



Installation Guide for

RoboSHOT CAT-5 Professional PTZ Camera Systems

Including

RoboSHOT QCCU, RoboSHOT QUSB, RoboSHOT QMini,
RoboSHOT QDVI, RoboSHOT QSR, and RoboSHOT AVBMP

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Overview

This guide covers the RoboSHOT® CAT-5 cameras. These cameras must be used with a Quick-Connect device or with an AV Bridge MATRIX PRO.



RoboSHOT QCCU systems:

- RoboSHOT 12 QCCU, North America – 999-9907-000 (silver/black)
- RoboSHOT 12 QCCU, Europe/UK – 999-9907-001 (silver/black)
- RoboSHOT 12E QCCU, North America – 999-99070-000 (black), 999-99070-000 (white)
- RoboSHOT 12E QCCU, Europe/UK – 999-99070-001 (black), 999-99070-001 (white)
- RoboSHOT 30 QCCU, North America – 999-9917-000 (black), 999-9917-000W (white)
- RoboSHOT 30 QCCU, Europe/UK – 999-9917-001 (black), 999-9917-001W (white)
- RoboSHOT 30 QCCU, Australia/New Zealand – 999-99170-009 (black), 999-99170-009W (white)
- RoboSHOT 30E QCCU, North America – 999-99170-000 (black), 999-99170-000W (white)
- RoboSHOT 30E QCCU, Europe/UK – 999-99170-001 (black), 999-99170-001W (white)
- RoboSHOT 30E QCCU, Australia/New Zealand – 999-99170-009 (black), 999-99170-009W (white)

RoboSHOT QUSB systems:

- RoboSHOT 12 QUSB, North America – 999-9909-000 (silver/black)
- RoboSHOT 12 QUSB, Europe/UK – 999-9909-001 (silver/black)
- RoboSHOT 12 QUSB, Australia/New Zealand – 999-9909-009 (silver/black)
- RoboSHOT 12E QUSB, North America – 999-99090-000 (black), 999-99090-000W (white)
- RoboSHOT 12E QUSB, Europe/UK – 999-99090-001 (black), 999-99090-001W (white)
- RoboSHOT 12E QUSB, Australia/New Zealand – 999-99090-009 (black), 999-99090-009W (white)
- RoboSHOT 30 QUSB, North America – 999-9919-000 (black); 999-9919-000W (white)
- RoboSHOT 30 QUSB, Europe/UK – 999-9919-001 (black); 999-9919-001W (white)
- RoboSHOT 30 QUSB, Australia/New Zealand – 999-9919-009 (black); 999-9919-009W (white)
- RoboSHOT 30E QUSB, North America – 999-99190-000 (black); 999-99190-000W (white)
- RoboSHOT 30E QUSB, Europe/UK – 999-99190-001 (black); 999-99190-001W (white)
- RoboSHOT 30E QUSB, Australia/New Zealand – 999-99190-009 (black); 999-99190-009W (white)

RoboSHOT QMini systems:

- RoboSHOT 12 QMini, North America – 999-9901-000 (silver/black)
- RoboSHOT 12 QMini, Europe/UK – 999-9901-001 (silver/black)
- RoboSHOT 12 QMini, Australia/New Zealand – 999-9901-009 (silver/black)
- RoboSHOT 12E QMini, North America – 999-99010-000 (black), 999-99010-000W (white)
- RoboSHOT 12E QMini, Europe/UK – 999-99010-001 (black), 999-99010-001W (white)
- RoboSHOT 12E QMini, Australia/New Zealand – 999-99010-009 (black), 999-99010-009W (white)
- RoboSHOT 30 QMini, North America – 999-9911-000 (black); 999-9911-000W (white)
- RoboSHOT 30 QMini, Europe/UK – 999-9911-001 (black); 999-9911-001W (white)
- RoboSHOT 30E QMini, North America – 999-99110-000 (black); 999-99110-000W (white)
- RoboSHOT 30E QMini, Europe/UK – 999-99110-001 (black); 999-99110-001W (white)

RoboSHOT QDVI systems:

- RoboSHOT 12 QDVI, North America – 999-9906-000 (silver/black)
- RoboSHOT 12 QDVI, Europe/UK – 999-9906-001 (silver/black)
- RoboSHOT 12E QDVI, North America – 999-99060-000 (black), 999-99060-000W (white)
- RoboSHOT 12E QDVI, Europe/UK – 999-99060-000 (black), 999-99060-000W (white)
- RoboSHOT 30 QDVI, North America – 999-9916-000 (black), 999-9916-000W (white)
- RoboSHOT 30 QDVI, Europe/UK – 999-9916-001 (black), 999-9916-001W (white)
- RoboSHOT 30E QDVI, North America – 999-99160-000 (black), 999-99160-000W (white)
- RoboSHOT 30E QDVI, Europe/UK – 999-99160-001 (black), 999-99160-001W (white)

RoboSHOT QSR systems:

- RoboSHOT 12 QSR, North America – 999-9905-000 (silver/black)
- RoboSHOT 12 QSR, Europe/UK – 999-9905-001 (silver/black)
- RoboSHOT 30 QSR, North America – 999-9915-000 (black), 999-9915-000W (white)
- RoboSHOT 30 QSR, Europe/UK – 999-9915-001 (black), 999-9915-001W (white)

RoboSHOT AVBMP:

- RoboSHOT 12 AVBMP, worldwide – 999-9900-500 (silver/black)
- RoboSHOT 12E AVBMP, worldwide – 999-99000-500 (black), 999-99000-500W (white)
- RoboSHOT 30 AVBMP, worldwide – 999-9910-500 (black), 999-9910-500W (white)
- RoboSHOT 30E AVBMP, worldwide – 999-99100-500 (black), 999-99100-500W (white)

What's in this Guide

This guide covers:

- Unpacking the camera
- Tips for a successful installation
- Instructions for installing the camera mount
- Information on connecting and mounting the camera
- Camera power-on

Complete product information is available in the **Complete Manual for RoboSHOT CAT-5 Professional PTZ Camera Systems**.

Download manuals, dimensional drawings, and other information from www.vaddio.com/support.

Camera Features

- Powered by your choice of Quick-Connect device or by an AV Bridge MATRIX PRO for maximum flexibility in installation and output connectivity
- Full HD (native 1080p/60) resolution
- RoboSHOT 12 and RoboSHOT 30: Exmor® 1/2.8 type image sensor
- RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5: Exmor R™ back-lit 1/2.5 type, high-speed, low-noise image sensor
- RoboSHOT 12 and RoboSHOT 12E CAT-5: 12x optical zoom – perfect for small to medium rooms
- RoboSHOT 30 and RoboSHOT 30E CAT-5: 30x optical zoom – for medium to large venues such as houses of worship, lecture theaters, IMAG systems
- Tri-Synchronous Motion™ simultaneous 3-axis pan/tilt/zoom movement between presets
- Smooth, silent direct-drive motors – ultra-accurate positioning, from 120° per second down to 0.35° per second
- Web interface for remote administration and operation, integration-ready Telnet or serial RS-232 control, presenter-friendly IR remote control

Quick-Connect Features

Quick-Connect devices provide power and connectivity for the RoboSHOT 12 and RoboSHOT 30 cameras. Tailored to specific environments and situations, they give the RoboSHOT cameras unparalleled flexibility.

Quick-Connect Universal CCU (QCCU)

Best for environments where lighting and color management are priorities, and for installations requiring long cabling distances.

- Full camera control unit functionality – manage lighting and color; store and recall up to 3 CCU scenes
- Supports resolutions up to 1080p/60 from the camera
- Simultaneous HD-SDI, HDMI and HD analog component (YPbPr) outputs
- Up to 500 ft. (152 m) cabling distance
- Tally light shows when the camera is on-air
- Back-lit 8-line menu display
- 1RU form factor; ships with rack mounting brackets



Quick-Connect USB (QUSB)

Versatile USB 2.0 device for environments using soft conferencing applications. Extends HDMI up to 100 ft. (30 m).

- Choice of USB 2.0 MJPEG or IP (H.264) streaming
- Simultaneous HDMI and HD analog component (YPbPr) outputs
- Supports resolutions up to 1080p/60 from the camera
- Up to 100 ft. (30 m) cabling distance
- Standard UVC drivers
- Web interface for network and streaming configuration
- Half-rack form factor; mounting brackets available (not included)



Quick-Connect USB Mini (QMini)

Cost-effective USB 2.0 connectivity for soft conferencing applications, designed for environments where only one camera is needed.

- USB streaming/capture only
- Standard UVC drivers
- Up to 100 ft (30 m) cabling distance
- Compact form factor



Quick-Connect DVI/HDMI-SR (QDVI)

Connectivity solution for use with legacy equipment.

- Supports resolutions up to 1080p/60 from the camera
- DVI-D/HDMI and analog component (YPbPr) outputs
- Up to 100 ft. (30 m) cabling distance
- Push-button color space selection - sRGB for DVI-D or YCbCr for HDMI
- IR output for codecs
- Supports daisy-chaining
- Half-rack form factor; mounting brackets available (not included)



Quick-Connect SR (QSR)

Basic connectivity for use with legacy equipment.

- Supports resolutions up to 1080p/60 from the camera
- Analog component YPbPr output
- Up to 100 ft. (30 m) cabling distance
- IR output for codecs



Unpacking the Camera System

Make sure you received all the items you expected. Here are the packing lists for the RoboSHOT camera systems.

Download manuals, dimensional drawings, and other information from www.vaddio.com/support.



Caution

Always support the camera's base when picking it up. Lifting the camera by its head or mounting arm will damage it.



RoboSHOT 12E AVBMP, worldwide – 999-99000-500 (black), 999-99000-500W (white)

- RoboSHOT 12E CAT-5 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-start guide



RoboSHOT 12 AVBMP, worldwide – 999-9900-500

(silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-start guide



RoboSHOT 30E AVBMP, worldwide – 999-99100-500 (black), 999-99100-500W (white)

- RoboSHOT 30E CAT-5 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-start guide



RoboSHOT 30 AVBMP, worldwide – 999-9910-500 (black), 999-9910-500W (white)

- RoboSHOT 30 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Start Guide



RoboSHOT 12E QCCU System, North America – 999-99070-000 (black), 999-99070-000W (white)
RoboSHOT 12E QCCU System, Europe/UK – 999-99070-001 (black), 999-99070-001W (white)
RoboSHOT 12E QCCU System, Australia/New Zealand – 999-99070-009 (black), 999-99070-009W (white)

- RoboSHOT 12E CAT-5 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect Universal CCU Cat-5 Interface (QCCU)
- 36V power supply with AC cord set(s)
- Rack mounting brackets, qty. 2 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 12 QCCU System, North America – 999-9907-000 (silver/black)
RoboSHOT 12 QCCU System, Europe and UK – 999-9907-001 (silver/black)
RoboSHOT 12 QCCU System, Australia and New Zealand – 999-9907-009 (silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-Connect Universal CCU Cat-5 Interface (QCCU)
- 36V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Rack mounting brackets, qty. 2 (not shown)
- Quick-start guides



RoboSHOT 30E QCCU System, North America – 999-99170-000 (black), 999-99170-000W (white)
RoboSHOT 30E QCCU System, Europe/UK – 999-99170-001 (black), 999-99170-001W (white)
RoboSHOT 30E QCCU System, Australia/New Zealand – 999-99170-009 (black), 999-99170-009W (white)

- RoboSHOT 30E CAT-5 Camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect Universal CCU Cat-5 Interface (QCCU)
- 36V power supply with AC cord set(s)
- Rack mounting brackets, qty. 2 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 30 QCCU System, North America – 999-9917-000 (black), 999-9917-000W (white)
RoboSHOT 30 QCCU System, Europe/UK – 999-9917-001 (black), 999-9917-001W (white)
RoboSHOT 30 QCCU System, Australia/New Zealand – 999-9917-009 (black), 999-9917-009W (white)

- RoboSHOT 30 Camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect Universal CCU Cat-5 Interface (QCCU)
- 36V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Rack mounting brackets, qty. 2 (not shown)
- Quick-start guides



RoboSHOT 12E QUSB System, North America – 999-99090-000 (black), 999-99090-000W (white)
RoboSHOT 12E QUSB System, Europe/UK – 999-99090-001 (black), 999-99090-001W (white)
RoboSHOT 12E QUSB System, Australia/New Zealand – 999-99090-009 (black), 99-99090-009W (white)

- RoboSHOT 12E CAT-5 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB interface (QUSB)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- Rubber feet for QUSB unit, qty. 4 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 12 QUSB System, North America – 999-9909-000 (silver/black)
RoboSHOT 12 QUSB System, Europe/UK – 999-9909-001 (silver/black)
RoboSHOT 12 QUSB System, Australia/New Zealand – 999-9909-009 (silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-Connect USB interface (QUSB)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- EZCamera RS-232 Control Adapter (998-1001-232)
- Rubber feet for QUSB unit, qty. 4 (not shown)
- Quick-start guides



RoboSHOT 30E QUSB System, North America – 999-99190-000 (black), 999-99190-000W (white)
RoboSHOT 30E QUSB System, Europe/UK – 999-99190-001 (black), 999-99190-001W (white)
RoboSHOT 30E QUSB System, Australia/New Zealand – 999-99190-009 (black), 999-99190-009W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB Interface (QUSB)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- Rubber feet for QUSB unit, qty. 4 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 30 QUSB System, North America – 999-9919-000 (black), 999-9919-000W (white)
RoboSHOT 30 QUSB System, Europe/UK – 999-9919-001 (black), 999-9919-001W (white)
RoboSHOT 30 QUSB System, Australia/New Zealand – 999-9919-009 (black), 999-9919-009W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB Interface (QUSB)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- EZCamera RS-232 Control Adapter (998-1001-232)
- Rubber feet for QUSB unit, qty. 4 (not shown)
- Quick-start guides



RoboSHOT 12E QMini, North America – 999-99010-000 (black), 999-99010-000W (white)
RoboSHOT 12E QMini, Europe/UK – 999-99010-001 (black), 999-99010-001W (white)
RoboSHOT 12E QMini, Australia/New Zealand – 999-99010-009 (black), 999-99010-009W (white)

- RoboSHOT 12E CAT-5 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB Mini interface (QMini)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 12 QMini System, North America – 999-9901-000 (silver/black)
RoboSHOT 12 QMini System, Europe/UK – 999-9901-001 (silver/black)
RoboSHOT 12 QMini System, Australia/New Zealand – 999-9901-009 (silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-Connect USB Mini interface (QMini)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- EZCamera RS-232 Control Adapter (998-1001-232)
- Quick-start guides



RoboSHOT 30E QMini System, North America – 999-99110-000 (black), 999-99110-000W (white)
RoboSHOT 30E QMini System, Europe/UK – 999-99110-001 (black), 999-99110-001W (white)
RoboSHOT 30E QMini System, Australia/New Zealand – 999-99110-009 (black), 999-99110-009W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB Mini interface (QMini)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 30 QMini System, North America – 999-9911-000 (black), 999-9911-000W (white)
RoboSHOT 30 QMini System, Europe/UK – 999-9911-001 (black), 999-9911-001W (white)
RoboSHOT 30 QMini System, Australia/New Zealand – 999-9911-009 (black), 999-9911-009W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect USB Mini interface (QMini)
- 24V power supply with AC cord set(s)
- 6 ft. (1.8 m) USB 2.0 cable, type A to B
- EZCamera RS-232 Control Adapter (998-1001-232)
- Quick-start guides



RoboSHOT 12E QDVI System, North America – 999-99060-000 (black), 999-99060-000W (white)

RoboSHOT 12E QDVI System, Europe/UK – 999-99060-000 (black), 999-99060-000W (white)

- RoboSHOT 12E CAT-5 camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect DVI/HDMI SR interface (QDVI)
- 24V power supply with AC cord set(s)
- Phoenix-style connector, 3-position
- Rubber feet for QDVI unit, qty. 4 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 12 QDVI System, North America – 999-9906-000 (silver/black)

RoboSHOT 12 QDVI System, Europe/UK – 999-9906-001 (silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-Connect DVI/HDMI SR interface (QDVI)
- 24V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Phoenix-style connector, 3-position
- Rubber feet for QDVI unit, qty. 4 (not shown)
- Quick-start guides



RoboSHOT 30E QDVI System, North America – 999-9916-000 (black), 999-9916-000W (white)

RoboSHOT 30E QDVI System, Europe/UK – 999-9916-001 (black), 999-9916-001W (white)

- RoboSHOT 30E CAT-5 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect DVI/HDMI SR interface (QDVI)
- 24V power supply with AC cord set(s)
- Phoenix-style connector, 3-position
- Rubber feet for QDVI unit, qty. 4 (not shown)
- Quick-start guides

Note

If you need an EZCamera RS-232 Control Adapter for use with this camera, please contact Vaddio Technical Support to obtain one.



RoboSHOT 30 QDVI System, North America – 999-9916-000 (black), 999-9916-000W (white)

RoboSHOT 30 QDVI System, Europe/UK – 999-9916-001 (black), 999-9916-001W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect DVI/HDMI SR interface (QDVI)
- 24V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Phoenix-style connector, 3-position
- Rubber feet for QDVI unit, qty. 4 (not shown)
- Quick-start guides



RoboSHOT 12 QSR System, North America – 999-9905-000 (silver/black)

RoboSHOT 12 QSR System, Europe and UK – 999-9905-001 (silver/black)

- RoboSHOT 12 camera
- Thin Profile Wall Mount with mounting hardware, black
- Vaddio IR Remote Commander
- Quick-Connect SR interface (QSR)
- 24V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Phoenix-style connector, 3-position
- Rubber feet for QSR unit, qty. 4 (not shown)
- Quick-start guides



RoboSHOT 30 QSR System, North America – 999-9915-000 (black), 999-9915-000W (white)

RoboSHOT 30 QSR System, Europe/UK – 999-9915-001 (black), 999-9915-001W (white)

- RoboSHOT 30 camera
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- Quick-Connect SR interface (QSR)
- 24V power supply with AC cord set(s)
- EZCamera RS-232 Control Adapter (998-1001-232)
- Phoenix-style connector, 3-position
- Rubber feet for QSR unit, qty. 4 (not shown)
- Quick-start guides



A Quick Look at the Camera

The cameras in the RoboSHOT line are similar in appearance.

- RoboSHOT 12 is silver, with a black base and stepped lens bezel
- RoboSHOT 30 is available in black or white, and has a fluted lens bezel
- RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 are available in black or white, and have smooth lens bezels

The image below shows a RoboSHOT 30 camera.

Front of the Camera



Camera and Zoom Lens

- **RoboSHOT 12:** 12x optical zoom in Super-Wide mode, 10x optical zoom in normal mode. Recommended for small to medium sized conference rooms.
- **RoboSHOT 12E CAT-5:** 12x optical zoom; recommended for small to medium sized conference rooms.
- **RoboSHOT 30 and RoboSHOT 30E CAT-5:** 30x optical zoom; best suited to larger rooms.

IR Sensors: Sensors in the front of the camera base receive signals from the remote. Make sure there's nothing directly in front of the camera base, and point the remote at the camera.

Status indicator: The multicolored LED indicates the camera's current state.

Really Cool Logo Badge (RCLB): Attractive and shiny, with a sophisticated brushed-metal finish.

Back of the Camera – RoboSHOT 12 and RoboSHOT 30

Rear panel connections are identical for the older RoboSHOT 12 and RoboSHOT 30 cameras.



- **Network Control:** RJ-45 connector. Connect to the network for control via the web interface or Telnet session.
- **HD Video Select:** Rotary switch to select the video output resolution. See [Video Resolution Setting](#).
- **Camera Settings:** DIP switches to set camera behaviors such as IR remote frequency, baud rate and image flip. See [Camera Behavior Settings – RoboSHOT 12 and 30](#) for more information.
- **RS-232:** RJ-45 connector. Connect to the RS-232 port (if any) on the Quick-Connect device to allow an external device to manage the camera using a modified VISCA protocol. See [RS-232 Serial Communication Settings](#) for RS-232 settings.
- **EZPower Video:** RJ-45 connector. Supplies power to the camera and delivers HD video back to the Quick-Connect interface using high speed differential signaling over Cat-5e cable. Connect to the EZPower Video port on the Quick-Connect device. (Color-coded orange or yellow, depending on the device.)
- **36 VDC FOR CCU ONLY:** RJ-45 connector. Power from the Quick-Connect Universal CCU, in RoboSHOT QCCU systems only. *Do not use this port* except when connecting to a Quick-Connect Universal CCU.

Note

A label on the bottom of the camera lists the rotary and DIP switch settings.

Back of the Camera – RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5

Rear panel connections are identical for the RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 cameras.



- **Network Control:** RJ-45 connector. Connect to the network for control via the web interface or Telnet session.
- **HD Video Select:** Rotary switch to select the video output resolution. See [Video Resolution Setting](#).
- **RS-232:** RJ-45 connector. Connect to the RS-232 port (if any) on the Quick-Connect device to allow an external device to manage the camera using a modified VISCA protocol. See [RS-232 Serial Communication Settings](#) for RS-232 settings.
- **EZPower Video:** RJ-45 connector. supplies power to the camera and delivers HD video back to the Quick-Connect interface using high speed differential signaling over Cat-5e cable. Connect to the EZPower Video port on the Quick-Connect device. (Color-coded orange or yellow, depending on the device.)
- **36 VDC FOR CCU ONLY:** RJ-45 connector. Power from the Quick-ConnectUniversal CCU. *Do not use this port except when connecting to a Quick-ConnectUniversal CCU.*

Note

A label on the bottom of the camera lists the rotary switch settings.

A (Quick) Look at the Quick-Connect Devices

RoboSHOT 12, RoboSHOT 12E CAT-5, RoboSHOT 30, and RoboSHOT 30E CAT-5 cameras are not designed for stand-alone operation. These configurations are available:

- **QCCU system** – A camera with a Quick-Connect Universal CCU, a broadcast-quality CCU (camera control unit) for managing color and lighting adjustments. This system is typically used with a joystick camera controller.
- **QUSB system** – A camera with a Quick-Connect USB, a versatile solution with multiple connectivity options and choice of USB or IP streaming. This system is typically used in rooms that need conferencing capability, and may be used with a joystick camera controller.
- **QMini system** – A camera with a Quick-Connect USB Mini, a basic USB connectivity solution with a small, unobtrusive form factor. This system is typically used for soft conferencing applications.
- **QDVI system** – A camera with a Quick-Connect DVI/HDMI-SR, a connectivity solution for legacy equipment; provides DVI and analog component video outputs. Use with a DVI-to-HDMI adapter for HDMI output. Like the RoboSHOT QSR system, this system is typically used with older equipment; however, it provides more connectivity options. This system may be used with a joystick camera controller.
- **QSR system** – A RoboSHOT 12 or RoboSHOT 30 camera with a Quick-Connect SR, a short-range connectivity device for legacy equipment; provides analog component video output. This system is typically used with older displays, and may be used with a joystick camera controller. The Quick-Connect SR device has been discontinued and is not available for RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 cameras, though it will work with them.

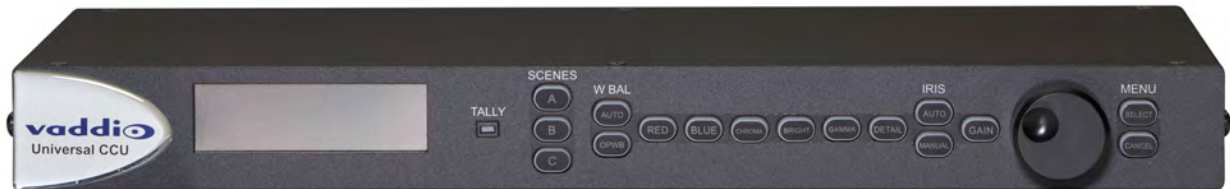
The RoboSHOT 12, RoboSHOT 12E CAT-5, RoboSHOT 30, and RoboSHOT 30E CAT-5 cameras are also sold as **RoboSHOT AVBMP** cameras. These do not use Quick-Connect devices, but connect directly to a Vaddio AV Bridge MATRIX PRO, which provides connectivity for up to three cameras.

Quick-Connect Universal CCU Interface

This interface combines a versatile connectivity solution with a broadcast-quality camera control unit (CCU). It is the best choice for environments where lighting and color management are priorities and installations requiring long cabling distances.

Note

The Universal CCU supports resolutions with frame rates of 60, 59.94 and 50 frames per second, but not lower.



Front panel features:

- **5-line display** – Shows the current value for the parameter you are changing. The display shows up to 8 parameters at a time, so you can see how the controls and settings interact.
- **Tally light** – In a multi-camera/CCU installation, this indicator shows when this CCU and camera are the live program. When this light illuminates, the CCU also sends a tally command to the camera to light its tally indicator.
- **Menu selector knob** – Dial the desired setting or value for the selected function.

The buttons:

- **Scene A, Scene B and Scene C** – Store and use three different sets of color and lighting adjustments (CCU scenes). F
- **W Bal OPWB (One Push White Balance)** – Calibrate the color balance (Auto White Balance must be off). After the calibration is complete, you may want to activate Auto White Balance.
- **W Bal Auto (Auto White Balance)** – Manage color levels automatically. Use the OPWB button to calibrate the white balance before activating Auto White Balance.
- **Red Gain and Blue Gain controls** – Adjust the color balance. These controls are only active when Auto White Balance is off.
- **Chroma** – Controls the color intensity of the image.
- **Bright** – Luminance control for the image.
- **Gamma** – Adjusts the mid-tones to change the grey density of the image.
- **Detail** – Sharpens or softens the objects in the image.
- **Iris Auto and Iris Manual** – Automatic and manual control, respectively, of the amount of light entering the camera.
- **Gain** – Boosts the signal level when the iris is open all the way and there is not enough light available.
- **Select and Cancel buttons** – Save the change you make with the menu selector knob, or cancel it to retain the existing setting or value. These buttons are also used for menu navigation.



Back panel features:

- **Power input** – Connect only the 36 VDC, 2.78 Amp power supply provided with the Universal CCU.
- **Recessed white button** – Press to execute a factory reset; press and hold to enter boot loader mode.
- **36 VDC to Camera (red)** – Power to the RoboSHOT camera. Connect to the camera's port marked **36 VDC for CCU Only** (color coded red). See [Back of the Camera](#).

Caution

*Connect this port ONLY to the camera port marked **36 VDC for CCU Only** and color-coded red. Connecting this port to any other port on the camera will result in equipment damage, and will void the warranty.*

- **RS-232 In (grey)** – Control from an external device. If the camera and CCU will be controlled using a ProductionVIEW console or other camera control system, connect it to this port. Daisy-chain topology is not supported.
- **RS-232 to Camera (blue)** – Camera control. Connect to the camera's RS-232 port.
- **Local** – Install the 2-pin 5.0 mm Euro-style connector to use the tally function. In a multi-camera CCU installation, this lights the blue indicator on the front panel when this camera and Universal CCU combination is the live program. A tally command is also sent to the RoboSHOT camera via RS-232, illuminating its front indicator.
- **8-position DIP switch** – The DIP switch lets you configure the way the camera and Universal CCU behave. The default position for all switches is DOWN. (Note that the default position for the DIP switch on the camera is all UP.)
 - Switch 1: UP to load Scene A on power-up or reboot.
 - Switch 5: UP to access adjustments for the display on the front panel.
- **Video from Camera (yellow and orange)** – Receives the camera's differential video signals from the camera's EZ-POWER VIDEO connection.
- **HD Video Outputs** – The Universal CCU provides simultaneous video output in three formats, at the same resolution as the video input:
 - **HD YPbPr** – Resolution/frame rate up to 1080p/60
 - **HDMI** – Resolution/frame rate up to 1080p/60
 - **HD-SDI** – 3Gb/s Single Link 1080p/60 HD-SDI

Quick-Connect USB Interface

This is a versatile USB 2.0 device for environments using soft conferencing applications. With simultaneous HDMI and HD analog component (YPbPr) video outputs and your choice of either USB or IP streaming, plus a web interface for ease of configuration, the Quick-Connect USB is an ideal connectivity solution for many environments.



Front panel features:

- **Back-lit LCD display** – During normal operation, the display shows the MAC address and IP address for the Quick-Connect. When the Quick-Connect is booting, the display shows an initialization message.
- **Power System Reset button** – Illuminates when the Quick-Connect is connected to power. Press and hold the button to reboot the Quick-Connect.
- **USB indicator** – Illuminates when there is a USB connection to a computer. Blinks to show USB activity.
- **Network indicator** – Illuminates when there is a network connection. Blinks to shown network activity.



Back panel features:

- **24 VDC 2.0 A power connector** – Connect only the power supply shipped with the Quick-Connect.
- **5-position DIP switch** – Setting for HDMI color space; firmware update configuration; factory reset.
- **RS-232 In** – Camera control input from a Vaddio joystick controller or other controller.
- **EZ-Power Video** – Power to the camera and video from the camera.
- **RS-232 Out to Camera** – Control signals to the camera; may originate from the connected camera controller or the web interface.
- **YPbPr** – Analog component video output from the camera.
- **HDMI** – HDMI video output from the camera.
- **Network** – Connect to the network for IP streaming and camera control via web interface or Telnet, and for access to the Quick-Connect's web interface.
- **USB** – Connect to a USB 2.0 port on the computer running the soft conferencing or video capture application.

Quick-Connect USB Mini Interface

This interface provides basic USB 2.0 connectivity for environments using soft conferencing applications. Available input/camera resolutions are 720p/60, 720p/59.94, and 720p/50.

The Quick-Connect USB Mini is typically mounted with the connector panel facing up.



Front panel features:

- **USB** – Connect to a USB 2.0 port on the computer running the soft conferencing or video capture application.
- **Power** – Illuminates when power is connected.



Back panel features:

- **24 VDC 2.08 A power connector** – Connect only the power supply shipped with the Quick-Connect.
- **Mode** – Press to switch between USB streaming mode and web control mode. Press and hold to reset the Quick-Connect to its factory defaults.
- **EZ-Power Video** – Power to the camera and video from the camera.
- **RS-232 to Camera** – Control signals to the camera.

Quick-Connect DVI/HDMI-SR Interface

This interface provides connectivity to older equipment.



Back panel features:

- **Power** – Illuminates when power is connected.
- **24 VDC 2.0 A power connector** – Connect only the power supply shipped with the Quick-Connect.
- **Color Space** – Toggles between HDMI YCbCr and sRGB (RGBHV) color space to accommodate either HDMI or DVI-D monitors.
- **RS-232 Control Input** – Camera control input from a Vaddio joystick controller or other controller.
- **RS-232 Control Out to Camera** – Control signals to the camera.
- **Daisy Chain** – Daisy Chain Control Emulation (DCCE) output to the next Quick-Connect DVI/HDMI-SR interface.
- **IR Output** – Forwards IR signals from the camera to third party equipment such as videoconferencing codecs. Use the MOD signal if the IR is from a remote or other IR emitter; use the NON-MOD signal for wired connections.
- **DVI-D/HDMI** – HDMI 1.3 and DVI v 1.0 compliant. With a DVI to HDMI adapter, extends HDMI to an output device up to 100 ft. (30 m) away.
- **YPbPr** – Analog component video output from the camera. Resolutions up to 1080p/60.
- **EZ-Power Video** – Power to the camera and video from the camera. Maximum cable distance 100 ft. (30 m).

Quick-Connect SR Interface

This interface provides basic connectivity to older equipment. The Quick-Connect SR interface has been discontinued and is not available for the RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 cameras, though it will work with them.



Back panel features:

- **24 VDC 2.0 A power connector** – Connect only the power supply shipped with the Quick-Connect.
- **EZ-Camera Power & HD Video** – Power to the camera and video from the camera. On some units, this port is color-coded orange.
- **HD Video Output YPbPr** – Analog component video output from the camera. SD video resolutions (Y/C and CVBS formats) are not supported by the Quick-Connect SR Interface; however, analog component SD (high fps format - 480p/59.94 and 576p/50) video is supported.
- **IR Output** – Forwards IR signals from the camera to third party equipment such as videoconferencing codecs. Use the MOD signal if the IR is from a remote or other IR emitter; use the NON-MOD signal for wired connections.
- **RS-232 Input and RS-232 Out to Camera** – Route RS-232 control through the Quick-Connect device for ease of cabling. Connect RS-232 Input to an optional camera controller, and connect RS-232 Out to Camera to (you guessed it) the camera.

Installing the Camera

This section covers:

- Selecting the location for the camera
- Installing the camera mount
- Information on cables and RS-232 communication
- Settings for the physical switch(es) on the camera
- Connection diagrams
- Mounting the camera

And a required safety note here:

Note

PoE type networks connected to this equipment are for intra-building use only and should not be connected to lines that run outside of the building in which this product is located.

Don't Void Your Warranty!



Caution

Always support the camera's base when picking it up. Lifting the camera by its head or mounting arm will damage it.

Caution

This product is for indoor use. Use an appropriate protective enclosure if installing it outdoors or in a humid environment.

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.

Caution

If using a DC power supply with this product, use the power supply included with it or recommended for use with it. Always check the output voltage listed on the power supply label, as power supplies for different products may look nearly identical. Using the wrong power supply will void the warranty, possibly causing unsafe operating conditions and damage to the product.

Before You Start

Things to keep in mind when deciding where to install the camera:

- Consider camera viewing angles, lighting conditions, line-of-sight obstructions, and in-wall obstructions.
- If the IR Remote Commander will be used, ensure that nothing blocks the IR lens in the camera's base.
- Ensure that the camera body can move freely and point away from the ceiling and lights.

Prepare for a successful installation:

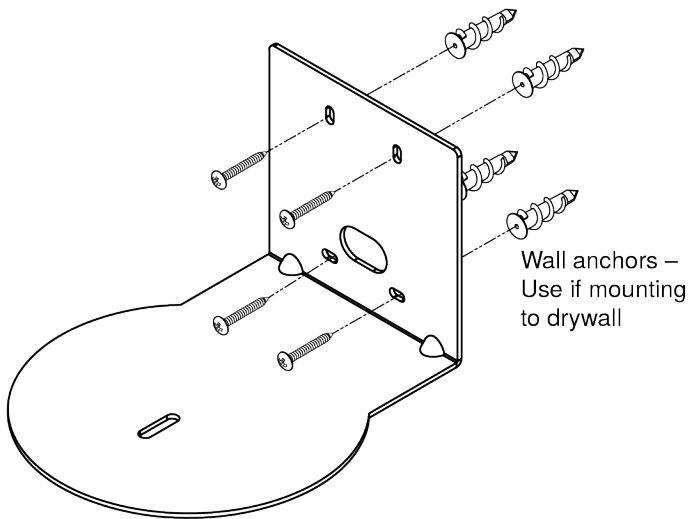
- Be sure you can identify all cables correctly.
- Check Cat-5 cables for continuity.
- Ensure that the video resolution rotary switch and the DIP switches (if any) are set appropriately.
- *Talk to the network administrator.* If installing the camera in a non-DHCP network (one that does not automatically assign IP addresses), you may need to configure the camera with a static IP address as directed by the network administrator before connecting it to the network. Work with the network administrator to determine how to configure the equipment.

Installing the Wall Mount

The camera is shipped with a Thin Profile Wall Mount. Other mounting options are available as well. Contact us if you don't have the camera mount you need.

You can install the camera wall mount to a 2-gang wall box or directly to the drywall.

- If you mount it to drywall, use the wall anchors provided with the wall mount.
- If you mount it to a wall box, use the cover plate screws supplied with the wall box.



About Ceiling-Mounted Cameras

If you use an inverted mount, set the camera's Image Flip DIP switch ON for inverted operation. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt up and down commands from the remote, web interface, and connected control devices. For RoboSHOT Elite series cameras, this switch is available to the administrator on the System page of the web interface.

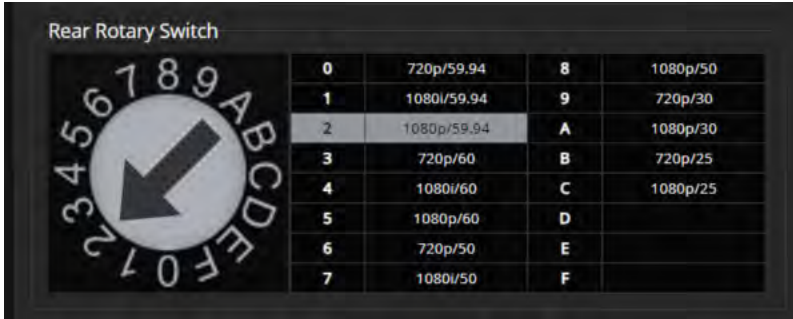
Video Resolution Setting

Non-architectural RoboSHOT cameras use a rotary switch to set output resolution.

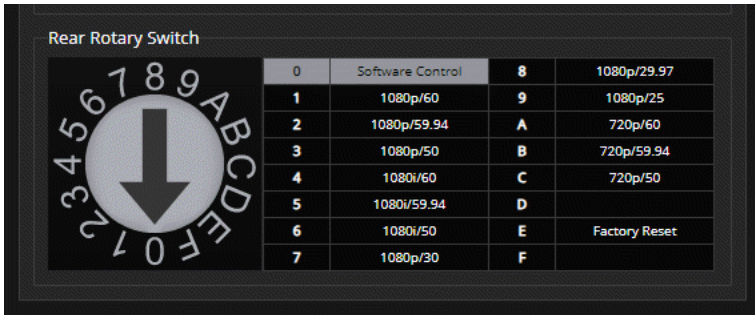
Set the desired video output resolution with the rotary switch before installing the camera. Note that the video resolutions are mapped differently on the rotary switch for the newer Elite-series cameras.

RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 only: If the camera has been updated to version 3.1.0 firmware or later, Position 0 selects software control. Set video output resolution in the web interface. The default resolution is 720p/59.94. This capability is not available in earlier firmware versions or on the older RoboSHOT 12 and RoboSHOT 30 cameras.

RoboSHOT 12 and RoboSHOT 30 cameras



RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 cameras



Note

The Quick-Connect Universal CCU supports frame rates of 50 fps and above. Switch selections 9 through C are valid for the camera but not supported on the QCCU.

Note

The Quick-Connect USB Mini supports only 720p/60, 720p/59.94, and 720p/50. Other resolution settings are valid for the camera but not supported on the QMini.

Camera Behavior Settings – RoboSHOT 12 and RoboSHOT 30

Older RoboSHOT cameras use DIP switches to set camera behaviors; the RoboSHOT Elite series cameras set all camera behaviors in the web interface.

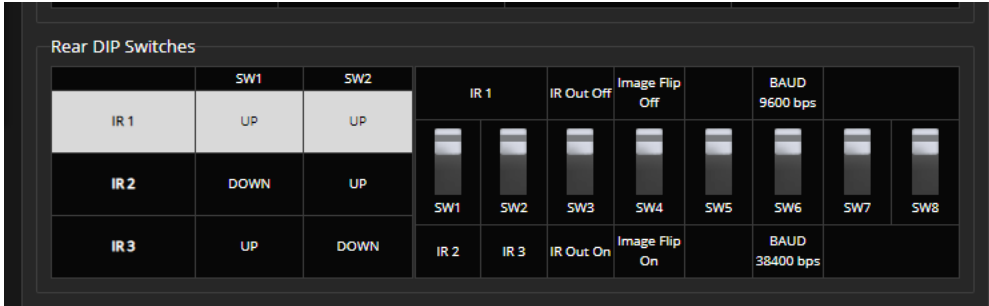
A label on the bottom of the camera provides a quick reference for setting the switches.

Set the switches appropriately before mounting the camera.

After the camera is installed, you can read the switches from the camera's web interface.

Note

When the camera is not inverted, DIP switches are in their default positions when they are up.



(RoboSHOT 30 shown; Switch 5 is Super Wide Mode if the camera is a RoboSHOT 12.)

IR1, IR2, IR3 (Frequency Selection): If there are multiple cameras in the room, use **switches 1 and 2** to configure each with a different IR frequency to allow the IR Remote Commander to control them independently. Then use the Camera Select buttons at the top of the remote to select the camera you want to control.

- SW1 and SW2 up: IR frequency 1
- SW1 down, SW2 up: IR frequency 2
- SW1 up, SW2 down: IR frequency 3

IR Out: Leave **switch 3 UP** if the IR remote will be used. If the system will be controlled from another device, set the switch DOWN. This turns off the IR sensors in the front of the camera, so that all control is via the RS-232 connection.

Image Flip: If mounting the camera upside-down, set **switch 4 DOWN: IMAGE FLIP ON**. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt up and down commands from the remote, web interface, and connected control devices.

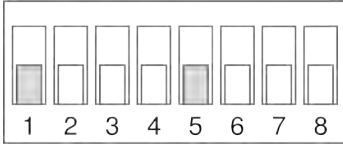
Super Wide Mode (RoboSHOT 12 only): To use Super-wide mode, set **switch 5 DOWN**. This gives 12X zoom with a 73° horizontal field of view. Normal mode provides 10X zoom with a 67.2° horizontal field of view (HFOV).

Baud Rate: Set **switch 6** to the baud rate of the device connected to the RS-232 port. The default is 9600 bps. The 38400 baud setting is optional if the connected control device supports it.

For RoboSHOT 30, **Switch 5** is not used. **Switches 7 and 8** are not currently used on either RoboSHOT 12 or RoboSHOT 30.

Switch Settings for the Universal CCU

The default position for DIP switches on the Universal CCU is down. On RoboSHOT cameras, the default position is up. Please double-check switch positions on both units if the camera does not perform as expected.



Switch 1:

- UP to load CCU Scene A on power-up (Custom Scene 1 must be defined on the camera)
- DOWN to use the color and lighting settings associated with the camera's Home preset

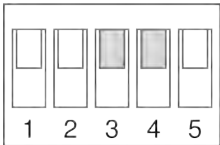
Switch 5:

- UP to include the front panel display controls on the menu
- DOWN to hide the display controls (all other menu items remain available)

The other switches are not used.

Switch Settings for the Quick-Connect USB

The default position for DIP switches on the Quick-Connect USB is up, as it is on RoboSHOT cameras.



Switch 3:

- UP for HDMI (YCbCr) color space
- DOWN for DVI (sRGB) color space

Switch 4:

- UP for normal operation
- DOWN to enable firmware update

The other switches are not used.

RS-232 Serial Communication Settings

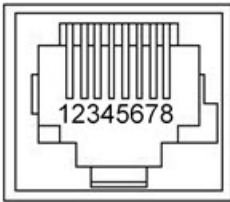
The RS-232 serial port (color-coded blue) provides a means of controlling the camera from a third-party device. Be sure the camera is set to the same baud rate as the external control device.

Specification	Value
Communication Speed	9600 or 38400 baud, selectable
Number of start bits	1
Number of stop bits	1
Number of data bits	8
Parity	None
Flow control	None

The camera's default baud rate is 9600. The 38400 baud setting is optional if the connected device supports it.

RS-232 Connector Pin-Out

- Pin 1: Not used
- Pin 2: Not used
- Pin 3: Not used
- Pin 4: IR Output (Diff Signal to Quick-Connect SR)
- Pin 5: IR Ground (Diff Signal to Quick-Connect SR)
- Pin 6: GND (GND of IR Short Range - Pin 3)
- Pin 7: RXD (from TXD of control source)
- Pin 8: TXD (to RXD of control source)



Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.

Cabling Notes

Caution

When making cables, do not use pass-through RJ-45 connectors. If they are crimped incorrectly, they can damage the connectors on the product, cause intermittent connections, and degrade signal quality. Physical damage to the connectors may void your warranty.



Intact – will make reliable contact with cable connector



Damaged – Bent contact fingers will NOT make reliable contact with cable connector

Use Cat-5e or better cable. We recommend using high-quality connectors and a high-quality crimping tool. We recommend shielded cabling if the cables will be coiled, run tightly with other cables, or placed close sources of electromagnetic interference such as power lines.

Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.



Pro Tip

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

Connecting the Camera

This section provides connection diagrams for each RoboSHOT system:

- RoboSHOT QCCU (includes systems with RoboSHOT Elite cameras)
- RoboSHOT QUSB (includes systems with RoboSHOT Elite cameras)
- RoboSHOT QMini (includes systems with RoboSHOT Elite cameras)
- RoboSHOT QDVI (includes systems with RoboSHOT Elite cameras)
- RoboSHOT QSR (RoboSHOT 12 and RoboSHOT 30 only)
- RoboSHOT AVBMP (includes RoboSHOT Elite cameras)

Note

Talk to the network administrator before you connect the equipment.

If you install this equipment on a non-DHCP network (one that uses only static IP addresses), you may need to configure the camera with a static IP address before you connect it to the network. Work with the network administrator to determine how to configure the equipment.

Determine what you need to do to prevent IP address conflicts:

- Installing cameras with Quick-Connect USB devices on a non-DHCP network: *configure each camera and each Quick-Connect USB device* with static IP addresses before connecting them to the network.
- Installing cameras with other Quick-Connect devices on a non-DHCP network: *configure each camera* with a static IP address before connecting it to the network.
- Installing cameras with an AV Bridge MATRIX PRO on a non-DHCP network: *configure each camera* with a static IP address before connecting it to the network. The AV Bridge MATRIX PRO will also need a static IP address.

If you need to do any of these things, work with the network administrator to determine the appropriate network configuration.

Refer to the **Complete Manual for RoboSHOT CAT-5 Professional PTZ Camera Systems** (System Administration section) for information on configuring static IP addresses.

Basic Connections: RoboSHOT QCCU System

RoboSHOT QCCU systems ship with the camera and a Quick-Connect Universal CCU (QCCU). The QCCU powers the camera and provides fine control over color and lighting (CCU) adjustments. This system is designed for a live production environment and is typically installed with a camera controller and multi-view preview monitor.

Caution

*Connect the power cable from the QCCU to the camera's power port marked **36 VDC For QCCU Only**. DO NOT connect it to the camera's EZ-Power Video port. Connecting the power cable from the QCCU to the wrong port on the camera will damage the camera and void your warranty.*

Pro Tip

Use the color coding on the camera and the QCCU – blue goes to blue, yellow/orange goes to yellow/orange, red goes to red.

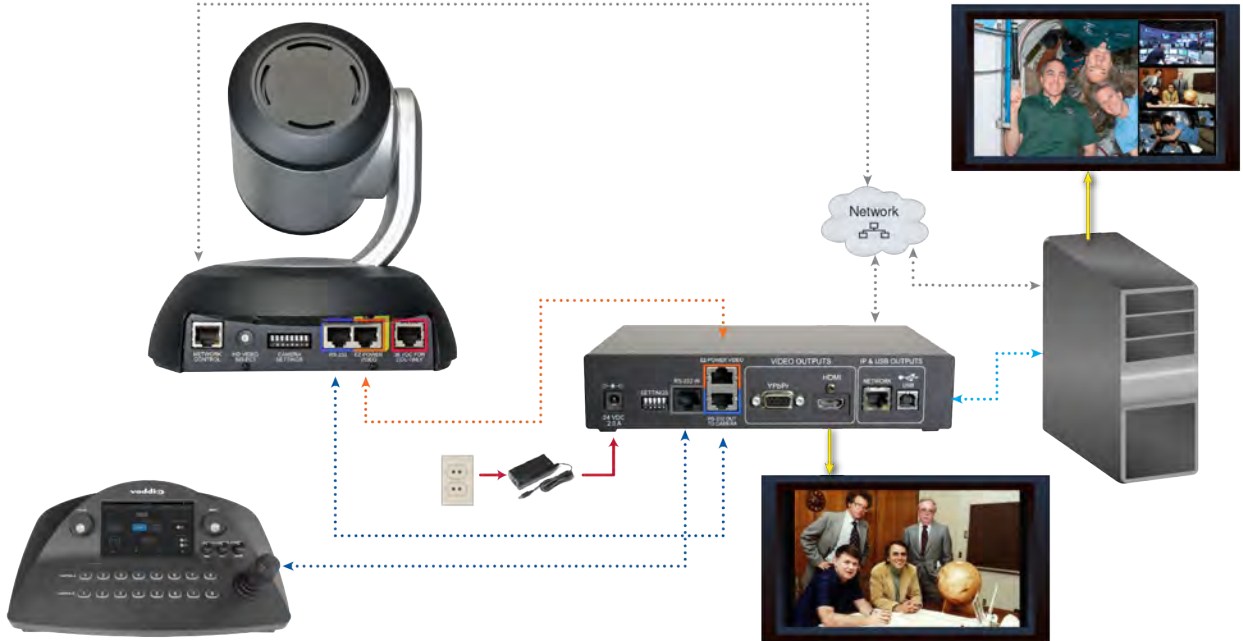
This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30, RoboSHOT 12E CAT-5, and RoboSHOT 30E CAT-5 connect in the same way.



Basic Connections: RoboSHOT QUSB System

RoboSHOT QUSB systems ship with a USB 2.0 cable to connect the Quick-Connect USB to a computer running a soft conferencing application. The Quick-Connect USB provides connections for a camera controller or other control device, and HDMI and YPbPr (analog component video) outputs to display video from the camera (near-end video).

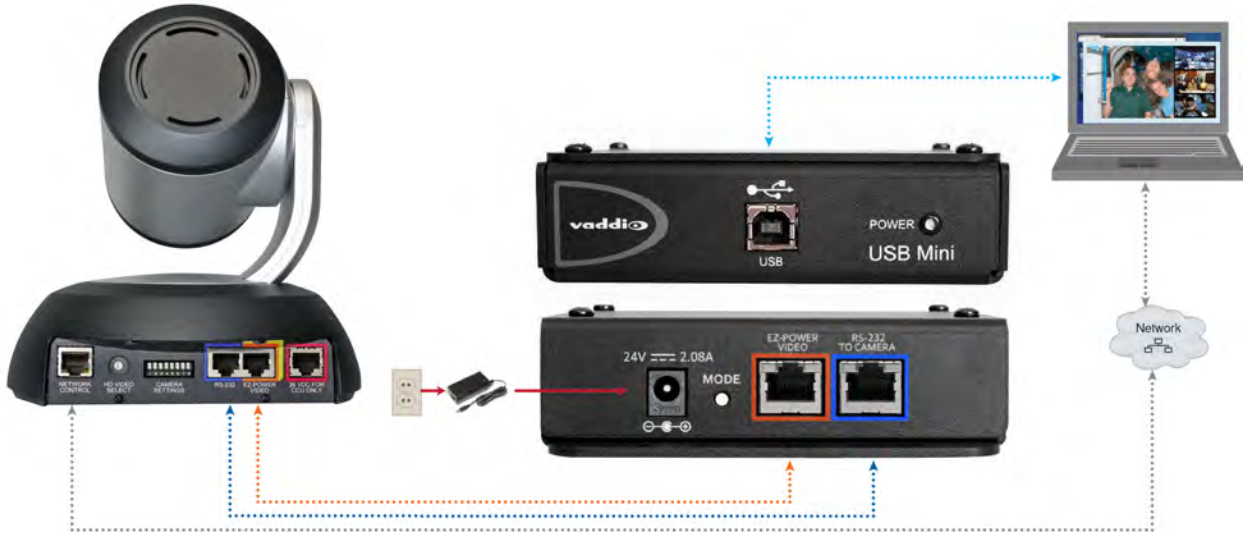
This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30, RoboSHOT 12E CAT-5, and RoboSHOT 30E CAT-5 connect in the same way.



Basic Connections: RoboSHOT QMini System

RoboSHOT QMini systems ship with a USB 2.0 cable to connect the Quick-Connect USB Mini to a computer running a soft conferencing application. The Quick-Connect USB Mini provides power and connectivity to the camera, and brings the camera's video to the computer via USB connection.

This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30, RoboSHOT 12E CAT-5, and RoboSHOT 30E CAT-5 connect in the same way.



Basic Connections: RoboSHOT QDVI System

The Quick-Connect DVI/HDMI-SR provides power and control to the camera, brings camera video to the connected display, and offers daisy-chaining capability for legacy equipment. DVI/HDMI and YPbPr (analog component video) outputs accommodate older displays.

If using the IR FORWARD connector:

- Use the MOD and GND pins (1 and 2) for balanced (differential) IR. Because it is a differential signal, you can swap the two wires.
- Use the GND and NON-MOD pins (2 and 3) for unbalanced (single-ended) IR, for example if connecting to Polycom equipment. Because it is not a differential signal, pin 2 must go to the GND connection at the other end of the cable.

This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30, RoboSHOT 12E CAT-5, and RoboSHOT 30E CAT-5 connect in the same way.



Basic Connections: RoboSHOT QSR System

The Quick-Connect SR interface provides power and control to the camera, and a YPbPr (analog component video) output. External control is via an RS-232 connected device.

If using the IR FORWARD connector:

- Use the MOD and GND pins (1 and 2) for balanced (differential) IR. Because it is a differential signal, you can swap the two wires.
- Use the GND and NON-MOD pins (2 and 3) for unbalanced (single-ended) IR, for example if connecting to Polycom equipment. Because it is not a differential signal, pin 2 must go to the GND connection at the other end of the cable.

This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30 camera connects in the same way. The Quick-Connect SR has been discontinued and is not available for the RoboSHOT 12E CAT-5 and RoboSHOT 30E CAT-5 cameras.



Basic Connections: RoboSHOT AVBMP

RoboSHOT AVBMP cameras ship with a remote and a wall mount. Connect the camera to an AV Bridge MATRIX PRO for power, control, and connectivity. Up to three cameras can be connected at once.

This diagram shows a RoboSHOT 12 camera. The RoboSHOT 30, RoboSHOT 12E CAT-5, and RoboSHOT 30E CAT-5 connect in the same way.



Installing the Camera

Be sure you have already set the camera's switches.

If you are installing the camera with a Quick-Connect USB or Quick-Connect USB Mini on a network that uses static IP addressing (a non-DHCP network), be sure you have already configured the camera appropriately for the network.

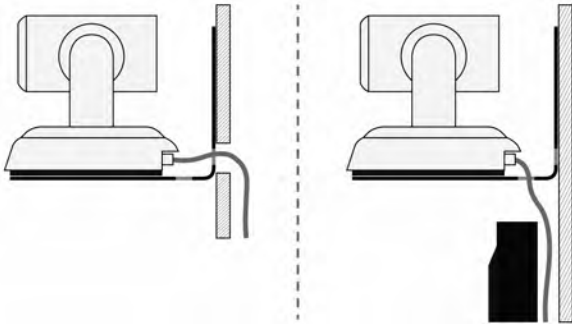
Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.

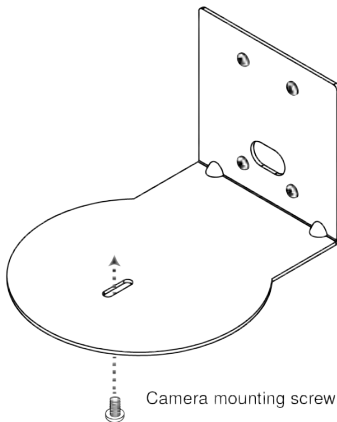
1. Route the cables to the camera location.
2. Route the cables through the mount, and install the mount on the wall or attach it to the wall box. Leave the screws loose enough to adjust the position of the mount.
3. Level the mount and tighten the mounting screws.
4. Connect the cables to the camera.
 - If using a Quick-Connect Universal CCU, connect the **36 VDC To Camera** output to the camera's **36 VDC From QCCU Only** port.
 - If connecting the camera to any other Quick-Connect device or to an AV Bridge Matrix Pro, connect power to the **EZ Power Video** port.

Be sure to connect the cables correctly. Connecting a cable to the wrong port could damage the camera and void the warranty.

5. Place the camera on the mount.



6. Attach the camera to the mount using the 1/4"-20 x .375 mounting screw supplied with the camera.



Images for illustration only; not to scale. Camera and mount details may differ.

Installing the Quick-Connect Device

If you are installing the camera with a Universal CCU or other Quick-Connect device, mount the Quick-Connect device appropriately. Follow the instructions provided with the mounting solution.

- The Universal CCU may be mounted in a rack using the rack mounting brackets provided.
- The Quick-Connect SR may be mounted directly to the camera wall mount.
- Rack mounting brackets and under-table mounting brackets are available for the Quick-Connect USB.
- Rack mounting brackets are available for the other Quick-Connect devices.

Contact us if you don't have the mount you need.

Powering Up the Camera

Connect camera power.

The camera will run a self-test routine and move to its home position. This will take a few seconds.

When the camera is initialized and ready, video is available and the status light is blue. At this point, the camera is ready to accept control information.

Note

Wait until the camera finishes initializing before trying to operate or control it.

Status Light

The light in the camera's base indicates its current state.

- **Blue:** Normal operation (blinks once when the camera receives a command from the remote)
- **Red:** On-air tally (signal provided by external device via serial connection)
- **Blinking red:** Video is muted (UC color scheme only)
- **Purple:** In standby mode or booting
- **Yellow:** Firmware update in progress

Caution

Do not remove power or reset the camera while the indicator is yellow, showing a firmware update in progress. Interrupting a firmware update can make the camera unusable.

Note

By default, the camera's status light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the indicator light is off.

Next Steps

The camera is now ready to configure and use. This information is available in the **Complete Manual for RoboSHOT CAT-5 Professional PTZ Camera Systems**.

Operation, Storage, and Care

For smears or smudges on the product, wipe with a clean, soft cloth. Use a lens cleaner on the lens. 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
- Lunar environments not pressurized and climate-controlled to Earth-normal
- Dry environments with an excess of static discharge

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

And a friendly reminder from our Training department...

As much as you might love our gear, do not attempt to romance your camera. As a robot it cannot return your love.



Compliance and Conformity Statements

Applicable to RoboSHOT cameras and Quick-Connect USB extensions

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 2014/30/EU	Class A
EN 55032: 2015	Class A
EN 55024: November 2010	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 2014/30/EU

EN 55032: 2015

Conducted and Radiated Emissions

EN 55024: November 2010

Immunity

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

Electrostatic Discharge

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

Radiated Immunity

EN 61000-4-4: 2004 + Corrigendum 2006

Electrical Fast Transients

EN 61000-4-5: 2006

Surge Immunity

EN 61000-4-6: 2009

Conducted Immunity

EN 61000-4-8: 2010

Power Frequency Magnetic Field

EN 61000-4-11: 2004

Voltage Dips, Interrupts and Fluctuations

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

IT Immunity Characteristics

EN 61000-4-2

Electrostatic Discharge

EN 61000-4-3

Radiated Immunity

EN 61000-4-4

Electrical Fast Transients

EN 61000-4-5

Surge Immunity

EN 61000-4-6

Conducted Immunity

EN 61000-4-8

Power Frequency Magnetic Field

EN 61000-4-11

Voltage Dips, Interrupts and Fluctuations

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

Compliance and Conformity Statements for Quick-Connect Devices

Applicable to Universal CCU, Quick-Connect USB Mini, Quick-Connect DVI/HDMI-SR, and Quick-Connect SR power/connectivity solutions.

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 55022: December 2010	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: 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

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Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and Fluctuations

Safety

Safety

Warranty and Return Policy

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 Customer Service: 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 or by phone at one of the phone numbers listed on 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 without exception. Special order products are 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.

General RMA Terms and Procedures: RMA's are valid for 30 days and will be issued to Vaddio dealers only.

- End users must return products through Vaddio dealers.
- Before a defective product can be authorized to send in for repair, it must first go through the troubleshooting process with a member of the Vaddio Technical Support team.
- Products authorized for repair must have a valid RMA (Return Material Authorization) number.
 - Vaddio RMA Team will issue the RMA number.
 - An RMA number is to be included in all correspondence with Vaddio.
 - The RMA number must appear clearly on the shipping label (not the box) when the product is returned.
 - A packing slip must be included on the inside of the box with the RMA number listed and reason for RMA return.
- Products received at Vaddio that do not have a valid RMA number clearly marked on the outside of the shipping container may be refused and returned to sender.
- Boxes showing external damage will be refused and sent back to the sender regardless of the clearly marked RMA number and will remain the responsibility of the sender.

RMA Charges (Restocking): All qualified returns must be made in unopened, original packaging with all original materials.

- Initial shipments of equipment that are refused upon attempted delivery, for any reason, are subject to restocking charges.
- The Dealer has up to 60 days from the date of purchase to return Vaddio product for credit for future purchases of Vaddio product only.
- The Dealer has 61 to 90 days from the date of purchase to return Vaddio product with a 15% restocking fee or \$50.00 fee, whichever amount is greater
- The Dealer has up to 30 days from the date of purchase to return OEM and other manufacturer's products with a 15% restocking fee or \$50.00 fee, whichever amount is greater.
- NOTE: Special Order products from other manufacturers (identified in the Vaddio Price Guide as noncancelable, nonreturnable and not refundable) are not eligible for advance replacement from Vaddio.

Advance Replacement Policies: For Vaddio manufactured products, advance replacement will be provided for up to one (1) year after the initial shipment of products.

- NOTE: OEM and other manufacturer's products are excluded from the Vaddio advance replacement policy. Advance replacement will be provided for up to 30 days after initial shipment of OEM products. Thereafter, a return to Vaddio and factory repair is offered during the other manufacturer's warranty period. Vaddio will determine if the returned product is qualified for the OEM warranty.
- NOTE: Special Order products from other manufacturers (identified in the Vaddio Price Guide as noncancelable, nonreturnable and not refundable) are not eligible for advance replacement from Vaddio.

Advance Replacement Procedures: The Vaddio Dealer must submit a non-revocable purchase order for advance replacement equipment at normal dealer pricing. Credit shall be issued upon complete product return (including all accessories) for dealers with Net 30 terms. For credit card accounts, charges will be assessed to the credit card for the replacement and credited back upon complete product return.

- Returns must be made in the original Vaddio packaging with all original materials if at all possible. Vaddio products with missing original materials will be billed to the dealer at dealer price.
- NOTE: OEM products must be returned in the original packaging with all materials and the RMA number written on the shipping label only and not on the OEM box. If the return is incomplete and/or the OEM box is defaced, the product shall be returned to the dealer and the RMA will not be credited.
- Equipment returned with “No Trouble Found” after advanced replacement will be assessed a full 15% or \$50.00 restocking fee (whichever is greater) for each item and may also be assessed for additional charges to compensate for wear, damages and reconditioning.
- All returns must be accompanied by RMA # as stated above.
- All Advanced Replacement products are sent via 2-day service in the continental USA. If the product is requested to be sent via priority or overnight shipping, the Dealer shall pay shipping costs. The dealer can elect to supply their preferred shipping account number.
- International customers are responsible for all freight charges for equipment returned to Vaddio, including international shipping, taxes, and duties, insurance and all other associated logistic charges.

Warranty Repair Terms and Procedures: Vaddio will repair any product free of charge, including parts and labor, within the terms outlined in the warranty agreement for that product.

- Customers must provide proof of the product’s purchase date.
- Product that is within the warranty period will be repaired under the non-warranty terms if:
 - The equipment has been damaged by negligence, accident, act of God, mishandling, used with the incorrect, modified or extended power supply or has not been operated in accordance with the procedures described in the operating and technical instructions.
 - The equipment has been altered or repaired by other than the Manufacturer or an authorized service representative.
 - Adaptations or accessories other than those manufactured or provided by the Manufacturer have been made or attached to the equipment, which in the determination of the Manufacturer, shall have affected the performance, safety or reliability of the equipment; or the equipment’s original serial number has been modified or removed.
- Customer is responsible for shipping charges to send defective product under warranty to Vaddio. Vaddio will pay ground service return shipping charges during the 2nd year of the warranty period.
- Standard return shipping method for products under warranty, but out of the advance replacement warranty period, is ground shipment. Extra charges associated with priority shipping, when requested, will be the responsibility of the customer.

Non-Warranty Repair Terms: Vaddio will repair any non-obsolete product that does not meet the terms of the warranty. Non-warranty repair terms are as follows:

- The customer is responsible for, and agrees to pay, all parts and labor costs associated with the repair. Standard non-warranty repair charges are outlined below.
- Customers must provide payment method and one of the following, prior to receiving an RMA:
 - Hard copy of a PO, for dealers with Net 30 terms and in good standing with Vaddio.
 - Valid credit card number - Credit card will be charged upon shipping repaired product back to customer.
- Request for COD: Customers will be notified of COD charges prior to shipping repaired unit.
- Customer is responsible for all shipping charges both to and from Vaddio, and may use their own carrier.
- Customers will receive a courtesy call notifying them of total repair charges prior to return shipping.

Non-Warranty Repair Charges: Total repair charges (per unit) for a non-warranty repair consist of the following:

- Cost of any replacement parts needed to repair the defect.
- Labor costs billed per hour after minimum charges/time.
- Labor charges include troubleshooting and repair time only.
- Burn-in time and final test time is not included in the labor charges.
- Labor time is rounded to the nearest quarter hour.
- Labor charges are billed at the prevailing rate for the category of equipment repaired, after minimum charges/time. For prevailing labor rates, please contact the Vaddio technical support.
- All shipping and handling costs are the responsibility of the customer for non-warranty repairs.

Minimum Labor Charges: All non-warranty repairs are subject to a minimum evaluation/repair labor charge even if there is no problem found. Please contact Vaddio technical support for the current applicable rate.

Repair Charge Estimates: Estimates on repair charges for a specific problem will not be given before an RMA is issued and the actual product has been evaluated by a Vaddio technician. Repair estimates will be given after the repair department receives and evaluates the unit.

- Customers requesting an estimate on repair charges must do so up front when they call in for an RMA. The RMA team will call or email with the estimate after evaluating the unit and before proceeding with the repair.
- Any product evaluated for a repair estimate is still subject to the minimum labor charges even if the customer decides not to proceed with the repair.
- Vaddio does not guarantee estimates given on repair charges. Actual repair costs may exceed the estimate.
- Customer is responsible for actual repair charges, regardless of estimate.

Repair Policy Notes:

- **Duration of Repair:** Products are repaired on a first come first serve basis. The turn-a-round time of a particular repair is dependent upon circumstances such as product type, the nature of the problem and current repair volumes. Requests for expedited repair service will be considered on a case-by-case basis.
- **Repair Warranty:** Vaddio guarantees all of its repair work, performed on non-warranty items, for 90 days from the day the repaired product is shipped back to the customer. If the original problem described was not resolved or reoccurs within the 90-day period, Vaddio will repair the unit free of labor charges. However additional material charges may apply unless the parts used to affect the repair are again deemed defective.

Photo Credits

This manual may include some or all of these photos.

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/, 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

By European Space Agency - ESOC flickr, Credit: ESA - Jürgen Mai, CC BY-SA 3.0-igo,

<https://commons.wikimedia.org/w/index.php?curid=36743173>

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

By NASA - <http://spaceflight.nasa.gov/gallery/images/station/crew-36/html/iss036e016704.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=27263573>

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,

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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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Sleeping goose

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STS-123 and Expedition 16 crews on the STS-123 crew's last full day onboard the International Space Station.

By NASA - <http://www.spaceflight.nasa.gov/gallery/images/shuttle/sts-123/html/iss016e033684.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=3773505>

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