MCS-3000 Series USB Software for OS X

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Installation

Follow the hardware setup instructions for the MCS-3000 Series modules in your system. Hardware manuals will be installed into the folder **MCS-3000 Series USB Software**. They are also available in the Help menu of the MCS-3000 application. The most up to date hardware manuals are located on the JLCooper website Manuals Page.

IMPORTANT: If you have any versions of the MCS-3000 software earlier than 3.0, you must uninstall them before installing this version.

Double-click the file **Install_MCS-3000_USB_3.1.dmg** to open a disk image. From the window that opens, run the application **Install MCS-3000 USB 3.0 Software** and follow the onscreen instructions.

The following files will be installed on your main hard drive:

The folder **MCS-3000 Series USB Software** will be placed in the `/ Applications/` folder.
This folder contains the **MCS-3000** application, keysets, and documentation.

MCS3kEtherMidiDriver.plugin will be placed in `/Library/Audio/MIDI Drivers/`.

MCS3kStartupItem will be placed in `/Library/StartupItems/`.

The folder **JLCooper** will be placed in `/Library/Application Support`.

The folder **MCS-3000 Uninstallers** will be placed on the `Desktop`.
This folder contains the **MCS-3000_USB_Uninstaller** application.

After the installation is complete, you will be directed to restart your computer.

Uninstalling

Launch the **MCS-3000_USB_Uninstaller** application which is located in the **MCS-3000 Uninstallers** folder on the `Desktop`. Select the items you wish to uninstall (or click on the Select All checkbox) then click on the Uninstall button.

After uninstalling, you may notice that the MCS-3000 driver still appears in the **Audio/MIDI Setup** (`/Applications/Utilities/`) MIDI window. This is because the Mac OS X tries to remember the state of your MIDI setup, even if there are changes such as removing or powering down equipment or removing drivers.

To remove the driver from **Audio/MIDI Setup**, disconnect the MCS from the Mac and wait for the driver's icon in **Audio/MIDI Setup** to be dimmed as in the graphic below.

Click on the MCS3k USB icon to select it, then hit the **DELETE** key on the Mac keyboard or choose **Delete** from the **Edit** menu. Quit **Audio/MIDI Setup**.

The MCS-3000 software's preference file is not removed by the uninstaller. It takes up relatively little space and should have no impact on the operation of other software once the MCS-3000 software is uninstalled. If you want to remove it, just delete the file `~/Library/Preferences/com.jlcooper.MCS3000.plist`.

Hardware Requirements

In order to communicate with your computer over USB, the MCS-3000 (or MCS-3800 or MCS-3400) must have an MCS-3000 USB Card Installed.

Hardware Setup

Setting Up Expansion Modules

There are several expansion modules which can be connected to an MCS-3800, 3400 or 3000, including the MCS-3000x Fader Expander, MCS-Bridge, MCS-Navigator, MCS-Tracker, MCS-Panner, MCS-Spectrum and MCS-ClipShot. They are all connected by modular “telephone-type” connectors, provided by JLCooper.

Warning: Use the cable provided by JLCooper. Do not use a standard “telephone handset” cable. If you use a standard “telephone handset” cable, you will short out and possibly damage the MCS-3000 modules.

Most modules have two expansion connectors on the back. They are chained together by connecting a cable from the master (usually an MCS-3800, 3400 or 3000) to an expansion connector on one of the modules, then another cable from that module’s second connector to the next module.

Connect expander to expander in a similar manner, using the cables provided. The system is engineered so that it does not matter which of the two connectors you use, nor in what order you chain the expanders.

MCS-Spectrum and MCS-ClipShot

The MCS-Spectrum and MCS-ClipShot each have only one expansion connector. This means that they will have to go at the end of the chain. It also means that a system can not have both a Spectrum and a ClipShot connected at the same time.

The Spectrum and ClipShot both have standalone modes. If they are equipped with an optional USB card, they can be operated without being connected to an MCS-3800, 3400 or 3000.

Your Spectrum or ClipShot will arrive pre-configured for either Standalone or Slave mode depending on the options you ordered. If you ever need to change that configuration, please see the Spectrum and ClipShot hardware manuals.

MCS-Spectrum

MCS-ClipShot

MCS-3000x

Up to seven MCS-3000x fader expanders can be connected to an MCS-3800 or 3400, and up to eight 3000x's can be connected to an MCS3000. This makes it possible to have as many as 64 physical faders and associated Mute, Solo, Aux and Select buttons.

MCS-3000x

The MCS-3000x expanders should all be chained to the master unit in the manner described above.

If the master unit has faders (MCS-3800 or MCS-3400), its first fader is always fader #1. The first expander's faders are numbered starting one higher than the main unit's last fader. If the master unit is an MCS-3000, which has no faders, then the first fader on the first expander is fader #1.

On the rear of each expander is a small cluster of four switches, known as DIP switches. These switches set the ID# of each Expander, so the system knows which Expander represents channels 1 through 8, 9 through 16, etc. It is important that each expander has a unique ID. A multiple expander system will not operate correctly if two or more units are set to the same ID.

Set the left-most Expander for ID #1 by making sure that all four switches are up, that is, off. Follow this chart to set the ID # of multiple units (Off = Up).

Switch 4	Switch 3	Switch 2	Switch 1	ID#	Fader Numbers (3800)	Fader Numbers (3400)
off	off	off	off	1	9-16	5-12
off	off	off	on	2	17-24	13-20
off	off	on	off	3	25-32	21-28
off	off	on	on	4	33-40	29-36
off	on	off	off	5	41-48	37-44
off	on	off	on	6	49-56	35-52
off	on	on	off	7	57-64	53-60

MCS-Bridge

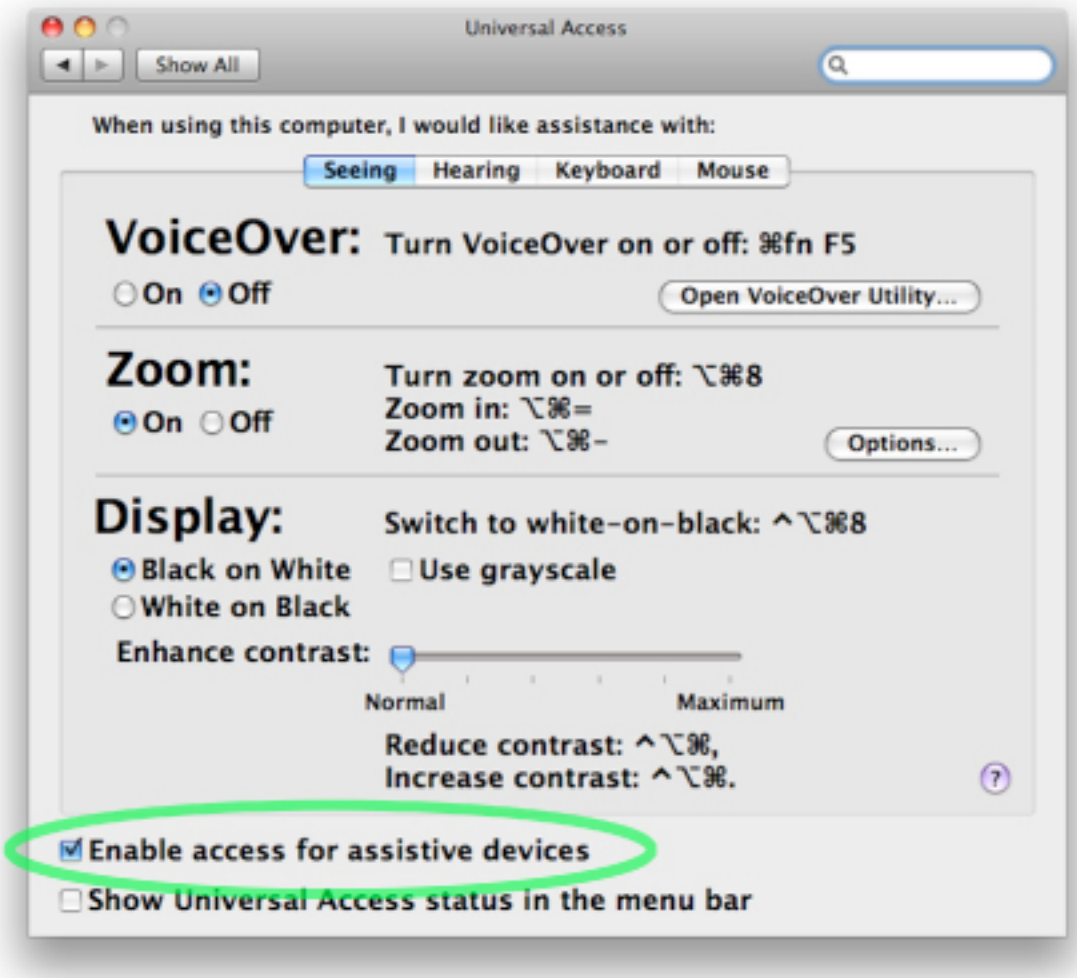
The MCS-Bridge attaches to the back of an MCS-3800 or an MCS-3000x to add more buttons, encoders and displays above each fader. The MCS-Bridge is chained into the system with the JLCooper supplied modular cables just like the other expansion modules.

Like the MCS-3000x, the Bridge has DIP switches on the back which let the system know which group of eight channels it represents. Any bridge that is attached to an MCS-3800 should have switch 4 off (Up) and the other three switches on (Down). If there are additional Bridges attached to MCS-3000x's, the switches on each Bridge should match the switch settings on the 3000x it is fastened to.

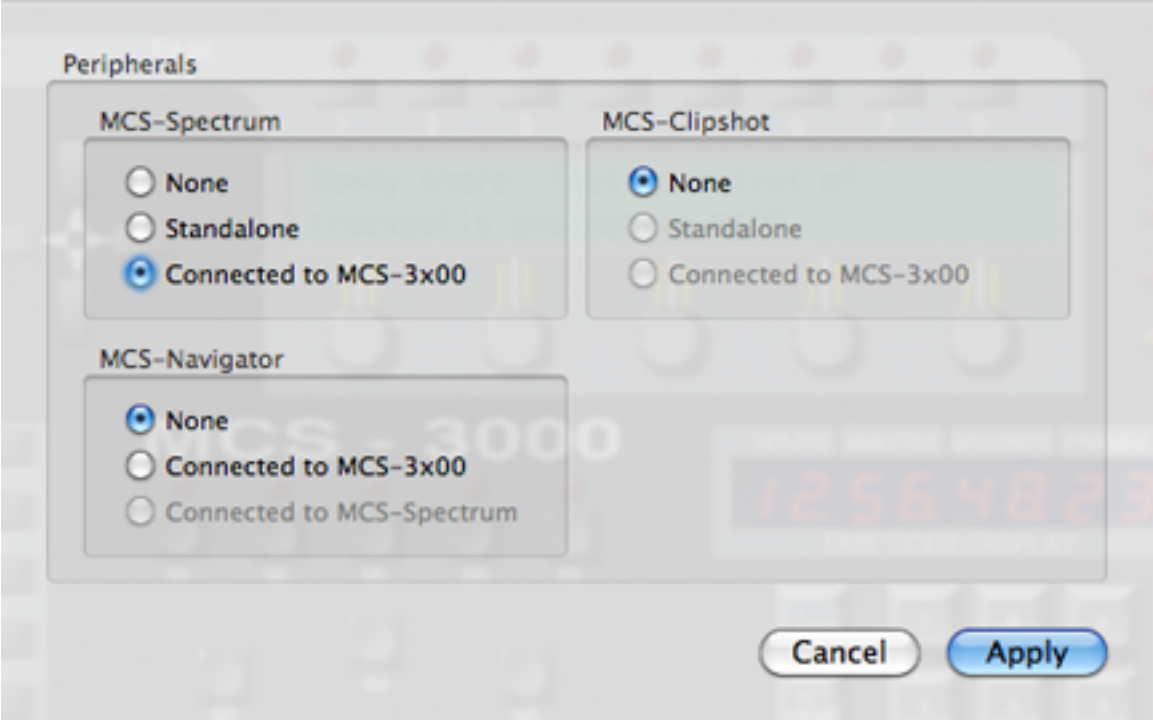
MCS-3800 with three MCS-300 fader expanders, four MCS-Bridges and an MCS-Panner

System and Software Setup

The MCS-3000 software relies on Apple's Universal Access to perform mouse emulation. In order for the MCS-3000 software to work correctly, you **must** open **System Preferences** and go to the **Universal Access** pane. Make sure "**Enable access for assistive devices**" is checked then quit **System Preferences**.



There is an additional one time step to perform. Open the application “**MCS-3000**”. It is located in `/Applications/MCS-3000 Series USB Software/`. Choose **Preferences…** from the **MCS-3000** menu.



The software needs to know about certain MCS-3000 Series peripherals in your system and how they are connected, namely, the MCS-Spectrum, MCS-ClipShot and MCS-Navigator. Not every combination of these peripherals is possible. For example, there can’t be a Spectrum and a ClipShot in the same setup. The Preferences dialog will keep you from picking an impossible combination. If you are not using these peripherals, leave them all set to **None**.

Introduction to the MCS-3000 USB Software

The MCS-3000 Software extends the MCS-3000 Series hardware's ability to control various applications running on your Macintosh™. It does this by communicating with applications via MIDI and other messaging protocols built into the Mac OS. It can also simulate mouse clicking and dragging, keystrokes and can even emulate other control surfaces if necessary.

Keysets

The MCS-3000 software uses "keysets" which are sets of various actions that are taken when MCS-3000 controls are pressed or turned. Different keysets can be applied to different applications, and the MCS-3000 will choose the correct keyset for whichever application is in the foreground. If no keyset has been created for the current foreground application, the MCS-3000 will use a built in keyset called the "Default" keyset.

To create or edit MCS-3000 keysets, open the application, "**MCS-3000**". To create a new keyset, choose **New Keyset** in the **File** menu and navigate to the application that will use the new keyset. You can also use **Import Keyset** from the File Menu to get an existing keyset. Keysets that ship with the MCS-3000 are located at `/Applications/MCS-3000 Series USB Software/keysets/`. You only need to use **New Keyset** or **Import Keyset** once for a given application. After that, keysets are stored with the MCS-3000 software's preferences.

Each application's keyset can have up to 4 layers, thus quadrupling the number of physical controls on the MCS-3000. To choose which layer to edit, click on one of the Layer buttons at the bottom of the main window.

You can use **Export Keyset** from the **File** Menu to save a copy of a keyset so it can be transported to another Mac or archived for safekeeping. You don't need to use Export in your daily use of the MCS-3000. As previously pointed out, your changes are added to the MCS-3000 software's preferences file automatically.

There are several sample keysets included in this package, including ones for Final Cut Pro™ and Color™.

Editing Keysets

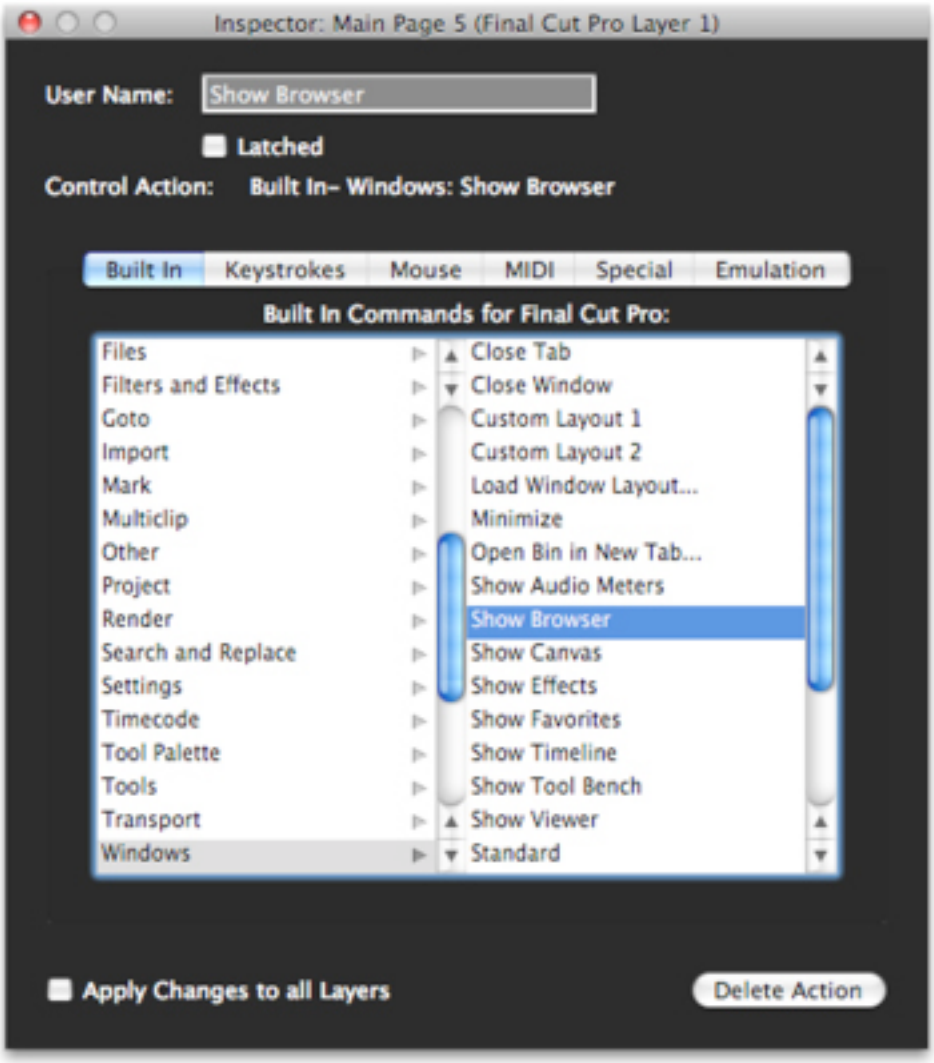
The application presents a graphical representation of the MCS-3000 front panel. When you click on an on-screen control (or move a control on the MCS-3000 itself), that control is selected and information about it appears in the floating **Inspector** window.

There are also windows representing the various MCS-3000 Series expansion modules you may have connected to your system. These windows can be opened from the **Window > Peripherals** menu.

You can choose which keyset to edit within the **MCS-3000 Series** application using the **Keysets** menu. The menu lists all keysets that you have created or imported. The name of the currently selected keyset will be displayed at the bottom of the main window.

The Inspector Window

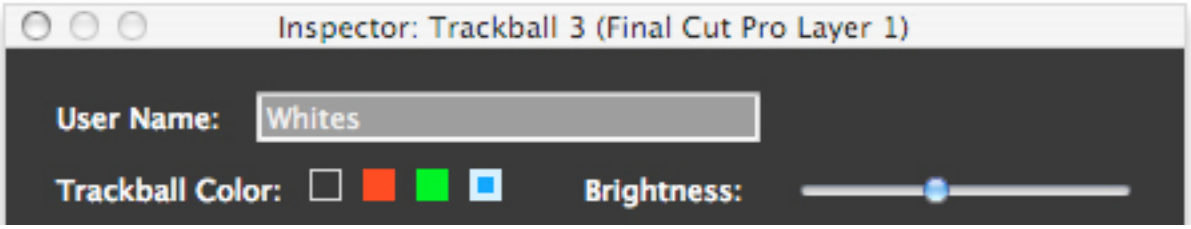
The **Inspector** window is where all your work takes place. It displays information about the currently selected control and contains the facilities for editing that information.



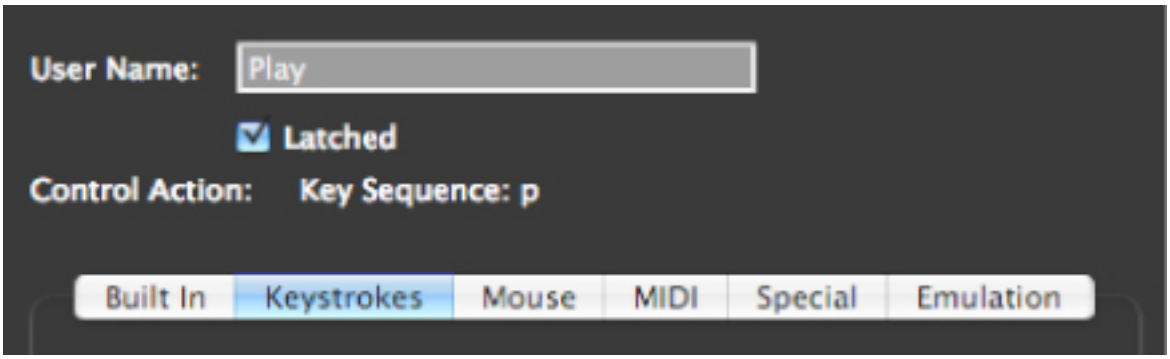
The User Name text box allows you to give a control a more descriptive name than “M1”, “W3” or “F7”. In the example above, the “Page 5” button has been assigned an action that opens the Final Cut Pro **Browser** window, so naming the button “Show Browser” conveys more information than “Page 5”.

Immediately below the User Name are editing controls that vary depending on what kind of MCS-3000 control is being edited. If the control is a button, you will see a “Latched” checkbox that lets you choose between a momentary (pressing the button turns it “on”, releasing it turns it “off”) or latched (pressing and releasing it turns it “on” and pressing and releasing it a second time turns it “off”) behavior.

If the control is a trackball, there will be controls that let you set its color and brightness. Other types of MCS-3000 controls don't have any special editing controls here.

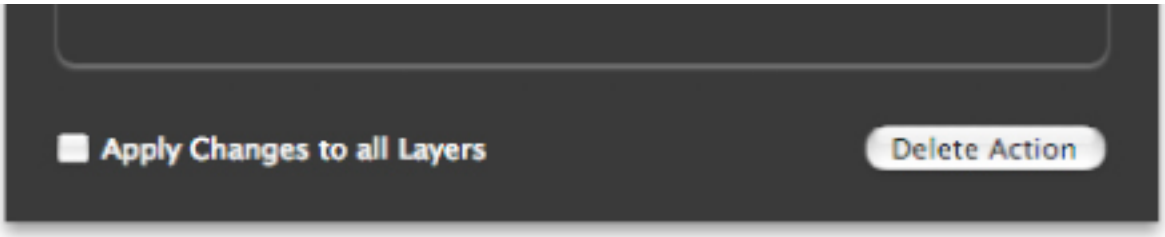


Next is a description of the action that is to take place when the selected MCS-3000 control is pressed or turned while the target application is active. Below that is the area where this action can be edited. There are a series of tabs representing the different kinds of actions that can be performed and clicking on one of these tabs will display controls for editing its kind of action. The available actions are **Built In**, **Keystrokes**, **Mouse**, **MIDI**, **Special** and **Emulation**.



Any changes made in one of these tabs are immediately applied to the selected control. The MCS-3000 software allows multiple levels of Undo, so you can easily get back to any starting point.

At the bottom of the **Inspector** window is the **Apply Changes to all Layers** checkbox. If it is checked while you are making changes, those changes will be applied to the selected control in all layers. Some controls, such as the Transport controls, will probably perform the same function in every layer. The **Apply Changes to al Layers** checkbox will save you having to make changes in every layer in cases like this.



Also at the bottom of the **Inspector** window is the **Delete Action** button. When pressed it will delete the action currently assigned to the selected control. This is also undoable.

Action Tabs

Keystrokes Tab

The MCS-3000 controls can be assigned to send a sequence of keystrokes to an application just as if they were typed on the Mac keyboard. These assignments are set up in the **Keystrokes Tab**.

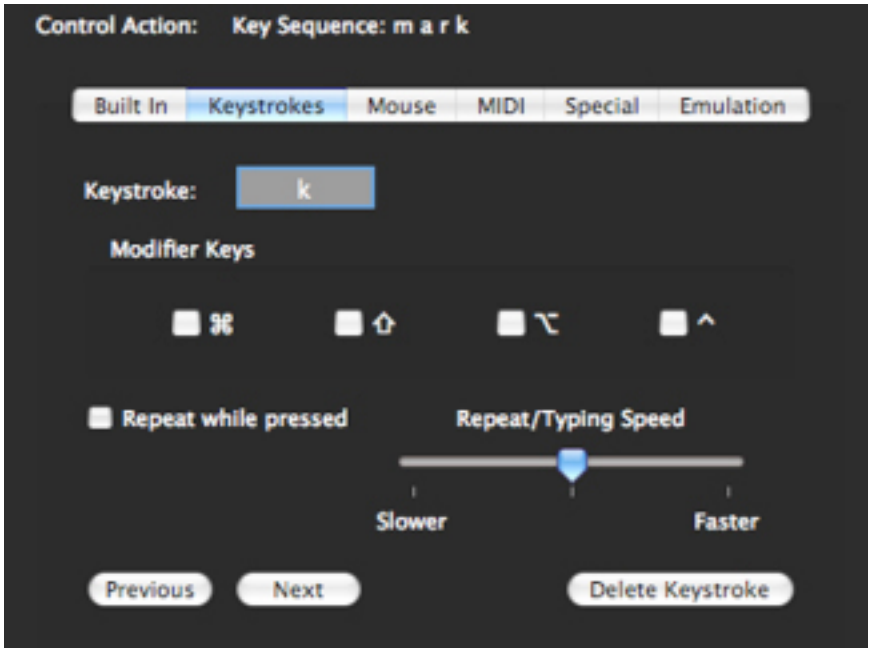
Select a control to edit, place the cursor in the **Keystroke** field and type a key. If you hold down any modifier keys (command, shift, option or control) while typing this key, the modifier checkboxes will be set up accordingly. You can also manually change the modifier checkboxes by clicking on them.

Some key/modifier combinations may be intercepted by the operating system before they reach the **Inspector** window. If this happens, just type the key without any modifiers, then click on the appropriate checkboxes to add the desired modifiers.

To add more keystrokes to the sequence, click on the **Next** button and repeat the above procedure. You can move forwards or backwards in the sequence with the **Next** and **Previous** buttons. The **Delete Keystroke** button will remove the currently displayed keystroke from the sequence.

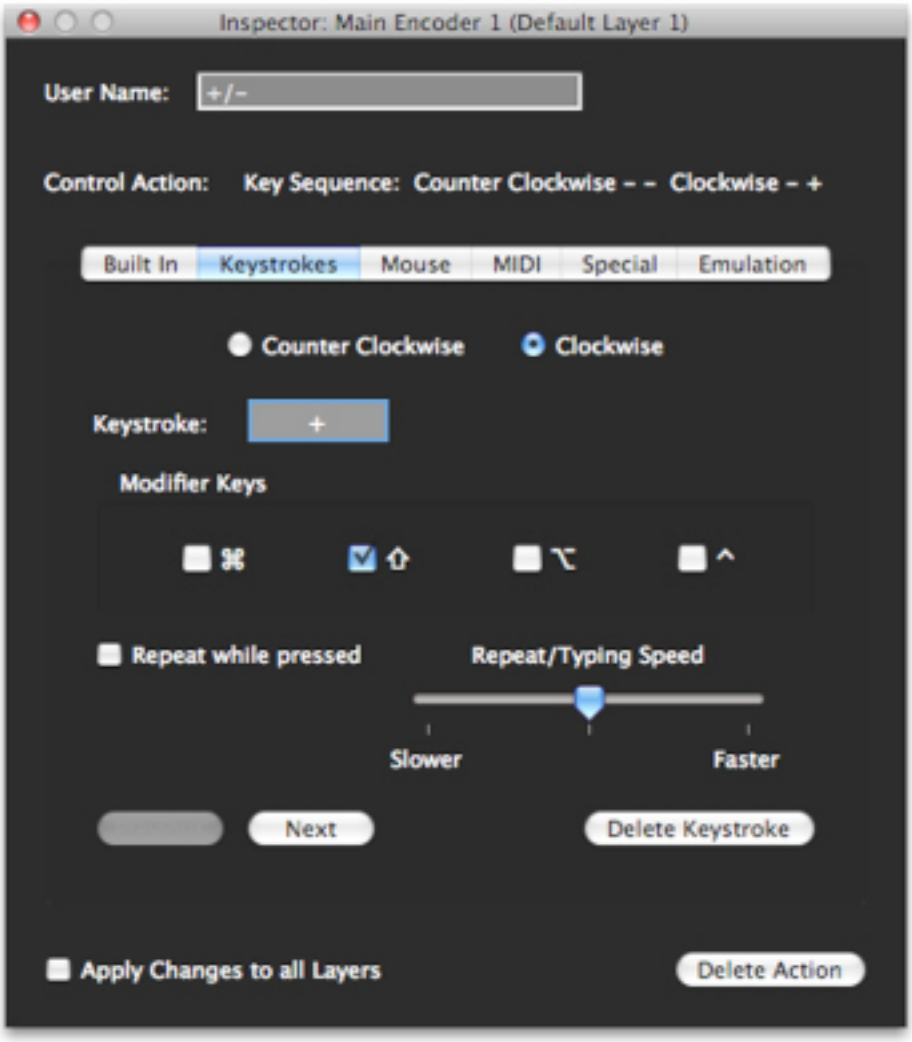
If **Repeat while pressed** is checked, the keystroke (or sequence) will repeat as long as the MCS-3000 control is held down. The speed of the repeat is controlled by the **Repeat/Typing Speed** slider. This slider also determines how much time there is between keystrokes if the sequence is more than one keystroke.

If the key sequence in the example below was assigned to the **W5** button, pressing and holding **W5** would be the equivalent of repeatedly typing the word “mark” until **W5** was released.

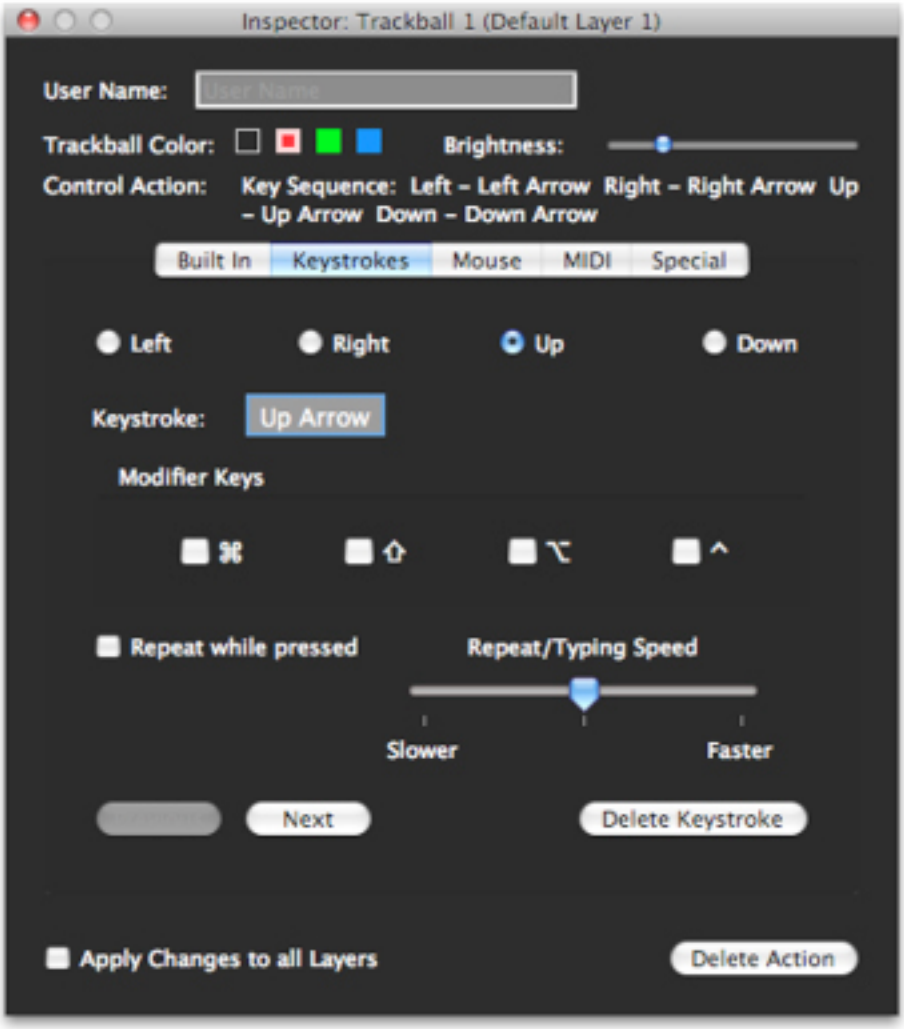


The **Keystrokes** tab can vary depending on the type of MCS-3000 control selected. For rotary encoders and the **Jog Wheel**, different key sequences can be assigned to each direction. Click on the **Counter Clockwise** or **Clockwise** radio button to choose which direction’s sequence to edit.

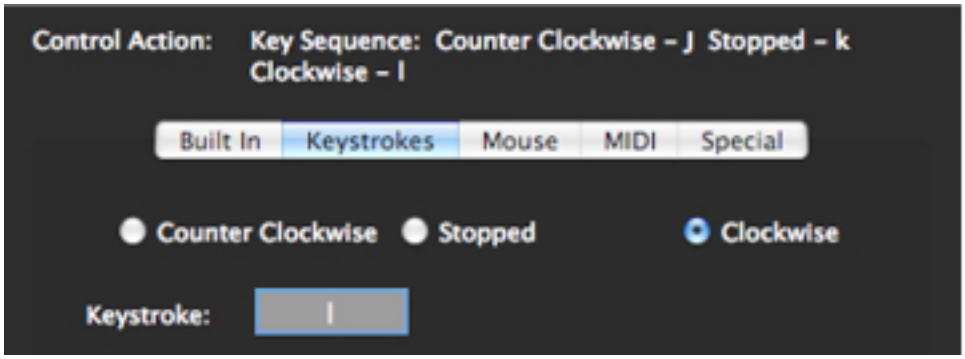
In the example below, a counter clockwise turn would send a “-” and a clockwise turn would send a “+”.



Trackballs and joysticks can have a different key sequence for Up, Down, Left and Right movements. In the example below, the trackball would send a corresponding Arrow key for each direction.



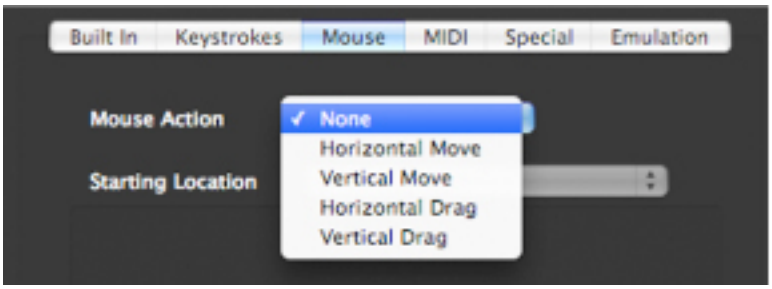
The Shuttle Ring can have a key sequence assigned not only to its counter clockwise and clockwise directions, but also to it's center detent. The example below implements JKL shuttling which is used by several nonlinear video editors. In other words, the shuttle will send a "j" when being turned counter clockwise, an "l" when being turned clockwise and a "k" when it is returned to the center position.



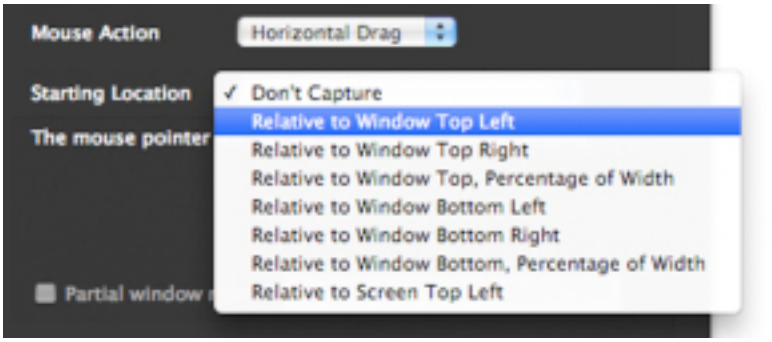
Mouse Tab

The controls on the MCS-3000 can be made to emulate the Macintosh mouse. Buttons can perform clicks, rotary encoders, the **Jog Wheel** and the **Shuttle Ring** can perform horizontal and vertical moves and drags, and trackballs and joysticks can perform 360° moves and drags.

The **Mouse Action** popup lists the actions available for the selected control. For example, if the **Jog Wheel** is selected the popup would look like this:



The **Starting Location** popup lets you choose where the click, move or drag will originate.



If you choose **Don't Capture**, the mouse action will always begin at the current location of the Mouse pointer. If you choose any other option, you will be prompted to pick a point in one of the target application's windows. The options in this menu determine how the MCS-3000 will find that point in the event that the destination window has been resized or moved.

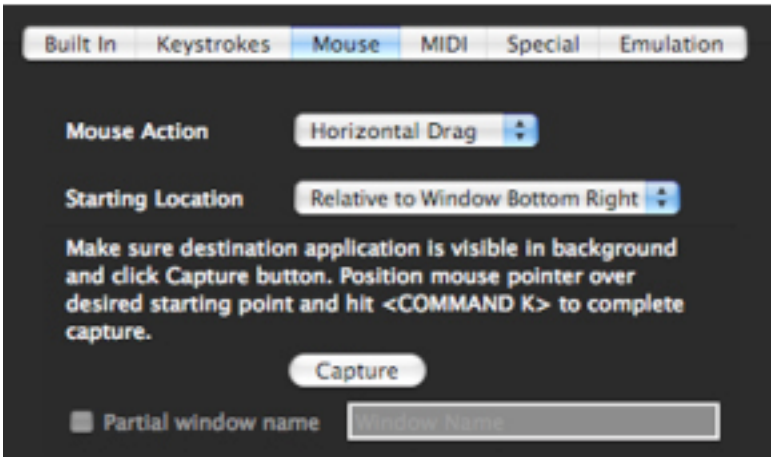
Option	When Destination Window is Resized or Moved
Relative to Window Top Left	The start point will stay the same distance from the top left corner of the window.
Relative to Window Top Right	The start point will stay the same distance from the top right corner of the window.
Relative to Window Top Percentage of Width	The start point will stay the same distance from the top of the window, but it's horizontal position will be a percentage of the window's width..

Option	When Destination Window is Resized or Moved
Relative to Window Bottom Left	The start point will stay the same distance from the bottom left corner of the window.
Relative to Window Bottom Right	The start point will stay the same distance from the bottom right corner of the window.
Relative to Window Bottom Percentage of Width	The start point will stay the same distance from the bottom of the window, but it's horizontal position will be a percentage of the window's width..
Relative to Screen Top Left	The start point will stay the same distance from the top left corner of the screen, no matter what the size or position of the window.

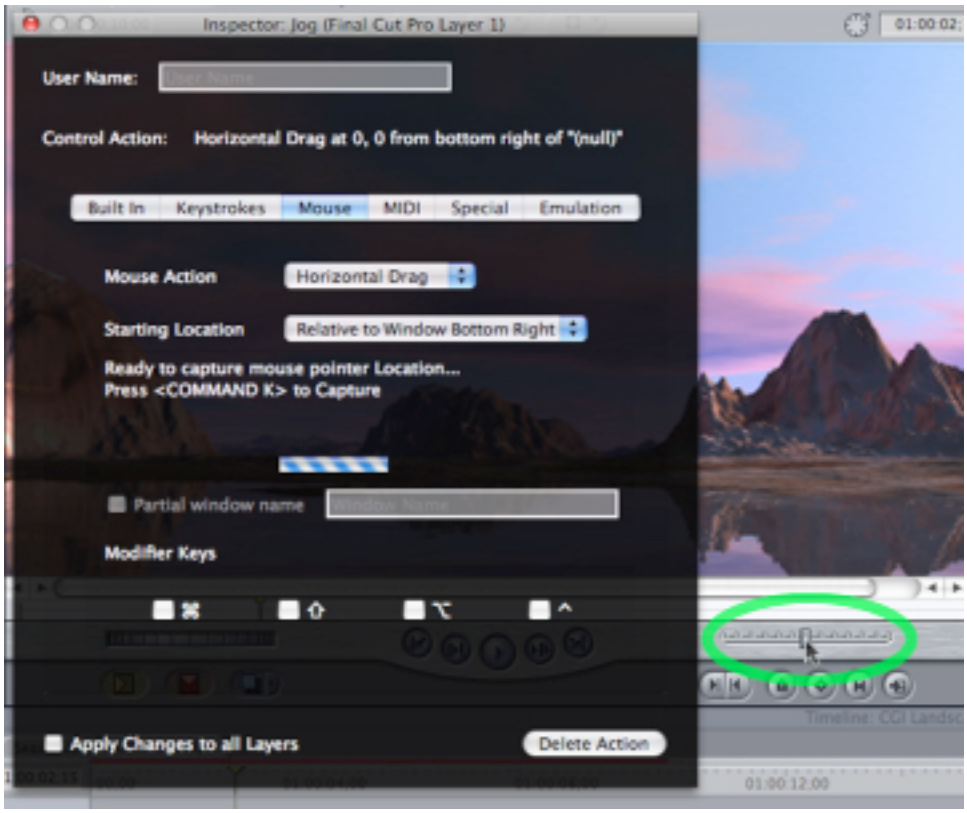
For example, let's say that a particular application has an onscreen shuttle slider in the lower right hand corner of it's Timeline window, and the center of that slider is 100 pixels from the right of the window and 20 pixels from the bottom of the window. When the window is resized, the slider stays at 100 pixels from the right and 20 pixels from the bottom of the window.

Suppose the only way to access this program's shuttle function is by dragging this slider left or right. You could program the MCS-3000 **Shuttle Ring** to do a horizontal drag starting at 100, 20 **Relative to Window Bottom Right**.

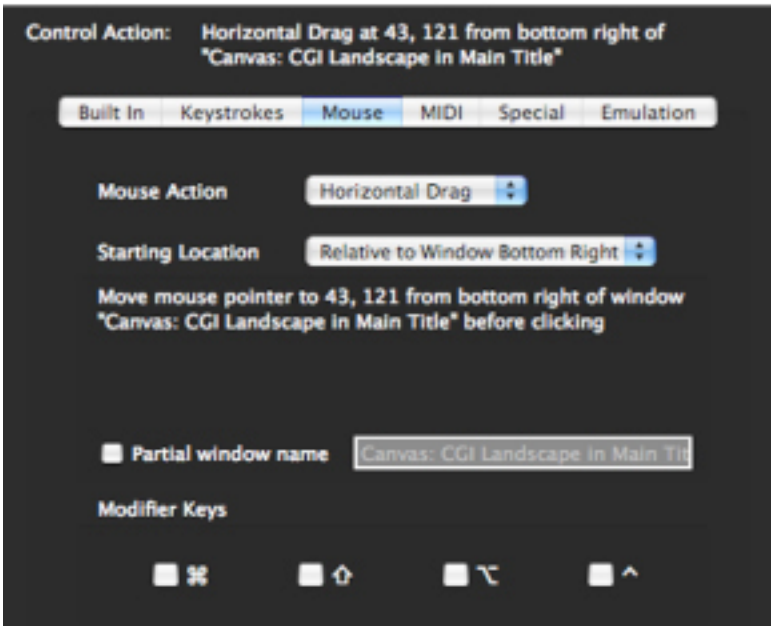
Once you have chosen from the **Starting Location** popup, you will be prompted to actually pick the starting point.



Make Sure the target application is open in the background, and that the destination window is visible. Hit the **Capture** button then position the mouse pointer over the desired starting point and type <COMMAND K>.



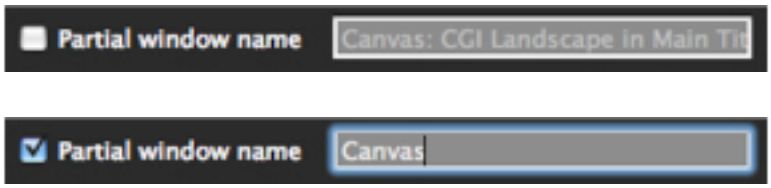
The **Inspector** window will be updated to show the window name and coordinates where the click, drag or move should take place.



From now on, whenever you are in the target application and use the assigned control, it will move the destination window to the front, then click, move or drag at the selected location.

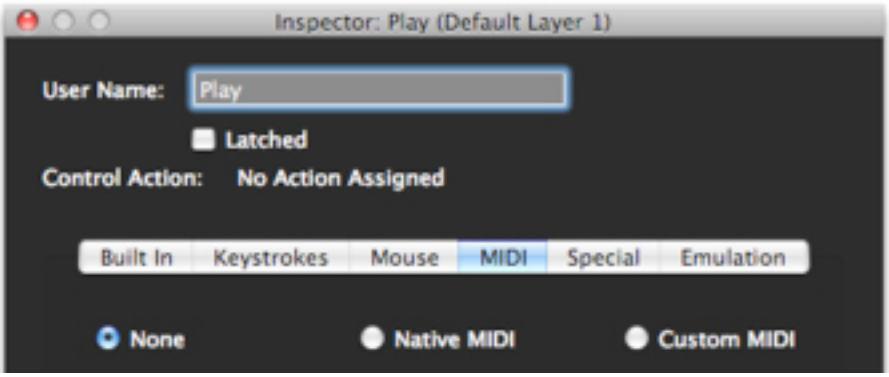
Once a window name and mouse location has been captured, you have the option of using a partial window name. This is useful in applications like Final Cut Pro, where the Canvas Window's title always starts with the word "Canvas" but the rest of the window title changes depending on what you're editing. Normally, the MCS-3000 tries to find a window with the exact name as the window where the click was first captured, but if the window name has changed, it will fail. You can choose the have the MCS-3000 just look for the word Canvas in Final Cut Pro and it would always find the Canvas Window, even if the exact name of the Canvas Window changed since the click was captured.

To use the partial name feature, click on the **Partial Window Name** checkbox. In the text box on the right, change the full window name to the partial name you want the MCS-3000 to use.



MIDI Tab

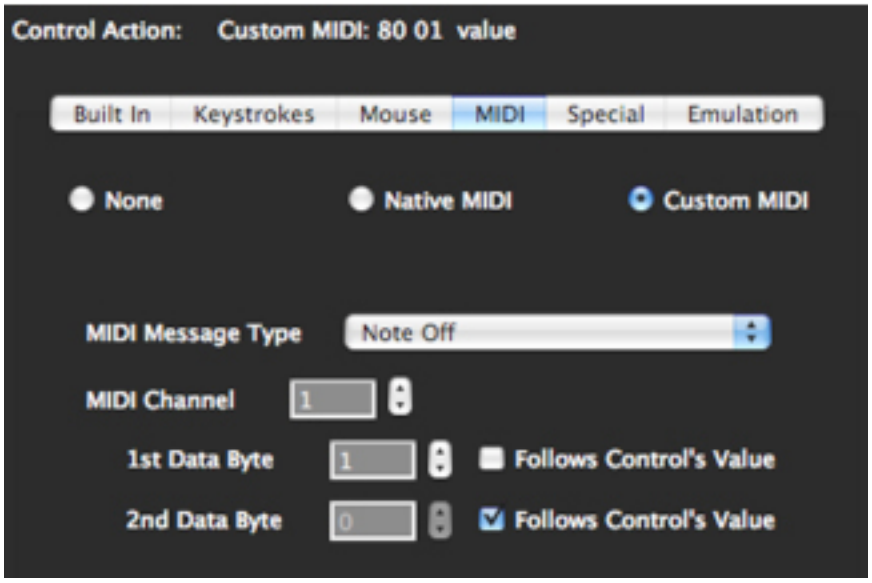
An MCS-3000 can be made to appear as a MIDI device to MIDI applications. Any MCS-3000 control can be programmed to send and respond to a MIDI message.



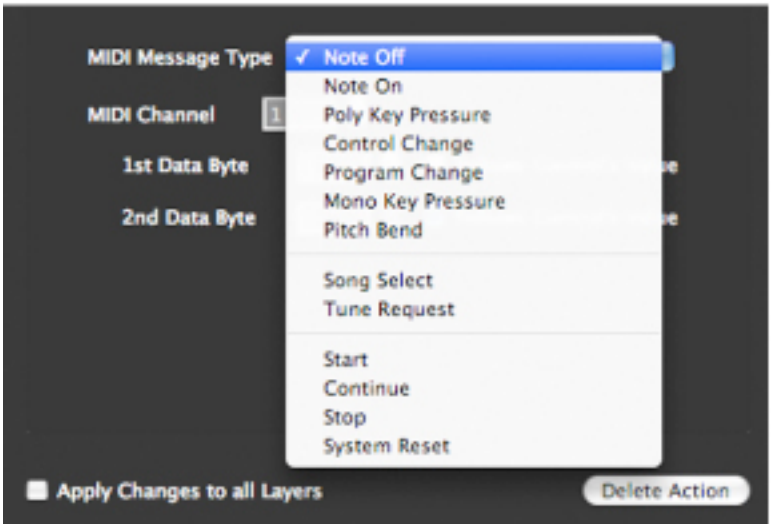
There are three radio buttons for choosing the type of MIDI message to assign.

None	No MIDI message for the selected control. If some other type of action has already been assigned, the None button will be selected. Clicking on the None button will delete the currently assigned action.
Native MIDI	Native MIDI actions send and respond to the MCS-3000 hardware's built MIDI protocol. You would typically use this setting with an application which directly supports the MCS-3000 Series protocol. It could also be used with an application that has a MIDI "Learn" feature. For convenience, choosing **Set all Controls to Native MIDI** in the **Actions** menu will assign Native MIDI actions to all of the MCS-3000 controls on all layers in the current keyset.
Custom MIDI	Custom MIDI actions send and respond to user defined MIDI messages.

When **Custom MIDI** is chosen, more controls will become visible for editing the custom messages.



The **MIDI Message Type** popup lets you choose any of the basic MIDI messages except for system exclusive and MIDI Time Code.



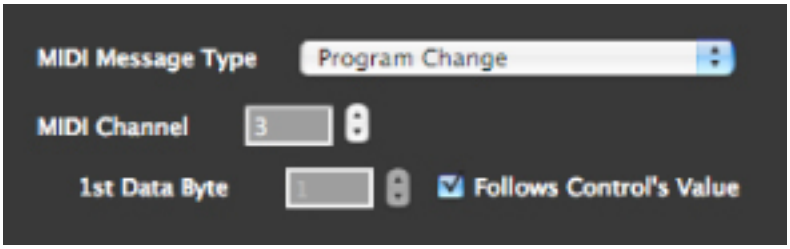
The first group of messages in the popup include a MIDI channel. If you choose one of these message types, a channel editor appears. You can either type or use the up and down arrows to set the channel. This editor accepts values from 1 through 16.

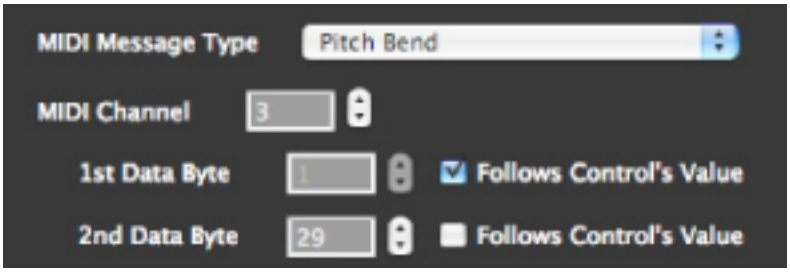
All MIDI messages except for system exclusive are either one, two or three bytes long. The first byte always is the message type, called the *status byte*. If there is a MIDI channel, it is embedded in the status byte. The bytes following the status byte, if any, are referred to as data bytes and contain additional information such as note numbers, velocities, control values, etc...

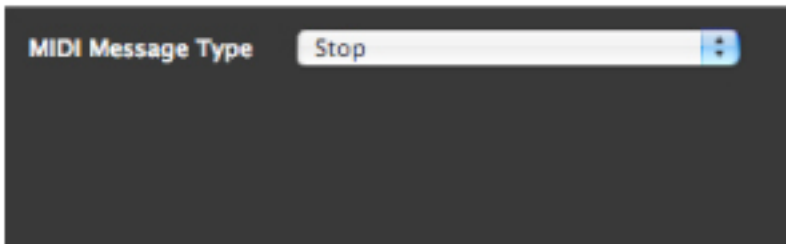
If you choose a message type that is more than one byte long the **1st Data Byte** (and possibly the **2nd Data Byte**) editor appears. You can set the data byte's value by typing or using the up/down arrows. The editor accepts values from 0 through 127.

Instead of setting an absolute value for a data byte, you can check the **Follows Control's Value** box. In this case, the value of that data byte is determined by the state of the MCS-3000 hardware control this message is assigned to. In other words, if you assigned a Custom MIDI Message to the **Jog Wheel** and the 2nd data byte was set to **Follows Control's Value**, a number representing the position of the **Jog Wheel** would be inserted as the 2nd data byte of the custom message. For MCS-3000 buttons, a value of 127 will be inserted for button presses, and 0 for button releases.

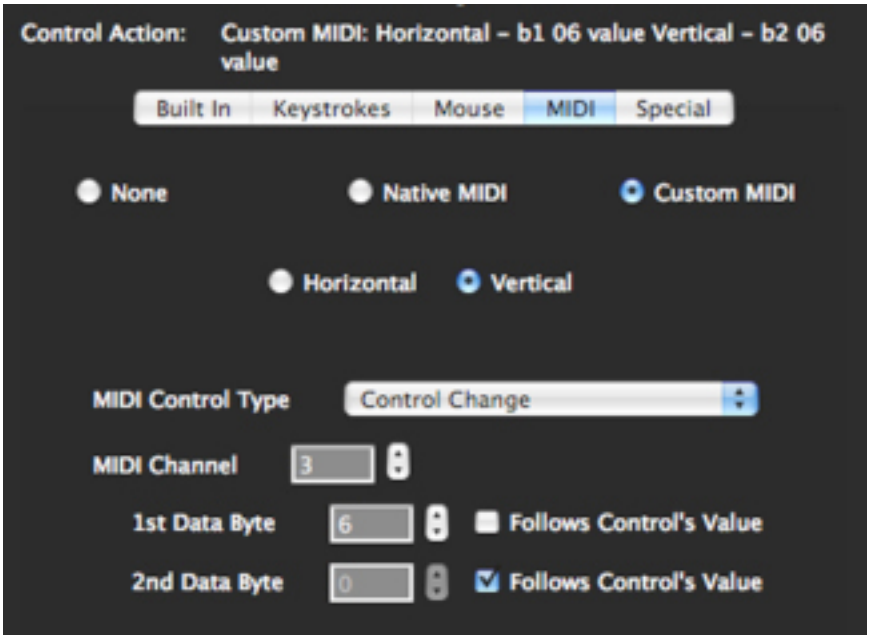
Following are some samples of the **MIDI Tab's** appearance for various message types.







When assigning **Custom MIDI** messages to a trackball, you set different messages for each axis of the trackball. You can also set either axis to **None**.

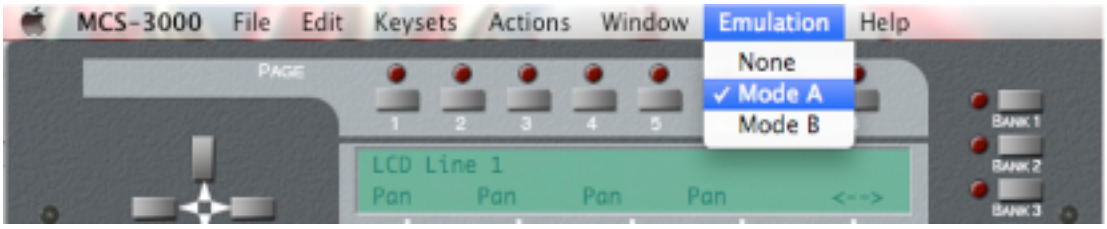


To access the MCS-3000's MIDI messages in your MIDI application, connect your application's MIDI input and output ports to the ports labeled "MCS3k". Depending on the application, the ports may be labeled "MCS3k USB". The exact method for connecting to MIDI ports varies from application to application. Consult the manuals of the MIDI applications you are using to learn how to do this.

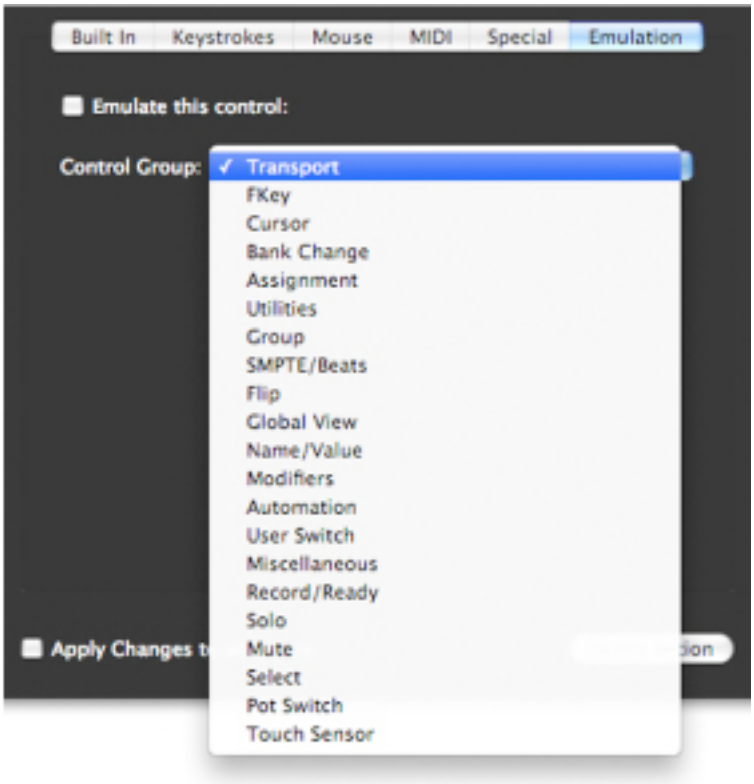
Emulation Tab

The MCS-3000 software has the ability to emulate other MIDI based control surfaces. This feature is useful if you are using the MCS-3000 with an application which doesn't directly support the MCS-3000, but which supports one of these other controls surfaces.

You can set any control on the MCS-3000 to emulate a control on one of these control surfaces using the Emulation Tab. The Emulation Tab is not available until you turn on Emulation in the **Emulation** Menu. Here you can choose **None**, **Mode A**, or **Mode B**. **Mode A** and **B** represent two different control surfaces. Which one you choose depends on the application you are using with the MCS-3000. More on this later.



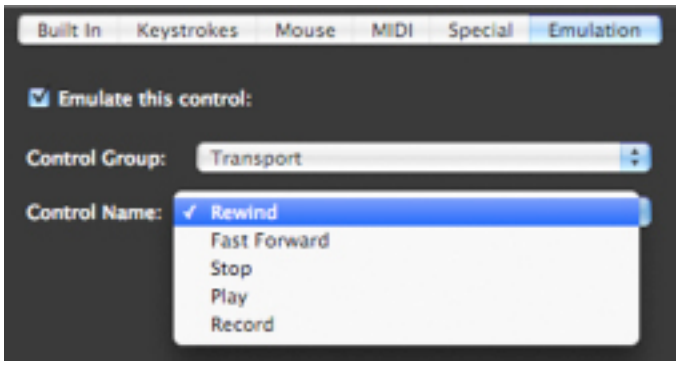
The contents of the **Emulation Tab** varies depending on the type of MCS-3000 control that is selected. This is what you will see at first if you select a button.



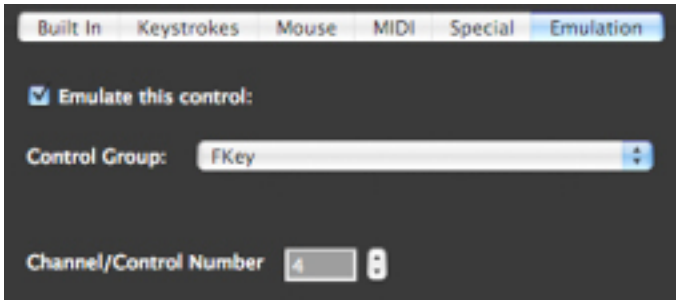
The **Control Group** popup lists the basic categories of controls that can be emulated by the selected MCS-3000 control. Checking **Emulate this control:** or choosing from the

Control Group popup will assign an Emulation action to the selected control. It will also display either a second popup or a numerical editor for choosing which control in the group to emulate.

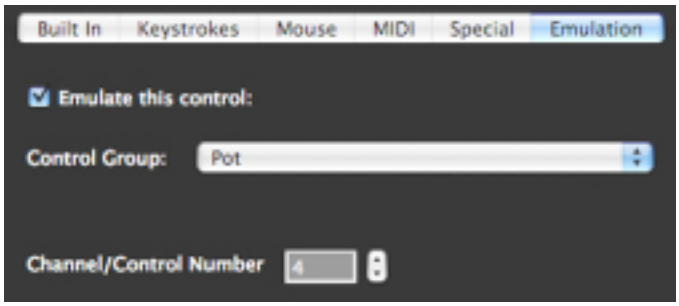
For some control categories, such as **Transport**, the individual controls in that category have names, such as **Rewind**, **Fast Forward**, **Stop**, **Play** and **Record**. For these categories a second popup will list the control names.



For other categories, such as **F-Keys**, the controls are just numbered. For these categories a numerical editor will appear. This allows you to either type or use up/down arrows to set the control number.



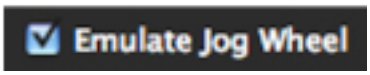
For rotary encoders and trackball rings, the available categories are **Pots**, **Faders** and **Display Scroll**.



Since the emulated control surfaces have wider displays than the MCS-3000, text meant to be shown on one of these displays will not fit on the MCS-3000 display. If you

assign **Display Scroll** to a knob on the MCS-3000, you can use that knob to scroll the display left and right so you can see all of the text.

The Jog Wheel only has one choice, **Emulate Jog Wheel**.



You cannot assign Emulation actions to the **Shuttle Ring** or **Trackballs** because none of the emulated control surfaces have these functions.

For convenience, choosing **Set all Controls to Emulation** in the **Actions** menu will assign **Emulation Actions** to many of the MCS-3000 controls on all layers in the current keyset. Some MCS-3000 Series controls do not correspond to any controls on the emulated control surfaces, so those controls are left unassigned.

The following assignments are made when **Set all Controls to Emulation** is chosen.

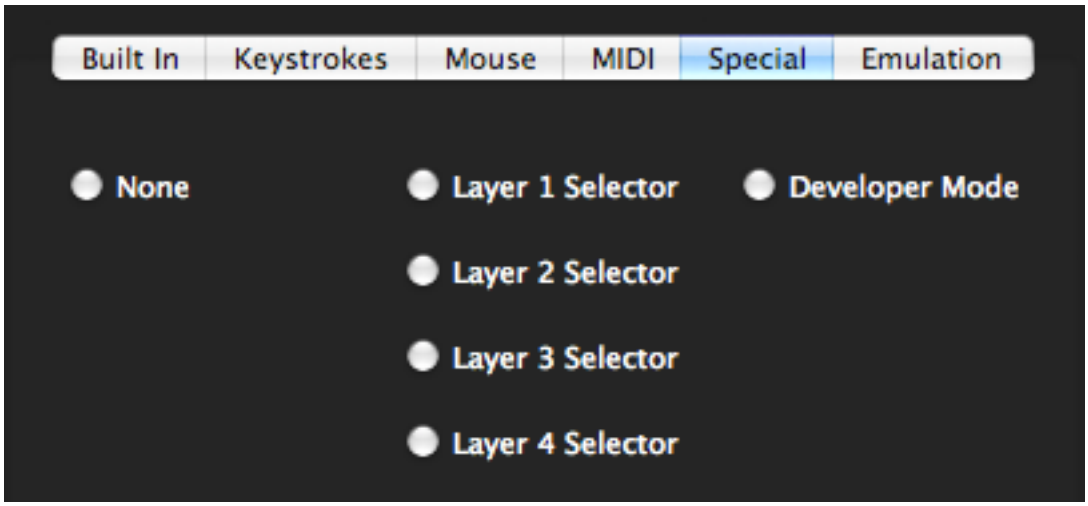
MCS-3000 Control	Assignment
Up	Cursor Up
Down	Cursor Down
Left	Cursor Left
Right	Cursor Right
F1 - F8	F1 - F8
SHIFT	SHIFT
MCS-3000 Page 1 - MCS-3000 Page 4	Mute Channel 1 - Mute Channel 4
MCS-3000 Page 5 - MCS-3000 Page 8	Solo Channel 1 - Solo Channel 4
MCS-3000 Encoders 1 - 4	Pots 1 - 4
MCS-3000 Encoder 5	Display Scroll
M1	SMPTE/Beats
M2	Global View On/Off
M3	Global View: Inputs
M4	Global View: Audio Tracks

MCS-3000 Control	Assignment
M5	Global View: AUX
Bank 1	Bank Left
Bank 2	Bank Right
Bank 3	Channel Left
Bank 4	Channel Right
W1	Automation: Read/Off
W2	Automation: Write
W3	Automation: Trim
W4	Automation: Touch
W5	Automation: Latch
Keypad ENTER	ENTER
Keypad CLEAR/CANCEL	CANCEL
Jog Wheel	Jog
Rewind	Rewind
Fast Forward	Fast Forward
Stop	Stop
Play	Play
Record	Record
MCS-3800/MCS-3000X Mute 1 - 8	Mute Channel 1 - 8
MCS-3800/MCS-3000X Solo 1 - 8	Solo 1 - 8
MCS-3800/MCS-3000X Aux 1 - 8	Pot Switch 1 - 8
MCS-3800/MCS-3000X Select 1 - 8	Select 1 - 8
Fader Touch Sensor 1 - 8	Fader Touch 1 - 8

MCS-3000 Control	Assignment
MCS-3800/MCS-3000X Fader 1 - 8	Channel Volume 1 - 8
MCS-Tracker Arm 1 - 8	Record Ready 1 - 8
MCS-Bridge B Buttons 1 - 8	Pot Switch 1 - 8
MCS-Bridge LCD Buttons 1 - 8	Record Ready 1 - 8
MCS Bridge B Encoders 1 - 8	Pots 1 - 8

Special Tab

The **Special Tab** is a collection of actions that don't easily fit into other categories. Different choices are available depending on what type of control is selected.



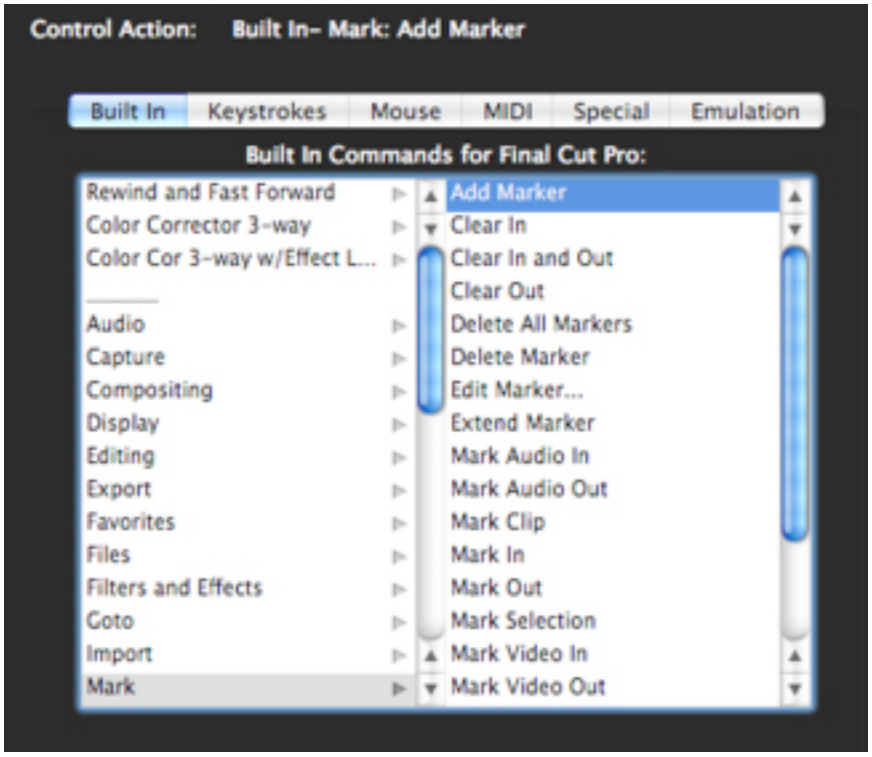
The choices are:

None	No Special Action for the selected control. If some other type of action has already been assigned, the None button will be selected. Clicking on the None button will delete the currently assigned action.
Layer Selectors	When assigned to an MCS-3000 button, that button can be used to switch between layers. When a Layer Selector Special Action is assigned to an MCS-3000 button, that assignment is automatically copied to that button on all layers.
Trackball Sensitivity	When assigned to an MCS-3000 rotary encoder, that encoder can be used to control the responsiveness of the MCS-Spectrum and MCS-Navigator trackballs.
Developer Mode	This is intended for use with applications which directly support the MCS-3000. This action uses messaging protocols built into Mac OS X to communicate with these applications. You normally wouldn't use this mode unless you knew that an application you were using supported it. 3rd party developers who support this mode would typically ship MCS-3000 keysets along with their applications. For convenience, choosing **Set all Controls to Developer Mode** in the **Actions** menu will assign **Developer Mode Special Actions** to all of the MCS-3000 controls on all layers in the current keyset.

Built In Actions Tab

The built in actions are actions that are predefined for specific applications. When you choose a keyset, the built in actions appropriate to that keyset's application are displayed. If no built in actions have been defined for the current application, the display will be blank.

The built in actions are presented in two columns. The left hand column lists basic categories and the right hand column lists the actual actions. Clicking on a category in the left hand column will change the list of actions displayed on the right. Double-click an action name to assign it to the selected MCS-3000 control.



Most of the categories and actions correspond to the keyboard shortcuts listed in the target application's manual. However, there are also actions defined by JLCooper that are not simple keyboard shortcuts. These actions will always appear at the beginning of the list, and there will be a separator line between them and other built in actions.

Displays

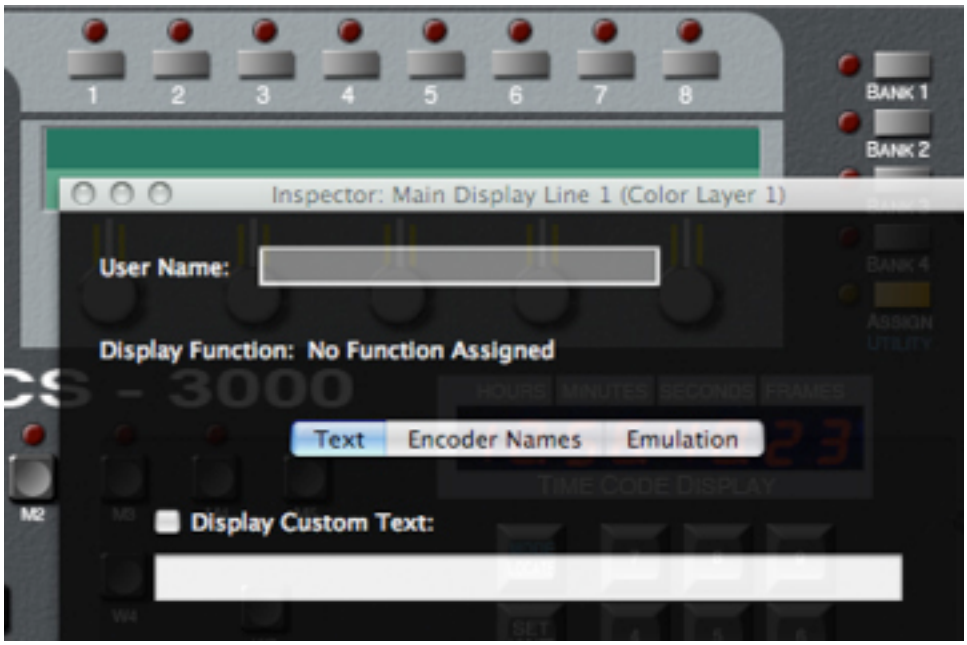
The MCS-3000 has an LCD display and a Timecode display. Some of the MCS-3000 Series peripherals, such as the MCS-Spectrum have LCD displays as well. The LCD displays are each have two lines. Each line is treated like a separate display. You can assign functions to these displays in much the same way as you assign actions to controls.

NOTE: If you are using an application that communicates with the MCS-3000 via MIDI or Developer Mod, you should probably not assign any functions to the displays in the keyset for that application. The application will probably be writing its own information to the displays.

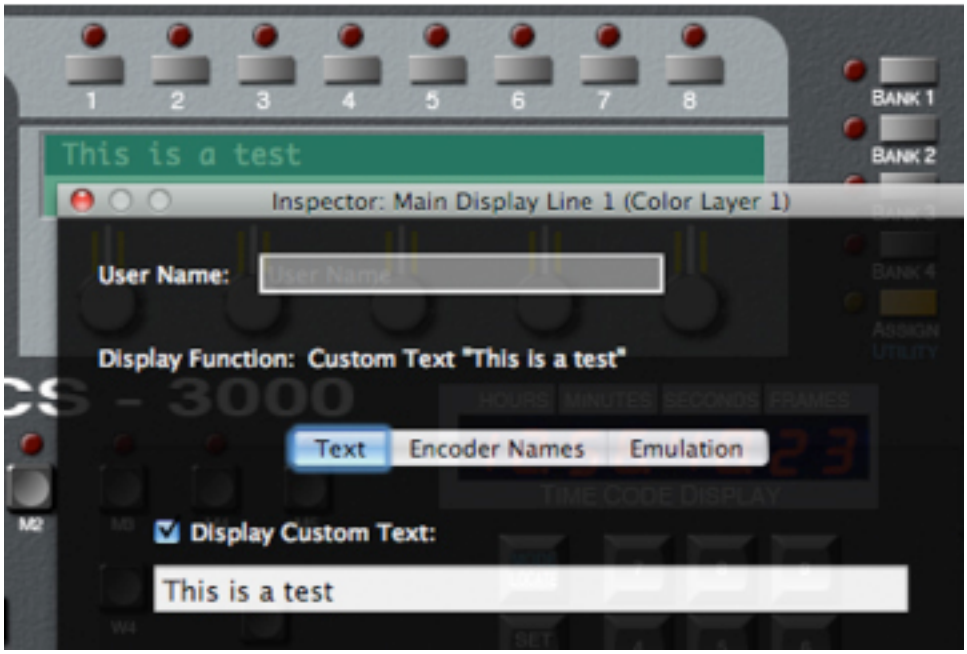
When you click on a display to select it, information about it appears in the **Inspector** window. This information includes a User Name, a description of the function assigned to the display and Tabs which contain controls for editing the display's function.

For the LCD displays, the available Tabs are **Text**, **Encoder Names** and **Emulation**.

Display Text Tab



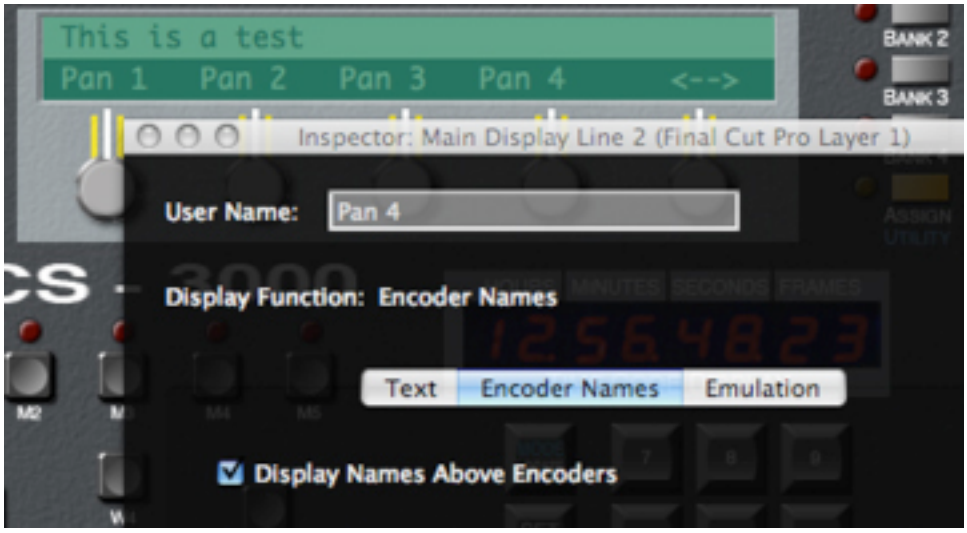
If you check the **Display Custom Text** box or type into the text box below it and hit the ENTER key, the text you type will be shown on the selected display line whenever the target application is in front.



Un-checking the **Display Custom Text** box will delete any function assigned to the currently selected display line.

Display Encoder Names Tab

If you check the **Display Names Above Encoders** box the User Names of the encoders below the selected display will be shown on the selected line whenever the target application is in front.

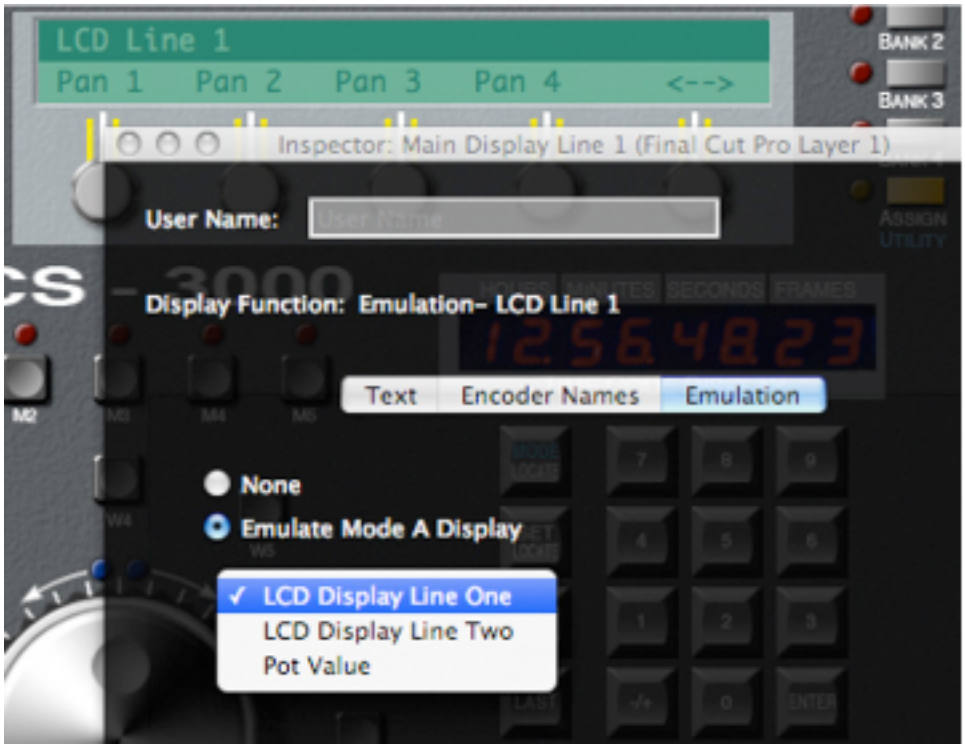


The display will update whenever the name of one of the encoders changes. If an encoder does not have a user name, then the display directly above it will be blank.

Un-checking the **Display Names Above Encoders** box will delete any function assigned to the currently selected display line.

Display Emulation Tab

If you have enabled Emulation in the current keyset, you can have any display on the MCS-3000 show the same information that the target application would display on the emulated control surface.

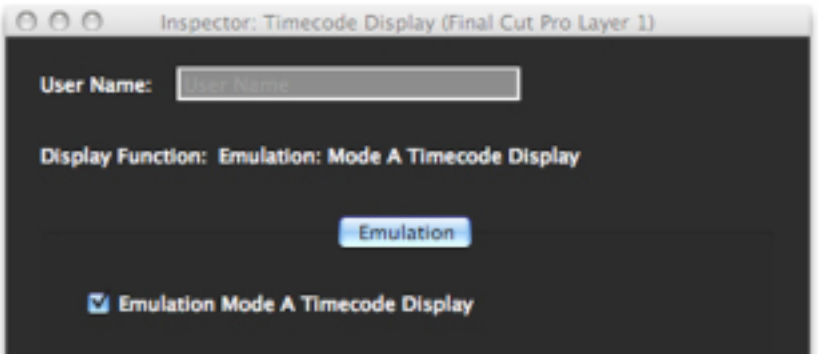


Click on the **Emulate Mode *X* Display** checkbox to enable display emulation. Click on **None** to delete the current display line's function. You can choose to emulate line one of the display, line 2 of the display or to display the values of the pots directly below the display (not currently implemented).

The MCS-3000 software's on-screen display will read "LCD Display Line 1" or "LCD Display Line 2", but when you are using the target application, the MCS-3000 display will show text sent to it by that application.

Timecode Display

For the Timecode Display, the only option is Emulation. When the **Emulation Mode *X* Timecode Display** box is checked, the display will show timecode intended for the emulated control surface. Un-checking it will delete any function assigned to the currently selected display line.



Reverse Messages from R and B Buttons

Above each MCS-Spectrum trackball is a button labeled R*x* and B*x*. The R stands for Ring and the B stands for Ball. These buttons are typically used in color correction applications as reset buttons. The R button resets changes made by turning the ring below it, and the B button resets changes made using the trackball below it.

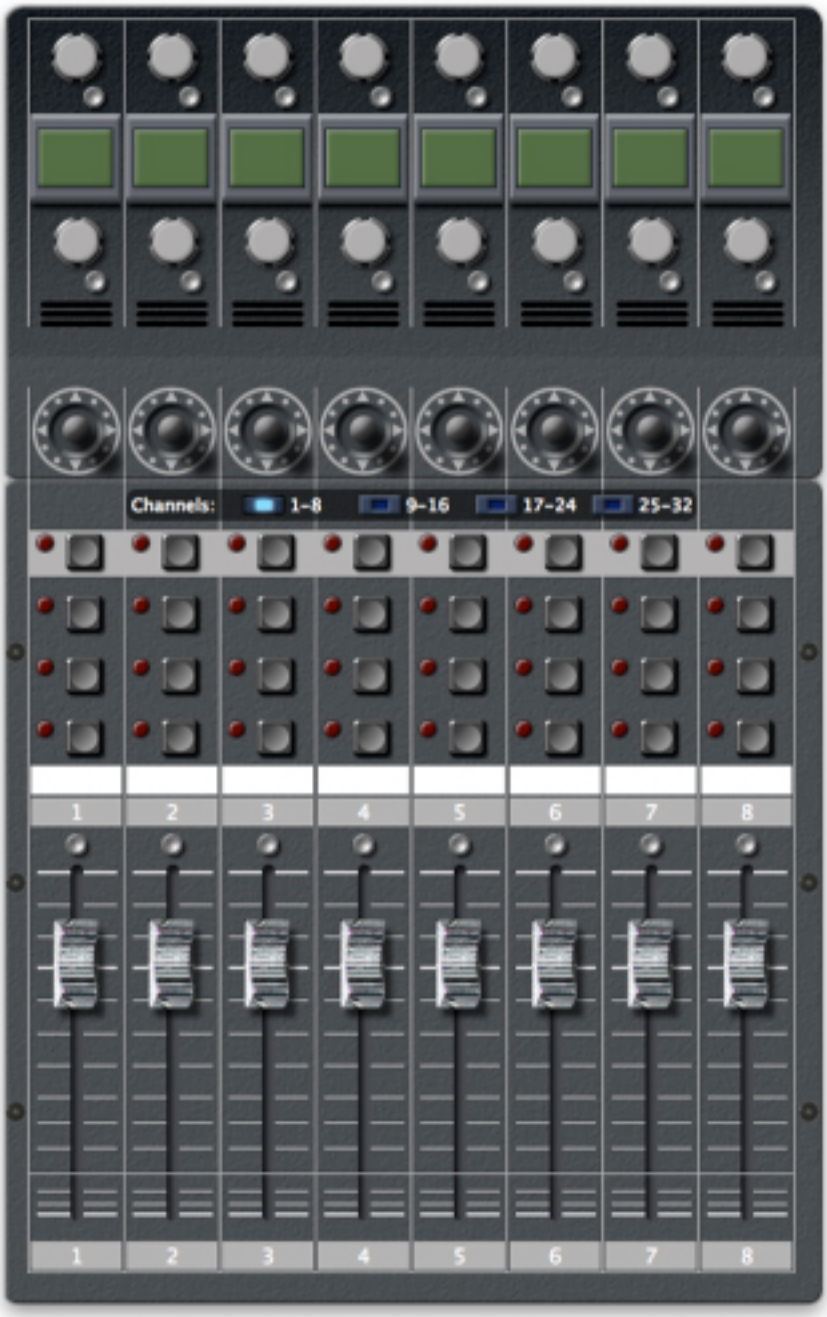
Some color correction applications, such as Apple's Color have the color wheel (which is controlled by the trackball) on the left and the contrast slider (which is controlled by the ring) on the right. This leaves the R button on the left resetting the contrast slider which is on the right and the B button on the right resetting resetting the color wheel which is on the left.

This potentially confusing situation can be dealt with by choosing **Reverse Messages from R and B Buttons** from the **Actions** menu. When this is set, each R button will send the message normally sent by its corresponding B button and vice versa. So, when used with Color, the R button will now reset the color wheel and the B button will reset the contrast slider.

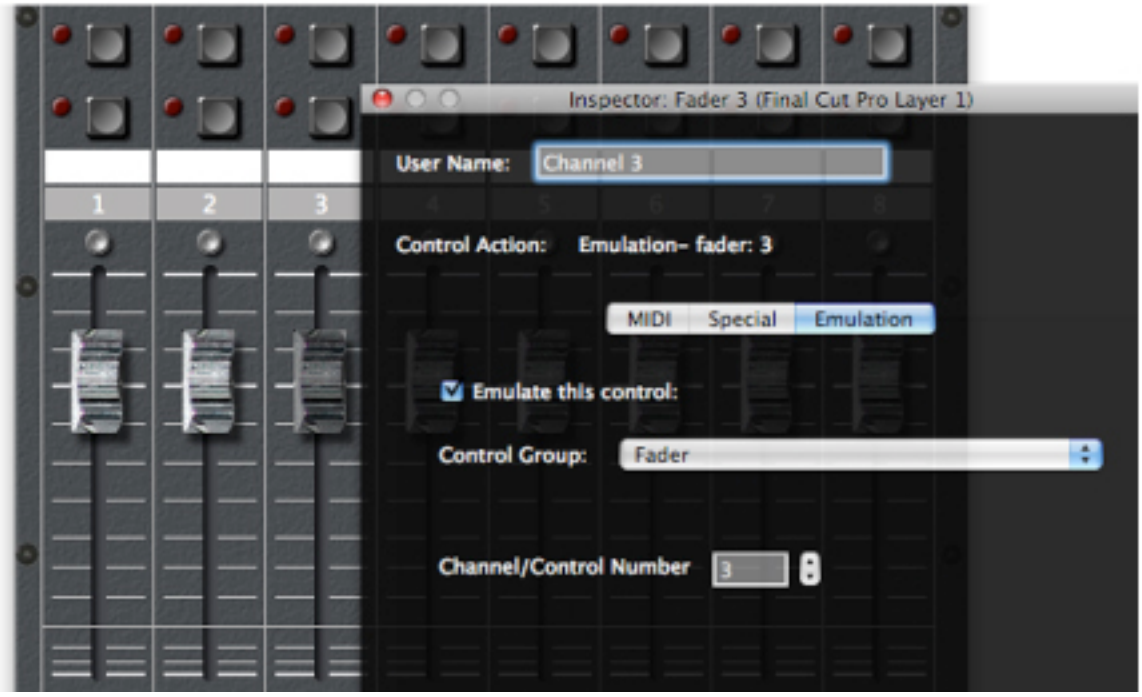
This setting affects R and B buttons that have been assigned Native MIDI or Developer Mode messages. It has no effect on Built-In, Keystroke, Mouse, Custom MIDI, or Emulation Messages.

Channels Window

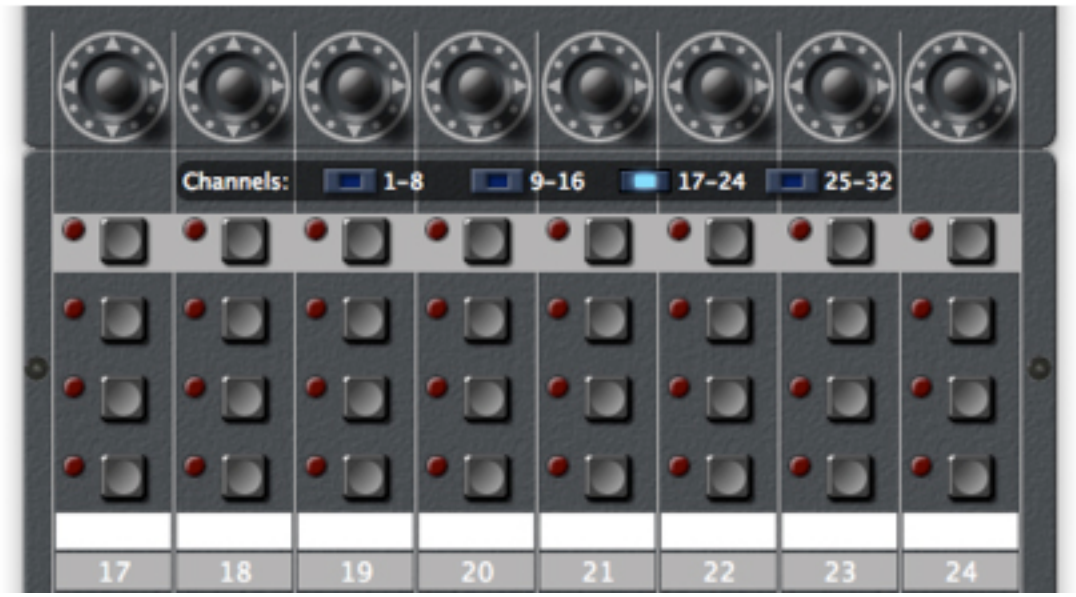
The **Channels Window** gives you access to the Fader Section of an MCS-3800 and/or any MCS-3000x Fader Modules that may be connected to your system. It also shows the controls from the optional MCS-Bridge modules.



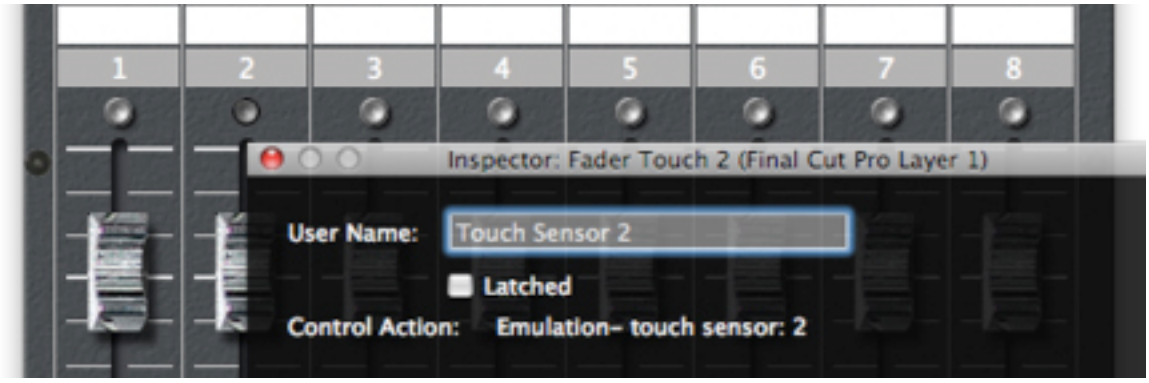
As with the MCS-3000 Main Window, selecting a control in this window, or moving a corresponding hardware control, causes information about that control to appear in the Inspector Window.



There are eight vertical “channel strips” shown at a time. If you have more than 8 physical faders in your system (as with an MCS-3800 and one or more MCS-3000x expanders, or an MCS-3000 with two or more expanders), you can view a different bank of eight channels by clicking on one of the **Channels** buttons in the center of the window.

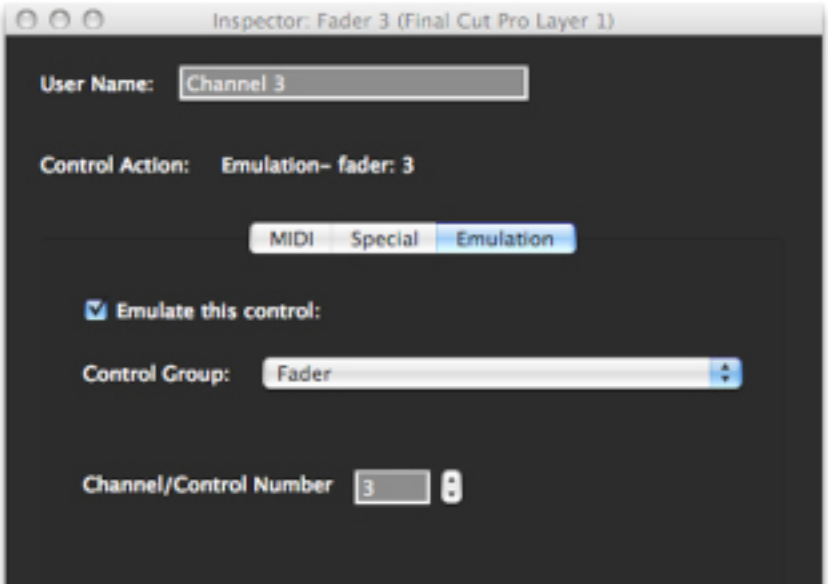


You may notice that there are a few more controls pictured in this window than actually appear on the MCS-3000 hardware. The little button above each fader represents that fader's touch sensor, which is treated like a separate control.

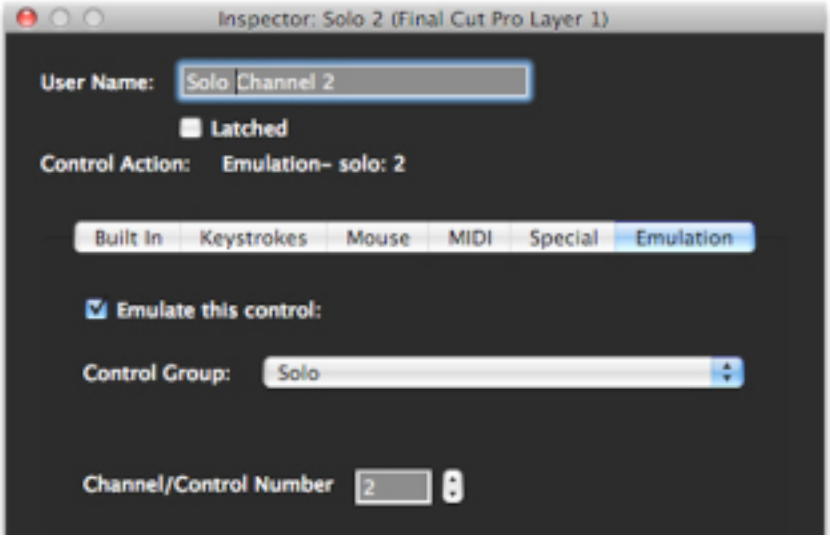


The rotary encoders at the top of the MCS-Bridge are also buttons that can be pressed. The button part of each encoder is represented in the **Channels Window** by little buttons below and to the right of each encoder. These buttons are treated as separate controls from the encoders.

The Faders can be assigned Native and Custom MIDI Actions, Developer Actions, and Fader Emulation Actions. For Emulation Actions, you can assign a channel.



All of the buttons can be assigned the same actions that can be assigned to buttons in the rest of the system. The same goes for the rotary encoders.



Since none of the emulated control surfaces have an equivalent to the joysticks, Emulation is not available for the joysticks. The available actions for the joysticks are Built In, Keystrokes, Mouse, Native and Custom MIDI, and Developer Special Actions.

Near the top of the MCS Bridge is a row of LCD Buttons. These are actually buttons with small 6 character by 3 line LCD displays on them.

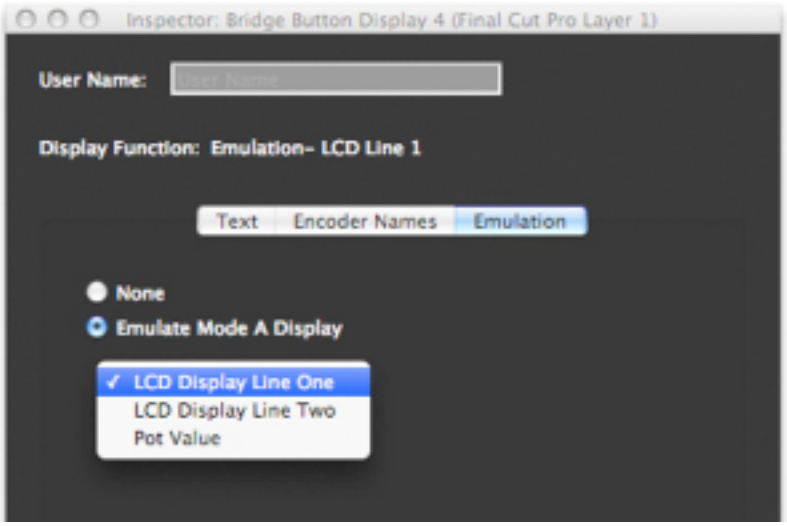
The software treats the button and the display as two separate items. To select the button for editing, click on the button's frame, or press the hardware button on an MCS-Bridge. Besides being able the assign all of the actions available to other buttons, you can also change the On and OFF colors for the LCD Buttons by clicking on the color swatches near the top of the **Inspector Window**.

To edit what is displayed on an LCD button, click in its display area. The display area will turn a lighter color and information about the display will appear in the Inspector.

The functions that can be assigned to the button displays are similar but slightly different to what can be assigned to other LCD displays. For both the Text and Encoder Names options you assign what appears in all three lines.

In the **Encoder Names** tab, there is a popup menu for each line of the display, for choosing which encoder's name you want displayed in that line. The choices are None, Bridge A Encoder, Bridge B Encoder and Fader.

In the **Emulation** tab, you have the same choices as for other LCD displays, but they operate differently. If you choose LCD Display Line 1 or 2, the MCS-3000 software can determine if the target application is attempting to display a series of track names on the chosen line of the emulated control surface's main LCD. It will then break the line up into individual track names and display each name on the appropriate LCD button.



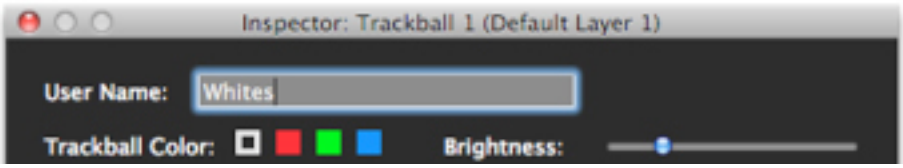
MCS-3000 Series Expansion Modules

There are windows for the various MCS-3000 Series expansion modules you may have connected to your system. These windows can be opened from the **Window > Peripherals** menu.

MCS-Spectrum and MCS-Navigator

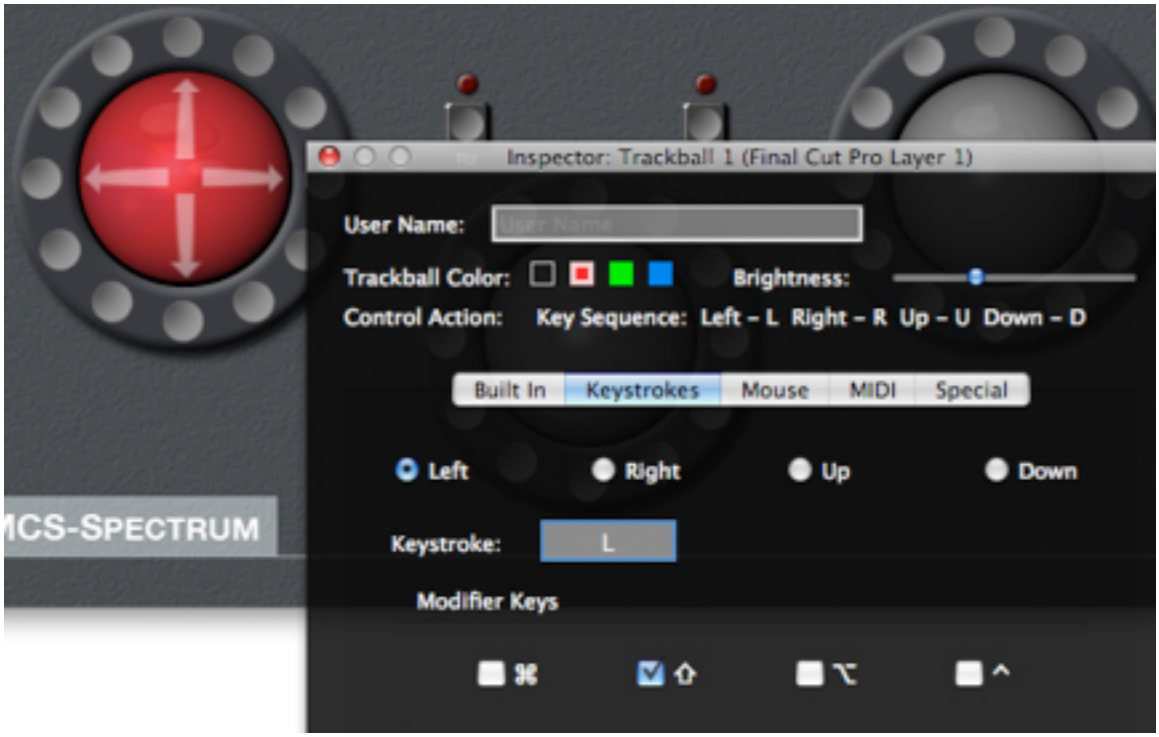
What distinguishes the Spectrum and Navigator from other MCS-3000 expansion modules are their lighted trackballs and trackball rings. The rest of the controls and displays behave like similar controls on other MCS-3000 modules.

If a trackball is selected, there will be controls near the top of the Inspector **window** that let you set its color and brightness.



The **Built In**, **Mouse**, and **Special** Tabs are just like those for other encoders.

The **Keystrokes** Tab lets you assign different key sequences for each direction. In the example below, when the trackball is rolled to the left it would type the letter “L”, to the right it would type “R”, up it would type “U” and down, “D”.



For **Custom MIDI** actions, you can assign different MIDI messages to the horizontal and vertical axes. In the example below, a controller 15 message on channel 1 will be sent when the trackball is rotated left or right, and a controller 7 message on channel 1 will be sent when it is rotated up and down.

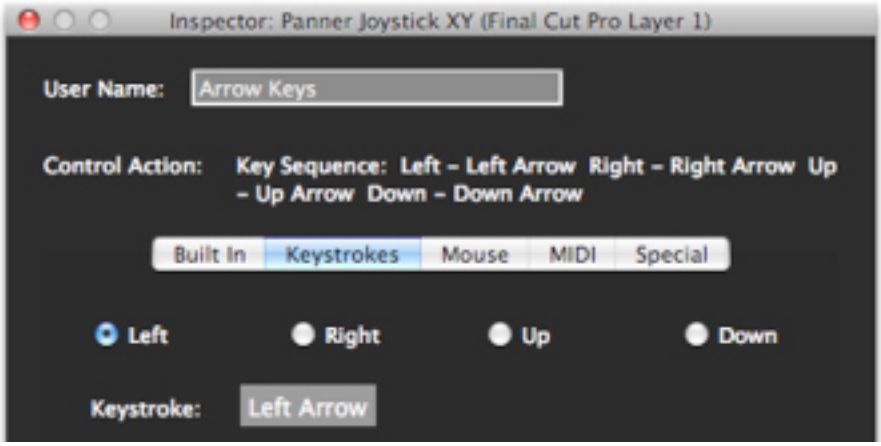
MCS-Panner

The MCS-Panner has buttons, rotary encoders and a joystick. The buttons and encoders have the same functionality as other buttons and encoders in the system.

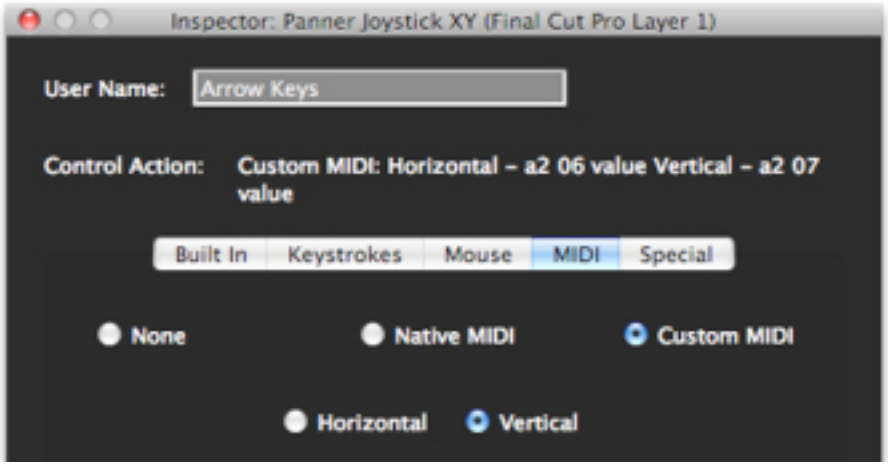
The joystick is actually three separate controls: a standard joystick, referred to as Joystick XY, a rotating knob, referred to as Joystick Z, and a button on the top of the joystick, referred to as Panner Stick.

To select the Panner Stick, click on the button image in the center of the joystick or press the actual Panner Stick on the MCS-Panner. To select Joystick Z, click on the gray ring surrounding the Panner Stick, or rotate the actual Joystick Z. To select the Joystick XY, click on the dark outer ring, or move the Joystick XY on the MCS-Panner.

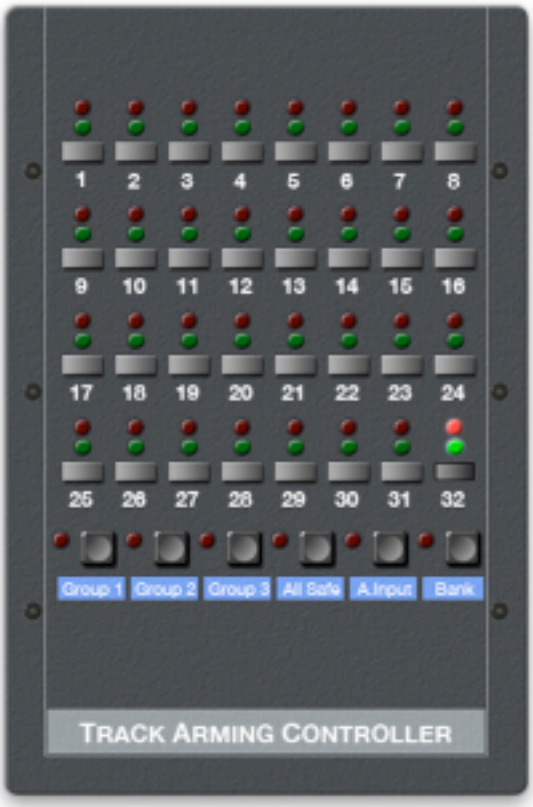
The Panner Stick and the Joystick Z work just like other buttons and encoders in the rest of the system. As with the trackballs and MCS-Bridge joysticks, the Joystick XY can be assigned **Built In**, **Keystrokes**, **Mouse**, **MIDI** and **Special** actions. For Keystroke actions, a different key sequence can be assigned for each direction.



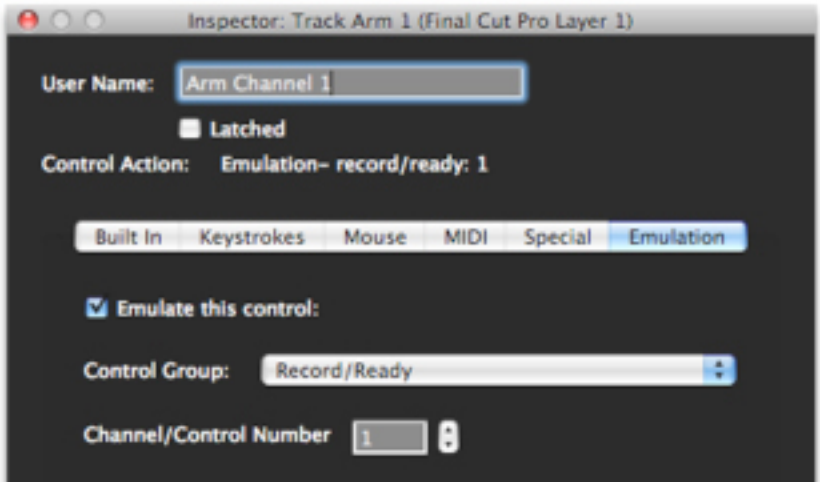
Available **Mouse** actions are 360° Move and 360° scroll. Separate **Custom MIDI** actions can be assigned to the Vertical and Horizontal axes.



MCS-Tracker



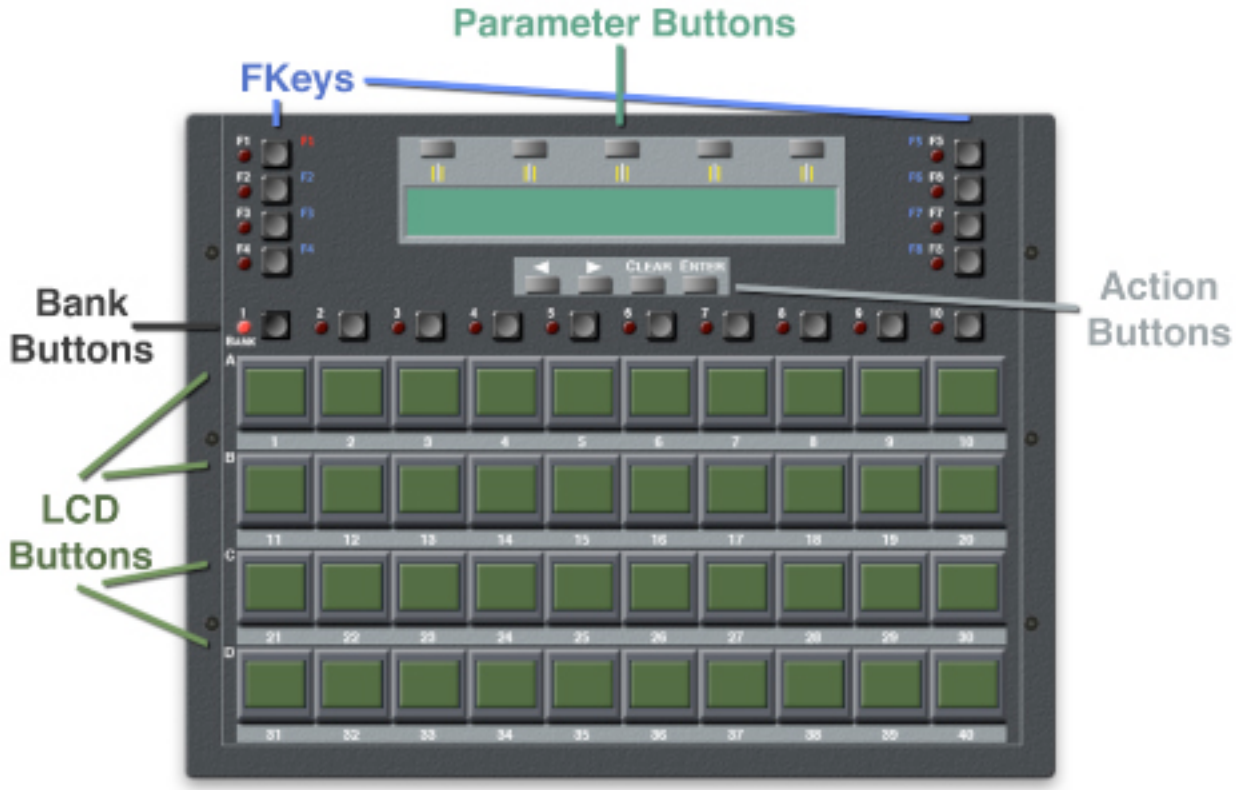
The buttons on the MCS-Tracker can be assigned the same actions as buttons in the rest of the system, although it would normally be used for arming individual audio channels in the target application, often through the use of **Native** or **Custom MIDI** actions or **Emulation** actions.



MCS-ClipShot

While the MCS-ClipShot operates similarly to other MCS-3000 Series modules, it has several unique features. With ten banks of 40 LCD buttons, it can be turned into almost any kind of control surface you want.

ClipShot Terminology



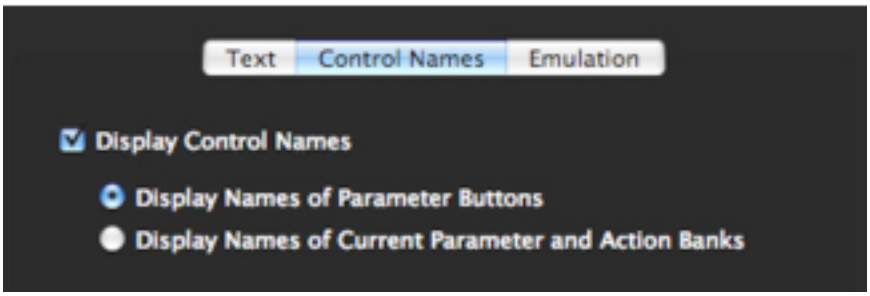
At the bottom are 40 **LCD** buttons. Both the buttons and their displays can be programmed. Above them are ten Bank buttons for selecting banks of **LCD** buttons. So altogether, there are **400** LCD buttons. Actions can not be assigned to the Bank buttons, although the bank can be changed by the target application via **Native MIDI** or **Developer** messages.

The eight **FKeys** along either side at the top serve as bank selectors for the five **Parameter** buttons, which themselves serve as bank selectors for the four **Action** buttons. This effectively gives 40 banks (8 **FKeys** x 5 **Parameter** banks) of **Action** buttons. Both the **FKeys** and **Parameter** buttons can have actions assigned to them in addition to their bank select duties.

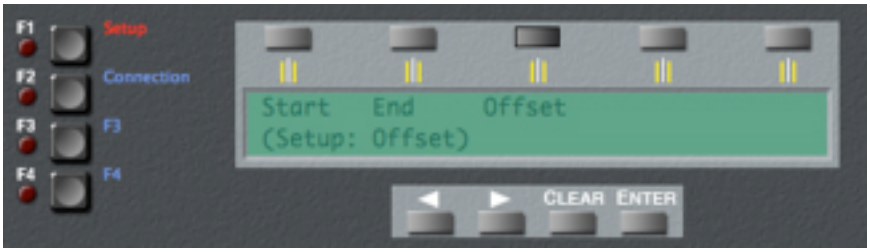
The **Action** buttons with the left and right arrows above them are commonly referred to as the Decrement and Increment buttons. When you assign a User Name to an **FKey**, that name will appear next to the **FKey** in blue. The name of the most recently selected **FKey** will be displayed in red instead of blue. It will stay red even other controls are selected. Since the **FKeys** are bank selectors in addition to being editable, the red is an indicator of the current **Parameter** bank, which will stay in effect until a different FKey is selected.

ClipShot LCD Display

The **LCD** display editor has a **Text** tab and an **Emulation** tab just like other LCD displays, but there is one tab unique to the ClipShot, **Control Names**.



Display Names of Parameter Buttons will show the names of the five buttons above the display. **Display Names of Current Parameter and Action Banks** will show the name of the currently selected **FKey** (which is also the name of the parameter bank), and the currently selected **Parameter** button (which is also the name of the action bank). In the examples below, the top line of the display is set to **Display Names of Parameter Buttons** and the bottom line is set to **Display Names of Current Parameter and Action Banks**.



As you can see, for each **FKey**, there is a different set of **Parameter** button assignments. And for each **Parameter** button, there is a different set of **Action** button assignments.

Examples

Although there are many ways to use these the **FKeys**, **Parameter** buttons and **Action** buttons, here is one possibility. Use an **FKey** to open a dialog box, either using **Built In** or **Keystroke** actions. Pressing the **FKey** will also switch to a bank of **Parameter** buttons which are assigned actions specific to that dialog box. These actions might select various parameters in the dialog box. Then the **Action** buttons (whose function changes depending on the current **Parameter** bank and **Action** bank) could perform the actual edit on that parameter.

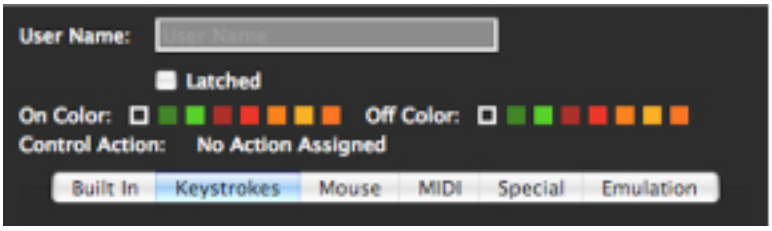
A more concrete example is shown below. The **F2** button is setup to open a dialog box that handles ethernet connections for a fictitious application. Besides opening the dialog, pressing **F2** also switches to the 2nd Parameter bank where the **Parameter** buttons are setup to select the various text fields in the Connection dialog, possibly using mouse clicks.

The Decrement and Increment buttons might send Down and Up arrows which this fictitious application uses to change the value of the selected text field. The 2nd line of the **LCD** display shows which parameter is being operated on by the **Action** buttons.

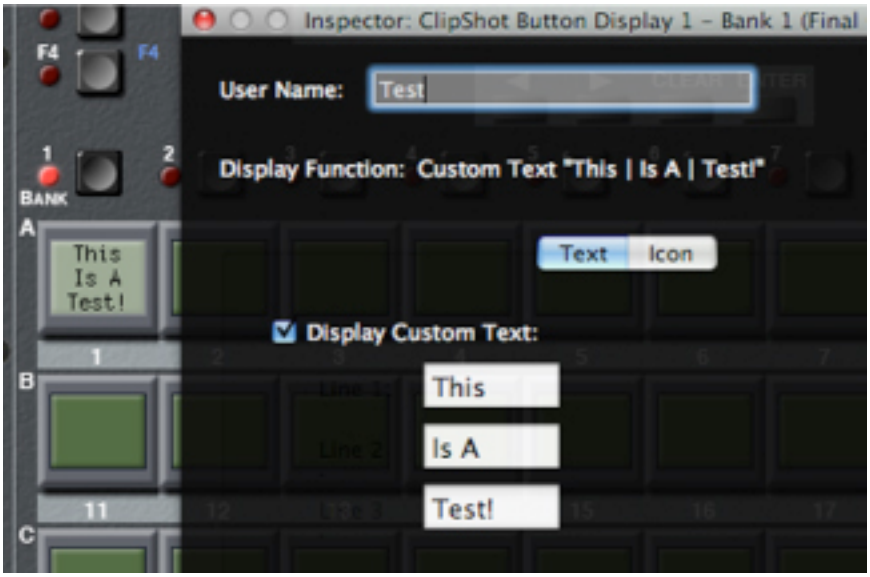
The **Clear** button could be programmed to send the ESCAPE key (for Cancel) and the **Enter** button could send the ENTER key for Okay.

ClipShot LCD Buttons

The button part of each **LCD** button functions just like the **LCD** buttons on the MCS-Bridge. That is, the On and Off colors can be set, and all the same actions can be assigned. As with the Bridge LCD buttons, click on the button's frame to select it.



To select the display part, click in the display area of the LCD button. The editor for the ClipShot **LCD** button displays has two tabs, **Text** and **Icon**. The **Text** tab behaves just like the **Text** tab for the MCS-Bridge **LCD** buttons.



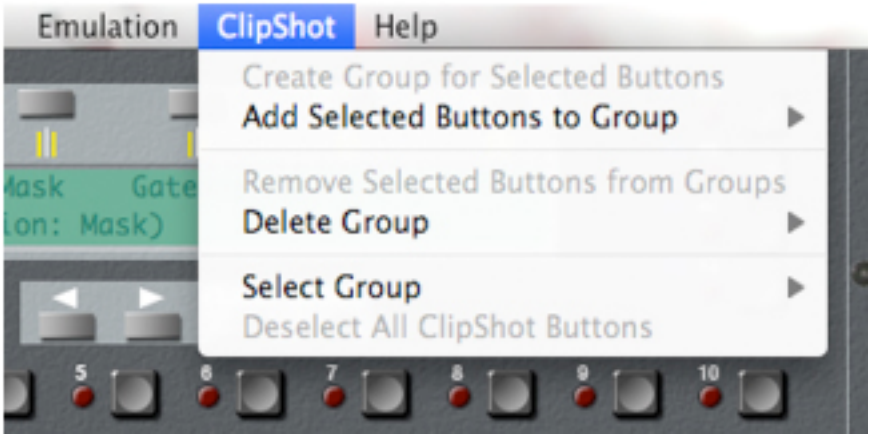
The ClipShot **LCD** buttons each have 40 built in icons. At times an icon might give a better visual cue to the function of the button than plain text would. To choose an icon to display, use the **Icon** tab.

Click on the red icon to open a list of the available icons then click on one of the icons to assign it. Click on the **Inspector** window's background to close the icon list.

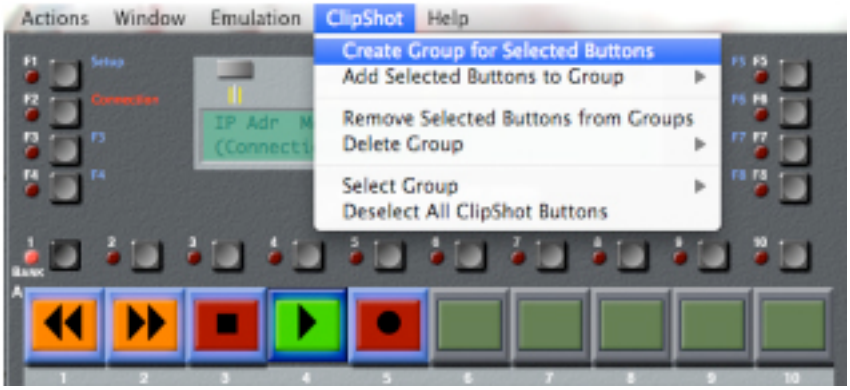
ClipShot Groups

The ClipShot **LCD** buttons can be formed into groups. Within any group, only one button can be on at a time, just like Macintosh radio buttons. When a new button in a group is pressed, any button in the same group that was on, will be turned off. Groups can span banks. A button in bank 1 can be in the same group as a button in bank 8.

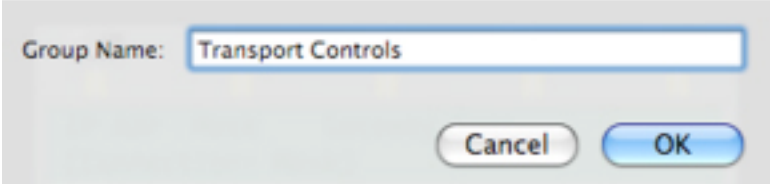
When the **ClipShot Window** is in front, a **ClipShot Menu** appears in the Menu Bar. This menu contains all the commands for creating, deleting and selecting ClipShot Groups.



To create a group, SHIFT-CLICK on the frame of every **LCD** button you want to be part of that group. The frames of the selected buttons will turn blue. If you select one by mistake, just SHIFT-CLICK it again to deselect it. Then go to the **ClipShot Menu** and choose **Create Group for Selected Buttons**.



A dialog will open where you can name the group.

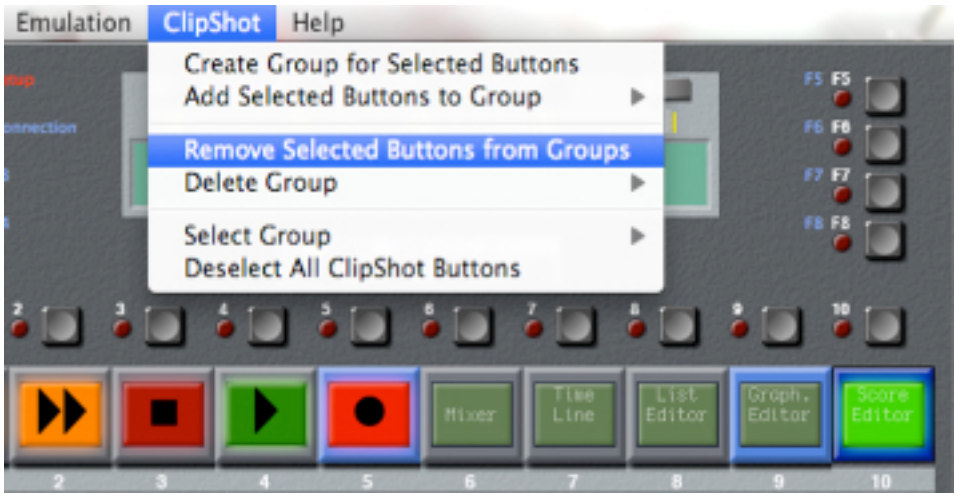


In the above example, pressing any control in the group, “Transport Controls” will turn off any other control in that group, which is the behavior you would usually want from transport controls.

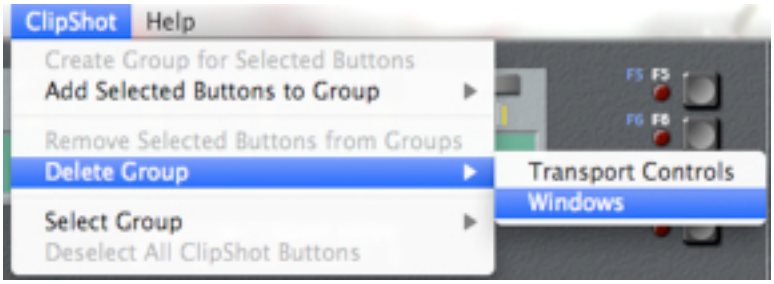
Once a group has been created, its name shows up in the submenus for **Add Selected Buttons to Group**, **Delete Group**, and **Select Group** under the **ClipShot Menu**.

You may have created a group of buttons that open various windows in the target application, then realize you want to add another button to that group. If so, just SHIFT-CLICK on the frame of the button in question, and use the **ClipShot > Add Selected Buttons to Group** menu.

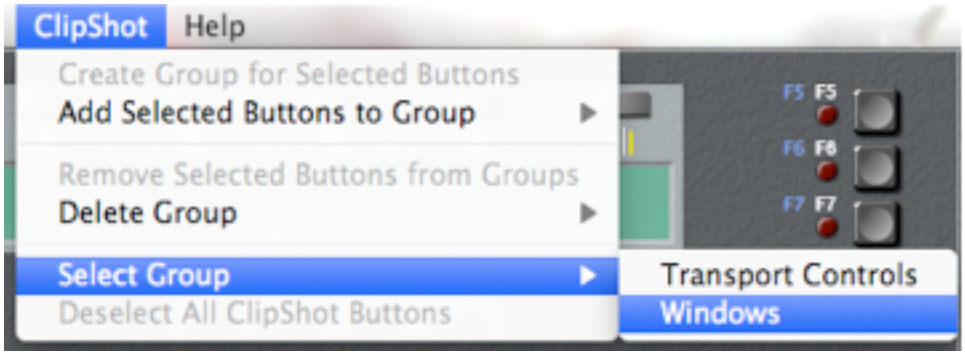
If after setting groups up as above, you decide that you don’t want the **Record** button to be part of the Transport Controls group and you don’t want the Graph Editor or Score Editor buttons to be part of the Windows group, just select those buttons and choose **Remove Selected Buttons from Groups**.



To completely delete a group, go to **Delete Group** and choose the group you want to delete from the submenu.



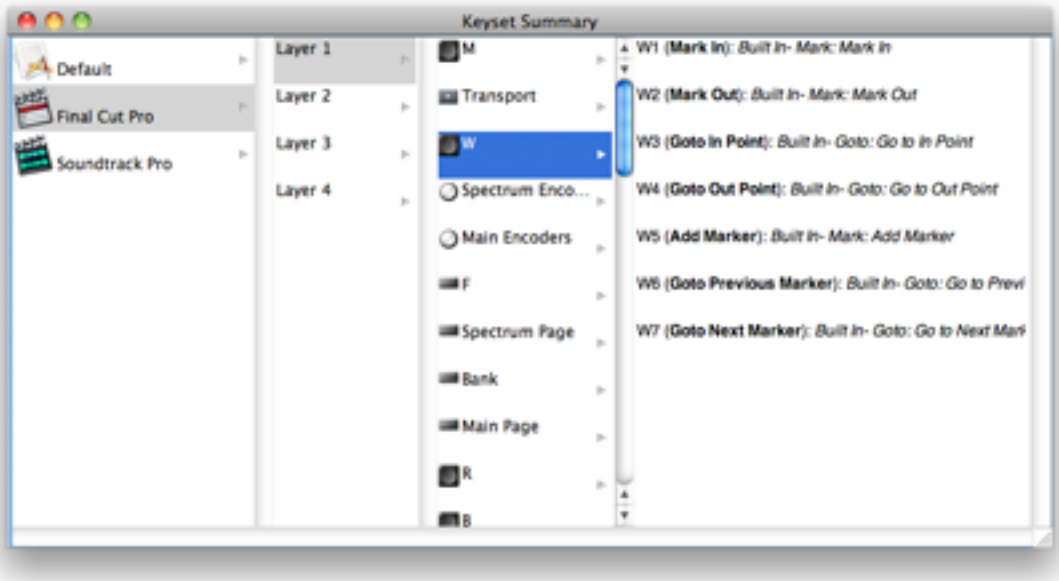
If you ever forget which buttons are in a particular group, go to **Select Group**, and choose the name of the group you are interested in from the submenu. All members of the group will be highlighted in blue.



As mentioned earlier, SHIFT-CLICKING on a selected button will deselect it, but if there are a lot of selected buttons, it would take a while to deselect all of them using this method. **Deselect All ClipShot Buttons** will deselect them all in one operation.

Keyset Summary Window

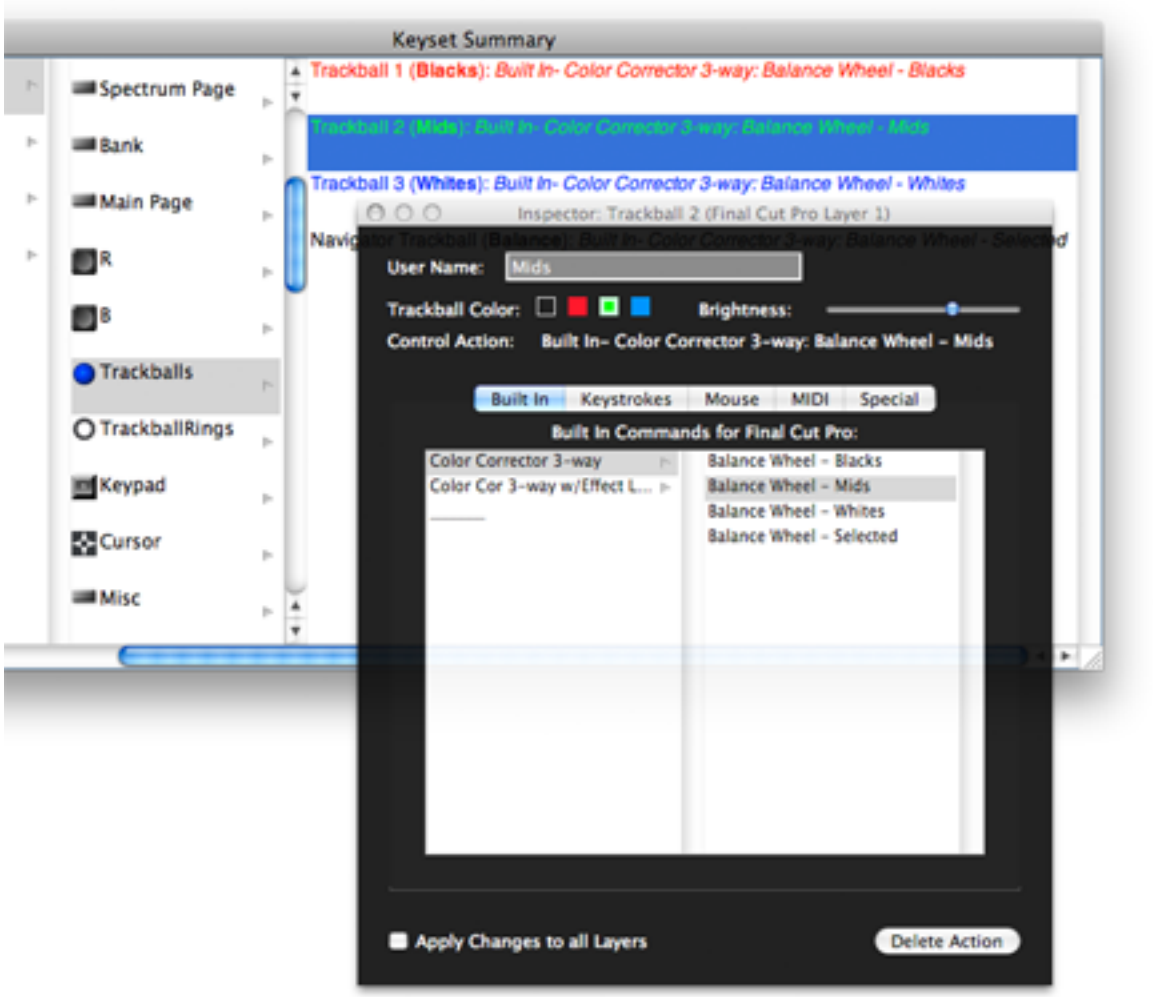
The **Keyset Summary Window** displays information about several controls at once, making it easier to tell at a glance how a particular keyset is set up. You choose the Keyset Summary from the Windows menu.



The window has four columns. The first column lists the currently active keysets. These are the same keysets that appear in the **Keysets Menu**. Clicking on a keyset in this column will change the selected keyset, just as if you had chosen a keyset from the **Keysets Menu**. Conversely, choosing a new keyset from the **Keysets Menu** will cause that keyset to be selected in the **Keyset Summary Window**.

The second column shows the selected keyset's layers. Clicking on a layer in this column has the same effect as clicking on one of the layer buttons at the bottom of the main **MCS-3000 Main Window**. Clicking on a layer button in the main window will cause that layer to be selected in the **Summary Window**.

The third column lists controls grouped by function, such as **Transport**, **Trackballs**, **Encoders**, etc. Selecting one of these groups will cause the fourth column to display all of the controls in that group. Each control name is followed by its **User Name**, if any, and a description of its assigned function. Clicking on a control in this column will cause that control to be selected in the main window and its information to be displayed in the **Inspector Window** for editing. In the case of trackballs, the descriptions are shown in the trackballs' assigned colors.



Final Cut Pro™ Support

Final Cut Pro™ and Control Surfaces

With FCP version 5 some support for MIDI control surfaces was added. Unfortunately, only audio parameters and transport functions are controllable via MIDI. Fortunately, the MCS-3000 software not only emulates the supported control surfaces, it also can control many other parameters in FCP.

The MCS-3000 has a large advantage over other control surfaces when used with Final Cut Pro because it is not limited to just the functions included in Final Cut's MIDI control surface support. With its built in functions and the ability to emulate the mouse and keyboard coupled with FCP's control surface support, virtually every function in Final Cut Pro can be controlled with the MCS-3000.

Final Cut Pro™ Shuttle

The FCP Built In Shuttle command works equally well in the Timeline, Canvas, Viewer and Log and Capture windows.

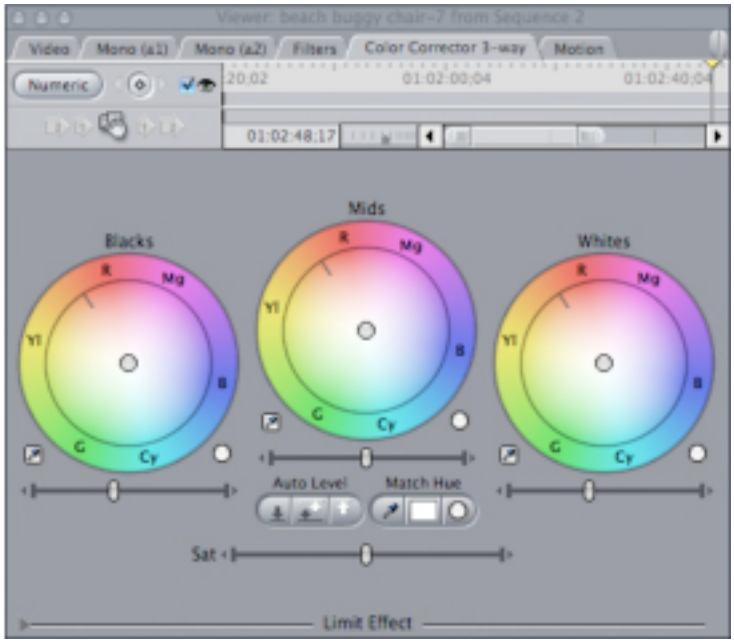
Using the MCS-3000 with Final Cut Pro

To use the MCS-3000 with FCP, first run the MCS-3000 application and import the Final Cut keyset provided by JLCooper. Now run Final Cut and open the **Control Surfaces** dialog from the **Tools** menu. Click on the "**+**" button to add a control surface and choose Mackie Control. Then choose **MCS3k USB - MCS3k** for the input connection and output connections. Click OK to exit the dialog.

Final Cut requires the **Audio Mixer** (Tools Menu) to be open in order for control surface support to be active. You might want to save a window layout that has the Audio Mixer open.

Using the MCS-Spectrum with the Final Cut Pro Color Corrector 3-way

To use the Spectrum for color correction in Final Cut, Color Corrector 3-way **must** be applied to a clip, that clip **must** be open in the Viewer, and the Color-Corrector 3-way tab **must** be open in the Viewer. You can not drag the Color Corrector 3-way tab out of the Viewer window.

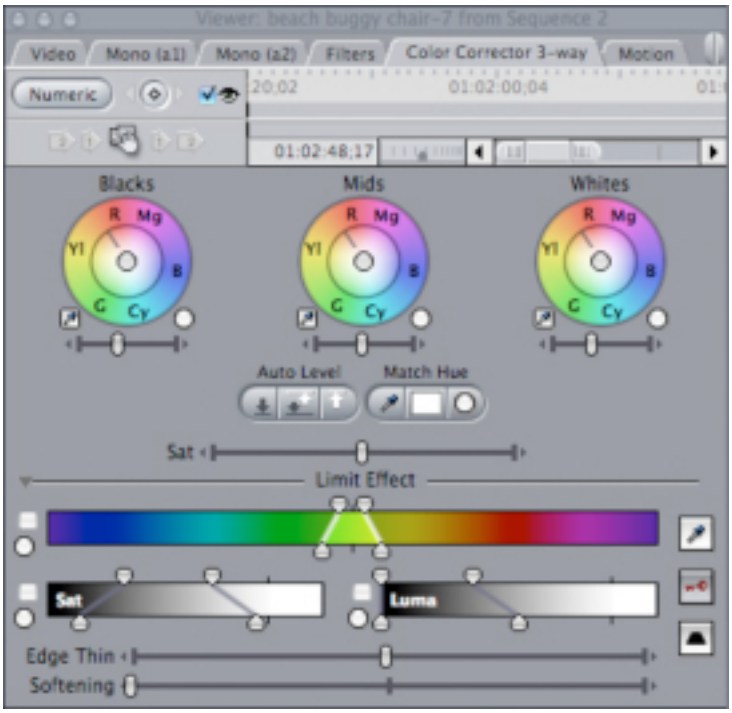


Assign the various color correction related built in actions to appropriate MCS-Spectrum controls (this has already been done in the JLCooper supplied FCP keyset).

There are two sets of color correction related actions in the FCP built in commands list, **Color Corrector 3-way** actions and **Color Corrector 3-way w/Effect Limits** actions. The first set is to be used when the **Limit Effect** controls at the bottom of the window are hidden. The second set of actions should be used when the **Limit Effect** controls are visible.

Using the **Color Corrector 3-way w/Effect Limits** actions when the **Limit Effect** controls are hidden and vice versa will not work in most cases.

The **Limit Effect** controls can be shown and hidden by clicking on the small triangle in the bottom left corner of the Viewer/Color Corrector 3-way window.



In the JLCooper-supplied Final Cut keyset, the **Color Corrector 3-way** actions are assigned to controls in layer 1 and the **Color Corrector 3-way w/Effect Limits** actions are assigned to controls in layers 2 and three. The Spectrum **Page 1**, **Page 2** and **Page 3** buttons can be used to switch between layers 1, 2. and 3.

Using the MCS-Navigator with Final Cut Pro

The MCS-Navigator has a single trackball and trackball ring. There are some built in commands especially designed to make using the Navigator without a Spectrum easier in FCP. For buttons, there are three actions, **Select Black Balance**, **Select Mid Balance**, and **Select White Balance**. For the trackball, there is the **Balance Wheel - Selected** action and for the ring there is the **Selected Levels** action. There are corresponding actions for the Color Corrector 3-Way with **Limit Effect** controls visible.

By using these actions, you can easily select one of the onscreen balance and level controls with a Navigator button, then adjust that balance and level with the trackball and ring.

The MCS-3000 Final Cut Pro Keyset

The MCS-3000 Final Cut Pro keyset uses a combination of emulated controls, mouse emulation, keystrokes and built-in commands. It is fully customizable using the techniques presented in this manual, so you can easily adapt it to your working style.

Here are the control assignments in the current version of the FCP keyset:

MCS-3000 Series Layer 1	FCP	MCS-3000 Series Layer 2	FCP
Spectrum Page 1	Layer 1 Selector	Spectrum Page 1	Layer 1 Selector
Spectrum Page 2	Layer 2 Selector	Spectrum Page 2	Layer 2 Selector
Spectrum Page 3	Layer 3 Selector	Spectrum Page 3	Layer 3 Selector
Spectrum Page 4	Layer 4 Selector	Spectrum Page 4	Layer 4 Selector
Spectrum Encoder 1	Color Corrector 3-way Saturation	Spectrum Encoder 1	Color Corrector 3-way w/effect limits Saturation
		Spectrum Encoder 2	Color Corrector 3-way w/effect limits Color Gradient
		Spectrum Encoder 3	Color Corrector 3-way w/effect limits Saturation Gradient
		Spectrum Encoder 4	Color Corrector 3-way w/effect limits Luma Gradient
		Spectrum Encoder 5	Color Corrector 3-way w/effect limits Edge Thinning
Spectrum Encoder 6	Trackball Sensitivity	Spectrum Encoder 6	Color Corrector 3-way w/effect limits Softening
Spectrum R1	Color Corrector 3-way Reset Black Level	Spectrum R1	Color Corrector 3-way w/effect limits Reset Black Level
Spectrum B1	Color Corrector 3-way Reset Black Balance	Spectrum B1	Color Corrector 3-way w/effect limits Reset Black Balance
Spectrum R2	Color Corrector 3-way Reset Mid Level	Spectrum R2	Color Corrector 3-way w/effect limits Reset Mid Level

MCS-3000 Series Layer 1	FCP	MCS-3000 Series Layer 2	FCP
Spectrum B2	Color Corrector 3-way Reset Mid Balance	Spectrum B2	Color Corrector 3-way w/effect limits Reset Mid Balance
Spectrum R3	Color Corrector 3-way Reset White Level	Spectrum R3	Color Corrector 3-way w/effect limits Reset White Level
Spectrum B3	Color Corrector 3-way Reset White Balance	Spectrum B3	Color Corrector 3-way w/effect limits Reset White Balance
Spectrum Trackball 1	Color Corrector 3-way Balance Wheel Blacks	Spectrum Trackball 1	Color Corrector 3-way w/effect limits Balance Wheel Blacks
Spectrum Trackball 2	Color Corrector 3-way Balance Wheel Mids	Spectrum Trackball 2	Color Corrector 3-way w/effect limits Balance Wheel Mids
Spectrum Trackball 3	Color Corrector 3-way Balance Wheel Whites	Spectrum Trackball 3	Color Corrector 3-way w/effect limits Balance Wheel Whites
Spectrum Trackball Ring 1	Color Corrector 3-way Black Levels	Spectrum Trackball Ring 1	Color Corrector 3-way w/effect limits Black Levels
Spectrum Trackball Ring 2	Color Corrector 3-way Mid Levels	Spectrum Trackball Ring 2	Color Corrector 3-way w/effect limits Mid Levels
Spectrum Trackball Ring 3	Color Corrector 3-way White Levels	Spectrum Trackball Ring 3	Color Corrector 3-way w/effect limits White Levels
Up	Goto Beginning	Up	Goto Beginning
Down	Goto End	Down	Goto End
Left	Left Arrow Key	Left	Zoom Out
Right	Right Arrow Key	Right	Zoom In
MCS-3000 F1 - F8	F1 - F8	MCS-3000 F1 - F8	F1 - F8

MCS-3000 Series Layer 1	FCP	MCS-3000 Series Layer 2	FCP
MCS-3000 Page 1 - 4	Layer 1 - Layer 4 Selectors	MCS-3000 Page 1 - 4	Layer 1 - Layer 4 Selectors
MCS-3000 Page 5	Show Browser	MCS-3000 Page 5	Show Effects
MCS-3000 Page 6	Show Viewer	MCS-3000 Page 6	Show Favorites
MCS-3000 Page 7	Show Timeline	MCS-3000 Page 7	Show Log and Capture
MCS-3000 Page 8	Show Canvas	MCS-3000 Page 8	Sequence Settings
MCS-3000 Encoder 1 - 4	Pan Channel 1 - Pan Channel 4	MCS-3000 Encoder 1 - 4	Pan Channel 1 - Pan Channel 4
MCS-3000 Encoder 5	Display Scroll	MCS-3000 Encoder 5	Display Scroll
MCS-3000 Bank 1	Bank Left	MCS-3000 Bank 1	Bank Left
MCS-3000 Bank 2	Bank Right	MCS-3000 Bank 2	Bank Right
MCS-3000 M1	Loop Playback		
MCS-3000 M2	Audio Scrubbing		
MCS-3000 M3	Snapping		
MCS-3000 M4	Undo		
MCS-3000 M5	Redo		
MCS-3000 W1	Mark IN	MCS-3000 W1	Mark IN
MCS-3000 W2	Mark OUT	MCS-3000 W2	Mark OUT
MCS-3000 W3	Goto INPOINT	MCS-3000 W3	Goto INPOINT
MCS-3000 W4	Goto OUTPOINT	MCS-3000 W4	Goto OUTPOINT
MCS-3000 W5	Add Marker	MCS-3000 W5	Add Marker
MCS-3000 W6	Goto Previous Marker	MCS-3000 W6	Goto Previous Marker
MCS-3000 W7	Goto Next Marker	MCS-3000 W7	Goto Next Marker
MCS-3000 Keypad 0 - 9	Timecode Entry 0 - 9	MCS-3000 Keypad 0 - 9	Timecode Entry 0 - 9

MCS-3000 Series Layer 1	FCP	MCS-3000 Series Layer 2	FCP
MCS-3000 Keypad ENTER	ENTER	MCS-3000 Keypad ENTER	ENTER
MCS-3000 Keypad CLEAR/CANCEL	CANCEL	MCS-3000 Keypad CLEAR/CANCEL	CANCEL
MCS-3000 Shuttle Ring	Shuttle	MCS-3000 Shuttle Ring	Shuttle
MCS-3000 Jog Wheel	JOG	MCS-3000 Jog Wheel	JOG
MCS-3000 Rewind	Rewind	MCS-3000 Rewind	Rewind
MCS-3000 Fast Forward	Fast Forward	MCS-3000 Fast Forward	Fast Forward
MCS-3000 Stop	Stop	MCS-3000 Stop	Stop
MCS-3000 Play	Play	MCS-3000 Play	Play
MCS-3000 Record	Record	MCS-3000 Record	Record
Left Spectrum Display Line 2	Encoder Names	Left Spectrum Display Line 2	Encoder Names
Right Spectrum Display Line 2	Encoder Names	Right Spectrum Display Line 2	Encoder Names
MCS-3000 Display Line 1	Emulated LCD Display Line 1	MCS-3000 Display Line 1	Emulated LCD Display Line 1
MCS-3000 Display Line 2	Encoder Names	MCS-3000 Display Line 2	Encoder Names
Faders 1 - 7	Channel Volume 1 - 7	Faders 1 - 7	Channel Volume 1 - 7
Fader 8	Master Volume	Fader 8	Master Volume
Fader Touch Sensors 1 - 7	Fader Touch 1 - 7	Fader Touch Sensors 1 - 7	Fader Touch 1 - 7
Fader Touch Sensor 8	Master Touch	Fader Touch Sensor 8	Master Touch
Mutes 1 - 7	Mute 1 - Mute 7	Mutes 1 - 7	Mute 1 - Mute 7

MCS-3000 Series Layer 1	FCP	MCS-3000 Series Layer 2	FCP
Mute 8	Master Mute	Mute 8	Master Mute
Solos 1 - 7	Solo 1 - Solo 7	Solos 1 - 7	Solo 1 - Solo 7
MCS-Bridge Encoders 1 - 7	Pan 1 - Pan 7	MCS-Bridge Encoders 1 - 7	Pan 1 - Pan 7
MCS-Navigator E1	Saturation	MCS-Navigator E1	Saturation (w/Limits)
MCS-Navigator E2		MCS-Navigator E2	Color Gradient (w/Limits)
MCS-Navigator E3		MCS-Navigator E3	Saturation Gradient (w/Limits)
MCS-Navigator E4		MCS-Navigator E4	Luma Gradient (w/Limits)
MCS-Navigator E5		MCS-Navigator E5	Edge Thin
MCS-Navigator E6		MCS-Navigator E6	Softening
MCS-Navigator S1	Select Blacks	MCS-Navigator S1	Select Blacks
MCS-Navigator S2	Select Mids	MCS-Navigator S2	Select Mids
MCS-Navigator S3	Select Whites	MCS-Navigator S3	Select Whites
MCS-Navigator S4	Reset Black Balance	MCS-Navigator S4	Reset Black Balance
MCS-Navigator S5	Reset Black Level	MCS-Navigator S5	Reset Black Level
MCS-Navigator S6	Reset Mid Balance	MCS-Navigator S6	Reset Mid Balance
MCS-Navigator S7	Reset Mid Level	MCS-Navigator S7	Reset Mid Level
MCS-Navigator S8	Reset White Balance	MCS-Navigator S8	Reset White Balance
MCS-Navigator Trackball	Selected Balance	MCS-Navigator Trackball	Selected Balance
MCS-Navigator Trackball Ring	Selected Level	MCS-Navigator Trackball Ring	Selected Level

MCS-3000 Series Layer 3	FCP	MCS-3000 Series Layer 4	FCP
Spectrum Page 1	Layer 1 Selector	Spectrum Page 1	Layer 1 Selector
Spectrum Page 2	Layer 2 Selector	Spectrum Page 2	Layer 2 Selector
Spectrum Page 3	Layer 3 Selector	Spectrum Page 3	Layer 3 Selector
Spectrum Page 4	Layer 4 Selector	Spectrum Page 4	Layer 4 Selector
Up	Goto Beginning	Up	Goto Beginning
Down	Goto End	Down	Goto End
Left	Left Arrow Key	Left	Zoom Out
Right	Right Arrow Key	Right	Zoom In
MCS-3000 F1 - F8	F1 - F8	MCS-3000 F1 - F8	F1 - F8
MCS-3000 Page 1 - 4	Layer 1 - Layer 4 Selectors	MCS-3000 Page 1 - 4	Layer 1 - Layer 4 Selectors
MCS-3000 Page 5	Show Browser	MCS-3000 Page 5	Show Effects
MCS-3000 Page 6	Show Viewer	MCS-3000 Page 6	Show Favorites
MCS-3000 Page 7	Show Timeline	MCS-3000 Page 7	Show Log and Capture
MCS-3000 Page 8	Show Canvas		
MCS-3000 Encoder 1 - 4	Pan Channel 1 - Pan Channel 4	MCS-3000 Encoder 1 - 4	Pan Channel 1 - Pan Channel 4
MCS-3000 Encoder 5	Display Scroll	MCS-3000 Encoder 5	Display Scroll
MCS-3000 Bank 1	Bank Left	MCS-3000 Bank 1	Bank Left
MCS-3000 Bank 2	Bank Right	MCS-3000 Bank 2	Bank Right
MCS-3000 W1	Mark IN	MCS-3000 W1	Mark IN
MCS-3000 W2	Mark OUT	MCS-3000 W2	Mark OUT
MCS-3000 W3	Goto INPOINT	MCS-3000 W3	Goto INPOINT
MCS-3000 W4	Goto OUTPOINT	MCS-3000 W4	Goto OUTPOINT
MCS-3000 W5	Add Marker	MCS-3000 W5	Add Marker

MCS-3000 Series Layer 3	FCP	MCS-3000 Series Layer 4	FCP
MCS-3000 W6	Goto Previous Marker	MCS-3000 W6	Goto Previous Marker
MCS-3000 W7	Goto Next Marker	MCS-3000 W7	Goto Next Marker
MCS-3000 Keypad 0 - 9	Timecode Entry 0 - 9	MCS-3000 Keypad 0 - 9	Timecode Entry 0 - 9
MCS-3000 Keypad ENTER	ENTER	MCS-3000 Keypad ENTER	ENTER
MCS-3000 Keypad CLEAR/CANCEL	CANCEL	MCS-3000 Keypad CLEAR/CANCEL	
MCS-3000 Shuttle Ring	Shuttle	MCS-3000 Shuttle Ring	Shuttle
MCS-3000 Jog Wheel	JOG	MCS-3000 Jog Wheel	JOG
MCS-3000 Rewind	Rewind	MCS-3000 Rewind	Rewind
MCS-3000 Fast Forward	Fast Forward	MCS-3000 Fast Forward	Fast Forward
MCS-3000 Stop	Stop	MCS-3000 Stop	Stop
MCS-3000 Play	Play	MCS-3000 Play	Play
MCS-3000 Record	Record	MCS-3000 Record	Record
Left Spectrum Display Line 2	Encoder Names	Left Spectrum Display Line 2	Encoder Names
Right Spectrum Display Line 2	Encoder Names	Right Spectrum Display Line 2	Encoder Names
MCS-3000 Display Line 1	Emulated LCD Display Line 1	MCS-3000 Display Line 1	Emulated LCD Display Line 1
MCS-3000 Display Line 2	Encoder Names	MCS-3000 Display Line 2	Encoder Names
Faders 1 - 7	Channel Volume 1 - 7	Faders 1 - 7	Channel Volume 1 - 7
Fader 8	Master Volume	Fader 8	Master Volume

MCS-3000 Series Layer 3	FCP	MCS-3000 Series Layer 4	FCP
Fader Touch Sensors 1 - 7	Fader Touch 1 - 7	Fader Touch Sensors 1 - 7	Fader Touch 1 - 7
Fader Touch Sensor 8	Master Touch	Fader Touch Sensor 8	Master Touch
Mutes 1 - 7	Mute 1 - Mute 7	Mutes 1 - 7	Mute 1 - Mute 7
Mute 8	Master Mute	Mute 8	Master Mute
Solos 1 - 7	Solo 1 - Solo 7	Solos 1 - 7	Solo 1 - Solo 7
MCS-Bridge Encoders 1 - 7	Pan 1 - Pan 7	MCS-Bridge Encoders 1 - 7	Pan 1 - Pan 7

Soundtrack Pro™ Support

Setting up the MCS-3x00 for use with Soundtrack Pro is almost identical to setting up for Final Cut Pro.

Open the MCS-3000 application and Import the Soundtrack Pro keyset or create a keyset of your own. If you create your own, start by setting the **Emulation Mode** to **A** then choosing **Set All Controls to Emulation** from the **Actions** menu. Later on you can customize this keyset with built-in commands, key sequences and mouse actions.

The next time you run Soundtrack Pro, open the **Preferences** dialog from the **Soundtrack Pro** menu then go to the **Control Surfaces** panel. Click on the "**+**" button to add a control surface and choose Mackie Control. Choose **MCSk USB - MCS3k** for the input connection and output connections. Click OK to exit the dialog.

The Soundtrack Pro Keyset

The Soundtrack Pro keyset is a combination of emulated actions, keystrokes and built in commands.

MCS-3000 Series	Soundtrack Pro
Faders 1-7	Channel Volume 1 - 7
Fader 8	Master Fader
Faders Touch Sensors 1-7	Fader Touch 1 - 7
Fader Touch Sensor 8	Master Touch
Mutes 1-7	Channel Mutes 1 - 7
Solos 1-7	Channel Solos 1 - 7
Aux 1-7	Center Pans 1 - 7
Select 1-7	Channel Select 1 - 7
Bridge B Encoders 1 - 7	Pan 1- 7
Bridge LCD Buttons	Channel Record Ready
MCS-3000 Encoders 1-4	Pan 1-4
MCS-3000 Page 1-4	Mute 1-4
MCS-3000 Page 5-8	Solo 1-4

MCS-3000 Series	Soundtrack Pro
Up	Zoom Out
Down	Zoom In
Left	Move Playhead to Previous Second
Right	Move Playhead to Next Second
Bank 1	Bank Left
Bank 2	Bank Right
W1	Insert Time Marker
W2	Add region marker for selection
W3	Add time markers at beginning and end of selection
W4	Insert Beat Marker
W5	Goto Previous Marker
W6	Goto Next Marker
Keypad 0-9	Types 0-9 for setting locate points
Keypad Last	Types “.”
Keypad +/-	Types “-”
Keypad Clear/Cancel	Cancel
Keypad Enter	Enter
Rewind	Move Back
Fast Forward	Move Forward
Stop	Stop
Play	Play
Record	Record

MCS-3000 Series	Soundtrack Pro
Jog Wheel	Jog

Logic Pro™ Support

Open the **MCS-3000** application and Import the Logic Pro keyset or create a keyset of your own. If you create your own, start by setting the **Emulation Mode** to **B** then choosing **Set All Controls to Emulation** from the **Actions** menu. Later on you can customize this keyset with built-in commands, key sequences and mouse actions.

Next run Logic Pro and choose **Preferences > Control Surfaces > Setup** from the **Logic Pro** Menu. In the resulting window's New menu, choose Install, and in the next window click on Scan. In a moment, Logic should tell you that it is connected to a **Logic Control** on the Input and Out Port named **MCS3k**. If it isn't successful then select **Logic Control** from the list and click on Add. Then manually connect the control surface to the Input and Out Port named **MCS3k**.

The Logic Pro Keyset

All of the assignments in the Logic Pro keyset are to Emulation Mode B. Consult the **Control Surfaces Support** document found under Logic's **Help** menu for details on using the Logic Control with Logic.

MCS-3000 Series	Logic Pro
M1	Emulation- smpte/beats
M2	Emulation- global view: global view on/off
M3	Emulation- global view: inputs
M4	Emulation- global view: audio tracks
M5	Emulation- global view: aux
Rewind	Emulation- transport: rewind
Fast Forward	Emulation- transport: fast forward
Stop	Emulation- transport: stop
Play	Emulation- transport: play

MCS-3000 Series	Logic Pro
Record	Emulation- transport: record
Jog	Emulation- jog
W1	Emulation- automation: read/off
W2	Emulation- automation: write
W3	Emulation- automation: trim
W4	Emulation- automation: touch
W5	Emulation- automation: latch
MCS-3000 Encoder 1	Emulation- pot: 1
MCS-3000 Encoder 2	Emulation- pot: 2
MCS-3000 Encoder 3	Emulation- pot: 3
MCS-3000 Encoder 4	Emulation- pot: 4
MCS-3000 Encoder 5	Emulation- display scroll
F1	Emulation- fkey: 1
F2	Emulation- fkey: 2
F3	Emulation- fkey: 3
F4	Emulation- fkey: 4
F5	Emulation- fkey: 5
F6	Emulation- fkey: 6
F7	Emulation- fkey: 7
F8	Emulation- fkey: 8
Bank 1	Emulation- bank_change: bank left
Bank 2	Emulation- bank_change: bank right
Bank 3	Emulation- bank_change: channel left
Bank 4	Emulation- bank_change: channel right

MCS-3000 Series	Logic Pro
MCS-3000 Page 1	Emulation- mute: 1
MCS-3000 Page 2	Emulation- mute: 2
MCS-3000 Page 3	Emulation- mute: 3
MCS-3000 Page 4	Emulation- mute: 4
MCS-3000 Page 5	Emulation- solo: 1
MCS-3000 Page 6	Emulation- solo: 2
MCS-3000 Page 7	Emulation- solo: 3
MCS-3000 Page 8	Emulation- solo: 4
Enter	Emulation- utilities: enter
Clear/Cancel	Emulation- utilities: cancel
Up	Emulation- cursor: up
Right	Emulation- cursor: right
Down	Emulation- cursor: down
Left	Emulation- cursor: left
Shift	Emulation- modifiers: shift
Mute 1	Emulation- mute: 1
Mute 2	Emulation- mute: 2
Mute 3	Emulation- mute: 3
Mute 4	Emulation- mute: 4
Mute 5	Emulation- mute: 5
Mute 6	Emulation- mute: 6
Mute 7	Emulation- mute: 7
Solo 1	Emulation- solo: 1
Solo 2	Emulation- solo: 2
Solo 3	Emulation- solo: 3
Solo 4	Emulation- solo: 4
Solo 5	Emulation- solo: 5

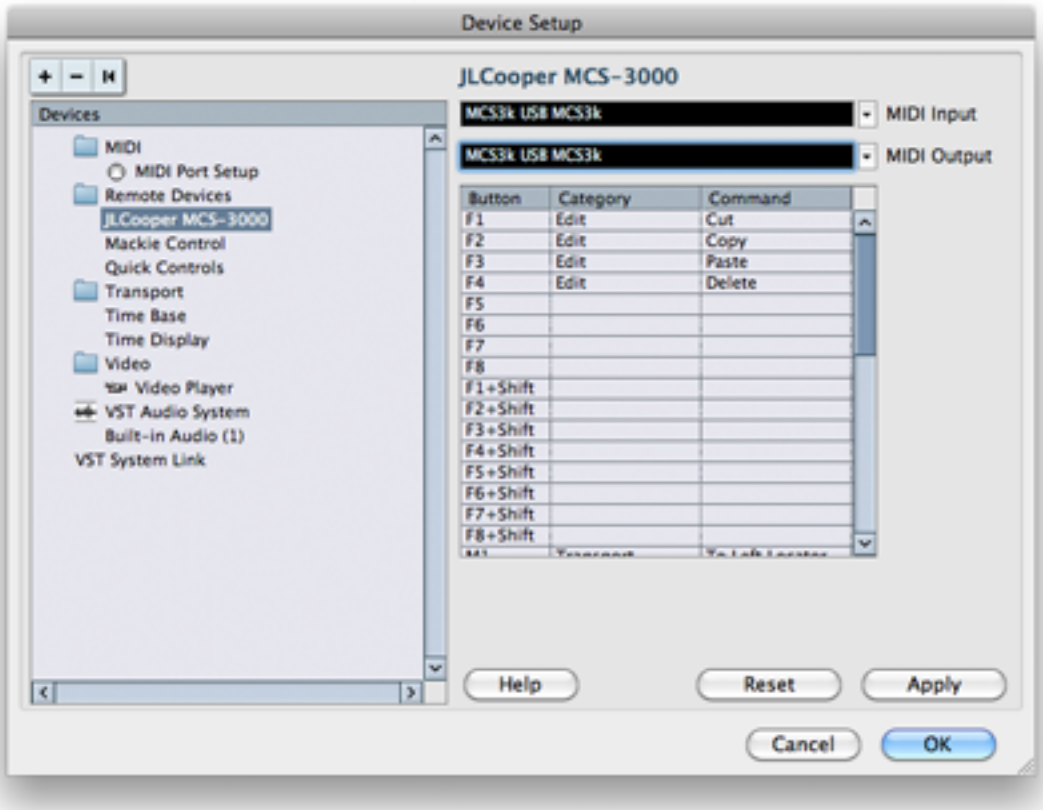
MCS-3000 Series	Logic Pro
Solo 6	Emulation- solo: 6
Solo 7	Emulation- solo: 7
Aux 1	Emulation- pot switch: 1
Aux 2	Emulation- pot switch: 2
Aux 3	Emulation- pot switch: 3
Aux 4	Emulation- pot switch: 4
Aux 5	Emulation- pot switch: 5
Aux 6	Emulation- pot switch: 6
Aux 7	Emulation- pot switch: 7
Select 1	Emulation- select: 1
Select 2	Emulation- select: 2
Select 3	Emulation- select: 3
Select 4	Emulation- select: 4
Select 5	Emulation- select: 5
Select 6	Emulation- select: 6
Select 7	Emulation- select: 7
Fader Touch 1	Emulation- touch sensor: 1
Fader Touch 2	Emulation- touch sensor: 2
Fader Touch 3	Emulation- touch sensor: 3
Fader Touch 4	Emulation- touch sensor: 4
Fader Touch 5	Emulation- touch sensor: 5
Fader Touch 6	Emulation- touch sensor: 6
Fader Touch 7	Emulation- touch sensor: 7
Fader Touch 8	Emulation- touch sensor: 9 (master)
Fader 1	Emulation- fader: 1
Fader 2	Emulation- fader: 2

MCS-3000 Series	Logic Pro
Fader 3	Emulation- fader: 3
Fader 4	Emulation- fader: 4
Fader 5	Emulation- fader: 5
Fader 6	Emulation- fader: 6
Fader 7	Emulation- fader: 7
Fader 8	Emulation- fader: 9 (master)

Nuendo™ Support

Steinberg Nuendo has built in support for the MCS-3000.

The Nuendo keyset has all controls set to Native MIDI. To setup Nuendo to work with the MCS, the first time you run it go to **Device Setup** in the **Devices** menu. On the left hand side of the dialog choose JLCooper MCS-3000 under **Remote Devices**. On the right hand side choose MCS3k USB MCS3k for both the MIDI Input and MIDI Output then click OK.



Here are the mappings from the Eclipse controls to Nuendo functions. More details can be found in the document **Remote Control Devices** supplied with Nuendo.

MCS-3000 Series	Nuendo
Faders 1 - 32	Volume on channels 1 - 32
Mutes 1 - 32	Mutes on channels 1 - 32
Solos 1 - 32	Solos on channels 1 - 32
Sel 1 - 32	Select channels 1 - 32 for editing
Bank 1	Select channels 1 - 8
Bank 2	Select channels 9 - 16
Bank 3	Select channels 17 - 24
Bank 4	Select channels 25 - 32
MCS-3000 Page 1	MCS-3000 Encoder Bank 1
MCS-3000 Page 2	MCS-3000 Encoder Bank 2
MCS-3000 Page 3	MCS-3000 Encoder Bank 3
MCS-3000 Page 4	MCS-3000 Encoder Bank 4
MCS-3000 Encoders Bank 1	
Encoder 1	Pan
Encoder 2	Effect Send 1
Encoder 3	Effect Send 2
Encoder 4	Effect Send 3
Encoder 5	Effect Send 4
MCS-3000 Encoders Bank 2	
Encoder 1	EQ 1 Gain
Encoder 2	EQ 1 Freq
Encoder 3	EQ 1 “Q”

MCS-3000 Series	Nuendo
Encoder 4	EQ 1 Low Limit
Encoder 5	EQ 1 High Limit
MCS-3000 Encoders Bank 3	
Encoder 1	EQ 2 Gain
Encoder 2	EQ 2 Freq
Encoder 3	EQ 2 “Q”
Encoder 4	EQ 2 Low Limit
Encoder 5	EQ 2 High Limit
MCS-3000 Encoders Bank 4	
Encoder 1	EQ 3 Gain
Encoder 2	EQ 3 Freq
Encoder 3	EQ 3 “Q”
Encoder 4	EQ 3 Low Limit
Encoder 5	EQ 3 High Limit
Set Locate (followed by typing an ID and pressing RETURN)	Create a Marker
Locate (followed by typing an ID and pressing RETURN)	Go to a Marker
Rewind	Rewind
Fast Forward	Fast Forward
Stop	Stop
Play	Play

Pro Tools™ Support

The MCS-3000 Series hardware has a built-in Pro Tools mode. When Pro Tools is running, it automatically puts the MCS-3000 into Pro Tools mode. Pro Tools mode overrides any actions that may have been assigned to various MCS-3000 controls.

In Pro Tools choose **Setup > Peripherals** and click on the **MIDI Controllers** tab. Choose HUI from the **Type** popup and MCS-3000 from both the **Receive From** and **Send To** popups. Click on the **OK** button.

Pro Tools Keyset

The Pro Tools keyset has all controls set to **Native MIDI**. It is not editable.

For more information on using the MCS-3000 with Pro Tools see the document **MCS-3000 Pro Tools Addendum**, which can be found in both the MCS-3000 application's **Help** menu and in the folder `/Applications/MCS-3000 Series USB Software/documentation/`.