Media Control Station³ USB Version For Macintosh



User's Manual

First Edition

©2000-2002 JLCooper Electronics 142 Arena Street • El Segundo, CA 90245 U.S.A.



MCS, Media Control Station, MCS³ and Media Control Station³ are trademarks of JLCooper Electronics. All other brand names are the property of their respective bolders.

MCS³ Macintosh USB Version Users Manual First Edition Part number for this manual is 932076-USB. ©1999-2002 JLCooper Electronics • 142 Arena Street • El Segundo, CA 90245 U.S.A. (310)322-9990 (310)322-0110 fax www.jlcooper.com

Table of Contents

Introduction	4
Connecting the MCS ³	5
Installing the Software	6
Getting Started	7
Shuttle and Record LEDs	
Launching the MCS ³ Application	7
What Does the MCS ³ Do?	
The MCS ³ Controls	
The MCS ³ Application	10
Try it Now	10
The MCS ³ Application Menus	11
Keysets	
What is a Keyset?	14
Display Keyset	
About the Default Keyset	16
Keyset Selection	17
Creating a New Keyset	
Saving and Deleting Keysets	19
Importing and Exporting Keysets	19
Using Supplied Keysets	
Editing the Default Keyset and examples	20
Restoring the Default Keyset	
Control Assignments	24
The Built-In Tab and example	24
The Keystrokes Tab and example	25
The Mouse Tab and example	
The Special Tab and example	
The Wheel Slider and example	
Technical Information	30
Specifications	
Troubleshooting	
Care and Service	
Warranty	

Introduction

Thank you for purchasing the JLCooper Media Control Station³. This MCS³ is an USB device, designed for use with Macintosh computers.

The MCS³ allows you to create a personalized control station for virtually any Macintosh application. You will find that the MCS³'s smooth, optically encoded jog wheel and transport keys make creative multi-media production and editing easier than ever.

The MCS³ wheel can play back movies, jog through sound files, scroll through event lists, and more. And the MCS³ keys can send command-key equivalents and mouse clicks. In addition, the MCS³ software will alow long and complex sequences of commands with just a single keypress, a literal "macro-command" set capability.

This allows you to use your MCS³ to bring the most frequently used menu items and commands speedily within reach, providing more comfortable and creative control of your favorite applications.

The MCS³ allows you to create an unlimited number of "Keysets". You can have a different "Keyset" for each Macintosh application.

The MCS³ detects which application is active, and the behavior of the MCS³ changes accordingly as you change applications.

The included MCS³ application software and extensions are required for the MCS³ hardware to operate.

Please take a moment to send in your product registration card, so we can notify you in the future about any new products or updates as they become available.

Connecting the MCS³

First locate an available USB hub port on your Macintosh. On your Macintosh, the port is identified by the USB icon:



Then plug in the MCS^{3} 's captive USB cable.

USB allows you to "hot plug" peripheral devices like the MCS^3 . That means you do not have to shut down the Macintosh to connect the MCS^3 .

Installing the Software

If this is your first installation, insert the CD-Rom in the CD-ROM drive on your computer and run it. The installer program will install the software automatically. Follow the instructions given by the program and read the Read Me file for any news not covered in this manual revision. After restarting the Macintosh with the MCS³ plugged in, verify by using the Extensions Manager that all the extensions are running correctly.

If there is a previous version of the MCS³ software on your computer:

1. Make a screenshot copy or write down the commands of any keysets you wish to save. (the older keysets are NOT compatible with the present software revision).

2. Remove the older software program, the keysets folder and the extensions (located in the Extensions folder within the System Folder).

3. Insert the CD-Rom in the CD-ROM drive on your computer and run it. The installer program will install the software automatically. Follow the instructions given by the program and read the Read Me file for any news not covered in this manual revision.

4. After restarting the Macintosh with the MCS³ plugged in, verify by using the Extensions Manager that all the extensions are running correctly.

Getting Started

First of all, remember that the MCS^3 Extensions are required for the MCS^3 to operate.

The MCS³ will not appear to send any commands into the Macintosh unless the Extensions have been properly loaded and are running.

Shuttle and Record LEDs

Normally on power up, the shuttle ring LEDs will not light until the shuttle ring is centered. The Record LED will also be off.

After that, the shuttle ring LEDs will light depending upon the direction of rotation from center. Both LEDs are on when the ring is centered. The Record LED will light when the record button is pressed. (this is a handy way to make sure that the MCS³ is connected correctly and that the Macintosh recognizes it.

If the MCS³ still fails to respond correctly with the LEDs or does not respond within the MCS³ software application, then please refer to the Troubleshooting section on page 30.

Launching the MCS³ Software Application

The application is launched by double-clicking on the MCS³ icon.

If the extensions are not loaded or the MCS³ is not connected, the MCS³ application will run but no changes will be saved.

What Does the MCS³ Do?

When you press a key or turn the wheel, the MCS³ behaves like a Macintosh keyboard or mouse, sending a command character. The comfortable tactile-responsive controls provide a logical and intuitive control interface for your application.

The main strength of the MCS³ is the support of the software application provided with the MCS³ which creates keysets for the particular software applications. Not only are simple direct key presses supported, but the key presses can be supported with key modifiers (such as control, shift, option, etc..). The keypress can also correspond to a mouse clicked location onscreen, for applications that have no keyboard equivalent available. In addition, each MCS³ command (except for the jog ring and shuttle wheel) can be set for a sequence of commands given (up to 12). As an example, the can be set so that the record button would perform the following sequence:

press command R (set recording counter to 00:00:00) delay of 30 ticks (wait 1/2 second) press control A (arm all recording tracks) click screen box w/mouse (disable recording interlock) press open apple R (hit RECORD button)

Some keysets for popular applications have built-in keystrokes that can also be used within the sequence per key.

The MCS³ Controls

The MCS³ control surface has 5 basic areas of control. Refer to the illustration below.

The Jog/Shuttle wheels are located in the center of the unit. The Jog wheel may be rotated in either direction at any speed. The Shuttle outer ring has a central detent and may be rotated about 55 degrees in either direction from center. Above the Jog/Shuttle wheels are two arrow shaped LEDs. These LEDs show the status of the Shuttle ring. Both LEDs on indicate that the Shuttle ring is centered.

The Transport controls are located on the bottom of the MCS³. The controls from left to right are Rewind, Fast Foward, Stop, Play and Record. The Record button has an LED above it to indicate Record status.

The V-stick is a small joystick located to the upper right side of the MCS³ and is surrounded by 4 arrows on the metal. Each arrow corresponds to which directions the V-stick is capable of.

The F and W key groups are sets of push buttons grouped in a logical order. The F buttons are marked F1 to F6 and are located as the top row of buttons on the MCS³. The W buttons are marked W1 to W7 and encircle the Jog/Shuttle wheels.



The MCS³ Application

The MCS³ application lets you test the MCS³ and work with the Keysets. The left side is the graphic representation of the MCS³. The light grey box on the right is the Control Tabs, which let you set which actions and keypresses are performed by the Keyset. The lower right dark grey box is the sequence box, which allows up to 12 actions (key presses, mouse clicks or delay periods) per MCS³ control press.



The MCS³ application is used for testing the MCS³ and working with the Keysets. *You do not need to use the MCS³ application during your regular work unless you wish to perform the above functions.* The Keysets created will be loaded by the MCS³ extensions and will activate for each target program you are working with.

Try it Now

Launch the MCS³ application and select "About Media Control Station". This will bring up a credit screen.

Use the Transport commands and the Jog Wheel to scroll the credits screen back and forth.

MCS³ Application's Menus

File Menu

New Keyset...

Creates a New Keyset, and links it with a particular Target Application.

In other words, when you are ready to start defining the function of the MCS³, the first thing you do is select New Keyset.

You will see a standard dialog. Then select the application that you wish to control with the MCS³. We refer to that application as the "target" application, simply to distinguish it from the MCS³ application.

Then you use the MCS³ application to assign what each control will send. These assignments are collectively called a Keyset.

Import Keyset...

Imports a previously exported Keyset file. Places the Keyset into the Keysets menu.

Export Keyset...

Exports a Keyset as an independent file, to allow you to more easily transfer the file to another computer.

Quit

Exits the MCS³ Application. Once you have defined your Keysets, the MCS³ application does not need to be running for the MCS³ hardware to operate.

Edit Menu

Undo Undoes last operation. This command may also reflect the previous operation.

Cut Copies the currently selected text the Clipboard. Clears text.

Copy Copies the currently selected text to the Clipboard.

Paste Pastes the previously copied text.

Clear Clears the selected text.

Select All Selects all of the text within the active window.

Delete Current Keyset Deletes currently selected Keyset. Will not delete the Default Keyset.

Keysets Menu

This menu contains a list of all the Keysets that you have created or imported.

It will always at least contain the Default Keyset.

Use this menu to select a Keyset to display the control assignments and edit them.

Display Keyset

Opens window which displays all the names and control assignments used in the Keyset Please see "Display Keyset" on page 15 for more information.

Actions Menu

Use Partial Window Name This command is reserved for future versions.

Windows Menu

Media Control Station 3 Opens the MCs³ program application window. You can keep both windows onscreen and switch back and forth with these two menu items.

Display Keyset Opens window which displays all the names and control assignments used n the Keyset Please see "Display Keyset" on page 15 for more information.

Help Menu

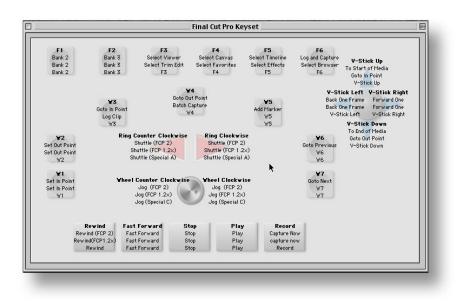
Help Center This will bring up the main Macintosh help menu which has help features for a variety of programs. The $MCS^3 V2$ help can also be accessed from this menu.

Show Balloons This command will turn on the help balloons for ease of use in the menus.

MCS³ V2 Help this will bring up the MCS³ V2 help menu. It is a condensed version of the information found within this manual.

Keysets What is a Keyset?

The keyset is the currently loaded set of definitions of all the controls on the MCS³. By control definition, it is meant of the way that each control is set to act on the computer. All the macro sequences, keyboard equivalents, mouse click locations and keyboard modifiers, those all fall under control definitions.



The screen above shows a typical keyset definition. The keyset also includes 3 banks, so each keyset can have 3 seperate sets of commands running, depending on which bank is in use at the time.

Several keysets have been included with the software package. New keysets can be created, exported to give to others, or keysets may be imported from other computers or online. (older software revision keysets cannot be imported).

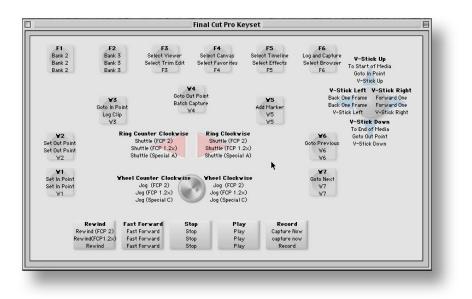
Display Keyset

When Display Keyset is selected, a second window opens.

This window displays the current assignments of each control in the Keyset.

Notice how each control has 4 lines. The top line is the name of the control while the lower 3 lines are the Banks 1,2 and 3 assignments. Running the mouse pointer over the name will show the complete macro sequence, if any.

Click the close box when finished with this window.



About The Default Keyset

The first time you use the MCS³, the so-called "Default Keyset" is automatically selected.

The Default Keyset is ready to use and has some functionality with QuickTime-related applications.

The wheel sends left and right arrow keys, to playback QuickTime[™] movies one frame at a time.

Play and Stop keys send a space and return, respectively. These keys play and stop QuickTime movies.

F1 through F6 send function keys F1 through F6. The V-Stick sends up, down, left and right arrow keys.

The W keys have no assignment. They will not send any keyboard commands or mouse clicks unless you edit the Default Keyset.

Any time you open an application, if you haven't yet created a Keyset for that specific application, the Default Keyset will be automatically selected.

Keyset Selection

One Keyset can be created for each application.

On the File menu, select "Create New Keyset". The MCS³ will show a dialog box asking you to select which application the keyset is for. Select the application to create the keyset for (program aliases won't be shown). Double click the application name, and the new blank keyset will be created and show in the upper left keyset pop-up bar.

If it is desired to bring in an external keyset, select "Import Keyset" from the File menu. Double click on the keyset to import.

Please note that on the right side of the same bar, the "Current Bank" red light selection is set to 1. When you load in the Keyset, the bank will begin at 1. You can select and edit the other banks. *The bank that is selected when you close the application is the bank that will be used for that particular keyset.*

Under the Windows file menu, select the Keyset Display choice (or command 2). This will show a graphic display of the keyset. Each control will have 4 lines, the top being the name assigned, and the 3 lines down being the commands set for each bank. Pointing on the command will show the whole macro sequence, if the command is a macro set. (editing the commands will be covered later in this manual, in "editing the default keyset" on page 20.

Creating a New Keyset

Remember that a Keyset is the collection of commands that the MCS³ can send. Each application can have its own Keyset. The MCS³ senses which application is active, so it knows which Keyset applies to each application.

When you are ready to start programming the MCS³, you begin by selecting New Keyset from the File menu. This "links" the operation of the MCS³ with the application you want to control.

Select New Keyset from the **File** menu.

This opens a Select dialog. Select the application that you wish use with the new Keyset.

(Please note that the other icons are Help on the bottom left, and the upper 3 are Shortcuts, Favorites and Recent Applications, respectively, which are standard Finder icons).

Create New Keyset		
🖾 Macintosh HD	<u></u>	
Name	Date Modified 🚔	
🗢 🧃 i Movie	5/4/01	
🗢 🧃 i Movie	5/4/01	
🏠 i Movie	9/27/01	
Resources	5/4/01	
🕨 🧻 i Movie Tutorial	5/4/01 👻	
	Show Preview	
Choose the Application Which Will Use	the New Keyset	
0	Cancel Choose	

The currently active Keyset name is displayed in the upper left part of the MCS^3 window.

Final Cut Pro	ŧ)
---------------	----

Saving and Deleting Keysets

The MCS³ Keysets are automatically saved within the MCS³ application's Preference file. You never have do a "Save" when using the MCS³ application.

To delete a Keyset, select the Keyset from the Keyset menu. Pull down the Edit menu and select Delete Current Keyset from this menu. You cannot delete the Default Keyset.

Importing and Exporting Keysets

Keysets, though automatically stored invisibly within the Preferences file, may also be Exported or Imported.

This allows you to easily move Keysets from one location to another, such as another computer. It also allows third-party Keysets to be developed and added at any time.

To Import a Keyset, select Import Keyset from the File menu. A standard Open dialogue lets you select the Keyset. Once imported, the Keyset will appear in the Keysets menu. It will also automatically be saved in the Preferences file.

To Export a Keyset, select Export Keyset from the File menu. A standard save dialogue will appear, to allow you to choose where to put the exported Keyset. The Keyset retains the name of the application that it is linked to.

Using Supplied Keysets

Some Keysets for selected applications are included on the MCS³ disk. Refer to any Read Me files on the disk for a description of the functions provided by these Keysets.

To use any of these Keysets, select Import from the File menu. Then select the Keyset within the Import dialogue.

The Keyset will then be automatically saved in the Preferences file, and will appear in the Keysets menu.

Editing the Default Keyset

You can edit (that is, change) the Default Keyset at any time, using the MCS³ application.

WARNING!

Before editing the default Keyset, it is *HIGHLY* recommended to Export the keyset. This way, you can re-import the original Default Keyset if desired.

Example of Changing the Wheel Action

Presently, the wheel sends left and right arrow keys at a medium speed.

Turning the wheel will play a movie in a QuickTime[™] related application, such as Movie Player.

Suppose you are editing a movie, and you want to use the wheel to easily view the movie frame by frame. You may want to slow down the response of the wheel, to make it easier to find a specific frame.

First, rotate the wheel a little in either direction or click on the left or right picture of the wheel.



The Wheel Slider setting affects the wheel speed for either direction of rotation. For the purposes of this example, it doesn't matter whether you select clockwise or counterclockwise rotation.

Click on the Wheel Slider and drag it downwards.



Now the next time you switch to a QuickTime[™] related application, the wheel will make the movie play back slower, allowing finer control.

The Wheel Slider is covered in more detail on page 29, "The Wheel Slider and example".

Example of Changing a Key Action

Presently, in the Default Keyset, pressing the Record key does nothing. Suppose that you want the Record key to send the equivalent of the Macintosh's Enter key.

Press the MCS³ Record key to select it. Notice that the Selected Control and the Name box right below it both say record. You can select the Name box and type in a new name, such as "The Record Function".

Now on the 4 tabs below the names, select Keystrokes. Notice that the fields are all blank. Select the optinal name bar with the mouse then type a name in the optional name box. *This will be the name of a button press emulated from the keyboard.* Let us call it: "Command R Keypress". Enter this text.

Now use the mouse to select the Keystroke box. *Now type in the keypress combination you wish to emulate.* If you use the Command R as the optional name suggests, a lowercase "r" will appear in the Keystroke box, and a check mark will appear in the box below.

Below and to the right is an Add/Insert box. Click this box with the mouse. Notice how the gray box to the left of this button just added the command you created. Now go lower with the mouse and change the number of ticks. (60 ticks=1 second). Then click the Insert Delay button. Now click the Add/Insert button once again.

What is created is now when you press the Record button, it pressed the command R key, waits the time specified, then presses it again. You can make and use different keypresses, for up to 12 actions per key. To clear the selection, select the area with the mouse to clear in the grey box, then press the "Clear Selection" box.

Restoring The Default Keyset

The previously mentioned examples WILL change the Default Keyset, and have it saved into the Preferences. There are 2 ways to restore the Default Keyset.

a. In the section on Editing the Default Keyset, it was highly recommended to do an Export Keyset on the default keyset. It is a simple matter now to go to the File Menu and Import the Default Keyset. This will bring back to factory spec.

b. If there was no exported version saved, the MCS³ V2 software must be re-installed. Refer to page 6, "Installing the software" and follow the procedure for previously installed versions. If you already had other keysets modified, export those keysets to a safe place (such as another folder).

Control Assignments

The MCS³ controls are assigned into the key equivalents and macro sequences by the Control Tabs. *The control assignments will save into the keyset loaded into the MCS³ program.*

The Built In Tab

The Built in Tab will show optional commands for factory programmed keysets. (the Default Keyset and self made keysets will show that there are no built-in commands).

The commands from this tab and the 3 others are used within the Sequence Window.

Example

Launch the MCS³ program. It is not necessary to have the MCS³ connected. Click in the "Built In" tab. Chang the Keyset to Default. Notice how the message says there are no built in commands. Now, change the keyset to the Final Cut Pro Keyset.

Click the Built In tab. Notice how it a hierarchical menu. Click on the Jog and Shuttle blue triangle to open this menu item.

Notice how there are two menu items, Jog and Shuttle (FCP2). Now click on any of the MCS³ buttons on the left picture and note how both the Jog and Shuttle items dim. Now click on the Shuttle arrows. Note that the Shuttle menu item now dims.

Click on the left and right Shuttle arrows. Note that the Sequence window has several sequence items on the Ring Clockwise setting while the Ring Counter-Clockwise is blank. Use this setting.

In the Built In Tab window, double click on the Shuttle menu item. The Shuttle menu item will appear in the Sequence window.

The Keystrokes Tab

The Keystrokes tab will allow a direct Macontosh keyboard keypress to be defined as the control action.

There is 3 fields within this tab. The Name (optional) allows you to name the keyboard action. The Keystroke is what keystroke itself is the action. The box below is the modifier keys utilizing 4 icons for the standard control keys. The Tab and Delete keys work standard in which the Tab key selects the different text fields and the Delete key will clear the selected field.

Command	Shift	Option	Control
_Modifier Keys:			
	□↔	٦Ľ	□ ^

Example

Launch the MCS³ program. It is not necessary to have the MCS³ connected. Click in the "Keystrokes" tab. Change the Keyset to Default.

Now click on the Keystrokes tab. Press the Rewind button on the MCS³ or click on it on the MCS³ screen graphic. Notice that the selected control and name box above the Control Tabs now say Rewind.

Click in the Keystroke box's Name (optional) box and type in a name. Now click the Keystroke box with the mouse. Now hit Control-R on the Macintosh keyboard.

In the Keystroke box will appear a lowercase "r" and the Control checkbox in the Modifier Keys will be checked.

If you define a jog or shuttle control, the keyboard character assigned will repeat as long as the control is being activated.

The Mouse Tab

The Mouse Tab allows an MCS³ control to be interpreted by the Macintosh as a mouse function. This is useful as some program buttons are mouse selectable without keyboard equivalents.

The Mouse tab has 4 fields.

a. *Name field*: same usage as the keyboard tab for naming the particular action

b. *Mouse Action*: This pull down menu will highlight 3 different types of actions, depending on which MCS³ control is being used. A button will allow only the mouse button click. The jog wheel will allow a vertical or horizontal drag or move. The shuttle ring will allow a vertical or horizontal scroll.

c. *Click Locatio*n: This pull down menu will give a point of reference for the captured mouse movement or click point. The reference can be to a window edge or or an edge, percentaged to the window's width (useful for resized windows)

∕Built In∨Keystrok	es 🗸 Mouse 🕽	Special		
Name (optional)	:			
Mouse Action (Horizontal S	croll	\$	
Click Location:	Relative t	o ¥indo¥ Top	Left 🗦) _
The window and ma Clockwise is used in		l be captured the n	lext time the Ring	
Modifier Keys:				
Ш Ж	🗌 쇼	\Box \sim	□ ^	

Example

Launch the MCS³ program. (it IS necessary to have the MCS³ connected for this example). Click in the "Mouse" tab. Change the Keyset to Default.

For a secondary, let use use the built in Stickies program as an example.

1. Select an MCS³ control. The Rewind key will be used. In the MCS3 program window, press the Rewind key. Now select the Mouse tab.

The Mouse Action will show the Mouse Click. Leave that alone. On the Click Location, select any of the settings. Since this is a click, the setting for this tab is not that important.

Now, go back to the target program (stickies) and place the mouse pointer in the window and area you wish to click it in. Press the MCS³ rewind key. This will allow the correct capture.

Now type up any text, random letters in the Stickies window. Position the mouse cursor over any point. Every time you press the Rewind key on the MCS3, it will act as if you pressed the mouse key.

Now, let us try a jog wheel capture. Go back to the MCS³ program. Turn the jog wheel a small amount to select within the mouse tab. In the Mouse Action menu, select Horizontal Move. On the Click Location, select relative to window top left.

Go back into Stickies and place the cursor within the text once again. *Now move the jog wheel left or right. You will see the text cursor move with the jog wheel.* (if you had selected the vertical scroll, it would still scroll horizontally in the text window becuase of the way the text cursor is handled).

The Special Tab

The Special tab will allow certain functions not covered by the other tabs.

A button press can be assigned as a bank 2 or 3 selector. This means that any button can switch the control banks, allowing user control of the banks instead of having the program switch to the banks. The bank switch control press will be the same for the first bank as well, forming a toggling bank control. For example, W2 can be assigned to switch to Bank 2, and W3 for bank 3. W1 would duplicate the Bank 2 or 3 command, allowing it to switch back to bank 1.

The Special Modes A-F are not assigned at the present time. Those are for developer programming, to create special modes not covered by the rest of the definitions. All controls can be affected by the special modes.

The JKL Shuttle Mode affects only the shuttle ring. When selected, the shuttle ring will send out these standard commands, for those programs which support it.

Built In V Keystro	okes V Mouse V Special V	
Special Modes:	 Special Mode A Special Mode B Special Mode C Special Mode D Special Mode E Special Mode F 	R
	Bank 2 Selector Bank 3 Selector JKL Shuttle Control	

The Wheel Slider

The Wheel Slider allows you to set a speed setting of the jog wheel or shuttle ring. The wheel can allow up to 4 speed settings while each direction of the shuttle ring will allow up to 12 increments.



Example

Launch the MCS³ program. It is not necessary to have the MCS³ connected. Click in the "Keystrokes" tab. Change the Keyset to Default.

Select the jog wheel. Go to the Keystrokes tab. Move the Wheel Slider control down to the very bottom, dragging it with the mouse pointer (you must click on the blue pointer; it will NOT follow a click on the slider bar).

Now click on the Add/Insert button below the slider bar. This will add the first entry into the Sequence box.

Move the Wheel Slider upwards a little more. Clck on the Add/ Insert button once again. Repeat this two more times with different blue pointer settings.

When you double click on the sequence box entry, you will see the blue pointer move to where it was selected.

Technical Information

Specifications

Troubleshooting

If for some reason the MCS³ does not give you the expected results, take a moment to do some investigating.

The most important concept is that the extensions are required for the MCS³ to operate. Confirm using the Extensions Manager that both extensions are enabled.

If the unit is not operating at all, or if an error dialog appears, use Apple System Profiler (2.0 or later) to confirm that the unit is currently detected by the Macintosh.

As with any peripheral device, certain extensions could possibly hinder the operation of the unit. First disable all suspect extensions or control panels using the Extensions Manager, and re-start the computer.

If the problem is corrected, then re-introduce the extensions back into the Extensions Folder one at a time, restarting each time, until the problem re-appears and the conflicting file is discovered.

Care and Service

If properly cared for, your MCS³ should provide years of trouble-free performance. Avoid dropping the MCS³, or hard banging on the keys.

Clean with a soft cloth dampened with window cleaner. Do not allow liquids to get inside the unit.

There are no user-serviceable parts in the MCS³. Please refer to the really fine print following for detailed warranty and service information.

JLCooper Electronics Limited Factory Warranty

JLCooper Electronics ("JLCooper") warrants this product to be free of defects in materials or workmanship for a period of 12 months from the date of purchase.

This warranty is non-transferable and the benefits apply to the original owner. Proof of purchase in the form of an itemized sales receipt is required for warranty coverage.

To receive service under this warranty, customers in the United States should contact the JLCooper factory at 310-322-9990 and talk to a service technician. If necessary, a Return Authorization number may be issued.

For our customers outside the United States, it is recommended that you first contact your Dealer or Distributor, since they may offer their own service or support policy.

If local support is not obtainable, please send a FAX to JLCooper's Service Department at 310-335-0110, with a detailed description of the service required.

Upon issuance of return authorization, the product should be properly packed and shipped to Service Department, JLCooper Electronics, 142 Arena St., El Segundo, CA 90245.

Please include the following: copy of the sales receipt, your name and address (no P.O. Boxes, please), a brief description of the problem, and any other related items discussed with the service department and considered necessary to evaluate the product or effect a repair. The return authorization number must be clearly written on the outside of the package.

JLCooper will, without charge for parts or labor, either repair or replace the defective part(s). Shipping costs are not covered by this warranty.

JLCooper's normal repair turn around time at the factory is approximately 15 business days, from receipt of product to shipping. Your actual turn around time will include return shipping.

Actual turn around time will vary depending upon many factors including the repeatability of the customer's reported complaint, the availability of parts required for repair, the availability of related products needed to evaluate the product if necessary.

Priority services are available. These should be discussed with the service technician at the time the return authorization is issued.

This warranty provides only the benefits specified and does not cover defects or repairs needed as result of acts beyond the control of JLCooper including but not limited to: abuse, damage by accident/negligence, modification, alteration, improper use, unauthorized servicing, tampering, or failure to operate in accordance with the procedures outlined in the owner's manual; nor for acts of God such as flooding, lightning, tornadoes, etc.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. JLCOOPER HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO: LOSS OF TIME, INCONVENIENCE, DELAY IN PERFORMANCE OF THIS WARRANTY, THE LOSS OF USE OF THE PRODUCT OR COMMERCIAL LOSS, AND FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY, APPLICABLE TO THIS PRODUCT. JLCOOPER SHALL NOT BE LIABLE FOR DAMAGES OR LOSS RESULTING FROM THE NEGLIGENT OR INTENTIONAL ACTS OF THE SHIPPER OR HIS CONTRACT AFFILIATES. THE CUSTOMER SHOULD CONTACT THE SHIPPER FOR PROPER CLAIMS PROCEDURES IN THE EVENT OF DAMAGE OR LOSS RESULTING FROM SHIPMENT.