MC80 User's Guide

LINK
Technologies, Inc.

MC80 User's Guide

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This digital apparatus does not exceed the Class A electromagnetic noise emission limits for digital apparatus as defined in the radio interference regulations of the Canadian Department of Communications.

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Overview

Features

Display Screen:

Color 14" diagonal, anti-glare, fully overscanned.

Screen Refresh:

60 or 78 Hz.

Screen Formats:

27-row display (single or dual sessions)in 80 or 132 columns. 53-row display (dual Session, 26 rows each, plus status line).

Virtual Terminals:

Simultaneous connection to two hosts with full page or split screen displays and concurrent updating of data.

Screen Attributes:

Normal, Dim, Bold, Blank, Reverse, and Blink in all combinations.

Attribute Styles:

Full screen embedded, Line embedded, or character; independently selectable per session.

Line Attributes:

Double wide, double high/double wide, and double high.

Character Size:

10x16 (60Hz, 27 rows); 10x9 (60Hz, 53 rows), and 10x13 (78 Hz, 27 rows).

Character Set:

512 displayable characters per session in hidden mode; 128 displayable characters per session in embedded mode.

Font Support:

ASCII, PC Multinational, DEC Special Graphics, DEC Multinational, and ISO Latin 1.

Display Memory:

Up to eight pages (132 columns, non-embedded mode).

Scrolling:

Jump or Smooth

Keyboards:

Detached, adjustable, low profile with mechanical keyswitches and 6-foot coiled RJ11 cord. Supports US Enhanced PC (EPC), International Enhanced PC (IEPC), ANSI 220, and ANSI 420 layouts. Up to 1500 bytes of non-volatile, function key memory available for key programming.

Communications:

Asynchronous, bi-directional RS-423 MAIN and AUXILIARY ports, using female DB25 and DB9 connectors. The MAIN port also supports RS-422 communications. Maximum baud rate on the MAIN port is 115.2K Baud. The AUXILIARY port's maximum baud rate is 38.4K baud. Both ports may be used as host connections. The PRINTER port (Centronics parallel interface) is IBM PC Compatible.

Emulation Compatibility:

ANSI.SYS, DEC VT220, VT100, and VT52, Wyse WY-60, TeleVideo 955 (TVI 955), PC Term, and Esprit III.

Power:

120 VAC +/-10%, 60 Hz; 220 VAC +/-10%, 50 Hz.

Dimensions:

Height: 13.31" (338 mm), Width: 14.09" (358 mm), Depth: 14.57" (370 mm).

Footprint:

Width: 9.5" (240 mm), Depth: 9.5" (240 mm).

Shipping Weight:

36 lbs (17 kg).

Regulatory Compliance:

UL and CSA Approved. FCC Class A International Unit complies with TUV GS, IEC 950, VDE Class A and MPR .08. VDE Class B Radio Protection Mark version is available.

About This Manual

The *MC80 User's Guide* contains the information you need to quickly install, set up, and operate the terminal. This guide is organized in the following manner:

Chapter 1
Installing the MC80

This chapter explains how to install the terminal as part of your host system network. Connecting external devices is also explained.

Chapter 2
Configuring the MC80

Chapter 2 explains to enter the *MC80*'s setup mode, and configure the terminal's operating characteristics to meet your system's requirements.

Chapter 3
Operating the MC80
Chapter 3 discusses the terminal's user features, operating functions, and display capabilities.

Appendix A
Keyboard Layouts
This appendix provides illustrations of the keyboards supported by the *MC80*.

Terms and Conventions

Terms

The following terms are used throughout this manual:

Application — A software program that directs the host computer and terminal to accomplish a specific task. For example, word processing or spreadsheets.

Cursor — An on-screen indicator, such as a blinking underline, that marks the location at which keystrokes are entered from the keyboard.

Default — A value, setting, or response set by the manufacturer. For instance, the *MC80's* default emulation is ANSI.SYS.

Host — The main computer in a network of computers or terminals connected directly or indirectly via a communications link.

Mode — A specific operational state in which the terminal exhibits a defined response.

Emulation — An operating mode that features compatible characteristics of a specific terminal, such as Digital Equipment Corporation's VT220.

Session — The active connection between the terminal and the host. When the *MC80* is in dual-session mode, multiple hosts or multiple addressing is active.

Key Symbols

The names of keys are italicized in small, bold typeface. For example: ***Tab***, ***F4***, or ***S***. The inscriptions *left* and *right* are used to identify a particular control key, such as left ***Alt*** or right ***Shift***.

Key Sequences

Key sequences appear simply as a series of key symbols, separated by a single space. For instance, ***Shift Setup*** means hold down the ***Shift*** and ***Setup*** keys at the same time.

Chapter 1
Installing the MC80

Setting Up the MC80

Follow these recommendations for finding a suitable location for the *MC80*:

- Choose a location away from direct sunlight or other sources of bright, direct lighting.
- Place the terminal on a flat, hard surface, allowing three inches on all sides for ventilation and external cabling. Figure 1-1 shows an unpackaged *MC80*.
- Connect the keyboard to the connectors on the terminal's back panel (see Figure 1-2 for connector locations).

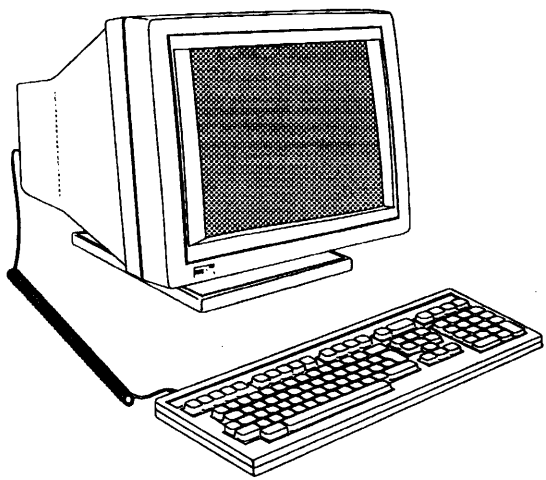


Figure 1-1. The MC80 Terminal and Keyboard

Communications Connections

The *MC80* can be connected directly to a host system or indirectly to a remote system via a terminal server or modem. The *MC80's* serial and parallel ports may be used as listed below. Figure 1-2 identifies the *MC80's* connectors.

- To connect a host computer or other serial device to either serial port.
- To connect a parallel printer to the Centronics-compatible parallel port, use a shielded parallel interface cable with a male 25-pin connector on the terminal end.

Note: *1. SERIAL 1's female 25-pin RS-232C/RS-423/RS-422 connector should be used with a shielded serial interface cable fitted with a male 25-pin connector on the terminal end.*

2. SERIAL 2's male 9-pin RS-232C/RS-423 connector should be used with a shielded serial interface cable fitted with a female 9-pin connector on the terminal end.

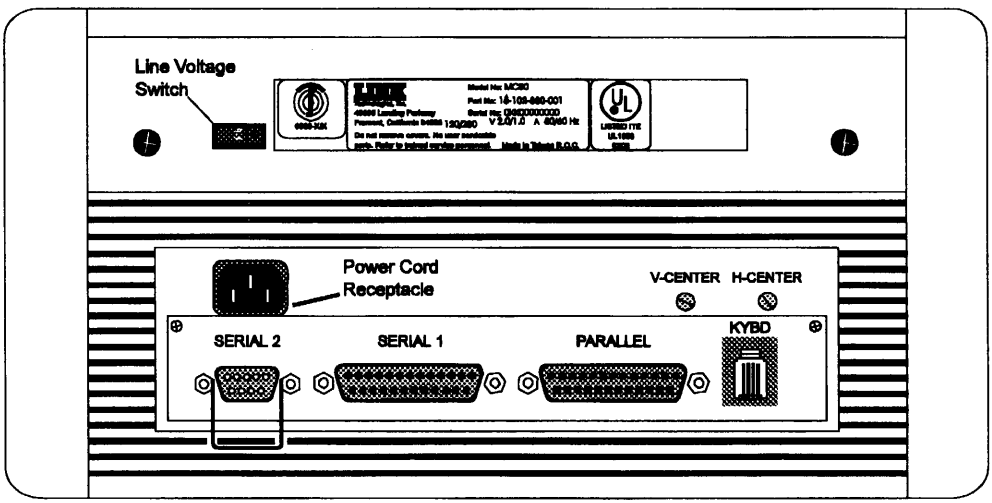


Figure 1-2. MC80 Back Panel View

CAUTION! *Ensure that your interface cable's pin assignments are compatible with those of the communications port (see Appendix B) to which they are connected. Improper interface connections may damage the terminal.*

Power Requirements

The *MC80* will operate safely using an AC power source with the following specifications:

- 120 Vac ±10% (108 to 132 Vac) 60 Hertz
- 230 Vac ±10% (207 to 253 Vac) 50 Hertz

Ensure that your power source's voltage corresponds with the line voltage setting located on the terminal's back panel. The voltage selector switch is recessed to prevent it from being accidently switched.

If your power source's voltage is in the 120-volt range, make sure that the selector switch is set to the 115 position. If source's voltage is in the 230-volt range, set the switch to 230. Refer to Figure 1-3 below.

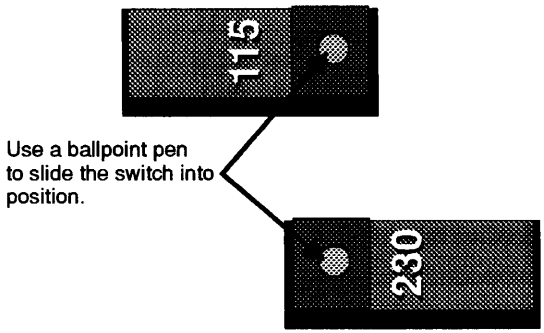


Figure 1-3. Line Voltage Switch Settings

CAUTION! *Connecting the terminal to a power source that does not meet the specifications above or not setting the line voltage correctly may damage the terminal.*

Turning the Terminal On

Turn the *MC80* on by pressing the power switch located on the right side of the terminal (see Figure 1-4). A beep will indicate that the terminal is receiving power, and start its self-test routine. After the self-test has finished, a status line will appear at the top of the screen. Set the brightness and contrast controls to adjust the display to a comfortable viewing level.

If a character appears at the lower, right hand corner of the screen after turning on the terminal, turn the *MC80* off, and follow these instructions:

1. Press **G** to leave the self-test, and clear the screen.
2. Turn *MC80* off and back on. If the character appears again, make a note of it, and contact technical support.

If the character, K, appears:

1. Turn the terminal off.
2. Hold down the **G** key while turning the terminal back on.
3. Press **D** to restore the defaults, **S** to save the setup, and then **E** to exit setup mode.
4. If this procedure fails, refer the *MC80* to technical support.

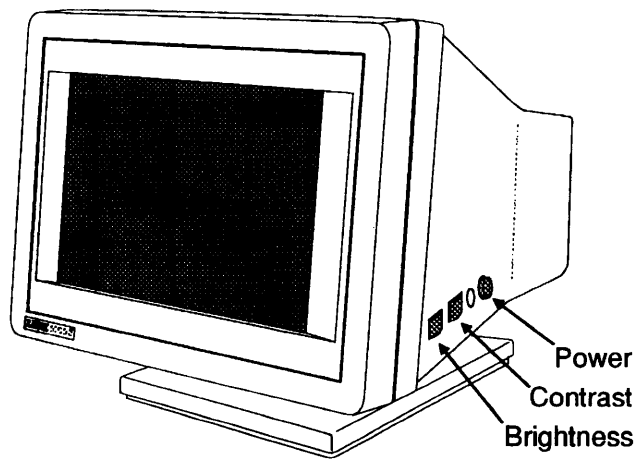


Figure 1-4. MC80 Operator Controls

Invoking Setup Mode

The first time the *MC80* is turned on (or any time a different keyboard is used), you will need to invoke the setup mode and configure the terminal's parameters to your system's requirements. Chapter 2 provides descriptions of each setup menu's parameters. Instructions for configuring the terminal are given below.

1. Press the ***Ctrl F3*** when using an ANSI keyboard or the ***Shift Select*** key sequence on the EPC/IEPC keyboards to invoke setup mode. The *General Setup* menu will appear on the screen (see Figure 1-5).

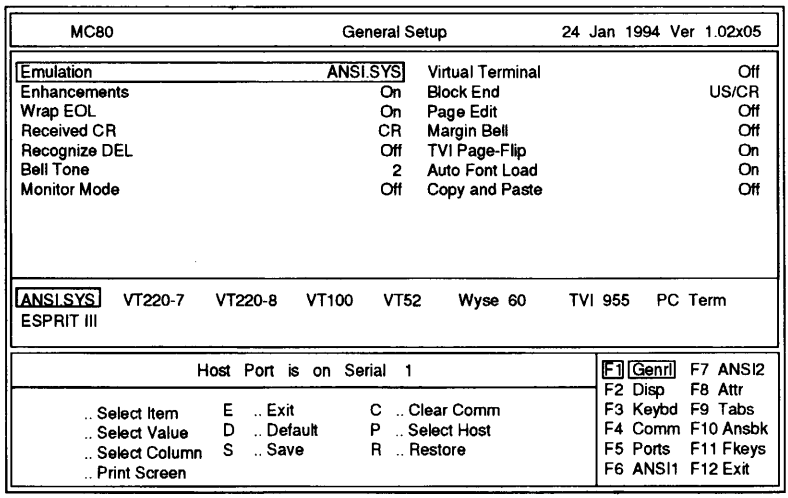


Figure 1-5. The MC80's General Setup Menu

2. Press ***D*** to restore the default settings.

3. If necessary, make any changes to the parameters (see Chapter 2), and press ***S*** to save the setup to permanent memory.

   The next time you turn the terminal on, the configuration in effect will be the one most recently saved to memory. If the setup is not saved, your changes will be lost when the terminal is turned back on.

4. Press ***E*** to exit setup mode.

Chapter 2
Configuring the MC80

Introduction

This chapter explains how to configure the *MC80's* operating parameters, and to program selected keys.

In general, set up parameters fall into three groups:

- Parameters must be set to correspond with the requirements of your host or other device for communicating with the terminal to be successful. For example, the host and terminal must be setup to use the same baud rate in order to send and receive data. Otherwise, communications between the two will fail.
- Parameters must be set to correspond with the requirements of particular application programs. For instance, does your application require that tab stops be set before installing it?
- Parameters that are set to suit your personal preferences. For example, do you want the cursor to appear on the screen as a block or underline, blinking or non-blinking?

Consult your computer, printer, and application program user's guides for information about particular setup requirements.

Setup Mode

Invoking the *MC80's* setup mode may be done at any time by pressing **F3** or **Ctrl F3** on the 105 or 107-key ANSI keyboards (respectively) or **Shift Select** on the EPC/IEPC keyboards. The data screen will be replaced by the *General Setup* menu.

Each menu has an identical set of function key commands that allow you to access any other menu at any time. Press a function key to move to a desired menu. Pressing **F12** while in any menu will exit setup mode, and return you to the main screen.

Table 2-1 lists each setup menu and the function key command that invokes it.

CAUTION! *If handshaking is not enabled when invoking setup mode, data may be lost while the MC_{80} is receiving data.*

Table 2-1. Setup Menu List

Function Key	Associated Menu
F1	General Setup (Genrl)
F2	Display Setup (Disp)
F3	Keyboard Setup (Keybd)
F4	Communications Setup (Comm)
F5	Serial Ports Setup (Ports)
F6	ANSI Setup 1 (ANSI1)
F7	ANSI Setup 2 (ANSI2)
F8	Attribute Setup (Attr)
F9	Tabs Setup (Tabs)
F10	Answerback Setup (Ansbk)
F11	Function Keys Setup (Fkeys)
F12	Exit Setup

Setup Menu Screen Layouts

Each menu has an identical set of function key commands that allow you to access any other menu at any time. Press a function key to move to a desired menu.

The first seven setup menus (see Figure 2-1) use the same screen layout, consisting of the following areas:

1. Header Area
2. Parameter Item Area
3. Selection Area
4. Function Key Command Directory Area
5. Host Port Indicator Area
6. Control Instruction Area

Each menu area is discribed on the following page.

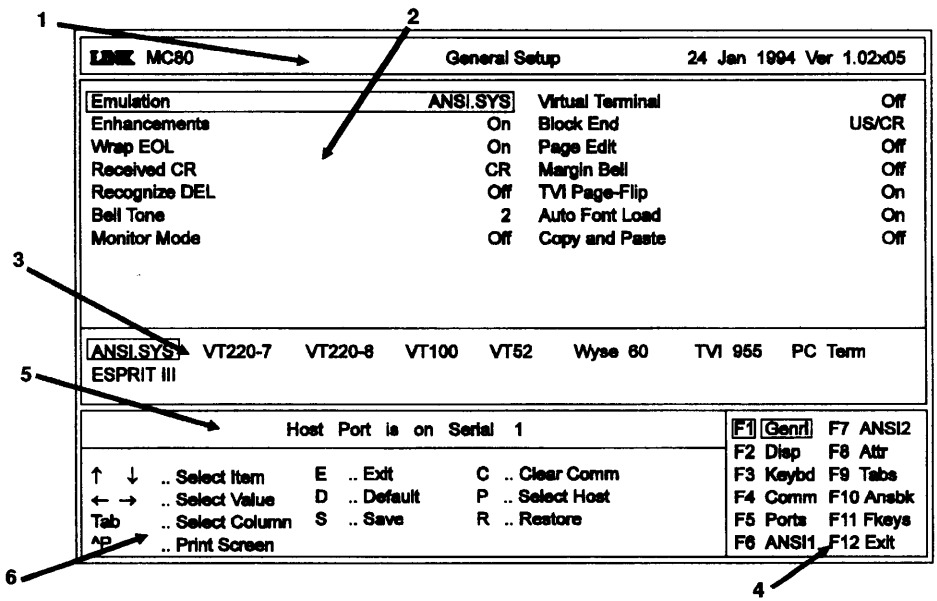


Figure 2-1. Setup Menu Areas

The *Attribute Setup*, *Tabs Setup*, *Answerback Setup*, and *Function Keys Setup* menu layouts differ from the first seven screens, except for the *Header*, *Function Key*, *Command Directory*, and *Host Port Indicator* areas.

Header Area

The *Header Area* displays the *MC80's* manufacturer name, model number, menu title, and firmware release date and version number.

Parameter Item Area

This area displays the parameters and their options. Select a parameter with the ↑ and ↓ keys. Its options will appear in the selection area.

Selection Area

The *Selection Area* displays a selected parameter's options. Use the ← and → keys to select the option that meets your system requirements.

Function Key Directory Area

This area is displayed at the lower, right hand corner of the screen. It lists the function keys that invoke setup menus.

Host Port Indicator Area

This area indicates which serial port is selected for the host system connection. Press **P** to toggle between serial ports 1 (SERIAL 1) and 2 (SERIAL 2).

Ensure that the port you select is connected to the host or device.

Control Instruction Area

The *Control Instruction Area* provides a summary of key commands used ito invoke each setup menu.

Setup Keyboard Commands

The following keyboard commands may be used to perform special functions while in setup mode.

Save

Press **S** to save your current parameter option selections to permanent memory.

Settings not saved will remain in effect until the *MC80* is turned off. The next time you turn the terminal on, the settings that were previously saved will take effect.

Print Screen

Press **Ctrl P** to print the current setup screen's parameter settings.

Restore

Press **R** to restore the *MC80*'s most recently saved parameter settings.

Default

Press **D** to restore the terminal's setup parameters to the factory defaults.

Clear Communications

Press **C** to clear the data communications while in setup mode. This does not affect the terminal's on-line/local state. It also performs the following actions:

- Sends an XOFF or XPC signal to the host or reasserts the DTR.
- Unlocks the keyboard.
- Clears the keyboard buffer.
- Discontinues any escape sequences.
- Disables any print operations.

Once these actions have been performed, Comm Cleared will be displayed on the screen.

Exit

Press **F12** or **E** to exit setup at any time or after your setup has been saved. Key definitions and answerback messages will be automatically saved to memory before exiting setup mode.

Menu Parameters and Options

Tables 2-2 through 2-9 describe each setup menu's parameters and option settings. Default settings appear in **bold** typeface. Figures 2-2 through 2-3 show each menu's display screen.

Note: *Not all setup parameters apply to every emulation. If an invalid parameter setting is selected, the MC80 will default to a valid setting upon exiting setup.*

General Setup Menu

The *General Setup* menu allows you to select a desired emulation, and configure such features as non-native enhancements, virtual terminal modes, and page editing. Press ***F3*** or ***Ctrl F3*** on the 105 or 107-key ANSI keyboard (respectively) or ***Shift Select*** on the EPC/IEPC keyboards to enter setup mode from the main screen and invoke this menu. Press ***F1*** to invoke it from any other setup menu.

Figure 2-2 shows the *General Setup* menu. Table 2-2 lists describes its parameters.

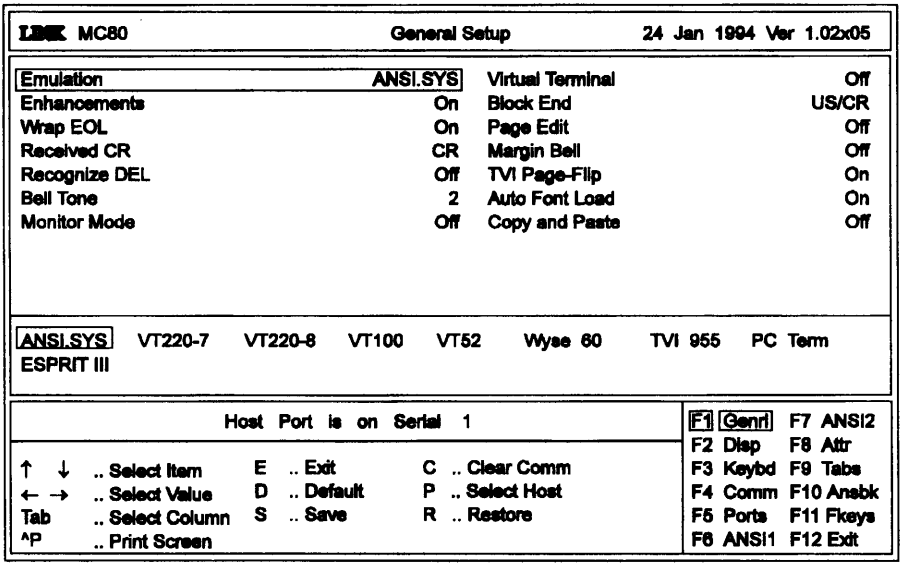


Figure 2-2. MC80 Gereral Setup Menu

Table 2-2. General Setup Menu Parameters

Parameter	Description
Emulation[1]	The *MC80* will run programs using commands characteristic of the following terminals:
ANSI.SYS	**SCO UNIX Console.**
VT220-7	DEC VT220, 7-bit mode.
VT220-8	DEC VT220, 8-bit mode.
VT100	DEC VT100.
VT52	DEC VT52.
Wyse 60	Wyse WY-60.
TVI 955	TeleVideo 955.
PC Term	PC terminal.
ESPRIT III	Esprit Systems, Inc. Esprit III.
Enhancements	Recognizes some non-native terminal emulations' enhanced code sets:
On	**Recognized by the terminal.**
Off	Not recognized.
Wrap EOL	When characters are entered at the end of a line:
On	**The cursor wraps to the start of the next line.**
Off	Characters at the cursor position will be overwritten.

[1] The terminal may clear its entire memory buffer when the emulation is changed.

Table 2-2. General Setup Menu Parameters (cont.)

Parameter	Description
Received CR	When the terminal receives an ASCII carriage retrurn (CR) character, the cursor will move to the beginning of the:
CR	**Current line.**
CRLF	Next line.
Recognize DEL	***Delete*** (7F hexadecimal) is:
Off	**Ignored.**
On	Interpreted as a destructive backspace. The character to left of the cursor is deleted, and the cursor is moved left one space.
Bell Tone	The sound of the *MC80's* bell tone is:
Off	Disabled.
1	A low-pitched beep.
2	**A medium-pitched beep.**
3	A high-pitched beep.
Monitor Mode	The terminal:
Off	**Executes escape sequences and control codes.**
On	Displays symbols for escape sequences and control codes without acting on them.
Virtual Terminal	When set to:
Off	**The *MC80* accesses only one host during a session.**
On	The terminal accesses two hosts in full-page, dual-session display mode.
Split	The terminal operates in dual-session mode, displaying both sessions concurrently.
Block End	When the terminal sends a block of data to the host::
US/CR	**The line terminator is displayed as an ASCII US character, and the block terminator is displayed as an ASCII CR character.**
CRLF/ETX	Displays line terminators as ASCII carriage return (CR) and line feed (LF) characters. The block terminator is displayed as an ASCII ETX character.

Table 2-2. General Setup Menu Parameters (cont.)

Parameter	Description
Page Edit	Character insert and delete operations extend to the:
Off	**End of the line.**
On	End of the page.
Margin Bell	The MC80's bell:
Off	**Does not ring when the cursor reaches the right margin.**
On	Rings when the cursor reaches the column where the bell is set. (Defaults are column 72 in 80-column mode, and column 124 in 132-column mode.)
TVI Page-Flip[2]	After a page-print operation, the screen:
Off	Continues to display the current page.
On	**Displays the next page.**
Auto Font Load	When changing emulations, the terminal:
Off	Does not change the current character set.
On	**Loads the appropriate character set.**
Copy and Paste[3]	The *MC80's* Copy and Paste feature is:
Off	**Disabled.**
On	Enabled. Data on the screen may be copied and pasted. (See Chapter 3 for Copy and Paste instructions.)

[2] Applies to TeleVideo the personality only.

[3] Setting this parameter to On reduces the available display memory to 7 pages.

Display Setup Menu

The *Display Setup* menu allows you to configure the *MC80's* line and column format, cursor style, background attribute, and other features. This menu can be invoked from any other menu by pressing **F2**.

Figure 2-3 shows the *Display Setup* menu. Table 2-3 describes each of its parameters.

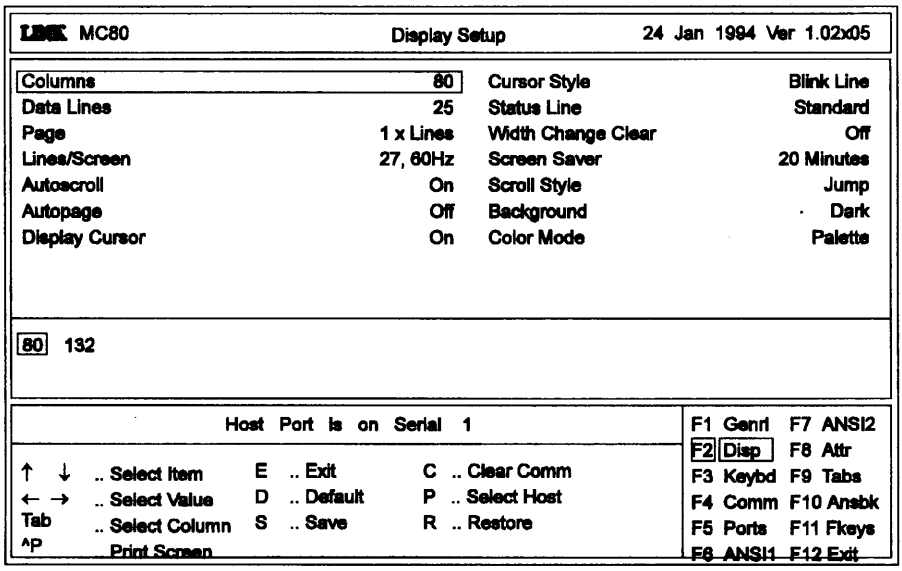


Figure 2-3. MC80 Display Setup Menu

Table 2-3. Display Setup Menu Parameters

Parameter	Description
Columns	The screen displays:
80	**80 columns**
132	132 columns
Data Lines[1]	The screen displays a status line, and:
24	24 data lines, and 1 label line.
25	**25 data lines, and 1 label line.**
42	42 data lines, and 1 label line.
43	43 data lines, and 1 label line.
Page[1]	The length of a page of display memory is equal to:
1 x Lines	**The number of data lines displayed on the screen (as selected by the Data Lines parameter).**
2 x Lines	Two times the number of data lines displayed on the screen.
4 x Lines	Four times the number of data lines displayed on the screen.
*	The number of data lines displayed on the screen for the first page with the second page containing with the rest remaining in memory.
Lines/Screen	The display configuration will be:
27, 76Hz	27 displayed lines with a 76 Hz screen retrace frequency.
27, 60Hz	**27 displayed lines with a 60 Hz screen retrace frequency.**
53, 60Hz	53 displayed lines with a 60 Hz screen retrace frequency.
Autoscroll	When the cursor moves past the last line on the page:
Off	It will wrap to the top of the page.
On	**The data scrolls up one line.**

[1] When a screen or page format is changed, the *MC80* will clear the entire display memory, send the cursor home, and reset the scroll margin

Table 2-3. Display Setup Menu Parameters (cont.)

Parameter	Description
Autopage	When the cursor reaches the top or bottom of the page:
Off	**It wraps around the page or the data will scroll (depending on the Autoscroll parameter's setting).**
On	A new page of memory is displayed on the screen.
Display Cursor	When the cursor is:
On	**Visible**
Off	Invisible
Cursor Style	The cursor is displayed as a:
Blink Block	Blinking rectangle.
Steady Block	Non-blinking rectangle.
Blink Line	**Blinking line.**
Steady Line	Non-blinking line.
Status Line	The screen displays:
Standard	**A status line with a cursor line and column indicators.**
Editing	A status line that displays editing information.
Off	No status line.
Width Change Clear	When changing the number of columns, the *MC80*:
Off	**Will not clear the screen.**
On	Clears the screen.
Screen Saver[2]	If data is not received from the host or keyboard for processing by the terminal, the screen:
Off	Stays on.
1 Minute	Goes blank after 1 minute.
2 Minutes.	Goes blank after 2 minutes.
5 Minutes	Goes blank after 5 minutes.
10 Minutes	Goes blank after 10 minutes.
20 Minutes	**Goes blank after 20 minutes.**
30 Minutes	Goes blank after 30 minutes.
1 Hour	Goes blank after 1 hour

[2] Press any key to restore the screen. All current data will be displayed.

Table 2-3. Display Setup Menu Parameters (cont.)

Parameter	Description
Scroll Style[3]	The screen display scrolls at:
Jump	**The rate data is received.**
Smooth-1	One line per second.
Smooth-2	Two lines per second.
Smooth-4	Four lines per second.
Smooth-8	Eight lines per second.
Background	Sets the background display:
Dark	**To black.**
Light	To a lighter color.
Color Mode[4]	The *MC80*'s color mode will be enabled according to:
Palette	The background and foreground colors selected from within the *Attribute Setup* menu.
Direct	What escape codes are entered from the keyboard.

[3] If smooth scrolling is selected, receive handshaking should be enabled (see Table 2-5, *Communications Setup* menu).

[4] This parameter may not be available to every emulation.

Keyboard Setup Menu

The *Keyboard Setup* menu allows you to select options for the MC80's keyboard features. This includes the terminal's Key Repeat, Compose Key, and Keycode characteristics. To invoke this menu when in setup mode, press ***F3***.

Figure 2-4 shows the *Keyboard Setup* menu as it appears on the screen. Table 2-4 describes each of its parameters and options.

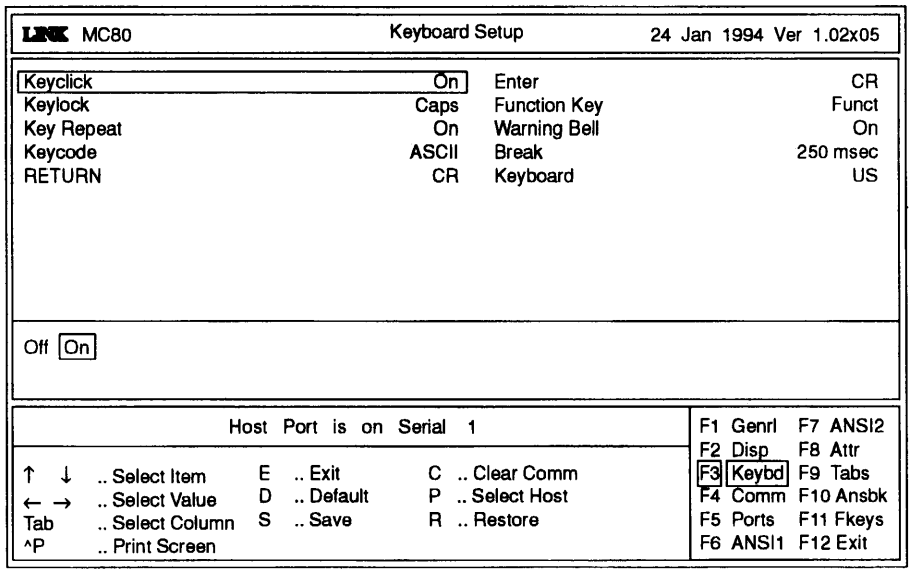


Figure 2-4. MC80 Keyboard Setup Menu

Table 2-4. Keyboard Setup Menu Parameters

Parameter	Description
Keyclick	Each time a key is pressed or repeated, the *MC80's* bell:
Off	Does not ring.
On	**Rings.**
Key Lock	When ***Lock*** or ***Caps Lock*** is engaged:
Caps	**Alphabetic keys generate only uppercase characters (numeric and symbol keys are unaffected).**
Reverse	The reverse affect of the ***Shift*** key takes place. Shifted alphabetic keys generate lowercase characters, unshifted alphabetic keys generate uppercase characters (numeric and symbol keys are unaffected).
Shift	All alphanumeric keys will generate shifted characters only.
Key Repeat	When held down for more than half a second, the key:
Off	Will not repeat.
On	**Repeat.**
Keycode[1]	When a key is pressed, the terminal sends:
ASCII	Standard ASCII codes.
Scan	PC scan codes (make/break).
RETURN	The keyboard's ***Return*** key will send an ASCII character for:
CR	**Carriage return (CR).**
CRLF	Carriage return (CR) and linefeed (LF).
TAB	Horizontal Tab (HT).
ENTER	The numeric keypad's ***Enter*** key will send an ASCII character for:
CR	Carriage return (CR).
CRLF	Carriage return (CR) and linefeed (LF).
TAB	Horizontal tab (HT).

[1] If the Comm Mode parameter is set to block, half block, or local, the *MC80* will send ASCII key codes regardless of this parameter's setting. In full-duplex mode, the terminal automatically changes the setting to scan when the PC Term emulation is selected (to select ASCII, the *MC80* must be in this emulation when entering setup mode.

Table 2-4. Keyboard Setup Menu Parameters (cont.)

Parameter	Description
Compose Key (or Left Alt Key)	Pressing the ***Compose Character*** (or left ***Alt***) key:
Funct	**With an alphanumeric key sends an ASCII SOH character, the alphanumeric key's ASCII code, and an ASCII CR.**
Hold	Freezes current data on the screen until the key is pressed again.
Meta	With an alphanumeric key, sends the key's code with its high bit set.
Compose	Composes non-standard characters in sequence with specific keys.
Warning Bell	When the Virtual Terminal parameter is On, the *MC80's* bell:
Off	Does not ring when an inactive session receives data.
On	**Sounds repeatedly when an inactive session receives data from the host.**
Break	When Break (or F5 on the ANSI keyboards) is pressed, the terminal sends:
170 msec	A 170-millisecond break signal to the host port.
250 msec	**A 250-millisecond break signal to the host port.**
500 msec	A 500-millisecond break signal.
Off	No break signal.

Table 2-4. Keyboard Setup Menu Parameters (cont.)

Parameter	Description
Keyboard	Choose the option that corresponds to your keyboard's language:
US[1]	**United States English character set.**
UK[2]	United Kingdom English character set.
FR. Canadian	French Canadian character set.
Latin American	Latin American character set.
Danish	Danish character set.
German	German character set.
Spanish	Spanish character set.
Swedish	Swedish character set.
Norwegian	Norwegian character set.
Flemish[2]	Flemish character set
French/Belgian	French and Belgian character sets.
Italian	Italian character set.
Swiss (French)[2]	Swiss-French character set.
Swiss (German)[2]	Swiss-German character set.
Finnish[2]	Finnish character set.
Dutch[3]	Ducht character set.
Portuguese[3]	Portuguese character set.

[1] The EPC keyboard only supports the US English language.

[2] This keyboard language is only supported by the IEPC keyboards.

[3] Supported by the ANSI keyboards.

Communications Setup Menu

The *MC80's Communications Setup* menu allows you to configure the terminal's communications parameters. This includes defining the Printer Port, and setting the Serial Interface and Comm Mode options. To invoke this menu, press **F4**.

Figure 2-5 shows the *Communications Setup* menu. Table 2-5 describes each of its parameters.

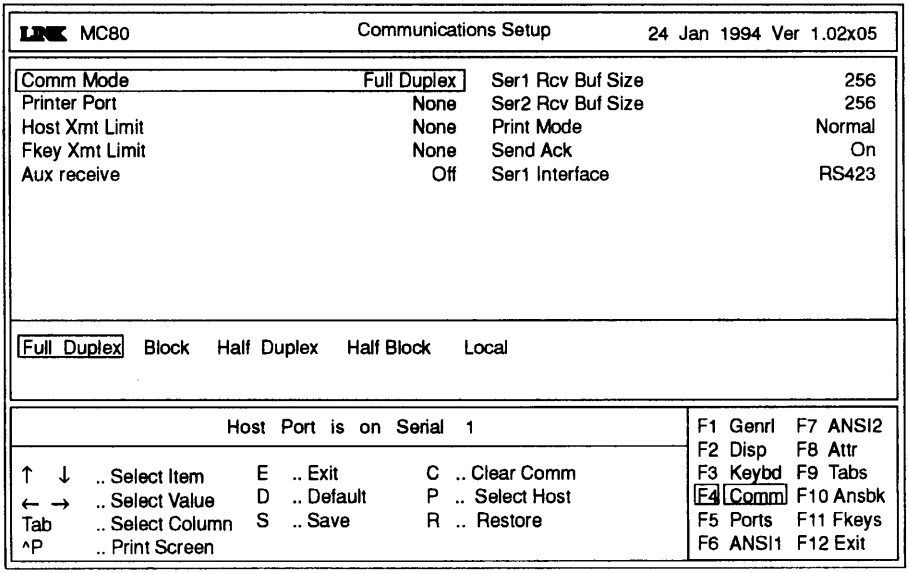


Figure 2-5. MC80 Communications Setup Menu

Table 2-5. Communications Setup Menu Parameters

Parameter	Description
Comm Mode **Full Duplex** Block Half Duplex[1] Half Block Local	The terminal's host port communication mode is: **Full-duplex.** Block Half-duplex Half-duplex block Local
Printer Port Parallel Serial **None**	During print operations, the *MC80* will send data to a: Parallel printer connected to the PARALLEL port. Serial printer connected to the serial port (SERIAL or SERIAL 2) not assigned as the host port. **Disabled.**
Host Xmt Limit **None** 30 cps 60 cps 150 cps	The *MC80* sends data via the host port: **As fast as the baud rate allows.** At a maximum of 30 characters per second. At a maximum of 60 characters per second. At a maximum of 150 characters per second.
Fkey Xmt Limit **None** 30 cps 60 cps 150 cps	The terminal sends function key definitions: **As fast as the baud rate allows.** At a maximum of 30 characters per second. At a maximum of 60 characters per second. At a maximum of 150 characters per second.
Aux Receive **Off**[2] On	Data received on the serial port (SERIAL 1 or SERIAL 2) not assigned as host port is: **Ignored.** Sent to the host.

[1] Do not select this setting unless it is required. Duplicated characters will appear on the screen if data is echoed from the host.

[2] Must be set to Off for dual sessions (Virtual Terminal set to On or Split).

Table 2-5. Communications Setup Menu Parameters (cont.)

Parameter	Description
Ser1 Rcv Buf Size	SERIAl 1 Receive Buffer Size is set to:
256	**256 bytes.**
1K[3]	1 kilobyte.
2K[3]	2 kilobytes.
3K[3]	3 kilobytes.
Ser2 Rcv Buf Size	SERIAL 2 Receive Buffer Size is set to:
256	**256 bytes.**
1K[3]	1 kilobyte.
2K[3]	2 kilobytes.
3K[3]	3 kilobytes.
Print Mode	Data is sent to the printer port:
Normal	**In response to print page and print line commands sent from the keyboard or host.**
Auto	And displayed on the screen as received from the host (i.e. copy print).
Ctrl	As received from the host without being displayed on the screen (i.e transparent print).
Send ACK	After executing specific commands,[4] the terminal:
Off	Does not send an acknowledgment.
On	**Sends an ASCII ACK character to the host port when the operation is complete.**
Ser1 Interface	SERIAL 1 supports:
RS422	RS-422 communications protocol.
RS423	RS-423 communications protocol.

[3] Setting either serial receive buffer size greater than 256 bytes reduces the total available display page memory to seven pages. A larger buffer setting may be required if neither hardware nor software handshaking is selected.

[4] For instance, commands reconfiguring the serial ports, loading character sets, or printing a page.

Serial Ports Setup Menu

The *Serial Ports Setup* menu provides support for both SERIAL 1 and SERIAL 2 communications ports. To invoke this menu from any setup menu, press **F5**.

Figure 2-6 shows the *Serial Ports Setup* menu that appears on the *MC80's* screen when in setup mode. Table 2-6 describes each of its parameters.

```
LINK MC80                    Serial Ports Setup          24 Jan 1994 Ver 1.02x05

[Ser1 Baud Rate                          9600]  Ser2 Baud Rate                9600
 Ser1 Data/Parity                        8/None  Ser2 Data/Parity            8/None
 Ser1 Stop Bits                               1  Ser2 Stop Bits                   1
 Ser1 Rcv Hsk                  XON-XOFF/XPC      Ser2 Rcv Hsk          XON-XOFF/XPC
 Ser1 Hsk Level                           75%    Ser2 Hsk Level                75%
 Ser1 Xmt Hsk                            None    Ser2 Xmt Hsk                  None

 50  75  110  134.5  150  200  300  600  1200  1800  2400  3600  4800  7200
[9600] 19200  38400  57600  76800  115200

                    Host Port is on Serial 1                  F1 Genrl  F7 ANSI2
                                                              F2 Disp   F8 Attr
↑ ↓  .. Select Item      E  .. Exit        C  .. Clear Comm   F3 Keybd  F9 Tabs
← →  .. Select Value     D  .. Default     P  .. Select Host  F4 Comm  F10 Ansbk
Tab  .. Select Column    S  .. Save        R  .. Restore      [F5 Ports] F11 Fkeys
^P   .. Print Screen                                          F6 ANSI1  F12 Exit
```

Figure 2-6. MC80 80 Serial Ports Setup Menu

Table 2-6. Serial Ports Setup Menu Parameters

Parameter	Description
Ser1 Baud Rate	SERIAL 1's baud rate (rate at which data is transmitted and received) is:
50	50 baud per second.
75	75 baud per second.
110	110 baud per second.
134.5	134.5 baud per second.
150	150 baud per second.
200	200 baud per second.
300	300 baud per second.
600	600 baud per second.
1200	1200 baud per second.
1800	1800 baud per second.
2400	2400 baud per second.
3600	3600 baud per second.
4800	4800 baud per second.
7200	7200 baud per second.
9600	**9600 baud per second.**
19200	19,200 baud per second.
38400	38,400 baud
57600	57,600 baud per second.
76800	76,800 baud per second.
115200	115,200 baud per second.
Ser1 Data/Parity	The terminal sends data via SERIAL 1 with:
8/None	**8-bit data, no parity.**
8/Spce[1]	8-bit data, space parity.
8/Odd[1]	8-bit data, odd parity.
8/Even[1]	8-bit data, even parity.
8/Mark[1]	8-bit data, mark parity.
7/Spce	7-bit data, space parity.
7/Odd	7-bit data, odd parity.
7/Even	7-bit data, even parity.
7/Mark	7-bit data, mark parity.
Ser1 Stop Bits	The *MC80* sends and receives characters via SERIAL 1 with:
1	**1 stop bit.**
2	2 stop bits.

[1] Selection valid only with 1stop bit (Ser1 Stop Bits parameter).

Table 2-6. Serial Ports Setup Menu Parameters (cont.)

Parameter	Description
Ser1 Rcv Hsk	The *MC80* controls the receipt of data from a device connected to SERIAL 1 via:
None	No handshaking protocol.
XON-XOFF/XPC[2]	**XON/XOFF or XPC software handshaking.**
DTR	DTR hardware handshaking (raising and lowering the DTR line's voltage).
Both[2]	Both hardware (DTR/DSR) and software (XON-XOFF/XPC) handshaking.
Ser1 Hsk Level	When handshaking is active, the terminal handshakes via SERIAL 1 when:
25%	The receive buffer is 25% full.
50%	The receive buffer is 50% full.
75%	**The receive buffer is 75% full.**
Ser1 Xmt Hsk[3]	When sending data to a device that is connected to SERIAL 1, the terminal:
None	**Ignores all incoming software handshaking codes.**
XON-XOFF	Responds to XON/XOFF software handshaking.
DSR	Responds to DSR hardware handshaking (raising and lowering the DSR line's voltage).
Both	Responds to both hardware and software handshaking.

[2] Software handshaking is XON/XOFF if Keycode parameter is set to ASCII, XPC if Keycode parameter is set to scan.

[3] Do not change the default setting unless another setting is specifically required. Set to XON-XOFF for full DEC compatiblity when the *MC80* is operating in an ANSI emulation.

Table 2-6. Serial Ports Setup Menu Parameters (cont.)

Parameter	Description
Ser2 Baud Rate	SERIAL 2's baud rate (rate at which data is transmitted and received) is:
50	50 baud per second.
75	75 baud per second.
110	110 baud per second.
134.5	134.5 baud per second.
150	150 baud per second.
200	200 baud per second.
300	300 baud per second.
600	600 baud per second.
1200	1200 baud per second.
1800	1800 baud per second.
2000	2000 baud per second.
2400	2400 baud per second
4800	4800 baud per second.
9600	**9600 baud per second.**
19200	19,200 baud per second.
38400	38,400 baud
Ser2 Data/Parity	The terminal sends data via SERIAL 2 with:
8/None	8-bit data, no parity.
8/Odd[4]	8-bit data, odd parity.
8/Even[4]	8-bit data, even parity.
8/Mark[4]	8-bit data, mark parity.
7/Spce	7-bit data, space parity.
7/Odd	7-bit data, odd parity.
7/Even	7-bit data, even parity.
7/Mark	7-bit data, mark parity.
Ser2 Stop Bits	The terminal sends and receives characters through SERIAL 2 with:
1	1 stop bit.
2	2 stop bits.

[4] Selection valid only when 1 stop bit has been selected from the Ser2 Stop Bits parameter.

Table 2-6. Serial Ports Setup Menu Parameters (cont.)

Parameter	Description
Ser2 Rcv Hsk	The *MC80* controls the receipt of data from a device connected to SERIAL 2 via:
None	No handshaking protocol.
XON-XOFF/XPC[5]	**XON/XOFF or XPC software handshaking.**
DTR	DTR hardware handshaking (raising and lowering the DTR line's voltage).
Both[5]	Both hardware (DTR/DSR) and software (XON-XOFF/XPC) handshaking.
Ser2 Hsk Level	When *MC80* is active, the terminal handshakes via SERIAL 2 when:
25%	Receive buffer is 25% full.
50%	Receive buffer is 50% full.
75%	**Receive buffer is 75% full.**
Ser2 Xmt Hsk[6]	When sending data to a device connected to SERIAL 2, the terminal:
None	**Ignores all incoming software handshaking codes.**
XON-XOFF	Responds to XON/XOFF software handshaking.
DSR	Responds to DSR hardware handshaking (raising and lowering the DSR line's voltage).
Both	Responds to both hardware and software handshaking.

[5] Software handshaking is XON/XOFF when the Keycode parameter is set to ASCII, XPC when the Keycode parameter is set to scan.

[6] Do not change the default setting unless another setting is specifically required by your system. Set to XON-XOFF for full DEC compatibility when an ANSI emulation is operational.

ANSI1 Setup Menu

The *ANSI1 Setup* menu provides parameters for settng such features as the *MC80's* character set, and assigning the cursor and data entry keys' operational mode. Press **F6** from within a setup menu to invoke this menu.

Figure 2-7 shows the *ANSI1 Setup* menu. Table 2-7 describes each of its parameters.

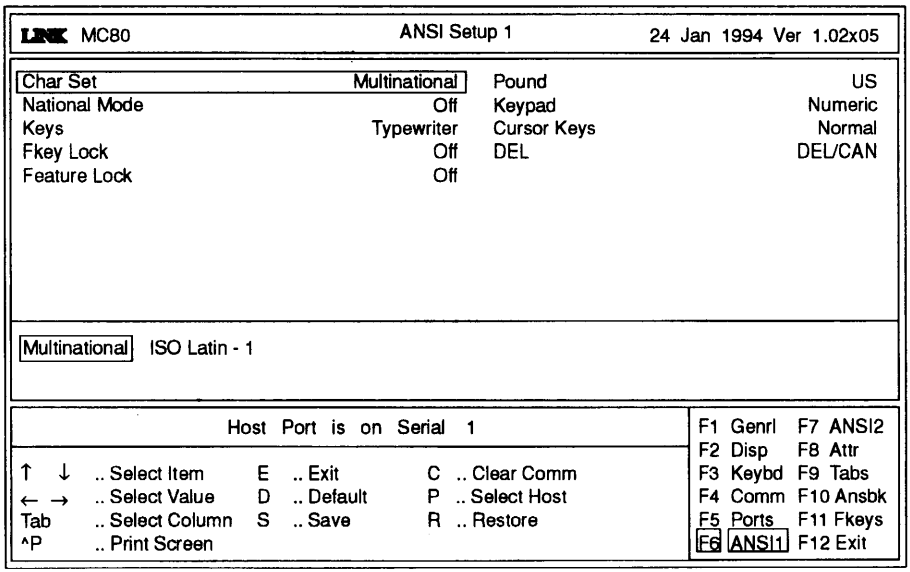


Figure 2-7. MC80 ANSI1 Setup Menu

Table 2-7. ANSI1 Setup Menu Parameters[1]

Parameter	Description
Char Set **Multinational** ISO Latin-1	The user-preferred supplemental character set is: **Multinational Supplemental.** ISO 8859-1 (Latin Alphabet Number 1).
National Mode **Off**	The *MC80* processes 8-bit multinational characters: **Standard setting.**
Keys **Typewriter** Data Processing	On some international keyboards, certain keys send codes for: **Standard character shown on the left half of the keycap.** The alternate character shown on the right half of the keycap.
Fkey Lock **Off** On	Redefinable function keys: **Can be redefined by host applications.** Cannot be redefined by the host.
Feature Lock[2] **Off** On	User preference features: **Can be redefined by host application programs.** Are locked, and cannot be redefined by the host.
Pound **US** British	When the MC80 receives an ASCII # character (23H hexadecimal), the character displayed is a: **United States pound symbol (#).** British pound symbol (£).

[1] This menu's parameters apply only when the terminal is operating in the VT220, VT100, or VT52 emulations.

2 User preference features are key repeat, scrolling speed, screen background, tab stops, and keyboard lock. Locking these features may cause problems for an application program that expects to control them.

Table 2-7. ANSI1 Setup Menu Parameters (cont.)

Parameter	Description
Keypad **Numeric** Application[3]	Numeric keypad keys send: **Numeric or other codes according to the characters on the keycaps.** Application-specific control codes and escape sequences.
Cursor Keys **Normal** Application[4]	The cursor keys send: **Normal cursor movement commands.** Application-specific control codes and escape sequences.
DEL **DEL/CAN** BS/DEL	The unshifted ***DEL*** or ***Backspace*** key sends a: **Delete character (DEL) and the shifted key send a cancel character (CAN)** Backspace character (BS) and the shifted key send a delete character (DEL).

[3] This setting cannot be saved to nonvolatile memory; it will always return to the numeric setting when the terminal is turned on.

[4] This setting cannot be saved to permanent memory. It will always return to the default setting when the terminal is turned on.

ANSI2 Setup Menu

The *ANSI2 Setup* menu allows you to select options for features such as Modem Control, Answerback Mode, and ANSI ID. Press **F7** to invoke this menu from anywhere in setup mode.

Figure 2-8 shows the *MC80's ANSI2 Setup* menu. Table 2-8 describes each parameter provided by this menu.

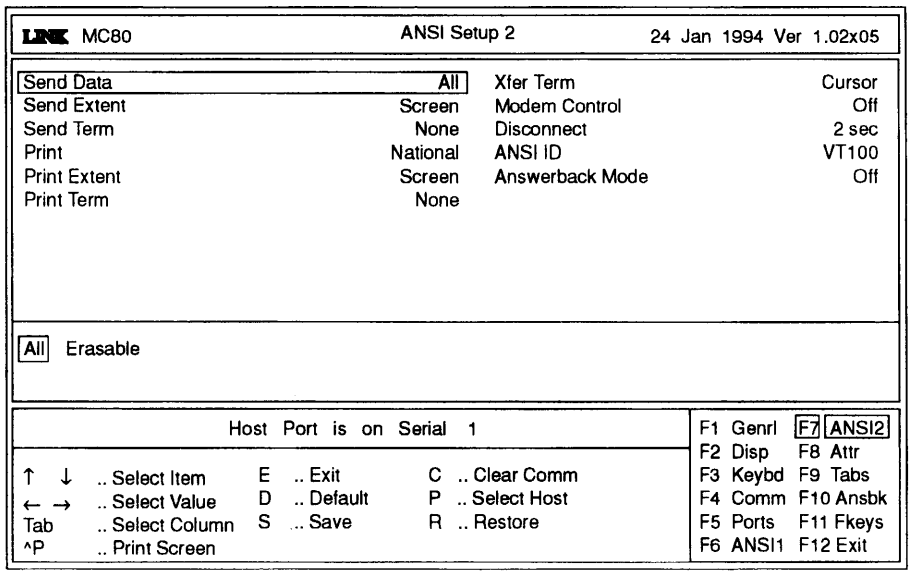


Figure 2-8. MC80 ANSI2 Setup Menu

Table 2-8. ANSI2 Setup Menu Parameters

Parameter	Description
Send Data	In block transmissions:
All	**Erasable and non-erasable data is sent to the host.**
Erasable	Only erasable data is sent.
Send Extent	During a send page operation, the terminal sends data to the host from the:
Screen	**Page.**
Scroll Rgn	Defined scrolling region.
Send Term	When a send page operation has been completed:
None	**A terminator character is not sent.**
Form Feed	A form feed (FF) character is sent.
Print	During a print page or print line operation:
Multinational	Escape sequences and control codes are sent, allowing ASCII characters, line-drawing, multinational, soft font characters, and character and line attributes to be printed.
National	**Escape sequences are not sent, and non-ASCII characters are replaced with ASCII underline characters.**
Line Drawing	Escape sequences and control codes are sent, allowing ASCII and line-drawing graphics character, and character and line attributes to be printed.
Print Extent	During a page print operation, the terminal sends data to the printer port from the:
Screen	**Page.**
Scroll Rgn	Defined scrolling region.
Print Term	At the end of a page print operation:
None	**A terminator character is not sent.**
Form Feed	A form feed character (FF) is sent.
Xfer Term	The terminal transmits blocks of data to the host ending at the:
EOS	End of the page or line.
Cursor	**Cursor position.**

Table 2-8. ANSI2 Setup Menu Parameters (cont.)

Parameter	Description
Modem Control[1]	When the terminal transmits and receives data, modem control pins from the host port are:
Off	**Disabled.**
On	Enabled.
Disconnect	When the Modem Control parameter is set to On, the terminal is disconnected after the receive line signal detect (RLSD) goes low for:
2 sec	**Two seconds.**
60 msec	60 milliseconds.
ANSI ID	When answering a host request, the *MC80* identifies itself as a:
VT100	**VT100 terminal.**
VT101	VT101 terminal.
VT102	VT102 terminal.
VT220	VT220 terminal.
VT320	VT320 terminal.
Answerback Mode[2]	In response to an ASCII ENQ character, the *MC80*:
Off	**Does not send an answerback message.**
On	Automatically sends an answerback message to the host.

[1] Set to On when using a modem that requires DEC-compatible control signals.

[2] The answerback message is always sent to the host computer in response to an ENQ. This parameter's determines whether the message is sent when the terminal is turned on or after communications is disconnected.

Setting Display Attributes

Display attributes control the appearance of text and the overscan area of the screen. When operating in the default ANSI.SYS emulation, the *MC80* supports applications that display up to 256 colors. When operating in the other emulations, up to 64 different combinations of foreground and background colors are displayed.

Invoke the *Attribute Setup* menu when in setup mode by pressing ***F8***. This menu provides access to the *Color Setup* menu. Descriptions for each of these menus are given below:

- The *Attribute Setup* menu (Figure 2-9) is used to set the terminal's text attributes. Table 2-9 describes each parameter.
- The *Color Setup* menu (Figure 2-10) is used to select the *MC80's* foreground, background, and overscan colors. You can invoke this menu from the *Attribute Setup* menu by selecting the Colors parameter, and pressing ***Return*** on the ANSI or ***Enter*** on the EPC/IEPC keyboards. Pressing ***Enter*** again toggles the screen back to the *Attribute Setup* menu.

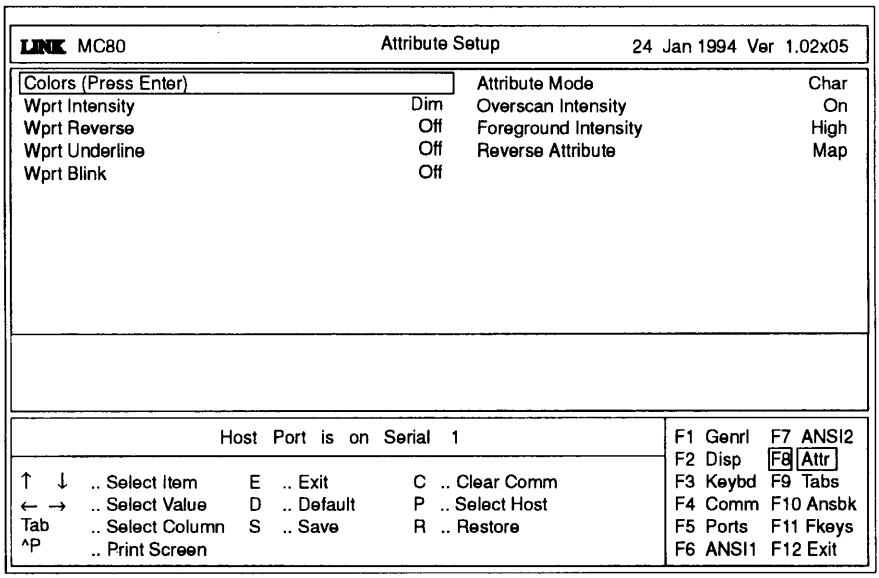


Figure 2-9. MC80 Attribute Setup Text Menu

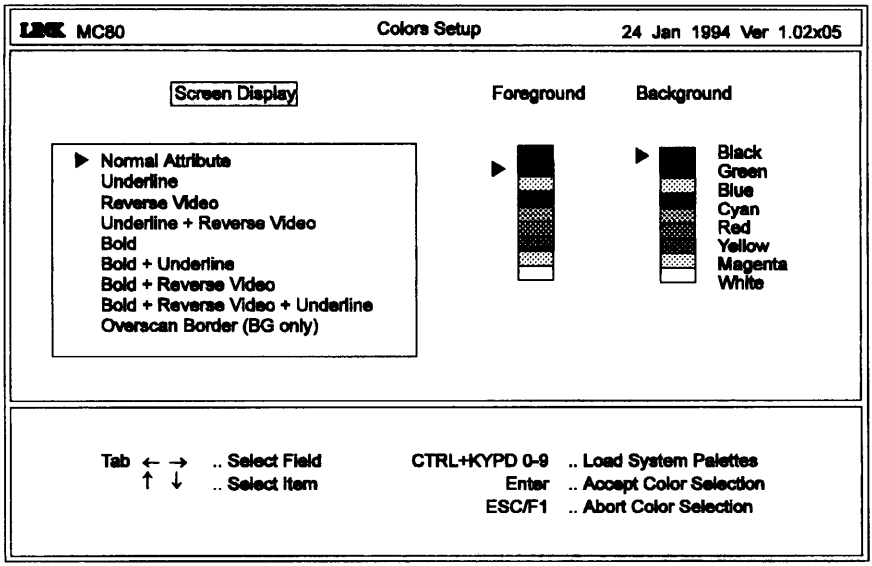


Figure 2-10. MC80 Attribute Setup Colors Menu

Text/Color Attribute Selection

The *Color Setup* menu's (see Figure 2-10) Screen Display field provides the *MC80's* available text attributes. To select a text attribute, use the ↑ and ↓ keys to place the selection arrow alongside the desired attribute.

To select the foreground and background colors, use the ***Tab***, ←, or → key to toggle between the Foreground and Background fields. Then select the desired color by using the ↓ and ↑ keys to place the selection arrow alongside the color attribute.

Once you have made your selections, press ***Enter*** to accept the setup and return to the *Attribute Setup* menu. To abort your selections and return to the *Attribute Setup* menu, press ***Esc*** or ***F1***.

Color Pallete Selection

Different color palletes may be selected by simultaneously pressing the ***Ctrl*** key with numeric keypad keys ***0*** through ***9***.

Table 2-9. Attribute Setup Menu Parameters

Parameter	Description
Color (Press Enter)	Press ***Enter*** on the ANSI or ***Return*** on the EPC/IEPC keyboards to invoke the color attributes menu.
Wprt Intensity Normal Blank **Dim** Blk/Dim	Write-protected characters appear: With Normal (Norml) attributes. With hidden attributes. **With Dim attributes.** With hidden attributes.
Wprt Reverse **Off** On	Write-protected characters are: **Not reversed.** Reversed.
Wprt Underline **Off** On	Write-protected characters are: **Not underlined.** Underlined.
Wprt Blink **Off** On	Write-protected characters: **Do not blink.** Blink.
Attribute Mode **Char** Line Page	Display attributes are: **Assigned to each character as it is entered.** Active until the end of the line is reached. Active until the end of the page is reached.
Overscan Intensity Off **On**	Controls the intensity of the color displayed in the overscan area. When set to: The overscan color is displayed at low intensity. **The overscan color is displayed at high intensity.**

Table 2-9. Attribute Setup Menu Parameters (cont.)

Parameter	Description
Foreground Intensity **High** Normal	Controls the intensity of the color displayed in the foreground. When set to: **The foreground color is displayed at high intensity.** The foregound color is displayed at normal intensity.
Reverse Attribute[1] **Map** Swap	Affects the foreground/background attribute. When set to: **Normal and reverse colors can be selected independent from one another.** Ignores the reverse color attribute selected for the backgound. For instance, when selecting a blue foreground against a black background, the reverse attribute will be set as black over blue.

[1] This parmeter is not available to the ANSI.SYS or Esprit III emulations.

Defining Tab Stops

When you turn the *MC80* on, the most recently saved tab stops will be activated. (Tab stops are cleared by default.) Tab stops are defined from within the *Tabs Setup* menu (see Figure 2-11). To invoke this menu press **F9** from within any setup menu.

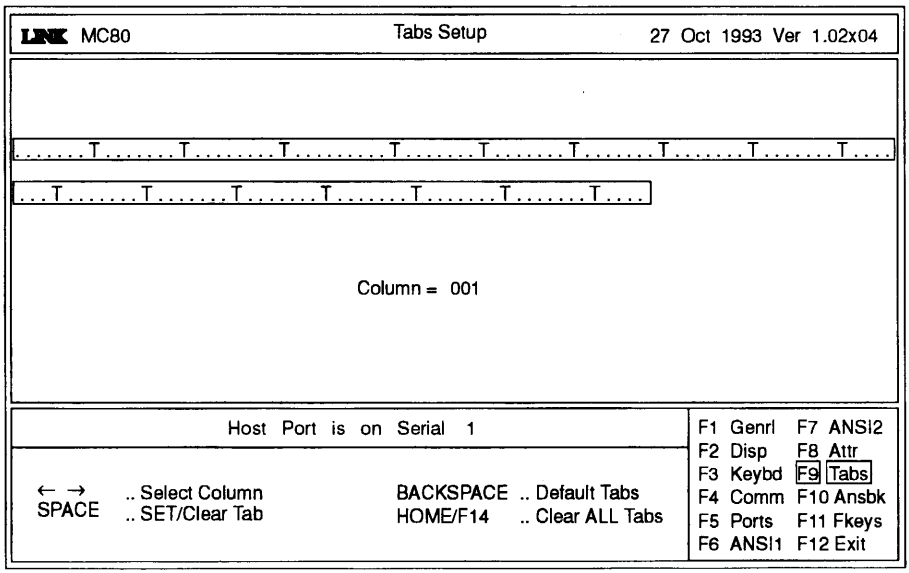


Figure 2-11. MC80 Tabs Setup Menu

Tab stops are identified by uppercase an T displayed along a line of periods that mark each column position. A tab stop in columns 2 through 78 is shown as a T along the upper line of periods. A tab stop in columns 79 through 132 is shown as a T along the lower line of periods (see Figure 2-11).

You can easily determine where tabs are set by moving the cursor across the line, and reading the column number displayed at the center of the screen.

Clear and set tabs anywhere along these lines by following these instructions:

1. Press the ← or → to move the cursor along the line.
2. Press the ***Spacebar*** to set or clear individual tab stops at the cursor position.
3. Press ***F14*** on the ANSI or ***Home*** on the EPC/IEPC keyboards to clear every tab stop.
4. Press the ***Backspace*** key to set one tab stop at every eighth column. When running the *MC80* in the VT100 or VT220 emulations, tab stops should be set at every eighth column.
5. Press ***F1*** to save the tab settings and return to the *General Setup* menu.
6. When the *General Setup* menu appears, press ***S*** to save all setup parameters, including your tab stops.
7. Turn the terminal off and back on so that your new setup will take effect.

When the *MC80* is configured as a virtual terminal in dual sessions, tabs can be set for each session as according to the instructions outlined above.

To program alternate sessions, press ***Ctrl Shift F9*** simultaneously.

Defining An Answerback Message

Answerback messages are defined from within the *Answerback Setup* menu (see Figure 2-12). Up to 30 characters may be entered to identify the terminal to your host system.

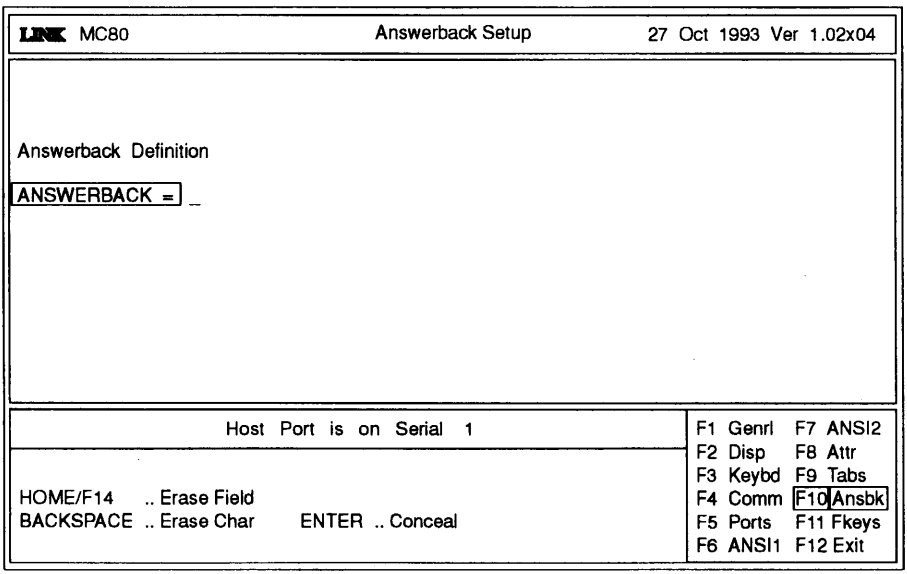


Figure 2-12. MC80 Answerback Setup Menu

To define an answerback message, follow these instructions:

1. Enter the message at the cursor position.

   Correct any errors by backspacing to delete individual characters or press ***F14*** on the ANSI keyboards or ***Home*** on the EPC/IEPC keyboards to clear the entire message.

Note: *Control characters may be entered by simultaneously pressing* ***Ctrl*** *and the appropriate key. If the Compose Key or Left Alt Key parameter has been set to Meta, characters can be entered with the high bit set (8-bit characters, ASCII 80H through FFH hexadecimal) by simultaneously pressing the* ***Compose Character*** *or the left* ***Alt*** *key with the appropriate alphanumeric key.*

Unless the parameter was set to Meta before entering setup mode, the Funct/Compose/Left Alt Key parameter must be set to meta. Exit and reenter setup mode before entering the 8-bit characters.

3. To prevent the answerback message from being displayed while in setup mode, press the **Enter** key on the numeric keypad. The message will be replaced by the word Concealed. The message will be hidden, and cannot be redisplayed or modified unless you clear and redefine it.

4. Press **F1** to go to the *General Setup* menu. The answerback message is automatically saved when you press **S** while in the *General Setup* menu.

Separate answerback messages can be defined when the *MC80* is setup up as a virtual terminal during dual session operations by following the instructions outlined above.

To define separate answerback messages when the terminal is configured for dual sessions, simultaneously press **Ctrl Shift F10** to switch between sessions.

Defining a Session I.D.

When the terminal is configured for dual sessions, a session I.D. message of up to 30 characters can be defined for each session. To define a session I.D., follow these instructions:

1. Press **F1** to invoke the *General Setup* menu.

2. Press **P** to select the session (port) to be set up—Ser1 or Ser2.

3. Press **F10** to invoke the *Answerback Setup* menu.

4. Use the ↓ to move the cursor from the ANSWERBACK field to the SESSION I.D. field.

5. To enter the session I.D. definition for the alternate session, simultaneously press the **Ctrl Shift F10** keys, and repeat the previous steps.

The session I.D. cannot be concealed, and is automatically saved when you press **S** while in the *General Setup* menu.

Key Programming

Function keys can be programmed and editted from within the *Function Keys Setup* menu (Figure 2-13).

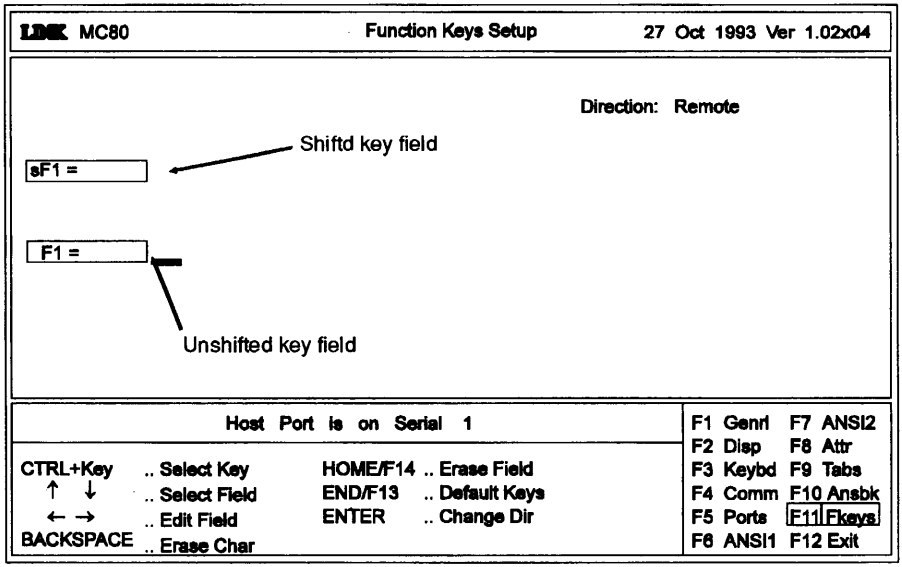


Figure 2-13. MC80 Function Keys Setup Menu

Character strings of up to 255 characters can be saved. Key codes that are not redefined retain their default values.

If you make a mistake programming a key, do not worry. Just go back to the *General Setup* menu, and press ***D*** to default the terminal. This restores the key codes to their default values. Be aware, though, that defaulting the *MC80* also restores every parameter back to their factory settings. This means that you will have to reconfigure the terminal your system's requirements.

CAUTION! *Some applications have programmed specific keys to perform functions that may not run properly if you reprogram them.*

Key programs are directed (or echoed) to the host and/or terminal when Remote is displayed in the *Function Keys Setup* menu's Direction field (see Figure 2-13). Press ***Enter*** from the numeric keypad to redirect the key's definition to Remote, Local, or Normal.

A key program can be directed in one of three ways:

- To the terminal (local echo).
- To the terminal and host (remote echo).
- To the setting selected from the Comm Mode parameter (normal echo).

To redefine a key:

1. Press **F11** to invoke the *Function Keys Setup* menu.
2. Simultaneously press **Ctrl** with the key to be programmed. This highlights the key's direction and definition fields.
3. Press ↑ or ↓ to highlight the shifted or unshifted key definition field (see Figure 2-13).
4. Enter the key program (up to 255 characters) at the cursor position. Correct any errors by backspacing to delete an individual character or press **F14** on the ANSI or **Home** on the EPC/IEPC keyboards to clear the entire definition. Use the ← or → key to position the cursor.

Note: *Control characters can be entered by simultaneously pressing* **Ctrl** *and the appropriate keys.*

If the Funct Key, Compose Key, or Left Alt Key parameter in the Keyboard Setup Menu has been set to Meta, characters can be entered with the high bit set. Simultaneously press the **Compose Character** *or left* **Alt** *key with the appropriate alphanumeric key.*

Unless the Funct Key, Compose Key, or Left Alt Key parameter was set to Meta before you entered setup mode, you must set the parameter to Meta. Then exit and reenter setup mode to enter the 8-bit characters.

When the Virtual Terminal parameter is set to On or Split (dual sessions), different key programs can be programmed for each session per the instructions outlined above. To redefine keys in an alternate session, press **Ctrl Shift** F11.

Key Programming Example

This example shows how to prgoram the key sequence, ***Shift F10***, to display the following signature block at the left margin of a page:

Sincerely yours,

Stephen DeMont

1. Enter setup mode.
2. Invoke the *Function Keys Setup* menu.
3. Press ***Ctrl F10***.
4. Press ↑ to highlight the shifted key field.
5. Enter the control codes for three line feeds ($^{L}_{F}$) and one carriage return ($^{C}_{R}$). The line feed control code is ***Ctrl J***; the carriage return code is ***Ctrl M***.
6. Type Sincerely yours,
7. Enter the control codes for five line feeds and one carriage return.
8. Type Stephen DeMont

   The definition string should look like this:

   $^{L}_{F}{}^{L}_{F}{}^{L}_{F}{}^{C}_{R}$Sincerely yours,$^{L}_{F}{}^{L}_{F}{}^{L}_{F}{}^{L}_{F}{}^{L}_{F}{}^{C}_{R}$Stephen DeMont

11. Press ***F12*** to exit setup mode and return to the current emulation.
12. Now, press ***Shift F10*** to end your letters with your usual signature block.

Key Program Storage Limitations

Key programs are automatically saved to memory, occupying up to 1500 bytes of memory space. If more than 255 characters are entered for any key or the 1500-byte limit is reached, the terminal will beep, warning that you cannot enter any more characters.

When the terminal is set up for dual sessions, programs are limited to no more than 750 characters per session.

Chapter 3
Operating the MC80

Emulations

The *MC80* can operate in a number of different emulations, enabling smooth interaction with applications that are written for a variety of command sets. Emulations are selected from the *General Setup* menu.

ASCII Emulations

The *MC80's* ASCII emulations operate according to the *American Standard Code for Information Interchange* (ASCII) command functions. The following ASCII emulations are supported:

- Wyse 60
- TeleVideo 955 (TVI 955)
- Esprit III (Esprit Systems Esprit III)
- PC Term (used with applications written for IBM PC-compatible terminals)

ANSI Emulations

When an ANSI emulation is selected, the terminal operates according to the *American National Standards Institute* (ANSI) command functions. The ANSI personalities supported by the *MC80* are:

- ANSI.SYS (Default)
- VT220 7-bit (DEC VT220 7-bit character mode)
- VT220 8-bit (DEC VT220 8-bit character mode)
- VT100 (DEC VT100)
- VT52 (DEC VT52)

Operating Features

Virtual Terminal Continuous Updates

When the *MC80* is configured as a virtual terminal, each session receives updated data from their respective hosts on a continuous basis—both in the background and foreground.

Copy and Paste

This feature allows selected blocks of data to be copied within or between sessions. The *General Setup* menu's Copy and Paste parameter must be enabled to do this. The following examples explain how to perform a copy and paste operation.

Copy and Paste Example 1 (ANSI Keyboards)

1. Position the cursor at the beginning of the data to be copied.
2. Hold down the left ***Ctrl*** key with the ***Compose Character*** key. HOLD appears on the status line.
3. Press ***Select*** while continuing to hold down ***Ctrl*** with the ***Compose Character*** key. COPY appears on the status line.
4. Continue to hold down ***Ctrl*** with the ***Compose Character*** key, and move the cursor key to highlight the data to be copied.
5. Continue to hold down ***Ctrl*** and the ***Compose Character*** key, and press ***Remove*** . COPY and the highlighted data block disappear.
6. Release ***Ctrl*** and the ***Compose Character*** key. HOLD disappears from the status line.
7. Move the cursor to the position where you want the data to be pasted.
8. Hold down the left ***Ctrl*** with the ***Compose Character*** key. HOLD reappears on the status line.
9. Press ***Insert Here*** while continuing to hold down ***Ctrl*** with the ***Compose Character*** key. The data you copied is pasted at the cursor's current position.

Copy and Paste Example 2 (EPC/IEPC Keyboards)

1. Position the cursor at the beginning of the data to be copied.
2. Hold down the left ***Ctrl*** and left ***Alt*** keys. HOLD appears on the status line.
3. Press ***Select*** while continuing to hold down the ***Ctrl*** and ***Alt*** keys. COPY appears on the status line.
4. Continue to hold down the ***Ctrl*** and ***Alt*** keys, and move the cursor key to highlight the data to be copied.
5. Continue to hold down the ***Ctrl*** and ***Alt*** keys, and press ***Delete***. COPY and the highlighted data block disappear.
6. Release the ***Ctrl*** and ***Alt*** keys. HOLD disappears from the status line.
7. Move the cursor to the position where you want the data to be pasted.
8. Hold down the left ***Ctrl*** and left ***Alt*** keys. HOLD reappears on the status line.
9. Press ***Insert*** while continuing to hold down the left ***Ctrl*** and left ***Alt*** keys. The data you copied is pasted at the cursor's current position.

Display Features

The *MC80* displays up to 27 or 45 lines down the screen, and 80 or 132 columns across the screen. The default screen configuration is 80 columns separated into two display areas—the status line, and the data area. Figure 3-1 illustrates the default screen format.

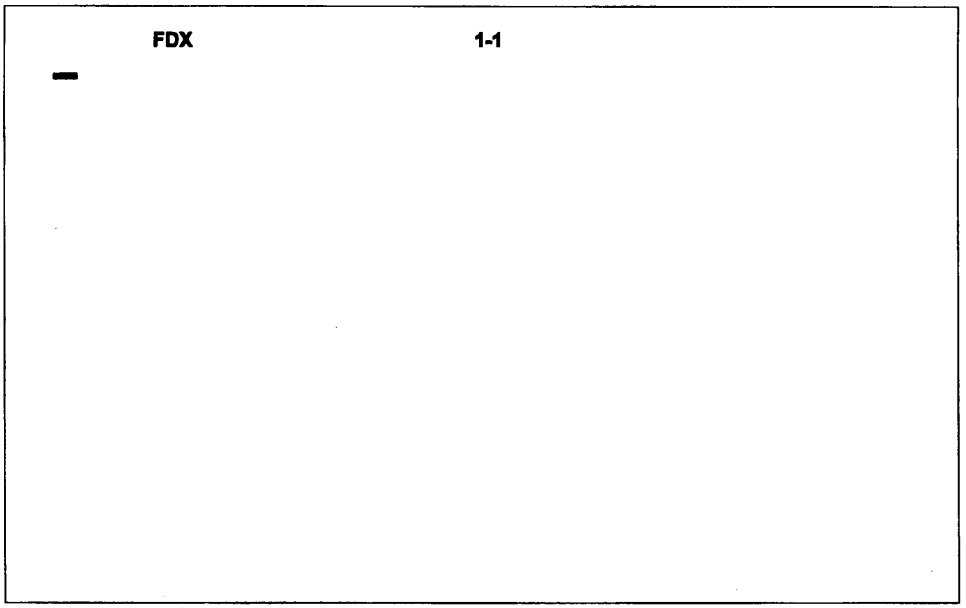


Figure 3-1. Default Screen Configuration

Split Screen Mode

The *MC80* can display two sessions concurrently from two separate windows (refer to Figure 3-2) when the Virtual Terminal parameter in the *General Setup* menu is set to Split. Both windows function as separate display screens. Session 1's data appears in the upper window, and Session 2's appears in the lower window. Press ***Ctrl*** and the numeric keypad's ***Enter*** key to switch between sessions. To invoke a full screen display of one session while the other resides in the background, simultaneously press ***Ctrl***, ***Shift***, and the numeric keypad's ***Enter*** key. Press this sequence again to return to the split screen display. You can scroll up and down a session's page, line-by-line, using the ↑ and ↓ keys.

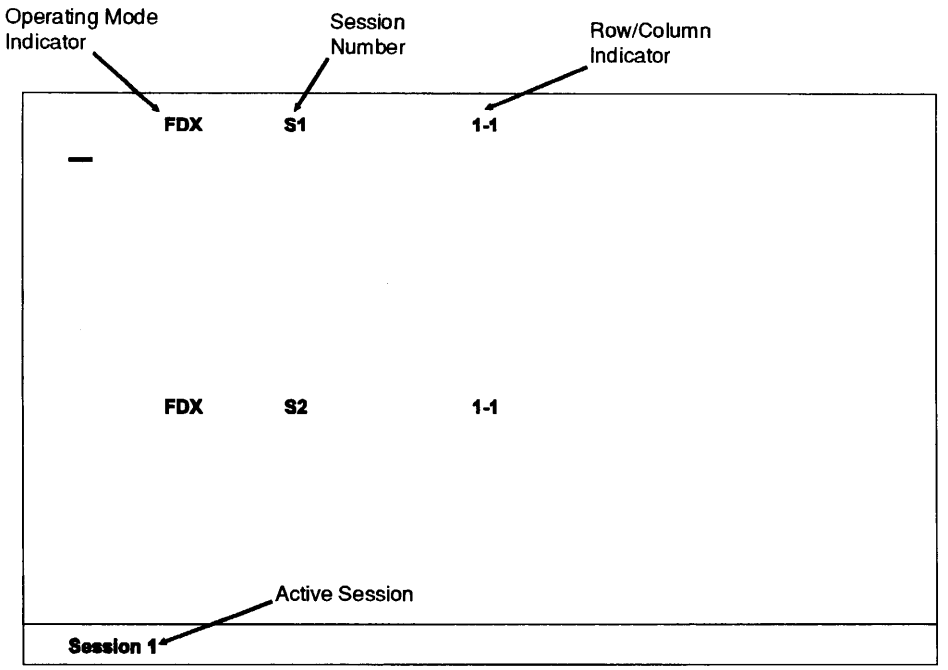


Figure 3-2. Split Screen Configuration

Split Screen Configuration Restrictions

The following restrictions apply to split screen configurations:

1. Both sessions must have the same refresh rate.
2. If Session 1 is configured for the ANSI.SYS emulation, then Session 2 must also be configured for ANSI.SYS.
3. The *MC80* only supports one character size for both sessions when:
   - Both sessions are configured for a non-hidden emulation.
   - One session is configured for the TVI955 emulation.

The Status Line

Messages from the *MC80* or host are displayed on the status line.

The status line appears at the top of the screen when the Status Line parameter from the *General Setup* menu is set to Standard or Editing. The Standard status line (default setting) identifies the cursor's current line and column position. An Editing status line displays information when performing functions such as copying and pasting text.

The Data Area

The screen's data area displays data entered from the keyboard or application. The default is set for 24 lines and 80 columns. This value can be changed from the Data Lines parameter within the *Display Setup* menu. (Refer to Table 2-2 in Chapter 2 for more information.)

Label Lines

The label line at the bottom of the screen can display both shifted and unshifted function key labels or messages when the Data Lines parameter is set to 24 or 42. When this parameter is set to 25 or 43, the label line will display labels only.

Screen Saver

The *MC80's* screen saver helps prevent CRT phosphor burn-in by blanking the screen if the terminal does not receive keyboard input or data from the host after a specified time period. This time period is selected from the Screen Saver parameter in the *Display Setup* menu. (Refer to Table 2-2 in Chapter 2 for more information.)

The screen will come back up by pressing any key (press ***Shift*** to avoid entering data) or when the terminal receives data from the host. To deliberately blank the screen, press ***Ctrl***, ***Shift***, and ***PF3*** on the ANSI or ***Ctrl***, ***Shift***, and ***End*** on the EPC/IEPC keyboards.

Keyboard Features

The *MC80* can accommodate one of four different keyboards:

- 102-key Enhanced PC (EPC)
- 103-Key International PC (IEPC)

- 105-key ANSI
- 107-key ANSI

Note: *Because the MC80 uses one of four keyboards, keyboard commands presented here are discussed in general terms.*

Keyboard features can be defined from within the *Keyboard Setup* menu. (Refer to Table 2-3 in Chapter 2 for *Keyboard Setup* parameter descriptions.) Depending on the emulation you selected, most of the function and edit keys for each keyboard can be programmed to perform specialized functions. (Refer to *Key Programming* in Chapter 2 for information about programming these keys.)

Keyboard Language

Keyboard languages may be selected from the *Keyboard Setup* menu's Keyboard parameter. (Refer to Table 2-3 in Chapter 2 for more information).

The language setting takes effect only after you exit setup mode. Function and edit keys should not be programmed until after you select a language, then exit and reenter setup mode.

Keyclick and Bell

The *MC80's* Keyclick and Warning Bell options is enabled or disabled from the *Keyboard Setup* menu. The Margin Bell is enabled/disabled from the *General Setup* menu.

When the Keyclick parameter is enabled, a beep is emitted from the terminal each time a key is pressed.

The *MC80's* warning bell serves as a warning and a margin bell. The bell will alert you to a system error. The margin bell functions as a typewriter bell, alerting you that text entries are approaching the right margin. The bell tone can be adjusted from the *General Setup* menu's Bell Tone parameter.

Key Functions

When the *MC80* communicates with the computer in full-duplex or half-duplex mode, most keys will perform remote functions. That is, they send codes that are interpreted and acted upon by the host's operating system and your application. Alphanumeric keys send the ASCII characters shown on the keycaps. Codes sent by the function ***Ctrl***, ***Enter***, and ***Shift*** keys are dependant upon the selected emulation, keycode, and other keyboard options.

Local Keyboard Commands

Certain keys, and combinations of keys, perform local command functions that initiate actions from the terminal. For example: simultaneously pressing the → and ***Ctrl*** keys alternates the status line from Standard to Edit to Off. (This sequence will not function during ANSI.SYS or PC Term sessions.)

The Compose Character Key

The ***Compose Character*** key on the ANSI and the left ***Alt*** key on the EPC/IEPC keyboards perform special functions selected from the *Keyboard Setup* menu's Compose Key parameter.

National Replacement Characters

National replacement characters can be used with the ANSI keyboard. Figure 3-3 provides a character chart for each language supported by the *MC80*. To use the replacement characters follow these instructions:

1. First, select the appropriate keyboard language from the *Keyboard Setup* menu, and exit setup.
2. Cross-reference the desired keyboard language character with the appropriate ANSI keyboard character from the chart in Figure 3-3.
3. Enter the ANSI keyboard character, and the keyboard language character will be displayed.

ANSI Keyboard Character / Keyboard Language	" 22H	# 23H	$ 24H	' 27H	/ 2FH	0 30H	1 31H	2 32H	7 37H	9 39H	: 3AH	; 3BH
Danish											Æ	æ
Dutch		£										
Finnish	Ä			ä							Ö	ö
Flemish				ù		à		é	è	ç		
French/Belgian				ù		à		é	è	ç		
French Canadian					ê							
German	Ä			ä							Ö	ö
Italian				ù	ò	à	£	é	è	ç		
Norwegian	Æ			æ								
Portuguese	¨				-						Ñ	
Spanish											Ñ	ñ
Swedish	Ä			ä							Ö	ö
Swiss French	ä		ç	à							ö	é
Swiss German	à		ç	ä							é	ö

ANSI Keyboard Character / Keyboard Language	? 3FH	[5BH	\ 5CH	] 5DH	` 60H	{ 7BH	¦ 7CH	} 7DH	~ 7EH
Danish		å				Å			
Dutch									
Finnish		å		ü		Å		Ü	
Flemish									
French/Belgian									
French Canadian	É	ç				Ç			
German		ü				Ü			
Italian		ì							
Norwegian		å				Å			
Portuguese	–	'	ç	+	¿	^	~	*	|
Spanish					¿				|
Swedish		å	ç	ü		Å		Ü	
Swiss French		è				ü	£		
Swiss German		ü				è			

Figure 3-3. National Replacement Characters

Generating 8-bit Characters

Generating 8-bit characters from the keyboard is possible when the Data/Parity parameter in the *Serial Ports Setup* menu is set to any 8-bit environment, and the Compose Key or Left Alt Key parameter in the *Keyboard Setup* menu is set to Meta.

Once these parameters have been set, hold down the ***Compose Character*** or left ***Alt*** and press the desired key.

Printer Control Features

The *MC80* supports printer functions via its parallel or serial ports. The printer may be controlled locally from the terminal or remotely from the host. When the terminal is running as a virtual terminal, the printer can be host-controlled from two separate ports.

Background Printing and Other Print Commands

When the *MC80* is configured as a virtual terminal operating in split screen mode, both hosts share the same printer from different ports. This allows you to print in the background from one session while working in the foreground from the other.

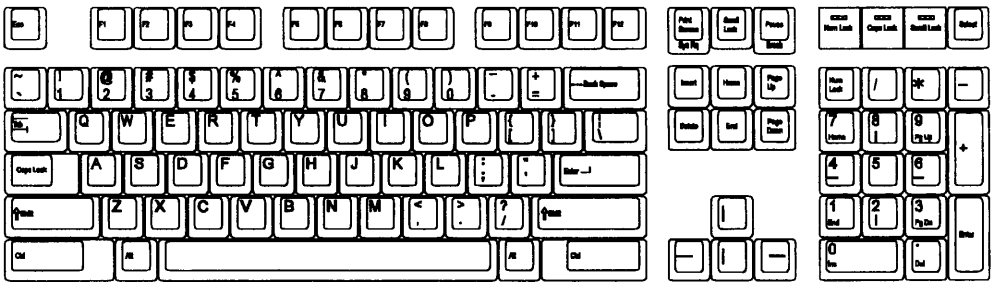
PRNTR=S1 or PRNTR=S2 will appear on the status line at the bottom of the screen. PRNTR=S1 shows that data from Session 1 will be sent to the printer. Data sent to the printer from Session 2 is identified by PRNTR=S2 on the status line. To switch between the two, press ***Ctrl***, ***Shift***, and the numeric keypad's ***5*** key.

To print data in the background from Session 1 while working in the foreground from Session 2:

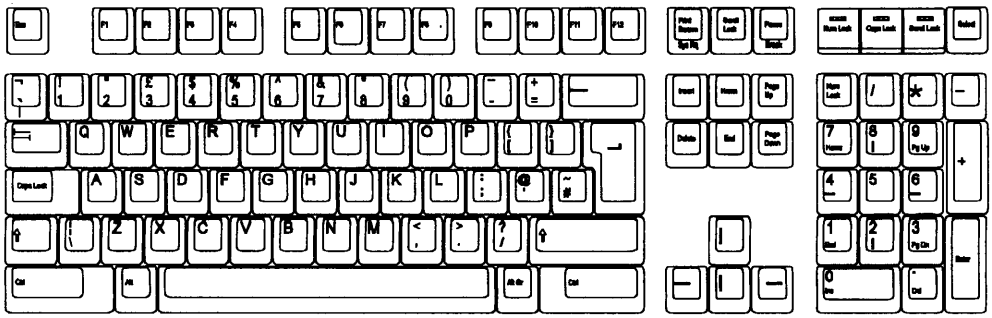
1. Select PRNTR=S1.
2. Switch to Session 2 by pressing ***Ctrl*** and the numeric keypad's ***Enter*** key.
3. Press ***F2*** on the ANSI or ***Print Screen*** on the EPC/IEPC keyboards to send data from Session 1 to the printer.

Appendix A
Keyboard Layouts

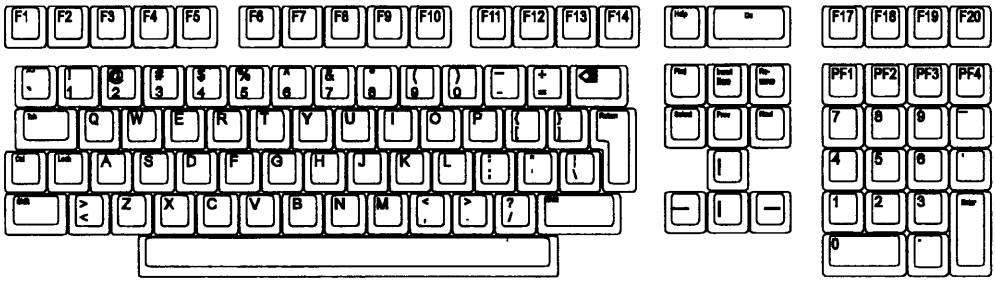
US 102-Key Enhanced PC (EPC) Keyboard



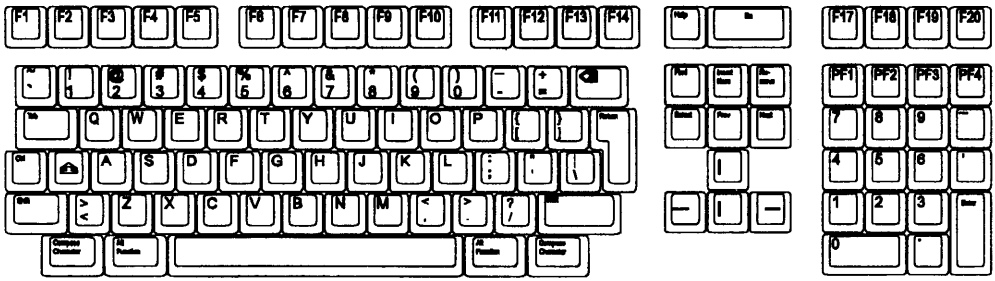
103-Key International Enhanced PC (IEPC) Keyboard



ANSI 220 Keyboard



ANSI 420 Keyboard



Appendix B
Communications Port Specifications

This appendix provides pin assignments for the *MC80's* serial and parallel ports.

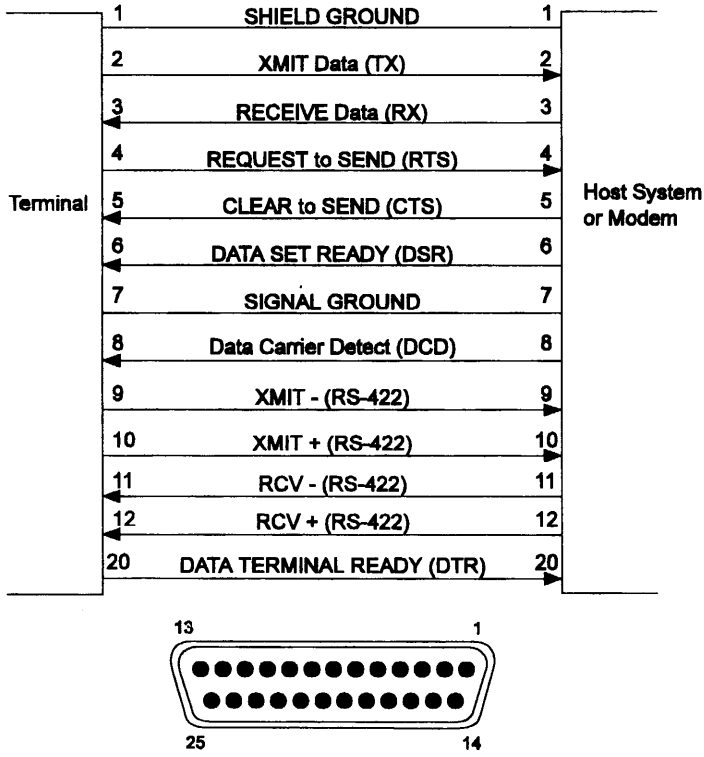


Figure B-1. SERIAL 1

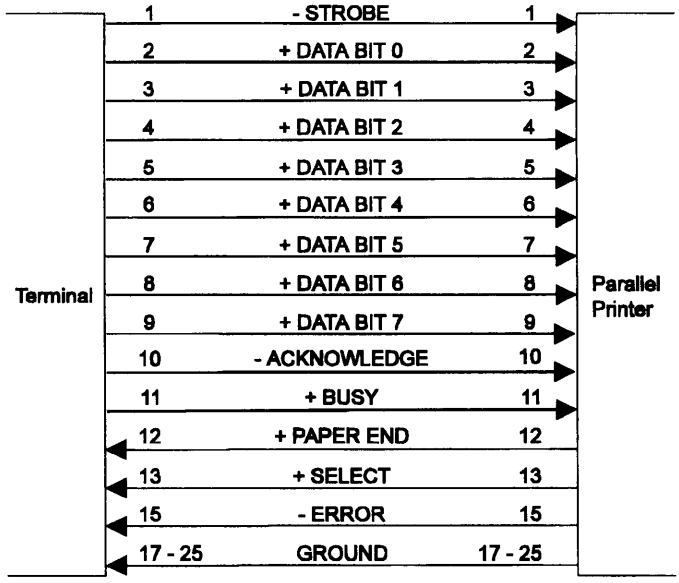


Figure B-2. PARALLEL Port

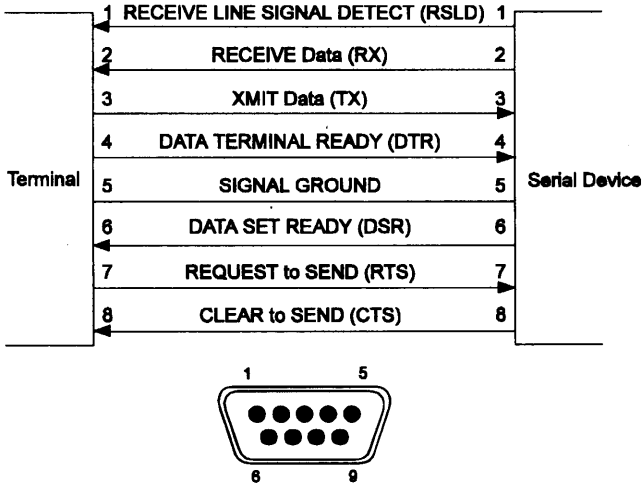


Figure B-3. SERIAL 2

Appendix C
Troubleshooting

Troubleshooting Quick Reference Guide

The following table lists the most frequently reported problems, and procedures that can be used to resolve them in most cases.

Before attempting any remedial action, enter setup mode as directed in Chapter 2, and write down all current operating parameter settings. This information is essential for diagnosing operating problems. Do not default the settings until the current parameter settings are recorded.

Problem	Remedy
Garbage on the screen	1 Check the configuration parameters in Chapter 2. 2 Check the terminal out on a good communications line. 3 Default the configuration and reconfigure the parameters.
Terminal does not print	1 Ensure that the printer (parallel or serial) is properly configured in Chapter 2. 2 If a serial printer is being used, verify the cable's pin assignments bewtween the printer and terminal. 3 Default the configuration and reconfigure the parameters. 4 Contact your Link customer service representative.

Index

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V

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