

eBridge1PCRT - IP and PoE over Coax Solution

eBridge1PCR Receiver and eBridge1PCT Transceiver kit



Overview:

The eBridge1PCR and eBridge1PCT are CAT5 to Coax cable Ethernet adapters that deliver data and power over the coax cable in a PoE compliant format. The paired set enables fast 10/100Base-T Ethernet digital communication to be transmitted over Coax cable. An eBridge1PCR receiver sends power over the coax to the eBridge1PCT transmitter under PoE protocol. The eBridge1PCT in turn delivers that PoE compliant power to a PoE enabled camera or IP device. The eBridge1PCR will not deliver power to non compliant devices, thus avoiding damage to improperly connected analog cameras. These plug and play units facilitate system upgrades from analog to IP cameras/devices utilizing existing legacy Coax and eliminating the costs and labor associated with installing new network cabling. In addition, data transmission and power over the Coax is possible up to 457m in comparison to 100m Ethernet maximum distance (*see Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 3*). A maximum range from head end to the PoE camera/device is 610m taking into consideration that up to 100m of structured cable may be deployed at each end.

Features:

Agency Listings:

- UL/CUL Listed for Information Technology Equipment (UL 60950-1).
- CE approved.
- C-Tick compliant.

Input:

- 24VDC Class 2 power supply (polarity not observed) or 24VAC Class 2 plug-in transformer.

Power Consumption (under maximum load):

- eBridge1PCR: 24VDC/1,000mA, 24VAC/900mA.
- eBridge1PCT: Powered by eBridge1PCR.

Ethernet:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5 or better structured cable.
- Distance: up to 100m.
- Speed: 10/100BaseT, half/full duplex, auto negotiation. PoE compliant to IEEE 802.3af (15W) Delivered to camera by eBridge1PCT. Power provided by eBridge1PCR to eBridge1PCT by PoE protocol.
- Throughput is rated to pass 25mbps of data at distances up to 457m. With proper headend equipment this supports Megapixel, HD720, HD1080.

Coax:

- Distance: up to 457m (*see Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 4*) for power delivery of coax.
- Connectivity: BNC, RG-59/U or similar.

LED Indicators:

- eBridge1PCR:
 - Blue LED - Coax link connection.
 - Green - PoE ON.
- eBridge1PCT:
 - Green - Power ON.
 - Yellow and Green LED (RJ45) IP Link status, 10/100Base-T/active.

LED Indicators (cont'd):

- eBridge1PCT:
 - Blue LED - Coax link connection.
 - Green LED - PoE from eBridge1PCR.

Environmental:

- **Operating Temperature:**
 - eBridge1PCR: – 4°F to 113°F (–20°C to +45°C).
 - eBridge1PCT: – 4°F to 140°F (–20°C to +60°C).
- **Storage Temperature:** –22° to 158°F (–30° to +70°C).
- Humidity: 20 to 85%, non-condensing

Functions:

- Auto detection and protection of legacy non-PoE cameras/devices.

Applications:

- Retrofit digital IP cameras in an analog CCTV installation.
- Works with Megapixel, HD720, HD1080 and VGA (SD) cameras (*see note, pg. 2*).
- Extend Network link distance in an industrial environment over 610m (*see note, pg. 2*).
- Upgrade deployed CCTV Coax to a digital network in Retail, Hospitality, Arenas, Casinos, Airports, Schools, Hospitals, Transportation, etc.

Mechanical:

- Dimensions (W x L x H approx.):
 - eBridge1PCR:
3.5" x 4.375" x 1" (88.89mm x 111.125mm x 25.4mm)
 - eBridge1PCT:
2.5" x 4.375" x 1" (63.5mm x 111.125mm x 25.4mm)

Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application. eBridge1PCT and eBridge1PCR are not intended to be connected to outside plant leads and should be installed indoors within the protected premises. eBridge1PCT and eBridge1PCR are intended for indoor use only.

1. eBridge1PCR installation:

- a. Secure unit to desired mounting surface with a proper fastening device utilizing the unit's mounting hole (Fig. 2a, pg. 3). Unit should be mounted in proximity to ethernet switch/network, NVR or video server.
- b. Connect 24VAC Class 2 plug-in transformer or 24VDC (polarity not observed) Class 2 power supply to wire insert connector [Power Input] (Fig. 1, pg. 2). Use 22AWG-16AWG wire for this connection.
- c. Connect structured cable from ethernet switch/NVR (network video server) to RJ45 jack marked [10/100BaseT] (Fig. 2, pg. 3).
- d. Connect Coax cable to BNC connector marked [Coax] (Fig. 2, pg. 3).

2. eBridge1PCT installation:

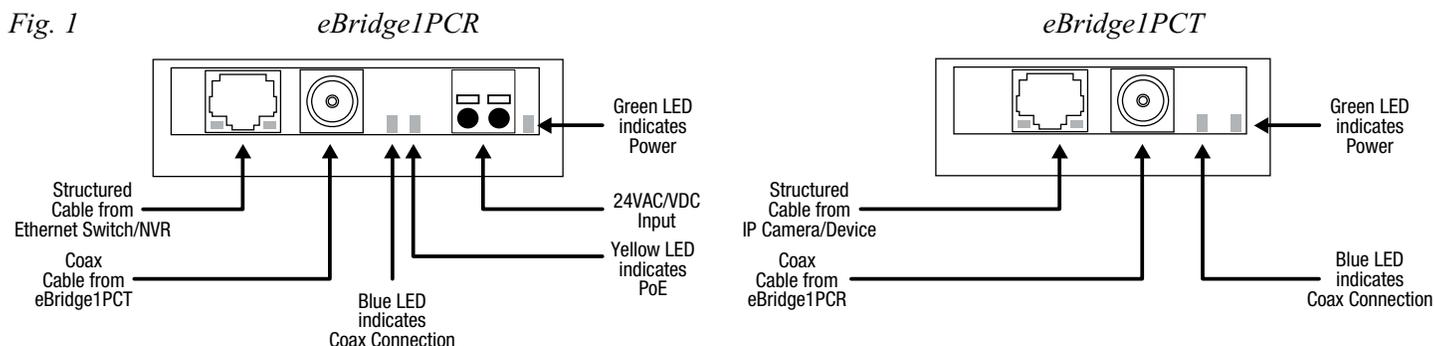
- a. Secure unit to desired mounting surface with a proper fastening device utilizing the case's mounting hole (Fig. 2a, pg. 3). Unit should be mounted in proximity of camera/device.
- b. Connect structured cable from IP camera/device to RJ45 jack marked [10/100BaseT] (Fig. 2, pg. 3).
- c. Connect Coax cable to BNC connector marked [Coax] (Fig. 2, pg. 3).

Note: The eBridge1PCRT is designed to accommodate Megapixel, HD720, HD1080 and VGA (SD) cameras. It is important to note that some high resolution and high frame rate cameras may demand faster headend processing ability, such as a PC graphics card to present a quality image. If the headend processing equipment is insufficient in speed, the image may show pixelation and latency. It is advisable to pre-test system if unsure. Alternatively, frame rate and resolution may be reduced to accommodate system equipment.

Technical Specifications:

Parameter	Description
Connections	BNC for Coax link. RJ45 for ethernet link.
Input power requirements	24VDC/1,000mA, 24VAC/900mA
Indicators	Blue: Coax Link. Yellow (RJ45 connector): On - Link, Off - No Link, Blinking - Activity. Green (RJ45 connector): On - 100Base-TX, Off - 10Base-T. Green: Power.
Environmental Conditions	Operating Ambient Temperature: UL60950-1 eBridge1PCR: - 4°F to 113°F (-20°C to +45°C). eBridge1PCT: - 4°F to 140°F (-20°C to +60°C). Relative humidity: 85%, +/- 5% Storage Temperature: -4° to 158°F (-20° to 70°C) Storage Operating Altitude: -1000 to 6,561.679 ft. (-304.8 to 2000m).
Regulatory Compliance	UL/CUL Listed for Information Technology Equipment (UL 60950-1). CE approved. C-Tick compliant.
Weights (approx.)	Product: 5.1 oz. (0.144 kg), Shipping: 7.76 oz. (0.22 kg)

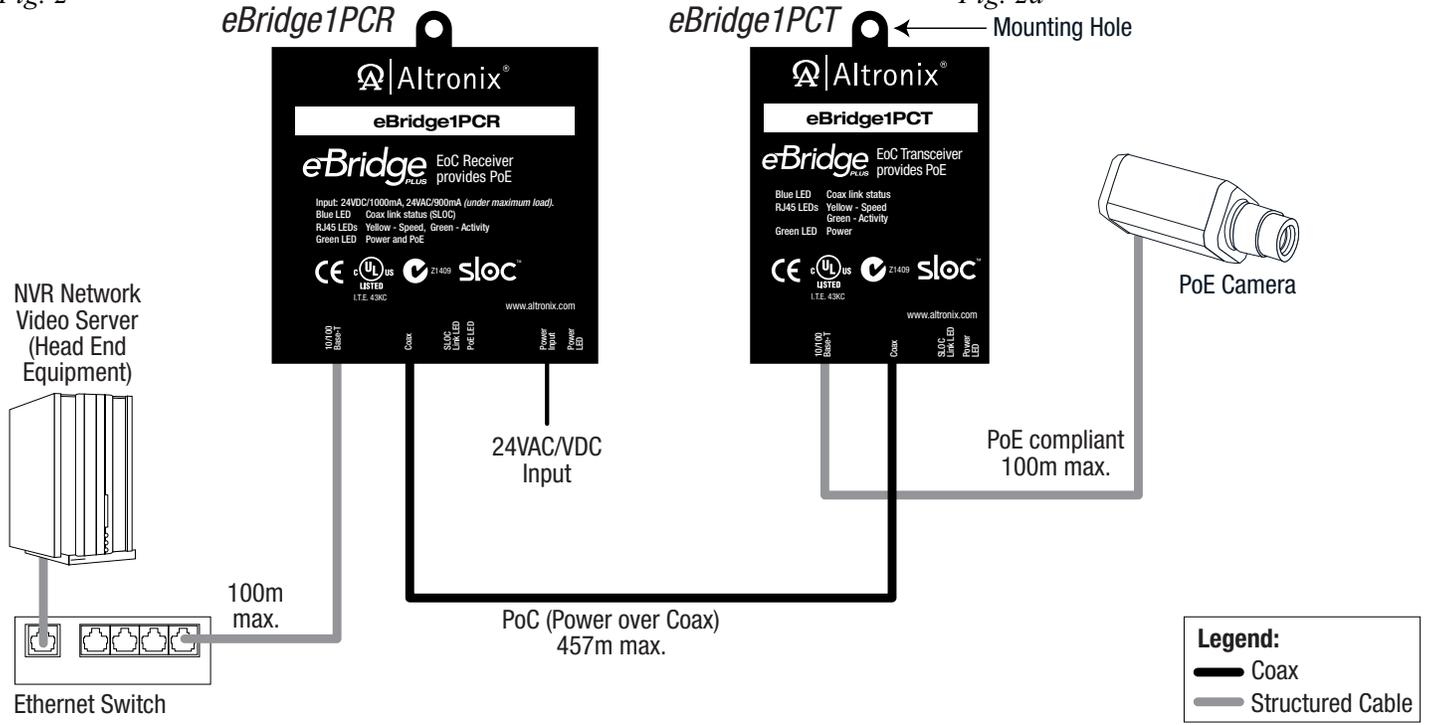
Fig. 1



Single PoE camera connection:

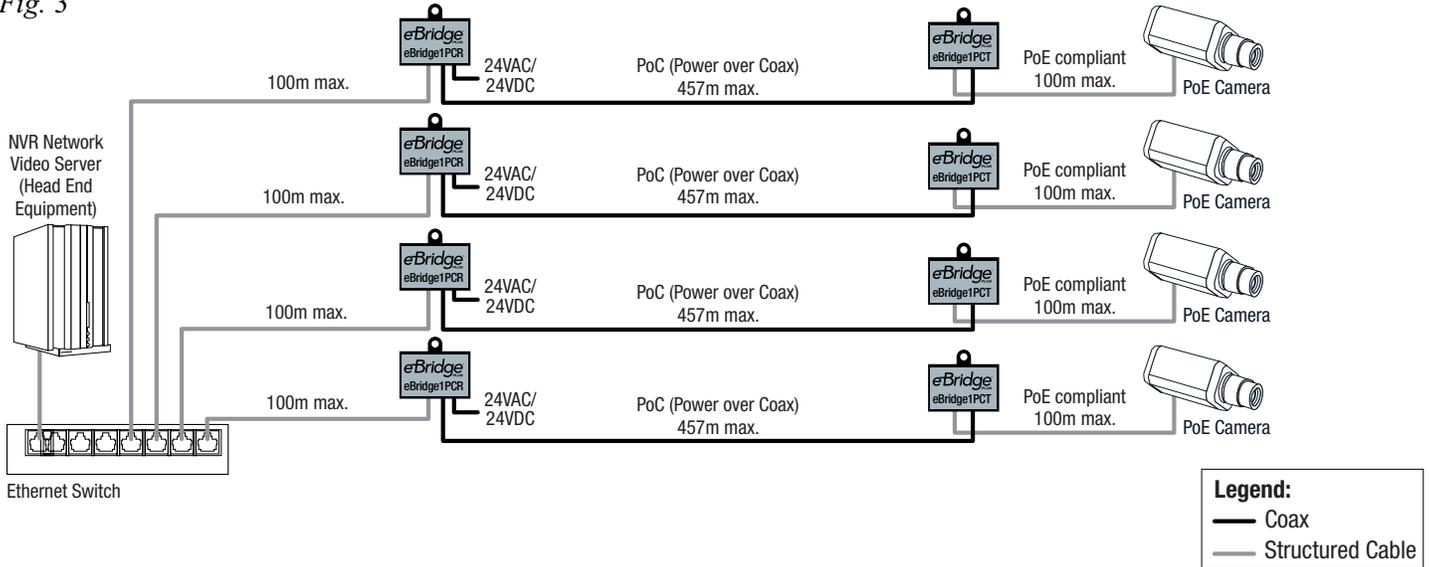
Fig. 2

Fig. 2a



Multiple PoE camera connection:

Fig. 3



Maximum Length of Coax Type vs. Camera Power/PoE Class:

Camera Power/ PoE Class	Coax Type				
	RG59/U - 23AWG	RG59/U - 22AWG	RG59/U - 20AWG	RG59/U - 18AWG	RG6/U - 18AWG
	Max. Length (meters)				
13W/0	260.64	335.28	457.20+	457.20+	457.20+
4W/1	457.20+	457.20+	457.20+	457.20+	457.20+
6.5W/2	457.20+	457.20+	457.20+	457.20+	457.20+
13W/3	260.64	335.28	457.20+	457.20+	457.20+

Notes:

Altronix is not responsible for any typographical errors.

140 58th Street, Brooklyn, New York 11220 USA, 718-567-8181, fax: 718-567-9056
website: www.altronix.com, e-mail: info@altronix.com, Lifetime Warranty, Made in U.S.A.
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eBridge1PCR/PCT