

ApexPlus POE Installation

This section covers installation when powering the unit through Power Over Ethernet (PoE) using a single or multiple Cat5e or Cat6 Shielded Twisted Pair (STP) Cable is desired, with copper or fiber traffic interfaces. The POE-GIGE-48 is shown in the Figure below:



Figure 1 POE-GIGE-48

The **PoE Power Injector POE-GIGE-48** can be connected to either of the two copper Ethernet ports:

1. **Out-of-Band Management Port:** Always use a shielded *Cross-Over* Ethernet cable when connecting the out-of-band Management Port to a COMPUTER (see Figure 6).
2. **Data Port:** Always use a shielded *Straight-Through* cable when connecting the Data Port to a HUB, SWITCH, or ROUTER

IMPORTANT INFORMATION ON THE APEXPLUS PoE

- 1) The PoE is non-standard and will not support 802.3af due to the high current requirements of the radio unit.
- 2) The total length of the Ethernet cabling from network switch to ApexPlus unit cannot exceed 100 meters. This length is the sum of the length of cable from the PoE injector to the ApexPlus unit + the length of cable from the PoE Injector to the network switch.
- 3) Since the PoE Requires **ALL 8 conductors AND the shield** which acts as the ground, it is critical that

- a. ONLY shielded Twisted Pair (STP) Cat5e or Cat6 cabling be used
- b. Shielded connectors are used with the shield crimped properly to the cable shield wire.
- c. All 8 conductors are wired.

If any of the above conditions are not met the PoE function may not work correctly

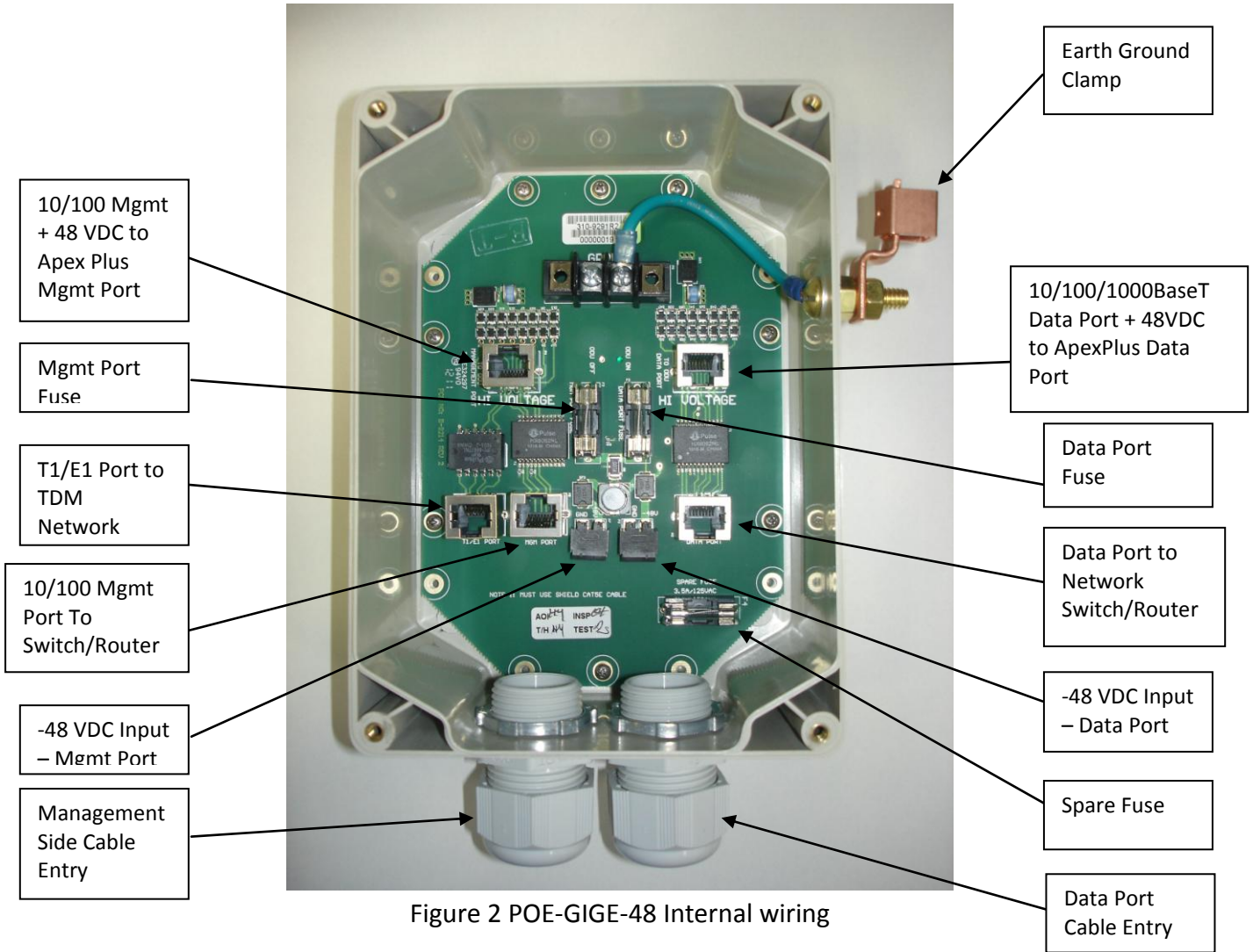


Figure 2 POE-GIGE-48 Internal wiring

PoE Based Installation (1+0)

In-Band Management Only

The wiring for basic 1+0 installation with In-Band Management is shown below. Use this configuration if only one cable is being run from the network switch to the unit and it must carry the data, management traffic, and power.

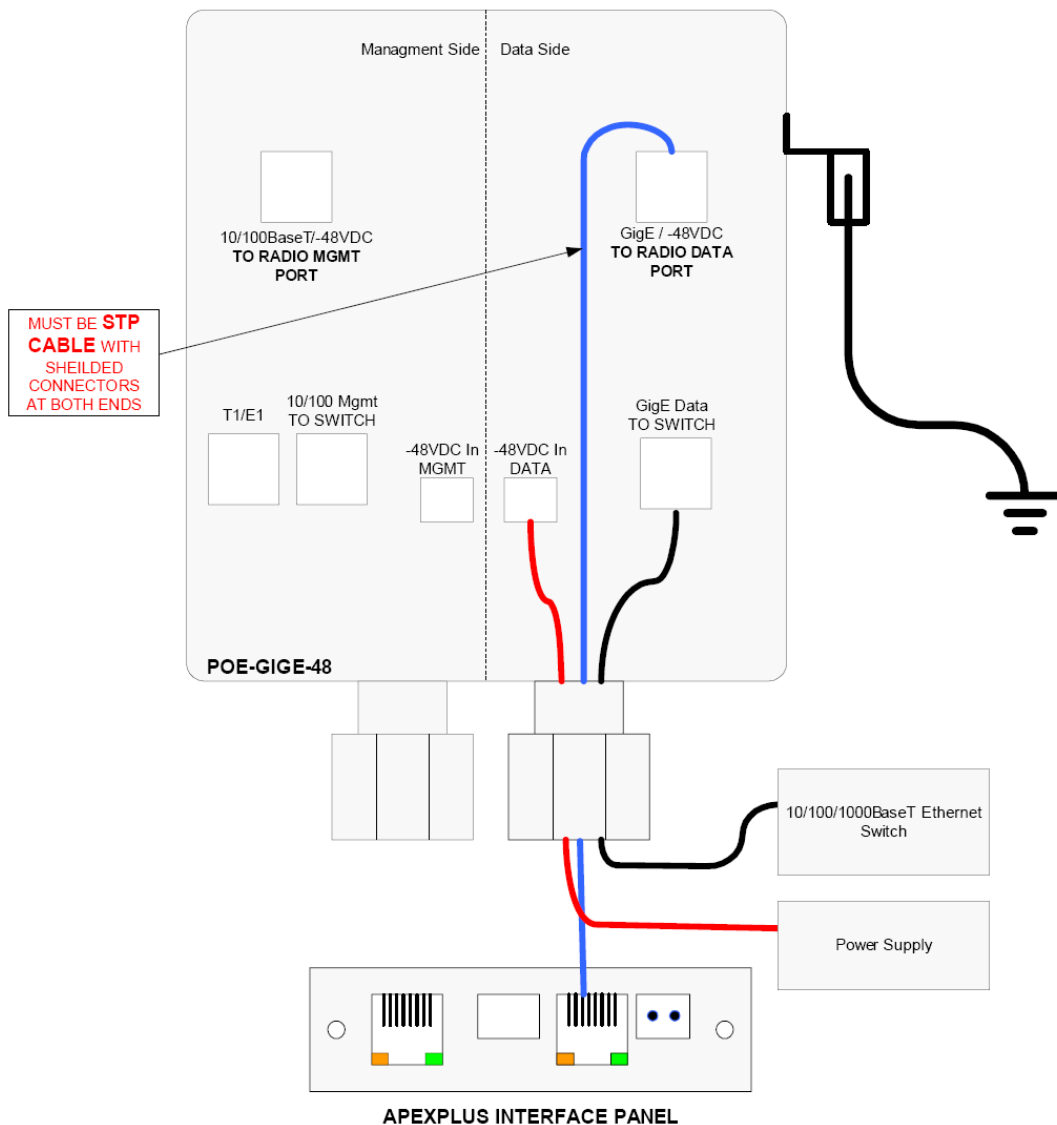


Figure 3 1+0 / IBM PoE Wiring

In-Band and Out-of-Band Management, Single power Supply

The wiring for basic 1+0 installation with Out-of-Band Management is shown below. Use this configuration if two cables can be used, one for Data and power, and one for management of the radio.

The power may also be applied on the management side only if desired with no change in function. Although it is possible to run the unpowered Ethernet cable directly to the Radio without going through the PoE-GigE-48, no surge protection would be present on the unpowered cable. Both the management and data are protected from surges if wired as shown below.

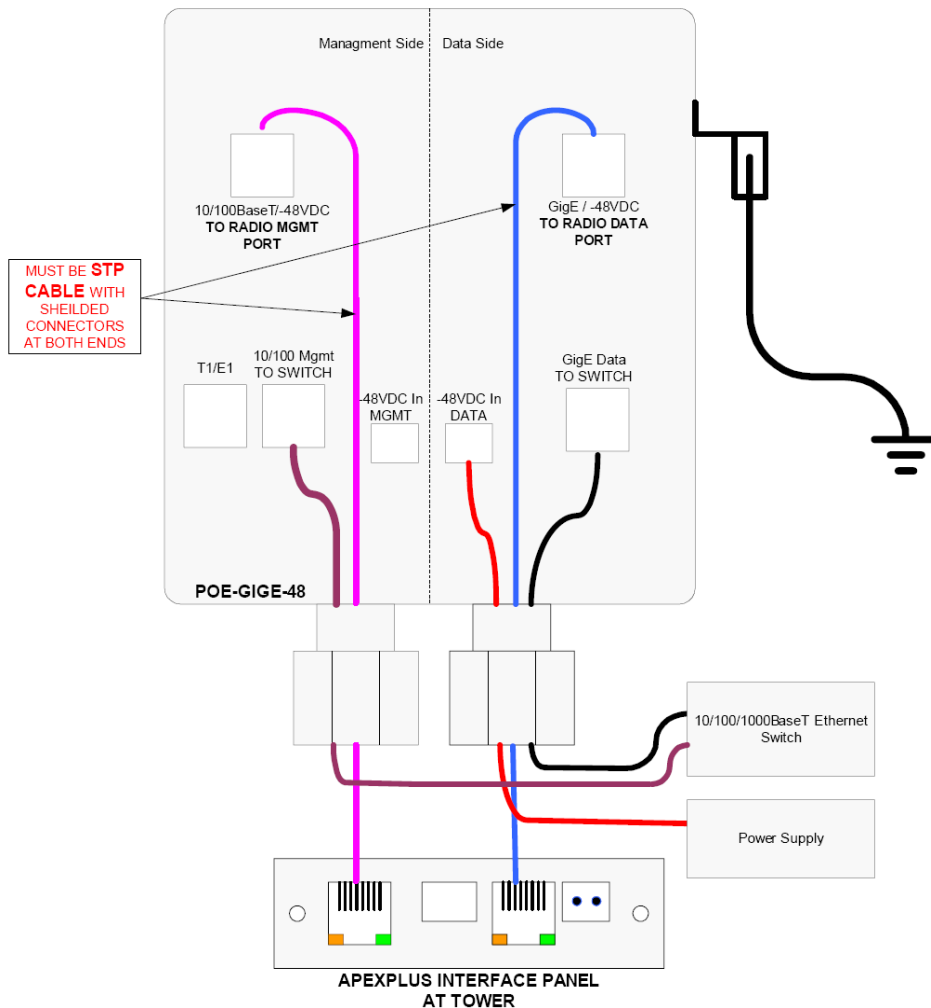


Figure 4 1+0 / OBM PoE Wiring

In-Band and Out-of-Band Management, Dual Power Supply

The PoE GigE-48 has separate physically isolated circuits for the management and data side to allow powering the same ApexPlus with two separate redundant power supplies as shown below. Both IBM and OBM can be used in this configuration

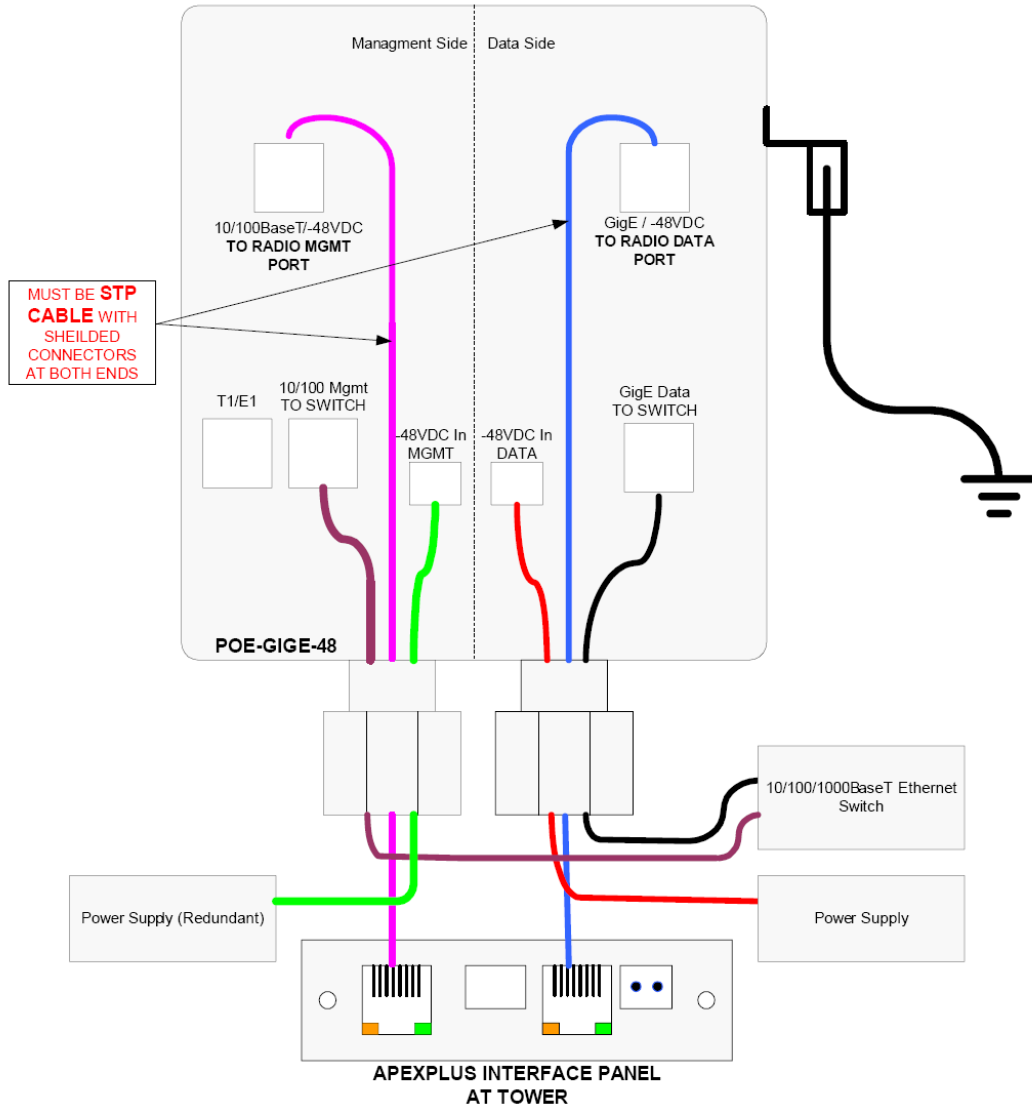


Figure 5 1+0 PoE Redundant Wiring

Grounding Diagram

Grounding of the Ethernet cable should be done at the base of the tower using the Terminal Block on the PoE Injector/Surge Suppressor Box. This applies to direct power or PoE powered installations using copper Ethernet. The surge suppression built into the PoE- GigE-48 will help protect network equipment inside the shelter from damage.

A Ground wire of AWG 12 or larger should be used and grounded to an Earth grounded tower leg or Bus Bar before entry into the shelter. Figure 16 shows the overall ground design.

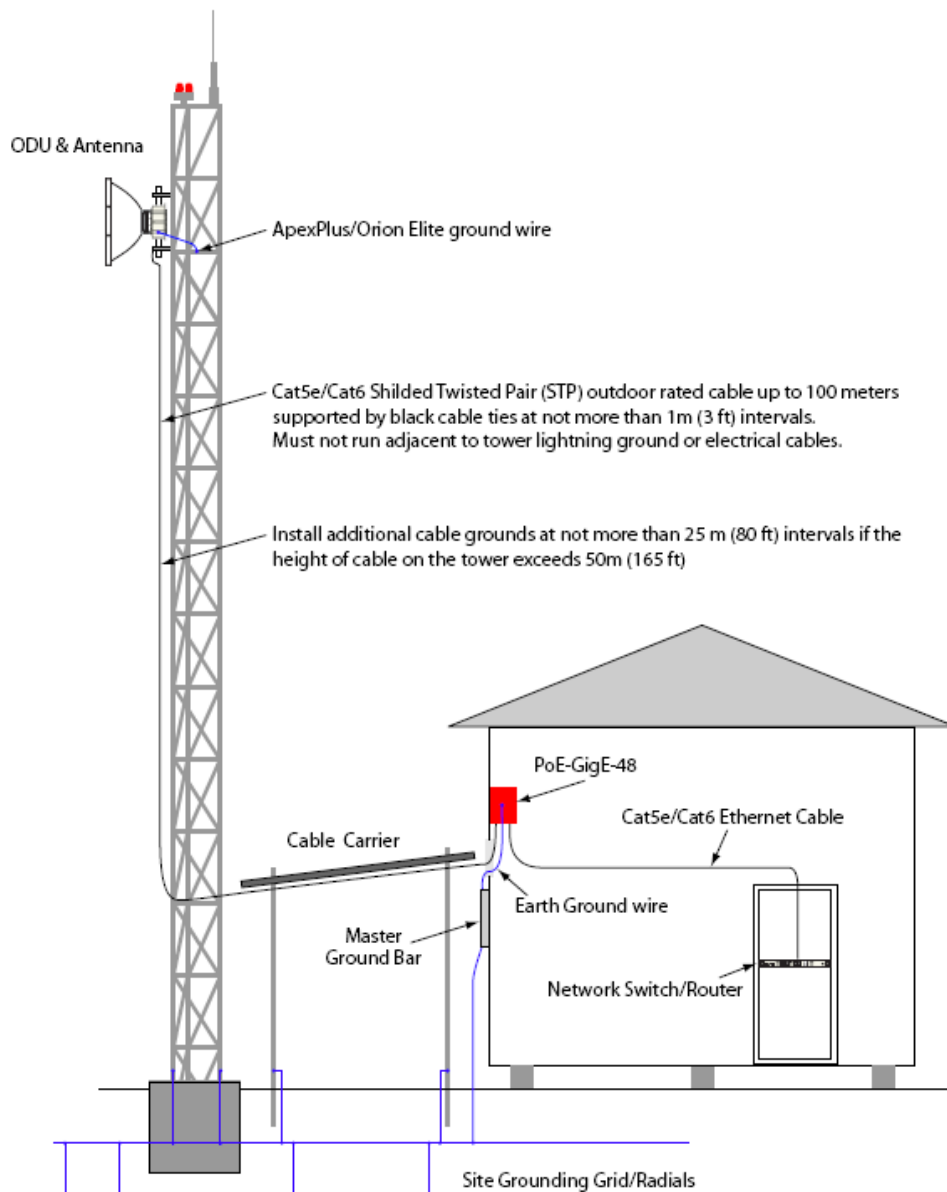


Figure 6 PoE Based Grounding Diagram