



Integrator's Complete Guide to the

## **PCC MatrixMIX**

Live Production Controller

Document 411-0007-30 Rev A  
August 2017

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## Overview

This guide provides information about the PCC MatrixMIX live production controller:

- 999-5755-000 – North America
- 999-5755-001 – Europe and UK
- 999-5755-009 – Australia and New Zealand

## About this Guide

This guide covers:

- Unpacking and installing the controller
- The controller's physical features and user interfaces
- Administration and configuration tasks
- Operation
- Specifications
- Troubleshooting and maintenance
- Warranty and compliance/conformity information

For your convenience, this information is also available in smaller, limited-purpose manuals:

- **Installation Guide for the PCC MatrixMIX Live Production Controller** – unpacking, physical features, switch settings, installation, and initial power-up
- **Configuration and Administration Guide for the PCC MatrixMIX Live Production Controller** – physical features, configuration, system administration, operation, and troubleshooting
- **Operator's Guide for the PCC MatrixMIX Live Production Controller** – physical features and console operation

Download manuals, dimensional drawings, and other information from [www.vaddio.com/support](http://www.vaddio.com/support).



## Features

### Intuitive control for AV Bridge MatrixMIX switchers:

- Touch-panel interface for CCU, presets, PIP, keying, audio control, macros, and streaming operation
- T-bar control for video transitions
- Web interface for complete administrative control from anywhere, using your browser

### Precision for the most demanding camera operation environments:

- Three-axis Hall effect joystick
- T-bar for manual transitions
- Pan, tilt, and zoom speed control knobs
- Illuminated pushbuttons for camera selection
- Large knobs for fine focus control and menu navigation, with push-to-select function

### Versatile power solution using PoE+ (Power over Ethernet)

## Product Compatibility

The PCC MatrixMIX is compatible with the following products.

### Switchers

AV Bridge MatrixMIX

### Vaddio Cameras

May require an update to the camera's firmware.

- RoboSHOT Series(may use Quick-Connect or OneLINK device)
- ConferenceSHOT Series\*
- ClearVIEW HD 20SE
- PowerVIEW HD 22/30
- ZoomSHOT 20
- WideSHOT

\* Includes cameras marked ClearSHOT 10 USB.

### Non-Vaddio Cameras

- Sony BRC Z330, Z700, H700, H900
- Sony EVI-H100S
- Sony SRG 120, SRG 300
- Panasonic AW-HE 40, AW-HE 130

## Unpacking the Camera Controller

Make sure you received all the items you expected. Here are the packing lists for the PCC MatrixMIX camera controller.

North America: PCC MatrixMIX, part number 999-5755-000

- PCC MatrixMIX, part number 998-5755-000
- Mid-span power injector with US cord set
- Cat-5e patch cable, 10 ft (3 m)
- Quick Start Guide

International: PCC MatrixMIX, part number 999-5755-001

- PCC MatrixMIX, part number 998-5755-000
- Mid-span power injector with UK and European cord sets
- Cat-5e patch cable, 10 ft (3 m)
- Quick Start Guide

Australia: PCC MatrixMIX, part number 999-5755-009

- PCC MatrixMIX, part number 998-5755-000
- Mid-span power injector with Australian cord set
- Cat-5e patch cable, 10 ft (3 m)
- Quick Start Guide



## A Quick Look at the Camera Controller

The console provides quick, intuitive control of cameras and switcher functions.



### Touch-Panel Display

Access to:

- Directory, for switcher selection
- Camera presets, scenes, and CCU settings
- Graphics keying and PIP
- Audio
- Macro recall
- Streaming sources
- Network information for the controller
- One-touch standby (controller and selected cameras)

### Focus Knob

Switch between modes – auto-focus (illuminated blue) or manual (illuminated red). Adjusts the focus when in manual mode.

### Menu Knob

Navigate and select items from touch-panel screens and menus, adjust and save settings.

### Pan, Tilt, and Zoom Speed Controls

The three speed control knobs above the joystick adjust the selected camera's speeds for pan, tilt, and zoom. When you adjust any of these knobs, the touch-panel displays a slider to show the speed range.

## Camera Select Buttons

The buttons on the Program and Preview rows are associated with the same video sources. During normal operation, the buttons are illuminated if they are mapped to cameras or other video sources. Color indications:

- Red – Current program output
- Green – Current preview output
- Blue – Available video source
- Blinking blue – No video source is currently available at the mapped IP address, or further configuration is required.

Button behavior depends on the selected switching mode.

A/B switching mode: One program output. The tally (red) indication is always on the Program row of buttons, and the preview indication is always on the Preview row.

Dual-bus switching mode: Two simultaneous program outputs. The buttons on the Program row show the tally for one output; the buttons on the Preview row show tally for the other output. Press another button to select a preview source. The button turns green to indicate that it will be the next source on that bus after a video transition (T-bar on the controller, or Take button on the multiviewer).

## T-Bar

Manual control for video source transitions.

## Joystick

Intuitive control for moving the selected camera to the desired position – left/right to pan, forward/back to tilt. Twist the joystick clockwise or counterclockwise to zoom the camera. Press the center button to return the camera to its home position.

The camera controller's web interface allows you to set normal or inverted directional operation, according to the operator's preference. See [Configuring Joystick Behavior](#).

## Connector Panel



**Ethernet/PoE+ connector** – PoE+ Gigabit Ethernet for power, control, and access to the cameras associated with the connected switcher.

**HDMI connector** – Reserved for future use.



## Installation

This section covers how to install and connect the product. It also provides safety information and other guidance related to installing the product.

### Note

*This product is intended for installation and use only in environments where all RS-232 and PoE+ connections originate within the building.*

## Don't Void Your Warranty!

### Caution

*This product is for indoor use. Do not install it outdoors or in a humid environment without the appropriate protective enclosure. Do not allow it to come into contact with any liquid.*

*Do not install or operate this product if it has been dropped, damaged, or exposed to liquids. If any of these things happen, return it to Vaddio for safety and functional testing.*

Learn more at [www.vaddio.com/products](http://www.vaddio.com/products).

## Cabling Notes

Use Cat-5e or better cable and standard RJ-45 connectors (568B termination). We recommend using high-quality connectors and a high-quality crimping tool.

### Note

*Use standard RJ-45 connectors and a good crimping tool. Do not use pass-through RJ-45 connectors. Poorly crimped connectors can damage the connectors on the product, cause intermittent connections, and degrade signal quality. Test cable pin-outs and continuity before connecting them.*



**Intact** – Contact fingers will make reliable contact with the cable connector



**Damaged** – Some contact fingers are bent and will NOT make reliable contact with the cable connector

### Caution

*Check Cat-5 cables for continuity before using them. Using the wrong pin-out may damage the camera system and void the warranty.*

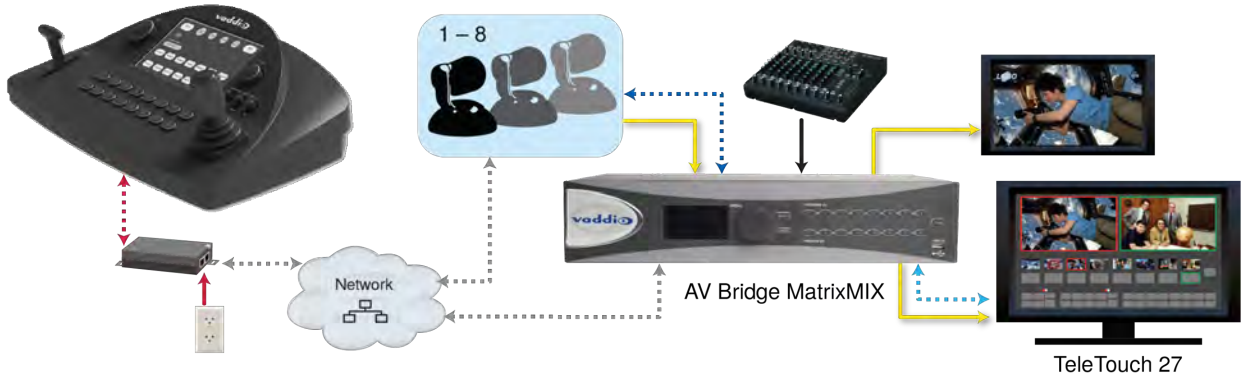


### Pro Tip

*To prevent tragic mishaps, label both ends of every cable.*

## Basic Connections

The diagram below shows a basic live production setup.



## Ensuring Compatibility

The camera controller may be unable to communicate with Vaddio cameras if their firmware is out of date. When you set up the camera controller, be sure the associated Vaddio cameras have been updated to a firmware version that supports the controller.

## Powering Up

Connect the PoE+ power injector.

When you power up the PCC MatrixMIX for the first time, its directory will need to be populated with at least one switcher, which manages the video and audio sources. This is part of the configuration process.

## Web Interface

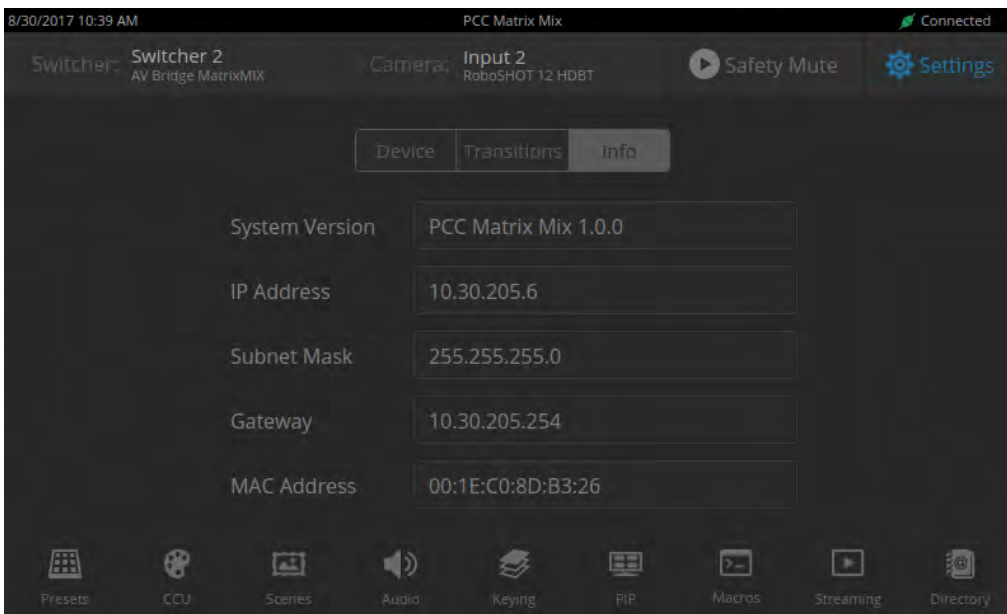
The live production controller provides a web interface to allow configuration via the IP network connection, using a browser. The web interface allows you to:

- Set idle session behavior and passwords
- Manage network and streaming settings
- Add identifying information to the web interface
- Set up the controller's directory
- Specify how the joystick behaves
- Back up, reboot, reset, or update the controller
- View information about the controller

When connected to a LAN that has a DHCP server, the live production controller will get its IP address, gateway and routing information automatically and you will be able to browse to it. In the absence of a DHCP server, the controller's default IP address is 169.254.1.2 and its subnet mask is 255.255.0.0.

You can configure a static IP address either through the network or from a computer connected directly to the Ethernet port. You may need a crossover cable.

To see the current IP address, select Settings on the touch-panel. The IP address and other network information is on the Info tab.



## Compatible Web Browsers

Supported web browsers:

- Chrome®
- Firefox®
- Microsoft® Internet Explorer®
- Safari®

Other browsers may also work.

We recommend Chrome or Firefox.

## Admin Access

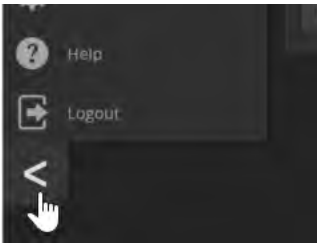
For administrative access, log in as **admin**. The default password is **password**.

### Note

*For best security, Vaddio strongly recommends changing the default password(s). Using default passwords leaves the product vulnerable to tampering. See [Managing Access and Passwords](#).*

The admin account has access to:

- **Directory** – Associate the controller with switchers on the network.
- **PCC Settings** – Configure joystick and standby behavior
- **Room Labels page** – Information to display on the web interface screens, including the conference room name and phone number and the in-house number for AV assistance.
- **Networking page**– Ethernet configuration.
- **Security page**– Set passwords and manage guest access.
- **Diagnostics page**– View or download logs when troubleshooting issues.
- **System page**– View firmware version and switch settings, reboot, restore factory defaults, and run firmware updates.
- **Help page**– Tech support contact information and a link to the product information library on the Vaddio website.
- **Logout button**– A graceful way to leave the web interface in a password-protected state.



### Compact Menu View

By default, the navigation buttons display an icon and a text label. The web interface provides a compact view of the menu buttons along with the default view. The button at the bottom of the menu toggles between the two views.

## Web Interface Cheat Sheet

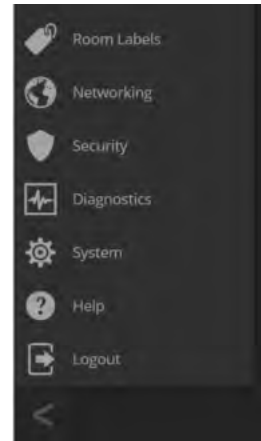
Where to find the controls you need right now.

What do you need?	Go to this page
Associating switchers with the controller	Directory
How downstream switchers behave on standby	PCC Settings
Joystick pan and tilt behavior	PCC Settings
Password for admin account	Security
Enable/disable session timeout	Security
Hostname and network settings	Networking
Time and date settings	Networking
Macros and triggers	Control Devices
Reboot or factory reset	System
Backup and restore operations	System
Firmware update and current version	System
Helpdesk phone number for end users	Room Labels
Contact information for Vaddio helpdesk	Help
Diagnostic log	Diagnostics
Information about the camera controller's location	Room Labels
Standby	Available from any page
Logout	Available from any page

## System Administration Tasks

System administration for the PCC MatrixMIX live production controller include:

- Adding information about the equipment's location and relevant phone numbers on the Room Labels page
- Enabling NTP updating to maintain the system time and date and specify the time zone on the Networking page
- Configuring hostname and network settings on the Networking page
- Setting passwords and enabling or disabling idle session timeout on the Security page
- Viewing and downloading diagnostic logs on the Diagnostics page
- Rebooting or starting a factory reset from the System page
- Starting a firmware update from the System page
- Locating the information to contact Technical Support on the Help page



## Configuring the Camera Controller for Your Network

WEB INTERFACE, NETWORKING PAGE

**Note**

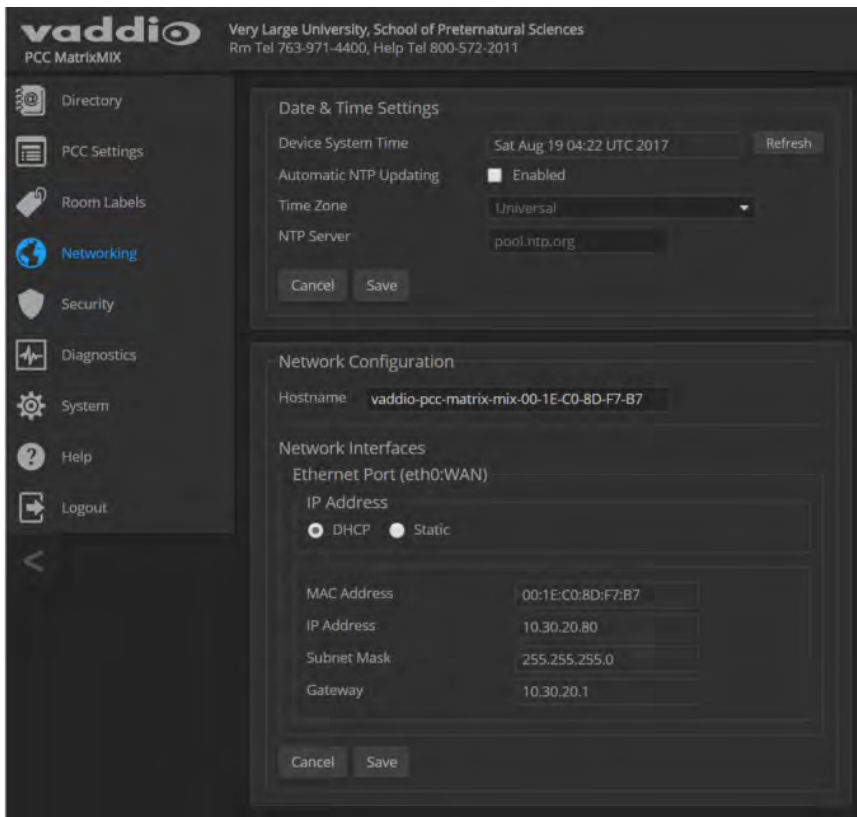
DHCP is the default setting, but the controller will use the default address of 169.254.1.2 if no DHCP server is available.

You will be able to enter the IP address, subnet mask, and gateway only if you set IP Address to Static.

**Note**

If you don't completely understand all the implications of the steps below, please contact your IT staff or Vaddio Technical Support for assistance. Changes in network configuration can result in loss of network contact with the device.

1. Edit the device hostname if necessary. The hostname serves as the device URL. If the network supports hostname resolution, you can use the hostname instead of the device's IP address when you open a web interface session. The hostname is also used as the filename for exported configuration data, so it can help you identify the source of an exported data file.
2. If the camera controller needs to use static IP addressing, select Static.
3. For static IP addressing, enter the appropriate IP address, subnet mask, and gateway address.

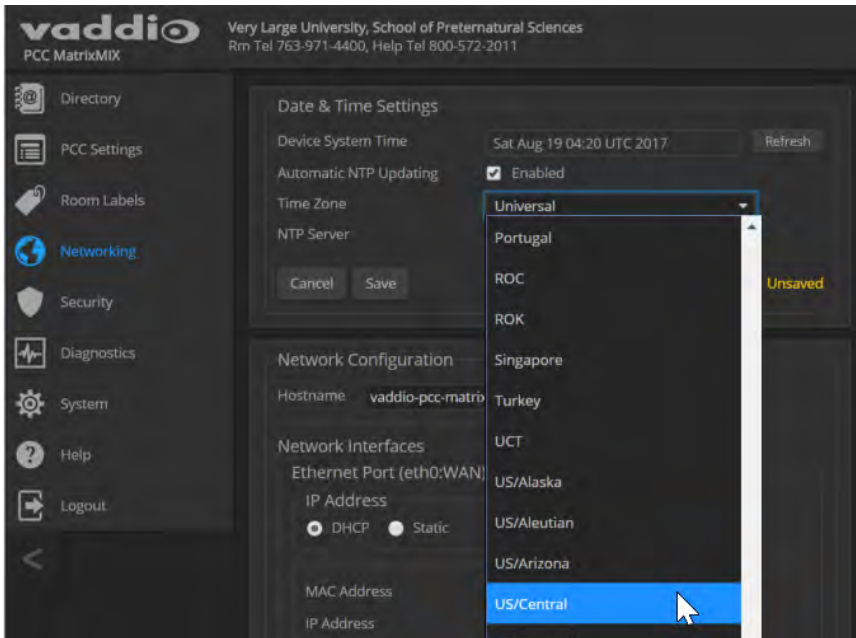


## Setting System Time and Time Zone

### NETWORKING PAGE

Allowing the switcher to contact a network time protocol (NTP) server ensures that its system time is correct, and makes the time zone editable. You also have the option to specify which NTP server to use.

1. Enable Automatic NTP Updating.
2. Select the desired time zone from the list.
3. If desired, specify the NTP server to use. If you are not sure about this, use the default.
4. Save your changes.
5. To update the system time immediately, select Refresh. Otherwise, the time will update the next time the controller contacts the NTP server.





## Managing Access and Passwords

### SECURITY PAGE

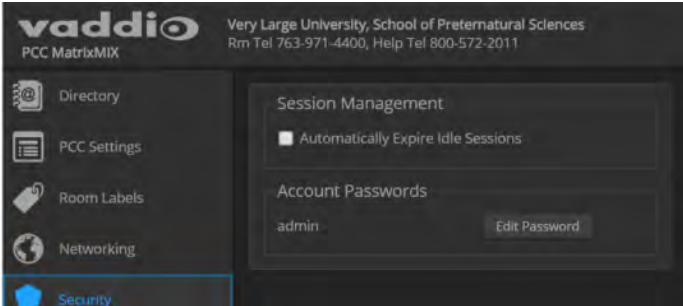
Set up the appropriate level of security to conform to your organization's requirements.

**Idle session time-out** – check the box labeled Automatically Expire Idle Sessions to automatically log you out of the web interface after 30 minutes without interaction.

**Change the password** – Select Edit Password to open the Edit Password dialog box.

#### Note

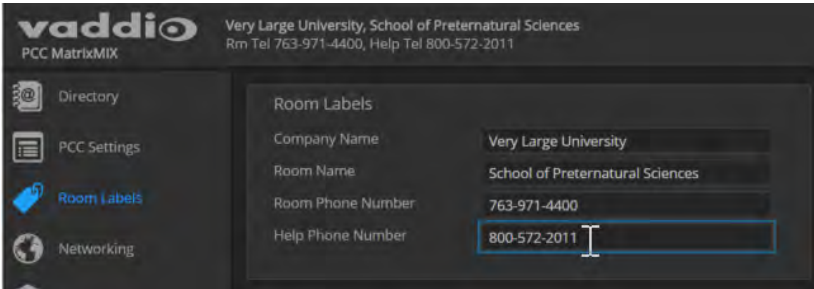
*For best security, Vaddio strongly recommends changing the admin password. Using the default password leaves the product vulnerable to tampering.*



## Adding Room Information

### ROOM LABELS PAGE

Enter information about the location of the equipment and the local IT or A/V help line. This information will be displayed on all pages of the web interface.



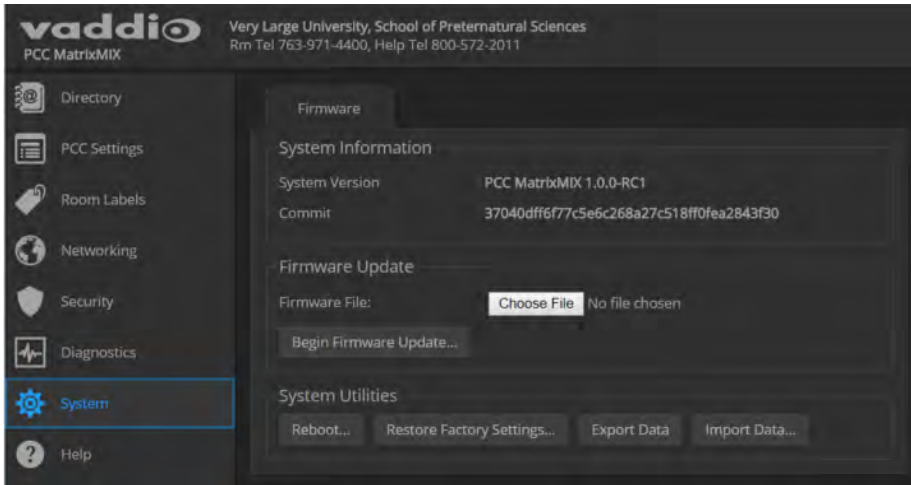
## Exporting and Importing Configuration Data

### SYSTEM PAGE

If your organization uses several of the same product, you may choose to configure one of them, verify that the configuration is good, and then copy it to the others. Most Vaddio professional AV products and cameras have this capability.

#### Note

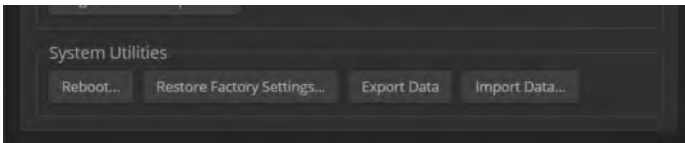
Currently, Vaddio products cannot import a configuration file that was exported from a different version of firmware.



#### To export a configuration:

To save a copy of the current configuration, select Export Data.

The configuration exports as a `.dat` file and downloads to your default file download location. The filename is the unit's hostname followed by the `.dat` file extension. If you only need to back up the configuration, you're done.



#### Note

This operation does not copy device-specific data such as hostname or sensitive data such as passwords.

#### To import a configuration:

1. Select Import. The Import Data box opens.
2. Select Choose File, and browse to the `.dat` file to be imported.
3. Select Begin Importing Data. When the import is complete, the device reboots and you will need to log in again.

#### Note

Currently, Vaddio products cannot import a configuration file that was exported from a different version of firmware.

## Updating the Firmware

### SYSTEM PAGE

From time to time, we issue new firmware to introduce new features and other product improvements, and to fix issues that turn up. We recommend keeping all your Vaddio products up to date, to get the most out of them.

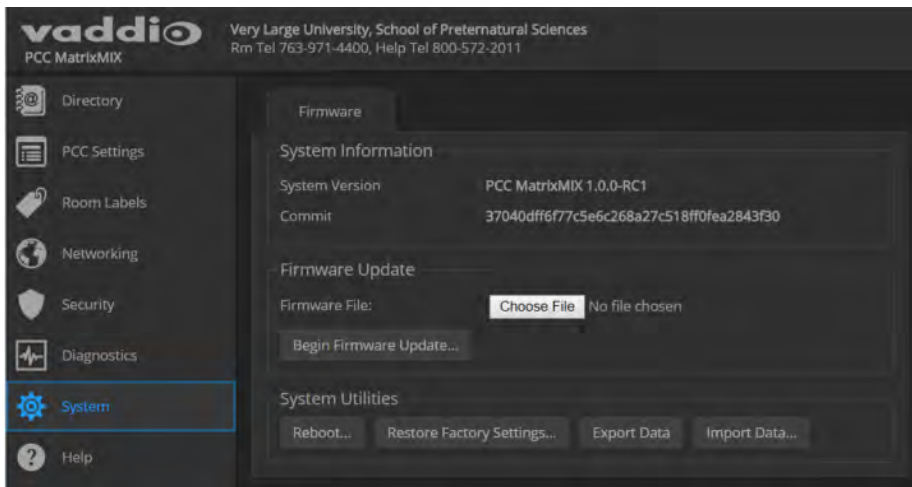
Firmware updates do not change the configuration or password.

#### Note

*It is rare for an update to generate errors. If this happens, please read them carefully and record them. Screen shots of the error message may be very helpful in troubleshooting the problem. If the update does not finish successfully, contact Vaddio technical support immediately.*

1. In a separate browser tab or window, go to the appropriate product page, or to the software updates section of [support.vaddio.com](http://support.vaddio.com) and download the appropriate update file.
2. In the Firmware Update pane, select Choose File. Then browse to the update file and select it.
3. Select Begin Firmware Update.
4. READ the information in the Confirm dialog box and be sure you understand it.
5. When you are ready to start the update, select Continue. The device reboots as the last step in the update process.

We recommend checking for firmware updates for your Vaddio cameras when you update other products that work with them.



## Restoring Factory Defaults

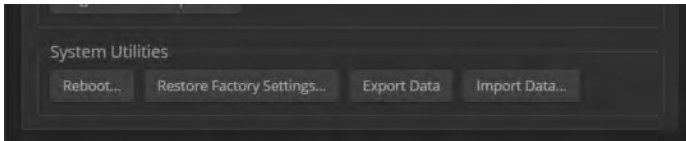
### SYSTEM PAGE

#### **To restore the original factory settings:**

Select Restore Factory Settings.

A confirmation message informs you that the action cannot be undone. This is your cue to make sure you have successfully exported the configuration.

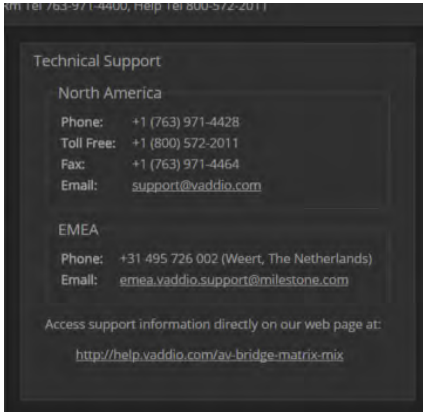
This operation logs you out and resets the admin password to its factory default value of `password`.



## Contacting Vaddio Technical Support

### HELP PAGE

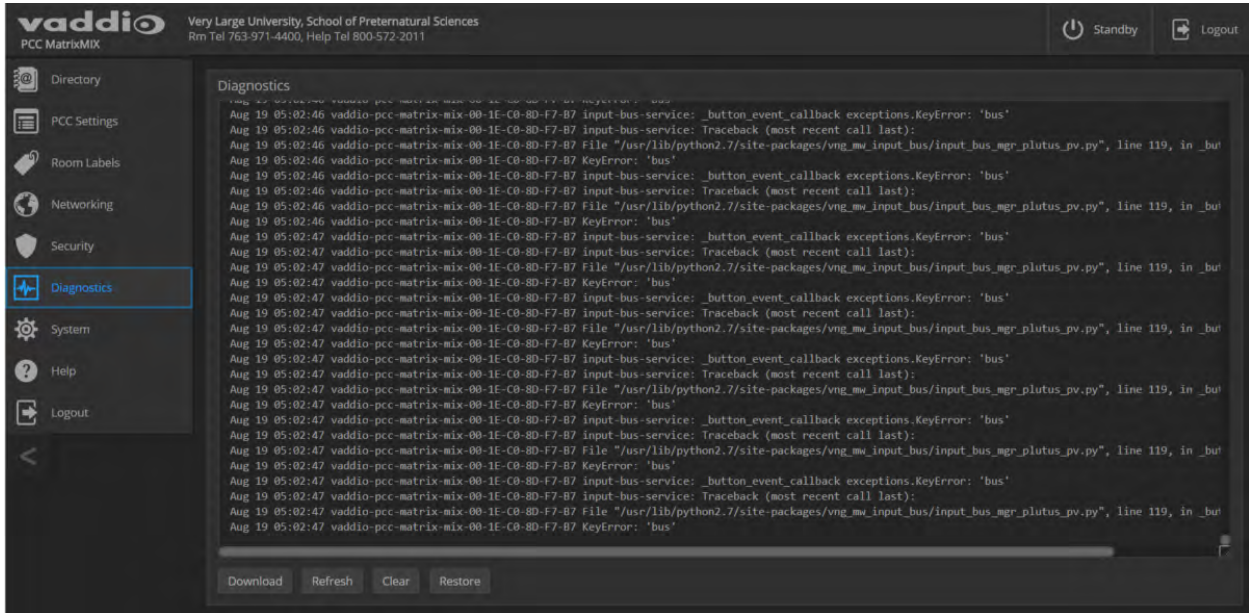
If you can't resolve an issue using your troubleshooting skills (or the [Troubleshooting](#) table in this manual), we are here to help. You'll find technical support contact information on the Help page.



## Viewing Diagnostic Logs

### DIAGNOSTICS PAGE

If you encounter a problem that you can't solve, your Vaddio technical support representative may ask you to download and email the log file available from the Diagnostics screen.



## Performance and Behavior Settings



Performance and behavior settings for the PCC MatrixMIX live production controller include:

- Managing the address book of switchers associated with this controller
- Specifying what happens when the controller goes into standby mode
- Specifying how the joystick behaves

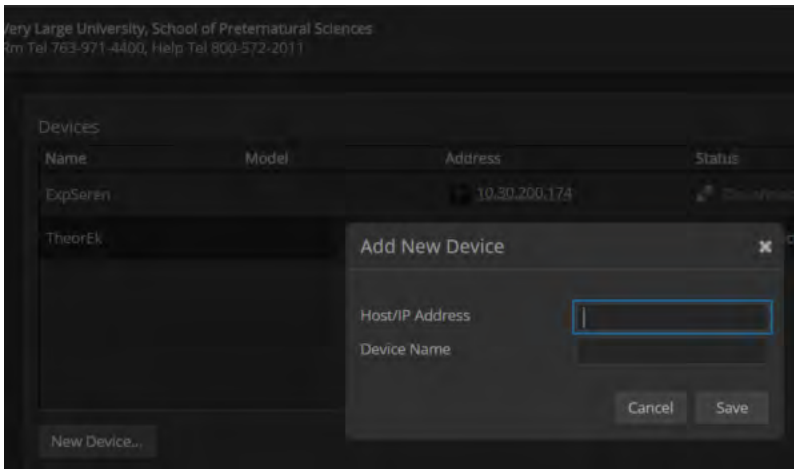
## Setting up the Directory

### DIRECTORY PAGE (WEB)

The PCC MatrixMIX can serve as a control device for any switcher in its directory. The directory is available to the operator on the Directory screen of the touch-panel display.

#### To add a switcher to the directory:

1. Select New Device
2. Enter the IP address of the switcher.
3. Optional: Assign this switcher a name in the directory. This name is only an identifying string for the directory entry; it is not written to the switcher.



#### To change a directory entry:

Select the pencil (edit) icon for the desired address book entry to edit its IP address or name.

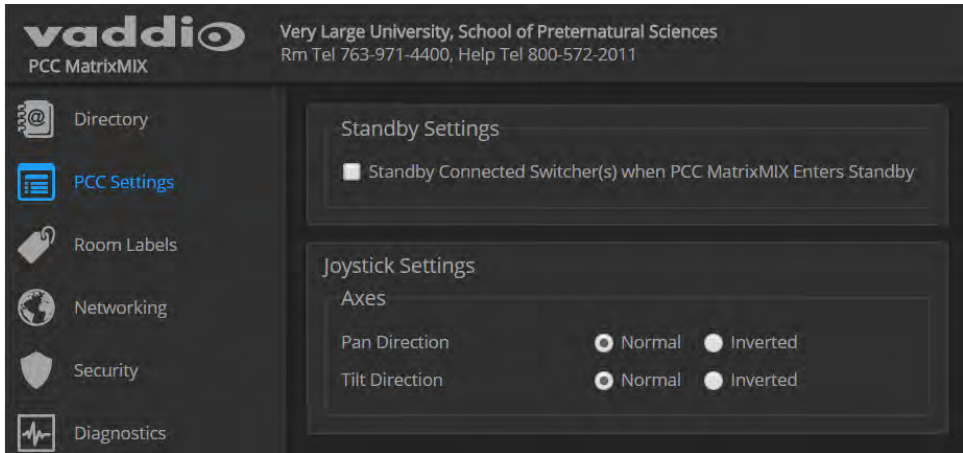
Select the X icon to delete the address book entry.



## Configuring Joystick Behavior

### PCC SETTINGS PAGE

Select Normal or Inverted for joystick pan and tilt axes.



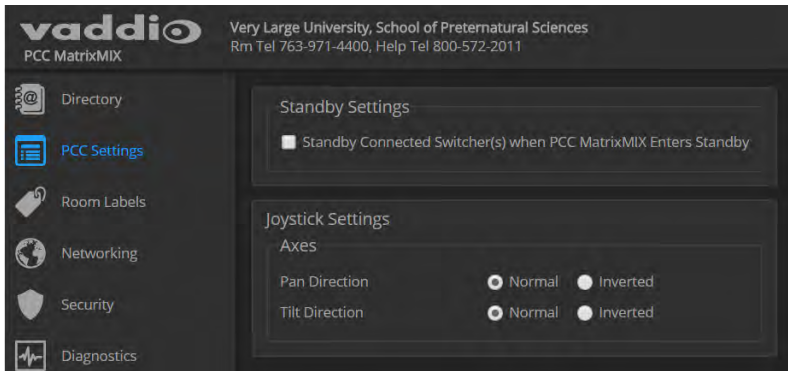
The operator can also do this from the controller's Settings > Device screen.

## Configuring Standby Behavior

### PCC SETTINGS PAGE

To place the associated switcher(s) in standby mode along with the camera controller, check the box marked "Standby Connected Switchers when PCC Enters Standby."

Leave this check box unchecked if all switchers (and their cameras) should remain powered up when the camera controller goes to standby mode.



This setting is also available to the operator, on the Settings screen of the touch-panel display. It is on the Device tab.

## Operating the Controller

The PCC MatrixMIX live production controller is the preferred operator interface for the AV Bridge MatrixMIX multipurpose AV switcher. We recommend using it with the TeleTouch 27 USB multiviewer if it is sited with the switcher.

This chapter covers operation of the controller console. Some of these tasks can also be done in other ways – from the TeleTouch 27 USB multiviewer, or from the switcher's web interface.

To select a touch-panel control, do one of these things:

- Tap the control on the touch-panel
- Dial to the control using the Menu knob, then press the knob to select the control.

You can change some adjustments, such as audio volume sliders, directly on the touch-panel. To adjust controls that use arcs, such as the touch-panel brightness adjustment, you must use the Menu knob to make the adjustment, and then press the knob to save the change.

### Before You Start

You will need additional information and software to control the cameras, other video sources, and audio equipment on your network.

- The PCC MatrixMIX can control up to 10 switchers, which must be added to the controller's directory via the web interface; the admin login is required.
- You will need to view the switcher's multiview output. If you are not using a TeleTouch 27 USB multiviewer (for example, if operating the switcher remotely), you will need to view the multiviewer output as an IP stream.
- To view the IP stream, the switcher must be configured to enable IP streaming.
- To view the IP stream, you will need a stream viewer application such as VLC Media Player.
- You will need to know the streaming URL for each switcher's IP stream. This information is available on the Streaming page of each switcher's web interface; the admin login is required.
- When viewing the multiviewer stream, keep in mind that the stream will lag perceptibly – there is network-dependent latency in addition to 400 ms of inherent latency.



## Touch-Panel Display Cheat Sheet

Where to find the controls you need right now.

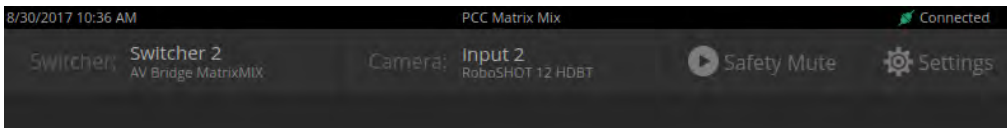
What do you need to do?	Go to this screen
<b>Mute all video and audio outputs</b>	<b>Safety Mute</b> (all screens)
View the controller's IP address and other network information	Settings: Info
Connect to a specific switcher to control its cameras	Directory
Store or recall presets for the selected camera	Presets
Select a defined set of lighting and color adjustments (recall a CCU scene) for the selected camera	Scenes
Adjust color and lighting settings for the selected camera	CCU
Store color and lighting adjustments as a CCU scene for the selected camera	CCU: Store as scene
View or change audio settings	Audio
Work with on-screen graphics	Keying
Select the source and placement for the picture-in-picture (PIP)	PIP
Work with macros	Macros
View or select streaming sources	Streaming
Adjust the touch-panel's brightness	Settings: Device
Put the system into standby mode; configure standby behavior	Settings: Device

## Safety Mute

### ALL SCREENS

In situations where it is desirable to mute all outputs together, select Safety Mute. This control is present at the top of every screen.

When you unmute Safety Mute, all inputs and outputs return to their previous states. For example, if the Program audio outputs were muted before Safety Mute was selected, they will remain muted after Safety Mute is deselected.



## Controller Adjustments

### SETTINGS SCREEN, DEVICE TAB

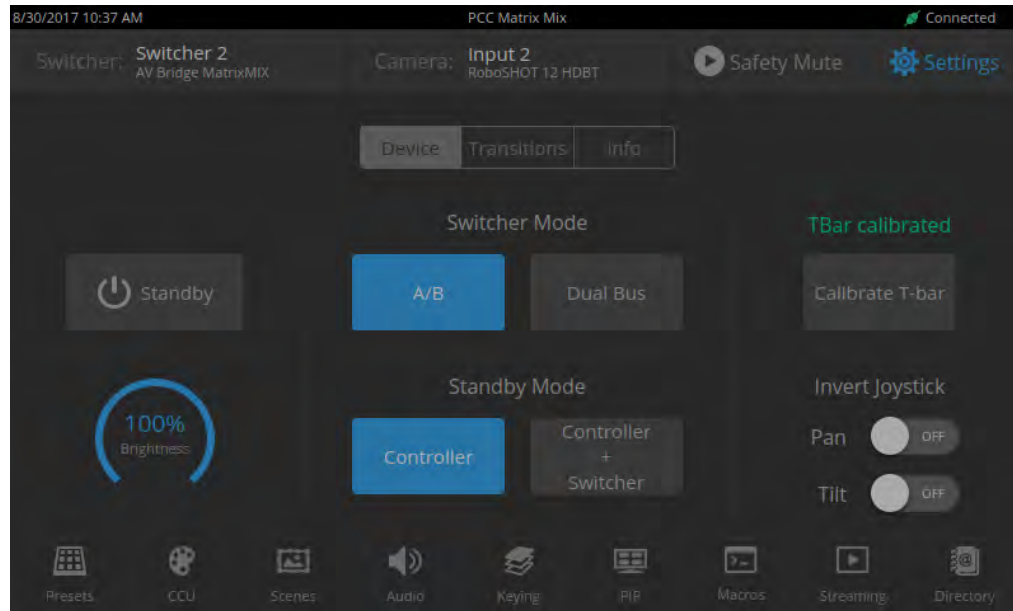
You can adjust the PCC MatrixMIX live production controller to suit the way you work.

#### To adjust the touch-panel brightness:

1. Tap the Brightness arc, or dial to it using the Menu knob and then press the knob.
2. Dial the Menu knob to adjust the brightness, then press the knob to save your change.

#### To set joystick direction:

Use the Invert Joystick controls to make the cameras pan and tilt in the direction you prefer for a given joystick movement.



## Selecting a Switcher from the Directory

### DIRECTORY SCREEN (TOUCH-PANEL)

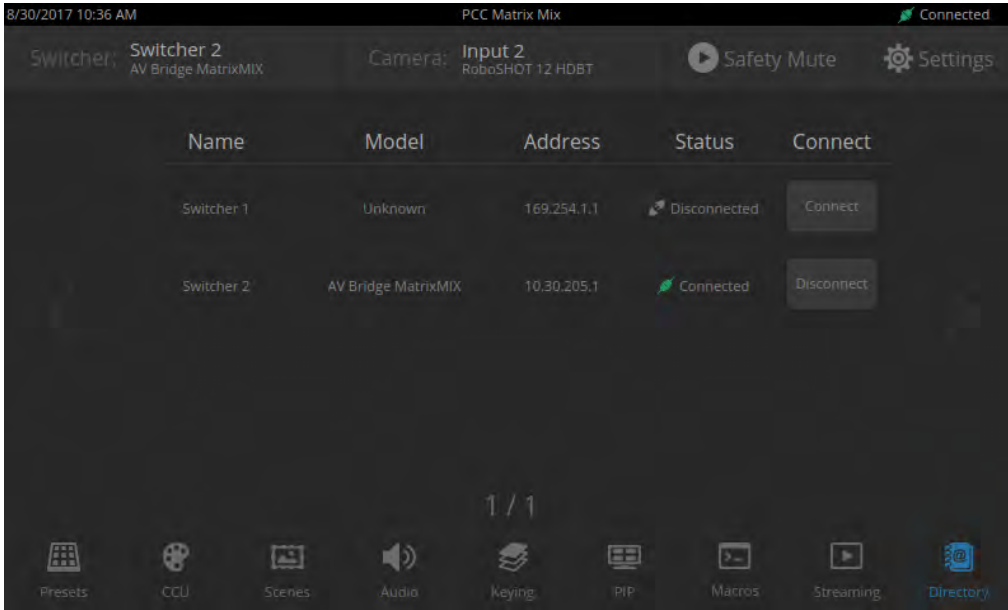
The controller must connect to a switcher to control the equipment connected to it. The top part of the touch-panel displays the name of the selected switcher (if any). You will also need a way to view the switcher's multiviewer output. The TeleTouch 27 USB multiviewer is recommended; however, for remote operation you can view the multiviewer output as a stream.

**Note**

*A switcher may be in more than one controller's directory, and may be controlled in other ways as well. If more than one operator has control of a switcher, unexpected behavior may result.*

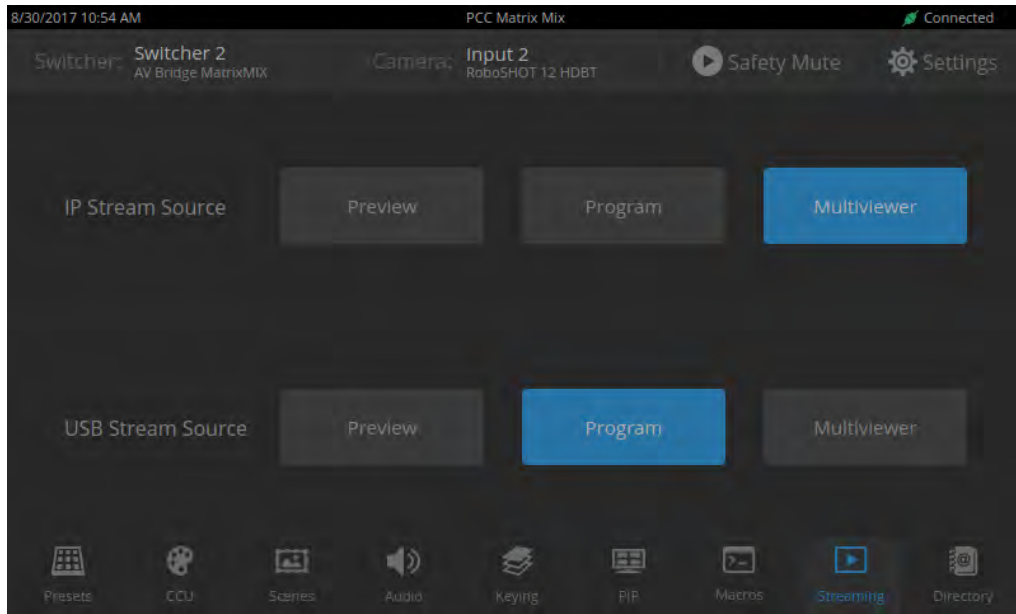
**With a TeleTouch 27 USB multiviewer:**

On the Directory screen, tap the Connect button associated with the switcher if its status is Disconnected.

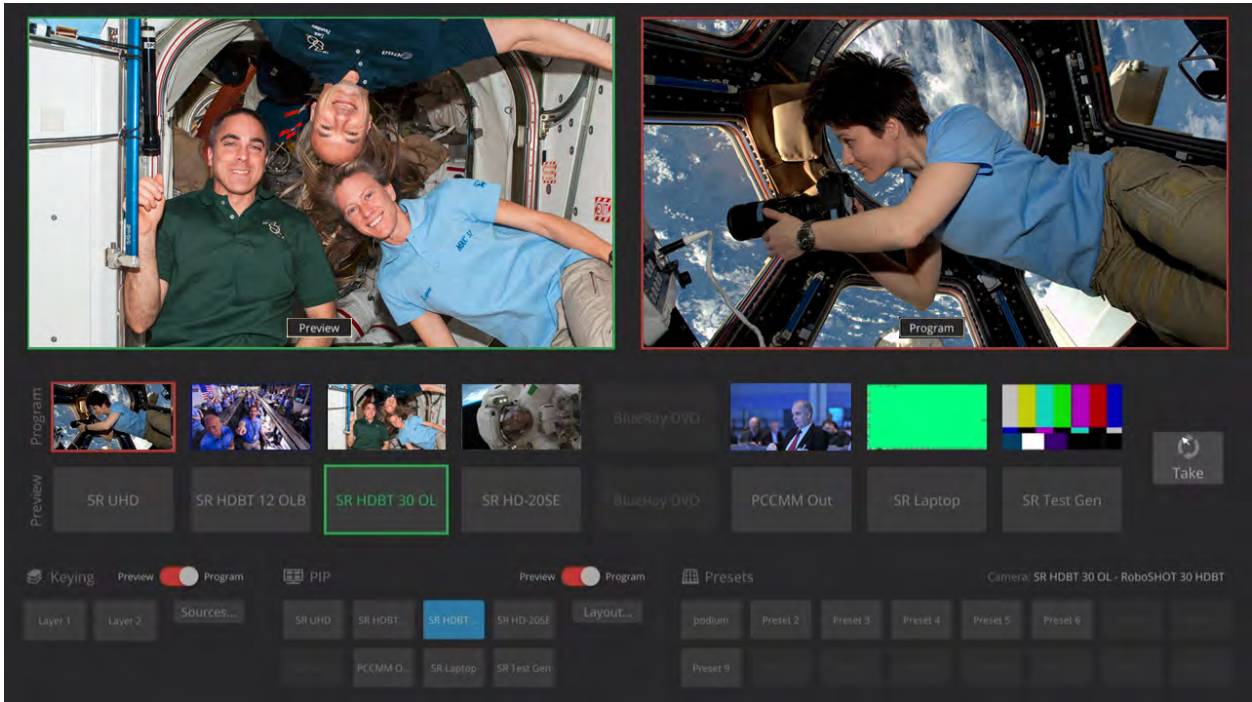


**Without a multiviewer:**

1. On the Directory screen, select the Connect button associated with the switcher.
2. On the Streaming screen, select Multiviewer as the IP streaming source if necessary.



3. Open an instance of your stream viewer and point it at the URL for the desired switcher's IP stream.



## Selecting Stream Sources

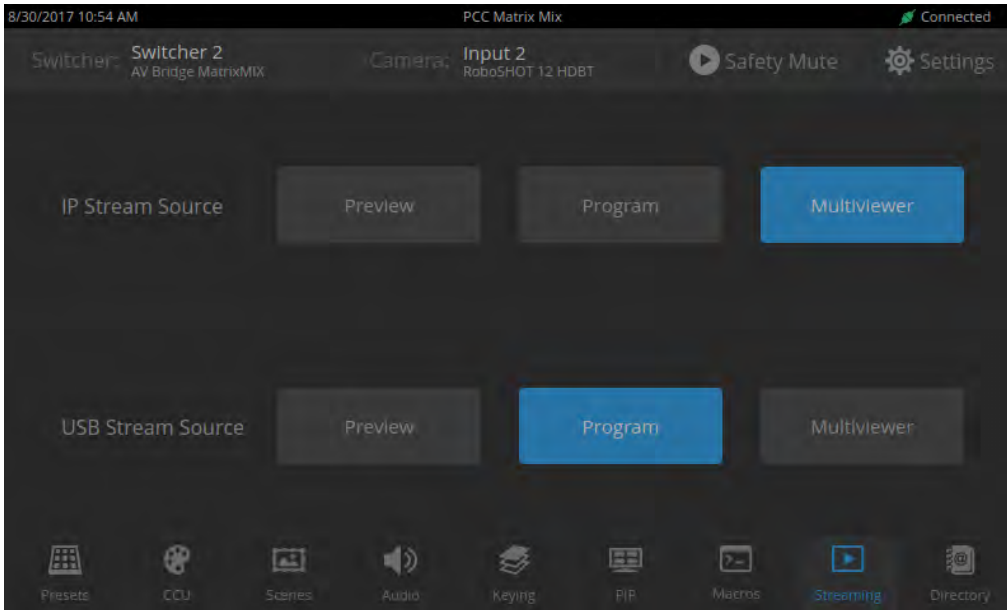
### STREAMING SCREEN

By default, the connected switcher's Program output is the source for both the IP stream and the USB stream.

Select the desired source for each stream.

#### **Note**

*If the source selections are dimmed for a stream, that stream is not enabled on the connected switcher. Enabling the stream requires administrative access to the switcher's web interface.*



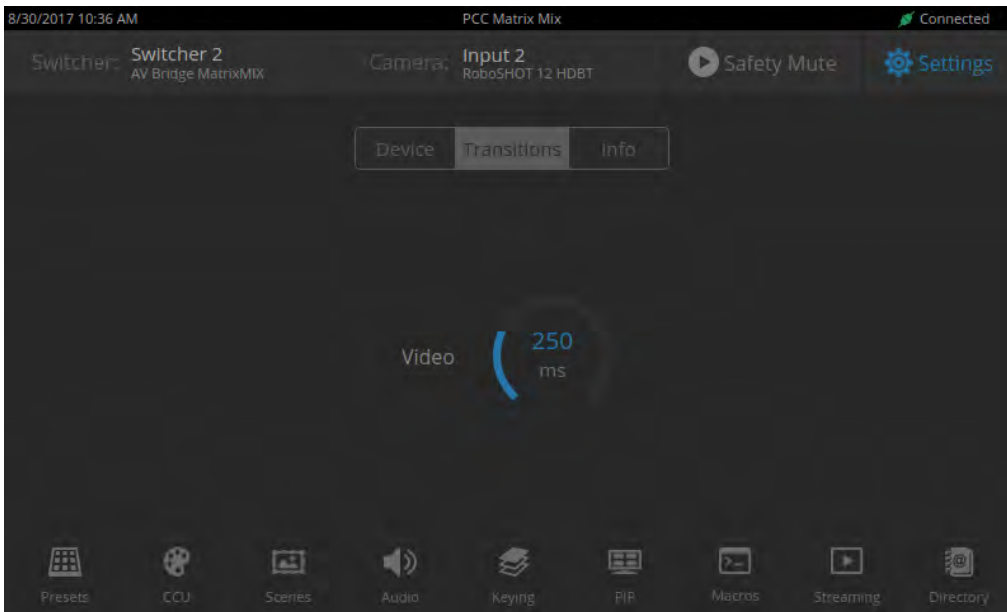
## Setting Video Transition Speed

### SETTINGS SCREEN, TRANSITIONS TAB

For automated video transitions (takes) using the Take button, the default transition time is 250 ms.

#### To view or change the transition time:

1. Select Settings and go to the Transitions tab.
2. Tap the Video arc, then turn the Menu knob to the desired value.
3. Press the Menu knob to save the new setting.

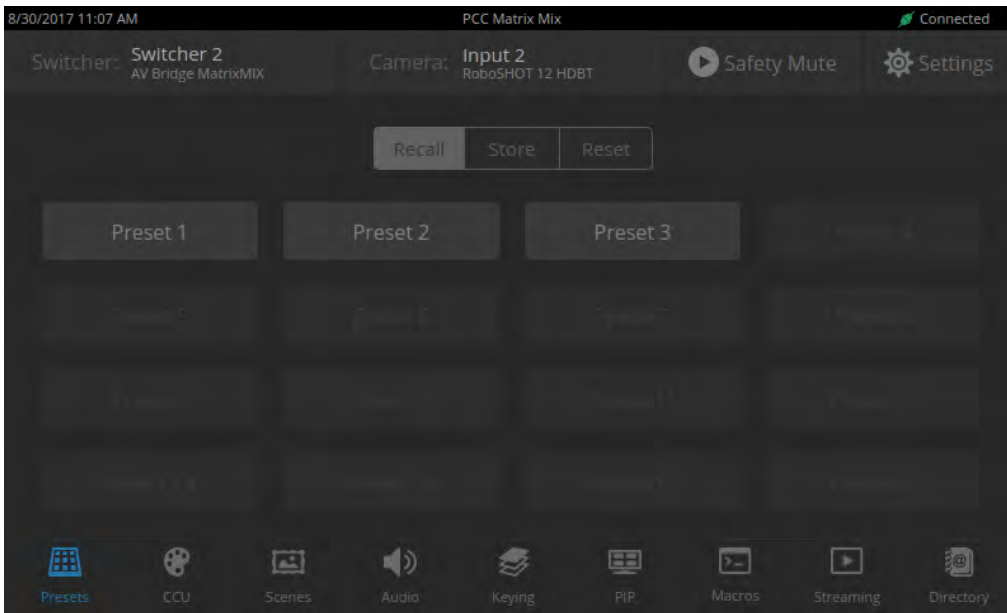


## Defining Camera Presets

### PRESETS SCREEN (TOUCH-PANEL)

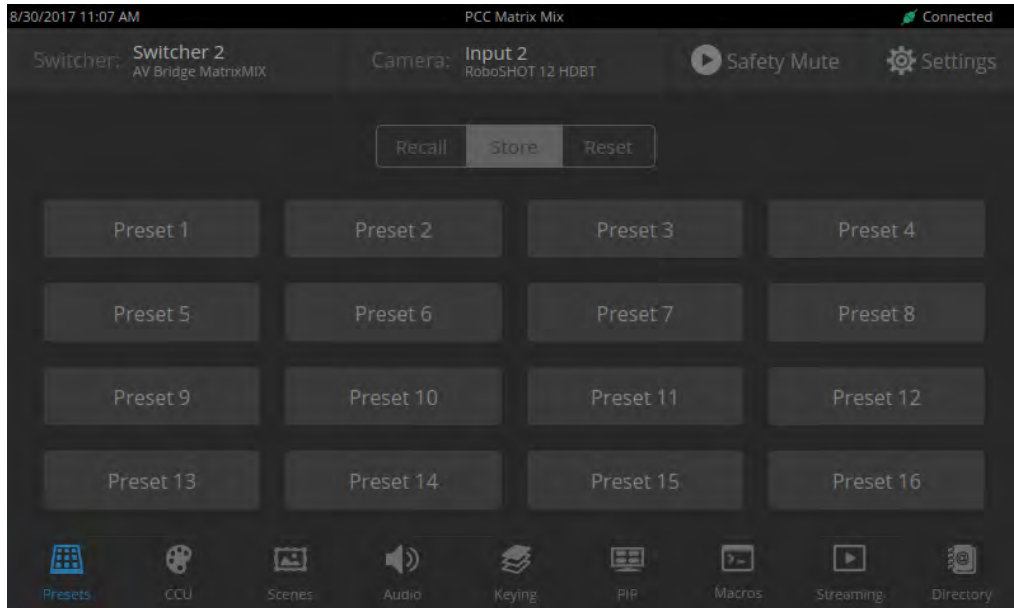
Like joystick control, preset operations affect the preview camera.

The camera controller does not store presets internally. It accesses the presets stored in the currently selected camera, and can write presets to the camera.

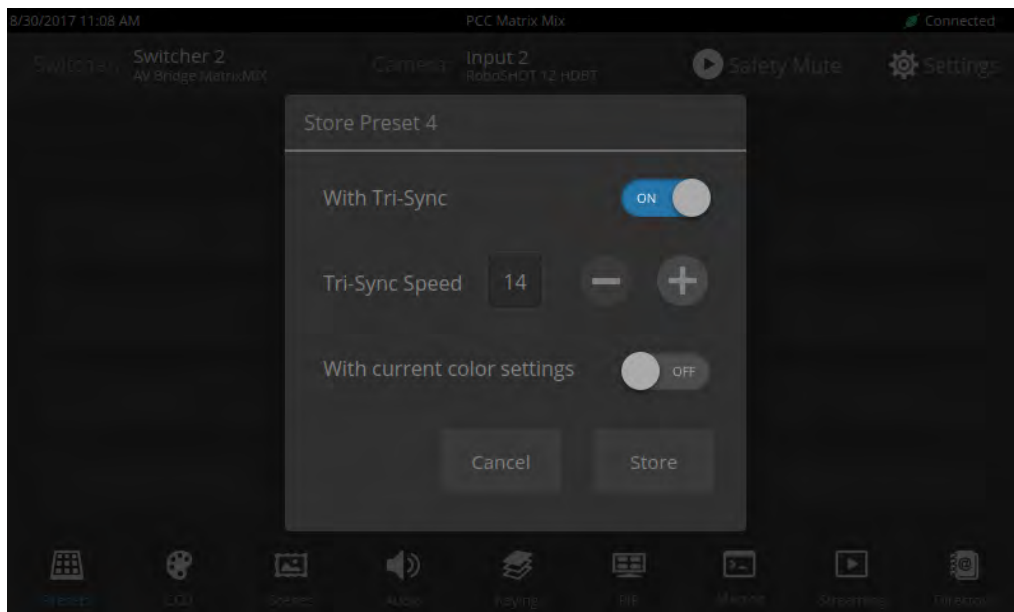


**To store a new preset to the preview camera:**

1. Set up the shot, including all adjustments.
2. If you are not changing an existing preset, make a note of which presets have already been stored. This information is on the Recall tab, which opens when you navigate to the Presets screen.
3. Select Store. All presets are available.



4. Select the preset to assign. If you choose a preset that is already assigned, you will overwrite the existing preset when you save the new one.
5. Select the preset options you want. Note that preset options depend on the camera's capabilities.
6. Select Store.



When you return to the Recall Preset screen, the new preset is available.



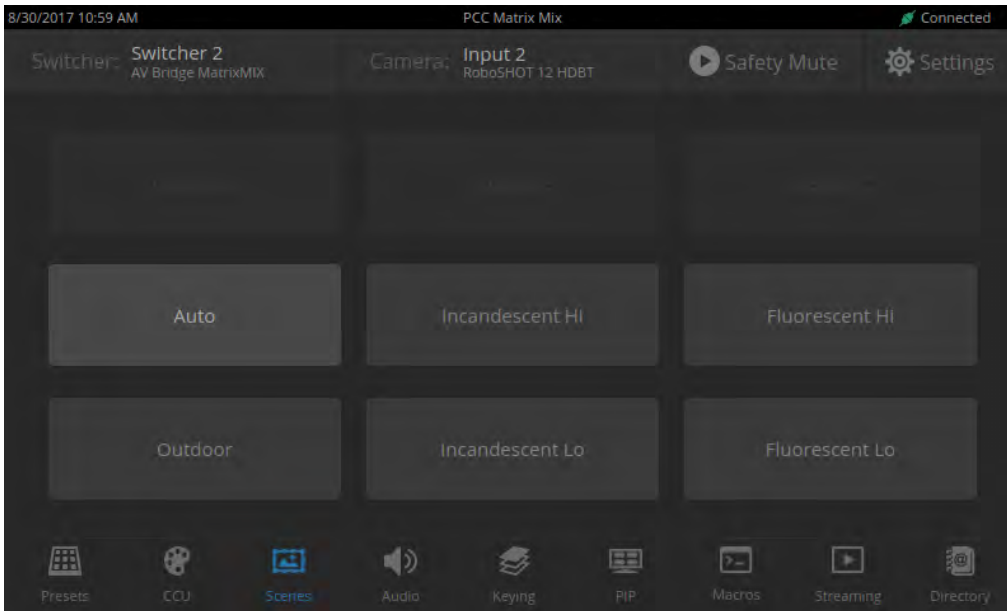
## Working with Lighting and Color Settings

The camera controller gives you access to the selected camera's defined lighting and color settings (scenes) and its lighting and color (CCU) adjustments. You don't need to access each camera's web interface separately to adjust for consistent video.

### Selecting Lighting and Color Settings

#### SCENES SCREEN (TOUCH-PANEL)

If the lighting or color balance doesn't look right in the video from the selected camera, go to the Scenes screen and choose the appropriate lighting setting. These are good starting points if you are not experienced with lighting and camera painting/shading.

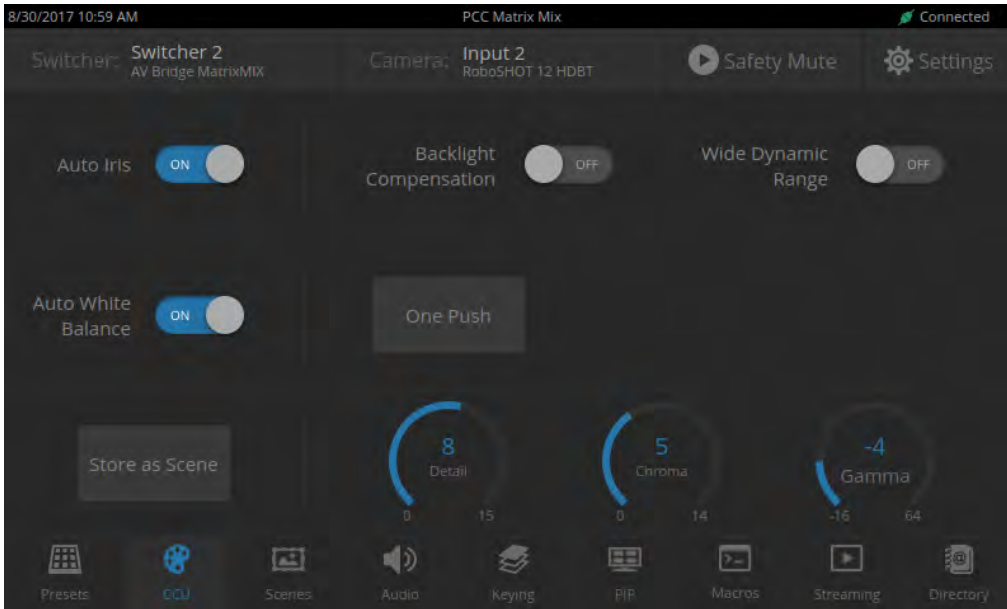


If none of the available scenes produce the desired results, you can create custom settings.

## Adjusting Lighting and Color (CCU) Settings

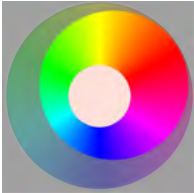
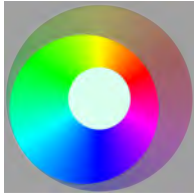
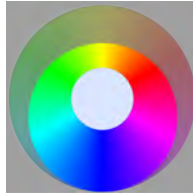
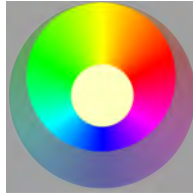

### CCU SCREEN (TOUCH-PANEL)

If none of the lighting selections on the Scenes screen produce the desired results, adjust the image using the controls on the CCU screen.



You may need to experiment to find the best combination of image adjustments.

Here are some tips.

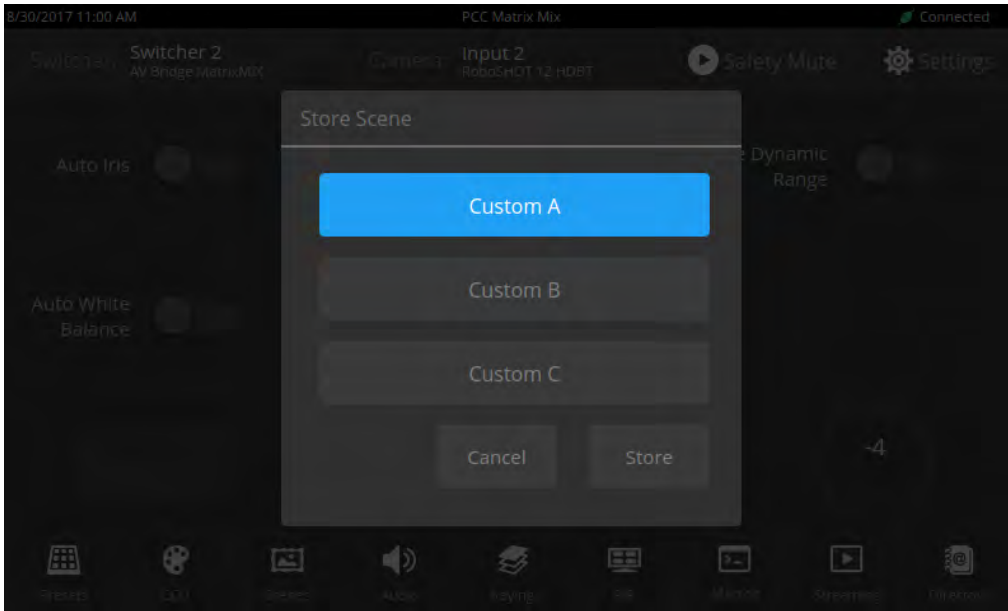
What do you need to correct?	Change this:	How:		
The image is too dark	Iris	Increase (Reduce F-stop)		
	Iris Gain	Increase		
The image looks washed out or faded	Iris	Decrease (Increase F-stop)		
	Iris Gain	Decrease		
	Chroma	Increase		
	Gamma	Decrease		
The subject is silhouetted against a bright background	Backlight Compensation	On		
Colors look less vivid than they should	Chroma	Increase		
Colors look too vivid	Chroma	Decrease		
Highlights and shadows look right, but mid-tones are too dark.	Gamma	Increase		
The mid-tones are too light.	Enable Wide Dynamic Range (WDR) if the camera supports this			
	Gamma	Decrease		
The image looks grainy	Detail	Decrease		
	Iris Gain	Decrease		
"Soft focus" effect; the image looks unrealistically smooth	Detail	Increase		
Colors look wrong; white objects do not appear white	Auto	On		
	One Push	(tap)		
	Red Gain (less red/less green)	Dial down/up		
	Blue gain (less blue/less yellow)	Dial down/up		
Too much red	Not enough red	Too much blue	Not enough blue	Balanced
				

If you are adjusting for lighting conditions that are likely to recur, you can save your adjustments as a custom scene.

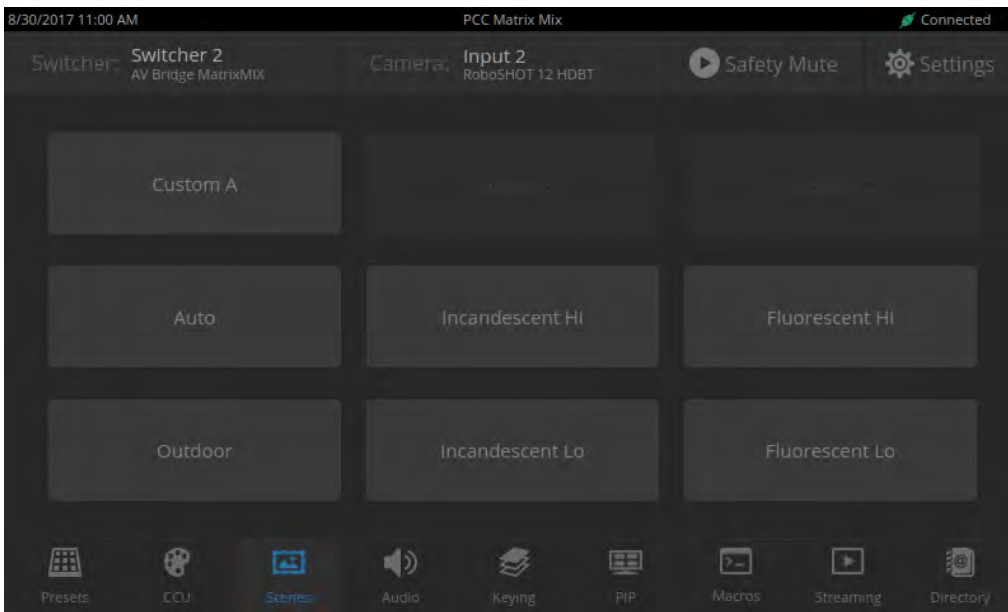
## Saving Lighting and Color Adjustments

### CCU SCREEN (TOUCH-PANEL)

When the lighting and color look good, select Store as Scene to save the adjustments. The screen prompts you to store the scene as Custom A, Custom B, or Custom C.



After you store the scene, it is available on the Scenes screen.

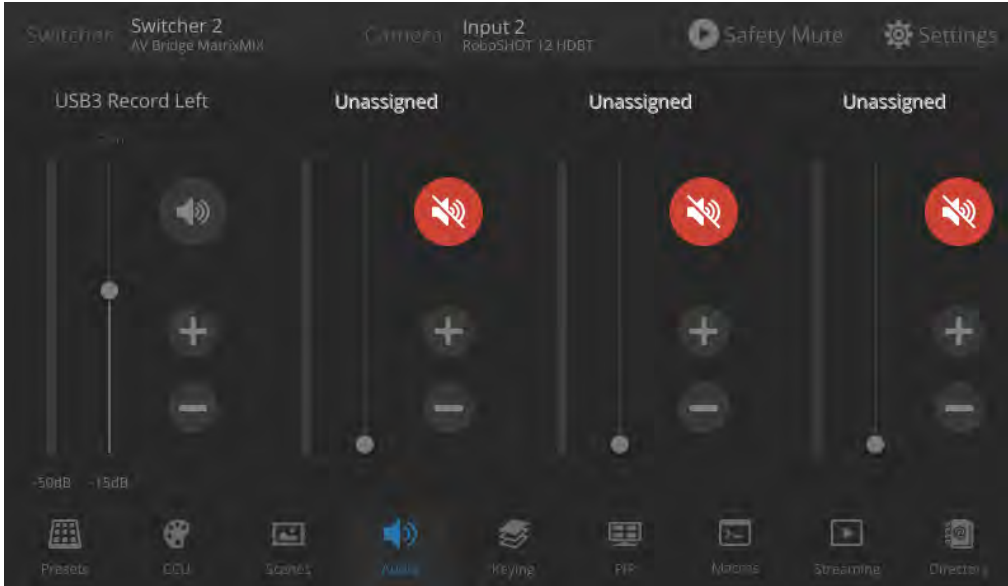


## Working with Audio

### AUDIO SCREEN (TOUCH-PANEL)

Up to four audio channels may be available on the Audio screen. Each provides a mute/unmute button, volume read-out, and volume slider control.

The audio channels available on the Audio screen depend on how the connected switcher is configured. Changing this requires administrative access to the switcher's web interface.

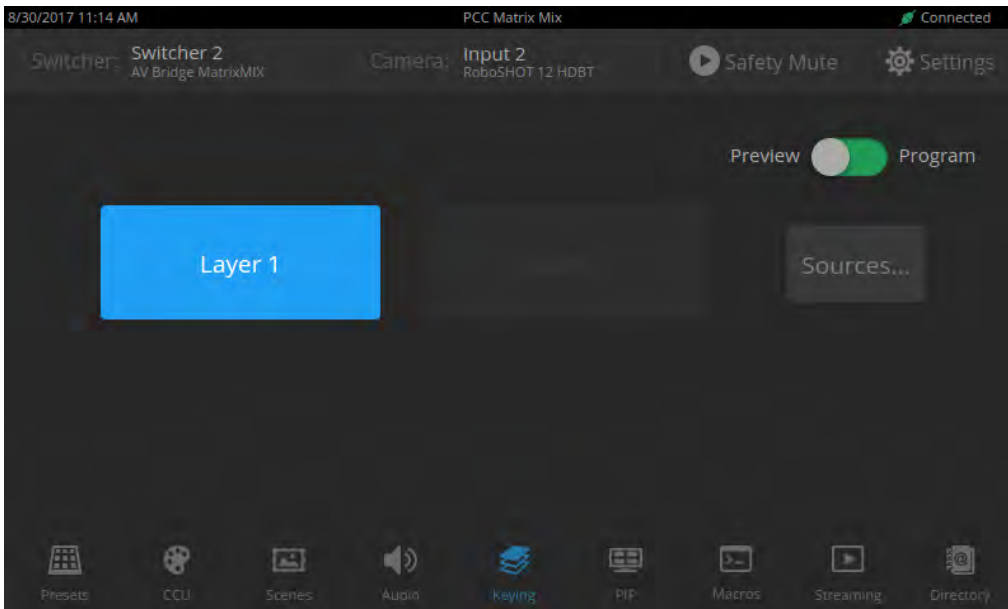


## Working with On-Screen Graphics

### KEYING SCREEN

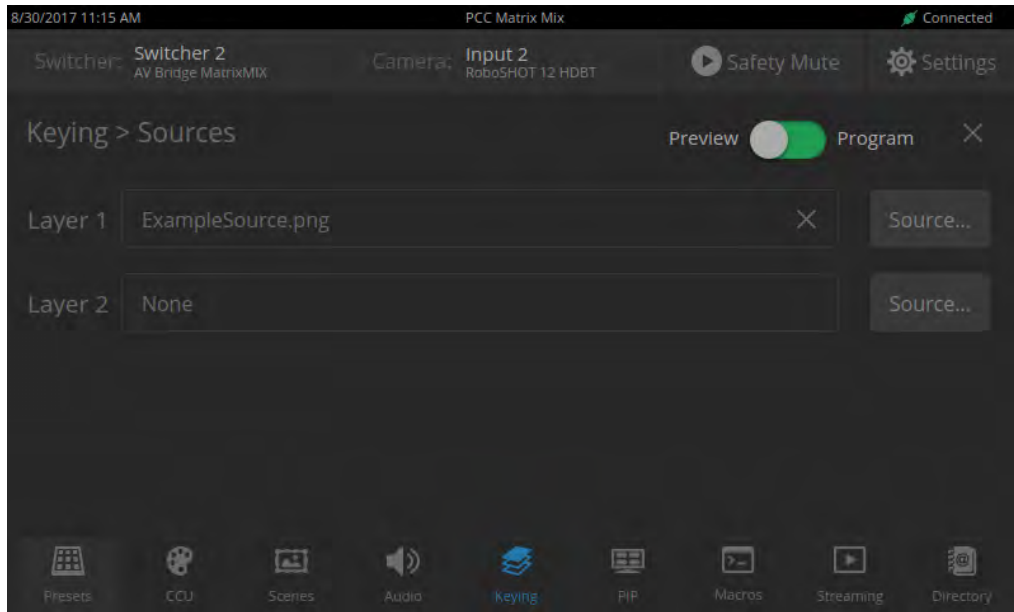
Select the output to work with – Preview or Program.

To add or remove an existing graphic, select or deselect the Layer button associated with it.

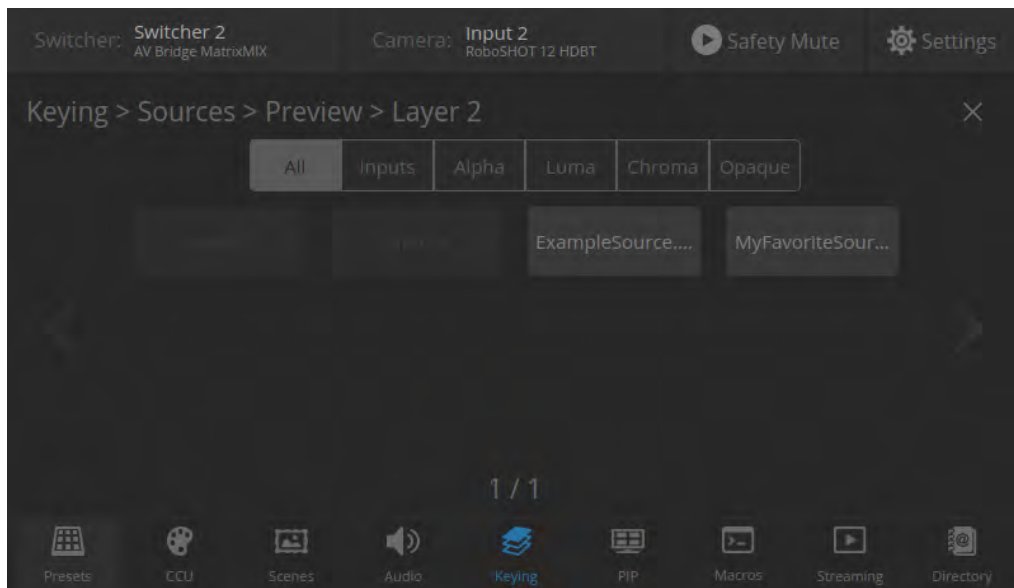


**To associate a graphic with a layer:**

1. Select Sources. The Keying > Sources screen displays the filename of the graphic (if any) associated with each layer.
2. To delete a graphic from a layer, select the X to the right of the filename.



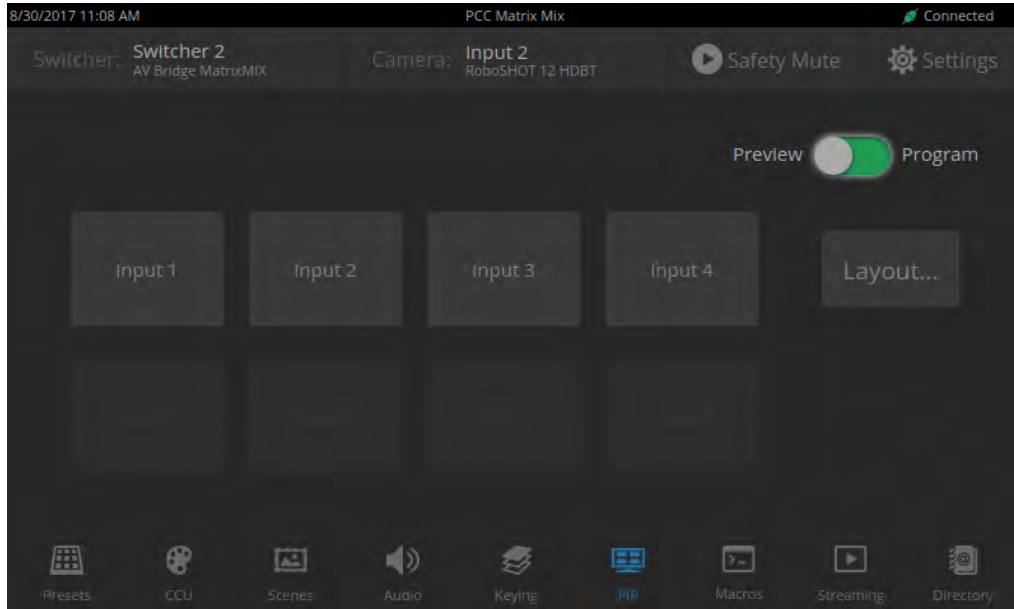
3. To add a graphic or change the graphic associated with a layer, select the Source button associated with the layer. This displays the library of available graphics files and sources.
4. Optional: Select one of the file search filters to display only the graphics of the desired mask type or source. If there are more graphics files and sources than will fit on the screen, the left and right navigation arrows become active.
5. Select the desired graphics file or source. This takes you back to the Keying > Sources screen.
6. Select the X in the upper right corner to return to the main Keying screen.



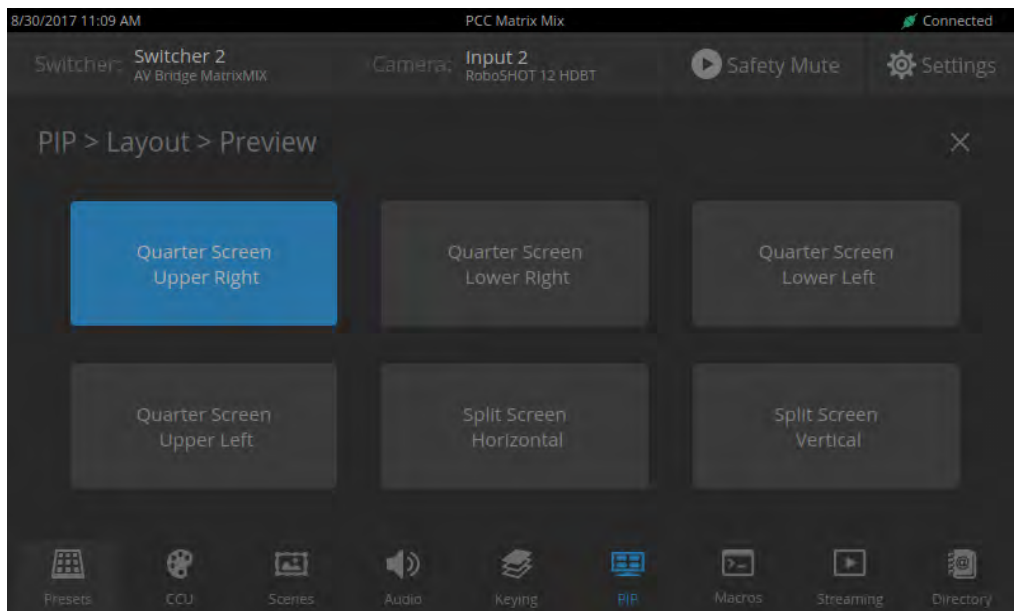
## Selecting a PIP Source and Layout

### PIP SCREEN

1. Select the output to work with – Preview or Program.
2. Select the camera or other video source to use as the PIP source.



3. Select Layout to open the layout selection box.
4. Select the desired screen layout.
5. Select the X in the upper right corner to return to the PIP source selection screen.



## Using Macros

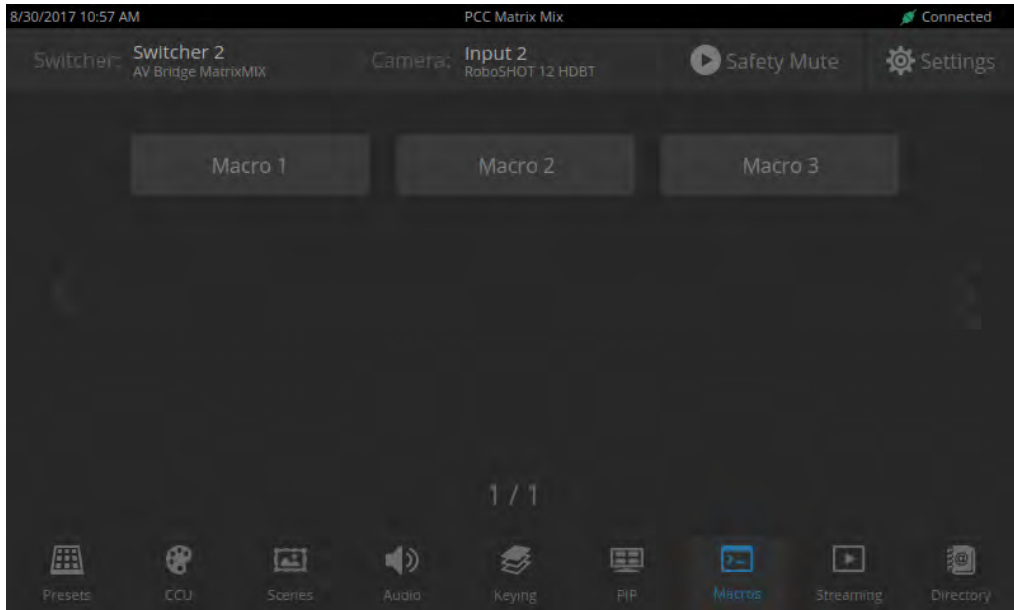
### MACROS SCREEN

Macros are defined in the switcher's administrative interface. Some may be specific to connected equipment rather than outputs.

Select the desired macro. Allow time for the macro to complete before starting another action.

#### **Note**

*Some macros enforce a delay to allow time for completion. The delay can be a minute or more in some cases.*

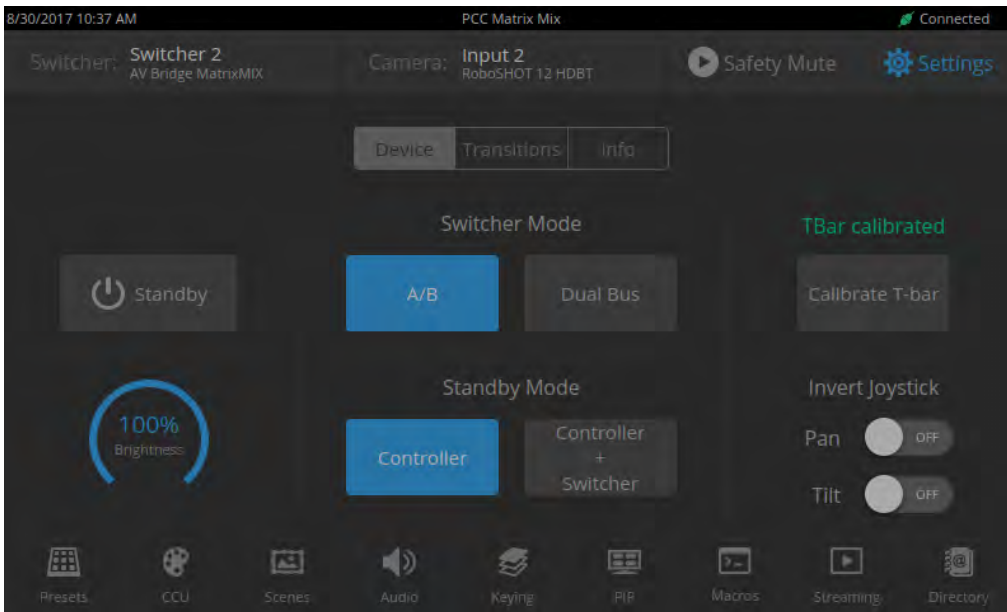




## Changing the Switching Mode

### SETTINGS SCREEN, DEVICE TAB

On the Device tab of the Settings screen, select the desired switcher mode – A/B or Dual Bus.



After changing from A/B switching to dual-bus mode or vice-versa, the controller(s) associated with the switcher may need to be rebooted.

## Changing to Low-Power Mode (Standby)

### SETTINGS SCREEN, DEVICE TAB

#### **Note**

On the Device tab of the Settings screen, select Standby. You may get a confirmation prompt. When the controller is in standby, you can tap the touch-panel to return to normal operation.

## Specifications

### Camera Management and Video Output

<b>Control via IP Network</b>	Up to 8 cameras via connected AV Bridge MatrixMIX switcher Directory of up to 10 connected AV Bridge MatrixMIX switchers		
<b>Local Program Output</b>	HDMI at resolutions up to full HD (1080p/60)		
<b>IP Streaming Decoder and Protocol</b>	H.264, RTSP	<b>Streaming Resolution</b>	Up to full HD (1080p/60)

### Hardware

<b>Control console</b>	<ul style="list-style-type: none"> <li>■ 7" capacitive touch panel display – Camera presets and administrative menu</li> <li>■ Illuminated rotary knobs – Focus (control, auto/manual) and Menu (display panel navigation)</li> <li>■ Rotary knobs – Pan, tilt, and zoom speed</li> <li>■ Illuminated pushbuttons – Program and Preview camera selection</li> <li>■ 3-axis Hall effect joystick, single-button – Pan, tilt, and zoom</li> <li>■ T-bar for manual transitions</li> </ul>
<b>System I/O</b>	<ul style="list-style-type: none"> <li>■ Gigabit Ethernet port with PoE+ support</li> <li>■ HDMI output</li> </ul>

### Power, Physical and Environmental

<b>Power Requirements</b>	PoE+ (Power over Ethernet)	<b>Power Consumption</b>	< 25W
<b>Height</b>	5.125 in. (12.6 cm)	<b>Operating temperature</b>	0° to +40°C (32° to 104°F)
<b>Width</b>	17 in. (43.2 cm)	<b>Operating humidity</b>	20% to 80% RH
<b>Depth</b>	11 in. (27.9 cm)	<b>Storage temperature</b>	-5° to +60° C (23° to 140°F)
<b>Weight</b>	7.2 lb (3.3 kg)	<b>Storage humidity</b>	20% to 80% RH

Specifications are subject to change without notice.

## Troubleshooting and Care

If the equipment does not behave as you expect, use this table to determine whether to call Vaddio Technical Support.

What is it doing?	Possible causes	Check and correct
Nothing. The display is off and the buttons do not light up.	Power is not connected.	Connect the mid-span power injector's power cord.
	The network/PoE+ cable from the mid-span power injector is bad.	Check using known good cables.
	The wall outlet is not active. (Check by finding out if it powers something else, such as a laptop or phone charger.)	Use a different outlet.
	The device or its mid-span power injector is bad.	Contact your reseller or Vaddio Technical Support.
Unable to log in successfully.	The web interface is out of sync with the unit. This can happen if more than one person is controlling the unit.	Use the browser's page refresh button.
	The password has been changed.	Contact your system administrator.
Unable to access the switcher's stream.	Streaming is not enabled on the switcher.	Log in to the switcher's web interface as admin and enable the appropriate stream.
A switcher's status is Disconnected and the connection status icon is red. The associated button is labeled Disconnect.	There is no longer a switcher at that IP address.	Change the directory entry to use the switcher's current IP address. If this happens repeatedly, consider working with your IT department to assign static IP addresses to the switchers and associated cameras.
	The PCC MatrixMIX is not connected to the network.	Verify that a good network cable is connected to the power injector's Data In port.
The program and preview indicators are blinking. (This may be visible on the switcher as well.)	A take is in progress. If the indicators keep blinking but no take occurs, the T-bar is not at either end of its travel.	Complete the take. Be sure the T-bar is at the end of its travel.

What is it doing?	Possible causes	Check and correct
The connected switcher is behaving in unexpected ways.	More than one operator has control of the switcher.	
No audio or video from the selected switcher; multiview display is blank.	Safety Mute is on.	Deselect Safety Mute on the PCC MatrixMIX touch-panel.
Safety Mute is on and cannot be deselected.	The switcher is in standby mode.	In the switcher's web interface, deselect standby mode.
No video from any source, but audio is present.	Video Mute is on at the switcher.	In the switcher's web interface, deselect Video Mute.
No audio, but video is present.	Audio Mute is on at the switcher.	In the switcher's web interface, deselect Audio Mute.

## Compliance Statements and Declarations of Conformity

Compliance testing was performed to the following regulations:

FCC Part 15 (15.107, 15.109), Subpart B	Class A
ICES-003, Issue 54: 2012	Class A
EMC Directive 2004/108/EC	Class A
EN 55032: 2015	Class A
EN 55024: November 2010	Class A
KN22 2008 (CISPR 22: 2006)	Class A
KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)	Class A
IEC 60950-1:2005 (2nd Edition); Am 1: 2009 + Am 2: 2013	Safety
EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013	Safety

### FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B, of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

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

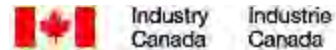
Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.



### ICES-003 Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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



## European Compliance

This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Standard(s) To Which Conformity Is Declared:



**EMC Directive 2004/108/EC**

**EN 55022: December 2010**

**EN 55024: November 2010**

EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001

EN 61000-4-3: 2006 + A1: 2008

EN 61000-4-4: 2004 + Corrigendum 2006

EN 61000-4-5: 2006

EN 61000-4-6: 2009

EN 61000-4-8: 2010

EN 61000-4-11: 2004

**KN22 2008 (CISPR 22: 2006)**

**KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)**

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

EN 61000-4-5

EN 61000-4-6

EN 61000-4-8

EN 61000-4-11

**IEC 60950-1: 2005 (2nd Edition); Am 1: 2009 + Am 2: 2013**

**EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013**

Conducted and Radiated Emissions

Immunity

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and Fluctuations

Conducted and Radiated Emissions

IT Immunity Characteristics

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and Fluctuations

Safety

Safety

## Warranty Information

See Vaddio Warranty, Service and Return Policies posted on [support.vaddio.com](http://support.vaddio.com) for complete details.

**Hardware\* warranty:** Two (2) year limited warranty on all parts and labor for Vaddio manufactured products. Vaddio warrants its manufactured products against defects in materials and workmanship for a period of two years from the day of purchase, to the original purchaser, if Vaddio receives notice of such defects during the warranty. Vaddio, at its option, will repair or replace products that prove to be defective. Vaddio manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.

**Exclusions:** The above warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer, customers applied software or interfacing, unauthorized modifications or misuse, mishandling, operation outside the normal environmental specifications for the product, use of the incorrect power supply, modified power supply or improper site operation and maintenance. OEM and special order products manufactured by other companies are excluded and are covered by the manufacturer's warranty.

**Vaddio Service Department:** Vaddio will test, repair, or replace the product or products without charge if the unit is under warranty. If the product is out of warranty, Vaddio will test then repair the product or products. The cost of parts and labor charge will be estimated by a technician and confirmed by the customer prior to repair. All components must be returned for testing as a complete unit. Vaddio will not accept responsibility for shipment after it has left the premises.

**Vaddio Technical Support:** Vaddio technicians will determine and discuss with the customer the criteria for repair costs and/or replacement. Vaddio Technical Support can be contacted by email at [support@vaddio.com](mailto:support@vaddio.com) or by phone at one of the phone numbers listed on [support.vaddio.com](http://support.vaddio.com).

**Return Material Authorization (RMA) number:** Before returning a product for repair or replacement request an RMA from Vaddio's technical support. Provide the technician with a return phone number, e-mail address, shipping address, product serial numbers and original purchase order number. Describe the reason for repairs or returns as well as the date of purchase. See the General RMA Terms and Procedures section for more information. RMAs are valid for 30 days and will be issued to Vaddio dealers only. End users must return products through Vaddio dealers. Include the assigned RMA number in all correspondence with Vaddio. Write the assigned RMA number clearly on the shipping label of the box when returning the product. All products returned for credit are subject to a restocking charge. Special order product are non-cancelable and not returnable.

**Voided warranty:** The warranty does not apply if the original serial number has been removed or if the product has been disassembled or damaged through misuse, accident, modifications, use of incorrect power supply, use of a modified power supply or unauthorized repair.

**Shipping and handling:** Vaddio will not pay for inbound shipping transportation or insurance charges or accept any responsibility for laws and ordinances from inbound transit. Vaddio will pay for outbound shipping, transportation, and insurance charges for all items under warranty but will not assume responsibility for loss and/or damage by the outbound freight carrier. If the return shipment appears damaged, retain the original boxes and packing material for inspection by the carrier. Contact your carrier immediately.

**Products not under warranty:** Payment arrangements are required before outbound shipment for all out of warranty products.

## Photo Credits

European Space Agency (ESA) astronaut Samantha Cristoforetti, a Flight Engineer with Expedition 42, photographs the Earth through a window in the Cupola on the International Space Station

By NASA - [https://blogs.nasa.gov/ISS\\_Science\\_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/](https://blogs.nasa.gov/ISS_Science_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/), Public Domain, <https://commons.wikimedia.org/w/index.php?curid=38834990>

Carl Sagan, Bruce Murray, Louis Friedman (founders) and Harry Ashmore (advisor), on the occasion of signing the papers formally incorporating The Planetary Society

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Main Control Room / Mission Control Room of ESA at the European Space Operations Centre (ESOC) in Darmstadt, Germany

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Expedition 42 on orbit crew portrait, International Space Station, Mar. 7, 2015 – Barry Wilmore (Commander) Top, Upside down, to the right cosmonaut Elena Serova, & ESA European Space Agency Samantha Cristoforetti. Bottom center US astronaut Terry Virts, top left cosmonauts Alexander Samokutyaev and Anton Shkaplerov.

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European Space Agency astronaut Luca Parmitano, Expedition 36 flight engineer, outside the International Space Station

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Chris Cassidy, Luca Parmitano, and Karen Nyberg, ISS, 2013. Photo Credit: NASA

Nicolas Altobelli, Rosetta Scientist at ESA's European Space Astronomy Centre, Villanueva de la Cañada, Madrid, Spain

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Andrea Accomazzo, ESA Rosetta Spacecraft Operations Manager, providing a live update from the Main Control Room at ESA's European Space Operations Centre, Darmstadt, Germany during the Rosetta wake-up day.

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