

902-928 MHz 5 dBi Fiber Glass Antenna (RAKARG14) Datasheet

Features

- Frequency range: 902 ~ 930 MHz
- Max gain: 5.8 dBi
- VSWR: ≤ 2.0
- Radom body: Fiberglass
- High efficiency
- Radome body: fiberglass
- Vertically polarized dipole
- Omni-directional
- Easy to mount with the included Installation kit
- Outdoor use



Figure 1: RAKARG14 overview

Specifications

Shenzhen RAKwireless Technology Co.,Ltd.
Room 506, Bldg B, New Compark, Pingshan First Road
Taoyuan Street, XiLi town P.O. Box Nanshan District
Shenzhen,
China

Parameter	Value
Model	RAKARG14
Frequency range	902 ~ 930 MHz
Peak gain	5.8 dBi
VSWR	≤ 2.0
Efficiency	≤ 79%
Feed impedance	50 Ohms
Radiation pattern	Omni-directional
Polarization	Vertical
Cover material (color)	Fiberglass (white)
Connector type	N-type male
Dimensions (mm)	Φ 29.8 mm x 800.0 mm
Operation temp (°C)	-20 °C ~ +65 °C
Storage temperature	-30 °C ~ +75 °C
Humidity range	5% ~ 95%

VSWR

Frequency (MHz)	VSWR
900 MHz	1.32
902 MHz	1.33
930 MHz	1.47

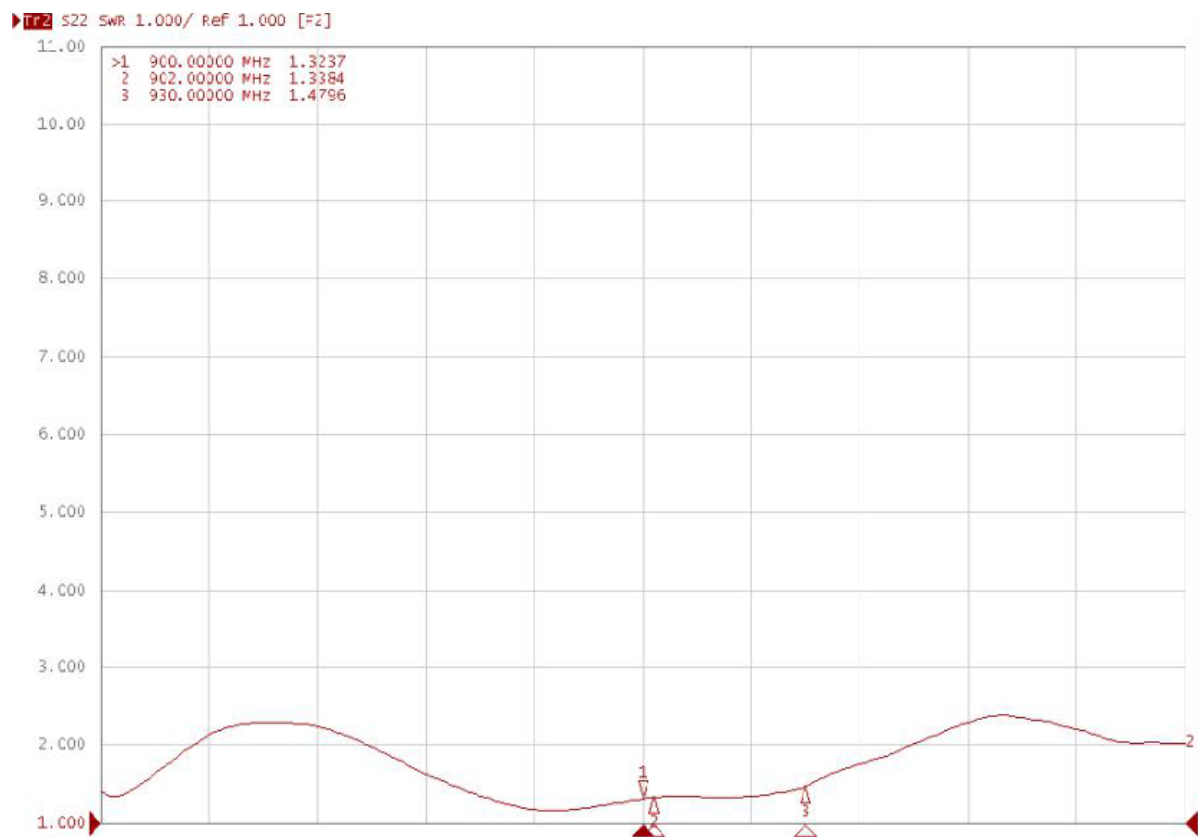


Figure 2: RAKARG14 VSWR graph

Peak Gain & Efficiency

Frequency (MHz)	Gain (dBi)	Efficiency (%)
902	5.4	74.02
904	5.6	76.58
906	5.6	76.34
908	5.6	74.85
910	5.5	74.11
912	5.6	74.09
914	5.7	76.16
916	6.0	78.27
918	6.1	79.42
920	6.0	79.10
922	5.9	77.99
924	5.8	76.85
926	5.8	76.56
928	5.7	77.45
930	5.7	78.16
	Average:	71.73

Radiation Patterns

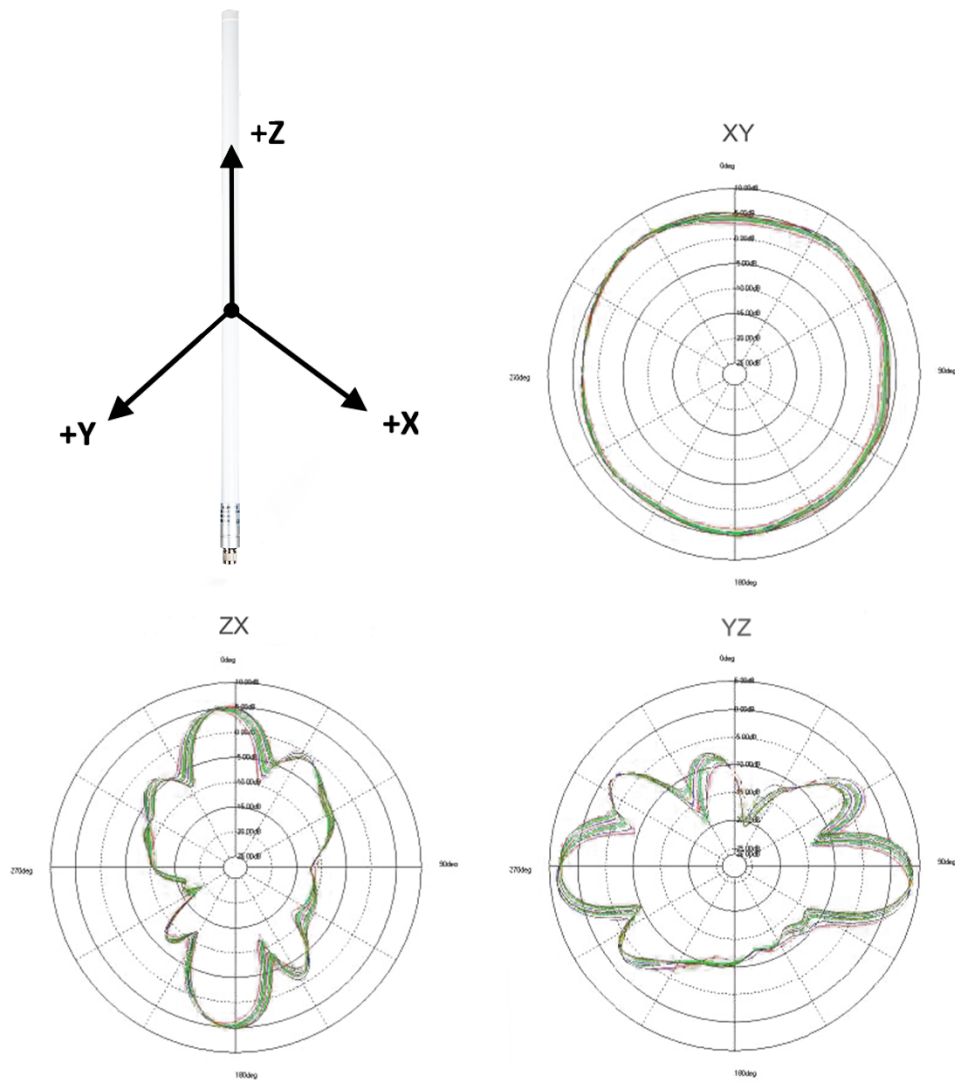


Figure 3: RAKARG14 radiation patterns

Mechanical Specifications

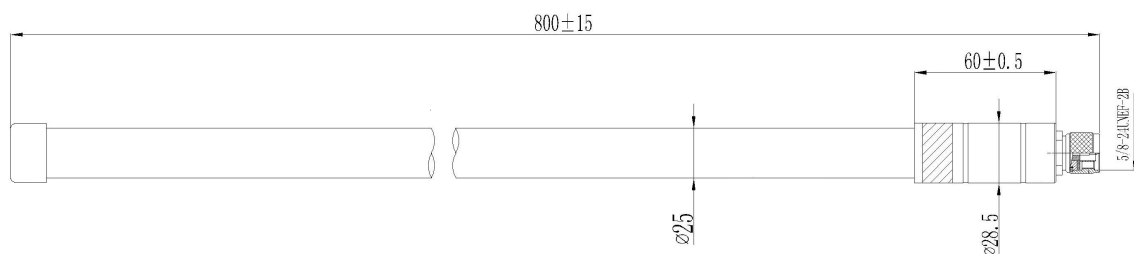


Figure 4: RAKARG14 mechanical specifications

902-928MHz 5dBi Fiber Glass Antenna Datasheet

Overview

The 5 dBi Fiber Glass 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 Miner.

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 Miner](#)  , [Bobcat Outdoor Enclosure Kit](#)  , and [Antenna Magnetic Base](#)  .

Features

- Frequency: 902-928 MHz
- Gain: 5.0 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 Rnge	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)	Fiber glass (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

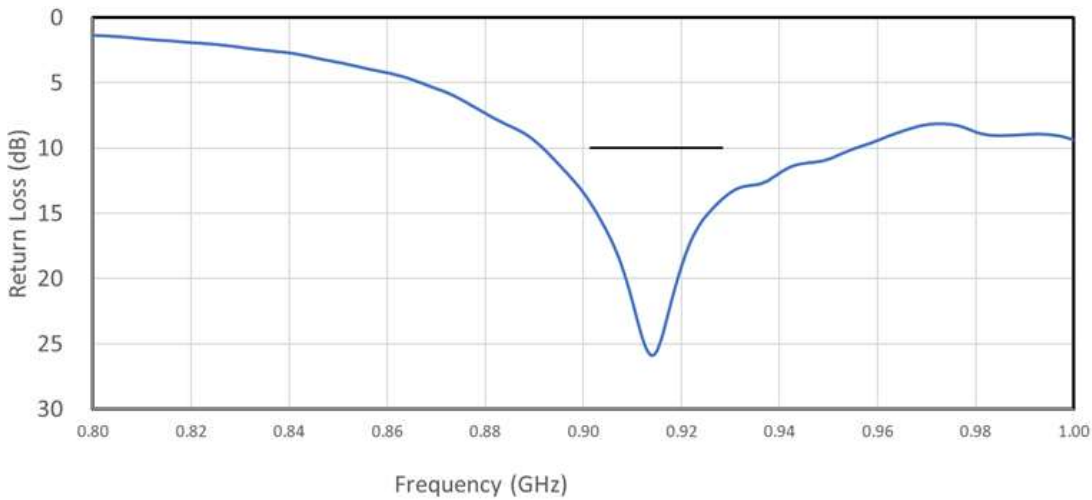


Figure 1: RAKARG19 VSWR Graph

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

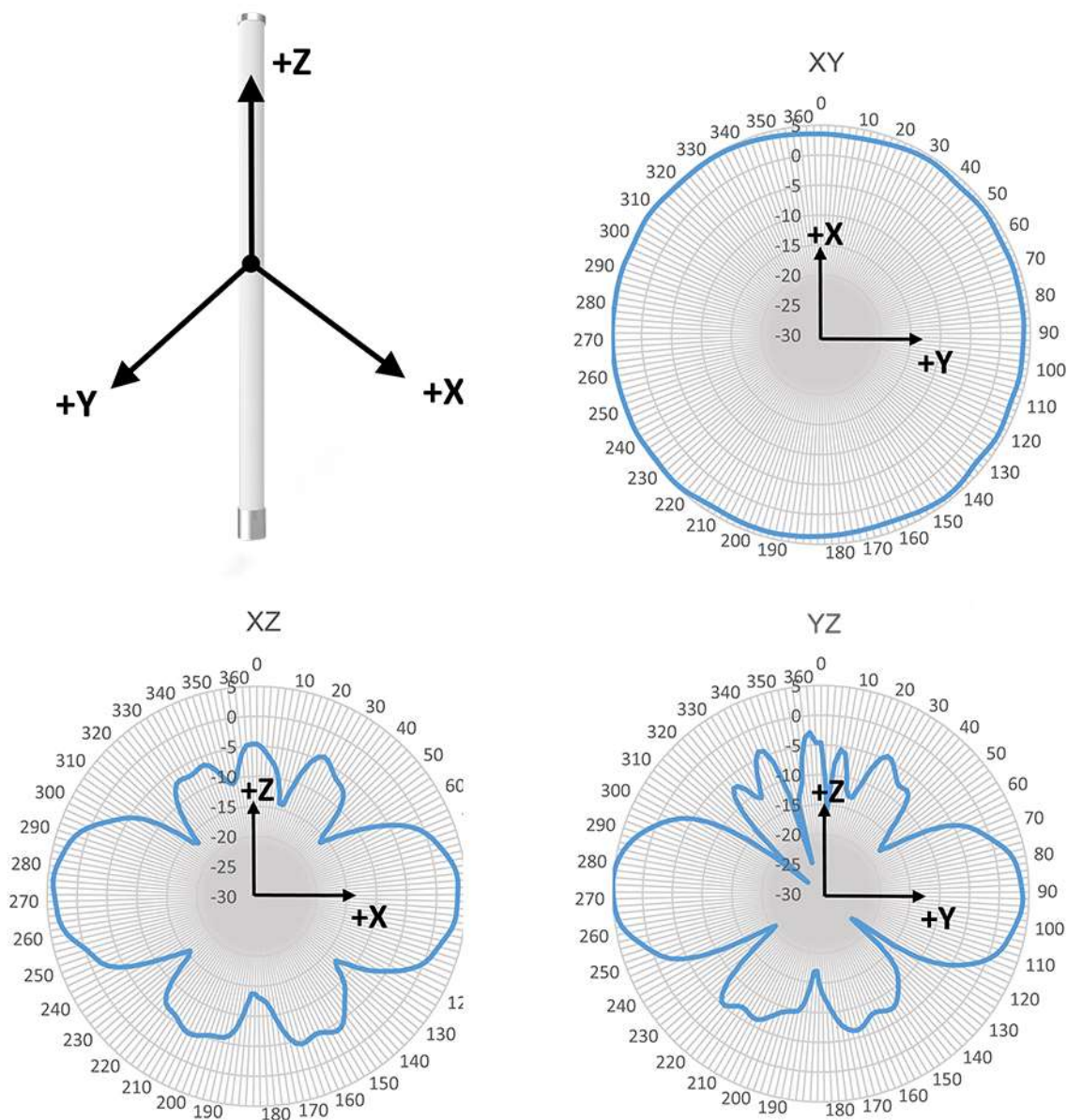


Figure 2: RAKARG19 Radiation Patterns

Mechanical Characteristics

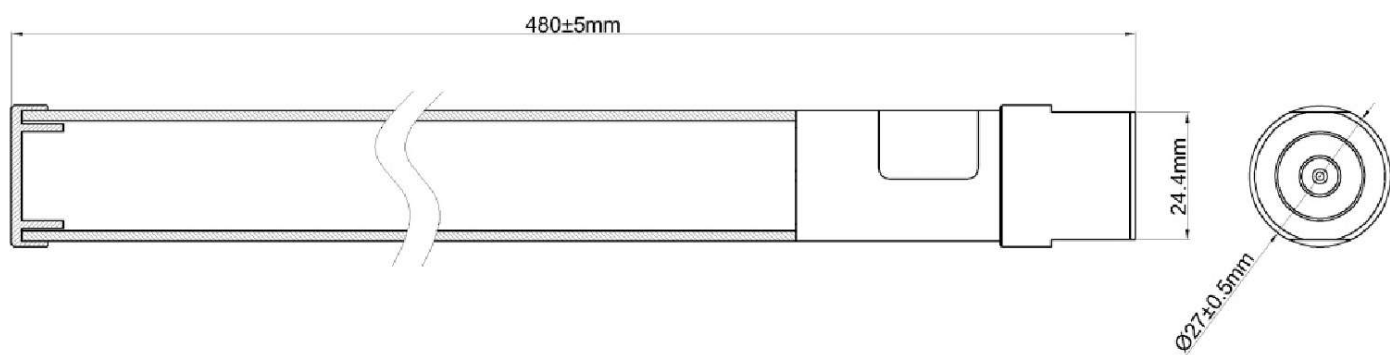


Figure 3: RAKARG19 mechanical specifications

900-930MHz 8dBi Fiber Glass Antenna

Overview

Features

- Frequency Range: 900~930 MHz
- Max Gain: 8.0 dBi
- VSWR: ≤ 1.5
- High efficiency
- Vertically polarized dipole
- Easy to mount with the included Installation kit



Figure 1: RAKARG15 Overview

Specifications

Model	RAKARG15
Frequency Range	900 MHz~930 MHz
Peak Gain	8.0 dBi
VSWR	≤ 1.5
Efficiency	$\leq 65\%$
Feed Impedance	50 Ω
Polarization	Vertical
Cover material(color)	Fiber glass (White)
Connector type	N-type male
Dimensions (mm)	$\Phi 25.0$ mm x 900.0 mm
Operation Temp (°C)	-30 °C ~ +65 °C
Humidity range	5%~95%

VSWR

Frequency(MHz)	VSWR
902MHZ	1.28
910MHZ	1.20
928MHZ	1.17

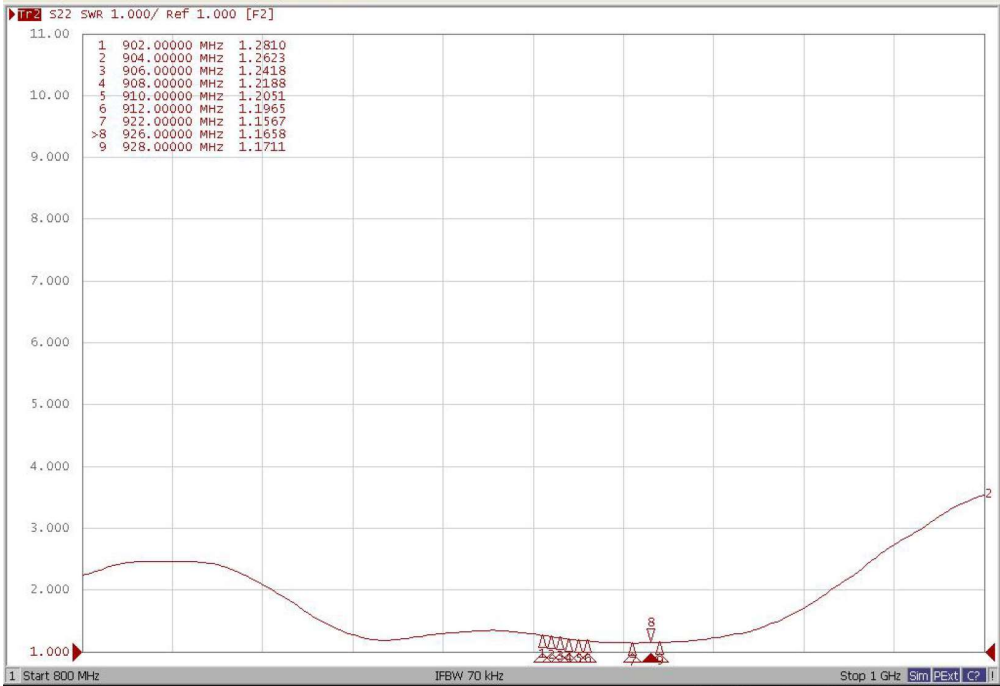


Figure 2: RAKARG15 VSWR graph

Peak Gain & Efficiency

Frequency (MHz)	Gain (dBi)	Efficiency (%)
900	6.3	43.3
905	6.6	47.1
910	7.6	50.4
915	7.3	52.6
920	7.4	52.4
925	7.6	52.7
930	8.3	50.9
Average:		50.0

Radiation Patterns

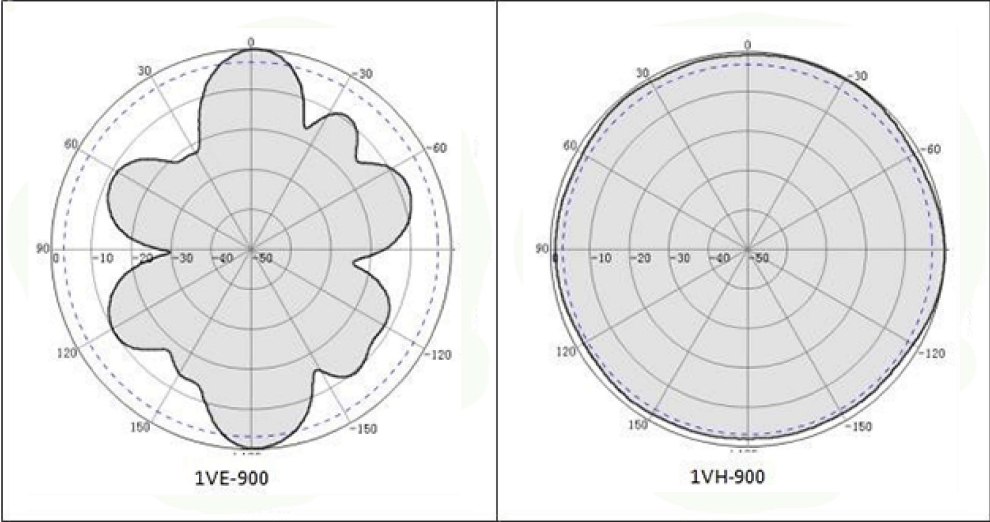


Figure 3: Radiation pattern at 900MHz

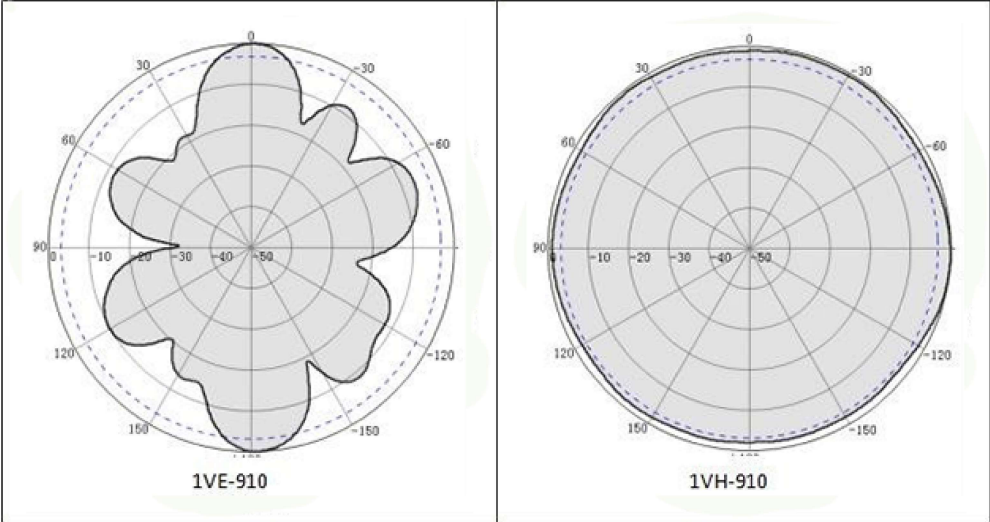


Figure 4: Radiation pattern at 910MHz

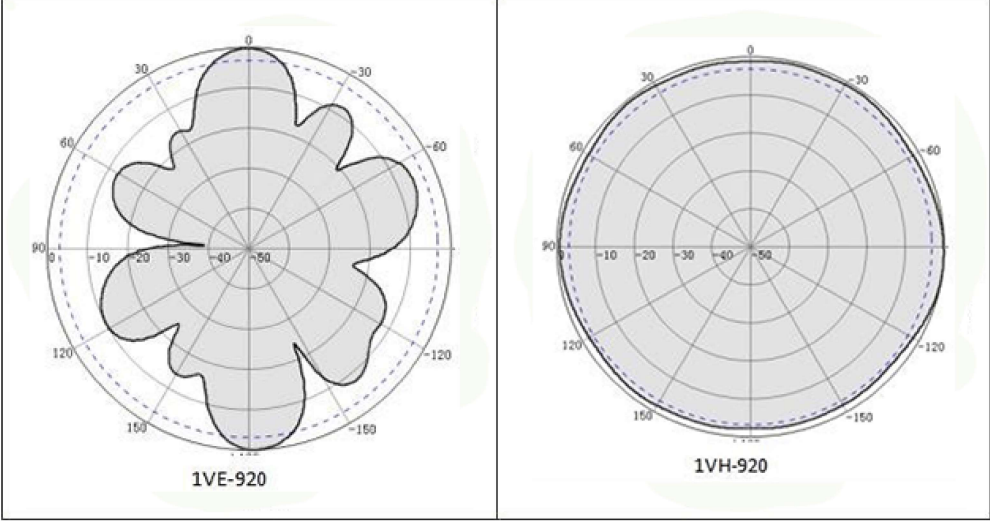


Figure 5: Radiation pattern at 920MHz

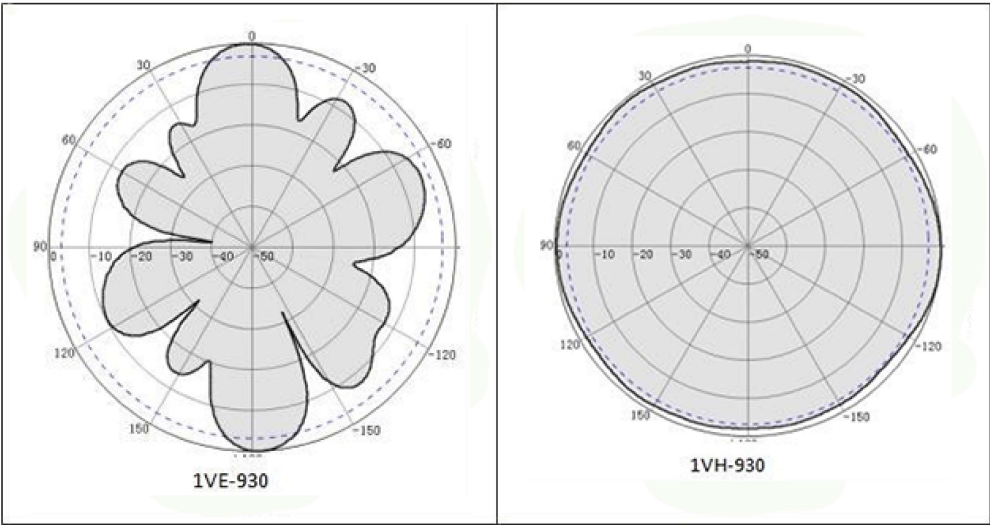


Figure 6: Radiation pattern at 930MHz

Mechanical Characteristics

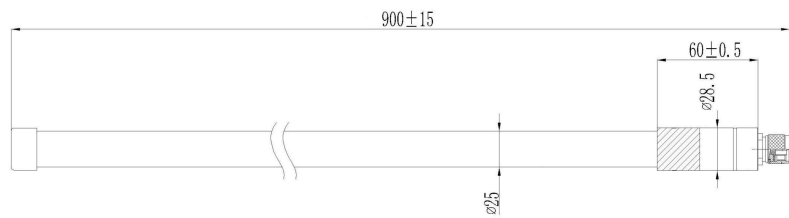


Figure 7: RAKARG15 Antenna dimensions

Features

- ✦ Frequency Range: 902~928MHz
- ✦ Quite good VSWR
- ✦ Max Gain: 2.3dBi
- ✦ High efficiency
- ✦ Vertically polari



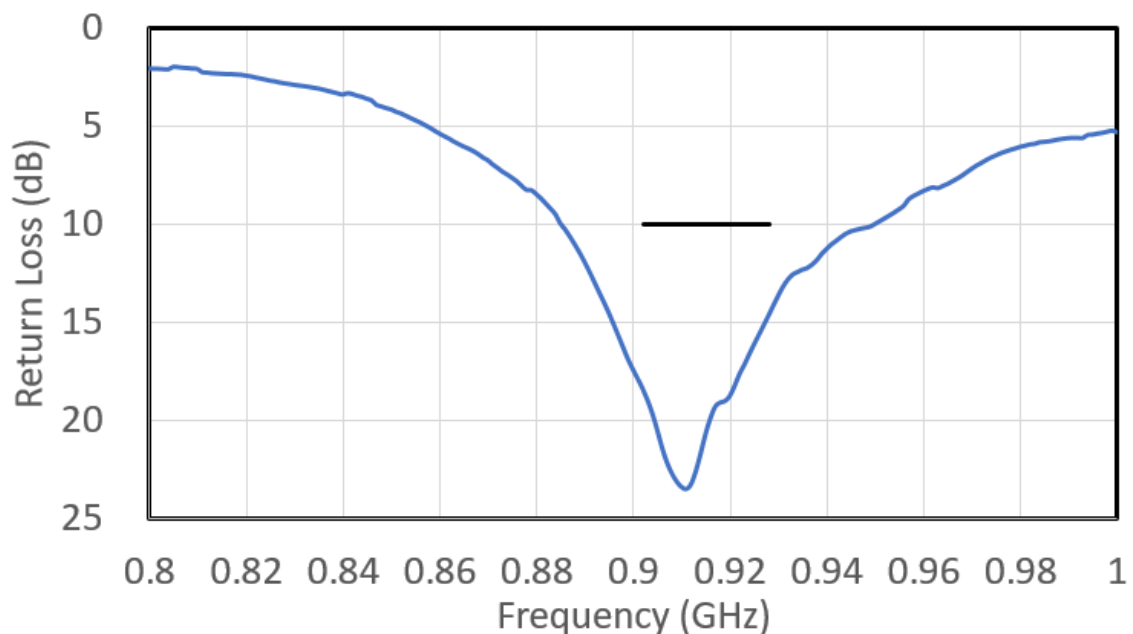
Specifications

Model		KRAKBJ2701C01A
Electrical Specifications	Frequency Range	902MHz~928MHz
	Peak Gain	2.3 dBi
	VSWR	≤ 1.5
	Efficiency	>80%
	Feed Impedance	50 Ohms
	Polarization	Vertical

Mechanical Specifications	Cover material(color)	Plastic(White)
	Interface	RPSMA
	Dimensions (mm)	Φ13.0mm x 198.0mm
	Operation Temp (°C)	-30°C ~ +75°C
	Humidity range	5%~95%

S11&VSWR

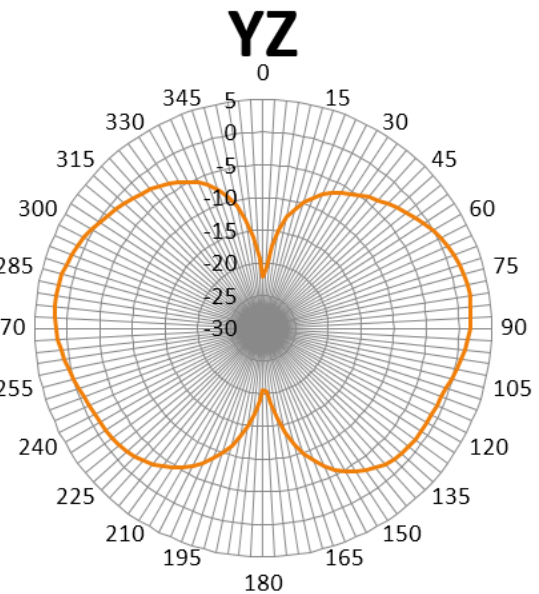
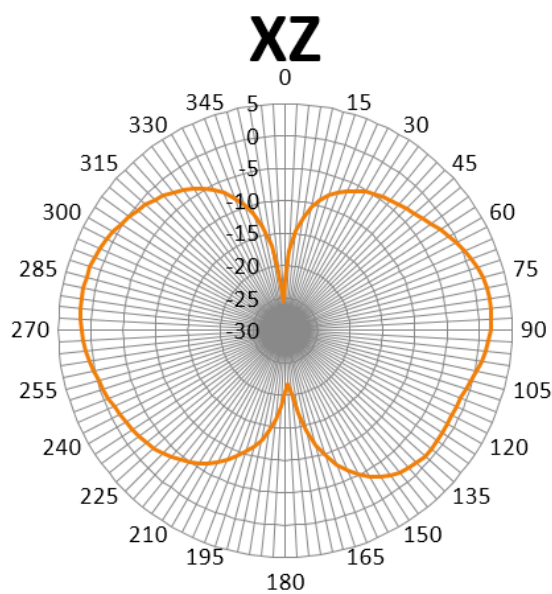
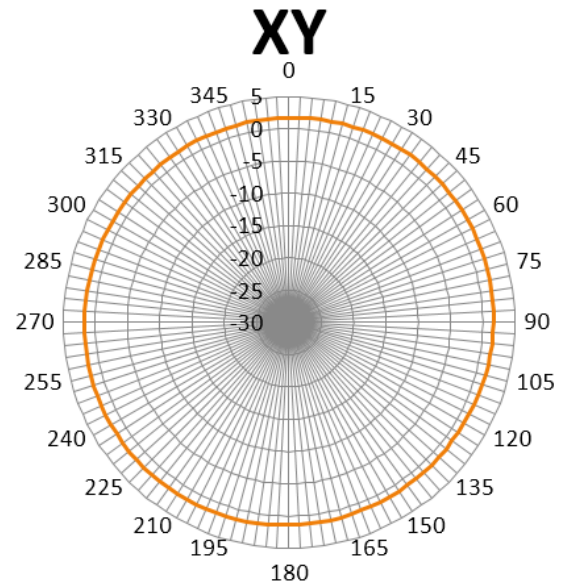
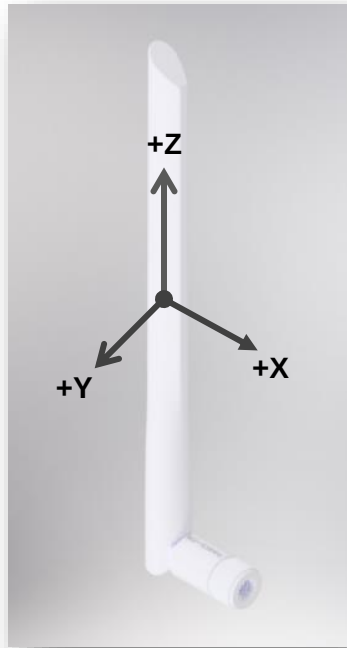
Frequency(MHz)	S11	VSWR
902MHz	-18.3	1.28
928MHz	-14.6	1.46



Peak Gain & Efficiency

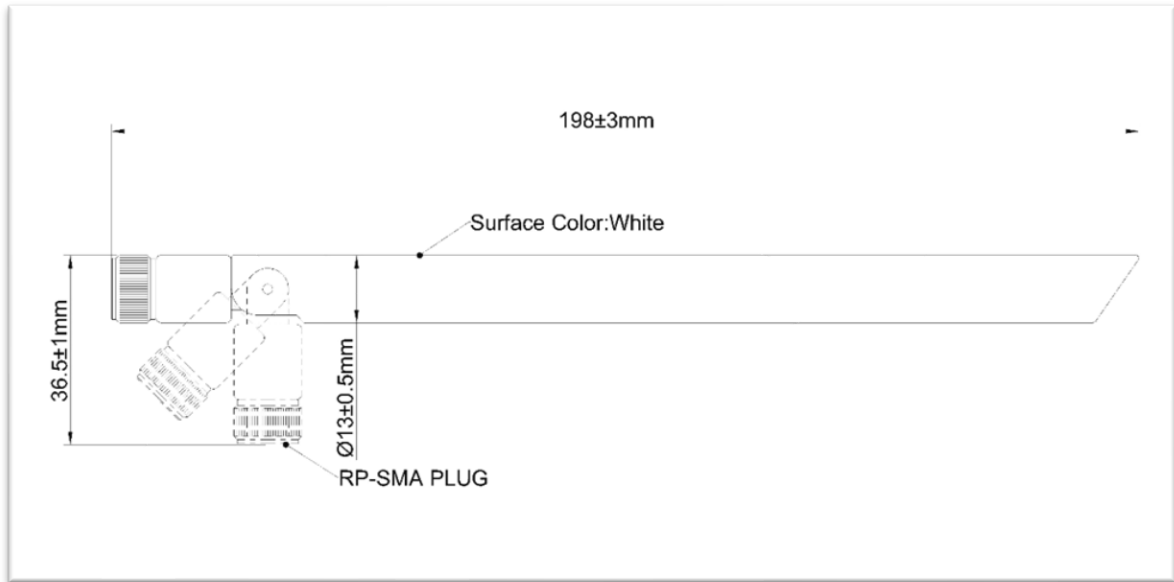
Frequency(MHz)	Peak Gain (dBi)	Efficiency (%)
902	2.3	82.6
904	2.2	82.3
906	2.2	82.7
908	2.3	84.0
910	2.3	85.0
912	2.3	85.7
914	2.3	86.0
916	2.2	86.1
918	2.2	85.9
920	2.2	86.0
922	2.2	86.4
924	1.9	85.9
926	1.9	85.1
928	2.1	85.5
Average	-	84.9

Radiation Patterns





Mechanical Specifications



Features

- Frequency Range: 902~928MHz
- Quite good VSWR
- Max Gain: 2.3dBi
- High efficiency
- Vertically polari



Specifications

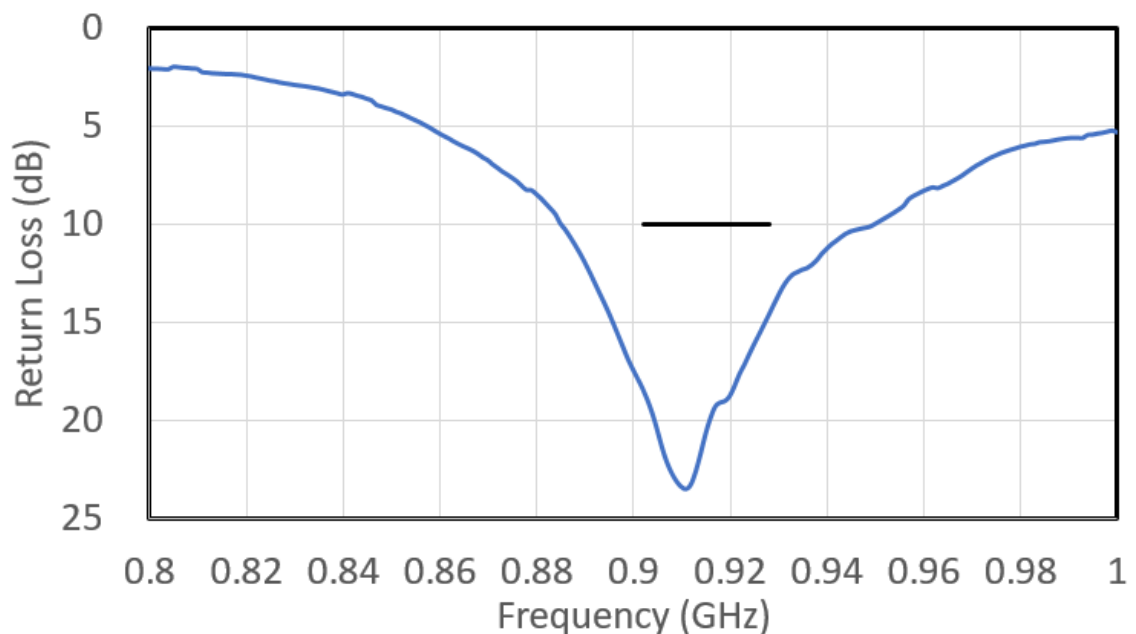
Model		KRAKBJ2701C01C
Electrical Specifications	Frequency Range	902MHz~928MHz
	Peak Gain	2.3 dBi
	VSWR	≤ 1.5
	Efficiency	>80%
	Feed Impedance	50 Ohms
	Polarization	Vertical



Mechanical Specifications	Cover material(color)	Plastic(Black)
	Interface	RPSMA
	Dimensions (mm)	Φ13.0mm x 198.0mm
	Operation Temp (°C)	-30°C ~ +75°C
	Humidity range	5%~95%

S11&VSWR

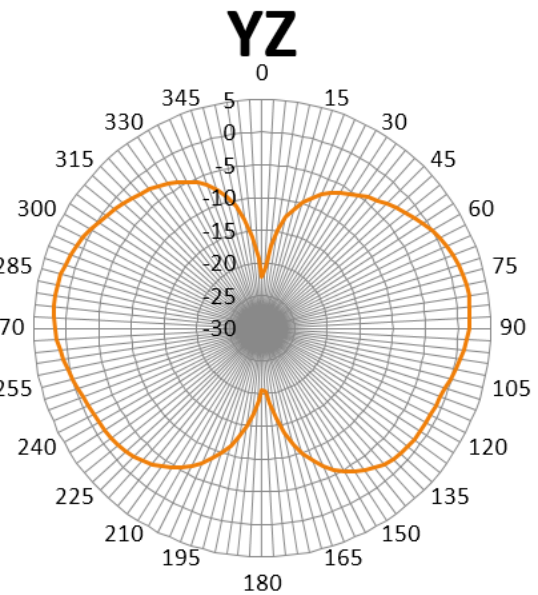
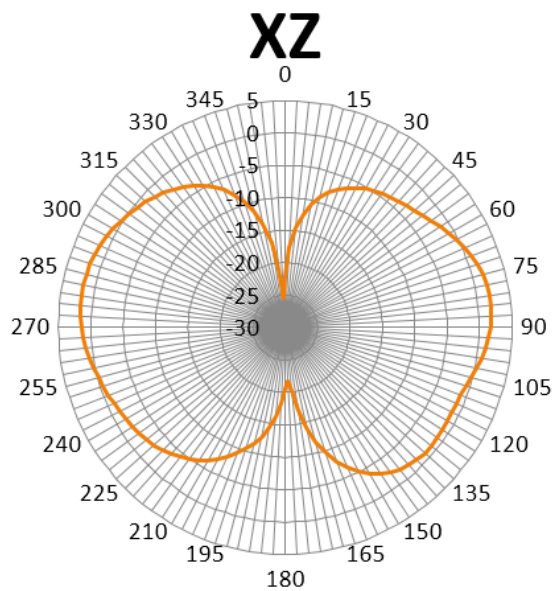
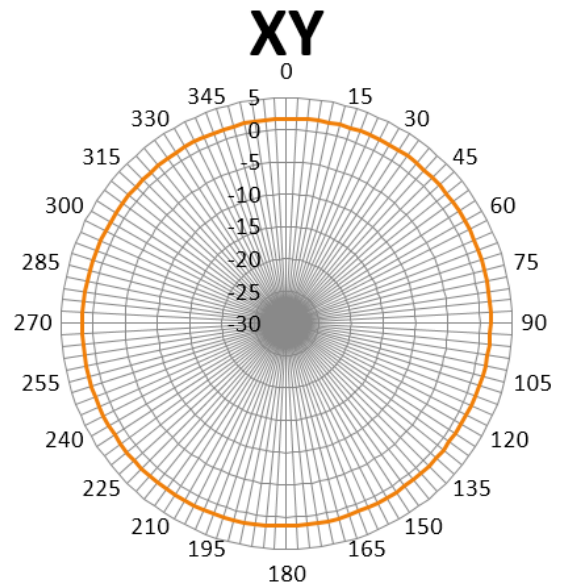
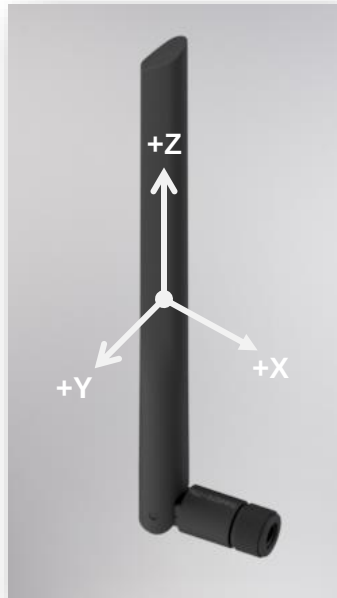
Frequency(MHz)	S11	VSWR
902MHz	-18.3	1.28
928MHz	-14.6	1.46



Peak Gain & Efficiency

Frequency(MHz)	Peak Gain (dBi)	Efficiency (%)
902	2.3	82.6
904	2.2	82.3
906	2.2	82.7
908	2.3	84.0
910	2.3	85.0
912	2.3	85.7
914	2.3	86.0
916	2.2	86.1
918	2.2	85.9
920	2.2	86.0
922	2.2	86.4
924	1.9	85.9
926	1.9	85.1
928	2.1	85.5
Average	-	84.9

Radiation Patterns





Mechanical Specifications

