated on a first-come first-served basis. The printer is in a not-ready state for all other T 27 processes until the first print operation is completed. Several competing processes may try to initiate printing:

- The PPT address
- Host initiated print on an environmental address
- Keyboard initiated print on the keyboard environment

The printer may also be in a not-ready state if AUX IN data is being sent to the host through the RS-232C port of the T 27 terminal.

If the printer becomes inoperable, data to the printer is blocked and *PRINTER ERROR* is displayed. When the printer becomes operational again, printing resumes and the error message is cleared.

Setting 132-Column Mode

Printer models AP1311, AP1312, AP1314 and AP9208 can print 132-column text by implementing a condensed character set as follows:

- 1 From the System Peripheral Options menu, turn off the character translation by setting the *Translate Control Char* to *no*.
- 2 Before printing, send the appropriate control character to the printer. (See the user guide for your printer, since the codes for each printer may be different.)

To return the printer to 80-column mode, send a different control character to the printer.

For example, to set an AP1312 printer to 132-column mode:

- 1 Press SHIFT HOME to clear the screen and home the cursor.
- 2 Press CTRL H = to display the character for hexadecimal 1D.
- 3 Press PRINT to send the character to the printer.

The printer will now print in 132-column mode. Sending a hexadecimal 1E in the same manner would return the AP1312 printer to 80-column mode.

Printing Page Data

Two menu options determine how screen data is sent to the printer:

- *Translate* determines whether all control characters (00-1F) are sent as is or if some are translated into space characters.
- *Extend Line* determines whether a CR/LF character is sent at the end of a line.

In most cases, screen print sends characters from the screen directly to the printer (*Translate* set to *Yes* in the Set-Up menu), without deletions or substitutions. The exceptions to this are as follows:

- Protected data in a forms mode page is replaced with spaces (only for unshifted PRINT key or CTRL : from keyboard or ESC : through data comm).
- If there are no CR or LF characters on the display line and EXTEND LINE = N, trailing spaces on the display line are replaced with the two-character sequence CR/LF.

If EXTEND LINE = Y, trailing spaces are sent to the printer. If a CR character is followed by more data on that line, the data is *not* sent to the printer. If a LF character is followed by more data on that line, the data *is* sent to the printer.

- If EXTEND LINE = N and the display line terminates with a character other than a CR or space, a CR/LF character is sent automatically to the printer.

If EXTEND LINE = Y, no additional characters are sent.

- If TRANSLATE = Y, the following control characters are replaced with a space: 00-06, 08-09, 0E-10, 14-1A, 1C-1F. All other control characters are sent to the printer without translation, except CR which is replaced with the two-character sequence CR/LF. (See Appendix B for control character codes and names.)

During set-up printing, all control characters, except CR/LF and FF are replaced with a space.

- If TRANSLATE = N and control characters are mapped in the Configuration menu, the mapped character is sent to the printer.

These exceptions also apply if you are printing from an environment configured for 132-column mode.

Control Code Mapping

The control code mapping option lets you map control characters on the screen to any character to be sent to the printer. To print the forms delimiters as printable characters, you can make the translate option = NO and then map these characters to any desired printable character.

For example, mapping hexadecimal code 1D (GS character) to hexadecimal code 5B (I) results in the GS character being printed as [. If the translate option = YES, then the forms delimiters are translated to spaces and printed as blanks.

Note: While choosing this option, ensure that any control characters on the screen do not get mapped to any code that might affect the functionality of the printer in use. Refer to your printer manual for control code interpretation.

Print Buffer

When a print command is given, data is transferred from the display buffer to the print buffer. When either the print buffer becomes full (its size is configurable) or transfer of all data to the print buffer is completed, transfer of data to the printer begins.

During transfer of data from the display buffer to the print buffer, input from the keyboard is ignored (except the LOCAL key). Once the transfer has been completed, input from the keyboard is accepted, even though printing is in progress.

Printer Pass Through

PPT Address

In addition to the three environment addresses, the T 27 has an address known as the PPT address. This enables the printer to work on one task while the T 27 works on others. Each of these addresses is individually selectable.

PPT Buffer

The PPT buffer either receives data from the host or transmits AUX-IN data to the host. The PPT buffer is a system buffer, allocated in the System Partitions and International menu. PPT is disabled when the PPT buffer is set to zero via the Set Up Menu. (The PPT address should also be disabled; otherwise, it will still answer to polls.)

Printer Control Codes

As the host computer sends data to a printer through Printer Pass Through, the host must also send any specifically needed control code sequences, such as carriage returns and line feeds. Each printer has specific requirements. When writing the commands in the host Network Definition Language (NDL), refer to the manual for your printer for control code sequence requirements.

Space Compression

The T 27 provides a space compression facility that is compatible with the PPT used on BTOS workstations. The escape sequence that supports space compression is

ESC [n a

where n is the ASCII representation of the number of spaces, and the lowercase a terminates the sequence. The value of n is between 0 and 32767. This escape sequence is filtered by the ANSI-standard filter algorithm, and the appropriate number of spaces are inserted before the data is sent to the printer. For release levels 1.2 and higher, the Space Compression facility can be turned off. In this case, the escape sequence is prevented from being filtered or processed, and is passed on to the printer intact, without interpretation.

If the escape sequence is not properly terminated or if n is out of range, then the escape sequence is discarded.

ACK Trigger and Logical ACK

The features ACK trigger and logical ACK operate independently. The ACK trigger is always in effect. The logical ACK is menu-selectable. Any entry other than an EOT (04 hex) enables the feature and defines that entry as the logical ACK character.

A message received from the host for printing goes to the PPT buffer first before being transferred to the print buffer. While any data remains in the PPT buffer, any select to the PPT address is NAKed. Selects are ACKed only when the PPT buffer is empty.

If Logical ACK is enabled, the logical ACK character is sent as soon as the PPT buffer empties. Any polls received before this condition are EOTed. The first poll received after the PPT buffer has reached an empty state returns the logical ACK character (if the feature is enabled).

If logical ACK is enabled, only one logical ACK character is transmitted, regardless of the length of the received message. The host should poll the PPT address until it receives the logical ACK character.

Note: Use of the logical ACK feature requires user application programming.

Flow Control

XON/XOFF

XON/XOFF flow control with the printer can be implemented by assigning characters other than EOTs in the menu. If the XON/XOFF feature is enabled, these characters will not be valid for AUX IN input data. If the XON and XOFF characters are the same and not EOT, they perform XON/XOFF functions as a toggle.

Printer Busy

When the terminal is going to output data to the printer, it checks the state of the printer busy signal. If this signal is on, the terminal does not output a character until the busy state is removed (signal goes to off). The busy level is determined by the state of the following signal:

Menu Busy (0/1)	Function
(0)	BUSY signal 1 (ON) is taken as busy state.
(1)	BUSY signal 0 (OFF) is taken as busy state.

See Appendix G for information on available flow control for supported printers.

Auxiliary I/O

Auxiliary input data is entered at the keyboard cursor location when AUX input is set to *screen*, or it is transmitted to the host via the PPT address when AUX input is set to *DCOM*.

Auxiliary Input to Environment

Data from the auxiliary port will be interpreted and displayed beginning at the keyboard cursor location shown in Table 10-3. Keyboard input during this period will be queued and displayed at the end of AUX IN data.

Table 10-3 Control Characters Interpreted as AUX Input

Hex	ASCII	To Screen	To Host*
00	NUL	DISPLAY	LOAD
01	SOH	DISPLAY	LOAD
02	STX	DISPLAY	LOAD
03	ETX	DISPLAY	LOAD
04	EOT	DISPLAY	LOAD
05	ENQ	DISPLAY	LOAD
06	ACK	DISPLAY	LOAD
07	BEL	SOUND BEEP	LOAD
08	BS	BACKSPACE CURSOR	LOAD
09	HT	TAB CURSOR	LOAD
0A	LF	LINE FEED CURSOR	LOAD
0B	VT	DISPLAY	LOAD
0C	FF	CLEAR PAGE HOME CURSOR	LOAD
0D	CR	CARRIAGE RETURN CURSOR	LOAD
0E-1F	DATA	DISPLAY	LOAD

* Any control character configured as "AUX-IN XMT CHAR" overrides the function indicated and the data is transmitted.

Note: Characters may be lost when running at 9600 baud if messages are longer than 256 bytes.

Auxiliary I/O to Host

If AUX input is set to *DCOM*, the data is sent directly to the PPT buffer. If the data contains the same character as the XMIT TO HOST ON CHAR, the T 27 will transmit the data it received from the auxiliary port using the PPT address.

International Support

Table 11-1 lists the language versions supported by the T 27 terminal (see Appendix D for character code listings). To select a language version, enter the number from the first column of the table in the language version choice field of the System Partitions and International menu. The choices are automatically limited by those available in the ROM pack installed.

The third column in the table identifies the language in which all menus and messages will appear. The menus are currently available in English, French, and Spanish.

ROM Packs

ROM packs contain firmware and font PROM. Any one ROM pack can support only a subset of the versions listed. When a language is selected in set-up, the font, keyboard layout, and accented characters that can be constructed are automatically selected to correspond to that version. (See Appendix D for character set selected, see Appendix H for accented character construction, and refer to your keyboard for keyboard layout.)

Table 11-1 T 27 Supported Languages

Setup Version	Version Name	Menu Language
01	1 United States	English
34	1/A Canada	English
02	2 United Kingdom	English
03	3 Belgium	English
36	3/A Belgium	English
04	4 Italy	English
05	5 Germany	English
37	5/A Germany	English
07	7 Spain	Spanish
39	7/A Spain	Spanish
14	14 Turkey	English
17	17 Iceland	English
43	43 French WP	French
44	Nonextended French	French
18	18 Sweden/Finland	English
41	Swiss German	English
42	Swiss French	English
06	6 Portugal	English
38	6/A Portugal	English
08	8 Denmark/Norway	English
09	9 Yugoslavia	English
25	25 Greek	English

Construction of Accented Characters at the Keyboard

(For details about which methods and diacritic characters are available for each language version, refer to Appendix H.)

Many languages such as French, German and Spanish have letters that must be displayed with diacritical marks. For example, the letters *a*, *e* and *c* may have the diacritical marks *´*, *^* and *,* added. This creates the characters *a´*, *e^* and *c,*. These characters are called *accented characters*.

There are two methods for entering accented characters from the keyboard. The simplest method requires the accented character to be assigned to a key. For example, the accented character *a´* is entered by pressing the *a´* key.

The second method requires the accented character to be constructed by pressing a sequence of keys consisting of the basic elements of the accented character. For example, *a* may be constructed by pressing the *'* key (diacritic) followed by the *a* key (follow-on key). Pressing the diacritic key always precedes pressing the follow-on key.

The method used to construct an accented character depends on whether the diacritical mark is nonescaping or escaping. If the diacritic is nonescaping, the cursor will not advance after the diacritic is displayed.

The nonescaping and escaping diacritic methods are described as follows, using the lowercase letter *c* with CEDILLA (,).

Method 1: Nonescaping Diacritics

- 1 When pressed, the CEDILLA key displays the , at the cursor position; the cursor remains stationary.
- 2 The next pressed key must be a valid follow-on key. For example, if the CEDILLA is to be combined only with the small letter *c*, any other key is considered an invalid follow-on key.

If the next pressed key is a valid follow-on key, in this case *c*, the accented character *c* is displayed at the cursor position and the cursor advances.

If the next key is an invalid follow-on key, in this case any key other than *c*, the diacritical mark , is overwritten by the invalid follow-on character.

Method 2: Escaping Diacritics

- 1 When the CEDILLA key is pressed (often the comma key is used as an escaping CEDILLA), the , displays at the cursor position and the cursor advances one position.
- 2 The next pressed key must be either BACKSPACE or LEFT ARROW. This places the cursor over the diacritical mark ,.
- 3 The next pressed key should be a valid follow-on key. If the next key is a valid follow-on key, in this case *c*, the accented character, *c* is displayed at the cursor position and the cursor advances.
If the next key is an invalid follow-on key, in this case any character other than *c*, the follow-on character is displayed in place of the diacritical mark , and the cursor is advanced.

Character Sets

Selection of the language version also selects a specific character set. For example, when writing an application to be used with language version 1 (United States), the version 1 character set would be used.

Note: Many character sets are 7-bit sets. Any attempt to send an unsupported 8-bit character from the host may produce unpredictable results.

See Appendixes I and K for examples of communicating extended characters between the T 27 and the host.

Error Messages

Bound Missing While using data sharing, you pressed the STORE key without first pressing the BOUND key.

Buffer Empty One of two conditions has occurred: Either you attempted to RECALL from the data sharing buffer without first using STORE to place data in the buffer, or an error occurred during the STORE operation and data was not stored in the data sharing buffer.

Buffer Overflow Too much data was sent to a T 27 buffer. A buffer overflow can occur under several conditions. One example is transmitting or receiving a message that is greater in size than the allocated datacomm buffer capacity. Buffer overflow can also occur when a print request is made and the printer buffer size is set to zero.

Entry Must Be Decimal You entered a character that is not decimal (0 through 9) into a field where only decimal characters are valid. Reenter the value, using only decimal characters.

Entry Must Be Hexadecimal You entered a character that is not hexadecimal (0 through 9 and A through F) into a field where only hexadecimal characters are valid. Reenter the value, using only hexadecimal characters.

Environment 1 Cannot Be Disabled You set the environment 1 size field in the Systems Partitions and International menu to some value less than 7500. Reset the value in this field to 7500 or greater, but within the total memory available to the system.

Invalid Character In Field You entered an illegal character in one of the set up fields. An example is entering the NUL or SYNC character in the datacomm address field. Retype the entry.

Invalid Window Configuration The values in the Window Configuration menu in some way violate the configuration constraints. For example, Total Lines/Screen must equal 24 lines. If all three environments and monitor mode are enabled (have space allocated to them), set at least one of the four to zero lines for the split-screen view configuration. You cannot exit the Window Configuration menu until the window configuration is valid.

Item Is At Maximum Security Level You pressed the MARK key to increase the security level of an item in the Main menu that is already at the maximum level.

Item Is At Minimum Security Level You pressed the MARK key to decrease the security level of an item in the Main menu that is already at the minimum level.

Keystroke Lost While in receive or transmit mode, with the keyboard buffer enabled, you entered too much data in the keyboard buffer, causing it to overflow. Keystrokes that you enter after this error message appears are lost.

Kybd Missing An illegal device, such as a mouse, has been attached in place of a keyboard.

Kybd ROM Faulty An error in the keyboard ROM has been detected.

Mark After Bound You pressed the MARK key at a character position on the screen that is after the BOUND character, or you pressed the BOUND key at a point that is before the MARK character.

Mark Missing While using data sharing, you pressed the STORE key without first pressing the MARK key.

Memory Size Exceeded The sum of the buffer sizes in the System Partitions and International menu exceeds the total memory available, or the buffer sizes in a Environment Buffers menu are greater than the total allocated to that environment. In the appropriate menu, reenter the buffer sizes so the allocated values no longer exceed available memory.

Message Lost The transmission numbers on the messages sent between the terminal and the host are out of order.

Printer Error The printer might be disconnected or off-line. Printer error is also reported when the printer is currently active and another print request is initiated. Another type of printer error occurs when auxiliary data is being sent to the host and a LOCAL print request is initiated.

Value Out Of Legal Range You entered an invalid value into a set-up field. For example, you cannot enter the value 256 in a field where valid values range from 0 to 255.

Vertical Tabs Ignored When Lines/Page Not Set To

32 You set VT Page Advance to *on* in the Environment Data Comm Options menu while Lines/Page is set to a value other than 32 in the Environment Buffers menu. If this configuration is saved, the VT Page Advance is automatically reset to *off*.

Confidence Test Routine Error Codes

The confidence test routine, a self-test procedure, is executed each time the T 27 is powered on. If an error is detected, a code is shown using the five LEDs above the numeric keypad; a code may also appear on the screen.

If the codes listed in Table A-1 appear at power on or the T 27 does not function properly, call your customer service representative.

Note: The error message NVBATT, indicating that the default configuration parameters for the T 27 have been loaded into nonvolatile memory, appears the first time a T 27 is powered on. If this message appears every time the T 27 is powered on, call your customer service representative.

Note: When the confidence test routine is finished and the T.27 is connected to the host, the line transmission activity indicator (LTAI) and receive (RCV) LEDs light. These lit LEDs indicate that the terminal is "on-line"; this is not an error condition.

Table A-1 Confidence Test Routine Error Codes

Kybd LED Pattern (1=ON)	Error Code on Screen	Confidence Test Indication
11110	None	Instruction set test failed—Z80 processor or ROM is bad
11101	None	ROM 1 is bad
11100	None	ROM 2 is bad
11011	None	DRAM data line error
11010	None	NVRAM data line error
11001	None	Addressing error detected
11000	None	Both bytes DRAM are bad
10111	None	Most significant byte of DRAM is bad
10110	None	Least significant byte of DRAM is bad
10101	None	NVRAM is bad
10100	None	I/O to custom system controller is bad
10011	None	Video nonmaskable interrupt error
10010	INTR nn	Software timer interrupt error; nn can equal 00 through FF
01111	VIDE01	Video vertical retrace interrupt error
01110	AUX00 n	Auxiliary interface error $n = 1$: UART read/write error $n = 2$: Time out during receive $n = 3$: Time out during transmit $n = 4$: Received parity error $n = 5$: Received overrun $n = 6$: Received framing error $n = 7$: Received data error $n = 8$: False interrupt

Table A-1 Confidence Test Routine Error Codes (Cont.)

Kybd LED Pattern (1=ON)	Error Code on Screen	Confidence Test Indication
01101	DCM00 <i>n</i>	Data comm interface error <i>n</i> = 1: UART read/write error <i>n</i> = 2: Time out during receive <i>n</i> = 3: Time out during transmit <i>n</i> = 4: Received parity error <i>n</i> = 5: Received overrun <i>n</i> = 6: Received framing error <i>n</i> = 7: Received data error <i>n</i> = 8: False interrupt
01100	KEY00 <i>n</i>	Keyboard interface error <i>n</i> = 1: UART read/write error <i>n</i> = 2: Time out during receive <i>n</i> = 3: Time out during transmit <i>n</i> = 4: Received parity error <i>n</i> = 5: Received overrun <i>n</i> = 6: Received framing error <i>n</i> = 7: Received data error <i>n</i> = 8: False interrupt
01011	KYB0 <i>nn</i>	Keyboard error <i>n</i> = 4: Received parity error <i>n</i> = 5: Received overrun <i>n</i> = 6: Received framing error or keyboard not attached <i>n</i> = 10: Keyboard not operating <i>n</i> = 11: Not enough ID synchs from keyboard <i>n</i> = 12: Time out during receive <i>n</i> = 13: Wrong ID code or spacebar pressed <i>n</i> = 14: Keys pressed <i>n</i> = 15: ROM checksum error
00111	NVBATT	All configuration parameters have been reset to the default values. Any previous configuration has been lost. The T 27 will otherwise function normally.

Note: If the terminal does not come on or you encounter an error code, whether listed in Table A-1 or not, call your customer service representative. AUX00*n* and NVBATT are nonfatal errors; you may be able to continue operation by pressing the LOCAL key. There is a chance, however, that you may not be able to access the printer (AUX00*n*) or that the internal battery may be dead (NVBATT).

Table A-2 Printer Test Error Codes

Error Code on Screen	Error Definition
PR000 <i>n</i>	An error was detected during the printer test (initiated by CTRL SPACEBAR F CTRL on the keyboard or <ESC> <i>sp</i> F from the host) <i>n</i> = 1: UART read/write error <i>n</i> = 2: Time out during receive <i>n</i> = 3: Time out during transmit <i>n</i> = 4: Received parity error <i>n</i> = 5: Received overrun error <i>n</i> = 6: Received framing error <i>n</i> = 7: Received data error <i>n</i> = 8: False interrupts

Table A-3 Reconfiguration Error Codes

Error Code on Screen	Error Definition
DC0000	If the T 27 is configured for synchronous communications, a synchronization test is performed during every power up and system reconfiguration. This error message is displayed if, when this test is run, no synchronization clock is detected on the datacomm port.
CD <i>hhhh</i>	A configuration error was detected. Specific error codes follow:
CD0000	Data not loaded from permanent storage due to CRC error.
CD0081	Datacomm baud rate error.
CD0089	Environment datacomm address is duplicate of another environment address, the PPT address, or the group poll address.
CD008C	Datacomm baud rate error.
CD008D	The configured language version is not available on this ROM pack.

Table A-3 Reconfiguration Error Codes (Cont.)

Error Code on Screen	Error Definition	
CD0094	Display store size error. This occurs when display store size is less than 1920 bytes (less than 3168 bytes if 132 characters per line) or greater than 24 pages.	
CD0099	Total sizes of all environmental buffers (display store plus DMA overhead, datacomm, keyboard, and temporary key programming) exceeds allocated environment partition.	
CD009E	Datacomm buffer size equals zero. It must be equal to or greater than one.	
CD00A6	The size of the system printer buffer plus all other buffers exceeds 40 Kbytes, the maximum user storage memory size.	
CD00AE	Printer baud rate error.	
CD00AF	Printer baud rate error.	
CD02C8	Environment 1 partition size less than the minimum 7500 bytes.	
CD5800	Total sizes of system buffers and system partitions exceeded 40 Kbytes, the maximum user storage memory size.	
CDFFFF	Security data not loaded from permanent storage.	

ASCII to EBCDIC Translate Table

COL ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p								
	0/0	1/0	4/0	15/0	7/12	13/7	7/9	9/7	2/0	3/0	4/1	5/8	7/6	9/15	11/8	13/12
1	SH	D1	!	1	A	Q	a	q								
	0/1	1/1	4/15	15/1	12/1	13/8	8/1	9/8	2/1	3/1	4/2	5/9	7/7	10/0	11/9	13/13
2	SX	D2	"	2	B	R	b	r								
	0/2	1/2	7/15	15/2	12/2	13/9	8/2	9/9	2/2	1/10	4/3	6/2	7/8	10/10	11/10	13/14
3	EX	D3	#	3	C	S	c	s								
	0/3	1/3	7/11	15/3	12/3	14/2	8/3	10/2	2/3	3/3	4/4	6/3	8/0	10/11	11/11	13/15
4	ET	D4	\$	4	D	T	d	t								
	3/7	3/12	5/11	15/4	12/4	14/3	8/4	10/3	2/4	3/4	4/5	6/4	8/10	10/12	11/12	14/10
5	EQ	NK	%	5	E	U	e	u								
	2/13	3/13	6/12	15/5	12/5	14/4	8/5	10/4	1/5	3/5	4/6	6/5	8/11	10/13	11/13	14/11
6	AK	SY	&	6	F	V	f	v								
	2/14	3/2	5/0	15/6	12/6	14/5	8/6	10/5	0/6	3/6	4/7	6/6	8/12	10/14	11/14	14/12
7	BL	EB	'	7	G	W	g	w								
	2/15	2/6	7/13	15/7	12/7	14/6	8/7	10/6	1/7	0/8	4/8	6/7	8/13	10/15	11/15	14/13
8	BS	CN	(	8	H	X	h	x								
	1/6	1/8	4/13	15/8	12/8	14/7	8/8	10/7	2/8	3/8	4/9	6/8	8/14	11/0	12/10	14/14
9	HT	EM	)	9	I	Y	i	y								
	0/5	1/9	5/13	15/9	12/9	14/8	8/9	10/8	2/9	3/9	5/1	6/9	8/15	11/1	12/11	14/15
10 (A)	LF	SB	*	:	J	Z	j	z								
	2/5	3/15	5/12	7/10	13/1	14/9	9/1	10/9	2/10	3/10	5/2	7/0	9/0	11/2	12/12	15/10
11 (B)	VT	EC	+	;	K	[	k	{								
	0/11	2/7	4/14	5/14	13/2	4/10	9/2	12/0	2/11	3/11	5/3	7/1	9/10	11/3	12/13	15/11
12 (C)	FF	◆	,	<	L	\	l	|								
	0/12	1/12	6/11	4/12	13/3	14/0	9/3	6/10	2/12	0/4	5/4	7/2	9/11	11/4	12/14	15/12
13 (D)	CR	▲	-	=	M	]	m	}								
	0/13	1/13	6/0	7/14	13/4	5/10	9/4	13/0	0/9	1/4	5/5	7/3	9/12	11/5	12/15	15/13
14 (E)	SO	◀	.	>	N	(-)	n	~								
	0/14	1/14	4/11	6/14	13/5	5/15	9/5	10/1	0/10	3/14	5/6	7/4	9/13	11/6	13/10	15/14
15 (F)	SI	▶	/	?	O	_	o	■								
	0/15	1/15	6/1	6/15	13/6	6/13	9/6	0/7	1/11	14/1	5/7	7/5	9/14	11/7	13/11	15/15

Note: Characters in parentheses within the chart are EBCDIC Graphics.

- EBCDIC Graphic Representation
- COL/ROW of Character in EBCDIC Code Table

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EBCDIC to ASCII Translate Table

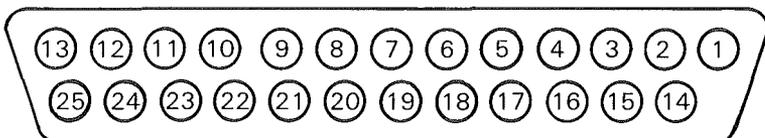
COL ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL			SP	&	-						{	}	\	0
	0/0	1/0	8/0	9/0	2/0	2/6	2/13	11/10	12/3	12/10	13/1	13/8	7/11	7/13	5/12	3/0
1	SH	D1					/		a	j	~		A	J		1
	0/1	1/1	8/1	9/1	10/0	10/9	2/15	11/11	6/1	6/10	7/14	13/9	4/1	4/10	9/15	3/1
2	SX	D2		SY					b	k	s		B	K	S	2
	0/2	1/2	8/2	1/6	10/1	10/10	11/2	11/12	6/2	6/11	7/3	13/10	4/2	4/11	5/3	3/2
3	EX	D3							c	l	t		C	L	T	3
	0/3	1/3	8/3	9/3	10/2	10/11	11/3	11/13	6/3	6/12	7/4	13/11	4/3	4/12	5/4	3/3
4									d	m	u		D	M	U	4
	9/12	9/13	8/4	9/4	10/3	10/12	11/4	11/14	6/4	6/13	7/5	13/12	4/4	4/13	5/5	3/4
5	HT		LF						e	n	v		E	N	V	5
	0/9	8/5	0/10	9/5	10/4	10/13	11/5	11/15	6/5	6/14	7/6	13/13	4/5	4/14	5/6	3/5
6		BS	EB						f	o	w		F	O	W	6
	8/6	0/8	1/7	9/6	10/5	10/14	11/6	12/0	6/6	6/15	7/7	13/14	4/6	4/15	5/7	3/6
7	█		EC	ET					g	p	x		G	P	X	7
	7/15	8/7	1/11	0/4	10/6	10/15	11/7	12/1	6/7	7/0	7/8	13/15	4/7	5/0	5/8	3/7
8		CN							h	q	y		H	Q	Y	8
	9/7	1/8	8/8	9/8	10/7	11/0	11/8	12/2	6/8	7/1	7/9	14/0	4/8	5/1	5/9	3/8
9		EM						~	i	r	z		I	R	Z	9
	8/13	1/9	8/9	9/9	10/8	11/1	11/9	6/0	6/9	7/2	7/10	14/1	4/9	5/2	5/10	3/9
10 (A)				[	]	|	:								
	8/14	9/2	8/10	9/10	5/11	5/13	7/12	3/10	12/4	12/11	13/2	14/2	14/8	14/14	15/4	15/10
11 (B)	VT					\$,	#								
	0/11	8/15	8/11	9/11	2/14	2/4	2/12	2/3	12/5	12/12	13/3	14/3	14/9	14/15	15/5	15/11
12 (C)	FF	◆		D4	<	*	%	@								
	0/12	1/12	8/12	1/4	3/12	2/10	2/5	4/0	12/6	12/13	13/4	14/4	14/10	15/0	15/6	15/12
13 (D)	CR	▲	EQ	NK	()	-	'								
	0/13	1/13	0/5	1/5	2/8	2/9	5/15	2/7	12/7	12/14	13/5	14/5	14/11	15/1	15/7	15/13
14 (E)	SO	◀	AK		+	;	>	=								
	0/14	1/14	0/6	9/14	2/11	3/11	3/14	3/13	12/8	12/15	13/6	14/6	14/12	15/2	15/8	15/14
15 (F)	SI	▶	BL	SB	!	(^)	?	"								
	0/15	1/15	0/7	1/10	2/1	5/14	3/15	2/2	12/9	13/0	13/7	14/7	14/13	15/3	15/9	15/15

Note: Characters in parentheses within the chart are ASCII Graphics.

- ASCII Graphic Representation
- COL/ROW of Character in ASCII Code Table

Pinouts

Figure C-1 RS-232C U (Upstream) Pin Diagram

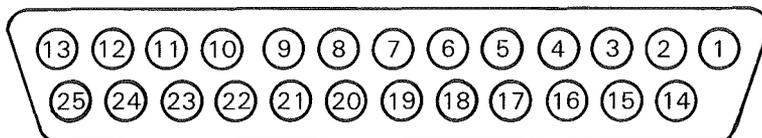


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Table C-1 RS-232C U (Upstream) Pin Assignments

Pin #	Designation	Description
1	Frameground	Protective ground
2	BA	Transmitted data
3	BB	Received data
4	CA	Request to send
5	CB	Clear to send
6	CC	Data set ready
7	GND	Signal ground
8	CF	Data carrier detect
9	—	—
10	—	—
11	CH	Rate selector 111/126
12	—	—
13	—	—
14	—	—
15	DB	Transmit clock (DCE)
16	—	—
17	DD	Receiver clock (DCE)
18	—	—
19	—	—
20	CD	Data terminal ready
21	—	—
22	—	—
23	CH	Data signal rate selector (DTE) (111)
24	CCITT116	Select standby
25	—	—

Figure C-2 RS-232C D (Downstream) Pin Diagram

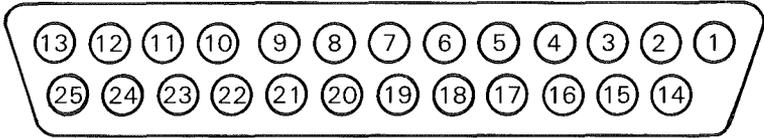


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Table C-2 RS-232C D (Downstream) Pin Assignments

Pin #	Designation	Description
1	Frameground	Protective ground
2	DWNSTMBA	Transmitted data
3	DWNSTMBB	Received data
4	DWNSTMCA	Request to send
5	DWNSTMCB	Clear to send
6	DWNSTMCC	Data set ready
7	GND	Signal ground
8	DWNSTMCF	Data carrier detect
9	—	—
10	—	—
11	DWNSTMCH	Rate selector 111/126
12	—	—
13	—	—
14	—	—
15	DWNSTMDB	Transmit clock (DCE)
16	—	—
17	DWNSTMDD	Receiver clock (DCE)
18	—	—
19	—	—
20	DWNSTMCD	Data terminal ready
21	—	—
22	—	—
23	DWNSTMCH	Data signal rate selector (DTE) (111)
24	DOWNCCITT116	Select standby
25	—	—

Figure C-3 TDI/BDAA/CPU (upstream) Pin Diagram



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Note: If you have *five* connectors on the back of your T 27, only Tables C-3a and C-3b apply. Otherwise you should have *four* connectors, and Tables C-3a, C-3b, and C-3c all apply.

Table C-3a TDI (Upstream) Pin Assignments

Page #	Designation	Description
2	Data	Data Line
7	Ground	Signal Return

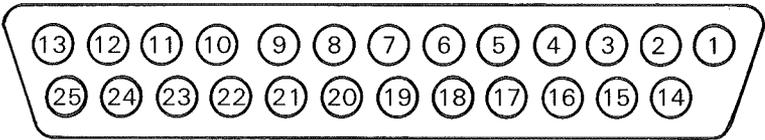
Table C-3b BDAA (Upstream) Pin Assignments

Page #	Designation	Description
1	Frame Ground	Protective Ground
2	Data	Differential Data Line
3	Data	Differential Data Line
7	Ground	Isolated BDAA Ground

Table C-3c CPU Connector Pin Assignments

Page #	Designation	Description
1	Frame Ground	Protective Ground
4	Monitor ID	Monitor Size Designation
5	Ground	Signal Return
6	Ground	Signal Return
8	Blanking	CPU Video Signal
9	Ground	Signal Return
10	Ground	Signal Return
11	Speaker	CPU Tone Signal
14	Keyboard Reset	CPU Keyboard Signal
15	Analog Video	CPU Video Signal
16	Ground	Signal Return
17	Horizontal Sync	CPU Video Signal
18	Vertical Sync	CPU Video Signal
20	Ground	Signal Return
21	Keyboard Data Out	Keyboard Data Signal
22	Keyboard Data In	Keyboard Data Signal
23	Power Enable	CPU Monitor Power Switch
24	CPU Enable	CPU Attached Signal

Figure C-4 PRT/AUX Connector Pin Diagram



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Table C-4 PRT/AUX Connector Pin Assignments

Pin #	Designation	I/O	Description
1	Frameground	—	
		Protective ground	
2	T x D	Input	Auxiliary data
3	R x D	Output	Printer data
4	RTS	Input	Printer busy
5	CTS	Output	Clear to send (Always true)
6	DSR	Output	Data set ready (Always true)
7	Signal ground	—	Signal ground
8	CD	Output	Carrier detect (Always true)
11	RTS	Input	
		Printer busy	
20	DTR	Input	Printer ready

(

(

(

Character Codes

The charts in this appendix list the language versions that are available for the T 27.

Note: Many character sets are 7-bit sets. Any attempt to send an unsupported 8-bit character may produce unpredictable results.

Language Version: 01

Version Name: 1 United States

COL ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	@	P	`	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	#	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	[	k	{
12 (C)	FF	◆	,	<	L	\	l	|
13 (D)	CR	▲	-	=	M	]	m	}
14 (E)	SO	◀	.	>	N	^	n	~
15 (F)	SI	▶	/	?	O	_	o	■

Language Version: 34

Version Name: 1/A Canada

COL ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	'	p				È	ö	h	ë	ö
1	SH	D1	!	1	A	Q	a	q			À	Ǧ	ø	à	ǧ	ø
2	SX	D2	"	2	B	R	b	r			Á	ì	ș	á	î	ș
3	EX	D3	#	3	C	S	c	s			Â	í	š	â	î	š
4	ET	D4	\$	4	D	T	d	t			Ã	î		ã	î	ß
5	EQ	NK	%	5	E	U	e	u			Ä	ï	þ	ä	ı	þ
6	AK	SY	&	6	F	V	f	v			Å	ï	ù	å	ı	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	Ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ć	Ĵ	Û	ć	ĵ	û
9	HT	EM	)	9	I	Y	i	y			Ç	Ł	Ü	ç	ł	ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ń	Ŵ	č	ń	ŵ
11 (B)	VT	EC	+	;	K	[	k	[			Đ	OE	Ý	đ	oe	ý
12 (C)	FF	◆	,	<	L	\	l	|				Ò	Ŷ	đ	ò	ŷ
13 (D)	CR	▲	-	=	M	]	m	]			È	Ó	Ÿ	è	ó	ÿ
14 (E)	SO	◀	.	>	N	^	n	~			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	_	o	■			Ê	Õ		ê	õ	

E7215

Language Version: 02, 03, 04

Version Name: 2 United Kingdom, 3 Belgium, 4, Italy

COL \ ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	@	P	`	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	£	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	[	k	{
12 (C)	FF	◆	,	<	L	\	l	|
13 (D)	CR	▲	-	=	M	]	m	}
14 (E)	SO	◀	.	>	N	^	n	~
15 (F)	SI	▶	/	?	O	_	o	■

Language Version: 36

Version Name: 3/A Belgium

COL ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p				È	ø	h	ë	ö
1	SH	D1	!	1	A	Q	a	q			À	Ğ	ø	à	ğ	ø
2	SX	D2	"	2	B	R	b	r			Á	Ì	Ş	á	ì	ş
3	EX	D3	£	3	C	S	c	s			Â	Í	Š	â	í	š
4	ET	D4	\$	4	D	T	d	t			Ã	Î		ã	î	β
5	EQ	NK	%	5	E	U	e	u			Ä	Ï	Þ	ä	ï	þ
6	AK	SY	&	6	F	V	f	v			Å	Ï	Ù	å	ï	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	Ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ć	Í	Û	ć	ı	û
9	HT	EM	)	9	I	Y	i	y			Ç	L	Ü	ç	ı	ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ň	Ű	č	ň	ű
11 (B)	VT	EC	+	;	K	[	k	[			Đ	OE	Ý	đ	oe	ý
12 (C)	FF	◆	,	<	L	\	l	l				Ò	Ÿ	đ	ò	ÿ
13 (D)	CR	▲	-	=	M	]	m	]			È	Ó	Ÿ	è	ó	ÿ
14 (E)	SO	◀	.	>	N	^	n	-			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	_	o	■			Ê	Õ		ê	õ	

E7218

Language Version: 05

Version Name: 5 Germany

COL	0	1	2	3	4	5	6	7
ROW								
0	NU	DL	SP	0	§	P	'	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	£	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	Ä	k	ä
12 (C)	FF	◆	,	<	L	ö	l	ö
13 (D)	CR	▲	-	=	M	ü	m	ü
14 (E)	SO	◀	·	>	N	^	n	ß
15 (F)	SI	▶	/	?	O	_	o	■

Language Version: 37

Version Name: 5/A Germany

COL \ ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	§	P	'	p				È	ö	h	ë	ö
1	SH	D1	!	1	A	Q	a	q			À	Ğ	ø	à	ğ	ø
2	SX	D2	"	2	B	R	b	r			Á	İ	ş	á	ı	ş
3	EX	D3	£	3	C	S	c	s			Â	Í	š	â	í	š
4	ET	D4	\$	4	D	T	d	t			Ã	Î		ã	î	ß
5	EQ	NK	%	5	E	U	e	u			Ä	İ	þ	ä	ı	þ
6	AK	SY	&	6	F	V	f	v			Å	Ï	ù	å	ï	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	Ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ç	Í	Û	ç	ı	Û
9	HT	EM	)	9	I	Y	i	y			Ç	L	Ü	ç	ı	Ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ň	Ű	č	ň	ű
11 (B)	VT	EC	+	;	K	Ä	k	ä			Ð	CE	Ý	ð	ce	ý
12 (C)	FF	◆	,	<	L	ö	l	ö				Ò	ÿ	đ	ò	ÿ
13 (D)	CR	▲	-	=	M	Ü	m	ü			È	Ó	ÿ	è	ó	ÿ
14 (E)	SO	◀	·	>	N	ˆ	n	ˆ			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	_	o	■			Ê	Õ		ê	õ	

E7220

Language Version: 06

Version Name: 6 Portugal

COL \ ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	@	P	`	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	#	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	Õ	k	õ
12 (C)	FF	◆	,	<	L	Ç	l	ç
13 (D)	CR	▲	-	=	M	Ã	m	ã
14 (E)	SO	◀	.	>	N	^	n	^
15 (F)	SI	▶	/	?	O	_	o	■

Language Version: 38

Version Name: 6/A Portugal

COL ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p				È	ö	ñ	è	ö
1	SH	D1	!	1	A	Q	a	q			À	Ğ	ø	à	ğ	ø
2	SX	D2	"	2	B	R	b	r			Á	İ	Ş	á	ı	ş
3	EX	D3	#	3	C	S	c	s			Â	Í	Š	â	í	š
4	ET	D4	\$	4	D	T	d	t			Ã	Î		ã	î	β
5	EQ	NK	%	5	E	U	e	u			Ä	Ï	þ	ä	ı	þ
6	AK	SY	&	6	F	V	f	v			Å	Ï	Ù	å	ı	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	Ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ć	Ĵ	Û	ć	ĵ	û
9	HT	EM	)	9	I	Y	i	y			Ç	Ł	Ü	ç	ł	ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ń	Ŧ	č	ň	ŧ
11 (B)	VT	EC	+	;	K	Õ	k	õ			Đ	CE	Ý	đ	ce	ý
12 (C)	FF	◆	,	<	L	Ç	l	ç				Ò	Ÿ	đ	ò	ÿ
13 (D)	CR	▲	-	=	M	Ã	m	ã			È	Ó	Ÿ	è	ó	ÿ
14 (E)	SO	◀	.	>	N	^	n	^			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	_	o	■			Ê	Õ		ê	õ	

E7222

Language Version: 07

Version Name: 7 Spain

COL \ ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	@	P	`	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	#	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	[	k	i
12 (C)	FF	◆	,	<	L	ñ	l	ñ
13 (D)	CR	▲	-	=	M	]	m	¿
14 (E)	SO	◀	.	>	N	^	n	—
15 (F)	SI	▶	/	?	O	_	o	■

Language Version: 39

Version Name: 7/A Spain

COL \ ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p				È	ö	h	ë	ö
1	SH	D1	!	1	A	Q	a	q			À	Ğ	Ø	à	ğ	ø
2	SX	D2	"	2	B	R	b	r			Á	İ	Ş	á	ı	ş
3	EX	D3	#	3	C	S	c	s			Â	Í	Š	â	í	š
4	ET	D4	\$	4	D	T	d	t			Ã	Î		ã	î	þ
5	EQ	NK	%	5	E	U	e	u			Ä	İ	ß	ä	ı	þ
6	AK	SY	&	6	F	V	f	v			Ř	Ï	Ù	ř	ï	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	Ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ć	Ĵ	Û	ć	ĵ	û
9	HT	EM	)	9	I	Y	i	y			Ç	Ł	Ü	ç	ł	ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ń	Ŵ	č	ń	ŵ
11 (B)	VT	EC	+	;	K	Ł	k	ł			Đ	Ĉ	Ý	đ	ĉ	ý
12 (C)	FF	◆	,	<	L	Ñ	l	ñ				Ò	Ÿ	đ	ò	ÿ
13 (D)	CR	▲	-	=	M	Ŷ	m	ŷ			È	Ó	Ÿ	è	ó	ÿ
14 (E)	SO	◀	.	>	N	ˆ	n	ˆ			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	˘	o	˘			Ê	Õ		ê	õ	

E7224

Language Version: 08

Version Name: 8 Denmark/Norway

COL ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	Ö	P	ö	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	”	2	B	R	b	r
3	EX	D3	£	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	Æ	k	æ
12 (C)	FF	◆	,	<	L	Ø	l	ø
13 (D)	CR	▲	-	=	M	Å	m	å
14 (E)	SO	◀	·	>	N	Ü	n	ü
15 (F)	SI	▶	/	?	O	Ä	o	ä

Language Version: 09

Version Name: 9 Yugoslavia

COL ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	Š	P	·	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	£	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	Ć	k	ć
12 (C)	FF	◆	,	<	L	Č	l	č
13 (D)	CR	▲	-	=	M	Š	m	š
14 (E)	SO	◀	·	>	N	Ž	n	ž
15 (F)	SI	▶	/	?	O	–	o	■

E7226

Language Version: 14

Version Name: 14 Turkey

COL \ ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	Ç	P	ç	p
1	SH	D1	ı	1	A	Q	a	q
2	SX	D2	”	2	B	R	b	r
3	EX	D3	Ŧ	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	İ	k	ı
12 (C)	FF	◆	,	<	L	ö	l	ö
13 (D)	CR	▲	-	=	M	Ş	m	ş
14 (E)	SO	◀	·	>	N	Ü	n	ü
15 (F)	SI	▶	/	?	O	Ğ	o	ğ

E7227

Language Version: 17, 43

Version Name: 17 Iceland, French WP

COL \ ROW	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	NUL	DLE	SP	0	@	P	'	p				°	À	Ð	à	ð
1	SOH	DC1	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2	STX	DC2	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3	ETX	DC3	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4	EOT	DC4	\$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5	ENQ	NAK	%	5	E	U	e	u			¥	µ	Å	Õ	a	ö
6	ACK	SYN	&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7	BEL	ETB	,	7	G	W	g	w			§	·	Ç	X	ç	÷
8	BS	CAN	(	8	H	X	h	x			¨	/	È	Ø	è	ø
9	HT	EM	)	9	I	Y	i	y			©	,	É	Ù	é	ù
10	LF	SUB	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
11	VT	ESC	+	;	K	[	k	{			<<	>>	Ë	Û	ë	û
12	FF	IS4	,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
13	CR	IS3	-	=	M	]	m	}			SHY	½	Í	Ý	í	ý
14		IS2	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
15		IS1	/	?	O	_	o	DEL			-	¸	Ï	β	ï	ÿ

E7228

Language Version: 44

Version Name: Non-extended French

COL	0	1	2	3	4	5	6	7
ROW								
0	NU	DL	SP	0	@	P	'	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	#	3	C	S	c	s
4	ET	D4	\$	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10	LF	SB	*	:	J	Z	j	z
11	VT	EC	+	;	K	[	k	{
12	FF	◆	,	<	L	\	l	|
13	CR	▲	-	=	M	]	m	}
14	SO	◀	.	>	N	^	n	~
15	SI	▶	/	?	O	_	o	DEL

E7229

Language Version: 18

Version Name: 18 Sweden/Finland

COL \ ROW	0	1	2	3	4	5	6	7
0	NU	DL	SP	0	É	P	é	p
1	SH	D1	!	1	A	Q	a	q
2	SX	D2	"	2	B	R	b	r
3	EX	D3	#	3	C	S	c	s
4	ET	D4	¤	4	D	T	d	t
5	EQ	NK	%	5	E	U	e	u
6	AK	SY	&	6	F	V	f	v
7	BL	EB	,	7	G	W	g	w
8	BS	CN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10 (A)	LF	SB	*	:	J	Z	j	z
11 (B)	VT	EC	+	;	K	Ä	k	ä
12 (C)	FF	◆	,	<	L	ö	l	ö
13 (D)	CR	▲	-	=	M	å	m	å
14 (E)	SO	◀	.	>	N	ü	n	ü
15 (F)	SI	▶	/	?	O	-	o	■

E7230

Language Version: 41, 42

Version Name: Swiss German, Swiss French

COL \ ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p			ß	Ë	ö	ñ	ë	ö
1	SH	D1	l	1	A	Q	a	q		..	À	Ğ	ø	à	ğ	ø
2	SX	D2	"	2	B	R	b	r		'	Á	Ì	Ş	á	ì	ş
3	EX	D3	#	3	C	S	c	s			Â	Í	Š	â	í	š
4	ET	D4	\$	4	D	T	d	t			Ã	Î	£	ã	î	£
5	EQ	NK	%	5	E	U	e	u			Ä	Ï	þ	ä	ï	þ
6	AK	SY	&	6	F	V	f	v			Å	ÿ	ù	å	ÿ	ù
7	BL	EB	,	7	G	W	g	w			Æ	IJ	ú	æ	ij	ú
8	BS	CN	(	8	H	X	h	x			Ć	Í	Û	ć	ı	û
9	HT	EM	)	9	I	Y	i	y			Ç	L	Ü	ç	ı	ü
10 (A)	LF	SB	*	:	J	Z	j	z			Č	Ñ	Ŵ	č	ñ	ŵ
11 (B)	VT	EC	+	;	K	[	k	ç			Đ	CE	Ý	đ	ce	ý
12 (C)	FF	◆	,	<	L	\	l	l			Š	Ò	Ÿ	đ	ò	ŷ
13 (D)	CR	▲	-	=	M	]	m	}			È	Ó	Ÿ	è	ó	ÿ
14 (E)	SO	◀	.	>	N	^	n	-			É	Ô	Ž	é	ô	ž
15 (F)	SI	▶	/	?	O	_	o	■			Ê	Õ	°	ê	õ	■

Language Version: 25

Version Name: 25 Greek

COL \ ROW	0	1	2	3	4	5	6	7	8	9	10 (A)	11 (B)	12 (C)	13 (D)	14 (E)	15 (F)
0	NU	DL	SP	0	@	P	`	p						Π	ε	π
1	SH	D1	!	1	A	Q	a	q					A	P	έ	ρ
2	SX	D2	"	2	B	R	b	r					B	Σ	ζ	σ
3	EX	D3	#	3	C	S	c	s					Γ	Τ	η	ς
4	ET	D4	\$	4	D	T	d	t					Δ	Υ	ή	τ
5	EQ	NK	%	5	E	U	e	u					E	Φ	ϑ	υ
6	AK	SY	&	6	F	V	f	v					Z	X	ι	ύ
7	BL	EB	'	7	G	W	g	w					H	Ψ	ί	ύ
8	BS	CN	(	8	H	X	h	x					Θ	Ω	ϊ	φ
9	HT	EM	)	9	I	Y	i	y					I	Δρ	κ	χ
10 (A)	LF	SB	*	:	J	Z	j	z					K	ΠΕ	λ	ψ
11 (B)	VT	EC	+	;	K	[k	{					Λ	α	μ	ω
12 (C)	FF	◆	,	<	L	\	l	;					M	ά	ν	ώ
13 (D)	CR	▲	-	=	M]	m	}					N	β	ξ	/
14 (E)	SO	◀	.	>	N	^	n	~					Ξ	γ	ο	..
15 (F)	SI	▶	/	?	O	_	o	■					O	δ	ό	

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Byte Configuration

Some T 27 options can be set up by directly changing bytes in the temporary storage area through a method known as *byte configuration*. This method is available to maintain compatibility with previous Burroughs terminals. Use the following procedure to enable and access this feature:

- 1 Access set-up mode and then select the System Keyboard and Screen menu, assuming this menu is accessible at your password level.
- 2 Move the cursor to the Byte Configuration Available option. Set this choice field to *yes*. This makes the feature accessible.
- 3 Return to the Main menu and save the option, either to temporary or permanent, depending on your needs.
- 4 Refer to the tables in this appendix to determine the temporary storage addresses that need to be changed. The first table lists the addresses according to the Set-Up menu in which the option appears. The second table lists the addresses in ascending numerical order and the default values for the option.
- 5 Access byte configuration by typing CTRL RW <pswd> CTRL. You must use a valid level I or II password. The prompt ">" then appears in the upper left corner of the screen.
- 6 You now have two options, both of which display 16 bytes of temporary storage. In both of the following methods, *xxxxx* represents the starting address of the 16 bytes you want to display. The difference between the methods is the way in which the contents of memory are displayed:
 - RHxxxxx** Displays the contents as hexadecimal numbers.
 - RAxxxxx** Displays the contents as characters.
- 7 Modify the bytes as necessary by moving the cursor and changing the values.
- 8 To change a temporary address not currently displayed, type CTRL **RHxxxxx** or CTRL **RAxxxxx** to display another 16 bytes.

- 9 To save the changes to the temporary area, use the sequence CTRL **RCxxxxx**. This must be done before you view another set of 16 bytes if the changes are to be saved. If all changes are syntactically correct (all values are hexadecimal and are in the proper place on the screen), the terminal responds with an *ACK* on the status line. If the values are incorrect, the terminal responds with a *NAK* and the values are not saved to the temporary area. After making all of your changes and saving through CTRL **RCxxxxx**, press LOCAL to exit byte configuration.
- 10 To save the changes to the permanent area, the sequence CTRL **RPxxxxx** must be executed. This sequence saves all changes made through byte configuration that were saved through CTRL **RCxxxxx**. The values are stored permanently, and six asterisks are displayed in the upper left corner of the screen if the reconfiguration was successful.
- 11 You may want to view the contents of the bytes without making any changes. As long as the sequence CTRL **RCxxxxx** is never executed, as much area as desired may be viewed. To exit, press LOCAL and the session is aborted.

Notes

In either a single or multiple environment configuration, changes can be made to both environment and system parameters in the temporary area, via the CTRL **RCxxxxx** sequence. After a successful CTRL **RCxxxxx** sequence (*ACK* appears on the status line), the LOCAL key exits byte configuration and causes a terminal reconfiguration.

If only one environment is enabled, a full system reconfiguration is performed, and any new changes to system parameters in the temporary area are ignored. With multiple environments, any changes to system parameters in the temporary area will not be used unless a full system reconfiguration is executed from set-up mode.

Similarly, CTRL **RPxxxxx** saves only environmental parameters from the temporary area to the permanent area if multiple environments are enabled. If only one environment is enabled, the CTRL **RPxxxxx** sequence saves both environmental and system parameters from the temporary area to the permanent area. A full system reconfiguration is then executed.

The control sequence CTRL **RLxxxxx** (see Section 2) enables you to view the contents of the error log. This sequence can be executed from byte configuration only.

The following keys and actions are not allowed in byte configuration:

- Monitor mode
- Menu-driven set-up
- Menu key programming
- Use of the environment keys to change the current environment
- Window configurator menu
- The XMT, RCV, and SPCFY keys

Table E-1 Temporary Storage Layout by Menu Options

Menu Item	Byte/Bit
Environment Datacomm Options	
Address	89, 8A
DC1 Function	80/3
DC2 Function	96/0
CR Interpretation	A0/3
LF Interpretation	92/0
RCV Mode Hold	9B/3
FF Clears Tabs	96/1
Xmit Printer Status	9B/0
DCOM Early Fill	A1/5
VT Page Advance	96/2
SO/SI XLT	A1/3
SO/SI XTN	A1/2
SOH Clears Screen	80/5
SOH Exits FORMS	A0/1
ETX Advance	A0/2
Line At A Time Xmit	A0/7
Form Xmit To Cursor	80/4
Environment Video Options	
Alternate US Char	86
Alternate RS Char	87
Lines Per Full-Screen	92/3
Environment Id	Not alterable
Form Delimiters Visible	Not alterable
CR Character Display:	
From DATACOMM	A0/4
From Keyboard	A0/6
HT Displayed on TAB FUNCTION:	
From DATACOMM	A0/0
From Keyboard	96/6
Cursor Display	92/5, A9/7
Blinking Cursor	92/1
DATACOMM ETX Display	96/4
Auto FORM Field ADVANCE	92/4

Table E-1 Temporary Storage Layout by Menu Options (Cont.)

Menu Item	Byte/Bit
Environment Buffers	
Keyboard	A2, A3
Datacomm	9E, 9F
Key Program Temporary	104, 105, 102, 103
Lines Per Page	84
Chars Per Line	85, 92/2
Number of Pages	Not alterable
Environment Keyboard Options	
CLR Function	96/3
Cursor Wrap Around	96/7
RET Function	A0/5
Column End Alarm	97
Row End Alarm	98
Lower Case Lockout	92/6
Buffer Enabled	A1/4
SPCFY Key Sends Page Number	7E/7
SPCFY Key Sends	A1/6
Insert Key Inserts Space	Not alterable
Environment Tab Options	
Tabs	96/5
Retain Tabs On Configuration	A1/7
Tab Ruler Display	Not alterable
System Datacomm Options	
Electrical Interface	A9/6
Protocol	80/2, 80/6
Transmission Mode	80/7
Opt Pol/Sel	88/0
Circuit 116	88/3
Circuit 111/126	88/2
Turn Around Delay	83
Transmission Number	7F
Check Parity	80/0
Fast Select Enable	7E/0
Beep On NAK	9B/6
Baud Rate	81, 8C
CTS Delay	82
Group Select Character	8B
Group Poll Address	8E, 8F

Table E-1 Temporary Storage Layout by Menu Options (Cont.)

Menu Item	Byte/Bit
System Partitions and International	
Language Version	8D
Environment 1 (Address 1)	Not alterable
Environment 2 (Address 2)	Not alterable
Environment 3 (Address 3)	Not alterable
Printer Buffer	A6, A7
Data Sharing Buffer	Not alterable
PPT Buffer	Not alterable
Monitor Mode Buffer	Not alterable
Key Programming Permanent	Not alterable for all environments
System Messages	
Column Indicator	Not alterable
Row Indicator	Not alterable
Insert Page Indicator	Not alterable
Insert Line Indicator	Not alterable
Page Indicator	10C-10F
Receive Mode Indicator	Not alterable
Control Mode Indicator	F0-F3
Forms Mode Indicator	F8-FB
ENQ Mode Indicator	Not alterable
Password (Level I)	Not alterable
Password (Level II)	108-10B
Search Mode Indicator	Not alterable
Monitor Mode Id	Not alterable
Buffer Overflow	110-11F
Trans Num Error:	Not alterable
Printer Error	130-13F
Mark Error	Not alterable
Receive Error	140-14F
Bound Error	Not alterable
Keystroke Lost	150-15F
Buffer Empty	Not alterable
Receiving Page	160-16F
Mark/Bound Error	Not alterable
System Keyboard and Screen	
Repeat Rate (Chars/Sec)	A8/0-A8/3
Repeat Delay (x 100 ms.)	A8/4-A8/7
Alarm	A9/2-A9/3
Click	A9/0-A9/1
Return Key in Forms	Not alterable
Screen Saver Delay (Minutes)	Not alterable
Byte Configuration Available	Not alterable

Table E-1 Temporary Storage Layout by Menu Options (Cont.)

Menu Item	Byte/Bit
System Peripheral Options	
Baud Rate	AE, AF
Bits/Char	AD/2, AD/3
Stop Bits	AD/5
Printer XON/XOFF	B6, B7
Printer Busy Status	AD/4
Extend Line	9B/5
Parity Bit Required	AD/1
Parity Type	AD/6
Parity Check	AD/4
Aux Input To	AD/0
Translate CTRL Char	9B/7
Control Code Mapping	Not alterable
PPT	Not alterable
PPT Address	A4, A5
Filter Control Codes	B4/7
Logical ACK Char	B/5
Xmit To Host On	Not alterable

Table E-2 Temporary Storage Layout in Address Order*

Address	Option	Default
Byte/Bit		
80/0	Check Parity	0 (on)
80/1	unused	0
80/2	unused	0
80/3	DC1 Function	1 (Stay in Receive)
80/4	Form XMIT to Cursor	1 (off)
80/5	SOH Clears Screen	0
80/6	Protocol	0 (Pol/Sel)
80/7	Transmission Mode	0 (Asynch)
81, 8C	Baud Rate	A1, 08 {9600}
		E9, 08 {38400}
		D1, 08 {19200}
		F5, 09 {4800}
		E9, 09 {2400}
		E1, 09 {1800}
		D1, 09 {1200}
		A1, 09 {600}
		D1, 0A {300}
		A1, 0A {150}
		96, 0A {134.5}
		7E, 0A {110}
		41, 0A {75}

Table E-2 Temporary Storage Layout in Address Order* (Cont.)

Address	Option	Default
Byte/Bit		
82	CTS Delay	05
83	Turn Around Delay	00
84	Lines Per Page	17 (24 lines), optional values are expressed as lines/page minus one, for example, twelve lines per page is expressed as 0B.
85, 92/2	Chars Per Line	4F, 1 (80 chars)
86	Alternate US Character	1F (US)
87	Alternate RS Character	1E (RS)
88/0	Opt Pol/Sel	0 (Standard)
88/2	Circuit 111/126	0
88/3	Circuit 116	0
89, 8A	Address	04, 04 (EOT, EOT)
8B	Group Select Character	04 (EOT)
8D	Language Version	01 (United States), see Section 11 for other language versions.
		0,0,0,1 {5cps}
		0,0,1,0 {7cps}
		0,0,1,1 {9cps}
		0,1,0,0 {11cps}
		0,1,0,1 {13cps}
		0,1,1,0 {15cps}
		0,1,1,1 {17cps}
		1,0,0,0 {19cps}
		1,0,0,1 {21cps}
		1,0,1,0 {25cps}
		1,0,1,1 {30cps}
		1,1,0,0 {40cps}
		1,1,0,1 {50cps}
		1,1,1,0 {60cps}
		1,1,1,1 {70cps}
A8/4-7	Repeat Delay	0,1,0,1 (0.5 ms)
		0,0,0,0 {no delay}
		0,0,0,1 {0.1 ms}
		0,0,1,0 {0.2 ms}
		0,0,1,1 {0.3 ms}
		0,1,0,0 {0.4 ms}
		0,1,0,1 {0.5 ms}
		0,1,1,0 {0.6 ms}
		0,1,1,1 {0.7 ms}

Table E-2 Temporary Storage Layout in Address Order* (Cont.)

Address	Option	Default
Byte/Bit		1,0,0,0 {0.8 ms}
		1,0,0,1 {0.9 ms}
		1,0,1,0 {1.0 ms}
		1,0,1,1 {1.1 ms}
		1,1,0,0 {1.2 ms}
		1,1,0,1 {1.3 ms}
		1,1,1,0 {1.4 ms}
		1,1,1,1 {1.5 ms}
A9/0-1	Click	1,1 (on)
A9/2-3	Alarm	1,1 (on)
A9/6	Electrical Interface	0 (TDI/BDAA)
AD/0	Aux Input To	0 (DCOM)
AD/1	Parity Bit Required	0
AD/2-3	Bits/Char	1,1 (8 bits/char)
		0,0 {5 bits/char}
		0,1 {6 bits/char}
		1,0 {7 bits/char}
AD/4	Printer Busy Status	1 (1)
AD/5	Stop Bits	0 (1)
AD/6	Parity Type	0 (even)
AD/7	Aux Parity Check	0 (yes)
AE, AF	Baud Rate	A1, 08 (9600)
		D1, 08 {19200}
		F5, 09 {4800}
		E9, 09 {2400}
		E1, 09 {1800}
8E, 8F	Group Poll Address	04, 04 (EOT, EOT)
92/0	LF Interpretation	0 (LF)
92/1	Blinking Cursor	0
92/3	Lines Per Full Screen	1 (24)
92/4	Auto Form Field Advance	0 (on)
92/5, A9/7	Cursor Display	0,0 (Block)
92/6	Lower Case Lockout	0
94, 95	Display Store Size (end)	3840 [decimal]
96/0	DC2 Function	0 (Toggle Forms)
96/1	FF Clears Tabs	0
96/2	VT Page Advance	0
96/3	CLR Function	0 (Clrs Unprotected)
96/4	Datcomm ETX Display	0
96/5	Tabs	0 (Fixed)
96/6	HT From Keyboard	0

Table E-2 Temporary Storage Layout in Address Order* (Cont.)

Address	Option	Default
Byte/Bit		
96/7	Cursor Wrap Around	0 (on)
97	Column End Alarm	84 (Column 133)
98	Row End Alarm	18 (Row 25)
99, 9A	Display Store Size (start)	0
9B/0	XMIT Printer Status	0
9B/3	RCV Mode Hold	1
9B/5	Extend Line	0
9B/6	Beep on NAK	1
9B/7	Translate Control Char	0 (yes)
9C, 9D	Data Comm Size (start)	0
9E, 9F	Data Comm Size (end)	2048 [decimal]
A0/0	HT From Datacomm	0
A0/1	SOH Exits Forms	0 (yes)
A0/2	ETX Advance	0
A0/3	CR Interpretation	0 (CR/LF)
A0/4	CR From Datacomm	0
A0/5	RET Function	0 (CR/LF)
A0/6	CR From Keyboard	0
A0/7	Line at a Time Xmit	0
A1/2	SO/SI XTN	0
A1/3	SO/SI XLT	0
A1/4	Buffer Enabled	0
A1/5	DCOM Early Fill	0
A1/6	SPCFY Key Sends	0 (ASCII)
A1/7	Retain Tabs on Configuration	0
A2, A3	Keyboard	0
A4, A5	PPT Address	04, 04 (EOT, EOT)
A6, A7	Printer Buffer	2048 [decimal]
A8/0-3	Repeat Rate	0,1,1,0 (15 cps) 0,0,0,0 {0 cps} D1, 09 {1200} A1, 09 {600} D1, 0A {300} A1, 0A {150} 96, 0A {134.5} 7E, 0A {110} 41, 0A {75}
B4/7	Filter Control Codes	0
B5	Logical ACK Character	04 (EOT)
B6, B7	Protocol	11, 13 (DC1, DC3)
FD - F3	Control Mode Indicator	CTRL

Table E-2 Temporary Storage Layout in Address Order* (Cont.)

Address	Option	Default
Byte/Bit		
F8 - FB	Forms Mode Indicator	FORM
102, 103	Key Program Temporary (start)	0
104, 105	Key Program Temporary (end)	1200 [decimal]
108 - 10B	Password	MODE
10C - 10F	Page Indicator	PAGE
110 - 11F	Buffer Overflow	BUFFER OVERFLOW
130 - 13F	Printer Error	PRINTER ERROR
140 - 14F	Receive Error	RECEIVE ERROR
150 - 15F	Keystroke Lost	KEYSTROKE LOST
160 - 16F	Receiving Page	RECEIVING-P.

* In the option column, the designations (*start*) or (*end*) indicate that the values returned are the starting or ending addresses of another value in temporary storage.

In the default column, a zero bit corresponds to no or off, a one bit corresponds to yes or on, unless otherwise indicated by a value in parentheses. Messages are shown in all uppercase letters. Optional values are shown in {braces}.

Host Reconfiguration Limitations (Single/Multiple Environments)

Set-up resources must be shared among environments. Resources cannot be under host control and still maintain environmental integrity. In a single environment, the host can change all system and environmental parameters. However, in a multiple environment situation, the host can only configure the environmental options; all attempts to modify a system option will have no effect. Write access does not occur and error information regarding it is not reported. New options that are controlled locally are not available for access in temporary storage. A host sequence affects only a specific environment; it does not reconfigure the entire system.

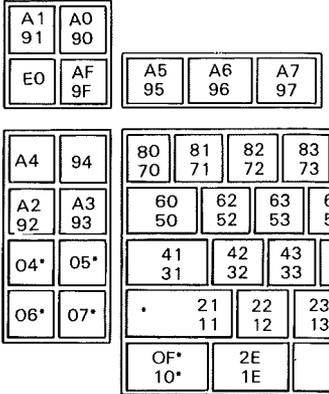
The following information is applicable only when the T 27 is operating in more than one environment. When operating in one environment, the host has access to system items in configuration storage. Set-up restrictions are:

Item	Host Access
Level I password	No
Level II password	No
Environment Datacomm Options:	Yes
Environment Video Options:	Yes
Environment Buffers:	Yes
Environment Keyboard Options:	Yes
Environment Tab Options: ability to toggle display of the Tab Ruler	Yes, except for the
Key Programs:	Yes
System Peripheral Options:	No
Window Configuration:	No
System Datacomm Options:	No
System Partitions and International:	No
System Messages:	No
System Keyboard and Screen:	No

Note: To find more information on accessing the terminal's memory, see sections 2 and 3 of this manual.

Key Programming

Figure F-1 Keyboard Location V:



* Matrix Code is nonprogrammable
 : Key can be split

Note:

1. If only one code appears on a key,
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Table F-1 Mnemonics By Function

Name	Value
<i>Cursor Positioning</i>	
Cursor Up	F6
Cursor Left	F7
Cursor Right	F8
Cursor Down	F9
Return	D6
Tab	C6
Reverse Tab	C4
Home	AE
Skip	B2

Table F-1 Mnemonics By Function (Cont.)

Name	Value	Mnemonic
<i>Data Sharing</i>		
Store	D4	STORE
Recall	D5	RECALL
Mark	D8	MARK
Bound	D9	BOUND
<i>Editing</i>		
Clear Home	80	CLR HOME
Insert Char	82	INS CHAR
Delete Char	84	DEL CHAR
Delete Line	85	DEL LINE
Clear EOL	86	CLR EOL
Clear EOP	87	CLR EOP
Roll Down	88	ROLL DWN
Roll Up	89	ROLL UP
Move Line Down	8A	MOVE DWN
Move Line Up	8B	MOVE UP
<i>Forms</i>		
FS (IS4)	1C	FLD PROT
GS (IS3)	1D	FLD RGHT
RS (IS2)	1E	FLD END
US (IS1)	1F	FLD LEFT
Tab Set	E0	TAB SET
Tab Clear	E1	TAB CLR
<i>Highlights</i>		
SO	0E	REVERSE
SI	0F	UNDLINE
ETB	17	HL END
CAN	18	BLINK
EM	19	SECURE
SUB	1A	BRIGHT
<i>Miscellaneous</i>		
Print Unprotected	9C	PRT UNPR
Print All	9D	PRT ALL
Align KBC to DCP	A0	ALIGN
EOT	A2	EOT
Escape	B4	ESC
Ext. Char. Code	8C	ECC

Table F-1 Mnemonics By Function (Cont.)

Name	Value	Mnemonic
<i>Mode</i>		
Control	A4	CTRL
Control (Shifted)	A5	CTRL LOCK
Local	A8	LOCAL
Receive	AA	RCV
Transmit	AC	XMIT
Caps Lock Enable	D2	CAPS EI
Caps Lock Disable	D3	CAPS DI
Forms Enable	9E	FORMS EN
Forms Disable	9F	FORMS DI
<i>Numerics</i>		
00	EA	00
000	EC	000
<i>Page Positioning</i>		
Scroll Right	E9	SCRL RT
Scroll Left	E8	SCRL LT
Scroll Down	FA	SCRL DOWN
Scroll Up	FB	SCRL UP
Back Page	FC	BACK PG
Next Page	FE	NEXT PG
<i>Windows</i>		
Window 1	E2	WINDOW 1
Window 2	E3	WINDOW 2
Window 3	E4	WINDOW 3
Full	E5	FULL
Split	E6	SPLIT
Config	E7	CONFIG

Table F-2 Mnemonics By Value

Value	Name
00-0D	Control Characters
0E	Reverse
0F	Underline
10-16	Control Characters
17	Highlight End
18	Blink
19	Secure
1A	Bright
1B	Escape
1C	Field Protect
1D	Field Right
1E	Field End
1F	Field Left
20-7F	Character Codes
80-81	Clear Home
82	Insert Char
83	Insert Line
84	Delete Char
85	Delete Line
86	Clear End of Line
87	Clear End of Page
88	Roll Down
89	Roll Up
8A	Move Line Down
8B	Move Line Up
8C	Extended Character Code
8D-95	Not Used
96-9B	Reserved Arabic/Hebrew
9C	Print Unprotected
9D	Print All
9E	Forms Enable
9F	Forms Disable
A0-A1	Align KBC to DCP
A2-A3	EOT
A4	Control
A5	Control (Lock)
A6-A7	Specify
A8-A9	Local
AA-AB	Receive
AC-AD	Transmit
AE-AF	Home
B0-B1	Not Used
B2-B3	Skip

Table F-2 Mnemonics By Value (Cont.)

Value	Name
B4-B5	Escape
B6-C3	Not Used
C4-C5	Reverse Tab
C6-C7	Tab
C8	No Function
C9-CD	Not Used
CE-CF	Clear EOL
D0-D1	Home
D2	Caps Lock Enable
D3	Caps Lock Disable
D4	Store
D5	Recall
D6-D7	Return
D8	Mark
D9	Bound
DA-DB	Skip
DC-DD	Not Used
DE-DF	Reverse Tab
E0	Tab Set
E1	Tab Clear
E2	Window 1
E3	Window 2
E4	Window 3
E5	Full
E6	Split
E7	Config
E8	Scroll Left
E9	Scroll Right
EA-EB	00
EC-ED	000
EE-EF	Not Used
F0-F1	Tab
F2-F5	Not Used
F6	Cursor Up
F7	Cursor Left
F8	Cursor Right
F9	Cursor Down
FA	Scroll Down
FB	Scroll Up
FC-FD	Back Page
FE-FF	Next Page

Table F-3 Programmable Cursor and Select Page Control

Col/ Row/ Page	Char	ASCII Code	EBCDIC	Col/ Row/ Page	Char	ASCII Code	EBCDIC
1	sp	20	40	49	P	50	D7
2	!	21	4F	50	Q	51	D8
3	"	22	7F	51	R	52	D9
4	#	23	7B	52	S	53	E2
5	\$	24	5B	53	T	54	E3
6	%	25	6C	54	U	55	E4
7	&	26	50	55	V	56	E5
8	'	27	7D	56	W	57	E6
9	(	28	4D	57	X	58	E7
10	)	29	5D	58	Y	59	E8
11	*	2A	5C	59	Z	5A	E9
12	+	2B	4E	60	[	5B	4A
13	,	2C	6B	61	\	5C	50
14	-	2D	60	62	]	5D	5A
15	.	2E	4B	63	^	5E	5F
16	/	2F	61	64	_	5F	6D
17	0	30	F0	65	`	60	79
18	1	31	F1	66	a	61	81
19	2	32	F2	67	b	62	82
20	3	33	F3	68	c	63	83
21	4	34	F4	69	d	64	84
22	5	35	F5	70	e	65	85
23	6	36	F6	71	f	66	86
24	7	37	F7	72	g	67	87
25	8	38	F8	73	h	68	88
26	9	39	F9	74	i	69	89
27	:	3A	7A	75	j	6A	91
28	;	3B	5E	76	k	6B	92
29	<	3C	4C	77	l	6C	93
30	=	3D	7E	78	m	6D	94
31	>	3E	6E	79	n	6E	95
32	?	3F	6F	80	o	6F	96
33	@	40	7C	81	p	70	97
34	A	41	C1	82	q	71	98
35	B	42	C2	83	r	72	99
36	C	43	C3	84	s	73	A2
37	D	44	C4	85	t	74	A3

Table F-3 Programmable Cursors and Select Page Control (Cont.)

Col/ Row/ Page	Char	ASCII Code	EBCDIC	Col/ Row/ Page	Char	ASCII Code	EBCDIC
38	E	45	C5	86	u	75	A4
39	F	46	C6	87	v	76	A5
40	G	47	C7	88	w	77	A6
41	H	48	C8	89	x	78	A7
42	I	49	C9	90	y	79	A8
43	J	4A	D1	91	z	7A	A9
44	K	4B	D2	92	{	7B	C0
45	L	4C	D3	93		7C	6A
46	M	4D	D4	94	}	7D	D0
47	N	4E	D5	95	~	7E	A1
48	O	4F	D6	96	DEL	7F	D7

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Supported Printer Configurations

The following are suggested System Peripheral Options for the T 27 terminal when attached to one of the supported printers. The configuration settings on the printer may have to be changed accordingly. (See your printer user guide for specific details.)

Printer Style	Baud Rate	Data Bits/Char	Stop Bits	Printer XON/XOFF	Printer Busy Status	Parity Bit Required	Parity Type
AP1305	9600	7	1	DC1 DC3	1	yes	even
AP1307	9600	7	1	DC1 DC3	1	yes	even
AP1312	1200	8	1		1	yes	even
AP1314*	9600	8	1	DC1 DC3	1	no	even
AP1354*	9600	8	1	DC1 DC3	1	no	even
AP1351	9600	8	1		1	no	even
AP1351-1	9600	8	1		1	no	even
AP9215*	9600	8	1	DC1 DC3	1	yes	even

* Uses T 27 default System Peripheral Options.

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Accented Character Construction Sequences

These charts list the construction sequences for those language versions that permit accented character construction. See also Section 11, "International Support," and Appendix D, "Character Codes."

Languagee Version: 34

Version Name: 1/A Canada

Escaping Diacritics: ' , "

Nonescaping Diacritics: ^ `

Constructed Characters: ^ ` ` à á â ç è é ê ë ì î ï ò ó ô
ù ú û ü ÿ

(also for uppercase of the letters shown)

Language Version: 36

Version Name: 3/A Belgium

Escaping Diacritics: ` ^ " ,

Nonescaping Diacritics: (none)

Constructed Characters: ` à â ã ç è é ê ë ì î ï ò ó ô õ ù ú û

(also for uppercase of the letters shown)

Language Version: 37

Version Name: 5/A German

Escaping Diacritics: ' , "

Nonescaping Diacritics: ^ `

Constructed Characters: ^ ` ` à â ç è é ê ë ì î ï ò ó ô ù û

(also for uppercase of the letters shown)

Language Version: 39

Version Name: 7/A Spain

Escaping Diacritics: ' " `

Nonescaping Diacritics: `

Constructed Characters: ` ` à á ç è é í î ò ó ú ü

(also for uppercase of the letters shown)

Language Version: 38

Version Name: 6/A Portugal

Escaping Diacritics: ' "

Nonescaping Diacritics: ^ `

Constructed Characters: ^ ` à á â è é ê ë ì í î ï ò ó ô
ù ú û ü

(also for uppercase of the letters shown)

Language Version: 41 and 42

Version Name: Swiss German and Swiss French

Escaping Diacritics: (none)

Nonescaping Diacritics: ' ^ ` ~ "

Constructed Characters: à â á ä è ê é ë ì î í ï ò ô ó ö
ù û ú ü ð ÿ

(also for uppercase of the letters shown)

Language Version: 17

Version Name: 17 Icelandic

Escaping Diacritics: ` ^ ~ " ' ,

Nonescaping Diacritics: ' ,

Constructed Characters: à á â ã ä ç è é ê ë ì í î ï ñ ò ó ô
ö õ ù ú û ü ý

(also for uppercase of the letters shown)

Language Version: 25

Version Name: 25 Greek

Escaping Diacritics: (none)

Nonescaping Diacritics: ' "

Constructed Characters: ' " á é ê í î ó ó ü ó

Extended Characters and Highlights

Two types of characters can be stored in the display buffer: standard characters (00-7F) and extended characters (80-FF). The terminal can display these characters via data comm or the keyboard.

The data comm protocol supports 7-bit characters. This would restrict character exchange with the host to 128 characters. A technique called *code extension* allows 256 characters to be exchanged with the host using shift out (SO) and shift in (SI) sequences to indicate which 128 character set to use (standard or extended).

The T 27 is capable of receiving extended characters from the host by receiving escape sequences <ESC> SO and <ESC> SI. Once an <ESC> SO is received, the terminal displays all subsequent characters as extended characters. Before standard characters can be displayed again, an <ESC> SI must be received. Any number of characters can be inserted between these.

The terminal transmits an <ESC> SO sequence when it encounters extended characters in its display buffer and an <ESC> SI when standard characters are to be sent. There is no automatic shift in (<ESC> SI) at the end of a data transmission block.

In addition to <ESC> SO and <ESC> SI, there are configurable substitute sequences. These are described in Tables I-1 and I-2.

Table I-1 **Receiving from Host**

Received from Host	Option	Used For
SO/SI	XTN = ON	Code Extension
SO/SI	XTN = OFF	Reverse Highlight/Underline

Table I-2 shows the effect of XLT and XTN options on reverse video, underline, and extended characters when they are loaded into the data comm buffer for transmission to the host.

Table I-2 Transmitting to Host

XLT	XTN	SO (Reverse Video)	SI (Underline)	Extended	Characters
		Sent as	Sent as	Begin	End
OFF	OFF	SO	SI	ESC SO	ESC SI
OFF	ON	ESC'	ESC/	SO	SI
ON	OFF	ESC'	ESC/	ESC SO	ESC SI
ON	ON	ESC'	ESC/	SO	SI

Data Comm Transmission Numbers

The T 27 supports 13 data comm transmission numbering options.

Configuration Setting	Option
0	None
1	Alternating 0/1, no checking
2	Alternating @/A, no checking
3	Alternating 0/1, checking
4	Alternating @/A, checking
5	Alternating 0/1, *
6	Alternating @/A, *
7	Cyclic 0-9
8	Cyclic 0-99
9	Cyclic 0-999
10	Cyclic 0-9, *
11	Cyclic 0-99, *
12	Cyclic 0-999, *

When using option 0, messages are neither numbered nor checked for validity in any way. In options 1 and 2, although data comm messages are numbered, the T 7 does not check the sequencing of the messages.

For options 3 through 12, the T 7 checks the transmission number against the number expected next. If the received number is one less than the number expected, or when receiving 9, 99, or 999 when expecting 0, the message is discarded as a duplicate. If the message number is not the number expected or a duplicate, the message is accepted and displayed (or printed if sent to a PPT address), and the next expected message number is reset to the number received plus one. Then if the received message was to be displayed on the terminal screen, *Messages lost* is displayed in the environment status line.

Also, in options 3 through 12, if the transmission number character is invalid (for instance, being some character other than 0 or 1 in option 3), a negative acknowledgment (NAK) will be returned to the sender. If the invalid message was to be displayed on the terminal screen, *Receive error* will be displayed on the status line instead.

For those options labeled with an asterisk—options 5, 6, 10, 11, and 12—if an asterisk, * (hexadecimal 2A), is received as the first character of the transmission number, the message is accepted as being correctly sequenced.

Then, the next expected transmission number is reset to zero (or @ for option 6). The asterisk resets only the transmission number within the environment or address to which it was sent.

After receiving the correct number of transmission number characters, any characters received before the start of text character, STX, will be discarded. They will, however, be included in the block check.

Four data comm transmission numbers will be maintained by the T 27 for each environment or address:

- 1 Next number for transmission
- 2 Next number for regular or fast selects
- 3 Next number for broadcast selects
- 4 Next number for group selects

The next numbers for broadcast and group selects are checked and incremented only within each environment or address.

When powered on or after system reconfiguration, the first transmission number sent to the host for options 5, 6, 10, 11, and 12 will be an asterisk. Transmission numbers for fast, broadcast, and group selects are reset independently by the first select of that type. Receiving an asterisk resets the transmission number only within the environment or address to which it was sent, and it resets the number only for its type of transmission/selection (types 1 through 4 just listed).

For other options—those not using the asterisk—the terminal sets the next transmission numbers according to the first number received from the host (that number plus one). Options 1 and 2 will start with 0 and @, respectively, without resetting.

Transmit Function

The transmit function consists of two procedures: scanning the data to be loaded into the data comm buffer and loading the buffer. Each procedure can be affected by set-up options. The function can be initiated from the keyboard using XMIT or via the host using an <ESC> (sequence. The <ESC> (sequence is somewhat different from the XMIT function and is discussed separately. This section is organized as follows:

- <ESC> (
- XMIT Nonforms: Buffer Loading and Scanning
Forms: Buffer Loading and Scanning with Search Mode Off
Forms: Buffer Loading and Scanning with Search Mode On

<ESC> (

The <ESC> (function is similar to the transmit function with the few exceptions that follow. Scanning and loading an outgoing message from the DCP page into the data comm buffer follows the same algorithms as for the XMIT key. The full procedure is detailed later in this section under "XMIT."

- The terminal goes into transmit mode after it has interpreted an incoming message containing the <ESC> (sequence and has loaded the outgoing message into the data comm buffer.
- An outgoing message is obtained by scanning the page where the DCP was left after the incoming message containing the <ESC> (sequence was received.
- Any mobile home on the page is ignored; all scans begin at line 1, column 1. If the DCP is at line 1, column 1, the scan continues to the end of the page. Otherwise, it stops when it reaches the DCP position. In either case, the scan stops if it encounters an ETX.

XMIT

Nonforms

The terminal is put into transmit mode.

If the terminal is in local or receive mode, the DCP is moved to the cursor position and the data in the page is transferred into the data comm buffer. The LOCAL and RCV LEDs are then turned off and the XMIT LED is turned on.

If the data comm buffer overflows, the data that didn't fit into the buffer is not transmitted and the terminal enters XMIT mode. The error message *Buffer Overflow* appears on the environment status line.

If the terminal is receiving data, this key has no effect.

Buffer Loading and Scanning

Note: *XMIT-HOME* defines the position where buffer loading starts. If the *Line at a Time Xmit* option is set off (in the *Environment Data Comm Options* menu), *XMIT-HOME* corresponds to the mobile home position; if the *Line at a Time Xmit* option is set on, *XMIT-HOME* corresponds to the column of the mobile home position in the same line that contains the cursor.

ETX and Cursor

When an ETX character is not in the cursor page:

<i>Cursor Position</i>	<i>Data Loaded</i>
Before or at XMIT-HOME	From XMIT-HOME to the end of page
After XMIT-HOME	From XMIT-HOME up to the cursor

When an ETX character is in the cursor page and the Line at a Time XMIT is set to *off*:

<i>Cursor Position</i>	<i>Data Loaded</i>
Before the ETX	From the cursor to the ETX character
At the ETX	An empty message
After the ETX	From the cursor to the end of the page

When an ETX character is in the cursor page and the Line At A Time XMIT is set to *on*:

<i>Cursor Position</i>	<i>Data Loaded</i>
Before the ETX and not on the ETX line	From the cursor to the end of the line
Before the ETX and on the ETX line	From the cursor to the ETX
At the ETX	An empty message
After the ETX	From the cursor to the end of the line

CR Character

If the CR character is displayed, it is the last character in a line to be loaded into the buffer. Loading resumes at the beginning of the next line. If the cursor or an ETX character is encountered before the next line, the scanning ends.

HT Character

If an HT character is displayed, it is the last character to be loaded before the next tab stop. If the cursor or an ETX character is encountered before the next tab stop or no other tab stops exists, the scanning ends.

SO and SI Codes

If the SO/SI XLT and SO/SI XTN options are both set OFF (see the Environment Data Comm Options menu), SO and SI codes are loaded as they are. If either option is set ON or if both options are set ON, the following substitution takes place:

SO is loaded as <ESC> ' (escape/single quotation/period)

SI is loaded as <ESC> '/ (escape/single quotation/slash)

See Appendix I for more information.

Extended Characters

If an extended character is encountered after a normal character, the <ESC> SO or SO sequence (*see note) is loaded and each extended character is AND'd with 7F hex (this sets the most significant bit to zero). If the last character is an extended character, <ESC> SI will be inserted before ETX.

If a normal character is encountered after an extended character, the <ESC> SI or SI (*see note) sequence is loaded.

Note: *Which sequence is loaded depends on how the XLT and XTN options are set. For more information, refer to Appendix I.

Forms

Buffer Loading and Scanning with Search Mode Off

When the Form XMIT to Cursor option is set to on and there is no ETX character on the cursor page:

<i>Cursor Position</i>	<i>Transmittable Data Loaded</i>
Before or at XMIT-HOME	From XMIT-Home to the end of the page
After XMIT-HOME	From XMIT-Home to the cursor
In the first unprotected GS field of a page which is a GS Field.	From XMIT-Home to the end of the page
Scan reaches the cursor without loading any characters	Scan proceeds to the end of the page

When the Form XMIT to Cursor option is set to on and there is an ETX character on the cursor page:

<i>Cursor Position</i>	<i>Transmittable Data Loaded</i>
Before the ETX	From the cursor to the ETX
At the ETX	An empty message
After the ETX	From the cursor to the end of the page

When the Form XMIT to Cursor option is set to off and there is no ETX character on the cursor page:

Transmittable Data Loaded

From XMIT-HOME to the end of the page

When the Form XMIT to Cursor option is set to off and there is an ETX character on the cursor page:

XMIT-HOME

<i>Position</i>	<i>Data Loaded</i>
Before the ETX	From XMIT-HOME to the ETX
At the ETX	An empty message
After the ETX	From XMIT-HOME to the end of the page

CR Character

If the CR character is displayed, it is the last character to be loaded into the buffer before the next GS, US, or FS character. If the cursor or an ETX character is encountered, the scanning ends.

HT Character

If an HT character is displayed, it is the last character to be loaded before the next GS, US, or FS character. If the cursor or an ETX character is encountered before the next field or no other field exists, the scanning ends.

Forms Delimiters

An RS character is the last character to be loaded before the next GS, US, or FS character.

FS, US, and GS characters are not loaded but scanning resumes at the next character.

SO and SI Codes

Same as in nonforms mode.

Extended Characters

Same as in nonforms mode.

Buffer Loading and Scanning with Search Mode On

When an ETX character is not in the cursor page:

Data Loaded

From XMIT-HOME to the end of the page

When an ETX character is in the cursor page:

XMIT-HOME

<i>Position</i>	<i>Data Loaded</i>
Before the ETX	From XMIT-HOME to the ETX
At the ETX	An empty message
After the ETX	From XMIT-HOME to the end of the page

CR Character

If a CR character is displayed, it is the last character in a line to be loaded into the buffer. Loading resumes at the beginning of the next line. If the cursor or an ETX character is encountered before the next line, the scanning ends.

HT Character

If an HT character is displayed, it is the last character to be loaded before the next tab stop. If the cursor or an ETX character is encountered before the next tab stop or no other tab stops exists, the scanning ends.

Forms Delimiters

GS, US, and FS fields are transmitted as they are.

SO and SI Codes

Same as in nonforms mode.

Extended Characters

Same as in nonforms mode.

Glossary

accented character. A character that is displayed or printed with a diacritic to provide a complete character as required by a specific language version.

ACK. An abbreviation of *acknowledgment*; a control character (06 hex).

active address. An address that is being polled by the host.

address. One or two characters that uniquely identify to the host an environment, a terminal, or a group of terminals.

align. An operation that moves the cursor to a specified location, such as the data comm pointer or mobile home position.

ALT. An abbreviation of *alternate*; a key that modifies the meaning of the next typed key or key sequence.

alternate delimiter. A character that can be configured to represent a forms delimiter.

ASCII. An acronym for *American Standard Code for Information Interchange*.

asynchronous. A timing-independent protocol for data communication in which the beginning and end of transmission are marked by a signal.

aux. An abbreviation of *auxiliary*; used in reference to the auxiliary port (aux port) or a device attached to that port (aux device.)

baud. A measure of data transmission speed, in bits per second.

BDAA. An acronym for *Burroughs Direct Asynchronous Access*; a Burroughs proprietary data communication interface.

BEL. An abbreviation of *bell*; a control character (07 hex).

BS. An abbreviation of *backspace*; a control character (08 hex).

BSEL. An abbreviation of *broadcast select*; one of four ways for a host to send a message to an address, using poll select protocol.

buffer. An area of memory allocated for a specific use. For example, the data comm buffer is an area of memory used only for host communication.

byte configuration. An archaic method of configuring the T 27 by directly changing the contents of memory. This method is more difficult and error-prone than using menu set-up.

CAN. An abbreviation of *cancel*; a control character (18 hex).

char. An abbreviation of *character*.

character set. All the font characters defined for the T 27 in a given language version.

concatenate. Connect terminals end to end.

Glossary-2

concatenation bypass. A method of connecting terminals so that individual terminals can be turned off without affecting downstream terminals.

config. An abbreviation of *configure* or *configuration*.

configure. To set up a T 27 for a specific set of operating conditions.

control code. Any hexadecimal character from 00 to 1F that performs a function, such as acknowledging that a transmission block has been received intact.

control sequence. A command consisting of a series of keystrokes, beginning with the CTRL key.

CR. An acronym for *carriage return*; a control character (0D hex).

CTR. An acronym for *confidence test routine*.

CTRL. An abbreviation for *control*; a key that modifies the meaning of the next typed key or key sequence.

CTS. An acronym for *clear to send*.

cursor. A position indicator on the video display.

data comm. An abbreviation of *data communication*; the exchange of information among a host and terminals.

data comm pointer (DCP). The starting position in the display store, where the next message received from the host is to be stored.

data entry position. The position within unprotected fields where data can be entered while in forms mode.

data sharing. A process that enables you to copy data within an environment or between environments.

data sharing buffer. A temporary storage area that holds data to be copied.

DC1. An abbreviation of *device control 1*; a control character (11 hex).

DC2. An abbreviation of *device control 2*; a control character (12 hex).

DC3. An abbreviation of *device control 3*; a control character (13 hex).

DC4. An abbreviation of *device control 4*; a control character (14 hex).

dcom. An abbreviation of *data communication*.

dcom early fill. A feature in which incoming data is acted on before the transmission block is checked for errors. This method may be useful with transmission speeds of 300 baud or less, because you see activity on the screen while the buffer is being filled. The disadvantage of this method is that data garbled during transmission is displayed.

DCP. An acronym for *data comm pointer*.

- delimiter.** A character used to begin or end each field in a form.
- diacritic.** A mark that may be added to a displayed or printed character to provide a complete character as required by a specific language version.
- disable.** To temporarily render a feature inoperable.
- display page overhead.** The additional number of bytes required to format all stored pages. This overhead is calculated as six times the total number of lines.
- display store.** A buffer containing information to be displayed on the screen.
- DLE.** An acronym for *data link escape*; a control character (10 hex).
- downstream.** A relative term applying to a set of connected devices. Devices that receive transmissions later than the reference point are said to be *downstream* of the reference point.
- EBCDIC.** An acronym for *Extended Binary Coded Decimal Interchange Code*.
- ECC.** An acronym for *extended character code* (8C hex). In key programming, an ECC indicates that the byte following the ECC will be a character code.
- edit mode.** The mode of menu key programming in which key programs are modified.
- EM.** An abbreviation of *end of medium*. A control character for the *secure* function (19 hex).
- enable.** To temporarily render a feature operable.
- end marker.** A data sharing marker, generated by pressing the BOUND key, that identifies the end of a MARK sequence.
- ENQ.** An abbreviation of *enquire*; a control character (05 hex).
- ENV.** An abbreviation of *environment*.
- environment.** An area of memory reserved for exclusive use by applications and identified to a host by a unique address.
- environment ID.** A configurable string of characters used to identify an environment.
- EOT.** An acronym for *end of transmission*; a control character (04 hex).
- ESC.** An abbreviation of *escape*; a control character (1B hex).
- escape sequence.** Any character or sequence of characters prefaced by an ESC character.
- ETB.** An abbreviation of *end of transmission block*; a control character for the highlight end function (17 hex).
- ETX.** An abbreviation of *end of text*; a control character (03 hex).
- extended character.** A character with a hex code greater than 7F.

Glossary-4

fast select. One of four ways for a host to send a message to an address, using poll select protocol.

FF. An acronym for *form feed*; a control character (0C hex).

form. A screen display consisting of text and delimiters that provides a predefined area in which to input data.

forms mode. The state in which data can be entered into forms.

FS. An acronym for *field separator*; a control character (1C hex). The delimiter that begins a transmittable, protected data field.

FSEL. An abbreviation of *fast select*.

FUNC. An abbreviation of *function*.

function keys. The F1 through F10 keys.

group select. One of four ways for a host to send a message to an address, using poll select protocol.

GS. An acronym for *group separator*; a control character (1D hex). The delimiter that begins an unprotected, right-justified data field.

GSEL. An abbreviation of *group select*.

GS field. A right-justified, unprotected field in a form.

handshaking. A protocol that enables devices to announce their intention to transmit or readiness to receive information.

highlight. A video attribute assigned to a section of text so that the text is distinguished from normal text. Some common highlights are *reverse video* and *underlined video*.

hl.end. A menu key programming function that ends a highlight for a section of text.

home. The first data entry position on a page.

host. A computing device that communicates with the T 27 via data comm.

HT. An abbreviation of *horizontal tab*; a control code (09 hex).

interface. A common boundary between components in a system.

KBC. An abbreviation of *keyboard cursor*.

keyboard cursor. A position indicator where the next hex code received from the keyboard or aux device is to be acted on.

keyboard environment. The environment in which input from the keyboard is currently assigned.

keyboard lockout. A condition in which keystrokes are buffered during data communication.

key program. A string of functions and/or characters that is stored in memory and then recalled with a single keystroke.

key programming. A method of redefining key functions so that you use fewer keystrokes to perform tasks.

key program permanent. An area of permanent storage reserved for key programs.

key program temporary (KPT) buffer. A buffer that provides temporary storage of key programs.

KPT. An acronym for *key programming temporary*.

language version. A set of predefined characters for use with a particular language. For example, the Greek language version consists of Greek alphabet characters.

LEDs (Light Emitting Diodes). Keyboard lights that indicate what states the terminal is in. During confidence test routines (CTR), the LEDs can also light in patterns, representing CTR error codes.

legend holder. On the keyboard, the recessed area above the function keys. A paper strip and plastic cover may be inserted into the legend holder to note what the function keys are programmed to do.

LF. An acronym for *line feed*; a control character (0A hex).

LOC. An abbreviation of *location*.

local printer. A printer that can be used to print out screen data from the T 27 to which it is connected.

logical ACK character. A configurable character sent to the host from the PPT address to indicate that the PPT buffer is empty and ready to receive more data.

LTAI. An acronym for *Line Transmission Activity Indicator*.

mobile home. The position at which data transmission begins on the page. A control sequence, CTRL HOME, sets mobile home at the line and column of the cursor position. An escape sequence, <ESC> D, sets mobile home at the DCP position.

monitor mode. A T 27 state in which all data comm activity is displayed on the screen.

NAK. An acronym for *negative acknowledgment*; a control character (15 hex).

NDL. See *Network Definition Language*.

Glossary-6

Network Definition Language. A programming language used on host computers to configure and communicate with all devices in its domain. Also, the protocol established by a specific implementation.

NEXT ENV. An abbreviation of *next environment*.

page. An area of memory organized into rows and columns. The page may be too large to fit on the screen display or on a sheet of printer paper.

parameter. A configuration option for the T 27. For example, baud rate and CTS delay are T 27 parameters.

parameter value. The value specified for a parameter. For example, 9600 is a parameter value for baud rate.

parity. A set-up option for specifying how each byte of a data transmission is encoded.

peripheral. A device, such as a printer, that enhances the basic operation of the T 27.

PERM STG. An abbreviation of *permanent storage*.

permanent storage. A portion of memory that stores configuration and key programming information so that it is not lost when the T 27 is turned off.

pointer. A generic term applying to the DCP and KBC.

Pol/Sel. An abbreviation of *poll select*.

PPT. See *Printer Pass-Through*.

PREV ENV. An abbreviation of *previous environment*.

print buffer. A memory space allocated in the T 27, via the Set-Up menu, to receive and hold data until the attached printer is ready to process it.

printer/aux port. A connector on the T 27, for use with RS-232C devices.

Printer Pass-Through. A feature that enables a host to send data to a printer attached to a T 27 without interrupting the use of the T 27.

protected field. In forms mode, an area of the page into which data cannot be entered.

protocol. A formal collection of rules and procedures that govern interaction between two or more devices or processes.

RCV. An abbreviation of *receive*.

reverse video. A video display of dark characters on a bright background.

ROM. An acronym for *read-only memory*.

ROM Pack. An integrated circuit board that contains firmware and font ROM that supports T 27 terminal language versions; a given ROM Pack contains a subset of the available language versions. Selecting a language version chooses the displayed font, the keyboard layout, and the accented characters that can be constructed.

RS. An acronym for *record separator*; a control character (1E hex) used as the delimiter that ends video highlights and fields in forms mode.

scroll. To change the portion of the page that is currently being displayed.

search character. The character to be scanned for in search mode.

search mode. A state in which the T 27 can scan for a character in the display store.

secure. A video attribute that displays characters as spaces. Secured characters are not visible, but may be transmitted.

set-up mode. A T 27 state in which menus enable you to set various options for a specific set of operating conditions.

SI. An acronym for *shift in*; a control character (0F hex).

SO. An acronym for *shift out*; a control character (0E hex).

SOH. An acronym for *start of header*; a control character (01 hex).

space compression. A method of encoding repetitive space characters to reduce the size of messages to PPT.

SPCFY. An abbreviation of *specify*.

start marker. In data sharing, a marker, generated by pressing the MARK key, that identifies the beginning of a MARK sequence.

STX. An acronym for *start of text*; a control character (02 hex).

SUB. An abbreviation of *substitute*; a control character (1A hex) used to initiate the bright highlight.

SYN. An abbreviation of *synchronize*; a control character (16 hex).

synchronous. A timing-dependent protocol for data communication in which there are constant intervals between bits.

TDI. An acronym for *two-wire direct interface*; a Burroughs proprietary interface for data communication.

temporary storage. A key program and configuration storage area, the contents of which are lost every time the T 27 is turned off.

Glossary-8

toggle. To change the state of anything that can be expressed in binary terms. For example, set-up options that can be expressed in binary terms—*on* or *off*, *yes* or *no*—are said to be toggled when their state is changed.

transmission numbering. A scheme for checking the sequencing of transmitted data.

unprotected field. A portion of the forms mode page into which operators can enter data.

upstream. A relative term applying to a set of connected devices. Devices that receive transmissions sooner than the reference point are said to be *upstream* of the reference point.

US. An acronym for *unit separator*; a control character (1F hex). It is the delimiter that begins an unprotected, left-justified field in forms mode.

user store. The area in memory from which all system and environment buffers are allocated.

version number. The revision level of the T 27 firmware.

view. A particular format of the video display. For example, a full-screen view displays one environment or monitor mode; a split-screen view may display more than one environment and monitor mode.

view mode. The menu key programming state in which specific key programs may be displayed on the screen.

virtual 132-column mode. The method used by the T 27 to simulate the display of a 132-column wide page. In this method, a window displays 80 columns at a time, but may be scrolled horizontally to view additional columns.

VT. An acronym for *vertical tab*; a control character (0B hex).

window. A portion of the screen that has been allocated to displaying the contents of a specified area of memory.

wraparound. A feature that enables the cursor to move from the last data entry position on a page to the home position.

xmit. An abbreviation of *transmit*.

xon/xoff. A method for implementing handshaking.

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 - end of transmission, <EOT>, 3-59

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<EOT>, end of transmission, 3-59

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