Altronix®

eBridge PLUS

eBridge1ST
EoC Hardened Mini-Transceiver
Installation Guide

Overview:

Altronix eBridge1ST EoC hardened transceiver transmits data at 25Mbps, Full Duplex over Coax cable to a paired eBridge receiver and provides power in a PoE/PoE+ compliant format to an enabled device/camera. The eBridge receiver is available in various options and is powered by an external midspan or endspan. The receiver passes PoE/PoE+ power over the same coax cable to the eBridge1ST transceiver, which, in turn, passes this power to an enabled IP camera/device. These plug and play units facilitate a cost-effective, simple way to replace legacy analog products with new IP devices over existing coax up to 500m.

Features:

Agency Listings:
- UL/cUL Listed for Information Technology Equipment (UL 60950-1).
- CE European Conformity.

Input:
- PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W) from eBridge receivers.

Compatible Receivers:
- eBridge1PCRM, eBridge4PCRM, eBridge8PCRM, eBridge16PCRM,
- eBridge1PCR, eBridge1PCRX, eBridge4PCRX, eBridge8PCRX, eBridge16PCRX.
- eBridge8E
- Visit www.altronix.com for the latest compatibility list.

Ethernet:
- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5.
- Distance: up to 500m.
- Speed: 10/100BaseT, auto negotiation. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W) Delivered to camera by eBridge1ST. Power provided by eBridge receiver to eBridge1ST by PoE protocol.*

Coax Link:
- Distance: Coax 500m *(Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 4)* for power delivery.
- Throughput is rated to pass 25Mbps of data at distances up to 500m.
- Connectivity: BNC, RG-59/U or similar.

See note on page 3.

LED Indicators:
- Green - PoE ON (by respective RJ45 jack).
- Yellow and Green LED (RJ45) IP Link status, 10/100Base-T/active.
- Blue: Coax Link is active.

Environmental:
- **Operating Temperature:**
  For 15W: – 40ºC to 75ºC (– 40ºF to 167ºF).
  For 30W: – 40ºC to 65ºC (– 40ºF to 149ºF).
- **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 IP Megapixel and non-Megapixel 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, Casinos, Airports, Schools, Hospitals, etc.

Mechanical:
- Dimensions (W x L x H approx.):
  2.27" x 2.645" x 1.12"
  (57.7mm x 67.2mm x 28.4mm).
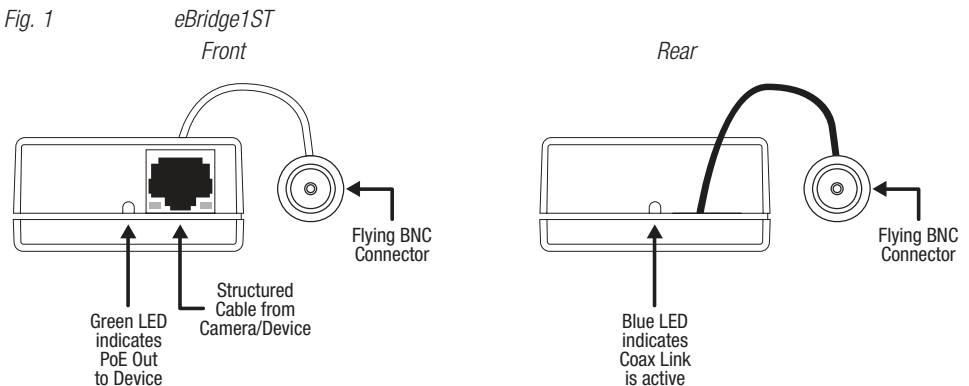
Installation Instructions:

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. eBridge1ST is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. eBridge1ST is intended for indoor use only.

1. Secure unit to the 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 [PoE Out] *(Fig. 2 and 3, pg. 3)*.
3. Connect Coax cable from eBridgePlus receiver (please refer to the list of compatible receivers on page 1) to BNC tether cable marked [Coax] *(Fig. 2 and 3, pg. 3)*.

Note: This unit 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's speed is insufficient, the image may show pixelation and latency. It is advisable to pretest system if unsure. Alternatively, frame rate and resolution may be reduced to accommodate system equipment.
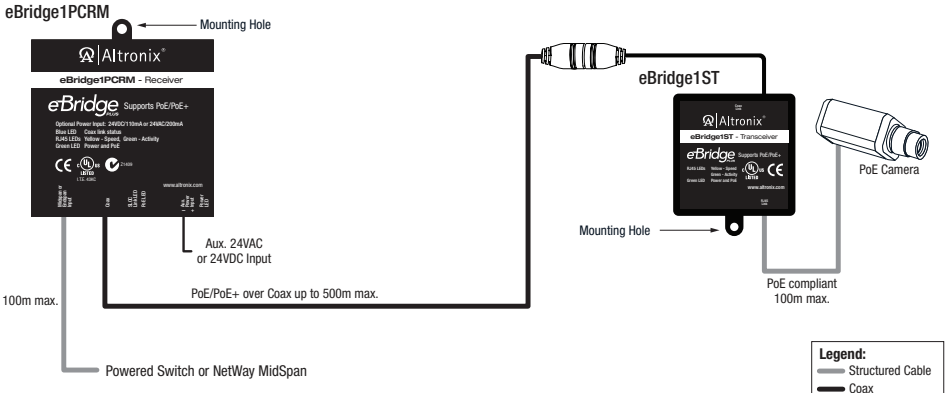
Technical Specifications:

Parameter	Description
Connections	BNC for Coax link, RJ45 for camera/device.
Input Power Requirements	PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W). Please refer to the list of compatible receivers on page 1
Indicators	**Yellow (RJ45 connector):** On - Link, Off - No Link, Blinking - Activity. **Green (RJ45 connector):** On - 100Base-TX, Off - 10Base-T. **Green:** PoE Active. **Blue:** Coax Link is active.
Environmental Conditions	**Operating Ambient Temperature:** UL60950-1 For 15W: − 40ºC to 75ºC (− 40ºF to 167ºF). For 30W: − 40ºC to 65ºC (− 40ºF to 149ºF). Relative humidity: 85%, +/ − 5% Storage Temperature: − 40ºC to 75ºC (− 40ºF to 167ºF). Operating Altitude: − 304.8 to 2,000m.
Regulatory Compliance	UL/cUL Listed for Information Technology Equipment (UL 60950-1). CE European Conformity.
Weights (approx.)	Product: 0.22 lb. (0.1 kg), Shipping: 0.4 lb. (0.18 kg).

Fig. 1   eBridge1ST

Front

Rear

Flying BNC Connector

Flying BNC Connector

Structured Cable from Camera/Device

Green LED indicates PoE Out to Device

Blue LED indicates Coax Link is active

Single PoE Camera Connection:

Fig. 2   *Fig. 2a*

eBridge1PCRM
Mounting Hole

eBridge1PCRM - Receiver

Aux. 24VAC
or 24VDC Input

PoE/PoE+ over Coax up to 500m max.

100m max.

Powered Switch or NetWay MidSpan

eBridge1ST

eBridge1ST - Transceiver

PoE Camera

Mounting Hole
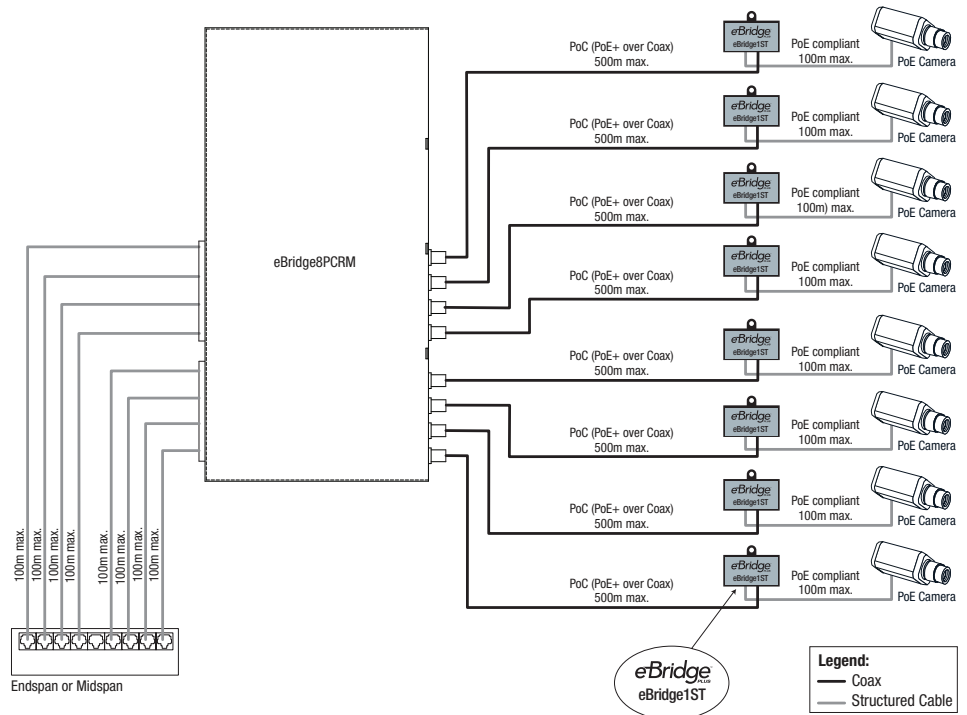
PoE compliant
100m max.

Legend:
— Structured Cable
— Coax

*Note: *Caution: once PoE connection is established between eBridgePlus receiver and eBridge1ST, disconnecting the eBridge1ST will not disable the PoE output voltage from the eBridgePlus receiver. Although the eBridge1ST can be reconnected, caution should be taken not to connect coax wiring from eBridgePlus receiver to any non-PoE device.*

Typical Application:

Fig. 3

eBridge8PCRM

PoC (PoE+ over Coax)
500m max.

PoE compliant
100m max.

PoE Camera

Endspan or Midspan

100m max.

eBridge1ST

Legend:
— Coax
— Structured Cable

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

Cable Type	Total Power Consumption	Max Data Distance	Max Power Distance
RG59u/23awg	13W		264m
RG59u/23awg	25W		132m
RG59U/22awg	13W		334m
RG59U/22awg	25W	500m	167m
RG59U/20awg	13W		532m
RG59U/20awg	25W		266m
RG59U/18awg	13W		846m
RG59U/18awg	25W		423m

Notes: