

Liberty Electronics

**Liberty 120
User's Guide**



This Guide provides you with all the information required to install the Liberty 120 video display terminal.

Available Literature:

Liberty 120 User Guide -- Liberty P/N 9-45100
Liberty 120 Maintenance Manual -- Liberty P/N 9-42100
Liberty 120 Data Sheet -- Liberty P/N 9-21100
Liberty 120 Advertisement Reprints - Liberty P/N 9-21101

Available Options:

Liberty 120, 110 Volt, USA, Green -- Liberty P/N 1-6-111511
Liberty 120, 110 Volt, USA, Amber -- Liberty P/N 1-6-111519
Liberty 120, 110 Volt, USA, White -- Liberty P/N 1-6-111515

Liberty 120, 220 Volt, Eur, Green -- Liberty P/N 1-6-224021
Liberty 120, 220 Volt, Eur, Amber -- Liberty P/N 1-6-224029
Liberty 120, 220 Volt, Eur, White -- Liberty P/N 1-6-224025

Keyboard, ASCII Layout, USA -- Liberty P/N 5-11-10
Keyboard, VT Layout, USA -- Liberty P/N 5-11-25
Keyboard, PC Layout, USA -- Liberty P/N 5-11-33

Keyboard, ASCII Layout, Eur -- Liberty P/N 5-21-10
Keyboard, VT Layout, Eur -- Liberty P/N 5-21-25
Keyboard, PC Layout, Eur -- Liberty P/N 5-21-33

Keyboard, 102 UK -- Liberty P/N 5-21-34-1
Keyboard, 102 French -- Liberty P/N 5-21-34-2
Keyboard, 102 German -- Liberty P/N 5-21-34-3
Keyboard, 102 Swiss -- Liberty P/N 5-21-34-4
Keyboard, 102 Swedish/Finnish -- Liberty P/N 5-21-34-5
Keyboard, 102 Spanish -- Liberty P/N 5-21-34-6
Keyboard, 102 Belgian -- Liberty P/N 5-21-34-7

Anti-Glare Screen, USA -- Liberty P/N 8-70200
Anti-Glare Screen, EUR -- Liberty P/N 8-70201

See Appendix C for international keycap options.

For ordering information, contact:

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ADM-31 is a trademark of Zentec, Inc.

WY-50/60/120/150 are trademarks of Wyse Technology.

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DEC VT-320/220/100/52 are registered trademarks of Digital Equipment Corporation.

FCC NOTICE - (USA only)

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 operated 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. However, there is no guarantee that interference will not occur in a particular installation. When operating this equipment with other equipment, shielded cables and ferrite core may be required on all interface cables.

Specifications and information contained in this User's Guide subject to change without prior notice.

CSA DOCUMENTATION - (Canada only)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radion 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 Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Le Ministère Des Communications du Canada.

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1.1 What's in the Box

You will receive, with each terminal purchased:

- Liberty 120 video display unit
- Power cord (USA only)
- Liberty 120 User's Guide
- Warranty Card (USA only)
- VDE Compliance Card (Germany only)

Please inspect to make sure everything has been received and is undamaged. Any missing items should immediately be reported to the company from which you purchased the terminal.

Shipping damage must be reported immediately to the carrier who transported the terminal, and a claim filed with that carrier.

Keyboards may be shipped separately. The keyboard comes with the keyboard connector cord built in.

1.2 Connections

1. Make sure that the available voltage matches the voltage which appears on the back of your terminal (normally 110 volt inside the USA, and 220 volt outside the USA).
2. Making sure the power switch is in the off position, plug the corresponding ends of the power cord into the back of the terminal and into the wall outlet.
3. Plug the small connector end of the coiled keyboard cord into the left side of the terminal housing.
4. The MAIN Port, or host computer port, is an asynchronous, RS-232-C, 25-pin female communications port. Plug your computer cable into the RS-232-C port labeled "MAIN." See Section 3.1 for the RS-232-C pin outs.
5. The printer port (labeled AUX) is an IBM-compatible, 25-pin, parallel printer port. See Section 3.2 for the parallel port pin outs.

1.3 Turning the Terminal On

After properly connecting the terminal, turn it on by pressing down on the front half of the power switch located at the right rear on top of the terminal base.

When turned on, a "beep" should be heard from the terminal, the CRT screen should light up slowly with the cursor in the top left corner and the status line showing at the bottom.

1.4 Brightness and Contrast

Anti-Glare Screen (Optional). A unique anti-glare, anti-static, grounded acrylic screen, can be used with the Liberty 120 terminal. To install the screen, remove the four plastic plugs from the bezel. Hold the screen with the grounded (copper) tabs at the top. Insert the top tabs first, then press the screen into position. Let the bottom tabs fall into place. For more information about Liberty's anti-glare screen, contact your terminal supplier.

Brightness -- Adjust the screen brightness to your liking by sliding the brightness switch in the lower right corner to the right or left.

Contrast -- Adjust the screen contrast to your liking by sliding the contrast switch in the lower left corner to the right or left.

Tilt and Swivel -- The terminal can be adjusted so the screen is at a comfortable viewing angle independent of your height or position. To tilt or swivel the screen, grasp opposite sides of the console's cabinet and firmly push the screen to the desired angle.

Keyboard tilt -- Pull out the two adjustable feet on the bottom of keyboard if you desire more of an angle to the keyboard.

1.5 Status Line

The status line appears either at the top or the bottom of the screen, depending upon which emulation is selected. Status line display can be turned off in the Setup or by remote host commands.

Freedom ONE Status Line

The following summarizes the status line information that may appear at the bottom of the screen when in the Freedom ONE, Televideo 950, ADM 31 or PC-Term emulation mode.

*PRC=prcccc	1	2	3	4	5	6	7	8	9	10	11	12	13
-------------	---	---	---	---	---	---	---	---	---	----	----	----	----

The PRC field will display the current page, row and column position of the cursor.

Field #1 will display printer port busy (PBSY) or printer port not busy (blank).

Field #2 will display printer port off (blank), Copy Print ON (COPY), Transparent Print ON (TRAN), or Page Print ON (PAGE).

Field #3 will display the number of bytes available for function key programming (256) or function key memory overflow (F).

Field #4 will display main port busy (TBSY) or main port not busy (blank). Also, OVER indicates buffer overflow.

Field #5 will display Monitor Mode ON (MON) or Monitor Mode OFF (blank).

Field #6 will display Graphics character set enabled (GRPH) or standard character set enabled (blank).

Field #7 will display edit keys set for Local Edit (LOCE) or edit keys set for duplex, online edit (DUPE).

Field #8 will display edit mode set for line only (EDTL), edit mode set for full page (EDTP), insert mode set for line only (INSL) or insert mode set for full page (INSP).

Field #9 will display keyboard unlocked (blank), keyboard locked (KLOK), Caps Lock ON (CAPS), or Shift Lock ON (SHFT).

Field #10 will display protect mode ON (PROT), or protect mode OFF (blank).

Field #11 will display write protect attribute ON (W.P.) or write protect attribute OFF (blank).

Field #12 will display main port at Full Duplex (FDX), Half Duplex (HDX), Local Mode (LOC), or Block Mode (BLK) and the Main Port baud rate (9600).

Field #13 will display block send active (SEND) or not active (blank).

Wyse Status Line

The following summarizes the status line information that may appear at the top of the screen when in Wyse 60/50/150/120, ADDS A2 or TVI-925 emulation mode.

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Field #1 will display keyboard unlocked (blank), keyboard locked (KLOK), Caps Lock ON (CAPS), or Shift Lock ON (SHFT).

Field #2 will display current page number (1).

Field #3 will display Monitor Mode ON (*) or Monitor Mode OFF (blank).

Field #4 will display main port at Full Duplex (FDX), Half Duplex (HDX), Local Mode (LOC), or Block Mode (BLK).

Field #5 will display printer port off (blank), Copy Print ON (>AUX) or Transparent Print ON (%AUX).

*** Please Note: Fields 6, 7 and 8 are available on the extended status line only.

Field #6 will display protect mode ON (PROT), or protect mode OFF (blank).

Field #7 will display write protect attribute ON (WPRT) or write protect attribute OFF (blank).

Field #8 will display insert mode ON (INS) or insert mode OFF (blank).

Field #9 will display the current cursor row and column number (1- 1).

DEC Status Line

The following summarizes the status line information that may appear at the bottom of the screen when in VT-300/200/100/52 emulation mode.

*RC=rrccc	1	2	3	4	5	6	7	8	9	10	11	12	13
-----------	---	---	---	---	---	---	---	---	---	----	----	----	----

The RC field will display the current row and column position of the cursor.

Field #1 will display printer port busy (PBSY) or printer port not busy (blank).

Field #2 will display printer port off (blank), Auto Print ON (AUTO), Controller Print ON (CONT), Page Print ON (PAGE), Line Print ON (LINE) or Send ON (SEND).

Field #3 will display the number of bytes available for function key programming (256) or function key memory overflow (F).

Field #4 will display main port busy (TBSY), main port not busy (blank) or buffer overflow (OVER).

Field #5 will display Monitor Mode ON (MONT) or Monitor Mode OFF (blank).

Field #6 will display COMPOSE character mode ON (COMP) or COMPOSE character mode OFF (blank).

Field #7 will display insert mode ON (INSR) or insert mode OFF (blank).

Field #8 will display non-erasable data selected, protect mode ON (PROT), or protect mode OFF (blank).

Field #9 will display keyboard unlocked (blank), keyboard locked (KLOK), Caps Lock ON (CAPS), or Shift Lock ON (SHFT).

Field #10 will display main port at Full Duplex (FDX), Half Duplex (HDX) or Local Mode (LOC) and the Main Port baud rate (9600).

2.1 Emulations and Keyboards

Your Liberty 120 terminal will run with one of four different keyboard layouts, all provided by Liberty Electronics USA. These layouts are:

1. ASCII, a Wyse 50 type layout.
2. PC, an enhanced-PC type layout.
3. VT, a DEC VT-320/220 type layout.
4. 102, a IBM 102 type layout (international only)

See Appendix A for USA Keyboard Layout Drawings. (See Appendix C for international keycap options and Appendix E for 102 keyboard layouts.) Your Liberty 120 terminal will automatically read which keyboard is plugged in at power on and configure itself to match that keyboard layout. The operator does not need to select a keyboard layout in the Setup menu. (For international operation, the keyboard character set IS a Setup selection.) Be sure the terminal is powered off when plugging and un-plugging keyboards.

Your Liberty 120 terminal must be configured to run in one of 16 available emulation modes. These are:

- | | |
|-----------------|--|
| 1. Freedom ONE. | Liberty's own unique operating mode. |
| 2. VT-300 7-bit | DEC VT-320 compatible mode, 7-bit operations only. |
| 3. VT-300 8-bit | DEC VT-320 compatible mode, 8-bit operations only. |
| 4. VT-200 7-bit | DEC VT-220 compatible mode, 7-bit operations only. |
| 5. VT-200 8-bit | DEC VT-220 compatible mode, 8-bit operations only. |
| 6. VT-100 | DEC VT-100 compatible mode. |
| 7. VT-52 | DEC VT-52 compatible mode. |
| 8. WY-150 | Wyse WY-150 compatible mode (same as WY-120 mode). |
| 9. WY-120 | Wyse WY-120 compatible mode (same as WY-150 mode). |
| 10. WY-60 | Wyse WY-60 compatible mode. |
| 11. WY-50 | Wyse WY-50 compatible mode. |
| 12. TVI-950 | Televideo TVI-950 compatible mode. |
| 13. TVI-925 | Televideo TVI-925 compatible mode. |
| 14. ADM-31 | Zentec (Lear Siegler) ADM-31 compatible mode. |
| 15. ADDS A2 | ADDS Viewpoint A2 compatible mode (Enhance On is Wy-50 A2 mode Enhance Off is ADDS A2 mode.) |
| 16. PC-TERM | WY-60, PC-Term compatible mode. |

- /// Please Note:
- A. WY-150/120/60 and PC-TERM are all 8-bit operating modes.
 - B. PC-TERM operating mode puts the terminal in a unique non-ASCII state. Key transmissions are per IBM scan codes and practically all local keyboard commands are not valid. See Section 4.5.

2.2 Terminal Setup

Before computer operations, the terminal must be configured properly for all computer and operator requirements. Most of the terminal's features that need to be configured can be set/changed in the terminal setup menu.

To enter the Setup Menu you must issue the proper keystrokes based on the emulation and the keyboard selected with your terminal. (Most local keyboard commands are a function of keystrokes that change based on keyboard layout and current emulation. See Section 4 for a complete list of all keystrokes in all emulation modes.) To enter the Setup Menu use the proper keystroke listed below.

If using the PC/102 Keyboard layout...

- press Scroll Lock for single line Setup or
- press Shift/Scroll Lock for full screen Setup.

If using the PC/102 Keyboard layout in PC-TERM mode...

- press Alt/Scroll Lock for single line Setup or
- press Alt/Shift/Scroll Lock for full screen Setup.

If using the VT keyboard layout...

- press F3(Setup) for single line setup or
- press Shift/F3(Setup) for full screen Setup.

If using the ASCII keyboard layout...

- press Setup for single line Setup or
- press Shift/Setup for full screen Setup.

If using the ASCII keyboard in a VT emulation mode...

- press ESC for single line Setup or
- press Shift/ESC for full screen Setup.

SINGLE LINE SETUP:

Use the Single Line Setup to change the Setup Menu parameters without clearing the screen of its current data. (Be advised that if certain parameters are changed, such as Emulation Mode or screen format, the screen will be cleared anyway.)

While in Single Line Setup use...

- Cursor Arrows: to move about
- Backspace: to move back one field (reverse cycle)
- Home: to move to first field
- Space Bar: to change a value (forward cycle)
- F4: to save changes
- F3: to exit without saving values
- CTRL/F5: to load factory default values.

FULL SCREEN SETUP:

Full Screen Setup will erase any data currently on the terminal display.

While in Full Screen Setup use...

- F1: to display next Setup Screen
- Cursor Arrows: to move about
- Backspace: to move back one field (reverse cycle)
- Home: to move to first field
- Space Bar: to change a value (forward cycle)
- F2: to program Function Keys (see Section 4.4.)
- F3: to exit without saving
- F4: to save changes
- CTRL/F5: to load default values

2.2.a ASCII SETUP PARAMETER VALUES

For Freedom ONE, WY-150/120/60/50, TVI-950/925, ADDS A2,
ADM-31 and PC-TERM

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
MAIN PORT SETTINGS		
Mode	Full Duplex (Default)	Data is sent to host and echoed back before being displayed
	Half Duplex	Data is displayed at same time as sent to host
	Local Duplex	Terminal does not send or receive from host
	Block Send	Data is sent only when send commands are issued
Speed	50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 7200 9600(default), 19200, 38400	Communications speed, bits per second
Parity	None (default)	The terminal does not send/check parity
	Odd	The terminals sends/ receives characters with odd parity
	Even	The terminal sends/ receives characters with even parity
	Mark	The terminal sends mark parity
	Space	The terminal sends space parity

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Data Bits	7	The main port sends and receives 7-bit characters
	8 (default)	The main port sends and receives 8-bit characters
Stop Bits	1 (default)	One stop bit is sent after every character
	2	Two stop bits are sent after every character
Receive Protocol	XonXoff (default)	Terminal uses XonXoff characters to control incoming data
	DTR	Terminal uses the signal on pin 20 to control incoming data
	Both	Both hardware and software handshaking are enabled
	None	No handshaking on received data
Transmit Protocol	XonXoff	Terminal responds to XonXoff characters to control transmission
	Limited	Terminal limits transmission throughput to 1200 baud
	Both	Both Limited and XonXoff are enabled to control terminal transmissions
	None (default)	No control over terminal transmissions

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Signal At	64 (default)	Terminal sends XOFF or DTR handshake signal when buffer is 64 characters from full
	128	Terminal sends XOFF or DTR handshake signal when buffer is 128 characters from full
XOFF	<DC3>	Lets user define XOFF character
XON	<DC1>	Lets user define XON character
ACK	<ACK>	Lets user define end of print acknowledge character

AUXILIARY PORT SETTINGS

Mode	Off (default)	Disables AUX port
	Copy	Data from host to screen is also copied to the AUX port
	Transparent	Prints directly from host to AUX port
Speed	Parallel	See Section 3.2.
Buffer Size	256 (default)	The main and auxiliary port buffers are 256 characters
	3K	The main and auxiliary port buffers are 3072 characters

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
BLOCK SEND SETTINGS		
Field Mark	<FS> <NUL>	Allows user to define the write protect field indicator
Line Mark	<US> <NUL>	Allows user to define end of line indicator
Start Protect	<ESC> <(>	Allows user to define start of protected field indicator
End Protect	<ESC> <(>	Allows user to define end of protected field indicator
End of Message	<CR> <NUL>	Allows user to define end of transmission indicator
DISPLAY SETTINGS		
Lines	24 (60 Hz) (default)	Sets display to 24 scrolling data lines at 60 cycles refresh; character cell is 10 by 16
	25 (60 Hz)	Sets display to 25 scrolling data lines at 60 cycles refresh; character cell is 10 by 16
	42	Sets display to 42 scrolling data lines at 60 cycles refresh; character cell is 10 by 9

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	43	Sets display to 43 scrolling data lines at 60 cycles refresh; character cell is 10 by 9
	24 (78 Hz)	Sets display to 24 scrolling data lines at 78 cycles refresh; character cell is 10 by 13
	25 (78 Hz)	Sets display to 25 rolling data lines at 78 cycles refresh; character cell is 10 by 13
Page Length	1*Lines	Page length equals 1 times the number selected in Lines
	2*Lines	Page length equals 2 times the number selected in Lines
	4*Lines	Page length equals 4 times the number selected in Lines
	*	Page 1 equals the number selected in Lines; Page 2 contains remaining screen memory
Columns	80 (default)	Selects 80-column display format; characters are 10 pixels wide
	132	Selects 132-column display format; characters are 9 pixels wide

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	ECON 80	Selects 80-column display format and frees memory for additional pages; characters are 10 pixels wide
Status Line	On (default)	Displays emulation status line
	Extended	Enables extended status line
	Off	Turn off emulation status line
Attribute	Char (default)	Display attributes apply to one character at a time
	Page	Display attributes apply to the entire page
	Line	Display attributes apply to one line at a time
Background	Dark (default)	Light characters on dark background (Overscan off)
	Light	Dark characters on light background (Overscan on)
Cursor Type	Block (default)	Cursor appears as a solid block
	BlkLin	Cursor appears as a blinking line
	Line	Cursor appears as a line

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Line Truncate	Blank	Cursor is not displayed
	BlnkBlk	Cursor appears as a blinking block
	On (default)	At end of line cursor sits at end of line
Auto New Line	Off	At end of line cursor moves to next line
	Off (default)	Upon receiving a carriage return, a line feed is not generated
Auto Scroll	On	Upon receiving a carriage return, a line feed is automatically generated
	On (default)	Reverse line feed at top inserts new line and scrolls screen down--bottom line lost. Line feed at bottom inserts new line and scrolls screen up--top line lost.
	Off	Reverse line feed at top positions cursor at bottom. Line feed at bottom positions cursor at top.
Auto Page	Off (default)	Reverse line feed and line feed controlled by auto scroll

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	On	Reverse line feed at top puts cursor at bottom line of previous page. Line feed at bottom puts cursor at top line of next page.
Scroll Type	Jump (default)	Display scrolls a row of characters at a time
	Smooth 1	Smooth scroll at 5 lines per second
	Smooth 2	Smooth scroll at 10 lines per second
	Smooth 3-8	Smooth scroll at 15-40 lines per second
Protect	Dim (default)	Defines protect attribute as dim intensity
	Normal	Defines protect attribute as normal intensity
	Reverse	Defines protect attribute as reverse video
Insert Char =	(User Defined)	Allows user to define insert character for use in insert mode and screen clears.

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
KEYBOARD SETTINGS		
Layout	North American (default) United Kingdom, Swiss (German), Swiss (French), Swedish, Spanish, Norwegian, Italian, German, Flemish, Finnish, Dutch, French, Danish, Canadian French,	Allows choice of international keyboard layout (See Appendix C/E for international keycap sets available from Liberty Electronics.)
Bell Tone	On (default)	Allows bell tone on <CTRL G>
	Off	Disables bell tone
Margin	1...132 (default @ 72)	Select column at which margin bell sounds
Margin Bell	Off (default)	Bell silent on margin column
	On	Bell rings on selected margin column
Click	Off (default)	Key depressions are silent
	On	Key depressions give audible feed back
Auto Repeat	8, 12, 16, 20 24 (default), 28, 32, 50	Number of times per second keys repeat when held down
Delay	.25, .5 (default), .6, .8, 1.0, 1.2, 1.4, 1.6	Time between when key depressed and when it begins repeating (seconds)
	****	No repeat

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Lock Type	Caps (default)	When Lock key depressed makes all alphabetic characters upper-case
	Shift	When Lock key depressed selects shifted key value on all keys
	Rev	When LOCK key depressed, Shift displays lower case
Lock Set	Off (default)	Lock is not selected on power up
	On	Lock is selected on power up
WordStar Mode	Off (default)	Disables WordStar command codes See Section 4.7.
	On	Loads WordStar command codes into function and cursor control keys
Edit Duplex	Remote (default)	Edit keys transmit to host
	Local	Edit keys processed locally by terminal
Edit Mode	Edit Line (default)	Character replacement as entered, insert/delete character only affects to end of line
	Edit Page	Character replacement as entered, insert/delete character affects to end of page

2.2.a ASCII SETUP PARAMETER VALUES

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Insert Line	Character inserted as entered, insert/delete character to end of line
	Insert Page	Character inserted as entered, inserted/delete character to end of page
Screen Saver	Off	Display always on
	5	Display turns off after 5 minutes of inactivity
	10	Display turns off after 10 minutes of inactivity
	15 (default)	Display turns off after 15 minutes of inactivity
Answerback	XXX	Program answerback
Concealed	Off (default)	Answerback will be displayed
	On	Answerback will be concealed

2.2.b ANSI SETUP PARAMETERS

VT-300/200/100/52 only

MAIN PORT SETTINGS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Mode	Remote (Default)	Allows transmission to computer
	Local	Limits communication within terminal
Local Echo	Off (Default)	Screen does not echo keys pressed on keyboard
	On	Screen echos keys pressed on keyboard
Receive Speed	50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600 (default), 19200, 38400	Communications speed, bits per second
Transmit Speed	50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 19200, 38400, Receiver(default)	Allows for separate receive and transmit speeds on the MAIN port, bits per second
Parity	None	The terminal does not send/check parity
	Odd	The terminal sends/receives characters with odd parity
	Even	The terminal send/receives characters with even parity
	Mark	The terminal sends mark parity

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Space	The terminal sends space parity
	Odd-No Check	The terminal sends/ receives characters with odd parity--no checking
	Even-No Check	The terminal sends/ receives characters with even parity -- no checking
Data Bits	7	The main port sends and receives 7-bit characters
	8 (default)	The main port sends and receives 8-bit characters
Stop Bits	1 (default)	One stop bit is sent after every character
	2	Two stop bits are sent after every character
Receive Protocol	None	No handshaking on received data
	Xon/Xoff (default)	Terminal uses XonXoff characters to control incoming data
	DTR	Terminal uses signal on pin 20 to control incoming data
	Both	Both hardware and software handshaking are enabled
Transmit Protocol	None (default)	No control over terminal transmissions

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Xon/Xoff	Terminal responds to XonXoff characters to control transmissions
	Limited	Limits transmission throughput to 1200 baud
	Both	Both Limited and XonXoff are enabled to control terminal transmissions
Signal At	64 (default)	Terminal sends XOFF or DTR handshake signal when buffer is 64 characters from full
	128	Terminal sends XOFF or DTR handshake signal when buffer is 128 characters from full
XOFF =	<DC3>	Lets user define XOFF character
XON =	<DC1>	Lets user define XON character
ACK =	<ACK>	Lets user define end of print acknowledge character

AUXILIARY PORT SETTINGS

Mode	Off	Disables AUX port
	Auto	Each line printed when line feed, form feed or vertical tab is received from the computer.

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Controller	All data from computer bypasses screen and is sent directly to AUX port
Speed	Parallel	IBM compatible parallel printer port; see Section 3.2
Buffer Size	256 (default)	The main and auxiliary port buffers are 256 characters
	3K	The main and auxiliary port buffers are 3072 characters
Print	Full Screen (Default)	Entire screen is printed when print command is received
	Scroll Region	Only scrolling region is printed when print command is received
Print Data	All	For printers supporting multinational characters
	ASCII/U.K. (Default)	For printers supporting only ASCII/U.K. characters
	Line Draw	For printers supporting additional line drawing characters
Terminator	None (default)	No print terminator.
	<FF>	Selects form feed as print terminator.

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
DISPLAY SETTINGS		
Lines/Page	24 (60 Hz)	Sets display to 24 scrolling data lines at 60 cycles refresh; character cell is 10 by 16
	24 (78 Hz)	Sets display to 24 scrolling data lines at 78 cycles refresh; character cell is 10 by 13
Columns	80	Selects 80-column display format; characters are 10 pixels wide
	Econ 80	Selects 80-column display format and frees memory for additional pages; characters are 10 pixels wide
	132	Selects 132-column display format; characters are 9 pixels wide
Status Line	On (default)	Displays emulation status line
	Off	Turn off emulation status line
	Extended	Enables extended status line
Background	Dark (default)	Light characters on dark background (Overscan off)

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Light	Dark characters on light background (Overscan on)
Ctrl Codes	Interpret (default)	Terminal executes all received control codes
	Display	Terminal displays all received control codes (monitor mode)
Scroll Type	Jump (default)	Display scrolls a row of characters at a time
	Smooth 1	Smooth scroll at 5 lines per second
	Smooth 2	Smooth scroll at 10 lines per second
	Smooth 3-8	Smooth scroll at 15-40 lines per second
Cursor Display On (default)		Cursor display on
	Off	Cursor display off
Cursor Type	Block	Cursor appears as a solid block
	BlkLin	Cursor appears as a blinking line
	Line	Cursor appears as a line
	Blank	No cursor display
	BlkBlk	Cursor appears as a blinking block

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Line Truncate	Off	At end of line cursor moves to next line
	On (default)	At end of line cursor sits at end of line
Auto New Line	Off (default)	Upon receiving a carriage return, a line feed is not generated
	On	Upon receiving a carriage return, a line feed is automatically generated
Auto Scroll	On (default)	Reverse line feed at top inserts new line and scrolls screen down--bottom line lost. Line feed at bottom inserts new line and scrolls screen up--top line lost.
	Off	Reverse line feed at top positions cursor at bottom. Line feed at bottom positions cursor at top.
Insert Char =	(User Defined) <space> (default)	Allows user to define insert character for use in insert mode and screen clears.
Screen Saver	Off	Display always on
	5	Display turns off after 5 minutes of inactivity

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	10	Display turns off after 10 minutes of inactivity
	15 (default)	Display turns off after 15 minutes of inactivity
Answerback	<program>	Program answerback message
Concealed	Off (default)	Displays answerback message
	On	Conceals answerback message
Select	Off	Answerback Disabled
	On (Default)	Answerback Enabled

KEYBOARD SETTINGS

Layout	N American (Default) United Kingdom Swiss (German) Swiss (French) Swedish Spanish Norwegian Italian German French Flemish Finnish Dutch Danish Canadian French	Allows choice of 15 international keyboard layouts
Bell Tone	On (default) Off	Allows bell tone on Disables bell tone

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Margin	1 ... 132 (default @ 72)	Selects column at which margin bell sounds
Margin Bell	Off (default)	Bell silent on margin tab
	On	Bell rings on selected margin column
Click	Off (default)	Key depressions are silent
	On	Key depressions give audible feed back
Auto Repeat	8, 12, 16, 20, 24 (default), 28, 32, 50	Number of times per second keys repeat when held down
Delay	.25, .5 (default), .6, .8, 1.0, 1.2, 1.4, 1.6,	Time between when key depressed and when it begins repeating (seconds)
	****	No repeat
Lock Type	Caps (default)	When Lock key depressed makes all alphabetic characters upper-case
	Shift	When Lock key depressed selects shifted key value on all keys
	Rev	When Lock key depressed, Shift displays lower case

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
Lock Set	Off (default)	Lock is not selected on power up
	On	Lock is selected on power up
Mode	Typewriter (default)	Selects standard typewriter layout
	Data Entry	Selects data entry keyboard layout
User Features	Unlocked (default)	Terminal accepts user controllable features ie. Keyboard Lock/Unlock, Smooth/Jump Scroll, Reverse/Normal Screen, Key Auto Repeat, Set/Clear Tabs
	Locked	Terminal ignores user selections on above features
User Keys	Unlocked (default)	All programmable keys may be re-programmed
	Locked	Programmable keys may not be re-programmed
Keypad Keys	Normal (default)	Selects labelled numeric key functions
	Application	Selects application key codes to be transmitted
Cursor Keys	Normal (default)	Selects labelled cursor key function

2.2.b ANSI SETUP PARAMETERS

<u>Parameter</u>	<u>Options</u>	<u>Description</u>
	Application	Selects special application code to be transmitted
Compose Key	Off	Disables Compose key
	On (default)	Allows Compose key to function
Backarrow Key	Delete (default)	Backarrow key acts as a delete key
	Backspace	Backarrow key acts as a backspace key

2.3 Saving Setup

After the parameters are changed, they may be saved in non-volatile memory. If not, the changes are only effective until you turn the terminal off. Saving Setup ensures that when you turn your unit off and back on again, Set-Up parameter values will still be present. The parameter values can also be restored to their factory setting.

To save Setup press CTRL/F4 "Saved" will be displayed at the bottom of the screen.

2.4 Resetting the Terminal

Soft Reset: Power on/off.

Soft Reset: Right Shift Break

Hard Reset: From Setup Mode, CTRL/F5, then right Shift Break.

2.5 Self Test Mode

Self Test Mode can only be accessed from the full screen Setup.

For continuous self-test mode press Shift/F1 while in Full Screen Setup. The firmware version number is displayed at the bottom of the self-test screen as Liberty 120 -- Version xx.xx. The EPROM checksum for the firmware is displayed in the lower left corner of the screen as ROM = xxxx, a four digit hexadecimal number. Continuous self test mode tests all RAM, ROM and communications ports on the terminal. Consult the Liberty 120 Maintenance Manual for more information.

To exit continuous self-test mode, you must perform a soft reset.

For video test mode, press Shift/F3 while in full screen Setup. You can select from five different video tests:

F1 = Tilt Alignment

F2 = H Pattern (with brightness blocks)

F3 = Hidden/Embedded Attributes

F4 = Foreign Fonts

F5 = Background Attribute

To exit from any/all video tests you must perform a soft reset.

3.1 Main Port

Configuration -- Data Terminal Equipment (Main Port)
Connector Type -- DB25 Female

Pin No.	I/O	Function	Pin No.	I/O	Function
1	X	Chassis Ground	14	X	N.C.
2	O	Data From Terminal to Computer (TxD)	15	X	N.C.
3	I	Data From Computer (RxD)	16	X	N.C.
4	O	Request to Send (RTS)	17	X	N.C.
5	I	Clear to Send (CTS)	18	X	N.C.
6	I	Data Set Ready (DSR)	19	X	N.C.
7	X	Signal Ground	20	O	Data Terminal Ready (DTR)
8	I	Data Carrier Detect (DCD)	21	X	N.C.
9	O	+12 volt source	22	X	N.C.
10	X	N.C.	23	X	N.C.
11	O	-12 volt source	24	X	N.C.
12	X	N.C.	25	O	+5 volt source
13	X	N.C.			

3.2 Aux Port

Configuration -- Centronics Parallel (Aux Port)

Connector Type -- DB25 Female

Pin No.	I/O	Function	Pin No.	I/O	Function
1	O	Strobe Pulse	14	O	Auto line feed
2	O	Data bit 1	15	I	Error
3	O	Data bit 2	16	O	Initialize
4	O	Data bit 3	17	X	N.C.
5	O	Data bit 4	18	X	Ground
6	O	Data bit 5	19	X	Ground
7	O	Data bit 6	20	X	Ground
8	O	Data bit 7	21	X	Ground
9	O	Data bit 8	22	X	Ground
10	I	Acknowledge	23	X	Ground
11	I	Printer Busy	24	X	Ground
12	I	Paper out	25	X	Ground
13	I	Print select			

4 Key Functions and Keycodes

The following section outlines all keycode transmissions for each of the four keyboards available with the terminal. See Appendix A/E for a complete layout of each keyboard.

Key transmissions change with the emulation mode selected. The proper keyboard layout must be matched with the correct emulation mode to determine exactly what functions the keyboard will be sending.

Please Note: For certain emulations the keycap legends may not match the execute key function. This was done to simulate the key positions of the emulated terminal. Be sure to consult the following tables since some terminal functions are not activated by the keycap legend you might expect (ie. Scroll Lock is the Setup key on PC keyboards).

4.1 ASCII Keyboard, Key Functions and Keycodes

All keycodes show unshifted first, then shifted following the slash. If there is no transmission or action by a key in Shifted state, then there is no slash or value after the slash.

KEY/shifted	F-ONE/WYSE TVI/ADM	VT-300/200	VT100/52	ADDS (Enhance OFF)	ADDS A2 (Enhance ON)
F1	SOH @ CR/SOH ` CR	ESC [17 ~	--	STX 1 CR/STX ! CR	STX 1/STX !
F2	SOH A CR/SOH a CR	ESC [18 ~	--	STX 2 CR/STX " CR	STX 2/STX "
F3	SOH B CR/SOH b CR	ESC [19 ~	--	STX 3 CR/STX # CR	STX 3/STX #
F4	SOH C CR/SOH c CR	ESC [20 ~	--	STX 4 CR/STX \$ CR	STX 4/STX \$
F5	SOH D CR/SOH d CR	ESC [21 ~	--	STX 5 CR/STX % CR	STX 5/STX %
F6	SOH E CR/SOH e CR	ESC [23 ~	ESC	STX 6 CR/STX ^ CR	STX 6/STX ^
F7	SOH F CR/SOH f CR	ESC [24 ~	BS	STX 7 CR/STX ' CR	STX 7/STX '
F8	SOH G CR/SOH g CR	ESC [25 ~	LF	STX 8 CR/STX (CR	STX 8/STX (
F9	SOH H CR/SOH h CR	ESC [26 ~	--	STX 9 CR/STX) CR	STX 9/STX)
F10	SOH I CR/SOH i CR	ESC [28 ~	--	STX : CR/STX * CR	STX :/STX *
F11	SOH J CR/SOH j CR	ESC [29 ~	--	STX i CR/STX + CR	STX i/STX +
F12	SOH K CR/SOH k CR	ESC [31 ~	--	STX < CR/STX , CR	STX </STX ,
F13	SOH L CR/SOH l CR	ESC [32 ~	--	STX = CR/STX - CR	STX =/STX -
F14	SOH M CR/SOH m CR	ESC [33 ~	--	STX > CR/STX . CR	STX >/STX .
F15	SOH N CR/SOH n CR	ESC [34 ~	--	STX ? CR/STX / CR	STX ?/STX /
F16	SOH O CR/SOH o CR	Pause/Pause	Pause/Pause	STX @ CR/STX 0 CR	STX @/STX 0

4.1 ASCII Keyboard, Key Functions and Keycodes

KEY/shifted	F-ONE/WYSE TVI/ADM	VT-300/200	VT100/52	ADDS (Enhance OFF)	ADDS A2 (Enhance ON)
SETUP	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP	SETUP/full setup	SETUP/full SETUP
BREAK	BREAK/reset	BREAK/reset	BREAK/reset	BREAK/reset	BREAK/reset
ESC	ESC/local ESC	ESC/ESC	ESC/ESC	ESC/local ESC	ESC/local ESC
BS	BS/BS	BS/BS	BS/BS	BS/BS	BS/BS
DEL	DEL/DEL	DEL/DEL	DEL/DEL	DEL/DEL	DEL/DEL
TAB	HT/ESC I	HT/HT	HT/HT	HT/ESC I	HT/ESC I
RETURN	CR/CR	CR/CR	CR/CR	CR/CR	CR/CR
PAGE	ESC K/ESC J	ESC [6 ~ /ESC [5 ~ --		ESC J/ESC J	ESC J/ESC J
FUNCT	FUNCTION seq	COMPOSE seq	COMPOSE seq	FUNCTION seq.	FUNCTION seq.
SEND/PRINT	ESC 7/ESC P	Print Screen	Print Screen	ESC 7/ESC P	ESC 7/ESC P

** The following HOME and Cursor arrow keys are controlled by Application mode in all VT emulations. Shifted value shown represents cursor key application mode ON.

KEY/shifted	F-ONE/TVI	VT-300/200/100	VT52	ADDS A2	ADM/WYSE
HOME	RS/ESC (	ESC [H/ESC O H	ESC H/ESC H	SOH/SOH	RS/ESC (
↑	VT/ESC j	ESC [A/ESC O A	ESC A/ESC A	SUB/SUB	VT/ESC j
←	BS/BS	ESC [D/ESC O D	ESC D/ESC D	NAK/NAK	BS/BS
↓	SY/LF	ESC [B/ESC O B	ESC B/ESC B	LF/LF	SY/LF
→	FF/FF	ESC [C/ESC O C	ESC C/ESC C	ACK/ACK	FF/FF

**Numeric Keypad: The following numeric pad keys are controlled by Application mode in all VT emulations. For VT emulations, shifted value shown represents Application mode ON. For ASCII emulations, shifted value is just shifted value.

KEY/shifted	F-ONE/WYSE TVI/ADM	VT-300/200/100	VT52	ADDS A2
INS	ESC Q/ESC E	ESC O P/ESC O P	ESC P/ESC P	ESC Q/ESC M
DEL	ESC W/ESC R	ESC O Q/ESC O Q	ESC Q/ESC Q	ESC W/ESC l
CLR	ESC T/ESC Y	ESC O R/ESC O R	ESC R/ESC R	ESC K/ESC k
INS/REPL	ESC r/ESC q	ESC O S/ESC O S	ESC S/ESC S	ESC r/ESC q
7	7	7/ESC O w	7/ESC ? w	7
8	8	8/ESC O x	8/ESC ? x	8
9	9	9/ESC O y	9/ESC ? y	9
-	-	-/ESC O m	-/ESC ? m	-
4	4	4/ESC O t	4/ESC ? t	4
5	5	5/ESC O u	5/ESC ? u	5
6	6	6/ESC O v	6/ESC ? v	6

4.1 ASCII Keyboard, Key Functions and Keycodes

KEY/shifted	F-ONE/WYSE TVI/ADM	VT-300/200/100	VT52	ADDS A2
,	,	,/ESC O l	,/ESC ? l	,
1	1	1/ESC O q	1/ESC ? q	1
2	2	2/ESC O r	2/ESC ? r	2
3	3	3/ESC O s	3/ESC ? s	3
0	0	0/ESC O p	0/ESC ? p	0
.	.	./ESC O n	./ESC ? n	.
ENTER	CR	CR/ESC O M	CR/ESC ? M	CR

4.1 ASCII Keyboard, VT Functions

When in DEC VT-300/200 mode of operation, using the Liberty ASCII layout keyboard, there are 6 keys not available. These are duplicated on the numeric pad, by using the CTRL key, as follows:

DEC VT KEY	Key Function	ASCII Keypad Key, w/CTRL
Find	ESC [1 ~	CTRL/7
Insert Here	ESC [2 ~	CTRL/8
Remove	ESC [3 ~	CTRL/9
Select	ESC [4 ~	CTRL/4
Prev Screen	ESC [5 ~	CTRL/5
Next Screen	ESC [6 ~	CTRL/6

4.2 VT Keyboard, Key Functions and Keycodes

All keycode transmissions show the unshifted first, then the shifted value. If key has no transmission or action in the shifted state, there is no slash and no value shown.

KEY/Shifted	DEC VT320/220	F-ONE/Wyse TVI/ADM	VT100/VT52	ADDS A2 (Enhance OFF)	ADDS A2 (Enhance ON)
HOLD SCREEN	Pause function	ESC/local ESC	DC3/DC1	STX 1 CR/STX ! CR	STX 1/STX !
PRINT SCREEN	Print screen	ESC 7/ESC P	Print Screen	STX 2 CR/STX " CR	STX 2/STX "
SET UP	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP
DATA/TALK	--	Pause function	--	DC3/DC1	
BREAK	BREAK/reset	BREAK/reset	BREAK/reset	BREAK/reset	BREAK/reset
F6	ESC [17 ~	SOH @ CR/SOH ` CR	--	STX 1 CR/STX ! CR	STX 1/STX !
F7	ESC [18 ~	SOH A CR/SOH a CR	--	STX 2 CR/STX " CR	STX 2/STX "
F8	ESC [19 ~	SOH B CR/SOH b CR	--	STX 3 CR/STX # CR	STX 3/STX #
F9	ESC [20 ~	SOH C CR/SOH c CR	--	STX C CR/STX c CR	STX C/STX c
F10	ESC [21 ~	SOH D CR/SOH d CR	--	STX D CR/STX d CR	STX D/STX d
F11	ESC [23 ~	SOH E CR/SOH e CR	ESC	STX E CR/STX e CR	STX E/STX e
F12	ESC [24 ~	SOH F CR/SOH f CR	BS	STX F CR/STX f CR	STX F/STX f
F13	ESC [25 ~	SOH G CR/SOH g CR	LF	STX G CR/STX g CR	STX G/STX g
F14	ESC [26 ~	SOH H CR/SOH h CR	--	STX H CR/STX h CR	STX H/STX h
HELP	ESC [28 ~	SOH I CR/SOH i CR	--	STX I CR/STX i CR	STX I/STX i
DO	ESC [29 ~	SOH J CR/SOH j CR	--	STX J CR/STX j CR	STX J/STX j
F17	ESC [31 ~	SOH K CR/SOH k CR	--	STX K CR/STX k CR	STX K/STX k
F18	ESC [32 ~	SOH L CR/SOH l CR	--	STX L CR/STX l CR	STX L/STX l
F19	ESC [33 ~	SOH M CR/SOH m CR	--	STX M CR/STX m CR	STX M/STX m
F20	ESC [34 ~	SOH N CR/SOH n CR	--	STX N CR/STX n CR	STX N/STX n
COMPOSE	COMPOSE seq	FUNCTION seq	COMPOSE seq.	FUNCTION seq.	FUNCTION seq.
RETURN	CR/CR	CR/CR	CR/CR	CR/CR	CR/CR
FIND	ESC [1 ~	RS/RS	--	SDH/SOH	SDH/SOH
INSERT HERE	ESC [2 ~	ESC r/ESC q	--	ESC r/ESC q	ESC r/ESC q
REMOVE	ESC [3 ~	DEL/DEL	--	DEL/DEL	DEL/DEL
SELECT	ESC [4 ~	ESC T/ESC Y	--	ESC K/ESC K	ESC K/ESC K
PREV SCREEN	ESC [5 ~	ESC J/ESC J	--	ESC J/ESC J	ESC J/ESC J
NEXT SCREEN	ESC [6 ~	ESC K/ESC K	--	ESC J/ESC J	ESC J/ESC J
TAB	HT/HT	HT/ESC I	HT/HT	HT/ESC 1	HT/ESC 1

**** Cursor arrow keys are controlled by cursor key mode, in all VT emulations. Shifted values shown represent cursor keymode ON.

KEY/Shifted	DEC VT300/200/100	F-ONE/TVI	ADM/WYSE	VT52	ADDS A2
↑	ESC [A/ESC O A	VT/ESC j	VT/ESC j	ESC A/ESC A	SUB/SUB
→	ESC [D/ESC O D	BS/BS	BS/BS	ESC D/ESC D	NAK/NAK
↓	ESC [C/ESC O C	SY/FF	SY/LF	ESC B/ESC B	LF/LF
←	ESC [B/ESC O B	FF/FF	FF/FF	ESC C/ESC C	ACK/ACK

**** The following numeric keypad keys are controlled by Keypad Application Mode in all VT emulations. Shifted value shown represents Keypad Application Mode ON. ASCII emulations, shifted value represents Shift.

KEY/Shifted	DEC VT300/200/100	F-ONE/Myse TV1/ADM	ADDS A2	VT52
PF1	ESC O P/ESC O P	ESC Q/ESC E	ESC Q/ESC M	ESC P/ESC P
PF2	ESC O Q/ESC O Q	ESC W/ESC R	ESC W/ESC L	ESC Q/ESC Q
PF3	ESC O R/ESC O R	SOH O CR/SOH o CR	STX C/STX O	ESC R/ESC R
PF4	ESC O S/ESC O S	N/A	N/A	ESC S/ESC S
7	7/ESC O w	7	7	7/ESC ? w
8	8/ESC O x	8	8	8/ESC ? x
9	9/ESC O y	9	9	9/ESC ? y
-	-/ESC O m	-	-	-/ESC ? m
4	4/ESC O t	4	4	4/ESC ? t
5	5/ESC O u	5	5	5/ESC ? u
6	6/ESC O v	6	6	6/ESC ? v
,	,/ESC O l	,	,	,/ESC ? l
1	1/ESC O q	1	1	1/ESC ? q
2	2/ESC O r	2	2	2/ESC ? r
3	3/ESC O s	3	3	3/ESC ? s
0	0/ESC O p	0	0	0/ESC ? p
.	./ESC O n	.	.	./ESC ? n
ENTER	CR/ESC O M	CR	CR	CR/ESC ? M

4.3 PC Keyboard, Key Functions and Keycodes

All keycode transmissions show the unshifted first, then the shifted value. If the key has no transmission or action in the shifted state, there is no slash and no value shown.

KEY/Shifted	F-ONE/MYSE TVI/ADM	ADD5 A2 (Enhance OFF)	ADD5 A2 (Enhance ON)	VT320/220	VT100/52
ESC	ESC/local ESC	ESC/local ESC	ESC/local ESC	SETUP/full SETUP	SETUP/full SETUP
F1	SOH a CR/SOH ` CR	STX 1 CR/STX ! CR	STX 1/STX !	ESC [17 ~	--
F2	SOH A CR/SOH a CR	STX 2 CR/STX " CR	STX 2/STX "	ESC [18 ~	--
F3	SOH B CR/SOH b CR	STX 3 CR/STX # CR	STX 3/STX #	ESC [19 ~	--
F4	SOH C CR/SOH c CR	STX C CR/STX c CR	STX C/STX c	ESC [20 ~	--
F5	SOH D CR/SOH d CR	STX D CR/STX d CR	STX D/STX d	ESC [21 ~	--
F6	SOH E CR/SOH e CR	STX E CR/STX e CR	STX E/STX e	ESC [23 ~	--
F7	SOH F CR/SOH f CR	STX F CR/STX f CR	STX F/STX f	ESC [24 ~	--
F8	SOH G CR/SOH g CR	STX G CR/STX g CR	STX G/STX g	ESC [25 ~	--
F9	SOH H CR/SOH h CR	STX H CR/STX h CR	STX H/STX h	ESC [26 ~	--
F10	SOH I CR/SOH i CR	STX I CR/STX i CR	STX I/STX i	ESC [28 ~	--
F11	SOH J CR/SOH j CR	STX J CR/STX j CR	STX J/STX j	ESC [29 ~	--
F12	SOH K CR/SOH k CR	STX K CR/STX k CR	STX K/STX k	ESC [31 ~	--
PRINT SCRNL	ESC P/ESC L	ESC P/ESC p	ESC P/ESC p	ESC [32 ~	--
SCROLL LOCK	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP	ESC [33 ~	--
PAUSE	BREAK/reset	BREAK/reset	BREAK/reset	ESC [34 ~	--
INSERT	ESC q/ESC r	ESC q/ESC r	ESC q/ESC r	ESC [1 ~	--
PG UP	ESC J/ESC K	ESC J/ESC J	ESC J/ESC J	ESC [3 ~	--
DELETE	ESC W/ESC R	ESC W/ESC I	ESC W/ESC I	ESC [4 ~	--
END	ESC T/ESC Y	ESC K/ESC k	ESC K/ESC k	ESC [5 ~	--
PG DN	ESC K/ESC J	ESC J/ESC J	ESC J/ESC J	ESC [6 ~	--
ENTER	CR/CR	CR/CR	CR/CR	CR/CR	CR/CR
BACKSPACE	BS/BS	BS/BS	BS/BS	DEL/DEL	DEL/DEL
TAB	HT/ESC i	HT/ESC i	HT/ESC I	HT/HT	HT/HT
ALT	FUNCTION seq	FUNCTION seq	FUNCTION seq.	COMPOSE seq.	COMPOSE seq.

*** Home and cursor arrow keys.

KEY/Shifted	F-ONE/TVI	ADD5 A2	ADM/MYSE	VT320/220/100	VT52
HOME	RS/ESC (	SOH/SOH	RS/ESC (	ESC [2 ~ /ESC [2 ~	--
↑	VT/ESC j	SUB/SUB	VT/ESC j	ESC [A/ESC O A	ESC A/ESC A
←	BS/BS	NAK/NAK	BS/BS	ESC [D/ESC O D	ESC D/ESC D
↓	SY/LF	LF/LF	SY/LF	ESC [B/ESC O B	ESC B/ESC B
→	FF/FF	ACK/ACK	FF/FF	ESC [C/ESC O C	ESC C/ESC C

*** The following numeric keypad keys are controlled by NUM LOCK. ASCII values show NUM LOCK ON/NUM LOCK OFF unshifted/NUM LOCK OFF shifted.

KEY/Shifted	F-ONE/TV1	ADD5 A2	ADM/WTSE	VT300/200/100	VT52
NUM LOCK	NUM LOCK ON/OFF	NUM LOCK ON/OFF	NUM LOCK ON/OFF	ESC O P/ESC O P	ESC P/ESC P
/	/	/	/	ESC O Q/ESC O Q	ESC Q/ESC Q
*	*	*	*	ESC O R/ESC O R	ESC R/ESC R
-	-	-	-	ESC O S/ESC O S	ESC S/ESC S
7/HOME	7/RS/ESC C	7/SH/SH	7/RS/ESC C	7/ESC O w	7/ESC ? w
8/t	8/VT/ESC j	8/SUB/SUB	8/VT/VT	8/ESC O x	8/ESC ? x
9/PG UP	9/ESC J/ESC K	9/ESC J/ESC J	9/ESC J/ESC K	9/ESC O y	9/ESC ? y
+	+	+	+	,/ESC O l	,/ESC ? l
4/-	4/BS/BS	4/NAK/NAK	4/BS/BS	4/ESC O t	4/ESC ? t
5	5	5	5	5/ESC O u	5/ESC ? u
6/->	6/FF/FF	6/ACK/ACK	6/FF/FF	6/ESC O v	6/ESC ? v
1/END	1/ESC T/ESC T	1/ESC K/ESC K	1/ESC T/ESC T	1/ESC O q	1/ESC ? q
2/l	2/SY/LF	2/LF/LF	2/LF/LF	2/ESC O r	2/ESC ? r
3/PG DN	3/ESC K/ESC K	3/ESC J/ESC J	3/ESC K/ESC K	3/ESC O s	3/ESC ? s
0/INS	0/ESC r/ESC q	0/ESC r/ESC q	0/ESC r/ESC q	0/ESC O p	0/ESC ? p
./DEL	./DEL/DEL	./DEL/DEL	./DEL/DEL	./ESC O n	./ESC ? n
ENTER	CR	CR	CR	CR/ESC O M	CR/ESC ? M

4.4 102 Keyboard, Key Functions and Keycodes

All keycode transmissions show the unshifted first, then the shifted value. If the key has no transmission or action in the shifted state, there is no slash and no value shown.

KEY/Shifted	F-ONE/MYSE TVI/ADM	ADDS A2 (Enhance OFF)	ADDS A2 (Enhance ON)	VT320/220	VT100/52
ESC	ESC/local ESC	ESC/local ESC	ESC/local ESC	SETUP/full SETUP	SETUP/full SETUP
F1	SOH a CR/SOH ` CR	STX 1 CR/STX ! CR	STX 1/STX !	ESC [17 ~	--
F2	SOH A CR/SOH a CR	STX 2 CR/STX " CR	STX 2/STX "	ESC [18 ~	--
F3	SOH B CR/SOH b CR	STX 3 CR/STX # CR	STX 3/STX #	ESC [19 ~	--
F4	SOH C CR/SOH c CR	STX C CR/STX c CR	STX C/STX c	ESC [20 ~	--
F5	SOH D CR/SOH d CR	STX D CR/STX d CR	STX D/STX d	ESC [21 ~	--
F6	SOH E CR/SOH e CR	STX E CR/STX e CR	STX E/STX e	ESC [23 ~	--
F7	SOH F CR/SOH f CR	STX F CR/STX f CR	STX F/STX f	ESC [24 ~	--
F8	SOH G CR/SOH g CR	STX G CR/STX g CR	STX G/STX g	ESC [25 ~	--
F9	SOH H CR/SOH h CR	STX H CR/STX h CR	STX H/STX h	ESC [26 ~	--
F10	SOH I CR/SOH i CR	STX I CR/STX i CR	STX I/STX i	ESC [28 ~	--
F11	SOH J CR/SOH j CR	STX J CR/STX j CR	STX J/STX j	ESC [29 ~	--
F12	SOH K CR/SOH k CR	STX K CR/STX k CR	STX K/STX k	ESC [31 ~	--
PRINT SCRn	ESC P/ESC L	ESC P/ESC p	ESC P/ESC p	ESC [32 ~	--
SCROLL LOCK	SETUP/full SETUP	SETUP/full SETUP	SETUP/full SETUP	ESC [33 ~	--
PAUSE	BREAK/reset	BREAK/reset	BREAK/reset	ESC [34 ~	--
INSERT	ESC q/ESC r	ESC q/ESC r	ESC q/ESC r	ESC [1 ~	--
PG UP	ESC J/ESC K	ESC J/ESC J	ESC J/ESC J	ESC [3 ~	--
DELETE	ESC W/ESC R	ESC W/ESC I	ESC W/ESC I	ESC [4 ~	--
END	ESC T/ESC Y	ESC K/ESC k	ESC K/ESC k	ESC [5 ~	--
PG DN	ESC K/ESC J	ESC J/ESC J	ESC J/ESC J	ESC [6 ~	--
ENTER	CR/CR	CR/CR	CR/CR	CR/CR	CR/CR
BACKSPACE	BS/BS	BS/BS	BS/BS	DEL/DEL	DEL/DEL
TAB	HT/ESC i	HT/ESC i	HT/ESC I	HT/HT	HT/HT
ALT	FUNCTION seq	FUNCTION seq	FUNCTION seq.	COMPOSE seq.	COMPOSE seq.

*** Home and cursor arrow keys.

KEY/Shifted	F-ONE/TVI	ADDS A2	ADM/MYSE	VT320/220/100	VT52
HOME	RS/ESC C	SOH/SOH	RS/ESC C	ESC [2 ~/ESC [2 ~	--
↑	VT/ESC j	SUB/SUB	VT/ESC j	ESC [A/ESC O A	ESC A/ESC A
←	BS/BS	NAK/NAK	BS/BS	ESC [D/ESC O D	ESC D/ESC D
↓	SY/LF	LF/LF	SY/LF	ESC [B/ESC O B	ESC B/ESC B
→	FF/FF	ACK/ACK	FF/FF	ESC [C/ESC O C	ESC C/ESC C

*** The following numeric keypad keys are controlled by NUM LOCK. ASCII values show NUM LOCK ON/NUM LOCK OFF unshifted/NUM LOCK OFF shifted.

KEY/Shifted	F-ONE/TVI	ADDS A2	ADM/WYSE	VT300/200/100	VT52
NUM LOCK	NUM LOCK ON/OFF	NUM LOCK ON/OFF	NUM LOCK ON/OFF	ESC O P/ESC O P	ESC P/ESC P
/	/	/	/	ESC O Q/ESC O Q	ESC Q/ESC Q
*	*	*	*	ESC O R/ESC O R	ESC R/ESC R
-	-	-	-	ESC O S/ESC O S	ESC S/ESC S
7/HOME	7/RS/ESC C	7/SOH/SOH	7/RS/ESC C	7/ESC O w	7/ESC ? w
8/↑	8/VT/ESC j	8/SUB/SUB	8/VT/VT	8/ESC O x	8/ESC ? x
9/PG UP	9/ESC J/ESC K	9/ESC J/ESC J	9/ESC J/ESC K	9/ESC O y	9/ESC ? y
+	+	+	+	,/ESC O l	,/ESC ? l
4/~	4/BS/BS	4/NAK/NAK	4/BS/BS	4/ESC O t	4/ESC ? t
5	5	5	5	5/ESC O u	5/ESC ? u
6/~	6/FF/FF	6/ACK/ACK	6/FF/FF	6/ESC O v	6/ESC ? v
1/END	1/ESC T/ESC T	1/ESC K/ESC K	1/ESC T/ESC T	1/ESC O q	1/ESC ? q
2/↓	2/SY/LF	2/LF/LF	2/LF/LF	2/ESC O r	2/ESC ? r
3/PG DN	3/ESC K/ESC K	3/ESC J/ESC J	3/ESC K/ESC K	3/ESC O s	3/ESC ? s
0/INS	0/ESC r/ESC q	0/ESC r/ESC q	0/ESC r/ESC q	0/ESC O p	0/ESC ? p
./DEL	./DEL/DEL	./DEL/DEL	./DEL/DEL	./ESC O n	./ESC ? n
ENTER	CR	CR	CR	CR/ESC O M	CR/ESC ? M

4.5 Programming Function Keys

Keys are programmed from the full screen Setup Mode, or by the host computer via escape sequences. To program keys from the keyboard, enter full screen Setup, then press F2.

The terminal will prompt you; Select a key to be programmed. Follow the instructions as they appear in the reverse video line at the bottom of the Setup screen.

Upon selecting a programmable key (if you select a key that cannot be programmed, the terminal will tell you), you will see the "programming line". Each box of the programming line contains important information, as follows:

Full Duplex

The Full Duplex box determines the transmission of function key data. Use the cursor up/down arrows to select the desired output.

Full Duplex = key transmits only
Terminal Duplex = keys act based on main port duplex
Edit Duplex = keys act based on Edit Mode status
Half Duplex = keys transmit and act locally
Local = keys act locally only

Full Duplex Key Use = XXX

Key Use shows the number of characters currently programmed into the selected key. The maximum is 256 characters.

Full Duplex Key Use = xxx Bytes Remaining = XXX

Bytes Remaining shows the amount of function key memory available for programming.

Programming Box

The last box is where the function key is programmed. At the cursor, enter data and/or control codes. Use the cursor right/left arrows to move around. Use the Delete key to make corrections. Use the Insert key to toggle insert mode on/off.

When finished programming, use the Numeric Keypad ENTER key to end programming and save the contents of that key in non-volatile memory.

To exit Program Mode, use either the ALT, FUNCT or COMPOSE key on the PC/102, ASCII or VT keyboard respectively.

4.6 PC-TERM Scan Codes

When the terminal is placed in PC-TERM emulation mode (or WY-120/150 with Scan Codes Option selected), the terminal sends PC scan codes only. See the following keyboard layouts for scan codes for each of the keyboards available with the Liberty 120. The values are shown as hexadecimal digits. The top value is the make code (key down). The bottom value is the break code (key up).

The only local keyboard command available while in PC-TERM is the command to enter Setup. While in PC-TERM to enter Setup press...

Keyboard	Full Screen Setup	Single Line Setup
-----	-----	-----
ASCII	Shift/Setup	Setup
PC/102	ALT/Shift/Scroll Lock	ALT/Scroll Lock
VT	Shift/F3(Setup)	F3(Setup)

Some keys send different scan codes, depending upon the condition of the Shift and CTRL keys. These are designated as KXX where XX is a number. Look up the "K keys" in the following table to determine their respective scan codes.

Key No	Base Case or Shift+Num Lock	Shift Case	Num Lock
-----	-----	-----	-----
K75	E0 52/E0 D2	E0 AA E0 52/ E0 D2 E0 2A	E0 2A E0 52/ E0 D2 E0 AA
K76	E0 53/E0 D3	E0 AA E0 53/ E0 D3 E0 2A	E0 2A E0 53/ E0 D3 E0 AA
K79	E0 4B/E0 CB	E0 AA E0 4B/ E0 CB E0 2A	E0 2A E0 4B/ E0 CB E0 AA
K80	E0 47/E0 C7	E0 AA E0 47/ E0 C7 E0 2A	E0 2A E0 47/ E0 C7 E0 AA
K81	E0 4F/E0 CF	E0 AA E0 4F/ E0 CF E0 2A	E0 2A E0 4F/ E0 CF E0 AA

Key No	Base Case or Shift+Num Lock	Shift Case	Num Lock
-----	-----	-----	-----
K83	E0 48/E0 C8	E0 AA E0 48/ E0 C8 E0 2A	E0 2A E0 48/ E0 C8 E0 AA
K84	E0 50/E0 D0	E0 AA E0 50/ E0 D0 E0 2A	E0 2A E0 50/ E0 D0 E0 AA
K85	E0 49/E0 C9	E0 AA E0 49/ E0 C9 E0 2A	E0 2A E0 49/ E0 C9 E0 AA
K86	E0 51/E0 D1	E0 AA E0 51/ E0 D1 E0 2A	E0 2A E0 51/ E0 D1 E0 AA
K89	E0 4D/E0 CD	E0 AA E0 4D/ E0 CD E0 2A	E0 2A E0 4D/ E0 CD E0 AA

Key No	Base Case or NUM LOCK	Shift Case
-----	-----	-----
K95	E0 35/E0 B5	E0 AA E0 35/ E0 B5 E0 2A*

Key No	Base Case	CTRL Case and/or Shift Case	ALT Case
-----	-----	-----	-----
K124	E0 2A E0 37/ E0 B7 E0 AA	E0 37/E0 B7	54/D4

Key No	Make Code	CTRL Case
-----	-----	-----
K126	E1 1D 45 E1 9D C5	E0 46 E0 C6

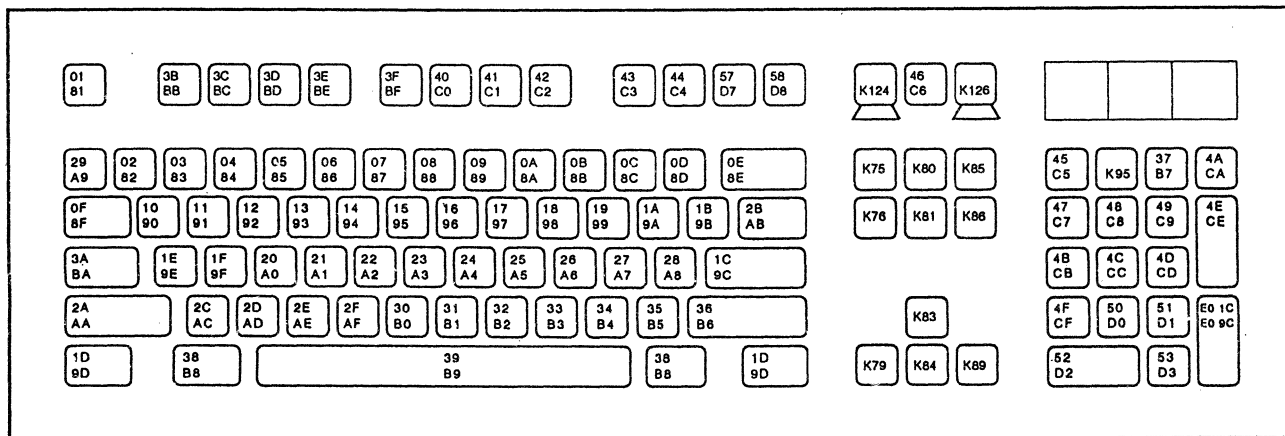
* Left Shift sends AA/2A pair. Right Shift sends B6/36 instead.
If both Shifts are down, both sets of codes are sent.

01 81	K124		K126	46 C6		3B BB	3C BC	3D BD	3E BE	3F BF		40 C0	41 C1	42 C2	43 C3		44 C4	57 D7		58 D8											
29 A9	02 82	03 83	04 84	05 85	06 86	07 87	08 88	09 89	0A 8A	0B 8B	0C 8C	0D 8D	0E 8E				K75	K80	K85		45 C5	K95	37 B7	4A CA							
0F 8F	10 90	11 91	12 92	13 93	14 94	15 95	16 96	17 97	18 98	19 99	1A 9A	1B 9B	1C 9C				K76	K81	K86		47 C7	48 C8	49 C9	4E CE							
1D 9D	3A BA	1E 9E	1F 9F	20 A0	21 A1	22 A2	23 A3	24 A4	25 A5	26 A6	27 A7	28 A8	2B AB					K83			4B CB	4C CC	4D CD								
2A AA		2C AC	2D AD	2E AE	2F AF	30 B0	31 B1	32 B2	33 B3	34 B4	35 B5	36 B6					K79	K84	K89		4F CF	50 D0	51 D1	50 1C E0 9C							
	38 B8						39 B9														52 D2	53 D3									

VT, SCAN CODES
PC-TERM, MAKE/BREAK SCAN CODES

3B BB	3C BC	3D BD	3E BE	3F BF	40 C0	41 C1	42 C2	43 C3	44 C4	57 D7	58 D8	59 D9	K85	45 C5	46 C6		K126		
01 81	02 82	03 83	04 84	05 85	06 86	07 87	08 88	09 89	0A 8A	0B 8B	0C 8C	0D 8D	0E 8E		K76	K75	K81	K95	37 B7
0F 8F	10 90	11 91	12 92	13 93	14 94	15 95	16 96	17 97	18 98	19 99	1A 9A	1B 9B	29 A9		K124	47 C7	48 C8	49 C9	4A CA
1D 9D	1E 9E	1F 9F	20 A0	21 A1	22 A2	23 A3	24 A4	25 A5	26 A6	27 A7	28 A8	1C 9C		K86	4B CB	4C CC	4D CD	4E CE	
38 BA	2A AA	2C AC	2D AD	2E AE	2F AF	30 B0	31 B1	32 B2	33 B3	34 B4	35 B5	36 B6		K83	K80	4F CF	50 D0	51 D1	E0 1C E0 9C
3A BA						39 D9					2B AB		K79	K84	K89	52 D2		53 D3	

ASCII, SCAN CODES
PC-TERM, MAKE/BREAK SCAN CODES



PC, SCAN CODES
PC-TERM, MAKE/BREAK SCAN CODES

01 81	3B BB	3C BC	3D BD	3E BE	3F BF	40 C0	41 C1	42 C2	43 C3	44 C4	57 D7	58 D8	K124	46 C6	K126					
29 A9	02 82	03 83	04 84	05 85	06 86	07 87	08 88	09 89	0A 8A	0B 8B	0C 8C	0D 8D	0E 8E	K75	K80	K85	45 C5	K95	37 B7	4A CA
0F 8F	10 90	11 91	12 92	13 93	14 94	15 95	16 96	17 97	18 98	19 99	1A 9A	1B 9B	1C 9C	K76	K81	K86	47 C7	48 C8	49 C9	4E CE
3A BA	1E 9E	1F 9F	20 A0	21 A1	22 A2	23 A3	24 A4	25 A5	26 A6	27 A7	28 A8	2B AB					4B CB	4C CC	4D CD	
2A AA	56 D6	2C AC	2D AD	2E AE	2F AF	30 B0	31 B1	32 B2	33 B3	34 B4	35 B5	36 B6		K83			4F CF	50 D0	51 D1	E0 1C E0 96
1D 9D	38 B8					39 B9					E0 38 E0 B8	E0 10 E0 90		K79	K84	K89	52 D2		53 D3	

102, SCAN CODES
MAKE/BREAK SCAN CODES

4.7 Wordstar Mode

Available in ASCII emulations only, WordStar alters the output of the following keys to simulate WordStar functions. Please coordinate between your Wordstar Manual and the following guide. Values are shown as unshifted/shifted.

VT Keyboard Wordstar Mode Keycodes.

<u>VT KEY</u>	<u>WORDSTAR MODE</u>	<u>VT KEY</u>	<u>WORDSTAR MODE</u>
HOLD SCREEN	ESC/local ESC	PRNT SCREEN	^O D/^Q Z
SETUP	SETUP/full SETUP	DATA/TALK	Xon/Xoff
BREAK	BREAK/reset term	F6	^K D/^K X
F7	.PA/^K Q	F8	^P S/^J H
F9	^P B/^K S ^Q P	F10	^Q F/^L
F11	^Q A/.FO	F12	^Q/^K
F13	^O C/.HE	F14	^K B/^K K
HELP	^K H/^K Y	DO	^K C/^K W
F17	^K V/^K R	F18	^O I/^O W
F19	^O N/^O J	F20	^Q C/^O L
COMPOSE	--	SPACE BAR	SPACE/SPACE
RETURN	CR/CR	CTRL	CTRL
LOCK	CAPS LOCK	FIND	^Q S ^Q E/^Q S ^Q E
INS HERE	^V/^K N	REMOVE	DEL/DEL
SELECT	^Q Y/NULL	PREV SCRIN	^R/^R
NEXT SCRIN	^C/^C	TAB	HT/^O G
↑	^E/^W	←	^S/^Q S
↓	^X/^Z	→	^D/^Q D
PF1	^N/^N	PF2	^G/^Y
PF3	^B/^O R	PF4	--
7	7/^P T	8	8/^P D
9	9/^P X	-	-/^K P
4	4/^P V	5	5/^P H
6	6/^P O	,	,/^K L
1	1/^A	2	2/^Q V
3	3/^F	0	0/^K F
.	./^Q Q	ENTER	CR

PC/102 Keyboard Wordstar Mode Keycodes

<u>PC/102 KEY</u>	<u>WORDSTAR MODE</u>	<u>PC/102 KEY</u>	<u>WORDSTAR MODE</u>
ESC	ESC/local ESC	F1	^K D/^K X
F2	C ^Q/^K Q	F3	^P S/^J H
F4	^P B/^K S ^P P	F5	^Q F/^L
F6	^Q A/^O J	F7	^O L/^O W
F8	^O R/^B	F9	^K B/^K K
F10	^K H/^K Y	F11	^K C/^K W
F12	^K V/^K R	PRINT SCRNL	^Q Z/^Q
SCROLL LOCK	SETUP/local SETUP	PAUSE	BREAK/reset
INSERT	^V/^N	PG UP	^R/^R
DELETE	^G/^EM	END	^Q Y/DEL ^Q
PG DN	^C/^R	ENTER	CR/CR
BACKSPACE	DEL/DEL	TAB	HT/ESC i
HOME	^Q S ^Q E/^Q R	↑	^E/^W
←	^S/^Q S	↓	^X/^Z
→	^D/^Q D		
** NUM LOCK on			
7	7/^P T	8	8/^P D
9	9/^P X	-	-/^K P
4	4/^P V	5	5/^P H
6	6/^P O	1	1/^A
2	2/^Q V	3	3/^F
0	0/^K F	ENTER	CR
** NUM LOCK off			
7	^Q S ^Q E/^P T	8	^E/^P D
9	^R/^P X	4	^S/^P V
5	5/^P H	6	^D/^P O
1	1/^A	2	^X/^Q V
3	^G/^F	0	^V/^K F
.	^G/^Y	ENTER	CR

ASCII Keyboard Wordstar Mode Keycodes

<u>ASCII KEY</u>	<u>WORDSTAR MODE</u>	<u>ASCII KEY</u>	<u>WORDSTAR MODE</u>
F1	^K D/^K X	F2	.PA/^K Q
F3	^P S/^J H	F4	^P B/^K S ^Q P
F5	^Q F/^L	F6	^Q A/.FO
F7	^Q/^K	F8	^O C/.HE
F9	^K B/^K K	F10	^K H/^K Y
F11	^K C/^K W	F12	^K V/^K R
F13	^O I/^O W	F14	^O N/^O J
F15	^Q C/^O L	F16	^B/^O R
ESC	ESC/local ESC	BS	BS/BS
DEL	DEL/DEL	TAB	HT/^O G
RETURN	CR/CR	PAGE	^C/^R
SEND/PRINT	^O D/^Q Z	HOME	^Q S ^Q E/^Q R
↑	^E/^W	←	^S/^Q S
↓	^X/^Z	→	^D/^Q D
INS	^N/^N	DEL CHAR	^G/^Y
CLR	^Q Y/--	Ins/Repl	^V/^K N
7	7/^P T	8	8/^P D
9	9/^P X	-	-/^K P
4	4/^P V	5	5/^P H
6	6/^P O	,	,/^K L
1	1/^A	2	2/^Q V
3	3/^F	0	0/^K F
.	./^Q Q	ENTER	CR

5.1 Overscan

The Liberty 120 offers full borderless reverse video, commonly called overscan. To enable overscan from the Setup, set the Background field to light.

Overscan can also be enabled by escape sequences by using the full screen reverse video escape sequence for your selected emulation.

5.2 Lines and Columns

The Liberty 120 offers a flexible display that can be configured in various formats. The display can be changed in the Setup screen or by remote host escape sequences. The 78 Hertz option is for reduced screen flicker.

Certain screen formats are not available in certain emulation modes to insure compatibility with the emulated terminal and/or application software. (For instance, DEC VT emulations do not offer the 42 or 43 line options.)

<u>Option</u>	<u>Result</u>
24 (60Hz)	Screen display is 24 scrolling lines of data with one status line. Screen is refreshed 60 times per second. Character cell size is 10 x 16 pixels. At 132 columns, character cell size is 9 x 16.
25 (60Hz)	Screen display is 25 scrolling lines of data with one status line. Screen is refreshed 60 times per second. Character cell size is 10 x 16 pixels. At 132 columns, character cell size is 9 x 16. (This option not available in Freedom ONE, TVI-950, ADM 31 or VT emulations.)
24 (78Hz)	Screen display is 24 scrolling lines of data with one status line. Screen is refreshed 78 times per second. Character cell size is 10 x 13 pixels. At 132 columns, character cell size is 9 x 13.
25 (78Hz)	Screen display is 25 scrolling lines of data with one status line. Screen is refreshed 78 times per second. Character cell size is 10 x 13 pixels. At 132 columns, character cell size is 9 x 13.

Option

Result

- | | |
|----|---|
| 42 | Screen display is 42 scrolling lines of data with one status line. Screen is refreshed 60 times per second. Character cell size is 10 x 9 pixels. At 132 columns, character cell size is 9 x 9. |
| 43 | Screen display is 43 scrolling lines of data with one status line. Screen is refreshed 60 times per second. Character cell size is 10 x 9 pixels. At 132 columns, character cell size is 9 x 9. |

6.1 DEC VT300/200/100 ESCAPE SEQUENCES

Some escape sequences require a parameter value. These are designated as PsX, where X is an ASCII character or a string of characters. The details of these parameters are described in Section 6.6.

** Note**

CSI.... is a 8-bit control code -- 09BM -- mnemonic, the equivalent 7-bit expansion os "ESC [".
 ST.... is a 8-bit control code -- 09CH -- mnemonic, the equivalent 7-bit expansion is "ESC \".
 DCS.... is a 8-bit control code -- 09HC -- mnemonic, the equivalent is "ESC P".

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
CONTROL FUNCTIONS		
ENQ: Send the answerback message	CTRL-E	CTRL-E
BEL: Bell tome of the bell enabled in Set-Up	CTRL-G	CTRL-G
BS: Backspace	CTRL-H	CTRL-H
HT: Horizontal tab	CTRL-I	CRTL-I
LF: Go to next line at same column	CTRL-J	CTRL-J
VT: Same action as LF	CTRL-K	CTRL-K
FF: Same action as LF	CTRL-L	CTRL-L
CR: Return to column 0	CTRL-M	CTRL-M
SO: Map G1 to GL	CTRL-N	CTRL-N
SI: Map G0 to GL	CTRL-O	CTRL-O
DC1: Device control 1 (XON)	CTRL-Q	CTRL-Q
DC3: Device control 3 (XOFF)	CTRL-S	CTRL-S
CAN: Immediately cancels the escape or control sequence in progress	CTRL-X	CTRL-X
SUB: Do a CAN and also display a reverse question mark	CTRL-Z	CTRL-Z
ESC: Introduce an escape sequence	CTRL-[	CTRL-[
IND: Move down to next line at same column	ESC D (84H)	--
NEL: Move to the first column of next line	ESC E (85H)	--

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
HTS: Set tab stop at cursor place	ESC H (88H)	--
RI: Move up to upper line at same column	ESC M (8DH)	--
SS2: Map G2 to GL for the next character	ESC N (8EH)	--
SS3: Map G3 to GL for the next character	ESC O (8FH)	--
DCS: Introduce a device string	ESC P (90H)	--
CSI: Introduce a control sequence	ESC [(9BH)	--
ST: Terminate a control string	ESC \ (9CH)	--
OSC: Introduce an operating string*	ESC] (9DH)	--
PM: Introduce a privacy message string*	ESC ^ (9EH)	--
APC: Introduce an application program command*	ESC _ (9FH)	--

* Once it receive these control codes, the terminal ignores all the following characters until it receives an ST control code. CAN, SUB, and ESC do not cancel device control strings.

SELECTING VT SERIES EMULATIONS

VT300 mode, 8-bit controls	CSI " p	CSI 63 " p
	CSI 63 ; 0 " p	CSI 63 ; 0 " p
	CSI 63 ; 2 " p	CSI 63 ; 2 " p
VT200 mode, 8-bit controls	CSI 62 " p	CSI 62 " p
	CSI 62 ; 0 " p	CSI 62 ; 0 " p
	CSI 62 ; 2 " p	CSI 62 ; 2 " p
VT300 mode, 7-bit controls	CSI 63 ; 1 " p	CSI 63 ; 1 " p
VT200 mode, 7-bit controls	CSI 62 ; 1 " p	CSI 62 ; 1 " p
VT100 mode	CSI 61 " p	CSI 61 " p
VT52 mode	CSI ? 2 1	CSI ? 2 1

CHARACTER SETS

Assigning 94-character set to:

G0	ESC (Ps36	ESC (Ps36
G1	ESC) Ps36	ESC) Ps36
G2	ESC * Ps36	--
G3	ESC + Ps36	--

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Designating 96-character set to:		
G1	ESC - Ps37	ESC - Ps37
G2	ESC . Ps37	--
G3	ESC / Ps37	--
Mapping G0 into GL	CTRL-O	CTRL-O
Mapping G1 into GL	CTRL-N	CTRL-N
Mapping G1 into GR	ESC ~	--
Mapping G2 into GL	ESC n	--
Mapping G2 into GR	ESC }	--
Mapping G3 into GL	ESC o	--
Mapping G3 into GR	ESC	--
Mapping G2 into GL for the next character	ESC N	--
Mapping G3 into GL for the next character	ESC O	--
Selecting User-Preferred supplemental set to be:		
DEC supplemental Graphic set	DCS 0 ! u % 5 ST	DCS 0 ! u % 5 ST
ISO Latin-1 supplemental set	DCS 1 ! u A ST	DCS 1 ! u A ST
Selecting National Replacement set to be:		
National Set	CSI ? 42 h	CSI ? 42 h
Multinational or ISO Latin set	CSI ? 42 l	CSI ? 42 l
<u>SCREEN DISPLAY CONTROLS</u>		
Local echo off	CSI 12 h	CSI 12 h
Local echo on	CSI 12 l	CSI 12 l
Reverse screen mode	CSI ? 5 h	CSI ? 5 h
Normal screen mode	CSI ? 5 l	CSI ? 5 l
Smooth scroll	CSI ? 4 h	CSI ? 4 h
Jump Scroll	CSI ? 4 l	CSI ? 4 l
<u>Selecting active status display:</u>		
Main display	CSI 0 \$ }	--
Status line	CSI 1 \$ }	--
<u>Selecting status line type:</u>		
Off	CSI 0 \$ ~	--
On	CSI 1 \$ ~	--
Host writable	CSI 2 \$ ~	--

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Select 132 column mode	CSI ? 3 h	CSI ? 3 h
Select 80 column mode	CSI ? 3 l	CSI ? 3 l
Set top and bottom margin	CSI Ps28; Ps28 r	CSI Ps28; Ps28 r
Set origin mode	CSI ? 6 h	CSI ? 6 h
Reset origin mode	CSI ? 6 l	CSI ? 6 l

VISUAL ATTRIBUTE AND LINE ATTRIBUTE

Select graphic rendition (visual attribute)	CSI Ps34;Ps34...m	CSIPs34;Ps34...m
Double-width, double-height	ESC #3 (top half) ESC #4 (bottom half)	ESC #3(top half) ESC#4(bottom half)
Single-width, single-height	ESC # 5	ESC # 5
Double-width, single-height	ESC # 6	ESC # 6

SCREEN EDITING

Insert Pn characters	CSI Ps29 @	--
Delete Pn characters	CSI Ps29 P	CSI Ps29 P
Insert Pn lines	CSI Ps28 L	CSI Ps28 L
Delete Pn lines	CSI Ps28 M	CSI Ps28 M
Erase Pn characters	CSI Ps29 X	--
Erase in line:		
cursor to end	CSI K	CSI K
beginning to cursor	CSI 0 K	CSI 0 K
entire line	CSI 1 K CSI 2 K	CSI 1 K CSI 2 K
Erase in display:		
cursor to end	CSI J	CSI J
beginning to cursor	CSI 0 J	CSI 0 J
entire display	CSI 1 J CSI 2 J	CSI 1 J CSI 2 J
Selective erase in line:		
cursor to end	CSI ? K	--
beginning to cursor	CSI ? 0 K	--
entire line	CSI ? 1 K CSI ? 2 K	-- --

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Selective erase in display:		
cursor to end	CSI ? J	--
beginning to cursor	CSI ? 0 J	--
entire display	CSI ? 1 J	--
entire display	CSI ? 2 J	--
Select character to be:		
erasable	CSI 0 " q	--
non-erasable	CSI 2 " q	--
non-erasable	CSI 1 " q	--
CURSOR CONTROLS		
Select cursor to be:		
visible	CSI ? 25 h	CSI ? 25 h
invisible	CSI ? 25 l	CSI ? 25 l
Cursor positioning	CSI Ps28;Ps28 H	CSI Ps28;Ps28 H
	CSI Ps28;Ps28 f	CSI Ps28;Ps28 f
Cursor up Pn lines	CSI Ps28 A	CSI Ps28 A
Cursor down Pn lines	CSI Ps28 B	CSI Ps28 B
Cursor forward Pn columns	CSI Ps28 C	CSI Ps28 C
Cursor backward Pn columns	CSI Ps28 D	CSI Ps28 D
Save current cursor state	ESC 7	ESC 7
Restore cursor state	ESC 8	ESC 8
Clear tab at cursor position	CSI 0 g	CSI 0 g
Clear all tabs	CSI 3 g	CSI 3 g
Set tab stops	ESC H	ESC H
KEYBOARD CONTROLS		
Lock keyboard	CSI 2 h	CSI 2 h
Unlock keyboard	CSI 2 l	CSI 2 l
RETURN transmitting both CR, LF	CSI 20 h	CSI 20 h
RETURN transmitting only CR	CSI 20 l	CSI 20 l
Autorepeat mode on	CSI ? 8 h	CSI ? 8 h
Autorepeat mode off	CSI ? 8 l	CSI ? 8 l
Autowrap mode on	CSI ? 7 h	CSI ? 7 h
Autowrap mode off	CSI ? 7 l	CSI ? 7 l

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Setting cursor keys to:		
application mode	CSI ? 1 h	CSI ? 1 h
normal cursor mode	CSI ? 1 l	CSI ? 1 l
Setting numeric keypad keys to:		
application mode	ESC =	ESC =
	CSI ? 66 h	CSI ? 66 h
normal numeric mode	ESC >	ESC >
	CSI ? 66 l	CSI ? 66 l
Setting backarrow key to be:		
backspace key	CSI ? 67 h	CSI ? 67 h
delete key	CSI ? 67 l	CSI ? 67 l
Setting main keypad keys to:		
data processing mode	CSI ? 68 h	CSI ? 68 h
typewriter mode	CSI ? 68 l	CSI ? 68 l

Programming User Defined Keys DCS Ps30;Ps31|Ps32/Ps33;Ps32/Ps33.
....ST (available in VT300/200/100)

PRINT CONTROLS

Defining the print region:		
full screen	CSI ? 19 h	CSI ? 19 h
scroll region	CSI ? 19 l	CSI ? 19 l
Print form feed mode on	CSI ? 18 h	CSI ? 18 h
Print form feed mode off	CSI ? 18 l	CSI ? 18 l
Auto print mode on	CSI ? 5 i	CSI ? 5 i
Auto print mode off	CSI ? 4 i	CSI ? 4 i
Printer controller mode on	CSI 5 i	CSI 5 i
Printer controller mode off	CSI 4 i	CSI 4 i
Print screen	CSI i	CSI i
	CSI 0 i	CSI 0 i
Print cursor line	CSI 1 i	CSI 1 i

STATE REPORTS AND RESTORES

Primary device attribute:		
request	CSI c	CSI c
	CSI 0 c	CSI 0 c
report	CSI ? Ps47; Ps48..Ps48 c	CSI ? Ps47; Ps48..Ps48 c

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Secondary device attribute:		
request	CSI > c	CSI > c
report	CSI ? c	CSI > c
	CSI > 24;11;0; c	CSI > 24;11;0 c
	24 = VT320 terminal	
	11 = version 1.1 firmware	
	0 = no hardware options	
VT320 operating status:		
request	CSI 5 n	CSI 5 n
report no malfunction	CSI 0 n	CSI 0 n
report malfunction	CSI 3 n	CSI 3 n
Cursor position report:		
request	CSI 6 n	CSI 6 n
report	CSI Ps28;Ps28 R	--
Printer status:		
request	CSI ? 15 n	CSI ? 15 n
report no printer	CSI ? 13 n	CSI ? 13 n
report printer ready	CSI ? 10 n	CSI ? 10 n
report printer not ready	CSI ? 11 n	CSI ? 11 n
UDKs status:		
request	CSI ? 25 n	--
report UDKs unlocked	CSI ? 20 n	--
report UDKs locked	CSI ? 21 n	--
Keyboard dialect:		
request	CSI ? 26 n	CSI ? 26 n
report	CSI ? 27; Ps39 n	CSI ? 27; Ps39 n
Terminal state reports/restores:		
request ignored	CSI 0 \$ u	--
request terminal state	CSI 1 \$ u	--
report terminal state	DCS 1 \$ s Ps40...Ps40	--
	<checksum 1 and 2> ST	
restore terminal state	DCS 1 \$ p Ps40...Ps40	--
	<checksum 1 and 2> ST	

6.1 VT300/200 AND VT100 ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>VT300/200</u>	<u>VT100</u>
Presentation state reports and restore:		
request ignored	CSI 0 \$ w	--
request cursor information	CSI 1 \$ w	--
request tab stop report	CSI 2 \$ w	--
report cursor information	DCS 1 \$ u Ps41;..Ps41 ST	--
report tab stop	DCS 2 \$ t Ps42;..Ps42 ST	--
restore cursor information	DCS 1 \$ t Ps41;..Ps41 ST	--
report tab stop	DCS 2 \$ t Ps42;..Ps42 ST	--
Mode settings:		
Request (ANSI mode)	CSI Ps43 \$ p	--
(DEC private)	CSI ? Ps44 \$ p	--
Report (ANSI mode)	CSI Ps43;Ps45 \$ y	--
(DEC private)	CSI Ps44;Ps45 \$ y	--
Set mode (ANSI mode)	CSI Ps43;...Ps43 h	--
(DEC private)	CSI Ps44;...Ps44 h	--
Reset mode (ANSI mode)	CSI Ps43;...Ps43 l	--
(DEC private)	CSI ? Ps44;...Ps44 l	--
Control function settings:		
Request	DCS \$ q Ps46 ST	--
Report valid request	DCS 0 \$ r Ps46 ST	--
Report invalid request	DCS 1 \$ r Ps46 ST	--
RESETTING AND TESTING TERMINAL		
Soft terminal reset	CSI ! p	--
Hard terminal reset	ESC c	ESC c
Invoke confidence test	CSI 4;Ps38..Ps38 y	CSI 4;Ps38..Ps38 y
Screen alignment pattern	ESC # 8	ESC # 8
SOFT CHARACTER SET		
Down-line-loading characters		
(available in VT300/200 only)	DCS Ps49;Ps50;Ps51;Ps52;Ps53;Ps54{Ps55;Ps56;...Ps56 ST	

6.2 WYSE ESCAPE SEQUENCES

Some escape sequences require a parameter value. These are designated as PsX, where X is an ASCII character or string of characters representing a value for the escape. Look up all parameter values in Section 6-6 Parameter Value Tables.

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
MONITOR MODE			
Monitor mode on	ESC U	ESC U	ESC U
Monitor mode off	ESC u or ESC X	ESC u or ESC X	ESC u or ESC X
SELECTING PERSONALITIES			
Enhance mode off	ESC ~ SP	ESC ~ SP	ESC ~ SP
Enhance mode on	ESC ~ !	ESC ~ !	ESC ~ !
Select WY-50+ mode	ESC ~ "	ESC ~ "	ESC ~ "
Select Freedom ONE mode	ESC ~ 1	ESC ~ 1	ESC ~ 1
Select TeleVideo 925 mode	ESC ~ \$	ESC ~ \$	ESC ~ \$
Select ADM 31 mode	ESC ~ +	ESC ~ +	ESC ~ +
Select ADDS VP A2 mode	ESC ~ %	ESC ~ %	ESC ~ %
Select previous Wyse mode	ESC ~ 4	ESC ~ 4	ESC ~ 4
Select PC Term mode	ESC ~ 5	ESC ~ 5	ESC ~ 5
Select VT52 mode	ESC ~ 6	ESC ~ 6	ESC ~ 6
Select VT100 mode	ESC ~ ;	ESC ~ ;	ESC ~ ;
Select Televideo 950 mode	ESC ~ (	ESC ~ (	ESC ~ (
COMMUNICATING WITH THE COMPUTER			
Enable transmission	CTRL Q	CTRL Q	CTRL Q
Stop transmission	CTRL S	CTRL S	CTRL S
Send ACK	CTRL E	CTRL E	CTRL E
ACK Mode off	ESC e 6	ESC e 6	---
ACK Mode on	ESC e 7	ESC e 7	---
Full-duplex mode on	ESC C	ESC C	ESC C
	ESC D F	ESC D F	ESC D F
Half-duplex mode on	ESC C	ESC C	ESC C
	ESC D H	ESC D H	ESC D H
Block mode on	ESC B	ESC B	ESC B
Send terminal ID	ESC SP	ESC SP	ESC SP
Program answerback	---	ESC c ; Ps1 CTRL Y	---

6.2 WYSE ESCAPE SEQUENCES

FUNCTION	WY 150/120	WY 60	WY 50
Send answerback	--	ESC c <	--
Conceal answerback	--	ESC c =	--
Answerback Mode off	ESC e SP	ESC e SP	--
Answerback Mode on	ESC e !	ESC e !	--
Set maximum xmit speed	--	ESC c 6 Ps2	--
Set baud/stop/parity/word	--	ESC c 0 Ps62	--

CONTROLLING THE TERMINAL AND KEYBOARD

Local edit mode on	ESC k	ESC k	ESC k
Duplex edit mode on	ESC l	ESC l	ESC l
Sound bell	CTRL G	CTRL G	CTRL G
Unlock keyboard	CTRL N	CTRL N	CTRL N
	or ESC "	or ESC "	or ESC "
Lock keyboard	CTRL O	CTRL O	CTRL O
	or ESC #	or ESC #	or ESC #
Keyclick off	ESC e \$	ESC e \$	--
Keyclick on	ESC e %	ESC e %	--
CAPS LOCK on	ESC e &	ESC e &	--
CAPS LOCK off	ESC e '	ESC e '	--
Margin bell off	ESC e L	ESC e L	--
Margin bell on	ESC e M	ESC e M	--
Margin bell set at cursor position	ESC ` J	ESC ` J	ESC ` J
Key repeat off	ESC e ,	ESC e ,	--
Key repeat on	ESC e -	ESC e -	--
Define CAPS LOCK normal	--	ESC e T	--
Define CAPS LOCK reverse	--	ESC e U	--
Application keymode on	--	ESC ~ 3	--
Application keymode off	--	ESC ~ 2	--
Wyseword on	--	ESC ~ /	--
Wyseword off	--	ESC ~ .	--

6.2 WYSE ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
REDEFINING THE KEYS			
Select standard ASCII key codes	ESC e H	--	--
Select PC scan codes	ESC e I	--	--
Program function keys	ESC z Ps4 Ps5	ESC z Ps4	ESC z
	DEL	Ps5 DEL	Ps4 Ps5 DEL
Program function keys with direction	ESC Z Ps3 Ps4	ESC Z Ps3	ESC Z
Clear function keys	Ps5 DEL	Ps4 Ps5 DEL	Ps5 DEL
	ESC z Ps4	ESC z Ps4	ESC z
	DEL	DEL	Ps4 DEL
Read function keys	ESC Z ~ Ps4	ESC Z ~ Ps4	ESC Z ~ Ps4
Set maximum function keys	--	ESC c 7 Ps2	--
Default all function keys	--	ESC c U	--
SCREEN AND CURSOR DISPLAY			
Screen display off	ESC ` 8	ESC ` 8	ESC ` 8
	or ESC o	or ESC o	--
Screen display on	ESC ` 9	ESC ` 9	ESC ` 9
	or ESC n	or ESC n	--
Screensaver off	ESC e P	ESC e P	--
Screen saver on	ESC e Q	ESC e Q	--
Set reverse screen (light background)	ESC ^ 1	ESC ^ 1	--
Restore normal screen (dark background)	ESC ^ 0	ESC ^ 0	--
Set scrolling speed and type	ESC ` Ps6	ESC ` Ps6	ESC ` Ps6
Smooth scrolling off	ESC ` @	ESC ` @	ESC ` @
Set cursor display features	ESC ` Ps7	ESC ` Ps7	ESC ` Ps7
Cursor display off	ESC ` 0	ESC ` 0	ESC ` 0
Cursor display on	ESC ` 1	ESC ` 1	ESC ` 1
Select 10 X 16 character cell (60Hz)	ESC e >	--	--
Select 10 X 13 character cell (78Hz)	ESC e ?	--	--

6.2 WYSE ESCAPE SEQUENCES

FUNCTION	WY 150/120	WY 60	WY 50
DISPLAYING THE MESSAGE FIELDS			
Status line on (extended)	ESC ` a	ESC ` a	ESC ` a
Status line on (standard)	ESC ` b	ESC ` b	ESC ` b
Status line off	ESC ` c	ESC ` c	--
Program/display message on status l.	ESC F Ps8 CR	ESC F Ps8	ESC F CR Ps8 CR
Program message on unshifted label line	ESC z (Ps9 CR	ESC z (Ps9 CR	ESC z Ps9 CR
Program message on shifted label line	ESC z) Ps9 CR or ESC f Ps9	ESC z) Ps9 CR or ESC f Ps9 CR	ESC z Ps9 CR or ESC f CR Ps9 CR
Turn on shifted label line	ESC z P CR	ESC z P CR	ESC z P CR
Turn off shifted label line	ESC z DEL	ESC z DEL	ESC z DEL
Clear unshifted label line	ESC z (CR	ESC z (CR	ESC z (CR
Clear shifted label line	ESC z) CR	ESC z) CR	ESC z) CR
Program/display f-key label	ESC z Ps11 Ps10 CR	ESC z Ps11 Ps10 CR	ESC z Ps11 Ps10
Clear function key label	ESC z Ps11 CR	ESC z Ps11 CR	ESC z Ps10 CR
DEFINING THE DATA AREA			
Select 80-column display	ESC ` :	ESC ` :	ESC ` :
Select 132-column display	ESC ` ;	ESC ` ;	ESC ` ;
80/132 width-change-clear off	ESC e .	ESC e .	--
80/132 width-change-clear on	ESC e /	ESC e /	--
Display 24 data lines	ESC e (	ESC e (	--
Display 25 data line	ESC e)	ESC e)	--
Display 42 data lines	ESC e *	ESC e *	--
Display 43 data lines	ESC e +	ESC e +	--
Economy 80-column mode off	ESC e F	ESC e F	--
Economy 80-column mode on	ESC e G	ESC e G	--

6.2 WYSE ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
DISPLAY MEMORY/SPLIT SCREEN			
Divide memory into pages	ESC w Ps12	ESC w Ps12	--
Display previous page	ESC w B or ESC J	ESC w B or ESC J	--
Display next page	ESC w C or ESC K	ESC w C or ESC K	--
Display page n	ESC w Ps13	ESC w Ps13	--
Split screen	ESC x A Ps14	ESC x A Ps14	--
Split screen and clear pages	ESC x 1 Ps14	ESC x 1 Ps14	ESC x 1 Ps14
Split screen (multiple pages)	ESC x C Ps14	ESC x C Ps14	--
Split screen (mult pgs) & clear	ESC x 3 Ps14	ESC x 3 Ps14	--
Activate upper window	ESC]	ESC]	ESC]
Activate lower window	ESC }	ESC }	ESC }
Activate other window (or page)	--	--	ESC J or ESC K
Lower horizontal split	ESC x P	ESC x P	--
Raise horizontal split	ESC x R	ESC x R	--
Roll window up in page	ESC w E	ESC w E	--
Roll window down in page	ESC w F	ESC w F	--
Redefine screen as one window	ESC x @	ESC x @	--
Redefine screen as one window and clear pages	ESC x O	ESC x O	ESC x O
DISPLAY ATTRIBUTES			
Assign display attribute to a message field	ESC A Ps15 Ps16	ESC A Ps15 Ps16	ESC A Ps15 Ps16
Assign character display attribute	ESC G Ps16	ESC G Ps16	ESC G Ps16
Character attribute mode off	ESC e 0	ESC e 0	--
Character attribute mode on	ESC e 1	ESC e 1	--
Page attribute mode on	ESC e 2	ESC e 2	--
Line attribute mode on	ESC e 3	ESC e 3	--
Assign write-protected character	ESC ` Ps17	ESC ` Ps17	ESC ` Ps17
Assign line attribute	ESC G Ps18	ESC G Ps18	ESC G Ps18

6.2 WYSE ESCAPE SEQUENCES

FUNCTION	WY 150/120	WY 60	WY 50
PROTECTING DATA			
Write-protect off	ESC (	ESC (	ESC (
Write-protect on	ESC)	ESC)	ESC)
Protect mode off	ESC '	ESC '	ESC '
Protect mode on	ESC &	ESC &	ESC &
GRAPHICS CHARACTERS			
Line-drawing graphics mode on	ESC H CTRL B	ESC H CTRL B	ESC H CTRL B
Line-drawing graphics mode off	ESC H CTRL C	ESC H CTRL C	ESC H CTRL C
Display line-drawing graphics character	ESC H Ps19	ESC H Ps19	ESC H Ps19
CONTROLLING THE CURSOR			
Cursor left (backspace)	CTRL H	CTRL H	CTRL H
Cursor right	CTRL L	CTRL L	CTRL L
Cursor up; no scroll	CTRL K	CTRL K	CTRL K
Cursor up; scroll (reverse linefeed)	ESC j	ESC j	ESC j
Cursor down; no scroll	CTRL V	CTRL V	CTRL V
Cursor down; scroll (linefeed)	CTRL J	CTRL J	CTRL J
Cursor to start of line	CTRL M	CTRL M	CTRL M
Cursor to start of next line	CTRL _	CTRL _	CTRL _
Home cursor	ESC {	ESC {	ESC {
	or CTRL ^	or CTRL ^	or CTRL ^
End-of-line wrap off	ESC d .	ESC d .	--
End-of-line wrap on	ESC d /	ESC d /	--
Receive CR mode = CR	ESC e 4	ESC e 4	--
Receive CR mode = CRLF	ESC e 5	ESC e 5	--
Autopage mode off	ESC d *	ESC d *	--
Autopage mode on	ESC d +	ESC d +	--
Autoscrolling mode off	ESC N	ESC N	ESC N
Autoscrolling mode on	ESC O	ESC O	ESC O
Line lock mode on	--	ESC ` H	--
Line lock mode off	--	ESC ` I	--
Address cursor in 80-column page	ESC = Ps14 Ps14	ESC = Ps14 Ps14	ESC = Ps14 Ps14

6.2 WYSE ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
Address cursor in specific 80 column page	ESC w @ Ps20 Ps14 Ps14	ESC w @ Ps20 Ps14 Ps14	ESC w @ Ps20 Ps14 Ps14
Address cursor in specific 80-column window/page	ESC-Ps20 Ps14 Ps14	ESC-Ps20 Ps14 Ps14	ESC-Ps20 Ps14 Ps14
Address cursor in 80/132 column current page	ESC a Ps21 R Ps21 C	ESC a Ps21 R Ps21 C	ESC a lll R Ps21 C
Read cursor line and column address in 80-col page	ESC ?	ESC ?	ESC ?
Read 80-column page number and cursor address	ESC w `	ESC w `	ESC w `
Read 80-column window/page number and cursor address	ESC /	ESC /	ESC /
Read cursor address in 80/132 column and page	ESC b	ESC b	ESC b
EDITING			
Clear all tab stops	ESC O or ESC 3	ESC O or ESC 3	ESC O or ESC 3
Set tab stop	ESC 1	ESC 1	ESC 1
Clear tap stop	ESC 2	ESC 2	ESC 2
Tab	ESC i or CTRL I	ESC i or CTRL I	ESC i or CTRL I
Backtab	ESC I	ESC I	ESC I
Initialize tabs on	ESC e ;	ESC e ;	--
Initialize tabs off	ESC e :	ESC e :	--
Insert mode on, replace mode off	ESC q	ESC q	ESC q
Insert mode off, replace mode on	ESC r	ESC r	ESC r
Page edit mode on	ESC e #	ESC e #	--
Page edit mode off	ESC e "	ESC e "	--
Insert space character	ESC Q	ESC Q	ESC Q
Insert line of spaces	ESC E	ESC E	ESC E
Insert column of nulls	--	ESC c M	--
Delete cursor character	ESC W	ESC W	ESC W
Delete cursor line	ESC R	ESC R	ESC R
Delete cursor column	--	ESC c J	--

6.2 WYSE ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
CLEARING DATA			
Clear page to nulls	ESC *	ESC *	ESC *
Clear page to spaces	ESC +	ESC +	ESC +
Clear page to write-protect spaces	ESC ,	ESC ,	ESC ,
Clear unprotected page to spaces	ESC ; or CTRL Z	ESC ; or CTRL Z	ESC ; or CTRL Z
Clear unprotected page to nulls	ESC :	ESC :	ESC :
Clear unprotected page to spaces from cursor	ESC Y	ESC Y	ESC Y
Clear unprotected page to nulls from cursor	ESC y	ESC y	ESC y
Clear unprotected line to spaces from cursor	ESC T	ESC T	ESC T
Clear unprotected line to nulls from cursor	ESC t	ESC t	ESC t
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 page foreground to spaces	--	ESC c P	--
Clear unprotected page foreground to nulls	--	ESC c Q	--
Clear unprotected column to nulls	--	ESC c K	--
Clear unprotected column to char	--	ESC c I Ps23	--
Clear cursor column to write protect spaces	ESC V	ESC V	ESC V
Box rectangle to right of cursor	--	ESC c N Ps14 Ps14	--
Box rectangle 80 column	--	ESC c G Ps14 Ps14	--
Box rectangle 132 column	--	ESC c G Ps14 Ps14	--
Clear unprotected rectangle 80 col	--	ESC c F Ps14 Ps14 Ps23	--

6.2 WYSE ESCAPE SEQUENCES

FUNCTION	WY 150/120	WY 6
Clear unprotected rectangle 132 col	—	ESC c F Ps14 ~ — Ps14 Ps23
Clear entire rectangle 80 col	—	ESC c H Ps14 — Ps14 Ps23
Clear entire rectangle 132 col	—	ESC c H Ps14 ~ — Ps14 Ps23
Fill screen with H's	—	— —

SENDING DATA

Begin print/send at top of page	ESC d ' —	ESC d ' —
Begin print/send at top of screen	ESC d & —	ESC d & —
Send cursor character	ESC M	ESC M
Send unprotected line to cursor	ESC 4	ESC 4
Send entire line to cursor	ESC 6	ESC 6
Send unprotected page to cursor	ESC 5	ESC 5
Send entire page to cursor	ESC 7	ESC 7
Mark block beginning	ESC 8	ESC 8
Mark block end	ESC 9	ESC 9
Send entire block	ESC s	ESC s
Send unprotected characters in block	ESC S	ESC S

PRINT FUNCTIONS

Print formatted page	ESC P	ESC P	ESC P
Print formatted unprotected page	ESC @	ESC @	ESC @
Print unformatted page	ESC p	ESC p	ESC p
	or ESC L	or ESC L	or ESC L
Auxiliary print mode off	CTRL T	CTRL T	CTRL T
Auxiliary print mode on	CTRL R	CTRL R	CTRL R
Transparent print mode off	CTRL T	CTRL T	CTRL T
Transparent print mode on	ESC d #	ESC d #	CTRL X

CHARACTER SETS

Select primary character set	ESC c D	ESC c D	—
Select secondary character set	ESC c E	ESC c E	—
Define primary character set	ESC c B Ps24	ESC c B Ps24	—
Define secondary character set	ESC c C Ps24	ESC c C Ps24	—

6.2 WYSE ESCAPE SEQUENCES

<u>FUNCTION</u>	<u>WY 150/120</u>	<u>WY 60</u>	<u>WY 50</u>
Load font bank with predefined character set	ESC c @ Ps24 Ps25	ESC c @ Ps24 Ps2	--
Clear font bank	ESC c ? Ps24	ESC c ? Ps24	--
Define and load character	ESC c A Ps24 Ps26 ...Ps26 CTRL Y	ESC c A Ps24 Ps26 ...Ps26 CTRL Y	-- -- --
Automatic font loading on	ESC e O	ESC e O	--
Automatic font loading off	ESC e N	ESC e N	--

6.3 Televideo and ADM 31 Escape Sequences

Some escape sequences require a parameter value. These are designated as PsX, where X is an ASCII character or string of characters, representing a value for the escape. Look up all parameter values in Section 6-6 Parameter Value Tables.

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
MONITOR MODE			
Monitor mode on	ESC U	ESC U	ESC U
Monitor mode off	ESC or ESC X	ESC u or ESC X	ESC u or ESC X
SELECTING PERSONALITIES			
Enhance mode off	ESC ~ SP	ESC ~ SP	ESC ~ SP
Enhance mode on	ESC ~ !	ESC ~ !	ESC ~ !
Select WY-50+ mode	ESC ~ "	ESC ~ "	ESC ~ "
Select Freedom ONE mode	ESC ~ 1	ESC ~ 1	ESC ~ 1
Select TeleVideo 925 mode	ESC ~ \$	ESC ~ \$	ESC ~ \$
Select ADM 31 mode	ESC ~ +	ESC ~ +	ESC ~ +
Select ADDS VP A2 mode	ESC ~ %	ESC ~ %	ESC ~ %
Select previous Wyse mode	ESC ~ 4	ESC ~ 4	ESC ~ 4
Select PC Term mode	ESC ~ 5	ESC ~ 5	ESC ~ 5
Select VT52 mode	ESC ~ 6	ESC ~ 6	ESC ~ 6
Select VT100 mode	ESC ~ ;	ESC ~ ;	ESC ~ ;
Select Televideo 950 mode	ESC ~ (	ESC ~ (	ESC ~ (
COMMUNICATING WITH THE COMPUTER			
Configure Main Port	ESC { Ps35	--	--
Enable transmission	CTRL Q	CTRL Q	CTRL Q
Stop transmission	CTRL S	CTRL S	CTRL S
Disable XonXoff/enable	DTR CTRL N	CTRL N	--
Enable XonXoff/disable	DTR CTRL O	CTRL O	--
Full-duplex mode on	ESC C	ESC C	ESC C
	ESC F	ESC F	ESC D F
Half-duplex mode on	ESC C	ESC C	ESC C
	ESC D H	ESC D H	ESC D H
Block mode on	ESC B	ESC B	ESC B
Send terminal ID	ESC M	ESC SP	--

6.3 Televideo and ADM 31 Escape Sequences

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
CONTROLLING THE TERMINAL AND KEYBOARD			
Local edit mode on	ESC k	ESC k	--
Duplex edit mode on	ESC l	ESC l	--
Sound bell	CTRL G	CTRL G	CTRL G
Unlock keyboard	ESC "	ESC "	ESC "
Lock keyboard	ESC #	ESC #	ESC #
Keyclick off	ESC <	--	--
Keyclick on	ESC >	--	--
REDEFINING THE KEYS			
Program function keys	ESC Ps4 Ps5 CTRL Y	ESC z Ps4 Ps5 DEL	--
Program function keys with direction	ESC Z Ps4 Ps3 Ps5 CTRL Y	ESC Z Ps3 Ps4 Ps5 DEL	--
Clear function keys	ESC Ps4 CTRL Y	ESC z Ps4 DEL	--
Read function keys	--	ESC Z ~ Ps4	--
SCREEN AND CURSOR DISPLAY			
Screen display off	ESC o	ESC . 8	--
Screen display on	ESC n	ESC . 9	--
Set reverse screen	ESC b	--	--
Restore normal screen	ESC d	--	--
Smooth scrolling on	ESC 8	--	--
Smooth scrolling off	ESC 9	ESC . @	--
Set cursor display	ESC . Ps7	ESC . Ps7	--
Cursor display off	ESC . 0	ESC . 0	--
Cursor display on	ESC . 2	ESC . 1	--
Set scrolling speed	--	ESC . Ps6	--
DISPLAYING THE MESSAGE FIELDS			
Program message line	ESC f Ps9 CR	ESC F Ps9 CR	--
Turn on status line	ESC h	--	--
Display message line	ESC g	ESC g	--

6.3 Televideo and ADM 31 Escape Sequences

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
DEFINING THE DATA AREA			
Select 80-column display	--	ESC . :	--
Select 132-column display	--	ESC . ;	--
DISPLAY MEMORY/SPLIT SCREEN			
Divide memory into pages	ESC \ Ps60	--	--
Line lock on	ESC ! 1	--	--
Line lock clear	ESC ! 2	--	--
Program SEND key	ESC & Ps60 Ps61	--	--
Split scrn and clear pages	--	ESC 1 Ps14	--
Redefine as one window and clear pages	--	ESC 0	--
Activate lower window	--	ESC }	--
Display previous page	ESC J	ESC J	ESC J
Display next page	ESC K	ESC K	ESC K
DISPLAY ATTRIBUTES			
Assign character display attribute	ESC G Ps16	ESC G Ps16	ESC G Ps16
Assign write protect display attribute	--	ESC . Ps17	--
Assign attribute to message field	--	ESC \ Ps15 Ps16	--
PROTECTING DATA			
Write-protect off	ESC (	ESC (	ESC (
Write-protect on	ESC)	ESC)	ESC)
Protect mode off	ESC '	ESC '	ESC '
Protect mode on	ESC &	ESC &	ESC &
GRAPHICS CHARACTERS			
Line-drawing graphics mode on	ESC \$	ESC H CTRL B	ESC G 0
Line-drawing graphics mode off	ESC %	ESC H CTRL C	ESC G 8
Display line-drawing graphics char	--	ESC H Ps19	--

6.3 Televideo and ADM 31 Escape Sequences

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
CONTROLLING THE CURSOR			
Cursor left (backspace)	CTRL H	CTRL H	CTRL H
Cursor right	CTRL L	CTRL L	CTRL L
Cursor up; no scroll	CTRL K	CTRL K	CTRL K
Cursor up; scroll	ESC j	ESC j	--
Cursor down; no scroll	CTRL V	CTRL V	--
Cursor down; scroll	CTRL J	CTRL J	CTRL J
Cursor to start of line	CTRL M	CTRL M	CTRL M
Cursor to start of next line	CTRL ^	CTRL ^	CTRL ^
Home cursor	CTRL ^	ESC { or CTRL ^	CTRL ^
Address cursor in 80-column page	ESC = Ps14 Ps14	ESC = Ps14	ESC = Ps14 Ps14
Address cursor in specific 80/132 column page	ESC - Ps13 Ps14 Ps14	ESC - Ps13 Ps14	ESC - Ps13 Ps14
Address cursor in 80/132	ESC CTRL Ps21 R PS22 C	ESC d Ps21 R Ps22 C	same
Read cursor line and column address	ESC ?	ESC ?	ESC ?
Read cursor address in 80/132 column page	ESC CTRL]	ESC b	ESC CTRL]
Read cursor character in 80/132 column page	--	ESC M	--
Read cursor page, line, and column	ESC /	ESC /	ESC /
Auto-page mode off	ESC w	--	ESC w
Auto-page mode on	ESC v	--	ESC v
EDITING			
Clear all tab stops	ESC 3	ESC 3	ESC 0
Set tab stops	ESC 1	ESC 1	ESC 1
Clear tap stop	ESC 2	ESC 2	ESC 2
Tab	CTRL I or ESC ;	CTRL I or ESC ;	CTRL I or ESC ;
Backtab	ESC I	ESC I	ESC I
Insert mode on	ESC q	ESC q	ESC q
Insert mode off	ESC r	ESC r	ESC r
Page edit mode on	ESC N	--	--
Page edit mode off	ESC O	--	--
Insert space character	ESC Q	ESC Q	ESC Q
Insert line of spaces	ESC E	ESC E	ESC E
Delete cursor character	ESC W	ESC W	ESC W
Delete cursor line	ESC R	ESC R	ESC R
Define insert character	ESC e char	--	--

6.3 Televideo and ADM 31 Escape Sequences

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
CLEARING DATA			
Clear page to nulls	ESC *	ESC *	ESC *
Clear page to spaces	ESC +	ESC +	ESC +
Clear page to write-protect spaces	ESC ,	ESC ,	ESC ,
Clear unprotected page to spaces	ESC ; or CTRL Z	ESC ; or CTRL Z	ESC ;
Clear unprotected page to nulls	ESC :	ESC :	ESC :
Clear unprotected page to spaces from cursor	ESC Y	ESC Y	ESC Y
Clear unprotected page to nulls from cursor	ESC y	ESC y	ESC y
Clear unprotected line to spaces from cursor	ESC T	ESC T	ESC T
Clear unprotected line to nulls from cursor	ESC t	ESC t	ESC t
Clear cursor column to write protect spaces	--	ESC V	--
Clear unprotected page to display attribute	--	ESC 1 Ps16	--
SENDING DATA			
Begin print/send at top of page	ESC d '	ESC d '	ESC d '
Begin print/send at top of screen	ESC d &	ESC d &	ESC d &
Send cursor character	--	ESC M	--
Send unprotected line to cursor	ESC 4	ESC 4	ESC 4
Send entire line to cursor	ESC 6	ESC 6	ESC 6
Send unprotected page to cursor	ESC 5	ESC 5	ESC 5
Send entire page to cursor	ESC 7	ESC 7	ESC 7
Send entire block	ESC s	ESC s	--
Send unprotected characters in block	ESC S	ESC S	ESC S
Mark block beginning	--	ESC 8	ESC 8
Mark block end	--	ESC 9	ESC 9

6.3 Televideo and ADM 31 Escape Sequences

<u>FUNCTION</u>	<u>TVI 950</u>	<u>TVI 925</u>	<u>ADM 31</u>
PRINT FUNCTIONS			
Print formatted page	ESC	ESC P	ESC P
Printer unformatted page	ESC L	ESC p or ESC L	ESC p or ESC L
Auxiliary print mode off	ESC A	CTRL T or ESC A	ESC A 0
Auxiliary print mode on	ESC @	CTRL R or ESC @	ESC A 2
Transparent print mode off	ESC a	ESC a	ESC A 0
Transparent print mode on	ESC `	or CTRL T ESC `	ESC A 1
Print page w/protected as spaces	--	or CTRL X --	ESC @

6.4 ADDS A2 and VT-52 Escape Sequences

The following escape sequences for ADDS A2 are with Enhanced mode off, meaning a true ADDS A2. Enhanced mode on enables a Wyse 50 type A2 mode. For Enhanced on, please see Section 6.2, Wyse 50 escape sequences.

<u>FUNCTION</u>	<u>ADDS A2</u>	<u>VT52</u>
SELECTING PERSONALITIES		
Select VT100 personality	--	ESC <
COMMUNICATING WITH THE COMPUTER		
Enable transmission	CTRL Q	CTRL Q
Stop transmission	CTRL S	CTRL S
Send terminal ID	--	ESC Z
Send answerback	--	CTRL E
CONTROLLING THE TERMINAL AND KEYBOARD		
Sound bell	CTRL G	CTRL G
Select bell volume	--	--
Unlock keyboard	CTRL B or ESC 6	--
Lock keyboard	CTRL D or ESC 5	--
Application keymode on	--	ESC =
Application keymode off	--	ESC >
SCREEN AND CURSOR DISPLAY		
Cursor display off	CTRL W	--
Cursor display on	CTRL X	--
Smooth scrolling on	ESC j	--
Smooth scrolling off	ESC J	--
Program message on user line	ESC c Ps18	--
Turn on user line	ESC N	--
Turn off user line	ESC F or ESC n	--

6.4 ADDS A2 and VT-52 Escape Sequences

<u>FUNCTION</u>	<u>ADDS A2</u>	<u>VT52</u>
DISPLAY ATTRIBUTES		
Assign write-protected character display attribute	ESC O Ps16	--
Set tag protect attribute	CTRL N	--
Reset tag protect attribute	CTRL O	--
GRAPHICS CHARACTERS		
Line-drawing graphics mode on	--	ESC F
Line-drawing graphics mode off	--	ESC G
CONTROLLING THE CURSOR		
Cursor left (backspace)	CTRL H or CTRL U	ESC D or CTRL H
Cursor right	CTRL F	ESC C
Cursor up; no scroll	CTRL Z	ESC A
Cursor up; scroll (rev linefeed)	--	ESC I
Cursor down; no scroll	--	ESC B
Cursor down; scroll (linefeed)	CTRL J	CTRL J/K/L
Cursor to start of line	CTRL M	CTRL M
Home cursor	CTRL A	ESC H
Cursor to specific column	CTRL P col	--
Cursor to specific row	CTRL K row	--
Address cursor	ESC Y Ps14 Ps14	ESC Y Ps14 Ps14
Tab	CTRL I	CTRL I
Insert line	ESC M	--
Delete cursor line	ESC I	--
CLEARING DATA		
Clear page	CTRL L	--
Clear line from cursor	ESC K	ESC K
Clear page from cursor	ESC k	ESC J
PRINT FUNCTIONS		
Print line	--	ESC V
Print page	ESC X	ESC]
Auxiliary print mode off	CTRL T	ESC ^
Auxiliary print mode on	CTRL R	ESC _
Transparent print mode off	ESC 4	ESC W
Transparent print mode on	ESC 3	ESC X

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

Some escape sequences require a parameter value. These are designated as PSX, where X is an ASCII character or string of characters, representing a value for the escape. Look up all parameter values in Section 6-6 Parameter Value Tables.

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
MONITOR MODE		
Monitor mode on	ESC U	ESC U
Monitor mode off	ESC u or ESC X	ESC u or ESC X
Display control characters	--	ESC F char
SELECTING PERSONALITIES		
Enhance mode off	ESC v SP	ESC CTRL ^ SP
Enhance mode on	ESC v !	ESC CTRL ^ !
Select WY-50 personality	ESC v "	ESC CTRL ^ "
Select TeleVideo 925 mode	ESC v \$	ESC CTRL ^ \$
Select TeleVideo 950 mode	ESC v (	ESC CTRL ^ (
Select ADM 31 personality	ESC v +	ESC CTRL ^ +
Select ADDS VP A2 personality	ESC v %	ESC CTRL ^ %
Select Freedom ONE	ESC v 1	ESC CTRL ^ 1
Select previous Wyse mode	ESC v 4	ESC CTRL ^ 4
Select PC Term personality	ESC v 5	ESC CTRL ^ 5
Select VT52 personality	ESC v 6	ESC CTRL ^ 6
Select VT100 personality	ESC v ;	ESC CTRL ^ ;
COMMUNICATING WITH THE COMPUTER		
Configure Main Port	--	ESC { Ps35
Load Xon Character	--	ESC Ctrl Q char
Load Xoff Character	--	ESC CTRL S char
Enable XonXoff protocol	--	CTRL O
Disable XonXoff protocol	--	CTRL N
Enable DTR protocol	--	ESC ~
Disable DTR protocol	--	ESC DEL
Enable transmission	CTRL Q	CTRL Q
Stop transmission	CTRL S	CTRL S
Full-duplex mode on	--	ESC C ESC D F
Half-duplex mode on	--	ESC C ESC D H
Block mode on	--	ESC B
Local mode on	--	ESC c
Send terminal ID	--	ESC M

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
Program answerback	--	ESC CTRL E dlmt
Send answerback	--	message dlmt CTRL E

CONTROLLING THE TERMINAL AND KEYBOARD

Scroll lock LED on	ESC _ 3	--
Scroll lock LED off	ESC _ 4	--
NUM Lock LED on	ESC _ 5	--
NUM Lock LED off	ESC _ 6	--
CAPS Lock LED on	ESC _ 7	--
CAPS Lock LED off	ESC _ 8	--
Auto repeat on	ESC _ 9	--
Auto repeat off	ESC _ :	--
Local edit mode on	--	ESC k
Duplex edit mode on	--	ESC l
Sound bell	CTRL G	CTRL G
	or ESC _ 0	
Bell on	--	ESC ^
Bell off	--	ESC _
Unlock keyboard	ESC "	ESC "
Lock keyboard	ESC #	ESC #
Keyclick off	ESC <	ESC <
	or ESC _ 2	
Keyclick on	ESC >	ESC >
	or ESC _ 1	
Application keymode on	ESC v 3	--
Application keymode off	ESC v 2	--
Load Setup parameters	--	ESC CTRL B Ps59
Send Setup parameters	--	ESC CTRL A

REDEFINING THE KEYS

Program function keys	--	ESC Ps59
Clear function keys	--	ESC DEL DEL

SCREEN AND CURSOR DISPLAY

Screen display off	ESC O	ESC o
Screen display on	ESC N	ESC n
Smooth scrolling on	--	ESC 8
Smooth scrolling off	--	ESC 9
Set cursor display features	ESC . Ps7	ESC . Ps7
25th line display off	--	ESC CTRL N
25th line display on	--	ESC CTRL O

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
DISPLAYING THE MESSAGE FIELDS		
Status line on	ESC h	ESC h
Program message on status	ESC f Ps9 CR	ESC f Ps9 CR
Display message line	ESC g	ESC g
Display tab status	--	ESC CTRL T
DEFINING THE DATA AREA		
Display 25 data lines	ESC e	--
Select 80 column display	--	ESC CTRL V 0
Select 132 column display	--	ESC CTRL V 1
DISPLAY MEMORY/SPLIT SCREEN		
Divide memory into pages	--	ESC \ Ps12
Display previous page	--	ESC J
Display next page	--	ESC K
Set Scroll region	--	ESC m Ps27 Ps14 Ps14
Line Lock	--	ESC ! Ps24
DISPLAY ATTRIBUTES		
Assign character display attribute	ESC G Ps16	ESC G Ps16
Assign write-protected character display attribute	--	ESC p Ps16
Assign line attribute	--	ESC CTRL L Ps61
PROTECTING DATA		
Write-protect attribute off	ESC (	ESC (
Write-protect attribute on	ESC)	ESC)
Protect mode off	ESC '	ESC '
Protect mode on	ESC &	ESC &
GRAPHICS CHARACTERS		
Line-drawing graphics mode on	ESC \$	ESC \$
Line-drawing graphics mode off	ESC %	ESC %
Display line-drawing graphics character	--	ESC CTRL G Ps19

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
CONTROLLING THE CURSOR		
Save cursor	--	ESC CTRL U 1
Restore cursor	--	ESC CTRL U 2
Cursor left (backspace)	CTRL H	CTRL H
Cursor right	CTRL L	CTRL L
Cursor up; no scroll	CTRL K	CTRL K
Cursor up; scroll	ESC j	ESC j
Cursor down; no scroll	CTRL V	CTRL V
Cursor down; scroll (linefeed)	CTRL J	CTRL J
Cursor to start of line	CTRL M	CTRL M
Cursor to start of next line	CTRL ^	CTRL ^
Home cursor	CTRL ^	CTRL ^
Cursor to specific column	--	ESC] Ps14
Cursor to specific line	--	ESC [Ps14
End-of-line wrap off	ESC 0	--
End-of-line wrap on	ESC ~	--
Receive CR mode = CR	ESC 9	--
Receive CR mode = CRLF	ESC 8	--
Autopage mode off	--	ESC w
Autopage mode on	--	ESC v
Toggle autoscrolling mode on/off	--	ESC H
Line lock mode on	--	ESC !
Line lock mode off	--	ESC !
Address cursor in 80-column current page	ESC = Ps14 Ps14	ESC = Ps14 Ps14
Address cursor in specific 80 column page	ESC - Ps13 Ps14 Ps14	ESC - Ps13 Ps14 Ps14
Read cursor line/column address in 80-column current page	ESC ?	ESC ?
Read 80-column window/page number and cursor address	ESC /	ESC /
Read cursor address in 80/132 column current page	ESC CTRL _	ESC CTRL _
Read cursor character in 80/132 page	--	ESC CTRL C
Address cursor in 80/132 column current page	ESC CTRL] Ps21 R Ps22 C	ESC CTRL] Ps21 R Ps22 C
EDITING		
Clear all tab stops	ESC 3	ESC 3
Set tab stop	ESC 1	ESC 1
Clear tap stop	ESC 2	ESC 2
Tab	CTRL I or ESC i	ESC i or CTRL I

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
Backtab	ESC I	ESC I
Tab by word left	--	ESC CTRL W 2
Tab by word right	--	ESC CTRL W 1
Define Insert Character	--	ESC e char
Insert mode on	ESC Z	ESC q
Insert mode off	ESC r	ESC r
Page edit mode on	--	ESC N
Page edit mode off	--	ESC O
Insert space character	ESC Q	ESC Q
Insert line of spaces	ESC E	ESC E
Delete cursor character	ESC W	ESC W
Delete cursor line	ESC R	ESC R

CLEARING DATA

Clear page to nulls	ESC *	ESC *
Clear page to write-protect spaces	ESC ,	ESC ,
Clear unprotected page to spaces	ESC ; or CTRL Z or ESC +	ESC + or ESC ; or CTRL Z
Clear unprotected page to nulls	ESC :	ESC :
Clear unprotected page to spaces from cursor	ESC Y	ESC Y
Clear unprotected page to nulls from cursor	ESC y	ESC y
Clear unprotected line to spaces from cursor	ESC T	ESC T
Clear unprotected line to nulls from cursor	ESC t	ESC t
Fill screen with H's	ESC F	--

SENDING DATA

Set SEND delimiters	--	ESC x n dlt dlt
Send status line	--	ESC Z 0
Send user line	--	ESC Z 1
Send unprotected line to cursor	ESC 4	ESC 4
Send entire line to cursor	ESC 6	ESC 6
Send unprotected page to cursor	ESC 5	ESC 5
Send entire page to cursor	ESC 7	ESC 7
Send entire block	ESC s	ESC s
Send unprotected characters in block	ESC S	ESC S
Mark block beginning	ESC 8	ESC 8
Mark block end	ESC 9	ESC 9
Program SEND key	--	ESC 0 Ps59
Send form all	--	ESC CTRL R

Section 6.5 -- PC-TERM and Freedom ONE Escape Sequences

<u>FUNCTION</u>	<u>PC-TERM</u>	<u>FREEDOM ONE</u>
PRINT FUNCTIONS		
Print formatted page	ESC p	ESC P
Print formatted unprotected page	ESC x	--
Print unformatted page	ESC p or ESC L	ESC L
Auxiliary print mode off	ESC A or ESC a	--
Copy print on	ESC @	ESC @
Copy print off	--	ESC A
Transparent print mode off	ESC a	ESC a
Transparent print mode on	ESC `	ESC `
Load Print Acknowledge character	--	ESC CTRL F char
Set print buffer size	--	ESC CTRL J Ps39
Set print boundaries	--	ESC CTRL L Ps39

6.6 Escape Sequence Parameters

Ps1 - Answerback

An answerback message can be any displayable characters up to 20.

Ps2 - Maximum Speed

<u>Ps2</u>	<u>Action</u>
1	120 characters per second
2	no maximum limit
3	120 characters per second

Ps3 - Function Key Direction

This parameter is optional in the escape sequence.

<u>Ps3</u>	<u>Action</u>
0	function keys act based on terminal state
1	function keys transmit only
2	function keys act locally only

Ps4 - Function Key

<u>Ps4</u>			<u>Ps4</u>		
<u>KEY</u>	<u>Unshifted</u>	<u>Shifted</u>	<u>KEY</u>	<u>Unshifted</u>	<u>Shifted</u>
F1	@	`	F9	H	h
F2	A	a	F10	I	i
F3	B	b	F11	J	j
F4	C	c	F12	K	k
F5	D	d	F13	L	l
F6	E	e	F14	M	m
F7	F	f	F15	N	n
F8	G	g	F16	O	o

Ps5 - Function Key Data

Can be any data/commands up to 256 characters per key.

Ps6 - Scroll Type and Speed

<u>Ps6</u>	<u>Action</u>
@	jump scroll
<	smooth scroll 1 lps
=	smooth scroll 2 lps
>	smooth scroll 3 lps
?	smooth scroll 4 lps

Ps7 - Cursor Display

<u>Ps7</u>	<u>Display</u>
0	cursor off
1	blinking block
2	block
3	blinking line
4	underline

6.6 Escape Sequence Parameters

Ps8, Ps9, Ps10 - Message Data

The message can be...

80 column mode 132 column mode

Ps8	46 characters	98 characters
Ps9	78 characters	130 characters
Ps10	9 characters	7 characters

Ps11 - Function Key Label Fields

KEY	Ps11		KEY	Ps11	
	<u>Unshifted</u>	<u>Shifted</u>		<u>Unshifted</u>	<u>Shifted</u>
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	?	_

Ps12 - Length of Page

Ps12 Setup Page =

G	1*lines	Page = number of lines
H	2*lines	Page = 2 times number of lines
I	4*lines	Page = 4 times number of lines
J	*	Page 1 = data lines, Page 2 = remaining memory

Ps13 - Page Number Table

Ps13 Page

0	0
1	1
2	2
3	3
B	next page
C	previous page

6.6 Escape Sequence Parameters

Ps14 - Line and Column Number Table

If the escape sequence requires two Ps14 characters, the line number is always first, then the column number.

<u>Line/Col</u>	<u>Ps14</u>	<u>Line/Col</u>	<u>Ps14</u>	<u>Line/Col</u>	<u>Ps14</u>	<u>Line/Col</u>	<u>Ps14</u>
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

Ps15 - Screen Area

Ps15 Area

- 0 data area
- 1 function key label line
- 2 terminal message field
- 3 computer message field

Ps16 - Display Attribute Table

Ps16 Attribute

Ps16 Attribute

- | | | | |
|---|----------------|---|---------------------|
| 0 | normal | p | dim |
| 1 | blank | q | dim, blank |
| 2 | blink | r | dim, blink |
| 3 | blank,blink | s | dim, blink, blank |
| 4 | reverse | t | dim, reverse |
| 5 | reverse, blank | u | dim, reverse, blank |

6.6 Escape Sequence Parameters

<u>Ps16 Attribute</u>		<u>Ps16 Attribute</u>	
6	reverse, blink	v	dim, reverse, blink
7	reverse, blink, blank	w	dim, reverse, blink, blank
8	underline	x	dim, underline
9	underline, blank	y	dim, underline, blank
:	underline, blink	z	dim, underline, blink
;	underline, blink, blank	{	dim, underline, blink, blank
<	underline, reverse		dim, underline, reverse
=	underline, reverse, blank	}	dim, underline, reverse, blank
>	underline, reverse blink	~	dim, underline, reverse, blink
?	underline, reverse, blink, blank	-	dim, underline, reverse, blink, blank

Ps17 - Write Protect Character Attribute Table

<u>Ps17 Attribute</u>		<u>Ps17 Attribute</u>	
6	reverse	C	blank
7	dim	E	underline
A	normal	F	reverse
B	blink	G	dim

Ps18 - Line Attribute Table

<u>Ps18 Attribute</u>	
@	single high, single wide
A	single high, double wide
D	top half, double high, double wide
E	bottom half, double high, double wide

Ps19 - Graphics Character Table

<u>Ps19</u>	<u>Character</u>	<u>Ps19</u>	<u>Character</u>	<u>Ps19</u>	<u>Character</u>
0	␣	6		<	=
1	␣	7	⌘	=	␣
2	␣	8		>	
3	␣	9	␣	?	⌘
4	␣	:	-		
5	␣	;	⌘		

6.6 Escape Sequence Parameters

Ps20 - Page or Window

<u>Ps20</u>	<u>Area</u>	<u>Ps20</u>	<u>Area</u>
0	page 0 or upper window	4	page 4
1	page 1 or lower window	5	page 5
2	page 2	6	page 6
3	page 3		

Ps21 - Use decimal numbers from 1 to 44.

Ps22 - Use decimal numbers from 1 to 132

Ps23 - Any displayable ASCII character to replace all unprotected characters.

Ps24 - Font Bank Table

<u>Ps24</u>	<u>Font Bank</u>
0	0
1	1
2	2
3	3

Ps25 - Character Set Tables

<u>Ps25</u>	<u>Set</u>	<u>Ps25</u>	<u>Set</u>
@	Wyse G0 native	G	standard ANSI
A	PC multi-national	`	44 line Wyse native
B	standard ASCII	a	44 line PC multi-national
C	graphics 1	b	44 line PC equivalent
D	PC equivalent	c	44 line ASCII
E	graphics 2	d	44 line ANSI
F	graphics 3		

Ps26 - Use the 2-byte hex value of the character.

Ps27 - Relative or Absolute Home

<u>Ps27</u>	<u>Result</u>
0	home is upper left corner of display (absolute)
1	home is upper left corner of scroll region

Ps28 - Use an actual decimal number from 1 to 132.
When two Ps28's are required, line number (1-24)
is always first followed by column number (1-132).

6.6 Escape Sequence Parameters

Ps29 - Function Key Clearing

Ps29 Action

none clear all keys before loading
0 clear all keys before loading
1 load new key without clearing old values

Ps30 - Function Key Locking

Ps30 Action

none lock keys against future programming
0 lock keys against future programming
1 do not lock keys against future programming

Ps31 - Function Key Labels

Ps31 KEY

Ps31 KEY

17	F6	26	F14
18	F7	28	HELP
19	F8	29	DO
20	F9	31	F17
21	F10	32	F18
23	F11	33	F19
24	F12	34	F20
25	F13		

Ps33 - Dscs

Dscs is a unique DEC command consisting of two ASCII characters which designate character sets.
Recommended is ESC (SPACE @ B, where B designates ASCII.

Ps34 - DEC Attribute Table

Ps32 Attribute

Ps32 Attribute

0	all off	22	normal
1	bold	24	not underline
4	underline	25	not blink
5	blink	27	not reverse video
7	reverse video		

6.6 Escape Sequence Parameters

Ps35 -- Configure the main port as follows:ESC { p1 p2 p3 p4

ASCII Char.	p1 Baud Rate	p2 Stop Bits	p3 Parity	p4 Data Length
----	-----	----	-----	-----
0	9600	1	none	8 bits
1	50	2	odd	7 bits
2	75			
3	110		even	
4	134.5			
5	150		mark	
6	300			
7	600		space	
8	1200			
9	1800			
:	2400			
<	4800			
=	7200			
>	9600			
?	19200			
@	38400			

Ps36 - 94-character set
to assign...

Ps36 is ...

ASCII	B
DEC Supplemental Graphic	% 5
User-Preferred supplemental	<
DEC special graphic	0
Soft character set (VT300/200 only)	Dscs ...see Ps57
National Replacement character set*	
British	A
Dutch	4
Finnish	5 or C
French	R
French Canadian	9 or Q
German	K
Italian	Y
Norwegian/Danish	` or E or 6
Spanish	Z
Swedish	7 or H
Swiss	=

* You must enable national mode before assigning national replacement character set.

6.6 Escape Sequence Parameters

Ps37 - 96-character set

<u>To Assign</u>	<u>Ps 37</u>
ISO Latin-1 set	A
Soft character set (VT300/200 only)	Dscs ...see Ps57

Ps38 - Confidence test level

<u>Ps38</u>	<u>Action</u>
0	power-up self test
1	power-up self test
2	RS232 port test
3	printer port test

Ps39 - Keyboard Dialect

<u>Ps39</u>	<u>Dialect</u>
1	North American
2	British
3	Flemish
4	Canadian French
5	Danish
6	Finnish
7	German
8	Dutch
9	Italian
10	Swiss (French)
11	Swiss (German)
12	Swedish
13	Norwegian
14	French/Belgian
15	Spanish

Ps40 - Terminal State data string

Ps40..Ps40 is a data string indicating the status of the terminal current operating state. Software should not expect the format of the string to be the same for all VT300 terminals. <checksum 1 or 2> is a two byte checksum of all the data in the report and is equal to the 2's complement of the sum of all the data.

Ps41 - Cursor Information

Ps41 is a data string containing the cursor information. The format of the data string is as follows
P1;P2;P3;S1;S2;S3;P4;P5;S4;S5
See below...

6.6 Escape Sequence Parameters

<u>Parameter</u>	<u>Description</u>
P1	the number of the cursor line
P2	the number of the cursor column
P3	the number of current page
S1	a graphic rendition byte with bit-0 0/1 bold off/on bit-1 0/1 underline off/on bit-2 0/1 blink off/on bit-3 0/1 reverse video off/on bit-4 0 always 0 bit-5 0 always 0 bit-6 1 always 1 bit-7 0 always 0
S2	a selective erase state byte bit-0 0/1 selective erase off/on bit-1 0 future use bit-2 0 future use bit-3 0 future use bit-4 0 always 0 bit-5 0 always 0 bit-6 1 always 1 bit-7 0 always 0
S3	a terminal state byte bit-0 0/1 origin mode reset/set bit-1 0/1 single shift 2 setting off/on bit-2 0/1 single shift 3 setting off/on bit-3 0/1 autowrap pending off/on bit-4 0 always 0 bit-5 0 always 0 bit-6 1 always 1 bit-7 0 always 0
P4	the number of the logical character set (G0 to G3) mapped into GL
P5	the number of the logical character set (G0 to G3) mapped into GR
S4	a character set size byte bit-0 0/1 G0 set size 94/96 bit-1 0/1 G1 set size 94/96 bit-2 0/1 G2 set size 94/96 bit-3 0/1 G3 set size 94/96 bit-4 0 always 0 bit-5 0 always 0 bit-6 1 always 1 bit-7 0 always 0

6.6 Escape Sequence Parameters

<u>Parameter</u>	<u>Description</u>
S5	is a string of intermediate and final characters indicating the character sets assigned as G0 to G3. They are the same as those used in selecting character set sequences. see Ps36,Ps37.

Ps42 - Tab stops
Ps42 is the column number location of each tab stop.

Ps43 - Mode setting/resetting parameter
(ANSI mode)

<u>Ps43</u>	<u>Action</u>
2	Keyboard lock/unlock
3	Control presentation*1
4	Insert/replace
10	Horizontal editing*2
12	Send/receive
20	Carriage return/new line

*1: Host can not change the state thru the command. It can only be changed thru Setup.

*2: This is permanently reset.

Ps44 - Mode setting/resetting parameter (DEC private mode)

<u>Ps44</u>	<u>Action</u>
1	Cursor keys
2	ANSI
3	132/80 Column
4	Jump/smooth scrolling
5	Normal/reverse screen
6	Origin mode
7	Autowrap on/off
8	Autorepeat on/off
18	Print form feed on/off
19	Printer extent screen/scrolling region
25	Text cursor visible/invisible
42	National Replacement Mode on/off
66	Numeric Keypad Application/Normal
67	Backarrow key Delete/Backspace
68	Keyboard usage Data entry/Typewriter

6.6 Escape Sequence Parameters

Ps45 - Mode setting state

<u>Ps45</u>	<u>Action</u>
0	Mode not recognized
1	Set
2	Reset
3	Permanently set
4	Permanently reset

Ps46 - Control Function Setting parameter

<u>Ps46</u>	<u>Function</u>
\$ }	active status display
" q	character attribute
" p	conformance level
\$ -	status line type
r	top and bottom margin
m	graphic rendition

Ps47 - Primary DA level*

<u>Ps47</u>	<u>Level</u>
61	level 1(VT100 family)
62,63	level 3 (VT300/200 family)

Ps48 -Primary DA state*

<u>Ps48</u>	<u>State</u>
1	132 column
2	printer port
6	selective erase
7	soft character set
8	user-defined key
9	National replacement character set

* Primary DA report is based on the VT320 ID selection in Set-up.

Ps49;Ps50;Ps51;Ps52;Ps53;Ps54;Ps55;Ps56 - Down-line-loading

<u>Parameter</u>	<u>Name</u>	<u>Description</u>
Ps49	Font number	0 or 1 = both refer to the same buffer buffer.

6.6 Escape Sequence Parameters

<u>Parameter</u>	<u>Name</u>	<u>Description</u>
Ps50	Starting	The beginning to load the character first character in the font buffer. If 94-character set designated, 0 or 1 means ASCII location 21H. If 96-character set defined, 0 means ASCII location 20H, 1 means ASCII location 21H. Ps51 Erase control 0 or 2 = erase all characters 1 = erase only characters in location being loaded
Ps52	Character Matrix width	0 = 8 pixels wide 1 = illegal 2 = 5 x 8 pixel cell 3 = 6 x 8 pixel cell 4 = 7 x 8 pixel cell 5 = 5 pixels wide 6 = 6 pixels wide 7 = 7 pixels wide 8 = 8 pixels wide
Ps53	80/132 Font	0 or 1 or 2 = refer to the same font size
Ps54	Text or full cell	0 or 1 = text 2 = full cell
Ps55	Character matrix height	0 or none = 16 pixels high 1 = 1 pixel high 2 = 2 pixels high 3 = 3 pixels high . . 16 = 16 pixels high
Ps56	Character set size	0 = 94-character set 1 = 96-character set

Ps57 - Soft character set ID...also known as -- Dscs Ps57 defines the name for the soft character set. The format of Dscs is as follows:

I F

where...

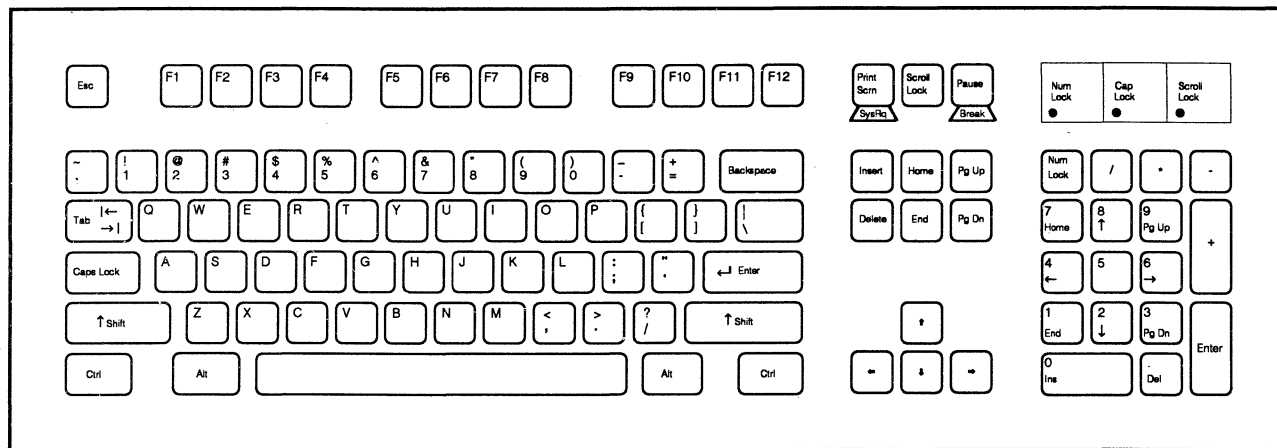
I -- is 0, 1 or 2 intermediate characters from the range 20H to 2FH in the ASCII table.

F -- is a final character in the range of 30H to 7EH in the ASCII table.

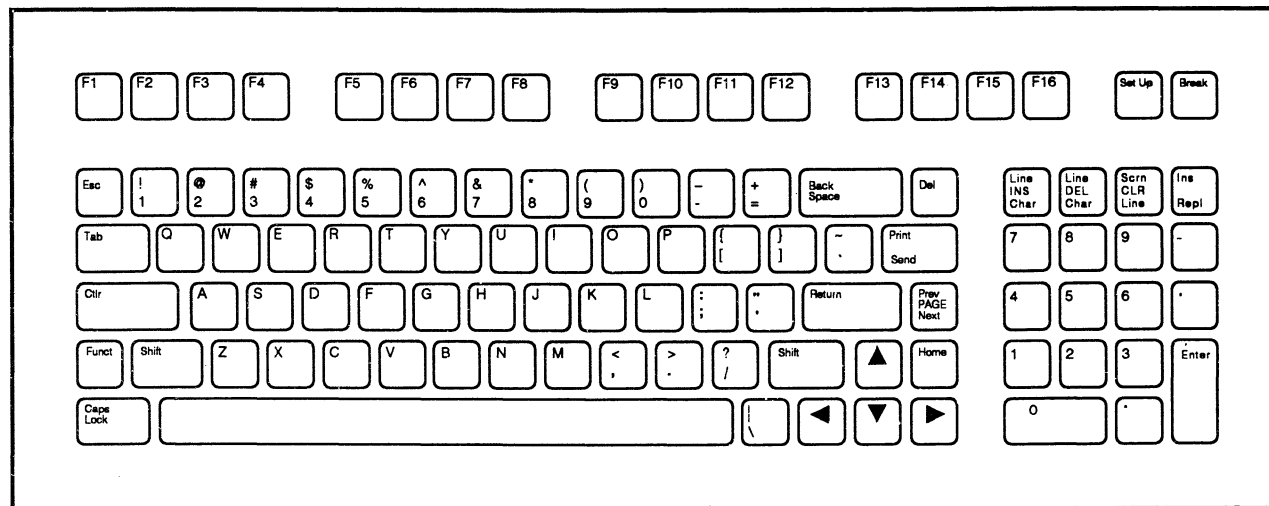
6.6 Escape Sequence Parameters

- Ps58 -- Down-line loading matrix pattern. Ps58 is a string of sixel bit pattern.
- Ps59 -- The parameters for these escape sequence are beyond the scope of this manual. Please contact Liberty Electronics USA for more information.
- Ps60 -- Page size
1 = 24 lines
2 = 48 lines
3 = 96 lines
- Ps61 -- Line Attributes
0 = single high, single wide
1 = single high, double wide
2 = double high, double wide
- Ps62 -- Baud/Stop/Parity/Word Bits

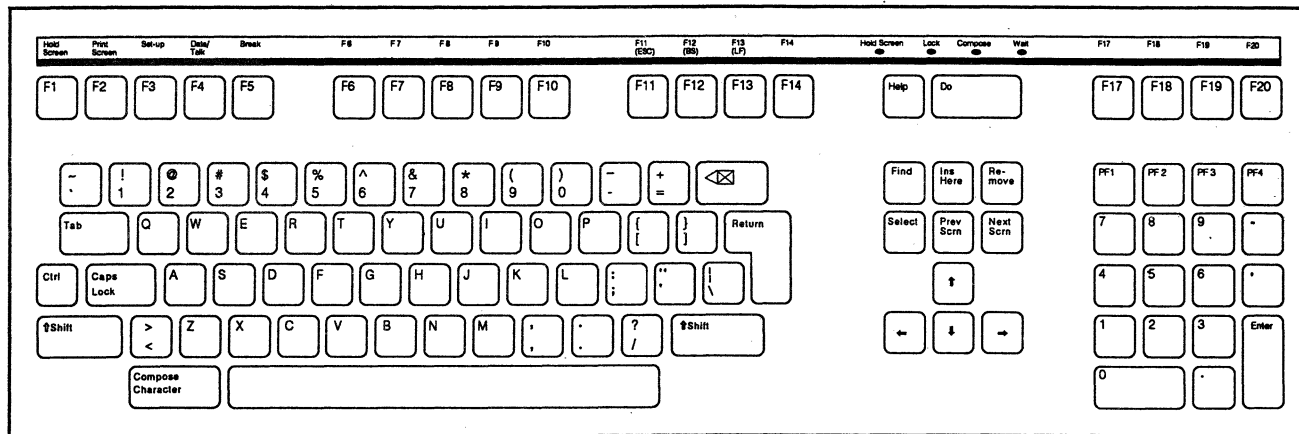
Ps62.1	Baud	Ps62.2	Stop Bits
0	38,400	0	1
1	19,200	1	2
2	9,600		
3	4,800	Ps62.3	Parity Bit
4	2,400	0	None
5	2,000	1	Odd
6	1,800	2	Mark
7	1,200	3	Even
8	600		
9	300		
:	150	Ps62.4	Data Word
;	134.5	0	7 bits
<	110	1	8 bits
=	75		
>	50		



PC, USA



ASCII, USA



VT, USA

This keyboard layout is designed to work on D.E.C. emulations only.

LIBERTY 120 Product Specifications

DISPLAY

Screen Size: 14 inches
 Overscan: Borderless reverse video
 Phosphor Color: Green (P31), Amber (P134), White (P192)
 Refresh Rate: Selectable 60/78Hz
 Displayable Lines: 24, 25, 26, 43, 44
 Displayable Columns: 80, 132
 Character Cell Size: 10 x 16
 Character Matrix: 7 x 12 w/3 dot descenders

	Non-hidden	Hidden
Pages Memory, 80 Column:	6	3
Pages Memory, 132 Column:	4	2

Brightness Adjustment: On front bezel
 Contrast Adjustment: On front bezel
 CRT Profile: Flat screen CRT
 CRT Non-Glare: Etched surface
 CRT Bezel: Recessed for ergonomic viewing

LOGIC

Emulations, ASCII: WY-150/120/60/50,
 TV1 950/925, ADDS VP A2, ADM 31,
 Freedom ONE
 Emulations, ANSI: VT-320/220/100/52
 Emulations, PC-Term: PC-Term, (Selectable
 scan codes or ASCII codes)
 Attributes, Character: Blink, blank, bold, dim
 underline, reverse
 Attributes, Line: Double wide, double high
 Attributes, Data Entry: Protected fields
 Attributes, Cursor: Underline, block, blink, blank
 Characters, Displayable: 512
 Characters, Down Loadable: 512
 Character sets, Foreign: U.K., Swiss (German),
 Swiss (French), Swedish, Spanish, Norwegian,
 Italian, German, French, Flemish, Finnish,
 Dutch, Danish, Canadian French
 Windows: Horizontal split screen

KEYBOARD

PC Layout

Number of Keys: 101
 Style of Layout: IBM PC, Enhanced
 Function Keys: 12 F-labelled Keys
 Programmable Keys: 43
 Programmable Memory: 256 characters
 LED Indicators: Scroll Lock, Caps
 Lock, Num Lock

ASCII Layout

Number of Keys: 101
 Style of Layout: WY-50
 Function Keys: 16 F-labelled Keys
 Programmable Keys: 44
 Programmable Memory: 256 Characters

VT Layout

Number of Keys: 105
 Style of Layout: VT-220
 Function Keys: 20 F-labelled Keys
 Programmable Keys: 46
 Programmable Memory: 256 Characters
 LED Indicators: Cap Lock, Compose, Pause,
 Hold Screen

All Layouts

Physical: Mechanical switch detached,
 low profile, w/tilt mechanism
 Connection: Modular phone jack, with
 static guard
 Life: 100 million cycles
 Output Direction: Programmable keys can be
 directed on-line, local,
 half-duplex, or terminal
 Tactile Indicators: F.J. #5 or numeric pad
 Numeric Keypad: Full function w/Enter
 Keyclick: Selectable on/off

COMMUNICATIONS

Main Port

Functional: Bi-directional serial port
 Interface: RS-232C
 Connector: DB25 female
 Pin Outs: DTE
 Data Xfer: 50 to 38,400 baud, 7/8 data bits,
 1/2 stop bits, even/odd/mark/space/none parity
 Flow Control: Xon/Xoff, DTR selectable
 Printer Port:
 Functional: Unidirectional parallel port
 Interface: Centronics compatible
 Connector: DB25 female
 Pin Outs: IBM PC compatible

ENCLOSURE

Size: 33 cm. H x 32.39 cm. W x 31.75 cm. D
 Foot Print: 24.13 cm. x 24.13 cm.
 Tilt: 12 to 38°
 Swivel: 270°
 Power Switch: Right rear bezel
 Power On Indicator: LED on front bezel
 Keyboard Size:
 ASCII 3.18 cm. H x 40.64 cm. W x 17.15 cm. D
 PC/VT 3.18 cm. H x 47.63 cm. W x 17.78 cm. D
 Keyboard tilt: 10°
 Shipping Weight: 29 lbs. (13.15 Kg.)

REGULATORY AGENCIES

Safety: UL, CSA, TUV
 Emissions: FCC, FTZ, VDE

OPTIONS

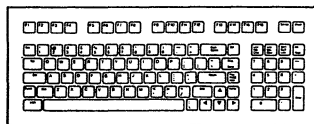
Keycaps: Canadian French, Danish, Dutch,
 French, German, Italian, Norwegian, Spanish,
 Swedish, Swiss (French), Swiss (German), U.K.
 Communications: RS 422, Current loop, RS-423
 Screen Filter: Anti-glare, anti-static, grounded
 snap in glass screen filter

POWER REQUIREMENTS

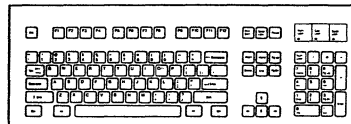
Voltage: 110/220 (+/-10%) VAC
 Frequency: 60Hz

ENVIRONMENT

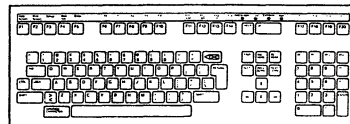
Temperature, Operating: 10 to 40° C
 Temperature, Storage: -40 to 60° C
 Humidity, Operating: 20% to 80% non-
 condensing
 Humidity, Storage: 20% to 80% non-
 condensing



ASCII KEYBOARD



ENHANCED PC KEYBOARD



VT KEYBOARD

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SALES OFFICE LISTING:

Corporate Headquarters:	415-742-7000
Boston	508-660-1938
Los Angeles	714-476-3113
Europe (Belgium)	(32) 07 555 831

Appendix C - Foreign Keycaps

Appendix C -- International Keycaps Available

(Available from Liberty Electronics USA.

Those starred "*" are available FOB Europe.

The others are available FOB San Francisco only.)

PC Keyboard

French*
German*
Spanish
Swedish
Swiss
U.K.*
Italian

VT Keyboard

Canadian French
Danish
Dutch
French*
German*
Italian
Norwegian
Spanish
Swedish*
Swiss French
Swiss German
U.K.

ASCII Keyboard

Canadian French
Danish
French*
German*
Norwegian
Spanish
Swedish*
Swiss*
Italian
U.K.

See Appendix E for 102 keyboard layouts. The 102 keyboard has international keycaps installed. There are no keycap kits for the 102 keyboard.

LIBERTY ELECTRONICS
WARRANTY/SERVICE INFORMATION SHEET

USA only

WARRANTY:

Freedom ONE	1 year
Freedom ONE Plus	3 years
Freedom ONE Turbo	3 years
Liberty 120	1 year

SERVICE LOCATIONS:

(for products in or out of warranty):

Liberty Electronics	San Francisco, CA	415 742 7034
Allen Edwards Assoc.	Torrance, CA	213 328 9770
Chess, Inc.	Denver, CO	303 573 5133
Computer Maint. Co.	Los Angeles, CA	213 483 2400
Dattec	Seattle, WA	206 575 1470
Hanson Data	Marlboro, MA	508 481 3901
Inland Associates	Olathe, KS	913 764 7977
Pro Com Sales	Glenview, IL	312 657 1140
RTS	Houston, TX	713 578 0218
TRW	Atlanta, GA	404 449 5906
	Baltimore, MD	301 953 3303
	Boston, MA	617 890 5600
	Dallas, TX	214 630 2640
	Detroit, MI	313 569 6610
	Long Island, NY	516 921 6262
	Seattle, WA	206 641 6660
The Canadian Press	12 locations in Canada	416 364 0321

EXTENDED WARRANTY PROGRAM:

Purchase 1 or 2 additional years of warranty from Liberty.

Extended Warranty cards are located in your terminal box.

One year is \$37.50. Two years is \$65.00.

Extended Warranty repairs are done at Liberty's San Francisco location.

FREEDOM EXPRESS PROGRAM:

Replace the standard product warranties (see above) with the Freedom Express Program for an equal length of time.

The Freedom Express Program guarantees a loaner terminal on your desk the next business day which is to be used while your terminal is being repaired.

Details of the Freedom Express Program can be found in your terminals box.

DEPOT REPAIR:

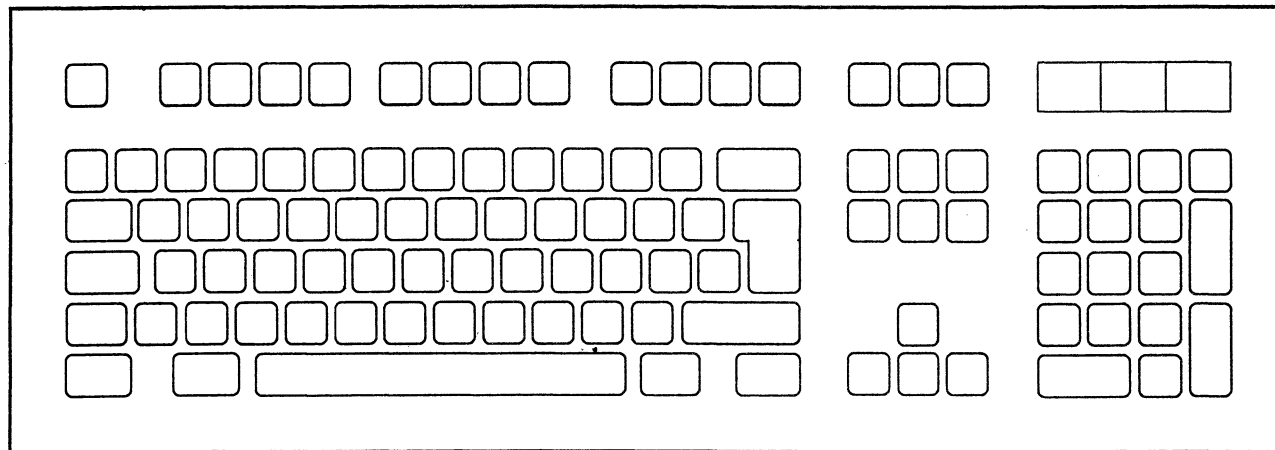
Always available from Liberty, South San Francisco all Liberty customers can take advantage of our reasonable time/materials rate for warranty and non-warranty terminal repairs.

TECH SUPPORT:

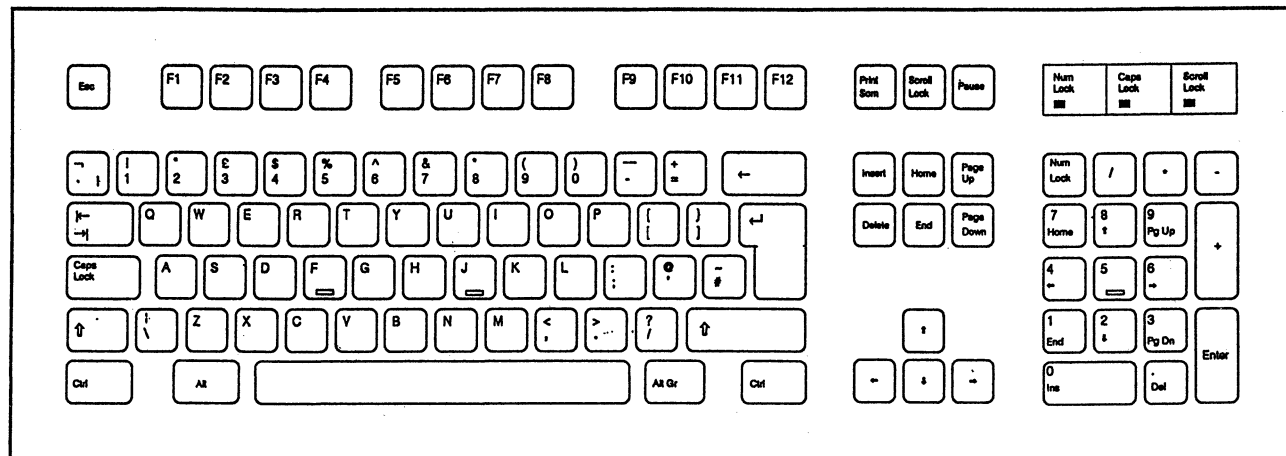
Available from Liberty during California business hours, at 415 742 7034 8:30 am to 5:00 pm Pacific Standard Time.

TECHNICAL DOCUMENTATION:

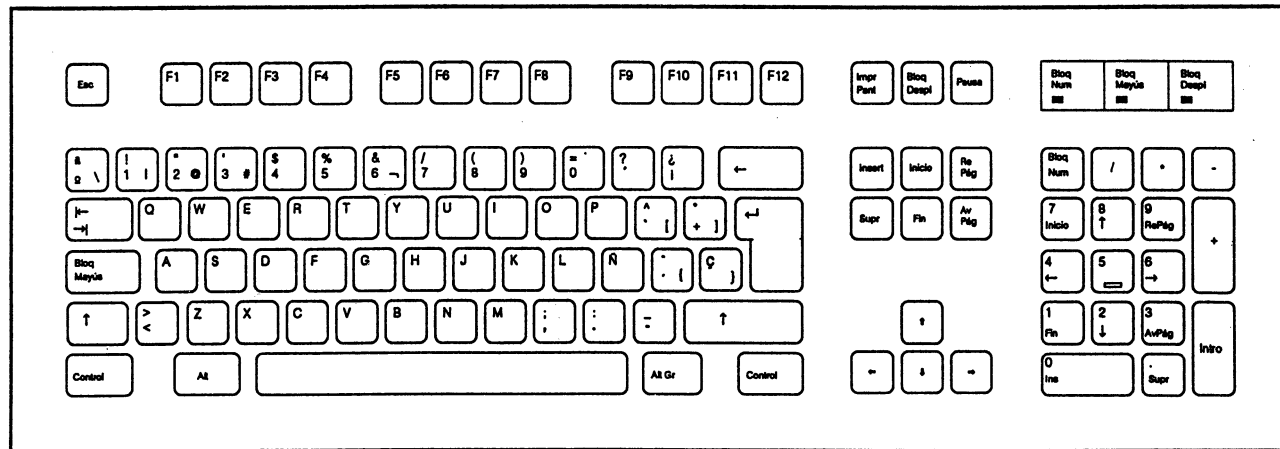
Freedom Series User Manual	9-45004	\$ 5.00
Freedom Series Programmer's Manual	9-39001	\$12.00
Freedom Series Service Manual	9-42001	\$25.00
Liberty 120 Maintenance Manual	9-42100	\$25.00
Liberty 120 User Guide	9-45100	\$ 5.00



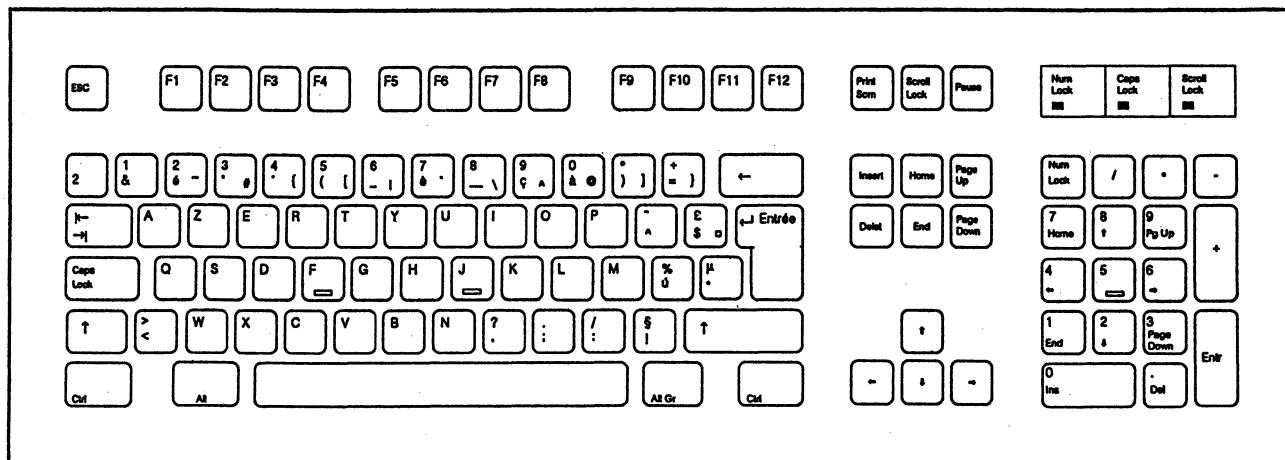
102, BLANK



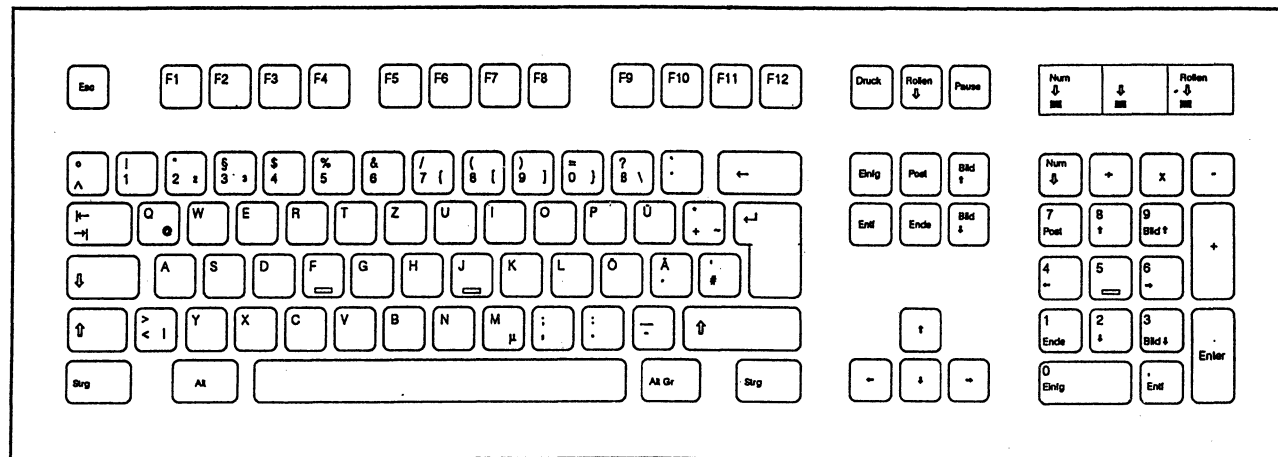
102, U.K. ENGLISH



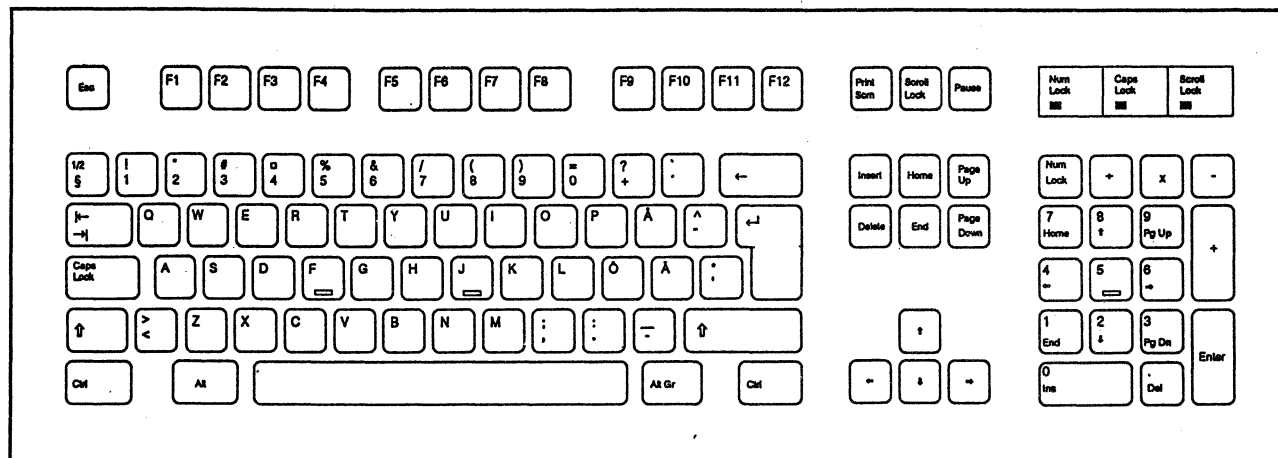
102, SPANISH



102, BELGIAN



102, GERMAN



102, SWEDISH / FINNISH