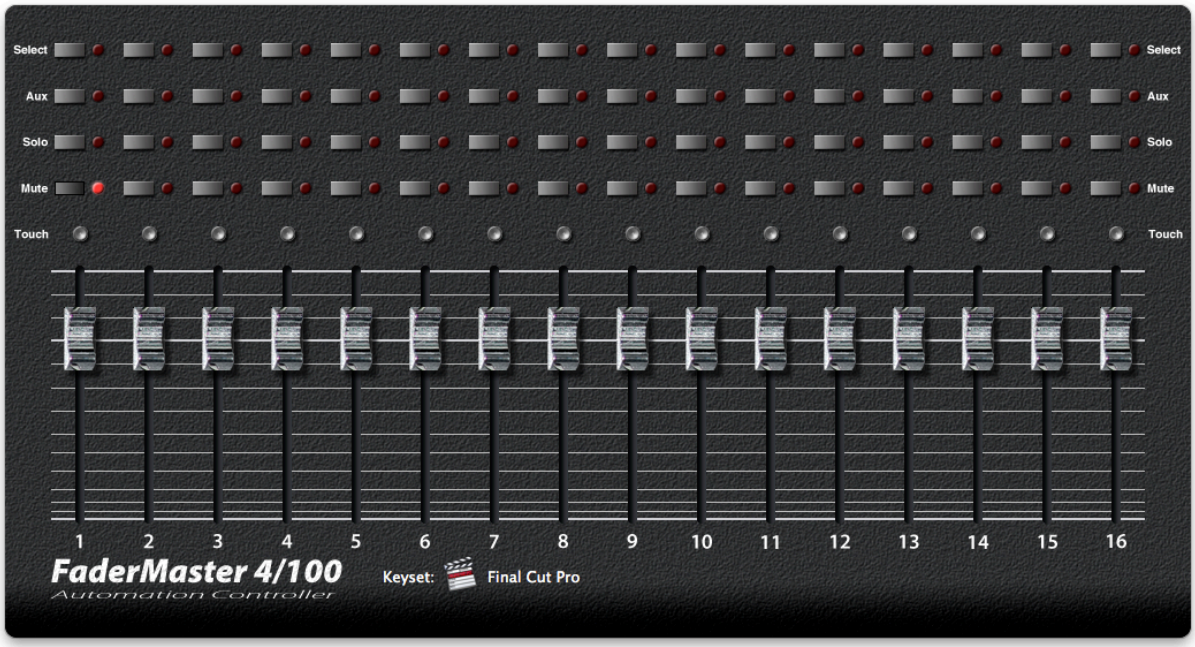
FM 4/100 USB Software for OSX



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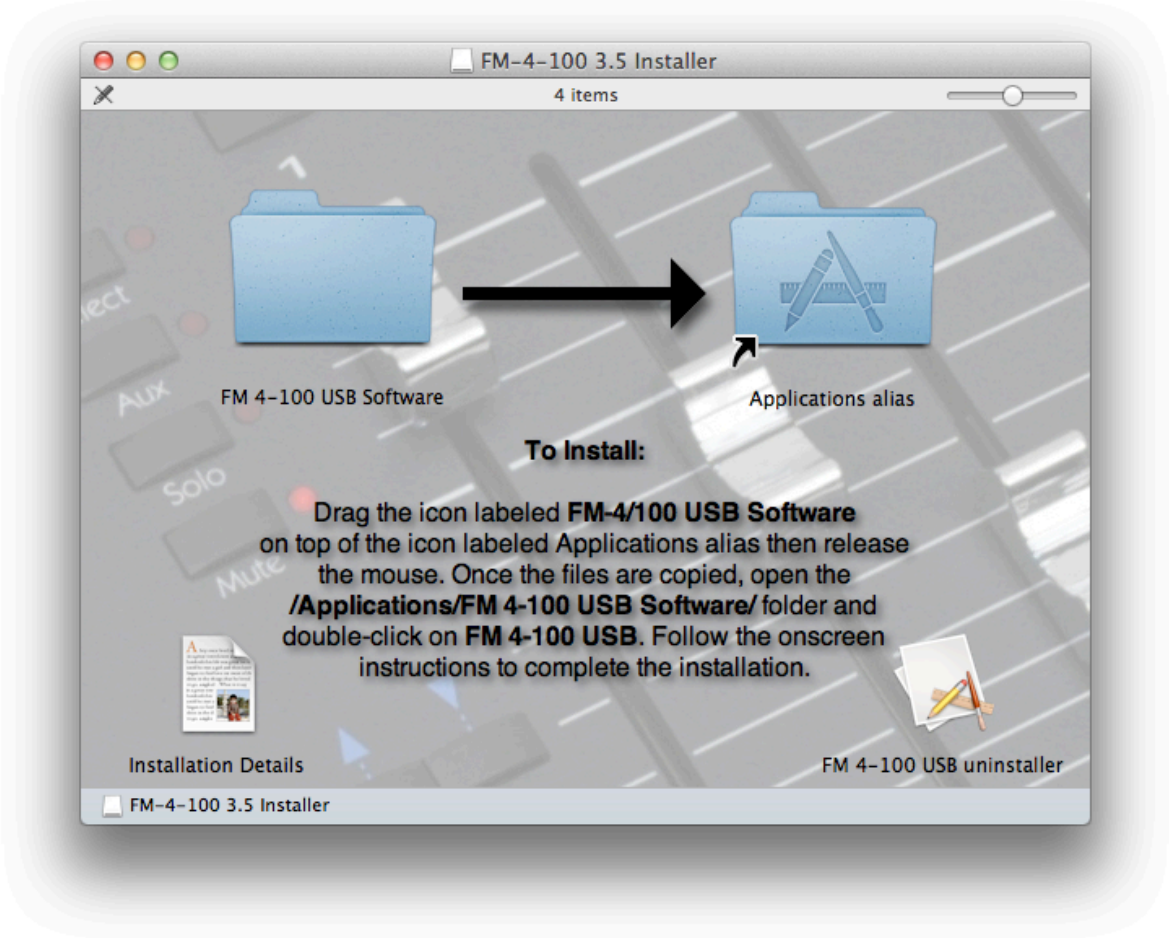
Installation

***Note**: if you have previously installed a version of the FM 4/100 software earlier than 3.5, you must uninstall it before installing this version.*

After downloading and double-clicking the **Install_FM 4-100_3.5.dmg** file, you should see the following window:

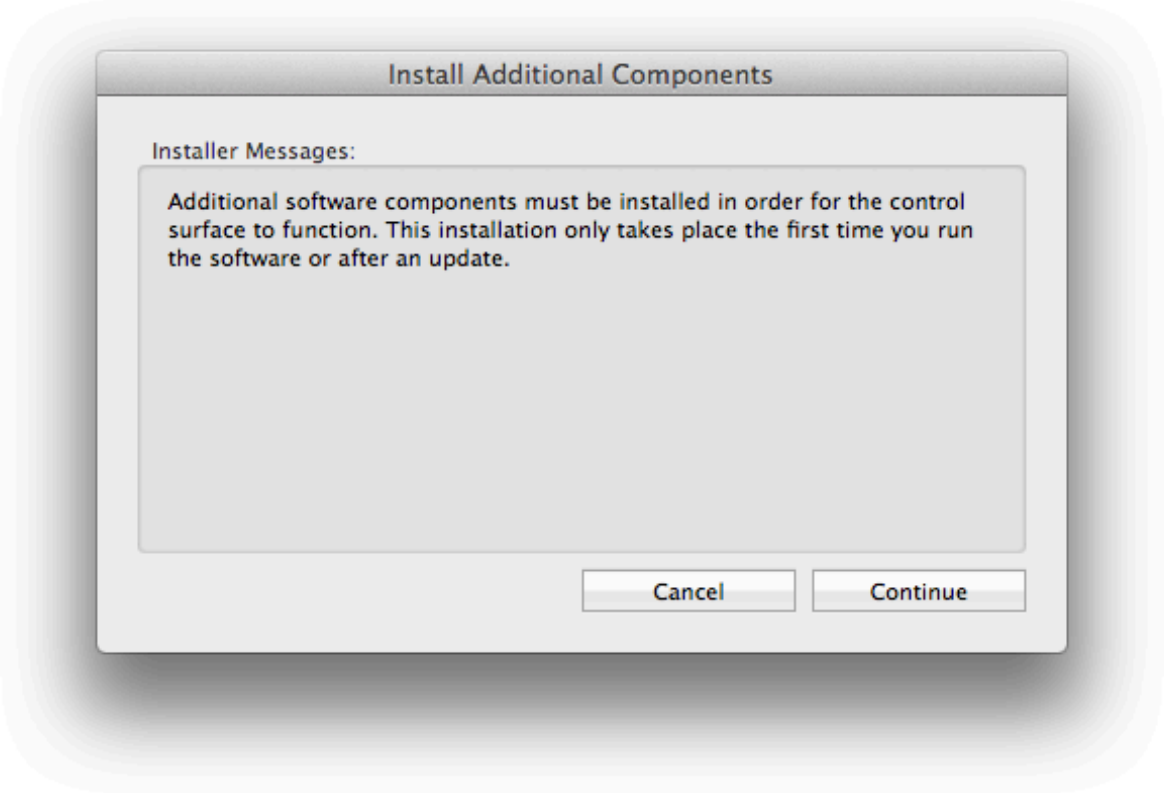


Drag the icon labeled **FM 4-100 USB Software** over the icon labeled **Applications alias** then release the mouse. This will cause the Finder to copy the FM 4/100 software to your **Applications** folder.

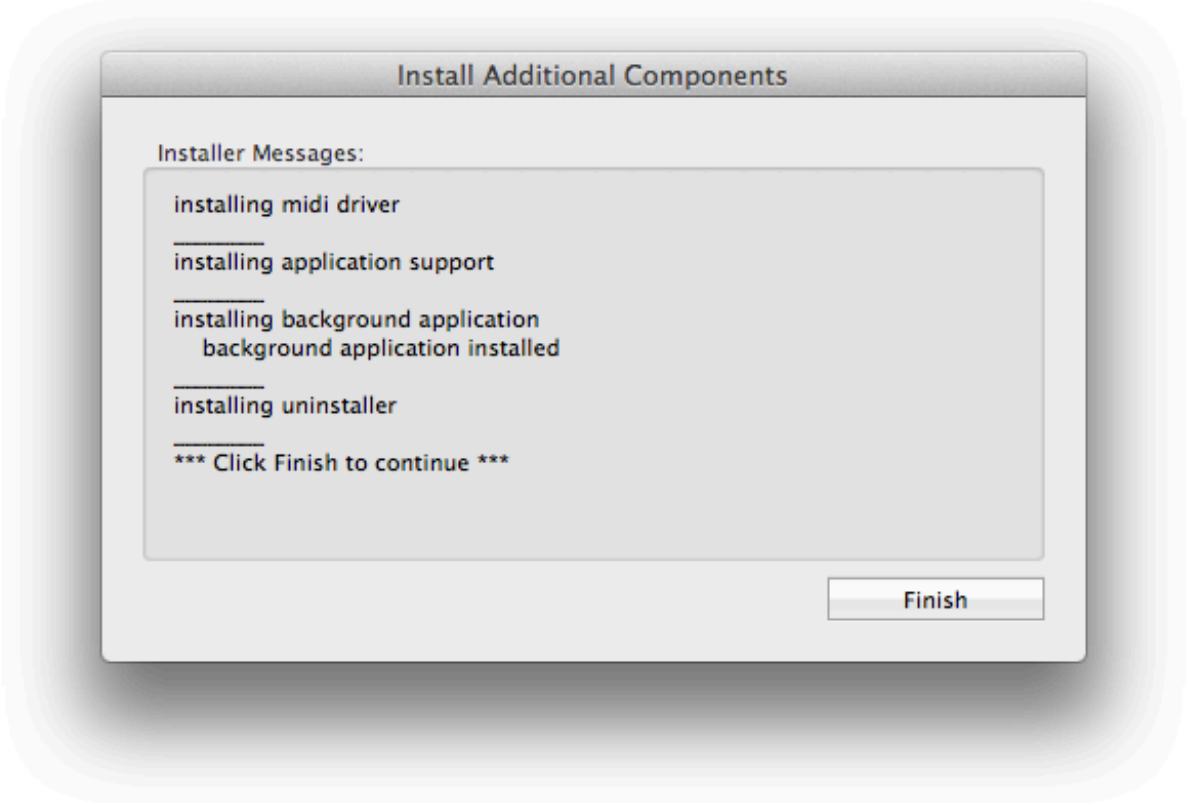
Once the copy is complete, open the `/Applications/FM 4-100 USB Software/` folder and double-click on the **FM 4-100 USB** application.

FM 4-100 USB

If this is the first time you are installing this software, or if you are installing a newer version, an installation dialog will appear. Click on **Continue** to finish the installation, or **Cancel** if you want to finish it the next time you run the **FM 4-100 USB** application. The installation must be completed before the FM 4/100 software will be fully functional.



Once all the software components have been installed, click on the **Finish** button. A connection will be established between the FM 4/100 software and the FM 4/100 hardware, and you can start working with the software.



Uninstalling

To uninstall run the **FM 4-100 USB uninstaller** located in the `/Applications` folder. Click on the **Uninstall** button to begin. When the uninstall is finished, click on the **Quit** button.

If there are multiple user accounts on this Mac, there may be multiple installations of the FM 4/100 software, one for each user. Each user shares the **FM 4-100 USB** application and the **FM 4-100 USB uninstaller**, but other software components are installed separately for each user account. For this reason, the uninstaller does not remove itself or the **FM 4-100 USB Software** folder. Before deleting either of these, please make sure that the software has been uninstalled from all user accounts.

After uninstalling, you may notice that the FM 4/100 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.

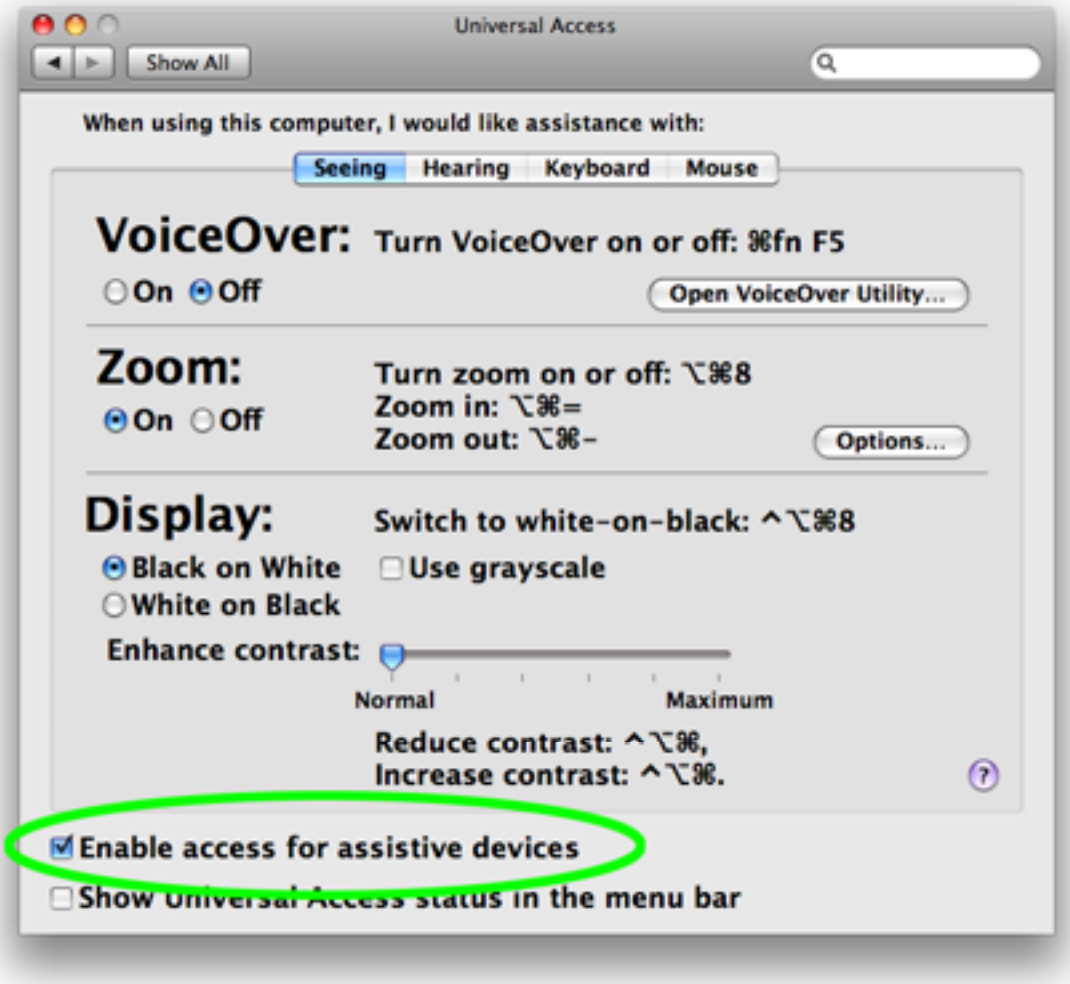
Although the driver has no effect at this point, you can remove it from **Audio/MIDI Setup** if you wish. To remove the driver, disconnect the FM 4/100 from the Mac and wait for the driver's icon in **Audio/MIDI Setup** to be dimmed as in the graphic below.

Click on the FM 4/100 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 FM 4/100 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 FM 4/100 software is uninstalled. If you want to remove it, just delete the file `~/Library/Preferences/com.jlcooper.FM4100USB.plist`.

System Setup

The FM 4/100 software relies on Apple's Universal Access to perform mouse emulation. In order for the FM 4/100 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**.



Introduction

The FaderMaster has four physical faders and four physical channel buttons but actually has 16 channels internally. You can switch between four banks of 4 channels with the Inc/Dec buttons. There is one button per channel, but each button's function can be changed by pressing the SELECT, AUX, SOLO or MUTE button. So even though there are only two physical controls per channel, there are six functions (counting the Touch Sensors which are activated every time a fader is touched or released).

The FM 4/100 Software extends the FM 4/100 hardware's ability to control various applications running on your Macintosh™. It does this by communicating with applications via MIDI, USB 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 FaderMaster software uses "keysets" which are sets of various actions that are taken when FaderMaster controls are pressed or moved. Different keysets can be applied to different applications, and the FaderMaster software will choose the correct keyset for whichever application is in the foreground. If no keyset has been created for the current foreground application, the FaderMaster will use a built in keyset called the "Default" keyset.

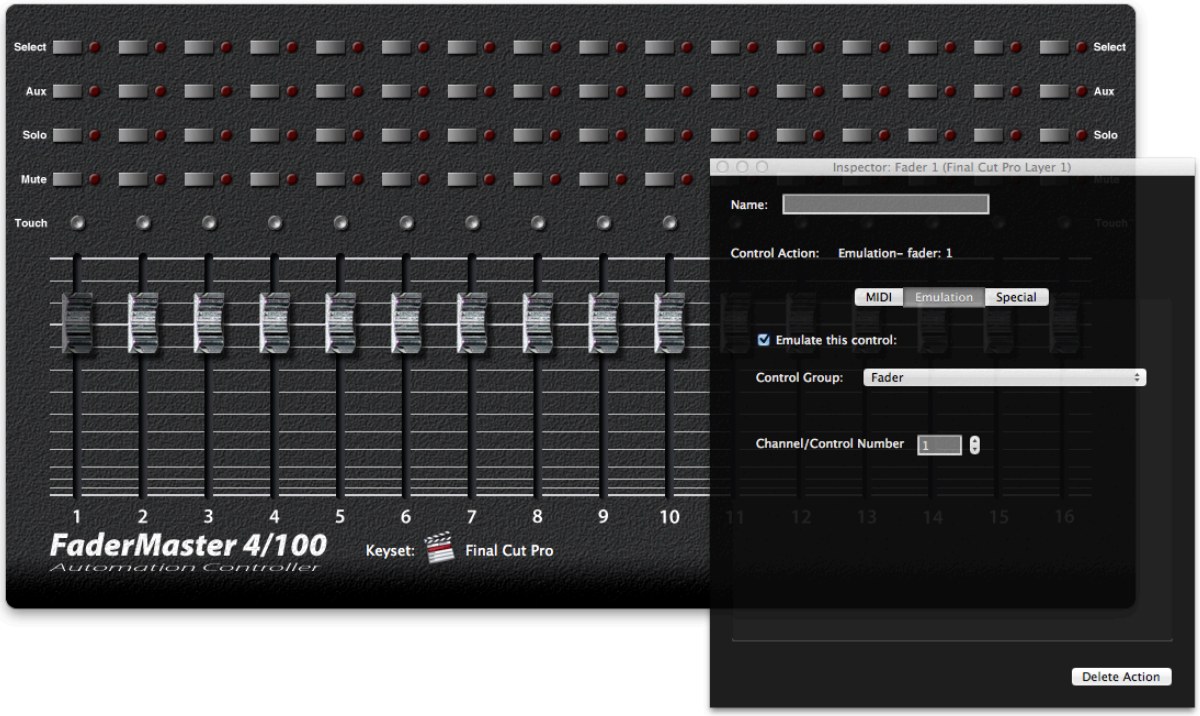
To create or edit FaderMaster keysets, open the application, "FM 4-100 USB" (`/Applications/FM 4-100 USB Software/`). To create a new keyset, choose **New Keyset** from the **File** menu and navigate to the application that will use the new keyset. You can also use **Import Keyset** from the **File** menu to get an existing keyset. You only need to use **New Keyset** or **Import Keyset** once for a given application. After that, keysets are stored with the FaderMaster's preferences.

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 Keyset** in your daily use of the FaderMaster. Your changes are added to the FaderMaster preferences file automatically.

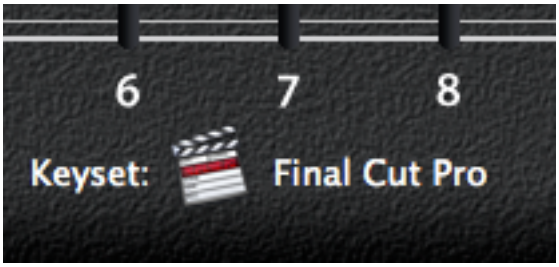
This package includes keysets for Final Cut Pro™, Logic Pro™ and Nuendo™.

Editing Keysets

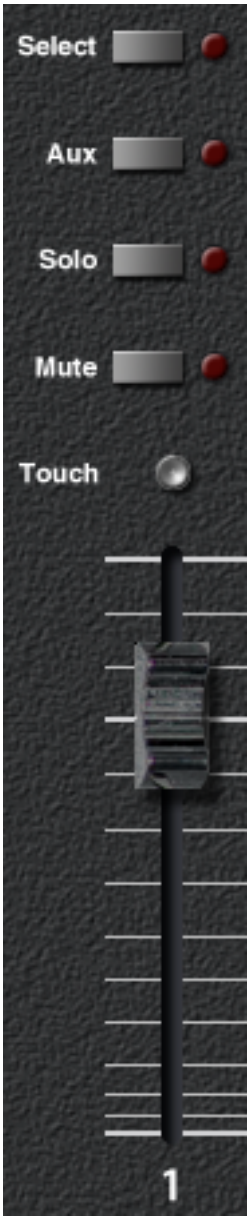
The application presents a graphical representation of the FM 4/100 front panel. When you click on an on-screen control (or move a control on the FM 4/100 itself), that control is selected and information about it appears in the floating **Inspector** window.



You can choose which keyset to edit within the FM 4/100 USB 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.



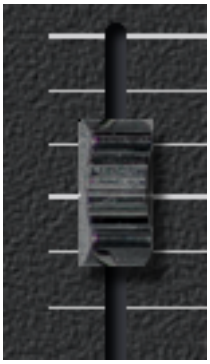
The FM 4/100 application displays all six functions for all sixteen channels as if they were actual hardware controls.



To choose which control's actions to edit to edit:

1. Click on the picture of an on-screen control with the mouse.
   or
2. Press or move a control on the FM 4/100 hardware.

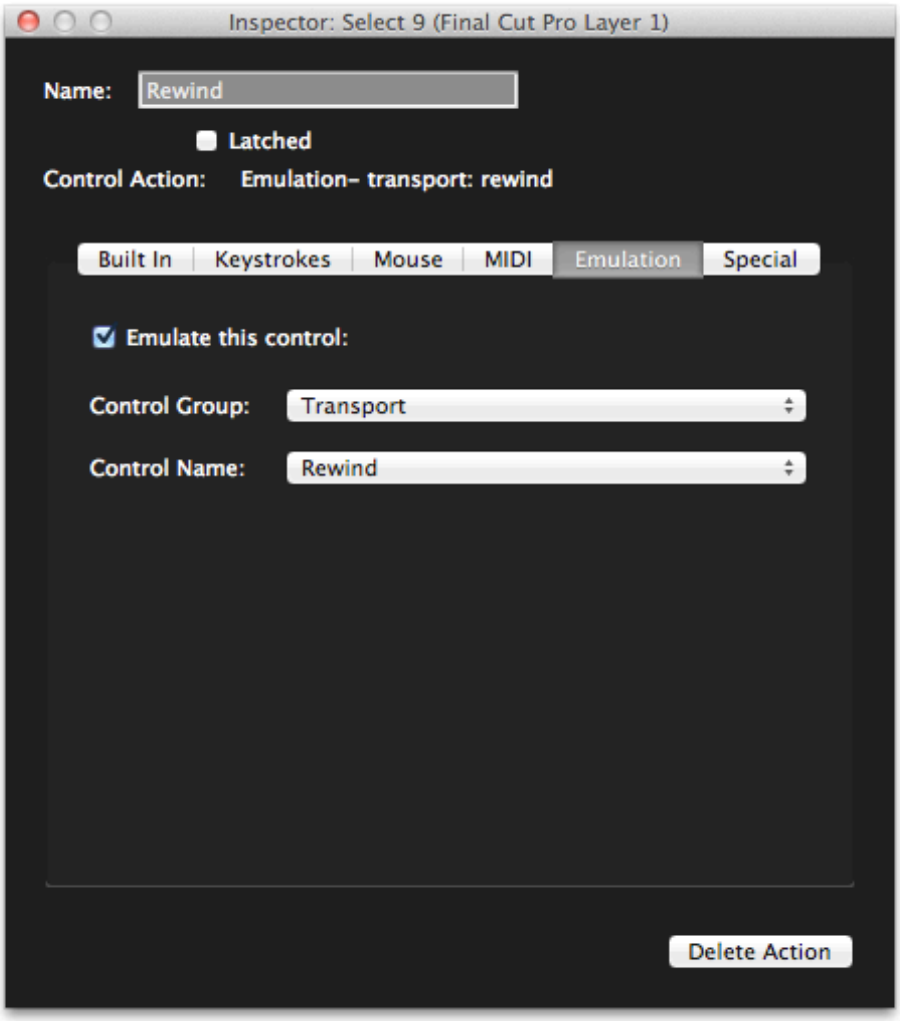
The selected control will be highlighted. **NOTE**: the faders do not move on-screen. The selected fader will be highlighted as in the graphic below:



Information about what action is assigned to the selected control appears in the Inspector 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.

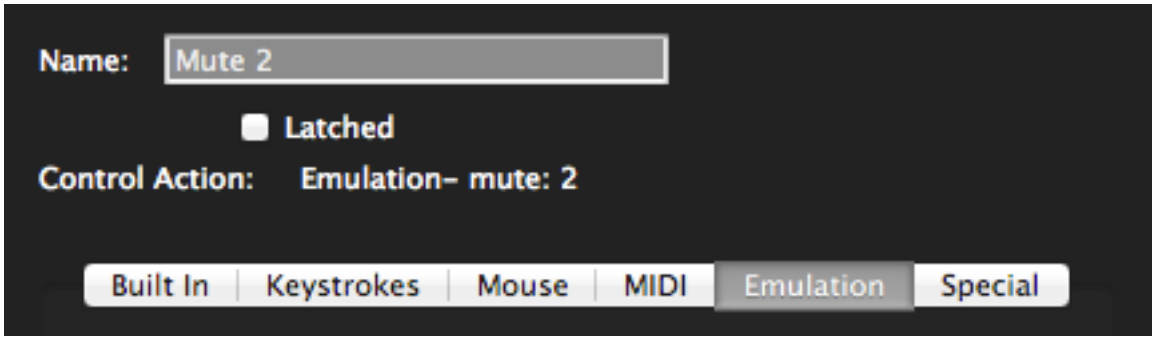


The **Name** text box allows you to give a control a more descriptive name that describes its precise function. In the example above, the “Select 9” button has been assigned an action that rewinds from the current time indicator, so naming the button “Rewind” conveys more information than “Select 9”.

If the selected control is a button, then immediately below the Name 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.

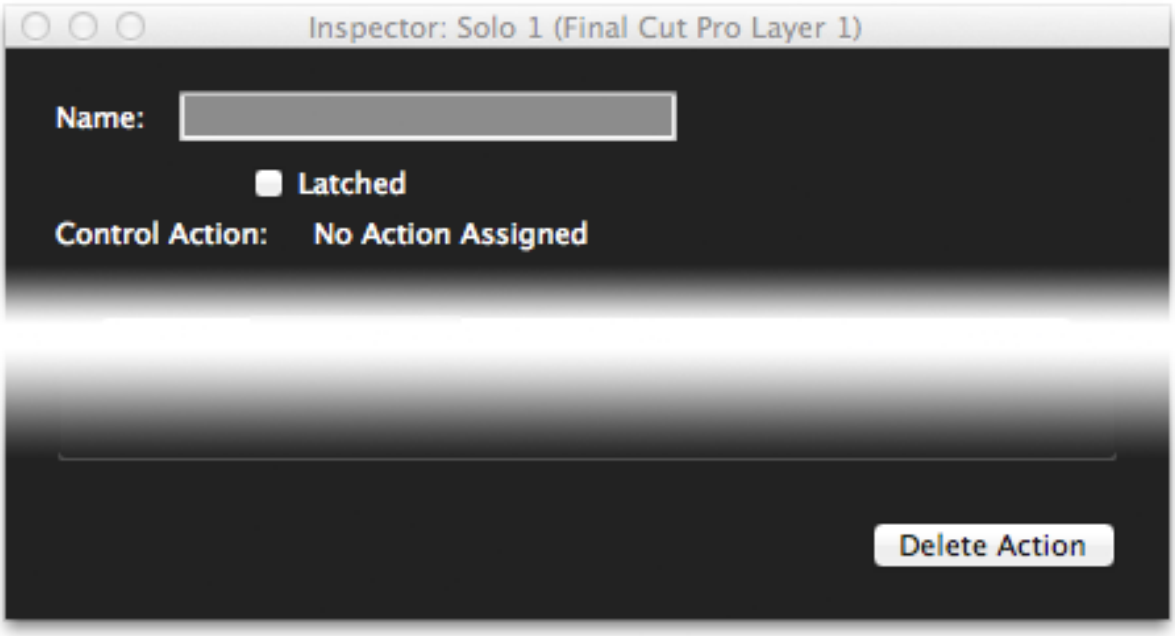
Next is a description of the action that is to take place when the selected FM 4/100 control is pressed or turned while the target application is active.

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. Clicking on one of these tabs will display controls for editing its kind of action. The available actions vary depending on the type of control being edited, but can include **Built In**, **Keystrokes**, **Mouse**, **MIDI**, **Emulation** and **Special**.



Any changes made in one of these tabs are immediately applied to the selected control. The FM 4/100 software allows multiple levels of Undo, so you can easily get back to any starting point.

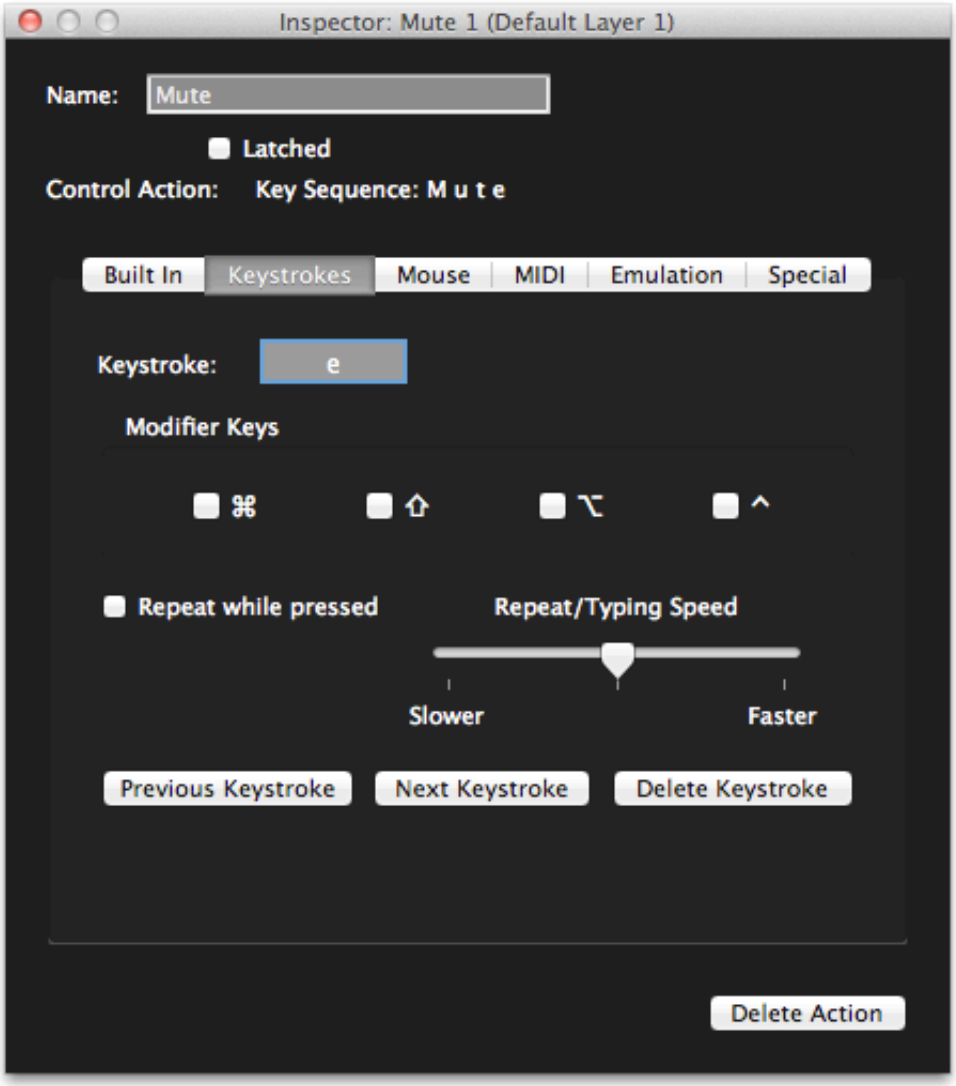
Also at the bottom of the **Inspector** window is the **Delete Action** button. When pressed it will delete the action currently assigned to the selected control. This is also undoable.



Action Tabs

Keystrokes Tab

The FM 4/100 Mute, Solo, Aux and Select buttons can be assigned to send a sequence of keystrokes to an application just as if they were keys on the Mac keyboard. These assignments are set up in the **Keystrokes Tab**.



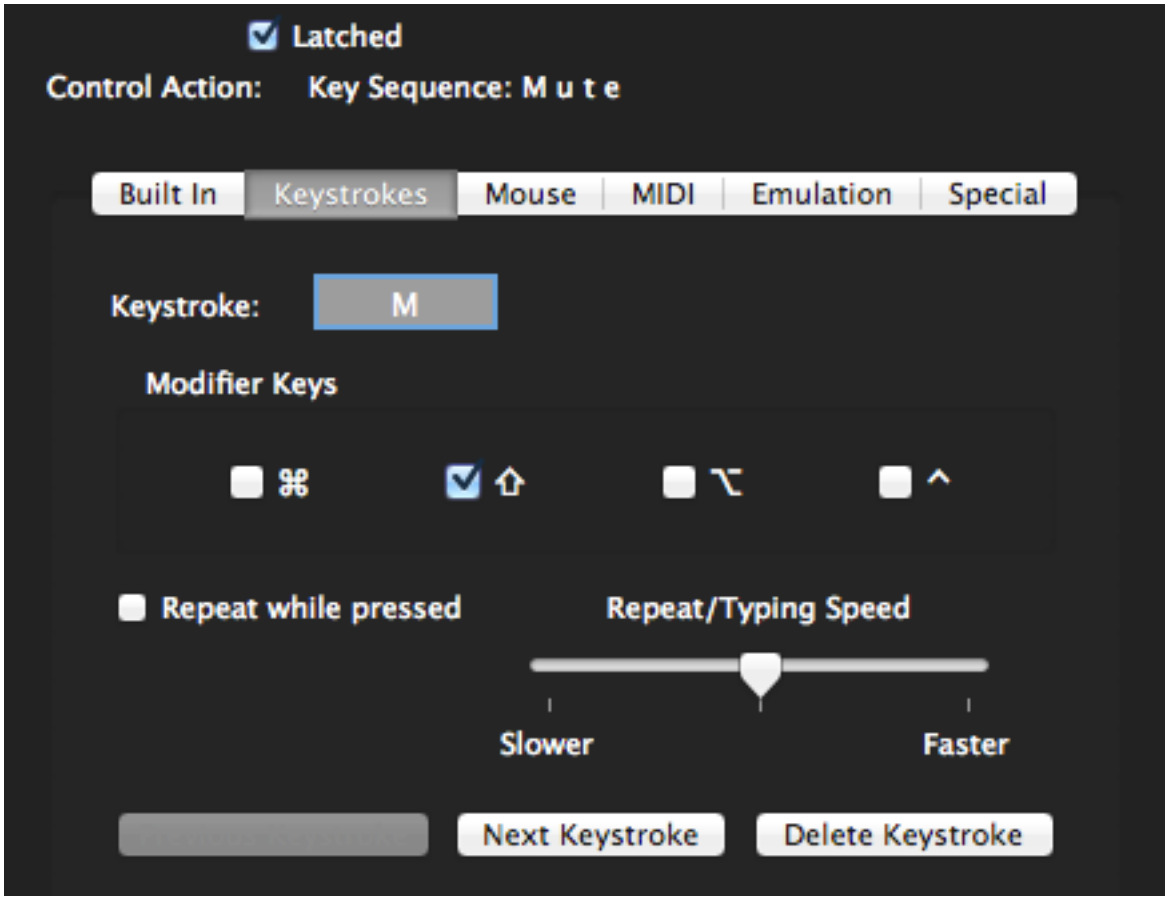
Select a control to edit, place the cursor in the **Keystroke** field and type a key. If you hold down any modifier keys (command, shift, option or control) while typing this key, the modifier checkboxes will be set up accordingly. You can also manually change the modifier checkboxes by clicking on them.

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 FM 4/100 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.

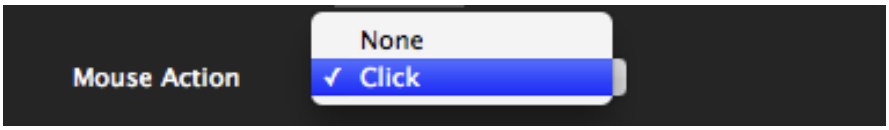
If the key sequence in the example below was assigned to the **STOP** button, pressing and holding **STOP** would be the equivalent of repeatedly typing the word “Mute” until **STOP** was released.



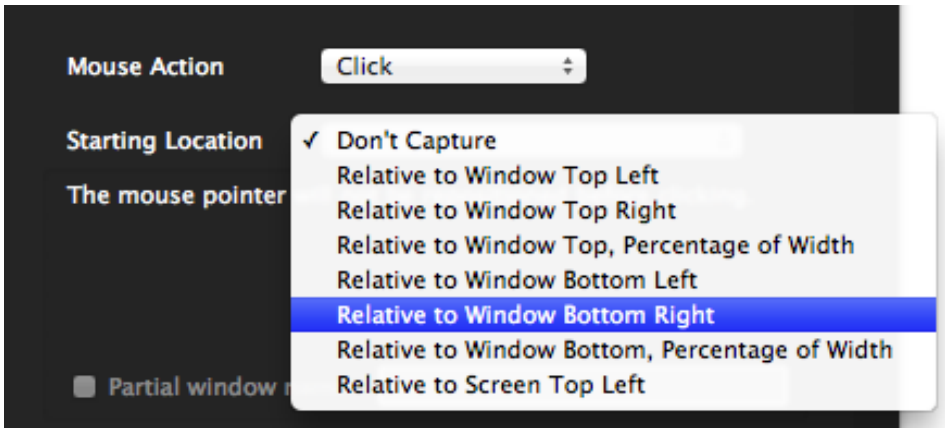
Mouse Tab

The buttons on the FM 4/100 can be made to emulate Macintosh mouse clicks.

The **Mouse Action** popup lists the available actions.



The **Starting Location** popup lets you choose where on the screen the click will take place.



If you choose **Don't Capture**, the click will always be performed 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 FM 4/100 will find that point in the event that the destination window has been re-sized or moved.

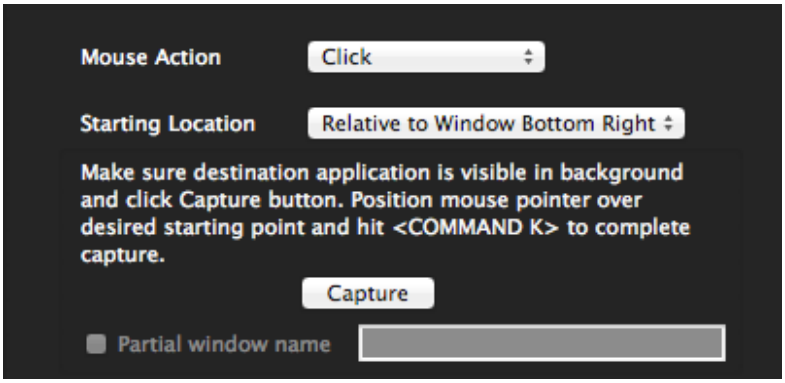
Option	When Destination Window is Re-sized or Moved
Relative to Window Top Left	The start point will stay the same distance from the top left corner of the window.
Relative to Window Top Right	The start point will stay the same distance from the top right corner of the window.
Relative to Window Top 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.

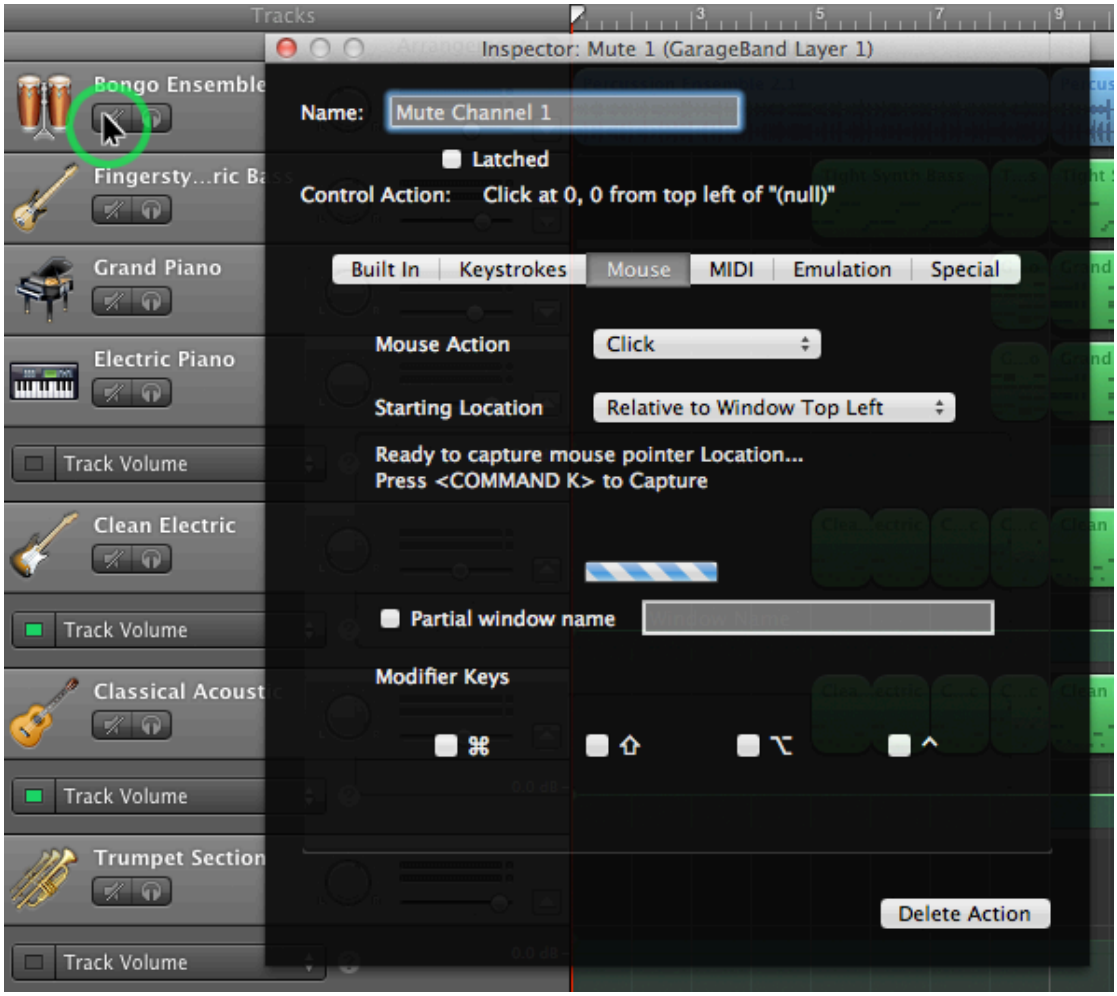
For example, let's say that a particular application has an onscreen master solo button in the lower right hand corner of it's Timeline window, and the center of that button is 100 pixels from the right of the window and 20 pixels from the bottom of the window. When the window is resized, the button 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 master solo function is by dragging this slider left or right. You could program FM 4/100 Solo button to do a mouse click at 100, 20 **Relative to Window Bottom Right**.

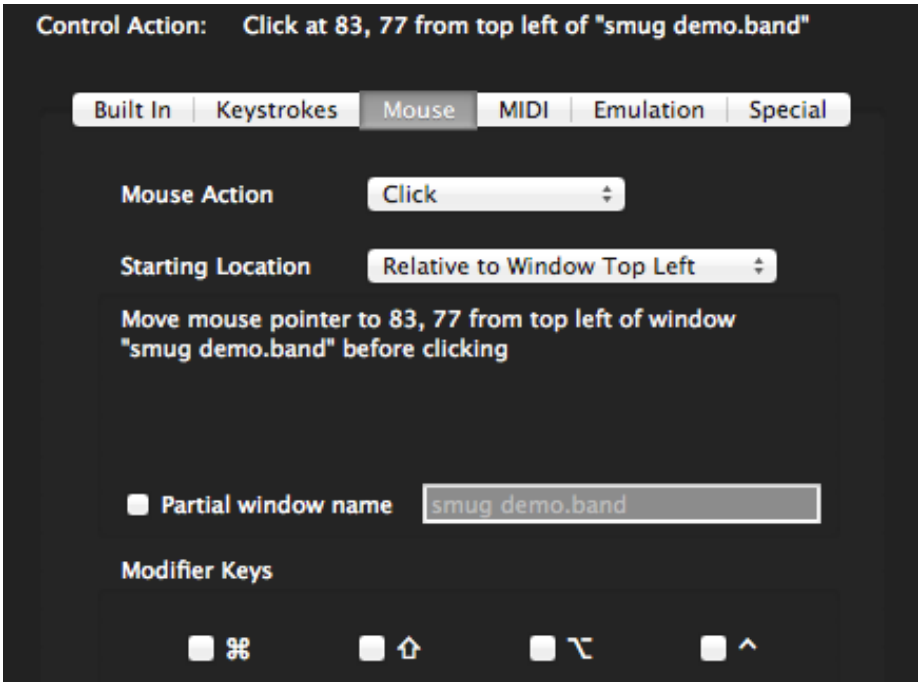
Once you have chosen from the **Starting Location** popup, you will be prompted to actually pick the click location.



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>.



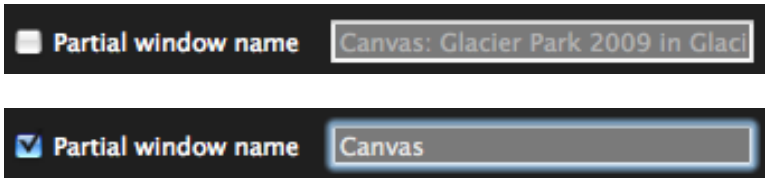
The **Inspector** window will be updated to show the window name and coordinates where the click should take place.



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.

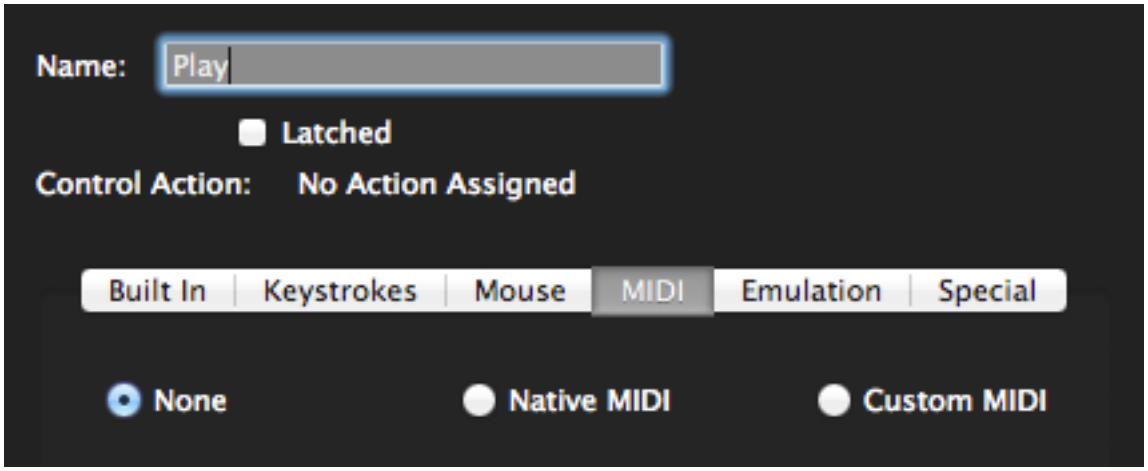
Once a window name and mouse location has been captured, you have the option of using a partial window name. This is useful in applications like Final Cut Pro, where the Canvas Window's title always starts with the word "Canvas" but the rest of the window title changes depending on what you're editing. Normally, the FM 4/100 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. If you choose to have the FM 4/100 just look for the word Canvas in Final Cut Pro it will 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 FM 4/100 to use.



MIDI Tab

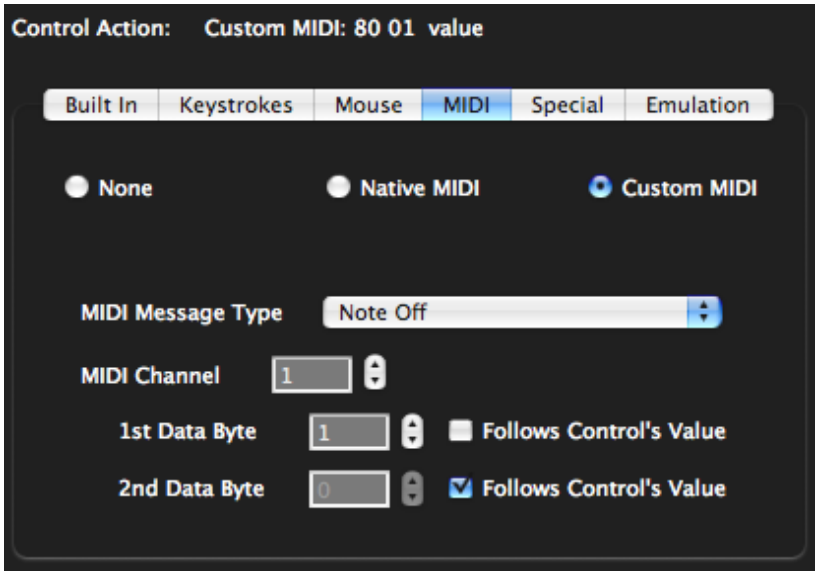
The USB version of the FM 4/100 can be made to appear as a MIDI device to MIDI applications. Any FM 4/100 control can be programmed to send and respond to a MIDI message.



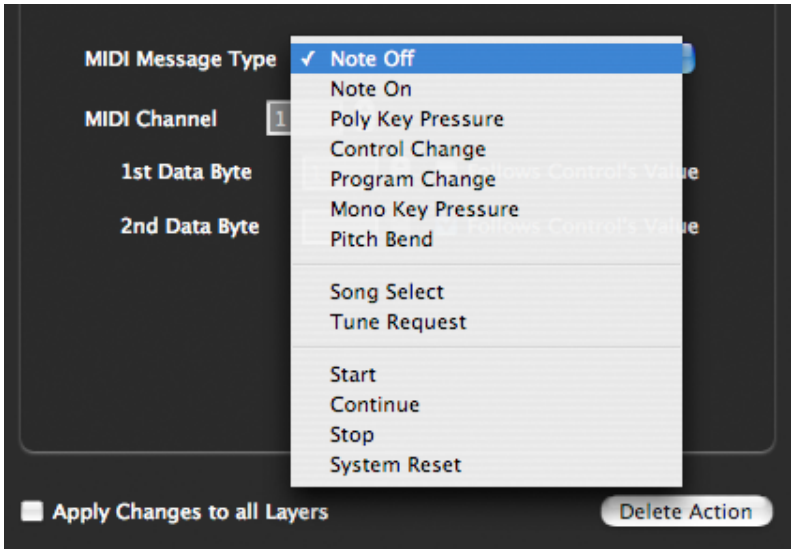
There are three radio buttons for choosing the type of MIDI message to assign.

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 same messages as the MIDI version of the FM 4/100. You would typically use this setting with an application which directly supports the FM 4/100 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 FM 4/100 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.



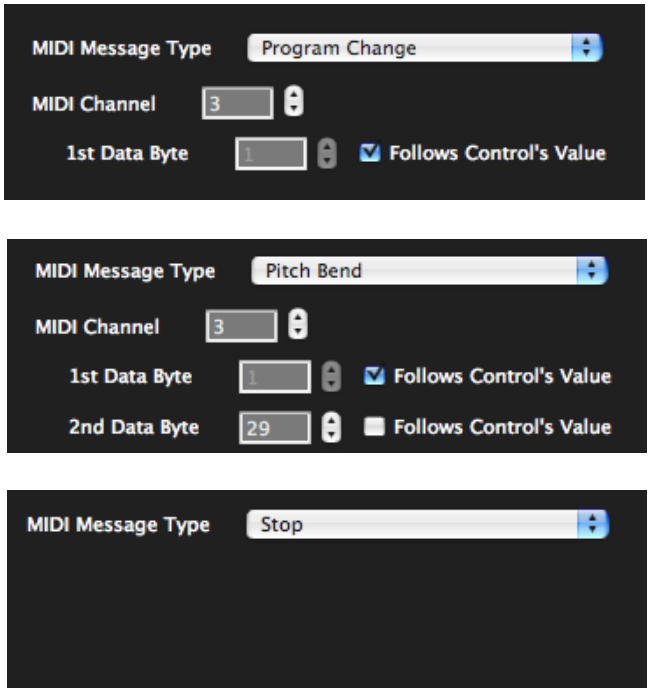
The first group of messages in the popup include a MIDI channel. If you choose one of these message types, a channel editor appears. You can either type or use the up and down arrows to set the channel. This editor accepts values from 1 through 16.

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 FM 4/100 hardware control this message is assigned to. In other words, if you assigned a Custom MIDI Message to fader and the 2nd data byte was set to **Follows Control's Value**, a number representing the movement of the fader would be inserted as the 2nd data byte of the custom message. For FM 4/100 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.

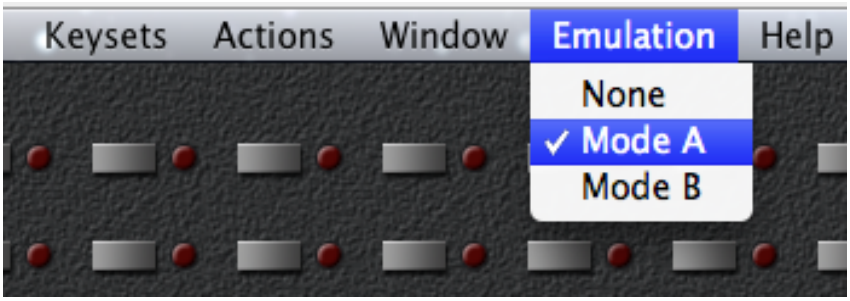


To access the FM 4/100's MIDI messages in your MIDI application, connect your application's MIDI input and output ports to the ports labeled "FM 4/100". Depending on the application, the ports may be labeled "FM 4/100 USB". The exact method for connecting to MIDI ports varies from application to application. Consult the manuals of the MIDI applications you are using to learn how to do this.

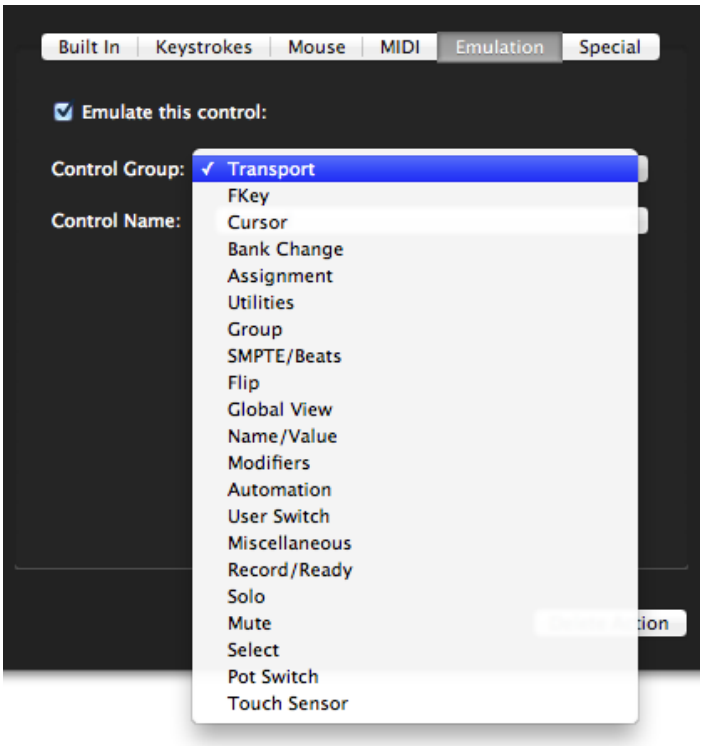
Emulation Tab

The FM 4/100 software has the ability to emulate other MIDI based control surfaces. This feature is useful if you are using the FM 4/100 with a MIDI application which doesn't directly support the FM 4/100, but which supports one of these other control surfaces.

You can set any control on the FM 4/100 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 FM 4/100. More on this later.

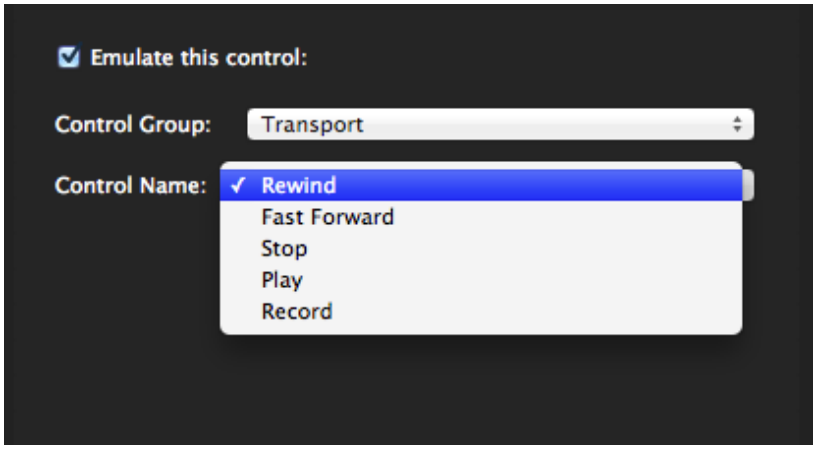


The contents of the **Emulation Tab** varies depending on the type of FM 4/100 control that is selected. This is what you will see at first if you select a button.

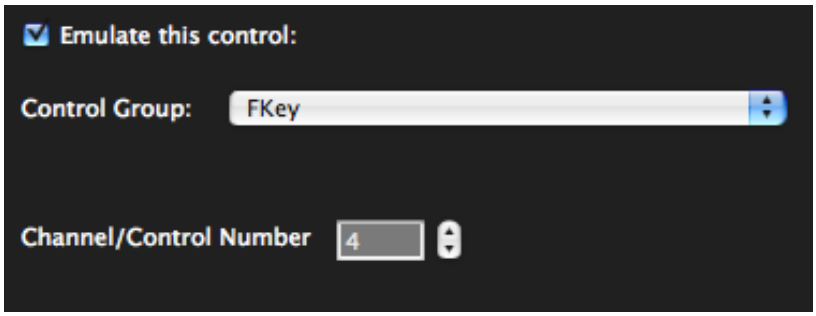


The **Control Group** popup lists the basic categories of controls that can be emulated by the selected FM 4/100 control. Checking **Emulate this control:** or choosing from the **Control Group** popup will assign an Emulation action to the selected control. It will also display either a second popup 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 convenience, choosing **Set all Controls to Emulation** in the **Actions** menu will assign **Emulation Actions** to many of the FM 4/100 controls in the current keyset. Faders 1 - 7 are assigned as faders 1 - 7. Fader 8 is assigned the fader 9 function which is the master fader. Mutes 1 - 8 are assigned the Mute function, Solos 1 - 8 the Solo function, Aux 1 - 8 the Pot Switch function, and Select 1 - 8 the Select function.

Special Tab

The **Special Tab** is a collection of actions that don't easily fit into other categories.

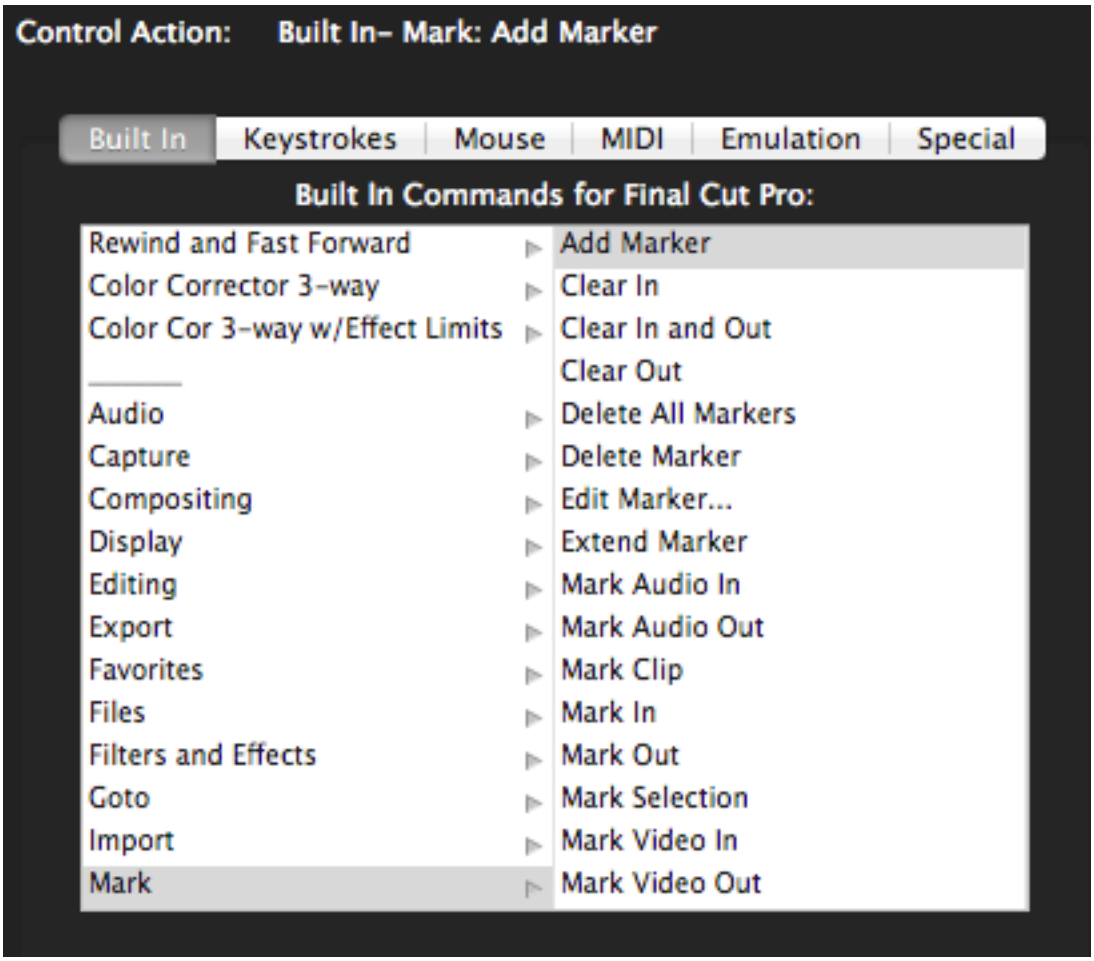
Currently, the choices are:

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.
Developer Mode	This is intended for use with applications which directly support the FM 4/100. 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 FM 4/100 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 FM 4/100 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 FM 4/100 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.

Final Cut Pro™

Final Cut Pro™ versions 5 through 7 have built in support for several MIDI control surfaces. Although the FaderMaster 4/100 is not one of the directly supported control surfaces, the FM 4/100 software's **Emulation Mode A** allows it to work with Final Cut.

To use the FaderMaster with FCP 5 or later, first run the FM 4/100 application and import the Final Cut keyset provided by JLCooper (located in `/Applications/FM 4-100 USB Software/keysets`). You can also create your own Final Cut keyset following the steps described in the section **Keysets** above. If you create your own, choose **Emulation Mode A** from the **Emulation** menu, then **Set All Controls to Emulation Mode A** from the **Actions** menu. 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 **FM 4/100 USB** for the input connection and **FM 4/100 USB** for the output connection. Click OK to exit the dialog.

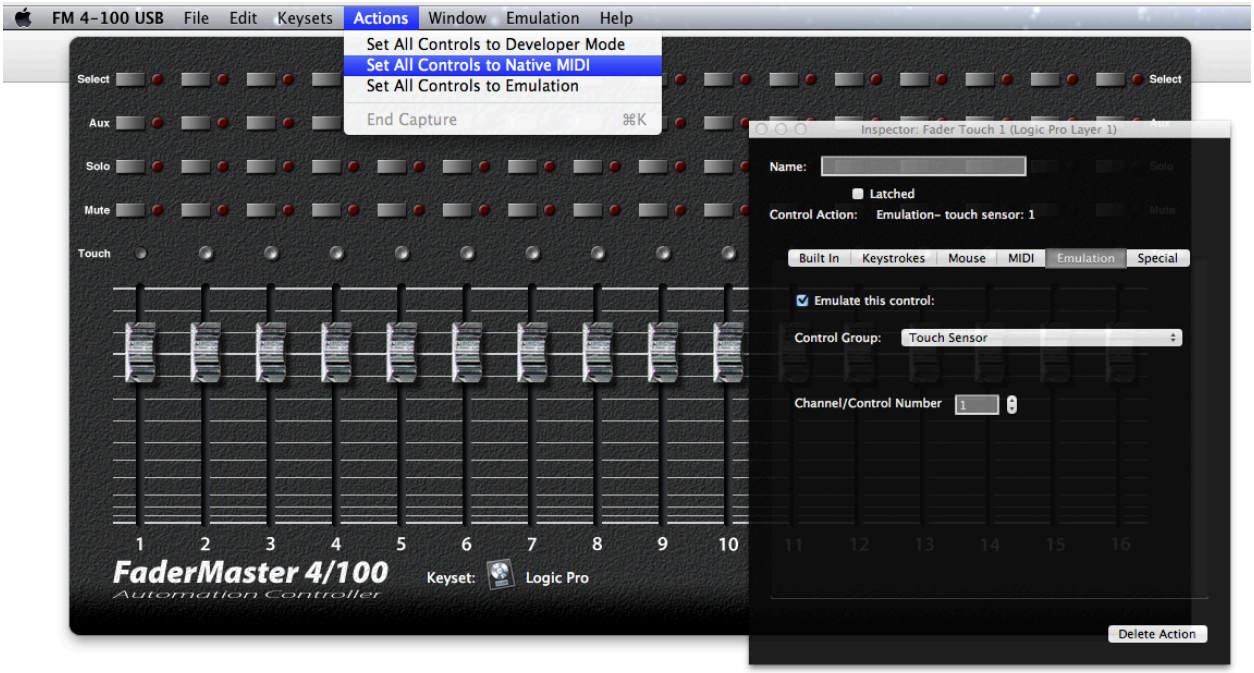
FCP 5 requires the Audio Mixer (Tools Menu) to be open in order for control surface support to be active. You might want to save a window layout that has the Audio Mixer open.

FCP's control surface support will allow you to control audio volume, mutes and solos with the FM 4/100. If any volume changes are recorded into an audio track in FCP, the motorized FaderMaster fader corresponding to that track will follow those changes during playback.

Please see the Final Cut manual for more information on using control surfaces.

Logic Pro™

Logic Pro™ version 7 has built in support for the FM 4/100. To make use of it you first need a Logic keyset. You can import the one in `/Applications/FM 4-100 USB Software/keysets` or create one of your own using the **FM 4/100 USB** application's **File > New Keyset…** command. If you create a new keyset you need to choose **Set All Controls to Native MIDI** from the **Actions** menu.



The first time you run Logic, go to **Preferences > Control Surfaces > Setup**. Choose **Install…** from the **Setup Window's New** menu. Click on **JLCooper Fadermaster 4/100** from the list of available control surfaces then click on the **Scan** button. Momentarily the FM 4/100 should appear in the **Setup Window**. You can also manually add the **JLCooper Fadermaster 4/100** to your setup by selecting it in the list, clicking on the **Add** button and choosing **FM 4/100 USB** for the Output and Input ports in the Setup Window.

From then on, you will be able to use the FM 4/100 with Logic as described in the control surface guide, which is included with Logic. In Logic's current implementation, bank selecting must be done with the mouse, by selecting a track in the bank you want to control with the FM 4/100.

Nuendo™

Nuendo™ versions 5 through 7 have built in support for several MIDI control surfaces. Although the FaderMaster 4/100 is not one of the directly supported control surfaces, the FM 4/100 software's **Emulation Mode A** allows it to work with Final Cut.

The next time you run Nuendo, open the **Device Setup** dialog from the **Devices** menu then go click on Mackie Control under **Remote Devices**. Choose **FM 4/100 USB** for the **MIDI Output** and **MIDI Input**. Hit OK to accept your settings and close the Setup Dialog.

The Nuendo keyset assignments are identical to the assignments you get when you choose **Set All Controls to Native MIDI** from the **Actions** menu.

Feedback

Please send feedback to beta@jlcooper.com