



MC Color

COLOR GRADING MEDIA CONTROLLER



USER GUIDE

Document Revision: A

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

- Reorient or locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications made to the product, unless expressly approved by Euphonix, Inc., could void the user's authority to operate the equipment.

Always use a shielded Ethernet cable to connect to your MC Color, such as the one supplied in with the unit.

DECLARATION OF CONFORMITY

We Euphonix, Inc.,
1330 West Middlefield Road
Mountain View, CA, 94043 USA
(650) 855-0400

declare under our sole responsibility that the product
MC Color

complies(y) with Part 15 of FCC Rules.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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This Class B digital apparatus complies with Canadian ICES-003

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取扱説明書に従って正しい取り扱いをして下さい。

IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



The exclamation point within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) This product must be connected to an AC power source that provides a safety earthing connection. This unit is provided with a power supply cord set appropriate for your area. Do not modify or defeat the safety earthing feature of the power cord.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) **WARNING** – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
- 16) Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
- 17) To completely disconnect this equipment from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
- 18) The mains plug of the power supply cord shall remain readily operable.
- 19) Operator Accessible Fuse (UK only):

Caution: For continued protection against risk of fire, replace only with same type and rating of fuse.

Attention: Pour ne pas compromettre la protection contre les risques d'incendie, remplacer par un fusible de même type et de même caractéristiques nominales.

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Chapter 1: Introduction

MC Color is a slim, beautifully designed, easily portable color grading media controller that integrates with Apple Color. With high-resolution trackballs, trackwheels, touch-sensitive Soft Knobs, and programmable Soft Keys, MC Color provides unprecedented control over the entire color editing process.

The Euphonix line of Artist Series of media controllers, comprised of MC Color, MC Control, MC Mix, and MC Transport, borrow features from MC Pro and System 5-MC large format media control surfaces. MC Color can be used as a standalone color grader or with other Artist Series media controllers to form a larger, more versatile integrated control surface.

MC Color has the following major features:

- Three optical trackballs to modify color parameters and vignettes
- Three optical trackwheels to control brightness, vignettes and pan/scan
- Six touch-sensitive Soft Knobs to adjust parameters
- Nine programmable Soft Keys for context-sensitive functionality
- Six high-resolution displays for parameter names and values
- Comprehensive transport and navigation controls
- Four dedicated copy/paste grade keys



Figure 1-1 Artist Series media controllers

Euphonix EuCon Ethernet Protocol and EuControl Software

The Artist Series media controllers communicate with audio/video applications running on a workstation computer over a 100 Mbps Ethernet *EuCon* connection. *EuCon* is a proprietary, high-speed communication protocol that enables control of virtually every application feature.

The *EuControl* software application finds, links, and communicates with all Artist media controllers on the network. *EuControl* must be installed on the workstation computer that runs the applications before using the Artist media controllers.

How to Use the PDF

The Acrobat PDF version of this manual can be a valuable online help learning tool while using the MC Color. These are some useful features of the PDF:

- The Bookmarks on the left serve as a continuously visible table of contents. Click on a subject heading to jump to that page. Click a **+** symbol to expand that heading to show subheadings. Click the **-** symbol to collapse a sub-heading.
- The manual's table of contents and list of figures are *active links* to their pages. Select the hand cursor, allow it to hover over the heading until it turns into a finger. Then click to locate to that subject and page.
- All cross references are active links. Allow the hand cursor to hover over the reference until it turns into a finger and click to follow the reference.
- Use the left and right arrow keys on the bottom bar to go back and forth between views. This is a great way to follow a cross reference and return to the page from which you were reading.
- Select the **Find** item from the Edit menu (Ctrl-F) to search for a subject. This can be used as an "index on the fly."
- Use the magnifying glass tool or the zoom edit box on the top bar to zoom in/out. This is helpful when examining a complex graphic or setting the text size for easy reading online.

Acrobat Reader version 6 or later is required to open the PDF. This can be downloaded for free from:

<http://www.adobe.com/products/acrobat/readstep2.html>

Chapter 2: Installation and Setup

Euphonix is dedicated to making your MC Color experience enjoyable and trouble-free so we will periodically update the following software and documentation:

- **EuControl:** This software runs your MC Color and communicates to your audio/video application. Always download the new version if prompted to do so after launching EuControl.
- **MC Color User Guide (PDF):** This is the complete user guide for your MC Color.

Before proceeding, download the latest versions from: www.euphonix.com/artist/support

Unpacking and Elevating MC Color

Unpack your MC Color, power supply, installation CD, Ethernet crossover cable, and riser brackets.

MC Color can be elevated *or* angled using small foldout legs on the bottom of the unit or elevated *and* angled by attaching the larger riser brackets. Since both methods require turning MC Color over, it is easier to do this before attaching any cables. Turn it over and place it on a soft surface.

Pull out all four of the small foldout legs to moderately elevate the unit; pull out only the back two to angle the unit towards you. Pull out the metal clips from the same area as the legs and move them until they snap into the legs (Figure 2-1 left).

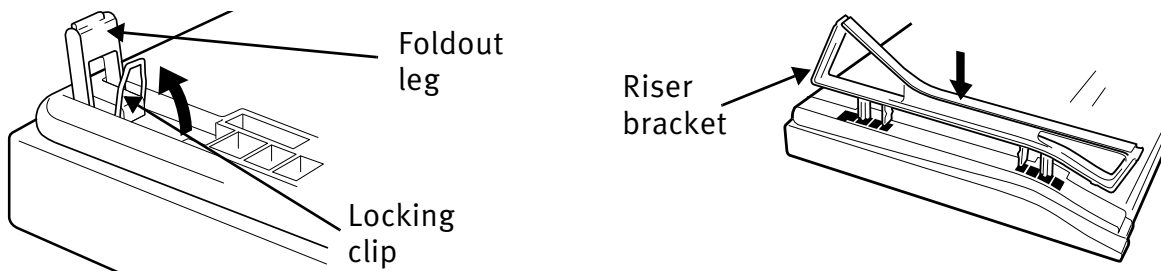


Figure 2-1 Foldout leg with locking metal clip (left); riser bracket (right)

Two larger, detached riser brackets elevate and angle the unit more than the fold-out legs. Use moderate force to snap them into the bottom panel (Figure 2-1 right).

Unpack the trackballs and place them in their trackball holders.

NOTE: To remove the riser brackets, see MC Color User Guide.


Installation

1. If you downloaded the latest software from the web, double-click the installer. Otherwise, insert the installation CD into your Macintosh.

NOTE: *Be sure to eject the installation CD in your Mac if you downloaded the latest software from the web.*

2. Follow the instructions to install the software.

If prompted to download the most current version of EuControl, follow the on-screen instructions.

EuControl will launch automatically and is running when this icon  appears in your menu bar.

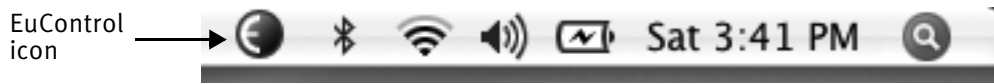



Figure 2-2 Menu bar with EuControl icon

3. Shut down your Macintosh.
4. Plug one end of the AC power cord into the power adapter (Figure 2-3 left) and the other into a power outlet.



Figure 2-3 Connecting the power adapter

5. Connect the DC output cable from the power adapter to **DC In** on the left side of the rear panel (Figure 2-3 right).
6. Plug one end of the Ethernet crossover cable into the Ethernet jack (labeled with ) on the rear panel of MC Color (Figure 2-4).

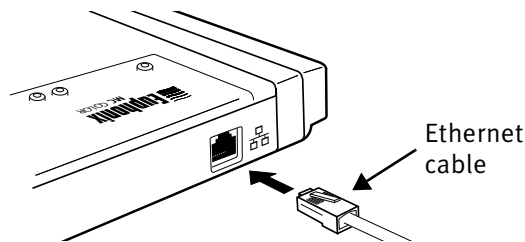


Figure 2-4 Ethernet cable and rear panel jack

7. Plug the other end of the Ethernet crossover cable into an open Ethernet jack on your computer, router, or Ethernet switch (Figure 2-5).

An Ethernet router or switch is required to connect additional Artist Series media controllers or to a local area network. Note that connecting directly to the computer (Figure 2-5-right) may require removing your Internet cable.

If you have a Mac with two Ethernet ports, use Ethernet 1, not Ethernet 2.

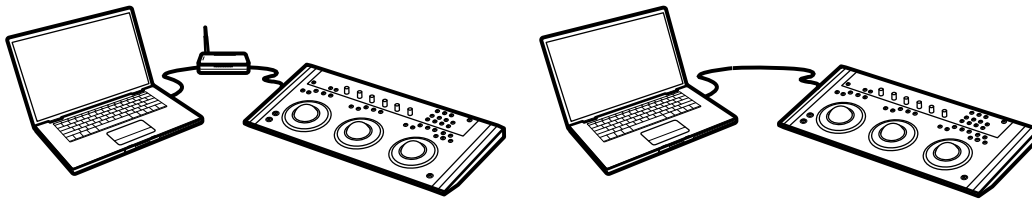



Figure 2-5 MC Color connected to router (left) and directly to computer (right)

8. Turn on your router (if applicable), then turn on your Mac and wait until it finishes starting up.
9. Press and release the **POWER** switch on your MC Color.

Look at the top-right of your screen and wait up to 60 seconds. A green icon  in the menu bar indicates correct installation.

If you did not see the green icon, see *Troubleshooting* on page 18 before proceeding.

10. Launch Apple Color.
11. Select **Setup Room**.
12. Select **User Prefs**.
13. Select **Show Control Surface Dialog**.
14. Select **Euphonix EuCon Control Surfaces** from the drop down menu.
15. Click **Yes** to exit the dialog.


Troubleshooting

If you did not see the green icon in step 9 above, try one of the following:

1. Shut down MC Color and the Mac and repeat steps 8 and 9 from the previous section.
2. If you did not see MC Color in the My Surfaces list in EuControl, select it in the All Surfaces list and click **Add**. See the first two steps in Updating Firmware below to display the Surfaces tab in EuControl.
3. See www.euphonix.com/artist/support for the most current troubleshooting information.

Updating Firmware

If you downloaded the latest software from the web, you may need to update the firmware on your Artist Series media controllers.

1. Click the green icon  in the menu bar and select **EuControl Settings**.
2. Select the **Surfaces** tab in EuControl (see Figure 2-6).
3. Select each Artist Series media controller in the My Surfaces list (shift-click to select multiple devices).
4. Press **Update Firmware** to update their firmware. If a dialog displays a message that the firmware is up to date, no further action is necessary.

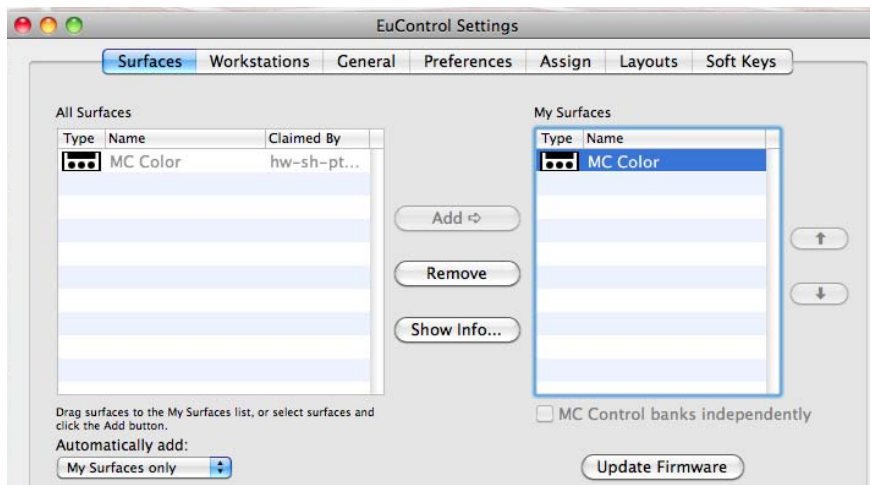


Figure 2-6 Surfaces tab

5. Follow the instructions in the Update Firmware dialog box.

Chapter 3: MC Color Surface Controls

MC Color is a custom control surface with many programmable controls to suit your preferences, others that are deftly switched when different rooms are selected, and some dedicated to a single purpose.

This chapter explains the dedicated surface controls (Figure 3-1) and identifies the others with cross references to the sections that discuss how to use them in a typical color editing workflow.

Operational Basics

The most important controls on MC Color are the three Trackballs and Trackwheels. There are also nine assignable Soft Keys, six Soft Knobs, Copy/Paste Grade keys, and Transport Controls.

The Soft Key assignments are stored in an *Application Set* for each application. Apple Color comes with its own Application set, but this can also be used as a starting point to modify and store your own. You can restore the default Application Set at any time or create a new one.

The *topmost* application (also called *foreground* and *in-focus*):

- receives mouse commands and keystrokes;
- is controlled by MC Color;
- determines MC Color's surface assignments.

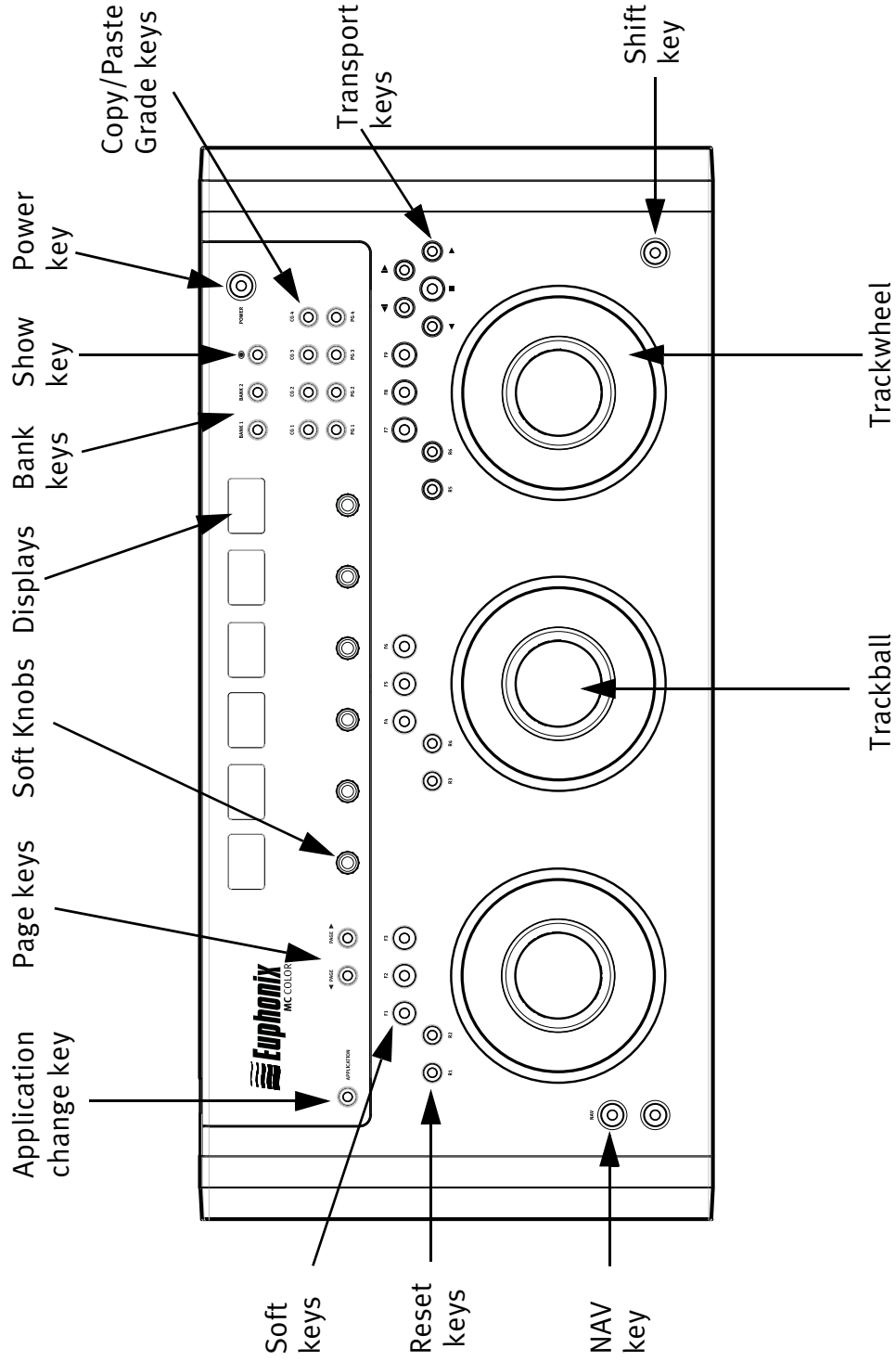


Figure 3-1 MC Color controls

3.1 POWER Key

Press and release the **POWER** key to turn the device on and off (Figure 3-2).

3.2 Show Key

Since MC Color key and knob assignments change often during the color editing process, it is very helpful to display the current key assignments. The **Show** key is included for this purpose:

1. Press and hold the **Show** key.

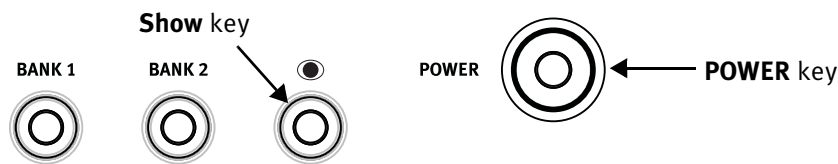


Figure 3-2 Show and POWER keys

2. Press another key.

That key's function name is shown above the image of that key in EuControl.

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3.2.1 Locking the Show Key

The **Show** key can be locked to browse multiple key functions without continuing to hold the **Show** key down.

1. Press and release the **Show** key quickly and then press another key to display its assignments.

Continue browsing in this manner until finished.

2. Press and release the **Show** key quickly again when finished to restore normal operation.

3.3 Shift Key

The **Shift** key accesses a second function for each key, if one has been assigned. Press and hold the **Shift** key and press another key to access the second function.

The **Shift** key can be used in conjunction with the **Show** key to display the second function. Since this may require holding down three keys, it is useful to lock the **Show** key (see *Locking the Show Key* on page 21) or the **Shift** key (see below).

3.3.1 Locking the Shift Key

The **Shift** key can be locked to access multiple alternate key functions without holding the **Shift** key down.

1. Press and release the **Shift** key quickly and then press another key to access its alternate function.
The **Shift** keys light when locked. Continue in this manner until finished.
2. Press and release the **Shift** key quickly again to restore normal operation.

If you have another Euphonix Artist media controller connected to the same instance of EuControl as your MC Color, you can also lock the **Shift** key by pressing two **Shift** keys down simultaneously. They can be on different devices. Unlock the **Shift** key by pressing and releasing one quickly on any device. See *My Surfaces* on page 32 for more information.

3.4 Soft Keys

The Soft Keys are initially factory programmed for each application. The nine Soft Keys can also access nine additional functions by holding down the **Shift** key before pressing a Soft Key.

The Soft Keys can be reassigned within each application. See Chapter 6: *Soft Keys* to learn how to program them.

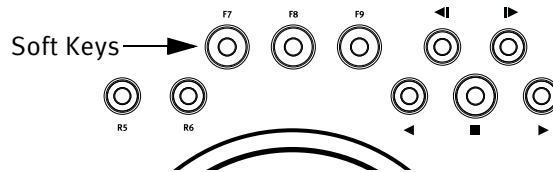


Figure 3-3 Soft Keys

3.5 Soft Knobs

The six Soft Knobs can be pressed like a switch or turned to adjust parameters. Pressing a Soft Knob can navigate to a room, clear color parameters, and select specific secondary operations.

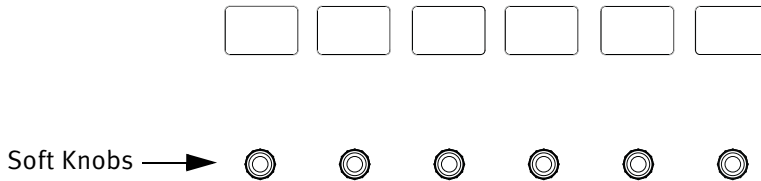


Figure 3-4 Soft Knobs

3.6 Reset Keys

Each Trackball/Trackwheel has two reset keys to restore their default settings. The left key of each group resets the trackball, the right resets the trackwheel.

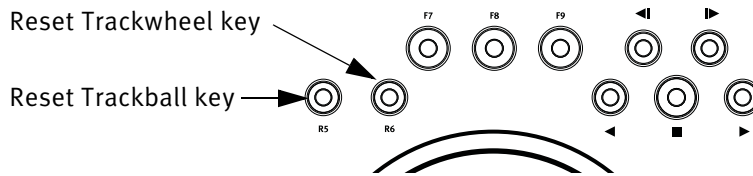


Figure 3-5 Reset Trackball/Trackwheel keys

3.7 Transport Keys

The Transport Keys are factory programmed for Apple Color. Each Transport Key lights when active. The Transport Keys are Forward Play, Reverse Play, Stop, and Go To Next/Previous clip.

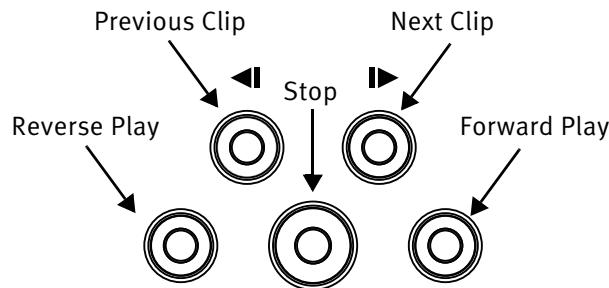


Figure 3-6 Transport Keys

3.8 Trackballs and Trackwheels

Three Trackballs control Hue and Saturation for Shadow, Midtone, and Highlight.

Three Trackwheels control the Brightness sliders for Shadow, Midtone, and Highlight. The right Trackwheel can be reassigned to jog through the timeline (see Chapter 6: *Soft Keys*).

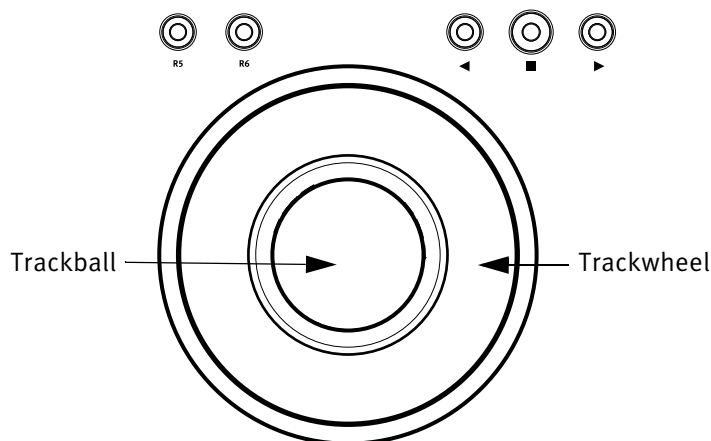


Figure 3-7 Trackball and Trackwheel

3.8.1 Trackball and Trackwheel Sensitivity

Trackball and Trackwheel *sensitivity* can be easily adjusted so you are comfortable with how these entities respond for each task.

1. Press both **PAGE** keys simultaneously.

The bottom half of the first and second displays show the Trackball and Trackwheel sensitivity values, respectively, while the label is in the top half.

Increasing the sensitivity changes the assigned parameter faster while decreasing it has the opposite effect.

2. Move the Trackball *up* to increase the sensitivity or *down* to decrease it.
3. Move the Trackwheel clockwise to increase sensitivity and counterclockwise to decrease it.

Trackball and Trackwheel sensitivity can also be adjusted by turning the knobs beneath the displays.

4. Press both **PAGE** keys simultaneously to exit.

3.9 APPLICATION Key

Press the **APPLICATION** key to toggle between the two most recently used open applications. To cycle through all open applications in a circle, hold down the **APPLICATION** key and press the **PAGE** keys.



Figure 3-8 APPLICATION and PAGE keys

MC Color can control Apple Color running on a second computer, referred to in this guide as a *workstation*. Press the **Shift + APPLICATION** keys to attach MC Color to another workstation. You must first use EuControl to create a list of workstations that this key switches between (see *Workstations* on page 35).

While attached to a second workstation, your Mac's keyboard and mouse can be configured to control that workstation and not your Mac (see page 36).

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3.10 PAGE Keys

Press **PAGE >** and **PAGE <** to navigate to parameters that are not displayed on the six displays (Figure 3-8).

Press both **PAGE** keys simultaneously to set the Trackball and Trackwheel sensitivity (see page 24).

3.11 BANK Keys

The Bank keys perform different functions depending on the context.

When in a Primary room, press **BANK 1** to select the Basic settings tab. Press **BANK 2** to select Advanced.

When in a Secondary room, press **BANK 1** to select the Basic settings tab. Press **BANK 2** to select Vignette controls, and **Shift+BANK 1** to select the Advanced settings tab.

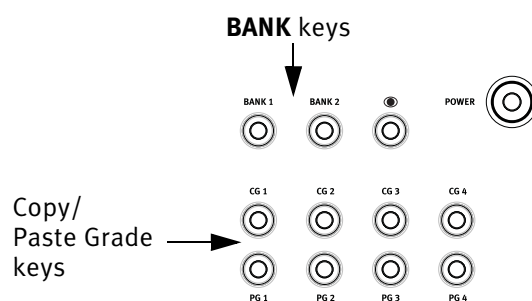


Figure 3-9 Copy/Paste Grade and **BANK** keys

3.12 Copy/Paste Grade Keys

The *Grade* comprises all color correction operations for a clip from all the rooms. The **CG1/PG1–CG4/PG4** (Figure 3-9) keys copy the Grade to four dedicated memory banks in Apple Color. The copy keys are on top, the paste keys are on the bottom. With a clip selected in the timeline, press a copy key. Select one or more clips in the timeline and press the corresponding paste key.

3.13 NAV Key

In all rooms, press the **NAV** key to show the room names in the display. Press the **PAGE >** key to display the Still Store and Render Queue rooms. Navigate to the desired room by pressing the corresponding Soft Knob.

In a secondary room, press **Shift+NAV** to show six operational tabs on the displays. Select the desired tab by pressing the corresponding Soft Knob.

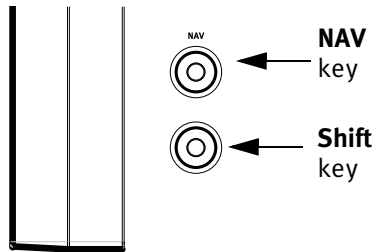


Figure 3-10 NAV and Shift keys

Chapter 4: Common Tasks

You are now ready to start learning how to perform some useful common tasks on your MC Color. A labeled drawing of MC Color's surface controls appears on page 20 but most of the controls discussed in this chapter are also depicted.

Note that the Soft Knobs can be turned like a conventional knob to alter its assigned parameter, and pressed like a switch to select a new parameter.

Using the NAV Key

1. Press the **NAV** key.

The displays show the room names defined in Apple Color that you can navigate to from MC Color by pushing the corresponding Soft Knob top below the display. Press the **PAGE >** key to display the Still Store and Render Queue rooms.

2. Push the knobtop below **Primary In**.

In Apple Color, the Primary and Secondary rooms have color wheels controlled by the Trackballs, and contrast sliders controlled by the Trackwheels for three sections: Shadow, Midtone, and Highlight.

NOTE: *When navigating to the Setup, Color Effects, Still Store, and Render Queue rooms, the displays continue to show the room names.*

Using the Trackballs and Trackwheels

In each of the following, the corresponding Trackwheel controls the contrast slider for that attribute.

3. Move the left Trackball to control the Shadow hue and saturation.
4. Move the middle Trackball to control Midtone hue and saturation.
5. Move the right Trackball to control Highlight hue and saturation.

Using the Show Key

6. Press the **Show** key.

The Soft Key assignments display on your computer screen.

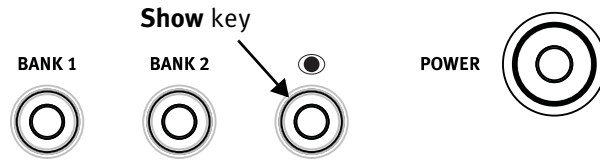


Figure 4-1 Show key

7. Press the **NAV** key and navigate to **Secondary In**.

Notice the Soft Key assignments change as you navigate between **Primary In** and **Secondary In**.

8. Locate the **Toggle Trackwheel Jog** Soft Key and press the **Show** key again.

Using the Trackwheel to Jog

9. Press the **Toggle Trackwheel Jog** Soft Key.
10. Turn the right Trackwheel, which now jogs.

The playhead moves through the timeline in Apple Color.

11. Press the **Toggle Trackwheel Jog** Soft Key to restore the previous function.

Transport Keys

Use the Transport keys to move through the project timeline.

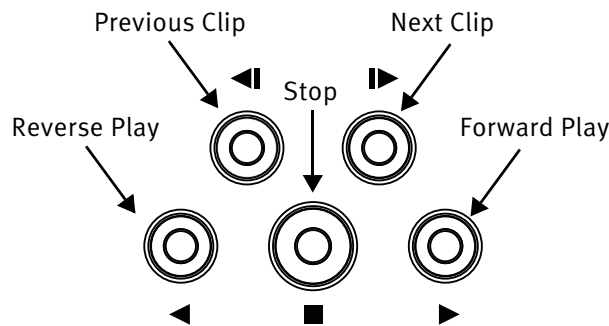



Figure 4-2 Transport Key assignments

Chapter 5: EuControl

EuControl is launched automatically upon starting your Mac and runs in the background. EuControl is responsible for finding, linking, and communicating with all Artist media controllers on the network. EuControl's configuration tasks are accessed by clicking the green icon  on the Mac taskbar and selecting **EuControl Settings**.

Only one instance of EuControl can run on a workstation. However, multiple workstations on a single network can each run EuControl. Each instance of EuControl can connect an MC Color, MC Transport, MC Control, and up to four MC Mixes on the network. These multiple devices act together as a single control surface. Once connected, these Artist Series media controllers are not available to other instances of EuControl until relinquished.



Figure 5-1 Selecting EuControl Settings from the taskbar

The tabs are discussed in the order (left to right) they appear at the top of the EuControl Settings dialog.

NOTE: *Some EuControl features pertain only to MC Transport, MC Mix, or MC Control, not MC Color. These are listed at the beginning of each tab's section.*

5.1 Surfaces

The Surfaces tab shows all Artist media controllers on your network and those connected to your instance of EuControl.

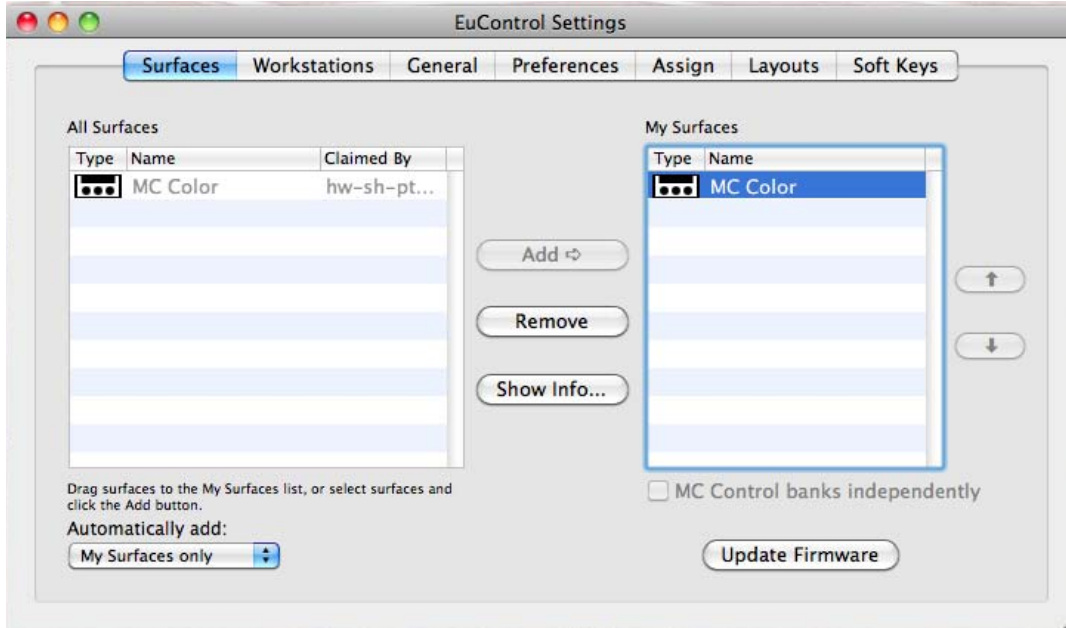


Figure 5-2 Surfaces tab

The following feature does not pertain to MC Color:



- **Control unit banks independently.**

All Surfaces

All Surfaces shows all Artist media controllers on the network. A device shown in light gray is already connected either to your own or another instance of EuControl running on a different workstation. In both cases, it is not selectable.

My Surfaces

My Surfaces shows the Artist media controllers connected to your instance of EuControl. There can be one MC Color, one MC Control, one MC Transport, and up to four MC Mixes in the My Surfaces list, linked into a single large surface.

The top-to-bottom order corresponds to the left-to-right order of the surfaces, respectively. The leftmost surface has fader strip 1. Use the  and  buttons to reorder the list.

Each Artist media controller can be renamed by double-clicking the existing name and typing a new name.

Add ⇨

Click **Add** ⇨ to add the selected **All Surfaces** entry to **My Surfaces**. This connects this Artist media controller to your instance of EuControl. You can also click and drag an Artist media controller from All Surfaces to My Surfaces.

Add ⇨ is disabled if all Artist media controllers in All Surfaces are connected to any instance of EuControl.

Remove

Click **Remove** to remove the selected surface from My Surfaces and make it available to other instances of EuControl.

Remove is disabled if no surface is selected.

Automatically Add

The **Automatically Add** menu has two settings that control what happens to stored Surfaces between shutdown and startup.

All Surfaces (default): This setting is best used when you are the only person running EuControl in your home or studio. It provides an easy plug-and-play experience by automatically adding your All Surfaces list to your My Surfaces list so you never have to manually edit the My Surfaces list.

My Surfaces Only: This setting is useful in facilities where other EuControl users are on your network. When EuControl starts, only the surfaces from your My Surfaces list are added. Because a surface can only be claimed by one user at a time, this avoids claiming another user's surfaces.

Update Firmware

Each time a new version of EuControl is installed, each MC Color, MC Transport, MC Control, and MC Mix in your system may need its firmware updated. The firmware is embedded in EuControl so an Internet connection is not required.

Select each Artist media controller in the My Surfaces list (shift-click to select multiple devices). Press **Update Firmware** to update their firmware. If a dialog displays a message that the firmware is up to date, no further action is necessary.

Follow the instructions in the EuControl dialog box.

- The Artist media controllers must be plugged into a working power source.
- Do not power off any Artist media controllers during the update or attempt to interrupt the update.
- The status for each Artist media controller being updated is displayed on that device as well as in the EuControl dialog box.

Show Info

Select an Artist media controller and click **Show Info** to display the name and hardware/software information on MC Color's display and in a dialog on the Mac.

5.2 Workstations

An Artist media controller can control applications running on a second computer, referred to in this guide as a *workstation*. The Workstations tab establishes the list of workstations that the **Shift+APPLICATION** key cycles through. Any workstation running EuCon software can be in this list, including those controlled by the System 5-MC, MC Pro, MC Mix, MC Transport, and MC Control.

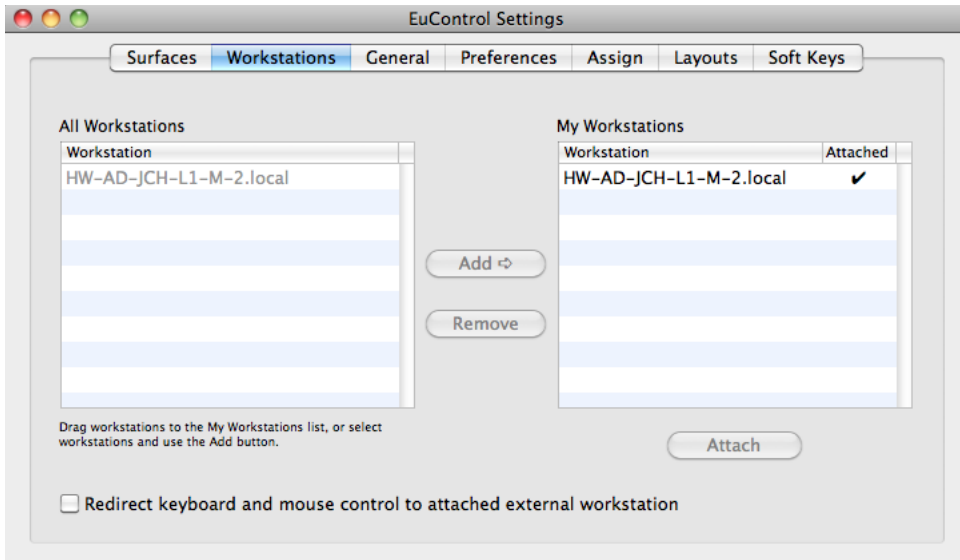


Figure 5-3 Workstations tab

All Workstations

All Workstations lists all EuCon-enabled workstations on the network. If the workstation is already in the My Workstations list, it is shown in gray and cannot be selected.

My Workstations

My Workstations lists the workstations that can be attached to by pressing the **WORKSTATION** key.

It is possible to put a workstation in the My Workstations list that is already attached to another instance of EuControl running on another computer. It cannot be attached here until it is unattached from the other instance of EuControl. This was done to allow multiple users to share workstations without having to frequently edit their My Workstation list.

Add ⇨

Click **Add** ⇨ to add the selected workstation from the All Workstations list to the My Workstations list. If the workstation is already in the My Workstations list, it is gray and cannot be selected.

Remove

Click **Remove** to remove the selected workstation from the My Workstations list.

Attach/Detach

Select a workstation in the My Workstations list and click **Attach**. A check mark appears in the Attach column next to that workstation. This workstation is now communicating with the Artist media controller(s) connected to your instance of EuControl.

If the selected workstation is already attached, the button displays **Detach**.

Redirect keyboard and mouse control to attached external workstation

Your Mac's keyboard and mouse can control a second external workstation, if desired. Select this option to redirect keyboard and mouse control to the attached workstation. Note that the keyboard and mouse will no longer control your Mac. If this option is *not selected* (default setting), your keyboard and mouse control your Mac.

You can manually toggle control back and forth between your Mac and the attached external workstation by pressing **ctrl+option+**.

5.3 General

This tab controls how the Artist media controller and application software work together.

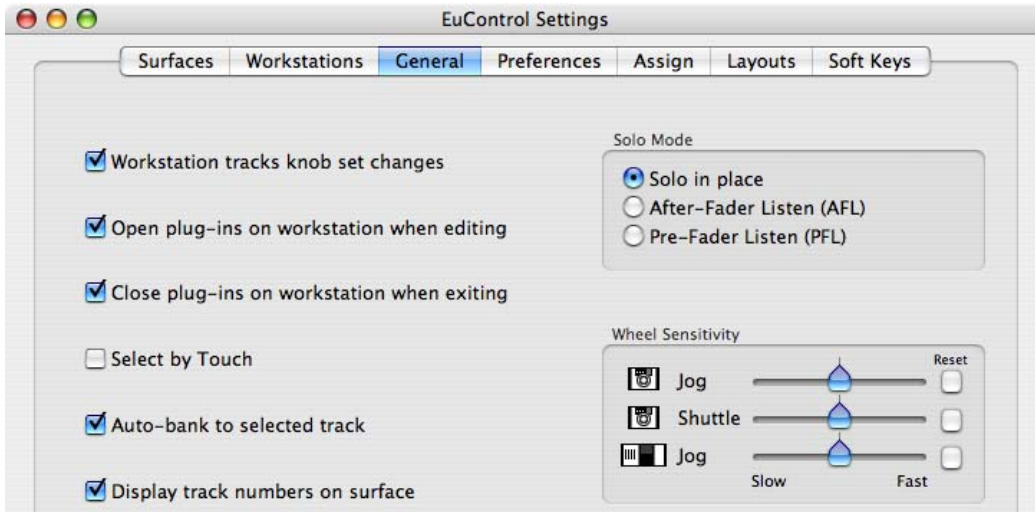


Figure 5-4 General tab

This tab does not pertain to MC Color.

5.4 Preferences

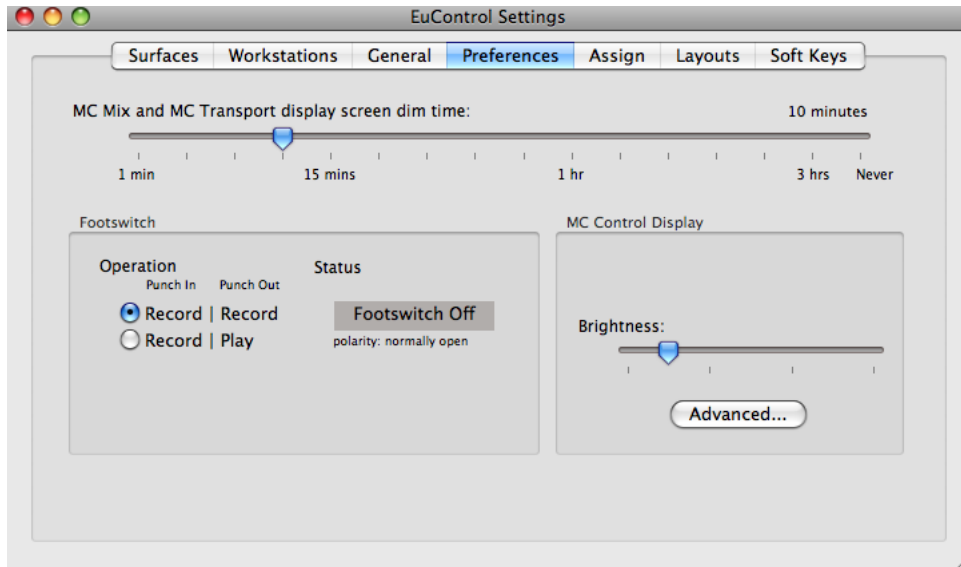


Figure 5-5 Preferences tab

38 The following features do not pertain to MC Color:

- **Footswitch**
- **MC Control Display**

MC Mix, MC Transport, and MC Color display screen dim time

Drag the slider to set the amount of inactive time before the display screens of any of these devices in your system dims to half intensity.

5.5 Assign

This tab manages how tracks are assigned to strips on the MC Control or MC Mix. By default, tracks are automatically assigned in banks of four.

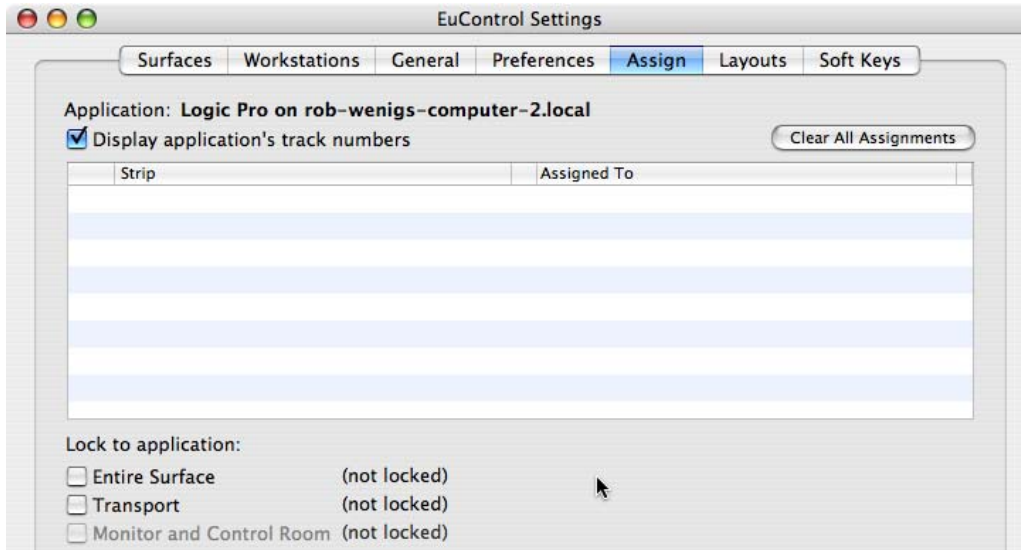


Figure 5-6 Assign tab

The following features do not pertain to MC Color:

- **Display application's track numbers**
- **Clear All Assignments**
- **Monitor and Control Room**

5.5.1 Lock to application

This feature allows the transport controls and/or the entire surface to stay locked to the application listed at the top-left of the dialog (Logic Pro in Figure 5-6) even when that application is not top-most.

Entire Surface: Select this checkbox to lock the entire surface, including those of all linked Artist media controllers, to the listed application.

Transport: Select this checkbox to lock the transport controls (MC Mix and MC Control) to the listed application.

5.6 Layouts

This tab does not pertain to MC Color.

5.7 Soft Keys

This tab controls assignments and programming for MC Color's nine Soft Keys. Since this is a very detailed subject and showcases MC Color's most innovative functions, the Soft Keys tab has its own chapter (Chapter 6: *Soft Keys*).

Chapter 6: Soft Keys

This tab controls function assignments to MC Color’s nine Soft Keys.

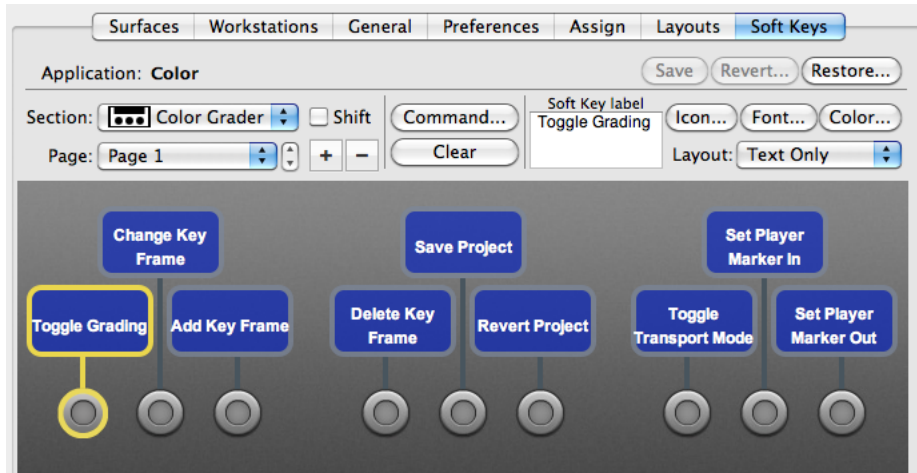


Figure 6-1 Soft Keys tab

NOTE: To edit an application’s assignments in EuControl, that application must be topmost immediately before switching to EuControl.

The application listed in the upper left of the window (Apple Color in Figure 6-1) is called *in focus* because it

- is controlled by your MC Color;
- receives computer keystrokes and mouse events.

Since MC Color responds dynamically as the in-focus application changes, you may be initially surprised to see the Soft Keys assignments change in EuControl. Simply switch the focus back to Apple Color and then switch back to EuControl to restore them. Although Apple Color’s unsaved Soft Key edits are preserved between focus changes until you quit the application, we still recommend saving frequently.

Apple Color’s Soft Key assignments are stored in an Application Set. Be sure to check that the Apple Color is in focus before using **Save**, **Restore**, or **Revert**.

6.1 Save

Clicking **Save** permanently stores the Application Set. However, changes to the Soft Key assignments are retained even without clicking **Save** until you quit EuControl, at which point you will be prompted to save.

6.2 Revert

Click **Revert** to revert to the Application Set last saved. This discards any changes made since the last **Save** command or EuControl was last started.

6.3 Restore

Click **Restore** to restore the Application Set to its factory default settings.

6.4 Section

Click the **Section** popup menu to select MC Color's Soft Keys section. These are the only entities saved for MC Color. Make sure you select the **Soft Keys** with MC Color icon to its left.

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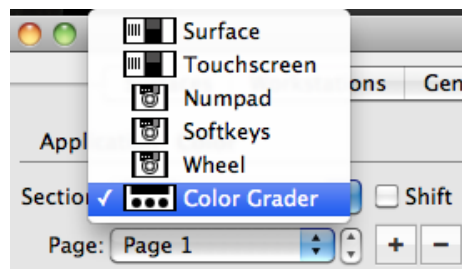


Figure 6-2 Section popup menu

6.5 Shift

Functions can be assigned to a shifted key. Click on the **Shift** checkbox to show the **Shift** key assignments.

6.6 Soft Key Label

Select a Soft Key (its outline highlights yellow) and type a label in this text field.

6.7 Layout

Select **Text Only**, **Icon Only**, or **Text and Icon** from the **Layout** popup menu.

6.8 Icon

Click the **Icon** button and select an icon from the standard Mac dialog.

6.9 Font

Click the **Font** button and select a font from the standard Mac dialog.

6.10 Color

Click the **Color** button and select a color from the standard Mac dialog for the selected key. That color is used to color the key in EuControl, not on the surface.

6.11 Clear

Press the **Clear** button to delete the function assigned to the selected key. Once cleared, pressing the selected key does nothing.

6.12 Command

Select a Soft Key (its outline highlights yellow) and click **Command** to view or edit the command(s) assigned to that Soft Key. Double-clicking the key is a shortcut to open the command editor.

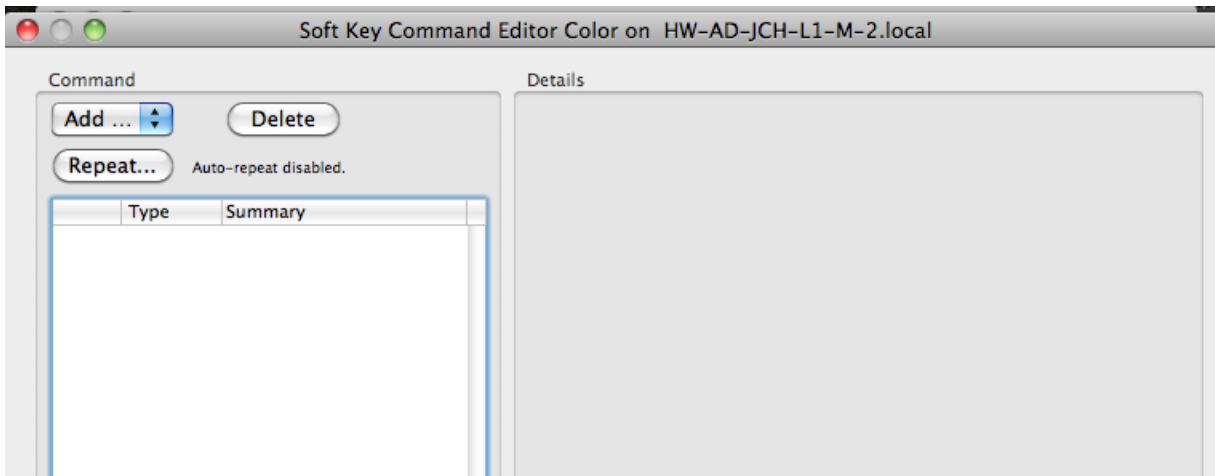


Figure 6-3 Command Editor

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Each Command type and how to create a new command are discussed in *Command Types* on page 46.

6.12.1 Add

Click **Add** to select a command type. Multiple commands can be added to the same key, creating a *macro*.

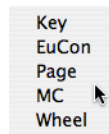


Figure 6-4 Selecting a command type from the **Add** menu

See page 46 to learn about each command type.

6.12.2 Delete

Click **Delete** to delete the selected command.

6.12.3 Repeat

Click **Repeat** to allow the command to be repeated if the Soft Key is held down.

Numeric fields in the Repeat dialog accept integer values only.

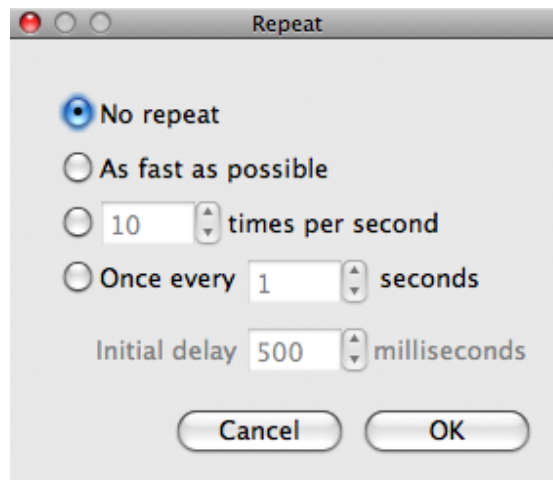


Figure 6-5 Repeat dialog

The Repeat controls are:

No Repeat: The key does not repeat (default setting).

As fast as possible: Repeats as fast as the Mac allows.

[x] times per second: Repeats the key x times per second.

Once every [x] seconds: Repeats the key every x seconds.

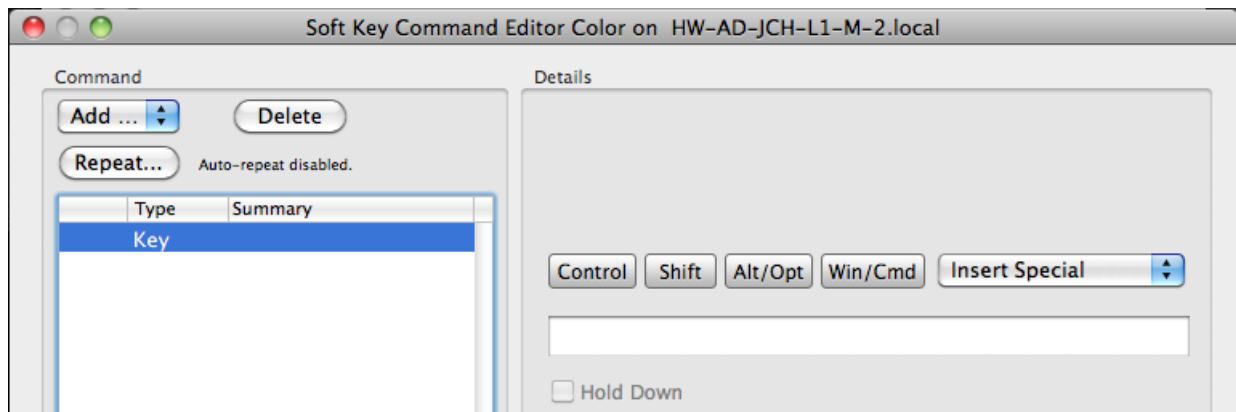
Initial delay [x] milliseconds: Specifies a delay of x ms before starting to repeat the key. This field is active only when **No Repeat** is NOT selected.

6.13 Command Types

MC Color uses two of the five command types: Key and EuCon.

6.13.1 Key

Key commands can execute menu commands and other application-specific commands that have key equivalents. Figure 6-6 shows the Key Command dialog.



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Figure 6-6 Key Command dialog

Type keystrokes into the text field in the Details pane. Use the **Control**, **Shift**, **Alt/Opt**, and **Win/Cmd** modifiers along with the **Insert Special** menu to finish creating the key command.

For example, to create a command to move to the previous key frame of the current shot in the current room:

1. Select the Soft Keys tab in EuControl.
2. Select the Soft Key to program
Check the **Shift** box to place this command on the Shift layer.
3. Click **Command** or double-click the Soft Key.
4. Select **Key** from the **Add** menu.
5. Choose **Alt/Opt** and select **Left Arrow** from the **Insert Special** menu.
6. Close the command editor.
7. Name the Soft Key *Previous Key Frame*.
8. Click **Save**.

Pressing that Soft Key now navigates to the previous key frame.

6.13.2 EuCon

The EuCon command types under the Details column are specific to Apple Color.

The Mouse Injection command engages the center Trackball to control the mouse cursor and the R3/R4 buttons control left click/right click. When entering the Color Effects room, MC Color automatically activates Mouse Injection, however it can be useful to implement this function elsewhere (i.e., to control curves in a primary room).

1. Select the Soft Keys tab in EuControl.
2. Select **Soft Keys** from the Section popup with MC Color's icon to its left.
3. Double-click the desired Soft Key.
4. Select **EuCon** from the **Add** popup menu.
5. Select **Color** from the left column.
6. Select **Surface Modes** from the middle column.
7. Select **Mouse Injection**.

EuCon commands automatically label the button but do not select an icon.

8. Click **Save** to save the command.

Figure 6-7 shows the completed Mouse Injection command.

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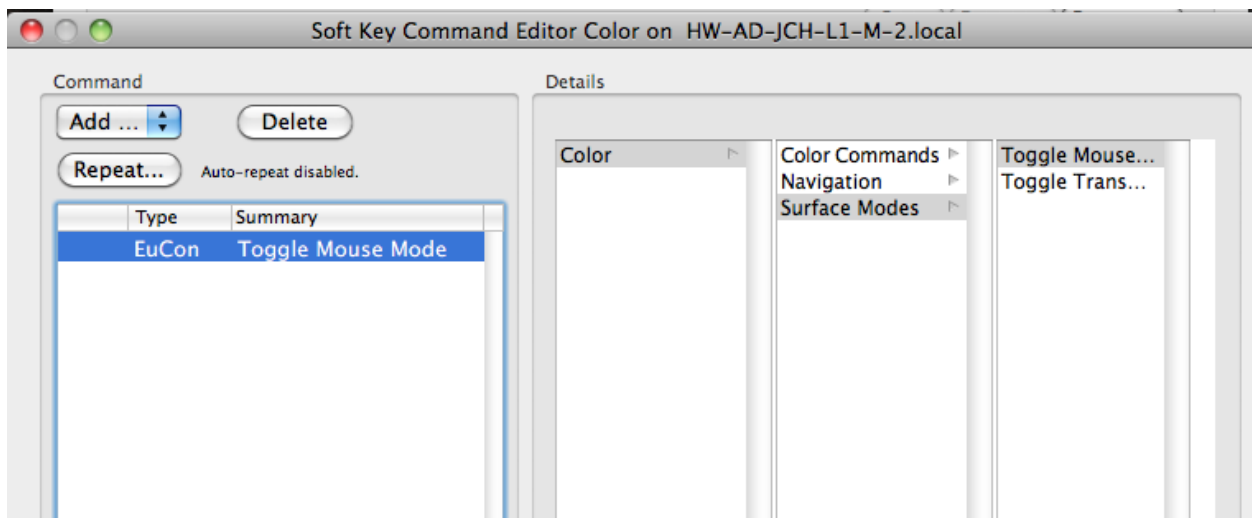


Figure 6-7 Creating a command in the Soft Keys tab

Chapter 7: Using MC Color

7.1 Controlling Apple Color with MC Color

This section describes the color correction process by examining important functions in some of the Apple color rooms: Primary In, Secondary: Vignette Control, and Color FX.

7.1.1 Primary In

Contrast

Most colorists begin by correcting the contrast of an image before adjusting its color.

Adjust the Shadow, Midtone, and Highlight contrast using the:

- left Trackwheel to control the Shadow slider;
- middle Trackwheel to control the Midtone slider;
- right Trackwheel to control the Highlight slider.

The contrast can be further adjusted by engaging Mouse Injection and changing the Luma curve control:

1. Press the **Mouse Injection** Soft Key.
2. Press **R3** to left-click and create a control point.
3. Use the center Trackball to hover over a control point, then press and hold **R3** and use the Trackball to move the control point.

To adjust Master Lift, Master Gain, and Master Gamma controls in the Basic tab:

1. Press **Bank 1**.
2. Turn Soft Knobs 4–6 to control Lift, Gain and Gamma, respectively.

Color Balance

After correcting the image's contrast, adjusting the color balance is the next step. Fast, coarse adjustments to the color balance (Shadow, Midtone, and Highlight) can be made using the Trackballs to set the primary color balance controls:

- The left Trackball controls the Shadow Color Balance wheel; **R1** resets Hue and Saturation.
- The middle Trackball controls the Midtone Color Balance wheel; **R3** resets Hue and Saturation.
- The right Trackball controls the Highlight Color Balance wheel; **R5** resets Hue and Saturation.

More detailed adjustments can be made using the red, green, and blue curve controls by engaging Mouse Injection and changing the curve(s). Numeric adjustments can be made using the Red, Green, and Blue Lift, Gamma, and Gain controls in the Advanced tab by selecting Bank 2 and turning the Soft Knobs.

Saturation

When the quality of the colors is satisfactory, the next step is to raise or lower the saturation (also called *intensity*) of the colors in the image. Select **BANK 1** and use the Soft Knobs to adjust the Saturation, Highlight Sat., and Shadow Sat. controls in the Basic tab. This allows adjusting the overall saturation or only the saturation within specific tonal regions.

7.1.2 Secondary: Vignette Control

1. Vignette controls are available in **BANK 2** of Secondaries. Press the **BANK 2** key to select them.
2. Press the **Enable Vignette** Soft Key to toggle the vignette on/off for that tab.
3. Press the **Mouse Injection** Soft Key.
4. Use the center Trackball to hover the cursor over the Shape popup menu and press **R3** to select a Circle or Square.

The following parameters are available only when the Square or Circle options are selected from the Shape popup menu.

- **Angle:** Rotates the current shape
- **Center:** Adjusts the position of the shape
- **Softness:** Blurs the edges of the shape
- **Size:** Scales the shape size up/down
- **Aspect:** Adjusts the width-to-height ratio of the shape

7.1.3 Color FX

When navigating to the Color FX Room, MC Color automatically engages Mouse Injection to select effects, connect node trees, and adjust parameters while maintaining contact with MC Color's surface.

To Keyframe in the Timeline:

1. Press the **Add Keyframe** Soft Key.
2. Adjust color parameters or vignette controls.
3. Press the **Trackwheel jog** Soft Key.
4. Jog to another frame to select another edit point.
5. Press the **Add Keyframe** Soft Key.
6. Adjust color parameters or vignette controls.

7.2 Using MC Color and MC Transport

MC Transport can be integrated with an MC Color to create a larger control surface with additional programmable Soft Keys, Numeric Keypad, weighted Jog Wheel, and high-resolution Shuttle Ring.

MC Transport's Numeric Keypad allows navigating to specific clips and timecode locations in the timeline.

For Clip Navigation:

1. Press the **Numpad go to clip** Soft Key.
2. Use the Numeric Keypad to enter the desired clip number.
3. Press **Enter**.

For Timecode Navigation:

1. Press the **Numpad go to timecode** Soft Key.
2. Use the Numeric Keypad to enter the desired timecode location.
3. Press **Enter**.

Appendix A: Setting the IP Address

Most MC Color users will never have to set a static Internet Protocol (IP) address but in the rare cases that require it, the MC Mix does allow for it.

Normally MC Color uses **Dynamic Host Configuration Protocol** (DHCP) to obtain its IP address, typically from a router. MC Color will revert to *link-local addressing* to generate an IP address if a DHCP server is not found on the network, such as when an MC Color is connected directly to a computer with an Ethernet cable. Both of these methods of obtaining IP addresses can be overridden by supplying a static IP address, which MC Color uses in all cases when powered on.

CAUTION: *Attempt this only if you have prior experience configuring a network.*

To set a static IP address:

1. Press and hold both **PAGE** keys while powering up MC Color.
2. Turn the leftmost Soft Knob to change the **Use DHCP** value from **yes** to **no**.

Figure A-1 shows the **Use DHCP** screen on MC Color’s display screen.

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Figure A-1 Use DHCP yes (left); Use DHCP no (right)

3. Press the left **Shift** key to move the cursor to the **IP Address** screen.
4. Use the leftmost Soft Knob to set the first **IP address** field.



Figure A-2 IP Address displays

5. Press the left **Shift** key to move the cursor to the second field.
6. Use the leftmost Soft Knob to set the second **IP address** field.

7. Use these techniques to set the two remaining **IP Address** fields.
8. After setting the fourth **IP Address** field, press the **Shift** key to move the cursor to the first field of the **Subnet Mask** screen (Figure A-3).



Figure A-3 Subnet Mask display

9. Use the same techniques to set the four **Subnet Mask** fields.
10. Press the two **PAGE** keys simultaneously to save the **DHCP** setting, static **IP address**, and **Subnet Mask**. Power MC Color off and on to use the settings.

To cancel any changes made during this process, power off MC Color before pressing the two **PAGE** keys simultaneously.

Appendix B: EuCon Commands

Table 7-1 EuCon Commands and descriptions

EuCon Command Name	Description
Add all to Queue	Adds all clips in the project to the Render Queue
Add Key Frame	Adds a keyframe to the current clip at the position of the playhead
Add Selected to Queue	Adds selected clips in the timeline to the Render Queue
Blue Channel Waveform	Displays the Blue Channel
Change Key Frame	Switches keyframe interpolation type between linear, smooth, and constant
Copy Current Grade Bank 1	Copies grade from current clip to memory bank 1
Copy Current Grade Bank 2	Copies grade from current clip to memory bank 2
Copy Current Grade Bank 3	Copies grade from current clip to memory bank 3
Copy Current Grade Bank 4	Copies grade from current clip to memory bank 4
Copy Current Grade Bank 5	Copies grade from current clip to memory bank 5
Copy Grade from Previous Clip	Copies grade from the previous clip on the timeline.
Cue Navigation	Moves playhead to the navigational time
Cut Edit	Splits current clip at the Playhead
Delete Key Frame	Deletes keyframe at position of playhead
Green Channel Waveform	Displays the Green Channel
Histogram Waveform	Displays the Histogram
Inch Play Forward	Plays forward by frame
Inch Play Reverse	Plays backward by frame
Keyer Enable H	Enable or disable secondary keyer for Hue

Keyer Enable S	Enable or disable secondary keyer for Saturation
Keyer Enable L	Enable or disable secondary keyer for Luma
Keyer Left Side Only	Control only the left side of selected keyer spread or falloff
Keyer Right Side Only	Control only the right side of selected keyer spread or falloff
Luma Y Waveform	Displays the Luma Channel
Merge Edit	Joins two shots at an edit point at the position of the Playhead
Next Edit	Moves the Playhead to the next edit
Next Grade	Selects the next grade on a clip for correction and viewing, or creates a new one.
Next Secondary	Selects the next Secondary tab for the current clip; cycles 1-8
Overlay Waveform	Displays Overlay
Parade Waveform	Displays Parade
Paste Current Grade Bank 1	Pastes grade from memory bank 1 to the current clip
Paste Current Grade Bank 2	Pastes grade from memory bank 2 to the current clip
Paste Current Grade Bank 3	Pastes grade from memory bank 3 to the current clip
Paste Current Grade Bank 4	Pastes grade from memory bank 4 to the current clip
Paste Current Grade Bank 5	Pastes grade from memory bank 5 to the current clip
Previous Edit	Moves the Playhead to the Previous Edit
Previous Grade	Selects the previous grade on a clip for correction and viewing
Previous Secondary	Selects the previous Secondary tab for the current clip; cycles 1-8
Print Queue	Render all clips in the Queue
Red Channel Waveform	Displays the Red Channel
Reset Grade	Resets grade for the current clip
Revert Project	Reverts to last saved state of the current project

Save Project	Saves Project
Set Player Marker In	Sets the player in Marker
Set Player Marker Out	Sets the player out Marker
Scope Resolution 100%	Sets the vector scope resolution to 100%
Scope Resolution 25%	Sets the vector scope resolution to 25%
Scope Resolution 50%	Sets the vector scope resolution to 50%
Scope Resolution 75%	Sets the vector scope resolution to 75%
Set as Beauty Grade	Sets the current grade to Beauty Grade
Start Playback Forward	Play forward
Start Playback Reverse	Play backward
Stop Playback	Play
Store Still	Creates a still of the current frame
To Project End	Navigates playhead to project end
To Project Start	Navigates playhead to project start
Toggle Grading	Toggle between clip ID and showing grade
Toggle Playback Mode	Toggle between playback on active clip or entire timeline
Toggle Primary Out Clipping	Toggle Primary Out Clipping on or off
Toggle Secondary	Enable or disable selected secondary for current clip
Toggle Secondary In or Out	Enable or disable the inner or outer control for selected secondary for current clip
Toggle Secondary Vignette	Enable or disable secondary vignette for the selected secondary for the current clip
Toggle Still Store	Show or hide still
Numpad go to Clip #	MC Transport's numpad is used to go to clip ID.
Numpad go to Time Code	MC Transport's numpad is used to go to timcode location

Toggle Mouse Injection	Center trackball controls mouse cursor; R3 and R4 become mouse buttons
Toggle Trackwheel Jog	Right trackwheel becomes jog wheel
Trackball & Wheel Accel	multiplies acceleration of ball and wheel 10 times