



Installation Guide for the

## **PCC MatrixMIX**

Live Production Controller

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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



## What's in this Guide

This guide covers:

- Unpacking the controller
- Tips for a successful installation
- Information on connecting the controller
- Equipment power-on

Complete product information is available in the **Integrator's Complete Guide to the PCC MatrixMIX Live Production Controller**.

## 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 and graphics
- Web interface for complete administrative control from anywhere, using your browser
- Optimized for soft conferencing clients

### 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.

\*\* If the camera is connected via a Quick-Connect or OneLINK device, IP control uses the camera's IP address, not the address of its extension device.

## 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 no RS-232 communication)

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.*

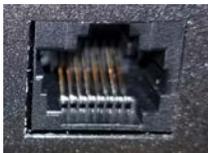
Learn more at [www.vaddio.com/products](http://www.vaddio.com/products).

## Cabling Notes

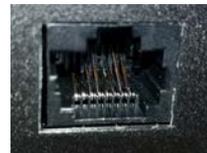
Use Cat-5e or better cable and standard RJ-45 connectors (568B termination). We recommend using high-quality connectors and a high-quality crimping tool.

### 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.*

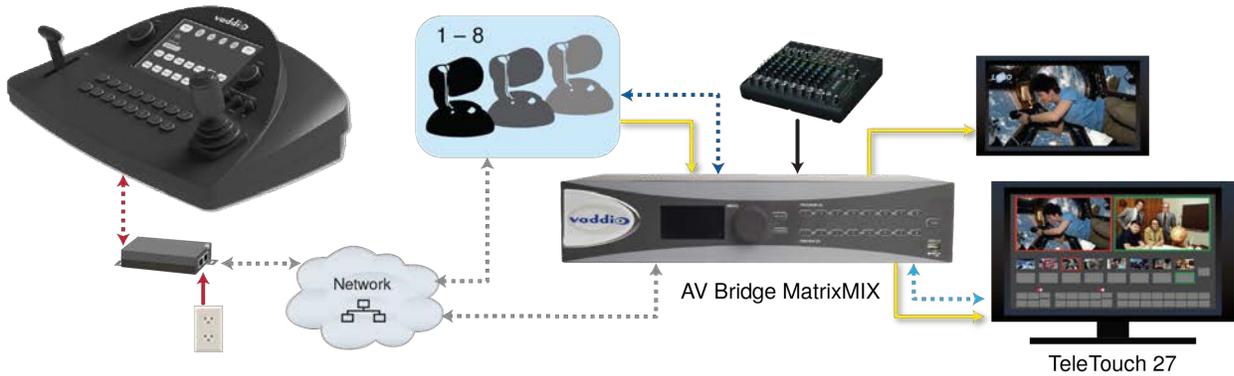


### Pro Tip

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

## Basic Connections

The diagram below shows a basic live production setup.



## 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.

## Next Steps

The PCC MatrixMIX is now ready to configure. Until the product is fully configured, its full functionality is not available. This information is available in the **Configuration and Administration Guide for the PCC MatrixMIX**. It is also covered in the **Integrator's Complete Guide to the PCC MatrixMIX**.

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

## Troubleshooting

If the equipment does not power up as expected, 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.

## Operation, Storage, and Care

For smears or smudges on the product, wipe with a clean, soft cloth. Do not use any abrasive chemicals.

Keep this device away from food and liquids.

Do not operate or store the device under any of the following conditions:

- Temperatures above 40°C (104°F) or below 0°C (32°F)
- High humidity, condensing or wet environments
- Inclement weather
- Severe vibration
- Dry environments with an excess of static discharge

Do not attempt to take this product apart. There are no user-serviceable components inside.

## 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.

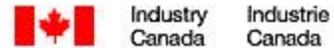


Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.

### 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

By European Space Agency - Nicolas Altobelli talks to the media, CC BY-SA 3.0-igo, <https://commons.wikimedia.org/w/index.php?curid=36743144>

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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Visit us at [support.vaddio.com](http://support.vaddio.com) for firmware updates, specifications, drawings, manuals, technical support information, and more.

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In British Columbia, Milestone AV Technologies ULC carries on business as MAVT Milestone AV Technologies ULC.

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The logo for Vaddio, featuring the word "vaddio" in a bold, blue, lowercase sans-serif font. The final letter "o" is stylized as a thick blue circle with a smaller blue circle inside it, resembling an eye or a lens. A registered trademark symbol (®) is located at the top right of the "o".

**vaddio®**