

eBridgeTM **PLUS**

Ethernet over Coax Solutions

Installation Guide

Models Include:

eBridge400PCRM

- Four (4) Channel Receiver

eBridge800PCRM

- Eight (8) Channel Receiver

eBridge1600PCRM

- Sixteen (16) Channel Receiver



Overview:

eBridge400/800/1600PCRM and eBridge100TM/eBridge100ST are CAT5e to Coax cable Ethernet adapters/Media converters that deliver data and power over the coax cable in a PoE+ compliant format. The paired set enables fast 100Base-T Full Duplex Ethernet digital communication to be transmitted over Coax cable. The eBridge400/800/1600PCRM receivers are powered by any UL Listed, PoE midspan or endspans and pass power over the coax to the eBridge100TM/eBridge100ST hardened transceivers. This enables the eBridge400/800/1600PCRM to be used in a managed manner, allowing for remote camera reset. The eBridge100TM/eBridge100ST, in turn, passes 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 300m in comparison to 100m Ethernet maximum distance (*see Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 3*).

Features:

Agency Listings:

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

Compatible Transceivers:

- **eBridge100TM:** Hardened transceiver.
- **eBridge100ST:** Hardened mini transceiver.

Input:

- Powered by a UL Listed limited power source, PoE midspan or endspan.

Ethernet:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5e or better structured cable.
- Distance: up to 100m.
- Speed: 100BaseT, 100mbps full duplex, auto negotiation. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W)
Delivered to camera by eBridge100TM/eBridge100ST.
Power provided by eBridge400/800/1600PCRM to eBridge100TM/eBridge100ST by PoE protocol.

Coax:

- Distance: up to 300m (*see Maximum Length of Coax Type vs. Camera Power/PoE Class, pg. 5*) for power delivery of coax.
- Throughput is rated to pass 100mbps of data at distances up to 300m full duplex. With proper headend equipment, this supports Megapixel, HD720, HD1080.
- Connectivity: BNC, RG-59/U or similar.

LED Indicators:

- **eBridge400/800/1600PCRM:**
Blue LED (near BNC) - Coax link connection.
Yellow and Green LED (RJ45) IP Link status, 100Base-T/active.
- **eBridge100TM:**
Green - PoE ON (by respective RJ45 jack).
Yellow and Green LED (RJ45) IP Link status, 100Base-T/active.

LED Indicators (cont'd):

- **eBridge100ST:**
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:**
eBridge400/800/1600PCRM: -20°C to 49°C (-4°F to 120.2°F).
eBridge100TM:
For 15W: -40°C to 75°C (-40°F to 167°F).
For 25W: -40°C to 70°C (-40°F to 158°F).
For 30W: -40°C to 49°C (-40°F to 120.2°F).
eBridge100ST:
For 15W: -40°C to 75°C (-40°F to 167°F).
For 30W: -40°C to 60°C (-40°F to 140°F).
- **Storage Temperature:** -30°C to 70°C (-22°F to 158°F).
- Humidity: 20 to 85%, non-condensing.

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 (*see note, pg. 2*).
- Upgrade deployed CCTV Coax to a digital network in Retail, Hospitality, Arenas, Casinos, Airports, Schools, Hospitals, Transportation, etc.

Mechanical:

- Dimensions (H x W x D approx.):
eBridge400PCRM:
1.7" x 5.25" x 9.25" (43.8mm x 133.35mm x 235mm).
eBridge800/1600PCRM:
1.625" x 19.125" x 8.5" (42mm x 486mm x 216mm).
eBridge100TM:
1" x 2.5" x 4.375" (25.4mm x 63.5mm x 111.125mm).
eBridge100ST:
2.27" x 2.645" x 1.12" (57.66mm x 67.18mm x 28.44mm).

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.

eBridge400/800/1600PCRM is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. The eBridge400/800/1600PCRM and eBridge100TM are intended for indoor use only.

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Do not obstruct any air vents on the unit. It is recommended to leave half space above and below the unit.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Note: Caution: Once PoE connection is established between eBridge400/800/1600PCRM and eBridge100TM or eBridge100ST, disconnecting the coax from eBridge100TM will not disable the PoE-compliant voltage from the eBridge400/800/1600PCRM. eBridge100TM or eBridge100ST can be reconnected, however, caution should be taken not to connect the coax wiring from eBridge400/800/1600PCRM to any non-PoE device.

1. eBridge400/800/1600PCRM Receivers installation:

- eBridge400PCRM - Affix rubber pads to eBridge400PCRM for shelf installation (Fig. 5, pg. 6).
eBridge800/1600PCRM - Attach mounting brackets to the unit for rack installation (Fig. 4, pg. 6).
Affix rubber pads to eBridge800/1600PCRM for shelf installation (Fig. 5, pg. 6).
Unit should be located in proximity to ethernet switch/network, NVR or video server.
- Connect structured cable from ethernet midspan or endspan device to RJ45 jack marked [100BaseT] (Fig. 2, pg. 3).
- Connect Coax cable to BNC connector marked [Coax] (Fig. 1, pg. 3).

2. eBridge100TM Transceiver installation:

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

3. eBridge100ST Transceiver installation:

- 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.
- Connect structured cable from IP camera/device to RJ45 jack marked [PoE Out] (Fig. 2a, pg. 3).
- Connect Coax from eBridge receiver (eBridge400PCRM, eBridge800PCRM or eBridge1600PCRM) cable to BNC tether cable marked [Coax] (Fig. 2a, pg. 3).

Note: eBridge400/800/1600PCRM 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.

Fig. 1

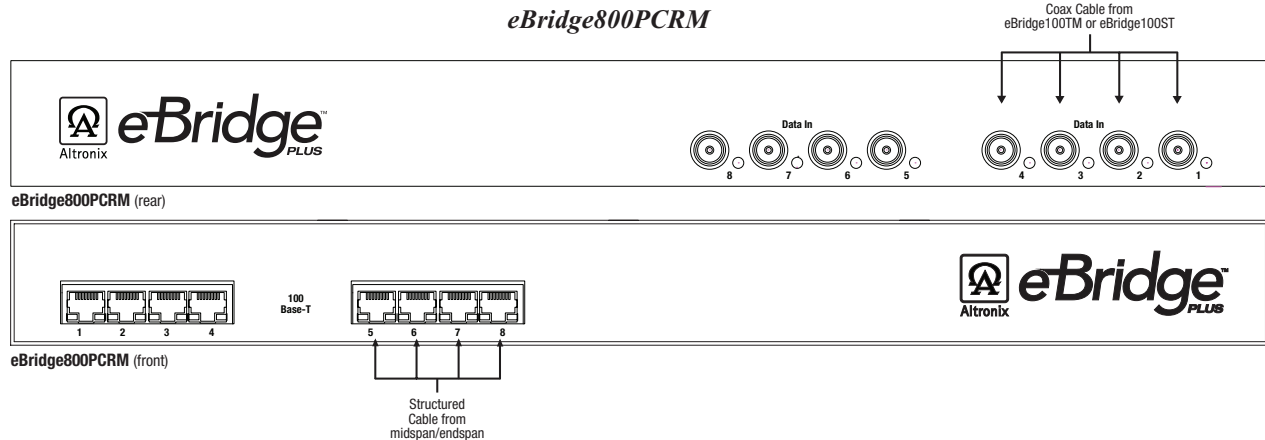
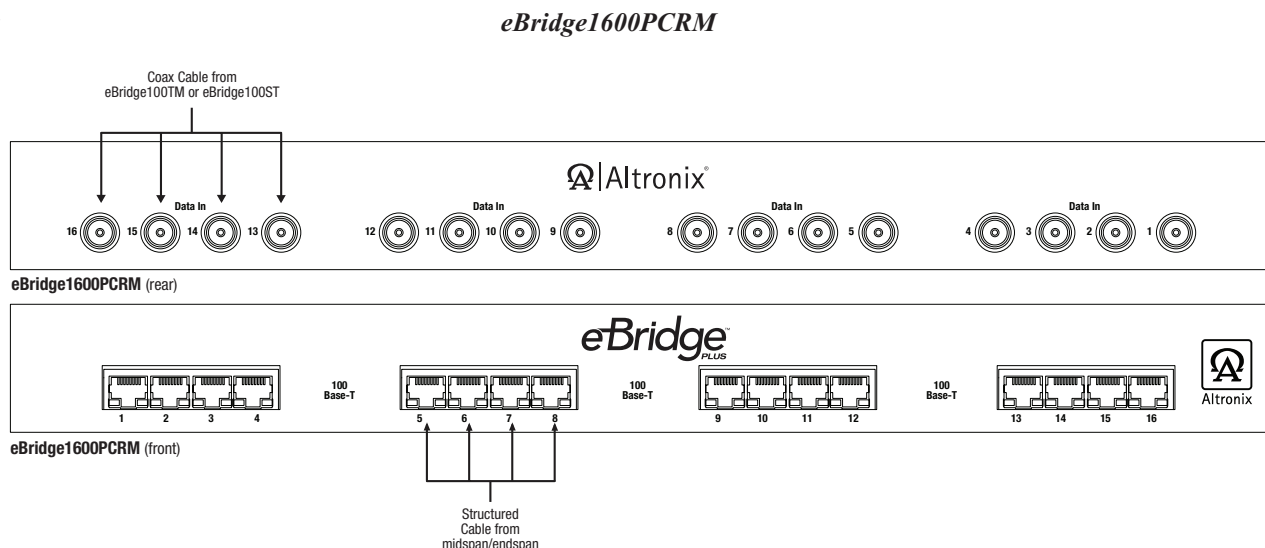


Fig. 1a



Technical Specifications:

Parameter	Description
Connections	BNC for Coax link. RJ45 for ethernet link.
Input power requirements	UL Listed power-limited midspan or endspan port connected.
Indicators	<p>eBridge400/800/1600PCRM: Blue LED (near BNC) - Coax link connection. Yellow and Green LED (RJ45) IP Link status, 100Base-T/active.</p> <p>eBridge100TM: Green - PoE ON (by respective RJ45 jack). Yellow and Green LED (RJ45) IP Link status, 100Base-T/active.</p> <p>eBridge100ST: Green - PoE ON (by respective RJ45 jack). Yellow and Green LED (RJ45) IP Link status, 10/100Base-T/active. Blue: Coax Link is active.</p>
Environmental Conditions	<p>Operating Ambient Temperature: UL60950-1 eBridge400/800/16PCRM: -20°C to 49°C (-4°F to 120.2°F). eBridge100TM: For 15W: -40°C to 75°C (-40°F to 167°F). For 25W: -40°C to 70°C (-40°F to 158°F). For 30W: -40°C to 49°C (-40°F to 120.2°F). eBridge100ST: For 15W: -40°C to 75°C (-40°F to 167°F). For 30W: -40°C to 60°C (-40°F to 140°F). Relative humidity: 20 to 85%, non-condensing. Storage Temperature: - 30°C to 70°C (- 22°F to 158°F). Operating Altitude: -1000 to 6,561.679 ft. (-304.8 to 2000m).</p>
Regulatory Compliance	UL/CUL Listed for Information Technology Equipment (UL 60950-1). CE approved. C-Tick compliant.
Weights (approx.)	<p>eBridge400PCRM: Product: 1.35 lbs. (0.61 kg), Shipping: 1.7 lbs. (0.77 kg) eBridge800PCRM: Product: 5.8 lbs. (2.63 kg), Shipping: 7.8 lbs. (3.54 kg) eBridge1600PCRM: Product: 7.2 lbs. (3.27 kg), Shipping: 9.2 lbs. (4.17 kg)</p>

Maximum Length of Coax 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)
	Max. Length (meters)				
13W/0	260.64m	300m	300m	300m	300m
4W/1	300m	300m	300m	300m	300m
6.5W/2	300m	300m	300m	300m	300m
13W/3	260.64m	300m	300m	300m	300m
19W	260.64m	300m	300m	300m	300m
25W	260.64m	300m	300m	300m	300m

Mounting Options:

Rack Mount Installation

- 1- Remove and discard factory installed screws from both sides of rack chassis (*Fig. 4a*).
- 2- Install mounting brackets (A) on the left and right side of rack chassis using the four (4) flat head screws (B) (included) (*Fig. 4b*).
- 3- Place unit into desired EIA 19" rack position and secure with mounting screws (*not included*) (*Fig. 4c*).

Fig. 4

Fig. 4a

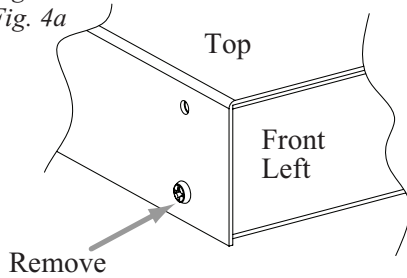


Fig. 4b

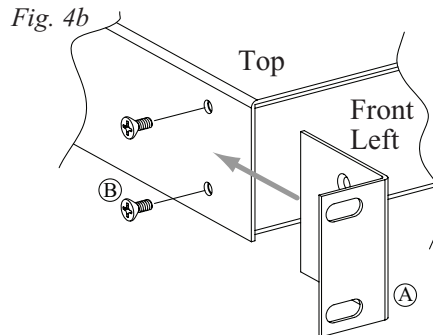
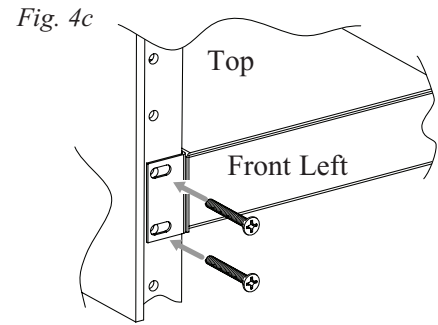


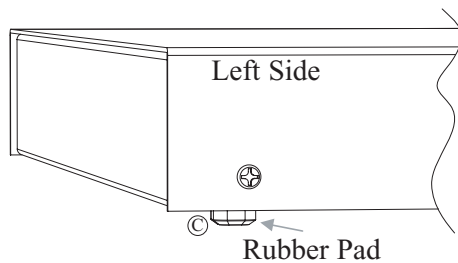
Fig. 4c



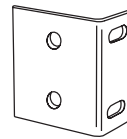
Shelf Installation

- 1- Position and affix rubber pads (C) (included) at each corner on the bottom of the unit (*Fig. 5*).
- 2- Place unit in desired location.

Fig. 5



Mounting Hardware (Included):



(A) Two (2) mounting brackets

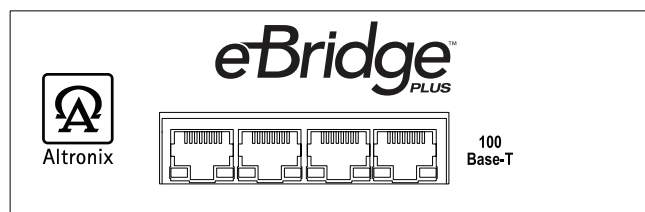
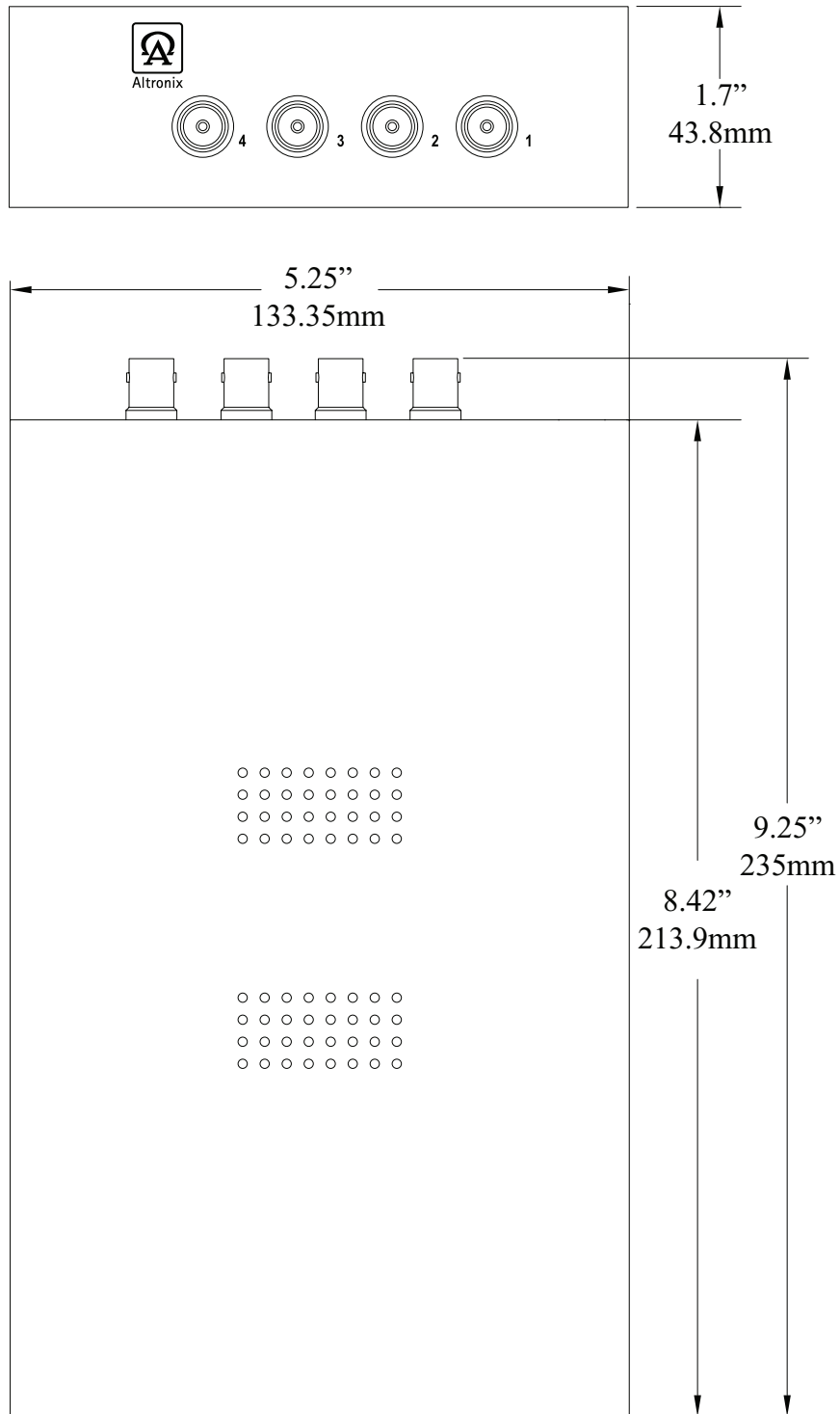


(B) Six (6) flat head screws for mounting brackets.



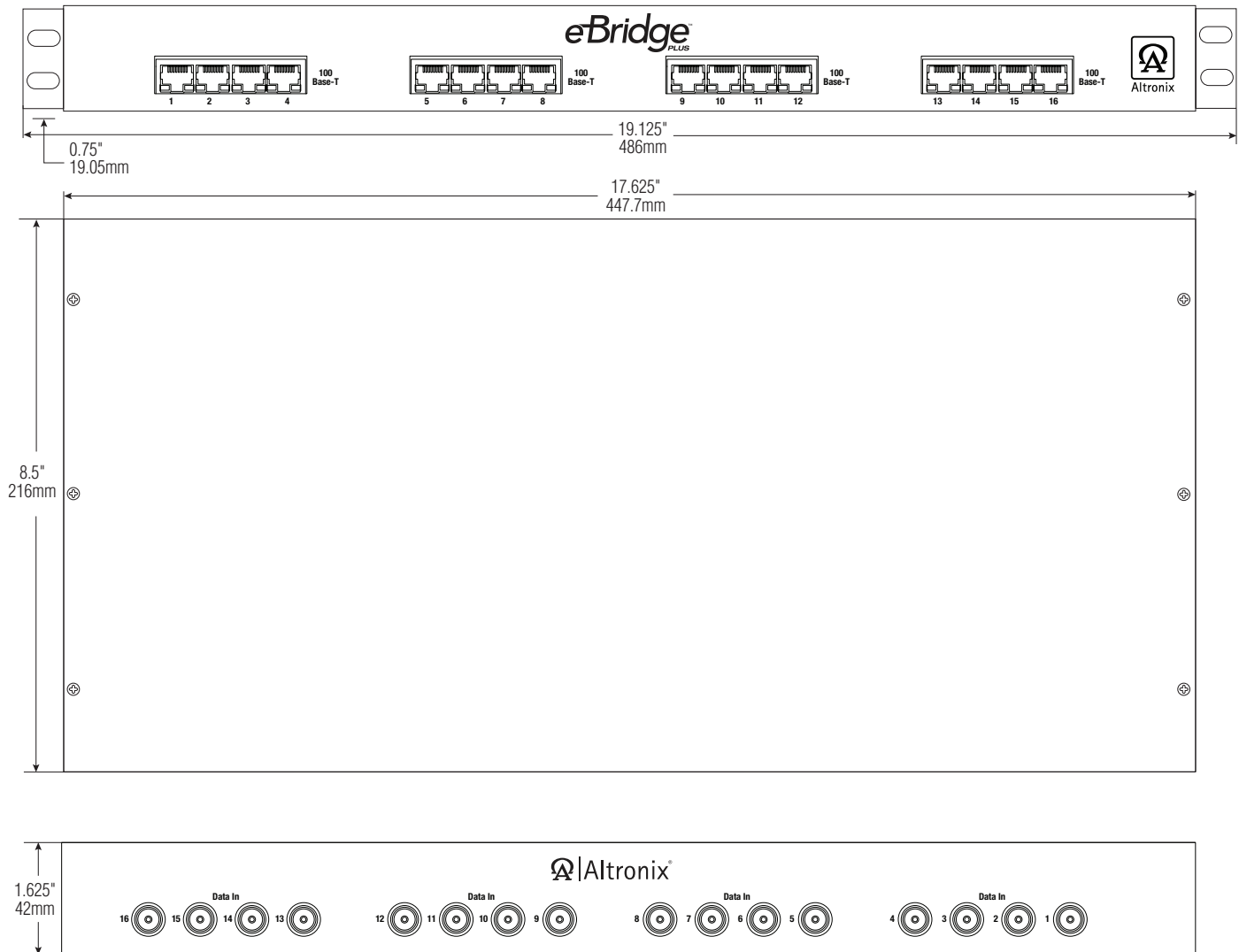
(C) Four (4) rubber pads.

Enclosure Dimensions (*H x W x D approximate*):
1.7" x 5.25" x 9.25" (43.8mm x 133.35mm x 235mm)



Enclosure Dimensions (H x W x D approximate):

1.625" x 19.125" x 8.5" (42mm x 486mm x 216mm)
eBridge1600PCRM shown. eBridge800PCRM is similar.



Altronix is not responsible for any typographical errors.

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