

# 902-928 MHz 5.1 dBi Fiberglass Antenna Datasheet

## Overview




The 5.1 dBi 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 the following RAK products:

- [RAK7240](#) 
- [RAK7249](#) 

The antenna is also compatible with the following:

- [Outdoor Enclosure for RAK Hotspot](#) 
- [Bobcat Outdoor Enclosure Kit](#) 
- [Antenna Magnetic Base](#) 

## Features

- Frequency: 902-928 MHz
- Gain: 5.1 dBi
- VSWR:  $\leq 1.47$
- Beamwidth: 360°
- Impedance: 50  $\Omega$
- Polarization: Vertical
- Radome Body: Fiberglass
- Connector: N-Type Male
- Dimensions:  $\Phi$  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	≤ 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

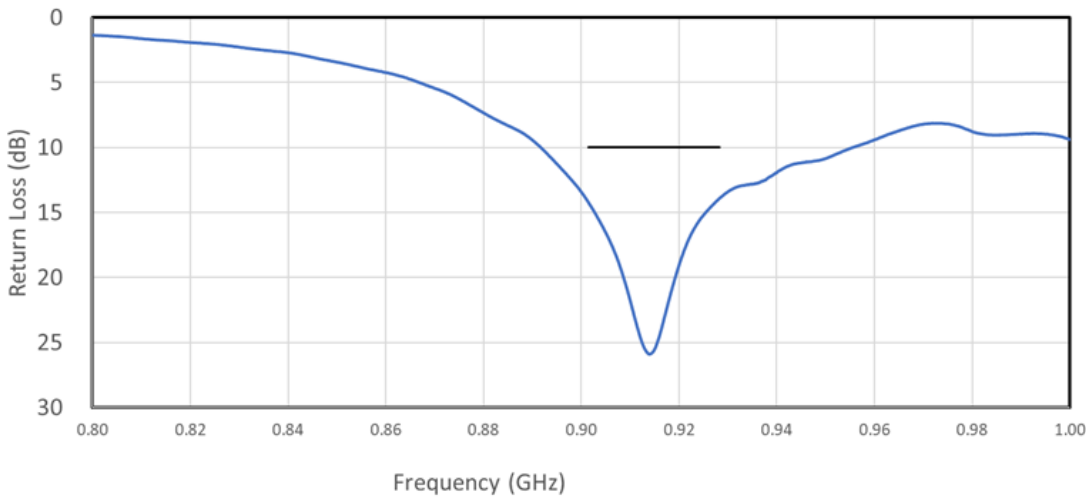


Figure 1: RAKARG19 VSWR Graph

## 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

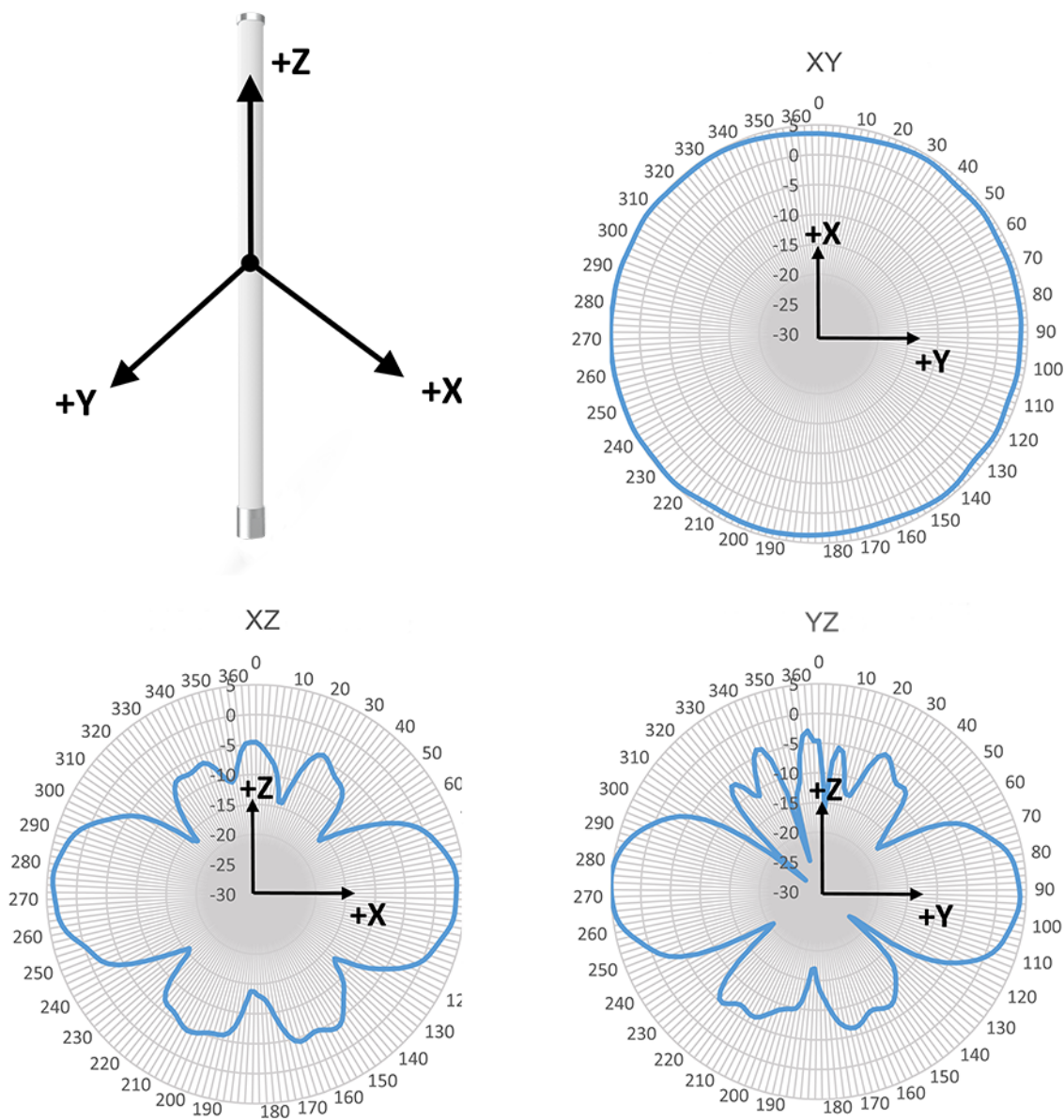


Figure 2: RAKARG19 Radiation Patterns

## Mechanical Characteristics

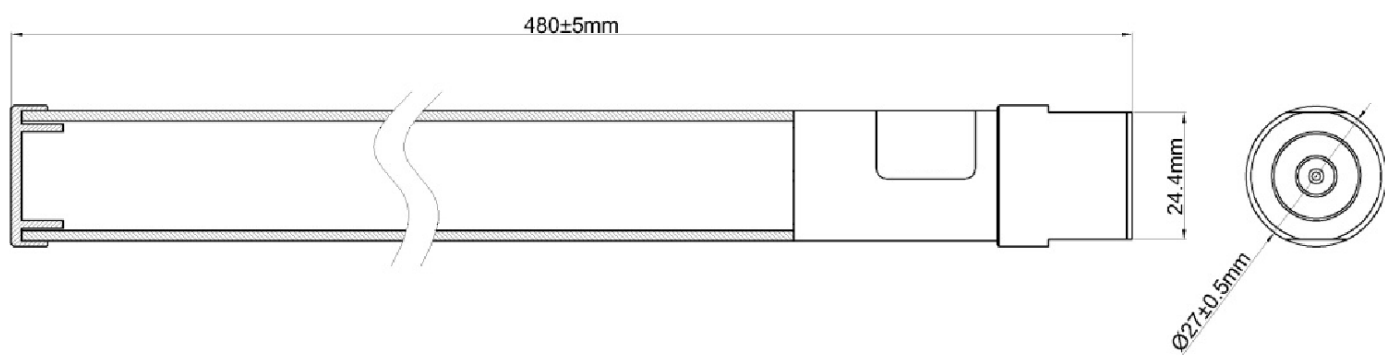


Figure 3: RAKARG19 mechanical specifications