

**WY-60  
User's  
Guide**

**WYSE**  
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# Overview

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## INTRODUCTION

In addition to advanced display, communications, and keyboard features, this full-function ASCII terminal supports three ANSI-based operating modes as well as fourteen ASCII modes.

Chapters 1 through 4 present the basic information you'll need to install and operate the terminal in its native mode. Appendix E includes a complete list of the commands supported by the terminal in each ASCII personality. Appendix F includes a complete list of the commands supported by the terminal in each ANSI personality.

For more detailed information on how to take advantage of the terminal's features in your computer programs, order the *WY-60 Programmer's Guide* through your sales representative.

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## CONVENTIONS

The term *native personality* refers to the terminal's normal operating mode. The term *personality* refers to operating modes characteristic of one or more other terminals.

Key functions are described in the text as follows:

- The symbol for the key on the WY-60 ASCII keyboard is shown first, followed by key symbols in parentheses for the other keyboards if they are different. For example,

**Setup** ( **Reset** , **Sys Req** , **Select** )

identifies **Setup** on the WY-60 ASCII keyboard, **Reset** on the 316X-style keyboard, **Sys Req** on the AT-style keyboard, and **Select** on the Enhanced PC-style keyboard.

- When a key symbol in the text refers to one of two names on a key on the keyboard, the action of other keys may be implied. For example, **Print** assumes the simultaneous pressing of **Shift** on the WY-60 ASCII keyboard, whereas **Send** would mean the same key by itself (unshifted). Similarly, **Break** assumes the simultaneous pressing of **Ctrl** on the 316X-style keyboard, because the name appears on the front face of the key.
- When necessary, an italic notation follows the key name to identify a specific location on the keyboard. For example, **5** *kpd* identifies the number key on the numeric keypad at the right side of the keyboard, and **Alt** *right* identifies the **Alt** key on the right side of the Enhanced PC-style keyboard.



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# 1

## Installing the Terminal

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### GETTING READY

You'll need a shielded serial interface cable (fitted with a male 25-pin connector on the terminal end) to connect the terminal to your computer or modem. If you plan to connect a serial printer directly to the terminal, you'll need a second serial cable. (See Appendix A for connector pin assignments.)

Place the terminal on a flat, hard surface, allowing three inches on all sides for ventilation.

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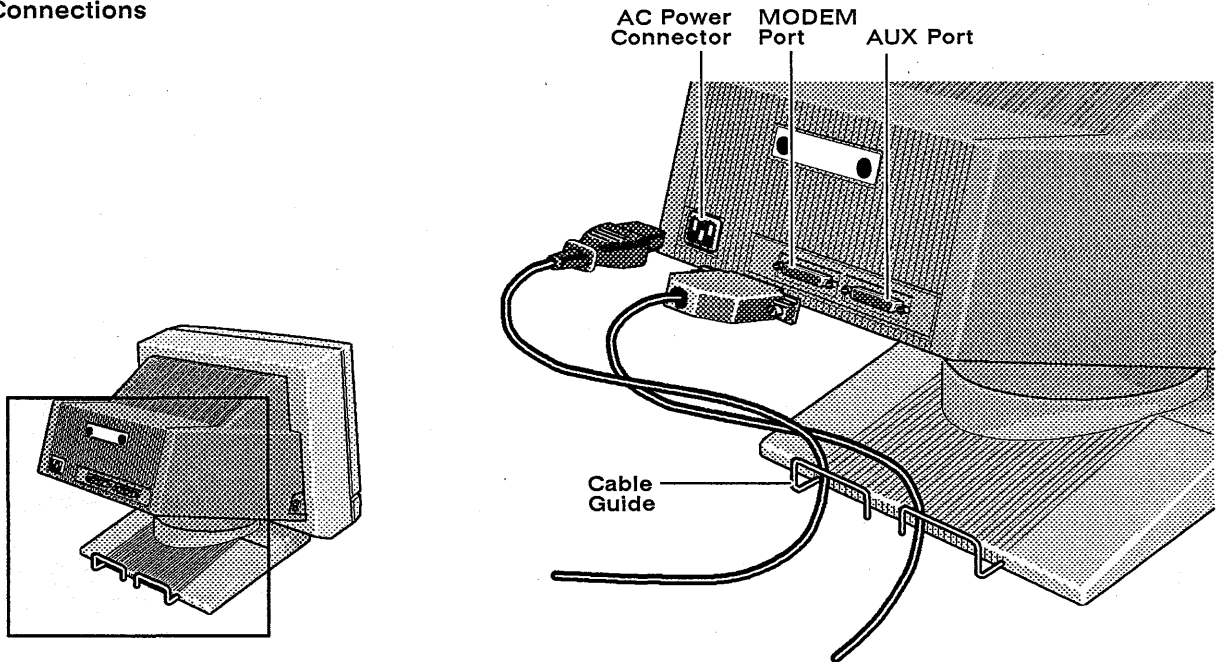
### CONNECTING THE TERMINAL

To connect the terminal, follow these steps:

- 1 Press the front half of the power switch on the right side of the terminal to be sure that the terminal is turned off.
- 2 Plug the keyboard cable into the keyboard socket on the left side of the terminal.
- 3 Thread the serial cable(s) through the cable guide at the back of the terminal base, as shown in Figure 1-1.
- 4 Connect the computer cable to the MODEM port and the printer cable to the AUX port.
- 5 Plug the power cord into the terminal's power connector and into a three-pronged grounded power outlet.

**Note** Make sure source of electricity is in the range of the voltage shown on the back of the terminal (115 V in the U.S. and Canada, 240 V in many other locations).

Figure 1-1 Back Panel Connections



## TURNING ON THE TERMINAL

Press the power switch to turn on the terminal. You'll hear an immediate beep if the terminal has received power, and the screen may flash display patterns as the terminal tests itself. When the cursor appears on the screen, the terminal is ready for operation.

- **Note** If the bell sounds and an A, C, E, W, X, Y, or Z appears at the bottom of the screen, press **Setup** ( **Reset**, **Sys Req**, **Select** ) to exit the self-test. If a K appears, turn the power off, then hold **G** down while you turn the power back on. If this does not work, call your service representative. If the error codes 0, 1, 9, p, or P appear, call your service representative—the terminal needs to be serviced by a qualified technician.

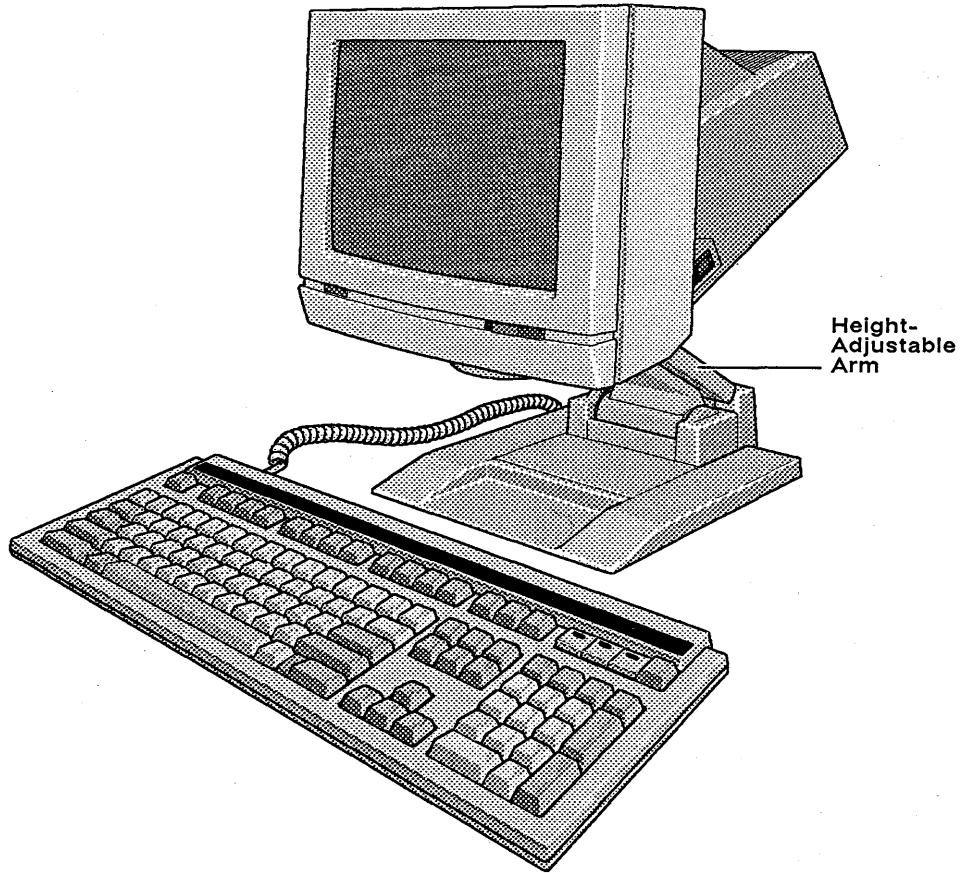


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**ADJUSTING THE TERMINAL**

Adjust the screen's brightness with the slideswitch at the right front corner. If you want the keyboard slanted up slightly, turn it over and pull out the hinged foot. A height-adjustable arm is available as an option (see Figure 1-2).

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**Figure 1-2 Height-Adjustable Arm**



# 2

## Configuring the Terminal

This chapter tells how to configure the terminal's operating parameters and redefine the programmable keys in setup mode.

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### ENTERING AND LEAVING SETUP MODE

To enter setup mode, press **Shift** and **Setup** simultaneously ( **Setup**, **Shift** **Sys Req**, **Shift** **Select** ). Data on the screen disappears, and the *top setup level* screen appears; the data is restored when the terminal returns to normal operating mode.

- **Caution** Don't enter setup mode while data is being transmitted. The terminal can't receive data from the computer in setup mode.

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### Top Setup Level

The top level serves as a directory to the other setup levels and to the alternatives for leaving setup mode.

**EXIT** **SAVE MODES** **SAVE ALL** **DEFAULT ALL** **RESTORE ALL**  
**TO EXIT SETUP USE ARROWS AND F10** **TO CHANGE PARAMETERS USE F1-F9**

**F1** **F2** **F3** **F4** **F5** **F6** **F7** **F8** **F9** **F10**  
**DISP** **GENERL** **KEYBRD** **COMM** **MISC** **TABS** **A/BACK** **F/KEYS** **LABELS** **EXIT**

- The fields at the bottom of the screen name the various setup levels where you can change the terminal's operating parameters.
- The fields at the top of the screen show the options for saving or not saving changes in nonvolatile memory when you return the terminal to the normal operating mode.
- The second line identifies the keys that you press to select the fields and activate their functions.

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**Leaving Setup Mode**

To leave setup mode press the cursor keys to highlight one of the fields at the top of the screen and press **F10**. Table 2-1 explains the function of each field.

**Table 2-1 Top Level Exit Functions**

Field	Function
EXIT	Returns terminal to normal operating mode without saving parameter changes or definitions.
SAVE MODES	Saves operating parameter changes only and returns terminal to normal operating mode.
SAVE ALL	Saves all changes (operating parameters, tabs, key definitions, answerback message, and function key labels); returns terminal to normal operating mode.
DEFAULT ALL	Restores all settings (operating parameters, tabs, key definitions, answerback message, function key labels) to default values and highlights EXIT field. Default values are <i>not</i> saved unless you select the SAVE ALL option to exit setup mode.
RESTORE ALL	Restores all settings and definitions to values last saved in nonvolatile memory and highlights the EXIT field. Values are saved when the terminal returns to normal operating mode.

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**CHANGING THE OPERATING PARAMETERS**

To select one of the setup levels named on the bottom line, press the indicated function key.

- The screen for that level appears with the name highlighted.
- The fields in the middle of the screen indicate the current settings for parameters you can change in that level.
- The top line identifies the keys you press to highlight the parameter fields and change the settings. Pressing **F10** always returns you to the top level.

Table 2-2 lists the parameters for each level and explain their settings. Default settings are always listed first.

- Note** If you select a parameter setting that's invalid for the current personality, the terminal defaults to a valid setting upon leaving setup mode.

Table 2-2 Setup Parameters

Level	Parameter	Explanation
Display	ANSWERBACK CONCEAL OFF ON <sup>1</sup>	The answerback message is Displayed in setup mode Concealed
	ANSWERBACK MODE OFF ON	The answerback message is Not sent Sent to the computer
	ATTRIBUTE CHAR LINE PAGE	Display attributes are Assigned to each character as it is entered Active to the end of the line Active to the end of the page
	BACKGROUND DARK LIGHT	The screen displays Light characters on a dark background Dark characters on a light background
	COLUMNS 80 132 ECON-80 <sup>2</sup>	The screen displays 80 columns 132 columns 80 columns with more pages of memory
	CURSOR BLINK BLOCK STEADY BLOCK BLINK LINE STEADY LINE	The cursor display is a Blinking rectangle Steady rectangle Blinking underline Steady underline
	DISPLAY CURSOR ON OFF	The cursor is Visible Invisible
	LINES 24 25 42 43	The screen displays 24 data lines, status line, and label line 25 data lines and status line 42 data lines, status line, and label line 43 data lines and status line
	PAGE LENGTH 1 * LINES  2 * LINES 4 * LINES <sup>3</sup> *	The length of a page of display memory is Equal to the number of lines selected in the Lines parameter Two times the value of the Lines parameter Four times the value of the Lines parameter Equal to the value of the Lines parameter, with a second page containing the rest of the lines remaining in memory

1. If you conceal the message, you can't redisplay it—the message stays concealed until you redefine it. The parameter defaults to *off* when you redefine the message.
2. When you choose 80 or 132 columns, data is preserved; when you choose economy 80-column mode, the terminal clears the entire display memory.
3. Available only in WY-50+ personality.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
Display, Continued	SCRL SPEED	The display scrolls
	JUMP	At the rate data is received
	SMOOTH-8	Eight lines per second
	SMOOTH-4	Four lines per second
	SMOOTH-2	Two lines per second
	SMOOTH-1	One line per second
	SCRN SAVER	If the terminal receives no data for approximately 15 minutes,
	ON	The screen blanks until you press a key (no data is lost)
	OFF	Screen data displays continuously
	STATUS LINE	The screen displays
STANDARD	A status line with time and cursor line and column indicators	
EXTENDED	A status line with editing status messages	
OFF	No status line	
General	AUTOSCRL	When the cursor moves past the last line of the page,
	ON	The data scrolls up one line
	OFF	It returns to the top of the same page
	COMM MODE	The terminal's communication mode is
	FULL DUPLEX	Full duplex
	BLOCK	Block
	HALF DUPLEX	Half duplex
	HALF BLOCK	Half-duplex block
	DATA/PRINTER	The terminal communicates with the computer through the
	MODEM/AUX	MODEM port (AUX port is the printer port)
AUX/MODEM	AUX port (MODEM port is the printer port)	
END-OF-LINE WRAP	When additional characters are entered at the end of a line,	
ON	The cursor wraps to the start of the next line	
OFF	Characters at the cursor position are replaced	
ENHANCE	In some nonnative terminal personalities, an enhanced set of codes is	
ON	Recognized by the terminal	
OFF	Not recognized by the terminal	
FONT LOAD	When changing personalities or the number of displayed lines, the terminal	
ON	Loads the appropriate character set	
OFF	Doesn't change the current character set	

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
General, Continued	INIT TABS OFF ON	When the terminal is turned on, tab stops are Cleared Initialized from nonvolatile memory
	MONITOR OFF ON	The terminal Executes escape sequences and control codes Displays symbols for escape sequences and control codes without acting on them <sup>4</sup>
	PERSONALITY <sup>5, 6</sup>  WY 60 WY 50+ TVI 910+ TVI 912/920 TVI 925 TVI 950 TVI 955 PC TERM ADDS A2 ADDS VP60 HZ 1500 DG 200 DG 210 ADM-31 IBM 3101-1X IBM 3101-2X IBM 3161 WY 75 VT 52 VT 100	The terminal can run programs written for the following terminals:  Itself (native personality) WY-50, WY-50+, WY-100 TeleVideo 910 and 910+ TeleVideo 912 and 920 TeleVideo 925 TeleVideo 950 TeleVideo 955 PC/XT/AT type ADDS Viewpoint A2 ADDS Viewpoint 60 Hazeltine 1500 Data General DASHER D100 and D200 Data General DASHER D210 Lear Siegler ADM 31, ADM 3A, ADM 5 IBM 3101, Model 1X IBM 3101, Model 2X IBM 3161 WY-75 Digital Equipment VT52 Digital Equipment VT100
	RCVD CR  CR CRLF	When the terminal receives an ASCII CR, the cursor moves to the beginning of the Current line Next line
	SEND ACK ON OFF	After executing certain commands, the terminal sends An ASCII ACK character to the computer No acknowledgment
	WIDTH CHANGE CLEAR  OFF ON	When executing a command to change the number of columns, the terminal Doesn't clear the screen <sup>7</sup> Clears the screen

4. See WyseWorks ASCII Table for symbols displayed.

5. When you select a new terminal personality, the terminal displays the appropriate character set unless the Font Load parameter is set to *off*.6. **Caution** The terminal may clear the entire display memory when you change the personality.

7. Except when entering or leaving economy 80-column mode.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
Keyboard	BREAK <sup>8</sup> 250MS 170MS 500MS	The terminal sends a break signal to the MODEM port for 250 milliseconds 170 milliseconds 500 milliseconds
	CORNER KEY <sup>9</sup> FUNCT  HOLD	Pressing the corner key Together with an alphanumeric key sends an ASCII SOH, the other key's code, and an ASCII CR Freezes the current data on the screen until the key is pressed again
	ENTER CR CRLF TAB	<b>Enter</b> sends the ASCII character for Carriage return (CR) Carriage return (CR) and linefeed (LF) Horizontal tab (HT)
	FKEY XMT LIMIT NONE 35CPS 60CPS 150CPS	The terminal sends function key definitions As fast as the baud rate allows At a maximum rate of 35 characters per second At a maximum rate of 60 characters per second At a maximum rate of 150 characters per second
	KEY REPEAT ON OFF	When held down for more than half a second, the keys Repeat Don't repeat
	KEYCLICK ON OFF	Each time a key is pressed or repeated, A muted beep sounds No beep sounds
	KEYLOCK CAPS REV	When <b>Caps Lock</b> is engaged, Alphabetic keys generate only uppercase characters The action of <b>Shift</b> is reversed—shifted alphabetic keys generate lowercase characters, unshifted keys generate uppercase characters
	LANGUAGE	Choose the setting that matches your keyboard language.
	MARGIN BELL OFF ON	The terminal's margin bell Doesn't ring Rings when the cursor reaches the column where margin bell is set (default is column 72 in 80-column mode, column 124 in 132-column mode)

8. A break can't be sent through the AUX port.

9. Key labeled **Funct**, **Hold**, or **Scroll Lock**, depending on your keyboard.



Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
Keyboard, Continued	RETURN	<b>Return</b> sends the ASCII character for
	CR	Carriage return (CR)
	CRLF TAB	Carriage return (CR) and linefeed (LF) Horizontal tab (HT)
	WYSEWORD	When Wyseword mode is
	OFF	Off, keys send standard key codes
	ON	On, specified keys send WordStar-compatible codes
	XMT LIMIT	The terminal sends data through the data port
	NONE	As fast as the baud rate allows
	35CPS	At a maximum rate of 35 characters per second
	60CPS	At a maximum rate of 60 characters per second
	150CPS	At a maximum rate of 150 characters per second
COMM	AUX BAUD RATE	The terminal sends and receives data through the AUX port at the indicated baud rate, which must match the baud rate of the device connected to the port.
	9600	
	19200	
	110	
	134.5	
	150	
	300	
	600	
	1200	
	1800	
	2000	
	2400	
	3600	
	4800	
	7200	
	AUX DATA/STOP BITS	Through the AUX port, the terminal sends and receives
	8/1	8-bit data with one stop bit
	7/2	7-bit data with two stop bits
	8/2	8-bit data with two stop bits
	7/1	7-bit data with one stop bit
	AUX PARITY <sup>10</sup>	The terminal sends data to the AUX port with
NONE	No parity bit	
MARK	A high (mark) parity bit	
EVEN	Even parity	
ODD	Odd parity	

10. The terminal ignores any incoming parity bits.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
COMM, Continued	AUX RCV HNDSHAKE <sup>11</sup>	The terminal controls the flow of data received from a device connected to the AUX port by
	DSR	Hardware handshaking (raising and lowering the DSR line voltage)
	BOTH	Both hardware (DSR) and software (Xon/Xoff) handshaking
	NONE	No handshaking protocol
	XON/XOFF	Software handshaking—CTRL S (Xoff) and CTRL Q (Xon) control codes
	AUX XMT HNDSHAKE <sup>12</sup>	The terminal regulates the sending of data to a device connected to the AUX port by responding to
	NONE	Hardware handshaking only (DTR line)
	XON/XOFF	Software handshaking—CTRL S (Xoff) and CTRL Q (Xon) control codes
	BAUD RATE	The terminal sends and receives data through the MODEM port at the indicated baud rate, which must match the baud rate of the device connected to the port.
		9600 19200 38400 50 75 110 134.5 150 300 600 1200 1800 2000 2400 4800
	DATA/STOP BITS	Through the MODEM port, the terminal sends and receives
	8/1	8-bit data with one stop bit
	7/2	7-bit data with two stop bits
	8/2	8-bit data with two stop bits
	7/1	7-bit data with one stop bit
	PARITY <sup>10</sup>	The terminal sends data to the MODEM port with
	NONE	No parity bit
	ODD	Odd parity
	MARK	A high (mark) parity bit
	EVEN	Even parity

11. Handshaking is an exchange of signals between the terminal and external devices to tell each other when they are ready or not ready to receive data. The device connected to the port must support the handshaking protocol selected for the terminal.

12. The terminal always responds to DTR handshaking signals through the AUX port.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
COMM, Continued	RCV HNDSHAKE <sup>11</sup>	The terminal controls the flow of data received from a device connected to the MODEM port by
	NONE	No handshaking protocol
	XON/XOFF	Software handshaking—CTRL S (Xoff) and CTRL Q (Xon) control codes
	DTR	Hardware handshaking (raising and lowering the DTR line voltage)
	BOTH	Both hardware (DTR) and software (Xon/Xoff) handshaking
	XMT HNDSHAKE	The terminal regulates the sending of data to a device connected to the MODEM port by responding to
	NONE	Hardware handshaking only (DSR line)
	XON/XOFF	Software handshaking—CTRL S (Xoff) and CTRL Q (Xon) control codes
	XPC HNDSHAKE	When the terminal is in PC Term personality,
	OFF	The receive handshaking protocol depends on the RCV Hndshake parameter setting of the port configured as the data port
	ON <sup>13</sup>	Special codes (Hex 65 and Hex 67) are sent in place of Xon/Xoff handshaking protocol for the port configured as the data port
Miscellaneous (IBM Personalities) <sup>14</sup>	ENTER	Pressing <input type="text" value="Enter"/> sends code defined by the
	SEND	Send parameter
	RETURN	Return parameter (in this setup level)
	INSERT <sup>15</sup>	Pressing <input type="text" value="Insert"/>
	MODE	Turns on insert mode
	SPACE	Inserts a space character at the cursor position (cursor doesn't move)
	PRINT <sup>15</sup>	Pressing <input type="text" value="Print"/> sends to the printer the contents of the
	VIEWPORT SCREEN	Viewport Screen
PRINT EOL <sup>15</sup>	When the terminal executes print viewport, print screen, or print page commands,	
ON	The line terminator defined by the Print Line End parameter is sent to the printer	
OFF	No line terminator is sent	

13. RCV Handshake parameter must be set to *Xon/Xoff*.

14. Parameters displayed when the terminal is in an IBM personality.

15. IBM 3161 only.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
<b>Miscellaneous (IBM Personalities)<sup>14</sup> Continued</b>	PRINT LINE END <sup>15</sup>	When the terminal sends data to the printer, the line terminator is an ASCII character for
	CRLF	Carriage return (CR) and linefeed (LF)
	CR	Carriage return (CR)
	PRINT NULL <sup>15</sup>	When sending data to the printer, the terminal
	ON	Doesn't send null characters
	OFF	Converts null characters to space characters
	RETURN	Pressing <b>Return</b> moves the cursor
	FIELD RETURN	To the next unprotected field As defined by the Return parameter in the keyboard setup level (CR or CRLF)
<b>Miscellaneous (Other Personalities)<sup>17</sup></b>	SEND <sup>16</sup>	Pressing <b>Send</b> sends
	PAGE	The entire page
	LINE	The entire cursor line
	SEND NULL <sup>16</sup>	When sending data to the computer, the terminal
	ON	Doesn't send null characters
	OFF	Converts null characters to space characters
	TAB <sup>15</sup>	In tab operations, the cursor moves to
	FIELD COLUMN	Start of field, ignoring column tab stops Column tab stops
<b>Miscellaneous (Other Personalities)<sup>17</sup></b>	TURNAROUND <sup>16</sup>	When the terminal sends data to the computer, the line terminator is an ASCII
	CR	CR character
	ETX	ETX character
	XOFF	XOFF character
	EOT	EOT character
	AUTOPAGE	When the cursor reaches the top or bottom of the page,
	OFF	It wraps on the page or the data scrolls, depending on the Autoscl parameter setting
	ON	A new page of memory moves onto the screen
<b>Miscellaneous (Other Personalities)<sup>17</sup></b>	BLOCK END <sup>18</sup>	When the terminal sends a block of data to the computer, the
	US/CR	Line terminator is an ASCII US character, block terminator is an ASCII CR character
	CRLF/ETX	Line terminators are ASCII CR and LF characters, the block terminator is an ASCII ETX character

16. IBM 3101-2X and IBM 3161 only.

17. Parameters displayed when the terminal is in a non-IBM personality.

18. The Block End, VP60 Blk End, and Turnaround parameter settings all change when any one of them is changed.

Table 2-2 Setup Parameters, Continued

Level	Parameter	Explanation
Miscellaneous (Other Personalities) <sup>17</sup> Continued	LABELS OFF ON	Function key labels are Not displayed at next power-on Displayed on the bottom line of the screen at next power-on
	PAGE EDIT OFF ON	The terminal's editing functions affect the Cursor line Entire page
	SAVE LABELS OFF ON	Function key labels are Cleared when you turn off the terminal Saved in nonvolatile memory (when the SAVE ALL option is selected on exit from setup mode)
	TEST OFF ON	The terminal is ready for Normal operation A manufacturing self-test (don't select this value)
	TVI955 ATTRIBUTE NO SPACE SPACE	In TVI 955 personality, display attributes are Hidden Nonhidden
	VP60 BLK END <sup>18</sup> NONE CR,EOT CR,ETX CR	When the terminal sends a block of data to the computer in ADDS VP60 personality, No line or block terminators are sent The line and block terminators are ASCII CR and EOT characters The line and block terminators are ASCII CR and ETX characters The line and block terminators are ASCII CR characters
	WPRT INTENSITY DIM NORMAL INVISIBLE	Write-protected characters appear Dim Normal Invisible
	WPRT REVERSE OFF ON	Write-protected characters appear as Light characters on a dark background Dark characters on a light background
	WPRT UNDERLINE OFF ON	Write-protected characters are Not underlined Underlined

---

**DEFINING TAB STOPS**

When the Init Tabs parameter (General setup level) is set to *off*, no tab stops are set when you turn on the terminal. When the Init Tabs parameter is set to *on*, the terminal activates the tab stops last saved in nonvolatile memory—by default these are positioned every eight columns across the screen, starting at column nine.

You can clear and set tab stops from the tabs setup level (**F6**) and save the changes in nonvolatile memory by choosing the SAVE ALL option when you exit setup mode.

---

**Tabs Setup Level**

On the tabs setup level screen, the terminal's current tab stops are indicated by uppercase T's displayed along a line of periods that mark each column position.

- A tab stop in columns 1 through 78 is shown as a T in the upper line of periods.
- A tab stop in columns 79 through 132 is shown as a T in the lower line of periods.

You can easily determine where tabs are set by moving the cursor across the line and reading the column number displayed in the second instruction line at the top of the screen.

Clear and set tabs anywhere on the line, as follows:

- To move the cursor across the line, press **▶** or **◀**.
- To either clear or set (toggle) an individual tab stop at the cursor position, press **Spacebar**.
- To clear all tabs, press **Home**.
- To restore all default tabs, press **Backspace**.

---

**DEFINING AN ANSWERBACK MESSAGE**

In the answerback setup level (**F7**) you can program a message of up to 20 characters to identify the terminal to the computer. Enter the message at the cursor position. Correct errors by pressing **◀** to delete characters or **Home** to clear the message.

The answerback message shares approximately 350 bytes of nonvolatile memory with key redefinitions and function key labels. To save the message in nonvolatile memory, exit setup mode with the SAVE ALL option.

The message is sent to the computer when the terminal receives an ASCII ENQ code (CTRL E) and

- The Answerback Mode parameter (Display setup level) is set to *on*
- The Send ACK parameter (General setup level) is set to *on*

If the Answerback Conceal parameter (Display setup level) is set to *on*, the word *CONCEALED* displays in place of the message. The message stays concealed until you clear and redefine it. (Pressing **[Home]** to clear the message resets the Answerback Conceal parameter to *off*.)

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## REDEFINING THE KEYS

You can redefine the function keys and editing keys, both shifted and unshifted, to send a unique character string of up to 64 characters. You can also redefine a key's *direction*, which determines where the terminal sends the key definition.

To redefine a key, press **[F8]** to display the keys setup level. Refer to the functions indicated at the top of the screen and follow these steps:

- 1 Select the key to be redefined by pressing that key together with **[Ctrl]**. This highlights the key's direction and definition fields.
- 2 Press **[▲]** or **[▼]** to highlight the unshifted or shifted key definition field.
- 3 Enter the key definition (up to 64 characters) at the cursor position. Correct errors by pressing **[◀]** to delete characters or **[Home]** to clear the definition.
- 4 If you want to change the key's direction, press **[Enter]** until your choice appears: *remote*, *local*, or *normal*
  - Remote  
Data is sent to the computer only, regardless of the terminal's communication mode. (Until redefined, the direction of all the programmable keys is remote.)
  - Local  
Data is sent to the terminal only, regardless of the terminal's communication mode.
  - Normal  
Data is sent to the computer and/or the terminal, depending on the terminal's communication mode.

---

**Memory Space**

To save key definitions in nonvolatile memory, choose the SAVE ALL option to exit setup mode. Key definitions share a total of approximately 350 bytes of nonvolatile memory space with the answerback message and function key labels. If you enter more than 64 characters for any one key or reach the 350-character overall limit, you'll hear a warning beep and won't be able to enter more characters.

- Note** If you connect another keyboard to the terminal after you've saved key definitions in nonvolatile memory, clear the definitions to their default values.

---

**DEFINING THE FUNCTION  
KEY LABELS**

You can define labels for the function keys (unshifted and shifted) and display them on the label line at the bottom of the screen. They share approximately 350 bytes of nonvolatile memory space with the answerback message and key definitions.

---

**Labels Setup Level**

To define a function key label, press **F9** to display the labels setup level and follow these steps:

- 1 Select the key you want to label by pressing that key together with **Ctrl**.
- 2 Press **▲** or **▼** to highlight the shifted or unshifted key field.
- 3 Enter the label (up to seven characters) at the cursor position. Correct errors by pressing **◀** to delete characters or **Home** to clear the label.

To display the labels at the next power-on, set the Labels parameter (Miscellaneous setup level) to *on*, set the Save Labels parameter (Miscellaneous setup level) to *on*, and exit setup mode with the SAVE ALL option.



# 3

## Operating the Terminal

---

### KEYBOARD FUNCTIONS

The four U.S. keyboards supported by the terminal are illustrated in Appendix B, which lists the codes sent by the keys in each of the terminal's ASCII personalities. Appendix D lists the key sequences that control the terminal locally.

When Wyseword mode is on (and your computer is loaded with the WordStar word-processing program), specified keys send the WordStar-compatible commands listed in Appendix C.

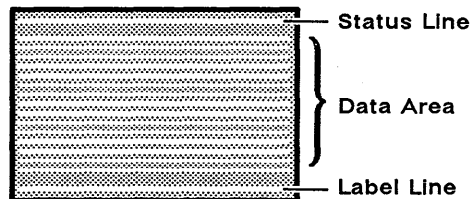
Key functions for the terminal's calculator and other desktop accessories are described in Chapter 4, "WyseWorks."

---

### SCREEN AREAS

The screen has three display areas: the *status line*, the *data area*, and the *label line* (see Figure 3-1).

Figure 3-1 Screen Areas



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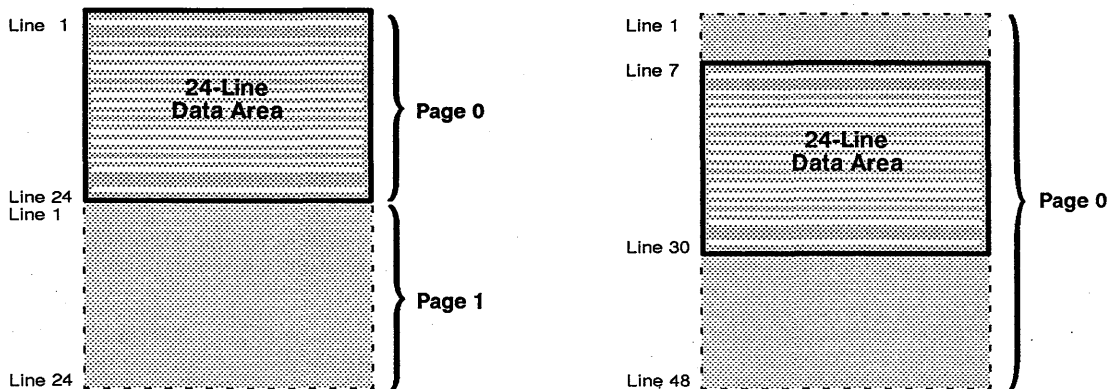
Unless you turn off the status line display in setup mode or with an escape sequence, the top line of the screen displays terminal or computer status messages.

The bottom line of the screen can display function key labels or a single longer message, or it can be an extra data line.

The data area of the screen is the portion of a page of display memory that can be viewed at any one time. The default data area is 24 data lines. The default page length is also 24 lines, allowing you to see an entire page at a time on the screen. You can set the Lines and Page Length setup parameters for other combinations of data lines and page length.

Figure 3-2 shows a 24-line data area in a 24-line and 48-line page.

**Figure 3-2 24-Line Data Area in 24- and 48-Line Page**



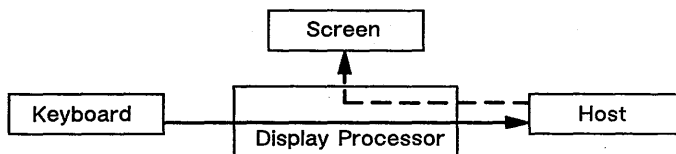
## COMMUNICATION MODES

Four modes of communication are possible between the terminal and the computer: full duplex, half duplex, block, and half-duplex block. Figure 3-3 shows how the terminal handles data in these communication modes.

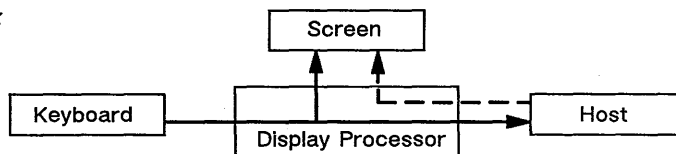
- Note** Half-duplex mode should not be selected unless required—characters will display twice if the host also echoes data back to the screen.

**Figure 3-3 Data Transmission in the Communication Modes**

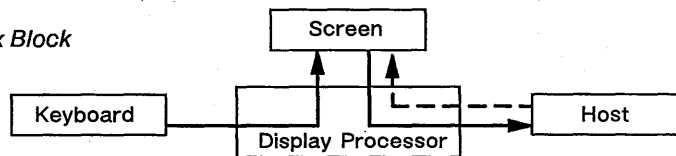
*Full Duplex*



*Half Duplex*



*Block or Half-Duplex Block*



## PRINTING

The terminal is set up to communicate with a serial printer through the AUX port. If you choose to connect the printer to the MODEM port instead, reverse the functions of the ports by changing the Data/Printer parameter in setup mode. (Appendix A gives the connector pin assignments for both ports.)

To print data coming from the computer,

- Make sure the printer port is configured for transmit handshaking that matches the requirements of your printer.
- Press **Ctrl** **Print** (**Print Line**, **Shift** **Sys Req**) to turn on auxiliary print mode.

To print a page of data when you have a serial printer connected directly to the terminal,

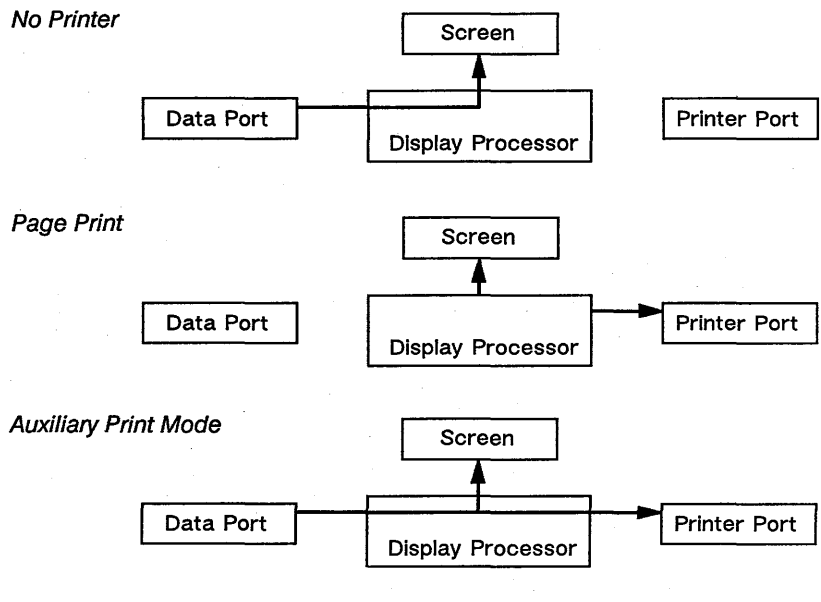
- Press **Shift** **Break** (**Block**) to put the terminal in block mode.

- Press **Print** ( **PrtSc**, **Print Screen** ) to send the formatted page to the printer.
- Note** Because data is sent from home through the cursor position, the cursor must be at the bottom of the page if the entire page is to print.
- When you're finished printing, press **Shift Break** ( **Block** ) again to take the terminal out of block mode.

Figure 3-4 shows how the terminal handles data through the printer port.

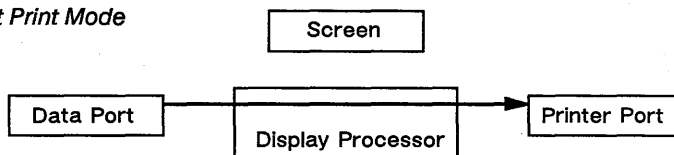
- **Caution** Do not enter data at the keyboard during print operations. Keyboard data will be sent to the computer and/or the screen as usual (see Figure 3-3) and, if echoed by the computer, can become mixed with data going to or from the printer port.

**Figure 3-4 Communications Through the Printer Port**

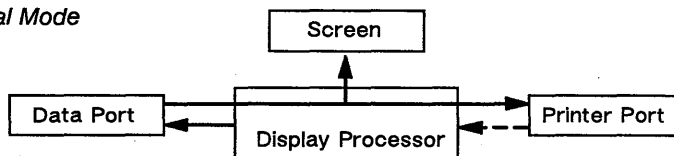


**Figure 3-4 Communications Through the Printer Port, Continued**

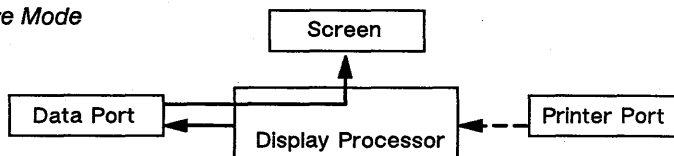
*Transparent Print Mode*



*Bidirectional Mode*



*AUX Receive Mode*





# 4 WyseWorks

---

## INTRODUCING WYSEWORKS

WyseWorks is a set of four desktop accessories:

- A calculator with a paper tape feature that displays and prints the results of your calculations
- An alarm clock with two alarm settings and reminder messages
- A calendar that displays three months at a glance
- An ASCII table displaying numerical equivalents and monitor mode symbols for 128 U.S. ASCII characters

You have access to these accessories at any time except when the terminal is in setup mode. They are displayed on the top eight lines of the screen, which temporarily defaults to 80 columns. (Overlaid data and the previous screen width are restored when you exit WyseWorks.)

---

## BASIC WYSEWORKS CONTROLS

Press **Ctrl** **Caps Lock** to display the WyseWorks entry screen, where the fields at the bottom of the screen display the name of each accessory. Follow these steps:

- 1 To select an accessory, press the indicated function key. The accessory will appear in the box at the top of the screen.
- 2 After you've selected an accessory, follow the instructions on the screen, referring to the explanations in this chapter.
- 3 When you're ready to leave an accessory,
  - Press **Ctrl** **Caps Lock** to exit WyseWorks
  - Press **F10** to return to the entry screen to select another accessory

---

**CALCULATOR**

The calculator works very much like a handheld calculator, with the keyboard acting as the numeric keypad and the screen displaying the results of your calculations. A paper tape feature allows you to display five entries at a time and send them to a printer connected directly to the terminal.

---

**Calculator Display**

In the box at the top of the screen the display shows

- A keypad that highlights the numbers and functions as you enter them on the keyboard
- Five memory locations, with a pointer (<m) indicating the active memory where you can store and recall your current calculation.

The two fields at the bottom of the screen indicate the function keys that turn the paper tape feature's display and print functions on or off. The current status (on or off) is shown in each field.

- When the tape is *on*, each keyboard entry appears at the left of the calculator display (see Figure 4-1), scrolling up like a paper tape. When more than five entries are made, the top entry scrolls off.
- When the printer is also *on*, each successive bottom line of the tape is sent to the port configured as the printer port.

Figure 4-1 shows the calculator's display of the calculation

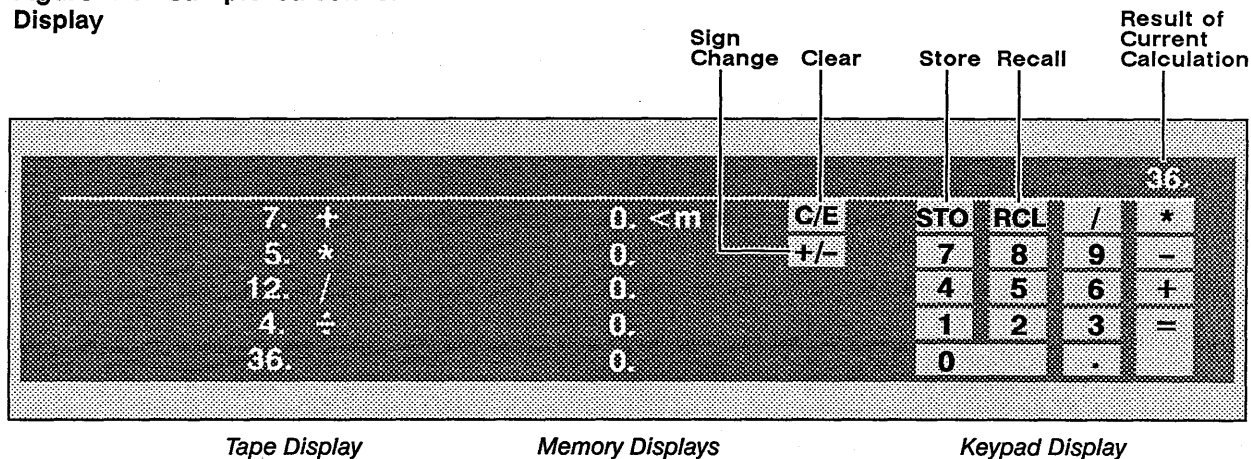
$$[(7 + 5) \times 12] \div 4$$

when the tape display is on.

- Note** The keypad display shown in the illustration corresponds to keys on the WY-60 ASCII keyboard. The display reflects the keys that perform calculator functions on the keyboard installed on the terminal.



Figure 4-1 Sample Calculator Display



### Calculator Operations

The calculator has an absolute numerical range of  $\pm 0.001$  to 9,999,999,999.9999.

#### Paper Tape Feature

Both the tape display and printer are *off* when you turn on the terminal and first enter WyseWorks. To turn on the tape display, press **[F1]**. To activate the printer, press **[F2]**. Observe the following precautions:

- Turn on the tape *before* starting your calculation—turning it on clears existing entries.
- Don't turn the printer on unless the tape display is also on and a printer is connected directly to the terminal.

Until you turn off the terminal, the status of the tape display and printer will remain as you last set them.

#### Keyboard Controls

Table 4-1 summarizes the calculator operations that you can perform from the keyboard and lists the keys that control them. The corresponding keypad display is highlighted as you make each entry at the keyboard.

Table 4-1 Calculator Controls

Operation	Keyboard Style			Enhanced PC <sup>1</sup>	Display Highlight
	WY-60 ASCII	IBM 316X	AT <sup>1</sup>		
Tape on/off	<b>F1</b>	<b>F1</b>	<b>F1</b>	<b>F1</b>	F1=TAPE ON F1=TAPE OFF
Printer port on/off	<b>F2</b>	<b>F2</b>	<b>F2</b>	<b>F2</b>	F2=PRINTER ON F2=PRINTER OFF
Enter number	<b>0</b> - <b>9</b> <sup>2</sup>	<b>0</b> - <b>9</b> <sup>2</sup>	<b>0</b> - <b>9</b> <sup>2</sup>	<b>0</b> - <b>9</b> <sup>2</sup>	0-9
Enter decimal point	<b>.</b> <sup>2</sup>	<b>.</b> <sup>2</sup>	<b>.</b> <sup>2</sup>	<b>.</b> <sup>2</sup>	.
Add	<b>+</b> <sup>2</sup>	<b>+</b> <sup>2</sup>	<b>+</b> <sup>2</sup>	<b>+</b> <sup>2</sup>	+
Subtract	<b>-</b> <sup>2</sup>	<b>-</b> <sup>2</sup>	<b>-</b> <sup>2</sup>	<b>-</b> <sup>2</sup>	-
Multiply	<b>Repl</b>	<b>Select</b>	<b>*<sup>2</sup></b>	<b>*<sup>2</sup></b>	*
Divide	<b>Clr Line</b>	<b>Send Line</b>	<b>Scroll Lock</b>	<b>/<sup>2</sup></b>	/
Produce result	<b>Enter</b>	<b>Enter</b>	<b>Sys Req</b>	<b>Enter</b> <sup>2</sup>	=
Reciprocal	<b>Clr Line</b>	<b>Send Line</b>	<b>Scroll Lock</b>	<b>/<sup>2</sup></b>	/
Square	and <b>Enter</b>	and <b>Enter</b>	and <b>Sys Req</b>	and <b>Enter</b> <sup>2</sup>	=
Select memory	<b>Repl</b>	<b>Select</b>	<b>*<sup>2</sup></b>	<b>*<sup>2</sup></b>	*
Store displayed number in memory (at pointer)	and <b>Enter</b>	and <b>Enter</b>	and <b>Sys Req</b>	and <b>Enter</b> <sup>2</sup>	=
Recall memory contents (from memory at pointer)	<b>▲</b> or <b>▼</b>	<b>↑</b> or <b>↓</b>	<b>Enter</b>	<b>↑</b> or <b>↓</b>	<m
Clear entry	<b>Ins Char</b>	<b>Jump</b>	<b>Esc</b>	<b>Home</b>	STO
Clear calculator	<b>Del Char</b>	<b>Page</b>	<b>Num Lock</b>	<b>Page Up</b>	RCL
Clear memory (at pointer)	<b>Del</b>	<b>Clear</b>	<b>←<sup>3</sup></b>	<b>Num Lock</b>	C/E
Clear all memories	<b>Del</b> <sup>4</sup>	<b>Clear</b> <sup>4</sup>	<b>←<sup>3,4</sup></b>	<b>Num Lock</b> <sup>4</sup>	C/E
Change sign of displayed number	<b>Shift</b> <b>Del</b>	<b>Shift</b> <b>Clear</b>	<b>Shift</b> <b>←<sup>3</sup></b>	<b>Shift</b>	C/E
				<b>Num Lock</b>	
	<b>Send</b>	<b>Erase EOF</b>	<b>\</b>	<b>Page Down</b>	+/-

1. On these keyboards, the keys perform the indicated functions regardless of NUM LOCK status.

2. These keys are found on the numeric keypad.

3. Backspace key.

4. Press key(s) twice in succession.

### Error Messages

If your calculation exceeds 14 digits or if a number has been divided by zero, an error message appears on the top line of the screen (the status line):

**\*\*Number too large\*\***

**\*\*Division by zero\*\***

If this happens, clear the calculation and recalculate.

### ALARM CLOCK

In the alarm clock accessory you can set two alarm times and enter two 20-character reminder messages. At the set time, the alarm sounds for 30 seconds, and any reminder message is simultaneously displayed on the status line.

- Note** The alarm sounds only during normal terminal operation, not while the terminal is in WyseWorks or setup mode.

### Alarm Clock Display

The alarm clock display shows

- The current time according to the terminal's clock (default 8:00 a.m.)
- Two alarm setting lines—Alarm 1 and Alarm 2—each with a time field (default 12:00 a.m.), a 20-character message field, and an on/off indicator field

### Setting the Alarm

Position the cursor in the appropriate fields:

- 1 Press the cursor keys or **Tab** or **Backspace** to go from field to field. Pressing **Return** (**Enter**) moves the cursor to the start of a line.
  - 2 To reset the terminal's clock, enter the current time (12-hour format, including a.m. or p.m.) in the time field.
  - 3 Enter the desired alarm time in the Alarm 1 or Alarm 2 time field and the desired message in the message field.
  - 4 In the on/off indicator field, press any key to set the alarm bell to *on*.
- Note** After the alarm sounds, the indicator defaults to *off*, but the time setting and message remain until you redefine them or turn off the terminal.

---

**Turning Off the Alarm**

To turn off the alarm, press **Setup** (**Reset**, **Sys Req**, **Select**).

Before you can resume normal operation or reenter WyseWorks you must press **Setup** (**Reset**, **Sys Req**, **Select**) again to clear the message displayed on the status line.

---

**CALENDAR**

The calendar displays three months at a time, defaulting to the factory setting when the terminal is turned on. (If more than five lines are required to include all the days, the leftover days of the month won't appear.)

---

**Calendar Controls**

To display other months in the year, press

- **◀** (**←**) for earlier months
- **▶** (**→**) for later months

To display the same months in another year, press

- **▼** (**↓**) for earlier years
  - **▲** (**↑**) for later years
- 

**ASCII TABLE**

The two-page ASCII table displays the hexadecimal codes for the U.S. ASCII table (64 codes per page), showing the monitor mode symbols for the current terminal personality.

The status line displays the corresponding ASCII character or control code, as well as binary, decimal, and octal equivalents, for the hexadecimal code that's highlighted in the table.

---

**ASCII Table Controls**

Press the cursor keys to highlight the codes. Press **Return** (**Enter**) to highlight the code at the start of a line.

Press **F1** to display the alternate page.

# A Connector Pin Assignments

Figure A-1 shows the MODEM and AUX port pin numbers.

Figure A-1 MODEM and AUX Port Pin Numbers

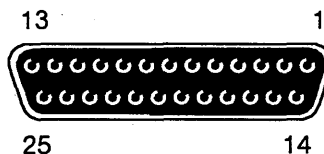


Table A-1 MODEM Port Connector Pin Assignments (DTE)

Pin	Signal	Mnemonic	Direction
1	Shield Ground	PGND	
2*	Transmit Data	TXD	Out
3*	Receive Data	RXD	In
4	Request to Send	RT	Out
5†	Clear to Send	CTS	In
6†	Data Set Ready	DSR	In
7*	Signal Ground	SGND	
8†	Data Carrier Detect	DCD	In
20*	Data Terminal Ready	DTR	Out

\* Typical configuration.

† Modem protocol. We recommend you leave it disconnected. If pin 5 is low, the terminal won't transmit any data. If pin 8 is low, the terminal won't receive any data.

**Table A-2 Typical Modem  
Pin Assignments**

Terminal (DTE)	Hayes Smartmodem 1200 (DCE)
1	1
2	2
3	3
7	7
20	20

We recommend that pins 6 and 8 be disconnected, as they are modem protocols that may lock up the terminal.

- Note** Hayes Smartmodem 1200 front panel switch settings are DUDUDDUD.

**Table A-3 AUX Port Connector  
Pin Assignments (DCE)**

Pin	Signal	Mnemonic	Direction
1	Shield Ground	PGND	
2*	Transmit Data	TXD	In
3*	Receive Data	RXD	Out
6	Data Set Ready	DSR	Out
7*	Signal Ground	SGND	
20*	Data Terminal Ready	DTR	In

\* Typical configuration.

# B Key Codes

This appendix lists the key codes for the terminal's ASCII personalities. See Appendix F for the terminal's ANSI personality key codes.

Tables B-1 through B-4 list ASCII codes for each of the four keyboards available for the terminal.

- The tables include codes for all ASCII personalities *except* PC Term, in which the keys send scan codes, not ASCII characters.
- Codes are given for editing and special keys only. Alphanumeric keys send the standard ASCII codes (see WyseWorks ASCII Table).

**Note** NUM LOCK must be off for editing and special key codes to be sent from the numeric keypad on the AT-style and Enhanced PC-style keyboards.

Table B-5 summarizes the hexadecimal values of the scan codes sent by the keys on all keyboards when the terminal is in the PC Term personality—each key sends one scan code when pressed (the *down* code) and another code when released (the *up* code)

- The table gives the codes for the editing and special keys only.
- Scan codes for the alphanumeric and function keys are shown on the AT-style and Enhanced PC-style keyboard illustrations. Only the down codes are shown. The up code is the same as the down code except the high bit is set (bit 7 is active). (The same codes are sent by the alphanumeric and function keys on the other keyboards when the terminal is in the PC Term personality.)

Table B-6 lists function key default codes for all keyboards and all ASCII personalities except PC Term.

Figure B-1 WY-60 ASCII Keyboard

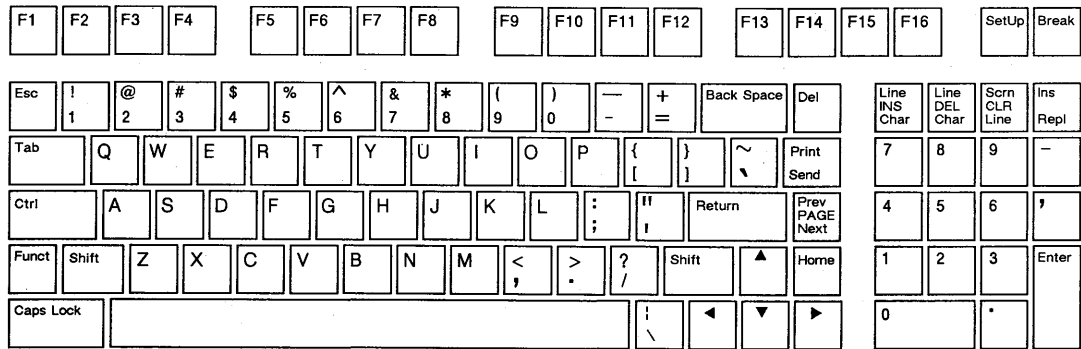


Table B-1 Editing and Special Key Codes—WY-60 ASCII Keyboard

Key	Native <sup>1</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
Backspace	CTRL H	08	CTRL H	CTRL H	CTRL Y	CTRL Y	CTRL H	CTRL H
Clr Line	ESC T	1B 54	ESC K	ESC K	RS ^		ESC I	~ CTRL O
Clr Scrn	ESC Y	1B 59	ESC k	ESC k		RS Z	ESC K	~ CTRL X
▼	CTRL J <sup>2</sup>	0A	CTRL J	CTRL J	CTRL Z	RS CTRL Z	ESC B	~ CTRL K
◀	CTRL H	08	CTRL U	CTRL U	CTRL Y	RS CTRL Y	ESC D	CTRL H
▶	CTRL L	0C	CTRL F	CTRL F	CTRL X	RS CTRL X	ESC C	CTRL P
▲	CTRL K <sup>3</sup>	0B	CTRL Z	CTRL Z	CTRL W	RS CTRL W	ESC A	~ CTRL L
Del	DEL	7F	DEL	DEL	DEL		DEL	DEL
Del Char	ESC W	1B 57	ESC E	ESC W	RS ]		ESC Q <sup>4</sup>	
Del Line	ESC R	1B 52	ESC I	ESC I		RS Y	ESC O <sup>4</sup>	
Esc	CTRL [	1B	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [

1. These codes also recognized in WY-50+, ADM 31, and TeleVideo 910/920/925/950/955 personalities. Unless otherwise noted, shifted keys send the same code as unshifted.
2. CTRL V if the terminal is in TeleVideo 925, 950, or 955 personality.
3. Shifted key sends ESC j in TeleVideo 925, 950, or 955 personality.
4. IBM 3101-2X and IBM 3161 personalities only.



Table B-1 Editing and Special Key Codes—WY-60 ASCII Keyboard

Key	Native <sup>1</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
<b>Enter</b> <sup>5</sup>	CTRL M or CTRL M CTRL J or CTRL I	0D 0D, 0A 09	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL J or CTRL M CTRL J or CTRL I		CTRL M or CTRL M CTRL J or CTRL I or <sup>6</sup>	CTRL M or CTRL M CTRL J or CTRL I
<b>Home</b>	CTRL ^	1E	CTRL A	CTRL A	CTRL H	RS CTRL H	ESC H	~ CTRL R
<b>Shift</b> <b>Home</b>	ESC {	1B 78	CTRL A	CTRL A		RS CTRL H	ESC H	~ CTRL R
<b>Ins</b> <sup>7</sup>	ESC q	1B 71	ESC f	ESC q		RS [	ESC L CTRL M	CTRL U
<b>Ins Char</b>	ESC Q	1B 51	ESC F	ESC Q	RS \		ESC P <sup>4</sup>	
<b>Ins Line</b>	ESC E	1B 45	ESC M	ESC M		RS X	ESC N <sup>4</sup>	~ CTRL Z
<b>Page Next</b>	ESC K	1B 4B	ESC J	ESC J	CTRL M <sup>9</sup> or CTRL M CTRL J or CTRL I			
<b>Page Prev</b>	ESC J	1B 4A	ESC J	ESC J				
<b>Print</b>	ESC P	1B 50	Local <sup>9</sup>	ESC P		Local <sup>10</sup>		CTRL F
<b>Repl</b>	ESC r	1B 72	ESC F	ESC r	RS _		ESC J	CTRL D
<b>Return</b> <sup>8</sup>	CTRL M or CTRL M CTRL J or CTRL I	0D 0D, 0A 09	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL J	CTRL J	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J
<b>Send</b>	ESC 7	1B 37	Local <sup>11</sup>	ESC 7	Local <sup>9</sup>		ESC 8 <sup>12</sup> or ESC ! 8 <sup>12</sup> or Local <sup>13</sup>	~ 7
<b>Tab</b>	CTRL I	09	CTRL I	CTRL I	CTRL I		CTRL I	CTRL I
<b>Shift</b> <b>Tab</b>	ESC I	1B 49	ESC O	ESC O			ESC 2 <sup>4</sup>	

5. Code depends on Enter parameter selection in setup mode. Shifted key sends no code (toggles keyclick).

6. Or IBM code defined by the MISC (IBM) setup level Enter and Return or Send parameter settings.

7. In IBM 3101-2X personality only, **Ctrl** **Ins** toggles insert mode.

8. Code depends on Return parameter selection in setup mode.

9. Prints unprotected.

10. Prints all.

11. Sends data to computer.

12. IBM 3161 personality only; code depends on Send parameter selection in setup mode. Line turnaround character is also sent.

13. IBM 3101-1X and IBM 3101-2X personalities only. Key sends no code; in block mode sends page or line, depending on Send setup parameter selection.

Figure B-2 IBM 316X-Style Keyboard

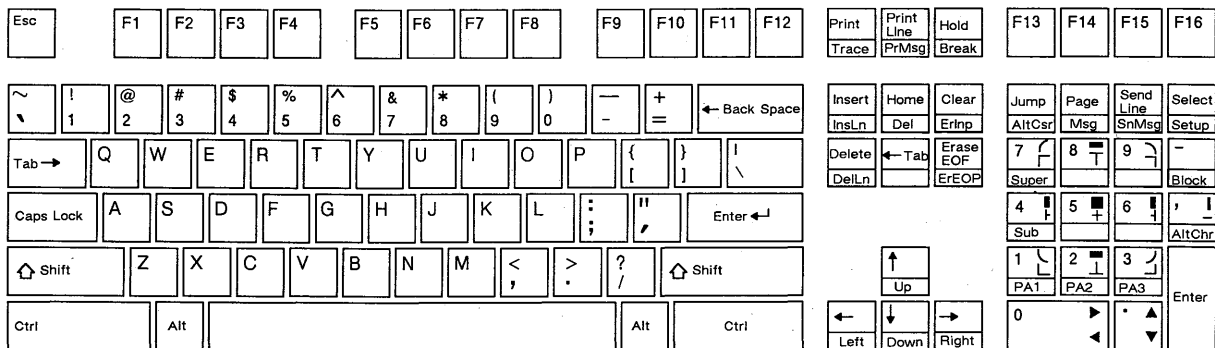


Table B-2 Editing and Special Key Codes—IBM 316X-Style Keyboard

Key	Native <sup>1</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
← Backspace	CTRL H	08	CTRL H	CTRL H	CTRL Y	CTRL Y	CTRL H	CTRL H
Clear	Local <sup>2</sup>		Local <sup>2</sup>	Local <sup>2</sup>	Local <sup>2</sup>		ESC L	Local <sup>2</sup>
▼	CTRL J <sup>3</sup>	0A	CTRL J	CTRL J	CTRL Z	RS CTRL Z	ESC B	~ CTRL K
◀	CTRL H	08	CTRL U	CTRL U	CTRL Y	RS CTRL Y	ESC D	CTRL H
▶	CTRL L	0C	CTRL F	CTRL F	CTRL X	RS CTRL X	ESC C	CTRL P
▲	CTRL K <sup>4</sup>	0B	CTRL Z	CTRL Z	CTRL W	RS CTRL W	ESC A	~ CTRL L
Del	DEL	7F	DEL	DEL	DEL		DEL	DEL
Delete	ESC W	1B 57	ESC E	ESC W	RS ]		ESC Q <sup>5</sup>	
Del Line	ESC R	1B 52	ESC I	ESC I	RS Y		ESC O <sup>5</sup>	
Enter <sup>6</sup>	CTRL M or CTRL M	0D, 0A	CTRL M or CTRL M	CTRL M or CTRL M	CTRL J or CTRL M	CTRL J or CTRL M	CTRL M or CTRL M	CTRL M or CTRL M
	CTRL J or CTRL I	09	CTRL J or CTRL I	CTRL J or CTRL I	CTRL J or CTRL I	CTRL J or CTRL I	CTRL J or CTRL I	CTRL J or CTRL I
							or <sup>7</sup>	

1. These codes are also recognized in WY-50+, ADM 31, and TeleVideo 910/920/925/950/955 personalities. Unless otherwise noted, shifted keys send the same code as unshifted.
2. Clears page to nulls, turning off protect and write-protect modes.
3. CTRL V if the terminal is in TeleVideo 925, 950, or 955 personality.
4. Shifted key sends ESC j in TeleVideo 925, 950, or 955 personality.
5. IBM 3101-2X and IBM 3161 personalities only.
6. Code depends on Enter parameter selection in setup mode. Shifted key sends no code (toggles keyclick).
7. Or IBM code defined by the MISC (IBM) setup level Enter and Return or Send parameter settings.

Table B-2 Editing and Special Key Codes—IBM 316X-Style Keyboard, Continued

Key	Native <sup>1</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
<b>Erase EOF</b>	ESC T	1B 54	ESC K	ESC K	RS ^		ESC I	~ CTRL O
<b>Er EOP</b>	ESC Y	1B 59	ESC k	ESC k	RS Z		ESC J	~ CTRL X
<b>Erlnp</b>			FF	FF			ESC K	~ CTRL \
<b>Esc</b>	CTRL [	1B	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [
<b>Home</b>	CTRL ^	1E	CTRL A	CTRL A	CTRL H		ESC H	~ CTRL R
<b>Shift Home</b>	ESC {	1B 78	CTRL A	CTRL A		RS CTRL H	ESC H	~ CTRL R
<b>Insert</b>	ESC q	1B 71	ESC f	ESC q	RS [		ESC P <sup>8</sup>	CTRL U
<b>Shift Insert</b>	ESC r	1B 72	ESC F	ESC r		RS _	ESC P <sup>8</sup>	CTRL D
<b>Ins Line</b>	ESC E	1B 45	ESC M	ESC M	RS X		ESC N <sup>6</sup>	~ CTRL Z
<b>LF</b>	CTRL M	0D	CTRL M	CTRL M	CTRL J	CTRL J	CTRL J	CTRL M
<b>Page</b>	ESC K	1B 4B	ESC J	ESC J	CTRL M <sup>9</sup> or CTRL M CTRL J or CTRL I			
<b>Shift Page</b>	ESC J	1B 4A	ESC J	ESC J				
<b>Print</b>	ESC P	1B 50	Local <sup>10</sup>	ESC P		Local <sup>11</sup>	Local <sup>11</sup>	CTRL F
<b>Return<sup>9</sup></b>	CTRL M or CTRL M CTRL J or CTRL I	0D 0D 0A	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL J	CTRL J	CTRL M or CTRL M CTRL J	CTRL M or CTRL M CTRL J
<b>Send</b>	ESC 7	1B 37	Local <sup>12</sup>	ESC 7	Local <sup>10</sup>		ESC 8 <sup>13</sup> or ESC ! 8 <sup>13</sup>	~ 7
<b>Tab→</b>	CTRL I	09	CTRL I	CTRL I	CTRL I		CTRL I	CTRL I
<b>← Tab</b>	ESC I	1B 49	ESC O	ESC O			ESC 2 <sup>8</sup>	~ CTRL I
<b>Send Line</b>	ESC 6						ESC ! 8 <sup>13</sup> or ESC 8 <sup>13</sup>	
<b>Sn Msg</b>							ESC SP 8 <sup>13</sup>	
<b>Jump</b>							ESC " A <sup>14</sup>	

8. Action depends on IBM personality and communication mode (FDX/BLK).

9. Action depends on Return parameter selection in setup mode.

10. Prints unprotected.

11. Prints all.

12. Sends data to computer.

13. IBM 3161 personality only; code depends on Send parameter selection in setup mode.

14. IBM 3161 personality only.



Table B-3 Editing and Special Key Codes—AT-Style Keyboard<sup>1</sup>, Continued

Key	Native <sup>2</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
<b>Ins</b>	ESC r	1B 72	ESC F	ESC r	RS _		ESC J	CTRL D
<b>Shift</b> <b>Ins</b>	ESC q	1B 71	ESC f	ESC q		RS [	ESC P <sup>7</sup>	CTRL U
<b>PgDn</b>	ESC K	1B 4B	ESC J	ESC J	CTRL J <sup>8</sup> or CTRL I			
<b>PgUp</b>	ESC J	1B 4A	ESC J	ESC J	CTRL J <sup>8</sup> or CTRL M			
<b>PrtSc</b>	ESC P	1B 50	Local <sup>9</sup>	ESC P		Local <sup>10</sup>	ESC W <sup>7</sup>	CTRL F
<b>Tab</b> <b>→</b>	CTRL I	09	CTRL I	CTRL I	CTRL I		CTRL I	CTRL I
<b>Shift</b> <b>Tab</b> <b>→</b>	ESC I	1B 49	ESC O	ESC O			ESC 2 <sup>7</sup>	

7. Action depends on IBM personality and communication mode (FDX/BLK). No code sent in IBM 3101-1X personality.

8. Code depends on Return parameter setting in setup mode.

9. Prints unprotected.

10. Prints all.

Figure B-4 Enhanced PC-Style Keyboard

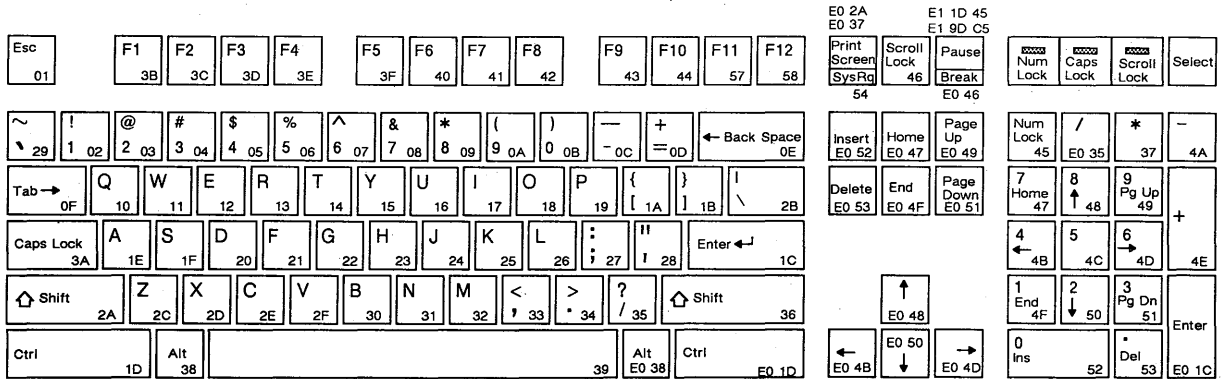


Table B-4 Editing and Special Key Codes—Enhanced PC-Style Keyboard<sup>1</sup>

Key	Native <sup>2</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210 Unshifted	DG 200/DG 210 Shifted	IBM	HZ-1500
Backspace	CTRL H	08	CTRL H	CTRL H	CTRL Y	CTRL Y	CTRL H	CTRL H
	CTRL J <sup>3</sup>	0A	CTRL J	CTRL J	CTRL Z	RS CTRL Z	ESC B	~ CTRL K
	CTRL H	08	CTRL U	CTRL U	CTRL Y	RS CTRL Y	ESC D	CTRL H
	CTRL L	0C	CTRL F	CTRL F	CTRL X	RS CTRL X	ESC C	CTRL P
	CTRL K <sup>4</sup>	0B	CTRL Z	CTRL Z	CTRL W	RS CTRL W	ESC A	~ CTRL L
<i>kpd</i>	DEL	7F	DEL	DEL	DEL		DEL	DEL
	ESC W	1B 57	ESC E	ESC W	RS ]		ESC Q <sup>5</sup>	CTRL B
	ESC R	1B 52	ESC I	ESC I		RS Y	ESC O <sup>5</sup>	~ CTRL S
<i>kpd</i>	ESC T	1B 54	ESC K	ESC K	RS ^	ESC I	~ CTRL O	
	ESC T	1B 54	ESC K	ESC K	RS ^		ESC I	~ CTRL O
	ESC Y	1B 59	ESC k	ESC k		RS Z	ESC K	~ CTRL X
<i>kpd</i> <sup>6</sup>	CTRL M or CTRL M CTRL J or CTRL I	0D 0D, 0A 09	CTRL M or CTRL J CTRL M or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL J		CTRL M or CTRL M CTRL J or CTRL I or <sup>7</sup>	CTRL M or CTRL M CTRL J or CTRL I
<sup>8</sup>	CTRL M or CTRL M CTRL J or CTRL I	0D 0D, 0A 09	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL J or CTRL M CTRL J or CTRL I		CTRL M or CTRL M CTRL J or <sup>7</sup>	CTRL M or CTRL M CTRL J or CTRL I
	CTRL [	1B	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [
<i>kpd</i>	CTRL ^	1E	CTRL A	CTRL A	CTRL H		ESC H	~ CTRL R
<i>kpd</i>	ESC {	1B 7B	CTRL A	CTRL A		RS CTRL H	ESC H	
	CTRL ^	1E	CTRL A	CTRL A	CTRL H		ESC H	~ CTRL R
	ESC {	1B 7B	CTRL A	CTRL A		RS CTRL H	ESC H	~ CTRL R

- Codes shown on keyboard layout are alphanumeric and function key scan codes sent in PC Term personality (the high bit is set when the key is released). See Table B-5 for scan codes sent by the editing and special keys in this personality.
- These codes are also recognized in WY-50+, ADM 31, and TeleVideo 910/920/925/950/955 personalities. Unless otherwise noted, shifted keys send the same code as unshifted.
- CTRL V if the terminal is in TeleVideo 925, 950, or 955 personality.
- Shifted key sends ESC j in TeleVideo 925, 950, or 955 personality.
- Action depends on IBM personality and communication mode (FDX/BLK).
- Code depends on Enter parameter selection in setup mode. Shifted key sends no code (toggles keyclick).
- Or IBM code defined by the MISC (IBM) setup level Enter and Return or Send parameter settings.
- Code depends on Return parameter selection in setup mode.

Table B-4 Editing and Special Key Codes—Enhanced PC-Style Keyboard<sup>1</sup>, Continued

Key	Native <sup>2</sup> Code	Hex. Value	ADDS VP 60	ADDS VP A2	DG 200/DG 210		IBM	HZ-1500
					Unshifted	Shifted		
<b>Ins</b> <i>kpd</i>	ESC r	1B 72	ESC F	ESC r	RS -		ESC J	CTRL D
<b>Shift</b> <b>Ins</b> <i>kpd</i>	ESC q	1B 71	ESC f	ESC q		RS [	ESC P <sup>9</sup>	CTRL U
<b>Ins</b>	ESC q	1B 71	ESC f	ESC q		RS [	ESC P <sup>9</sup>	CTRL U
<b>Shift</b> <b>Ins</b>	ESC r	1B 72	ESC F	ESC r		RS -	ESC J	CTRL D
<b>PgDn</b> <i>kpd</i>	ESC K	1B 4B	ESC J	ESC J				CTRL A
								CTRL J <sup>9</sup> or CTRL M CTRL J or CTRL I
<b>Page Down</b>	ESC K	1B 4B	ESC J	ESC J				CTRL A
								CTRL J <sup>9</sup> or CTRL M CTRL J or CTRL I
<b>PgUp</b> <i>kpd</i>	ESC J	1B 4A	ESC J	ESC J				CTRL E
								CTRL J <sup>9</sup> or CTRL M CTRL J or CTRL I
<b>Page Up</b>	ESC J	1B 4A	ESC J	ESC J				CTRL E
								CTRL J <sup>9</sup> or CTRL M CTRL J or CTRL I
<b>Print Screen</b>	ESC P	1B 50	Local <sup>10</sup>	ESC P		Local <sup>11</sup>	Local <sup>6</sup>	CTRL F
<b>Tab</b> <b>→</b>	CTRL I	09	CTRL I	CTRL I	CTRL I		CTRL I	CTRL I
<b>Shift</b> <b>Tab</b> <b>→</b>	ESC I	1B 49	ESC O	ESC O			ESC 2 <sup>5</sup>	

9. IBM 3101-2X and IBM 3161 personalities only.

10. Prints unprotected.

11. Prints all.

Table B-5 lists the hexadecimal values of the scan codes sent by the editing and special keys on all four keyboards when the terminal is in the PC Term personality. (Keys are listed alphabetically under the AT-style keyboard.)

- Note** When a key is listed twice under the WY-60 ASCII, IBM 316X-style, or Enhanced PC-style keyboard, the key shown in parentheses sends the indicated code when NUM LOCK status is off. The second, longer code is sent when NUM LOCK status is on.

Table B-5 Editing and Special Key Codes in PC Term Personality

Keyboard Style				Hexadecimal Scan Codes PC Term Mode	
WY-60 ASCII	IBM 316X	AT	Enhanced PC	DN	UP
<b>Funct</b>	<b>Reset</b>	<b>Alt</b>	<b>Alt</b> <i>left</i>	38	B8
	<b>Send</b>		<b>Alt</b> <i>right</i>	E0 38	E0 B8
<b>Backspace</b>	<b>← Backspace</b>	<b>← Backspace</b>	<b>← Backspace</b>	0E	8E
<b>Ctrl</b> <b>Break</b>	<b>Break</b>		<b>Break</b>	E0 46	E0 C6
<b>Caps Lock</b>	<b>Caps Lock</b>	<b>Caps Lock</b>	<b>Caps Lock</b>	3A	BA
<b>Ctrl</b>	<b>Ctrl</b> <i>left</i>	<b>Ctrl</b>	<b>Ctrl</b> <i>left</i>	1D	9D
	<b>Ctrl</b> <i>right</i>		<b>Ctrl</b> <i>right</i>	E0 1D	E0 9D
<b>Return</b>	<b>Return</b>	<b>Enter</b>	<b>Enter</b>	1C	9C
<b>Enter</b>	<b>Enter</b>	<b>Enter</b> <i>kpd</i>		E0 1C	E0 9C
<b>Esc</b>	<b>Esc</b>	<b>Esc</b>	<b>Esc</b>	01	81
<b>F15</b> <sup>1</sup>	<b>Jump</b> <sup>1</sup>	<b>Num Lock</b> <sup>1</sup>	<b>Num Lock</b> <sup>1</sup>	45	C5
<b>Break</b>	<b>Hold</b>		<b>Pause</b>	E1 1D 45 E1 9D C5	(none)
<b>Repl</b>	<b>Send Line</b>	<b>PrtSc</b> <b>*</b> <i>kpd</i>	<b>*</b> <i>kpd</i>	37	B7
<b>Send</b>	<b>Print</b>		<b>Print Screen</b>	E0 2A E0 37	E0 B7 E0 AA
<b>F16</b>	<b>Print Line</b>	<b>Scroll Lock</b>	<b>Scroll Lock</b>	46	C6
<b>Shift</b> <i>left</i>	<b>Shift</b> <i>left</i>	<b>Shift</b> <i>left</i>	<b>Shift</b> <i>left</i>	2A	AA
<b>Shift</b> <i>right</i>	<b>Shift</b> <i>right</i>	<b>Shift</b> <i>right</i>	<b>Shift</b> <i>right</i>	36	B6
<b>Spacebar</b>	<b>Spacebar</b>	<b>Spacebar</b>	<b>Spacebar</b>	39	B9
<b>Send</b> <sup>2</sup>	<b>Print</b> <sup>2</sup>	<b>Sys Req</b>	<b>Print Screen</b> <sup>2</sup>	54	D4
<b>Tab</b>	<b>Tab</b> →	<b>Tab</b> →	<b>Tab</b> →	0F	8F
<b>-</b> <i>kpd</i>	<b>-</b> <i>kpd</i>	<b>-</b> <i>kpd</i>	<b>-</b> <i>kpd</i>	4A	CA
<b>,</b> <i>kpd</i>	<b>,</b> <i>kpd</i>	<b>+</b> <i>kpd</i>	<b>+</b> <i>kpd</i>	4E	CE
<b>Clr Line</b>	<b>Page</b>	<b>/</b> <i>kpd</i>	<b>/</b> <i>kpd</i>	E0 35 E0	B5

1. Toggles NUM LOCK status and NUM indicator on status line. You can press this key simultaneously with **Ctrl** to synchronize the terminal with your application program's NUM LOCK status.
2. With **Funct** (**Reset**, **Alt**) key pressed simultaneously.



Table B-5 Editing and Special Key Codes in PC Term Personality, Continued

Keyboard Style		Hexadecimal Scan Codes PC Term Mode			
WY-60 ASCII	IBM 316X	AT	Enhanced PC	DN	UP
<i>kpd</i> (Del) Del	<i>kpd</i> (Delete) Delete	<i>kpd</i>	<i>kpd</i> (Delete) Delete	53 E0 53 E0 2A E0 53	D3 E0 D3 E0 D3 E0 AA
<i>kpd</i> (Ins Char) Ins Char	<i>kpd</i> (Insert) Insert	<i>kpd</i>	<i>kpd</i> (Insert) Insert	52 E0 52 E0 2A E0 52	D2 E0 D2 E0 D2 E0 AA
<i>kpd</i> (Del Char) Del Char	<i>kpd</i> (← Tab) ← Tab	<i>kpd</i>	<i>kpd</i> (End) End	4F E0 4F E0 2A E0 4F	CF E0 CF E0 CF E0 AA
<i>kpd</i> (↓) ↓	<i>kpd</i> (↓) ↓	<i>kpd</i>	<i>kpd</i> (↓) ↓	50 E0 50 E0 2A E0 50	D0 E0 D0 E0 D0 E0 AA
<i>kpd</i> (Page Next) Page Next	<i>kpd</i> (Erase EOF) Erase EOF	<i>kpd</i>	<i>kpd</i> (Page Down) Page Down	51 E0 51 E0 2A E0 51	D1 E0 D1 E0 D1 E0 AA
<i>kpd</i> (←) ←	<i>kpd</i> (←) ←	<i>kpd</i>	<i>kpd</i> (←) ←	4B E0 4B E0 2A E0 4B	CB E0 CB E0 CB E0 AA
<i>kpd</i>	<i>kpd</i>	<i>kpd</i>	<i>kpd</i>	4C	CC
<i>kpd</i> (→) →	<i>kpd</i> (→) →	<i>kpd</i>	<i>kpd</i> (→) →	4D E0 4D E0 2A E0 4D	CD E0 CD E0 CD E0 AA
<i>kpd</i> (Home) Home	<i>kpd</i> (Home) Home	<i>kpd</i>	<i>kpd</i> (Home) Home	47 E0 47 E0 2A E0 47	C7 E0 C7 E0 C7 E0 AA
<i>kpd</i> (↑) ↑	<i>kpd</i> (↑) ↑	<i>kpd</i>	<i>kpd</i> (↑) ↑	48 E0 48 E0 2A E0 48	C8 E0 C8 E0 C8 E0 AA
<i>kpd</i> (F14) F14	<i>kpd</i> (Clear) Clear	<i>kpd</i>	<i>kpd</i> (Page Up) Page Up	49 E0 49 E0 2A E0 49	C9 E0 C9 E0 C9 E0 AA

**Table B-5 Editing and Special Key Codes in PC Term Personality, Continued**

Keyboard Style			Hexadecimal Scan Codes PC Term Mode		
WY-60 ASCII	IBM 316X	AT	Enhanced PC	DN	UP
	F13			59	D9
	F14			5A	DA
	F15			5C	DC
	F16			5B	DB

**Table B-6 Function Key Default Codes<sup>1</sup>**

Key	Native <sup>2</sup>	ADDS VP <sup>3</sup>	DG	IBM <sup>4</sup>
F1	CTRL A @ CR	CTRL B 1	RS q	ESC a CR
F2	CTRL A A CR	CTRL B 2	RS r	ESC b CR
F3	CTRL A B CR	CTRL B 3	RS s	ESC c CR
F4	CTRL A C CR	CTRL B 4	RS t	ESC d CR
F5	CTRL A D CR	CTRL B 5	RS u	ESC e CR
F6	CTRL A E CR	CTRL B 6	RS v	ESC f CR
F7	CTRL A F CR	CTRL B 7	RS w	ESC g CR
F8	CTRL A G CR	CTRL B 8	RS x	ESC h CR
F9	CTRL A H CR	CTRL B 9	RS y	ESC i CR
F10	CTRL A I CR	CTRL B :	RS z	ESC j CR
F11	CTRL A J CR	CTRL B ;	RS {	ESC k CR
F12	CTRL A K CR	CTRL B <	RS	ESC l CR
F13	CTRL A L CR	CTRL B =	RS }	ESC m CR
F14	CTRL A M CR	CTRL B >	RS ~	ESC n CR

- Codes are the same for all keyboards; number of function keys varies.
- Codes also recognized in ADM 31, HZ 1500, and TVI 910+, 920, 925, 950, and 955 personalities. Terminating character depends on setting of Block End parameter in setup mode; default is CR.
- In ADDS VP A2 personality, the terminating character is CR. In ADDS VP 60 personality, the terminating character depends on setting of VP60 Blk End parameter in setup mode (default is none).
- Terminating character depends on setting of Turnaround parameter in setup mode; default is CR. Shifted key codes apply to IBM 3161 personality only.

Table B-6 Function Key Default Codes<sup>1</sup>, Continued

Key	Native <sup>2</sup>	ADDS VP <sup>3</sup>	DG	IBM <sup>4</sup>
F15	CTRL A N CR	CTRL B ?	RS p	ESC o CR
F16	CTRL A O CR	CTRL B @		ESC p CR
Shift F1	CTRL A ' CR	CTRL B !	RS a	ESC ! a CR
Shift F2	CTRL A a CR	CTRL B "	RS b	ESC ! b CR
Shift F3	CTRL A b CR	CTRL B #	RS c	ESC ! c CR
Shift F4	CTRL A c CR	CTRL B \$	RS d	ESC ! d CR
Shift F5	CTRL A d CR	CTRL B %	RS e	ESC ! e CR
Shift F6	CTRL A e CR	CTRL B &	RS f	ESC ! f CR
Shift F7	CTRL A f CR	CTRL B '	RS g	ESC ! g CR
Shift F8	CTRL A g CR	CTRL B (	RS h	ESC ! h CR
Shift F9	CTRL A h CR	CTRL B )	RS i	ESC ! i CR
Shift F10	CTRL A i CR	CTRL B *	RS j	ESC ! j CR
Shift F11	CTRL A j CR	CTRL B +	RS k	ESC ! k CR
Shift F12	CTRL A k CR	CTRL B ,	RS l	ESC ! l CR
Shift F13	CTRL A l CR	CTRL B -	RS m	ESC ! m CR
Shift F14	CTRL A m CR	CTRL B .	RS n	ESC ! n CR
Shift F15	CTRL A n CR	CTRL B /	RS `	ESC ! o CR
Shift F16	CTRL A o CR	CTRL B 0		ESC ! p CR
Ctrl F1			RS 1	
Ctrl F2			RS 2	
Ctrl F3			RS 3	
Ctrl F4			RS 4	
Ctrl F5			RS 5	
Ctrl F6			RS 6	
Ctrl F7			RS 7	
Ctrl F8			RS 8	
Ctrl F9			RS 9	
Ctrl F10			RS :	
Ctrl F11			RS ;	

Table B-6 Function Key Default Codes<sup>1</sup>, Continued

Key	Native <sup>2</sup>	ADDS VP <sup>3</sup>	DG	IBM <sup>4</sup>
Ctrl	F12			RS <
Ctrl	F13			RS =
Ctrl	F14			RS >
Ctrl	F15			RS 0
Ctrl	Shift	F1		RS !
Ctrl	Shift	F2		RS "
Ctrl	Shift	F3		RS #
Ctrl	Shift	F4		RS \$
Ctrl	Shift	F5		RS %
Ctrl	Shift	F6		RS &
Ctrl	Shift	F7		RS '
Ctrl	Shift	F8		RS (
Ctrl	Shift	F9		RS )
Ctrl	Shift	F10		RS *
Ctrl	Shift	F11		RS +
Ctrl	Shift	F12		RS ,
Ctrl	Shift	F13		RS -
Ctrl	Shift	F14		RS .
Ctrl	Shift	F15		RS SP

# C Wyseword Commands

Table C-1 lists the WordStar-compatible commands executed by the terminal in Wyseword mode.

- Note** Keys located on the numeric keypad on the AT-style keyboard function as described only when NUM LOCK is off. All keys on the Enhanced PC-style keyboard function as described whether NUM LOCK is on or off.

**Table C-1 Wyseword Commands**

Command Description	WordStar Command	WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	PC-Style Keyboard
Move Cursor					
Right one character	^D				
Left one character	^S				
Up one line	^E				
Down one line	^X				
Right one word	^F	<i>kpd</i>	<i>kpd</i>		<i>kpd</i>
Left one word	^A	<i>kpd</i>	<i>kpd</i>		<i>kpd</i>
To next tab stop	^I				
To top of screen, column 1	^QS^QE				
To start of file	^QR				
To end of file	^QC				
To start of line	^QS				
To end of line	^QD				
To start of last find/replace	^QV	<i>kpd</i>	<i>kpd</i>		<i>kpd</i>
To marked text	^Q (0-9)	- <i>*</i>	- <i>*</i>		

\* The user must enter the marker number.

Table C-1 Wyseword Commands, Continued

Command Description	WordStar Command	WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	PC-Style Keyboard
<b>Scroll</b>					
Up one line	^W	Shift ▲	Shift ↑	Shift ↑	Shift ↑
Down one line	^Z	Shift ▼	Shift ↓	Shift ↓	Shift ↓
To previous screen	^R	Prev Page	Shift Page	PgUp	Page Up
To next screen	^C	Next Page	Page	PgDn	Page Down
Down continuously	^QZ	Print	Print		Shift Print Screen
<b>Find and Replace</b>					
Find text	^QF	F5	F5	F5	F5
Find and replace text	^QA	F6	F6	F6	F6
Find/replace text again	^L	Shift F5	Shift F5	Shift F5	Shift F5
Return cursor to start of last find/replace	^QV	Shift 2]kpd	Shift 2]kpd		
<b>File and Block Operations</b>					
Change logged disk drive	^KL	Shift [,kpd	Shift [,kpd		
File directory on/off	^KF	Shift 0]kpd	Shift 0]kpd		Shift 0]kpd
Print file	^KP	Shift -]kpd	Shift -]kpd	Shift -]kpd	Shift -]kpd
Column mode on/off	^KN	Ins	Shift Insert		
Mark/unmark block beginning	^KB	F9	F9	F9	F9
Mark/unmark block end	^KK	Shift F9	Shift F9	Shift F9	Shift F9
Move block	^KV	F12	F12	F7	F12
Hide/show block	^KH	F10	F10	F10	F10
Delete block	^KY	Shift F10	Shift F10	Shift F10	Shift F10
Copy block	^KC	F11	F11	F8	F11
Write block to file	^KW	Shift F11	Shift F11	Shift F8	Shift F11
Read block to file	^KR	Shift F12	Shift F12	Shift F7	Shift F12
Set/remove marker (0-9)	^K (0-9)	Shift F7 ( 0 - 9 )*	Shift F7 ( 0 - 9 )*		

Table C-1 Wyseword Commands, Continued

Command Description	WordStar Command	WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	PC-Style Keyboard
<b>Save Files</b>					
Save, resume edit	^KS^QP	Shift F4	Shift F4		Shift F4
Save, return to opening menu	^KD	F1	F1	F1	F1
Save, exit to system	^KX	Shift F1	Shift F1		Shift F1
Abandon edit	^KQ	Shift F2	Shift F2	Shift F1	Shift F2
<b>Miscellaneous</b>					
Repeat next command or character	^Q	Shift <input type="checkbox"/> kpd	Shift <input type="checkbox"/> kpd		
Set help level	^JH	Shift F3	Shift F3	Shift F3	Shift F3
<b>Format</b>					
Word wrap on/off	^OW	Shift F13	Shift F13	Shift F4	Shift F7
Justification on/off	^OJ	Shift F14	Shift F14	Shift F6	Shift F6
Set left margin	^OL	Shift F15	Shift F15		F7
Set right margin	^OR	Shift F16	Shift F16		F8
Paragraph tab	^OG	Shift Tab	Shift Tab→	Shift Tab→	Shift Tab→
Reformat paragraph	^B	F16	F16	Shift F2	Shift F8
Set tab	^OI	F13	F13		
Clear tab	^ON	F14	F14		
Center text	^OC	F8	F8		
Print control display on/off	^OD	Send	Send		
<b>Delete and Insert</b>					
Delete character left	DEL	Del	Del		
Delete character	^G	Del Char	Delete	Del	Delete
Delete line	^Y	Del Line	DelLn	Shift Del	Shift Delete
Delete to end of line	^QY	Cir Line	Erase EOF		End
Delete to start of line	^Q DEL	Shift Del	Shift Erase EOF		Shift End
Delete block	^KY	Shift F10	Shift F10	Shift F10	
Insert mode on/off	^V	Repl	Insert	Ins	Insert
Insert blank line	^N	Ins Line	InsLn	Shift Ins	Shift Insert

Table C-1 Wyseword Commands, Continued

Command Description	WordStar Command	WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	PC-Style Keyboard
<b>Print Commands</b>					
Boldface on/off	^PB	<b>F4</b>	<b>F4</b>	<b>F4</b>	<b>F4</b>
Underline on/off	^PS	<b>F3</b>	<b>F3</b>	<b>F3</b>	<b>F3</b>
Double strike on/off	^PD	<b>Shift</b> <b>8</b> <i>kpd</i>	<b>Shift</b> <b>8</b> <i>kpd</i>		<b>Shift</b> <b>8</b> <i>kpd</i>
Subscript on/off	^PV	<b>Shift</b> <b>4</b> <i>kpd</i>	<b>Shift</b> <b>4</b> <i>kpd</i>		<b>Shift</b> <b>4</b> <i>kpd</i>
Superscript on/off	^PT	<b>Shift</b> <b>7</b> <i>kpd</i>	<b>Shift</b> <b>7</b> <i>kpd</i>		<b>Shift</b> <b>7</b> <i>kpd</i>
Strikeout on/off	^PX	<b>Shift</b> <b>9</b> <i>kpd</i>	<b>Shift</b> <b>9</b> <i>kpd</i>		<b>Shift</b> <b>9</b> <i>kpd</i>
Strikeover	^PH	<b>Shift</b> <b>5</b> <i>kpd</i>	<b>Shift</b> <b>5</b> <i>kpd</i>	<b>Shift</b> <b>5</b> <i>kpd</i>	<b>Shift</b> <b>5</b> <i>kpd</i>
Enter nonbreak space	^PO	<b>Shift</b> <b>6</b> <i>kpd</i>	<b>Shift</b> <b>6</b> <i>kpd</i>		<b>Shift</b> <b>6</b> <i>kpd</i>
<b>Dot Commands</b>					
Enter footer	.FO	<b>Shift</b> <b>F6</b>	<b>Shift</b> <b>F6</b>		
Enter header	.HE	<b>Shift</b> <b>F8</b>	<b>Shift</b> <b>F8</b>		
Enter page break	.PA	<b>F2</b>	<b>F2</b>		





# Local Keyboard Commands

**Table D-1 Native Personality Local Keyboard Commands**

Command	Key Sequence by Keyboard Style		AT	Enhanced PC
	WY-60 ASCII	IBM 316X		
Toggle SHIFT LOCK on/off	<b>Caps Lock</b>	<b>Caps Lock</b>	<b>Caps Lock</b>	<b>Caps Lock</b>
Toggle NUM LOCK on/off			<b>Num Lock</b>	<b>Num Lock</b>
Hold data on screen <sup>1</sup>	<b>Funct</b>	<b>Hold</b>	<b>Scroll Lock</b>	<b>Scroll Lock</b>
Put terminal in setup mode	<b>Shift</b> <b>Setup</b>	<b>Setup</b>	<b>Shift</b> <b>Sys Req</b>	<b>Shift</b> <b>Select</b>
Partially reset terminal, including communication; unlock keyboard, turn off all print modes	<b>Setup</b>	<b>Reset</b>	<b>Sys Req</b>	<b>Select</b>
Send break <sup>2</sup>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
Toggle between block and full-duplex modes	<b>Shift</b> <b>Break</b>	<b>Block</b>		<b>Ctrl</b> <b>Shift</b> <b>Break</b>
Select other port as data port	<b>Ctrl</b> <b>Break</b>			
Turn auxiliary print mode on/off	<b>Ctrl</b> <b>Print</b>	<b>Shift</b> <b>Trace</b>	<b>Ctrl</b> <b>Shift</b> <b>PrtSc</b>	<b>Shift</b> <b>Sys Req</b>
Turn monitor mode on/off	<b>Ctrl</b> <b>Shift</b> <b>1</b> <i>kpd</i>		<b>Ctrl</b> <b>Shift</b> <b>1</b> <i>kpd</i>	<b>Ctrl</b> <b>Shift</b> <b>1</b> <i>kpd</i>
Turn keyclick on/off	<b>Shift</b> <b>Enter</b>	<b>Shift</b> <b>Enter</b>	<b>Shift</b> <b>Enter</b>	<b>Shift</b> <b>Enter</b> <i>kpd</i>
Turn on instant screen saver <sup>3</sup>	<b>Ctrl</b> <b>Clr Scrn</b>			
Turn Wyseword mode on/off	<b>Ctrl</b> <b>.</b> <i>kpd</i>	<b>Ctrl</b> <b>.</b> <i>kpd</i>	<b>Ctrl</b> <b>.</b> <i>kpd</i>	<b>Ctrl</b> <b>.</b> <i>kpd</i>
Put terminal in WyseWorks	<b>Ctrl</b> <b>Caps Lock</b>	<b>Ctrl</b> <b>Caps Lock</b>	<b>Ctrl</b> <b>Caps Lock</b>	<b>Ctrl</b> <b>Caps Lock</b>
Speed scrolling rate	<b>Ctrl</b> <b>Shift</b> <b>▲</b>	<b>Ctrl</b> <b>Shift</b> <b>↑</b>	<b>Ctrl</b> <b>Shift</b> <b>↑</b>	<b>Ctrl</b> <b>Shift</b> <b>↑</b>

1. When Corner Key setup parameter is set to *hold*.

2. To MODEM port only when configured as data port; has no effect on AUX port.

3. Scrn Saver setup parameter must be set to *on*.

Table D-1 Native Personality Local Keyboard Commands, Continued

Command	Key Sequence by Keyboard Style		AT	Enhanced PC
	WY-60 ASCII	IBM 316X		
Slow scrolling rate	Ctrl Shift ▼	Ctrl Shift ↓	Ctrl Shift ↓	Ctrl Shift ↓
Home cursor and clear page	Ctrl Shift Home	Ctrl Shift Home	Ctrl Shift Home	Ctrl Shift Home
Display page 0	Ctrl 0 kpd	Ctrl 0 kpd	Ctrl 0 kpd	Ctrl 0 kpd
Display page 1 (if more than one page is defined)	Ctrl 1 kpd	Ctrl 1 kpd	Ctrl 1 kpd	Ctrl 1 kpd
Display page 2 (if defined)	Ctrl 2 kpd	Ctrl 2 kpd	Ctrl 2 kpd	Ctrl 2 kpd
Display page 3 (if defined)	Ctrl 3 kpd	Ctrl 3 kpd	Ctrl 3 kpd	Ctrl 3 kpd
Display next page (or activate other window <sup>4</sup> )	Ctrl Next Page	Ctrl Page		Ctrl Page Down
Display previous page (or activate other window <sup>4</sup> )	Ctrl Page Prev	Ctrl Shift Page	Ctrl PgUp	Ctrl Page Up
Toggle between split screen <sup>5</sup> and full screen format	Ctrl Shift - kpd	Ctrl Shift - kpd	Ctrl Shift - kpd	Ctrl Shift - kpd
Raise horizontal split and adjust display	Ctrl - kpd			
Lower horizontal split and adjust display	Ctrl , kpd			
Roll active window up in page <sup>4</sup>	Ctrl ▲	Ctrl ↑		
Roll active window down in page <sup>4</sup>	Ctrl ▼	Ctrl ↓		

4. If screen is split.

5. Splits screen at line 12.

# E ASCII Command Guide

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## COMMANDS SUPPORTED IN ASCII PERSONALITIES

Table E-1 lists the ASCII commands recognized by the terminal in native, Wyse WY-50+, ADM 31, ADDS VP A2, ADDS VP 60, HZ 1500, IBM 3101, and IBM 3161 personalities.

Table E-2 lists the ASCII commands recognized by the terminal in native, DG 200, DG 210, TeleVideo 910+/920/925/950/955, and PC Term personalities.

The native personality code for the command is given in the second column. The remaining columns show the support for the command in other ASCII personalities according to the following notations:

**Same**

Same as native code (code is native to other terminal also)

**Wyse**

Same as native code (Wyse enhancement—code not native to other terminal)

**ENH**

Same as native code when enhance mode is on (Wyse enhancement—code not native to other terminal)

A code listed under a nonnative personality indicates that the related terminal's native code is supported. These codes are given in abbreviated form. Refer to the other terminal's documentation for complete information on the indicated command and its associated parameter values. A blank in any column indicates that the command is not supported in that personality.

Variables are shown in italics. The variable values for both Tables E-1 and E-2 are given at the end of Table E-2 according to the reference numbers in brackets after the command description, e.g, [22].

ANSI commands (recognized by the terminal in the WY-75, VT52, and VT100 personalities) are listed in Appendix F.

Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Monitor Mode</b>							
Monitor mode on	ESC U	Same			ENH	CTRL P STX	CTRL P STX
Monitor mode off	ESC u or ESC X	Same			ENH	CTRL P ETX	CTRL P ETX
<b>Selecting Personalities</b>							
Enhance mode off	ESC ~ SPACE	Same	ENH	Wyse	ENH		
Enhance mode on	ESC ~ !	Same					
Select WY-50+ personality	ESC ~ "	Same	ENH	Wyse	ENH	Wyse	Wyse
Select TVI 910+ personality	ESC ~ #	Same	ENH	Wyse	ENH	Wyse	Wyse
Select TVI 925 personality	ESC ~ \$	Same	ENH	Wyse	ENH	Wyse	Wyse
Select ADDS VP A2 personality	ESC ~ %	Same	ENH	Wyse	ENH	Wyse	Wyse
Select HZ 1500 personality	ESC ~ &	Same	ENH	Wyse	ENH	Wyse	Wyse
Select TVI 912/920 personality	ESC ~ '	Same	ENH	Wyse	ENH	Wyse	Wyse
Select TVI 950 personality	ESC ~ (	Same	ENH	Wyse	ENH	Wyse	Wyse
Select DG 200 personality	ESC ~ )	Same	ENH	Wyse	ENH	Wyse	Wyse
Select IBM 3101-1X personality	ESC ~ *	Same	ENH	Wyse	ENH	Wyse	Wyse
Select ADM 31 personality	ESC ~ +	Same	ENH	Wyse	ENH	Wyse	Wyse
Select TVI 955 personality	ESC ~ ,	Same	ENH	Wyse	ENH	Wyse	Wyse
Select WY-75 personality	ESC ~ -	Same	ENH	Wyse	ENH	Wyse	Wyse
Select WY-60 personality	ESC ~ 4	Same	ENH	Wyse	ENH	Wyse	Wyse
Select PC Term personality	ESC ~ 5	Same	ENH	Wyse	ENH	Wyse	Wyse
Select VT52 personality	ESC ~ 6	Same	ENH	Wyse	ENH	Wyse	Wyse
Select IBM 3101-2X personality	ESC ~ 7	Same	ENH	Wyse	ENH	Wyse	Wyse
Select ADDS VP 60 personality	ESC ~ 8	Same	ENH	Wyse	ENH	Wyse	Wyse
Select IBM 3161 personality	ESC ~ 9	Same	ENH	Wyse	ENH	Wyse	Wyse
Select DG 210 personality	ESC ~ :	Same	ENH	Wyse	ENH	Wyse	Wyse
Select VT100 personality	ESC ~ ;	Same	ENH	Wyse	ENH	Wyse	Wyse
<b>Communicating with the Computer</b>							
Enable transmission <sup>1</sup>	CTRL Q	Same	Same	Same	Same	Same	Same
Stop transmission <sup>1</sup>	CTRL S	Same	Same	Same	Same	Same	Same
Disconnect						CTRL P EOT	CTRL P EOT
Send ACK (if ACK mode on)	CTRL E	Same					
ACK mode off	ESC e 6	Same			ENH		

1. Host must support Xon/Xoff transmit handshaking.

Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Communicating with the Computer, Continued</b>							
ACK mode on	ESC e 7	Same			ENH		
Full-duplex mode on	ESC C ESC D F	Same			ENH		
Half-duplex mode on	ESC C ESC D H	Same			ENH		
Block mode on	ESC B	Same			ENH		
Half-duplex block mode on	ESC D H ESC B	Same			ENH		
Select MODEM port for data communications	ESC e 8	Same	ENH				
Select AUX port for data communications	ESC e 9	Same	ENH				
Set MODEM port operating parameters [1,2,3,4]	ESC c 0 <i>baud stop parity word</i>	Same	ENH		ENH		
Set AUX port operating parameters [1,2,3,4]	ESC c 1 <i>baud stop parity word</i>	Same	ENH	ESC A	ENH		
Set MODEM port receive handshaking [5]	ESC c 2 <i>hndshk</i>	Same	ENH		ENH		
Set AUX port receive handshaking [5]	ESC c 3 <i>hndshk</i>	Same	ENH		ENH		
Set MODEM port transmit handshaking [5]	ESC c 4 <i>hndshk</i>	Same	ENH		ENH		
Set AUX port transmit handshaking	ESC c 5 <i>hndshk</i>	Same	ENH		ENH		
Set maximum data transmission speed [6]	ESC c 6 <i>max</i>	Same	ENH		ENH		
Send terminal ID	ESC SPACE	Same	ENH				ESC ! 6
Program answerback message [7]	ESC c ; <i>answer CTRL Y</i>	Same	ENH				
Send answerback message	ESC c <	Same	ENH				
Conceal answerback message	ESC c =	Same	ENH				
Answerback mode off	ESC e SPACE	Same	ENH				
Answerback mode on	ESC e !	Same	ENH				
Send model							ESC SPACE 6
Load time of day [8,9]	ESC c 8 <i>hh mm</i>	Same	ENH		ENH		
<b>Controlling the Terminal and Keyboard</b>							
Local edit mode on	ESC k	Same			ENH		
Duplex edit mode on	ESC l	Same			ENH		
Wyseword mode off	ESC ~	Same			ENH		



**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Controlling the Terminal and Keyboard, Continued</b>							
Set/read Control 4							ESC # 9/7
Set/read Control 5							ESC \$ 9/7
Set/read Control 6							ESC % 9/7
Set/read Control 7							ESC & 9/7
Reset keyboard and clear modified data tag							ESC ! s
<b>Redefining the Keys</b>							
Program function key definition [10,11]	ESC z <i>fkey</i> sequence DEL	Same	ENH	ENH	ENH		ESC ! =
Program key direction and definition [12,13,11,10]	ESC Z <i>dir key</i> sequence DEL or ESC Z <i>dir fkey</i> sequence DEL	Same					
Read key direction and definition [13,10]	ESC Z ~ <i>key</i> or ESC Z ~ <i>fkey</i>	Same					
Clear function key definition [10]	ESC z <i>fkey</i> DEL	Same	ENH	ENH	ENH		
Clear key direction and definition [12,13,10]	ESC Z <i>dir key</i> DEL or ESC Z <i>dir fkey</i> DEL	Same	ENH				
Set maximum function key transmission speed [6]	ESC c 7 <i>max</i>	Same					
Default function key							ESC t
Default all function keys							ESC SPACE t
Default all programmable keys	ESC c U	Same					
<b>Screen and Cursor Display</b>							
Screen display off	ESC \ 8	Same	ENH	ESC D	ENH		
Screen display on	ESC \ 9	Same	ENH	ESC d	ENH		
Screen saver off	ESC e P	Same					
Screen saver on	ESC e Q	Same					
Reverse screen	ESC ^ 1	Same	ENH	ENH	ENH		
Restore normal screen	ESC ^ 0	Same	ENH	ENH	ENH		
Set scrolling speed and type [14]	ESC \ <i>scroll</i>	Same	ENH			ENH	
Set cursor display features [15]	ESC \ <i>cursor</i>	Same	ENH			ENH	

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Screen and Cursor Display, Continued</b>							
Cursor display off			CTRL W	CTRL W			
Cursor display on			CTRL X	CTRL X			
<b>Displaying the Message Fields</b>							
Extended status line on	ESC ` a	Same	ENH		ENH		
Standard status line on	ESC ` b	Same	ENH	ESC b	ENH		
Status line off	ESC ` c	Same	ENH	ESC B	ENH		
Program/display computer message on status line [16]	ESC F <i>message</i> CR	Same			ENH		
Program computer message on unshifted label line [17]	ESC z ( <i>text</i> CR	Same	ENH	ENH	ENH		
Program computer message on shifted label line [17]	ESC z ) <i>text</i> CR	Same	ENH	ENH	ENH		
Display shifted label line	ESC z P CR	Same	ENH	ENH	ENH		
Turn off shifted label line	ESC z DEL	Same	ENH	ENH	ENH		
Clear unshifted label line	ESC z ( CR	Same	ENH	ENH	ENH		
Clear shifted label line	ESC z ) CR	Same	ENH	ENH	ENH		
Program/display function key label [19,18]	ESC z <i>field label</i> CR	Same	ENH	ENH	ENH		
Clear function key label [19]	ESC z <i>field</i> CR	Same	ENH	ENH	ENH		
Don't save function key labels	ESC e J	Same			Wyse		
Save function key labels	ESC e K	Same			Wyse		
<b>Defining the Data Area</b>							
Select 80-column display	ESC ` :	Same	ENH				
Select 132-column display	ESC ` ;	Same	ENH				
Economy 80-column mode off	ESC e F	Same					
Economy 80-column mode on	ESC e G	Same					
Width-change-clear mode off	ESC e .	Same					
Width-change-clear mode on	ESC e /	Same					
Display 24 data lines	ESC e (	Same					
Display 25 data lines	ESC e )	Same					
Display 42 data lines	ESC e *	Same					
Display 43 data lines	ESC e +	Same					



**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Display Memory/Split Screen</b>							
Divide memory into pages [20]	ESC w <i>length</i>	Same					
Display previous page	ESC w B or ESC J <sup>2</sup>	Same					
Display next page	ESC w C or ESC K <sup>2</sup>	Same					
Display page 0	ESC w 0	Same					
Display page 1	ESC w 1	Same					
Display page 2	ESC w 2 <sup>3</sup>	ESC w 2					
Display page 3		ESC w 3					
Display page 4		ESC w 4					
Display page 5		ESC w 5 <sup>3</sup>					
Display page 6		ESC w 6 <sup>3</sup>					
Split screen horizontally (2 pages only) [21]	ESC x A <i>line</i>	Same					
Split screen horizontally (2 pages only) and clear pages [21]	ESC x 1 <i>line</i>	Same					
Split screen horizontally (multiple pages) [21]	ESC x C <i>line</i>	Same					
Split screen horizontally (multiple pages) and clear pages [21]	ESC x 3 <i>line</i>	Same					
Activate upper window	ESC ]	Same					
Activate lower window	ESC }	Same					
Activate other window (or page <sup>2</sup> )	ESC J or ESC K	Same					
Lower horizontal split	ESC x P	Same					
Raise horizontal split	ESC x R	Same					
Roll window up in page	ESC w E	Same					
Roll window down in page	ESC w F	Same					
Redefine screen as one window	ESC x @	Same					
Redefine screen as one window and clear pages	ESC x 0	Same					

2. If screen is not split.

3. With economy 80-column mode on.

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Display Memory/Split Screen, Continued</b>							
Create viewport							ESC SPACE r
Select host partition							ESC SPACE q
Select active partition							ESC ! q
Jump partition							ESC " A
<b>Display Attributes</b>							
Assign display attribute to a message field [22,23]	ESC A <i>mf attr</i>	Same	ENH		ENH		
Assign character display attribute [23]	ESC G <i>attr</i>	Same	ENH	ESC O	ENH		
Character attribute mode off	ESC e 0						
Character attribute mode on	ESC e 1						
Page attribute mode on	ESC e 2	Same					
Line attribute mode on	ESC e 3	Same					
Assign write-protected character display attribute [24]	ESC ` <i>wpc a</i>	Same	ESC 0				
Clear unprotected page to display attribute [23]		ESC ! <i>attr</i>	ENH		ENH		
Assign line attribute [25]	ESC G <i>lattr</i>	Same					
Set tag protect attribute				CTRL N			
Reset tag protect attribute				CTRL O			
Set field attribute						ESC 3 <sup>4</sup>	ESC 3
Set character attribute							ESC 4
<b>Protecting Data</b>							
Write-protect mode off	ESC (	Same	CTRL O		~ US		
Write-protect mode on	ESC )	Same	CTRL N		~ EM		
Clear cursor column to write-protected spaces	ESC V	Same	ENH		ENH		
Protect mode off	ESC '	Same	ENH		ENH		
Protect mode on	ESC &	Same	ENH		ENH		
<b>Graphics Characters</b>							
Graphics mode on	ESC H CTRL B	Same	ENH	ESC 1	ENH		
Graphics mode off	ESC H CTRL C	Same	ENH	ESC 2	ENH		
Display graphics character [26]	ESC H <i>ldraw</i>	Same	ENH		ENH		

4. IBM 3101-2X personality only.

Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Controlling the Cursor</b>							
Cursor left (backspace)	CTRL H	Same	Same or CTRL U	Same or CTRL U	Same	Same or ESC D	Same or ESC D
Cursor right	CTRL L	Same	CTRL F	CTRL F	CTRL P	ESC C	ESC C
Cursor up; no scroll	CTRL K	Same	CTRL Z	CTRL Z	~ FF	ESC A	ESC A
Cursor up; scroll (reverse linefeed)	ESC j	Same	ENH		ENH		
Cursor down; no scroll					~ VT	ESC B	ESC B
Cursor down; scroll (linefeed)	CTRL J	Same	Same	Same	Same	Same	Same
Cursor to start of line	CTRL M	Same	Same	Same	Same	Same	Same
Cursor to start of next line	CTRL _	Same	ENH		ENH		
Home cursor	ESC { or CTRL ^	Same	ENH or CTRL A	CTRL A	ENH or ~ DC2	ESC H	ESC H
Cursor to specific column [21]			CTRL P <i>col</i>	CTRL P <i>col</i>			
Cursor to specific line [21]			CTRL K <i>line</i>	CTRL K <i>line</i>			
End-of-line wrap off	ESC d .	Same					
End-of-line wrap on	ESC d /	Same					
Received CR mode off	ESC e 4	Same					
Received CR mode on	ESC e 5	Same					
Autopage mode off	ESC d *	Same					
Autopage mode on	ESC d +	Same					
Autoscrolling mode off	ESC N	Same	ENH		ENH		
Autoscrolling mode on	ESC O	Same	ENH		ENH		
Line lock mode on <sup>5</sup>	ESC \ H	Same					
Line lock mode off	ESC \ I	Same					
Must tab mode off					ESC h		
Must tab mode on					ESC H		
Address cursor in 80-column current page [21]	ESC = <i>line col</i>	Same	ENH or ESC Y	ESC Y	ENH or ~ DC1	ESC Y	ESC Y
Address cursor in specific 80-column page [27,21]	ESC w @ <i>page line col</i>	Same	ENH				
Address cursor in specific 80-column window/page <sup>2</sup> [27,21]	ESC - <i>wnd/ page line col</i>	Same	ENH				

5. Page Length setup parameter must be set to 1 \* Lines. When this command is active, the following features are disabled: smooth scroll, insert/delete/clear columns, and box/clear rectangles.

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Controlling the Cursor, Continued</b>							
Address cursor in specific 80-column window/page <sup>2</sup> [27,21]	ESC - <i>wnd/</i> <i>page line col</i>	Same	ENH				
Address cursor in 80/132-column current page [28,29]	ESC a <i>lll</i> R <i>ccc</i> C	Same	ENH		ENH		
Set buffer address						ESC X	ESC X
Reset buffer address mode							ESC SPACE Z
Insert cursor						ESC Z	ESC Z
Read cursor address in 80-column current page	ESC ?	Same	ENH		~ ENQ	ESC 5	ESC 5
Read 80-column page number and cursor address	ESC w `	Same					
Read 80-column window/page number and cursor address	ESC /	Same					
Read cursor address in 80/132-column page	ESC b	Same	ENH		ENH		
<b>Editing</b>							
Clear all tab stops	ESC 0	Same			ESC 3		ESC SPACE 1
Set tab stop	ESC 1	Same	ENH		ENH	ESC 0	ESC 0
Clear tab stop	ESC 2	Same	ENH		ENH	ESC 1	ESC 1
Tabulate cursor	ESC i or CTRL I	Same	ENH	CTRL I		CTRL I	CTRL I
Backtab	ESC I	Same	ENH	ESC O	ENH	ESC 2 <sup>4</sup>	ESC 2
Insert mode on, replace mode off	ESC q	Same	ENH		ENH		
Insert mode off, replace mode on	ESC r	Same	ENH		ENH		
Page edit mode off	ESC e "	Same					
Page edit mode on	ESC e #	Same					
Insert space character	ESC Q	Same	ENH		ENH		
Insert character to EOF/EOL				ESC F			
Insert character to EOP				ESC f			
Insert line of spaces	ESC E	Same	ESC M	ESC M	ENH or ~ SUB		
Insert line of nulls						ESC N <sup>4</sup>	ESC N

Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Editing, Continued</b>							
Insert column of nulls	ESC c M	Same					
Delete cursor character	ESC W	Same	ENH	ESC E or ESC e	ENH	ESC Q <sup>4</sup>	ESC Q
Delete cursor line	ESC R	Same	ESC I	ESC I	ENH or ~ DC3	ESC O <sup>4</sup>	ESC O
Delete cursor column	ESC c J	Same					
<b>Clearing Data</b>							
Clear page to nulls	ESC *	Same	ENH		ENH	ESC L <sup>4</sup>	ESC L
Clear page to spaces	ESC +	Same	ENH or CTRL L	CTRL L	ENH or ~ FS		
Clear page to write-protected spaces	ESC ,	Same	ENH		ENH or ~ ETB <sup>6</sup>		
Clear unprotected page to spaces	ESC ; or CTRL Z	Same	ESC ; <sup>7</sup>		ENH or ~ GS		
Clear unprotected page to nulls	ESC :	Same	ENH		ENH		
Clear unprotected page to a specific character [30]	ESC . char	Same	ENH		ENH		
Clear unprotected page to display attribute [23]		ESC ! attr	ENH		ENH		
Clear unprotected page to spaces from cursor	ESC Y	Same	ESC k	ESC k	ENH or ~ CAN	ESC J	ESC J
Clear unprotected page to nulls from cursor	ESC y	Same	ENH		ENH		
Clear unprotected page foreground to spaces	ESC c P	Same					
Clear unprotected page foreground to nulls	ESC c Q	Same					
Clear line to nulls from cursor						ESC I <sup>8</sup>	
Clear unprotected line to spaces from cursor	ESC T	Same	ESC K	ESC K	ENH or ~ SI		
Clear unprotected line to nulls from cursor	ESC t	Same	ENH		ENH	ESC I <sup>4</sup>	ESC I
Clear unprotected to end of line with spaces	ESC c O	Same					

6. Clears from cursor position to end of page.

7. With enhance mode on.

8. IBM 3101-1X personality only.

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Clearing Data</b>							
Clear unprotected to end of line with nulls	ESC c L	Same					
Clear unprotected line foreground to spaces	ESC c R	Same					
Clear unprotected line foreground to nulls	ESC c S	Same					
Clear unprotected column to nulls	ESC c K	Same					
Clear unprotected column to specific character [30]	ESC c I <i>char</i>	Same					
Box rectangle to right of cursor [31,32]	ESC c N <i>width height</i>	Same					
Box rectangle in 80-column page [21]	ESC c G <i>line col</i>	Same					
Box rectangle in 132-column page [21]	ESC c G <i>line ~ col<sup>9</sup></i>	Same					
Clear unprotected rectangle in 80-column page [21,30]	ESC c F <i>line col char</i>	Same					
Clear unprotected rectangle in 132-column page [21,30]	ESC c F <i>line ~ col<sup>9</sup> char</i>	Same					
Clear entire rectangle in 80-column page [21,30]	ESC c H <i>line col char</i>	Same					
Clear entire rectangle in 132-column page [21,30]	ESC c H <i>line ~ col<sup>9</sup> char</i>	Same					
Erase input						ESC K	ESC K
Erase variable data				ESC G			
Clear all							ESC ! L
<b>Sending Data</b>							
Begin print/send at top of page	ESC d '	Same					
Begin print/send at top of screen	ESC d &	Same					
Send cursor character	ESC M	Same			ENH		
Send cursor line	ESC 6	Same			ENH		ESC ! 8
Send unprotected cursor line	ESC 4	Same			ENH		

9. To box/clear rectangles past 80-column limit, you must add 80 to the *col* value.

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Sending Data, Continued</b>							
Send page	ESC 7	Same	ENH		ENH		
Send unprotected page	ESC 5	Same		ESC DC1	ENH		
Mark block beginning	ESC 8	Same	ENH		ENH		
Mark block end	ESC 9	Same	ENH		ENH		
Send block	ESC s	Same	ENH		ENH		
Send unprotected characters in block	ESC S	Same	ENH		ENH		
Write send mark						ESC E <sup>4</sup>	ESC E
Read buffer						ESC 8 <sup>4</sup>	ESC 8
Report terminal status				ESC ENQ			ESC 6
Send message							ESC SPACE 8
Send all							ESC # 8
<b>Print Functions</b>							
Print formatted page	ESC P	Same	ENH		ENH	ESC W <sup>4</sup>	
Print formatted unprotected page	ESC @	Same	ENH		ENH		
Print unformatted page	ESC p or ESC L	Same	ESC p	ESC x	ENH		
Print all unprotected				ESC X			
Print line						ESC U <sup>4</sup>	
Print message						ESC V <sup>4</sup>	
Auxiliary print mode off	CTRL T	Same	Same	Same	ENH		
Auxiliary print mode on	CTRL R	Same	Same	Same	ENH		
Transparent print mode off	CTRL T	Same	ESC 4	ESC 4	ENH		
Transparent print mode on	ESC d # or CTRL X <sup>10</sup>	ESC d #	ESC 3	ESC 3	ESC d # <sup>7</sup>		
Secondary receive mode off	ESC d SPACE	Same	ENH		ENH		
Secondary receive mode on	ESC d !	Same	ENH		ENH		
Bidirectional mode off	ESC d \$	Same	ENH		ENH		
Bidirectional mode on	ESC d %	Same	ENH		ENH		
Print screen							ESC SPACE W
Print viewport							ESC W

10. With enhance mode off.

**Table E-1 Supported Commands—Native, Wyse, ADM, ADDS VP, HZ, and IBM Personalities, Continued**

Function	Native Personality	WY-50+ ADM 31	ADDS VP A2	ADDS VP 60	HZ 1500	IBM 3101	IBM 3161
<b>Character Sets</b>							
Select primary character set	ESC c D	Same <sup>11</sup>					CTRL O
Select secondary character set	ESC c E	Same <sup>11</sup>					CTRL N
Define primary character set [33]	ESC c B <i>bank</i>	Same <sup>11</sup>					
Define secondary character set [33]	ESC c C <i>bank</i>	Same <sup>11</sup>					
Automatic font loading off	ESC e N	Same <sup>11</sup>					
Automatic font loading on	ESC e O	Same <sup>11</sup>					
Load font bank with predefined character set [33,34]	ESC c @ <i>bank set</i>	Same <sup>11</sup>					ESC <
Clear font bank [33]	ESC c ? <i>bank</i>	Same <sup>11</sup>					
Define and load character [33,35,36]	ESC c A <i>bank pp bb...bb</i> CTRL Y	Same <sup>11</sup>					

11. In these personalities, you cannot simultaneously display characters from more than one font bank (128 characters) at a time.



Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Monitor Mode</b>								
Monitor mode on	ESC U	ENH <sup>1</sup>	Same	Wyse	Same	Same	Same	Same
Monitor mode off	ESC u or ESC X	ENH	Same	Wyse	Same	Same	Same	Same
<b>Selecting Personalities</b>								
Enhance mode off	ESC ~ SPACE	Wyse	ENH	ENH	ENH	ENH	ENH	ESC v SPACE
Enhance mode on	ESC ~ !	Wyse	Same	Same	Same	Same	Same	ESC v !
Select WY-50+ personality	ESC ~ "	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v "
Select TVI 910+ personality	ESC ~ #	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v #
Select TVI 925 personality	ESC ~ \$	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v \$
Select ADDS VP A2 personality	ESC ~ %	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v %
Select HZ 1500 personality	ESC ~ &	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v &
Select TVI 912/920 personality	ESC ~ '	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v '
Select TVI 950 personality	ESC ~ (	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v (
Select DG 200 personality	ESC ~ )	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v )
Select IBM 3101-1X personality	ESC ~ *	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v *
Select ADM 31 personality	ESC ~ +	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v +
Select TVI 955 personality	ESC ~ ,	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v ,
Select WY-75 personality	ESC ~ -	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v -
Select WY-60 personality	ESC ~ 4	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 4
Select PC Term personality	ESC ~ 5	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 5
Select VT52 personality	ESC ~ 6	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 6
Select IBM 3101-2X personality	ESC ~ 7	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 7
Select ADDS VP 60 personality	ESC ~ 8	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 8
Select IBM 3161 personality	ESC ~ 9	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v 9
Select DG 210 personality	ESC ~ :	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v :
Select VT100 personality	ESC ~ ;	Wyse	Wyse	Wyse	Wyse	Wyse	Wyse	ESC v ;
<b>Communicating with the Computer</b>								
Enable transmission <sup>2</sup>	CTRL Q	Same	Same	Same	Same	Same	Same	Same
Stop transmission <sup>2</sup>	CTRL S	Same	Same	Same	Same	Same	Same	Same
Send ACK (if ACK mode on)	CTRL E		Wyse	Wyse	Wyse	Wyse	Wyse	Wyse
ACK mode off	ESC e 6		ENH	ENH	ENH	ENH	ENH	ENH
ACK mode on	ESC e 7		ENH	ENH	ENH	ENH	ENH	ENH

1. In DG 200 and DG 210 personalities, ESC and RS are interchangeable in Wyse-enhanced codes.

2. Host must support Xon/Xoff transmit handshaking.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Communicating with the Computer, Continued</b>								
Full-duplex mode on	ESC C ESC D F		Same	Wyse	Same	Same	Same	ESC }
Half-duplex mode on	ESC C ESC D H		Same	Wyse	Same	Same	Same	ESC {
Block mode on	ESC B	ENH	Same	Wyse	Same	Same	Same	Same
Block mode off (conversation)								ESC C
Half-duplex block mode on	ESC D H ESC B		Same	Same	Same	Same	Same	
Select MODEM port for data communications	ESC e 8	ENH						
Select AUX port for data communications	ESC e 9	ENH						
Select 8 data bits							ESC [ = 1 h	
Select 7 data bits							ESC [ = 1 l	
Set MODEM port operating parameters [1,2,3,4]	ESC c 0 <i>baud stop parity word</i>	ENH				ESC {	ESC {	
Set AUX port operating parameters [1,2,3,4]	ESC c 1 <i>baud stop parity word</i>	ENH				ESC }	ESC }	
Set MODEM port receive handshaking [5]	ESC c 2 <i>hndshk</i>	ENH					ESC [ 1 ; n v	
Set AUX port receive handshaking [5]	ESC c 3 <i>hndshk</i>	ENH						
Set MODEM port transmit handshaking [5]	ESC c 4 <i>hndshk</i>	ENH					ESC [ = 0 h	
Reset MODEM port transmit handshaking							ESC [ = 0 l	
Set AUX port transmit handshaking	ESC c 5 <i>hndshk</i>	ENH						
Enable DTR MODEM port handshaking			CTRL N	CTRL N	CTRL N	CTRL N	CTRL N	CTRL N
Enable Xon/Xoff MODEM port handshaking			CTRL O	CTRL O	CTRL O	CTRL O	CTRL O	CTRL O
Set maximum data transmission speed [6]	ESC c 6 <i>max</i>	ENH					ESC [ O ; n v	
Send terminal ID	ESC SPACE	RS C	ESC M		ESC M	ESC M	ESC M	
Program answerback message [7]	ESC c ; <i>answer</i> CTRL Y						ESC ^ <i>answer</i> CTRL Y	ESC ] <i>answer</i> CR
Send answerback message	ESC c <						CTRL E	CTRL E
Conceal answerback message	ESC c =							

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Communicating with the Computer, Continued</b>								
Answerback mode off	ESC e SPACE							
Answerback mode on	ESC e !							
Send model								
Load time of day [8,9]	ESC c 8 <i>hh mm</i>	ENH			ESC SPACE 1	ESC SPACE 1		ESC SPACE 1
<b>Controlling the Terminal and Keyboard</b>								
Local edit mode on	ESC k		Same		Same	Same	Same	Same
Duplex edit mode on	ESC l		Same		Same	Same	Same	Same
Wyseword mode off	ESC ~ .	ENH	ENH	ENH	ENH	ENH		ESC v .
Wyseword mode on	ESC ~ /	ENH	ENH	ENH	ENH	ENH		ESC v /
Initialize tabs off	ESC e :							
Initialize tabs on	ESC e ;							
Application key mode off	ESC ~ 2	ENH	ENH	ENH	ENH	ENH		
Application key mode on	ESC ~ 3	ENH	ENH	ENH	ENH	ENH		
Sound bell	CTRL G	Same	Same	Same	Same	Same	Same	Same
Unlock keyboard	CTRL N or ESC "	ESC "3	ESC "	ESC "	ESC "	ESC "	ESC "	ESC "
Lock keyboard	CTRL O or ESC #	ESC #	ESC #	ESC #	ESC #	ESC #	ESC #	ESC #
Keyclick off	ESC e \$	ENH	ESC <		ESC <	ESC <	ESC <	ESC <
Keyclick on	ESC e %	ENH	ESC >		ESC >	ESC >	ESC >	ESC >
CAPS LOCK on	ESC e &	ENH	ENH		ENH	ENH	ENH	
CAPS LOCK off	ESC e '	ENH	ENH		ENH	ENH	ENH	
Margin bell off	ESC e L						ESC [ = 4 l	ESC n
Set margin bell at cursor position	ESC \ J						CTRL W	
Margin bell on	ESC e M						ESC [ = 4 h	
Turn margin bell on and set position								ESC o
Key repeat off	ESC e ,		ENH	ENH	ENH	ENH	ESC [ = 8 l	
Key repeat on	ESC e -		ENH	ENH	ENH	ENH	ESC [ = 8 h	

3. With enhance mode on.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Controlling the Terminal and Keyboard, Continued</b>								
Define CAPS LOCK key as CAPS LOCK	ESC e T							
Define CAPS LOCK key as REV	ESC e U							
Read status								ESC [
Default unit								ESC m
<b>Redefining the Keys</b>								
Program function key definition [10,11]	ESC z <i>fkey</i> sequence DEL	ENH	Wyse	Wyse	Wyse	Wyse	Wyse	
Program key direction and definition [12,13,11,10]	ESC Z <i>dir key</i> sequence DEL or ESC Z <i>dir fkey</i> sequence DEL					ESC	ESC	
Read key direction and definition [13,10]	ESC Z ~ <i>key</i> or ESC Z ~ <i>fkey</i>							
Clear function key definition [10]	ESC z <i>fkey</i> DEL	ENH	Wyse	Wyse	Wyse	Wyse	Wyse	
Clear key direction and definition [12,13,10]	ESC Z <i>dir key</i> DEL or ESC Z <i>dir fkey</i> DEL	ENH						
Set maximum function key transmission speed [6]	ESC c 7 <i>max</i>							
Invoke function key								ESC [ n
Default all programmable keys	ESC c U							
<b>Screen and Cursor Display</b>								
Screen display off	ESC \ 8	ENH	ESC o	ESC o	ESC o	ESC o	ESC o	ESC O
Screen display on	ESC \ 9	ENH	ESC n	ESC n	ESC n	ESC n	ESC n	ESC N
Screen saver off	ESC e P		ENH	ENH	ENH	ENH	ESC [ 8 ; 0 v	
Screen saver on	ESC e Q		ENH	ENH	ENH	ENH	ESC [ 8 ; 1 v	
Reverse screen	ESC ^ 1		ESC b	ESC b	ESC b	ESC b	ESC b	
Restore normal screen	ESC ^ 0		ESC d	ESC d	ESC d	ESC d	ESC d	
Set scrolling speed and type [14]	ESC \ <i>scroll</i>						ESC [ 6 ; n v	
Smooth scrolling on			ESC 8	ESC 8	ESC 8	ESC 8	ESC 8	

Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Screen and Cursor Display, Continued</b>								
Smooth scrolling off			ESC 9	ESC 9	ESC 9	ESC 9	ESC 9	
Set cursor display features [15]	ESC \ <i>cursor</i>		ESC .	ESC .	ESC .	ESC .	ESC .	ESC .
25th line display off								ESC e
<b>Displaying the Message Fields</b>								
Extended status line on	ESC \ a	ENH						
Standard status line on	ESC \ b	ENH						
Status line off	ESC \ c	ENH						
Program/display computer message on status line [16]	ESC F <i>message</i> CR		ENH	ENH	ENH	ENH		
Program computer message on unshifted label line <sup>4</sup> [17]	ESC z ( <i>text</i> CR		ESC f	ESC f	ESC f	ESC f	ESC f	ESC f
Program computer message on shifted label line [17]	ESC z ) <i>text</i> CR							
Turn on unshifted label line <sup>4</sup>			ESC g	ESC g	ESC g	ESC g		
Turn off unshifted label line <sup>4</sup>			ESC h	ESC h	ESC h	ESC h		
Display shifted label line	ESC z P CR							
Turn off shifted label line	ESC z DEL							
Clear unshifted label line	ESC z ( CR							
Clear shifted label line	ESC z ) CR							
Program/display function key label [19,18]	ESC z <i>field</i> <i>label</i> CR		Wyse	Wyse	Wyse	Wyse	Wyse	Wyse
Clear function key label [19]	ESC z <i>field</i> CR		Wyse	Wyse	Wyse	Wyse	Wyse	Wyse
Don't save function key labels	ESC e J							
Save function key labels	ESC e K							
<b>Defining the Data Area</b>								
Select 80-column display	ESC \ :							ESC [ = 3 l
Select 132-column display	ESC \ ;							ESC [ = 3 h
Economy 80-column mode off	ESC e F							

4. The unshifted label line is automatically displayed in the native personality. The label line message (both shifted and unshifted) can be hidden by assigning the invisible attribute (ESC A 1 1), and displayed again by assigning any visible attribute.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Defining the Data Area, Continued</b>								
Economy 80-column mode on	ESC e G							
Width-change-clear mode off	ESC e .							
Width-change-clear mode on	ESC e /							
Display 24 data lines	ESC e (							
Display 25 data lines	ESC e )							ESC ^
Display 42 data lines	ESC e *							
Display 43 data lines	ESC e +							ESC _
<b>Display Memory/Split Screen</b>								
Divide memory into pages [20]	ESC w <i>length</i>					ESC \ <sup>5</sup>	ESC \ <sup>5</sup>	
Display previous page	ESC w B or ESC J <sup>6</sup>		ESC J	ESC J	ESC J	ESC J	ESC J	
Display next page	ESC w C or ESC K <sup>6</sup>		ESC K	ESC K	ESC K	ESC K	ESC K	
Display page 0	ESC w 0							ESC [ 1 ; 0 }
Display page 1	ESC w 1							ESC [ 1 ; 1 }
Display page 2	ESC w 2 <sup>7</sup>							ESC [ 1 ; 2 } <sup>7</sup>
Split screen horizontally (2 pages only) [21]	ESC x A <i>line</i>							
Split screen horizontally (2 pages only) and clear pages [21]	ESC x 1 <i>line</i>							
Define scrolling region								ESC [ <i>iline</i> ; <i>bline</i> r
Split screen horizontally (multiple pages) [21]	ESC x C <i>line</i>							
Split screen horizontally (multiple pages) and clear pages [21]	ESC x 3 <i>line</i>							
Activate upper window	ESC ]							

5. With enhance mode off.

6. If screen is not split.

7. With economy 80-column mode on.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Display Memory/Split Screen, Continued</b>								
Activate lower window	ESC }							
Activate other window (or page <sup>6</sup> )	ESC J or ESC K							
Lower horizontal split	ESC x P							
Raise horizontal split	ESC x R							
Roll window up in page	ESC w E							
Roll window down in page	ESC w F							
Redefine screen as one window	ESC x @							
Redefine screen as one window and clear pages	ESC x 0							
<b>Display Attributes</b>								
Assign display attribute to a message field [22,23]	ESC A <i>mf attr</i>		ESC \ <sup>3</sup>	ESC \ <sup>3</sup>	ESC \ <sup>3</sup>	ESC \ <sup>3</sup>	ESC [ 3 ; <i>n v</i>	
Assign character display attribute [23]	ESC G <i>attr</i>	ENH	Same	Same	Same	Same	Same	
Character attribute mode off	ESC e 0							
Character attribute mode on	ESC e 1							
Page attribute mode on	ESC e 2						ESC [ = 2 h	
Line attribute mode on	ESC e 3						ESC [ = 2 l	
Assign write-protected character display attribute [24]	ESC \ <i>wpc a</i>							
Assign write-protected character display attribute/write-protect on								ESC G
Clear unprotected page to display attribute [23]			ESC !	ESC !	ESC !			
Assign line attribute [25]	ESC G <i>lattr</i>							
Start reverse video		RS D		ESC j				
End reverse video		RS E		ESC k				
Start underline		CTRL T		ESC l				
End underline		CTRL U		ESC m				
Start blink		CTRL N		ESC ^				
End blink		CTRL O		ESC q				
Blink enable		CTRL C						
Blink disable		CTRL D						





Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Controlling the Cursor, Continued</b>								
Cursor to start of next line	CTRL _	CTRL J	Same	Same	Same	Same	Same	Same
Home cursor	ESC { or CTRL ^	CTRL H	CTRL ^	CTRL ^	CTRL ^	CTRL ^	ESC [ H or CTRL ^	CTRL ^
Cursor to specific column [21]			ESC ] <i>col</i>					
Cursor to specific line [21]			ESC [ <i>line</i>					
End-of-line wrap off	ESC d .						ESC [ = 7 I	ESC 0
End-of-line wrap on	ESC d /						ESC [ = 7 h	ESC ~
Received CR mode off	ESC e 4		ENH	ENH	ENH	ENH	ESC [ = 6 I	ESC 9
Received CR mode on	ESC e 5		ENH	ENH	ENH	ENH	ESC [ = 6 h	ESC 8
Autopage mode off	ESC d *		ESC w	ESC w	ESC w	ESC w	ESC w	
Autopage mode on	ESC d +		ESC v	ESC v	ESC v	ESC v	ESC v	
Autoscrolling mode off	ESC N	CTRL S						
Autoscrolling mode on	ESC O	CTRL R						
Line lock mode on <sup>a</sup>	ESC ` H					ESC ! 1	ESC ! 1	
Line lock mode off	ESC ` I					ESC ! 2	ESC ! 2	
Address cursor in 80-column current page [21]	ESC = <i>line col</i>	CTRL P	Same	Same	Same	Same	Same	Same
Address cursor in specific 80-column page [27,21]	ESC w @ <i>page line col</i>		ESC - <sup>5</sup>	ESC -	ESC -	ESC -		
Address cursor in specific 80-column window/page <sup>a</sup> [27,21]	ESC - <i>wnd/ page line col</i>	ENH					Same	Same
Address cursor in 80/132-column current page [28,29]	ESC a <i>lll R ccc C</i>						ESC [ <i>ll</i> ; <i>ccc H</i> or ESC [ <i>ll</i> ; <i>ccc f</i>	
Read cursor address in 80-column current page	ESC ?	CTRL E	Same	Same	Same	Same	Same or ESC [ 6 n	Same
Read 80-column page number and cursor address	ESC w `							
Read 80-column window/page number and cursor address	ESC /		ENH	ENH	Same	Same or ESC [	Same ? 6 n	Same
Read cursor address in 80/132-column page	ESC b							

8. Page Length setup parameter must be set to 1 \* Lines. When this command is active, the following features are disabled: smooth scroll, insert/delete/clear columns, and box/clear rectangles.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Editing</b>								
Clear all tab stops	ESC 0		ESC 3	ESC 3	ESC 3	ESC 3	ESC 3	ESC 3
Set tab stop	ESC 1		Same	Same	Same	Same	Same	Same
Clear tab stop	ESC 2		Same	Same	Same	Same	Same	Same
Tabulate cursor	ESC i or CTRL I		CTRL I	CTRL I	CTRL I	CTRL I	CTRL I	CTRL I
Backtab	ESC I		Same	Same	Same	Same	Same	Same
Field tab			ESC i	ESC i	ESC i	ESC i	ESC i	ESC i
Insert mode on, replace mode off	ESC q	ENH	ENH		ENH	Same	Same	ESC Z
Insert mode off, replace mode on	ESC r	ENH	ENH		ENH	Same	Same	Same
Page edit mode off	ESC e "					ESC O	ESC O	
Page edit mode on	ESC e #					ESC N	ESC N	
Insert space character	ESC Q	ENH	Same	Same	Same	Same	Same	Same
Insert <i>n</i> characters							ESC [ <i>n</i> @	
Insert line of spaces	ESC E		Same	Same	Same	Same	Same	Same
Insert <i>n</i> lines							ESC [ <i>n</i> L	
Insert column of nulls	ESC c M							
Delete cursor character	ESC W	ENH	Same	Same	Same	Same	Same	Same
Delete <i>n</i> characters							ESC [ <i>n</i> P	
Delete cursor line	ESC R	CTRL K <sup>9</sup>	Same	Same	Same	Same	Same	Same
Delete <i>n</i> lines							ESC [ <i>n</i> M	
Delete cursor column	ESC c J							
Read cursor address in 80/132-column page	ESC b							
<b>Clearing Data</b>								
Clear page to nulls	ESC *	ENH or CTRL L	Same	Same	Same	Same	Same	Same
Clear page to spaces	ESC +	ENH		ESC +			Same	
Clear page to write-protected spaces	ESC ,	ENH						Same

9. From cursor position to end of line.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Clearing Data, Continued</b>								
Clear unprotected page to spaces	ESC ; or CTRL Z	ENH	ESC ; or ESC +	ESC ;	ESC ; or ESC +	ESC ; or ESC +	Same	Same or ESC +
Clear unprotected page to protected spaces			ESC ,		ESC ,	ESC ,	ESC ,	
Clear unprotected page to nulls	ESC :	ENH	Same	Same	Same	Same	Same	Same
Clear unprotected page to a specific character [30]	ESC . <i>char</i>							
Clear unprotected page to display attribute [23]			ESC !	ESC !	ESC !			
Clear unprotected page to spaces from cursor	ESC Y	ENH	Same	Same	Same	Same	Same	Same
Clear unprotected page to nulls from cursor	ESC y	ENH	Same	Same	Same	Same	Same	Same
Clear unprotected page foreground to spaces	ESC c P							
Clear unprotected page foreground to nulls	ESC c Q							
Clear unprotected characters in page							ESC [ n J	
Clear unprotected line to spaces from cursor	ESC T	ENH	Same	Same	Same	Same	Same	Same
Clear unprotected line to nulls from cursor	ESC t	ENH	Same	Same	Same	Same	Same	Same
Clear unprotected to end of line with spaces	ESC c O							
Clear unprotected to end of line with nulls	ESC c L							
Clear unprotected line foreground to spaces	ESC c R							
Clear unprotected line foreground to nulls	ESC c S							
Clear unprotected characters in line							ESC [ n K	
Clear unprotected column to nulls	ESC c K							
Clear unprotected column to specific character [30]	ESC c I <i>char</i>							
Box rectangle to right of cursor [31,32]	ESC c N <i>width height</i>							

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Clearing Data, Continued</b>								
Box rectangle in 80-column page [21]	ESC c G <i>line col</i>						ESC H	
Box rectangle in 132-column page [21]	ESC c G <i>line ~ col<sup>10</sup></i>							
Clear unprotected rectangle in 80-column page [21,30]	ESC c F <i>line col char</i>							
Clear unprotected rectangle in 132-column page [21,30]	ESC c F <i>line ~ col<sup>10</sup> char</i>							
Clear entire rectangle in 80-column page [21,30]	ESC c H <i>line col char</i>							
Clear entire rectangle in 132-column page [21,30]	ESC c H <i>line ~ col<sup>10</sup> char</i>							
Fill page with H's								ESC F
<b>Sending Data</b>								
Begin print/send at top of page	ESC d '							
Begin print/send at top of screen	ESC d &							
Send unprotected line	ESC 4	ENH	Same	Same	Same	Same	Same	Same
Send cursor character	ESC M							
Send cursor line	ESC 6	ENH	Same	Same	Same	Same	Same	Same
Send unprotected cursor line	ESC 4	ENH	Same	Same	Same	Same	Same	Same
Send page	ESC 7	ENH	Same	Same	Same	Same	Same	Same
Send unprotected page	ESC 5	ENH	Same	Same	Same	Same	Same	Same
Mark block beginning	ESC 8							
Mark block end	ESC 9							
Send block	ESC s	ENH	Same	Same	Same	Same	Same	Same
Send unprotected characters in block	ESC S	ENH	Same	Same	Same	Same	Same	Same
Report terminal status								ESC [
Report attribute under cursor								ESC D
Define delimiters			ESC x	ESC x	ESC x	ESC x	ESC x	ESC x

10. To box/clear rectangles past 80-column limit, you must add 80 to the *col* value.

**Table E-2 Supported Commands—Native, DG, TeleVideo, and PC Term Personalities, Continued**

Function	Native Personality	DG 200 DG 210	TeleVideo 910+	920	925	950	955	PC Term
<b>Print Functions</b>								
Set print terminator			ESC p	ESC p	ESC p	ESC p	ESC p	ESC p
Print formatted page	ESC P	CTRL Q <sup>11</sup>	Wyse	Same	Same	Same	Same	Same
Print formatted unprotected page	ESC @							
Print unformatted page	ESC p or ESC L			ESC L		ESC L	ESC L	
Print page with time			ESC L		ESC L			ESC L
Print all unprotected		CTRL A <sup>11</sup>						
Auxiliary print mode off	CTRL T		ESC A	ESC A	ESC A	ESC A	ESC A	ESC A
Auxiliary print mode on	CTRL R		ESC @	ESC @	ESC @	ESC @	ESC @	ESC @
Transparent print mode off	CTRL T	RS F ? 2 or RS F a	ESC a	ESC a	ESC a	ESC a	ESC a	ESC a
Transparent print mode on	ESC d # or CTRL X <sup>12</sup>	RS F ? 3 or RS F `	ESC `	ESC `	ESC `	ESC `	ESC `	ESC `
Secondary receive mode off	ESC d SPACE							
Secondary receive mode on	ESC d !							
Bidirectional mode off	ESC d \$		CTRL T	CTRL T	CTRL T	CTRL T	CTRL T	CTRL T
Bidirectional mode on	ESC d %		CTRL R	CTRL R	CTRL R	CTRL R	CTRL R	CTRL R
<b>Character Sets</b>								
Select primary character set	ESC c D							
Select secondary character set	ESC c E							
Define primary character set [33]	ESC c B <i>bank</i>							
Define secondary character set [33]	ESC c C <i>bank</i>							
Automatic font loading off	ESC e N							
Automatic font loading on	ESC e O							
Load font bank with predefined character set [33,34]	ESC c @ <i>bank set</i>							
Clear font bank [33]	ESC c ? <i>bank</i>							
Define and load character [33,35,36]	ESC c A <i>bank pp bb...bb</i>							CTRL Y

11. From start of cursor line to end of page.

12. With enhance mode off.

**VARIABLE VALUES FOR  
TABLES E-1 AND E-2**

[1]	<b>Baud Rate</b>		[2]	<b>stop</b>	<b>Stop Bits</b>
	<i>baud</i>	<b>MODEM Port</b>	<b>AUX Port</b>	0	1
	0	38400	19200	1	2
	1	19200	9600		
	2	9600	7200		
	3	4800	4800		
	4	2400	3600	[3]	<b>parity</b>
	5	2000	2400	0	None
	6	1800	2000	1	Odd
	7	1200	1800	2	Mark
	8	600	1200	3	Even
	9	300	600		
	:	150	300		
	;	134.5	150	[4]	<b>word</b>
	<	110	134.5	0	7 bits
	=	75	110	1	8 bits
	>	50			
[5]	<b>Handshaking Protocol</b>		[6]	<b>max</b>	<b>Maximum Speed</b>
	<i>hndshk</i>	<b>Receive</b>	<b>Transmit</b>	1	60 characters per second
	0	None	None	2	None
	1	Xon/Xoff	Xon/Xoff	3	150 characters per second
	2	DTR (MODEM port)		4	35 characters per second
	3	DSR (AUX port)			
		Both			
[7]	<i>answer</i>	Up to 20 characters to define answerback message			
[8]	<i>hh</i>	Hour (two-digit decimal number between 00 and 23)			
[9]	<i>mm</i>	Minutes (two-digit decimal number between 00 and 59)			
[10]		<i>fkey</i>		<i>fkey</i>	
	<b>Key</b>	<b>Unshifted</b>	<b>Shifted</b>	<b>Key</b>	<b>Unshifted</b>
	F1	@	`	F9	H
	F2	A	a	F10	I
	F3	B	b	F11	J
	F4	C	c	F12	K
	F5	D	d	F13	L
	F6	E	e	F14	M
	F7	F	f	F15	N
	F8	G	g	F16	O
[11]	<i>sequence</i>	Up to 64 bytes to be loaded in function key			
[12]	<i>dir</i>	<b>Direction</b>			
	0	Normal			
	1	Remote			
	2	Local			

## [13] Editing Key Values

WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	Enhanced PC-Style Keyboard	key
Esc	Esc	Esc	Esc	SPACE
Shift Esc	Shift Esc	Shift Esc	Shift Esc	%
Tab	Tab	Tab	Tab	!
Shift Tab	Shift Tab	Shift Tab	Shift Tab	&
Backspace	← Backspace	← Backspace	← Backspace	"
Shift	Shift	Shift ←	Shift	,
Backspace	← Backspace		← Backspace	#
Del		Del		(
Shift Del		Shift Del		\$
Return	Return		Enter	)
Shift Return	Shift Return		Shift Enter	*
Home	Home	Home	Home	/
Shift Home	Shift Home	Shift Home	Shift Home	+
▲	↑	↑	↑	0
Shift ▲	Shift ↑	Shift ↑	Shift ↑	,
▼	↓	↓	↓	1
Shift ▼	Shift ↓	Shift ↓	Shift ↓	-
◀	←	←	←	2
Shift ▶	Shift ←	Shift ←	Shift ←	.
▶	→	→	→	3
Shift ▶	Shift →	Shift →	Shift →	s
Enter	Enter	Enter	Enter <i>kpd</i>	4
Shift Enter	Shift Enter	Shift Enter	Shift Enter <i>kpd</i>	7
Repl	Insert	Ins	Insert	8
Ins	Shift Insert	Shift Ins	Shift Insert	r
Page Next	Page	PgDn	Page Down	w
Page Prev	Shift Page	Shift PgDn	Shift Page Down	u
Send	Send			t
Print	Shift Send			}
Clr Line	Clear			z
Clr Scrn	Shift Clear			5
Del Char	Delete		Delete	6
Del Line	Shift Delete		Shift Delete	q
Ins Char				p
Ins Line				Q
	Erase EOF			W
	Shift Erase EOF			v
	Jump			x
	Shift Jump			R
	Print	PrtSc	Print Screen	

**[13] Editing Key Values, Continued**

WY-60 ASCII Keyboard	IBM 316X-Style Keyboard	AT-Style Keyboard	Enhanced PC-Style Keyboard	key
	Shift	Print	Shift	X
			Print Screen	
	Send Line			S
	Shift	Send Line		Y
	Print Line			T
	Shift	Print Line		Z
	← Tab			P
	Shift	← Tab		V
		End	End	\
		Shift	End	]
		+ kpd		^
		Shift	+ kpd	-
		- kpd		
		Shift	- kpd	y
		PgUp	Page Up	:
		Shift	PgUp	;
		5 kpd		<
		Shift	5 kpd	=

**[14] Scrolling Speed**

scroll	Type	Speed (lps)
@	Jump scroll	
<	Smooth scroll	1
=	Smooth scroll	2
>	Smooth scroll	4
?	Smooth scroll	8

**[15] Cursor**

cursor	Display
0	Cursor display off
1	Cursor display on
2	Steady block cursor
3	Blinking line cursor
4	Steady line cursor
5	Blinking block cursor

	Character String	80-Column Screen <sup>1</sup>	132-Column Screen <sup>1</sup>
[16]	message	46/48 characters	98/100 characters
[17]	text	78/80 characters	130/132 characters
[18]	label	8/9 characters	7 characters

1. Lower number of characters available in personalities with nonhidden attributes; higher number of characters available in personalities with hidden attributes.



[19]	Key	Unshifted	field Shifted	Key	Unshifted	field Shifted
	F1	0	P	F9	8	X
	F2	1	Q	F10	9	Y
	F3	2	R	F11	:	Z
	F4	3	S	F12	;	
	F5	4	T	F13	<	\
	F6	5	U	F14	=	]
	F7	6	V	F15	>	^
	F8	7	W	F16	?	-

[20]	length	Multiple	Length of Page
G	1	x lines	Equal to the number of data lines
H	2	x lines	Double the number of data lines
I <sup>2</sup>	4	x lines	Four times the number of data lines
J	*		One page contains the number of data lines; a second page contains the rest of the lines remaining in memory

2. Available only in WY-50+ personality

[21]	ASCII Line and Column Codes (Native Personality <sup>3</sup> )						
Line/ Column	line/ col	Line/ Column	line/ col	Line/ Column	line/ col	Line/ Column	line/ col
1	Space	25	8	49	P	73	h
2	!	26	9	50	Q	74	i
3	"	27	:	51	R	75	j
4	#	28	;	52	S	76	k
5	\$	29	<	53	T	77	l
6	%	30	=	54	U	78	m
7	&	31	>	55	V	79	n
8	'	32	?	56	W	80	o
9	(	33	@	57	X	81	p
10	)	34	A	58	Y	82	q
11	*	35	B	59	Z	83	r
12	+	36	C	60	[	84	s
13	,	37	D	61	\	85	t
14	-	38	E	62	]	86	u
15	.	39	F	63	^	87	v
16	/	40	G	64	~	88	w
17	0	41	H	65		89	x
18	1	42	I	66	a	90	y
19	2	43	J	67	b	91	z
20	3	44	K	68	c	92	{
21	4	45	L	69	d	93	
22	5	46	M	70	e	94	}
23	6	47	N	71	f	95	~
24	7	48	O	72	g	96	DEL/RUB

3. Native codes also recognized in WY-50+, ADM 31, IBM 3101, IBM 3161, TeleVideo 910+/920/925/950/955, and PC Term personalities, and in ADDS VP A2/60 personalities' absolute cursor addressing. (Terminal supports only 24 lines to a page in all personalities except WY-50+ and PC Term.)

ASCII Line Codes (ADDS VP A2/60<sup>4</sup>, DASHER D200/D210, HZ-1500)  
 ADDS VP A2/60  
 DASHER D200/D210

Line	ADD S VP A2/60 DASHER D200/D210 HZ-1500	Line	ADD S VP A2/60 DASHER D200/D210 HZ-1500
1	CTRL @	13	CTRL L
2	CTRL A	14	CTRL M
3	CTRL B	15	CTRL N
4	CTRL C	16	CTRL O
5	CTRL D	17	CTRL P
6	CTRL E	18	CTRL Q
7	CTRL F	19	CTRL R
8	CTRL G	20	CTRL S
9	CTRL H	21	CTRL T
10	CTRL I	22	CTRL U
11	CTRL J	23	CTRL V
12	CTRL K	24	CTRL W

## 4. Vertical addressing (CTRL K)

ASCII Column Codes (ADDS VP A2/60<sup>5</sup>, DASHER D200/D210, HZ-1500)

Column	ADDS VP A2/60	DASHER D200/D210	HZ-1500	Column	ADDS VP A2/60	DASHER D200/D210	HZ-1500
1	CTRL @	CTRL @	CTRL @	32	1	CTRL _	%
2	CTRL A	CTRL A	CTRL A	33	2	SPACE	&
3	CTRL B	CTRL B	CTRL B	34	3	!	'
4	CTRL C	CTRL C	CTRL C	35	4	"	(
5	CTRL D	CTRL D	CTRL D	36	5	#	)
6	CTRL E	CTRL E	CTRL E	37	6	\$	*
7	CTRL F	CTRL F	CTRL F	38	7	%	+
8	CTRL G	CTRL G	CTRL G	39	8	&	,
9	CTRL H	CTRL H	CTRL H	40	9	'	-
10	CTRL I	CTRL I	CTRL I	41	@	(	.
11	CTRL J	CTRL J	CTRL J	42	A	)	/
12	CTRL P	CTRL K	CTRL K	43	B	*	0
13	CTRL R	CTRL L	CTRL L	44	C	+	1
14	CTRL S	CTRL M	CTRL M	45	D	,	2
15	CTRL T	CTRL N	CTRL N	46	E	-	3
16	CTRL U	CTRL O	CTRL O	47	F	.	4
17	CTRL V	CTRL P	CTRL P	48	G	/	5
18	CTRL W	CTRL Q	CTRL Q	49	H	0	6
19	CTRL X	CTRL R	CTRL R	50	I	1	7
20	CTRL Y	CTRL S	CTRL S	51	P	2	8
21	SPACE	CTRL T	CTRL T	52	Q	3	9
22	!	CTRL U	CTRL U	53	R	4	:
23	"	CTRL V	CTRL V	54	S	5	;
24	#	CTRL W	CTRL W	55	T	6	<
25	\$	CTRL X	CTRL X	56	U	7	=
26	%	CTRL Y	CTRL Y	57	V	8	>
27	&	CTRL Z	SPACE	58	W	9	?
28	'	CTRL [	!	59	X	:	@
29	(	CTRL \	"	60	Y	;	A
30	)	CTRL ]	#	61	/	<	B
31	0	CTRL ^	\$	62	a	=	C

## 5. Horizontal addressing (CTRL P)

ASCII Column Codes (ADDS VP A2/60<sup>5</sup>, DASHER D200/D210, HZ-1500), Continued

Column	ADDS VP A2/60	DASHER D200/D210	HZ-1500	Column	ADDS VP A2/60	DASHER D200/D210	HZ-1500
63	b	>	D	72	q	G	M
64	c	?	E	73	r	H	N
65	d	@	F	74	s	I	O
66	e	A	G	75	t	J	P
67	f	B	H	76	u	K	Q
68	g	C	I	77	v	R	R
69	h	D	J	78	w	M	S
70	i	E	K	79	x	N	T
71	p	F	L	80	y	O	U

- [22] *mf* Screen Area
- 0 Data area<sup>6</sup>
  - 1 Function key label line
  - 2 Terminal message field
  - 3 Computer message field

6. In native personality, only the reverse attribute can be assigned to the data area.

- [23] Display Attribute Codes
- | <i>attr</i> | Display Attributes                   | <i>attr</i> | Display Attributes                        |
|-------------|--------------------------------------|-------------|---|
| SPACE       | Space character                      | p           | Dim                                       |
| 0           | Normal                               | q           | Dim and invisible                         |
| 1           | Invisible                            | r           | Dim and blink                             |
| 2           | Blink                                | s           | Dim, blink, invisible                     |
| 3           | Invisible                            | t           | Dim and reverse                           |
| 4           | Reverse                              | u           | Dim, reverse, invisible                   |
| 5           | Reverse and invisible                | v           | Dim, reverse, blink                       |
| 6           | Reverse and blink                    | w           | Dim, reverse, blink, invisible            |
| 7           | Reverse, blink, invisible            | x           | Dim and underline                         |
| 8           | Underline                            | y           | Dim, underline, invisible                 |
| 9           | Underline and invisible              | z           | Dim, underline, blink                     |
| :           | Underline and blink                  | {           | Dim, underline, blink, invisible          |
| ;           | Underline, blink, invisible          |             | Dim, underline, reverse                   |
| <           | Underline and reverse                | }           | Dim, underline, reverse, invisible        |
| =           | Underline, reverse, invisible        | ~           | Dim, underline, reverse, blink, invisible |
| >           | Underline, reverse, blink            | DEL         | Dim, underline, reverse, blink, invisible |
| ?           | Underline, reverse, blink, invisible |             |   |

- [24] Write-Protected Display Attribute
- |            |                      |
|------------|----------------------|
| <i>wpc</i> | Display Attribute    |
| 6          | Reverse <sup>7</sup> |
| 7          | Dim <sup>7</sup>     |
| A          | Normal <sup>7</sup>  |
| B          | Blink on             |
| C          | Invisible on         |
| E          | Underline on         |
| F          | Reverse on           |
| G          | Dim on               |

7. Clears other write-protected attributes

<b>[25]</b>	<i>lattr</i>	<b>Line Attribute</b>
	@	Single-high, single-wide characters
	A	Single-high, double-wide characters
	B	Top half of double-high, single-wide characters
	C	Bottom half of double-high, single-wide characters
	D	Top half of double-high, double-wide characters
	E	Bottom half of double-high, double-wide characters
	G	Normal background
	H	Bold background
	I	Invisible background
	J	Dim background

**[26] Graphics Character Codes**

<i>ldraw</i>	Graphics Character	<i>ldraw</i>	Graphics Character	<i>ldraw</i>	Graphics Character	<i>ldraw</i>	Graphics Character
0	T	4		8	+	<	=
1	L	5	J	9	+	=	⊥
2	┌	6		:	—	>	
3	└	7	█	;	▒	?	▒

**[27] *wnd/page* Window or Page**

0	Page 0 or upper window
1	Page 1 or lower window
2	Page 2
3	Page 3
4	Page 4
5	Page 5
6	Page 6

**[28]** *lll* One- to three-decimal value of line relative to home

**[29]** *ccc* One- to three-decimal value of column relative to home

**[30]** *char* Character that replaces unprotected characters

**[31]** *width* Column code from [21] for column number representing the number of columns to right of cursor

**[32]** *height* Line code from [21] for line number representing the number of lines below cursor

<b>[33]</b>	<i>bank</i>	<b>Font Bank<sup>9</sup></b>
	0	Font bank 0
	1	Font bank 1
	2	Font bank 2
	3	Font bank 3

---

8. Holds predefined character set

<b>[34]</b>	<i>set</i>	<b>Predefined Character Set</b>
	@	Native mode
	A	Multinational
	B	Standard ASCII
	C	Graphics 1
	D	PC equivalent
	E	Graphics 2
	F	Graphics 3
	G	Standard ANSI
	`	44-line native mode
	a	44-line multinational
	b	44-line PC equivalent
	c	44-line Standard ASCII
	d	44-line Standard ANSI

<b>[35]</b>	<i>pp</i>	2-byte hex value of character position <sup>9</sup>
-------------	-----------	---

---

9. In the illustrations, DEC = decimal value; HEX = hexadecimal value. Read across, then down.

Cmd	0	16	32	48	64	80	96	1 <sub>1</sub>	2
HEX	0	1	2	3	4	5	6	7	
0	0		T	0	@	P	'	p	
1	1	S	!	1	A	Q	a	q	
2	2	S	"	2	B	R	b	r	
3	3	S	#	3	C	S	c	s	
4	4	S	\$	4	D	T	d	t	
5	5	S	%	5	E	U	e	u	
6	6	S	&	6	F	V	f	v	
7	7	S	'	7	G	W	g	w	
8	8	S	(	8	H	X	h	x	
9	9	S	)	9	I	Y	i	y	
10	A	S	*	10	J	Z	j	z	
11	B	S	+	11	K	[	k	{	
12	C	S	=	12	L	\	l		
13	D	S	-	13	M	]	m	}	
14	E	S	.	14	N	^	n	~	
15	F	S	/	15	O	_	o		

Native Mode

Cmd	0	16	32	48	64	80	96	1 <sub>1</sub>	2
HEX	0	1	2	3	4	5	6	7	
0	0	É	á	█	Ł	ı	ı	ı	ı
1	1	Ü	æ	ı	█	ı	ı	ı	ı
2	2	é	æ	ó	█	ı	ı	ı	ı
3	3	à	ò	ú	ı	ı	ı	ı	ı
4	4	ä	ö	ñ	ı	ı	ı	ı	ı
5	5	á	ó	ñ	ı	ı	ı	ı	ı
6	6	à	ó	ı	ı	ı	ı	ı	ı
7	7	ç	ú	ı	ı	ı	ı	ı	ı
8	8	è	ú	ı	ı	ı	ı	ı	ı
9	9	ë	ö	ı	ı	ı	ı	ı	ı
10	A	é	ü	ı	ı	ı	ı	ı	ı
11	B	ı	ç	ı	ı	ı	ı	ı	ı
12	C	ı	é	ı	ı	ı	ı	ı	ı
13	D	ı	ı	ı	ı	ı	ı	ı	ı
14	E	ı	ı	ı	ı	ı	ı	ı	ı
15	F	ı	ı	ı	ı	ı	ı	ı	ı

Multinational

Cmd	0	16	32	48	64	80	96	1 <sub>1</sub>	2
HEX	0	1	2	3	4	5	6	7	
0	0		T	0	@	P	'	p	
1	1	S	!	1	A	Q	a	q	
2	2	S	"	2	B	R	b	r	
3	3	S	#	3	C	S	c	s	
4	4	S	\$	4	D	T	d	t	
5	5	S	%	5	E	U	e	u	
6	6	S	&	6	F	V	f	v	
7	7	S	'	7	G	W	g	w	
8	8	S	(	8	H	X	h	x	
9	9	S	)	9	I	Y	i	y	
10	A	S	*	10	J	Z	j	z	
11	B	S	+	11	K	[	k	{	
12	C	S	=	12	L	\	l		
13	D	S	-	13	M	]	m	}	
14	E	S	.	14	N	^	n	~	
15	F	S	/	15	O	_	o		

Standard ASCII

DEC	HEX	0	16	32	48	64	80	96	1 <sub>1</sub>	2 <sub>2</sub>
0	0				0			0		
1	1			1				1		
2	2			2				2		
3	3			3				3		
4	4			4				4		
5	5			5				5		
6	6			6				6		
7	7			7				7		
8	8			8				8		
9	9			9				9		
10	A							A		
11	B							B		
12	C							C		
13	D							D		
14	E							E		
15	F							F		

Graphics 1

DEC	HEX	0	16	32	48	64	80	96	1 <sub>1</sub>	2 <sub>2</sub>
0	0									
1	1									
2	2									
3	3									
4	4									
5	5									
6	6									
7	7									
8	8									
9	9									
10	A									
11	B									
12	C									
13	D									
14	E									
15	F									

Graphics 2

DEC	HEX	0	16	32	48	64	80	96	1 <sub>1</sub>	2 <sub>2</sub>
0	0									
1	1									
2	2									
3	3									
4	4									
5	5									
6	6									
7	7									
8	8									
9	9									
10	A									
11	B									
12	C									
13	D									
14	E									
15	F									

Graphics 3

DEC	HEX	0	16	32	48	64	80	96	1 <sub>1</sub>	2
0	0				0	@	P	'	p	
1	1	◆	-	!	1	A	Q	a	q	
2	2	▒	-	"	2	B	R	b	r	
3	3	HT	-	#	3	C	S	c	s	
4	4	FF	-	\$	4	D	T	d	t	
5	5	CR	-	%	5	E	U	e	u	
6	6	LF	-	&	6	F	V	f	v	
7	7	°	-	'	7	G	W	g	w	
8	8	±	-	(	8	H	X	h	x	
9	9	NL	-	)	9	I	Y	i	y	
10	A	UT	-	<	*	:	J	Z	j	z
11	B	J	-	>	+	;	K	[	k	{
12	C	7	-	π	,	<	L	\	l	!
13	D	⌈	-	≠	=	M	]	m	}	
14	E	⌋	-	£	.	>	N	^	n	~
15	F	†	-	/	?	0	_	o		

Standard ANSI

DEC	HEX	0	16	32	48	64	80	96	1 <sub>1</sub>	2
0	0				0	@	P	'	p	
1	1	⊠	◀	!	1	A	Q	a	q	
2	2	⊠	↑	"	2	B	R	b	r	
3	3	◆	!!	#	3	C	S	c	s	
4	4	◆	9	\$	4	D	T	d	t	
5	5	⊠	6	%	5	E	U	e	u	
6	6	⊠	_	&	6	F	V	f	v	
7	7	⊠	±	'	7	G	W	g	w	
8	8	⊠	↑	(	8	H	X	h	x	
9	9	◊	↓	)	9	I	Y	i	y	
10	A	◊	→	*	:	J	Z	j	z	
11	B	◊	←	+	;	K	[	k	{	
12	C	♀	⌊	,	<	L	\	l	!	
13	D	♫	⊠	=	M	]	m	}		
14	E	♫	♠	.	>	N	^	n	~	
15	F	♫	♣	/	?	0	_	o		

PC Equivalent

[36] *bb...bb* 32-byte character string defining bit pattern of character



# F ANSI Personalities

This appendix describes the commands supported in the terminal's ANSI personalities: WY-75, VT52, and VT100.

The command descriptions assume a basic working knowledge of ANSI-based terminals.

Table F-1 lists the commands under functional headings. Within a command sequence, parameters are underlined: *Pn* represents a numeric parameter; *Ps* represents a selective parameter whose values are listed immediately following the command. Table F-2 lists mnemonic names. Tables F-3 through F-6 list key codes.

**Table F-1 ANSI Commands**

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
<b>Communicating with the Computer</b>			
Send ACK/answerback message	ENQ	CTRL E	CTRL E
Resume transmission (after suspension by CTRL S)	DC1	CTRL Q	CTRL Q
Suspend transmission (when transmit handshaking is Xon/Xoff)	DC3	CTRL S	CTRL S
Delay processing for about 250 milliseconds	WYDELAY	ESC ,	
Request terminal ID	WYID DECID DA	ESC SPACE ESC Z ESC [ 0 c	ESC Z
Response (WYID): 75 CR (WY-75 personality) 60 CR (all other personalities)	Response (DECID or DA): ESC [ ? 1 ; 0 c (WY-75 personality) <sup>1</sup> ESC [ ? 1 ; 2 c (VT100 personality) <sup>2</sup> ESC / Z (VT52 personality)		
Request status report	DSR	ESC [ <i>Ps</i> n	
<i>Ps</i>	<b>Request</b>	<b>Report</b>	
5	Terminal status	Ready: ESC [ 0 n	
6	Cursor position	Line/column: ESC [ <i>Pn</i> ; <i>Pn</i> R	
?15	Printer status	Ready: ESC [ ? 10 n Busy: ESC [ ? 11 n	

1. Mode without AVO. Attributes are nonhidden in WY-75 personality.
2. Mode with AVO. Attributes are hidden in VT100 (and VT52) personality.

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52		
Abort escape sequence, display error character	CAN SUB	CTRL X or CTRL Z	CTRL X or CTRL Z		
<b>Controlling the Terminal</b>					
Enter VT100 personality (from VT52 personality)			ESC <		
Terminal modes on (set)	SM SM	(1) ESC [ <i>Ps</i> ; ...; <i>Ps</i> h (2) ESC [ ? <i>Ps</i> ; ...; <i>Ps</i> h			
Terminal modes off (reset) <sup>3</sup>	RM RM	(1) ESC [ <i>Ps</i> ; ...; <i>Ps</i> l (2) ESC [ ? <i>Ps</i> ; ...; <i>Ps</i> l			
<b>(1) <i>Ps</i><sup>4</sup> Mode</b>	<b>Mnemonic</b>	<b>Default<sup>5</sup></b>	<b>(2) ? <i>Ps</i><sup>4</sup> Mode</b>	<b>Mnemonic</b>	<b>Default</b>
1 Transfer enhanced data <sup>6</sup>	GATM	On	1 Cursor key	DECCKM	Off
2 Keyboard lock	KAM	Off	2 VT100 <sup>7</sup>	DECANM	NVR
3 Monitor	CRM	Off	3 132-column	DECCOLM	NVR
4 Insert character	IRM	Off	4 Smooth scroll	DECSCLM	NVR
6 Clear enhanced data <sup>6</sup>	ERM	On	5 Reverse screen	DECSCNM	NVR
12 Local echo disable	SRM	NVR	6 Origin	DECOM	Off
13 Disable control execution	FEAM	Off	7 Character wrap (end-of-line wrap mode)	DECAWM	NVR
16 Cursor transfer termination	TTM	On	8 Auto repeat (key repeat mode)	DECARM	NVR
20 Newline (received CR mode)	LNM	NVR	10 Block	DECEDM	NVR
30 Display disable	WYDSCM	Off	18 Print form feed	DECFFF	Off
31 Status line display	WYSTLINM	NVR	19 Print full screen	DECPEX	On
32 Screen saver	WYCRTSAVM	NVR	25 Enable cursor	DECTCEM	NVR
33 Steady cursor	WYSTCURM	NVR			
34 Underline cursor	WYULCURM	NVR			
35 Width change clear disable	WYCLRM	NVR			
40 Select 25th/43rd data line	WYSEDL	NVR			
41 Select 42/43 data lines	WYSL44	NVR			
42 WY-60 (from VT100 or WY-75)	WY60	NVR			
43 WY-75 (from VT100)	WY75	NVR			
44 VT100 (from WY-75)	VT100	NVR			
45 AUX data port	WYDP	NVR			
Reset terminal to initial state <sup>8</sup>	RIS		ESC c		
Reset all terminal modes <sup>8</sup>	WYSTR		ESC ! p		
Sound bell	BEL		CTRL G	CTRL G	
Keypad application mode on	DECKPAM		ESC =	ESC =	

3. Final character in sequence is a lowercase L.

4. *Ps* values are listed in two groups: In the first group are the values for terminal modes that can be set with SM command sequence (1) or reset with RM command sequence (1); in the second group are the values for terminal modes that can be set with SM sequence (2) or reset with RM sequence (2). The latter group is shown as ? *Ps* to indicate that sequence (2) includes a question mark immediately following the control sequence introducer CSI. Up to 16 *Ps* values can be specified (separated by semicolons) in any one SM or RM command sequence.

5. When terminal is turned on or reset. "NVR" signifies that the mode is on or off according to the value saved in nonvolatile memory.

6. WY-75 personality only.

7. When off, VT52 personality is enabled.

8. When Xon/Xoff handshaking is active, an Xon (DC1) character is sent after execution of this command.

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
Keypad application mode off	DECKPNM	ESC >	ESC >
Restore saved cursor position, character sets, and attribute <sup>9</sup>	DECRC or WYRC	ESC 8 ESC [ u	
Save cursor position, character sets, and attribute <sup>9</sup>	DECSC or WYSC	ESC 7 or ESC [ s	

**Programming Message Fields and Function Keys**

Load text	WYTLOAD	ESC [ > <i>Ps delim text delim</i>
Clear text	WYTLOAD	ESC [ > <i>Ps delim delim</i>

*Ps* = Computer message field or function key:

<i>Ps</i>	Computer Message Field <sup>10</sup>	Maximum text Characters	
		80 Columns	132 Columns
+	Status line	46	98
,	Unshifted label line	78	130
-	Shifted label line	78	130

Key <sup>11</sup>	<i>Ps</i>		Key <sup>11</sup>	<i>Ps</i>		Key <sup>11</sup>	<i>Ps</i>	
	Unshifted	Shifted		Unshifted	Shifted		Unshifted	Shifted
F1	A	F	F7	b	m	F13	h	s
F2	B	G	F8	c	n	F14	i	t
F3	C	H	F9	d	o	F15	j	u
F4	D	I	F10	e	p	F16	k	v
F5	E	J	F11	f	q			
F6	a	l	F12	g	r			

*delim* = text terminator (any ASCII character not used in *text*)<sup>12</sup>

*text* = character string<sup>13</sup>

9. Attribute in VT100 personality only.

10. The following field attributes may be assigned to the message fields by including the control characters SO (CTRL N) and SI (CTRL O) in the text string as indicated:

Normal	SO SI @	Reverse, dim	SO SI Q
Dim	SO SI A	Reverse, blink	SO SI R
Blink	SO SI B	Reverse, blink, dim	SO SI S
Blink, dim	SO SI C	Reverse, invisible	SO SI T
Invisible	SO SI D	Reverse, invisible, dim	SO SI U
Invisible, dim	SO SI E	Reverse, underline	SO SI X
Underline	SO SI H	Reverse, underline, dim	SO SI Y
Underline, dim	SO SI I	Reverse, underline, blink	SO SI Z
Underline, blink	SO SI J	Reverse, underline, blink, dim	SO SI [
Underline, blink, dim	SO SI K	Reverse, underline, invisible	SO SI \
Underline, invisible	SO SI L	Reverse, underline, invisible, dim	SO SI ]
Underline, invisible, dim	SO SI M	Reverse, underline, invisible	SO SI ^
Underline, invisible, blink	SO SI N	blink	SO SI _
Underline, invisible, blink, dim	SO SI O	Reverse, underline, invisible,	
Reverse	SO SI P	blink, dim	

11. Maximum text characters in function key are 64.

12. Except NUL, DEL, SO, SI, or DC1 and DC3 if Xon/Xoff handshaking is enabled.

13. Including any ASCII character except NUL, DEL, or DC1 and DC3 if Xon/Xoff handshaking is enabled. (SO and SI have the special function indicated in footnote 10.)

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
<b>Screen Display/Attributes</b>			
Display screen alignment pattern (fill screen with <i>E</i> 's)	DECALN	ESC # 8	
Display next page <i>Pn</i> = number of pages forward	NP	ESC [ <i>Pn</i> U	
Display previous page <i>Pn</i> = number of pages back	PP	ESC [ <i>Pn</i> V	
Define scrolling region <i>Pn</i> = beginning line number; ending line number <sup>14</sup>	DECSTBM	ESC [ <i>Pn</i> ; <i>Pn</i> r	
Control simulated keyboard LEDs in computer message field	DECLL	ESC [ <i>Ps</i> ; ...; <i>Ps</i> q	
<b><i>Ps</i> LED</b>			
0 L1 to L4 off			
1 L1 on			
2 L2 on			
3 L3 on			
4 L4 on			
Define video attribute	SGR	ESC [ <i>Ps</i> ; ...; <i>Ps</i> m	
<b>Video Attribute</b>		<b>Video Attribute</b>	
<b><i>Ps</i> WY-75 Personality<sup>15</sup></b>	<b>VT100 Personality<sup>16</sup></b>	<b><i>Ps</i> WY-75 Personality</b>	<b>VT100 Personality<sup>16</sup></b>
0 Normal	Attributes off	7 Reverse	
Non-0 Enhanced <sup>17</sup>		8 Invisible <sup>18</sup>	
1 Bold <sup>18</sup>		22 Normal	
2 Dim <sup>18</sup>		24 Underline off	
4 Underline		25 Blink off	
5 Blink		27 Reverse off	
Define enhance attribute (WY-75 personality only; see SGR)	WYNNAT	ESC [ <i>Ps</i> t	
<b><i>Ps</i> Attribute</b>			
0 Dim			
1 Reverse			
2 Underline			
3 Blink			
4 Invisible			

14. If the second parameter is 0 or absent, the ending line is the last line on the screen.

15. Standard ANSI characters are always displayed with the normal attribute.

16. ANSI Graphics characters are displayed with the current attribute.

17. See WYNNAT.

18. Bold, dim, and invisible cannot be combined.

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
Assign field attribute from cursor location to end of screen or start of next attribute (WY-75 personality only)	WYFDAT	ESC [ <i>Ps</i> p	
<b><i>Ps</i> Attribute</b>	<b><i>Ps</i> Attribute</b>	<b><i>Ps</i> Attribute</b>	
0 Normal	11 Underline, blink, dim	22 Reverse, invisible	
1 Dim	12 Underline, invisible	23 Reverse, invisible, dim	
2 Blink	13 Underline, invisible dim	24 Reverse, underline	
3 Blink, dim	14 Underline, invisible, blink	25 Reverse, underline, dim	
4 Invisible	15 Underline, invisible, blink, dim	26 Reverse, underline, blink	
5 Invisible, dim	16 Reverse	27 Reverse, underline, blink, dim	
6 Invisible	17 Reverse, dim	28 Reverse, underline, invisible	
7 Invisible, dim	18 Reverse, blink	29 Reverse, underline, invisible, dim	
8 Underline	19 Reverse, blink, dim	30 Reverse, underline, invisible, blink	
9 Underline, dim	20 Reverse, invisible	31 Reverse, underline, invisible, blink dim	
10 Underline, blink	21 Reverse, invisible, dim		
Enable top half of double-high, double-wide line	DECDHL	ESC # 3	
Enable bottom half of double-high, double-wide line	DECDHL	ESC # 4	
Enable single-high, single-wide line	DECSWL	ESC # 5	
Enable single-high, double-wide line	DECDWL	ESC # 6	
Enable top half of double-high, single-wide line	WYDHL	ESC # :	
Enable bottom half of double-high, single-wide line	WYDHL	ESC # ;	
<b>Controlling the Cursor</b>			
Cursor right one column		ESC [ C	ESC C
Cursor right <i>Pn</i> columns	CUF	ESC [ <i>Pn</i> C	
Cursor left one column	BS	CTRL H	CTRL H or ESC D
Cursor left <i>Pn</i> columns	CUB	ESC [ <i>Pn</i> D	
Cursor up one line; no scroll			ESC A
Cursor up one line; scroll	RI	ESC M	ESC I
Cursor up <i>Pn</i> lines	CUU	ESC [ <i>Pn</i> A	
Cursor up <i>Pn</i> lines and to column 1	CPL	ESC [ <i>Pn</i> F	
Cursor down <i>Pn</i> lines and to column 1	CNL	ESC [ <i>Pn</i> E	
Cursor down one line; scroll	IND	ESC D	

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
Cursor down one line; scroll	LF	CTRL J or CTRL K or CTRL L	CTRL J or CTRL K or CTRL L
Cursor down one line; no scroll			ESC B
Cursor down <i>Pn</i> lines	CUD	ESC [ <i>Pn</i> B	
Cursor to start of line	CR	CTRL M	CTRL M
Cursor to start of next line; scroll	NEL	ESC E	
Cursor to column <i>Pn</i>	CHA	ESC [ <i>Pn</i> G	
Cursor to line <i>Pn</i> ; column <i>Pn</i>	CUP HVP	ESC [ <i>Pn</i> ; <i>Pn</i> H or ESC [ <i>Pn</i> ; <i>Pn</i> f	ESC Y <i>line col</i> <sup>19</sup>
<b>Editing</b>			
Home cursor			ESC H
Set tab stop at cursor position	HTS	ESC H	
Clear tab stop at cursor position	TBC	ESC [ 0 g	
Clear all tab stops	TBC	ESC [ 3 g	
Move cursor to next tab stop, or right margin	HT	CTRL I	CTRL I
Move cursor forward <i>Pn</i> tab stops	CHT	ESC [ <i>Pn</i> I	
Move cursor backward <i>Pn</i> tab stops	CBT	ESC [ <i>Pn</i> Z	
Insert <i>Pn</i> null characters beginning at cursor column	ICH	ESC [ <i>Pn</i> @	
Insert <i>Pn</i> lines of null characters beginning at cursor line	IL	ESC [ <i>Pn</i> L	
Delete <i>Pn</i> lines beginning at cursor line	DL	ESC [ <i>Pn</i> M	
Delete <i>Pn</i> characters beginning at cursor column	DCH	ESC [ <i>Pn</i> P	
Erase in display	ED		
From cursor to end of screen		ESC [ 0 J	ESC J
From beginning through cursor		ESC [ 1 J	
Entire screen		ESC [ 2 J	
Erase only normally enhanced data (WY-75 personality only)	DECSKD		
From cursor to end of screen		ESC [ ? 0 J	
From beginning through cursor		ESC [ ? 1 J	
Entire screen		ESC [ ? 2 J	

19. *line* and *col* are the hexadecimal codes for the line or column number plus 1FH (or the ASCII line and column codes in Appendix E).

Table F-1 ANSI Commands, Continued

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
Erase in line	EL		
From cursor to end of line		ESC [ 0 K	ESC K
From start of line through cursor		ESC [ 1 K	
Entire line		ESC [ 2 K	
Erase only normally enhanced data in line (WY-75 personality only)	DECSEL		
From cursor to end of line		ESC [ ? 0 K	
From start of line through cursor		ESC [ ? 1 K	
Entire line		ESC [ ? 2 K	
Erase <i>Pn</i> characters beginning at cursor column	ECH	ESC [ <i>Pn</i> X	
<b>Sending/Printing Data</b>			
Media copy	MC	ESC [ <i>Ps</i> i	
<i>Ps</i>	<b>Action</b>		
0	Copy entire screen display to printer port		
2	Copy entire screen display to data port		
4	Turn off transparent print mode		
5	Turn on transparent print mode		
?1	Copy cursor line to printer port		
?3	Copy cursor line to data port		
?4	Turn off auxiliary print mode		
?5	Turn on auxiliary print mode		
Send cursor character (WY-75 personality only)	WYXCH	ESC 5	
Copy screen display to printer port			ESC ]
Copy cursor line to printer port			ESC V
Auxiliary print mode on			ESC ^
Auxiliary print mode off			ESC _
Transparent print mode on			ESC W
Transparent print mode off			ESC X
<b>Character Sets</b>			
Select G0 character set	SCS	CTRL O	CTRL O
Select G1 character set	SCS	CTRL N	CTRL N
Select ANSI Graphics character set	SCS		ESC F
Select Standard ANSI character set	SCS		ESC G

**Table F-1 ANSI Commands, Continued**

Function	Mnemonic	Command Sequence WY-75/VT100	VT52
Change G0 character set to ANSI Graphics set	SCS	ESC ( 0	
Change G0 character set to UK ANSI set	SCS	ESC ( A	
Change G0 character set to Standard ANSI set	SCS	ESC ( B	
Change G1 character set to ANSI Graphics set	SCS	ESC ) 0	
Change G1 character set to UK ANSI set	SCS	ESC ) A	
Change G1 character set to Standard ANSI set	SCS	ESC ) B	



□ **Note** In the following illustration, DEC = decimal, HEX = hexadecimal. Read across, then down.

DEC	HEX	0	1	2	3	4	5	6	7
0	0				0	@	P	'	p
1	1	!	1	A	Q	a	q		
2	2	"	2	B	R	b	r		
3	3	#	3	C	S	s	c	s	
4	4	\$	4	D	T	t	d	t	
5	5	%	5	E	U	u	e	u	
6	6	&	6	F	V	v	f	v	
7	7	'	7	G	W	w	g	w	
8	8	(	8	H	X	x	h	x	
9	9	)	9	I	Y	y	i	y	
10	A	<	A	J	Z	z	j	z	
11	B	>	B	[	]	]	k	{	
12	C	,	C	[	\	]	l		
13	D	=	D	[	]	]	m	}	
14	E	.	E	[	]	]	n	~	
15	F	/	F	[	]	]	o		

Standard ANSI

DEC	HEX	0	1	2	3	4	5	6	7
0	0				0	@	P	'	p
1	1	!	1	A	Q	a	q		
2	2	"	2	B	R	b	r		
3	3	#	3	C	S	s	c	s	
4	4	\$	4	D	T	t	d	t	
5	5	%	5	E	U	u	e	u	
6	6	&	6	F	V	v	f	v	
7	7	'	7	G	W	w	g	w	
8	8	(	8	H	X	x	h	x	
9	9	)	9	I	Y	y	i	y	
10	A	<	A	J	Z	z	j	z	
11	B	>	B	[	]	]	k	{	
12	C	,	C	[	\	]	l		
13	D	=	D	[	]	]	m	}	
14	E	.	E	[	]	]	n	~	
15	F	/	F	[	]	]	o		

UK ANSI

DEC	HEX	0	1	2	3	4	5	6	7
0	0				0	@	P	'	p
1	1	!	1	A	Q	a	q		
2	2	"	2	B	R	b	r		
3	3	#	3	C	S	s	c	s	
4	4	\$	4	D	T	t	d	t	
5	5	%	5	E	U	u	e	u	
6	6	&	6	F	V	v	f	v	
7	7	'	7	G	W	w	g	w	
8	8	(	8	H	X	x	h	x	
9	9	)	9	I	Y	y	i	y	
10	A	<	A	J	Z	z	j	z	
11	B	>	B	[	]	]	k	{	
12	C	,	C	[	\	]	l		
13	D	=	D	[	]	]	m	}	
14	E	.	E	[	]	]	n	~	
15	F	/	F	[	]	]	o		

ANSI Graphics

Table F-2 Mnemonic Names

Mnemonic*	Name	Mnemonic*	Name
BEL	Bell	ERM	Erase Mode
BS	Backspace	FEAM	Format Effector Action Mode
CAN	Cancel	GATM	Guarded Area Transfer Mode
CBT	Cursor Backward Tabulation	HT	Horizontal Tab
CHA	Cursor Horizontal Absolute	HTS	Horizontal Tabulation Set
CHT	Cursor Horizontal Tabulation	HVP	Horizontal and Vertical Position
CNL	Cursor Next Line	ICH	Insert Character
CPL	Cursor Preceding Line	IL	Insert Line
CR	Carriage Return	IND	Index
CRM	Control Representation Mode	IRM	Insertion-Replacement Mode
CUB	Cursor Backward	KAM	Keyboard Action Mode
CUD	Cursor Down	LF	Line Feed
CUF	Cursor Forward	LNM	Line Feed New Line Mode
CUP	Cursor Position	MC	Media Copy
CUU	Cursor Up	NEL	Next Line
DA	Device Attributes	NP	Next Page
DC1	Device Control 1	PP	Preceding Page
DC3	Device Control 3	RI	Reverse Index
DCH	Delete Character	RIS	Reset to Initial State
DECALN	Screen Alignment Display	RM	Reset Mode
DECANM	ANSI/VT52 Personality	SCS	Select Character Set
DECARM	Auto Repeat Mode	SGR	Select Graphic Rendition
DECAWM	Autowrap Mode	SM	Set Mode
DECCKM	Cursor Keys Mode	SRM	Send-Receive Mode
DECCOLM	Column Mode	SUB	Substitute
DECDHL	Double-Height Line	TBC	Tabulation Clear
DECDWL	Double-Width Line	TTM	Transfer Termination Mode
DECEDM	Editing Mode	VT100	VT100 Personality
DECID	Identify Terminal	WY60	WY-60 Personality
DECKPAM	Keypad Application Mode	WY75	WY-75 Personality
DECKPNM	Keypad Numeric Mode	WYCLRM	Width-Change-Clear Disable Mode
DECLL	Load LEDs	WYCRTSAVM	CRT Saver Mode
DECOM	Origin Mode	WYDELAY	Delay Processing
DECPEX	Print Extent	WYDHL	Double High Line
DECFFF	Printer Form Feed	WYDP	MODEM/AUX Data Port
DECRC	Restore Cursor	WYDSCM	Disable Screen Mode
DECS	Save Cursor	WYFDAT	Field Attribute
DECSCLM	Scrolling Mode	WYID	Terminal Identification
DECSNM	Screen Mode	WYNNAT	Define Enhance Attribute
DECED	Selective Erase in Display	WYRC	Restore Cursor
DECSEL	Selective Erase in Line	WYSC	Save Cursor
DECSTBM	Set Top and Bottom Margins	WYSEDL	Select Extra Data Line
DECSWL	Single-Width Line	WYSL44	Select 44 Lines
DECTCEM	Text Cursor Enable	WYSTCURM	Steady Cursor Mode
DL	Delete Line	WYSTLINM	Status Line Display Mode
DSR	Device Status Report	WYSTR	Soft Terminal Reset
ED	Erase in Display	WYTLOAD	Text Load
EL	Erase in Line	WYULCURM	Underline Cursor Mode
ENQ	Enquiry	WYXCH	Transmit Character

\* Mnemonics beginning with "WY" are Wyse Technology private mnemonics; those beginning with "DEC" are Digital Equipment Corporation private mnemonics; all others are ANSI mnemonics.

Table F-3 Function Key Default Codes

Key	Keyboard Style		AT <sup>1</sup>	Enhanced PC <sup>1</sup>
	WY-60 ASCII/IBM 316X Unshifted	Shifted		
<b>F1</b>	ESC [ ? 5 i <sup>2</sup>	ESC [ 5 i <sup>3</sup>	ESC O P	ESC O P
<b>F2</b>	ESC [ ? 3 i	ESC [ ? 1 i	ESC O Q	ESC O Q
<b>F3</b>	ESC [ 2 i	ESC [ 0 i	ESC O R	ESC O R
<b>F4</b>	ESC [ @	ESC [ L	ESC O S	ESC O S
<b>F5</b>	ESC [ M	ESC [ K	Same	Same
<b>F6</b>	ESC [ 17 ~	ESC [ 31 ~	Same	Same
<b>F7</b>	ESC [ 18 ~	ESC [ 32 ~	Same	Same
<b>F8</b>	ESC [ 19 ~	ESC [ 33 ~	Same	Same
<b>F9</b>	ESC [ 20 ~	ESC [ 34 ~	Same	Same
<b>F10</b>	ESC [ 21 ~	ESC [ 35 ~	Same	Same
<b>F11</b>	ESC [ 23 ~	ESC [ 1 ~		Same
<b>F12</b>	ESC [ 24 ~	ESC [ 2 ~ <sup>4</sup>		Same
<b>F13</b>	ESC [ 25 ~	ESC [ 3 ~ <sup>5</sup>		
<b>F14</b>	ESC [ 26 ~	ESC [ 4 ~		
<b>F15</b>	ESC [ 28 ~	ESC [ 5 ~		
<b>F16</b>	ESC [ 29 ~	ESC [ 6 ~ <sup>6</sup>		

1. On the AT-style and Enhanced PC-style keyboards, function keys **F1** through **F4**, shifted and unshifted, send PF key codes (see Table F-4). The remaining function keys send the same codes as the other keyboards.
2. With auxiliary print mode off. Sends ESC [ ? 4 i if auxiliary print mode is on.
3. With transparent print mode off. Sends ESC [ 4 i if transparent print mode is on.
4. In full duplex mode. In block mode, toggles insert mode.
5. In full duplex mode. In block mode, deletes cursor character.
6. In full duplex mode. In block mode, clears from cursor to end of screen.

Table F-4 Simulated PF-Key Codes

Key	Keyboard Style WY-60 ASCII	IBM 316X	AT	Enhanced PC	Code WY-75/ VT100	VT52
<b>PF1</b>	Ins Char / Ins Line	Jump	<b>F1</b>	<b>F1</b>	ESC O P	ESC P
<b>PF2</b>	Del Char / Del Line	Page	<b>F2</b>	<b>F2</b>	ESC O Q	ESC Q
<b>PF3</b>	Clr Line / Clr Scrn	Send Line	<b>F3</b>	<b>F3</b>	ESC O R	ESC R
<b>PF4</b>	Repl / Insert	Select	<b>F4</b>	<b>F4</b>	ESC O S	ESC S

Table F-5 Keypad Application Mode Codes

Numeric Keypad Key	WY-75 VT100	VT52	Numeric Keypad Key	WY-75 VT100	VT52
*	ESC O l	ESC ? l	4	ESC O t	ESC ? t
.	ESC O l	ESC ? l	5	ESC O u	ESC ? u
-	ESC O m	ESC ? m	6	ESC O v	ESC ? v
.	ESC O n	ESC ? n	7	ESC O w	ESC ? w
0	ESC O p	ESC ? p	8	ESC O x	ESC ? x
1	ESC O q	ESC ? q	9	ESC O y	ESC ? y
2	ESC O r	ESC ? r	Enter <sup>3</sup>	ESC O M	ESC ? M
3	ESC O s	ESC ? s			

1. AT-style and Enhanced PC-style keyboards only.

2. WY-60 ASCII and 316X-style keyboards only.

3. Not applicable to AT-style keyboard.

Table F-6 Editing and Special Key Codes<sup>1</sup>

Key <sup>2</sup>	Keyboard Style			
	WY-60 ASCII	IBM 316X	AT	Enhanced PC
Backspace	CTRL H	CTRL H	CTRL H	CTRL H
Break	Local <sup>3</sup>	Local <sup>3</sup>		Local <sup>3</sup>
Shift   Break	Local <sup>4</sup>	Local <sup>4</sup>		Local <sup>4</sup>
Clr Line   Clr Scrn <sup>5</sup>	ESC O R			
▲ <sup>6</sup>	ESC [ A	ESC [ A	ESC [ A	ESC [ A
▼ <sup>6</sup>	ESC [ B	ESC [ B	ESC [ B	ESC [ B
▶ <sup>6</sup>	ESC [ C	ESC [ C	ESC [ C	ESC [ C
◀ <sup>6</sup>	ESC [ D	ESC [ D	ESC [ D	ESC [ D

1. Unless otherwise noted, codes are for both the unshifted and shifted key. Codes for keys located on the numeric keypad apply only in numeric keypad mode and only when NUM LOCK is off on the AT-style and Enhanced PC-style keyboards.

2. Keys are listed alphabetically.

3. Sends break to MODEM port. Length depends on Break parameter selection in setup mode.

4. Sends two-second disconnect break to MODEM port.

5. In VT52 personality, the O is not sent.

6. In VT52 personality, [ is not sent. In WY-75 and VT100 personalities, [ is replaced with O when cursor key mode is on.

**Table F-6 Editing and  
Special Key Codes<sup>1</sup>  
Continued**

Key <sup>2</sup>	Keyboard Style			
	WY-60 ASCII	IBM 316X	AT	Enhanced PC
<b>Del</b>	Local <sup>7</sup>	DEL	DEL	DEL
<b>Shift Del</b>	Local <sup>7</sup>	CTRL X	CTRL X	CTRL X
<b>Del Char / Del Line<sup>5</sup></b>	ESC O Q			
<b>Enter<sup>8</sup></b>	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I
<b>Esc ESC</b>	CTRL [	CTRL [	CTRL [	CTRL [
<b>Funct</b>	Local <sup>9</sup>			
<b>Hold</b>	Local <sup>9</sup>			
<b>Home<sup>6</sup></b>	ESC [ H	ESC [ H	ESC [ H	ESC [ H
<b>Ctrl Shift Home<sup>10</sup></b>	Local	Local	Local	Local
<b>Ins Repl<sup>5</sup></b>	ESC O S			
<b>Ins Char / Ins Line<sup>5</sup></b>	ESC O P			
<b>LF</b>	CTRL J			
<b>Page Next / Page Prev</b>	CTRL J			
<b>Print</b>	CTRL X			
<b>Reset</b>	Local <sup>11</sup>			
<b>Return<sup>12</sup></b>	CTRL M or CTRL M CTRL J or CTRL I	CTRL M or CTRL M CTRL J or CTRL I		
<b>Scroll Lock</b>			Local <sup>9</sup>	Local <sup>9</sup>
<b>Select</b>				Local <sup>11</sup>
<b>Shift Select</b>				Local <sup>13</sup>

7. Toggles block mode.

8. Code depends on Enter parameter selection in setup mode.

9. Action or code depends on Corner Key parameter selection in setup mode.

10. Homes cursor and clears screen.

11. Clears modes and error conditions.

12. Code depends on Return parameter selection in setup mode.

13. Puts terminal in setup mode.

**Table F-6 Editing and  
Special Key Codes<sup>1</sup>  
Continued**

Key <sup>2</sup>	Keyboard Style			Enhanced PC
	WY-60 ASCII	IBM 316X	AT	
<b>Send</b>	DEL			
<b>Setup</b>	Local <sup>11</sup>	Local <sup>13</sup>		
<b>Shift Setup</b>	Local <sup>13</sup>			
<b>Sys Req</b>			Local <sup>11</sup>	
<b>Shift Sys Req</b>			Local <sup>13</sup>	
<b>Tab</b> <i>right</i>	CTRL I	CTRL I	CTRL I	CTRL I
<b>Tab</b> <i>left</i> <sup>14</sup>		ESC [ Z		
<b>Shift Tab</b> <sup>14</sup>	ESC [ Z	ESC [ Z	ESC [ Z	ESC [ Z

14. In VT52 personality, always sends CTRL I; in WY-75 and VT100 personalities, [ is replaced with O when cursor key mode is on.

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**FCC NOTICE**

**WARNING:** This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operating in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Only devices certified to comply with the limits for a Class A computing device may be attached to this equipment. Operation with noncertified device(s) is likely to result in interference to radio and TV reception.

This equipment is intended for commercial use only and is not suited for operation in Class B environments.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC rules.

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**CANADIAN DOC NOTICE**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

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