Video • Data

HubWay®

Active UTP Transceiver Hub

Installation Guide

Models Include:

HubWayEX16
- *Sixteen (16) Camera Channels*

HubWayEX32
- *Thirty-two (32) Camera Channels*

c (U L) us C E C Z1409

Altronix®

Rev. 011810

More than just power.™

Table of Contents:

Overview:

Altronix HubWayEX16/EX32 Active UTP Transceiver Hub employs *automatic gain control (AGC)* to transmit UTP video, RS422/RS485 data over a single CAT-5 or higher structured cable. Units provide either 16 or 32 camera channels in a space saving 1U EIA 19" rack mount chassis which may be rack, wall or shelf mounted. Video transmission range is up to one mile max. per channel. Units are compatible with fixed or PTZ cameras. Each grouped camera channel provides video transmission for up to four (4) cameras over a single CAT-5 or higher structured cable. This permits the installation of up to sixteen (16) cameras at remote locations over four (4) CAT-5 or higher structured cables or thirty-two (32) cameras at remote locations over eight (8) CAT-5 or higher structured cables.

HubWayEX Specifications:

HubWayEX16
Input:
• 115VAC, 60Hz, 0.4A or 230VAC, 50Hz, 0.2A.

Video:
• Sixteen (16) channels of video over twisted pair up to a distance of 5,000 ft. per channel.
• Sixteen (16) 75 ohm video outputs.

HubWayEX32
Input:
• 115VAC, 60Hz, 0.4A or 230VAC, 50Hz, 0.2A.

Video:
• Thirty-two (32) channels of video over twisted pair up to a distance of 5,000 ft. per channel.
• Thirty-two (32) 75 ohm video outputs.

Specifications:

Data:
• RS422/RS485 data inputs.

Visual Indicators:
• AC input power indicator.
• Video signal and power LED indicators.

Features:
• Automatic picture and gain control.
• Automatic compensation for reverse polarity wiring (video).
• Illuminated master power disconnect circuit breaker with manual reset.

Features (cont'd):
• IEC 320 - 3-wire grounded line cord (detachable).
• Unit can be rack, wall or shelf mounted.
• 1U rack mount chassis for use in standard EIA 19" rack.

Accessories:
• Optional HubSat4D/Di or HubWayEXP allows transmission of up to four (4) video signals over a single CAT-5 or higher structured cable.

WARNING: To reduce the risk of fire or electric shock do not expose the unit to rain or moisture.
This installation should be made by qualified service personnel and should conform to all local codes.
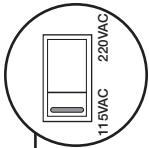
Installation Instructions:

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.

1. Set the input voltage selector switch located on the left side of the HubWayEX16/EX32 unit (facing front panel) for 115VAC or 230VAC operation *(Fig. 1b, pg. 5)*.
2. Attach mounting brackets to HubWayEX16/EX32 unit for rack or wall mount installation *(Figs. 6-7, pg. 8)*. Affix rubber pads to HubWayEX16/EX32 for shelf installation *(Fig. 8, pg. 8)*.
3. Secure the unit in a rack, mount unit to a wall or place unit on a shelf as desired (unit should be spaced at least 3" from any video monitors).
4. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 5, pg. 8)*.
5. Plug the grounded AC line cord into the IEC 320 connector of the HubWayEX16/EX32. For US & Canada the plug end is a 3 prong type B plug used for standard 115VAC receptacles, as provided with unit *(Fig. 1g, pg. 5)*. For non North American 230VAC applications use the appropriate 3 prong plug that matches the local standard receptacle.
6. Connect the BNC video outputs for HubWayEX16/EX32 Channels 1-32 to the corresponding video inputs on the head end equipment (DVR) *(Fig. 1c, pg. 5)*.
7. Connect the RS422/RS485 output of the head end equipment (DVR) to the one (1) or both data input terminal blocks of the HubWayEX16/EX32 unit (polarity must be observed) *(Fig. 1f, pg. 5)*. **Note:** The Data input terminals of the HubWayEX16/EX32 must be wired in parallel for proper operation. When using fixed cameras disregard this step.
8. Connect one (1) end of a CAT-5 or higher structured cable into the RJ45 jack marked [CH 1-4, CH 5-8, CH 9-12, CH 13-16] of the HubWayEX16 or [CH 1-4, CH 5-8, CH 9-12, CH 13-16, CH 17-20, CH 21-24, CH 25-28, CH 29-32] of the HubWayEX32 *(Fig. 1d, pg. 5)*. Connect the opposite end of the CAT-5 or higher structured cable into the corresponding RJ45 jack marked [CH 1-4, CH 5-8] HubWayEXP *(Fig. 4, pg. 7)* or [VIDEO 1-4] of the HubSat4D/Di *(Fig. 5, pg. 8)*.
9. Connect one (1) end of a CAT-5 or higher structured cable into the RJ45 jack marked [DATA] of the HubWayEX16/EX32 *(Fig. 1e, pg. 5)*. Connect the opposite end of the CAT-5 or higher structured cable into the RJ45 jack marked [DATA] of HubWayEXP *(Fig. 4, pg. 7)* or [DATA 1-4] of the HubSat4D/Di *(Fig. 5, pg. 8)*. **Note:** When using fixed cameras disregard this step. Repeat steps 8 and 9 for cameras 5-8, 9-12, 13-16, 17-20, 21-24, 25-28, 29-32. *(refer to HubSat4D/Di or HubWayEXP installation instructions for camera hookups)*.
10. Upon completion of wiring set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 6, pg. 11)*.
11. The video signal indicator LEDs (Red) located on the front of the HubWayEX16/EX32 will illuminate when video signal is present *(Fig. 1a, pg. 5)*. If any of these LEDs are not illuminated, there is no video signal for that corresponding channel.
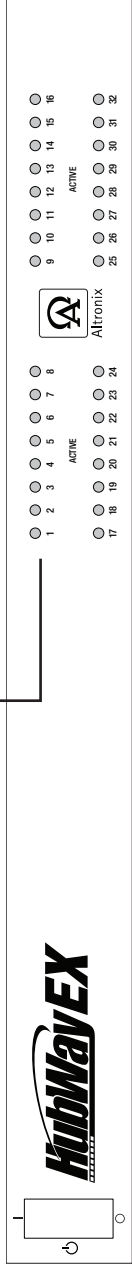
Fig. 1

Front

1a - LED(s) 1-16: Video signal indicators.
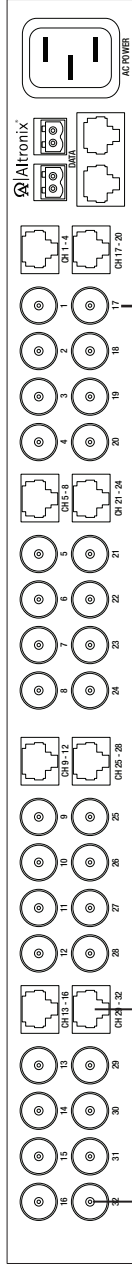
1b - Input Voltage Switch: Selects 115VAC/230VAC (switch is located on the left side of the unit).

Rear

1c - BNC Connector: Video outputs to head end equipment (DVR).

1d - Channels 1-4, 5-8, 9-12, 13-16, 17-20, 21-24, 25-28, 29-32: CAT-5 or higher structured cable to HubWayEXP utilized for the video transmission.

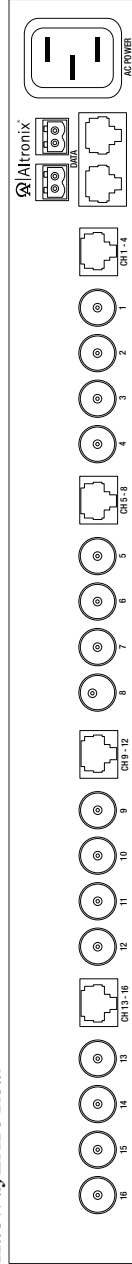*1e - DATA 1-16, 17-32:* CAT-5 or higher structured cable to HubWayEXP for the data transmission to PTZ's.

1f - Data: Removable terminal blocks for RS422/ RS485 input from head end equipment (DVR) for PTZ control.

1g - IEC 320 Connector: Grounded line cord included.

Data input from Head End Equipment (DVR).

Top View
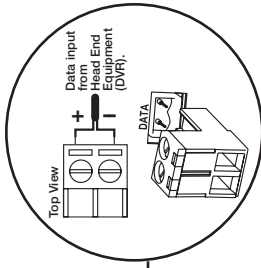
HubWayEX16 Front

HubWayEX16 Rear

HubWayAv, HubWayAv2, HubWayDv, and HubWayDvi Video Balun/Combiners:

Altronix Model Number	Input Voltage from HubWay Unit	Output Voltage to Camera	Camera Type	Power LED
HubWayAv	*24VAC/28VAC	*24VAC/28VAC	*24VAC/28VAC	Green
HubWayAv2	*24VAC/28VAC	*24VAC/28VAC	*24VAC/28VAC	N/A
HubWayDv	*24VAC/28VAC	12VDC	12VDC cameras	Red
HubWayDvi	*24VAC/28VAC	12VDC electonically isolated	12VDC cameras without isolation	Red

*Based on camera load and structured cable length.

Fig. 2

Fig. 2a

Fig. 2c

* Also Available as:
HubWayDvi
Video Balun/
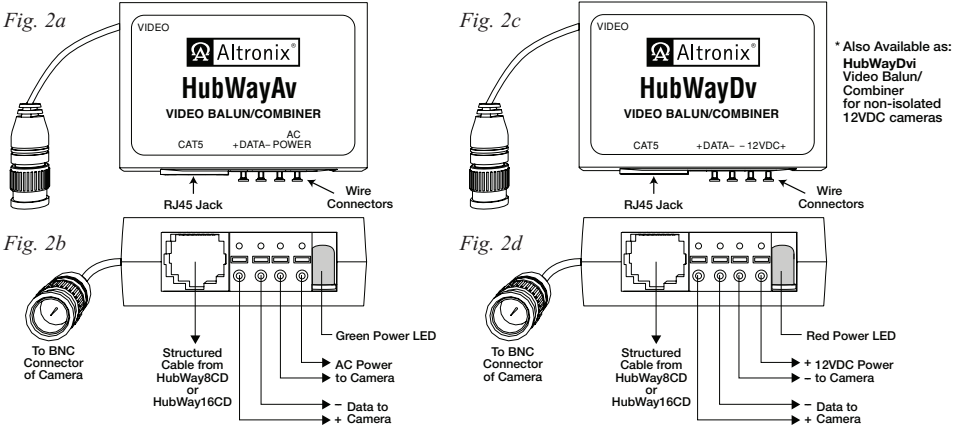Combiner
for non-isolated
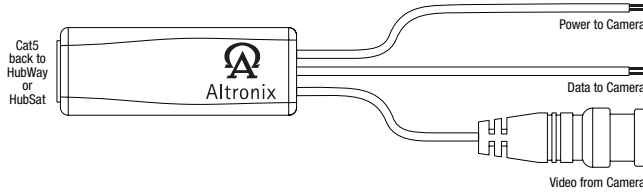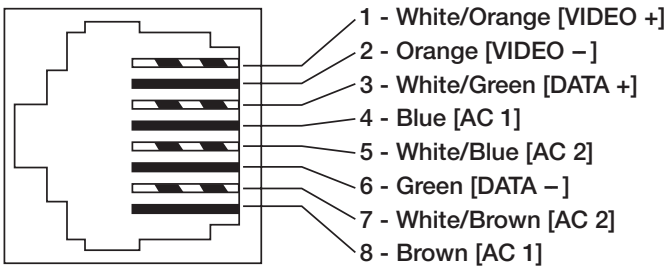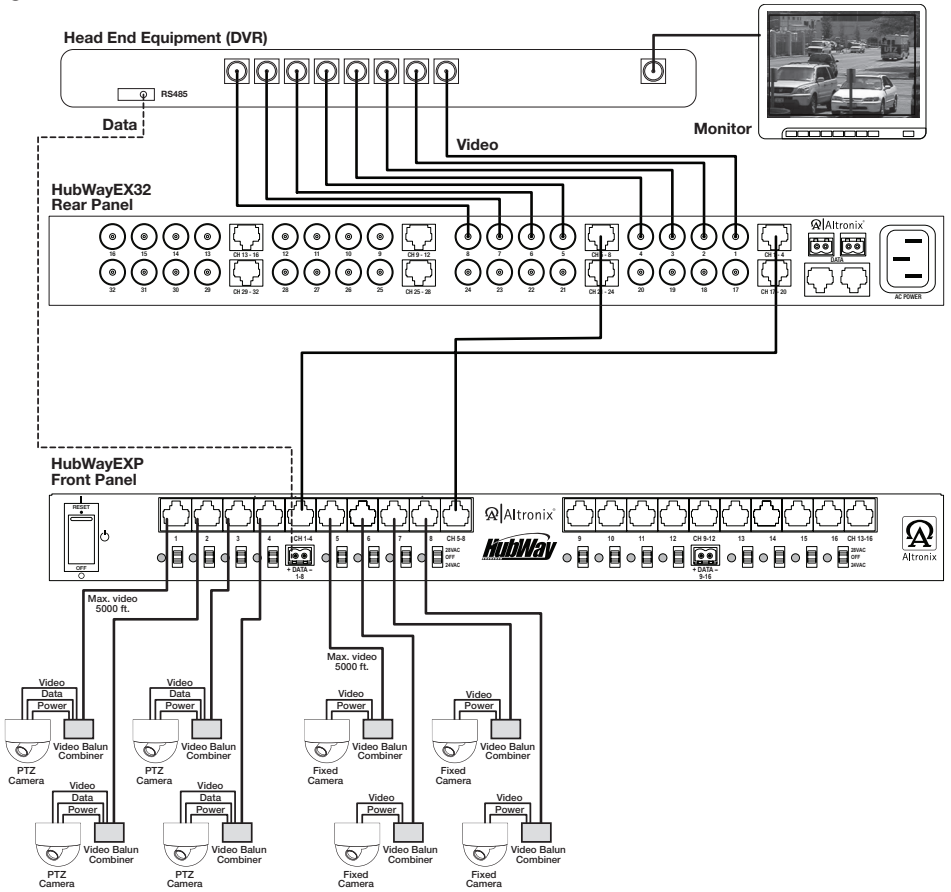12VDC cameras

Fig. 2b

Fig. 2d

Fig. 2e   **HubWayAV2**

HubWayAv/HubWayAv2 passes AC voltage from pins 4, 5, 7, 8 to terminals marked [AC Power] *(Fig. 3, pg. 6)*.
HubWayDv/HubWayDvi converts AC voltage to DC voltage from pins 4, 5, 7, 8 to terminals marked [– 12VDC +]
(Fig. 3, pg. 6).

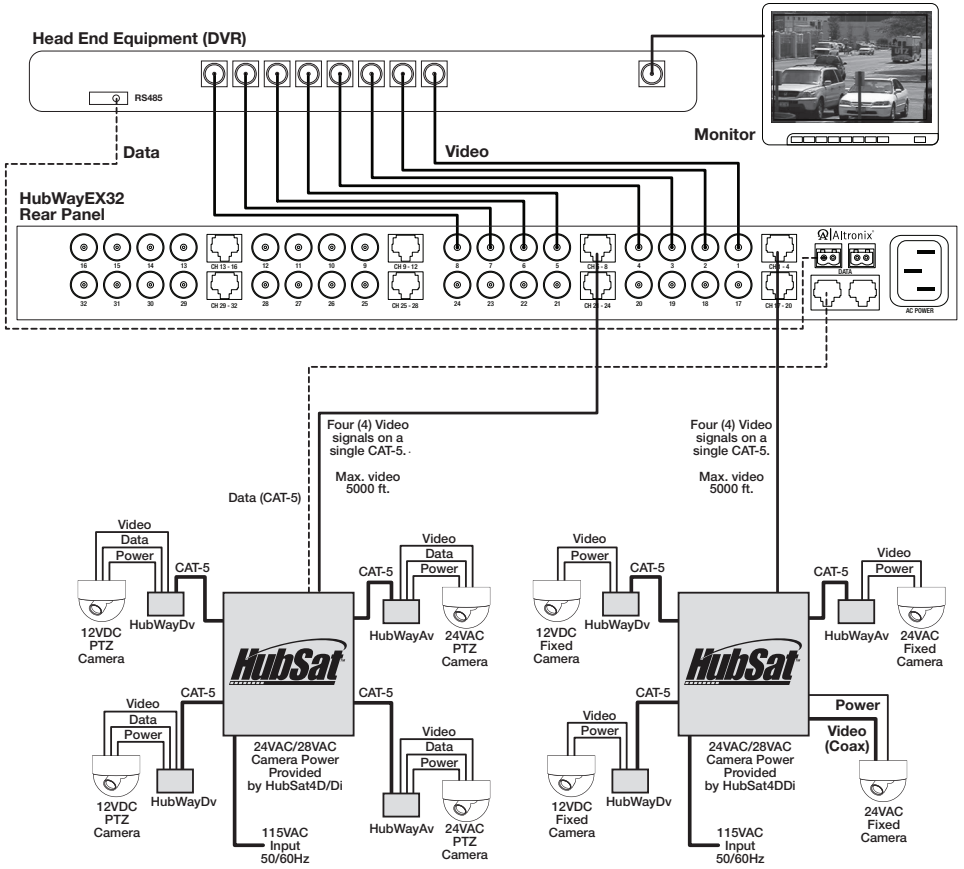Fig. 3   *CAT-5 Structured Cable Wiring Color Codes and PIN Configurations*

1 - White/Orange [VIDEO +]
2 - Orange [VIDEO –]
3 - White/Green [DATA +]
4 - Blue [AC 1]
5 - White/Blue [AC 2]
6 - Green [DATA –]
7 - White/Brown [AC 2]
8 - Brown [AC 1]

Typical Applications:

Fig. 4

Head End Equipment (DVR)

RS485

Data

Video

Monitor

HubWayEX32 Rear Panel

HubWayEXP Front Panel

Max. video 5000 ft.

Max. video 5000 ft.

Video
Data
Power

Video Balun Combiner

PTZ Camera

Fixed Camera

Typical Applications:

Fig. 5

Head End Equipment (DVR)

RS485

Data

Video

Monitor

**HubWayEX32
Rear Panel**

16 15 14 13 CH 13 - 16 12 11 10 9 CH 9 - 12 8 7 6 5 CH 5 - 8 4 3 2 1 CH 1 - 4 Altronix
32 31 30 29 CH 29 - 32 28 27 26 25 CH 25 - 28 24 23 22 21 CH 21 - 24 20 19 18 17 CH 17 - 20 DATA AC POWER

Four (4) Video
signals on a
single CAT-5.

Max. video
5000 ft.

Four (4) Video
signals on a
single CAT-5.

Max. video
5000 ft.

Data (CAT-5)

Video
Data
Power

CAT-5

HubWayDv

12VDC
PTZ
Camera

Video
Data
Power

CAT-5

HubWayAv 24VAC
PTZ
Camera

Video
Power

CAT-5

HubWayDv

12VDC
Fixed
Camera

Video
Power

CAT-5

HubWayAv 24VAC
Fixed
Camera

HubSat

HubSat

Video
Data
Power

CAT-5

HubWayDv

12VDC
PTZ
Camera

Video
Data
Power

CAT-5

HubWayAv 24VAC
PTZ
Camera

24VAC/28VAC
Camera Power
Provided
by HubSat4D/Di

115VAC
Input
50/60Hz

Video
Power

CAT-5

HubWayDv

12VDC
Fixed
Camera

24VAC/28VAC
Camera Power
Provided
by HubSat4DDi

115VAC
Input
50/60Hz

Power

**Video
(Coax)**

24VAC
Fixed
Camera

Notes:

Notes:

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of an insulated DANGEROUS VOLTAGE within the product's enclosure that may be of sufficient magnitude to constitute an electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock do not open enclosure. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

1U EIA 19" Rack Mount Chassis Mechanical Drawing and Dimensions:
1.625" x 19.125" x 8.5" (41.275mm x 486mm x 216mm)

REAR
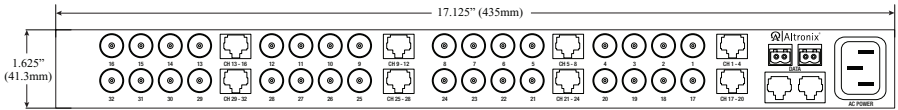
TOP and BOTTOM
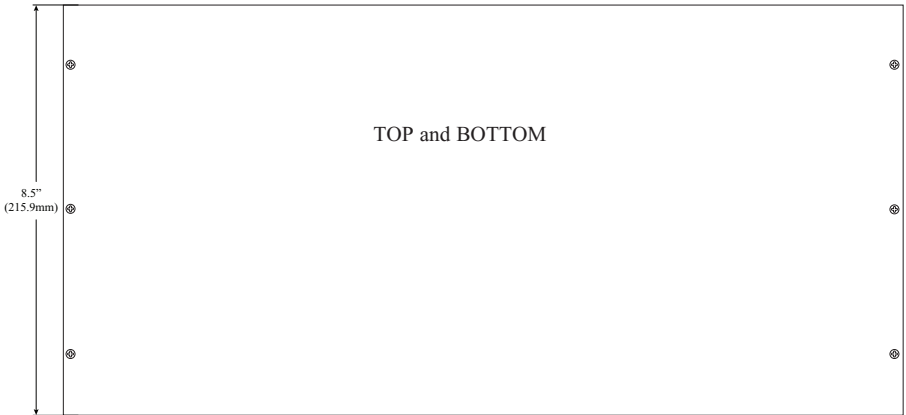
FRONT
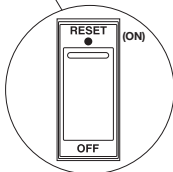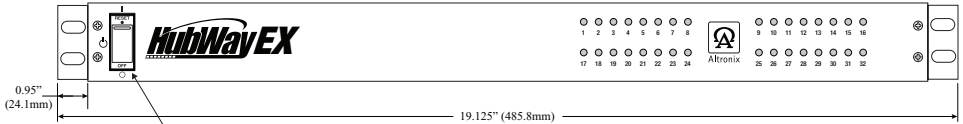
Fig. 6

Illuminated master power disconnect circuit breaker:
• OFF position: Circuit breaker tripped – Switch not illuminated.
• RESET (ON) position: Switch illuminated.

Mounting Options:

Rack Mount Installation

1. Remove and discard factory installed screws from both sides of rack chassis *(Fig. 7a)*.
2. Install mounting brackets (A) on the left and right side of rack chassis using the four (4) flat head screws (B) *(included) (Fig. 7b)*.
3. Place unit into desired EIA 19" rack position and secure with mounting screws *(not included) (Fig. 7c)*.

Fig. 7

| *Fig. 7a* | *Fig. 7b* | *Fig. 7c* |
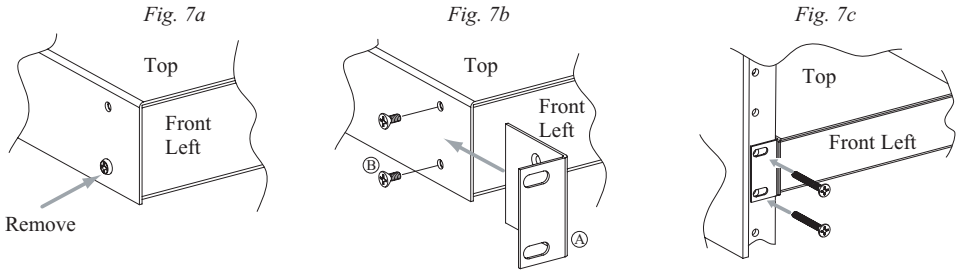
Wall Mount Installation

1. Install mounting brackets (A) on the left and right side of rack chassis using four (4) flat head screws (B) (included) *(Fig. 8a)*.
2. Place unit at desired location and secure with #6 size screws or larger *(not included) (Fig. 8b)*.
   Caution: It is necessary to make sure mounting screws are securely fastened to a beam when installing the unit vertically.
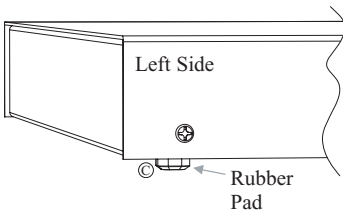
Fig. 8

Fig. 8a

Fig. 8b

Dotted lines indicate studs behind sheetrock.
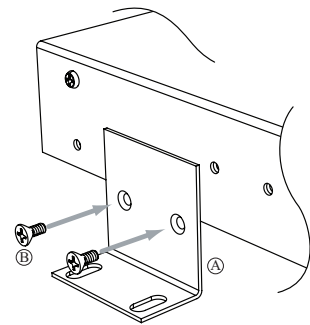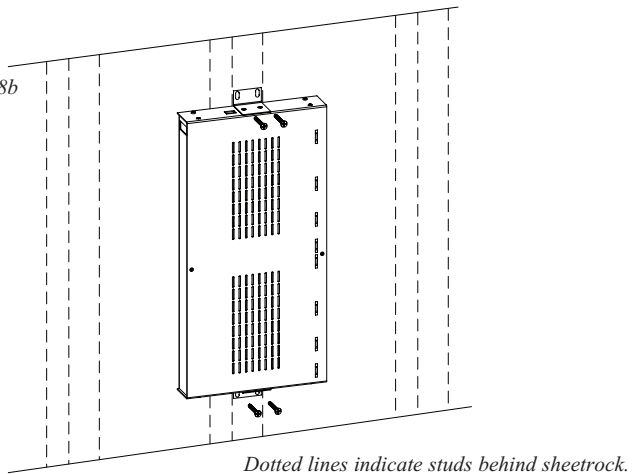
Shelf Installation

1- Position and affix rubber pads (C) (included) at each corner on the bottom of the unit *(Fig. 9)*.
2- Place unit in desired location.

Fig. 9

Left Side

Rubber Pad

Mounting Hardware *(Included)*:

Ⓐ Two (2) mounting brackets

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

Ⓒ Four (4) rubber pads.

MEMBER
HubWayEX16/EX32