eBridge1PCT
IP and PoE over Coax
Hardened Transceiver

Overview:

The eBridge1PCT is a CAT5 to Coax cable Ethernet adapter that delivers data and power over the coax cable in a PoE compliant format. The transceiver enables fast 10/100Base-T Ethernet digital communication to be transmitted over Coax cable. An eBridge1PCR, eBridge1PCRX, eBridge4P-CRX, eBridge8PCRX or eBridge16PCRX 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. 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 headend 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:
- Powered by eBridge1PCR, eBridge1PCRX, eBridge4PCRX, eBridge8PCRX or eBridge16PCRX receiver.

Power Consumption *(under maximum load)*:
- eBridge1PCT: Powered by eBridge1PCR, eBridge1PCRX, eBridge4PCRX, eBridge8PCRX or eBridge16PCRX receiver.

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 eBridge Plus receiver to eBridge1PCT by PoE protocol.

Coax:
- Distance: up to 457m *(see Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 3)* for power delivery of coax.
- Throughput is rated to pass 25mbps of data at distances up to 457m. With proper headend equipment this supports Megapixel, HD720, HD1080.
- Connectivity: BNC, RG-59/U or similar.

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

Environmental:
- **Operating Temperature:**
  For 15W: −40ºC to 75ºC (−40ºF to 167ºF).
- **Storage Temperature:**
  −40ºC to 75ºC (−40ºF to 167ºF).
- 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.): 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 is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. eBridge1PCT is intended for indoor use only.

1. 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.
2. Connect structured cable from IP camera/device to RJ45 jack marked [10/100BaseT] *(Fig. 2, pg. 3)*.
3. Connect Coax from eBridge receiver (eBridge1PCR, eBridge1PCRX, eBridge4PCRX, eBridge8PCRX or eBridge16PCRX) to BNC connector marked [Coax] *(Fig. 2 and 3, pg. 3)*.
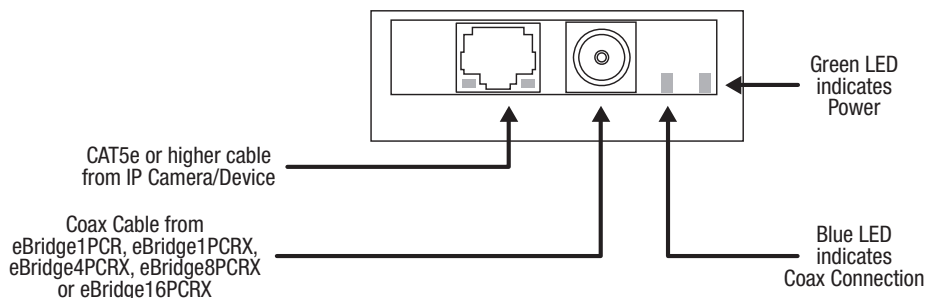
Note: The eBridge1PCT is designed to accommodate Megapixel, HD720, HD1080 and VGA (SD) cameras. It is important to note that some high resolution and high frame rate cameras may demand faster headend processing ability, such as a PC graphics card to present a quality image. If the headend processing 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:

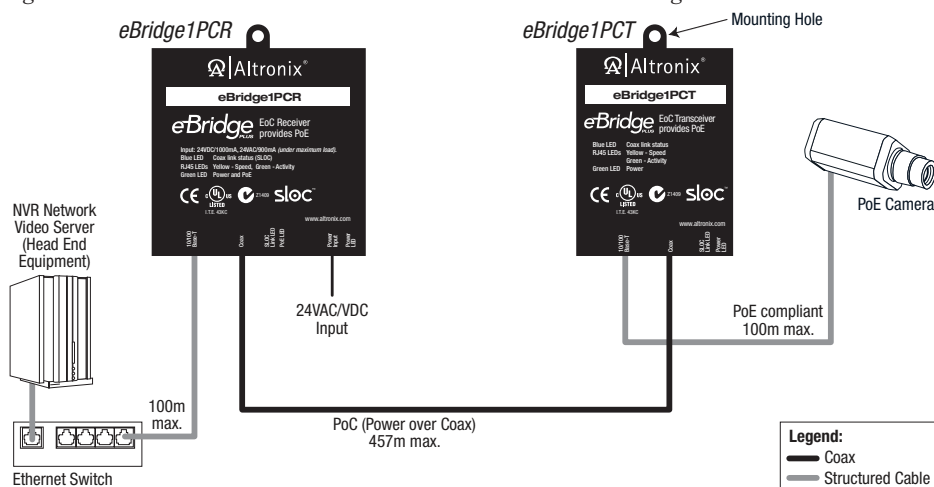| Parameter	Description
Connections	BNC for Coax link. RJ45 for ethernet link.
Input power requirements	24VDC/1,000mA, 24VAC/900mA
Indicators	Blue: Coax Link. Yellow (RJ45 connector): On - Link, Off - No Link, Blinking - Activity. Green (RJ45 connector): On - 100Base-TX, Off - 10Base-T. Green: Power.
Environmental Conditions	Operating Ambient Temperature: UL60950-1 For 15W: $-40°C$ to $75°C$ ($-40°F$ to $167°F$). Relative humidity: 85%, +/ -5%. Storage Temperature: $-40°C$ to $75°C$ ($-40°F$ to $167°F$). Operating Altitude: -304.8 to 2000m (-1000 to 6,561.679 ft.).
Regulatory Compliance	UL/CUL Listed for Information Technology Equipment (UL 60950-1). CE approved. C-Tick compliant.
Weights (approx.)	Product: 0.25 lbs. (0.11 kg), Shipping: 0.6 lbs. (0.27 kg).

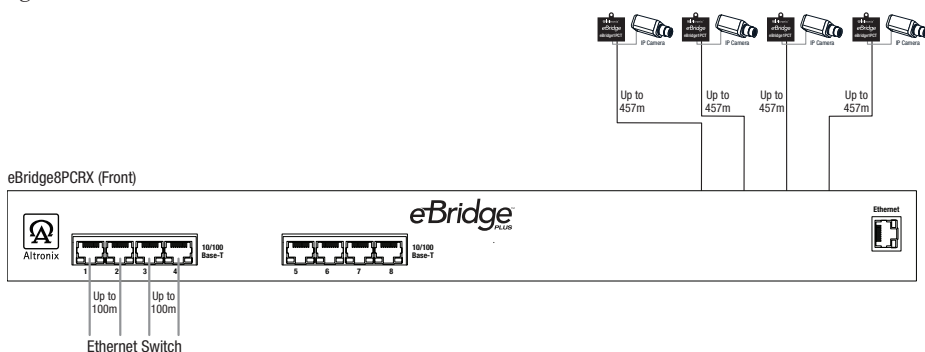*Fig. 1*   *eBridge1PCT*

Green LED indicates Power

CAT5e or higher cable from IP Camera/Device

Coax Cable from eBridge1PCR, eBridge1PCRX, eBridge4PCRX, eBridge8PCRX or eBridge16PCRX

Blue LED indicates Coax Connection

Single PoE Camera Connection:

Fig. 2

Fig. 2a

eBridge1PCR

eBridge1PCT

Mounting Hole

NVR Network
Video Server
(Head End
Equipment)

24VAC/VDC
Input

PoE Camera

PoE compliant
100m max.

100m
max.

PoC (Power over Coax)
457m max.

Ethernet Switch

Legend:
━━ Coax
━━ Structured Cable

Multiple PoE Cameras Connection:

Fig. 3

IP Camera   IP Camera   IP Camera   IP Camera

Up to
457m

Up to
457m

Up to
457m

Up to
457m

eBridge8PCRX (Front)

eBridge

Ethernet

10/100
Base-T

10/100
Base-T

1 2 3 4   5 6 7 8

Up to
100m

Up to
100m

Ethernet Switch

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

Cable Type	Total Power Consumption	Max Data Distance	Max Power Distance
RG59u/23awg	15W	500m	264m
RG59U/22awg	15W	500m	334m
RG59U/20awg	15W	500m	532m
RG59U/18awg	15W	500m	846m

Notes:

MEMBER
eBridge1PCT