eBridge™

eBridge16CR

Sixteen (16) Port IP over Coax Receiver

Installation Guide

c UL us LISTED
I.T.E. 43KC

CE Z1409

Altronix®

More than just power.™

Rev. 072412

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

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Overview:

Altronix eBridge16CR is a CAT5 to Coax cable Ethernet receiver. The receiver enables fast 10/100Base-T Ethernet digital communication to be received over Coax cable. This plug and play unit facilitates 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 over the Coax can be extended to 500m (five times the 100m Ethernet maximum length), eliminating the need for repeaters. At the same time the unit can combine Composite Video Signal with the Ethernet data enabling connection to an analog input on a monitor or matrix switch. **The eBridge16CR is to be used with a compatible Hybrid cameras with "sloc" technology. An eBridge1CT is required for other IP cameras/devices.**

Features:

Agency Listings:

- **UL 60950-1** Information Technology Equipment.
- **CE** European Conformity.
- **sloc™ Compliant:** Incorporates *sloc™ (Security Link over Coax) technology.

Input:

- 24VDC to 56VDC UL Listed Class 2 power supply (polarity not observed) or UL Listed 24VAC Class 2 plug-in transformer.

Power Consumption:

- 24VDC/1500mA, 56VDC/700mA, 24VAC/2000mA.

Ethernet:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair Cat-5 or better structured cable.
- Distance: up to 100m.
- Speed: 10/100BaseT, half/full duplex, auto negotiation.
- Throughput is rated to pass 25Mbps of data at distances up to 500m. With proper headend equipment multiple Megapixel cameras can be used.

Coax:

- Distance: up to 500m.
- Connectivity: BNC, RG-59/U or similar.

LED Indicators:

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

Environmental:

- Operating Temperature: – 10ºC to 50ºC (14ºF to 122ºF).
- Storage Temperature: – 30º to 70ºC (– 22º to 158ºF).
- 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.
- Upgrade deployed CCTV Coax to a digital network in Retail, Hospitality, Arenas, Casinos, Airports, Schools, Hospitals, Transportation, etc.
- Enables simultaneous transmission of composite and digital IP video.

Mechanical:

- Dimensions (H x W x D approx.): 1.625" x 19.125" x 8.5" (42mm x 486mm x 216mm)

* sloc is a registered trademark of Intersil Corporation.

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. eBridge16CR is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. The eBridge16CR is intended for indoor use only. This product is intended to be supplied by a UL Listed Direct Plug-in Power Unit marked "Class 2" and rated from 24VDC to 56VDC or 24VAC, 2000mA.

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 (Tma) 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

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

Circuit Overloading - Consideration should be given to the connection of the equipment to supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring.

Appropriate consideration of equipment nameplate rating should be used when addressing this concern.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

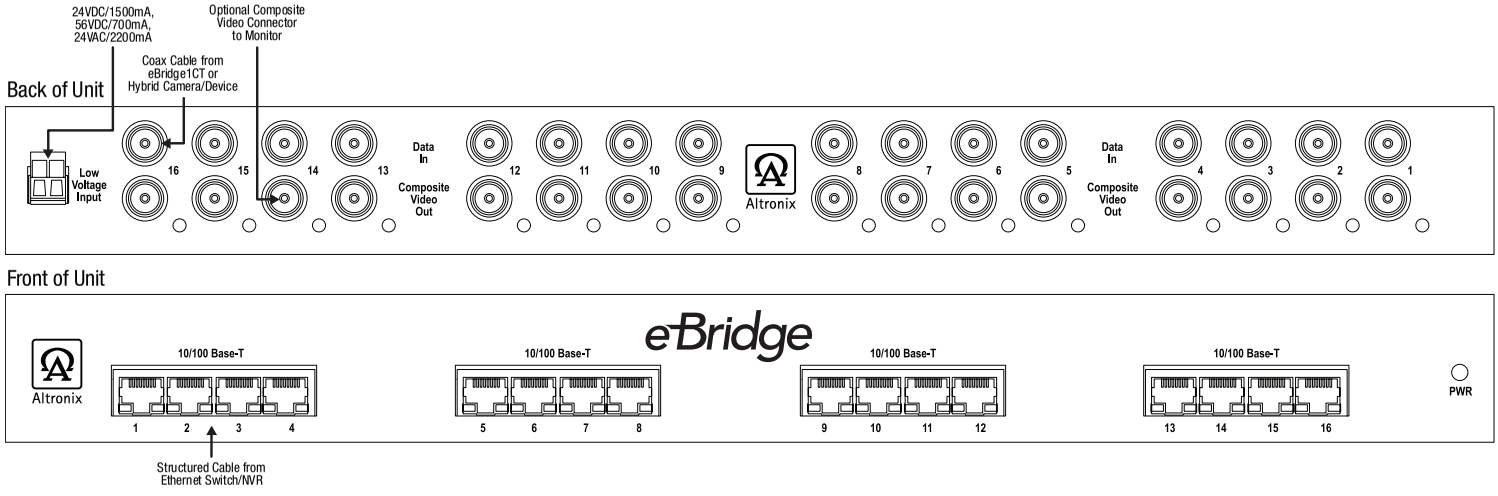
1. Attach mounting brackets to eBridge16CR unit for rack installation *(Fig. 7, pg. 11)*.
   Affix rubber pads to eBridge16CR for shelf installation *(Fig. 8, pg. 11)*.
2. Unit should be located in proximity to ethernet switch/network, NVR or video server.
3. Connect UL Listed 24VAC Class 2 plug-in transformer or 24VDC/56VDC (polarity not observed) UL Listed Class 2 power supply to jack marked [Power Input] using two pin plug in connector (supplied) *(Fig. 1, pg. 5)*. Use 22AWG-16AWG wire for this connection.
4. Connect structured cable from ethernet switch/NVR (network video server) to RJ45 jack marked [10/100BaseT] *(Fig. 1, pg. 5)*.
5. Connect Coax cable to BNC connector marked [Data In] *(Fig. 1, pg. 5)*.
6. For optional simultaneous Composite Video transmission, connect Coax cable to BNC connector marked [Composite Video Out] *(Fig. 2, pg. 6)*. Connect the other end of the Coax cable to the composite video input of the NVR, monitor display, matrix switch or other headend equipment.

Note: eBridge16CR 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 pixilation 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 ethernet link. Composite video connector for optional composite video service
Input Power Requirements	24VDC/1500mA, 56VDC/700mA, 24VAC/2000mA.
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): – 10ºC to 50ºC (14ºF to 122ºF). Relative humidity: 85%, +/– 5%. Storage Temperature: – 30ºC to 70ºC (– 22ºF to 158ºF). 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: 7.2 lb. (3.27 kg) | Shipping: 9.2 lb. (4.17 kg)

Fig. 1


24VDC/1500mA,
56VDC/700mA,
24VAC/2200mA
Optional Composite
Video Connector
to Monitor
Coax Cable from
eBridge1CT or
Hybrid Camera/Device
Back of Unit
Low
Voltage
Input
16
15
14
13
Data
In
Composite
Video
Out
12
11
10
9
Altronix
8
7
6
5
Data
In
Composite
Video
Out
4
3
2
1
Front of Unit
Altronix
eBridge
10/100 Base-T
1
2
3
4
10/100 Base-T
5
6
7
8
10/100 Base-T
9
10
11
12
10/100 Base-T
13
14
15
16
PWR
Structured Cable from
Ethernet Switch/NVR

Single IP Camera Shown with Composite Video Option:

Fig. 2

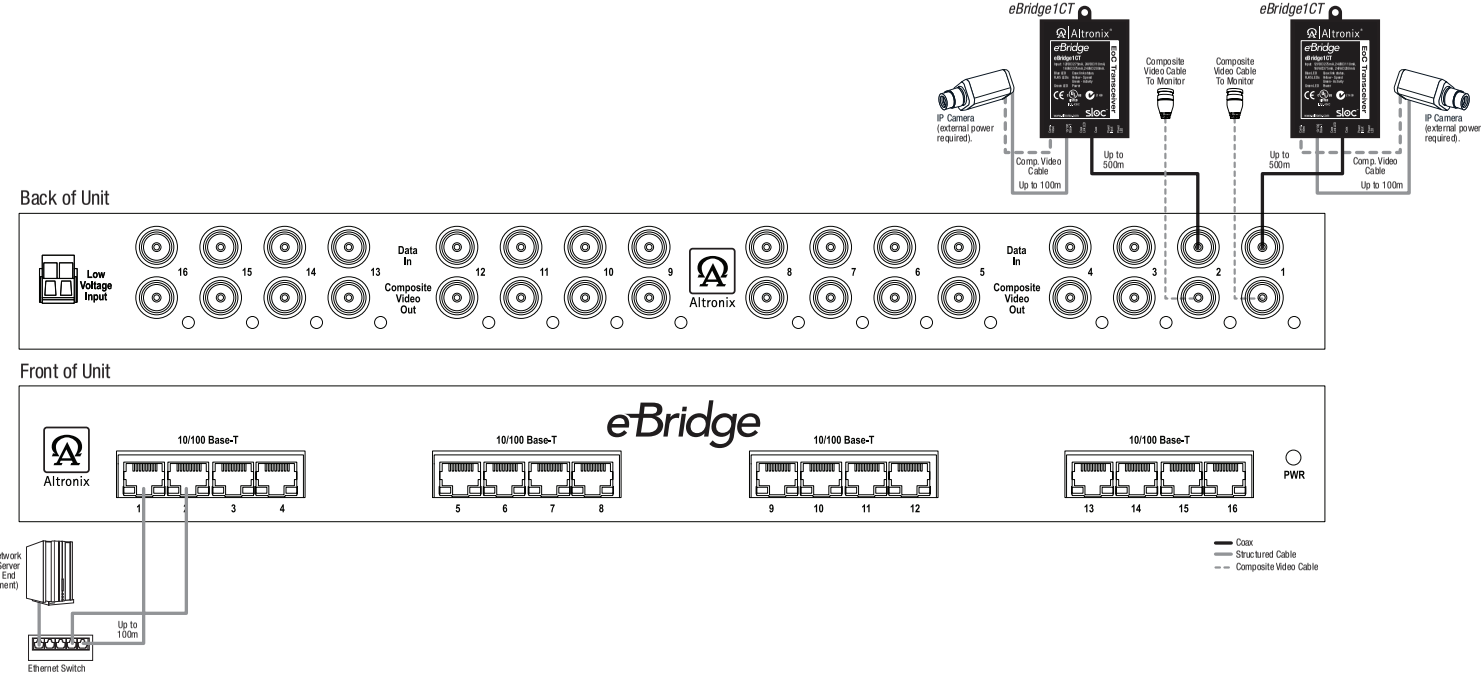
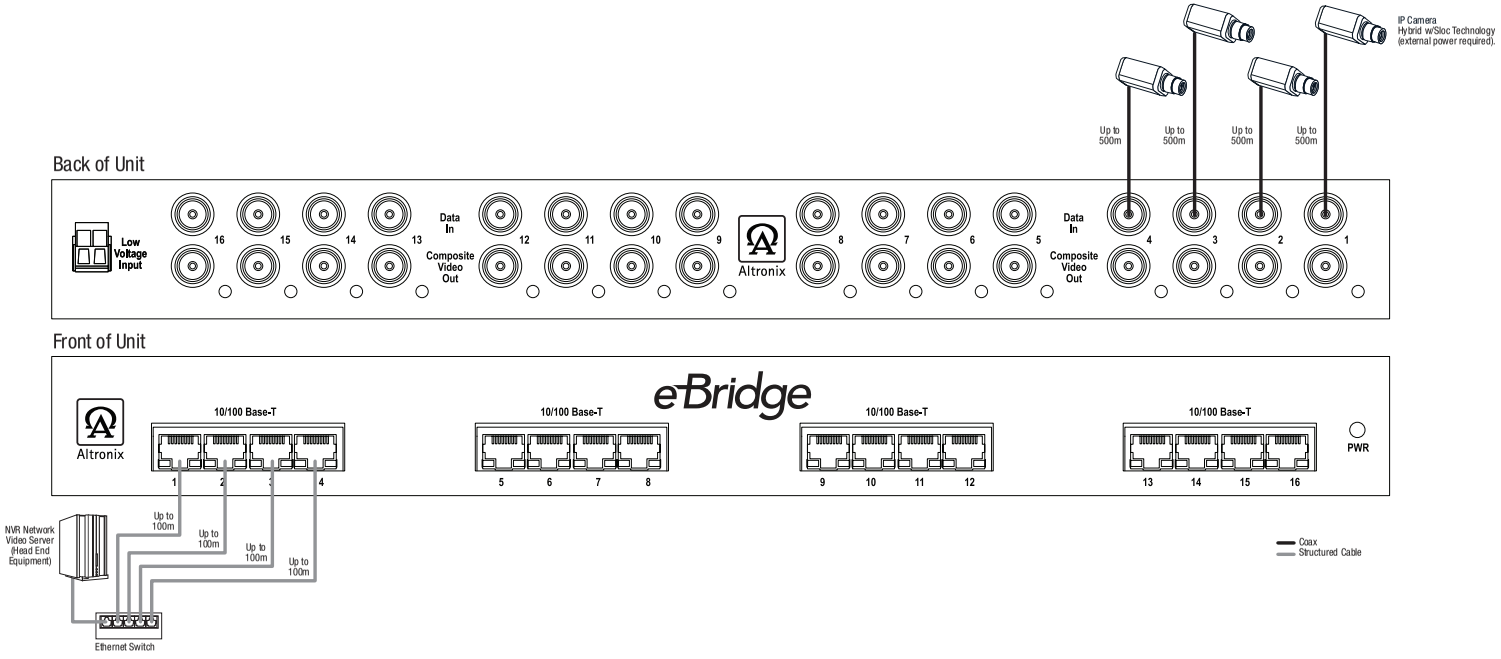


Fig. 3


IP Camera
Hybrid w/Sloc Technology
(external power required).
Up to 500m
Up to 500m
Up to 500m
Up to 500m
Back of Unit
Low Voltage Input
16
15
14
13
Data In
Composite Video Out
12
11
10
9
Altronix
8
7
6
5
Data In
Composite Video Out
4
3
2
1
Front of Unit
Altronix
10/100 Base-T
eBridge
10/100 Base-T
10/100 Base-T
10/100 Base-T
PWR
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
NVR Network Video Server (Head End Equipment)
Up to 100m
Up to 100m
Up to 100m
Up to 100m
Ethernet Switch
Coax
Structured Cable

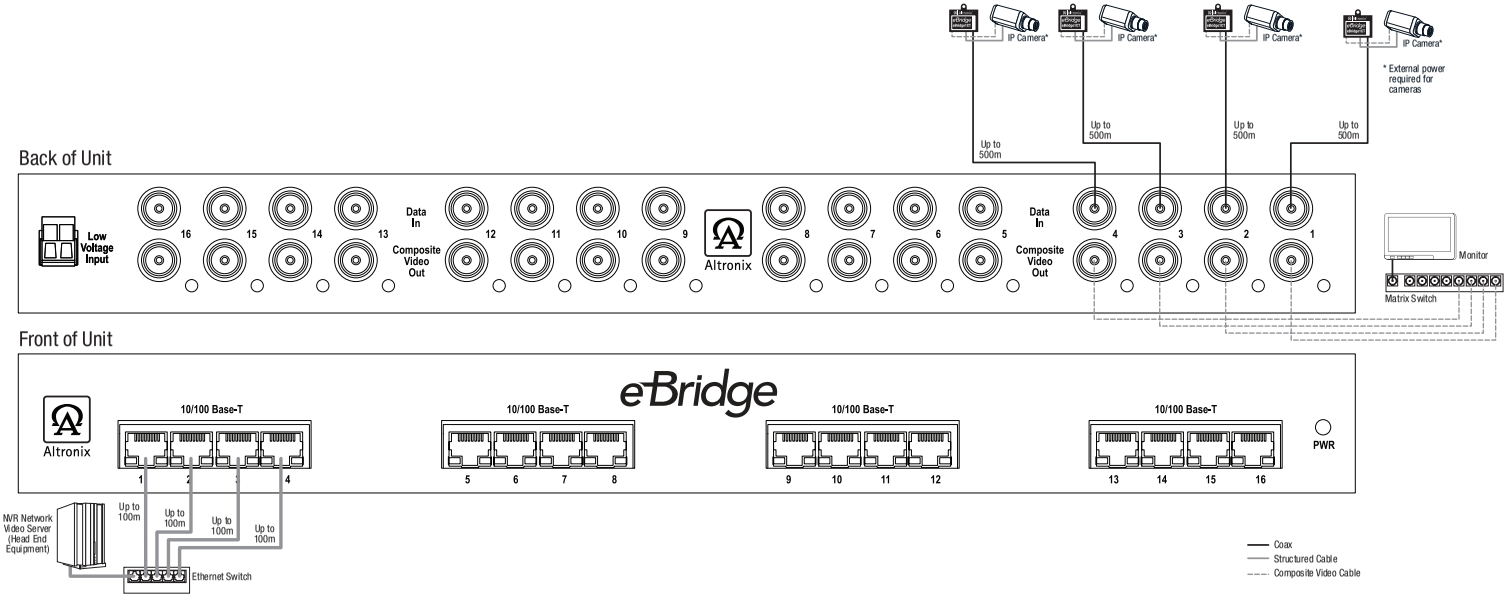
Solutions and Installation Notes:

Currently Matrix Switchers, DVRs and NVRs do not readily accommodate multi-picture (Matrix) monitor display capability (typically 4X4 – 16 channel display) for some of the higher resolution cameras. In addition HD cameras use a wide screen format (16:9 aspect ratio). This may not fit as well into the matrix display as the standard screen format (4:3 aspect ratio). In addition high resolution multichannel recording can introduce unacceptable latency in the real-time monitor display.

To achieve high resolution recording along with real-time multi-channel viewing: Record the high resolution IP video via the NVR and the simultaneous composite video via the Matrix switcher to achieve proper display format *(Fig. 4, pg. 8).*

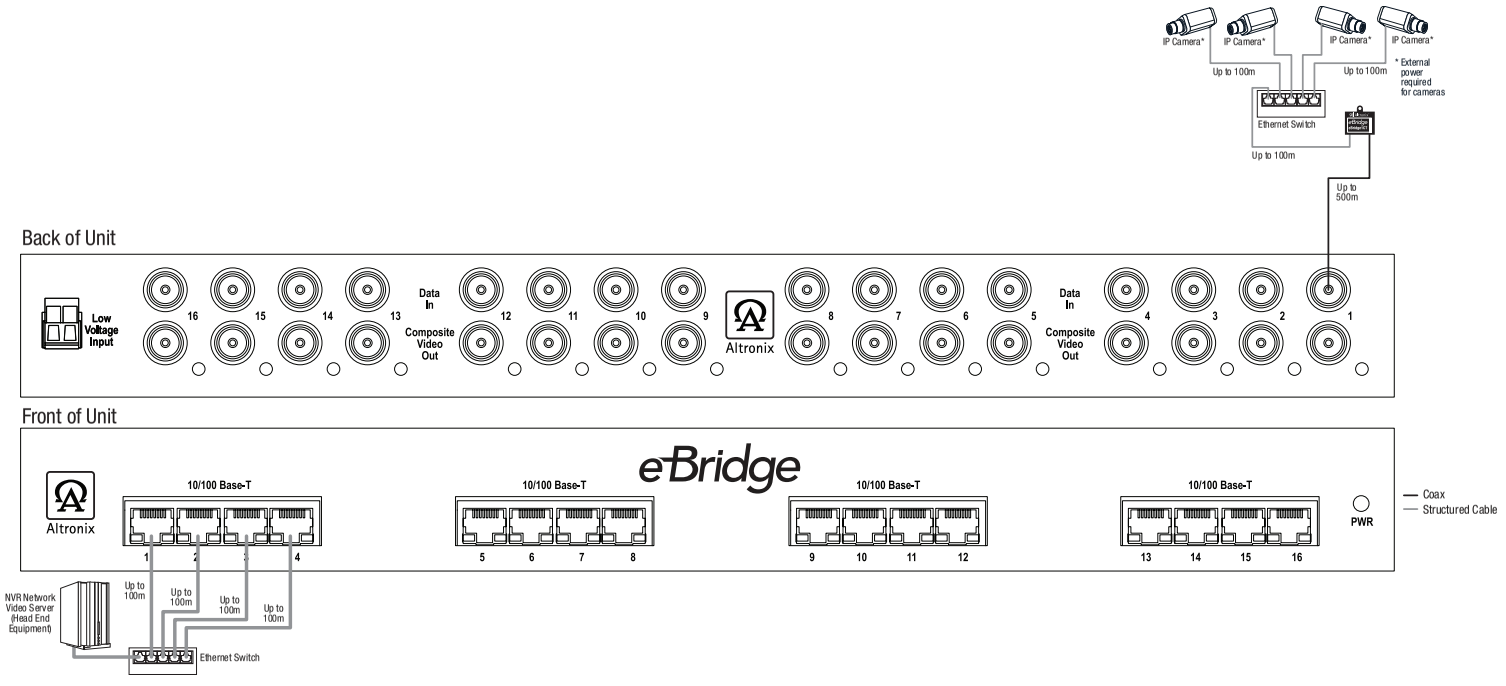
Multiple IP Cameras Shown with Composite Video Option:

Fig. 4



Multiple IP Cameras Over a Single Coax:

Fig. 5

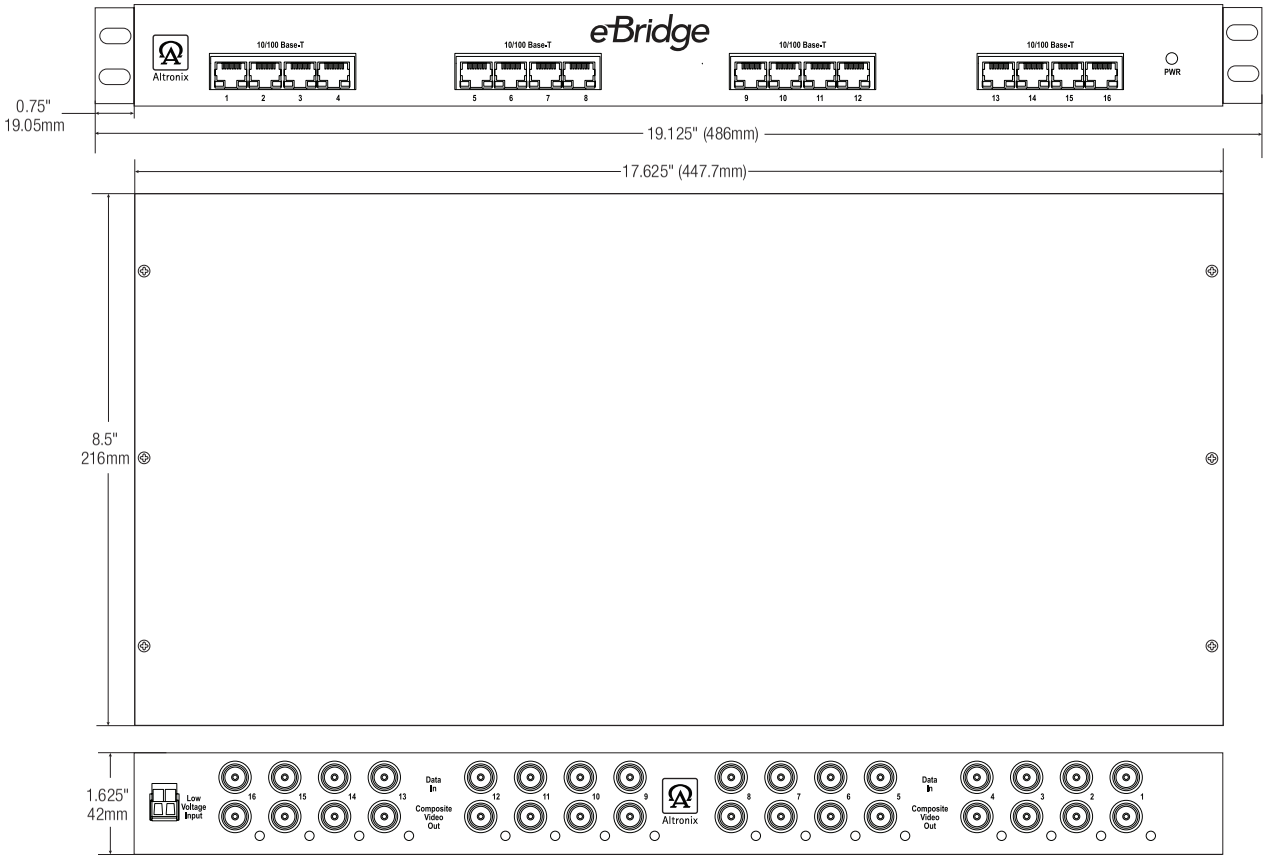


***Note:** Multiple cameras require higher bandwidth and headend equipment processing speed. It is advised to test this configuration. eBridge is rated to pass 25Mbps of data at distances up to 500m. With proper headend equipment multiple Megapixel cameras can be used.

eBridge16CR Rack Mount Chassis Mechanical Drawing and Dimensions (H x W x D approx.):

1.625” x 19.125” x 8.5” (42mm x 486mm x 216mm)

Fig. 6



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

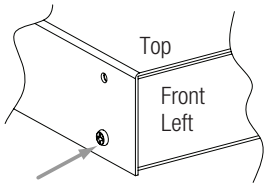


Fig. 4b

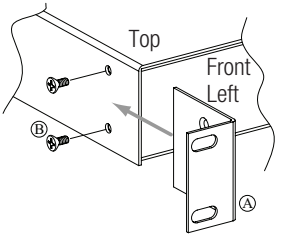
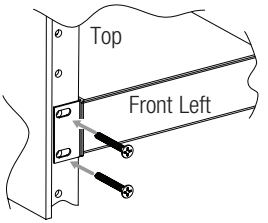


Fig. 4c



Wall Mount Installation

1. Install mounting brackets (A) on the left and right side of rack chassis using four (4) flat head screws (B) (included) *(Fig. 5a)*.
2. Place unit at desired location and secure with #6 size screws or larger *(not included) (Fig. 5b)*.
   Caution: It is necessary to make sure mounting screws are securely fastened to a beam when installing the unit vertically.

Fig. 5

Fig. 5a

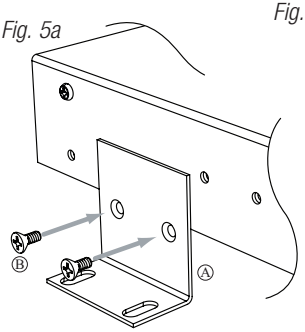
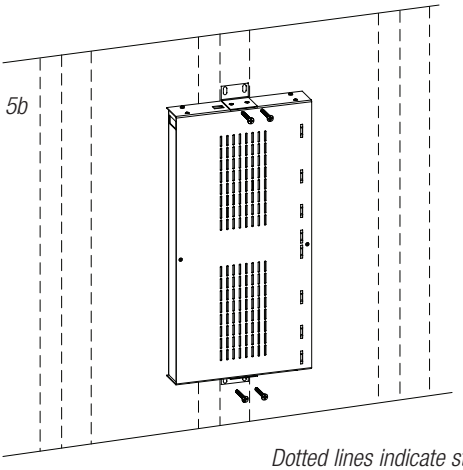


Fig. 5b

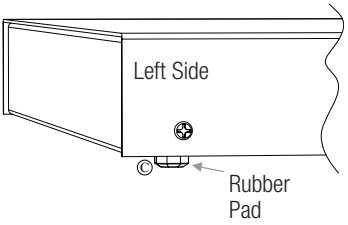


Dotted lines indicate studs behind sheetrock.

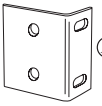
Shelf Installation

1- Position and affix rubber pads (C) (included) at each corner on the bottom of the unit *(Fig. 6)*.
2- Place unit in desired location.

Fig. 6



Mounting Hardware (Included)**:**



Ⓐ Two (2) mounting brackets

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

Ⓒ Four (4) rubber pads.

Notes:

Altronix is not responsible for any typographical errors.

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