AlphaGateway SMG-01PE Quick Start Guide
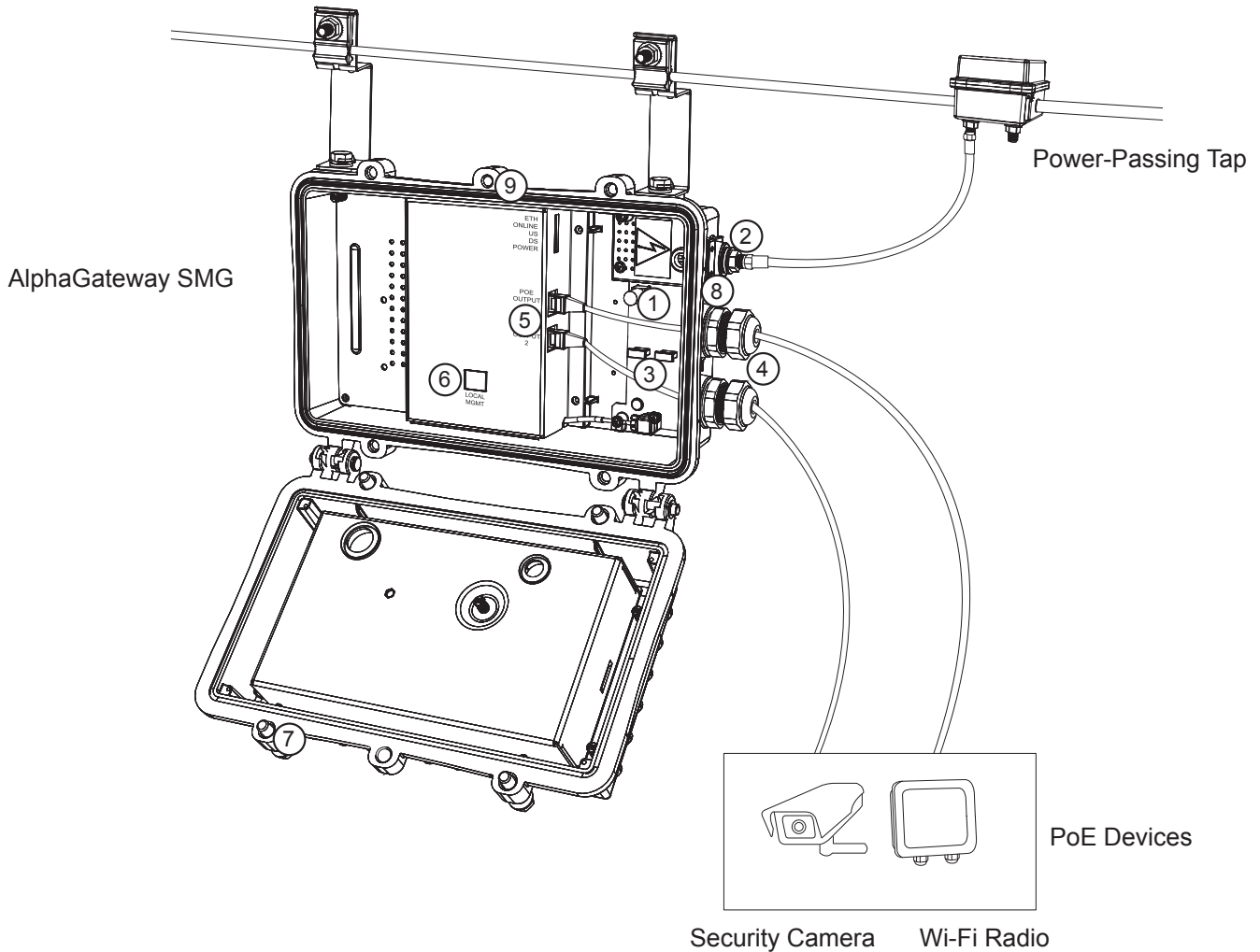

AlphaGateway SMG

Power-Passing Tap

PoE Devices

Security Camera   Wi-Fi Radio

① RF Connector Test Port — A -20dB test port allowing measurement of the downstream signal levels in the device.

② F Connector — Powers the device via the F connection from a power-passing tap or directional coupler.

③ Attenuation Port (2) — A connection point for JXP-style attenuation pads to adjust the upstream and downstream RF levels.

④ Grommet (2) — A weather-tight grommet designed for a CAT5e (or better) Ethernet connection to the PoE port.

⑤ Power-over-Ethernet (PoE) Port (2) — Provides power to connected devices via a minimum 26 AWG CAT5e (or better) Ethernet cable (IEEE802.3at PoE+).

⑥ Local Management Port — Provides local Web page access to a personal computer via Ethernet cable.

⑦ Enclosure Bolts (4) — Hardware securing the top and bottom lid of the SMG.

⑧ Ground Lug Mount — Provides grounding through #6 AWG wire connection to a driven ground rod or the strand ground on the pole to which the unit is mounted.

⑨ Security — Location for optional Alpha security screw (*Alpha p/n* 647-189-13).

Pre-Installation

- Provision the SMG's DOCSIS Modem and RF MAC Address (including, but not limited to):
    - Assign a cable modem configuration file with the EMS as a trap destination, CPE enabled, and the bandwidth set properly.
    - Set up a billing account (if applicable).
- Provision each connected device (e.g. camera, Wi-Fi radio) using the device's MAC address.
- Install a Power Passing Tap on the hard coax. The SMG can also be connected to the hard coax through a directional coupler.
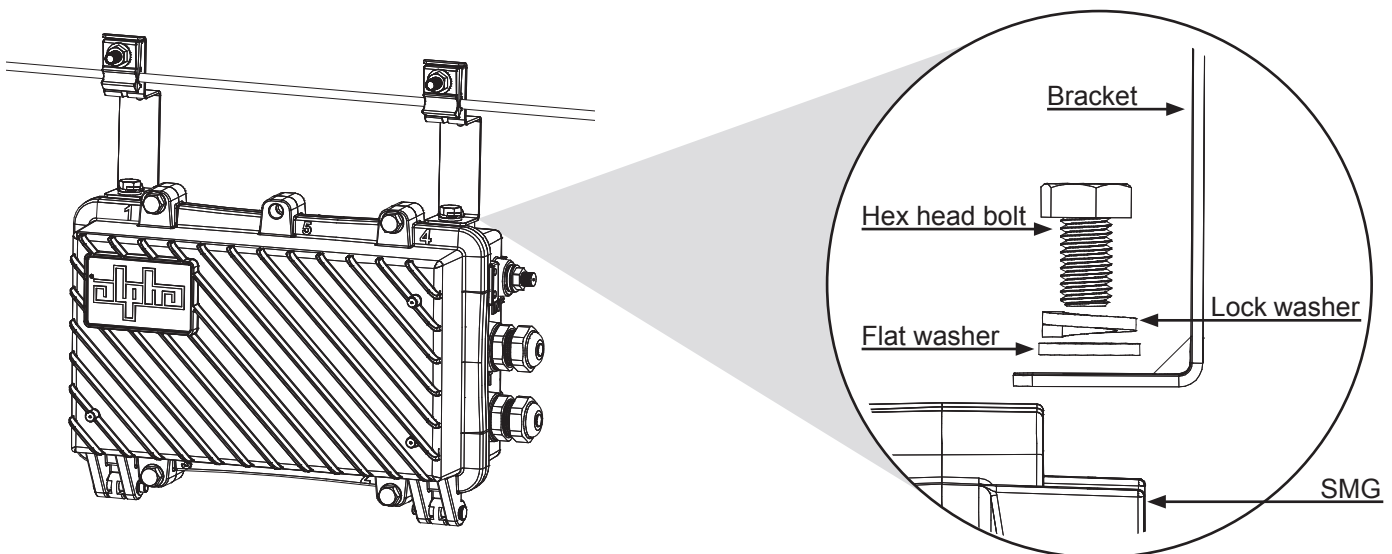
NOTICE:

- Each device will register as a distinct CPE device; these may need fixed IP addresses depending upon the model.
- Ensure that unused ports are covered with plugs. Remove only the plugs necessary for installation.
- For other mounting options, refer to the SMG Technical Manual (*Alpha p/n* 018-344-B0-001).

Tools Required (User-Supplied):

- Torque Wrench
    - 7/16" (11mm) Socket
    - 1/2" (13mm) Socket
- Drill (Wall Mount Installation)
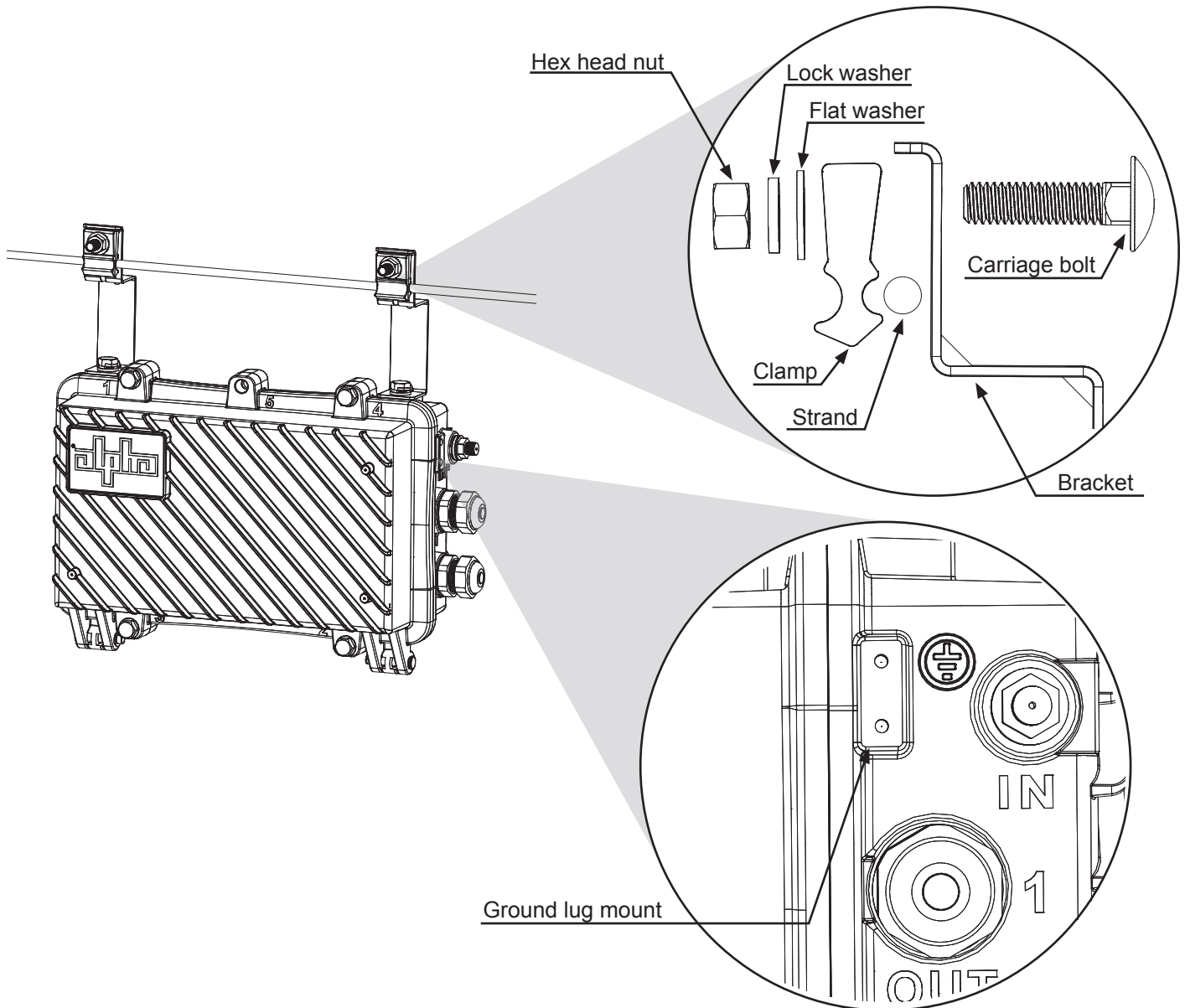- Signal Level Meter

Strand Mount Installation

1. Take the two strand mount brackets from the strand bracket installation kit (*Alpha p/n* 746-627-20-001) and remove the two plugs from the top of the enclosure, securing the mounting brackets to the SMG in their place. Position the strand mounting brackets around the strand and verify the proper orientation as shown. Use the hex head bolts, lock washers, and flat washers from the strand bracket installation kit to secure the strand brackets to the SMG, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m).
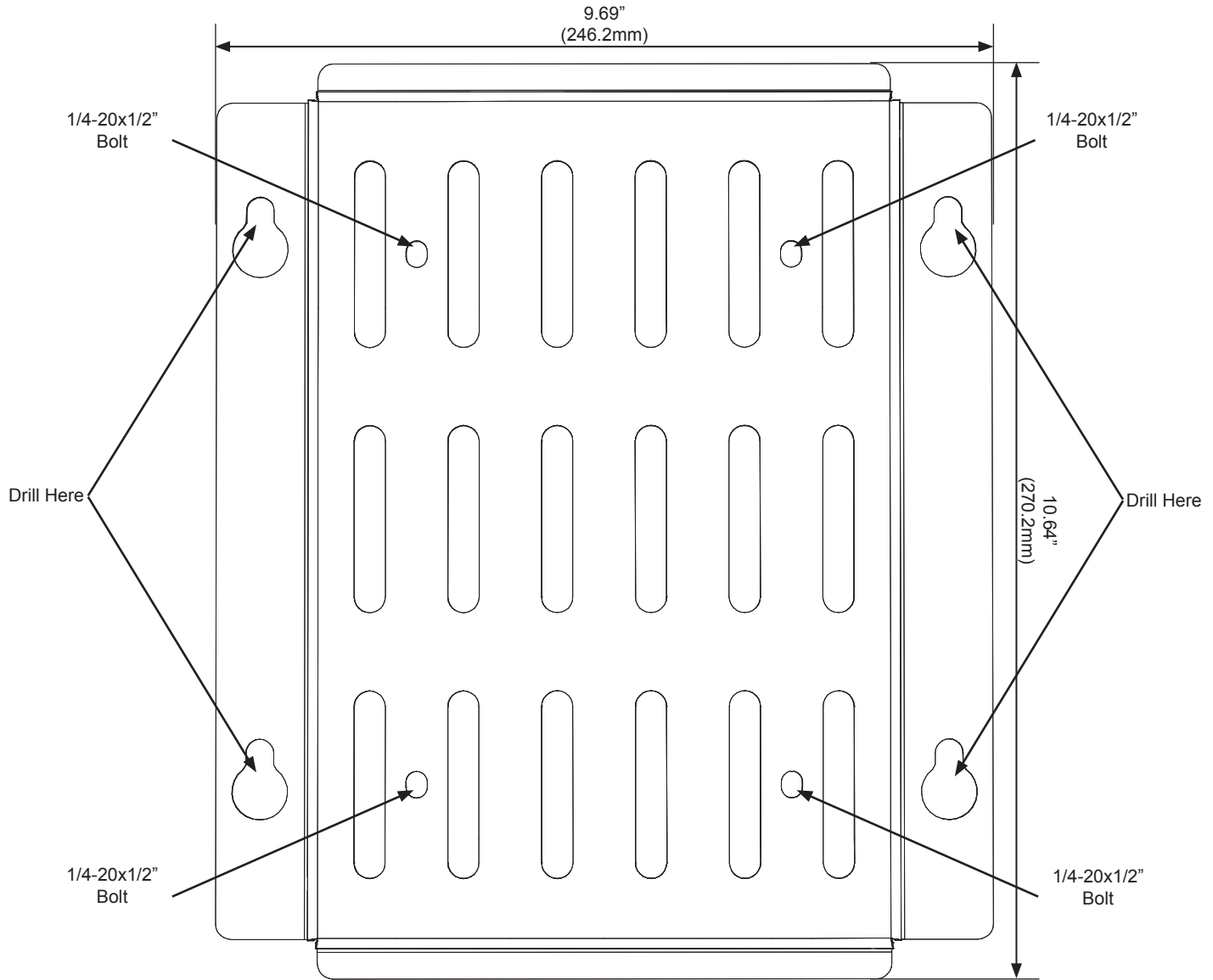
NOTICE:
The SMG must hang from the strand with the hinges facing down.

2. Hang both brackets on the strand through the clamps on the bracket as shown. For thicker 3/8" strands, reverse the orientation of the clamp so that the larger concave side faces the strand. Insert the carriage bolt through the back of the bracket and tighten the hex head nut, lock washer, and flat washer against the clamp on the front of the bracket, torquing to 79.7 – 88.5 in-lbs (9 – 10 N-m). Repeat for the second bracket.

Hex head nut

Lock washer

Flat washer

Carriage bolt
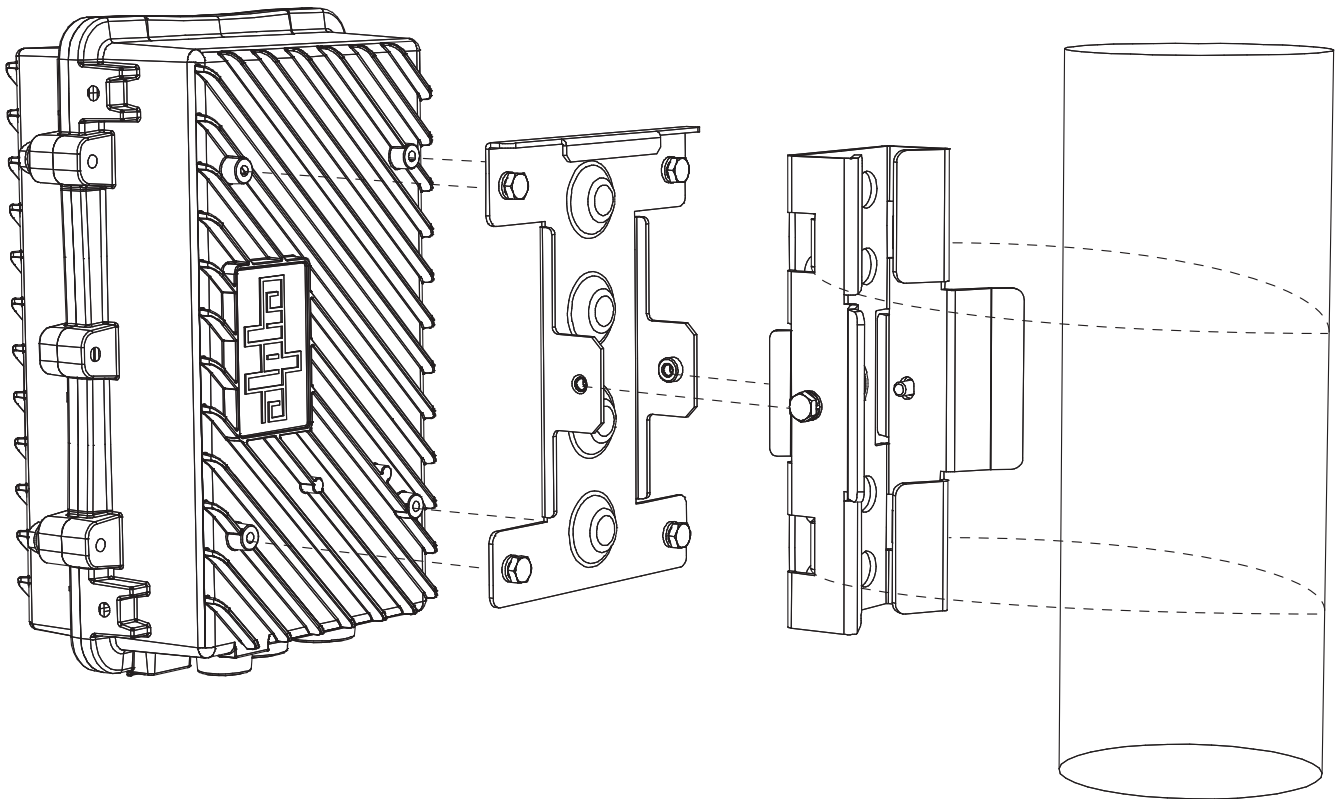
Clamp

Strand

Bracket

Ground lug mount

IN

OUT 1

3. Properly ground the SMG by connecting a #6 AWG wire from the ground lug mount on the outside of the enclosure to either a driven ground rod or the strand ground on the pole to which the unit is mounted. Apply anti-oxidant compound (e.g. Noalox® or equivalent) to the ground connection.

4. Proceed to the "Start-Up and Verification" section.

Wall Mount Installation

9.69"
(246.2mm)

1/4-20x1/2"
Bolt

1/4-20x1/2"
Bolt

Drill Here

10.64"
(270.2mm)

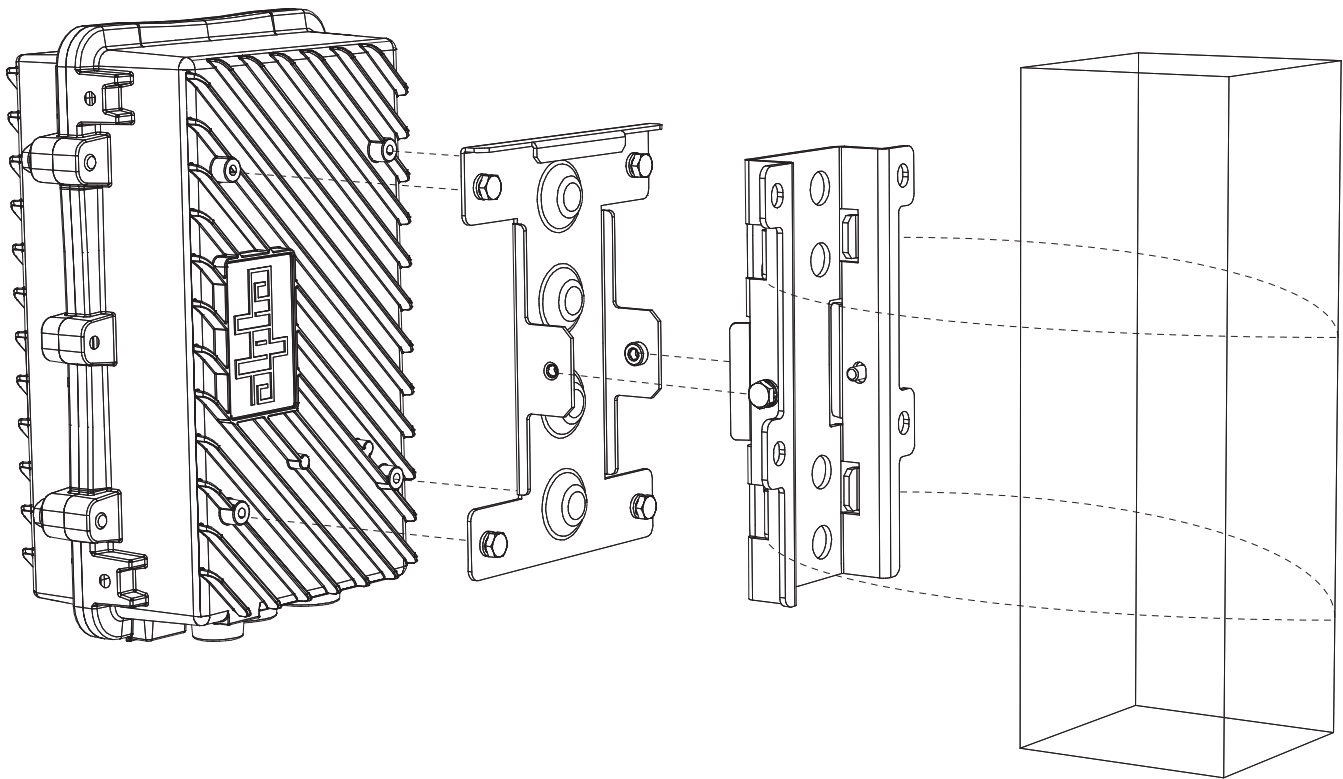Drill Here

1/4-20x1/2"
Bolt

1/4-20x1/2"
Bolt

1. Align the bracket (*Alpha p/n* 746-645-20-001) into the desired installation position on the wall. Mark the four holes where the 5/16" (M8) hex head screws will be drilled into the wall.

2. Drill four pilot holes into the wall using the wall mount bracket as a template. If mounting to drywall, a stud should be located and used to secure any two of the hex head screws.

3. Using the four 1/4-20x1/2" bolts and flat washers, mount the SMG to the wall mount bracket with the 7/16" (11mm) socket, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m). The F connector must be facing down with the hinges on the enclosure facing left.

4. Mount the SMG and wall mount bracket on the wall by partially screwing in the top two 5/16" lag bolts without washers and hang the unit by the bracket with the key-holes. Install the other two lag bolts with washers and tighten all four.

5. Properly ground the SMG by connecting a #6 AWG wire from the ground lug mount on the outside of the enclosure to either a driven ground rod or the strand ground on the pole to which the unit is mounted. Apply anti-oxidant compound (e.g. Noalox® or equivalent) to the ground connection.

6. Proceed to the "Start-Up and Verification" section.

Round Pole Mount Installation

1. Align the I-bracket (*Alpha p/n* 607-210-B1-001) on the back of the SMG as shown above, with the F connector on the SMG facing down.

2. Using the four 1/4"-20 bolts, lock washers, and flat washers, mount the I-bracket to the SMG with the 7/16" (11mm) socket, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m).

3. Secure the round pole mount bracket (*Alpha p/n* 607-212-N2-001) to the pole using the metal straps.

4. Using the two 1/4"-20 bolts, lock washers, and flat washers, fasten the SMG and I-bracket to the pole mount bracket with the 7/16" (11mm) socket, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m). The F connector must be facing down with the hinges on the enclosure facing left.

5. Properly ground the SMG by connecting a #6 AWG wire from the ground lug mount on the outside of the enclosure to either a driven ground rod or the strand ground on the pole to which the unit is mounted. Apply anti-oxidant compound (e.g. Noalox® or equivalent) to the ground connection.

6. Proceed to the "Start-Up and Verification" section.

Square Pole Mount Installation

1. Align the I-bracket on the back of the SMG as shown above, with the F connector on the SMG facing down.

2. Using the four 1/4"-20 bolts, lock washers, and flat washers, mount the I-bracket to the SMG with the 7/16" (11mm) socket, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m).

3. Secure the square pole mount bracket (*Alpha p/n* 607-211-N2-001) to the pole using the metal straps.

4. Using the two 1/4"-20 bolts, lock washers, and flat washers, mount the SMG and I-bracket to the square pole mount bracket with the 7/16" (11mm) socket, torquing to 44.3 – 53.1 in-lbs (5 – 6 N-m). The F connector must be facing down with the hinges on the enclosure facing left.

5. Properly ground the SMG by connecting a #6 AWG wire from the ground lug mount on the outside of the enclosure to either a driven ground rod or the strand ground on the pole to which the unit is mounted. Apply anti-oxidant compound (e.g. Noalox® or equivalent) to the ground connection.

6. Proceed to the "Start-Up and Verification" section.

Start-Up and Verification

WARNING! ELECTRICAL HAZARD

Low impedance grounding is **mandatory for personnel safety** and critical for the proper operation of the cable system.

1. Connect the powered-coax from the coaxial F connector port to the power-passing tap or directional coupler. When installing the coax to the F Connector, torque to 35 in-lbs (4.0 N-m).

2. Using the 1/2" (13mm) socket, loosen the four M8 enclosure bolts and open the SMG.

NOTICE:

If replacing the Pin to F Connector, first remove the coax from the F Connector, then loosen the Pin Seizure screw and remove the connector. Apply silicone-based o-ring grease (Dow Corning® 55 O-Ring, or equivalent) to the 5/8-24 threads of the new connector. Install the new connector by hand (to avoid cross-threading) and tighten it to the enclosure with a torque of 44 in-lbs (5.0 N-m). Torque the Pin Seizure screw to 12 in-lbs (1.3 N-m).

3. Verify that the unit powers up by looking at the DOCSIS Modem "POWER" LED.

4. Measure the downstream power level of the RF connector Test Port with the signal level meter. The RF connector Test Port is located above the upstream and downstream attenuators.
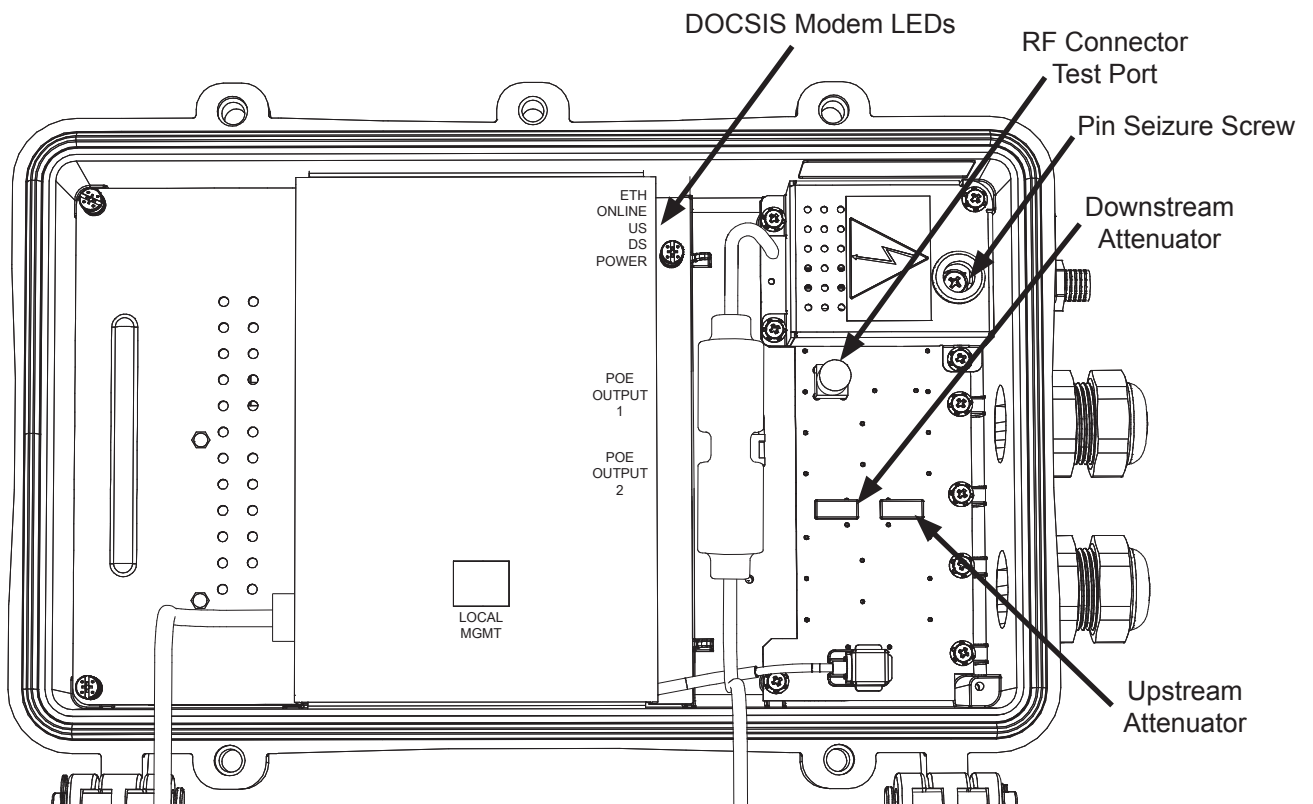
NOTICE:

The reading obtained from the RF connector Test Port will be 20dB less than the actual power level of the cable plant.

5. Ensure that the downstream recieve signal level does not exceed +15dBmV. Attenuation can be adjusted through the replaceable JXP-style attenuators.

NOTICE:

DOCSIS Specifications limit downstream power levels to be within +15dBmV to -15dBmV.

6. Once the first four LEDs on the DOCSIS modem are solid green (POWER, DS, US, and ONLINE) remove one (or both) of the grommet plugs below the F connector port to access the PoE ports from outside the enclosure.

NOTICE:
The fifth LED (ETH) will continually flash green as an indication that the SMG ports have established communications link necessary for PoE port MAC and IP connected device data reporting. The local port will be ready for connectivity approximately twenty seconds after this LED begins to continually flash.

CAUTION!
Failure to properly install the sealing insert and nut could result in water intrusion into the enclosure.

7. Feed the minimum 26 AWG Ethernet cable (4 – 6.6mm diameter) through the grommet hole. Plug the cable into the PoE port and torque the sealing nut to 12 in-lbs (1.5 N-m, hand tight), then connect the Ethernet cable to the desired device. Each PoE port has two LEDs to indicate PoE and communication status.
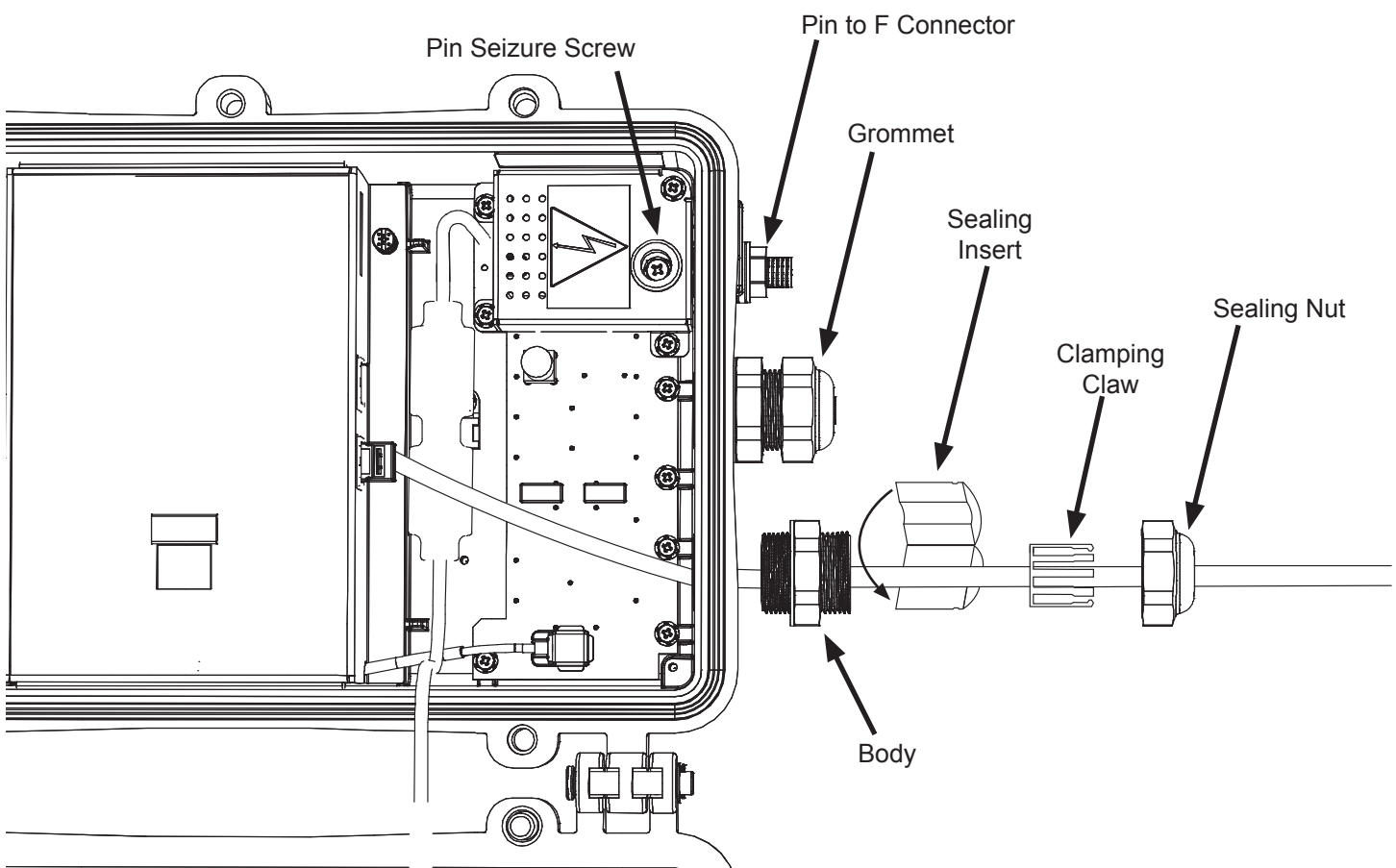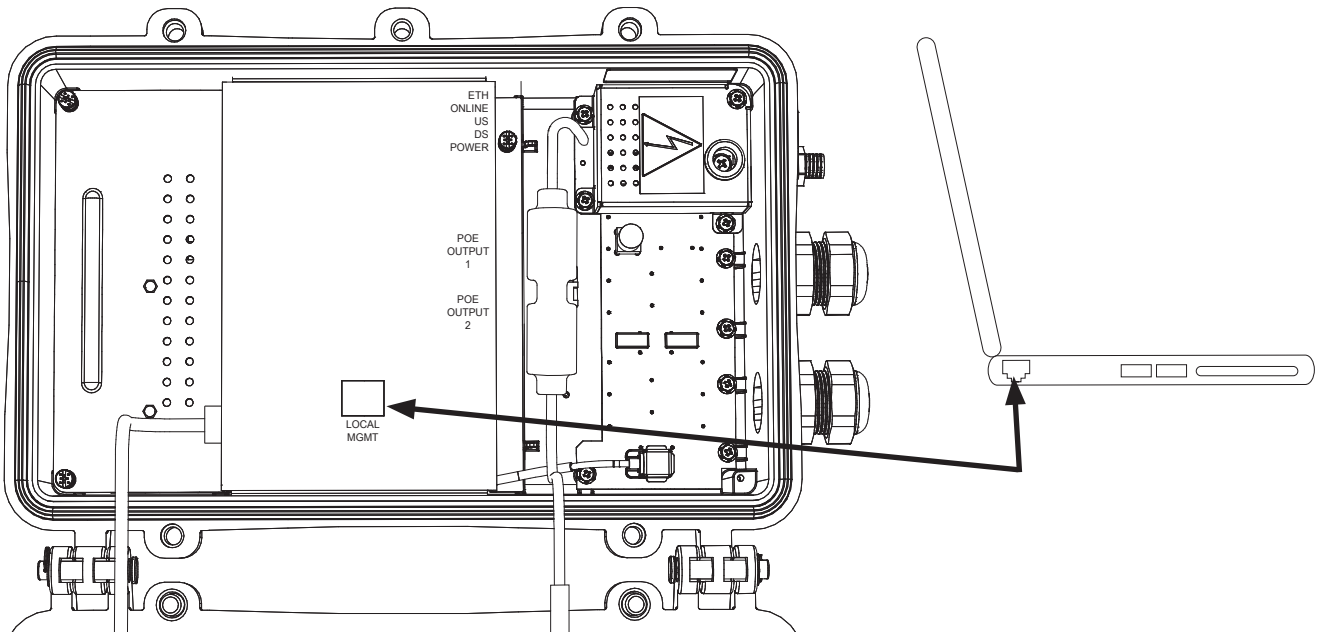
NOTICE:
Normally, the Body of the grommet connected to the enclosure stays installed. However, if it gets removed, apply silicone-based o-ring grease (Dow Corning® 55 O-Ring, or equivalent) to the gasket surface that faces the enclosure, and reinstall, torquing to 30 in-lbs (3.5 N-m).

8. Proceed to the "Web Page Access for Diagnostics" section before returning to complete steps 9 and 10.

9. Close the lid on the AlphaGateway SMG and hand tighten the four M8 enclosure bolts. With the bolts firmly in place, use the 1/2" (13mm) socket to torque each to 44.3 – 48.7 in-lbs (5 – 5.5 N-m) following the order of the numbers on the enclosure.

10. Verify that the grommet for any unused PoE port remains plugged to ensure a weathertight enlcosure.

NOTICE:
A fifth bolt is available as an optional Alpha security screw (*Alpha p/n* 647-189-13). Torque to 26.6 in-lbs (3 N-m).

Pin Seizure Screw

Pin to F Connector

Grommet

Sealing Insert

Sealing Nut

Clamping Claw

Body

Web Page Access for Diagnostics

1. Connect an Ethernet cable (CAT5 or better) from the Local Management port to a laptop or similar device.

2. Open a Web browser.

3. Enter the default IP address (192.168.100.1) of the SMG into the Web browser's address field.The SMG's Web interface will load.

4. Navigate the site to record diagnostic information and verify operational status of the SMG. Refer to the DOCSIS page located under the "System" menu selection for signal level specifications. Install the appropriate amount of attenuation using the JXP-style attenuators to adjust the upstream and downstream signals to the desired level.

NOTICE:

If the SMG Home Page is not displayed after entering the default IP address, the computer may need a static IP address assigned to its network configuration settings. See the SMG technical manual (*Alpha p/n* 018-344-B0-001) located at www.alpha.com.

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