Altronix® eBridge® PLUS

eBridge100TM
IP and PoE/PoE+ Over Coax Hardened Transceiver
Installation Guide

c(UL)us LISTED CE
I.T.E. 43KC

Z1409
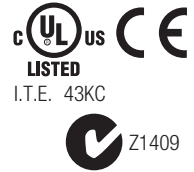
Overview:

Altronix eBridge100TM EoC hardened transceiver transmits data at 100Mbps, 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 eBridge100TM 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 300m. When paired with the eBridge100RM EoC Receiver, the eBridge100TM will pass 100Mbps full duplex data and PoE/PoE+ over CAT5e (or higher) up to 500m.

Features:

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

Compatible Receivers:
- eBridge100RM, eBridge400PCRM, eBridge800PCRM, and eBridge1600PCRM.
- eBridge800E.
  Visit www.altronix.com for the latest compatibility list.

Input:
- Operating power provided by PSE (power sourcing equipment).
- Current draw: 1.5W.
- PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W) from eBridge receivers.*

Coax link:
- Throughput is rated to pass 100Mbps of data at distances up to 300m.
  (Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 4) for power delivery.
- Connectivity: BNC, RG-59/U or similar.

CAT5e or Higher from eBridge100RM:
- Distance: up to 500m @ 100Mbps.
  (Maximum Length of Coax or CAT5 Type vs. Camera Power/PoE Class, pg. 4) for power delivery.

See note on the bottom of Page 2.

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

Environmental:
- **Operating Temperature:**
  For 15W: – 40ºC to 75ºC (– 40ºF to 167ºF).
  For 25W: – 40ºC to 60ºC (– 40ºF to 140ºF).
  For 30W: – 40ºC to 49ºC (– 40ºF to 120.2ºF).
- **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, Casinos, Airports, Schools, Hospitals, etc.

Mechanical:
- Dimensions (W x L x H approx.):
  3.5" x 4.375" x 1"
  (88.9mm x 111.1mm 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. eBridge100TM is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. eBridge100TM is intended for indoor use only.

1. Secure unit to desired mounting surface with a proper fastening device utilizing the case'smounting 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] *(Figs. 2, 3, pg. 3)*.
3. **Coax:** Connect Coax cable from eBridge receiver (eBridge100RM, eBridge400PCRM, eBridge800PCRM, eBridge1600PCRM or eBridge800E) to BNC connector marked [Coax] *(Figs. 2, 3, pg. 3)*.
   CAT5 or higher (must use eBridge100RM receiver): Connect CAT5e or higher to connector marked [RJ45 IN] *(Fig. 2, pg. 3)*.
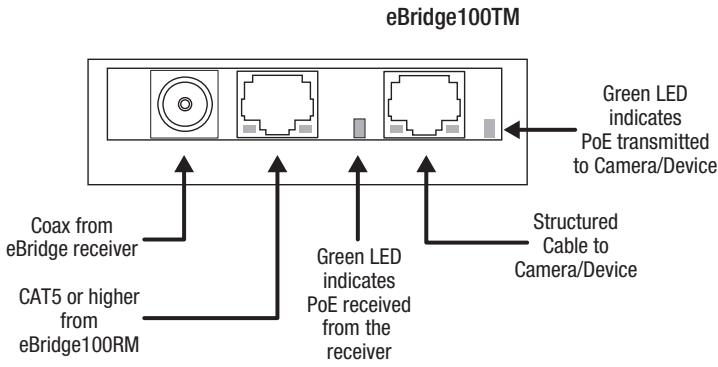
Note: eBridge100TM is designed to accommodate Megapixel, HD720, HD1080 and VGA (SD) cameras. It is important to note that some high resolution and high frame rate cameras may demand faster headend processing ability, such as a PC graphics card to present a quality image. If the headend processing equipment is insufficient in speed, the image may show pixelation and latency. It is advisable to 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 extended Ethernet link.		
Input Power Requirements	PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W) from eBridge100RM, eBridge400/800/1600PCRM or eBridge8E.		
Indicators	**Yellow (RJ45 connector):**	On - Link, Off - No Link, Blinking - Activity.	
	Green (RJ45 connector):	On - 100Base-TX, Off - 10Base-T.	
	Green:	PoE Active.	
Environmental Conditions	Operating Ambient Temperature: UL60950-1		
	eBridge100TM:	For 15W:	$-$ 40ºC to 75ºC ($-$ 40ºF to 167ºF).
		For 25W:	$-$ 40ºC to 70ºC ($-$ 40ºF to 158ºF).
		For 30W:	$-$ 40ºC to 49ºC ($-$ 40ºF to 120.2ºF).
	Storage Temperature:		$-$ 40ºC to 75ºC ($-$ 40ºF to 167ºF).
	Humidity: 20 to 85%, non-condensing. Operating Altitude: -304.8 to 2,000m.		
Regulatory Compliance	UL/cUL Listed for Information Technology Equipment (UL 60950-1). CE European Conformity. C-Tick compliant.		
Weights (approx.)	Product: 0.22 lb. (0.1 kg) ǀ Shipping: 0.4 lb. (0.18 kg).		

*Note: *Caution: once PoE connection is established between a receiver and eBridge100TM, disconnection from eBridge100TM will not disable the PoE output voltage on the receiver. Although eBridge100TM can be reconnected, caution should be taken not to connect the CAT5 or single UTP wiring from the receiver to any non-PoE device.*

Fig. 1   **eBridge100TM**

Coax from
eBridge receiver

CAT5 or higher
from
eBridge100RM

Green LED
indicates
PoE received
from the
receiver

Green LED
indicates
PoE transmitted
to Camera/Device

Structured
Cable to
Camera/Device

Single PoE Camera Connection:

Fig. 2   *Fig. 2a*

eBridge100RM   eBridge100TM   ← Mounting Hole

PoE Camera

PoE/PoE+ over Coax up to 300m max.
or
PoE/PoE+ over CAT5e up to 500m max.

PoE compliant 100m max.

100m max.

Powered Switch or Midspan

Legend:
— Structured Cable
— Coax

Typical Application:

Fig. 3

PoE/PoE+ over Coax/CAT5e
500m max.

eBridge100TM

PoE
compliant
100m max.

PoE Camera

PoE/PoE+ over Coax/CAT5e
500m max.

eBridge100TM

PoE
compliant
100m max.

PoE Camera

PoE/PoE+ over Coax/CAT5e
500m max.

eBridge100TM

PoE
compliant
100m max.

PoE Camera

PoE/PoE+ over Coax/CAT5e
500m max.

eBridge100TM

PoE
compliant
100m max.

PoE Camera

eBridge800PCRM (rear)

Ethernet Switch

Legend:
— Structured Cable
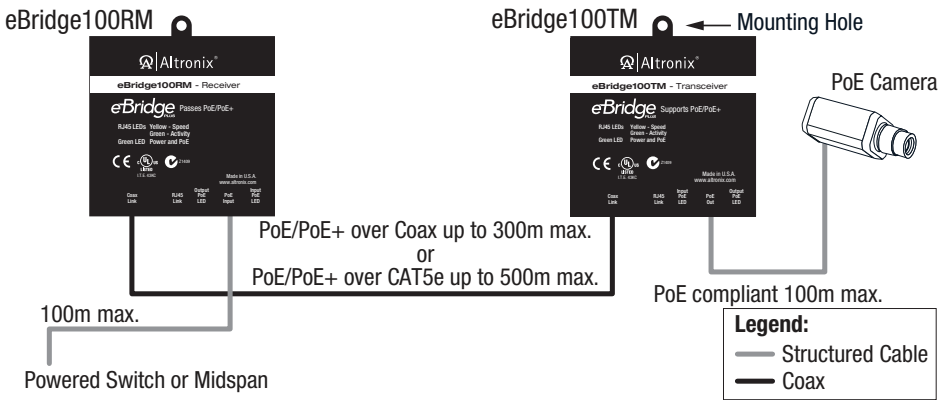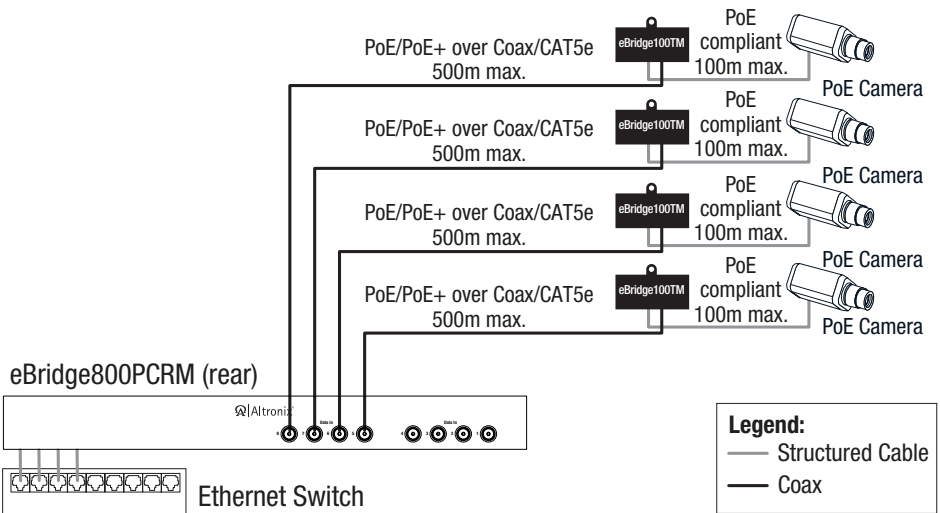— Coax

Maximum Length of Coax/CAT5 Type vs. Camera Power/PoE Class:

Camera Power/ PoE Class	RG59/U - 23AWG	RG59/U - 22AWG	RG59/U - 20AWG	RG59/U - 18AWG	RG6/U - 18AWG	CAT5 or Higher
	Max. Length (meters)					
13W/0	261	336	500	500	500	500
4W/1	500	500	500	500	500	500
6.5W/2	500	500	500	500	500	500
13W/3	261	336	500	500	500	500
19W	153	198	316	500	500	305
25W	119	151	240	366	366	214

Notes: