Technical Bulletin
Outdoor Mount Grounding

Overview

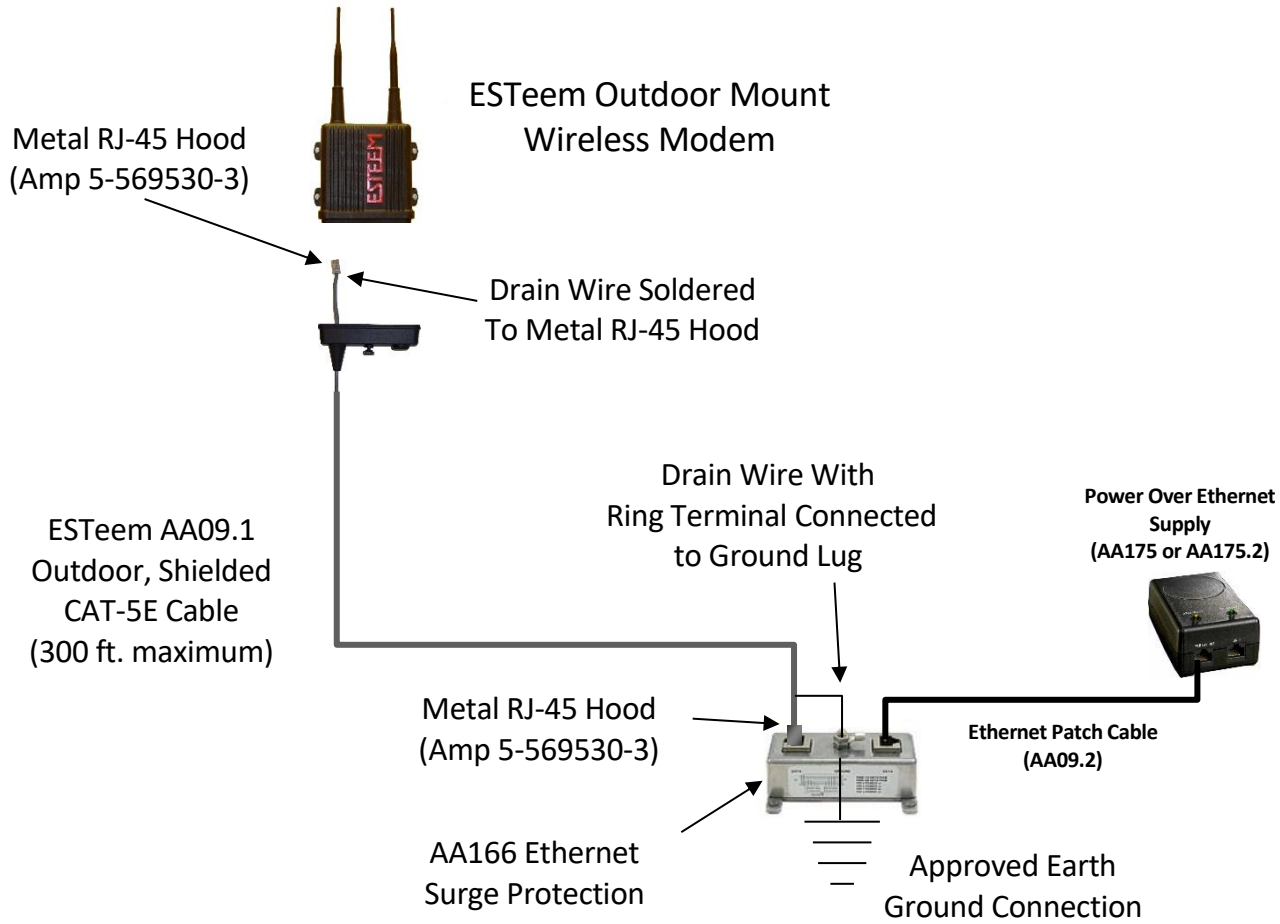
Mounting the ESTeem radio modem outdoors requires proper grounding procedures to prevent damage to both the radio hardware and the connected Ethernet and Serial peripherals. The case on the ESTeem is electrically conductive, but the AA195PM, Pole Mount kit provides isolation from the connected structure. To bring the case to a ground potential with Earth ground and eliminate any static buildup on the case itself, the shield on the Ethernet cable is used to provide the ground connection.

Outdoor Ethernet Cable

A critical component of this grounding protection system is the ESTeem AA09.1 outdoor, shielded CAT-5E Ethernet cable. This cable provides three, necessary elements; Ethernet data, DC Power over Ethernet (PoE) applications, and a ground from the ESTeem case to the AA166 surge protector. The Ethernet cable (Belden 7929A) is outdoor rated and protected from UV breakdown.

Installation

The following diagram outlines all the critical components and connections in the system. The Earth ground connection to the surge protector must be installed to comply with local Electrical code requirements.



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Troubleshooting:

The following is a quick overview of the items to test at an outdoor pole-mounted installation:

1.) Test the grounding system at the location in question and verify a low impedance path to earth ground.

2.) Verify that connection from the surge protector (AA166), the earth ground and the drain wire from the shielded Ethernet cable are secure.

3.) Measure for a change in potential (voltage and current) from the drain wire on the shielded Ethernet cable to the ground lug on the AA166 by removing the cable and testing between. Also remove the Earth ground connection and test between the above. Any voltage or current could be a potential problem.

4.) Verify the shielded Ethernet cable is not coupling noise from a nearby source (AC power line, high power RF cable, etc.) to the system. This coupling, if high enough, will show in test #3.