



High Gain Cellular Antenna Assembly and Installation Guide

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Unlock Energy Intelligence



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Revision History			
Revision	Date	Author	Comments
1	January 2026	Engineering	Update Branding and Assets

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Installation Personnel

Installation and maintenance of the communications enclosure should only be performed by qualified, competent personnel who have appropriate training and experience. The antenna assembly must be installed in accordance with all Local and National Electrical Safety Codes.

FCC Statement

This device is classified as a Class A digital device.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.



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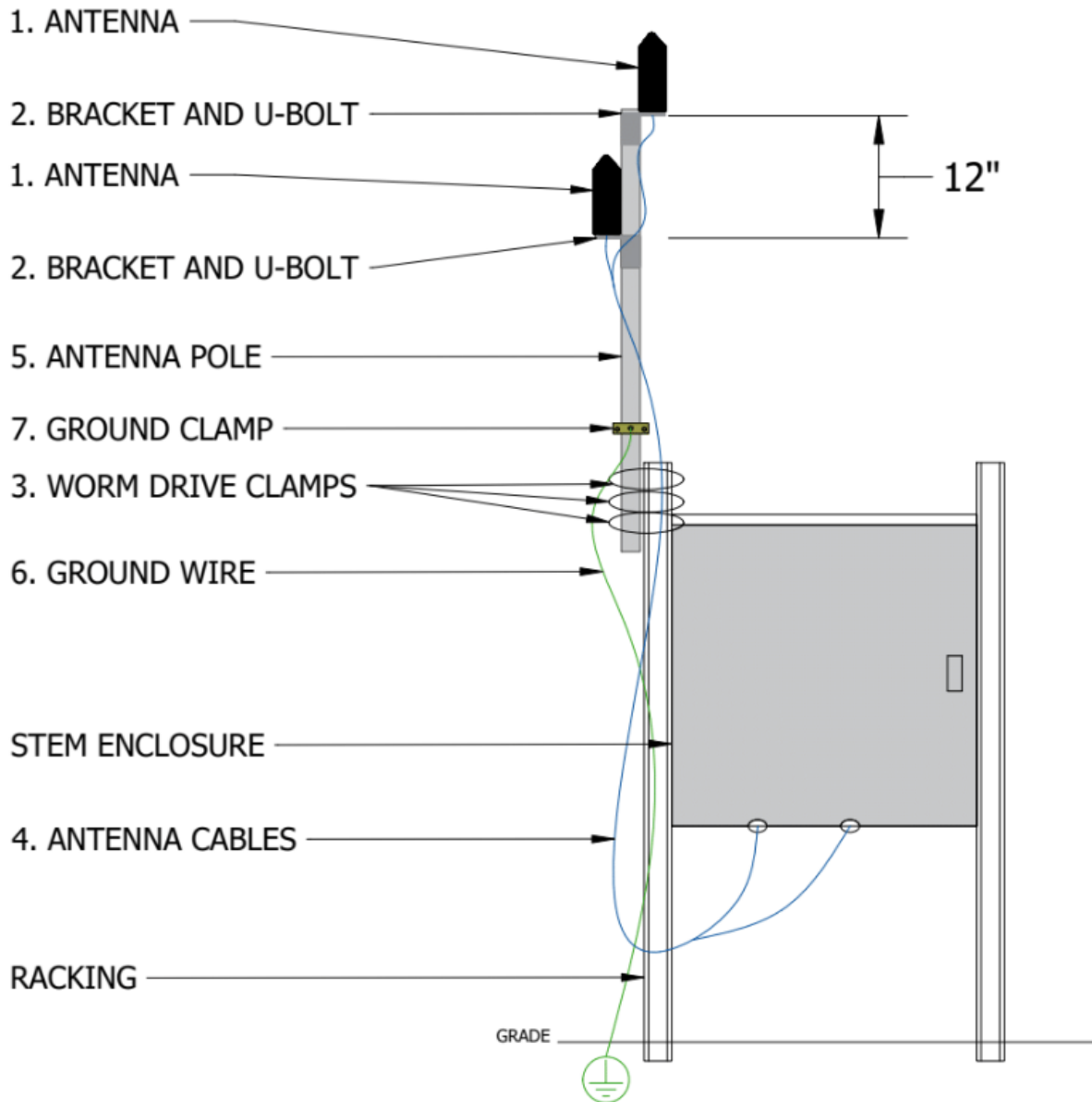


Scope and purpose

This document provides assembly and installation procedures for the High Gain Antenna Assembly designed to improve cellular modem connectivity in weak signal areas.

The High Gain Antenna Assembly consists of dual omnidirectional cellular antennas mounted to a stainless-steel pole with 12-inch vertical separation. This configuration provides enhanced signal reception for cellular modems such as the Pepwave Max BR1 Mini or Sierra RV55 housed in Stem field enclosures. The assembly is designed to mount to standard Unistrut racking using worm drive clamps, though other mounting configurations are possible. All components are rated for outdoor use and are designed to withstand harsh environmental conditions.

Installation Example





Assembly

Package Contents

Remove all items from their packaging

Included Items		
Item Number	Description	Quantity
1	Antenna	2
2	Antenna bracket and u-bolts	2
3	Worm drive clamps	3
4	Antenna cable (20 ft)	2
5	Antenna pole	1
6	Ground wire, 10 AWG, 10ft (not shown)	1
7	Ground clamp (not shown)	1
8	Self-amalgamating tape	1
9	Zip Ties	6



Mounting the Antennas

1. Mount the antenna brackets to the pole using the supplied u-bolts.
2. Offset the antenna brackets by 90 degrees.
3. Mount the upper bracket at the top of the pole.
4. Mount the lower bracket below the top bracket such that the top of the bottom bracket is 12" below the bottom of the top bracket.



(Optional, but recommended)

5. Add dielectric grease (not provided) to the antenna connector. Ensure there are no air bubbles inside the connector.



6. Feed each antenna cable through the bracket and nut. Then screw on to the antenna hand tight.



7. Wipe off any excess dielectric grease (if applicable).



8. Peel the outer covering from the self-amalgamating tape:



9. Wrap the connection with self-amalgamating tape, starting at the cable going toward the antenna. When wrapping, stretch the tape to $\frac{2}{3}$ width and overlap each wrap by one half the tape width.



10. Cover the self-amalgamating tape with electrical tape (not provided), starting at the cable going toward the antenna.



11. Secure the antennas to the brackets using the provided nuts. Place a small zip tie (not provided) at the top of the electrical tape to prevent unraveling.



Installing the ground clamp

12. Install the ground clamp on to the pole more than 12" from the bottom of the pole. (Bottom 12" of pole used for mounting)



Securing the Antenna Cables

13. Secure the antenna cables to the pole using the included zip-ties.

WARNING: Hand tighten only. Do Not crush or kink the coaxial antenna cables.





Racking Installation

- Mount the pole to the racking structure or antenna base using the provided worm drive clamps
- Route the cables into the enclosure via the bottom panel using cable glands
 - Connect the SMA connectors to the modem located inside the enclosure. **Stem does not recommend extending the coaxial cables or using longer cables in order to preserve signal strength.**
- Ground the antenna pole using the included ground wire per NEC standards.

Wall Installation

When mounting the enclosure to a wall or building structure, position the antenna assembly away from the wall surface to maintain omnidirectional coverage. Use a standoff bracket or mounting arm to achieve the recommended clearances listed below. **Wall-mount accessory options are not included.**

Minimum Clearance Guidelines

Based on typical omnidirectional cellular antenna specifications:

Wall Material	Minimum Clearance from Antenna
Metal (steel, aluminum siding)	24-36 inches
Concrete/masonry	12-24 inches
Wood/vinyl siding	6-12 inches