MS320® forWindows

Version 4.01

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Chapter 1

Introduction

OVERVIEW

MS320 is a flexible 32-bit terminal emulator designed specifically for personal computers running Microsoft's Windows 98, Windows ME, Windows NT 4.0, Windows 2000, and Windows XP, and Windows 2003 (which includes Terminal Server). E-Term32 emulates DEC VT52, VT100, VT220, VT320, WYSE 50, SCO ANSI and BBS ANSI terminals. MS320 emulates these terminals as well as VT340 and TEK4010/4014. It also offers an array of extended features that extend its usefulness beyond just terminal emulation. These features include:

- ➢ *Kermit, ASCII, XMODEM, YMODEM, and ZMODEM file transfer*
- ➢ *Extensive command (script) language*
- ➢ *Command File Recorder*
- ➢ *Keyboard mapping, Mouse mapping and Customizable Toolbars*
- ➢ *Screen scrollback*
- ➢ *Data logging and replay*
- ➢ *WordPerfect mode*
- ➢ *Color support*

NOTATION

All documentation uses the following notation:

COMMAND /OPTIONS arguments

Emulator commands appear in uppercase letters in bold text, and as user input in examples. Additional options are preceded by a forward slash (/) and also appear in uppercase letters. Arguments may or may not follow commands. A descriptive word in lowercase letters represents command arguments.

[optional]

Options or arguments appearing in square brackets are optional.

Menu - Submenu - Tab Name – Button…

Drop down menus and the menu fields appear in italics and are separated by hyphens.

PC

A general descriptor for all types of personal computers.

```
PROMPT>
```

Prompts appear in Courier type and are used in examples to illustrate where certain commands are given, or features used.

USER INPUT

Input required from the user is shown in uppercase and bold letters.

Note: *All instructions in this documentation assume that you are using a mouse. If you do not have a mouse, follow the Microsoft Windows instructions for accelerator keys.*

Examples

Examples are given throughout the manual. They have the following format:

Example: CMD>**WRITE HOST**

CMD> represents the command line prompt which displays at the bottom of the emulation window. The command "Write Host" is shown as user input.

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Emulator Commands

Throughout the documentation, you may see the phrase, "Enter the xxxx command to...". Emulator commands are entered by pressing Alt C, clicking **Execute - Command Line** or by clicking the C> button on the CMD Line Toolbar (enabled via **View – Toolbars**). The command line CMD> prompt appears on the screen. Enter the command at the command prompt. Many functions that are not assigned to keys are available through emulator commands.

APPLICATION WINDOW

The application window displays many standard Microsoft *Windows* features such as scrollbars, maximize/minimize buttons, and a Control Menu icon.

The Menu Bar lists items common to *Windows* applications (*File, Edit, View, Help…*) with each menu containing emulator-specific features.

The Status Line displays the current terminal setting, online status, column mode, NumLock status (capital "N" toggles on and off), and messages indicating active features such as LOG and PRINT.

All host communications scroll through the application window as they are received.

LINE RECALL AND EDITING

Input lines can be recalled and edited in the command window.

Command Line Editing

Command Line Editing is available on all input to emulator commands. This includes input entered in response to the CMD> prompt or emulator functions activated by function keys.

The following keys are available for Command Line Editing:

Key	Function
Up Arrow	Recall previous line
Down Arrow	Recall next line
Left Arrow	Move cursor left
Right Arrow	Move cursor right
Del	Delete character
Backspace	Delete character left of cursor
Ins	Toggle Insert/Overstrike mode
Ctrl U	Delete entire line

The number of command lines stored for recall is set to 100 lines.

Chapter 2

Getting Connected

OVERVIEW

This chapter covers the information that you need to get started with MS320. System requirements, installation, and instructions for making a successful connection to your host are detailed.

PACKAGE CONTENTS

The emulator package includes:

➢ Online documentation including: *Getting Started Guide, Programming Reference Manual, and Help.*

➢ CD-ROM, if shipped. A self-extracting executable is downloaded with an online purchase.

➢ Registration Card (for single copies) or a license form (5-packs and site licenses).

If any of these items are missing, please call Minisoft at 800-682-0200 or contact sales@minisoft.com.

MINIMUM REQUIREMENTS

➢ 486 or Pentium processor
➢ Microsoft's *Windows 98*, *Windows ME*, *Windows NT 4.0*, *Windows 2000*, and *Windows XP*, and *Windows 2003* (which includes *Terminal Server*).
➢ 16 MB RAM
➢ 30 MB Hard Disk space
➢ One of the following: a) serial port directly connected to host; b) modem connected to a phone line; c) network connection to host

REGISTRATION

There is a registration number printed on the registration card or license form that is shipped with the CD.

Please record this number for future reference, updates, and technical support.

If you received a registration card, please take a few moments to fill out your product registration card and send it in. This will ensure that you receive prompt service and critical update notices.

INSTALLATION

The emulator files are stored in compressed format on the CD-ROM or download file. The installation procedure decompresses the files and copies them into the correct directory.

To install the emulator, you must be running *Windows* and have Administrative privileges. We recommend closing all other programs.

1. Place the CD-ROM into the drive to initiate the installation program. If the installation screen does not appear automatically, go to **Start - Run**. Select from **Browse…**, or enter **A:\autoruni.exe**. (Where: **A** is the CD-ROM drive.) You will need a valid installation key (shipped with the CD).

   If installing from the download, launch the file from the saved location. The installation key is automatically entered in the installation procedure. **IMPORTANT!** Record this installation key for future reference, especially if you plan to delete the download file after the installation is complete.

2. Click **Install**. The installation program begins.

3. Answer any questions that appear on the screen.

4. When the installation is complete, click **Exit** to close the initial installation screen.

Network and Terminal Server Installations

Please refer to the **Netserv.htm** and **Termserv.htm** files that are copied to the MS320 installation directory for information on setting up the emulator on a network or terminal server.

Additional Installed Reference/Application Files

In addition to the files used to run the emulator, the installation directory will include these files that may be useful as you setup and configure the emulator.

Buildhis.txt	Displays a reverse chronological listing of changes in each version.
Readme.htm	Displays important information relating to the version of the software.
Startup.ini	Text version of the configuration of product options.
StartupEdit.exe	GUI version of product option configuration. Most commonly used to set the NumLock options, and for administrators to set user restrictions.
StartupEdit.hlp	Help on the StartupEdit application.
SSHKeyGeneration.exe	(Installed with SSH version of the emulator only.) A program used to generate the keys needed for SSH connections.
SSHKeyGeneration.hlp	(Installed with SSH version of the emulator only.) Help on the SSHKeyGeneration application.

EMULATOR APPLICATION WINDOW

The Emulator Application Window displays whenever the emulator is started, unless the emulator is configured to start as an icon.
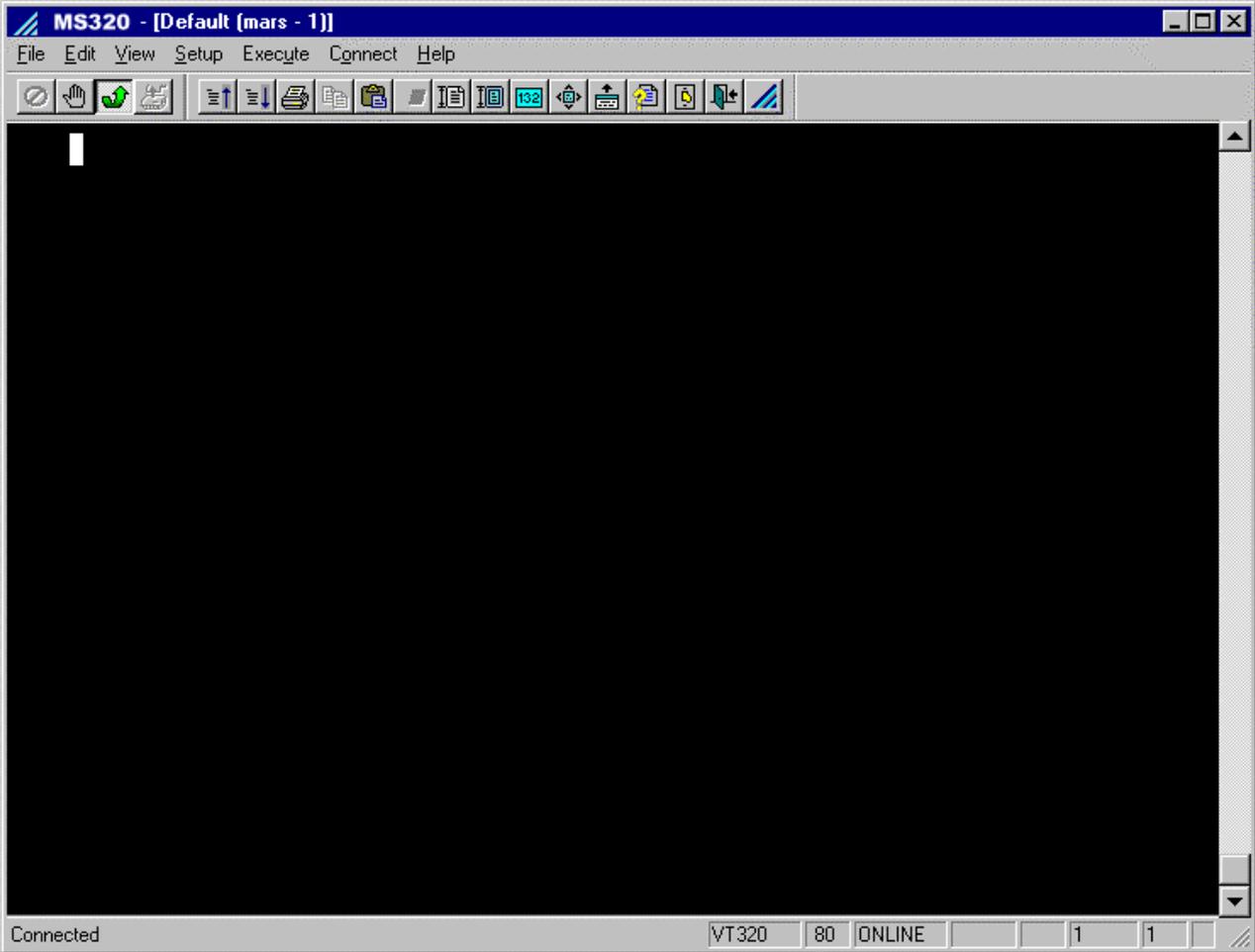
FIGURE 1 – APPLICATION WINDOW

CONNECTING TO A HOST

There are three ways to connect; through the *Connections* dialog, the *Session Manager* dialog, or the command line.

Connections

To make connection through the *Connections* dialog box:

1. Click on **Connect - Connect**. The *Connections* dialog box appears.
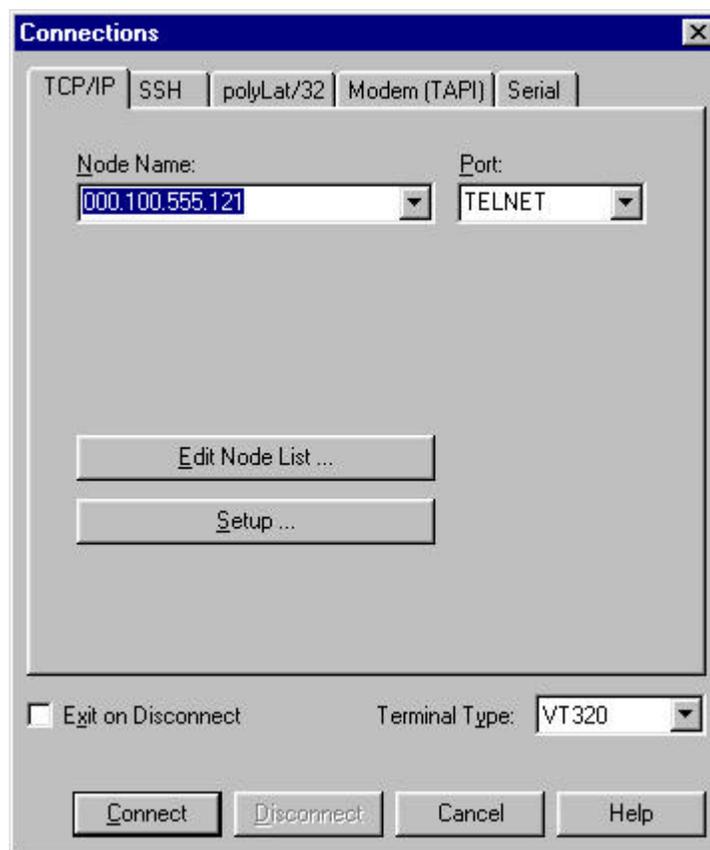
2. Select the tab defining the desired mode of connection to the host. The following options are available:

   TCP/IP
   TCP/IP provides connectivity using any of several protocols. TCP/IP is a standard network interface that many network protocol providers have available for their protocol stacks. When selecting this tab, the protocol used for the connection is Telnet.

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SSH

Using the SSH connection, a secure, encrypted connection can be made to hosts supporting the SSH1 or SSH2 protocols. By establishing a Secure Shell connection, session data is protected from outside attacks that can steal passwords, sensitive data, or totally hijack a session. SSH makes session hijacking and IP "spoofing" much more difficult by encrypting session data. As a result, outsiders are prevented from reading raw text data that may contain passwords or other sensitive information.

Features:
> Adds a secure protocol to TCP/IP for making connections.

> Provides Port Forwarding over TCP/IP, which allows other protocols such as POP, DNS, and PPP to use SSH to establish secure sessions.

Modem (TAPI)

TAPI is a protocol available in *Windows* that allows connections to modems defined in the *Windows* operating system. If the modems were not installed by *Windows* plug-and-play or manually through the *Windows* Control Panel, the modem will not be available in TAPI.

Poly/LAT-32

PolyLAT/32 is a LAT protocol for DEC terminal communications. If polyLAT is installed on your system, DECnet terminal communications can be established.

Serial Port

Serial communications are accomplished by a direct serial connection between the host and the PC. The *Serial* tab allows connection through the PC's available serial ports.

3. Depending on the connection tab, enter the appropriate **Node Name**, **Phone Number** or **COM port**.

4. Select the **Terminal Type** for the connection. See the section, "*Selecting and Setting up the Terminal*", for information on the available terminal types.

5. Click the ***Setup...*** button if available. Make any desired parameter changes, then click ***OK***.

6. Click the ***Connect*** button. Status messages regarding the progress of the connection appear on the status line.

Session Manager

The *Session Manager* allows you to set the properties for different sessions and set up an automatic connection to the desired host. For example, you can save multiple network sessions that have different connection requirements with a unique name. Similarly, you can set up Modem (TAPI) connections and Serial port connections.

When MS320 first launches, it creates a session file named **default.et32** and stores it in the Sessions folder of the *MS320* installation directory. When you open the *Session Manager*, you can edit the properties of the default session file or create a new session file.

To start a session, select a session name, and then click **Start**. Double-clicking a session name also starts a session. Users often create a shortcut to the session and copy it to the *Windows* Desktop for easy launch.

Each connection type is assigned an identifying icon to easily distinguish between the different type of connections. The same connection types listed in the *Connections* section are available. However, when using the *Session Manager*, the *None* tab also appears. If a command file has been recorded with *the Record Command File* feature and is specified in the session's properties (for the purpose of an automatic login), the *None* tab must be used.

Creating a TCP/IP Session

1. Click on **Connect - Session Manager** to display the *Session Manager* dialog box.
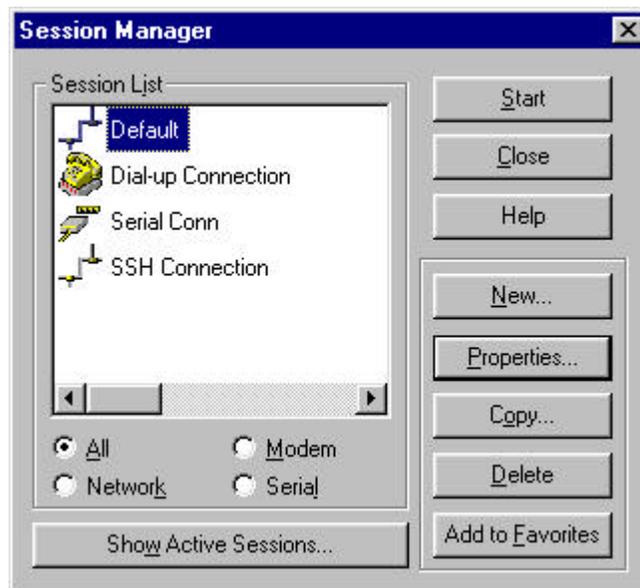
2. Click **New** to display the session properties tabs where the default session name is "UnNamed".

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3. Select the *TCP/IP* tab.
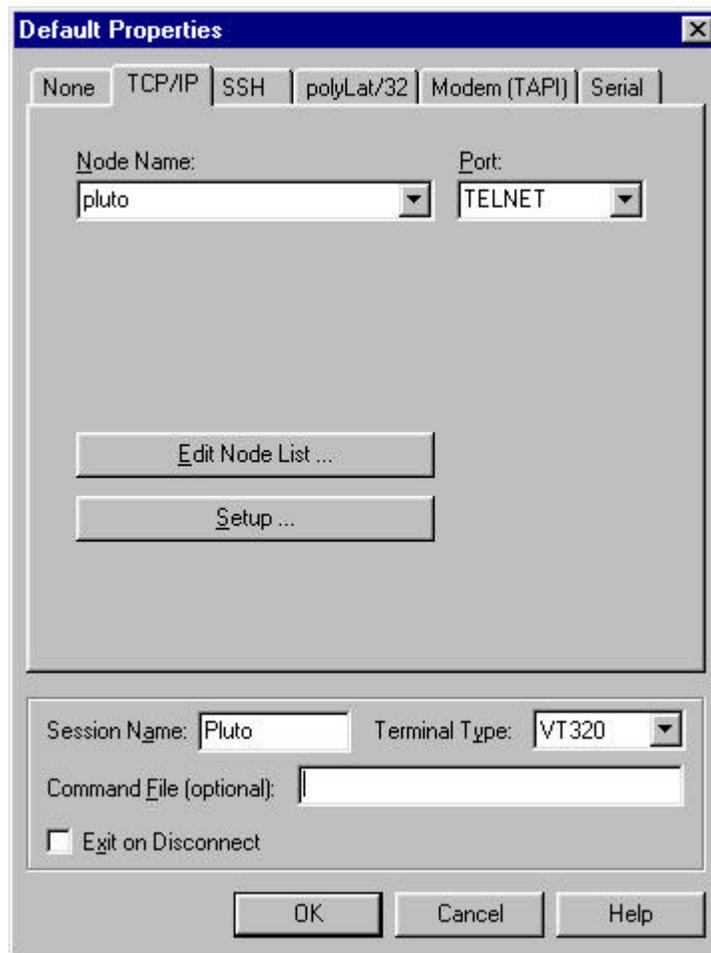
FIGURE 4 – TCP/IP SESSION MANAGER PROPERTIES

4. Enter the **Node Name** for the host computer system or select it from the list.

5. Enter a **Session Name**. This is the name used for the Session Icon in the program folder and in the *Session Manager* **Session List**.

6. Select the **Terminal Type** for the session.

7. Click *OK* to create the session. The new session now displays in the **Session List**. However, no connection has been initiated.

8. To start the session, double-click the session name (or select the session name), then click *Start*.

Note: *To create new sessions for other than TCP/IP, click the appropriate properties tab (SSH, Modem, PolyLat, or Serial) and follow a similar procedure to the above.*

Copying Sessions

The Copy feature is a quick way to create sessions of a similar type. For example, if connecting to both VMS and UNIX systems, a VMS version and a UNIX version connection can be created. These base versions can then be copied when making multiple sessions for a given type. After setting up key mappings, mouse button mappings or tool bars, the Copy feature is necessary to copy these definitions to another session.

To copy a session:

1. Click on **Connect - Session Manager**.

2. Select a session to copy.

3. Click the **Copy** button. The properties dialog box for the new session displays.

4. Enter a new **Session Name** if desired. Otherwise, a default name, "Copy X", is assigned.

5. Select the type of connection from the available tabs.

6. Adjust property parameters as necessary.

7. Click **OK**. The new **Session Name** displays in the **Create Session** list.

Deleting Sessions

To delete a session:

1. Click on **Connect - Session Manager**.

2. Select a session to delete.

3. Click the **Delete** button.

Switching Sessions

To switch between sessions:

1. Click on **Connect - Session Manager**.

2. Click the **Show Active Sessions...** button. The *Session Manager* switches to the *Active Sessions* view.

3. Select the session to which you want to switch, from the **Active Sessions** window.

4. Click the **Go To** button.

Exiting Sessions Remotely

To exit a session remotely:

1. Click on **Connect - Session Manager**.

2. Click the **Show Active Sessions...** button.

3. Select a session to close.

4. Click the **End Session** button. If the session selected is the current session, a message appears warning the user that they are about to exit the session.

Add to Favorites

Click the **Add to Favorites** button to add currently selected session to the *Windows Favorites* list.

Command Line

Connections can also be initiated via the command line.

Command Line Execution

Two commands are available for connecting from the command line: SET HOST and SESSION.

SET HOST [node name]

Connects to a remote node. The SET HOST command can be used with one of the following:

/DEFAULT_PORT	Connects to the default port selected in the *Session Manager* dialog box. If the port is set to **None** or if you are already connected to the default port, an error is returned.
/DISCONNECT	Disconnects from the currently selected port.
/LAST_NODE	Connects to the last successfully connected port. If a previous connection did not exist, an error is returned.
/PROTOCOL=node	Where: **protocol** is SERIAL, MODEM, POLYLAT, SSH, or WINSOCK. **node** is the network node name.
/PASSWORD=password	Used only with the /PROTOCOL option, the /PASSWORD option allows the connect password to be specified.

Examples:　**SET HOST/PROTOCOL=SERIAL COM1**
Connects to COM1.

SET HOST/PROTOCOL=WINSOCK PLUTO
Connects to the WINSOCK node WILLY. (Use this option for TCP/IP connections.)

SET HOST/PROTOCOL=POLYLAT PLUTO
Connects to the LAT node PLUTO.

SET HOST/PROTOCOL=MODEM "9,3034479251"
Where:　**9** is required used to dial out of a company and the number following is the number to dial.

SESSION [path]session-name[ext]

Starts an emulator session using the specified session file.

Where:　**session-name** is the name of the session file. By default, the session file is retrieved from the emulator's session directory. However, an optional path and file extension can be supplied.

If the session file does not exist, an invalid file specification error will be returned:

"Status =STS_K_CMD_INVFSPEC"

SELECTING AND SETTING UP THE TERMINAL

When making a connection, select the desired terminal type from the *Connections* dialog. Click on **Setup - Terminal**. Select a **Terminal Type**, then click on the corresponding Terminal tab to set the terminal options.

Terminal Type/Terminal ID

VT320
Emulates a DEC VT320 terminal. In this mode, all 7-bit and 8-bit control sequences are interpreted and multinational characters are displayed. This mode is recommended for combined VT102/220/320 operation as it offers VT100 compatibility and provides all the VT320 features.

VT220
Emulates a DEC VT220 terminal. When VT220 is selected, the terminal identifies itself as a VT220 instead of a VT320.

VT100
Emulates the VT102 terminal. However, it identifies itself as a VT100 with AVO and a printer. This mode is for use with programs that require the VT100 identification sequence. All VT102 control sequences are emulated in this mode.

VT52
Emulates the older DEC VT52 terminal.

SCOANSI
SCO ANSI is a blend of VT, ANSI color, and extensions limited to hosts running SCO. The emulator interprets the control sequences sent by the host running SCO.

BBSANSI
Displays the ANSI characters and color sequences that are generally available through bulletin board services.

WYSE-50
Emulates a WYSE-50 terminal.

VT340 (*MS320*)
Emulates a DEC VT340 terminal with ReGIS graphics support.

TEK4014 (MS320)
Emulates a Tektronix 4010/4014 terminal.

Status

Selects **Online** or **Local** mode. **Online** allows the emulator to communicate with the host system. This is the default setting. In **Local** mode, the emulator does not send data to the host or process data received from the host.

Local Echo

Sends the data transmitted to the host computer to the PC screen. Enable **Local Echo** when communicating with half-duplex computer systems.

Terminal Tab Options
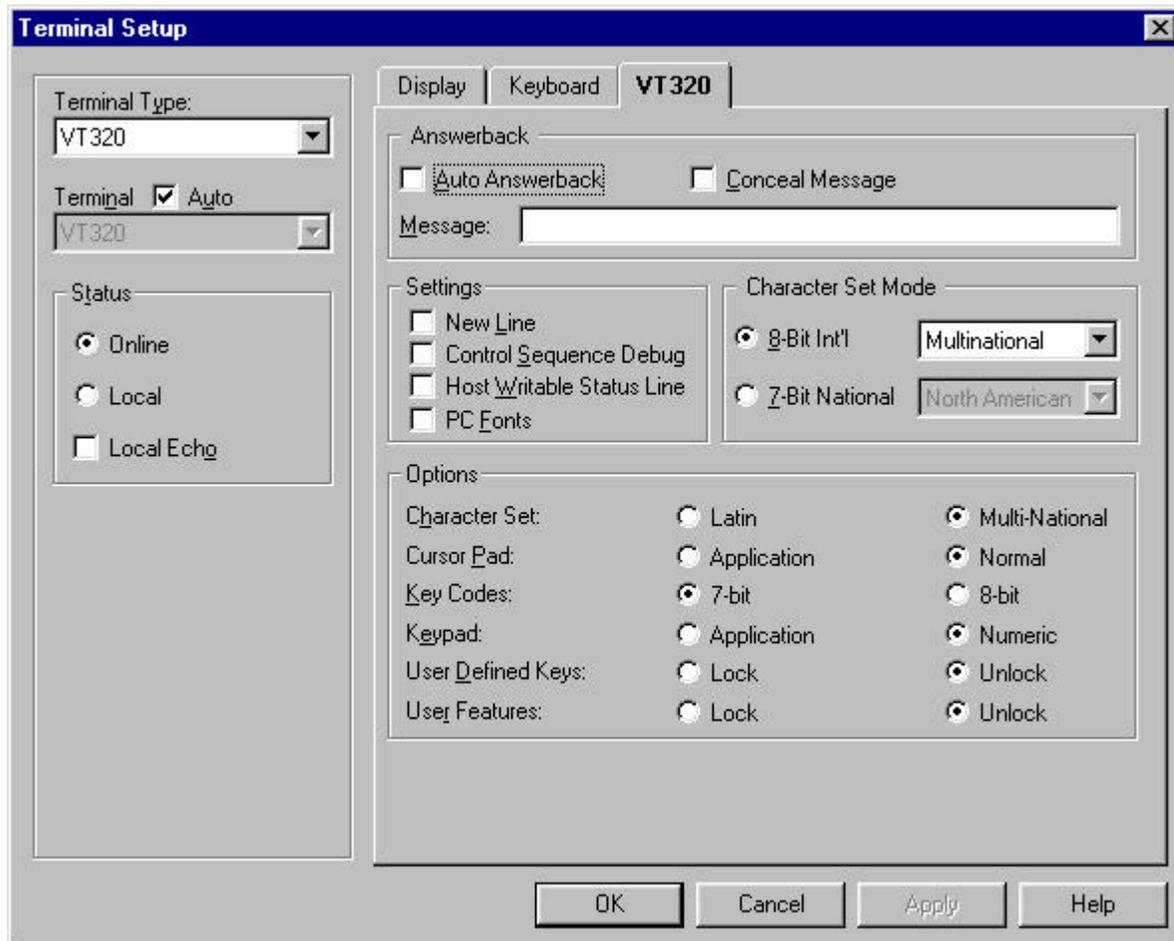
FIGURE 5 - VT320 TERMINAL SETUP

Note: All the options below are found on the VT320 tab. Since each Terminal Type is different, these options will vary, depending on the selected terminal.

Answerback

Auto Answerback

Enables or disables (default) the sending of the Answerback Message automatically when a communication connection is established. When using serial communications, **Modem Control** must be enabled if **Auto Answerback** is enabled.

Conceal Message

If selected, the Answerback Message is not displayed on the screen. Instead, "<<Concealed>>" appears. Once an Answerback Message is concealed, it can only be made visible by entering a new message.

Message

The Answerback Message is sent on receipt of an ENQ code, clicking **Execute - Send Answerback**, or entering the SEND ANSWERBACK command. It is generally used as a security measure by host computer systems to identify certain terminals or users.

Settings

New Line
Sends a carriage return and line feed to the host. If a line feed is received from the host, a carriage return is added.

Control Sequence Debug
This mode is a substitute for VT320 Display Controls mode. When debug mode is enabled, and DEBUG (default is Alt `) is pressed, VT320 control sequences display on the status line of the application window before they are executed. Pressing any key executes the sequence. Press DEBUG again to allow control sequences to execute without displaying.

Host Writable Status Line
If enabled, this option allows the host program to write information to the bottom line of the screen.

PC Fonts
Uses the IBM PC character set that includes line drawing characters.

Character Set
8-Bit Int'l selects the DEC Multinational character set, while **7-Bit National** selects the 7-bit National Replacement Character Set.

Options

Character Set
Selects DEC Multinational (default) or ISO Latin-1 as the DEC Supplemental character set.

Cursor Pad
Allows manual control of the codes generated by the VT320 cursor pad. The cursor pad is normally controlled by the host. If **Normal** is selected, the code for the arrows printed on the keys is generated. If **Application** is selected, the *MS320* generates control sequences used by application programs.

Key Codes
Setting the key code to **7-Bit** sends 7-bit control sequences to the host, but still interprets 8-bit control sequences and characters received from the host. When **8-Bit** is selected, 8-bit control sequences are transmitted to the host computer by the emulator. Note that VT320 8-bit mode is not a communication setting. It is an operating environment. To select 8-bit communications, configure the emulator connection to "8" **Date Bits** and "No" **Parity**.

Keypad
Allows manual control of the codes generated by the keypad. This is normally controlled by the host. If **Numeric** is selected the numeric values printed on the keys are generated. If **Application** is selected the emulator generates control sequences used by application programs.

User Defined Keys
Locks or unlocks the user-defined keys. Locking the keys prevents downloading and protects the current key contents. UDKs can be locked by the host system but can only be unlocked through the setup menu. When unlocked, the host system can download the function keys with user-defined strings.

User Features
Locks or unlocks the user preference features. If locked, the emulator ignores control sequences that affect the user preference features. Slow/fast scroll and normal/reverse screen are considered user preference features.

WINDOW SIZING AND LOCATION

Several options in the *View* menu control the appearance of the emulator. The emulation window can be toggled between framed or unframed, maximized workspace, left justified or centered, and more.

The size of the emulation window is determined by the font selected for the presentation window size. The emulator automatically selects a font that utilizes as much of the presentation window as possible while displaying all lines and columns currently configured.

Presentation window sizing is accomplished in the typical *Windows* manner; use mouse button 1 to grab a border and drag it to size the window. Note that the emulator will not allow you to resize the emulator smaller than the smallest font.

Number of Emulation Lines

The number of emulation lines is configured in **Setup - Terminal - Display** and is continuously variable from 24 to 48.

Maximize Workspace

Maximize Workspace maximizes the emulation window (working area) by "hiding" the menu bar, message lists, status line and toolbars. Emulator drop down menus are available through the *Control* menu by enabling the *Menu Bar* option.

There are three ways to toggle Maximize Workspace mode on and off:

> ➢ Click on the toolbar icon.

> ➢ Click on **View - Maximize Workspace**.

> ➢ Click on the *Control* menu icon located in the upper-left corner of the emulator title bar (or press Alt Spacebar) and select the *Maximize Workspace* item.

SCREEN SCROLLBACK

The scrollback display is manipulated through the vertical scrollbar. To move one line, click on the arrows at the ends of the scrollbar. To move a page, click in the gray area near the ends of the scrollbar.

If the scrollbar is not displayed, click on either **View - Scrollbar** or the scrollbar button on the *Hold Toolbar*.

Setup – Terminal – Display sets the size of scroll memory in lines .The maximum value is 32,767 lines. Based on 25 line screens, the upper limit will reach 1,300 + pages of scroll memory.

VIDEO ATTRIBUTE COLOR MAPPING

Video attribute color mapping is mapping of colors to normal VT320 monochrome attributes such as bold, reverse video, and underline. Video attribute mapping is configured through the *Color Setup* dialog accessed by **Setup – Terminal – Display – Color…**.

When you edit an existing color scheme, the name of the scheme changes to "Custom" and all color information is saved to that scheme.

CHARACTER SETS

The emulator supports the following character sets:

> ➢ DEC Multinational (consists of the ASCII and DEC supplemental character sets)
> ➢ DEC Special Graphics
> ➢ ISO Latin-1
> ➢ National Replacement Character
> ➢ PC

If a DEC VT terminal is selected, then on initial load or after a terminal reset, DEC Multinational is mapped as the default terminal character set.

The ASCII set is accessed for character codes 0-127. The DEC Supplemental set is accessed for codes 128-255. During a serial connection, the DEC Supplemental set does not display properly unless the emulator is set to "8" **Data Bits** and "No" **Parity**.

PRINTER SUPPORT

All VT100 and VT320 print modes are supported.

Print Mode	Function
Print Screen	Sends the contents of the screen to the printer. If the screen is set to 132 columns, up to 132 columns can be sent to the printer.
Auto Print	Prints every line sent to the screen. Same as Continuous Print mode
Printer Controller	Prints received characters without displaying them on the screen.
Print Cursor Line	Prints the line the cursor is on.
Print Extent	Prints the contents of the scrolling region.

The following print modes can be initiated using a function key, emulator PRINT command, or by a host control sequence. Other print modes can only be selected by using control sequences.

Print Mode	Token	Command
Print Screen	PRTSCR	PRINT SCREEN
Auto Print	PRTAUTO	PRINT ON/OFF
Controller Print	PRTCTL	PRINT/CONTROLLER ON/OFF

RUNNING IN A BROWSER WINDOW

The emulator fully supports *Microsoft's Internet Explorer* (IE) and will run inside an IE window. This is referred to as Running In-Place. There are two ways to run an emulator session In-Place.

Run In-Place Using Favorites

The first three steps are required only once for each session. After that, Step 4 is all that is required.

1. Open the *Session Manager* dialog box by clicking **Connect - Session Manager**.

2. Select the desired session.

3. Click on **Add to Favorites**. The session name will be added to the *Favorites* list.

4. Once the session has been added to the *Favorites* list, it can be run In-Place by selecting it from the IE *Favorites* list.

Run In-Place Using the Session File

1. Start *Internet Explorer*.

2. Click on **File - Open** and then **Browse...**. Locate the desired session file in the emulator's session folder. The session folder is normally located at c:\minisoft\ms320\sessions.

3. Double-click the session name.

Note: *The session file can also be run In-Place by locating the session file using Windows Explorer and dragging it into the IE window.*

Once an emulator session is running In-Place, it can be added to *Favorites* list using IE's **Add to Favorites** button. The session will then run In-Place when started from the *Favorites* list.

When running the emulator In-Place, certain behavioral changes take place:

Menu Bar

The program Menu Bar is displayed under the browser toolbar and becomes part of the browser menu bar. All the normal menu names appear; however, the *File* menu list is different when running In-Place. *Print* and *Page Setup* still appear in the *File* menu, but the *Log File*, *Command File*, and file transfer menu items (*Receive* and *Send*) are moved to the *Execute* menu.

Session Management

New sessions started using the *Session Manager* while running in place, also run In-Place. If more than one session is run, each acts as an individual browser document and you can move between them using the Back and Forward buttons or through the *Session Manager*.

COMMON PROBLEMS

Installation

The installation isn't working.

On *Windows* operating systems newer than *Windows 98*, you must be assigned administrator rights to install programs.

"Failed to update system registry Please try using Regedit" appears.

On *Windows* operating systems newer than *Windows 98*, you must be assigned administrator rights to install programs.

Keyboards

The backspace key doesn't appear to work

VT terminals have two backspace codes to choose from. To set these codes (**Backspace** or **Delete**) select the *Keyboard* tab in **Setup - Terminal**. Change the backspace setting. Click **OK**.

The NumLock key doesn't go on when NumLock is pressed.

First, it is important to understand the way the NumLock key works and how to tell whether NumLock is actually on or off. The NumLock indicator is located in the lower right corner of the status line. If NumLock is on, a capital "N" appears on the status line. If NumLock is off, the NumLock field is blank. The default keymap (**Setup – Keyboard Mapper**) maps the physical NumLock key to PF1 and NumLock is toggled on and off with Ctrl NumLock or Shift NumLock. (It is important to press and hold down the Ctrl key or Shift key while pressing NumLock. Doing so repeatedly should toggle the "N" indicator on and off.) The alternate keymap (**Setup – Keyboard Mapper**) maps the NumLock key to NumLock.

The state of the NumLock key is turned off (or on) when swtiching between applications.

Change the NumLock section in the startup.ini file to the desired behavior.

> 0 = When *MS320* first initializes, NumLock is Off.
> 1 = When *MS320* first initializes, NumLock is On.
> 2 = NumLock in MS320 matches the system NumLock.

Terminal Type XXX not defined

TCP/IP Connections to UNIX systems only:

Be sure that the terminal type selected in **Setup - Terminal** is a terminal type recognized by the host. Disconnect the session and then connect again. Note that many UNIX systems do not recognize the terminal type **VT320**, but they do recognize the terminal type **VT220**.

Error message: Error Attempting Connect

For TCP/IP connections:
Check that the node name is correct and try again. Or, instead of the node name, try the IP address of the host. Certain TCP/IP configuration problems can cause names to fail while allowing IP addresses to work.

For polyLAT/32 connections:
Be sure that polyLAT/32 is installed. PolyLAT/32 is available from Minisoft. Be sure that no other LAT, such as Pathworks LAT, is installed. If so, remove it, or it will interfere with polyLAT/32.

For TAPI (modem) connections:
Check the phone number for accuracy. The phone line might be busy. Also, make sure that you've preceded the phone number with "9" if that is required by your company's phone system for reaching an outside line.

For Serial connections:
No Response
The port might be in use by another application or still attempting to connect with another session of MS320. Be sure that no other copy of the emulator is connected to the port. Ensure that no FAX program is connected to the port.

Incorrect COM (serial) port selected in the *Serial Setup* dialog box.

Incorrect **Baud Rate** selected in the *Serial Setup* dialog box.

Flow control is off on the host system. Press Ctrl Q (Xon) to clear the flow control.

More than one serial communications interface is assigned to the same COM port. Look at the jumpers on the serial board to make sure that they are set for a unique COM port. Consult the serial board documentation.

Incorrect RS232 cable. Try another cable.

Garbage Characters Appear on the Screen
Incorrect baud rate selected in the *Serial Setup* dialog box.

Incorrect parity selection when using VT320 mode. VT320 mode interprets all eight bits. If your host system is not properly configured for full 8-bit operation, select "Space" **Parity** in the *Serial Setup* dialog box. Most common combinations are "8" **Data Bits**/"No" **Parity** and "7" **Data Bits**/"Space" **Parity**.

Dropping Characters
The host doesn't use Xon/Xoff flow control. Try reducing the **Baud Rate** in the *Serial Setup* dialog box.

The PC has a hardware problem. Try running the emulator on another PC.

More than one serial communications interface is hardware jumpered to the same COM port.

TECHNICAL SUPPORT

Minisoft offers technical support to all registered customers of the emulator. However, many problems can be solved without having to make a phone call. Please consult the following first:

- ➢ Online Help
- ➢ Online *Reference Manual* and *Getting Started*
- ➢ Website: www.minisoft.com

If you are still unable to find a solution to your problem, Technical Support can be reached by:

- ➢ Phone: 800-682-0200
- ➢ FAX: 360-563-2923
- ➢ E-Mail: support@minisoft.com
- ➢ Website: www.minisoft.com

Whichever option you select, please include in your email (or for telephone service, have ready) all of the following information. This will help us serve you quickly and effectively.

1. For telephone service, be at a computer that can duplicate the problem.

2. Have your registration number and the emulator version number ready. These are found on the program disk label. The version number is also located in **Help - About**.

3. Please have the following information for the support person:

   - ➢ The problem (including the exact error messages) and the steps needed to reproduce it
   - ➢ Type of host
   - ➢ Type of connection to host (i.e., Serial, Network,...)
   - ➢ Type of PC, keyboard, monitor and video card (display adapter)
   - ➢ Whether the problem occurs on more than one system (if available)
   - ➢ Microsoft *Windows* version

Chapter 3

KEYBOARD, MOUSE, and TOOLBARS

OVERVIEW

The operation of the emulator can be customized using the Keyboard and Mouse mappers and the Customize Toolbars feature. Keystrokes and mouse clicks can be assigned to a wide variety of functions through these simple, easy-to-use mappers. Toolbar buttons and toolbars can be created to suit individual preferences.

KEYBOARD MAPPING

Through the *Keyboard Mapping* dialog box, the keyboard can be configured to perform many different functions. An individual key can be defined to send a string, a command, execute a command file, access a help file, and more. The emulator provides default keymaps that can be edited, but not deleted.

To configure the keyboard, click on **Setup - Keyboard Mapper**.

Creating a New Key Map

The top of the dialog box contains a section that deals with the keymaps as whole entities. The name of the current keyboard map is listed in the Current Keymap list box. Click the **New...** button to create a new keymap, enter a new name, then click **OK**.

Defining a Key

Key definitions are set in the Current Key section. Note that predefined keys displayed on the online keyboards are outlined in green, while user-defined keys are outlined in blue.

To define a key to perform a specific function:

1. Using the mouse, click on the desired keys in the order they should be pressed. For example, to map the following keystroke, Alt+Shift+F1, click the Alt key, then the Shift key, followed by the F1 key. The sequence displays in the **Current Key – PC Key** field as follows:

    PC KEY:A^S^F1

    Any combination of Alt, Shift, and Ctrl can be used. Note however, that these keys will always display in the PC Key field in the order A^,S^, and C^.

2. Select a function for the keystroke from the **Set To** list. The following **Set To** options are available:

    Command
    Defines a single ECL command to be executed when the key is pressed. Enter a valid command in the **Command** field.

Example:	**Command: ERASE SCREEN**
	Erases the screen when the key is pressed.

Example:	**Command: DISPLAY "HELLO THERE"**
	Displays HELLO THERE at the current cursor position.

Command File
Specifies the execution of a command file. Enter the path name of a command file in the **CMD File** field or click **Browse…** to display the *Command File Selection* dialog box. Select a command file, then click **Open**.

Terminal Key
Assign a PC key to a terminal key. Enter a valid name in the Key field or click **Browse…** and select a function from the list. If a DEC terminal type is selected, the key list will be for a DEC VT terrminal. If a WYSE terminal is selected, the WYSE key list is displayed.

Edit/Paste
Performs an edit/paste function. Enter a valid name in the **Edit/Paste** field or click **Browse…** and select from the list.

Emulator Functions
Executes a VT key or emulator function. Enter a valid name in the **Emul. Func.** field or click **Browse…** and select from the list.

Help File
Launches a help file. Enter the path name of a help file in the **Help File** field or click **Browse…** to display the *Help File Selection* dialog box. Select a help file, then click **Open**.

Nothing
Ignores any key action (disables the key definition). Nothing can be entered in the **Nothing** field.

String
Defines a string to be sent to the host. A simple ASCII string can be entered in the **String** field.

> Examples: **String:** <027>OP**or** **String:** <ESC>OP
> Both examples send the escape sequence Control [OP (^[OP).
>
> **String:** <<BELL>>
> Sends <BELL>. Double brackets prevent conversion to numeric values.
>
> **String:** <%x44>
> Converts the string from its Hex value to D.

Unmapped
The default setting for unmapped keys. Nothing can be entered in the **Unmapped** field.

3. When you are satisfied with the key combination, click the **Add** button. The key definition displays in the **Mapped Keys** list box, and the keystroke combination is highlighted in blue.

   If at any time while defining a key you wish to make changes, click the **Undo** button.

4. Save the key map by clicking the **OK** button.

Changing a Key Definition

To change the existing configuration for the currently selected keystroke.

1. Select the key definition to change and set it to the desired function.

2. Click the **Change** button

Note: *Be sure to click the **Add** or **Change** button before selecting another key definition from the keyboard map, otherwise all changes to the current keystroke will be lost.*

Deleting a Key Definition

To delete a key definition:

1. Select the key definition to delete.

2. Click the **Delete** button.

Note: *Predefined (default) keys can be edited and redefined, but can never be deleted. If you delete the user-defined definition, it will revert to the default definition.*

MOUSE MAPPING

Through the Mouse Mapper, mouse buttons can be configured to perform many functions such as sending a string, a command, a mouse position report, a command file, perform emulator functions, and more.

Mouse clicks are only redefined while the mouse cursor is in the emulation window. If the mouse cursor is moved outside of the emulation window, the mouse buttons perform their normal *Windows* functions.

To enter the *Mouse Mapping* dialog box, click on **Setup - Mouse Mapper**.

Creating a New Mousemap

The top of the dialog box contains a section that deals with the mousemaps as whole entities. The name of the current mousemap is listed in the **Current Mousemap** list box. Click the **New...** button to create a new mousemap, enter a new name, then click **OK**.

Note: *The **New**, **Rename**, and **Delete** operations cannot be undone by clicking the **Cancel** button.*

Defining a Mouse Button

Mouse button definitions are set in the **Current Action** section. Note that predefined mouse buttons displayed on the Mouse Button Layout are outlined in green, while user-defined keys are outlined in blue.

To define a mouse button to perform a specific function:

1. Using the mouse, click on the desired mouse button and Alt, Shift, or Control if desired. For example, to map the following mouse button, Alt+Right Button, click the Alt key followed by Right. The sequence displays in the **Current Action - Action** field as follows:

   ACTION: **A^Right**

   Any combination of Alt, Shift, and Ctrl can be used. Note however, that these keys will always display in the Action: field in the order C^, A^, and S^.

   Mouse buttons that are shown with a colored border are predefined and display in the **Mapped Action** window.

2. Select a function for the mouse button from the **Set To** list. The following **Set To** options are available:

   Command
   Defines a single ECL command to be executed when the mouse button is pressed. Enter a valid command in the **Command** field.

   Example: **Command:** ERASE SCREEN
   Erases the screen when the mouse button is pressed.

   Command File
   Specifies the execution of a command file. Enter the path name of a command file in the **CMD File** field or click *Browse…* to display the *Command File Selection* dialog box. Select a command file, then click *Open*.

   Terminal Key
   Assign a mouse click action to a terminal key. Enter a valid name in the **Key field** or click *Browse…* and select a function from the list. If a DEC terminal type is selected, the key list will be for a DEC VT terrminal. If a WYSE terminal is selected, the WYSE key list is displayed.

   Edit/Paste
   Performs an edit/paste function. Enter a valid name in the **Edit/Paste** field or click *Browse…* and select from the list.

   Emulator Functions
   Executes a VT key or emulator function. Enter a valid name in the **Emul. Func.** field or click *Browse…* and select from the list.

   Help File
   Launches a help file. Enter the path name of a help file in the **Help File** field or click *Browse…* to display the *Help File Selection* dialog box. Select a help file, then click *Open*.

Edit Menu

Causes the Edit Menu to be displayed next to the current cursor position so the user can select edit functions such as cut and paste.

Mouse Function

Assigns special mouse actions to a mouse button. Enter the name of a mouse function in **the Mouse Func.** field or click *Browse…* to display the **Mouse Functions** list. Select a function, then click *OK*.

Note: *Only one mouse button can be assigned to a particular mouse function. When selecting a mouse function for a button, the emulator resets all other mouse buttons with the same mouse function.*

Mouse Position Report

Sends the following string to the host indicating the mouse position in alpha cursor coordinates.

   Example: **ESC P[row;column] CR**

The **Mouse Pos.** field is disabled for this selection. Nothing can be entered.

Extended Mouse Report

Sends the following string to the host indicating cursor position, mouse button, and shift keys:

   ESC M(A1 A1 A3 B) [row;column] CR

   Where: **A1** is "A" if Alt key is down - blank if not.
               A1 is "C" if Control key is down - blank if not.
               A1 is "S" if Shift key is down - blank if not.
               B is "L(left), M(middle), or R(right) for the button pressed.

   Example: **ESC M(A L)[1;1] CR**
   Results: Keys = A SPACE SPACE   Alt key
             Button = L   Left
             Position = 1;2   Row 1, Column 2
             The possible key combinations are: Control, Shift, Shift Control, and Alt.

The **Ext. Mouse** field is disabled for this selection. Nothing can be entered.

Nothing

Ignores any mouse button action (disables the mouse button definition). Nothing can be entered in the **Nothing** field.

String

Defines a string to be sent to the host. A simple ASCII string can be entered in the **String** field..

   Examples: **String:** <027>OP**or**   **String:** <ESC>OP
                Both examples send the escape sequence Control [OP (^[OP).

                String: <<BELL>>
                Sends <BELL>. Double brackets prevent conversion to numeric values.

MS320

String: <%x44>
Converts the string from its Hex value to D.

Unmapped
The default setting for unmapped mouse buttons. Nothing can be entered in the **Unmapped** field.

3. When you are satisfied with the mouse button combination, click the *Add* button. The mouse button action displays in the **Mapped Action** window, and the mouse button combination is highlighted.

4. If at any time while defining a mouse button you wish to make changes, click the *Undo* button.

5. Save the mouse map by clicking the *OK* button.

Changing a Mouse Button Definition

To change the existing configuration for the currently selected mouse button.

1. Select the mouse button definition to change.

2. Set to the desired function.

3. Click the *Change* button.

Note: *Be sure to click the Add or Change button before selecting another mouse button definition from the Mouse Button Layout, otherwise all changes to the current mouse button will be lost.*

Deleting a Mouse Button Definition

To delete a mouse button definition:

1. Select the mouse button definition to delete.

2. Click the *Delete* button.

Note: *Predefined (default) mouse buttons can be edited and redefined, but can never be deleted. If you delete the user-defined definition, it will revert to the default definition.*

CUSTOMIZE TOOLBARS

The Customize Toolbar feature allows you to create and display toolbars to perform functions that suit your individual needs. The toolbars can be displayed anywhere on the screen, with text or without, with bitmap pictures or text only, docked to the borders or floating. The toolbars will also maintain their location and size when resizing the screen.

To create a toolbar or edit an existing toolbar, click on **Setup - Customize Toolbars**. The *Properties* tab displays. Once a toolbar is created, it can be defined as floating or docked. To modify the shape of the toolbar, drag the toolbar's edges to the desired shape.

Creating a New Toolbar

To create a new toolbar, in the *Properties* tab, click on the **New...** button. The *New Toolbar* dialog box displays. Enter a new **Toolbar Name**, then click **OK**.

Defining a Toolbar Button

To define a toolbar button to perform a specific function:

1. Click the **New...** button. Enter a name for the button, then click **OK**.

2. Select a **Bitmap**. You can select an internal bitmap or import a bitmap from another location. To create a text only bitmap, select the **Empty Internal Bitmap** option.

3. Select from the **Category** functions. The following options are available:

   Unmapped
   The default setting for unmapped toolbar buttons. Nothing can be entered in the **Unmapped** field.

   Nothing
   Ignores toolbar action (disables the button definition). Nothing can be entered in the **Nothing** field.

   String
   Defines a string to be sent to the host. A simple ASCII string can be entered in the **String** field.

   Examples: **String:** <027>OP**or**   **String:** <ESC>OP
   Both examples send the escape sequence Control [OP (^[OP).

   String: <<BELL>>
   Sends <BELL>. Double brackets prevent conversion to numeric values.

   String: <%x44>
   Converts the string from its Hex value to D.

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Command

Defines a single ECL command to be executed when the toolbar button is pressed. Enter a valid command in the **Command** field.

Example: Command: ERASE SCREEN
Erases the screen when the toolbar button is pressed.

Command File

Specifies the execution of a command file. Enter the path name of a command file in the **CMD File** field or click *Browse…* to display the *Command File Selection* dialog box. Select a command file, then click *Open*.

Terminal Key

Assign a toolbar button to a terminal key. Enter a valid name in the **Key** field or click *Browse…* and select a function from the list. If a DEC terminal type is selected, the key list will be for a DEC VT terrminal. If a WYSE terminal is selected, the WYSE key list is displayed.

Edit/Paste

Performs an edit/paste function. Enter a valid name in the **Edit/Paste** field or click *Browse…* and select from the list.

Emulator Functions

Executes a VT key or emulator function. Enter a valid name in the **Emul. Func.** field or click *Browse…* and select from the list.

Help File

Launches a help file. Enter the path name of a help file in the **Help File** field or click *Browse…* to display the *Help File Selection* dialog box. Select a help file, then click *Open*.

4. Enter the **Button Text**.

5. Enter the **Help Text**.

6. Enter the **Tool Tip**.

7. The new button will be available in the *Buttons* tab under the **User Defined** category and can be added to any toolbar.

Changing a Toolbar Button Definition

To change the existing configuration for the currently selected toolbar button.

1. Select the button name from the **User Defined Buttons** list.

2. Edit the **Button Function** properties.

Note: *To revert back to the previous definition, click the **Reset** button. The **Reset** button is available after editing a button and prior to closing the dialog box.*

Deleting a Toolbar Button Definition

To delete a toolbar button definition:

1. Select the button name from the **User Defined Buttons** list.

2. Click the *Delete* button.

Note: *Predefined (default) mouse buttons cannot be edited, redefined, or deleted.*

Renaming a Toolbar Button Definition

To rename a toolbar button definition:

1. Select the button name from the **User Defined Buttons** list

2. Click the *Rename* button. The *Rename Button* dialog box appears.

3. Enter a new name for the button, then click *OK*.

Note: *Predefined (default) mouse buttons cannot be edited, redefined, or deleted.*

Chapter 4

MENUS

OVERVIEW

The menu bar lists the drop down menus for emulator features and setup. Click on a name and a list of options will drop down. Click on the desired option to display a dialog box or to execute a command or feature.

The MS320 menus are as follows:

> ➢ *File*
> ➢ *Edit*
> ➢ *View*
> ➢ *Setup*
> ➢ *Execute*
> ➢ *Connect*
> ➢ *Help*

FILE

The *File* menu lists different features requiring filename input. This menu contains the features related recording, editing, and running Command Files, Log Files, Text Files, and Picture Files (*MS320* only). In addition, File Transfers and Print.jobs are initiated through the *File* menu.

Edit Command File Selection

To edit a command file:

1. Click on **File - Edit Command File** to display the *Edit Command File Selection* dialog box.

2. Select or enter the name of the command file to edit.

3. Click **Open** to launch the Notepad editor with the selected file loaded for editing.

Run Command File Selection

To run a command file:

1. Click on **File - Run Command File** to display the *Run Command File Selection* dialog box.

2. Select or enter the name of the command file to execute.

3. Click **Open** to execute the selected command file.

Record Command File Selection

To record a command file:

1. Click on **File – Record Command File** to display the *Record Command File Selection* dialog box.

2. Select or enter the name of the command file to record.

3. If desired, check **Append** to append recorded date to the end of an existing command file, or enable **Overwrite Protection** to be prompted before overwriting an existing file.

4. Click **Save** to open the command file and begin recording. To stop recording, click **on File - Stop Recording Command File**.

Capture Text to File

The Capture Text to File feature records all data sent to the emulator from the host into a file on the PC. The data is first interpreted by the emulator, so it appears in the log file as it appears on the screen.

To capture text to a file:

1. Click on *File - Capture Text to File* to display the *Capture Text to File* dialog box.

2. Select or enter a name of the capture file where the data is recorded.

3. If desired, check **Append** to append recorded date to the end of an existing command file, or enable **Overwrite Protection** to be prompted before overwriting an existing file.

4. Click *Save* to open the capture file and begin capturing. To stop capturing text, click *on File - Stop Capturing Text to File*.

Record Log File Selection

The Log feature records all data sent to the emulator from the host into a file on the PC.

1. Click on *File - Record Log File* to display the *Record Log File Selection* dialog box.

2. Select or enter the name of the log file where the data is to be recorded.

3. If desired, check **Append** to append recorded date to the end of an existing command file, or enable **Overwrite Protection** to be prompted before overwriting an existing file. This also applies when opening a log file from the command line.

4. Click *Save* to open the log file and begins recording. To stop recording, click on *File - Stop Recording Log File*.

Replay Log File Selection

To replay a log file:

1. Click on *File - Replay Log File* to display the *Replay Log File Selection* dialog box.

2. Select or enter the name of the log file to replay.

3. Click *Open* to open the selected log file.

Create Picture File Selection

(*MS320* Only)

While drawing a graphics image on the screen, the emulator saves the commands necessary to reproduce the image in a temporary file. This file is then used by the emulator to reproduce the image whenever screen redrawing is required.

The temporary file is cleared and reset each time a ReGIS clear screen command is received. It is possible to copy the temporary file into a permanent file for reproduction at a later time.

To create a picture file:

1. Click on **File – Create Picture File** to display the *Create Picture File Selection* dialog box.

2. Select or enter the name of the picture file where the data is to be recorded.

3. Click **Save** to save the picture file.

Replay Picture File Selection

To replay a picture file:

1. Click on **File - Replay Picture File** to display the *Replay Picture File Selection* dialog box.

2. Select or enter the name of the picture file to replay.

3. Click **Open** to open the selected picture file.

Receive

To receive a file from the host to your PC:

1. Click **File - Receive** to display the *File Receive Selection* dialog box. Select the desired transfer protocol. If are using Kermit, select **Server** or **Non-Server** mode.

2. If the **Host File** name input box appears, enter the name of the host file to transfer. If the Host File name input box is not visible, enter the name for the PC file.

3. Click **OK** to start the transfer. (If a filename is double-clicked, the file is selected and the transfer begins immediately.)

Send

To send a file from your PC to the host:

1. Click *File - Send* to display the *File Send Selection* dialog box. Select the desired transfer protocol. If are using Kermit, select **Server** or **Non-Server** mode.

2. Select the PC files to send. Wildcards and path names can be used. If wildcards are used, pressing Return updates the file list to display the selected files.

3. Click *OK* to start the transfer. (If a filename is double-clicked, the file is selected and the transfer begins immediately.)

Print

Note: *Changes to this dialog are not saved; they are valid for the individual cycle only.*

To perform a standard print job:

1. Click on *File - Print*.

2. The list of printers installed on your system (*Control Panel – Printers*) display in the **Printer** list. If no printer displays, MS320 was unable to detect a default printer on your system. Select the desired printer from the list.

3. To print to a file in lieu of a printer, check the **Print to File** option. The *Print to File Selection* dialog box appears. Select or enter the name of the file. The default extension of .PRN is used.

4. Select the **Print Range** from the following options:

    Screen
    Prints only the text on the screen.

    Scrollback
    Prints the text on the screen and in scrollback.

    Selected
    Prints only selected text. If no text is selected, this option is disabled.

    Graphics
    Prints graphics. (VT340 mode only.)

5. Enter the number of **Copies** to print.

6. When finished selecting the options, click *OK* to print.

Print Close

Ends Continuous Print mode.

Page Setup

The Page Setup selects various options for the printer. Click on **File - Page Setup** to display the initial *Page Setup* dialog box. From this dialog, you can select the standard print options, such as page layout and orientation. Most of the page options unique to MS320 can be found by clicking the **Options…** button.

> **Note:** *Changes made to this dialog box are saved for all subsequent print operations.*

Page Setup Options

Click the **Options...** button in the *Page Setup* dialog box to display the *Page Setup* options dialog box.

Automatic Print Mode
When **Off**, the printer prints the contents of the screen in normal mode. **Continuous** mode sends each line of text displayed on the screen to the printer. **Controller** mode send information from the host to the printer.

General Print Options

Automatic Close on Print Screen
If checked, the printer is closed after each print screen. If this option is unchecked, the printer closes after the time specified by **Idle Time before Close** option.

Force Black on White
Forces the printer to reverse the printing from white text on black background to black on white.

Idle Time Before Close
The idle timer monitors the printer activity. When the host sends a message for the emulator to stop printing, the timer takes effect. When the timer expires, the emulator sends the Finalize String, closes the print job and ejects the page. The print job can be closed manually, before time runs out, by clicking the **Close Printer** button on the *Hold Toolbar*.

If the timer is set to manual, the **Close Printer** button must be used to close the print job.

Maintain Font Aspect Ratio
When enabled, the aspect ratio (width and height) of the font is maintained based on the selected printing parameters (paper size, orientation, and margins) in order to fit all the text on the page.

Print to File
When this box is enabled and **OK** is clicked, the *Print to File Selection* dialog box appears. Select or enter the name of the file. The default extension of .PRN is used.

Use Internal Printer Font
If enabled, the emulator will print without sending a downloadable font to the printer. Instead it will print using printer's internal font. Note that to print line drawing characters, the appropriate printer font must be selected locally on the printer.

Print Controller Options

These options are available when **Use Windows Print Driver** is selected.

Use Windows Print Driver
Enables the use of the *Windows* Print driver, which is normally bypassed during controller mode printing.

Columns
Determines the number of columns to be printed on the page during controller mode printing.

Rows Per Page
Sets the number of rows to be printed.

Auto Wrap
If checked, wraps any text that appears beyond the defined number of columns to the next line. If left unchecked, any text that appears beyond the defined number of columns is not printed.

Auto Calculate Rows
When selected, ignores the set number of rows and auto calculates the optimal number of rows to be printed for the page based on the parameters set and selected in **Columns** and **Maintain Font Aspect Ratio**. If either parameter is changed, a new calculation is provided.

Print Controller Strings

These strings define the character strings that control various printer functions. Most printer control strings have an enable string that selects a printer feature and a disable string that deselects a printer feature.

The printer strings can include any ASCII control character.

Example: **<ESC> <^O>**
                        Enables condensed print for the IBM ProPrinter.

Initialization
The initialization string can be used to select a specific printer connected to a printer sharing device and select a printer feature, such as condensed print, prior to sending the printer data. This string is sent to the printer, at the beginning of printer output, when the print is initiated.

Finalize
The reset string is sent to the printer at the end of a print operation, and can be used to deselect a printer attached to a printer sharing device and reset a printer feature that was enabled by the initialization string.

80 Column
This string is sent when the emulator is in 80 column mode. This string is sent when Continuous print mode is selected or when the host initiates a printer mode.

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132 Column

This string is sent when the emulator is in 132 column mode. This string is sent when Continuous print mode is selected or when the host initiates a printer mode.

Printer	Set String	Reset String
Epson FX, MX, or LQ	<ESC><^O>	<^R>
HP LaserJet	<ESC>(s16.66H	<ESC>(s10H
IBM ProPrinter	<ESC><^O>	<^R>

Form Feed on Close

If enabled, the printer is sent a form feed after every print screen.

Convert LF to CR/LF

If enabled, the printer is sent a carriage return in addition to each line feed it receives.

Exit

Closes all open sessions, exits the emulator (and closes the application window).

E**DIT**

The *Edit* menu lists the *Windows* Clipboard functions.

Copy
Copies selected text to the Clipboard.

Paste
Pastes a copy of the current Clipboard contents at the current cursor position.

Send
Sends the contents of the Clipboard to the host computer. Carriage returns are sent at the end of each line.

Select All
Selects the current screen and all of the scrollback data.

Select Screen
Selects all the text on the screen.

VIEW

The *View* menu options affect the look of the emulation window.

Menu

Toggles the display of the menu bar.

Status Line

Toggles the display of the status line on the bottom of the emulation window.

Centered

If checked, centers the emulation window. Otherwise, the window is left-justified.

Framed

If checked, places a frame around the emulation window. Otherwise, the window is unframed.

Maximize Workspace

Toggles the Maximize Workspace mode on and off. When the workspace is maximized, the status line, menu bar and toolbars are hidden. A checkmark indicates that this option is in effect.

Scrollbar

Toggles the display of the scrollbar.

Terminal Keyboard

Displays a graphical representation of the terminal being emulated, either a VT (includes SCO-ANSI and BBS-ANSI) or a WYSE keyboard layout. To send a key to the host, click the appropriate key on the terminal keyboard. The description of the terminal key being pressed displays on the status line.

File Transfer Messages

Toggles the display of the *File Transfer Messages* window.

Message History

Toggles the display of the *Message History* window.

Toolbars

The display of the Toolbars is controlled in the *Toolbars* dialog box. Click on **View - Toolbars** to select the toolbars to display.

SETUP

The *Setup* menu lists the following categories that customize the emulator to your PC and host computer.

Customize Toolbars

Please refer to Chapter 3 *"Keyboard, Mouse, and Toolbars"* for detailed information on this feature.

Keyboard Mapper

Please refer to Chapter 3 *"Keyboard, Mouse, and Toolbars"* for detailed information on this feature.

Mouse Mapper

Please refer to Chapter 3 *"Keyboard, Mouse, and Toolbars"* for detailed information on this feature.

File Transfer

MS320 includes an ASCII file transfer plus four popular protocols for error free file transfer:

- ➢ Kermit
- ➢ XModem
- ➢ YModem
- ➢ ZModem

Please refer to online Help for detailed information on the *File Transfer Setup* for each protocol.

General

The *General Settings* dialog box contains tabs for *DDE*, *Directories*, and *Log Replay*. To display, click on **Setup - General**.

DDE

Click on **Setup - General** and then select the *DDE* tab. From this dialog, you can enable the **Server** option to allow the emulator to act as a DDE Server. If disabled, the emulator ignores any attempt by another application to initiate a DDE conversation. This is helpful when running multiple instances, e.g., if a specific instance should be prevented from participating in a DDE conversation.

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Directories

Click on *Setup - General* and then select the *Directories* tab.

Command Files
Enter the directory paths containing command files that you wish to read from multiple locations. Separate each path name with a semi-colon.

Picture Files
(VT340 mode only.) Enter the directory path to be used to save and display picture files.

File Transfer Directory
Enter the directory path to be used for file transfers.

Log File Replay

Click on *Setup - General* and then select the *Log Replay* tab. From this box, you set the Sets the rate of replay for log files. Incremented from slowest to fastest, the rates go from 300, 1100, 2400, 4800, 9600 to the maximum baud rate.

In addition, you can set the options to pause the log file at the following points:

Clear Screen
If enabled, causes the log file replay to pause each time the screen is cleared.

Every Page
If enabled, causes the log file replay to pause when a new page of text is scrolled onto the screen.

Text
This parameter is used to enter a comparison string. When the string is matched by data in the replay file, a replay pause occurs. The string can be up to 25 characters in length and can include control characters. To disable the comparison string, leave this field blank.

Terminal

The *Terminal Setup* dialog box contains tabs for *Display*, *Keyboard* and the Terminal type.

Display

Click on *Setup - Terminal*, then select the *Display* tab. The following options are set in this tab:

Columns
Sets the display width to **80** or **132** columns. This option is typically controlled by the host.

Cursor
Selects a **Visible** or **Invisible** cursor.

Cursor Type
Selects a **Block** or **Underline** cursor.

Auto Wrap

Enables or disables auto wrap. If disabled, characters written to the last column of the screen overwrite each other. If enabled, the next received character at the end of a full line wraps to the beginning of the next line. Display lines are 80 or 132 columns, depending on the number of screen columns selected.

Smooth Scroll

Enables or disables smooth scrolling.

Display Lines

Selects the number of lines, from 24 through 48, that are displayed on the emulation screen.

Jump Scrolling

Determines the number of lines scrolled when updating the screen. Increasing the number of lines enables the screen to keep up with the data being received from the host.

Scrollback Lines

Sets the size of scroll memory in lines .The maximum value is 32,768 lines. Based on 25 line screens, the upper limit will reach 1,300 + pages of scroll memory.

Tabs

A small line represents each character of a 132 column line. To add a tab, click on the desired location. An arrow appears for each tab setting. To delete a tab, click on the location again and the arrow disappears. You can also **Clear All** tab settings or set the tabs at specific intervals.

Color Setup

Click the *Color Setup...* button in the *Display* tab to display the *Color Setup*. Select a new color scheme from the predefined schemes or create your own. In addition you can set attributes such as bold, underline, and blink.

When you edit an existing color scheme, the name of the scheme changes to "Custom" and all color information is saved to that scheme.

Keyboard

Click on *Setup - Terminal*, then select the *Keyboard* tab. The *Keyboard* setup dialog box appears. Key behavior and bell options can be set.

Save Now

Click *Setup - Save Now* to save configuration changes immediately.

Save on Exit

This option is enabled by default. All configuration changes are saved when the program exits. To enable or disable this mode, click **Setup - Save on Exit**. When a check mark is displayed, the feature is enabled. If disabled, configuration changes will be lost when the program exits.

EXECUTE

The *Execute* menu lists different emulator commands and features.

Abort

Click on **Execute - Abort** to abort file transfers, emulator commands, and command file execution.

Break (short)

Sends a 200 millisecond break to the Serial or Modem communications port.

Break (long

Sends a 3.5 second break to the Serial or Modem communications port.

Command Line

Displays the command prompt (CMD>) for execution of emulator commands and command files.

Clear Communications

Releases a hold condition and sets flow control on.

DDE Command Builder

Displays the *DDE Command Builder* dialog box.

Drop DTR

Drops the Data Terminal Ready (DTR) and Request to Send (RTS) modem control signal.

Reset

Resets the terminal emulator. The following actions take place during a reset:

- ➢ The default character set is selected.
- ➢ The scrolling region is set to 24 lines.
- ➢ The UDKs are cleared.
- ➢ The screen is erased and the cursor is set to [1,1].
- ➢ Video attributes are set to normal.
- ➢ All screen characters positions are set to erasable.

Send Answerback

Sends the Answerback message to the host. The message is specified in the *Terminal Setup* dialog box, in the *Terminal* tab.

WordPerfect 5.x Mode

Toggles WordPerfect 5.x mode on or off. A checkmark indicates that WP5 mode is enabled. In WP5 mode, the VAX/VMS WordPerfect version 5.x operates using the PC keystrokes. This features allows the user familiar with PC WordPerfect 5.x keystrokes to operate VAX/VMS WordPerfect 5.x without having to learn the VAX WordPerfect 5.x keystrokes.

CONNECT

Connect

Please refer to Chapter 2 *"Getting Connected"* for detailed information on connecting to the host with the *Connections* dialog box.

Session Manager

Please refer to Chapter 2 *"Getting Connected"* for detailed information on connecting to the host with the *Session Manager*.

HELP

The *Help* menu lists the help options.

Contents

Lists all help topics. Cross-referencing and searching is supported.

Using Help

Gives instructions on using *Windows* Help. See the Microsoft *Windows* documentation for more information.

About

General

Displays information such as the version number and release date of the emulator installed on your PC.

Version

Displays the name, version, and path to all the modules used by the emulator.

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