

APPLICATION NOTE



Weatherproofing Exterior Antenna Connections



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Weatherproofing Exterior Antenna Connections

Wireless data-acquisition systems often include connections to cables, antennas, and surge protectors that are exposed to the natural environment. Following is an introduction to a technique designed to protect connections from water intrusion.

What you will need:

- Roll of self-vulcanizing tape (cold shrink tape), 1 inch x 10 feet, Campbell Scientific pn 21212



- Scissors or tool for cutting the tape
- Cleaning supplies to clean the surge protector and connections
- Surge protection kit and antenna cables. An example kit is shown in the following figure. It is used in the following procedure.



Procedure:

1. Inspect connection components. If connectors are contaminated with dust, oil, corrosion, etc, thoroughly clean the connections, being careful not to introduce any liquid into cable ends. Consider replacing connectors that have significant corrosion or cables that may have

become water or oil soaked. Corrosion and liquids will attenuate RF signals. Clean the body of the surge protector.

2. Connect the grounding wire to the case of the surge protector.



3. Complete the cable connections.



4. Wrap tape on individual connections.
 - Wrap tape in the direction of the threads. This tends to tighten the connection.
 - Apply tension while wrapping to make a good seal between tape and connectors and between tape layers.



5. Finish wrapping the connection.



6. Wrap the second connection in like manner.



7. Wrap both connections a second time, contiguous with the surge protector, from end to end. Extend the ground wire from the wrapping parallel to an antenna cable.



8. Secure the assembly, perhaps to the mast that supports the antenna. UV resistant cable ties are versatile fasteners. Point down the end from which the ground wire emerges to minimize the chance of moisture entry.



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