

MANUAL UPDATE

Manual: microExplorer™ User's Guide (2552701-0001*E)

Change No.: Change 2

Effectivity Date: October 1990

This change package contains information necessary to update your current manual. Please remove the obsolete pages from your existing manual and replace them with the changed pages as follows:

Remove

Obsolete Pages

Title Page/Effective Pages
Trademarks/Warranty
ix
3-5 - 3-6
A-1 - A-7
Index-1 - Index-3
Doc. Questionnaire/Bus. Reply
Back Cover

Insert

Change 2 Pages

Title Page/Effective Pages
Trademarks/Warranty
ix
3-5 - 3-6
A-1 - A-9
Index-1 - Index-3
Doc. Questionnaire/Bus. Reply
Back Cover

microExplorer™ USER'S GUIDE

WARNING: In order to ensure compliance with the Class B computing device radio emission limitations, only shielded cables such as those specified by Texas Instruments should be utilized in connecting a monitor or peripheral device to this computer.

WARNING: This equipment generates and uses radio frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient the receiving antenna.
2. Relocate the computer with respect to the receiver.
3. Move the computer away from the receiver.
4. Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

NOTICE TO CANADIAN USERS: This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

LIST OF EFFECTIVE PAGES

Insert latest changed pages and discard superseded pages.

Note: The changes in the text are indicated by a change number at the bottom of the page and a vertical bar in the outer margin of the changed pages, with the following exceptions:

- A change number at the bottom of the page but no change bar indicates either a deletion or a page layout change.
- An entire section with no change bars but with change numbers at the bottom of each page is an entirely new section.

microExplorer™ User's Guide (2552701-0001)

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Change No.	Most Current Page Is In. . .
0	Original issue or last full revision
1	Change package number 1
2	Change package number 2
.	.
.	.
.	.

The total pages and change numbers in this publication are as follows:

Page	Change No.	Page	Change No.	Page	Change No.
Front Cover	0	1-1 - 1-3	0	B-1	0
Inside Cover	0	2-1 - 2-13	0	C-1	0
Title Page	2	3-1 - 3-5	0	Index-1 - Index-3	2
List of Effective Pages	2	3-6	2	License Agreement	1
Trademarks/Warranty	0	4-1 - 4-8	0	Doc. Questionnaire	2
vii - viii	0	5-1 - 5-5	0	Inside Cover	0
ix	2	6-1 - 6-2	0	Back Cover	2
xi - xvi	0	A-1 - A9	2		

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Appendix	Title
A	Troubleshooting
B	Hardware Specifications
C	Software Specifications

Index

	Figure	Title	Page
Figures	1-1	Macintosh™ II Configuration for the microExplorer	1-1
	2-1	microExplorer Processor Board	2-2
	2-2	Removing the Computer Cover	2-4
	2-3	Expansion Slots	2-5
	2-4	Shield Pin and Guide Scheme	2-6
	2-5	Installing the microExplorer Processor Board	2-7
	2-6	Applying the microExplorer Serial Number Label	2-9
	2-7	Applying the microExplorer Product Logo	2-9
	2-8	microExplorer Processor and Memory Expansion	2-11
	2-9	Installing the Memory Expansion (Exploded View)	2-13
	3-1	Make/Change Partition-Files Dialog Box	3-5
	4-1	Typical Launch Sequence Messages	4-3
	4-2	Typical Contents of the Startup File	4-7

	Table	Title	Page
Tables	5-1	Mouse Click Equivalents	5-3
	A-1	Post-Installation Problems With the microExplorer Processor Board	A-1
	A-2	Problems Installing the microExplorer Software	A-2
	A-3	Problems During the microExplorer Launch	A-3
	A-4	Software Compatibility Chart	A-6
	A-5	Problems During a microExplorer Session	A-7
	A-6	Performance Issues	A-9

1. From the menu bar, drag the mouse down the Make title to the Make command. The Make/Change Partition-Files dialog box appears, as shown in Figure 3-1.

Figure 3-1

Make/Change Partition-Files Dialog Box

microExplorer Make/Change Partition Files

Volume:

Partition-file Name:

Length [in 1024-byte blocks]:

- a. The volume prompt requests the volume name of your hard disk. The default value is HD, a common volume name for hard disks.

If different from HD, enter the name of your hard disk by editing the field and pressing the RETURN key.

- b. The Partition-file Name prompt requests the name of your new page partition-file. Enter a name that adheres to the following format:

pX.page

You must end the name of the page partition-file with the “.page” suffix. For X, enter a numeric value that approximates the size (in megabytes) of the page partition-file for your system. The larger the page partition-file, the better performance you will get from the microExplorer. However, you are limited to the amount of free space on your hard disk drive. The default value, p25.page is for a 25M-byte partition-file. This value should be acceptable for most users. If not, change it using the same procedures outlined in substep 1a.

NOTE: Do not specify more than four characters in the first part of any partition-file’s name. For example, the three-letter p25.page is correct, but the five-letter p0025.page name will be interpreted as p002 by the microExplorer. Also, take care not to add any blanks, tabs, or other invisible characters to the beginning or end of a partition-file name.

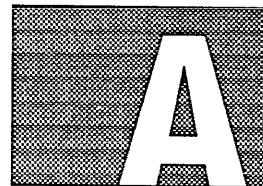
- c. The `Length` prompt requests the length (in 1024-byte blocks) of your page partition-file. Using the previous example, your page partition-file is 25M-bytes, or 25000 blocks long. Fill in that information according to the value you have chosen for your page partition-file. Again, use the procedures outlined in substep 1a.
2. After determining that all the requested information is correct, click the `OK` button to implement the information and activate the `MakePFiles` utility. If you have changed your mind, click on the `CANCEL` button.
3. After the `MakePFiles` utility completes, exit `MakePFiles`. To do so, select the `Quit` command from the `File` menu. You are now ready to launch the `microExplorer`.

Contents of Your Hard Disk

3.8 After you have completed the steps described in the earlier portions of this section, the following items should be on your hard disk:

- `Macintosh System` folder — Contains code used by applications running on the Macintosh
- `Macintosh Utilities` folder — Contains the utilities that enabled you to install the System Software
- `microExp` folder — Contains these items:
 - `microExplorer` application — The actual application for the `microExplorer`
 - `MakePFiles` application — Used to create or modify partition-files
 - `TbServer` application — Used to make Macintosh Toolbox calls from the `microExplorer` environment
 - `Color-Qix` application — An example Toolbox interface application
 - `Startup` file — Identifies parameters needed at launch time
 - `Load` partition-file — Contains the Lisp environment loaded at launch time
 - `Microcode` partition-file — Contains the Lisp microcode environment
 - `Page` partition-file — Used by the `microExplorer` for virtual memory swap space
 - `MacSys` folder — Empty in this release of the `microExplorer`
 - `ExpSys` folder — Includes the `UBIN` folder, which has the `TBL` and `CRASH` files (These files contain information needed for error reporting and crash analysis.)
 - `HyperLisp` folder — Contains materials that enable communication between `HyperCard™` and the `microExplorer`

TROUBLESHOOTING



This appendix describes a number of procedures that you can use to correct any problems that you might encounter with the microExplorer hardware or software.

In the event you need outside help to resolve a problem, please call Texas Instruments Field Service at 1-800-572-3300 for hardware problems or your Customer Service representative for software problems. Be prepared to give your microExplorer serial number (from the label on the back of your computer) to the service representative when requesting assistance.

Following this introduction is a list of symptoms, causes, and solutions associated with possible microExplorer problems that you may encounter.

In the first set of problems, references are made to the fault indicator light-emitting diode (LED). This LED resides on the microExplorer processor board. The board turns the LED on when self-tests begin and then off when self-tests have successfully completed. Depending on which slot the microExplorer processor board is in, the LED may or may not be visible. If the microExplorer processor board is in slot 13, the LED can be seen through the center ventilation slot on the top of the Macintosh main unit. Slot 13 is the chassis slot labeled hexadecimal D on the Macintosh motherboard. The microExplorer LED is about one inch from the front edge of the ventilation slot.

Table A-1 Post-Installation Problems With the microExplorer Processor Board

Symptom	Cause/Action
The Macintosh does not function properly.	<p>Incorrect set-up or malfunction in the Macintosh.</p> <p>Consult the Macintosh documentation or other appropriate manuals for troubleshooting the Macintosh system.</p>
The microExplorer fault indicator LED remains lit during installation.	<p>The microExplorer board is not properly seated in its slot.</p> <p>Power down the Macintosh and carefully follow the installation instructions to reinstall the memory expansion connector and board, checking that all connectors are exactly aligned and seated.</p> <p>If the fault indicator LED again stays on after power-up, power down the Macintosh, remove the expansion memory board from the microExplorer processor board, and reinstall the processor board without the expansion memory board attached to it. If the fault indicator LED goes off after you apply power again, then the expansion memory board is faulty. Call Texas Instruments Field Service at the number indicated at the beginning of this section.</p> <p>If the fault indicator LED again stays on after power-up, then the microExplorer processor board itself is bad. Call Texas Instruments Field Service.</p>

Table A-1 Post-Installation Problems With the microExplorer Processor Board (Continued)

Symptom	Cause/Action
The microExplorer fault indicator LED stays on at installation.	<p>Another board in the system could be disturbing execution of the microExplorer board self-tests.</p> <p>Power down the Macintosh, and remove all other add-in boards to temporarily eliminate them as sources of the disturbance. Reapply power to the Macintosh. If the LED on the microExplorer processor board turns off, one of the add-in boards is the source of the problem.</p> <p>To identify which add-in board is causing the problem, reinstall one add-in board at a time, powering up the Macintosh to check the fault indicator LED on the microExplorer processor each time. When you have identified the problem board, contact the manufacturer's representative for that board.</p> <p>If the fault indicator LED remains on with all the other add-in boards removed from the Macintosh, then the microExplorer processor board is faulty. Contact Texas Instruments Field Service.</p>

Table A-2 Problems Installing the microExplorer Software

Symptom	Cause/Action
One of the System Files diskettes icons or the Host Driver diskette icon does not appear after you insert the diskette.	<p>The icon is hidden behind an application window or is not visible in your directory listing.</p> <p>Move the application windows or scroll your directory listing to find the icon.</p> <p>If you do not find the item, remove the diskette by pressing Apple-Shift-1 and reinsert.</p> <p>If that does not work, obtain a replacement diskette from your TI customer representative.</p>
The HDBackup utility fails to recognize one of the Development System Software diskettes.	<p>Eject and reinsert the diskette.</p> <p>If that does not work, start again at the beginning of the procedure.</p> <p>If that fails, the diskette is probably damaged. Call your TI customer representative.</p>
The xxxx.load file does not appear on the desktop after using the HDBackup utility.	<p>The hard disk directory listing window may need updating.</p> <p>Close the window representing the directory contents of your hard disk; then reopen it.</p>

Table A-2 Problems Installing the microExplorer Software (Continued)

Symptom	Cause/Action
The <i>xxxx.load</i> file appears as <i>1.xxxx.load</i> .	The hard disk directory listing window may need updating. Close the window representing the directory contents of your hard disk; then reopen it.
After reopening the hard disk directory listing window, the <i>xxxx.load</i> file does not appear on the desktop after using the HDBackup utility.	The <i>xxxx.load</i> file may be hidden behind your hard disk System folder or another icon in your hard disk window. Use the Clean Up Window item on the Finder's Window menu to rearrange the icons in your hard disk directory listing window.
When you attempt to run the MakePFiles utility, you receive a -34 error.	The value you specified for the length of the partition-file exceeds the room you have on your disk. MakePFiles will still create a new partition file or resize an existing partition-file, allocating as much space as it can find for that file.
When you attempt to run the MakePFiles utility, you receive a -51 error.	The name you supplied for your page partition-file has tabs, blanks, or other invisible characters in it. Correct the name of the partition-file, deleting any invisible characters, and rerun the MakePFiles utility.

Table A-3 Problems During the microExplorer Launch

Symptom	Cause/Action
An alert message appears, indicating that the processor board for microExplorer could not be found or that it is not installed.	Either the ROM revision level on your Macintosh is earlier than 1.2 and your microExplorer processor board is in a slot other than slot 13 (hexadecimal D), or your Startup file has incorrect information in its forslot line. Correct the information in the Startup file. See paragraph 4.9 earlier in this manual for information about the Startup file. Check the ROM revision level of your Macintosh.
A message appears, indicating that the microExplorer processor failed to reset, a NuBus test failed, or that no communication was possible with the microExplorer processor board.	The microExplorer processor board is not seated properly in its slot. Power down the Macintosh and reseal the microExplorer processor board according to the instructions in Section 2 of this manual.

Table A-3 Problems During the microExplorer Launch (Continued)

Symptom	Cause/Action
<p>After carefully reseating the microExplorer processor board, the same message appears indicating that the microExplorer processor failed to reset, a NuBus test failed, or that no communication was possible with the microExplorer processor board.</p>	<p>Another board in the system is disturbing execution of the microExplorer board self-tests.</p> <p>Power down the Macintosh, and remove all other add-in boards (except one video interface board) to temporarily eliminate them as sources of the disturbance. Reapply power to the Macintosh. If you can then launch the microExplorer application, one of the add-in boards is the source of the problem.</p> <p>To identify which add-in board is causing the problem, reinstall one add-in board at a time, powering up the Macintosh each time until the launch again fails. When you have identified the problem board, contact the manufacturer's representative for that board.</p> <p>If the launch fails even after all add-in boards have been removed from the Macintosh, the microExplorer processor board is faulty. Contact Texas Instruments Field Service.</p>
<p>The Macintosh system freezes shortly after the Resetting message appears on the Cold Load Stream. The Macintosh mouse does not track across the screen and the system is totally unresponsive.</p>	<p>A microExplorer application was already active in the system. Only one microExplorer application can be running at a time.</p> <p>Reboot the Macintosh (this may require powering it down first). Verify that the microExplorer is not already active by examining the list of running applications on the Apple menu. If the microExplorer is not active, attempt to launch it.</p>
<p>An alert message appears, indicating that the load or microcode partition-file is missing.</p>	<p>The Startup file has the wrong name for the missing partition-file.</p> <p>Correct the information in the Startup file. See paragraph 4.9 earlier in this manual for information about the Startup file.</p>
<p>The microExplorer boot process stops shortly after displaying information about which microcode is being booted.</p>	<p>The software version levels of the microExplorer application and the microcode are not compatible.</p> <p>Consult the software level compatibility chart in Table A-4. Note that this chart may be updated in your system's latest Release Information document.</p>
<p>Erratic behavior or system locks up when launching the microExplorer.</p>	<p>MacroMaker is installed in the System folder.</p> <p>Move MacroMaker to another folder.</p>

Table A-3 Problems During the microExplorer Launch (Continued)

Symptom	Cause/Action
The microExplorer boot process stops shortly after displaying information about which load band is being booted.	<p>The system version level of the load band is not compatible with the version levels of the microExplorer application and the microcode.</p> <p>Consult the software level compatibility chart in Table A-4. Note that this chart may be updated in your system's latest Release Information document.</p>
The Cold Load Stream display indicates that the load band or microcode booted is not the one expected.	<p>The Startup file contains the wrong information, or the Startup file actually being used is located on a different disk volume.</p> <p>Consult the microExplorer's Cold Load Stream display to determine which Startup file was used when booting. Verify that the Startup file contains the desired boot source information.</p>
An alert message appears, indicating that the MultiFinder utility cannot be found.	<p>If you are running Macintosh operating system version 5, the MultiFinder is not the startup application.</p> <p>Enable the MultiFinder utility by making it the startup application. This procedure is described in paragraph 4.3. For information about the MultiFinder utility, see the <i>MultiFinder User's Guide</i>.</p>
The Macintosh system freezes shortly after information appears about which load band is being booted. The Macintosh mouse does not track across the screen, and the system is totally unresponsive.	<p>If your Macintosh operating system is version 6.x, the MultiFinder is not the startup application.</p> <p>Enable the MultiFinder utility by making it the startup application. This procedure is described in paragraph 4.3. For information about the MultiFinder utility, see the <i>MultiFinder User's Guide</i>.</p>
When the TI icon is displayed on the initial Lisp Listener screen, the Texas Instruments Explorer™ text beside it appears in a thin, scraggly-looking font.	<p>One or more Macintosh fonts needed by the microExplorer are not installed in the Macintosh system resource file.</p> <p>Install the required Macintosh fonts. Consult Section 6, Fonts, in the <i>microExplorer Development Software User's Guide</i> for more information about required fonts and how to install them.</p>

Table A-3 Problems During the microExplorer Launch (Continued)

Symptom	Cause/Action
Late in the microExplorer boot process, a notification appears indicating that no swap space exists.	<p>You may have no page partition-file in the Macintosh file system, or the page partition-file is misnamed, or you need more paging space than is currently allocated.</p> <p>If no page partition-file yet exists, create one according to the instructions in paragraph 3.7, Run the MakePFiles Utility, of this manual; then relaunch the microExplorer application.</p> <p>If you have a page partition-file, verify that it has the proper period-page (.page) suffix in its name. Correct the name if needed, then relaunch the microExplorer.</p> <p>If the page partition-file exists, and its name is correct, either expand the existing partition-file, or create another page partition-file. Be sure to relaunch the microExplorer application afterwards.</p>
The microExplorer unexpectedly quits when printing a file or screen.	<p>This problem can occur when PrintMonitor downloads fonts to the printer and the fonts are installed on the microExplorer.</p> <p>Remove all FONT and FONT resources except MOUSE from the microExplorer application and install them in the system file using the DA/Font Mover utility.</p>

Table A-4 Software Compatibility Chart

Load Band Version	Microcode Version ¹	microExplorer Application Version ²	Macintosh Operating System Version
Release 4.0	MX33	1.0	5.x
Release 4.1.1	MX39-MX41	1.28-1.30	5.x or 6.x
Release 5.0	MX96-MX98	2.x	5.x or 6.x
Release 6.0	M138-M143	3.x	6.x
Release 6.1	M195 or higher	6.x	6.x

NOTES:

¹ The microcode version level is contained in the .MCR file name.

² If the microExplorer application is active, its version number can be obtained by selecting the About microExplorer item from its Apple menu. When the microExplorer application is not active, its version can be obtained as follows:

1. In the Finder, select the microExplorer icon by clicking on it once.
2. Select the Get Info item from the Finder's File menu.

The microExplorer version level is listed in the Version lines.

Table A-5 Problems During a microExplorer Session

Symptom	Cause/Action
<p>The display stops being updated during a microExplorer session.</p>	<p>Look at the state window on the bottom of the microExplorer virtual screen. If it says <i>crashed</i>, the microExplorer system has crashed. You should first attempt to warm boot as described in the following paragraphs.</p> <p>If the microExplorer state is something other than <i>crashed</i>, wait for at least two minutes before taking any further action. If the display remains frozen, proceed as described in the following paragraphs.</p> <p>If you can still move the mouse cursor, drag down the Special menu and select the Warm Boot command. If the microExplorer successfully warm boots, <i>save your files immediately</i>. Next, execute the <code>sys:shutdown</code> function, answering <i>yes</i> to its prompt. After the function completes, quit the microExplorer application by dragging down the File menu and selecting the Quit command. Then, relaunch the microExplorer application.</p> <p>If the warm boot fails, drag down the Special menu and select the Force Crash command. This action preserves a crash file that may aid your TI Customer Service representative to correct your problem. Attempt to warm boot the microExplorer again. If this fails, quit the microExplorer application and attempt to relaunch the microExplorer.</p> <p>After any microExplorer system crash, forced crash, or warm boot, you should use the <code>report-last-shutdown</code> or <code>report-all-shutdowns</code> function to obtain analysis information that may be of use to TI analysts. Both of these functions allow you to write the analysis to a file. For maximum information, you should execute these functions in the warm-booted environment.</p> <p>If the display has stopped updating and the mouse cursor will not move, the Macintosh has crashed. Manually reset the Macintosh. One way to reset is to reboot the Macintosh by using the Programmer's switch. If your Macintosh has a Programmer's switch, reboot by pressing the System-Reset button on the Programmer's switch. The Programmer's switch is located on the right side of the Macintosh (as you are facing it). The System-Reset button is the one closest to you. (The farthest one is the Debug button.)</p> <p>If your Macintosh has no Programmer's switch, use the Power On button on the back of the Macintosh (on the right-hand side if you are facing the front).</p>
<p>A notification message appears indicating that you are running out of swap space.</p>	<p>You must increase the size of your existing page partition-file or add another page partition-file to create a page band. See paragraph 3.7, Run the MakePFiles Utility, of this manual for details on how to create or expand a page partition-file.</p>

Table A-5 Problems During a microExplorer Session (Continued)

Symptom	Cause/Action
<p>You cannot successfully perform a garbage collection (GC).</p>	<p>If the microExplorer crashes during GC, you may have run out of swap space or virtual memory.</p> <p>Reboot the microExplorer, and use the report-last-shutdown function to view the shutdown record.</p> <p>If the shutdown description is out of swap space, you had insufficient paging storage. Create additional page partition-files by using MakePFiles (if the microExplorer is not running) or by using the sys:add-page-band function in the microExplorer Lisp environment.</p> <p>If the shutdown description is Virtual Memory Overflow while traps disabled, there was insufficient address space for the Garbage Collector's copy operations. You may need to invoke garbage collection earlier while there is virtual memory available or use the Extended Address Space (EAS) facility.</p> <p>If the shutdown description is something else, save it to a file and contact your TI Customer Service representative, or submit it in a bug report to Texas Instruments. Refer to your system's latest Release Information document.</p> <p>For more information on garbage collection, refer to the <i>Explorer Lisp Reference</i>.</p>
<p>The Macintosh freezes or gets a bus error immediately after launching the TBSERVER.</p>	<p>If your Macintosh ROMs are earlier than version 1.2, your microExplorer board must be in slot D and your startup file FORSLOT value must be 13.</p> <p>Correct the information in the Startup file. Check the ROM revision level of your Macintosh. Check that your microExplorer board is in slot D.</p>

Table A-6 Performance Issues

Symptom	Cause/Action
The microExplorer is slow paging virtual memory. The disk produces a chattering noise.	<p>The microExplorer may not be the selected application. Hence, sufficient processing time may not be allocated to perform paging adequately.</p> <p>Determine if the microExplorer is the selected application. The title bar of the selected application is highlighted, its application name has a check beside it in the Apple menu application list, and its icon appears on the far right of the menu bar. If the microExplorer is not the selected application, select it by clicking on its window or by choosing it from the Apple menu applications list.</p>
Screen output, especially scrolling, seems slow when you have more than two colors or grays selected.	<p>The Macintosh drawing routines are slower when multi-bit color is enabled, even if the running application does not use color.</p> <p>Using the Monitors facility of the Control Panel, decrease the number of color bits that can be used or switch to monochrome mode.</p>
An alert message appears, indicating that the bit-array cache cannot hold any more screens.	<p>Too many virtual screens have been created.</p> <p>Kill some of the screens by clicking on their close boxes, or increase the size of the microExplorer application. For details about this procedure, see Section 4, Memory and Disk Requirements, in the <i>microExplorer Development Software User's Guide</i>.</p>
Switching between windows often causes a delay of several seconds during which the screen is not updated and the cursor does not blink.	<p>The microExplorer application is not sized sufficiently large for the size of your monitor or the number of virtual screens and windows in your environment. As a result, the microExplorer must spend a great deal of time moving window bit arrays between Macintosh and microExplorer memory.</p> <p>Increase the memory size of the microExplorer application. See Section 4, Memory and Disk Requirements, in the <i>microExplorer Development Software User's Guide</i> for details on this subject.</p>

Alphabetization Scheme

The alphabetization scheme used in this index ignores package names and nonalphabetic symbol prefixes for the purposes of sorting. For example, the `sys:*break-bindings*` variable is sorted under the entries for the letter `b` rather than under the letter `s`.

Symbols

+ variable, 5-2
++ variable, 5-2
- variable, 5-2
* variable, 5-2
** variable, 5-3
/ variable, 5-3
// variable, 5-3

A

Abort keystroke, 5-1
antistatic bag, 2-3
antistatic precautions, 2-2—2-13
applications, loading, 6-1—6-2
audience, xiv

B

bank 0 DRAM, 2-11
bank 1 DRAM, 2-11
bank 2 DRAM, 2-11
`sys:*break-bindings*` variable, 5-2

C

Clear Input keystroke, 5-1
Clear Screen keystroke, 5-1
Cold Load Stream, 4-3—4-8, 5-4
configuration label, 2-2
connector, memory expansion board, 2-11
cover latch, 2-4
crash, forcing a, 4-6

D

debugger, 5-5
defaultdevice, line in the Startup file, 4-8
Delete keystroke, 5-2
Delivery configuration, minimum requirements for, 1-2
diskette
 Host Driver, 3-2
 System Files, 3-3
 System Software, 3-3
double-male connector, 2-13

E

expansion slot
 locations, 2-4
 selecting the, 2-4
 standard location, 2-5
ExpSys folder, 3-6

F

fault indicator LED, 2-2, 2-8
folder
 ExpSys, 3-6
 Macintosh System, 3-6
 Macintosh Utilities, 3-6
 MacSys, 3-6
 microExp, 3-6
forcing a crash, 4-6
forslot, line in the Startup file, 4-8
functions
 load, 6-1—6-2
 sys:load-if, 6-1—6-2
 login, 4-4
 logout, 4-5
 make-system, 6-2
 sys:shutdown, 4-5

H

hardware troubleshooting, A-1—A-9
Host Driver diskette, 3-2
hostname, line in the Startup file, 4-8

I

installation
 items added to hard disk, 3-6
 memory expansion board, 2-10—2-12
 exploded view, 2-13
 microExplorer processor board, 2-3—2-13
 microExplorer processor board (figure), 2-7
 microExplorer product logo, 2-9
 microExplorer serial number label, 2-9
 preparations, 3-1—3-6
 System Software, 3-1
 verify the Startup file, 4-2

- installation (continued)
 - where to find instructions, xii—xvi
- installation problems
 - installing the microExplorer software, A-2—A-3
 - post-installation with processor board, A-1—A-2
- K**
- si:*kbd-zmacs-mode* variable, 5-2
- keyboard overlay, 5-1
- keystrokes
 - Abort, 5-1
 - Clear Input, 5-1
 - Clear Screen, 5-1
 - common microExplorer, 5-1
 - Delete, 5-2
- L**
- launch
 - messages, 4-3
 - status, 4-3
- launching the microExplorer, problems during, A-3—A-6
- load function, 6-1—6-2
- sys:load-if function, 6-1—6-2
- loading applications, 6-1—6-2
- loadname, line in the Startup file, 4-7
- loadvolume, line in the Startup file, 4-7
- locking spacers, 2-13
- log in, 4-4—4-8
- logging out, 4-5
- login function, 4-4
- login initialization file, 4-4
- M**
- Macintosh
 - configuration, 1-1
 - cover latch, 2-4
 - Power On key, 4-1
 - power switch, 2-4
 - removing the computer cover (figure), 2-4
 - replacing the chassis cover, 2-8
 - ROM version number, 4-8
 - security screw, 2-4
 - software compatibility chart, A-6
 - System folder, 3-6
 - Utilities folder, 3-6
- MacSys folder, 3-6
- make-system function, 6-2
- MakePFiles utility, 3-4
- manual
 - boldface font usage, xv
 - italics font usage, xv
 - monowidth font usage, xv
- manual conventions, xv
- mcrname, line in the Startup file, 4-7
- mcrvolume, line in the Startup file, 4-7
- memory expansion board, 2-4
 - bank 1 DRAM, 2-11
 - bank 2 DRAM, 2-11
 - connector, 2-11
 - double-male connector, 2-13
 - exploded view, 2-13
 - figure, 2-11
 - installation, 2-10—2-12
 - mounting holes, 2-11
- memory expansion boards, 1-3
- microExp folder, contents, 3-6
- microExplorer
 - application icon, 4-3
 - configuration label, 2-2
 - Delivery configuration definition, xii
 - Development configuration definition, xii
 - Development System Software definition, xii
 - ending a session, 4-5
 - forcing a crash, 4-6
 - hardware specifications, B-1
 - keyboard overlay, 5-1
 - launch, 4-3
 - launching, problems during, A-3—A-6
 - log in, 4-4
 - logout, 4-5
 - Network configuration definition, xii
 - Network System Software definition, xii
 - performance issues, A-9
 - power down, 4-5—4-8
 - power up, 4-1
 - processor board
 - removing the, 2-10
 - shield, 2-7
 - shield pin and guide scheme, 2-6
 - processor board (figure), 2-2
 - quitting the application, 4-6
 - resetting the, 4-6
 - serial number label, 2-8
 - session, problems during a, A-7, A-8
 - software compatibility chart, A-6
 - software problems when installing, A-2—A-3
 - software specifications, C-1
 - Startup file, 4-6—4-8
 - System definition, xii
 - System Software, 1-3
 - System Software definition, xii
 - unpacking the processor board, 2-2—2-13
 - Upgrade Kit, 2-1
 - upgrade kit definition, xii
 - user interface, 5-1—5-5
 - warm boot, 4-6
- microExplorer processor board
 - bank 0 DRAM, 2-11
 - mounting spacers, 2-11
- mounting holes, memory expansion board, 2-11

mounting spacers, 2-13
 microExplorer processor board, 2-11
 MultiFinder, enabling the, 4-1

N

NuBus connector, 2-2

P

partition-file, page, 3-4
 performance issues, troubleshooting, A-9
 Power On key, 4-1
 power switch, 2-4
 processor board
 figure, 2-2
 removing the, 2-10
 shield, 2-7
 shield pin and guide scheme, 2-6
 product logo, applying the, 2-9

Q

quitting the microExplorer application, 4-6

R

read-eval-print loop, 5-1
 removing the Macintosh computer cover, 2-4
 removing the microExplorer processor board,
 2-10
 replacing the chassis cover, 2-8
 resetting the microExplorer, 4-6

S

security screw, 2-4
 serial number label, applying the, 2-9
 shield, microExplorer processor board, 2-7
 shield pin and guide scheme, 2-6
 sys:shutdown function, 4-5
 slot, expansion, 2-4
 See also expansion slot
 slot numbering, 4-8
 software compatibility chart, A-6
 software specifications, C-1
 spacer lock, 2-12

Startup file, 4-6—4-8
 typical contents, 4-7
 static electricity, protection from, 2-2—2-13
 stream operations, 5-4—5-5
 System Files diskette, 3-3
 System Software, 1-3
 installing, 3-1
 System Software diskettes, 3-3
 system specifications, B-1
 hardware, B-1
 software, C-1

T

terminal input/output, 5-4—5-5
 terminal interface. *See* terminal input/output
 troubleshooting, A-1—A-9
 performance issues, A-9
 post-installation problems, A-1—A-2
 problems during the launch, A-3—A-6
 problems during the session, A-7, A-8
 software installation problems, A-2—A-3

U

unpacking the microExplorer processor board,
 2-2—2-13
 user interface, 5-1—5-5

V

variables
 +, 5-2
 ++, 5-2
 -, 5-2
 *, 5-2
 **, 5-3
 /, 5-3
 //, 5-3
 sys:*break-bindings*, 5-2
 si:*kbd-zmacs-mode*, 5-2

W

warm boot, 4-6
 warranty claims, 2-8

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