Iridium® Communications

Technical Advisory
Ground Connections for Iridium Pilot® - Best Practice

December 23, 2013

As a prelude to revisions to the Iridium Pilot® installation manual and Iridium Pilot® quick start guide that will be published in Q1, 2014, Iridium is issuing this technical advisory on electrical grounding of the Pilot® system. The following information details proper ground cable specification and installation for the Iridium Pilot® above deck equipment (ADE) and below deck equipment (BDE). Please ensure that all of your existing and new installations of Iridium Pilot® are grounded correctly. Installation or service on Iridium Pilot® units should be performed by a qualified technician and make sure the unit is powered OFF before attempting any ground connection.

ADE Grounding

The ground location on the ADE is a bolt hole on the bottom of the ADE base plate and has M10 threads.

The ground cable specifications for grounding the ADE are:

- Cable Design – *Recommended* - coated cable to resist marine environment (UV STBILIZED/ RESISTANT complying with IEC60332-1-2 Fire Hazard International Standard).
  - *Minimum* - coated cable to resist marine environment
- Cable Thickness – *Recommended & Minimum* - 6 Gauge
- Cable Termination end for ADE mounting – *Recommended & Minimum*- crimped on eyelet for M10 bolt

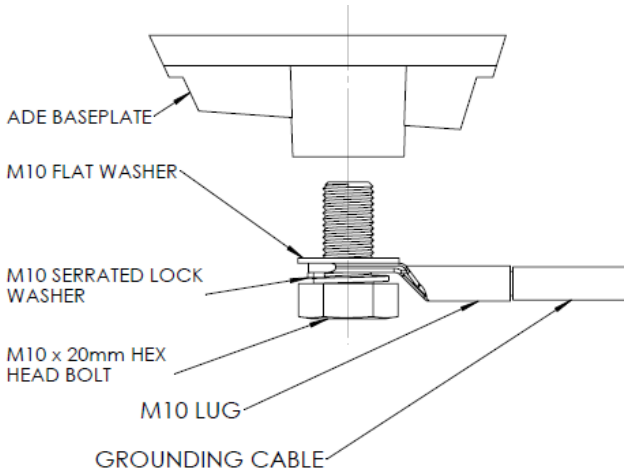

Figure 1.

- Cable Termination for local ground source – appropriate ground clamp connection

ADE Grounding Bolt recommendations:

- M10 x 20mm Stainless Steel (SS) type 316 Hex Head Bolt (included in ADE Mounting Hardware)
- M10 SS type 316 Serrated Lock Washer (included in ADE Mounting Hardware)
- M10 SS type 316 Flat Washer (included in ADE Mounting Hardware)

Installing the ground cable to the ADE

See Figure 1 for recommended installation of the ground cable lug. Place the serrated washer on the M10 hex bolt with serrations towards the bolt head, then the M10 lug from the ground cable, followed by the M10 flat washer. Install the ground lug into the ADE baseplate connection and torque the bolt to 10-12 ft.-lbs. An impervious coating (RTV or other) should be applied over the whole joint to exclude moisture from all metal surfaces, e.g. using self-amalgamating tape or a shrink-fit rubber boot.

Installing the ground cable to the local ground

The local ground source will vary for each installation site. Attach the terminating end of the ground cable to a local ground connection (not an electrical system ground) at the location using a suitable, noncorrosive clamp or terminal. Tighten the cable to the clamp or terminal as recommended.

BDE Grounding

The ground location on the BDE is inside the cover plate as show below in Figure 2. Other connections are also shown as labelled. A sticker installed in the area further confirms the connections.

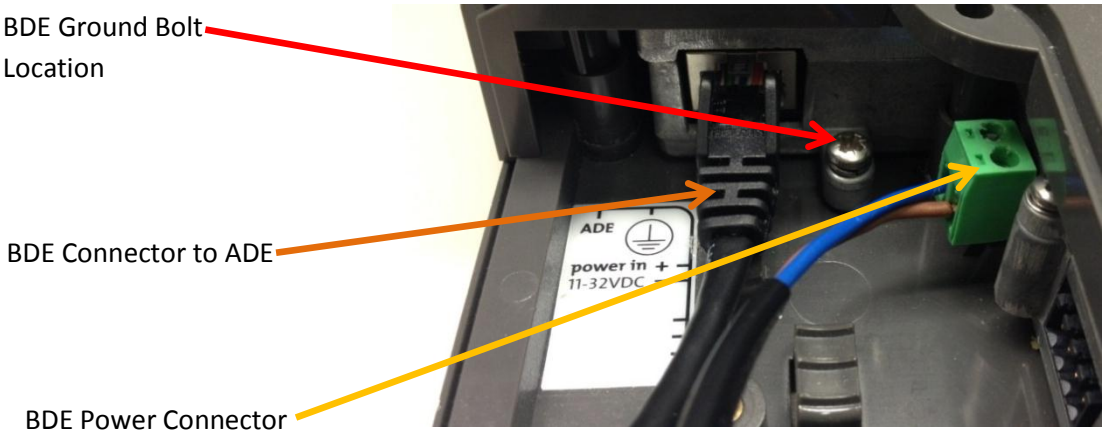

Figure 2.

The ground cable specifications for grounding the BDE are:

- Cable Design – *Recommended & Minimum* - coated cable
- Cable Thickness - *Recommended & Minimum* - 12 Gauge
- Cable Termination for ADE mounting
  - *Recommended* – crimped on eyelet for M4 bolt
  - *Minimum* – direct wire compressed under M4 bolt
- Cable Termination for local ground source – appropriate ground clamp connection

BDE Grounding Bolt recommendations:

- M4 x 8mm Phillips Bolt – included on BDE
- M4 lock washer – included on BDE

Installing the ground cable to the BDE

Remove the M4 bolt from the BDE as shown in Figure 2. Retain the lock washer that is in place on the bolt. Place the M4 lug from the ground cable onto the bolt so that the order is bolt head, lock washer and then the M4 ground lug. Torque the bolt to 15 in-lbs (recommended torque).

Installing the ground cable to the local ground

The local ground source will vary by each installation site. Attach the terminating end of the ground cable to a local ground connection (not an electrical system ground) at the location using a suitable, noncorrosive clamp or terminal. Tighten the cable to the clamp or terminal as recommended.