

902-928MHz 5.1dBi Fiberglass Antenna Datasheet

Overview

The 5.1dBi Fiberglass antenna is an outdoor, high-performance antenna, designed to withstand harsh outdoor conditions. It is specially designed for LoRa® in the 902-928 MHz band – US915, AU915, AS923, and KR920. The antenna connector is one with the antenna body - this design further increases the resistance of the antenna to external conditions. With a length of only 480 mm, this antenna will be the best fit for your LPWAN gateway or outdoor deployed RAK Hotspot.

 **NOTE:**

This antenna is designed to be directly mounted on the enclosure of the Gateway. It is suitable for [RAK7240](#) and [RAK7249](#). The antenna is also compatible with [Outdoor Enclosure for RAK Hotspot](#), [Bobcat Outdoor Enclosure Kit](#), and [Antenna Magnetic Base](#).

Features

- Frequency: 902-928 MHz
- Gain: 5.1 dBi
- VSWR: ≤ 1.47
- Beamwidth: 360°
- Impedance: 50 Ω
- Polarization: Vertical
- Radome Body: Fiberglass
- Connector: N-Type Male
- Dimensions: Φ 27.0 mm x 480.0 mm
- Operation Temperature: -40 °C ~ +75 °C
- Storage Temperature: -40 °C ~ +85 °C
- IP67 rated

Specifications

| Parameter | Value |
|-------------------|-----------------|
| Model | RAKARG19 |
| Frequency Range | 902 ~ 928 MHz |
| Peak Gain | 5.1 dBi |
| VSWR | ≤ 1.47 |
| Efficiency | $\leq 84\%$ |
| Feed Impedance | 50 Ω |
| Radiation Pattern | Omnidirectional |
| Polarization | Vertical |

| | |
|------------------------|----------------------|
| Cover Material (Color) | Fiberglass (White) |
| Connector Type | N-type male |
| Dimensions (mm) | Φ 27.0 mm x 480.0 mm |
| Operation Temp (°C) | -40 °C ~ +75 °C |
| Storage Temperature | -40 °C ~ +85 °C |
| Humidity Range | 5% ~ 95% |

VSWR and Return Loss

| Frequency (MHz) | VSWR | Return Loss (dB) |
|-----------------|------|------------------|
| 902 MHz | 1.47 | -14.4 |
| 928 MHz | 1.46 | -14.5 |

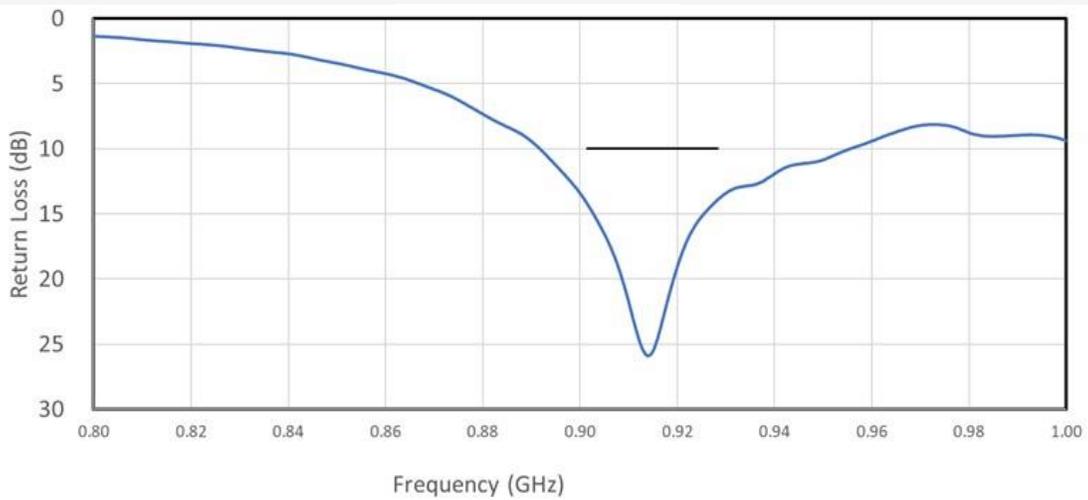


Figure 1: RAKARG19 VSWR Graph

Peak Gain & Efficiency

| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
|-----------------|------------|----------------|
| 902 | 4.8 | 82 |
| 904 | 4.9 | 83 |
| 906 | 5.0 | 83 |
| 908 | 5.0 | 83 |
| 910 | 5.0 | 84 |

| | | |
|-----|----------|-------|
| 912 | 5.0 | 84 |
| 914 | 5.1 | 84 |
| 916 | 5.1 | 84 |
| 918 | 5.1 | 84 |
| 920 | 5.1 | 84 |
| 922 | 5.1 | 84 |
| 924 | 5.0 | 84 |
| 926 | 5.0 | 84 |
| 928 | 5.0 | 84 |
| | Average: | 83.64 |

Radiation Patterns

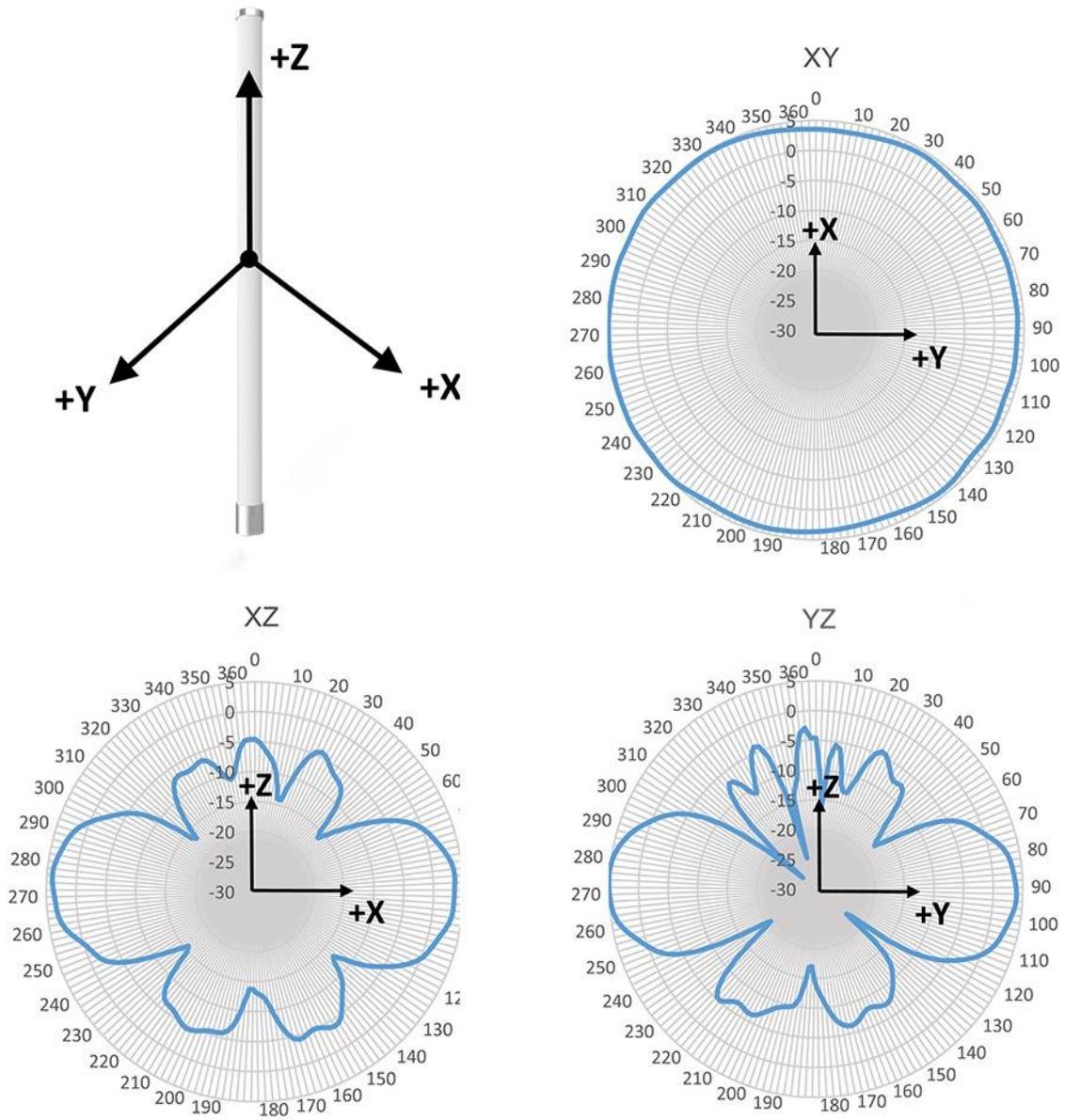


Figure 2: RAKARG19 Radiation Patterns

Mechanical Characteristics

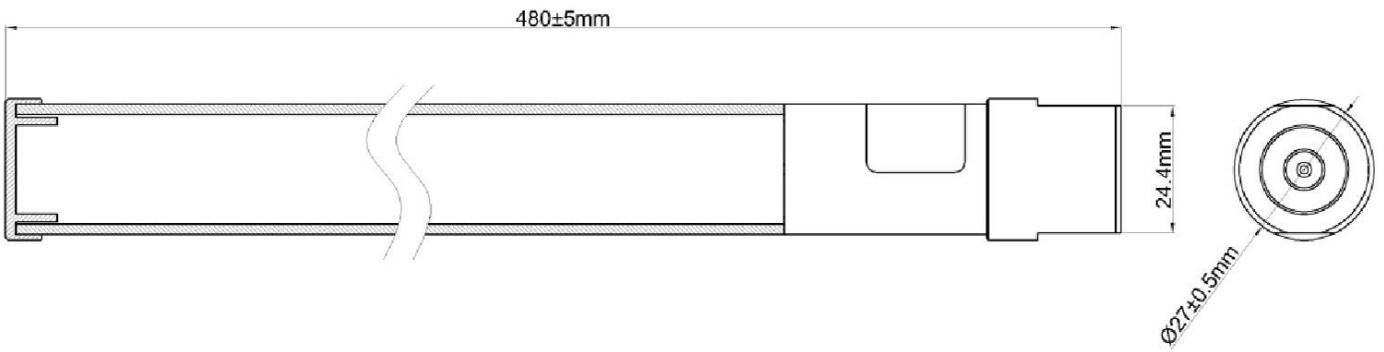


Figure 3: RAKARG19 mechanical specifications

