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ZDTECH 915MHz LoRa Gateway Antenna

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Instruction Manual

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your ZDTECH 915MHz LoRa Gateway Antenna. This omnidirectional fiberglass antenna is designed for LoRa and LoRaWAN applications, operating within the 902-928MHz frequency range. It is suitable for both indoor and outdoor deployments, offering a 7dBi gain to enhance signal coverage for devices such as RAK, Bobcat, HNT, and Helium Hotspot Miners.

Package Contents

Please verify that all items listed below are included in your package:

- 1 x 915MHz Antenna (N Male Connector)
- 1 x 20ft RG58 Extension Cable (N Female to RP-SMA Male)
- 1 x Adapter (RP-SMA Female to SMA Male)
- 1 x U-bolt Mounting Kit (Pole is not included)



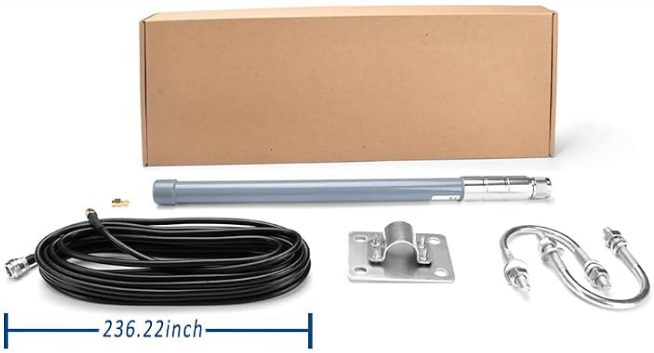
Figure 1: Overview of all included components.

Specifications

The following table details the technical specifications of the ZDTECH 915MHz LoRa Gateway Antenna:

Electrical Data	
Frequencies	902-928MHz
Polarization	Vertical
Gain	7dBi
Horizontal 3dB Beamwidth	360°
Vertical 3dB Beamwidth	18°
VSWR	≤1.5:1
Impedance	50Ω
Power Handiing	100W
Environmental Data	
Operating Temperature Range	-40℃ to +60℃
Storage Temperature Range	-55℃ to +75℃
Relative Humidity	5%-95%
Mechanical Data	
Input Connectors	N-J
Connector Position	Bottom
Dimensions	360xΦ23mm
Weight	0.32kg
Maximum Wind Velocity	200km/hr
Radome Material	Fiberglass
Mounting Kit	Included
Mounting Pole Diameter	Φ30-55mm
Extension Cable Connector	N Female to RP-SMA Male
Adapter Connector	RP-SMA Female to SMA Male
Main Features	
Outdoor Omni Antenna;Cover LORA900 Band;Vertocal Polarization;Fiberglass Radome	





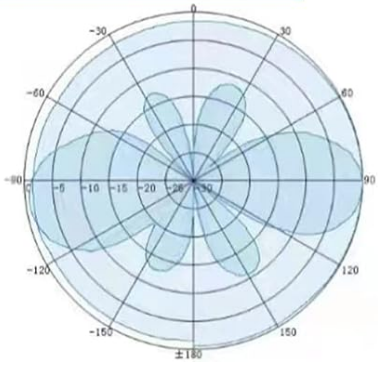


Figure 2: Detailed product specifications.

Category	Specification
Frequency Range	902-928MHz
Gain	7dBi
VSWR	≤1.5
Impedance	50 Ohm
Polarization	Vertical
Horizontal 3dB Beamwidth	360°
Vertical 3dB Beamwidth	18°

Category	Specification
Power Handling	100W
Operating Temperature	-40°C ~ +60°C
Storage Temperature	-55°C ~ +75°C
Relative Humidity	5-95%
Antenna Connector	N Male
Extension Cable Connector	N Female to RP-SMA Male
Adapter Connector	RP-SMA Female to SMA Male
Antenna Dimensions	360mm x Ø23mm (approx. 14.17 inches)
Antenna Weight	0.32kg (approx. 0.7 lbs)
Maximum Wind Velocity	200km/hr
Radome Material	Fiberglass
Mounting Pole Diameter	Ø30-55mm

Setup and Installation

Follow these steps to properly set up and install your antenna:

1. **Identify Components:** Familiarize yourself with the antenna, extension cable, adapter, and U-bolt mounting kit.
2. **Connect Extension Cable to Antenna:** Securely connect the N Female end of the 20ft RG58 extension cable to the N Male connector at the base of the antenna. Ensure the connection is hand-tightened to prevent signal loss.

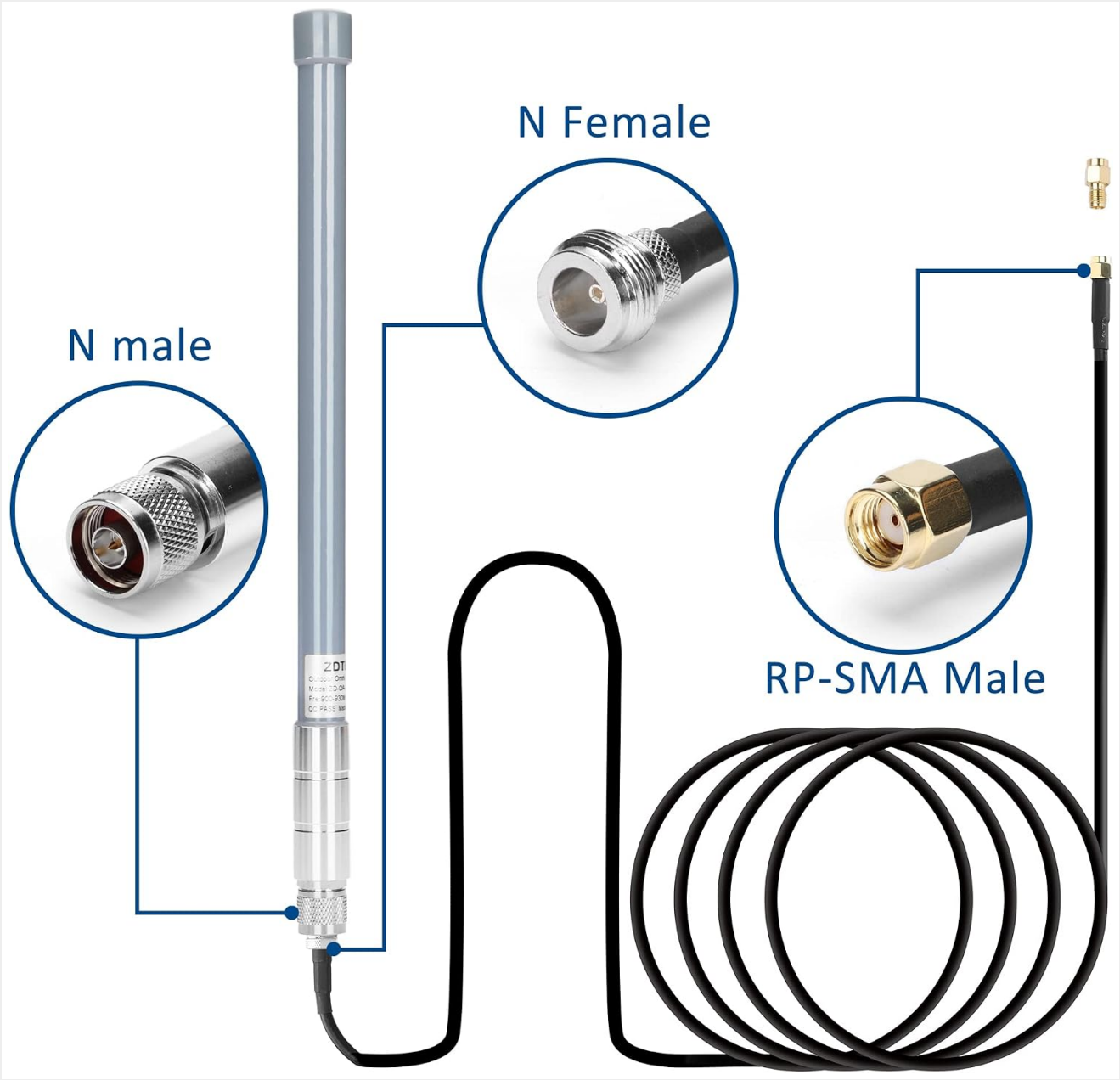


Figure 3: Antenna and extension cable connectors.

3. **Connect Adapter (if needed):** If your LoRa gateway or hotspot requires an SMA Male connection, attach the RP-SMA Female to SMA Male adapter to the RP-SMA Male end of the extension cable.

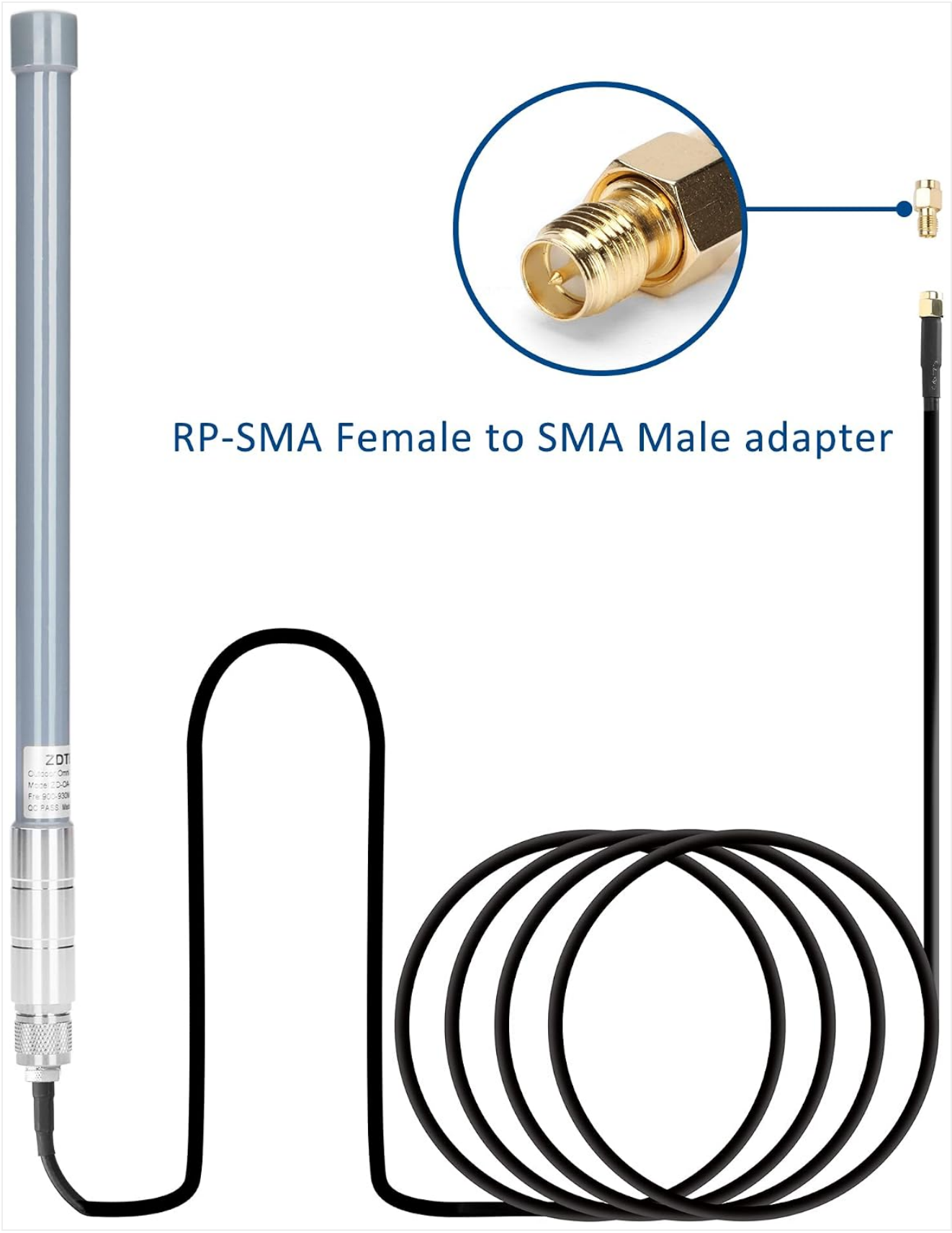


Figure 4: Connecting the RP-SMA Female to SMA Male adapter.

4. **Mount the Antenna:** Use the provided U-bolt mounting kit to secure the antenna to a suitable pole. The kit is designed for poles with a diameter between 30mm and 55mm. Ensure the mounting location provides a clear line of sight for optimal signal performance.

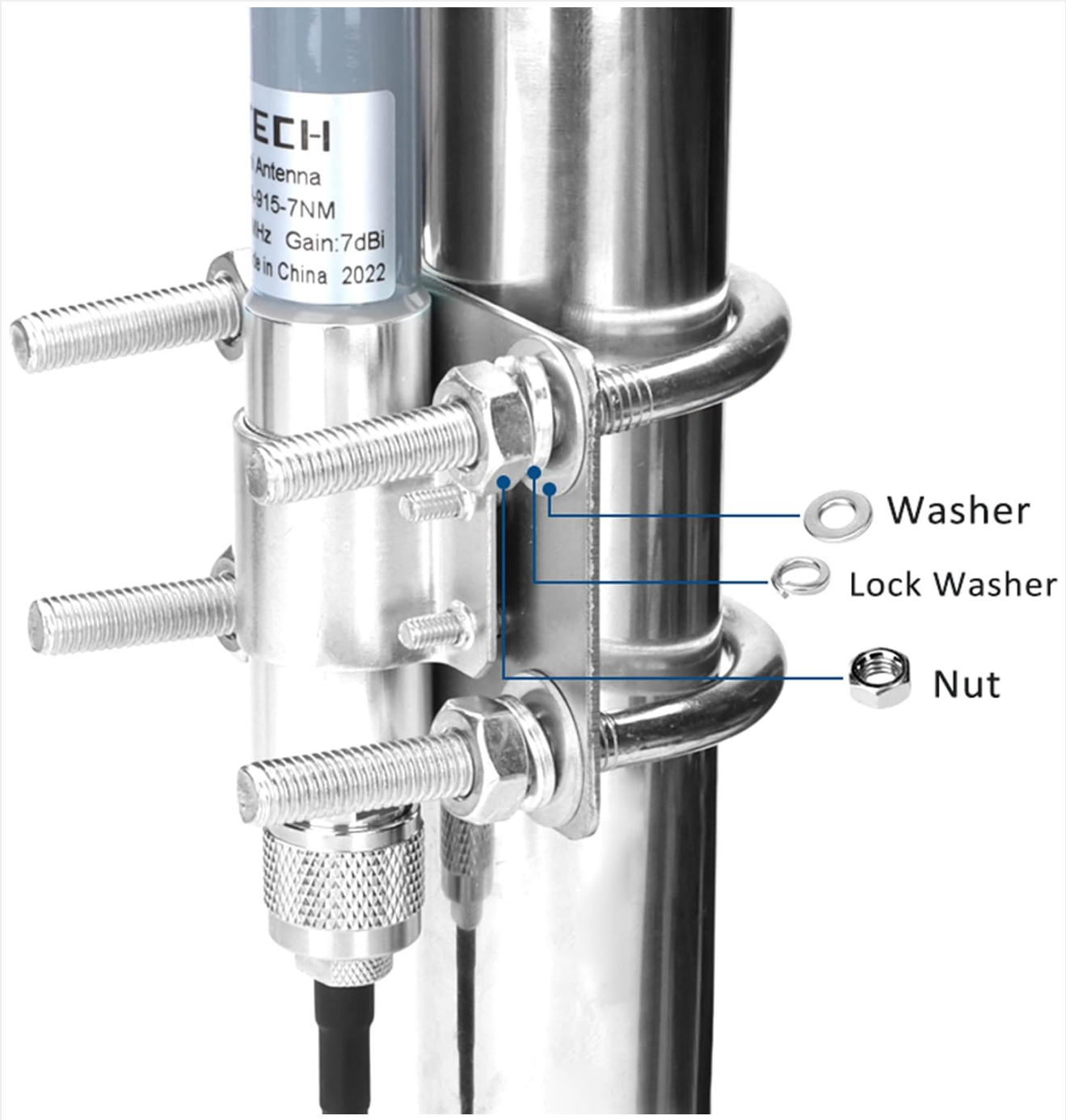


Figure 5: U-bolt mounting hardware details.

5. **Secure Connections:** Double-check all cable and adapter connections to ensure they are tight and secure. Loose connections can lead to signal degradation.
6. **Route Cable:** Carefully route the extension cable to your LoRa gateway or hotspot, avoiding sharp bends or kinks that could damage the cable.

Operation

Once the antenna is securely installed and connected to your LoRa gateway or hotspot, it will begin to operate. Ensure your gateway is configured to use the 915MHz frequency band to match the antenna's specifications. For optimal performance, position the antenna as high as possible and away from obstructions that could block the signal.

Maintenance

To ensure the longevity and optimal performance of your antenna, consider the following maintenance tips:

- **Regular Inspection:** Periodically inspect the antenna, cable, and connections for any signs of wear, corrosion, or damage.
- **Clean Radome:** If installed outdoors, gently clean the fiberglass radome with a soft, damp cloth to remove dirt or debris that may accumulate. Avoid abrasive cleaners.
- **Check Mounting:** Ensure the U-bolt mounting remains secure, especially after strong winds or adverse weather conditions. Tighten nuts if necessary.
- **Cable Integrity:** Verify that the extension cable is not pinched, cut, or excessively bent, as this can affect signal quality.

Troubleshooting

If you experience issues with your antenna, refer to the following troubleshooting guide:

- **Poor Signal Reception/Transmission:**
  - Verify all cable connections are secure and properly tightened.
  - Ensure the antenna is mounted in an optimal location with minimal obstructions and sufficient height.
  - Confirm your LoRa gateway/hotspot is operating on the correct 915MHz frequency band.
  - Inspect the extension cable for any damage or kinks.
- **No Connection:**
  - Check that the correct adapter (RP-SMA Female to SMA Male) is used if your device requires an SMA connection.
  - Ensure all connectors are fully engaged and not cross-threaded.
- **Physical Damage:**
  - If the fiberglass radome is cracked or severely damaged, it may affect performance and require replacement.

Warranty and Support

Specific warranty information for this product is not provided in this manual. For any support inquiries or warranty details, please refer to the product's original purchase documentation or contact the seller directly.

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