MINISOFT®92

fortheMAC

version 5.1

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Table of Contents

Chapter 1

Introduction

What is MS92 for MAC

MS92 for Macintosh provides HP700/92, VT100, and HP ANSI terminal emulation for Macintosh users. MS92 allows your Macintosh to access data, applications, and storage capacity of your Hewlett-Packard or other host computers, just as if you were using the emulated terminal.

You can connect MS92 to your host by direct cable, modem, or local area network (LAN). With MS92, you have options no ordinary terminal can provide. You can log host data to printers or disk files and automate any task using the TermTalk scripting language. MS92 takes full advantage of the advanced capabilities of the Macintosh interface, including multi-tasking, on-line help, and cut and paste with the clipboard. You can also transfer any type of file between your Mac and host computer.

MS92 for MAC Specifications

Terminal Emulation

To the standard terminal capabilities required by host applications, MS92 adds the power, productivity, and convenience of the Macintosh environment.

HP Terminal Display Features

- User selectable number of columns (40-200)
- Configurable scrolling memory
- Line or smooth vertical scrolling
- Row and column counters
- Underline or block cursor
- Configurable HP display enhancements (inverse, underline, half-bright, blinking, security)
- Text and background colors (HP2397 color pairs) can be specified via a dialog box or an escape sequence.

HP Keyboard Functionality

- Scrolling and cursor positioning via keyboard or mouse
- Edit keys
- Terminal control keys
- Function keys F1 - F12
- Numeric keypad and arrow keys
- Configurable RETURN, TAB, ENTER, and BACKSPACE keys
- Supports 7-bit operation with Danish, French, German, Norwegian, Spanish, Swedish/Finnish, and United Kingdom character sets
- Supports 8-bit operation with Apple international keyboards automatically translating characters into HP Roman-8.

HP Terminal Modes and Functions

- Block/line, block/page, and character mode
- Format or unformatted mode
- Remote or local mode
- Display functions
- Memory lock
- Auto line feed
- Insert character
- Keyboard lock
- Local echo
- Configurable terminal ID
- Transmit-only fields
- Recognizes all HP escape sequences.

HP Function Key Emulation

- Function keys F1 - F12
- Loadable values and two-line on-screen labels
- Function keys can be entered by clicking label, pressing F1 - F12 on keyboard or selecting menu command
- HP System keys supported via menu items and dialog boxes.

VT100 and HP ANSI Emulation

- Function keys PF1- PF4
- On screen LEDs emulate indicators on DEC keyboard
- Answerback message
- Configurable BACKSPACE and shifted BACKSPACE
- HP ANSI emulation adds support for HP escape sequences and downloadable function keys F1 - F12.

Powerful Logging

- Log to local printer, clipboard, or disk file
- Log lines off top or off bottom of display memory
- Log current line, page, all of display memory, display memory from cursor, or selected text via menu items
- Output logged to printer is spooled on disk until you print.

Macintosh Convenience and Ease of Use

- Use mouse or keyboard to position cursor, scroll, select commands, and enter function keys
- Pause button suspends scrolling of received data
- On-screen control bar lets you toggle between editing keys, tab/margin ruler, and control character entry
- Control bar can be hidden for added screen space
- On-screen indicators show row/column position of cursor, status of host connection, keyboard lock, logging, and script recording/execution
- User selectable screen font size
- All terminal, keyboard, connection, and other settings can be saved to a settings file on disk.

Connectivity

MS92 for Macintosh supports a variety of standards-based networking options for the Mac user, including serial, modem, and local area network (LAN) hardware connections such as NSVT and Telnet. Using MS92, you can log on to an HP3000, HP9000, HP1000, DEC VAX, UNIX-based system or other host computer.

Supported Connections

- Serial using printer or modem port (300 to 57,600 baud)
- Automatic dialup with Hayes-compatible modems

File Transfer

MS92 provides reliable, high performance file transfer to a variety of hosts. Companion programs for HP3000 and HP 9000 systems interact with MS92's file transfer facility to ensure error-free transmission. File transfers run in background mode so you can work on other tasks while the transfer is in progress.

HP3000 and HP9000 transfers include

- Data compression
- Dynamically sized data blocks based on network characteristics
- Support for 7-bit and control character sensitive networks
- Backup of Macintosh files to host
- Archival of host files to Mac (Mac can act as intermediary in HP-to-HP file transfer)
- Conversion between HP and Mac text formats
- Translation between HP Roman-8 and ANSI international characters.

Transfers with other hosts

- Includes XMODEM protocol for binary transfer to HP1000 and other non-HP hosts

Scripting Language

MS92 includes TermTalk, a scripting language that automates repetitive tasks. TermTalk is a modern, block-structured language that provides control of MS92's communication with the host and interface to the user.

For best performance, MS92 automatically compiles TermTalk scripts into object code the first time they are executed.

Scripts can be used to

- Set configuration values, dial modems, and log on users
- Run host or Macintosh applications and print files
- Transmit and log data
- Create and delete files on Macintosh or host
- Send and receive files to and from other computers
- Display dialog boxes and accept user input
- Modify the position, size, and appearance of MS92 windows.

Scripts can be created with

- Any Macintosh or host-based text editor
- MS92's script recorder, which observes user actions and generates TermTalk commands to reproduce those actions.

Session 4.3:

MS92's script editing window, which features:

- Cut, Copy, Paste, and Find functions
- Command syntax checking
- Paste Command function enters default command syntax without typing
- Access to all Macintosh fonts, sizes, and styles

Scripts can be

- Distributed (in source code or object code) to users
- Added to and executed from the Script menu
- Assigned to function keys F1 - F12
- Run directly from the built-in editor window
- Run automatically when a MS92 is started or ended
- Initiated by other scripts
- Initiated by the host via an escape sequence
- Initiated by another Macintosh application using AppleEvents.

Sample Scripts

Inside your MS92 folder is a folder titled Scripts. This folder contains sample TermTalk scripts that demonstrate some of the ways you can configure and use MS92, as well as some of the things scripts can do. To find out more about using these scripts, open the Read Me file in that folder.

Chapter 2

Installation and Logon

Requirements and Installation

To use MS92, you must have at least:

- 10 MB of memory on your Macintosh
- Running 10.2 or later

Installing MS92 for MAC

MS92 is shipped on a CD. To install MS92 follow these steps:

1. Insert the MS92 CD into your CD ROM drive.
2. Once the MS92 CD icon appears on your desktop, double click the icon.
3. From the list of files in the MS92 CD folder double click the MS92 Installer icon.
4. The Install MS92 program will automatically start:

1. The specific files installed include: INSTALL.TTS, MS92 Fonts, TYMLINK3000, TYMLINK9000/300, TYMLINK9000/800, UPLOAD.C.

5. Follow the installer prompts. You may be asked to Restart your Macintosh.

6. MS92 is now ready to use.

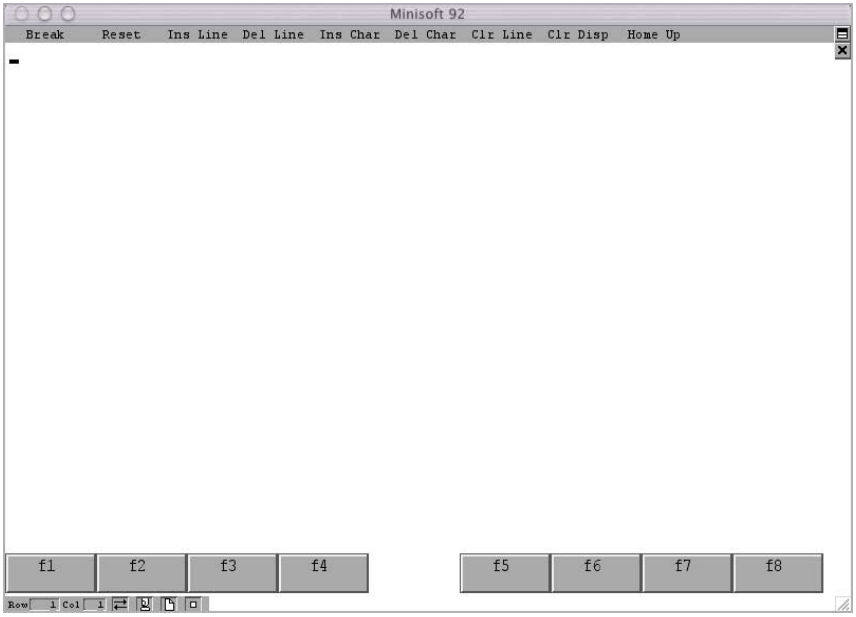
The installation procedures for Tymlink (the file transfer companion program for HP hosts) are described in Chapter 9. Note: Your System Manager or Mac/PC coordinator may have already done this.

Running MS92

Start MS92 in any of the following ways:

- Double-click the application icon.
- Double-click a settings file you have created or that was given to you by someone else.
- Use any other standard method for running a Macintosh application: select the icon, then choose Open from the Finder's File menu choose an alias you have created.

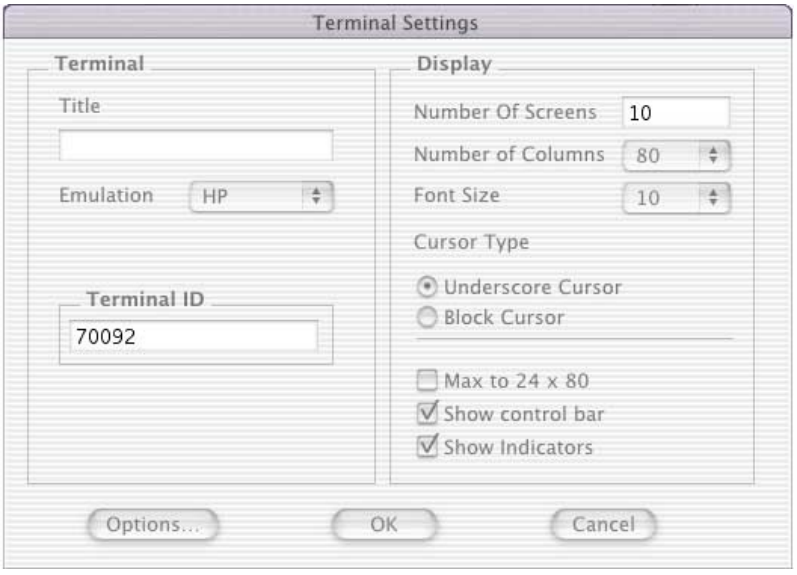
The start up MS92 screen appears:



Log on

To log on, do the following:

1. HP700/92 emulation is the default. If you wish to emulate something other than an HP700/92 terminal, choose *Terminal* from the *Settings* menu:



2. Enter the desired HP terminal ID or choose HP ANSI or VT100 from the Emulation pop-up menu, then click *OK*.

☞ *Note*: If you are using a LAN or modem connection to the host, choose *Connection* from the *Settings* menu to configure the connection type and options such as host node name or phone number:

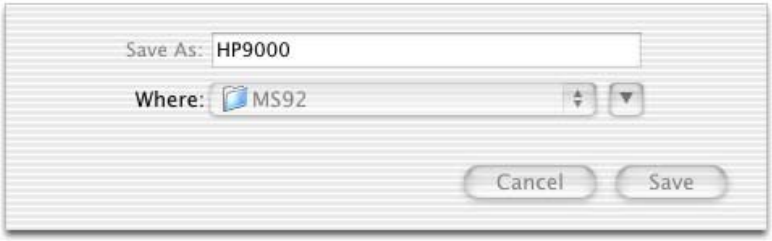
Additional configuration settings are made using the SESSION.HOSTS file, as documented in Chapter 8.

4. Press Return. Like all other characters you enter from the keyboard when the MS92 window is active, the Return character is transmitted to your host system. If you are configured properly, the host returns a prompt character (usually colon (:) on the HP3000 and dollar sign ($) on the HP9000).

5. If no prompt is displayed, check your hardware connections. Then check your configuration values by choosing *Connection* and *Terminal* from the *Settings* menu. These dialog boxes replace the System keys on an HP terminal. If you have questions about the appropriate configuration for communications with your host, see your system manager.

Creating a Settings File

If you make changes to the default configuration, choose *Save* from the *File* menu to save your changes in a settings file.



You can give this file a name that corresponds to the connection type and/or host it is used with, such as HP9000 or Modem to CompuServe. Next time you need to log on with this configuration, run MS92 by double-clicking the appropriate settings file, not the MS92 program icon.

When you choose Save or Save As, the status of the following items are recorded in a settings file:

- All settings made from the Settings menu—terminal, connection, color, file transfer, logging, keyboard/character set, function keys, display enhancements, and script
- Tab and margin settings made from the control bar
- Status of the control bar: hidden or displayed, and whether edit buttons, control character buttons, or margin/tab ruler are displayed
- Status and contents of function key labels
- Size and position of MS92 and script windows

If you are already using a settings file, choosing *Save* updates the file with any changes made since the last save. If you are not working with an existing settings file, a dialog box is displayed for you to enter a file name. If you are already using a settings file, and want to save the changes you have made under a different name, choose *Save As*.

To create a settings file that opens automatically when you double-click the MS92 icon, save your file with the name *MS92 Defaults* in the same folder as MS92.

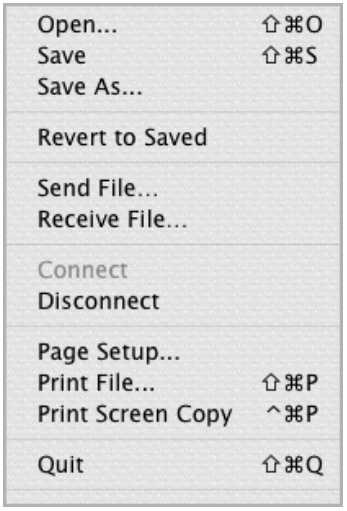
As you become familiar with MS92's capabilities, you may want to create startup and shutdown scripts and link them to your settings files. A startup script is performed automatically when a settings file is opened; a shutdown script is executed when it is closed. For example, you could create a startup script that sends your log on to the host and runs your host application. A shutdown script could exit the application and log off. A sample startup script can be found in Chapter 7 under the heading *Write a startup script*.

Chapter 3

Menu Reference

File Menu

The *File* menu contains commands that manage settings files, control connection and printing, and initiate file transfer.



Open

Loads a settings file created with *Save* or *Save As*.

Save / Save As

Records the current status of the following items to a settings file on disk:

- All settings made using commands from the *Settings* and *Utility* menus
- Tab and margin settings
- Status of the control bar
- Status and contents of function key labels
- Size and position of MS92 window.

If you are already using a settings file choosing *Save* updates the file with any changes made since the last save. If you choose *Save As*, the current settings are saved under the name you specify. If you save a file that has not been saved before, the *Save As* dialog box is always displayed.

You can load the configuration specified in a settings file by double-clicking the file or by choosing *Open* from MS92's *File* menu.

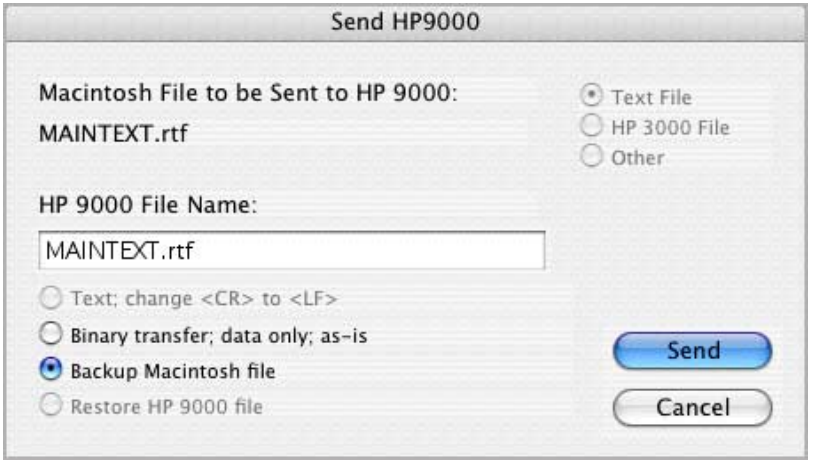
Revert to Saved

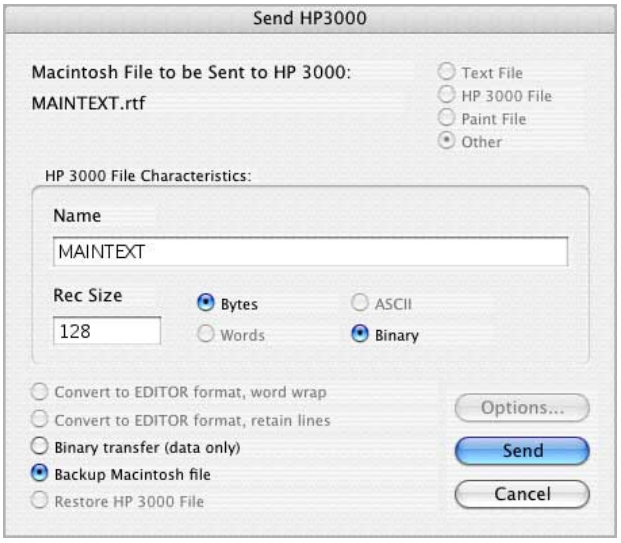
Returns all settings to the values last saved in the current settings file, or to MS92's defaults if no settings file is in use.

Send File

Transfers a file to a host using the protocol and other settings indicated in the *File Transfer Settings* dialog box. Other options are selected in the dialog boxes shown on the next page.

HP3000 or HP9000 Transfers
If the selected protocol is either *MS92 to HP3000* or *MS92 to HP9000*, one of the following dialog boxes is displayed.





Options:

File Types

In the upper right corner of the box, a checkmark indicates what type of Macintosh file is being transferred. This cannot be changed.

Macintosh File Types

File Type	***Description***
Text File	A Macintosh file containing only text characters and tabs; special formatting information such as fonts, page breaks, etc., is not included.
HP3000 or HP9000 File	A backup copy of a host file, transferred to the Macintosh with MS92's Backup HP3000 file or Backup HP9000 file option.
Paint File	A file of the PNTG file type.
Other	Any other type of file.

HP3000 File Characteristics

The default file name is created from the first letter and up to seven subsequent letters and digits of the Macintosh file name. If you do not qualify the file name with a group and account, it is copied into your log on group. You can override all or part of the default name by entering a fully qualified HP3000 file name, including a lock word if desired.

The default *Record Size* is shown in another box. You can supply a different record length only when converting to an EDITOR file or performing a binary transfer. If length is expressed in bytes, the maximum is 32,766. If length is expressed in words, the maximum is 16,383.

Also indicated is whether the data is ASCII or Binary.

HP9000 File Name

The default file name is created using the first 14 letters and digits of the Macintosh file name. If you do not qualify the file name with a path name, the file is copied into your working directory. You can override all or part of the default file name by entering a new file name or path name.

Conversion Options

Depending on the host you are transferring to and the type of Macintosh file, one or more of the conversion methods listed below is available.

Option	***Description***	***File Type***
Convert to EDITOR format, word wrap	To perform word wrap, each record of the EDITOR file is filled with as many whole words (text separated by spaces or non-printing characters) from the Macintosh file as fit in the established record length. A single carriage return is replaced by a space. When consecutive carriage returns are encountered, each one after the first causes a blank record to be written to the EDITOR file. Other non-printing characters are replaced with a space. To change the way tab characters are handled, click the Options button	Text
Convert to EDITOR format, retain lines	Each paragraph in the Macintosh file (string of data terminated by a carriage return) is written to a single record in the HP3000 file. If a line is too long to fit in the established record length, as many characters as fit are placed in the record and additional records are written. A single carriage return is replaced by a space. When consecutive carriage returns are encountered, each one after the first causes a blank record to be written to the EDITOR file. All other non-printing characters are replaced by a space. To change the way tab characters handled, click the Options button	Text
Text; change <CR> to <LF>	Converts a Macintiosh text file into a file suitable for use with HP-UX editors such as vi. It converts a text file that uses the carriage return character to separate lines or paragraphs into a file that uses the linefeed or newline character for this purpose. It is comparable to the icrnl option in the stty command and in the termio structure used by the ioctl system call.	Text

Option	*Description*	*File Type*
Binary Transfer	Copies all data in the Macintosh file into binary file on the host with no modification. Only the data fork of the file is copied; the resource fork, filetype, and icon are not. When performing a binary transfer, each record in the host file is completely filled with data.	All types
Backup Macintosh file	Copies any Macintosh file to the host so that it can later be restored with the Restore Macintosh file option in the Receive File dialog box.	All types
Restore HP3000 or HP9000 file	This option restores a file previously archived on the Macintosh with the Backup HP3000 file or Backup HP9000 file option in the ReceivedFile dialog box.	HP3000 or HP9000

Options Button

The Options button is available for transfers of Text Files to the HP3000 only. It allows you to convert tabs in the Macintosh file to a specified number of spaces in the host file.

XMODEM Transfer

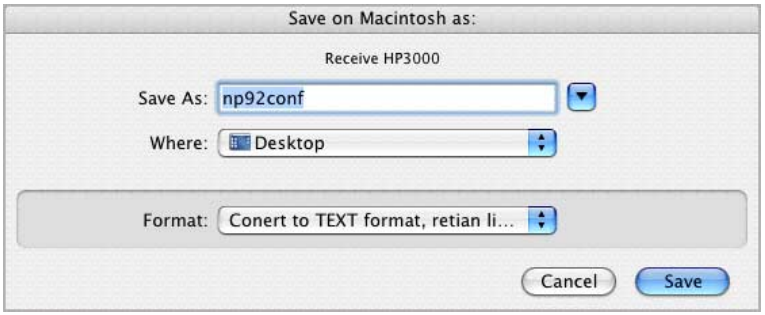
When MS92 to XMODEM protocol is selected in the *File Transfer Settings* box and you choose *Send File* from the *File* menu, transfer begins as soon as you select the file to send. The XMODEM program on the host should already be running.

Receive File

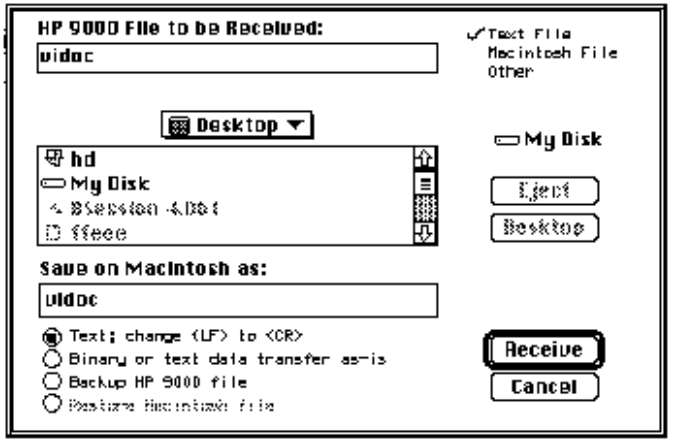
Receives a file from the host using the protocol and other settings indicated in the *File Transfer Settings* dialog box.

HP3000 or HP9000 Transfers
If the protocol selected is either MS92 to HP3000 or MS92 to HP9000, you are first prompted to type in the name of the host file to receive. Once that file has been located on the host, one of the following dialog boxes is displayed:

HP3000



HP9000



File Types

In the upper right corner of the box, a checkmark indicates what type of file is being transferred. This cannot be changed.

File Type	Description
Text File	On the HP3000, this is an ASCII sequential file with record length less than 256 bytes. The file must have either no file code or the file code EDTCT (designating a COBOL source file). On the HP9000, this is a file with no magic number or system ID number in its first four bytes.
Macintosh File	A backup copy of a Macintosh file, previously transferred to the host with MS92's Backup Macintosh file option.
Other	Any host file that is not a text file. KSAM and IMAGE files cannot be transferred.

Macintosh File Name

The default file name and location of the file created on the Macintosh can be overridden with new values.

Conversion Options

Depending on the host you are transferring from and the type of Macintosh file, one or more of the conversion methods listed below are available.

Option	***Description***	***File Type***
Convert to text format word wrap	To perform word wrap, each record of the EDITOR file is filled with as many whole words (text separated by spaces or non-printing characters) from the Macintosh file as fit in the established record length. Single carriage returns are replaced by a space. When consecutive carriage returns are encountered, each one after the first causes a blank record to be written to the Mac file. Other non-printing characters are replaced with a space.	Text
Convert to text format, retain lines	All trailing blanks are stripped from each record in the EDITOR file and a single carriage return is appended. Non-printing characters are placed by a space.	Text
Text; change <LF> to <CR>	Converts each newline or linefeed character in the HP-UX text file into a carriage return. It is comparable to the *onlret* option in the *stty* command and in the *termio* structure used by the *ioctl* system call.	All types
Binary transfer	Copies all data characters in the HP file into a Macintosh file with no modification.	All types
Backup HP3000 or HP9000 file	Copies any HP file to the Macintosh so that it later can be restored with the Restore HP3000 file or Restore HP9000 file option in the Send File dialog box	All types
Restore Macintosh file	This option restores a Macintosh file previously archived on the HP with the Backup Macintosh file option in the Received File dialog box.	Macintosh file

XMODEM Transfer

When MS92 to XMODEM protocol is selected in the *File Transfer Settings* box and you choose *Receive File* from the *File* menu, transfer begins as soon as you select the file to receive. The XMODEM program on the host should already be running.

Connect

If you have chosen Modem as your connection type in the *Connection Settings* dialog box (choose *Connection* from the *Settings* menu), this command dials the phone number entered there.

When you have chosen *NSVT or Telnet* as your connection type in the *Connection Settings* dialog box, choosing *Connect* initiates the handshaking necessary to connect you to the specified host.

If you have chosen *Serial* as your connection type, connection to the host is established automatically. This command is disabled.

Disconnect

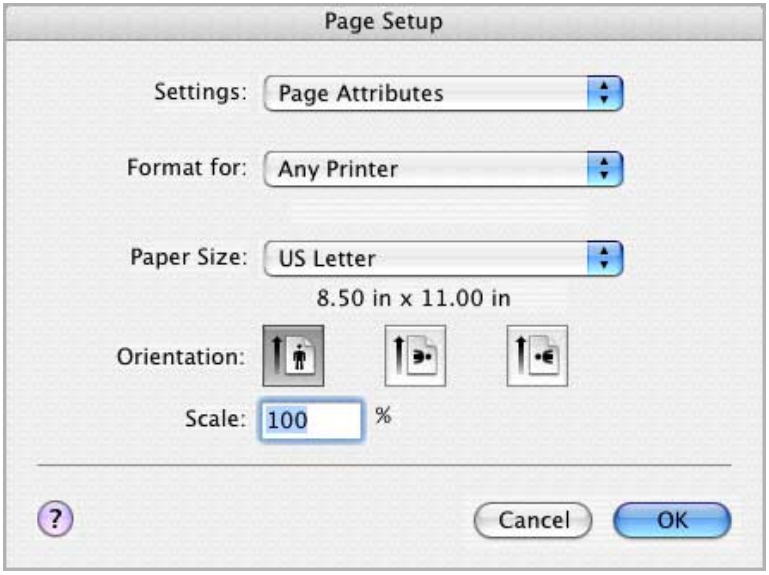
If you are using a modem, choosing this command terminates the telephone connection. Disconnect only works with a Hayes-compatible modem. See Chapter 8 under the heading *Modem connection* for further details.

If you are using a LAN, choosing this command terminates the LAN connection.

If you are using a serial connection, this command is disabled.

Page Setup

Displays the standard page setup dialog box. Controls the format of printing initiated with Print File or Print Logged.



Print File

Displays a dialog box in which you can select any TEXT type file to be printed.

Print Screen Copy

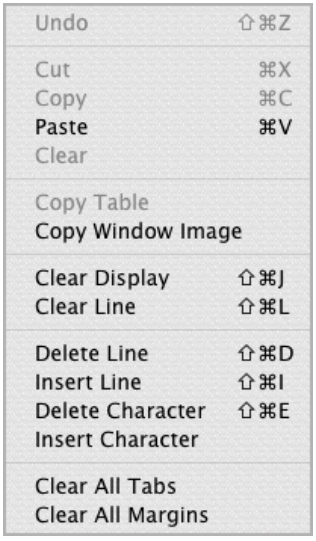
Makes a screen print of your current window and prints the screen print to the configured printer.

Quit

Terminates execution of MS92. Though Quit does not terminate your MS92 on the host computer, it does shut down any LAN connection you may have to the host.

Edit Menu

The Edit menu controls cut and paste with the Macintosh clipboard, HP-style screen control, and editing.



Undo

Not used in MS92. Available for use with desk accessories.

Cut

Cuts selected data to the clipboard, removing the data from display memory.

Copy

Copies selected data to the clipboard, leaving the data in display memory. If you select a line of data terminated by a carriage return, the carriage return is also copied.

Paste

Pastes data from the clipboard to the current cursor position, leaving the data on the clipboard. Carriage returns are pasted along with text.

Clear

Clears selected data from display memory without placing it in the clipboard.

Copy Table

Copies selected data to the clipboard, converting one or more spaces in the copied text into one tab character.

Copy Window Image

Places an image of the current contents of the window, including function keys, on the clipboard in PICT format. By default, the window image is copied as a single bitmap. Hold down the SHIFT key, and then select this item to copy the image as multiple objects. This facilitates editing of text.

Clear Display

Emulates the CLEAR DISPLAY key on an HP terminal, clearing from the current cursor position to the end of display memory.

Clear Line

Emulates the CLEAR LINE key on an HP terminal, clearing from the current cursor position to the end of the line.

Delete Line

Emulates the DELETE LINE key on an HP terminal, removing the entire line in which the cursor is located. Subsequent lines are scrolled up one line to take the place of the deleted line; the cursor is moved to the left margin.

Insert Line

Emulates the INSERT LINE key on an HP terminal, inserting a blank line preceding the one in which the cursor is located. The line in which the cursor is located and all subsequent lines are moved down one line; the cursor is moved to the left margin of the newly inserted line.

Delete Character

Emulates the DELETE CHAR key on an HP terminal, removing the character at the current cursor position. Characters to the right of the deleted character are moved left one position.

Insert Character

Emulates the INSERT CHAR key on an HP terminal, enabling you to insert multiple characters into a line without overwriting existing characters. Existing characters are shifted right one position for each character you insert; characters shifted past the right margin are lost. When Insert Character is chosen, insert character mode is turned on, and the Ins Char edit button on the control bar is inverted. To turn this mode off, choose the command again.

Clear All Tabs

Clears all tab settings.

Clear All Margins

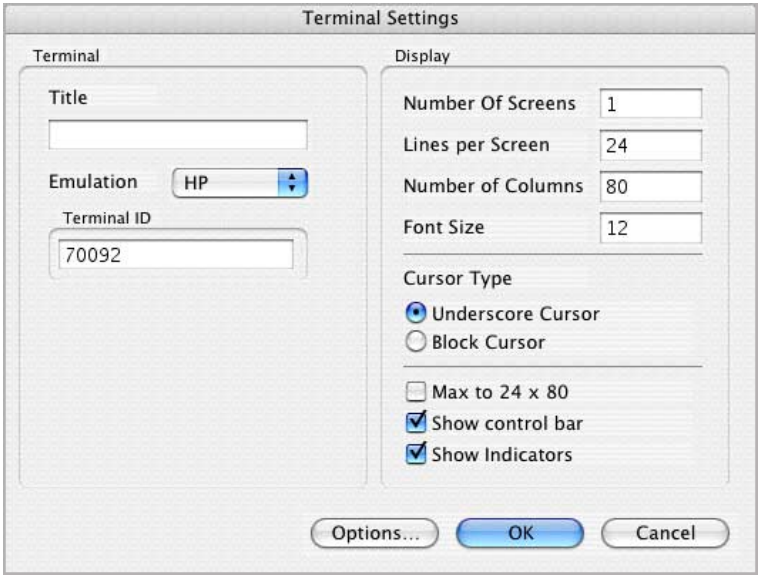
Clears margin settings, returning to the default left margin at column one and default right margin at column 80, 132, or 160, depending on the Number of Columns you have chosen in the Display area of the *Terminal Settings* box.

Settings Menu

The Settings menu contains items that control all configurable aspects of MS92's operation. All Settings menu options are saved when you select *Save* or *Save As* from the *File* menu to create a settings file. When such a file is opened, all the options it contains are enabled.

Terminal

This dialog box contains items that control terminal emulation and screen display:



Title

Text you enter here is displayed in MS92's title bar, replacing *MS92 from Tymlabs*.

Emulation

There are three choices in this pop-up menu. The choice you make effects both the Terminal ID/Answerback area immediately beneath it, as well as the options displayed when you click the Options button at the lower right of the box.

- *HP*
  Emulates an HP700/92 terminal, and responds to status requests from programs running on the host (escape sequence ec *s^) with the configured Terminal ID. The default is 70092. If you want the host program to handle communications with MS92 as if it were talking to an HP2392 terminal, enter 2392A in this area. Other possible entries include 2622A or 2624A.
- *HP ANSI*
  Emulates HP ANSI terminal support (VT100 plus a limited group of HP escape sequences). Responds to enquiries (ENQ) from the host with the configured Answerback. The answerback may include control characters.
- *VT100*
  Emulates a DEC VT100 terminal. Responds to enquiries (ENQ) from the host with the configured Answerback. The answerback may include control characters.

Display

The following items control the terminal display.

- *Number of Screens*
  For HP terminals, the default is 10, and the upper limit is determined by available memory. For HP ANSI terminals, the default is 1, and the upper limit is determined by available memory. For VT100 terminals, a grayed-out 1 is displayed, as no more than one screen of memory can be configured.
- *Lines per Screen*
  Default is 24.
- *Number of Columns*
  On each of the terminals emulated, you can choose from 40-200 column operation from this menu.

  Default: 80
- *Font Size*
  MS92 uses custom fonts in order to display text in the 24-row by 80-column format of a terminal screen. The fonts include the standard alphanumeric characters and symbols plus the characters used to display control characters. Line drawing and other alternate character sets are provided as well. Alternate character sets are activated using escape sequences.

  You can choose to display text in either 10-point or 12-point characters. When you change the size, the font used in the function key labels and control bar is also resized.

  Default: 12 point

Cursor Type

The cursor can be an Underscore or a Block Cursor.

Default: Underscore Cursor

Max to 24 x 80

Normally, when you click the zoom box at the right of the title bar, the area of the MS92 window zooms between the size you last chose by dragging the grow box and the size of your monitor. When this box is checked, the window zooms between the size you last chose by dragging the grow box and the program default, which is 24 rows x 80 columns.

Default: Max to 24 x 80 off

Show Control Bar

When this box is checked, the control bar and rotator button at the top of the screen are displayed. When it is not checked, the control bar is hidden and this area is used to display data.

Default: Show control bar on

Show Indicators

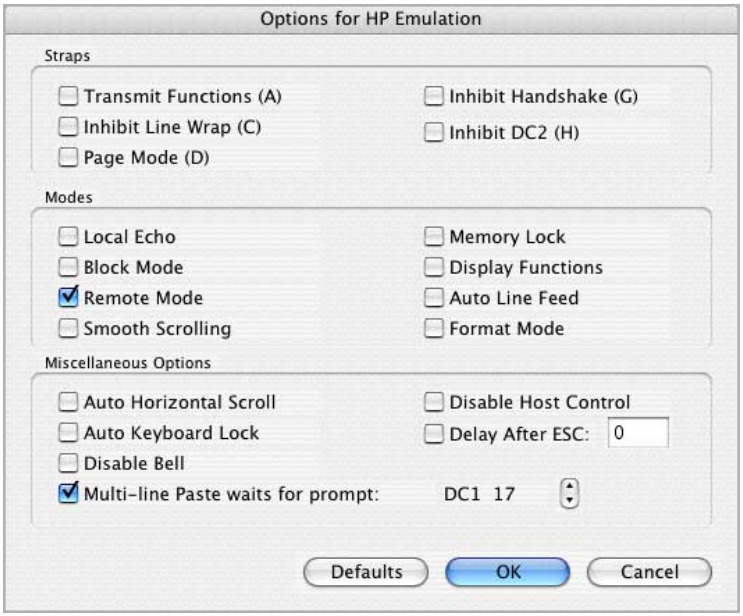
When this box is checked, the row and column counters, connection indicator, keyboard lock indicator, logging indicator, and script indicator at the lower left of the window are displayed. When it is not checked, the indicators are hidden.

Default: Show indicators on

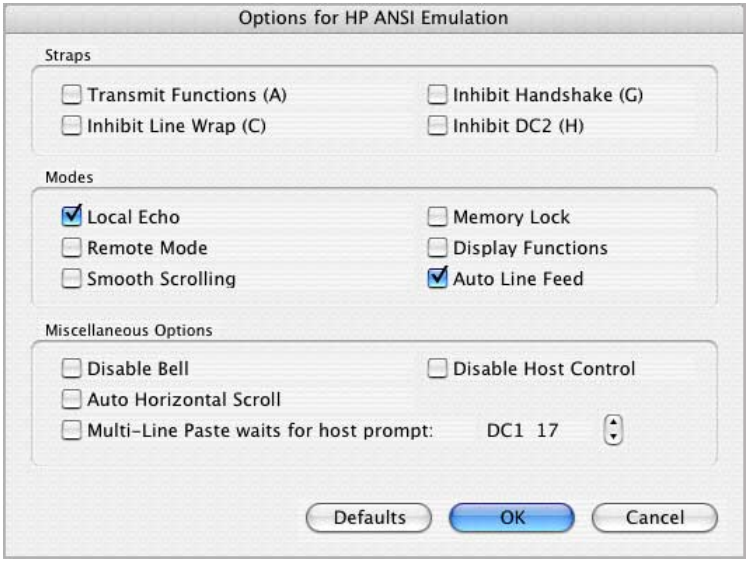
Options

MS92's terminal options are described below. Each terminal emulated supports a subset of these, listed in its *Options* dialog box.

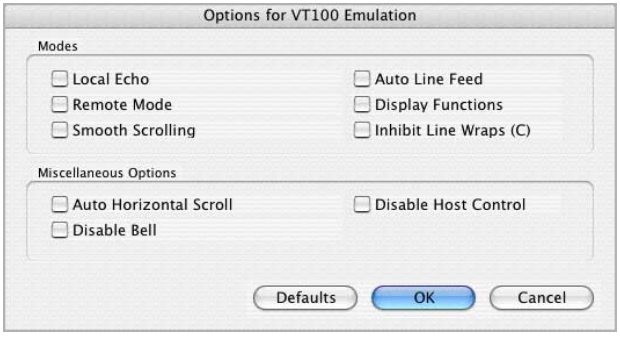
HP:



HP ANSI:



VT100:



Straps:

Transmit Functions (A)

When Transmit Functions is turned off, the functions of special keys for cursor movement, the arrow keys, and so on, are performed locally. They are not transmitted to the host computer. When Transmit Functions is turned on, the escape sequences are transmitted to the host computer and performed at the terminal, only if they are echoed by the host. (If Local Echo is also turned on, the sequences are performed locally and sent to the host, so if the host echoes them back they are performed twice.)

Default: Transmit Functions off

Inhibit Line Wrap (C)

When Inhibit Line Wrap is turned off, MS92 wraps automatically to the next line when the cursor reaches the right margin. This causes the cursor to move to the left margin of the next line. When Inhibit Line Wrap is turned on, the cursor remains at the right margin until a carriage return or some other cursor movement function is performed. Any characters entered overwrite the existing character in the last column of the current line.

Default: Inhibit Line Wrap off

Page Mode (D)

There are two types of block mode operation: block/page mode (Page Mode on) and block/line mode (Page Mode off). In block/page mode, all data in display memory (or only the unprotected fields if format mode is enabled) is transmitted when you press ENTER. In block/line mode, data is transmitted one line at a time (or one unprotected field at a time if format mode is enabled).

Default: Page Mode off

Inhibit Handshake (G)

Together with Inhibit DC2 (strap H), the setting of this field determines the type of handshaking used when transferring data from the terminal to the host computer.

Default: Inhibit Handshake off

Inhibit DC2 (H)

Together with Inhibit Handshake, the setting of this field determines the type of handshaking used when transferring data from the terminal to the host computer.

Default: Inhibit DC2 off

Modes:

Local Echo

When operating in remote mode with Local Echo turned off, characters are transmitted as you key them. If the remote system echoes the characters, they are displayed on your screen. When you operate with Local Echo turned on, MS92 displays the characters in addition to transmitting them. If the host echoes them back, they are displayed twice. However, if the host is operating in half duplex mode it does not echo the characters, so Local Echo must be turned on to display the characters on the screen. For example, this may be the case when running over an X.25 network.

When you are operating in local mode, MS92 displays the characters you enter automatically. The Local Echo setting has no effect.

Default: Local Echo off

Block Mode

Indicates whether the terminal is operating in block mode or character mode. When operating in character mode, characters are transmitted to the host as they are keyed. In block mode, data is transmitted when you press the ENTER key on the numeric keypad on your Macintosh.

There are two types of block mode operation: *block/page mode* (Page Mode on) and *block/line mode* (Page Mode off). In block/page mode, all data in display memory is transmitted when you press ENTER. In block/line mode, data is transmitted one line at a time.

Default: Block Mode off, character mode operation

Remote Mode

When Remote Mode is ON a communications link exists between the terminal and the host computer. When Remote Mode is OFF no such link exists; the terminal is operating in local mode.

Default: Remote Mode on

Smooth Scrolling

When Smooth Scrolling is enabled, data is rolled up and down the screen smoothly, rather than jumping a line at a time. As on an HP terminal, Smooth Scrolling is rather slow.

Default: Smooth Scrolling off

Memory Lock

Locks all lines on the screen above the current position of the cursor. The locked lines remain frozen in position while lines preceding and following scroll beneath them. Memory Lock also has a second function. If the cursor is homed before memory lock is turned on, all lines in display memory are protected so that no data can be lost off the top.

Default: Memory Lock off

Display Functions

When Display Functions is turned on, a special character set is used to display ASCII control codes and escape sequences instead of performing the functions as usual.

Default: Display Functions off

Auto Line Feed

When Auto Line Feed is on, an ASCII line feed control code is automatically appended to each ASCII carriage return control code generated through the keyboard.

Default: Auto Line Feed off

Format Mode

When Format Mode is on, data can be typed only in unprotected fields, and only unprotected fields are transmitted to the host computer when you press ENTER. When Format Mode is off, data can be typed anywhere on the screen and all data is transmitted.

Default: Format Mode off

Inhibit Line Wrap (C)

When Inhibit Line Wrap is turned off, MS92 wraps automatically to the next line when the cursor reaches the right margin. This causes the cursor to move to the left margin of the next line. When Inhibit Line Wrap is turned on, the cursor remains at the right margin until a carriage return or some other cursor movement function is performed. Any characters entered overwrite the existing character in the last column of the current line.

Default: Inhibit Line Wrap off

Miscellaneous Options:

Auto Horizontal Scroll

When Auto Horizontal Scroll is on, scrolling occurs automatically when character data reaches the right edge of the screen. By default, this mode is off so that data can be placed in display memory beyond the right edge of the screen without scrolling, thereby increasing display speed.

Default: Auto Horizontal Scroll off

Auto Keyboard Lock

Most HP3000 applications that perform block transfers lock and unlock the keyboard so that no characters can be typed while the transfer is in progress. However, when running over X.25 networks, such locking is usually not performed. When Auto Keyboard Lock is enabled, MS92 automatically locks the keyboard and the mouse at the beginning of a block transfer and unlocks them when the transfer is complete.

Default: Auto Keyboard Lock off

Disable Bell

Disables the ringing of the terminal bell by applications running on the host. Also disabled is the automatic ringing performed by MS92 when the cursor reaches the position eight characters to the left of the right margin and when an unprotected field is completely filled in format mode.

Default: Disable Bell off

Multi-Line Paste Waits For Prompt
or Multi-Line Paste Waits for Host Prompt

To allow you to paste multiple lines of data into your host applications, MS92 waits at the end of each line for the host computer to return a designated character to signal that it is ready to receive another line of data. On the HP3000, this Host Ready character is a DC1 (ASCII value 17). For compatibility with other hosts and applications, you can configure whether MS92 waits for a host ready character, and what this character is.

Default: Multi-line Paste Waits on; Host Ready char is DC1

Disable Host Control

Unless this option is selected, MS92 allows a host computer to execute almost any TermTalk script language command using the host control facility. The host sends the text of the command to MS92 in an escape sequence. MS92 then compiles and executes the command. Depending on the escape sequence used to send the command, MS92 returns a completion status code to the host so the host program can tell if the command was successfully executed. See Appendix D of the TermTalk manual for details. When this option is selected, MS92 ignores host control escape sequences.

Default: Host Control enabled

Delay after ESC

When you are operating above 2400 baud with Transmit Functions turned on, the use of the mouse for cursor positioning can cause data overruns on the HP3000. The overruns are due to the rate at which this process generates escape sequences. If this occurs, use this option to specify a delay after the transmission of each escape character. The delay is specified in sixtieths of a second.

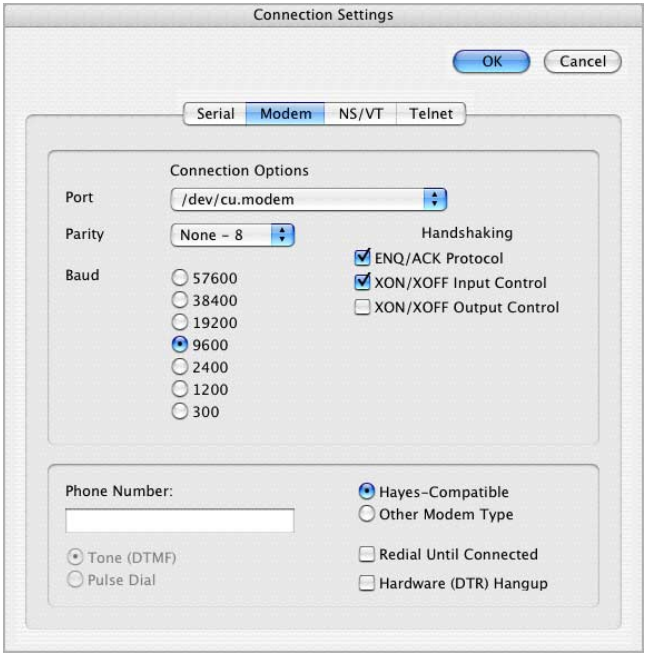
Default: No delay after ESC

Connection

The Connection pop-up menu lets you choose from Serial, Modem, AdvanceNet, or Telnet connection. (For more details on direct, modem, and LAN connection see Chapter 10.) The connection options in the lower portion of the box change as you make different choices from the pop-up menu.

Serial:

Modem:


Connection Settings
OK
Cancel
Serial
Modem
NS/VT
Telnet
Connection Options
Port
/dev/cu.modem
Parity
None - 8
Handshaking
ENQ/ACK Protocol
XON/XOFF Input Control
XON/XOFF Output Control
Baud
57600
38400
19200
9600
2400
1200
300
Phone Number:
Hayes-Compatible
Other Modem Type
Tone (DTMF)
Pulse Dial
Redial Until Connected
Hardware (DTR) Hangup

NSVT:


Connection Settings
OK
Cancel
Serial
Modem
NS/VT
Telnet
Host Node Name
123.857.52.1
Enter the name or IP address of the HP 3000 host on the network that you want to connect to.

Telnet:

Port

The port used to connect your Macintosh to the host.

Default: Modem

Baud

The speed of data transmission in bits per second.

Default: 9600

Parity

The type of parity generation and checking used with each data character transmitted and received. This is followed by a slash and a numeral indicating the number of bits per character. MS92 sets stop bits to one or none automatically, depending on your parity selection.

Default: None/8

ENQ / ACK Protocol

Enables the use of the Hewlett-Packard ENQ/ACK handshake. On the HP3000 under MPE (though not under MPE XL), you must be signed on to a port configured as TERMTYPE 10 (or add the TERM=10 parameter to your :HELLO command) to use ENQ/ACK.

Default: ENQ/ACK Protocol on

XON / XOFF Input Control

Enables the use of XON (DC1) and XOFF (DC3) handshake with transmissions to the terminal.

Default: XON/XOFF Protocol on

XON / XOFF Output Control

Enables the use of XON (DC1) and XOFF (DC3) handshake with transmissions from the terminal. This may be required when running over an X.25 network if the local pad is configured to use XON/XOFF flow control.

Default: XON/XOFF Protocol off

Phone Number

For modem connections, enter the phone number, including pause characters (,) if necessary.

Hayes-Compatible Modem

If your modem is Hayes-compatible, click the appropriate radio button. Indicate whether the phone line is tone or pulse, and if you like choose *Redial Until Connected*. The setup and dialing commands for Hayes-compatible modems are performed automatically. See *Modem connection* in Chapter 8.

Other Modem Type

If you are using a modem that is not Hayes-compatible, choose *Other Modem*. Include any setup and dialing commands required in the phone number string. (Strings that contain multiple carriage returns cannot be entered in this box, and must be typed from the keyboard. You could also write a TermTalk script to dial the number.) Pause characters (,) may also be entered in the phone number if necessary.

Redial Until Connected

Default unchecked.

Hardware (DTR) Hangup

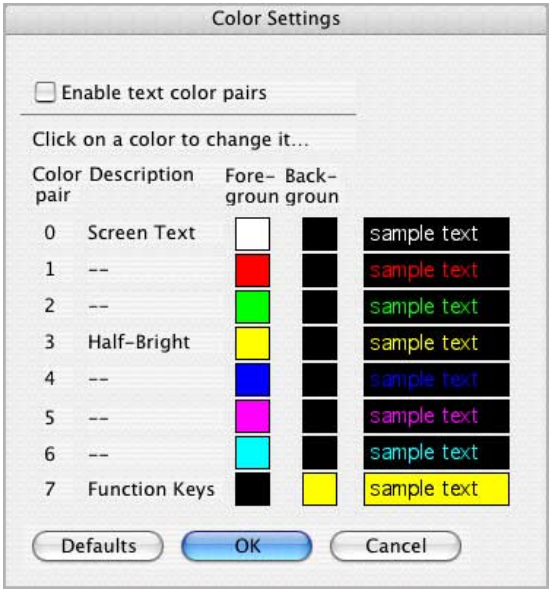
Useful primarily when you are not actually communicating using a modem, but are hard-wired to a host network. Choosing *Hardware* (DTR) *Hangup* changes what happens when you choose the *Disconnect* command from the *File* menu, or when an ec -f (modem disconnect) is received. Instead of sending the usual hang up commands, the DTR (Data Terminal Ready) line on the serial port is lowered for two seconds.

Host Node Name

Specifies the node name of the target computer for LAN connections. For more information on configuring a LAN connections, see *LAN connection* in Chapter 10.

Color

If you have a color monitor, text displayed by MS92 can be colored the same way it is on an HP2397 terminal, using *color pairs*. A color pair is composed of a foreground color used for the characters, and a background color used for the area around the characters. MS92 adds the capability to change the colors used for each pair to any of the colors available on the Macintosh using the dialog box below.



The color pair assignments shown above are terminal defaults. Host applications can make other assignments. HPDESK, for example, displays function keys with color pair 3. The color pairs not labeled above are often used by VPlus block mode applications.

When you click any foreground or background color, a color wheel is displayed:

Move your pointer around the wheel until you see the desired new color in the top half of the Select a new color box. When you click *OK*, the color in this box replaces the color you clicked.

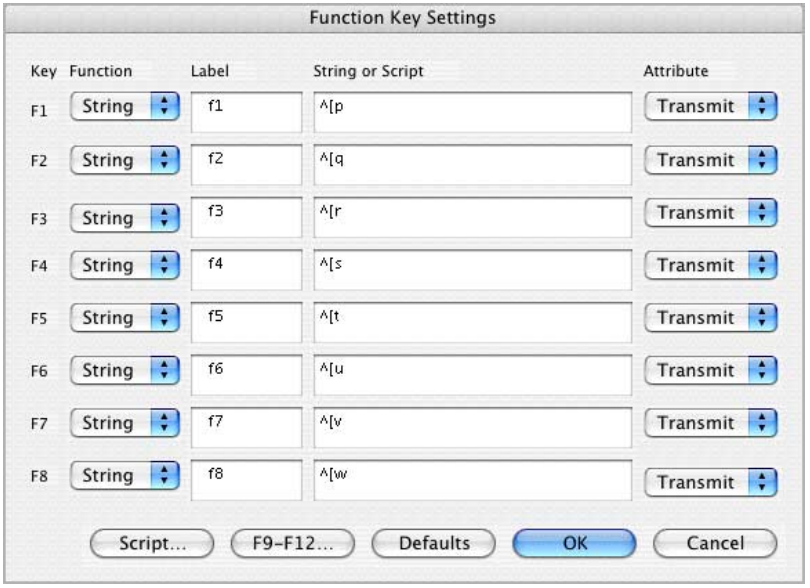
For information on setting color with escape sequences, see Appendix A.

Function Keys

Like those of an HP terminal, MS92's function keys F1 through F12 can be redefined either locally or by a program executing on the host computer.

When the Function Key Settings dialog box first appears, the definitions for F1 through F8 are displayed. To display the definitions for F9 through F12, click the F9 - F12 button. To return to the defaults for all keys, click *Defaults*.

To turn on display functions so that control characters in your message strings are displayed, check the box at the bottom of the screen.



For each key, the following four fields may be set:

Function
When you choose *String*, the function key works as on an HP terminal. The string you specify is either transmitted to the host or performed locally, depending on the setting of the Attribute field.

When you choose *Script*, the function key runs the script whose name is shown in the *String* or *Script* field.

Label
Two lines of eight characters each, displayed in the on-screen function key labels.

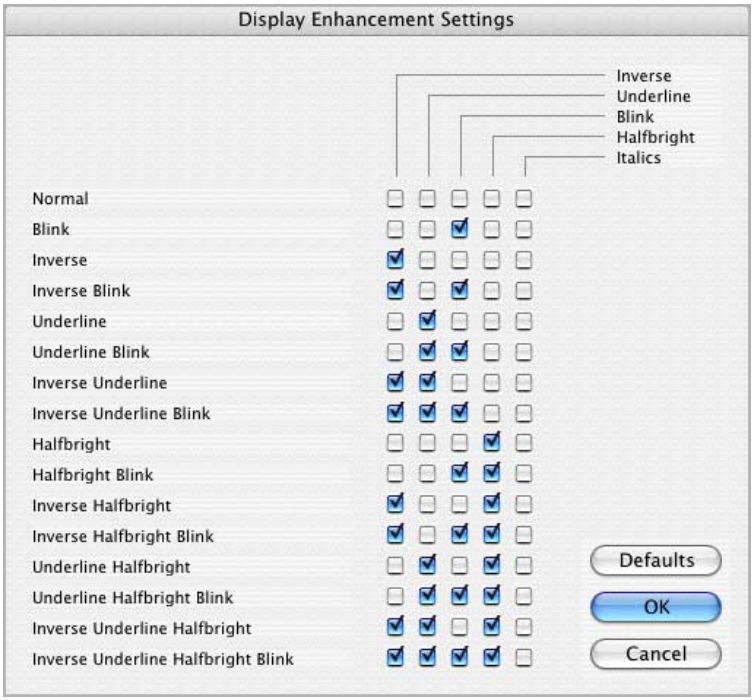
String or Script
For a String type function key, this is the string transmitted to the host or performed locally. For a Script type function key, this is the name of the script. You can either type in the name of a script file or click the Script button at the bottom of the box to choose a script. The path name can be up to 80 characters in length.

Attribute
String type function keys are assigned an operational attribute: Normal, Transmit, and Local. Transmit, the default, sends the value and adds a carriage return to the end of it. Normal sends the value with no carriage return. Local displays the value on your screen without transmitting anything. The Attribute field has no meaning for Script type function keys.

Display Enhancements

HP terminals provide four different display enhancements (blink, inverse, underline, and half-bright) that may be used individually or in combination to highlight fields on the screen. The Macintosh supports all of these enhancements accept half-bright, and MS92 adds box and bold enhancements.

You control how the display enhancements requested by your application are implemented by MS92 using the dialog box below.



For each of the possible HP enhancement combinations, you can specify any combination of box, bold, blink, underline, and inverse. By default, the bold enhancement is substituted whenever half-bright is requested. The box enhancement is not used by default, but can be substituted for any of the other enhancements. It is helpful with applications that use multiple enhancements to display bar charts, such as HP OPT/3000.

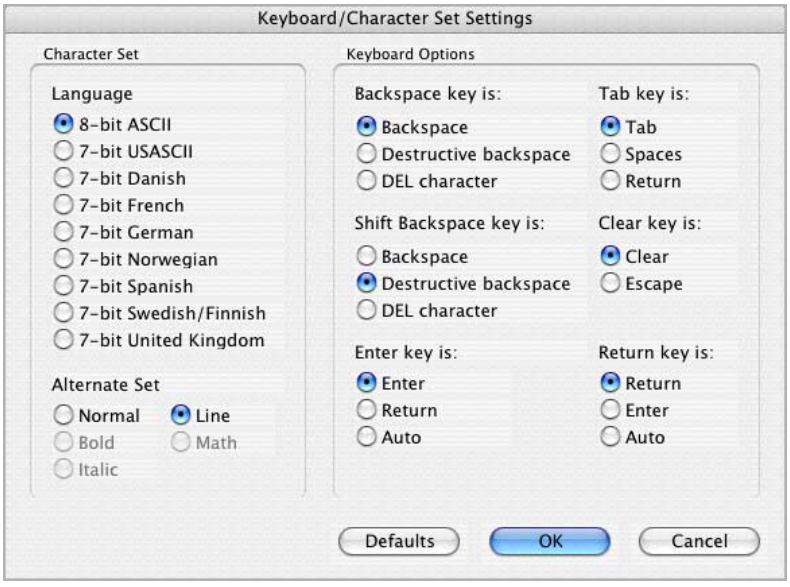
If you are running in color, the half-bright and inverse display enhancements are implemented as they are on an HP terminal. Color pair 3 (cyan on white) is used for half-bright, and inverse is implemented by reversing the foreground and background colors of the current color pair.

Note that use of the box and inverse enhancements slows MS92's display speed.

Once you have clicked OK in this box, MS92 must go through all of display memory checking (and possibly changing) the existing enhancements. This process may take several seconds, depending on the number of screens in memory.

Keyboard / Character Set

You can configure character set and keyboard options in the box below.



Character Set

Language

MS92 supports both 7-bit and 8-bit operation, meaning it can send, receive, and represent ASCII characters using either 7 or 8 bits. Its default is 8-bit ASCII. In 8-bit ASCII mode, you enter international characters in standard Macintosh style. (To locate characters not labeled on your keyboard, use the Key Caps desk accessory, and select the HPScreen font from the Key Caps menu. On the U.S. keyboard, many characters are generated using the ALT/OPTION key.)

MS92 translates the characters you type into the corresponding HP Roman 8 characters before transmitting them to the host. Conversely, characters sent from the HP host computer are translated into the Macintosh character set as they are received.

A chart of the Roman 8 international characters is found in Appendix B.

If you choose a 7-bit language in the Keyboard/Character Set dialog box, only a subset of international characters is supported. You can enter these characters in Macintosh style, described above, or HP 7-bit style. To enter an international character in HP 7-bit style, see Appendix B.

Default: 8-bit ASCII

Alternate Set

Here you choose which alternate character set is enabled by the Shift-In control characters.

Default: Line Drawing

Keyboard Options

You can configure the BACKSPACE, SHIFT BACKSPACE, ENTER, TAB, CLEAR, and RETURN keys. By default, the function of each of these keys corresponds to the key with the same name on an HP terminal keyboard. The exception is the Shift Backspace combination that produces a regular backspace on an HP terminal but produces a destructive backspace in MS92.

Backspace Key, Shift-Backspace combination

The BACKSPACE key and SHIFT BACKSPACE combination can each be configured to produce a nondestructive backspace, a destructive backspace, or a DEL character. The DEL character, decimal value 127 of the ASCII character set, is also produced by pressing CTRL + BACKSPACE.

Enter Key

The ENTER key on the numeric keypad can be configured to generate Enter or Return. The Return setting is useful when typing numbers from the numeric keypad.

Tab Key

The TAB key can be configured to generate either a tab character, the number of spaces needed to reach the next tab stop, or a carriage return. If Spaces is selected, backtab characters are converted into the number of backspaces needed to reach the previous tab stop.

Clear Key

The CLEAR key can be configured to generate either Clear Display or Escape. The Escape setting is useful if your keyboard does not have an ec key.

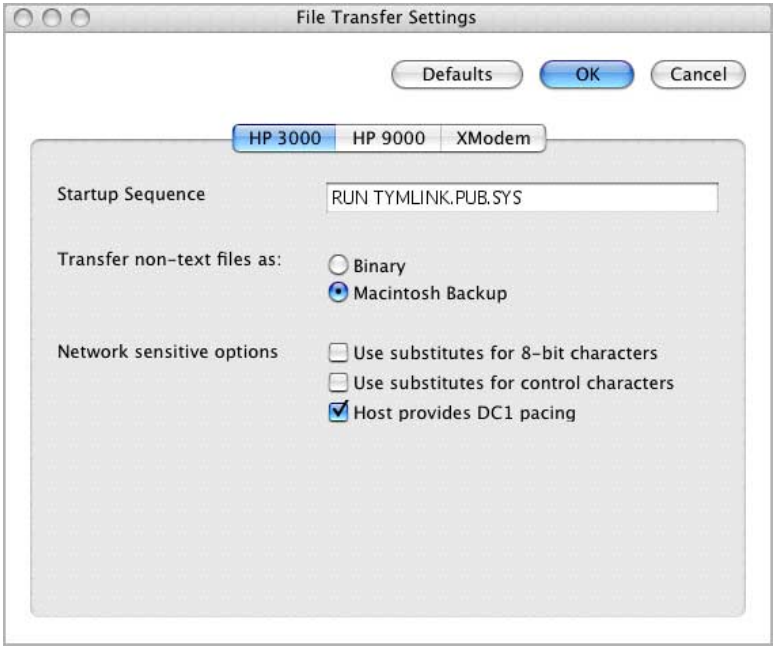
Return Key

Most HP software differentiates between the Return key and the Enter key, as HP terminals provide keys for each of these functions. When operating in block mode on an HP terminal, pressing Enter sends a block of data to the host. The Return key is used to send a line of data while operating in character mode.

Normally, the ENTER key on the Macintosh numeric keypad is used as the Enter key. If you like, you can configure the RETURN key as Enter.

File Transfer

File transfer method and defaults are configured in the dialog box shown below.



Transfer Method

The transfer method chosen determines the protocol used when you initiate file transfer by choosing *Send File* or *Receive File* from the *File* menu.

Startup Sequence

If you have installed the Tymlink program in some group other than PUB.SYS on an HP3000 or in some directory other than /usr/bin on the HP9000, you must edit the command used to initiate execution. On the HP3000, you can also precede the RUN command with a colon or some other character to allow file transfers from within a host application that supports the entry of MPE commands in this way.

Transfer Non-Text Files As

A Macintosh file that is not a text file can be transferred to the host in two ways. One is Binary, which sends the data in the file but not any of its file attributes. The other choice is Macintosh Backup, which transfers both the data and the file attributes so that the file can be restored onto a Macintosh. The choice you make here determines which of these choices is the default in the Send File dialog box.

Network Sensitive Options

- *Use substitutes for 8-bit characters*
  Choose this option only if you use data communications equipment that is not transparent to 8-bit bytes (only supports the transmission of 7-bit data). This option is also required for file transfer using a Telnet connection.

  When this option is chosen, MS92 recodes any character with a decimal value greater than 127 into two 7-bit bytes during transmission and decodes it to its original 8-bit form before writing it to the destination file. This slows transfer proportionately to the number of characters recoded and should be used only when necessary.

  Some X.25 and other switching networks are sensitive to 8-bit characters and require that this option be selected.
- *Use Substitutes for Control Characters*
  Choose this option if you are sending files using data communications equipment that is not transparent to ASCII control characters (attempts to act on, rather than transmit, the control sequence).

  When this option is chosen, control characters embedded in the transmitted file are recoded during transmission and decoded to their original form before being written to the destination file. This option slows transfer proportionately to the number of characters recoded and should be used only when necessary.

  All X.25 networks, PADs, and switching networks are sensitive to control characters, and require that this option be selected.

- *Host Provides DC1 Pacing*
  When Host provides DC1 pacing is chosen (default status), MS92 uses DC1s as the pacing character for data transmissions to the HP3000. If the option is not chosen, MS92 introduces time delays for pacing with the host, rather than the DC1 character. Using time delays slows transfer proportionately to the speed at which your host system can accept characters.

  Deselect this option if you are performing a file transfer over an X.25 network, if you are logged on as TERMTYPE 18 or 24, or any time you are not logged on as TERMTYPE 10 or are not using a port configured as TERMTYPE 10. If your file transfers have problems starting up, or if no data is sent, try deselecting this option. It may be that you are not logged on as TERMTYPE 10.

Logging

This dialog box is used to configure logging direction.

Logging Direction

Log Lines Off Top

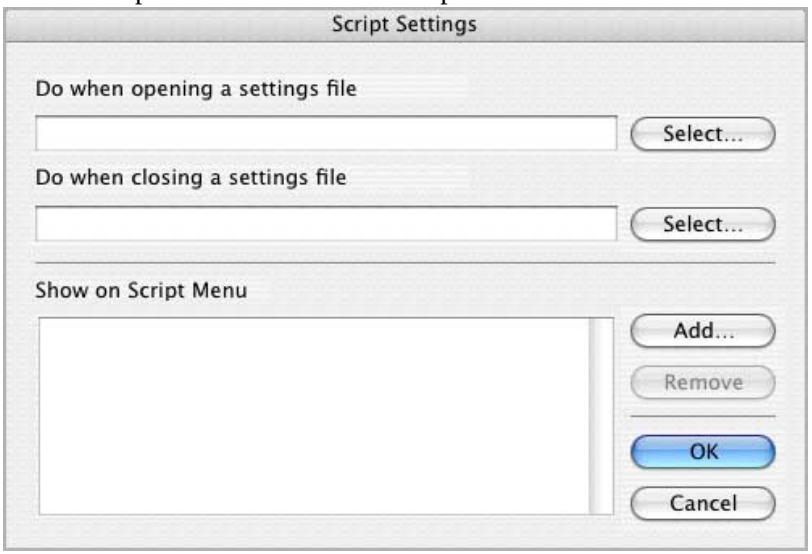
Lines are logged as they scroll off the top of display memory.

Log Lines Off Bottom

Lines are logged as they are displayed.

Script

Use this dialog box to select scripts you want executed automatically, as well as scripts to be added to the Script menu.



Do when opening a settings file

The script whose name is indicated here is executed automatically when the settings file is opened. When the cursor is in this box, you can use the *Select* button to open a file dialog from which you can choose a script file, or you can type in a name manually.

Do when closing a settings file

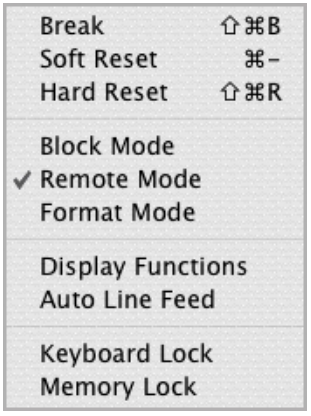
The script whose name is indicated here is executed automatically when the settings file is closed. When the cursor is in this box, you can use the Select button to open a file dialog from which you can choose a script file, or you can type in a name manually.

Show on Script Menu

The scripts whose names are shown in this area are listed on the Script menu. Click *Add* to open a file dialog and choose *Scripts* to add to the list. To remove a script, highlight its name and click *Remove*. After you click *OK*, these scripts are listed on the Script menu.

Utility Menu

The Utility menu provides fast access to frequently used keys and modes.



Break

Emulates the function of the BREAK key on an HP terminal, dropping the Transmit Line state for 200 milliseconds. Clicking the Break button on the control bar can also perform break.

Soft Reset

Emulates the function of the RESET key on an HP terminal. MS92's soft reset does the following:

- display Functions and Keyboard Lock are turned off
- any data communication transfers in progress are canceled
- the bell rings
- and the screen are refreshed.

Hard Reset

Emulates the CTRL + SHIFT + RESET key combination on an HP terminal. MS92's hard reset does the following:

- Display memory is cleared.
- All tabs are cleared. (Margins are not cleared.)
- The following configuration values and mode settings are reset to their default values:

  -Page mode off

  -Inhibit Line Wrap (strap C) off

  -Inhibit Handshake (strap G) off

  -Inhibit DC2 (strap H) off

  -Transmit Functions off

  -Keyboard Lock off

  -Memory Lock off

  -Insert Character mode off

  -Display Functions off

  -Any datacomm transfers in progress are canceled and the buffers are emptied

  -Display Functions and Keyboard Lock are turned off

  -If enabled, record mode and logging are disabled

  -The bell rings

  -The screen is refreshed.

Block Mode

When Block Mode is checked, data is transmitted when you press the Enter key. When you are operating in character mode (no checkmark beside this item), characters are transmitted to the host as they are keyed.

Remote Mode

When Remote Mode is checked, a communications link exists between the terminal and the host computer. In local mode (no checkmark beside this item), no transmissions are sent or received.

Format Mode

When Format Mode is checked, data can be typed only in unprotected fields, and only unprotected fields are transmitted to the host when you press *Enter*. When format mode is off (no checkmark), data can be typed anywhere on the screen and all data is transmitted.

Display Functions

When Display Functions is checked, control characters entered are not acted upon but are displayed using a special character set.

Auto Line Feed

When Auto Line Feed is checked, an ASCII line feed control code is automatically appended to each ASCII carriage return control code generated through the keyboard.

Keyboard Lock

When Keyboard Lock is checked, all keys except *command key*, SHIFT, and CTRL are disabled. On-screen edit buttons, except for Reset and Break, are locked as well. The mouse can only be used to choose menu commands.

When the keyboard is unlocked, any keystrokes during the locked period are flushed.

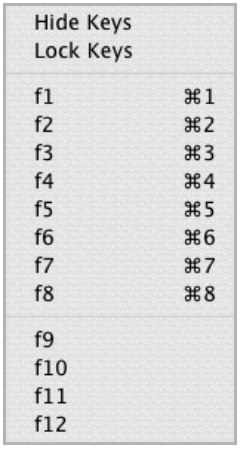
Memory Lock

When Memory Lock is checked, all lines on the screen above the current position of the cursor are locked. The locked lines remain frozen in position while lines preceding and following the locked lines scroll beneath them. Memory Lock also has a second function.

If the cursor is homed before memory lock is turned on, all lines in display memory are protected so that no data can be lost off the top.

Keys Menu

Commands that control the function keys are found on the Keys menu.



Hide / Show Keys

Hides the on-screen function keys. When the keys are hidden, this command changes to Show Keys. When the keys are shown, you can select a key by clicking it with the mouse.

Lock Keys

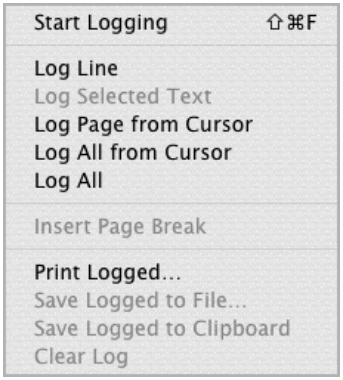
Locks the function keys into their current state (hidden or displayed). If the keys are visible when Lock Keys is selected, they cannot be hidden with the Hide Keys command or by an escape sequence. If they are hidden, they are prevented from being displayed.

Key Labels

The labels currently defined for each function key are displayed in the lower portion of the menu. You can enter a function key by choosing it here.

Log Menu

Commands that control logging are found on the Log menu. The first six commands on the menu (Start Logging, Log Line, Log Selected Text, Log Page from Cursor, Log All from Cursor, and Log All) log data to a temporary file. You can print the logged data, save it in a file, place it on the clipboard or discard it using the last four commands on the menu (Print Logged, Save Logged to File, Save Logged to Clipboard, and Clear Log.)



The Hewlett-Packard concept of a *destination device* is not used in MS92. You always log the data to a temporary file, and then send it where you want it to go.

Log Line, Log Selected Text, Log Page from Cursor, Log All from Cursor, and Log All are executed slightly differently when chosen from the menu and when performed using an escape sequence. When performed using an escape sequence, MS92 sends the terminating character S or F (the host program requesting the copy should be waiting for this status indicator). When chosen from the menu, the terminating character is not sent.

Start Logging / Stop Logging

Used to enable or disable logging off top or off bottom, as indicated using the Logging command from the *Settings* menu. When Start Logging is chosen, this command becomes Stop Logging.

Log Line

Logs the entire line in which the cursor is currently located. After the line is copied, the cursor is moved to column one of the next lower line.

Log Selected Text

Logs the currently selected text. This command is grayed out unless some text is selected on the screen. The cursor is not moved after the text is copied.

Log Page from Cursor

Logs all lines on the screen, starting from the line the cursor is currently on and ending after the last visible line on the screen. After the page is copied, the cursor is moved to column one of the line after the last visible line on the screen.

Log All from Cursor

Logs all lines in display memory, starting from the line the cursor is currently on and ending after the last visible line on the screen. After the page is copied, the cursor is moved to column one of the line after the last visible line on the screen.

Log All

Logs all lines in display memory. After the lines are copied, the cursor is moved to column one of the line following the last line in display memory.

Insert Page Break

Places a page break (or a form feed) in the log file.

Print Logged

Sends logged output to configured printer, and clears the current log. See also *Page Setup* on the *File* menu and *Logging* on *Settings* menu.

Save Logged to File

Saves logged output to a text type file. When you choose this command, a dialog box is displayed in which you can enter a name for the file.

Save Logged to Clipboard

Saves logged output to the clipboard. Logged data can then be pasted back into MS92 or into another application.

Clear Log

Clears the contents of the current log.

Script Menu

The commands on the Script menu are used to create and run scripts written in TermTalk, MS92's script language. For more information on TermTalk, see the TermTalk manual.

Do Script / Stop Script

Executes the script you select in the File Open dialog box displayed. After this command has been chosen, it changes to Stop Script, which terminates script execution.

Pause Script / Resume Script

Suspends execution of a script. When this command is chosen, it changes to Resume Script, which restarts script execution.

Do Command

Displays a dialog box in which you can choose a single TermTalk command, edit the default syntax, and click OK to execute it. You can also type a command in the edit box.

Record a Script / Stop Recording

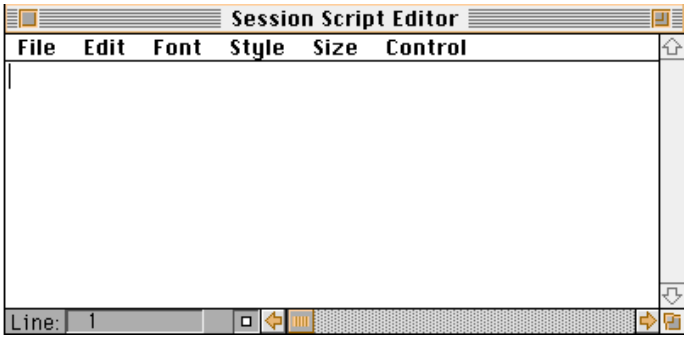
When you choose this command, MS92 “watches” you perform subsequent operations, automatically recording the TermTalk commands needed to perform those operations. When this command is chosen, it changes to Stop Recording. When you choose Stop Recording, a box is displayed in which you can name and save the script just created.

Pause Recording / Resume Recording

Suspends automatic command recording initiated with Record a Script so that you can pick up where you left off after switching to another application or performing some other task you don’t want recorded. After this command has been chosen, it changes to Resume Recording, which restarts the recorder.

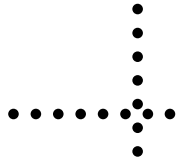
Show Script Window

Displays a window in which you can write, record, and edit scripts. The menus and features of the script window are documented in the *TermTalk* manual.



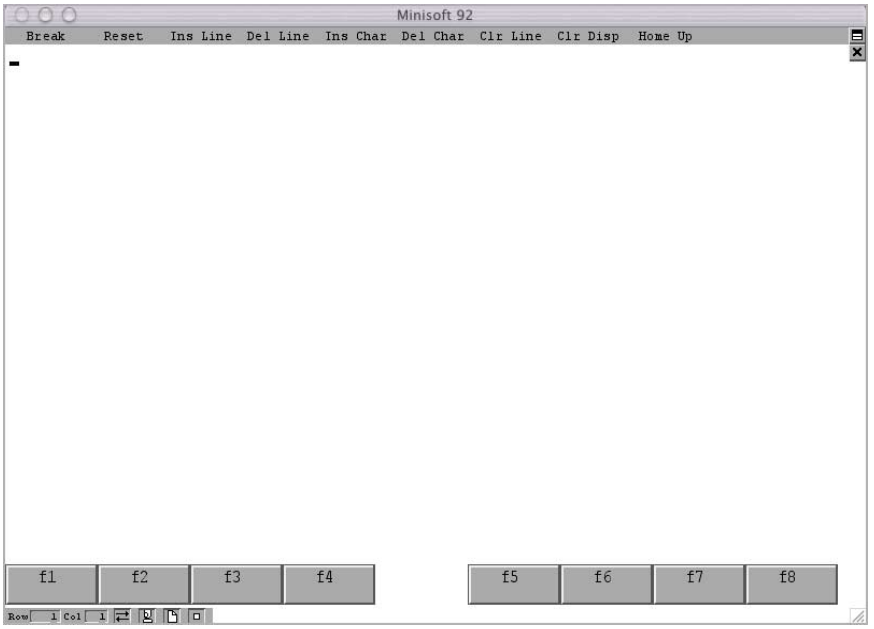
Chapter 4

Configuring the Display



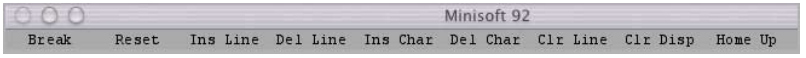
The following information describes how to change the way MS92 looks on your screen, from resizing the window to changing the color of the function keys. To save any changes you make in a settings file choose *Save* or *Save As* from the *File* menu. Open that file to run MS92 with your settings in effect.

MS92 adds several elements to the standard MAC window:

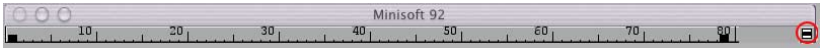


From top to bottom, the MS92 window special features are:

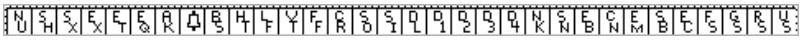
- Control bar edit buttons, from *Break* to *Home Up* in the above example.



- Control bar rotator, immediately to the right of the Home Up button. When you click the rotator once, the control bar changes to a margin/tab ruler:



Click it again for control character buttons:



- Pause button—the little ☒ symbol immediately beneath the control bar rotator—suspends and resumes scrolling.
- Function keys, F1-F8, are shown toward the bottom of the screen.

The bottom of the screen displays, from left to right:

- Row and column counters.
- Connection indicator:

   indicates you are connected and/or operating in remote mode.

   indicates you are not connected and/or operating in local mode.

- Keyboard lock indicator:

   indicates the keyboard is locked.

   indicates the keyboard is unlocked.

- Logging indicator:

   indicates no logging is in progress.

   indicates logging is in progress.

- Script status indicator:

   indicates no script activity.

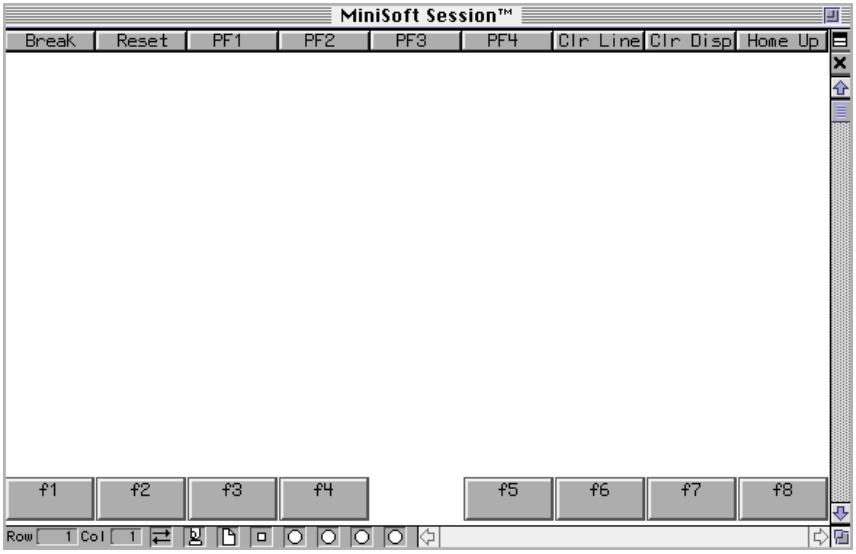
   indicates script compiling.

   indicates a script is running.

   indicates a script is being recorded.

   indicates the script is paused.

When VT100 or HP ANSI emulation is selected in the Terminal Settings dialog box, the following changes are made:



Note that the control bar now shows the PF1-PF4 VT100 function keys, and the bottom row has additional indicators that emulate keyboard LEDs.

Sizing the Window

To change the size of the MS92 window, use any of the following methods:

- Place your pointer over the grow box at the lower right. You can drag from the minimum window size (4 rows x 35 columns) to the full size of your monitor.
- Click the zoom box in the upper right corner to enlarge the window to maximum size. Click again and it shrinks to the size it was before you enlarged it.
- Configure MS92 so that clicking the zoom box resizes the window to 24 x 80 rather than the full size of the monitor, choose *Terminal* from the *Settings* menu, and select the Zoom to 24 x 80 option.

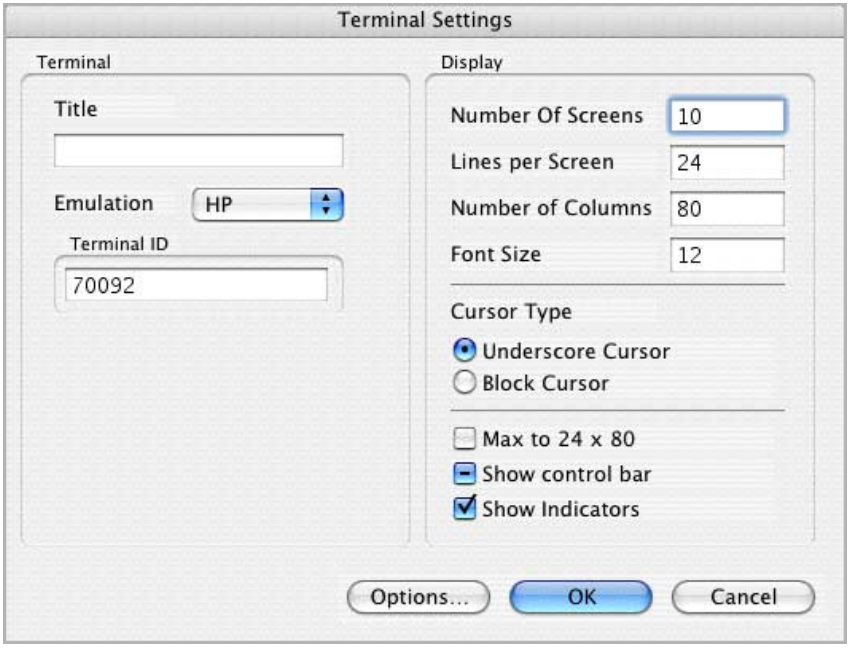
Note: Changing the width of the window does not cause MS92 to display data to the right of column 80 unless you configure 132 or 160 column operation. See *Change the Number of Columns and Lines* immediately below.

Changing the Number of Columns and Lines

MS92 can display 40-200 columns whether all columns are used depends on your host application.

Like a terminal, MS92 keeps track of data displayed on the screen so you can review or log it after it has scrolled out of view. By default, 10 screens (240 lines) of data are maintained in memory when in HP terminal emulation mode. When in HP terminal emulation mode, you can configure as many additional screens as the memory in your Macintosh will support.

To change the number of columns or screens in memory, select *Terminal* from the *Settings* menu.



Changing the Title

It may be useful to have the title bar of the MS92 window display text that describes the purpose of the current settings file. For example, the title could describe the host system for which the settings file is configured (HP9000 - Headquarters) or the application it logs on to (Customer Database). To change the title displayed in the title bar, note the following:

- Start MS92 by double-clicking the application icon or the MS92 Defaults file, the title bar reads Minisoft MS92.
- Double-click on a settings file; the name of the file is then displayed in the title bar.
- Specify a title in the *Terminal Settings* box, this title is displayed instead of the name of the program or settings file.

Hiding Function Keys and Control Bar

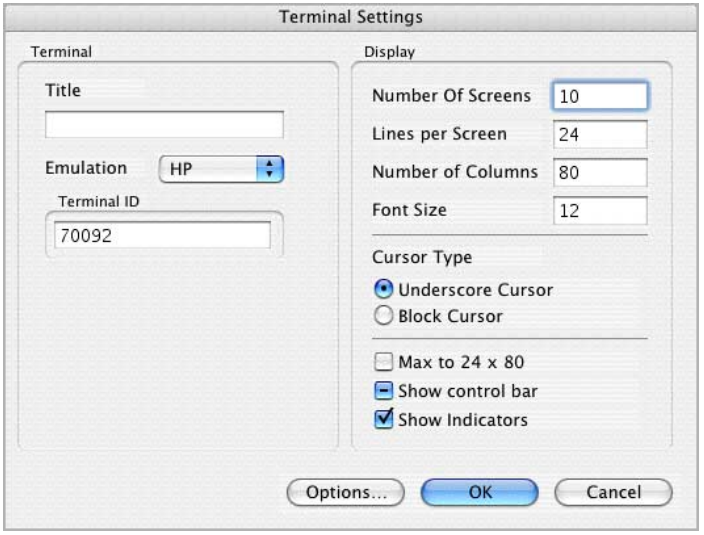
If you have a small monitor and would like to display additional lines of data, use the following techniques:

- Choose *Hide Keys* from the *Keys* menu. The function keys are erased and the additional two lines are used for data. You can still select *Function Keys* from the *Keys* menu or from the keyboard.
- Choose *Terminal* from the *Settings* menu and uncheck *Show control bar* by clicking on it. The control bar is erased and the additional line is used to display data.

Changing Font Size

MS92's terminal display uses a built-in font called HPScreen. This font is designed to provide a 24 x 80 display that accurately emulates the terminal and includes all the HP alternate character sets.

To select either 12 or 10-point type, choose *Terminal* from the *Settings* menu and choose a size from the Font Size pop-up menu.



Changing Cursor Shape

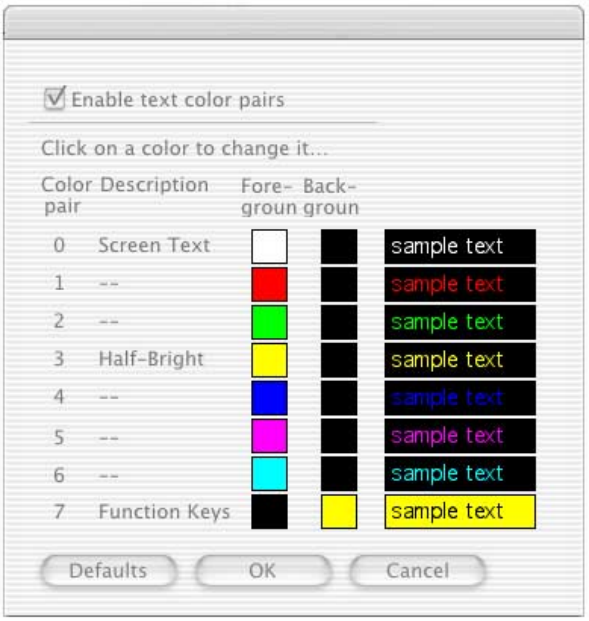
You can use either the default underline cursor or a block cursor. To change the cursor type, select *Terminal* from the *Settings* menu and click either the *Underscore* or *Block Cursor*.

Using Color

Text displayed by MS92 can be colored the same way it is on an HP2397 terminal, using *color pairs*. A color pair is composed of a foreground color, used for the characters, and a background color, used for the area around the characters. MS92 lets you change the colors of each pair to any of the colors available on the Macintosh.

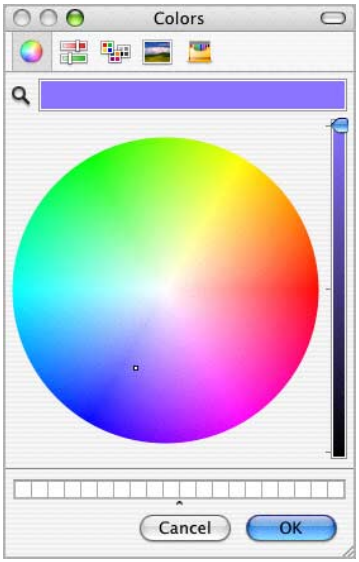
To change the colors of any color pair, do the following:

1. Select *Color* from the *Setting* menu:



2. Determine which color pair you want to modify and click either the foreground or background color.

3. A color wheel is then displayed:



4. Move your pointer around the wheel until you see the desired color in the *New* color box. When complete select *OK*, the new color will then display in the color pair dialog box.

Reconfigure Display Enhancements

HP terminals provide four display enhancements that applications can use to highlight data on the screen. These are:

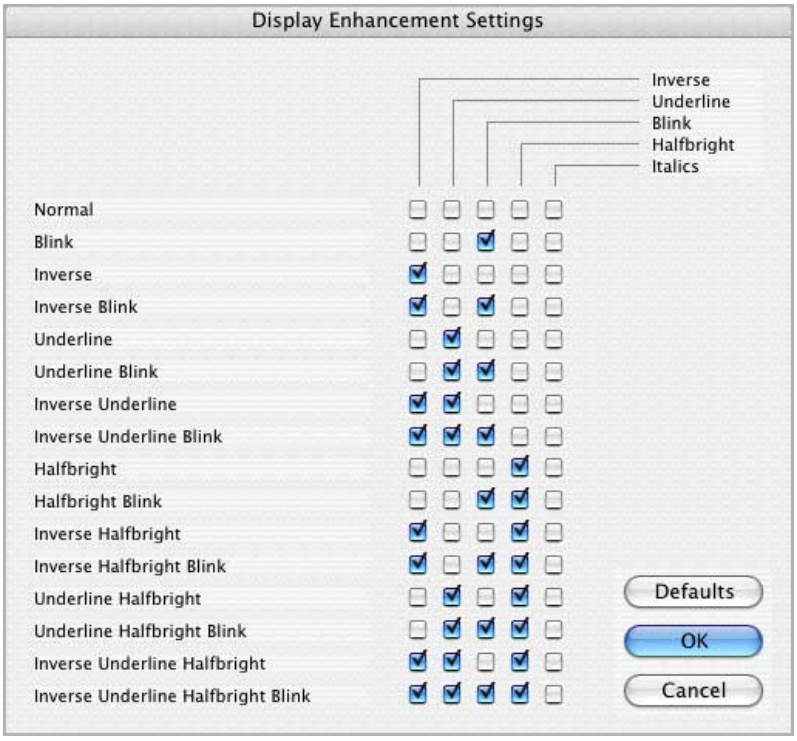
- *Blinking*
- *Inverse* (On a monochrome terminal, white text is displayed on black. On a color terminal, the foreground and background colors of color pair 0 are reversed.)
- *Underline*
- *Half-bright* (On a monochrome terminal, text is dimmed. On a color terminal, it is displayed using color pair 3.)

MS92 supports all of these accept half-bright on a monochrome monitor, and adds box and bold enhancements. MS92 substitutes bold whenever half-bright is requested on a monochrome monitor.

To substitute any enhancement for another, do the following:

1. Choose *Display Enhancements* from the *Settings* menu.

2. Each row in the box below shows you what combination of enhancements is used when each of the various enhancements or combinations is requested. Reconfigure these relationships by checking and unchecking boxes.



Chapter 5

Keyboard and Screen Buttons

Terminal Keyboard Functions

The charts below show how special keys on a terminal keyboard are emulated by MS92.

Terminal Control Functions

HP Key	*MS92 Equivalent*
Enter	*return*
Ctrl	*control* *Command key option* (For Mac Plus and 512KE.) Enter control characters using the control bar. Click the rotator at the right of the bar to display control characters buttons.
Esc	*esc* Click the ESC button on the control bar.
F1 - F12	F1 - F12 Choose from the Keys menu For F1 - F8 only, click on-screen label or type c*ommand key* 1 through *command key* 8.
Break	Click Break on the control bar. Choose Break from the Utility menu. Type *command key* B.
Reset	Click Reset on the control bar. Choose Soft Reset from the Utility menu. Type *command key* hyphen.
Shift - Ctrl - Reset	Hold *alt/option* while you click the Reset button on the control bar. Choose Hard Reset from the Utility menu. Type *command key* R.

Editing Functions

HP key	*MS92 equivalent*
Clear Line	*shift - clear* Click Clr Line on the Control bar. Choose Clear Line from the Edit menu. Type *command key* L.
Clear Display	*clear* Click Clr Disp on the control bar. Choose Clear Display from the Edit menu. Type *command key* J.
Delete Char	*del* Click Del Char on the control bar. Choose Delete Character from the Edit menu. Type *command key* E.
Delete Line	Click Del Line on the control bar. Choose Delete Line from the Edit menu. Type *command key* D.
Insert Char	*shift - ins/help* Click Ins Char on the control bar. Choose Insert Character from the Edit menu.
Insert Line	Click Ins Line on the control bar. Choose Insert Line from the Edit menu. Type *command key* I.

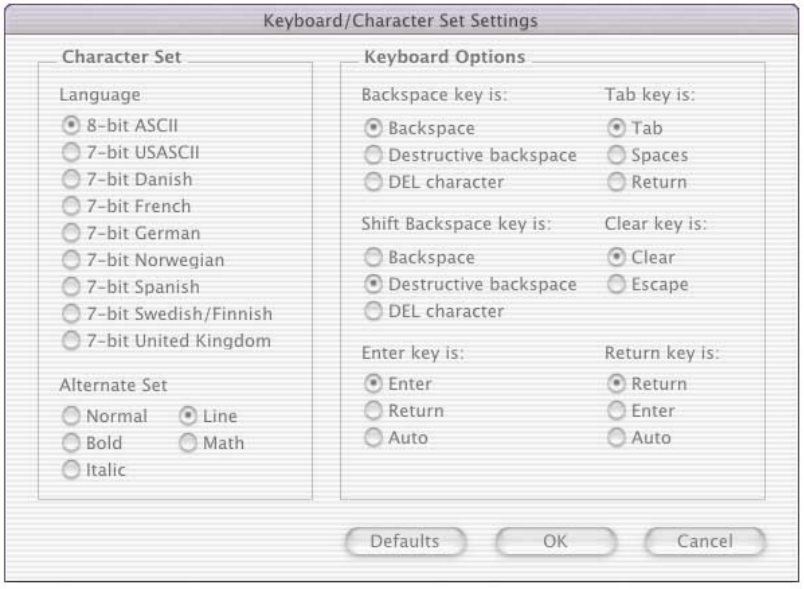
Cursor Movement and Scrolling Functions

HP key	***MS92 equivalent***
Home Up	*home* Click Home Up on the control bar.
Home Down	*end* Hold the *alt/option* key while you click the Home Up button on the control bar.
Home Up, Clear Display	*alt/option - shift - clear* Hold *alt/option* and *shift* while you click the Home Up button on the control bar.
Arrow keys	Use arrow keys or mouse to move cursor.
Roll Up	Use *shift* plus arror keys (not available on Mac Plus). Click Scroll arrows.
Roll Down	Use *shift* plus arrow keys (not available on Mac Plus). Click scroll arrows.
Prev	*page up* Click scroll bar.
Next	*page down* Click scroll bar.

Reconfiguring Special Keys

To reconfigure the use of Return, Enter, Tab, Clear, and Backspace (labeled Delete on the Macintosh keyboard), do the following.

1. Choose *Keyboard/Character Set* from the *Settings* menu:



2. Reconfigure the keys as desired. The most common uses of the options available are:

   - The Backspace key setting is important for VT100 emulation, to mimic the use of the Backspace key on VT100 terminals.
   - Use the Tab key Spaces setting for fast cursor positioning in applications where the Tab key can't normally be used. It converts a tab into the number of spaces needed to reach the next tab stop.
   - Clear key to Escape if your keyboard has no ESC key.
   - Return key to Enter for convenience in block mode.
   - Enter key to Return for convenience when typing numbers from the numeric keypad.

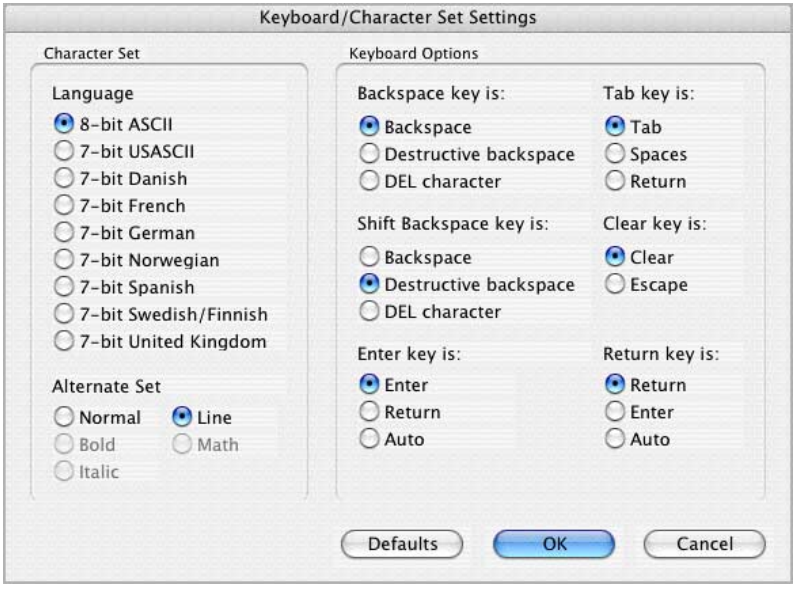
These settings are saved in your settings file when you choose *Save* or *Save As* from the *File* menu.

Using a Language Other Than English

MS92 supports both 7-bit and 8-bit operation, meaning it can send, receive, and represent ASCII characters using either 7 or 8 bits. Its default is 8-bit ASCII. If you don't use international characters such as •, ¿, and £, this should be fine. To use a language other than U.S. English:

1. Choose *Keyboard/Character Se*t from the *Settings* menu (see the illustration in the previous section).

2. Select the desired language in the dialog box.



In 8-bit ASCII mode, enter international characters in standard Macintosh style. (To locate characters not labeled on your keyboard, use the Key Caps desk accessory and select the HPScreen font from the Key Caps menu. On the U.S. keyboard, many characters are generated with the ALT/OPTION key.) MS92 translates characters typed into HP

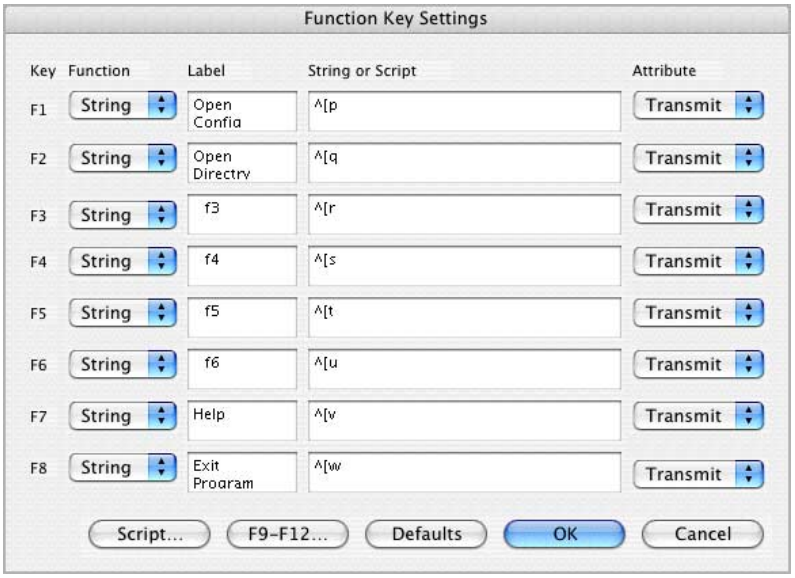
Roman-8 characters before transmitting them to the host. Conversely, characters received from the host are translated into the Macintosh character set. A chart of the Roman-8 international characters is found in Appendix B.

If you choose a 7-bit language, you can enter international characters in Macintosh style, described above, or HP 7-bit style. To enter an international character in HP 7-bit style, press the USASCII key with the same decimal value. A chart showing these correspondences is found in Appendix B.

Setting Special Function Key Values

By defining and saving your own function key values, you can enter frequently used commands or run TermTalk scripts with a single key-stroke or mouse click. To define and save function key values, follow the steps below.

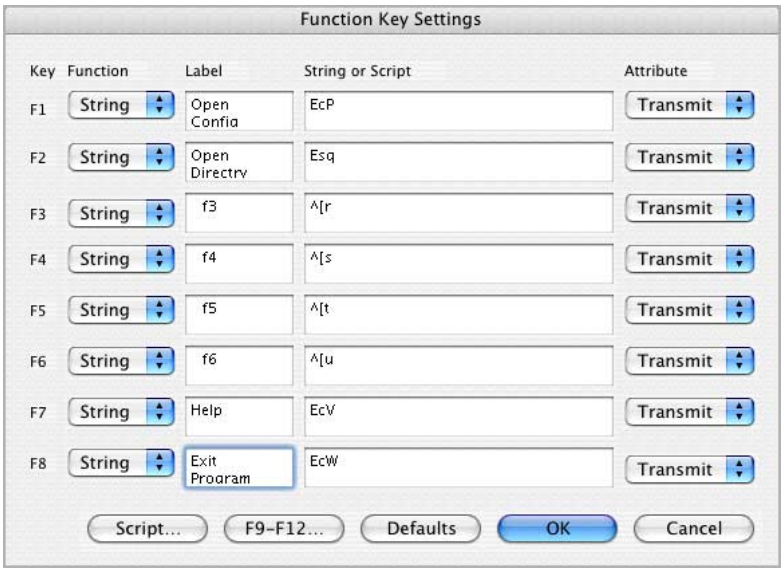
1. Select *Function Keys* from the *Settings* menu:



2. For each function key you want to set up, choose *String* or *Script* from the Function pop-up menu.

   Choosing *String* displays text on the screen or transmits it to the host. Choosing *Script* runs a TermTalk script.

3. Use the mouse to position the cursor to the *Label* field. The text you type here appears in the on-screen button and on the Keys menu. You may enter two lines of up to eight characters each.



Before typing a new value, highlight the current label and delete it. To wrap down to the second line, fill the first line completely with characters or spaces.

Note: Pressing the Return key is the equivalent to clicking OK—it closes the dialog box.

4. Press *tab* or use the mouse to select the *String* or *Script* field.

For a String type key, type the string you want to send to the host or display on your screen. To enter control characters in your string, check the Display Functions box. This way when you enter control key sequences, they are included in the function key value rather than acted on as usual.

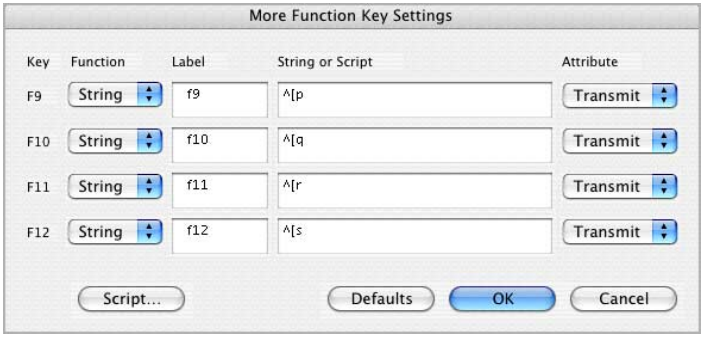
For a Script type key, click the Script button at the bottom of the box to select a script.

5. For String type keys only, make a selection from the Attribute pop-up menu.

   - Send the string to the host and add a carriage return, choose *Transmit*.
   - Send the string to the host without appending a carriage return, choose *Normal*.
   - Display the string in the MS92 window without sending it, choose *Local*.

6. Click *OK* to close the dialog box and put the changes you have made into effect, or

   Click *Cancel* to close the box, discarding changes, or
   Click *Defaults* to return all values to program defaults, or
   Click *F9-F12* to define these additional keys:



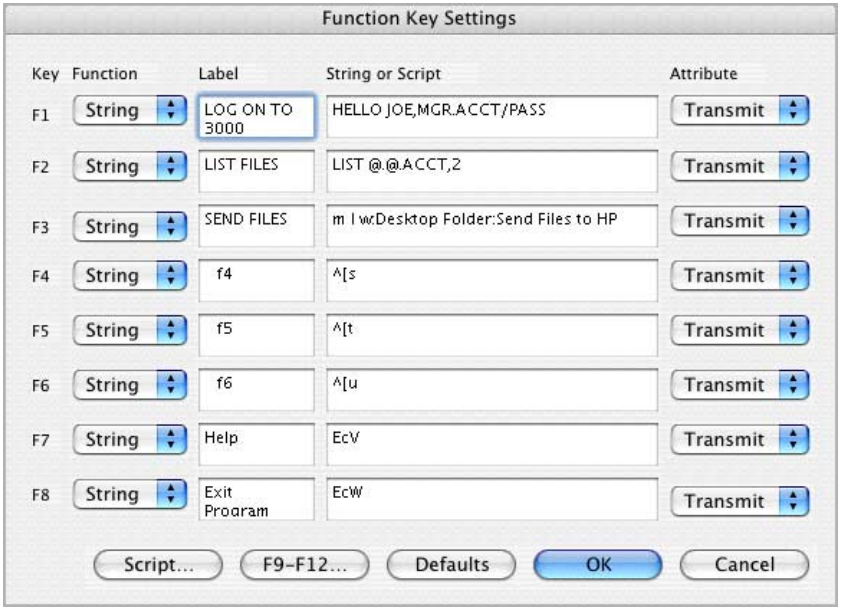
   All the buttons in this box apply only to F9 - F12. After you click *OK* or *Cancel*, MS92 returns you to the F1 - F8 box.

7. Save your function key settings in a settings file by choosing *Save* or *Save As* from the *File* menu. When you start MS92 by opening this file, the function keys are loaded automatically.

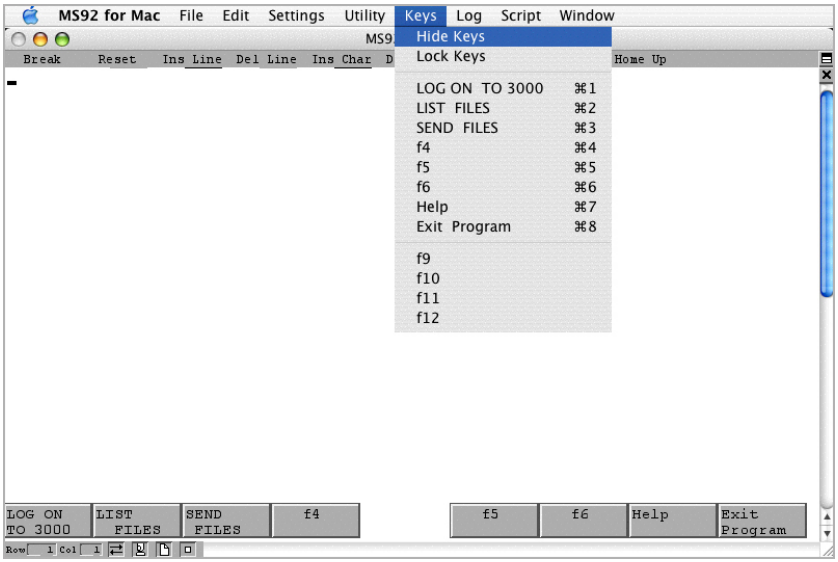
☞ *Tip***:** Your function key definitions are removed when a host application loads its own function key values and labels. Since most applications use only F1 - F8, you can avoid having some definitions wiped out by putting them in F9 - F12. Also, you can reload function keys saved in your settings file by choosing *Revert* from the *File* menu. This won't interrupt your host MS92.

Finally, you could write a TermTalk script, which loads function key definitions; assign it to one of the keys between F9 and F12 so that it doesn't get wiped out, and run that script whenever you need to reload the function keys.

The following shows sample function key definitions:



The labels are displayed at the bottom of the MS92 window and on the *Keys* menu:



You can execute any function key by pressing F1 through F12 on the keyboard or selecting it from the menu. F1 through F8 can also be selected by clicking the labels or by entering a *command key* 1 through a *command key* 8.

Chapter 6

Save, Print, and Copy Screen Data

Logging

One way of saving, printing, or copying MS92 data is to log it to a temporary file called a *log file*. You can then send the log file to the printer, save it as a permanent file on your Mac or copy it to the clipboard.

The various methods of logging are described below.

Log Data in Display Memory

If the data you want to log has already appeared on the screen, and is now located somewhere in display memory, you can log it using any one of the following methods:

- Highlight the data to be logged by dragging the pointer over it. Choose *Log Selected Text* from the *Log* menu to place it in the log file.
- Place the cursor on the first line you want to log, and choose one of the following:

  Log Line - Logs the line the cursor is on.

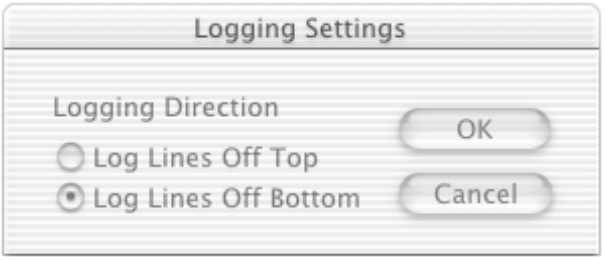
  Log Page from Cursor - Logs from the line the cursor is on to the last line in the window.

  Log All From Cursor - Logs from the line the cursor is on to the last line in display memory.
- Choose *Log All* to log all lines in display memory.

Log Data Interactively

If you want to log data as it is displayed, do the following:

1. When logging is turned on, MS92's default is to copy lines to the log file as they appear on the screen. This is called logging lines off bottom. To log lines as they scroll out of display memory, choose *Logging* from the *Settings* menu and click *Log Lines Off Top*.



2. Choose *Start Logging* from the *Log* menu.

3. List the data or enter the commands you want to log on the screen.

4. When all lines have been logged, choose *Stop Logging* from the *Log* menu.

☞ *Tip*: In block mode, you may find that some full screen applications do not log their screens properly. This is because the application directly positions the cursor to each field without sending line feeds on every line.

To log a full-screen application, select the desired text and use the *Log* menu command *Log Selected Text*, or position the cursor to the top of the area you wish to log and use *Log Page from Cursor*.

Append to an Existing Log File

You can use any of the methods described above to add more data to the end of an existing log file. Choose *Insert Page Break* from the *Log* menu between instances of logging. When you print the log file, a new page begins every time a page break is encountered.

Print Logged Data

To send the current contents of the log file to the printer, choose *Print Logged* from the *Log* menu. After printing, the log file is cleared.

To print logged data in the same font as it appears on the screen, you must install the fonts in the suitcase called *MS92 Fonts* into the System file in your System folder. The font suitcase is found in the MS92 folder.

Save Logged Data

To save the data in the log file to a permanent file on your Macintosh, choose *Save Logged to File* from the *Log* menu. A dialog box appears in which you name the file. After saving, the log file is cleared.

The ability to save logged data to a file provides a quick way to transfer files or portions of files from host systems or on-line services. Just list the data you want transferred on the screen, log it, and save it to a file.

Put Logged Data on the Clipboard

To place the contents of the current log file on the clipboard so it can be pasted into another Macintosh application or back into MS92, choose *Save Logged to Clipboard* from the *Log* menu.

Erasing the Log File

To remove all data in the log file without printing, saving, or copying, choose *Clear Log* from the *Log* menu.

Using Cut, Copy, and Paste

As in any Macintosh application, you can select data in the MS92 window and *Copy* or *Cut* it to the clipboard. You can then Paste the data back into the MS92 window or into any other Macintosh document.

Redo Commands and Automate Data Entry

To redo a single MPE or host application command, do the following:

1. Select the desired line by dragging over it with the mouse. Do not select the prompt at the beginning of the line, but do drag to the end of the line so the invisible carriage return that follows the other characters is selected.

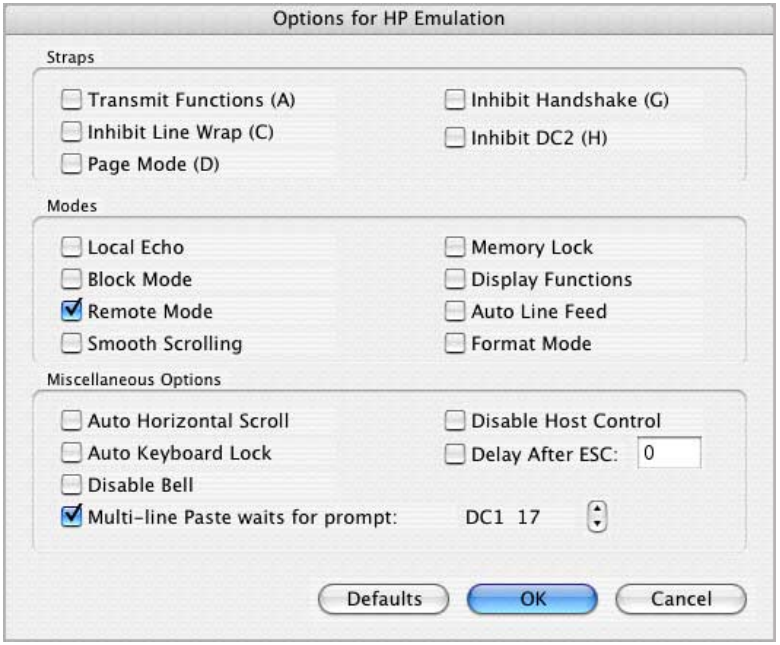
   If you want to edit the line before copying it, put the terminal in local mode by unchecking the *Remote Mode* item on the *Utility* menu. After you make the changes, go back into remote mode and select the line as described above.

2. Choose *Copy* (*command key* C) or *Cut* (*command key* X) from the *Edit* menu.

3. At the host or application prompt, choose *Paste* (*command key* V) from the *Edit* menu. The pasted line is displayed on the screen and transmitted to the host.

You can also paste multiple lines of data into MS92, automating the entry of a series of commands typed into a text file, or adding lines copied from a Macintosh text file one by one into an HP text file. Because MS92 waits for a Host Ready prompt before sending each additional line, data is handled just as if it were being typed from the keyboard. When preparing for a multi-line paste, be aware of the following:

- There should be no prompts or other characters normally supplied by the host in the text you paste.
- By default the Host Ready prompt MS92 expects is DC1, which is appropriate for the HP3000 but may not be for other hosts. To reconfigure this, choose *Terminal* from the *Settings* menu and click the *Options* button in that dialog box. Choose a different control character from the *Multiline Paste Waits for Host Prompt* scroll box.



Copy Columnar Data into a Spreadsheet

If you plan to paste data that appears on your screen in columns into a spreadsheet or word processor, you can convert the spaces that separate each column into tabs. This allows you to paste it directly into the cells of a spreadsheet, or into a word processor where you've set tabs for each column. Do the following:

1. Drag with the pointer to select the desired lines.
2. Choose *Copy Table* from the *Edit* menu.
3. Paste the data into your other Macintosh application.

Note that every occurrence of one or more spaces is converted to a tab, including the spaces between the words of any headings or other text.

Document Application Screens

You can take a screen shot of the contents of the MS92 window and place it on the clipboard in PICT format. Function keys and any colors on the screen are included in the picture and a black outline is drawn around the window. You can then paste this image into any Macintosh program that supports PICT files. To do this, choose *Copy Window Image* from the *Edit* menu. Note the following:

- By default, the image is copied as a single bitmap.
- To copy the window as multiple objects rather than a single bitmap, hold down the *shift* key while you select Copy Window Image. The window outline, each line of text, the function key outlines, and labels are copied as separate objects so each can be edited individually in a drawing program.

To give your other Macintosh program access to the fonts used by MS92, copy the fonts in the suitcase called *MS92 Fonts* into the System file in your System folder. The font suitcase is found in the MS92 folder.

If you don't copy the HPScreen font, screen data appears in the default font of your graphics application.

Chapter 7

Installing File Transfer

Tymlink Companion Program

The Tymlink program is shipped with MS92 to provide intelligent file transfer between the Macintosh and an HP3000 or HP9000. For other transfers, MS92 supports XMODEM protocol.

Three versions of Tymlink are provided: Tymlink 3000, Tymlink 9000/300, and Tymlink 9000/800. In addition to binary transfer, these programs can:

- Transfer data between an HP host text file and a Macintosh text file.
- Back up a Macintosh file to the HP host. An application or document stored in this way can be restored to its original form on a Macintosh.
- Back up an HP host file to a Macintosh disk. A file stored in this way can be restored to its original form on any similar HP host. KSAM and IMAGE files cannot be transferred.

The interaction between Tymlink on the HP host and MS92 on the Macintosh provides other useful file transfer functions. Data can be compressed during transfer to make the operation run faster. Control character and 8-bit characters can be recoded for transfer over sensitive networks.

When uploading text files with international characters, Macintosh characters are automatically translated to the HP Roman 8 character set; when downloading, Roman 8 is translated to Macintosh.

Also, file transfers are performed using the cyclic redundancy check (CRC) error checking algorithm to ensure the validity of the data.

The MS92 for Windows and MS92 for Macintosh Tymlink programs are compatible, so if you have both PC and Macintosh users on your system, they can share the same copy of Tymlink.

Installing Tymlink

A script that installs Tymlink on an HP3000 or HP9000 host is provided with MS92. If there is already a copy of Tymlink on your system, use the alternate procedure described under the following heading *If Tymlink is already on your system*.

On the HP3000

To install Tymlink, do the following:

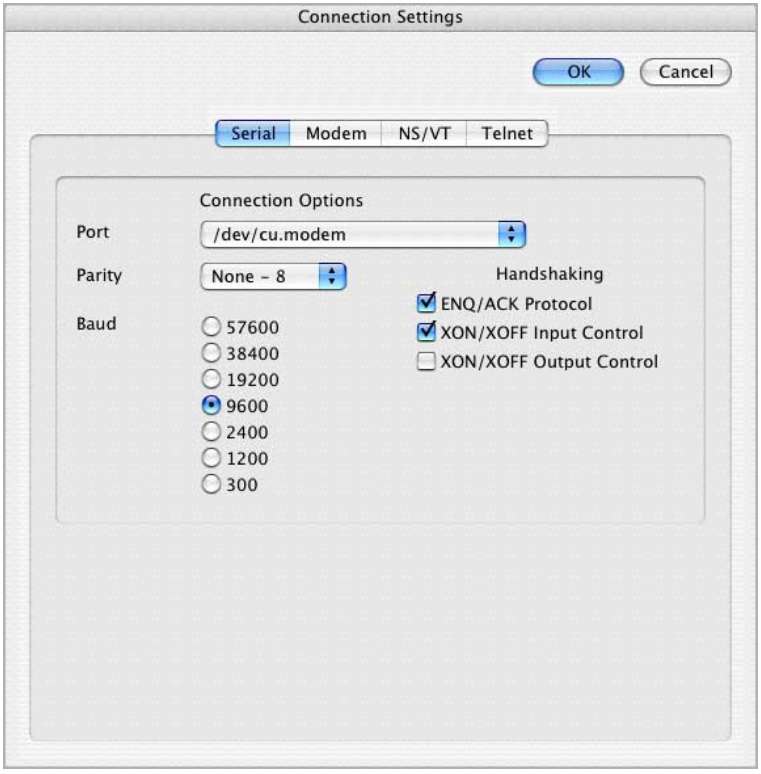
1. Run MS92.

2. Log on as MANAGER.SYS, or log on to another group and account where you want to install Tymlink. If you are directly connected to the host (rather than running over a LAN), your port must be configured as TERMTYPE 10. If not add the TERM=10 parameter to your :HELLO command when you log on.

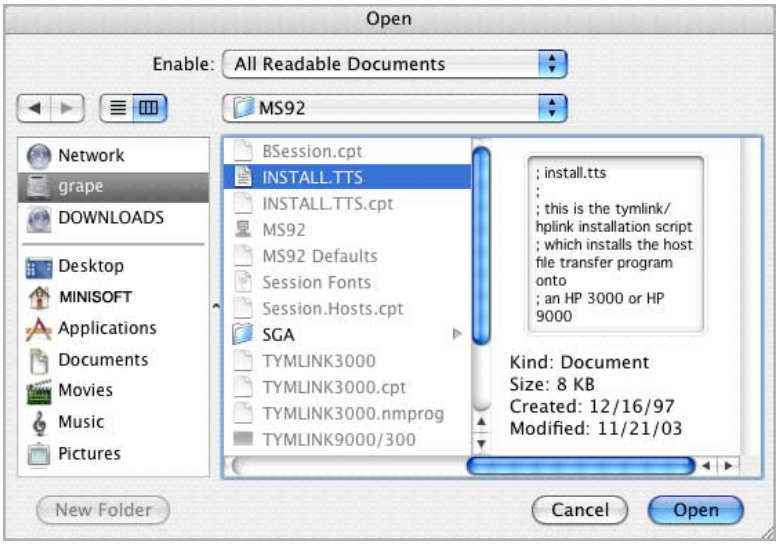
   ```
   :HELLO MANAGER.SYS;TERM=10
   ```

☞ *Note:* Tymlink cannot be installed over a DS line. If you cannot connect directly or over a LAN to the host machine, install Tymlink on the local machine, then use DSCOPY to transfer Tymlink to the host.

3. If you are directly connected to the host, choose *Connection* from the *Settings* menu. Ensure that parity is set to None/8 and that XON/XOFF Output Control is disabled. No special configuration is required if you are running over a LAN:



4. Choose *Do Script* from the *Script* menu. In the dialog box displayed, open the INSTALL.TTS file in the MS92 folder.



5. The script displays a message asking whether you are installing on a HP3000 or a HP9000. Once you click HP3000, an informational dialog box is displayed. When you click *Install* in this box, transmission begins.

6. If the procedure takes more than 10 minutes, it is likely that a communications error occurred and operation has been suspended. Click *Cancel* to terminate the transfer, and then restart the procedure.

7. If you install Tymlink in a group other than PUB.SYS, choose *File Transfer* from the *Settings* menu and edit the Startup Sequence used to run Tymlink in the *File Transfer Settings* box.

To ensure that there are no transmission errors, Tymlink is uploaded twice, and the two versions are compared. If they are identical, installation is successful. One version is purged automatically. If they are not identical, a message is displayed to inform you that the installation has been unsuccessful. You should try again at a slower baud rate.

Use the MPE SPEED command to adjust the baud rate on the host before changing MS92's baud setting:

```
:SPEED 240,240
```

Choose *Connection* from the *Settings* menu to change MS92's baud rate. Then type MPE at the colon prompt to enable the new baud rate:

```
:MPE
```

If you are performing the upload over telephone lines or a LAN and it continues to fail even at the lowest baud rate, arrange to have installation performed using a direct connection.

On the HP9000

If your HP9000 system has a copy of UMODEM, it is used to install Tymlink. UMODEM is included with HP-UX on the Series 300 and, as of HP-UX 7.0, on the Series 800. The path to UMODEM must be set in your Unix environment variable PATH.

If you do not have UMODEM, MS92 attempts to transfer a small upload program to your 9000 and uses this program to upload Tymlink. This procedure requires a C language compiler. If you have neither UMODEM nor a C compiler, please contact your Minisoft support representative for assistance.

1. Run MS92.

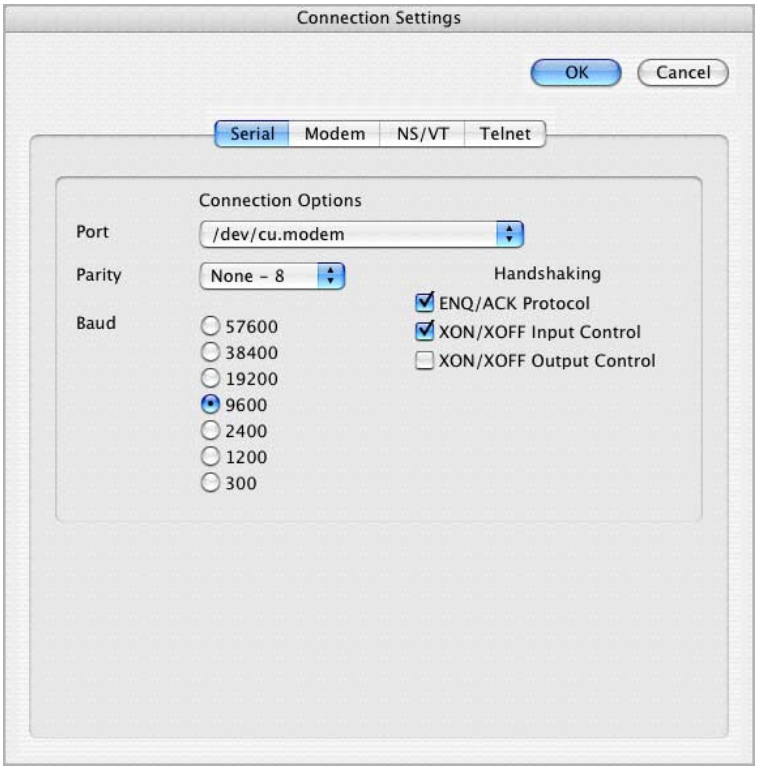
2. Log in to the HP9000 as root (or otherwise become superuser). Change to the /usr/bin directory:

   cd /usr/bin

   You must perform the upload while logged on in the Bourne shell.

3. Choose *Connection* from the *Settings* menu to ensure that parity is set to None/8.

If you are running over a LAN connection proceed with step 5.



4. The port attached to your HP9000 must also be configured for no parity checking and eight stop bits. If it is not, use the stty -parenb cs8 ixon ixoff command.

5. Choose *Do Script* from the *Script* menu, and choose the script file INSTALL.TTS in the dialog box displayed.

6. The script displays a message asking whether you are installing on an HP3000 or an HP9000. Once you click HP9000, an informational dialog box is displayed. This box contains a button for the Series 300 and a button for the Series 800. Once you click Install, MS92 locates UMODEM on the HP9000 and proceeds with installation.

7. To ensure that there are no transmission errors, Tymlink is uploaded twice, and the two versions are compared. If they are identical, installation is successful. One version is purged automatically. If they are not identical, a message is displayed to inform you that the installation has been unsuccessful. Poor line quality is most likely the problem; you should try again.

8. If you install Tymlink in a group other than /usr/bin, choose *File Transfer* from the *Settings* menu and edit the Startup Sequence used to run Tymlink in the *File Transfer Settings* box.

If there is not a copy of UMODEM on your HP9000, MS92 uses its own upload procedure. A small C language program called UPLOAD.C is transferred from the MS92 folder on your Macintosh to the HP9000. This program is compiled and run to transfer Tymlink from the Macintosh to the HP9000. Once Tymlink has been successfully transferred, UPLOAD.C is purged.

If the transfer fails, attempt the upload at a lower baud rate. Reconfigure your HP9000 port for a lower baud rate using stty <baudrate>, and set a lower baud rate by choosing *Connection* from the *Settings* menu. If you are performing the upload over telephone lines or a LAN to a remote HP9000 and it continues to fail even at the lowest baud rates, you should arrange to have the Tymlink installation performed by a Macintosh connected directly to the HP9000.

If Tymlink is Already on Your System

If there is a copy of Tymlink installed on your host, you can install the new version using the *Send File* command rather than by running the INSTALL.TTS script. This is a faster and more secure approach. Do the following:

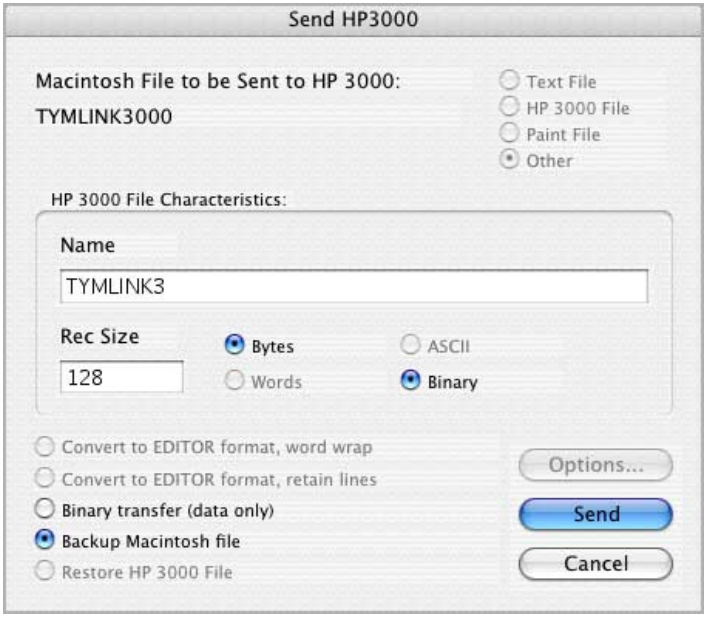
1. Run MS92.

2. On the HP3000, log on as MANAGER.SYS, or log on to another group and account where you want to install Tymlink. On the HP9000, login as root (or otherwise become superuser) and change the directory to /usr/bin or other directory where you want to install Tymlink.

3. Choose *Send File* from the *File* menu.

4. Select the Tymlink file in the MS92 folder on your hard disk and click *Open*. For the HP3000, select *TYMLINK 3000*; for the HP9000 select *TYMLINK 9000/800*.

5. Since there is already a file named Tymlink in the group or directory to which you are transferring, and since it can't be replaced while it is in use (you are running it right now), you must rename the new Tymlink file before transferring it:



   For TYMLINK, type a different name, such as TYMNEW.

6. Click *Send* to start the transfer.

7. When the transfer is complete, purge the old copy of Tymlink and rename the new one. On the HP3000, enter these commands:

   ```
   :RENAME TYMLINK,TYMOLD

   :RENAME TYMNEW,TYMLINK
   ```

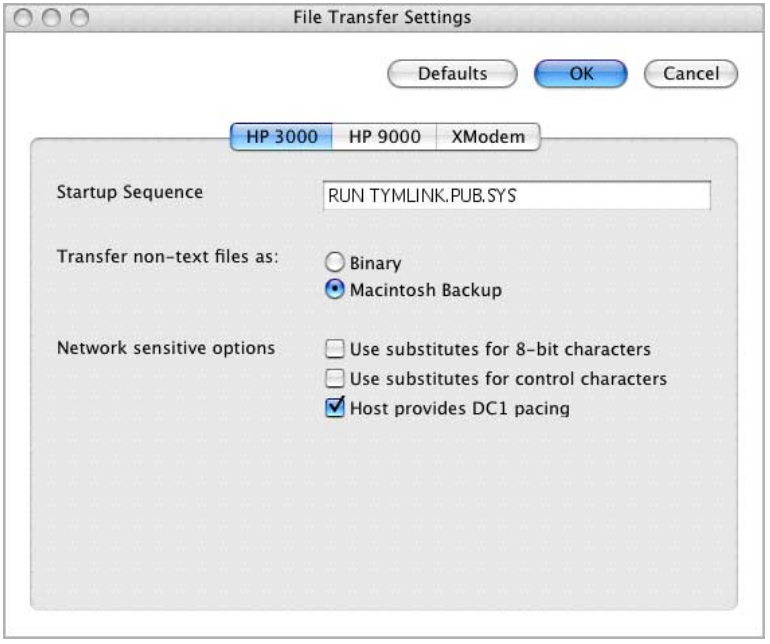
On the HP9000, rename the new version of Tymlink and give it execute capability using the Unix command chmod.

```
mv tymlink tymold
mv tymnew tymlink
chmod +x tymlink
```

8. If you installed Tymlink in a group other than PUB.SYS or /usr/bin, choose *File Transfer* from the *Settings* menu and edit the Startup Sequence used to run Tymlink in the *File Transfer Settings* box.

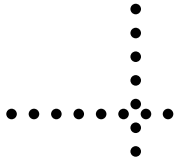
Configuring the Defaults

To configure file transfer options, choose *File Transfer* from the *Settings* menu.



Chapter 8

Transferring Files



Before You Begin

This section provides instructions for transferring different files between the Macintosh and a host computer. To transfer files with HP systems using MS92's built-in protocol, the Tymlink file transfer companion program must be installed on the HP host. Depending on your data communications hardware, some special configuration options may also be required. You may need the help of your system manager to take care of these things. For more information, see the *File Transfer Installation and Configuration* chapter in this manual.

MS92's built-in XMODEM facility does not require installation of Tymlink.

An explanation of each option in the file transfer dialog boxes is found in the chapter titled *Menu Reference* and in the on-line help system.

☞ *Note:* Once you begin a file transfer with MS92, this status box is displayed showing you the progress of the transfer:

Don't worry if the Characters sent don't match the File size in characters once the transfer is complete because sometimes MS92 has to pad the information transmitted to create transfer blocks of even length.

Transfer any Type of File to the HP3000 or HP9000

You can do a binary transfer with any type of file on your Macintosh or host system except for Macintosh applications. In binary transfer, each character in the input file is simply copied to the output file; no special characteristics of the file such as HP file code and blocking factor or Macintosh resource fork are preserved. For this reason, this approach is not usually used to transfer program files, system files, or other host specific files, as these files may be unusable after a binary transfer. To transfer these types of files, see—in Chapter 8—*Backup Macintosh Files on the HP3000 or HP9000* and *Back up HP files on the Macintosh*; for text files, see *Transfer Text Files with an HP3000 or HP9000*.

To perform a binary transfer, do the following:

1. Run MS92 and log on to the host.

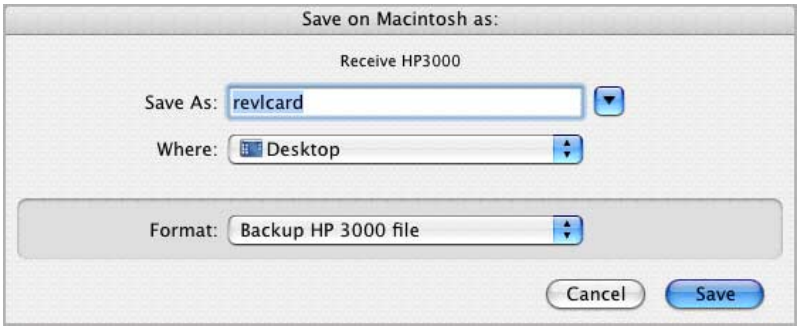
2. Choose *File Transfer* from the *Settings* menu and make sure that the right transfer method (MS92 to HP3000 or MS92 to HP9000) is selected.

3. Select *Send File* from the *File* menu to transfer a file to the host. Select *Receive File* to transfer a file to the Macintosh.

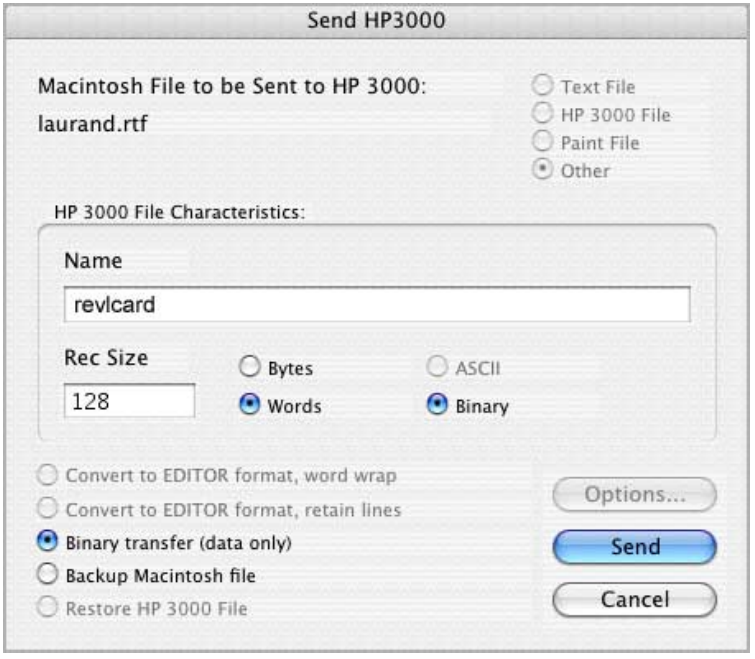
4. Select or type the name of the file to be transferred.

5. The Transfer dialog box will then display. Check the name and any other characteristics of the file created by the transfer. Make sure the *binary* transfer option is selected.

Receive File



Send File



6. Click *Send* or *Receive* to start the transfer.

Transfer Text Files with a HP3000 or HP9000

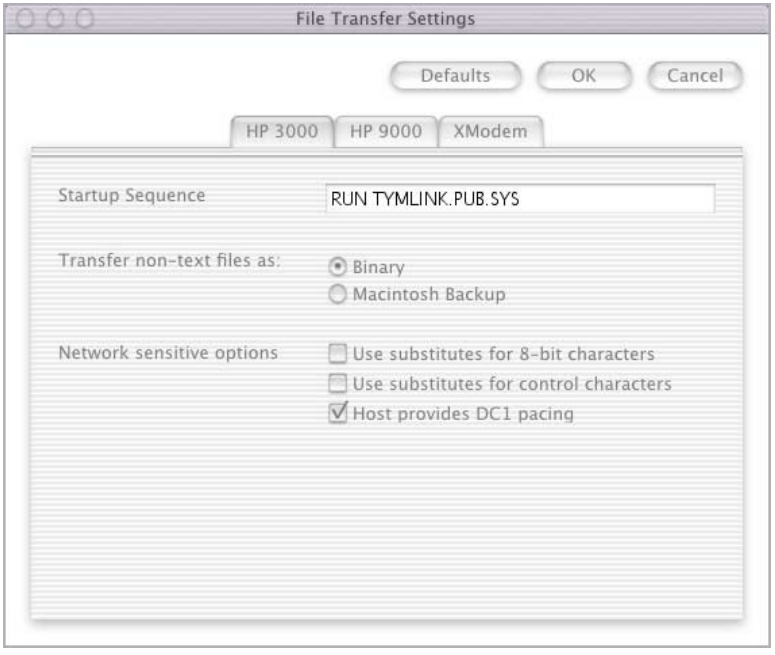
To use MS92's built-in transfer protocol to send a text file from the Macintosh to the host or from the host to the Macintosh, follow the instructions below.

1. Make sure the file to be sent contains text characters and tabs only, no special formatting or fonts. Otherwise MS92 may not recognize the file as a text file. For Macintosh files, save with the Text Only option.

2. Run MS92 and log on to the host.

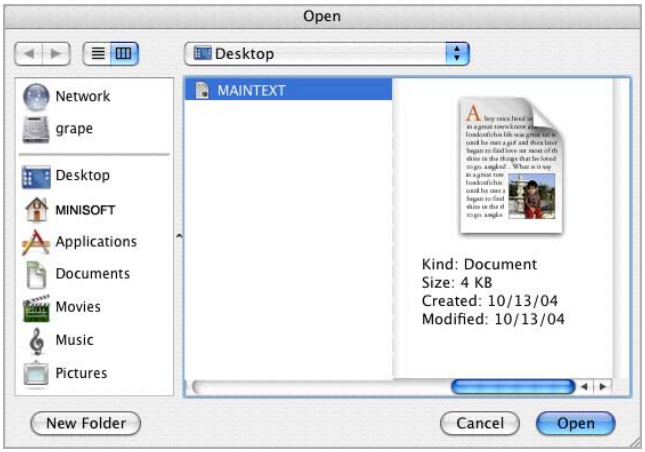
3. Choose *File Transfer* from the *Settings* menu.

4. If you are sending or receiving files from an HP3000/HP9000 select the corresponding tab and select the necessary options:



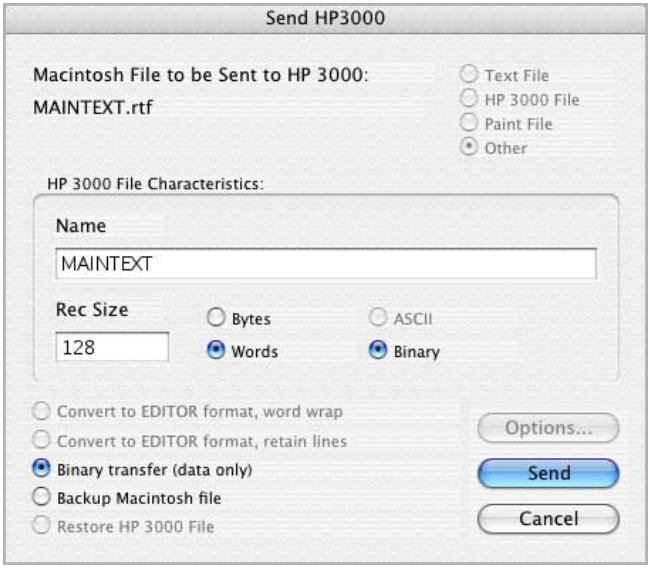
4. Select *Send File* from the *File* menu to transfer a Macintosh text file to the host. Select *Receive File* to transfer a host file to the Macintosh.

5. Select or type the name of the file to transfer.

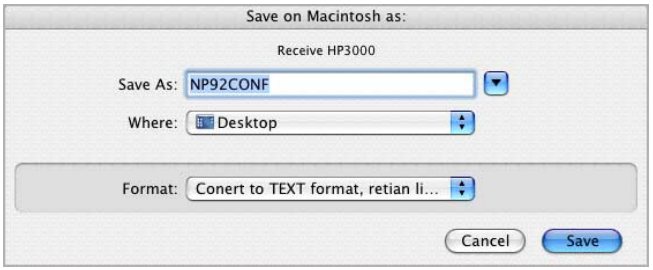


6. One of the following dialog boxes is displayed:

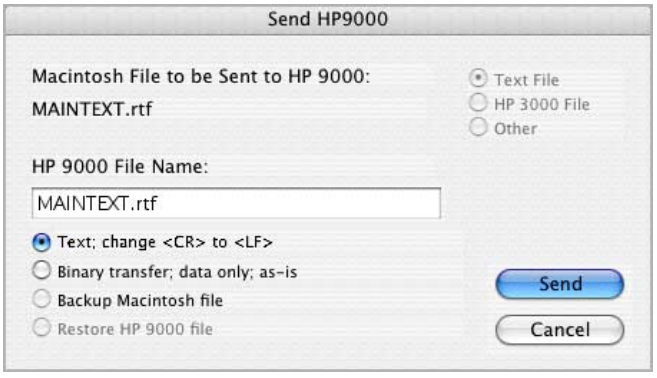
   When sending from the Mac to an HP3000:



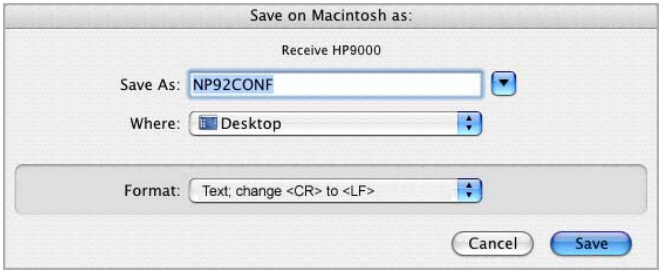
When receiving from an HP3000 to a Mac:



When sending from the Mac to an HP9000:



When receiving from an HP9000 to a Mac:



7. Verify that *Text File* is shown as the file type in the upper right of the box. If not, click *Cancel* and make sure the file is in a text-only format.

8. Check the name and any other characteristics of the file created by the transfer.

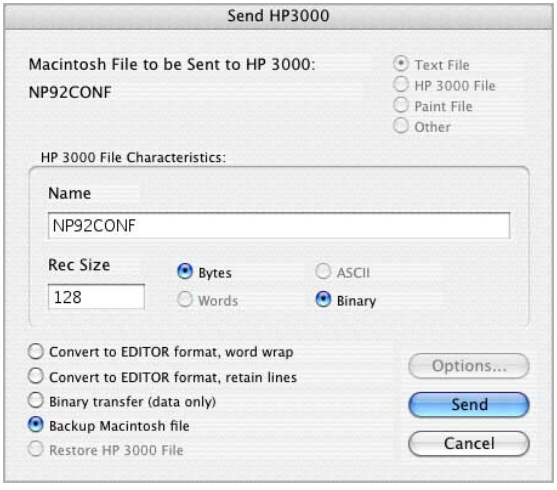
9. When transferring to or from an HP3000, choose either the word wrap or retain lines option. Word wrap concatenates lines into paragraphs until it encounters two consecutive carriage returns in a Macintosh file or a blank line in an HP EDITOR file. Retain lines preserves the line breaks of the file as they are.

10. Click *Send* or *Receive* in the dialog box to start the transfer.

Backup Macintosh Files on the HP3000 or HP9000

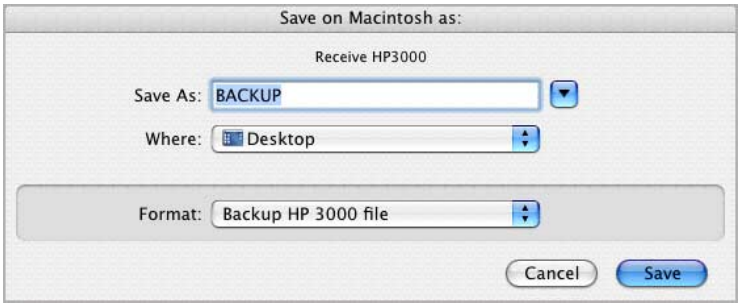
You can transfer any type of Macintosh file to the HP3000 or HP9000 so that it can later be restored on the Macintosh with all characteristics preserved. Do the following:

1. Run MS92 and log on to the host.
2. Choose *File Transfer* from the *Settings* menu and make sure the right transfer method (MS92 to HP3000 or MS92 to HP9000) is selected.
3. Choose *Send File* from the *File* menu.
4. Select the Macintosh file to transfer.
5. The Transfer dialog box is displayed. Check the name of the file created on the HP host by the transfer. Make sure the Backup Macintosh file option is selected. Although Macintosh files can be transferred to the host as binary files, they are usually unusable after transfer. Macintosh application files can only be transferred as backup files.



6. Click *Send* to start the transfer.

To restore a Macintosh backup file, choose *Receive File*, and transfer the file back to the Macintosh with the Restore Macintosh file option.



Backup HP Files on the Macintosh

You can transfer any type of HP file to the Macintosh so that it can later be restored on the original or another HP host. Use this method when transferring program files and other files where blocking factors, file codes, etc., must be maintained for the files to be useful when restored on the HP system. Do the following:

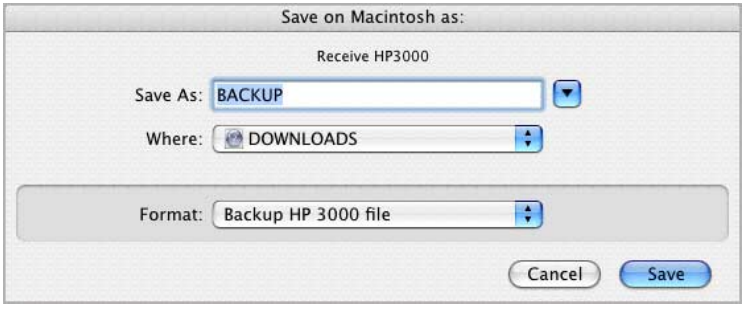
1. Run MS92 and log on to the host.

2. Choose *File Transfer* from the *Settings* menu and make sure that the right transfer method (MS92 to HP3000 or MS92 to HP9000) is selected.

3. Choose *Receive File* from the *File* menu.

4. Type the name of the HP file to transfer.

5. The Transfer dialog box is displayed. Check the name of the file created on the Macintosh by the transfer. Make sure the *Backup HP file* option is selected.



6. Click *Receive* to start the transfer.

To restore this file on an HP3000, choose *Receive File* and transfer it back to the host with the *Restore HP file* option.

Send and Receive Files Using XMODEM

To use MS92's XMODEM file transfer facility to send and receive data with any other system that has an XMODEM program (on HP-UX systems, the XMODEM program is called UMODEM), follow the steps below.

To perform an XMODEM transfer:

1. Run MS92.

2. Choose *File Transfer* from the *Settings* menu. Make sure the MS92 to XMODEM transfer method is selected.

3. Log on to the host, and run its XMODEM program.

4. When sending or receiving a file with XMODEM, you must first tell the host to send or receive the file, then have MS92 do the converse, as described below.

5. Choose *Receive File* or *Send File* from MS92's *File* menu.

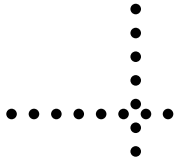
   Do this as quickly as possible, since the host program will probably terminate if it does not receive transmission by the end of some allotted period. If you time out, you must start over.

6. Select or type the name of the file to transfer.

7. Click *OK* to start the transfer.

Chapter 9

Scripts



What Scripts Can Do

A MS92 script is a sequence of statements written in TermTalk, the scripting language provided with MS92 for MAC. A script automatically performs functions that would normally be performed by a user at a terminal. For example, a script can:

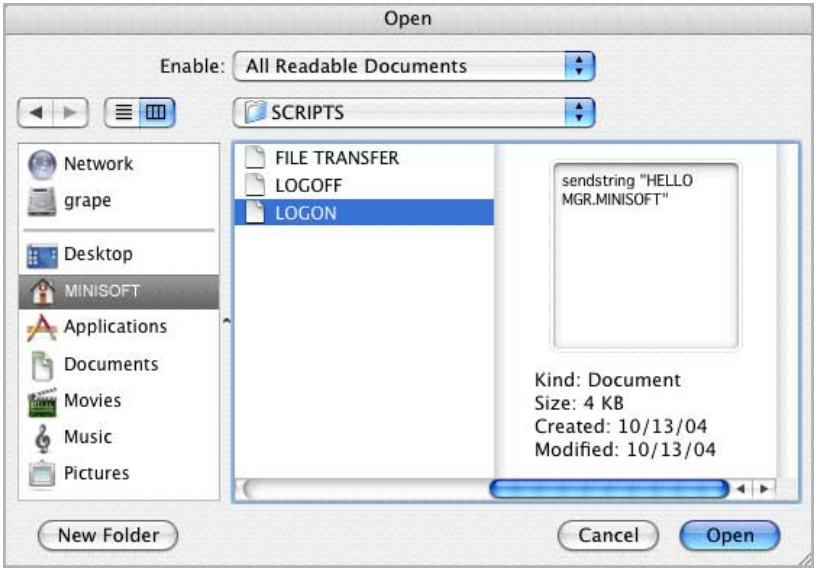
- Log on to a host
- Set configuration values
- Run applications
- Transmit data to the host
- Create and delete files (on Macintosh or host)
- Log data and print files
- Send and receive files to and from other computers
- Prompt the user for input; display messages
- Take different actions in different situations.

This chapter tells you how to run scripts and gives some basic ideas about how to use MS92's command recorder. Please refer to the *TermTalk Script Language Reference* manual for complete details.

Run a Script Manually or Automatically

If your system manager or another MS92 user has provided you with scripts, all you need to know is how to run them. The simplest way is to choose *Do Script* from the *Script* menu.

Use the controls in the dialog box displayed to locate and select the script:



Then click *Open*.

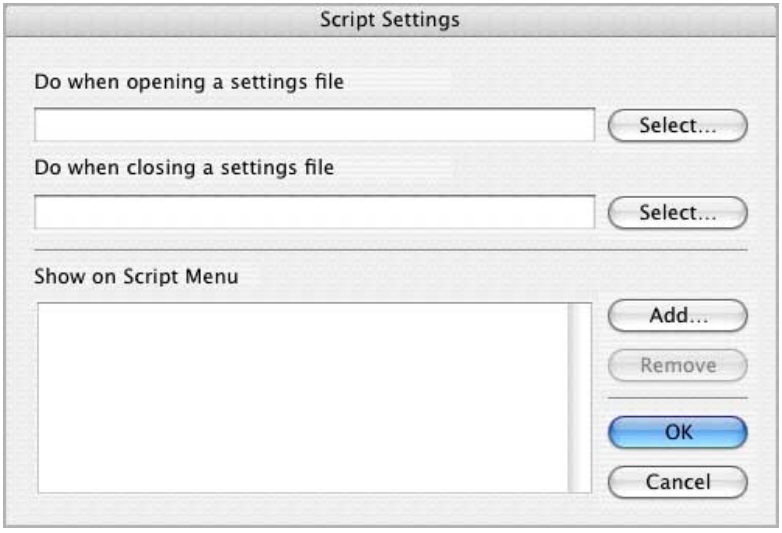
While the script is running, use *Stop Script* or *Pause Script* from the *Script* menu to interrupt execution. If you pause, choose *Resume Script* to continue.

There are several ways to make running frequently used scripts more automatic and convenient. See the following procedures.

Add a Script to the Script Menu

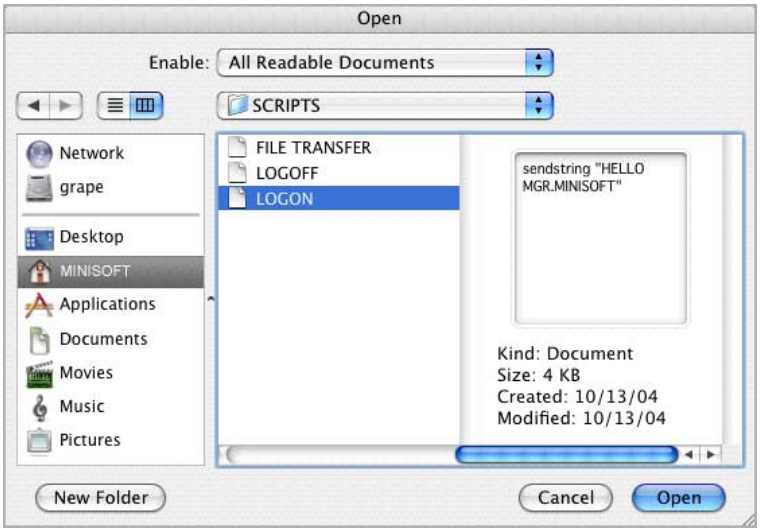
To add a script to the script menu, do the following:

1. Choose *Script* from the *Settings* menu. The following dialog box is displayed:

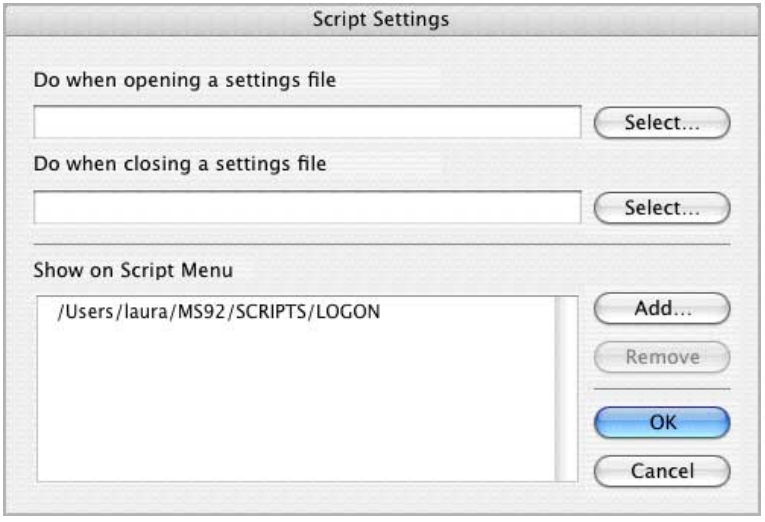


2. Click the *Add* button in the bottom half of the box.

3. Select a script file in the dialog box displayed:



and click *Open*.



4. Click *OK* in the *Script Settings* box.

5. Next time you open the Script menu, your script is listed at the bottom.

6. Be sure to save your Script menu listings by choosing *Save* or *Save As* from the *File* menu to create a settings file. When you run MS92 by opening that file, the scripts you have specified appear on the Script menu.

Execute a Script when you Open or Close a Settings File

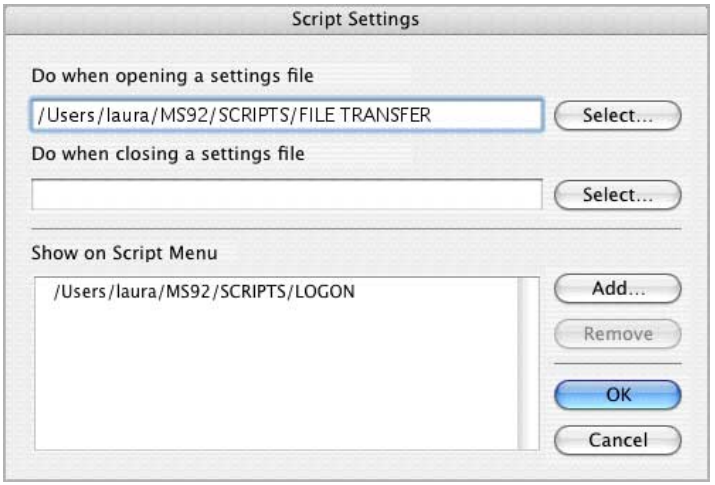
To execute a script when you open or close your settings file:

1. Choose *Script* from the *Settings* menu.

2. Place the cursor in the *Do when opening* or *Do when closing box*. Click the *Select* button.

3. Select a script file in the dialog box displayed, and click *Open*.

4. The script name (along with its location on disk) is displayed in the box where the cursor was positioned:



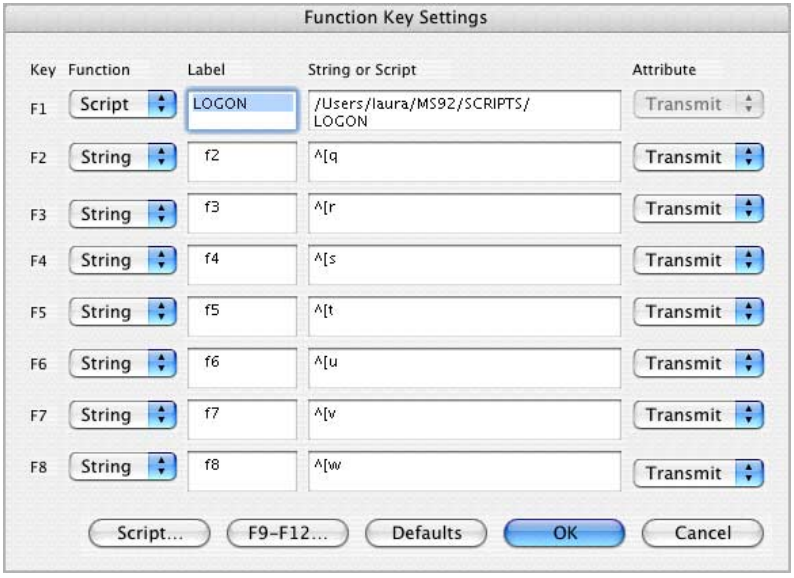
5. The location of the script is saved along with the name so MS92 can find it. If you move the script to another folder or disk, you must remove it and re-add it.

6. Choose *Save* or *Save As* from the *File* menu to create a settings file. When you open that settings file, the *Do when opening script* is executed. When you close the file, the *Do when closing script* is run before MS92 execution is terminated.

Associate a Script with a Function Key

To execute a script with a function key, do the following:

1. Choose *Function Keys* from the *Settings* menu:



2. Choose *Script* in the Function column, and then click the Script button at the bottom of the box to choose a script file. The name and location of the script are placed in the String or Script box. In the Label column, type one or two lines of eight characters or less indicating the name of the script or its purpose.

3. Save your function key definitions in a settings file by choosing *Save* or *Save As* from the *File* menu.

☞ ***Tip*:** Your function key definitions are removed when a host application loads its own function key values and labels. Since most applications use only F1 - F8, you can avoid having some definitions wiped out by putting them in F9 - F12. Also, you can reload function keys saved in your settings file by choosing *Revert* from the *File* menu. This won't interrupt your host MS92. Finally, you could write a TermTalk script that loads function key definitions, assign it to one of the keys between F9 and F12 so that it doesn't get wiped out, and run that script whenever you need to reload the function keys.

Record a Script

MS92's automatic command recorder is useful for creating simple scripts, for building a basic structure for more complex scripts that can later be modified using the script editor, and for helping you learn to use TermTalk. Turn on the recorder before performing a series of actions, and the commands required to reproduce these actions are recorded automatically. Follow these basic steps.

1. Choose *Show Script Window* from the *Script* menu. You may wish to size the main window and the script window to make both visible on your screen.

2. Start recording by choosing *Record a Script* from the *Control* menu of the script window.

3. Click in the main MS92 window so that it becomes the active window again.

4. Do the operation you want to record. Commands appear in the script window as you perform each action.

5. Choose *Stop Recording* from the *Control* menu to suspend or stop recording.

   Choosing *Record a Script* again, recording resumes at the current cursor position.

6. You can edit the script in the window at any time (even without stopping recording), and can save it with the *Save* or *Save As* commands from the *File* menu.

If you record complex interactions with host software, the resulting script is likely to require editing to fine-tune timing and handshaking procedures. You may need to use the TermTalk expect command to condition the sending of data upon the reception of the appropriate prompt from the host. When adding commands to the script, it is convenient to use the *Paste* command from the *Edit* menu of the script window

to place the default syntax of the command in the window. Edit the command parameters as required.

To record a script without displaying the commands on the screen, start recording from the Script menu of the main window rather than from the Control menu of the script window. Follow these steps:

1. Choose *Record A Script* from the *Script* menu.

2. Do the actions you wish to record. MS92 records data typed from the keyboard, menu, and dialog box selections, configuration settings, and changes in window size and position.

3. To suspend recording at any point, choose *Pause Recording* from the *Script* menu. This item then changes to *Resume Recording*. When you resume recording, commands are appended to the end of the file where you left off.

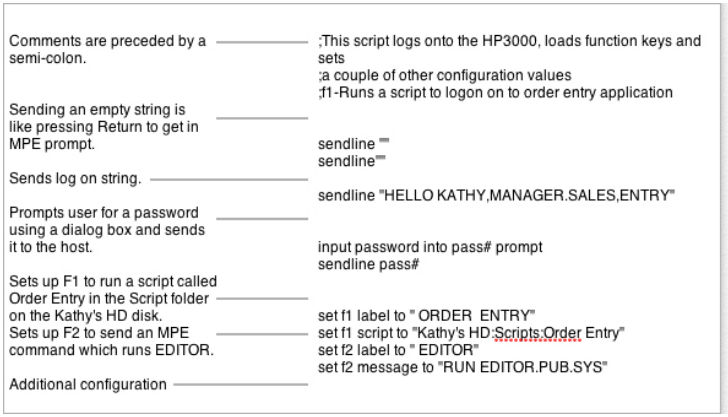
4. When finished, choose *Stop Recording* from the *Script* menu. Save your script by specifying a name in the dialog box displayed.

5. To see the script you created, open the script window by choosing *Show Script Window* from the *Script* menu. Open your script file by choosing Open from the script window's *File* menu. You can then test your script using *Do Script Window*, *Do Lin*e, and *Do Selection* from the *Control* menu of the script window and edit it as necessary.

Write a Startup Script

A start-up script is run automatically when you open the settings file it is associated with. To designate a start-up script, see *Execute a script when you open or close a settings file* on page 7-4. The paragraphs below gives you some ideas about how to create a script used for this purpose.

A start-up script can contain commands to log on to the host, set configuration values, run an application, and so forth. A sample start-up script for the HP3000 is shown below:



To create a start-up script like this, you might turn on command recording before performing your normal log on procedures. Each time you press Return, the sendline “” command is recorded automatically. Typing your log on would be recorded as with the sendline command.

However not all elements of the script can be created automatically by the command recorder. To prompt for a password in a dialog box rather than just sending it with a sendline command, you would have to add the input command manually. (This would eliminate the need to place passwords in a script file where other users could see it, and also would make it unnecessary to update the script if the password changed.) Manual modifications can be made by editing the script in the script window after you finish recording.

The set commands that establish labels and values for F1 and F2 could be created using the command recorder. You would turn on recording before you select *Function Keys* from the *Settings* menu and enter the data. The settings are recorded using the commands shown in the sample script.

Similarly, the set *maximizeSize* and set *logDirection* commands are recorded when you open the Terminal and Logging Settings boxes and make the corresponding choices.

In general, most configuration options can either be saved in a settings file or set by a start-up script. However, there are some settings that cannot be made by a script and must be saved in a settings file. These include:

- All Color Settings options
- All Display Enhancement options
- Scripts to be added to the Script menu

For further details on using TermTalk, see the TermTalk Reference Manual.

Chapter 10

Connection to the Host

Overview

There are three ways to connect a Macintosh to an HP3000 host:

- With a direct cable
- Using a modem
- Through a LAN connection.

This section gives instructions for each type of connection.

Direct Connection

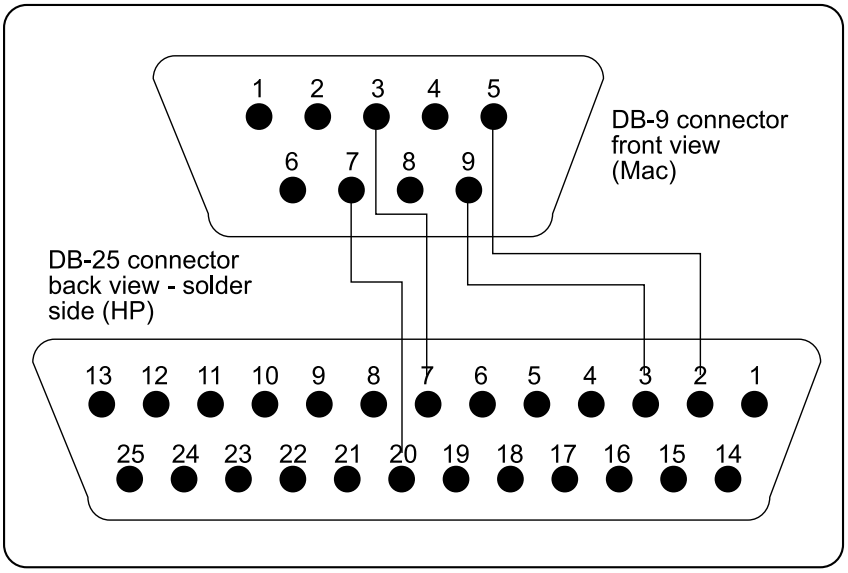
Macintosh 512KE

To cable a Macintosh 512KE to a host system, you need a cable at the Macintosh end that conforms to one of the following diagrams. You can connect this cable to either serial port A (the modem port) or serial port B (the printer port).

Serial connection is MS92's default connection type. If you have any problems getting a host prompt, do the following:

1. Choose *Connection* from the *Settings* menu.
2. Ensure that Serial is selected.
3. Click the *Options* button to verify other parameters.

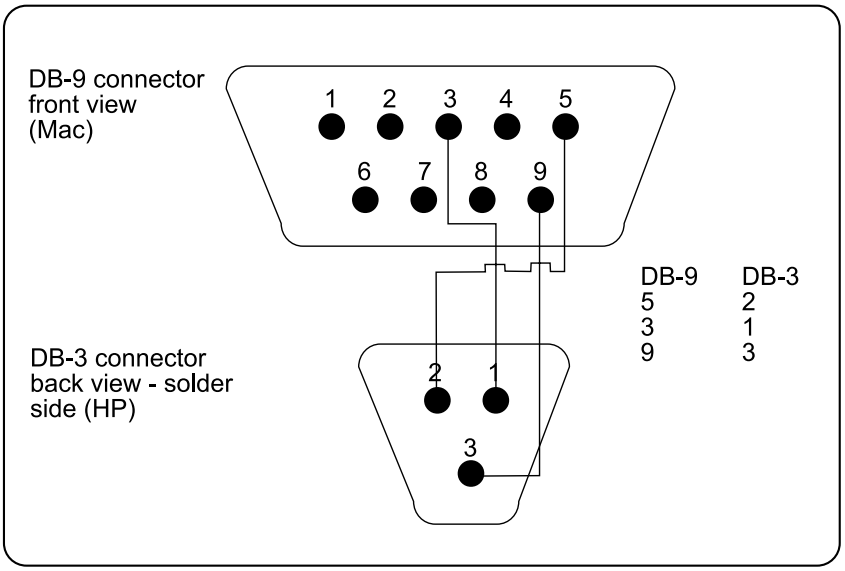
ADCC port controller – RS-232



Connection of pin 7 on the DB-9 to pin 20 on the DB-25 is required only if you plan to use the Hardware DTR Hangup option in the *Connection Settings* box (choose *Connection* from the *Settings* menu). To use this option, you must have a 512KE or larger system.

DB-9	DB-25
3	7
5	2
9	3
7	20

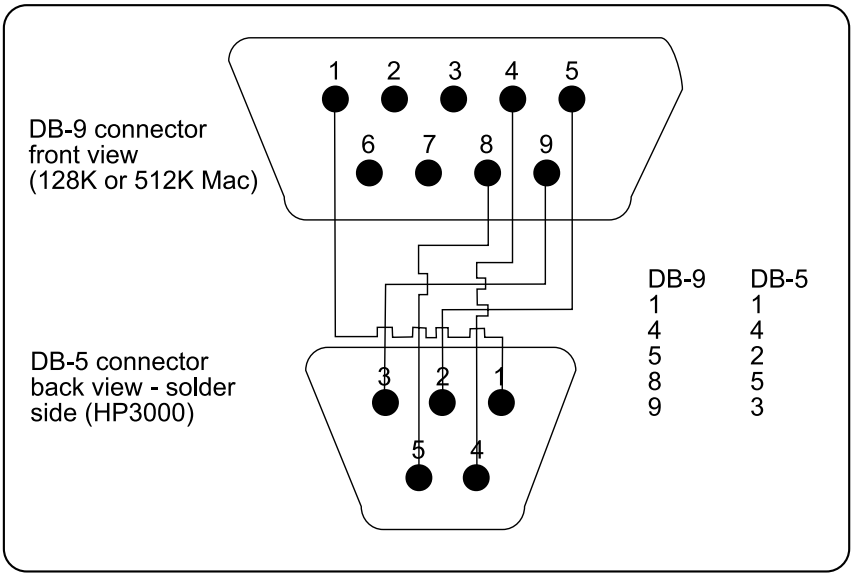
ATP (3-pin) port controller—RS-232



The above illustration shows a DB-9 connector, front view (Mac) and a DB-3 connector, back view - solder side (HP).

DB-9	DB-3
5	2
3	1
9	3

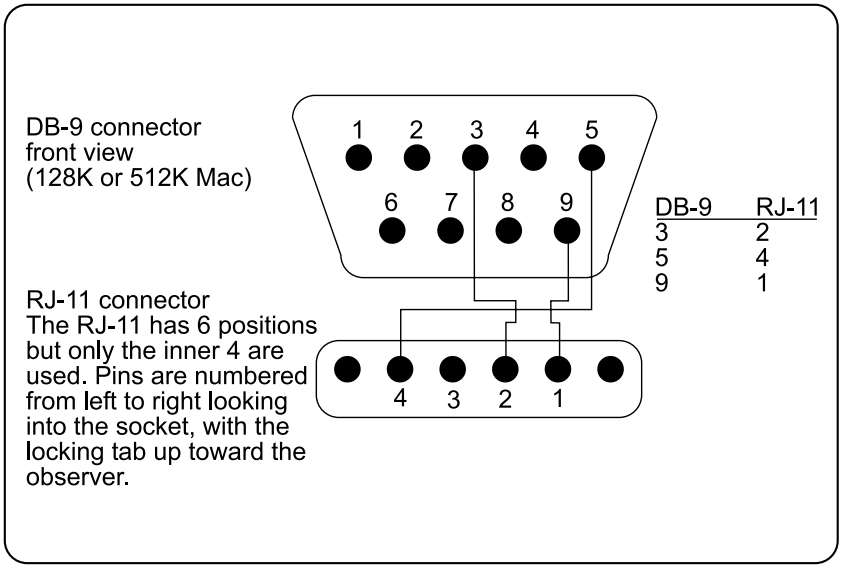
ATP (5-pin) port controller—RS-422



The above illustration shows a DB-9 connector, front view (128K or 512K Mac), and a DB-5 connector, back view - solder side (HP3000).

DB-9	DB-5
1	1
4	4
5	2
8	5
9	3

98624A MUX on HP9000 Series 3000



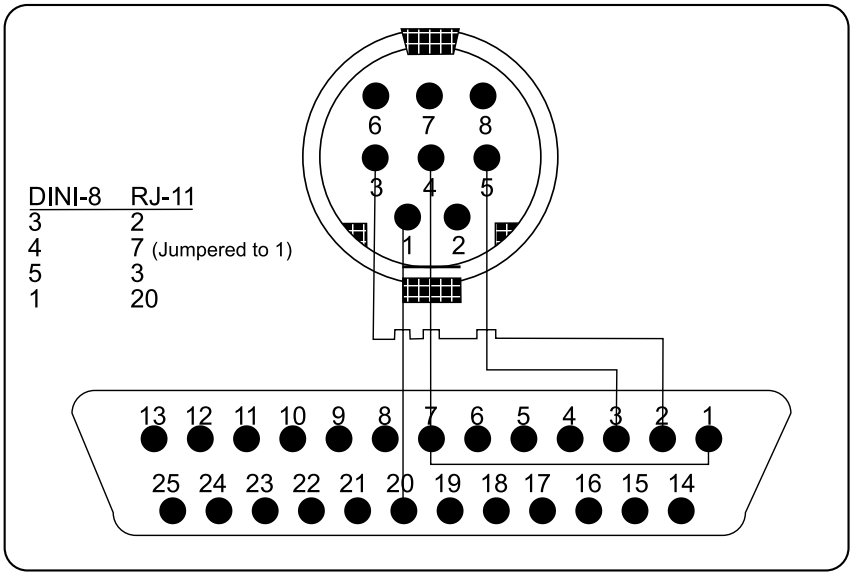
The above illustration shows a DB-9 connector, front view (128K or 512K Mac), and a RJ-11 connector. The RJ-11 has 6 positions but only the inner 4 are used. Pins are numbered from left to right looking into the socket, with the locking tab up toward the observer.

DB-9	RJ-11
3	2
5	4
9	1

Other Macintoshes

The following diagrams show how to cable the DIN-8 connector on a Macintosh Plus, SE, LC, II, etc., to the connector for the HP host system.

ADCC port controller—RS-232

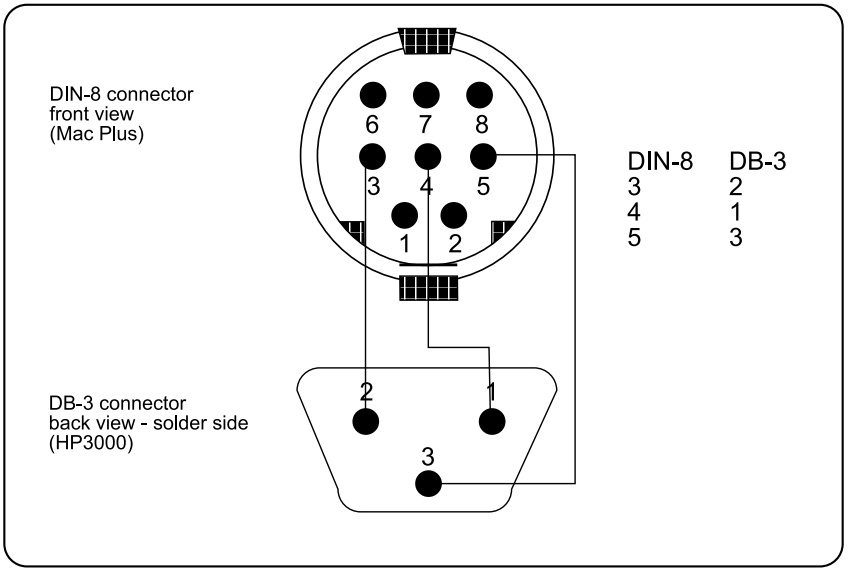


The above illustration shows a DIN-8 connector, front view (Mac), and a DB-25P connector, back view - solder side (HP).

DINI-8	RJ-11
3	2
4	7 (jumpered to 1)
5	3
1	20

Connection of pin 1 on the DIN-8 to pin 20 on the DB-25 is required only if you plan to use the Hardware DTR Hangup option in the *Connection Settings* box (choose *Connection* from the *Settings* menu).

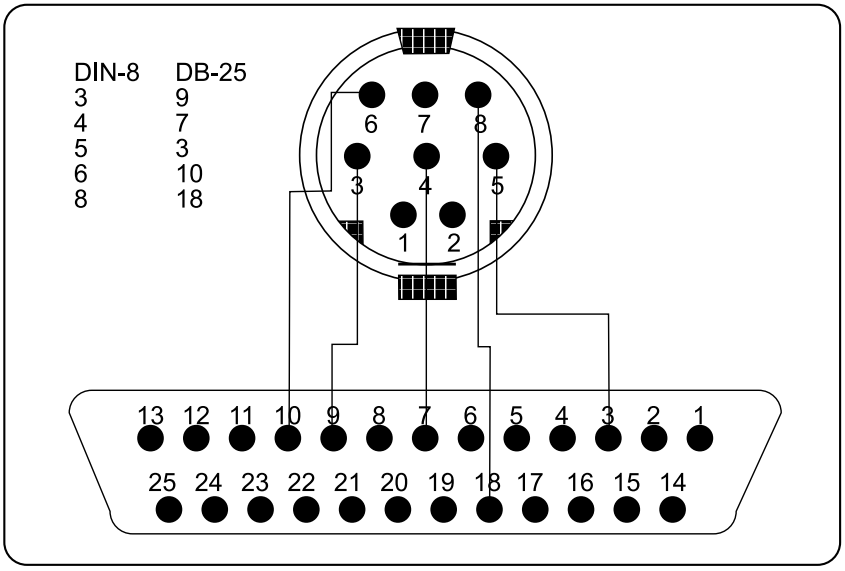
ATP (3-pin) port controller - RS-232



The above illustration shows a DIN-8 connector, front view (Mac Plus), and a DB-3 connector, back view - solder side (HP3000).

DINI-8	DB-3
3	2
4	1
5	3

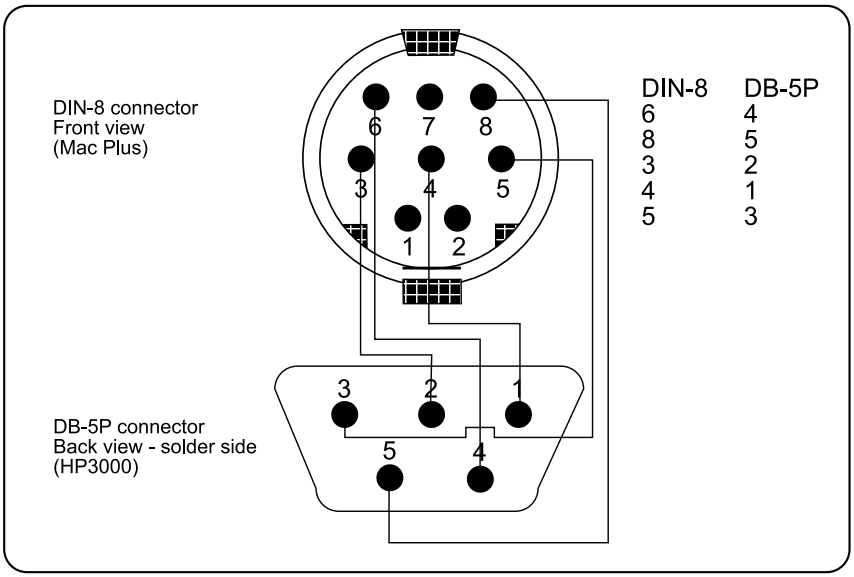
ATP (25-pin to 5-pin) port controller—RS-422



The above illustration shows a DIN-8 connector, front view (Mac), and a DB-25P connector, back view - solder side (HP).

DIN-8	DB-25
3	9
4	7
5	3
6	10
8	18

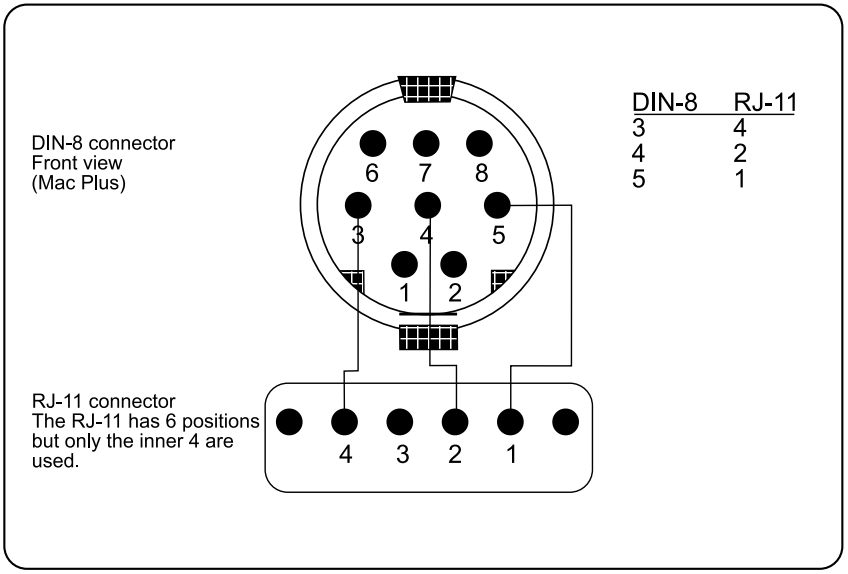
ATP (5-pin) port controller—RS-422



The above illustration shows a DIN-8 connector, front view (Mac Plus), and a DB-5P connector, back view - solder side (HP3000).

DIN-8	DB-5
3	2
4	1
5	3
6	4
8	5

98624A MUX on HP9000 Series 3000



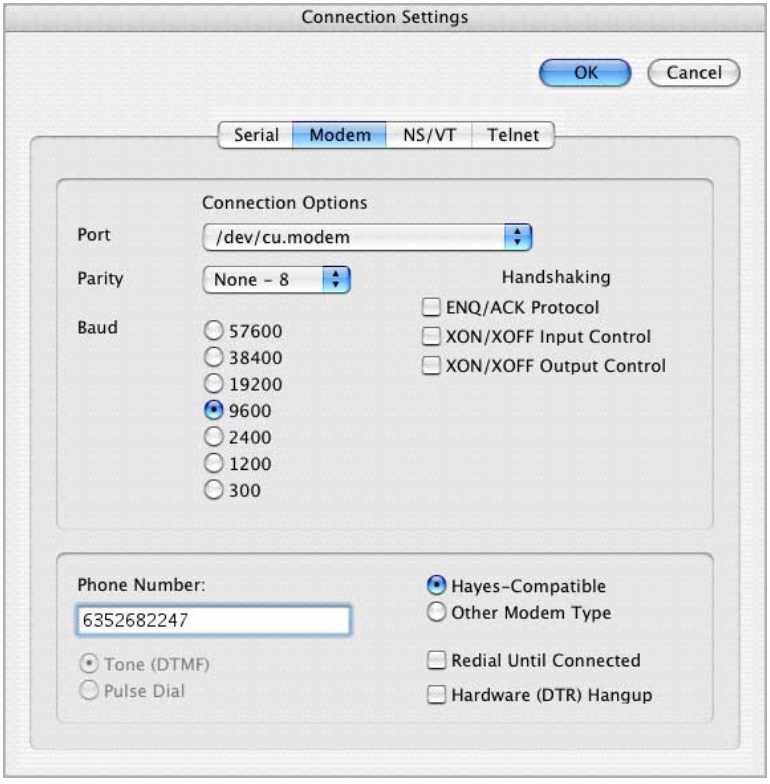
The above illustration shows a DIN-8 connector, front view (Mac Plus), and a RJ-11 connector. The RJ-11 has 6 positions but only the inner 4 are used. Pins are numbered from left to right looking into the socket, with the locking tab up toward the observer.

DIN-8	RJ-11
3	4
4	2
5	1

Modem Connection

To connect a modem to a Macintosh, follow the instructions from the modem manufacturer. To configure MS92 to use the modem connection, do the following:

1. Choose *Connection* from the *Settings* menu.
2. Select *Modem* from the *Connection Type* pop-up menu.
3. Type the phone number in the Phone Number box.



To dial, choose *Connect* from the *File* menu.

To hang up (works with Hayes-compatible modems only), choose *Disconnect* from the *File* menu.

When Hayes-compatible modem is selected in the *Connection Settings* dialog box and you choose *Connect* from the *File* menu, MS92 sends the commands required to set up and hang up the modem automatically.

When you select *Connect*, the following commands are transmitted:

ATZ	Resets the modem.
ATE0	Turns echo off.
ATQ0	Modem sends result codes
ATV1	Results are words.
ATS5=255	Disable backspace character.
ATS12=2	Set escape guard time to 40 milliseconds.
ATM1	Turns speaker on only while connecting.
ATD[T/P] phone#	Dials the phone number entered in the Connection Settings box. T indicates tone dialing; P indicates pulse.
A/	Used to redial the phone number if Redial Until Connected is checked in the Connection Settings box.

When you select *Disconnect*, MS92 sends the commands below:

+++	Puts modem in local command mode.
ATH	Hangs up.
ATZ	Resets the modem.

If you are using a modem that is not Hayes-compatible, you must enter the setup, dialing, and hangup commands manually. Setup and dialing commands can be included in the phone number string entered in the *Connection Settings* box. Strings that contain multiple carriage returns cannot be entered in this box and must be typed from the keyboard. Pause characters (,) can also be entered in the phone number, if necessary.

LAN Connection

Hardware and Software Compatibility

With MS92, you can connect a Macintosh to an HP3000, HP9000, or other ARPA Telnet host using an Ethernet local area network (LAN).

MS92 currently supports a wide range of Ethernet adapters. Ethernet adapters can be cards installed directly in your Macintosh or external boxes connected using the SCSI port on the Macintosh. All Ethernet adapters are shipped with software drivers that must be installed in the System folder of your Macintosh before using MS92.

MS92 also lets Macintosh use a LocalTalk to Ethernet gateway such as the Shiva (Kinetics) FastPath or the Cayman Gatorbox. This means a group of Macintoshes connected to a LocalTalk network can access a host computer on an Ethernet network through the gateway. With a gateway you don't need a separate Ethernet adapter card for each Mac.

Use of gateways requires that your HP host be configured for Ethernet. On an HP3000, use NMMGR.PUB.SYS to enable Ethernet as a link level transport service. The Ethernet and the 802.3 protocols run in parallel with the computers figuring out which to use for a particular terminal conversation.

- Only MPE V systems running V D 5 or later support Ethernet.
- MPE XL 2.1 does not support Ethernet, but versions 2.2 and later do.
- All HP hosts support the 802.3 protocol.
- Most UNIX hosts automatically support gateway connections using Telnet.

Establishing LAN Connection

Follow these steps to establish a connection between a Macintosh and the HP3000 host systems using a LAN. You may need the help of your system manager or network administrator.

1. Run MS92 and choose *Connection* from the *Settings* menu. Select the *NSVT* or *Telnet* option from the *Connection* pop-up menu:

2. NSVT is usually used for HP3000 hosts, and Telnet for HP9000 or ARPA hosts.

3. Enter the node name of the host to connect to and click *OK*.

The node name can be:

- Any host name set up in the SESSION.HOSTS file
- Any name that can be resolved using a domain name server on the network
- The full Internet address, for example, 192.6.1.5.
- A pound sign (#) followed by the host number used by the host on your Ethernet. The pound sign is used only when the Macintosh and the host are on the same Ethernet. The host number is determined by the class of addressing and the subnet mask. For example, if your Macintosh is at address 192.6.1.55, you can access host 192.6.1.5 by entering #5.

4. MS92 locates the Ethernet card and establishes a connection to the host. A host prompt appears in the MS92 window within a few seconds.

5. To terminate the connection, choose *Disconnect* from the *File* menu.

SESSION.HOSTS File

The hosts file (SESSION.HOSTS) contains local operating parameters such as your node name and IP address, plus a list of commonly accessed hosts and optional network tuning parameters for each one. SESSION.HOSTS is a TeachText document and can be edited with the TeachText application or with any word processor or text editor.

The SESSION.HOSTS file must be located in the folder containing MS92 or in your System Folder. MS92 uses the SESSION.HOSTS file in your System Folder if it finds one there first. The file is listed on the following pages. An explanation of the syntax and meaning of each entry follows.

```
#    This  is a text file containing network configuration options.
#    You must replace the sample values shown with actual values for your network!
#    Check with your network administrator if you need assistance.
########################################################################
#    Set these parameters equal to your Mac's IP address and network name.
########################################################################
myip=192.6.1.173
myname=mikemac.domain.organization
########################################################################
#    Set your Ethernet adapter type: AppleTalk, Ether, EtherSE, EtherSC
########################################################################
hardware=Ether
zone=*
########################################################################
#    For Ethernet connection, set maximum time in seconds to spend locating host address.
########################################################################
arptime=5
########################################################################
#    If you use 802.3 protocal rather than standard Ethernet, remove the comment symbol
#    at the beginning of the next line.
########################################################################
# 802p=1
########################################################################
#    To set up a name to use instead of the IP address and to establish TCP/IP tuning options
#    edit the entries below. the first set of entries establishes defaults for all machines.
########################################################################
name=default    # Don't change this line
contime=20      # how long to attempt to make connection, in seconds
retrans=30      # how long to wait before resending an unacknowledged packet,
        # in ticks (1/60th second)
mtu=512 # maximum transmit unit in bytes
           # For Apple Talk, mtu<=512. For Ethernet, mtu<=1024
maxseq=512    #  largest segment we can receive
           # For Apple Talk, maxseq<=512. For Ethernet, maxseg<=1536
rwin=4096      # TCP window size. Must be <=4096
########################################################################
#    Create a set of entries for each machine used. You can simply establish a name for each
#    host or you can override default tuning options. For example:
########################################################################
name=s825   ;   hostip=192.6.1.2
name=xe ;  hostip=192.6.1.5; contime=50
name=s70;   hostip=192.6.1.3   ;   gateway  =  1
```

Syntax for Entries in SESSION.HOSTS

The file is a list of entries, each composed of a keyword and a value for that keyword. Any of the following delimiters can be used between entries or between a keyword and its value:

- Equal sign (=)
- Colon (:)
- Semicolon (;)
- Any white-space character (for example, space, carriage return, line feed, tab).

In the following example of correct syntax, the equal sign is used between each keyword and its value. A carriage return is used between entries.

```
name=hostname      # comment field to end of line ->
hostip=192.6.1.10
contime=60
```

In the next example, a colon is used between each keyword and its value, and a space is used between entries.

```
name:hostname hostip:192.6.1.10 contime:60
```

To include delimiters in a value field, enclose the field in quotes. Quotes cannot be a part of any value. Pound signs (#) indicate comments. Once a pound sign is entered, everything from the pound sign to the end of line is a comment.

Macintosh HOSTS File

The first entries in the file describe the Macintosh environment.

myip Set this entry to the IP address of your Macintosh. This address must be unique on your network. To use dynamic IP addressing, see *Dynamic IP addressing* below.

myname Set this entry to the network name of your Macintosh. It must be unique on your network. This name should include the domain and organization names.

hardware Set this entry to one of the following values, depending on the type of hardware you are using to make LAN connections:

Ether	Ethernet card in a Mac II type system
Ether	For Macintoshes with built-in Ethernet connections (Quadra and Centris) who want to use an added Ethernet card, *nn* is 10 for slot 1, 11 for slot 2, 12 for slot 3, etc.
EtherSC	SCSI-based Ethernet adapter
EtherSE	SE bus Ethernet adapter card
AppleTalk	LocalTalk to Ethernet gateway (Shiva FastPath, Cayman Gatorbox, etc.)

zone=* This entry is used with hardware=AppleTalk to indicate which LocalTalk zone the Ethernet-to-LocalTalk gateway is in. The default, zone =*, means the gateway is in the same zone as your Macintosh. If the gateway is in another LocalTalk zone, set this entry equal to the name of that zone in quotes; for example, zone=”Marketing Macs”. Using a gateway in a zone other than the one your Macintosh is in requires that you also specify myip=dynamic. See heading *Dynamic IP addressing*.

netmask If your site uses a subnetted network, you may enter a subnet mask in decimal form using this parameter; for example, netmask=255.255.255.0.

arptime Set this entry to the number of seconds to spend trying to locate the host's address on your network. Five seconds works fine for many networks, but larger values may be needed for hosts slow to respond. Smaller values are more convenient for the user since the time-out period is shorter.

802p=1 This entry indicates whether to use 802.3 protocol or standard Ethernet protocol to connect with your host.

- If you are using AppleTalk Phase 2 on your Macintosh and connecting to a host supporting Ethernet, use the Ethernet protocol in MS92.
- If you are using AppleTalk Phase 1 on your Macintosh, or connecting to a host that only supports 802.3, use the 802.3 protocol in MS92.

To use 802.3 protocol, remove the comment symbol (#) before the 802p=1 line. To use Ethernet protocol, either remove this line or leave the comment symbol.

Host-Specific Parameters

After the Macintosh configuration options, you may list zero or more hosts, with specific parameter values for each one. Typically, the first host listed is name=default. The entries for this host establish default values for all hosts. Any keyword listed under later hosts overrides the default setting.

Note that the keyword name is special because it separates entries. Parameters following a name up to the next name are all associated with the specified host.

name Set this entry either to default or to the name of a host to which you want to connect. This name can be used as a shortcut when connecting to this host, instead of typing the IP address.

hostip Set this entry to the IP address of the host. For efficiency, include the IP addresses of all commonly accessed hosts. IP addresses of gateways and servers are required entries in the configuration file. See also *Dynamic IP addressing* below.

gateway Set this entry to the gateway precedence for this host. To reach hosts that are not connected to your local network, at least one gateway entry is required. Gateway numbers must start at 1 and increase by increments of 1.

contime Set this entry to the number of seconds to spend trying to open the connection. After this amount of time has elapsed, MS92 gives up on opening the connection. For congested or slow networks, this value should be increased.

retrans Set this entry to the initial retransmit time-out in 1/60ths of a second. After each packet of data is transmitted, MS92 waits for an acknowledgment. If none is received, the packet is retransmitted. This entry specifies how long MS92 waits for an acknowledgment before retransmitting. Increasing its value helps avoid unnecessary retries when using connections with high round-trip times.

mtu Set this entry to the size in bytes of the maximum transmission unit; that is, the largest amount of data to put in each packet. If you are sending to the ARPANET or to local hosts, use mtu=512. Do not set a value greater than 512 with a LocalTalk to Ethernet gateway.

maxseg Set this entry to the size in bytes of the largest segment that can be received. This value controls the size of the packets that are sent over the connection. Reducing this value can eliminate IP fragmentation. A value of maxseg=512 should be sufficient to avoid fragmentation. Do not set a value larger than 512 if you are using a LocalTalk to Ethernet gateway.

rwin Set this entry to the size of the receive window in bytes. The Ethernet hardware MS92 uses cannot handle receiving back-to-back packets. This requires us to limit the TCP receive window advertised to other hosts. For communicating to slower hosts, a larger window may work better. 4096 is the maximum setting.

copyfrom Set this entry to the name of a previously specified host from which you want to copy all unspecified parameters.

Dynamic IP Addressing

To have MS92 request a dynamic IP address from a KIP-style gateway such as a Fastpath or Gatorbox, specify myip=dynamic. The gateway must be configured to allow this; see your gateway manual for details.

Alternately, you can pre-assign an IP address using the codes shown in Table 2. When you attempt to connect to a gateway, MS92 decodes the address you specify and replaces it with a numeric value, as shown in Table 3. Because these addresses are assigned by MS92 rather than by the gateway, this type of addressing doesn't require special configuration of the gateway. From the gateway's perspective, these addresses are static addresses.

Codes for IP addressing

Code	Meaning
h	High-order byte of the network number (net number/256)
l	Low-order byte of the network number (net number modulo 256)
n	AppleTalk node number

Some examples are shown below:

Sample IP addresses

IP Address	Apple Talk Number	Resulting IP Number
myip=128.174.h.n	Net:1230 Node:35	128.174.4.35
myip=128.174.20.n	Net:1230 Node:35	128.174.20.35
myip=m80.h.l.n	Net:1230 Node:35	128.4.206.35

Multiple Sessions

There are as many ways to set up and run multiple simultaneous sessions as there are network configurations and users, but here are a few guidelines that need to be observed:

- Each simultaneous MS92 requires a separate copy of the MS92 product.

If you are using MS92 4.12 or later, the number of simultaneous sessions you can run is limited only by your available RAM and disk space.

Our recommendation for setting up and running multiple sessions follows:

1. Create a folder for each MS92 you intend to run.

2. Make a duplicate copy of MS92 for each folder, naming it something descriptive (like the network connection it will use, or the name of the host you'll be connecting to).

3. Place each copy in its own folder.

4. For each copy of MS92, create a settings file (named *MS92 Defaults*) with the appropriate connection settings, window placement, screen colors, f-key definitions, scripts, etc. Place this file in the folder with its copy of MS92.

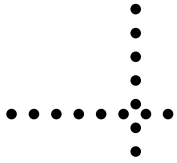
   Naming the settings files *MS92 Defaults* ensures that when MS92 opens, it uses the settings in that file.

5. Create an alias for each MS92 application on your desktop. This way, to run MS92 with a given connection configuration, all you have to do is open the appropriate alias, and you're ready to go.

NSVT is usually used for HP3000 hosts and Telnet for HP9000 or ARPA hosts.

Appendix A

Escape Sequences



Escape sequences are codes that allow executing programs to perform terminal control functions. Most can be performed by entering them from the keyboard. All escape sequences begin with the escape character followed by one or more characters.

When a sequence is more than one character long and ends in a letter, that letter *must* be uppercase. Sequences in the same family (with the same two characters following the Ec character) can be combined. In this case, the final letter must be uppercase and all preceding letters must be lower case. For example, Ec&k1L turns on local echo and Ec&k1C turns on caps lock. To combine these, you could use Ec&k1l1C or Ec&k1c1L.

In the tables following, escape sequences are grouped in functional categories.

- The column labeled *EC* gives the characters that follow the initial escape character in a particular sequence. Variables enclosed in brackets (<>) should be replaced by a value. Where double brackets are used (<<>>), the value should appear in brackets in the actual sequence. For example, one valid form of Ec&p<<fn>>n9^ would be Ec&p<RECEIPTS>n9^.
- The column labeled *Function* describes what the sequence does.

The remaining columns give keyboard, menu, and mouse equivalents where available.

HP700/92 and 700/94 Escape Sequences

Terminal Control

EC	Function	Keyboard	Menu	Mouse
1	Set tab stop			Margin/ tab ruler
2	Clear tab stop			Margin/ tab ruler
3	Clear all tab stops		Edit	
I	Horizontal tab	TAB		
i	Back tab	SHIFT TAB		
4	Set left margin			Margin/ tab ruler
5	Set right margin			Margin/ tab ruler
9	Clear all margins		Edit	
E	Hard reset	command key R	Utility	Press ALT/OPTION and click RESET
g	Soft reset	command key -	Utility	Click RESET
Y	Begin display function mode		Utility	
Z	End display functions mode		Utility	
b	Unlock keyboard		Settings, Utility	

EC	Function	Keyboard	Menu	Mouse
c	Lock keyboard		Settings, Utility	
&k0A	Disable auto line feed mode		Utility	
&k1A	Enable auto line feed mode		Utility	
&k0C	Disable caps lock mode			
&k1C	Enable caps lock mode			
&k0D	Disable bell		Settings	
&k1D	Enable bell		Settings	
&k0K	Disable auto keyboard lock		Settings	
&k1K	Enable auto keyboard lock		Settings	
&k0L	Disable local echo		Settings	
&k1L	Enable local echo		Settings	
&k0M	Disable Modify All mode			
&k1M	Enable Modify All mode			
&k0P	Disable caps mode	CAPS/LOCK		
&k1P	Enable caps mode	CAPS/LOCK		
&k0Q	Disable Click			
&k1Q	Enable click			
&k0R	Disable remote mode (local mode)		Utility, Settings	
&k1R	Enable remote mode		Utility, Settings	

EC	Function	Keyboard	Menu	Mouse
&k0]	Select key = Print/Enter key			
&k1]	Print/Enterkey = Select key			
&f1m149P<!154>	Return key = Enter key		Settings	
&f1m149P<!149>	Return key = Return key		Settings	
&f1m149P<>	Return key = Return key		Settings	
&fR and &f2 11P...	Numeric keypad Tab assignments			
&f0B	Store configuration values, function key labels, tabs and margins for later retrieval			
&f1B	Restore values stored by EC &F0B			
z	Initiate terminal self-test			
&q0L	Unlock configuration			
&q1L	Lock configuration			
&k<x>j	Selects CRT refresh rate			
&k1\	Selects EM220 mode from HP mode			
&k0\	Selects HP mode from EM220 mode			

Cursor Control

EC	Function	Keyboard	Menu	Mouse
*d0Q	Underline cursor		Settings	
*d1Q	Block cursor		Settings	
A	Cursor up	UP arrow		Click on spot
B	Cursor down	DOWN arrow		Click on spot
C	Cursor right	RIGHT arrow		Click on spot
D	Cursor left	LEFT arrow		Click on spot
H	Cursor home up	HOME		Click Home Up
h	Cursor home up (ignore transmit fields)	HOME		Click Home Up
F	Cursor home down	END		Press ALT/ OPTION and click Home Up
G	Cursor to left margin			Click on spot
'	Sense relative cursor position			
a	Sense absolute cursor position			
&a<col>c<row>Y	Move cursor to row and col on screen (screen relative addressing)	NOTE The leftmost column and topmost row are numbered 0.		Click on spot

EC	Function	Keyboard	Menu	Mouse
&a<col>c<row>R	Move cursor to row and col in display memory (absolute addressing)	NOTE The leftmost column and topmost row are numbered 0.		Click on spot
&a±<col>c±<row>Y	Move cursor relative to its present position on screen	NOTE Possitive numbers indicate right or upward movement; negative numbers indicate left or downward movement.		Click on spot
&a±<col>c±<row>R	Move cursor relative to its present position in display memory	NOTE Possitive numbers indicate right or upward movement; negative numbers indicate left or downward movement.		Click on spot
&x0C	Disable send cursor position mode			
&x1C	Enable send cursor position mode			

Display Control

EC	Function	Keyboard	Menu	Mouse
&w12F	Turns on display			
&w13F	Turns on display			
S	Roll up	SHIFT UP arrow		Click up arrow
T	Roll down	SHIFT DOWN arrow		Click down arrow
U	Next page	PAGE DOWN		Click scroll bar
V	Previous page	PAGE UP		Click scroll bar

EC	Function	Keyboard	Menu	Mouse
&w6f<x>X	Select width of display in columns (x=80,132,160)		Settings	
*d0E	Normal display			
*d1E	Inverse display			
&k0[	Disable smooth scroll		Settings	
&k1[	Enable smooth scroll		Settings	
l	Begin memory lock mode		Settings, Utility	
m	End memory lock mode		Settings, Utility	

Editing

EC	Function	Keyboard	Menu	Mouse
J	Clear from cursor to end of memory	*command key* J to CLEAR	Edit	Click Clr Disp
K	Clear from cursor to end of line	*command key* L or SHIFT CLEAR	Edit	Click Clr Line
L	Insert one line	*command key* I	Edit	Click Ins Line
M	Delete one line	*command key* D	Edit	Click Del Line
N	Begin insert character with wraparound mode			Press and click Ins Char
O	Delete one character with wraparound			

EC	Function	Keyboard	Menu	Mouse
P	Delete one character	*command key* E or DEL	Edit	Click Del Char
Q	Begin insert character mode	SHIFT INS/HELP	Edit	Click Ins Char
R	End insert character mode	SHIFT INS/HELP?	Edit	Click Ins Char
&s0B	Disable SPOW			
&s1B	Enable SPOW			
&s0C	Enable EOL wrap		Settings	
&s1C	Disable EOL wrap		Settings	

Format Mode

EC	Function	Menu
W	Begin format mode	Settings, Utility
X	End format mode	Settings, Utility
6	Define alpha field	
7	Define numeric field	
8	Define field	
[	Begin unprotected field	
{	Start transmit-only field	
]	End field	
&k0X	Select US decimal type	
&k1X	Select European decimal type	
&k<x>Y	Select <x> decimal digits	
&k0Z	Disable transmit modified data mode	
&k1Z	Enable transmit modified data mode	

EC	Function	Menu
&e<x>e<y>	Initiates edit check, applying attribute y to field type x	
&a<coll>s <col2>s... <coln>s	Splits display memory veritcally into up to 80 tab regions	
&a<col1>s <col2>s... <coln>s <row1>I	Specifies vertical tab regions for a range of rows beginning at the top of display memory and ending with row 1	
&a<row1>i<col1>s <col2>s... <coln>S	Specifiies vertical tab regions for a range of rows beginning with row1 and ending at the bottom of display memory	
&a<row1>i<col1>s <col2>s... <coln>s <row2>I	Specifies vertical tab regions for a range of rows beginning with row1 and ending with row2	

Forms Cache

EC	Function
&q4te2{<x>L	Set forms cache size
	x = # of 256-byte blocks; 0£x£95
&p9^	Returns number of 256-byte blocks assigned to forms cache
&p<x>p9^	&p<<fn>>n9^
Returns forms cache status, where x is the form number and fn is the form name	
&p<>n9^	Returns numbers and names of forms in forms cache directory
&p9u<x>p0L &p9u<x>pL	Purges form x
&p9u<x>pF	Copies form x from cache to screen
&p9u<<fn>>n <x>p<def>L	Defines and downloads form x of length y, with name fn and definition characters def
&p9u<<fn>>n <x>p<<def>>L	Defines and downloads form x with name fn and definition characters def. Used when length is unknown.

Status

EC	Function
^	Returns primary status
~	Secondary status request
*s^	Returns terminal id: 70092 or 70094
*s<x>^	Returns terminal capabilities x=-1 Alphanumeric capabilities x=-2 Graphics capabilities x=-3 Amount of RAM x=-4 Interface capabilities
*y^	Returns downloadable character set capabilities
&p4^	Returns printer status

Data Transfer

EC	Function	Menu
f	Disconnect modem	
@	Stop transmission from terminal for one second	File
d	Transmit block to host	
&k0B	Disable block mode	Settings, Utility
&k1B	Enable block mode	Settings, Utility
&k0I	Data byte = 7 data bits and one parity bit	Settings
&k1I	Data byte = 8 data bits, no parity bit	Settings
&s0A	Disable transmit functions mode	Settings
&s1A	Enable transmit functions mode	Settings

EC	Function	Menu
&s0D	Disable page mode	Settings
&s1D	Enable page mode	Settings
&s0G	Enable handshaking	Settings
&s1G	Disable handshaking	Settings
&s0H	Disable DC2 handshaking	Settings
&s1H	Enable DC2 handshaking	Settings
&s1N	Disable esc transfer	
&s1N	Enable esc transfer	
&s0C	Disable send cursor position mode	
&s1C	Enable send cursor position mode	
&q8te 1 {0R	Return key = Return	Settings
&q8te 1 {1R	Return key = Enter	Settings
&q1te 1 {0G	Disable XON/XOFF Output Control	Settings
&q1te 1 {1G	Enable XON/XOFF Output Control	Settings
&q1te 1 {0H	Disable XON/XOFF Input Control	Settings
&q1te1 {1H	Enable XON/XOFF Input Control	Settings
&q<m>te 1 {0B	Disable hardware handshaking m=1 Datacomm port m=2 Printer port	
&q<m>te 1 {1B	Enable hardware handshaking	
&q4te2{0Z	For format mode transfers, transmit all unprotected fields to host	
&q4te2{0Z	For format mode transfers, transmit only fields whose MDTs are set on	

Logging

Note: MS92 does not support selection of the destination device using an escape sequence. No matter which device code you specify in your escape sequence, data is always logged to a temporary log file on disk. You can send the contents of the log file to the printer at any time using a special sequence, Ec&opP.

EC	Function	Menu
0	Home up and copy memory to log file	
&pB or &p0B	Copy line to log file	Log
&pF or &p0F	Copy from cursor line to last displayed line to log file	Log
&pM or &p0M	Copy all of memory to log file	Log
&p<x>p1C &p<x>p4u1C &p<x>p6u1C	Perform x lines feeds	
&p<x>C &p4u<x>C &p6u<x>C	Perform form feed; x = 0 or 2 - 10	
&p11C &p4u11C &p6u11C	Enable logging from bottom	Log, Settings
&p12C &p4u12C &p6u12C	Enable logging from top	Log, Settings
&p13C &p4u13C &p6u13C	Disable logging	Log
&p<char>p20C	Enable record mode; char is the ASCII value used to end record mode	
&p<x>D	Select <x> as the destination device	

EC	Function	Menu
&p<y>D	Copies y amount of data to log file y=b Copies the cursor line y=f Copies from cursor line to last display line y=m Copies from cursor line to end of display memeory	
&p<x>W<string>	Transfers x bytes of the string to the log file in binary form 1£x£256	
&p W<string>	Transfers string to the log file in ASCII form; string is terminated by 256th byte or line feed character	

Function Keys

EC	Function	Keyboard	Menu	Mouse
p	Default for user key 1	F1	Keys	Click lable 1
q	Default for user key 2	F2	Keys	Click label 2
r	Default for user key 3	F3	Keys	Click label 3
s	Default for user key 4	F4	Keys	Click label 4
t	Default for user key 5	F5	Keys	Click label 5
u	Default for user key 6	F6	Keys	Click label 6
v	Default for user key 7	F7	Keys	Click label 7
w	Default for user key 8	F8	Keys	Click label 8
j	Begin user key definition		Settings	
k	End user key definition		Settings	
&j@	Enable user keys; remove key labels and status line from the screen			
&jA	Enable and display the Modes keys			

EC	Function	Keyboard	Menu	Mouse
&jB	Display user function key labels		Keys	
&jR	Enable the User/System key			
&jS	Disable the User/System key			
&j<x>L <message>	Remove key labels; display message with length of x characters, up to 160			
&jC	Remove message; display function key labels			
&j<x>D	Controls what happens after message is displayed using Ec&j<x>L<message> sequence x=0 No bell, no CR transmitted, labels restored x=1 Bell rings, no CR transmitted, labels restored x=2 No bell, CR transmitted, labels not restored x=3 Bell rings, CR transmitted, labels restored			
&f<attr>a <key>k <lbllen>d <strlen>L <label> <string>	Define function key attributes, labels, and strings attr=0 Normal attr=1 Local attr=2 Transmit key number of function key 1≤key≤8 lbllen number of characters in label (maximum 16 used) strlen number if characters in string (Maximum 80 used)			
&f<key>E	Executes a function key key number of function key 1≤key≤8			

Display Enhancements

EC	Function
&d@	End display enhancement
&dA	Start blinking enhancement
&dB	Start inverse enhancement
&dC	Start inverse and blinking enhancement
&dD	Start under line enhancement
&dE	Start underline and blinking enhancement
&dF	Start underline and inverse enhancement
&dG	Start underline, inverse and blinking enhancement
&dH	Start half-bright enhancement
&dI	Start half-bright and blinking enhancement
&dJ	Start half-bright and inverse enhancement
&dK	Start half-bright, inverse and blinking enhancement
&dL	Start half-bright and underline enhancement
&dM	Start half-bright, underline and blinking enhancement
&dM	Start half-bright underline and inverse enhancements
&dO	Start half-bright, underline, inverse and blinking enhancements
&dS	Start security enhancement

Character Set

EC	Function	Menu
)@	Change alternate set to base set	Settings
)A	Change alternate set to math set	Settings
)B	Change alternate set to line drawing set	Settings
)E	Change alternate set to italic set	Settings
)F	Change alternate set to bold set	Settings
)X	Download alternate set	

MS92-Specific Escape Sequences

The following table lists sequences used only with MS92. These control script execution, file transfer, etc.

EC	Function
&ox<script>	Execute complied TermTalk script
&oX <scriptobject>	Execute TermTalk script object under NewWave
&oC<command>	Execute TermTalk command string y; no completion status returned
&oB<command>	Execute TermTalk command string; completion status returned
&os<x>h<mpefilename>N	Send a New Wave object to an HP3000 host x length in characters of MPE file name
&or<x>h<mpefilename>N	Receive a file from an HP3000 host under NewWave x length in characters of MPE file name
&os<x>h<mpefilename>Z &os<o>c <x>h<mpefilename>Z	Send a file to an HP3000 host under Windows x length in characters of MPE file name o=0 default conversion option o=1 text transfer, retain lines o=2 binary transfer o=3 text transfer, word wrap o=4 backup MS-DOS file o=5 restore HP file
&or<x>h<mpefilename>Z &or<y>w<msdosfilename> <x>h<mpefilename>Z &or<o>c <x>h<mpefilename>Z &or<o>c<y>w<msdosfilename> <x>h<mpefilename>Z	Receive a file from an HP3000 host under Windows x length in characters of MPE file name y length in characters of MS-DOS file name o=0 default conversion option o=1 text transfer, retain lines o=2 binary transfer o=3 text transfer, word wrap o=4 backup HP file o=5 restore MS-DOS file

EC	Function
&opP	Print log file; see *Logging* sequences, above in this chapter
*s811^	Return TermTalk identity () function result string
&oS	Test status of MS92-specific escape sequences, returning a string terminated by a carriage return. The first character indicates whether the previous Ec&o... sequence was successful with one of the following codes: S Successful F Failed C Canceled by the user X Sequence invalid For file trnasfer sequences, this status character is followed by the MS-DOS file name or NewWave object name.

Color Terminal Escape Sequences

EC	Function	Menu
*v<x>p	Select a palette 0≤x≤15	File
*v<method>m<int>a<int>b<int>c<mix>I	Defines the color for one mix method = 0 RGB method = 11 HSL int intensity for each component a red or hue value b green or saturation value c blue or luminosity value mix 0 ≤ mix ≤ 7	File
*vL	Load a palette	File
*e<mix>B	Select color for background pen; 0≤mix≤7	
*m<mix>X	Select color for primary pen; 0≤mix≤7	
*m<mix>Y	Select color for secondary pen; 0≤mix≤7	
*n<mix>X	Select color for graphics text pen; 0≤mix<Z	
*m<mix>H	Select color for area boundary pen; 0≤mix≤7	
*mH	Disable area boundary pen	
*m<x>A	Select drawing mode x 0 = picture protect 4 = Jam2 1 = Clear1 5 = OR 2 = Jam1 6 = Complement2 3 = Complement1 7 = Clear2	

EC	Function	Menu
*m<x>W	Select predefined dithered color x 2 = Violet 3 = Brown 4 = Burnt orange 5 = Gold 6 = Lime 7 = Turquoise 8 = Red 9 = Green 10 = Blue 11 = White 12 = Black 13 = Lime 14 = Aqua 15 = Royal blue 16 = Fuschia 17 = Burnt sienna 18 = Pumpkin 19 = Gray brown	
*m<x>,<y>,<z>V	Assigns densities <x>, <y>, and <z> to the red, green, and blue color planes to select a user-defined dithered color. <s>, <y>, and <z> are values between 0.00 and 1.00, converted by the terminal to the nearest 1/16th.	
*v<x>D	Deletes a palette 0 ≤ x ≤ 15	
*vE	Delete all palettes	
&v<method>m <fclr1>a<fclr2>b <fclr3>c <bclr1>x<bclr2>y<bclr3>z <pair>I	Assigns color to a color pair method 0 for RGB, 1 for HSL fclr1 red/hue value (foreground) fclr2 green/sat value (foreground) fclr3 blue/lum value (foreground) bclr1 red/hue value (background) bclr2 green/sat value (background) bclr3 blue/lum value (background) pair 0 ≤ pair ≤ 7	File
&v<pair>S	Select a color pair; 0 ≤ pair ≤ 7	File

EC	Function	Menu
&f<key>k <pair>c <column>xOL	Color a function key label key 1 < key ≤ 12 pair 0 ≤ pair ≤ 7 column 1 or 9	
*v<mask><mix><palette>^	Return palette and mix information. Mask is converted to a binary number which selects from the following list of status requests. Only the six least significant digits are used. mask -32768 ≤ mask ≤ 32767 mix 0 ≤ mix ≤ 7 palette 0 ≤ palette ≤ 15 *bit* *request* *response* 0 Does palette exist? 1 = yes/ 2 = no 1 Is palette currently loaded? 1 = yes/ 2 = no 2 Color selection method? 0 = RGB/ 1 = HSL 3 Number of current palette? 0 - 15 4 R, G, and B values in mix? n.nnnn for each 5 H, S, and L values in mix? n.nnnn for each	

VT100 Escape Sequences

The following table lists the VT100 escape sequences recognized by MS92, with keyboard, menu, and mouse equivalents, where available.

EC	Function	Keyboard	Menu / Mouse
[<x>A	Cursor up x spaces	UP arrow	Click desired spot
[<x>B	Cursor down x spaces	DOWN arrow	Click desired spot
[<x>C	Cursor right x spaces	RIGHT arrow	Click desired spot
[<x>D	Cursor left x spaces	LEFT arrow	Click desired spot
[<r>;<c>H	Cursor position; row r, column c		Click with mouse
H	Horizontal tab set		Margin/tab ruler
[<r>;<c>f	Horizontal and vertical position; row r, column c		Click with mouse
D	Index		Click with mouse
M	Reverse Index		Click with mouse
E	Next line		Click with mouse
[g or [0g	Tab clear		Margin/tab ruler
[3g	Clear all tabs		Edit menu
7	Save cursor and attributes		

EC	Function	Keyboard	Menu / Mouse
8	Restore cursor and attributes		
[<tr> r	Set scrolling regions to top row tr, bottom row br		
[J or [0J	Erase from cursor to end of screen		
[1J	Erase from beginning of screen to cursor		
[2J	Erase from entire screen		
[K or [0K	Erase from cursor to end of line		
[1K	Erase from beginning of line to cursor		
[2K	Erase entire line		
(Bs	Set base character set to USASCII		
(0s	Set base character set to line drawing		
(As	Set base character set to UK		
)Bs	Set alternate character set to USASCII		Settings menu
)0s	Set alternate character set to line drawing		Settings menu
)As	Set alternate character set to UK		Settings menu
[<x>;...;<x>m	Display enhancements x=0 attributes off x=1 half-bright (substitute for bold) x=4 underscore x=5 blink x=7 inverse video		
[0c or [c	Identify terminal		
[5n	Device status request (terminal)		
[6n	Device status request (cursor position)		
Z	Device Attributes		
C	Hard reset	*Command key* R	Utility menu

EC	Function	Keyboard	Menu / Mouse
=	Set keypad to application mode		
>	Set keypad to numeric mode		
[<x>;...;<x>q	Turn LEDs on/off x=0 all LEDs off x=1 1l on x=2 L2 on x=3 L3 on x=4 L4 on		
[<x>;...;<x>h	Set modes x=20 New line mode x=?1 Cursor keys in application mode x=?3 132 column mode x=?4 Smooth scrolling x=?6 Relative origin mode x=?7 Autowrap on		Settings menu
[<x>;...;<x>l	Terminal reset modes x=20 Linefeed mode x=?1 Cursor keys in cursor mode x=?3 80 column mode x=?4 Jump scrolling mode x=?6 Absolute origin mode x=?7 Autowrap off		Settings menu

HP ANSI Escape Sequences

The following table lists the HP ANSI escape sequences recognized by MS92, with keyboard, menu, and mouse equivalents where available. In HP ANSI mode, MS92 also responds to all VT100 escape sequences.

EC	Function	Keyboard	Menu	Mouse
[<x>Z	Cursor backtab	SHIFT TAB		
[<x>G	Cursor horizontal absolute			Click desired spot
[<x>E	Cursor next line			Click desired spot
[<x>F	Cursor preceding line			Click desired spot
[<x>d	Vertical position absolute			Click desired spot
[<x>e	Vertical position relative			Click desired spot
[>ls	Cursor home down	CTRL END		Press CTRL + Home Up button
[>0s	Cursor home up	CTRL HOME		Home Up button
[<x>U	Next page	PAGE DOWN		Click scroll bar
[<x>V	Previous page	PAGE UP		Click scroll bar
[<x>T	Scroll down	CTRL DOWN arrow		Click down arrow
[<x>S	Scroll up	CTRL UP arrow		Click up arrow
[<x>@	Insert character			
[<x>A	Cursor up			
[<x>P	Delete character(s)			

EC	Function	Keyboard	Menu	Mouse
[<x>M	Delete line(s)			
[<x>L	Insert line(s)			
[0x or [1x	Request parameters from host			
[5i	Print Controller mode on			
[4i	Print Controller mode off			
[<x>i	Media Copy			
[?5i	Log bottom		Settings	
[?4i	Log bottom off		Settings	
&kl\	HP mode to ANSI mode		Settings	
&k0\	ANSI mode to HP mode		Settings	
[<x>;...;<x>h	Set modes x=2 keyboard lock disabled x=3 display functions on x=4 insert char mode x=>1 multi page mode x=>2 memory locked			
[<x>;...;<x>1	Reset modes x=2 keyboard lock enabled x=3 display functions off x=4 replace char mode x=>1 single page mode x=>2 memory unlocked			

Appendix B

Roman 8- and 7-Bit Character Sets

The terms *7-bit* and *8-bit* refer to the number of bits used to send, receive, and represent characters. With 7 bits, characters whose ASCII codes are 0 through 127 can be represented. With 8 bits, characters whose ASCII codes are 0 through 255 can be represented.

In 8-bit ASCII mode, MS92's default, you enter international characters and various other symbols in the standard Macintosh style. On the U.S. keyboard, this involves using the ALT/OPTION key together with one or more other keys. On international keyboards, some characters can be generated without using the ALT/OPTION key. To locate characters on your particular keyboard, use the Key Caps desk accessory, and select the HPScreen font from the Key Caps menu.

In 8-bit mode, MS92 translates characters typed into the corresponding HP Roman 8 characters before transmitting them to the host. Characters sent from the HP host computer are translated into the Macintosh character set as they are received. Thus, this mode maintains complete compatibility with HP implementation of the 8-bit character set while supporting the familiar Macintosh keyboard.

When moving text to and from other applications, characters with codes above 128 must be converted. MS92 performs this conversion automatically. Some Roman 8 characters have no equivalent in the ANSI set, and some ANSI characters have no equivalent in Roman 8. They are represented by the DEL character (decimal value 127) in MS92.

The chart below shows Roman 8 international characters, their hexadecimal and decimal values, and how the character is produced on a Macintosh running MS92.

char	hex	decimal	Mac keys
un-defined	A0	160	
À	A1	161	ALT/OPTION ' A
Â	A2	162	ALT/OPTION t
È	A3	163	ALT/OPTION r
Ê	A4	164	ALT/OPTION 2
Ë	A5	165	ALT/OPTION }
Î	A6	166	ALT/OPTION 8
Ï	A7	167	ALT/OPTION 7
´	A8	168	ALT/OPTION e ALT/OPTION e
`	A9	169	ALT/OPTION V
ˆ	AA	170	ALT/OPTION i ALT/OPTION i
¨	AB	171	ALT/OPTION u ALT/OPTION u
~	AC	172	ALT/OPTION /
Ù	AD	173	ALT/OPTION ,
Û	AE	174	ALT/OPTION .
Italian Lira symbol	AF	175	ALT/OPTION =
¯	B0	176	ALT/OPTION _
un-defined	B1	177	
un-defined	B2	178	
º	B3	179	ALT/OPTION *
Ç	B4	180	ALT/OPTION C

char	hex	decimal	Mac keys
ç	B5	181	ALT/OPTIONS c
Ñ	B6	182	ALT/OPTIONS n N
ñ	B7	183	ALT/OPTIONS n n
¡	B8	184	ALT/OPTIONS 1
¿	B9	185	ALT/OPTIONS ?
¤	BA	186	ALT/OPTIONS 5
£	BB	187	ALT/OPTIONS 3
¥	BC	188	ALT/OPTIONS]
§	BD	189	ALT/OPTIONS 6
f	BE	190	ALT/OPTIONS f
¢	BF	191	ALT/OPTIONS 4
â	C0	192	ALT/OPTIONS i a
ê	C1	193	ALT/OPTIONS i e
ô	C2	194	ALT/OPTIONS i o
û	C3	195	ALT/OPTIONS i u
á	C4	196	ALT/OPTIONS e a
é	C5	197	ALT/OPTIONS e e
ó	C6	198	ALT/OPTIONS e o
ú	C7	199	ALT/OPTIONS e u
à	C8	200	ALT/OPTIONS ` a
è	C9	201	ALT/OPTIONS ` e
ò	CA	202	ALT/OPTIONS ` o
ú	CB	203	ALT/OPTIONS ` u
ä	CC	204	ALT/OPTIONS u a
ë	CD	205	ALT/OPTIONS u e
ö	CE	206	ALT/OPTIONS u o
ü	CF	207	ALT/OPTIONS u u

char	hex	decimal	Mac keys
Å	D0	208	ALT/OPTION A
î	D1	209	ALT/OPTION i i
Ø	D2	210	ALT/OPTION o
Æ	D3	211	ALT/OPTION "
å	D4	212	ALT/OPTION a
í	D5	213	ALT/OPTION e i
ø	D6	214	ALT/OPTION o
æ	D7	215	ALT/OPTION '
Ä	D8	216	ALT/OPTION u A
ì	D9	217	ALT/OPTION' i
Ö	DA	218	ALT/OPTION u o
Ü	DB	219	ALT/OPTION u U
É	DC	220	ALT/OPTION g
ï	DD	221	ALT/OPTION u i
ß	DE	222	ALT/OPTION s
Ô	DF	223	ALT/OPTION y
Á	E0	224	ALT/OPTION m
Ã	E1	225	ALT/OPTION n A
ã	E2	226	ALT/OPTION n a
Ð	E3	227	ALT/OPTION d
d with stroke	E4	228	ALT/OPTION w
Í	E5	229	ALT/OPTION P
Ì	E6	230	ALT/OPTION p
Ó	E7	231	ALT/OPTION b
Ò	E8	232	ALT/OPTION z
Õ	E9	233	ALT/OPTION n
õ	EA	234	ALT/OPTION o

char	hex	decimal	Mac keys
Š	EB	235	ALT/OPTION l
š	EC	236	ALT/OPTION v
Ú	ED	237	ALT/OPTION x
Ÿ	EE	238	ALT/OPTION j
ÿ	EF	239	ALT/OPTION u y
Þ	F0	240	ALT/OPTION {
þ	F1	241	ALT/OPTION ;
un-defined	F2	242	
un-defined	F3	243	
un-defined	F4	244	
un-defined	F5	245	
-	F6	246	ALT/OPTION -
¼	F7	247	ALT/OPTION Q
½	F8	248	ALT/OPTION q
a	F9	249	ALT/OPTION 9
º	FA	250	ALT/OPTION 0
«	FB	251	ALT/OPTION \
n	FC	252	ALT/OPTION [
»	FD	253	ALT/OPTION |
±	FE	254	ALT/OPTION +
un-defined	FF	255	

When you select a 7-bit language in the Keyboard/Character Set configuration box, only a subset of international characters is available and a special translation process is required to access these characters. MS92 performs this translation by substituting from the chart below according to the language you have configured.

Decimal value	35	39	64	91	92	93	94	96	123	124	125	126
US ASCII key	#	'	@	[	\	]	^	`	{	|	}	~
Swedish/Finnish	#	˙	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Danish	§	´	@	Æ	Ø	Å	^	`	æ	ø	å	¨
French	£	˙	à	°	ç	§	^	`	é	ù	è	¨
German	£	´	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
United Kingdom	£	˙	@	[	\	]	^	`	{	|	}	~
Spanish	#	´	@	¡	Ñ	¿	°	`	{	ñ	}	¨
Norwegian	#	´	@	Æ	Ø	Å	^	`	æ	ø	å	¨

To enter an international character in HP 7-bit style, press the US ASCII key associated with that character, as shown in the preceding chart.

For example, assume that MS92 is configured for 7-bit French operation.

- If you press the # key on a Macintosh U.S. keyboard, or the £ key on a Macintosh French keyboard, or if a character with decimal value 35 is sent to the terminal by the host, the £ symbol is displayed.
- If that character is then placed in a file on the HP3000, and that file is listed on a terminal operating in USASCII mode, the character is displayed as a #.
- On a Danish terminal, it is displayed as a §.
- If it is copied to the clipboard, it is copied as a #, since that is the standard ASCII character associated with the decimal value 35.

Thus in 7-bit mode, international characters “revert” to the corresponding US ASCII characters when copied to the clipboard. This does not occur in 8-bit mode since each 8-bit HP Roman 8 character is mapped onto the corresponding character in the Macintosh character set.

Appendix C

Control Characters

The chart below shows control characters, their hexadecimal value, and how the character is produced on a Macintosh running MS92. Control characters can also be generated using the control bar at the top of the screen.

If you have an older Macintosh keyboard without a CTRL key, the ALT/OPTION key can be used as the HP CTRL key. However, there are certain cases where you must press both ALT/OPTION and SHIFT in combination with the designated character to generate a control character.

- The caret (^), used to generate an RS character (record separator), and the underscore (_), used to generate a US character (unit separator), are both shifted characters. For example, to generate an RS, you hold down both ALT/OPTION and SHIFT while you press the 6.

Certain keys on the United States keyboard are “delayed” when pressed in combination with the ALT/OPTION key. Instead of being transmitted immediately, these characters are retained until a second key is pressed. (This is because these characters are used to produce diacritical marks over the next character entered.)

The control characters affected by this are ALT/OPTION e, ALT/OPTION u, ALT/OPTION i, ALT/OPTION n, and ALT/OPTION `. To generate these characters, you must either hold down both the ALT/OPTION key and the SHIFT key while you press the designated character, or just hold down the ALT/OPTION key while you press the designated character twice.

char	hex	decimal	Mac keys
NUL	00	0	CONTROL @
SOH	01	1	CONTROL A
STX	02	2	CONTROL B
ETX	03	3	CONTROL C
EOT	04	4	CONTROL D
ENQ	05	5	CONTROL E
ACK	06	6	CONTROL F
BEL	07	7	CONTROL G
BS	08	8	CONTROL H
HT	09	9	CONTROL I
LF	0A	10	CONTROL J
VT	0B	11	CONTROL K
FF	0C	12	CONTROL L
CR	0D	13	CONTROL M
SO	0E	14	CONTROL N
SI	0F	15	CONTROL O
DLE	10	16	CONTROL P
DC1	11	17	CONTROL Q
DC2	12	18	CONTROL R
DC3	13	19	CONTROL S
DC4	14	20	CONTROL T
NAK	15	21	CONTROL U
SYN	16	22	CONTROL V

char	hex	decimal	Mac keys
ETB	17	23	CONTROL W
CAN	18	24	CONTROL X
EM	19	25	CONTROL Y
SUB	1A	26	CONTROL Z
ESC	1B	27	CONTROL [
FS	1C	28	CONTROL \
GS	1D	29	CONTROL]
RS	1E	30	CONTROL ^
US	1F	31	CONTROL _

Appendix D

AppleEvents

AppleEvents provide a way for Macintosh applications to communicate with each other. For example, AppleEvents are used by the Finder under System 7 to open applications and documents, to print files, and to quit applications.

MS92 can receive but not send AppleEvents. In particular, MS92 allows any Mac application that can send AppleEvents to run a TermTalk script. To take advantage of this capability, consult the documentation for the application from which you want to send the AppleEvent.

The types of events MS92 can receive are:

- Open Application
- Open Documents
- Print Documents
- Quit Application
- Do Script

Syntax

To send an AppleEvent, send the class and ID for the particular event and any required parameters. Class and ID are represented by four characters, case-sensitive constants. The parameters are specified as internal data structures and have corresponding types. These types are also represented by four character constants. The application receiving the event is responsible for retrieving the parameters and converting them to the correct internal format.

Open Application

Event Class: aevt

Event ID: oapp

Parameters: none

Notes: Runs MS92. This AppleEvent is sent to an application by the Finder when the user double clicks the application's icon.

Open Documents

Event Class: aevt

Event ID: odoc

Parameter Type: list

Contents: list of documents to open

Notes: The Open Documents AppleEvent can open at most two documents: one MS92 file and one script file. If a script file is specified, it is opened in MS92's script editor window.

Print Documents

Event Class: aevt

Event ID: pdoc

Parameter Type: list

Contents: list of documents to open

Notes: MS92 can print only text type documents.

Quit Application

Event Class: aevt

Event ID: quit

Parameters: none

Notes: Terminates MS92.

Do Script

Event Class: misc

Event ID: dosc

Parameter Type: TEXT or alis

Contents: If TEXT, contains TermTalk commands. If alis, contains a list of scripts to execute.

Appendix E

Troubleshooting

Capture File

If you call your Minisoft support representative with a technical question involving the interaction of MS92 with one of your host applications, you may be asked to create a capture file to be used for diagnostic purposes. When MS92's capture facility is turned on, all data and control sequences transmitted from the terminal to the host and from the host to the terminal are intercepted and written to a file called MS92 Capture File.

To turn on MS92's capture facility, use the CTRL + SHIFT + SPACEBAR key combination. A dialog box will appear with the following message:

"This keystroke turns on the Session capture diagnostic system. All I/O will be logged to the Session Capture File."

If a file called MS92 Capture File already exists, it is overwritten.

To turn off the capture facility, use the same key combination, CTRL + SHIFT + SPACEBAR. A message confirming that capture is disabled is displayed.

Error Messages

This section provides an alphabetical listing of error and warning messages that may appear while you are using MS92. These messages can help you determine if you have made an error or if there has been a malfunction in your system.

A file system error has occurred. (see list below)

There is a problem with the disk or the files on the disk.

Check that the disk is not full or corrupted.

- Unable to flush volume.
- Unable to set file marker.
- Unable to set file info.
- Unable to get file info.
- Unable to set end of file.
- Unable to access file.
- Unable to create file.
- Unable to open file.
- Unable to close file.
- Unable to write file.
- Unable to read file.
- File directory is full.
- Disk is full.
- Nonexistent File or Volume.
- Unexpected end-of-file.
- Attempted to position prior to start of file.
- System heap is full.
- To many files are open.

- File or Volume is locked.
- One or more files are open.
- A file with this name already exists.
- Writing to this file is not allowed.
- Nonexistent access path.
- Volume is not on-line.
- Volume is already mounted and on-line.
- Not a Macintosh disk.
- External file system.
- Problem during rename.
- Bad directory Reinitialize volume.
- Disk I/O error.
- Bad File or Volume name.
- File is not open.

A printer spool file has just been created. You may print the file, save the file, or discard the file.

This message occurs when a printer spool file is created by logging to a spool file.

Select the button for the desired action.

A printer spool file is being created. After logging is complete, print the file by selecting 'Print Spooled' from the Log menu.

A printer spool file has been created by logging to a spool file.

No immediate action is required until you want the spooled text to be printed. Print the file by selecting Print Spooled from the Log menu.

Are you sure you want to quit?

This message is displayed when Command Q is pressed to ensure that you didn't accidentally press the keys.

Press the Quit button or Cancel.

Cannot access HP x000 file.

You have attempted to access an nonexistent host file during a file transfer.

Enter a valid existing file name.

Cannot locate Tymlink.

MS92 had a problem finding the Tymlink program during installation. Make sure the MS92 master disk is in a disk drive.

Cannot open Tymlink program file on a mounted disk. Be sure to start up from the original MS92 master disk

An error has been encountered opening the Tymlink program. Insert the MS92 master disk that contains the Tymlink file.

Cannot open UPLOAD.C file on a mounted disk. Be sure to start up from the original MS92 master disk.

An error occurred opening the UPLOAD.C file.
Insert the MS92 master disk containing the UPLOAD.C file.

Cannot position file Tymlink.

There is a problem with the Tymlink disk.
Copy Tymlink to another floppy disk and restart the installation.

Cannot rewind file UPLOAD.C.

There is a problem with the Tymlink disk.
Copy Tymlink to another floppy disk and restart the installation.

Changing the number of screens will destroy the current contents of display memory.

The contents of display memory cannot be saved during this operation.

Reply OK if you wish to continue with the action, otherwise select Cancel.

Disconnect... only works for Hayes-compatible modems. If you are using a non-Hayes-compatible modem, you must type in the hangup command yourself.

An attempt has been made to disconnect, but the modem is not configured as a Hayes compatible.

Enter the hangup command directly to your non-Hayes modem, rather than using Disconnect.

Display memory is full and Memory Lock is on. Turn Memory Lock off if you need to continue interactive operations.

The Memory Lock display overflow protection is enabled. This means that memory lock is enabled on row 1 so that no lines can be scrolled off the screen.

Turn Memory Lock off if this is not desirable, or home up and clear the screen to reuse existing memory.

File already exists. OK to replace existing file?

An attempt has been made to save over an existing file.

If the original file can be deleted, reply OK, otherwise select Cancel and enter a new name for the file being saved.

Getting the requested memory.

This message appears when you change the number of screens or columns in the Terminal Settings... dialog box.

No action is required.

HP x000 file already exists. OK to replace existing file?

An attempt has been made to save over an existing host file.

If the original file on the host can be deleted, reply OK, otherwise select Cancel and enter a new name for the file to be transferred.

Installation of HPx000 link program failed.

Tymlink could not be installed.

1) Check that your terminal is configured to 8-bit, no parity, one stop bit, and TERMTYPE 10.

2) Lower the baud rate and retry the installation.

Memory Allocation Error.
Fatal memory error.
Must quit the program.
Give more memory to MS92 if possible.

MS92 has encountered a shortage of memory from which it cannot recover.

Quit MS92 and, if possible, increase the amount of memory allocated to MS92 using Get Info from the File menu of the Finder.

Neither UMODEM nor a C Compiler is available. Please call your supplier for installation assistance.

There is no way for MS92 to automatically install Tymlink.

Call your supplier. File transfers with this Unix host will not be possible until that time.

Not enough memory for x *screens. Only* y *screens were created.*

This message appears when you change the number of screens or columns in the Terminal Settings... dialog box and not enough memory is available to fulfill the request.

No action is required. If you need the extra screens or columns, increase the amount of memory allocated to MS92 using Get Info from the File menu of the Finder.

Not enough memory to complete the operation.

MS92 has encountered a shortage of memory. The operation you requested (usually a Copy or Paste) is not being performed.

Quit MS92 and increase the amount of memory allocated to the program using Get Info from the File menu of the Finder.

Please insert the MS92 Master disk and open Tymlinkxxxx/xxx.

MS92 is trying to install Tymlink, but could not find the program.

Insert the MS92 master disk and open the requested Tymlink program.

Please insert the MS92 Master disk and open UPLOAD.C.

The file UPLOAD.C file could not be found during the installation of Tymlink.

Insert the MS92 master disk and open UPLOAD.C.

Printer error.
An error has occurred during a printing operation.
Please check the printer and reconfigure MS92 printing.

Something went wrong during printing.

Check that the printer is properly attached and is selected with the Chooser. Check the MS92 printing configuration in the Logging Settings dialog box.

Read error on file Tymlink.

There is a problem with the Tymlink disk.

Copy Tymlink to another floppy disk and restart the installation.

Read error on file UPLOAD.C.

There is a problem with the Tymlink disk.

Copy Tymlink to another floppy disk and restart the installation.

Receive file operation did not complete successfully.

The cause of the problem will either be presented in another dialog, or is unknown by MS92.

1. Try again.

2. Choose Do Command from the Script menu. Select the set blocksize command from the scrolling list. In the edit box, change 1024 to 256. Click the Do button.

3. Choose File Transfer from the Settings menu. Enable Use substitutes for control characters and/or Use substitutes for 8-bit characters.

Send file operation did not complete successfully.

The cause of the problem will either be presented in another dialog, or is unknown by MS92.

Sorry, a FATAL error has occurred in MS92. Unable to get HPScreen font.

This error indicates a problem with the MS92. program file. Replace your copy of MS92 with a new copy.

Sorry, a FATAL error has occurred on the serial port.

A problem has occurred with the serial port on the Macintosh.

Check that no other programs that use the serial port are active. Restart your Macintosh and try opening MS92 again.

Sorry, unable to run Desk Accessory because of insufficient memory.

This message occurs when trying to open a desk accessory and not enough memory is available.

Quit any desk accessories already running and try again.

The file already exists. You may Cancel the operation, continue and overwrite, specify a new file name, or append to the existing file.

An attempt has been made to log to an existing text file.

Select the button for the desired action.

There is a problem with the modem. Check your connections and try turning the modem off and on again and then reselect Connect Using Modem.

An attempt has been made to connect to a host using a modem, but the modem is not responding.

Check that the modem is correctly connected to the Macintosh and is turned on. Also check that the modem is Hayes compatible.

There is no phone number to dial. Use the Configure Modem... menu item to enter the phone number. Then select the Connect... menu item again.

You have selected Modem as your Connection type but failed to enter a phone number.

Enter a phone number in the Connection Settings box and try to connect again.

The version of Tymlink on your host is newer than the one expected by MS92. You should consider updating your copy of MS92 to the latest version.

MS92 has detected that the copy of Tymlink being used is newer than the version of MS92 currently running.

Normally the file transfer may be completed without any problem, but you may want to get the latest copy of MS92 from your supplier.

The version of Tymlink on your host is not the one expected by MS92. You may proceed with the transfer, but some options may be unavailable.

MS92 has detected that the copy of Tymlink being used is older than the version that MS92 expects.

The file transfer can be completed without any problem, but the version of Tymlink shipped on the disk with your copy of MS92 should be installed. See Chapter 9 for instructions.

This configuration or settings file is an old format file. It will be opened as 'untitled' so you may resave it as a new file.

The settings file you just opened was created by an older version of MS92. It can be used.

Resave the file under the current version of MS92.

This configuration or settings file is not from MS92 version 2 or above. Please reconfigure and resave the settings.

The settings file you just opened was created by an older version of MS92. It cannot be opened.

Reconfigure your settings and save under the current version of MS92.

UMODEM is not available; looking for a C compiler.

MS92 cannot find UMODEM on the system to use for the installation, so it searches for a C compiler to compile the UPLOAD.C program.

No user action is required.

UMODEM is not functioning properly.

The installation has failed due to problems with the host UMODEM program.

Make sure you have a working version of UMODEM on your Unix host, and restart the installation.

Unable to run HP x000 link program.

A file transfer has begun and the Tymlink program is unable to run.

Make sure the name and location of the Tymlink program are correct in the File Transfer Settings dialog box. Make sure you are logged on correctly and connected to the host.

File Transfer

Some of the messages you may encounter during file transfer are discussed below.

File error detected on the HP9000
The HP9000 file you specified cannot be created. You may be out of disk space, have incorrect security access, or have misspelled file name, disk drive, or directory.

Macintosh (or HP3000 or HP9000) file already exists
A file with the name you specified already exists on the target disk. Click *Yes* in this box to replace the existing file. Click *No* to rename the file being transferred or to cancel the transfer.

Invalid file reference (FSERR 54)
The host file name specified does not follow HP3000 naming conventions.

Nonexistent permanent file (FSERR 52)
The HP host file you specified does not exist.

Out of disk space (FSERR 46)
There is not enough space on the host to build the file you are trying to send.

Path name not found
The directory specified doesn't exist. Cancel and repeat the operation with a legal filename.

Privileged file violation (FSERR 45)
This usually means you tried to copy or build an IMAGE or TurboIMAGE database. MS92 does not support transfers of IMAGE or TurboIMAGE files.

Security violation (FSERR 93)
You don't have the proper capabilities to open, build, or save a file in the group and account specified.

The version of Tymlink on the HP3000 (or HP9000) is older than the one expected by MS92
The latest version of Tymlink has not been installed on the host. You may proceed with the transfer, though some options may not be available or may work differently. Ask your system manager to install the version of Tymlink requested in the alert message.

Unable to run HP3000 (or HP9000) link program
Make sure you are logged on. Make sure Tymlink is installed on the host system in the group and account where MS92 expects it to be. Do this by choosing *File Transfer* from the *Settings* menu and checking the Startup Sequence.

For HP3000 file transfers, if there is a long pause after which the operation terminates with this message, it may be that your host does not supply the DC1 character used for pacing. Choose *File Transfer* from the *Settings* menu and try unchecking the Host provides DC1 pacing option.

Feel free to copy Tymlink into several different groups on your HP3000 if multiple copies are needed.

Index

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

X