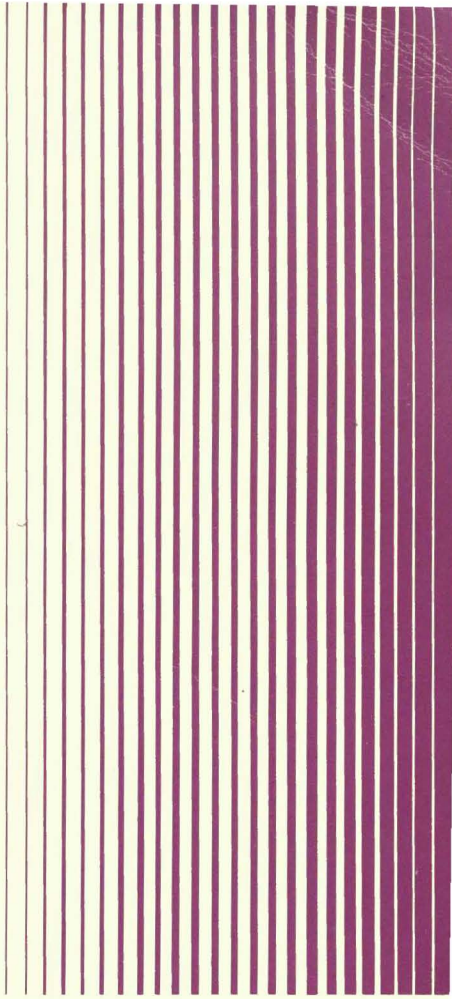

WY-150
User's Guide

WYSE

WYSE TECHNOLOGY
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Overview

INTRODUCTION

This powerful, ergonomic terminal supports a broad range of ASCII, ANSI, and PC terminal personalities (operating modes).

Chapters 1 and 2 present the basic information you'll need to install and set up the terminal. The appendixes contain technical reference material, including the commands supported by the terminal in each personality.

More detailed information on how to take advantage of the terminal's features in your computer programs is contained in a separate programmer's guide available through your sales representative.

CONVENTIONS

The term *native personality* refers to the terminal's normal operating mode; otherwise, 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 ASCII and ANSI keyboards is shown first, followed by a symbol in parentheses for the Enhanced PC-style keyboard if the key is different. For example,

  [Setup] ([Select])

  identifies [Setup] on the ASCII and ANSI keyboards 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 symbol will not look exactly like the actual key, and the action of other keys may be implied. For example,
  - [Print] on the ASCII keyboard is the upper name on the key that is also marked [Send]. When [Print] appears in the text,

it means the key pressed simultaneously with [Shift]; when [Send] appears in the text, it means the same key by itself (unshifted).

- [Break] on the Enhanced PC-style keyboard appears on the front face of the key that is also marked [Pause], meaning that to access the break function on this keyboard [Ctrl] is pressed simultaneously. When [Break] appears in the text, it means the key pressed together with [Ctrl]; when [Pause] appears in the text, it means the same key by itself.

- The italic *kpd* identifies keys on the numeric keypad.

Table of Contents

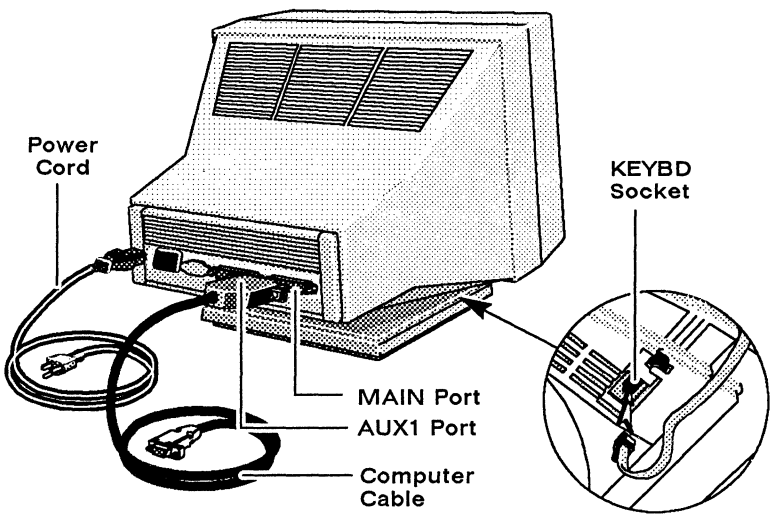
1 Installing the Terminal

CONNECTING THE TERMINAL

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

■ **Caution** Don't plug in the terminal until you have completed steps 2 through 5.

2 Connect the terminal to your computer or modem with a shielded serial interface cable (fitted with a male 25-pin connector on the terminal end). If you plan to connect a parallel printer directly to the terminal, you'll need another shielded cable with a male connector on the terminal end.



3 Plug the keyboard cable into the socket labeled KEYBD.

4 Connect the computer cable to the MAIN (serial) port and, if you are installing a printer, connect the parallel printer cable to the AUX1 (parallel) port.

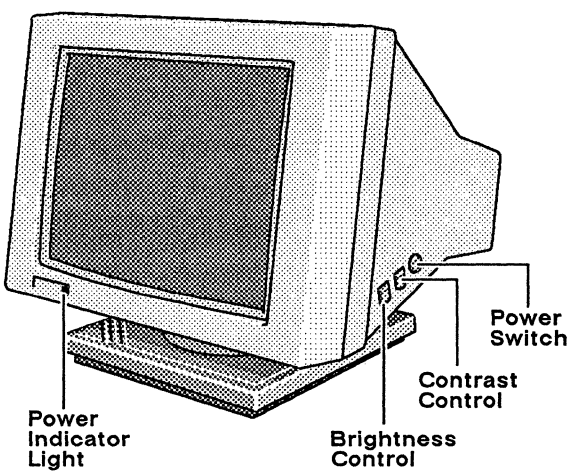
■ **Caution** Do not plug the computer cable or any serial device into the AUX1 port or a parallel printer cable into the MAIN port—doing so may permanently damage the equipment.

5 Plug the power cord into the terminal's power connector and into a three-pronged grounded power outlet.

☐ **Note** Make sure your building's voltage matches the voltage shown on the back of the terminal.

TURNING ON THE TERMINAL

Press the power button to turn on the terminal. You'll see the LED power indicator and hear an immediate beep if the terminal has received power.



☐ **Note** The position of the power switch and the control buttons on your terminal may differ slightly from the illustration. The functions, however, remain the same.

☐ **Note** If the bell sounds and an A, a, b, C, c, d, E, W, X, Y, or Z appears at the bottom of the screen, press [Setup] ([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, 2, or P appear, call your service representative—the terminal needs to be serviced by a qualified technician.

ADJUSTING THE TERMINAL

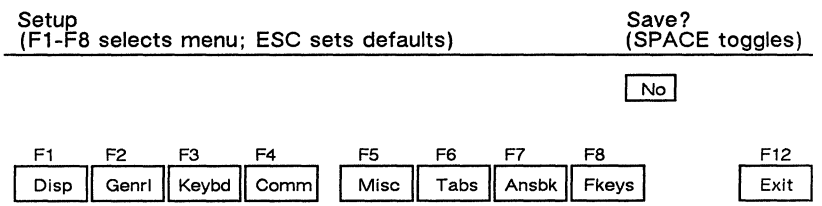
Adjust the screen's brightness and contrast with the appropriate controls on the right side of the terminal.

2 Configuring the Terminal

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

ENTERING AND LEAVING SETUP MODE

If you are using an ASCII or ANSI keyboard, enter setup mode by pressing [Shift] and [Setup] simultaneously (or [Ctrl] [Setup] if the terminal is in PC Term personality or if the keycode parameter is set to *scan*). If you are using the Enhanced PC-style keyboard, enter setup mode by pressing [Shift] [Select] (or [Ctrl] [Select] if the terminal is in PC Term personality or if the keycode parameter is set to *scan*). Data on the screen disappears, and the *top setup level* screen appears; the data is restored when the terminal returns to normal operating mode.



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

- The fields at the bottom of the screen name the various setup levels where you can change the terminal's operating parameters and the function key you press to access each level.

- The highlighted field at the right of the screen gives you the choice of saving or not saving changes in nonvolatile memory when you return the terminal to the normal operating mode.
- Pressing [Esc] restores all settings to their default values.

To leave setup mode, press [Spacebar] to toggle the highlighted save option at the right side of the screen and press [F12]. The following table explains the function of each option.

Table 2–1 Top Level Exit Functions

Option	Function
No	Returns the terminal to its normal operating mode without saving the parameter changes for power-on.
Yes	Saves all changes (operating parameters, tabs, key definitions, and answerback message); returns the terminal to its normal operating mode.
ESC	Restores all settings (operating parameters, tabs, key definitions, and answerback message) to their default values.

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 [F12] always returns you to the top level.

The parameters for each level are explained below.

☐ **Note** Explanations of setup parameters apply to the terminal's native mode. If you select a parameter setting that's invalid for the current personality, the terminal defaults to a valid setting upon leaving setup mode.

[F1]—Display Setup Level

Columns sets the screen display for **80** columns, **132** columns, or **Econ-80** (80 columns with more pages of memory).

Lines sets the screen display for **24** or **25** lines.

Page sets the length of a page of display memory to **1 x Lines** (equal to the number of lines selected in the lines parameter), **2 x Lines** (two times the value of the lines parameter), **4 x Lines** (four times the value of the lines parameter), or * (equal to the value of the lines parameter, with a second page containing the rest of the lines remaining in memory).

Cursor sets the cursor display to blink or steady, block or underline.

Display sets the screen display to **Dark** (light characters on a dark background) or **Light** (dark characters on a light background).

Autopage causes a new page of memory to move onto the screen when the cursor reaches the top or bottom of the page.

Scrn Saver prolongs the life of the phosphor by blanking the screen when the terminal receives no data for approximately 15 minutes (no data is lost). Press Shift to restore the screen display.

Char Cell sets the character cell size to **10 x 16** (60 Hz) or **10 x 13** (78 Hz).

80/132 Clr causes the terminal to clear the screen when executing a command to change the number of columns.

F2—General Setup Level

Personality sets the terminal's operating mode to **Wyse 150** (native personality), **Wyse 50+** (WY-50, WY-50+, WY-100, ADM 31/5/3a), TeleVideo **TVI 925** or **TVI 910+** (includes 910), **PC TERM**inal, **ADDS A2**, or DEC **VT 100** or **VT 52.**

Scrl sets the display scroll rate to **Jump** (the rate data is received), **Smth-8** (eight lines per second), **Smth-4**, **Smth-2**, or **Smth-1**.

Rcv CR causes the cursor to move to the beginning of the current line (**CR**) or the beginning of the next line (**CRLF**) when the terminal receives an ASCII CR character.

Enhance allows the terminal to recognize an enhanced set of codes when the terminal is in nonnative personalities.

Autoscrl causes the data to scroll up a line when the cursor moves past the last line of the page.

Monitor causes the terminal to display symbols for escape sequences and control codes without acting on them.

Status Line turns on the status line display (top line of the screen).

Wrap EOL causes the cursor to move to the start of the next line when additional characters are entered at the end of a line.

F3—Keyboard Setup Level

Keyclick sets the terminal to sound a muted beep each time a key is pressed or repeated.

Xmt Lim causes the terminal to send data through the MAIN port as fast as the baud rate allows (**None**) or at a maximum rate of **35 cps**, **60 cps**, or **150 cps**.

Repeat causes the keys to repeat when they are held down for more than half a second.

Margin Bell sets the terminal's bell to ring when the cursor reaches the column where the bell is set (default is column 72 in 80-column mode or 124 in 132-column mode).

Keycode sets the terminal to send normal ASCII characters (**ASCII**) or PC-type scan codes for every key up/down (**Scan**).

Bell Volume sets the bell and keyclick volume to **Off**, low (**1**), medium (**2**), or loud (**3**).

F4—Communication Setup Level

Baud Rate sets the MAIN port baud rate to **50**, **75**, **110**, **134.5** **150**, **300**, **600**, **1200**, **1800**, **2400**, **3600**, **4800**, **9600**, **19200**, or **38400.**

Rcv Hndshk allows the terminal to control the receipt of data from a device connected to the MAIN port with no handshaking (**None**), **XON/XOFF** handshaking, **DTR** handshaking, both XON/XOFF and DTR handshaking (**DTR/XOFF**), or by sending special codes (**XPC**). XPC is possible only when the personality parameter is set to PC Term.

Data/Parity causes the terminal to send and receive 8-bit data with no parity (**8/None**) or 7-bit data with odd (**7/Odd**), even (**7/Even**), space (**7/Space**), or mark (**7/Mark**) parity.

Xmt Hndshk causes the terminal, when sending data to a device connected to the MAIN port, to ignore all incoming software

handshaking signals (**None**) or to respond to **XON/XOFF** handshaking.

Stop Bits selects either **1** or **2** stop bits.

Comm sets the terminal's communication mode to full duplex (**FDX**), block (**BLK**), half duplex (**HDX**), or half-duplex block (**HBLK**).

F5—Miscellaneous Setup Level

WPRT Intensity sets write-protected characters to appear **Dim**, **Normal**, or **Blank**.

Blk End selects the ASCII terminator character sent by the terminal at the end of a block transmission to the computer: **US/CR** (US at the end of each line and CR at the end of the block) or **CRLF/ETX** (CR and LF at the end of each line and ETX at the end of the block.

WPRT Rev sets write-protected characters to appear in reverse (dark characters on a light background).

Attribute sets display attributes to be assigned to each character as it is entered (**Char**), to be active to the end of the line (**Line**), or to be active to the end of the page (**Page**).

WPRT Undrln sets write-protected characters to appear underlined.

F6—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 2 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 on the right side 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 set tabs to the default setting (every eighth column), press Backspace.

☐ **Note** A tab stop cannot be set in column 1.

F7—Answerback Setup Level

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.

Conceal hides the answerback message so it is not displayed in setup mode.

The message shares approximately 600 bytes of nonvolatile memory with the key redefinitions. To save the message in nonvolatile memory, exit setup mode with the YES option.

F8—Function Key Definition Setup Level

You can redefine the function keys and many of the editing keys to send a unique character string of up to 64 characters. Table 2-2 lists the redefinable keys.

Direction determines where the key data is sent: **Remote** sends data to the computer only, regardless of the terminal's communication mode. (Until redefined, the direction of all the redefinable keys is remote.) **Normal** sends data to the computer and/or the terminal, depending on the terminal's communication mode. **Local** sends data to the terminal only, regardless of the terminal's communication mode.

Table 2-2 Redefinable Keys

ASCII Keyboard	ANSI Keyboard	Enhanced PC-Style Keyboard
▲	▲	↑
▼	▼	↓
▶	▶	→
◀	◀	←
Backspace	Backspace	← Backspace
Clr Line	Block	Delete

Table 2–2 Redefinable Keys Continued

ASCII Keyboard	ANSI Keyboard	Enhanced PC-Style Keyboard
Clr Scrn	Delete	End
Del	Enter	Enter↵
Del Char	Esc	Enter *kpd*
Del Line	F1 through F16	Esc
Enter	Home	F1 through F12
Esc	Line Feed	Home
F1 through F16	Local	Insert
Home	PF1	Page Down
Ins	PF2	Page Up
Ins Char	PF3	Print Screen
Ins Line	PF4	Tab
Page Prev	Return	
Page Next	Tab	
Print		
Repl		
Return		
Send		
Tab		

To redefine a key,

1 Select the key to be redefined by pressing that key together with Ctrl. This highlights the key's definition field.

2 Press ▲ (↑) to select the shifted or unshifted 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.

5 To send the key's new definition, simply press the redefined key. If the terminal is in PC Term mode, press Setup (Select) together with the redefined key.

Appendix

A Pin Assignments

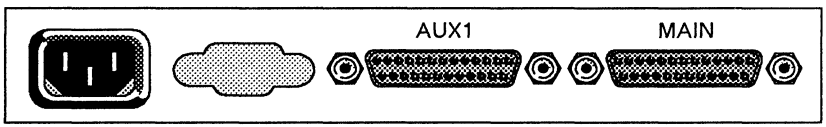
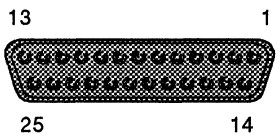


Figure A-1 MAIN Port Connector Pin Assignments (Serial, DTE)

	Pin	Signal Name	Pin	
Terminal RS-232C Connector	1	Shield ground	1	Computer or other Serial Device
	2	Transmit data	2	
	3	Receive data	3	
	4	Request to send	4	
	5	Clear to send	5	
	7	Signal ground	7	
	8	Data carrier detect	8	
	20	Data terminal ready	20	

☐ **Note** The AUX1 port is compatible with the IBM PC parallel port (LPT 1).

Figure A-2 AUX1 Port Connector Pin Assignments (Parallel) [1]



Terminal Parallel Printer Connector	Pin	Signal Name[2]	Pin	Printer with Parallel Connector
	1	– Strobe	1	
	2	+ Data bit 0	2	
	3	+ Data bit 1	3	
	4	+ Data bit 2	4	
	5	+ Data bit 3	5	
	6	+ Data bit 4	6	
	7	+ Data bit 5	7	
	8	+ Data bit 6	8	
	9	+ Data bit 7	9	
	10	– Acknowledge	10	
	11	+ Busy	11	
	12	+ Paper end	12	
	15	– Error	32	
	17-25	Ground	17-25	

1. All inputs are real-time (nonlatched) signals.
2. All are Standard TTL Levels.

Appendix

B Key Codes

Keys send PC scan codes or standard ASCII characters according to the setting of the keycode parameter in setup mode.

PC scan codes send a down code when the key is pressed and an up code when the key is released.

Figure B-1 shows the Enhanced PC-style keyboard with PC scan codes. Figure B-2 shows the ASCII keyboard scan codes. Figure B-3 shows the ANSI keyboard scan codes. The down code is shown; the high bit is set when the key is released.

Tables B-1 and B-2 show the standard ASCII key codes for editing and special keys on each keyboard in the terminal's native personality.

Figure B-1 Enhanced PC-Style Keyboard with Scan Codes

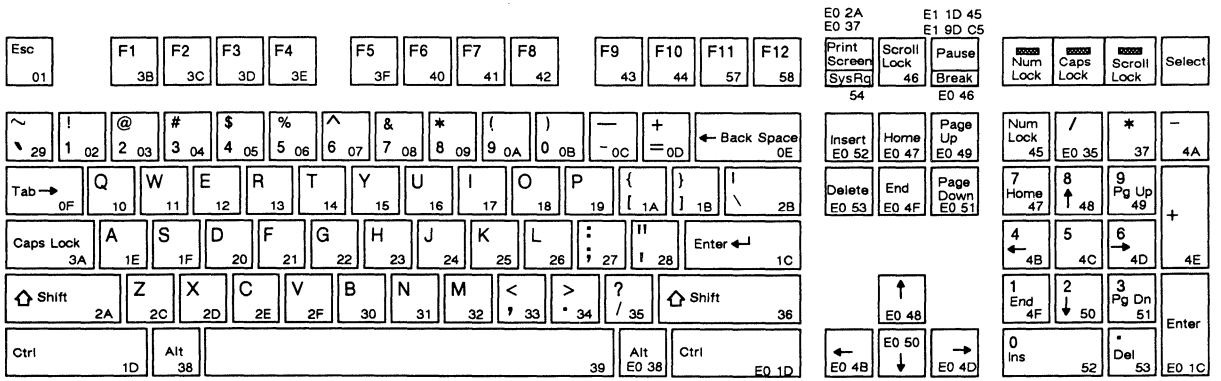


Table B-1 Standard ASCII Key Codes—Enhanced PC-Style Keyboard

Key	Native Code[1]	Hex Value
◄ Backspace	CTRL H	08
↑	CTRL K	0B
↓	CTRL J	0A
→	CTRL L	0C
←	CTRL H	08
Del *kpd*	DEL	7F
Delete	DEL	7F
Shift Delete	ESC R	1B 52
End	ESC T	1B 54
Shift End	ESC Y	1B 59
Enter↵	CTRL M	0D
Enter *kpd*[2]	CTRL M	0D
Esc	CTRL [	1B
Home	CTRL ^	1E
Ins *kpd*	ESC r	1B 72
Shift Ins *kpd*	ESC q	1B 71
Insert	ESC q	1B 71
Shift Insert	ESC r	1B 72
Page Down	ESC K	1B 45
Page Up	ESC J	1B 4A
Print Screen	ESC P	1B 50
Tab→	CTRL I	09
Shift Tab→	ESC I	1B 49

1. Unless otherwise noted, shifted keys send the same code as unshifted.
2. Shifted key sends no code (toggles keyclick).

Figure B-2 ASCII Keyboard with Scan Codes

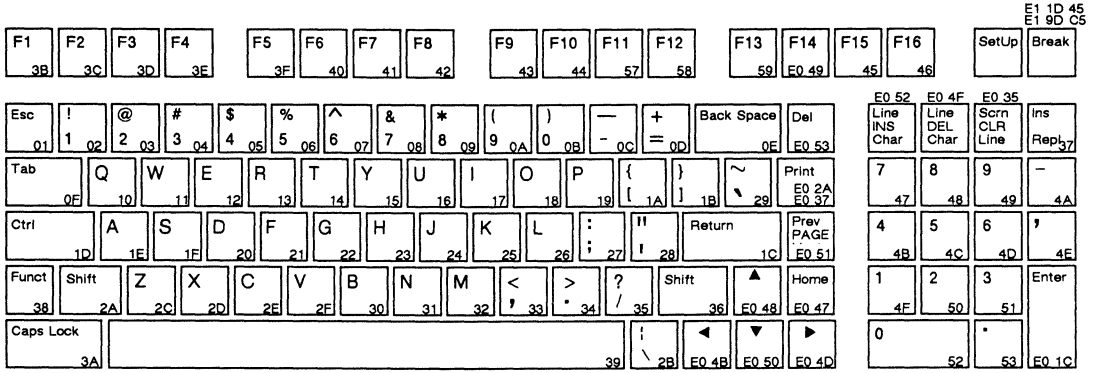


Figure B-3 ANSI Keyboard with Scan Codes

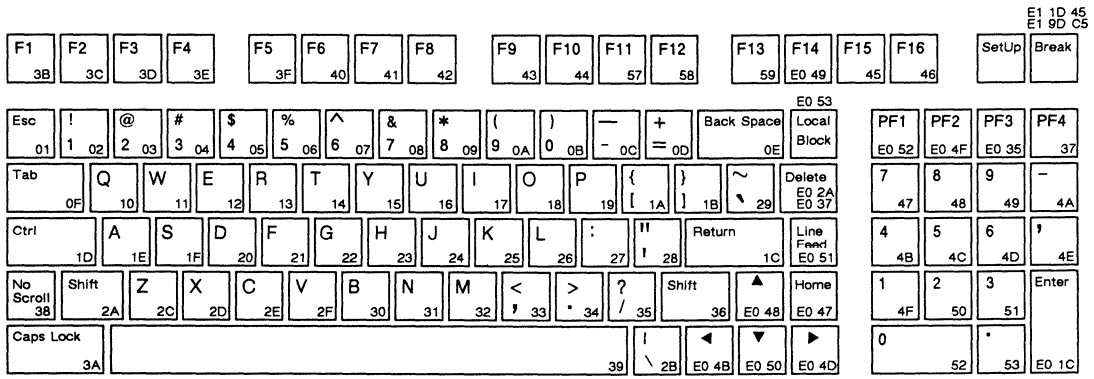


Table B-2 Standard ASCII Key Codes—ASCII and ANSI Keyboards

ASCII Keyboard	ANSI Keyboard	Native Code	Hex Value
Backspace	Backspace	CTRL H	08
Clr Line	PF3	ESC T	1B 54
Clr Scrn	Shift PF3	ESC Y	1B 59
▲	▲	CTRL K	0B
▼	▼	CTRL J	0A
▶	▶	CTRL L	0C
◀	◀	CTRL H	08
Del	Block	DEL	7F
Del Char	PF2	ESC W	1B 57
Del Line	Shift PF2	ESC R	1B 52
Enter *	Enter *	CTRL M	0D
Esc	Esc	CTRL [	1B
Home	Home	CTRL ^	1E
Shift Home	Shift Home	ESC {	1B 7B
Ins	Shift PF4	ESC q	1B 71
Ins Char	PF1	ESC Q	1B 51
Ins Line	Shift PF1	ESC E	1B 45
Page Next	Line Feed	ESC K	1B 4B
Page Prev	Shift Line Feed	ESC J	1B 4A
Print	Shift Delete	ESC P	1B 50
Repl	PF4	ESC r	1B 72
Return	Return	CTRL M	0D
Send	Delete	ESC 7	1B 37
Tab	Tab	CTRL I	09
Shift Tab	Shift Tab	ESC I	1B 49

* Shifted key sends no code (toggles keyclick).

Appendix C Local Keyboard Commands

Table C-1 Native Mode Local Keyboard Commands by Keyboard Style

Command	ASCII	ANSI	Enhanced PC-Style
Toggle SHIFT LOCK on/off	Caps Lock	Caps Lock	Caps Lock
Toggle NUM LOCK on/off			Num Lock
Send function sequence[1]	Funct	No Scroll	Alt
Put terminal in setup mode	Shift Setup or Ctrl Setup[2]	Shift Setup or Ctrl Setup[2]	Shift Select or Ctrl Select[2]
Partially reset terminal, including communication; unlock keyboard, and turn off all print modes	Setup	Setup	Select
Send break	Break	Break	Break
Toggle block/full-duplex modes	Shift Break	Shift Break	Shift Break
Print screen formatted	Ctrl Shift . *kpd*	Ctrl Shift . *kpd*	Ctrl Shift . *kpd*
Turn auxiliary print mode on/off	Ctrl Print	Ctrl Shift Delete	Ctrl Shift Print Screen
Turn monitor mode on/off	Ctrl Shift 1 *kpd*	Ctrl Shift 1 *kpd*	Ctrl Shift 1 *kpd*
Turn keyclick on/off	Shift Enter	Shift Enter	Shift Enter
Change status line display (standard, off, extended)	Ctrl ▶	Ctrl ▶	Ctrl →
Turn on instant screen saver[3]	Ctrl Clr Scrn	Ctrl Shift PF3	
Speed scrolling rate	Ctrl Shift ▲	Ctrl Shift ▲	Ctrl Shift ↑
Slow scrolling rate	Ctrl Shift ▼	Ctrl Shift ▼	Ctrl Shift ↓
Home cursor and clear page	Ctrl Shift Home	Ctrl Shift Home	Ctrl Shift Home
Display page of memory[4]	Ctrl *n kpd*	Ctrl *n kpd*	Ctrl *n kpd*
Display next page (or activate other window[5])	Ctrl Page Next	Ctrl Line Feed	Ctrl Page Down
Display previous page (or activate other window[5])	Ctrl Page Prev	Ctrl Shift Line Feed	Ctrl Page Up

1. When key is pressed together with an alphanumeric key, this command sends an ASCII SOH character, the other key's code, and an ASCII CR character.
2. If the terminal is in PC Term personality or if keycode setup parameter is set to scan.
3. SCRN SAVER parameter must be on.
4. n equals the page number 0, 1, or 2.
5. If screen is split.

Appendix D

ASCII Commands

Commands Supported in ASCII Personalities

Support for each command is shown according to the following notations:

- Same = Same as native code (code is native to other terminal also)
- Wyse = Wyse enhancement (code is not native to other terminal but is always executed)
- ENH = Wyse enhancement (code is not native to other terminal but is executed in enhance mode)

A blank in any column indicates that the command is not supported. Variables are shown in italics. Their values are listed in alphabetical order at the end of the table.

Table D-1 Summary of ASCII Commands

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Monitor Mode					
Monitor mode on	ESC U	Same		Same	Same
Monitor mode off	ESC u or ESC X	Same		Same	Same
Selecting Personalities					
Enhance mode off	ESC ~ SP	Same	ENH	ENH	ESC v SP
Enhance mode on	ESC ~ !	Same			ESC v !
Select WY-50+ personality	ESC ~ "	Same	ENH	Wyse	ESC v "
Select TeleVideo 910+ personality	ESC ~ #	Same	ENH	Wyse	ESC v #
Select TeleVideo 925 personality	ESC ~ $	Same	ENH	Wyse	ESC v $
Select ADDS VP A2 personality	ESC ~ %	Same	ENH	Wyse	ESC v %
Select native personality	ESC ~ 4	Same	ENH	Wyse	ESC v 4
Select PC Term personality	ESC ~ 5	Same	ENH	Wyse	ESC v 5

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Select VT52 personality	ESC ~ 6	Same	ENH	Wyse	ESC v 6
Select VT100 personality	ESC ~ ;	Same	ENH	Wyse	ESC v ;
Communicating with the Computer					
Enable transmission	CTRL Q	Same	Same	Same	Same
Stop transmission	CTRL S	Same	Same	Same	Same
Send ACK (if ENH mode on)	CTRL E	Same		Wyse	Same
Full-duplex mode on	ESC C ESC D F	Same		Same	ESC }
Half-duplex mode on	ESC C ESC D H	Same		Same	ESC {
Block mode on	ESC B	Same		Same	ESC B
Half-duplex block mode on	ESC D H ESC B	Same		Same	
Send terminal ID	ESC SP	Same		ESC M	
Block mode off (conversation)					ESC C
Enable DTR MAIN port handshaking					CTRL N
Enable Xon/Xoff MAIN port handshaking					CTRL O
Controlling the Terminal and Keyboard					
Local edit mode on	ESC k	Same		Same	Same
Duplex edit mode on	ESC l	Same		Same	Same
Sound bell	CTRL G	Same	Same	Same	Same
Select bell volume	ESC c \ *volume*	Same	ENH		
Unlock keyboard	CTRL N or ESC "	Same	CTRL B	ESC "	ESC "
Lock keyboard	CTRL O or ESC #	Same	CTRL D	ESC #	ESC #
Keyclick off	ESC e $	Same	ENH	ESC <	ESC <
Keyclick on	ESC e %	Same	ENH	ENH	ESC >
CAPS LOCK on	ESC e &	Same	ENH	ENH	
CAPS LOCK off	ESC e '	Same	ENH	ENH	
Margin bell off	ESC e L	Same	ENH	ENH	ESC n
Margin bell on	ESC e M	Same	ENH	ENH	ESC o
Set margin bell at cursor position	ESC ` J	Same	ENH		
Select standard ASCII key code mode	ESC e H	Same	ENH		
Select PC scan code mode	ESC e I	Same	ENH		
Key repeat off	ESC e ,	Same	ENH	ENH	
Key repeat on	ESC e -	Same	ENH	ENH	

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Read status					ESC [
Default unit					ESC m
Redefining the Keys					
Program function key definition	ESC z *fkey sequence* DEL	Same	ENH	Wyse	
Clear function key definition	ESC z *fkey* DEL	Same	ENH	Wyse	
Program key direction and definition	ESC Z *dir key sequence* DEL or ESC Z *dir fkey sequence* DEL	Same		Wyse	ESC ¦ *p1 p2 sequence* CTRL Y
Read key direction and definition	ESC Z ~ *key* or ESC Z ~ *fkey*	Same		Wyse	
Clear key direction and definition	ESC Z *dir key* DEL or ESC Z *dir fkey* DEL	Same		Wyse	
Screen and Cursor Display					
Screen display off	ESC ` 8	Same	ENH	ESC o	ESC O
Screen display on	ESC ` 9	Same	ENH	ESC n	ESC N
Screen saver off	ESC e P	Same	ENH	ENH	
Screen saver on	ESC e Q	Same	ENH	ENH	
Set reverse screen (light background)	ESC ^ 1	Same	ENH	ESC b	
Restore normal screen (dark background)	ESC ^ 0	Same	ENH	ESC d[1]	
Set scrolling speed and type	ESC ` *scroll*	Same	ENH		
Smooth scrolling on				ESC 8[2]	
Smooth scrolling off				ESC 9[2]	
Set cursor display features	ESC ` *cursor*	Same	ENH	ESC .	ESC .
Cursor display off	ESC ` 0	Same	CTRL W		
Cursor display on	ESC ` 1	Same	CTRL X		
User line display off					ESC e
Select 10 x 16 character cell (60 Hz)	ESC e >	Same	ENH		
Select 10 x 13 character cell (78 Hz)	ESC e ?	Same	ENH		
Displaying the Message Fields					
Status line on (extended)	ESC ` a	Same	ENH		
Status line on (standard)	ESC ` b	Same	ENH		

1. With enhance mode off
2. With enhance mode on

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Status line off	ESC ` c	Same	ENH		
Program/display message on status line	ESC F *message* CR	Same	ENH	ENH	
Program message on unshifted label line	ESC z (*text* CR[3]	Same	ENH	ESC f[2]	ESC f
Program message on shifted label line	ESC z) *text* CR	Same	ENH		
Turn on unshifted label line[3]				ESC g[4]	
Turn off unshifted label line	ESC A 11[3]	Same	ENH	ESC h[4]	
Turn on shifted label line	ESC z P CR	Same			
Turn off shifted label line	ESC z DEL	Same	ENH	ENH	
Clear unshifted label line	ESC z (CR	Same	ENH		
Clear shifted label line	ESC z) CR	Same	ENH	ENH	
Program/display function key label	ESC z *field label* CR	Same	ENH	ENH	
Clear function key label	ESC z *field* CR	Same	ENH	ENH	
Defining the Data Area					
Select 80-column display	ESC ` :	Same	ENH		
Select 132-column display	ESC ` ;	Same	ENH		
80/132 width-change-clear off	ESC e .	Same	ENH		
80/132 width-change-clear on	ESC e /	Same	ENH		
Display 24 data lines[5]	ESC e (	Same	ENH		
Display 25 data lines[5]	ESC e)	Same	ENH		ESC ^
Economy 80-column mode off	ESC e F	Same	ENH		
Economy 80-column mode on	ESC e G	Same	ENH		
Display Memory/Split Screen					
Divide memory into pages	ESC w *length*	Same	ENH		
Display previous page	ESC w B or ESC J[6]	Same	ENH	ESC J	
Display next page	ESC w C or ESC K[6]	Same	ENH[7]	ESC K	
Display page *n*	ESC w *page*	Same	ENH		

3. Automatically displayed in native personalty; may be hidden by assigning blank attribute (ESC A 1 1)
4. In TeleVideo 910+ personalty, enhance mode must be on
5. Screen cleared
6. If screen is not split
7. ESC w C only

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Split screen horizontally (simple split)	ESC x A *line*	Same			
Split screen horizontally (simple split) and clear pages	ESC x 1 *line*	Same			
Split screen horizontally (adjustable split)	ESC x C *line*	Same			
Split screen horizontally (adjustable split) and clear pages	ESC x 3 *line*	Same			
Activate upper window	ESC]	Same			
Activate lower window	ESC }	Same			
Activate other window (or page[6])	ESC J or ESC K	Same	ESC J[2]		
Lower horizontal split	ESC x P	Same			
Raise horizontal split	ESC x R	Same			
Roll window up in page	ESC w E	Same	ENH		
Roll window down in page	ESC w F	Same	ENH		
Redefine screen as one window	ESC x @	Same			
Redefine screen as one window and clear pages	ESC x 0	Same			
Display Attributes					
Assign display attribute to a message field	ESC A *mf attr*	Same		ESC \[1]	
Assign character display attribute	ESC G *attr*	Same	ENH	Same	Same
Character attribute mode off	ESC e 0				
Character attribute mode on	ESC e 1				
Page attribute mode on	ESC e 2	Same	ENH		
Line attribute mode on	ESC e 3	Same	ENH		
Assign write-protected character display attribute	ESC ` *wpca*	Same	ESC 0		
Clear unprotected page to display attribute		ESC ! *attr*	ENH	Wyse	
Assign line attribute	ESC G *lattr*	Same	ENH		
Set tag protect attribute			CTRL N		
Reset tag protect attribute			CTRL O		
Protecting Data					
Write-protect mode off	ESC (	Same	CTRL O	Same	Same
Write-protect mode on	ESC)	Same	CTRL N	Same	Same

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Clear cursor column to write-protected spaces	ESC V	Same	ENH	Same	
Protect mode off	ESC '	Same	ENH	Same	Same
Protect mode on	ESC &	Same	ENH	Same	Same
Graphics Characters					
Line-drawing graphics mode on	ESC H CTRL B	Same		ESC $	ESC $
Line-drawing graphics mode off	ESC H CTRL C	Same		ESC %	ESC %
Display line-drawing graphics character	ESC H *ldraw*	Same			
Controlling the Cursor					
Cursor left (backspace)	CTRL H	Same	Same or CTRL U	Same	Same
Cursor right	CTRL L	Same	CTRL F	Same	Same
Cursor up; no scroll	CTRL K	Same	CTRL Z	Same	Same
Cursor up; scroll (reverse linefeed)	ESC j	Same	ENH	Same	Same
Cursor down; no scroll				CTRL V	CTRL V
Cursor down; scroll (linefeed)	CTRL J	Same	Same	Same	Same
Cursor to start of line	CTRL M	Same	Same	Same	Same
Cursor to start of next line	CTRL _	Same	ENH	Same	Same
Home cursor	ESC { or CTRL ^	Same	ENH or CTRL A	Wyse Same	CTRL ^
Cursor to specific column			CTRL P *col*	ESC]	
Cursor to specific line			CTRL K *line*	ESC [	
End-of-line wrap off	ESC d .	Same	ENH		ESC 0
End-of-line wrap on	ESC d /	Same	ENH		ESC -
Received CR mode = CR	ESC e 4	Same	ENH	ENH	ESC 9
Received CR mode = CRLF	ESC e 5	Same	ENH	ENH	ESC 8
Autopage mode off	ESC d *	Same	ENH	ESC w	
Autopage mode on	ESC d +	Same	ENH		
Autoscrolling mode off	ESC N	Same	ENH		
Autoscrolling mode on	ESC O	Same	ENH		
Address cursor in 80-column current page	ESC = *line col*	Same	ENH or ESC Y	Same	Same
Address cursor in specific 80-column page	ESC w @ *page line col*	Same	ENH	ESC -	

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Address cursor in specific 80-column window/page[6]	ESC – *wnd/ page line col*	Same	ENH		Same
Address cursor in 80/132-column current page	ESC a *lll* R *ccc* C	Same	ENH		
Read cursor line and column address in 80-column current page	ESC ?	Same	ENH	Same	Same
Read 80-column page number and cursor address	ESC w `	Same	ENH		
Read 80-column window/page number and cursor address	ESC /	Same	ENH	Same	Same
Read cursor address in 80/132-column page	ESC b	Same	ENH		
Editing					
Clear all tab stops	ESC 0	Same		ESC 3	ESC 3
Set tab stop	ESC 1	Same	ENH	Same	Same
Clear tab stop	ESC 2	Same	ENH	Same	Same
Tabulate cursor	ESC i or CTRL I	Same	ENH	CTRL I	CTRL I
Backtab	ESC I	Same	ENH	Same	Same
Field tab				ESC i	ESC i
Insert mode on, replace mode off	ESC q	Same	ENH	Wyse	ESC z
Insert mode off, replace mode on	ESC r	Same	ENH	Wyse	Same
Insert space character	ESC Q	Same	ENH	Same	Same
Insert line of spaces	ESC E	Same	ENH	Same	Same
Delete cursor character	ESC W	Same	ENH	Same	Same
Delete cursor line	ESC R	Same	ESC l	Same	Same
Clearing Data					
Clear page to nulls	ESC *	Same	ENH	Same	Same
Clear page to spaces	ESC +	Same	ENH		
Clear page to write-protected spaces	ESC ,	Same	ENH		Same
Clear unprotected page to spaces	ESC ; or CTRL Z	Same	ESC ;	ESC ; or ESC +	Same
Clear unprotected page to nulls	ESC :	Same	ENH	Same	Same
Clear unprotected page to a specific character	ESC . *char*	Same	ENH		
Clear unprotected page to protected spaces				ESC .	

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Clear unprotected page to display attribute		ESC ! *attr*	ENH	Wyse	
Clear unprotected page to spaces from cursor	ESC Y	Same	ESC k	Same	Same
Clear unprotected page to nulls from cursor	ESC y	Same	ENH	Same	Same
Clear unprotected line to spaces from cursor	ESC T	Same	ESC K	Same	Same
Clear unprotected line to nulls from cursor	ESC t	Same	ENH	Same	Same
Fill page with H's					ESC F
Sending Data					
Begin print/send at top of page	ESC d '	Same	ENH		
Begin print/send at top of screen	ESC d &	Same	ENH		
Send cursor character	ESC M	Same			
Send line through cursor	ESC 6	Same		Same	
Send entire cursor line					ESC 6
Send unprotected line through cursor	ESC 4	Same		Same	
Send unprotected line					ESC 4
Send page through cursor	ESC 7	Same	ENH	Same	
Send entire page					ESC 7
Send unprotected page through cursor	ESC 5	Same		Same	
Send unprotected page					ESC 5
Mark block beginning	ESC 8	Same	ENH		
Mark block end	ESC 9	Same	ENH		
Send entire block	ESC s	Same	ENH	Same	Same
Send unprotected characters in block	ESC S	Same	ENH	Same	Same
Report terminal status					ESC [
Report attribute under cursor					ESC D
Print Functions					
Print formatted page	ESC P	Same	ENH	Same	Same
Print formatted unprotected page	ESC @	Same	ENH		
Print unformatted page	ESC p or ESC L	Same	ESC p	ESC L[9]	
Auxiliary print mode off	CTRL T	Same	Same	ESC A	ESC A
Auxiliary print mode on	CTRL R	Same	Same	ESC @	ESC @
Transparent print mode off	CTRL T	Same	ESC 4	ESC a	ESC a

Table D-1 Summary of ASCII Commands, Continued

Function	Command Native Personality	Wyse WY-50+	ADDS VP A2	TeleVideo 910+/925	PC Term
Transparent print mode on	ESC d #	Same	ESC 3	ESC `	ESC `
Set print terminator				ESC p	ESC p
Define delimiters				ESC x	ESC x
Character Sets					
Select primary character set	ESC c D	Same			
Select secondary character set	ESC c E	Same			
Define primary character set	ESC c B *bank*	Same			
Define secondary character set	ESC c C *bank*	Same			
Load font bank with predefined character set	ESC c @ *bank set*	Same			
Clear font bank	ESC c ? bank	Same			
Define and load character	ESC c A *bank pp bb...bb CTRL Y*	Same			

Variable Values for ASCII Commands

attr	Display Attributes
SP	Space character
0	Normal
1	Invisible
2	Blink
3	Blink, invisible
4	Reverse
5	Reverse and invisible
6	Reverse and blink
7	Reverse, blink, invisible
8	Underline
9	Underline and invisible
:	Underline and blink
;	Underline, blink, invisible
<	Underline and reverse
=	Underline, reverse, invisible
>	Underline, reverse, blink
?	Underline, reverse, blink, invisible

attr	Display Attributes
p	Dim
q	Dim and invisible
r	Dim and blink
s	Dim, blink, invisible
t	Dim and reverse
u	Dim, reverse, invisible
v	Dim, reverse, blink
w	Dim, reverse, blink, invisible
x	Dim and underline
y	Dim, underline, invisible
z	Dim, underline, blink
{	Dim, underline, blink, invisible
|	Dim, underline, reverse
}	Dim, underline, reverse, invisible
~	Dim, underline, reverse, blink
DEL	Dim, underline, reverse, blink, invisible

bank	**Font Bank***
0	Font bank 0
1	Font bank 1
2	Font bank 2
3	Font bank 3

* Holds predefined character set

bb...bb 32-byte character string defining bit pattern of character

ccc One- to three-decimal value of column relative to home

char Character that replaces unprotected characters

col See *line/col*

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

dir	**Direction**
0	Normal
1	Remote
2	Local

Key	*field* Unshifted	Shifted	Key	*field* Unshifted	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	?	_

Key	*fkey* Unshifted	Shifted
F1	@	`
F2	A	a
F3	B	b
F4	C	c
F5	D	d
F6	E	e
F7	F	f
F8	G	g

Key	*fkey* Unshifted	Shifted
F9	H	h
F10	I	i
F11	J	j
F12	K	k
F13	L	l
F14	M	m
F15	N	n
F16	O	o

key	ASCII Keyboard	ANSI Keyboard	Enhanced PC-Style Keyboard
SP	Esc	Esc	Esc
%	Shift Esc	Shift Esc	Shift Esc
!	Tab	Tab	Tab→
&	Shift Tab	Shift Tab	Shift Tab→
”	Backspace	Backspace	← Backspace
’	Shift Backspace	Shift Backspace	Shift ← Backspace
#	Del	Block	
(	Shift Del	Local	
$	Return	Return	Enter↵
)	Shift Return	Shift Return	Shift Enter↵
*	Home	Home	Home
/	Shift Home	Shift Home	Shift Home
+	▲	▲	↑
0	Shift ▲	Shift ▲	Shift ↑
,	▼	▼	↓
1	Shift ▼	Shift ▼	Shift ↓
–	◀	◀	←
2	Shift ◀	Shift ◀	Shift ←
.	▶	▶	→
3	Shift ▶	Shift ▶	Shift →
s	Enter	Enter	Enter *kpd*
4	Shift Enter	Shift Enter	Shift Enter *kpd*
q	Ins Char	PF1	Insert
p	Ins Line	Shift PF1	Shift Insert
r	Page Next	Line Feed	Page Down
w	Page Prev	Shift Line Feed	Shift Page Down

key	ASCII Keyboard	ANSI Keyboard	Enhanced PC-Style Keyboard
u	Send	Delete	
t	Print	Shift Delete	
}	Clr Line	PF3	
z	Clr Scrn	Shift PF3	
5	Del Char	PF2	Delete
6	Del Line	Shift PF2	Shift Delete
7	Repl	PF4	
8	Ins	Shift PF4	
R			Print Screen
X			Shift Print Screen
\			End
]			Shift End
:			Page Up
;			Shift Page Up

label 9 characters (80 columns); 7 characters (132 columns)

lattr	Line Attribute
@	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

Graphics Character Codes

ldraw	Graphics Character	*ldraw*	Graphics Character	*ldraw*	Graphics Character	*ldraw*	Graphics Character
0	┬	4	├	8	┼	<	═
1	└	5	┘	9	┤	=	┴
2	┌	6	│	:	─	>	╫
3	┐	7	▮	;	▒	?	▒

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†	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

† Available only in WY-50+ personality

Line/ Column	*line/ col*‡	**Line/ Column**	*line/ col*‡	**Line/ Column**	*line/ col*‡	**Line/ Column**	*line/ col*‡
1	SP	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

‡ These codes are recognized in Native, WY-50+, TeleVideo 910+/925, VT52, and PC Term personalities, and in ADDS VP A2 personality absolute cursor addressing

lll One- to three-decimal value of line relative to home

message 46 characters (80 columns);
98 characters (132 columns)

mf	**Screen Area**
0	Data area*
1	Function key label line
2	Terminal message field
3	Computer message field

* In native personalty, only the reverse attribute can be assigned to the data area

p1	**Function Key**
1	F1
2	F2
3	F3
4	F4
5	F5
6	F6
7	F7
8	F8
9	F9
0	F10

p2	**Direction**
1	Remote
2	Local
3	Normal

page	**Page**
0	Page 0
1	Page 1
2	Page 2
3	Page 3
4	Page 4
5	Page 5
6	Page 6

pp 2-byte hex value of character position—see "ASCII Character Sets" at the end of this section

scroll	**Scrolling Type**	**Speed (lines per second)**
@	Jump scroll	
<	Smooth scroll	1
=	Smooth scroll	2
>	Smooth scroll	4
?	Smooth scroll	8

sequence Up to 255 bytes to be loaded in function key

set	**Predefined Character Set**
@	Native Mode
A	PC Multinational
B	Standard ASCII
D	PC Standard
G	Standard ANSI

text 78 characters (80 columns); 130 characters (132 columns)

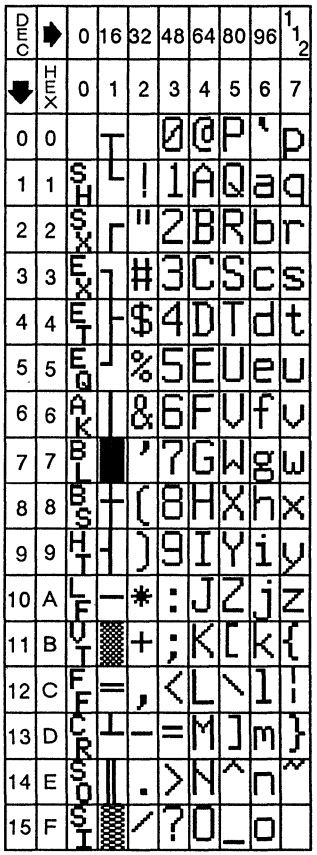
volume	**Bell Volume**
#	Loud
"	Medium
!	Low
SP	Off

wnd/page	**Window or Page**
0	Page 0 or upper window
1	Page 1 or lower window

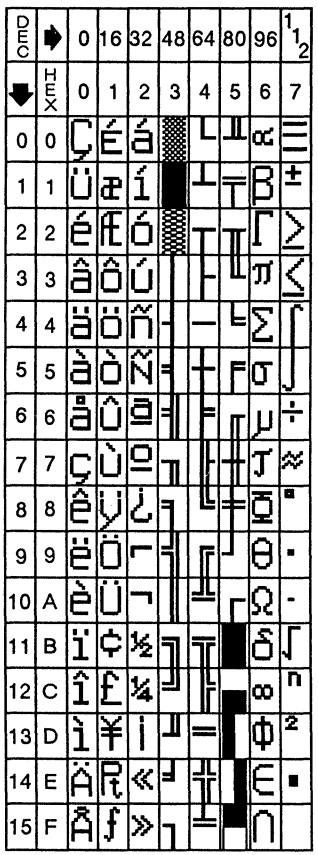
wpca	**Write-Protected Display Attribute**
6	Reverse*
7	Dim*
A	Normal*
B	Blink on
C	Invisible on
E	Underline on
F	Reverse on
G	Dim on

* Clears other write-protected attributes

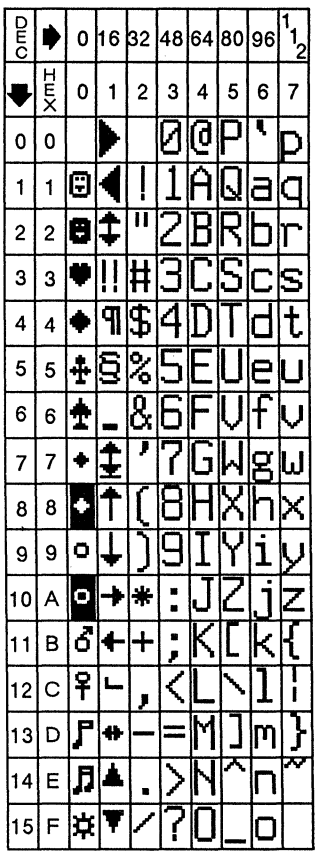
ASCII Character Sets*



Native Mode



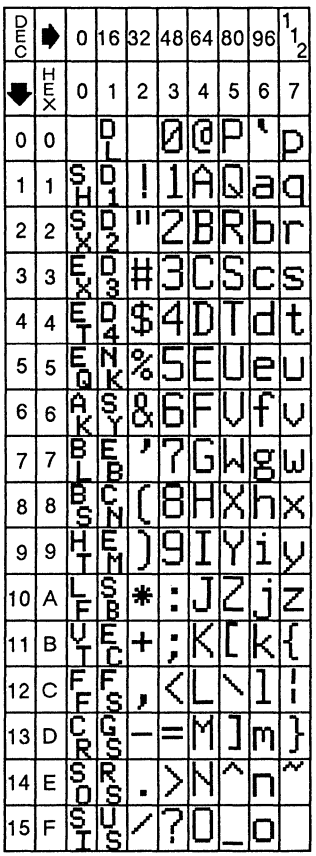
PC Multinational



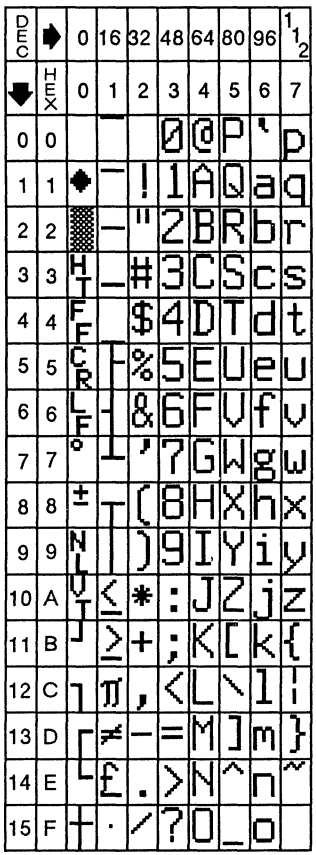
PC Standard

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

ASCII Character Sets,* Continued



Standard ASCII



Standard ANSI

Appendix E

ANSI Commands

Table E-1 VT52 Mode Escape Sequences

Command	Sequence
Move cursor up one line	ESC A
Move cursor down one line	ESC B
Move cursor right one column	ESC C
Move cursor left one column	ESC D
Move cursor to home position	ESC H
Move cursor up one line with scroll	ESC I
Move cursor to line *line*, column *col*	ESC Y *line col*
Select graphics character set	ESC F
Select standard ASCII character set	ESC G
Erase from cursor to end of display	ESC J
Erase from cursor to end of line	ESC K
Print cursor line	ESC V
Print display	ESC]
Transparent print mode on	ESC W
Transparent print mode off	ESC X
Copy print mode on	ESC ^
Copy print mode off	ESC _
Keypad application mode on	ESC =
Keypad application mode off	ESC >
Enter VT100 mode	ESC <
Identify terminal	ESC Z

☐ **Note** Within a command sequence, *Pn* represents a numeric parameter; *Ps* represents a selective parameter whose values are listed immediately following the command.

Table E-2 VT100 Mode Commands

Function		Command
Communicating with the Computer		
Send ACK/ answerback message		CTRL E
Resume transmission		CTRL Q
Suspend transmission		CTRL S
Delay processing for 250 milliseconds		ESC ,
Request product type		ESC SPACE
Response	150 CR	
Request primary attributes		ESC Z or ESC [0 c
Respond VT100 personality	ESC [? 1 ; 2 c	
Respond VT52 personality	ESC /Z	
Request status report		ESC [*Ps* n
Ps **Request**	**Report**	
5 Terminal status	Ready: ESC [0 n	
6 Cursor position	Line/column: ESC [*Pn*;*Pn* R	
15 Printer status	Ready: ESC [? 10 n Busy: ESC [? 11 n	
Abort escape sequence, display error character		CTRL X or CTRL Z
Controlling the Terminal		
Sound bell		CTRL G
Select bell volume		ESC # *Ps*
Ps **Bell Volume**		
? Loud		
> Medium		
= Low		
< Off		
Keypad application mode on		ESC =
Keypad application mode off		ESC >
Restore saved cursor position, character set, and attribute		ESC 8 or ESC [u
Save cursor position, character set, and attribute		ESC 7 or ESC [s
Reset terminal to initial state		ESC c
Reset all terminal modes		ESC ! p
Terminal modes on (set)		ESC [*Ps*; ...;*Ps* h

Table E-2 VT100 Mode Commands, Continued

Function	Command

Terminal modes off (reset)[1] — ESC [*Ps*; ...;*Ps* l

Ps[2]	Mode	Ps[2]	Mode
2	Keyboard lock	?10	Block
3	Monitor	?18	Print form feed
4	Insert character	?19	Print full screen
12	Local echo disable	?25	Enable cursor
16	Cursor transfer termination	30	Display disable
20	Newline	31	Status line display
?1	Cursor key	32	Screen saver
?2	VT100 mode[3]	33	Steady cursor
?3	132-column	34	Underline cursor
?4	Smooth scroll	35	Width change clear disable
?5	Reverse screen	40	Select 25th data line
?6	Origin	42	Native mode
?7	Character wrap (EOL wrap)	53	10x16 character cell[4]
?8	Auto repeat (key repeat)	54	ASCII key code mode[5]

Screen Display/Attributes

Display screen alignment pattern — ESC # 8

Display next page — ESC [*Pn* U

Display previous page — ESC [*Pn* V

Define scrolling region — ESC [*Pn*; *Pn* r

Control simulated keyboard LEDs in computer message field — ESC [*Ps*; ...;*Ps* q

Ps	LED
0	L1 to L4 off
1	L1 on
2	L2 on
3	L3 on
4	L4 on

Define video attribute — ESC [*Ps*;...;*Ps* m

Ps	Attribute	Ps	Attribute
0	Attributes off	8	Invisible[6]
1	Bold[6]	22	Normal
2	Dim[6]	24	Underline off
4	Underline	25	Blink off
5	Blink	27	Reverse off
7	Reverse		

1. Final character in sequence is a lowercase L.
2. Up to 16 Ps values may be specified (separated by semicolons). Some values are shown with a question mark to indicate that the command must include a question mark character (?) immediately following the control sequence introducer (ESC [). Therefore, Ps values shown with the question mark may not be combined with Ps values shown without the question mark.
3. When off, VT52 mode is enabled.
4. When off, selects 10x13 (78 Hz) character cell.
5. When off, selects PC scan codes.
6. Bold, dim, and invisible cannot be combined.

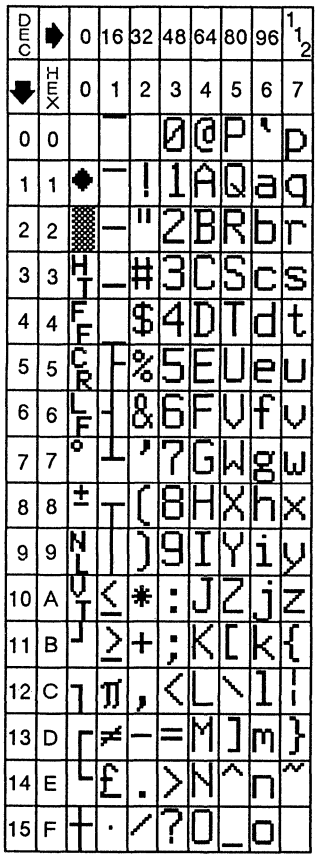
Table E-2 VT100 Mode Commands, Continued

Function	Command
Enable top half of double-high, double-wide line	ESC # 3
Enable bottom half of double-high, double-wide line	ESC # 4
Enable single-high, single-wide line	ESC # 5
Enable single-high, double-wide line	ESC # 6
Enable top half of double-high, single-wide line	ESC # :
Enable bottom half of double-high, single-wide line	ESC # ;
Controlling the Cursor	
Cursor right one column	ESC [C
Cursor right *Pn* columns	ESC [*Pn* C
Cursor left one column	CTRL H
Cursor left *Pn* columns	ESC [*Pn* D
Cursor up one line; scroll	ESC M
Cursor up *Pn* lines	ESC [*Pn* A
Cursor up *Pn* lines and to column 1	ESC [*Pn* F
Cursor down *Pn* lines and to column 1	ESC [*Pn* E
Cursor down one line; scroll	ESC D
Cursor down one line; scroll (LF)	CTRL J or CTRL K or CTRL L
Cursor down *Pn* lines	ESC [*Pn* B
Cursor to start of line (CR)	CTRL M
Cursor to start of next line; scroll	ESC E
Cursor to column *Pn*	ESC [*Pn* G
Cursor to line *Pn*; column *Pn*	ESC [*Pn*; *Pn* H or ESC [*Pn*; *Pn* f
Editing	
Set tab stop at cursor position	ESC H
Clear tab stop at cursor position	ESC [0 g
Clear all tab stops	ESC [3 g
Move cursor to next tab stop	CTRL I
Move cursor forward *Pn* tab stops	ESC [*Pn* I
Move cursor backward *Pn* tab stops	ESC [*Pn* Z
Insert *Pn* null characters beginning at cursor column	ESC [*Pn* @
Insert *Pn* lines of null characters beginning at cursor line	ESC [*Pn* L
Delete *Pn* lines beginning at cursor line	ESC [*Pn* M

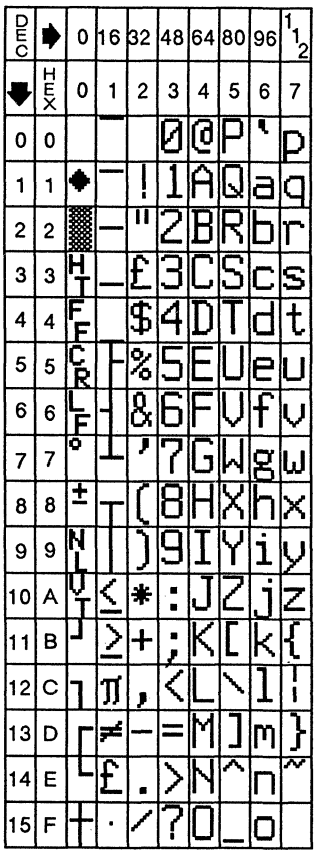
Table E-2 VT100 Mode Commands, Continued

Function	Command
Delete *Pn* characters beginning at cursor column	ESC [*Pn* P
Erase in display	
From cursor to end of screen	ESC [0 J
From beginning through cursor	ESC [1 J
Entire screen	ESC [2 J
Erase in line	
From cursor to end of line	ESC [0 K
From start of line through cursor	ESC [1 K
Entire line	ESC [2 K
Erase *Pn* characters beginning at cursor column	ESC [*Pn* X
Sending/Printing Data	
Media copy	ESC [*Ps* i
Ps **Action**	
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	
Character Sets	
Select G0 character set	CTRL O
Select G1 character set	CTRL N
Change G0 to ANSI Graphics character set	ESC (0
Change G0 to UK ANSI character set	ESC (A
Change G0 to Standard ANSI character set	ESC (B
Change G1 to ANSI Graphics character set	ESC) 0
Change G1 to UK ANSI character set	ESC) A
Change G1 to Standard ANSI character set	ESC) B

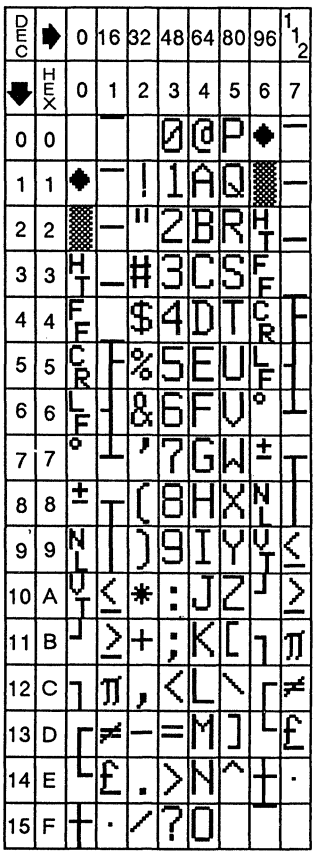
ANSI Character Sets*



Standard ANSI



UK ANSI



ANSI Graphics

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

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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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