

W-1RA3

2.4G/5.8G WIFI Antenna

CELLULAR

WIFI

The W-1RA3 is an ultraband antenna for 2.4G/5.8G WIFI frequencies. It operates in 2400-2500 MHz and 5100-5850 MHz. It's a compact and durable external antenna with a wide band and high efficiency. It is mainly use in Wireless Router to Enlarge the wireless network signal.

The W-1RA3 attaches with an SMA connector, 2.5MM diameter PVC wire, with internal high transmission oxygen free copper core wire, signal transmission is fast and stable, strong and durable.



18 x46.5 mm

Document Information

Product	W-1RA3
Part Number	W-1RA3
Description	2.4G/5.8G WIFI Antenna
Version	2.0 (current)
Date	14-Sep-2023
Status	Released

Revision History

Version	Date	Author	Changes
1.0	16-Dec-2020	Amy Li	Initial Release
2.0	14-Sep-2023	Ivy Liao	New layout and design

Product Overview

Product Description

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Key Features

- Operates in 2400-2500 MHz and 5100-5850 MHz
- Dual band antenna
- Vertical polarization
- High gain of 5 dBi
- VSWR 1.3
- Omni-directional pattern

Applications

- Wifi radios
- Gateways
- Set-Top Boxes
- Security
- IoT
- M2M

Electrical Specifications

Frequency				VSWR	Peak Gain	Efficiency
2.4G WiFi	2400	2500	MHz	1.2	5 d Bi	60%
5G WiFi	5100	5850	MHz	1.8		

Frequency Range	2400 – 2500/5100-5850 MHz	Azimuth	Omnidirectional
Impedance	50 Ω	Power Handling Capacity	50W
Polarization	Vertical	Lighting Protection	Direct Current earth

Mechanical Specifications

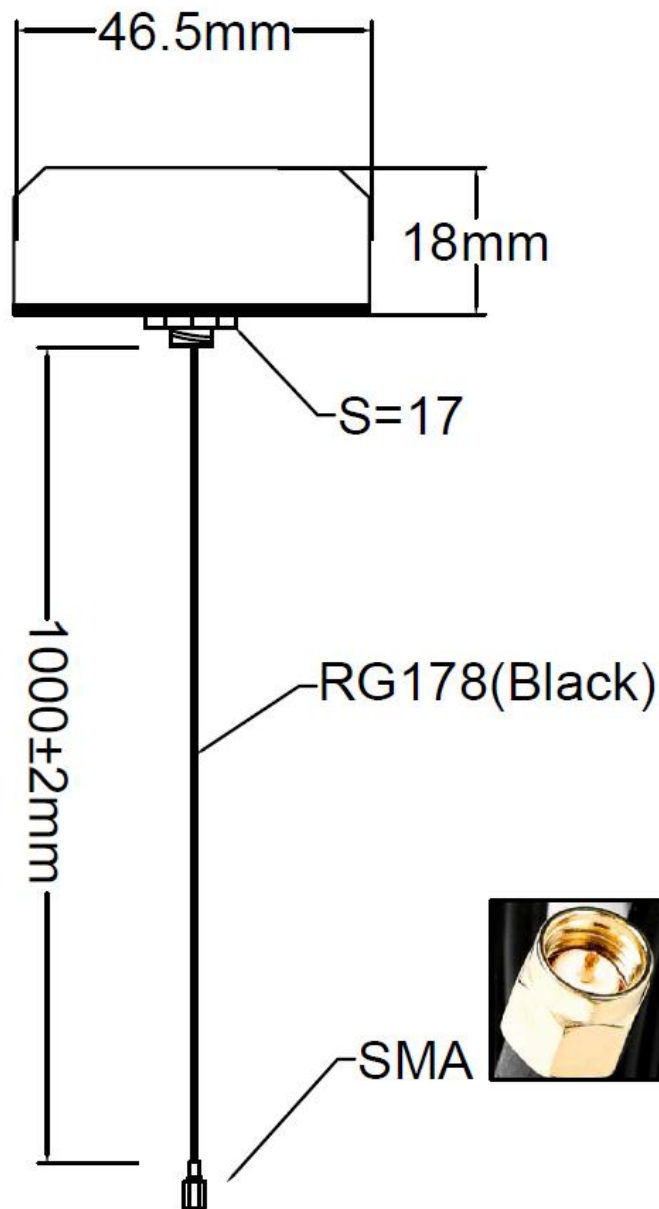
Cable Type	RG-178(1M)	Enclosure	TPE
Dimensions	172 × 13 mm	Color	Black
Connector (Termination)	SMA	Material	PBT + PC
Radiator	Cuprum		

Caution:

1. Do not apply excess mechanical stress to the component body or terminations. Do not attempt to re-form or bend the components, as this will cause damage to the component.
2. Do not expose the component to an open flame.
3. This specification applies to the functionality of the component as a single unit. Please ensure the component is thoroughly evaluated in the application circuit.

Product Image and Dimensions





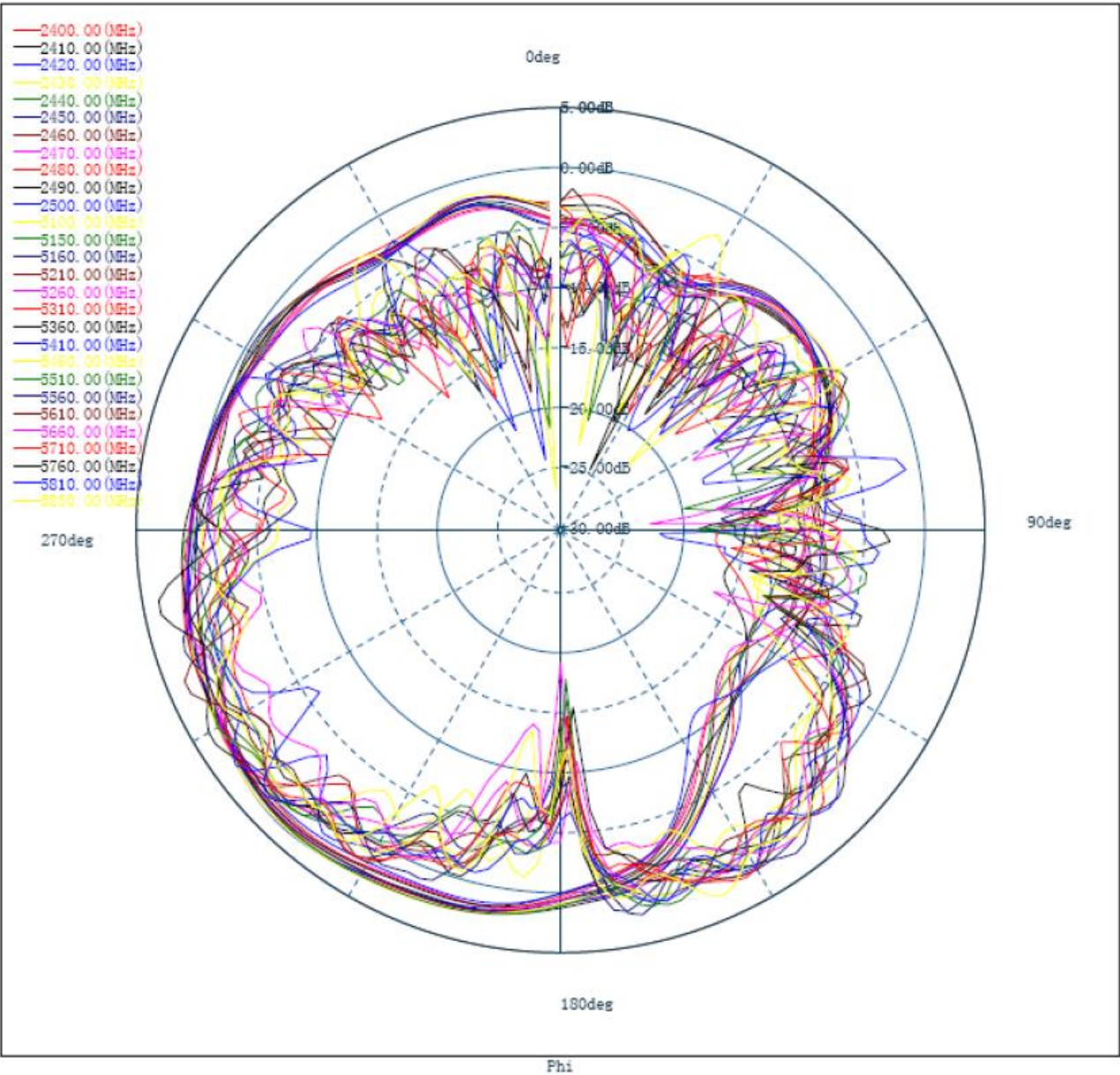
Radiation Pattern

A radiation pattern is a graphical representation of the directional properties of an antenna. It shows how electromagnetic waves are distributed in space in relation to the direction of propagation.

By understanding the information provided by a radiation pattern, it is possible to optimize the design and performance of an antenna for specific applications.

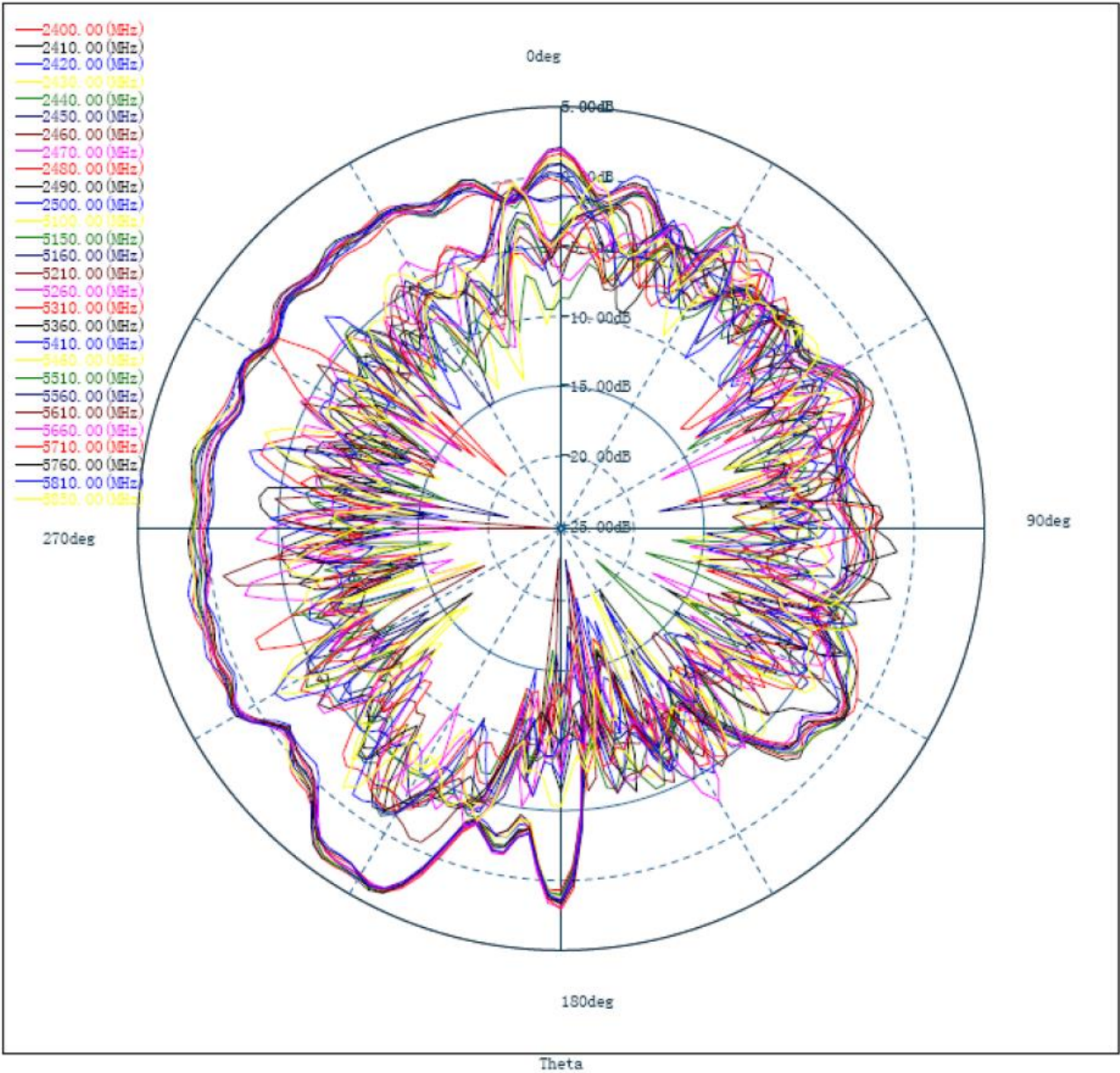
XY Plane (H)

2400 – 5850 MHz



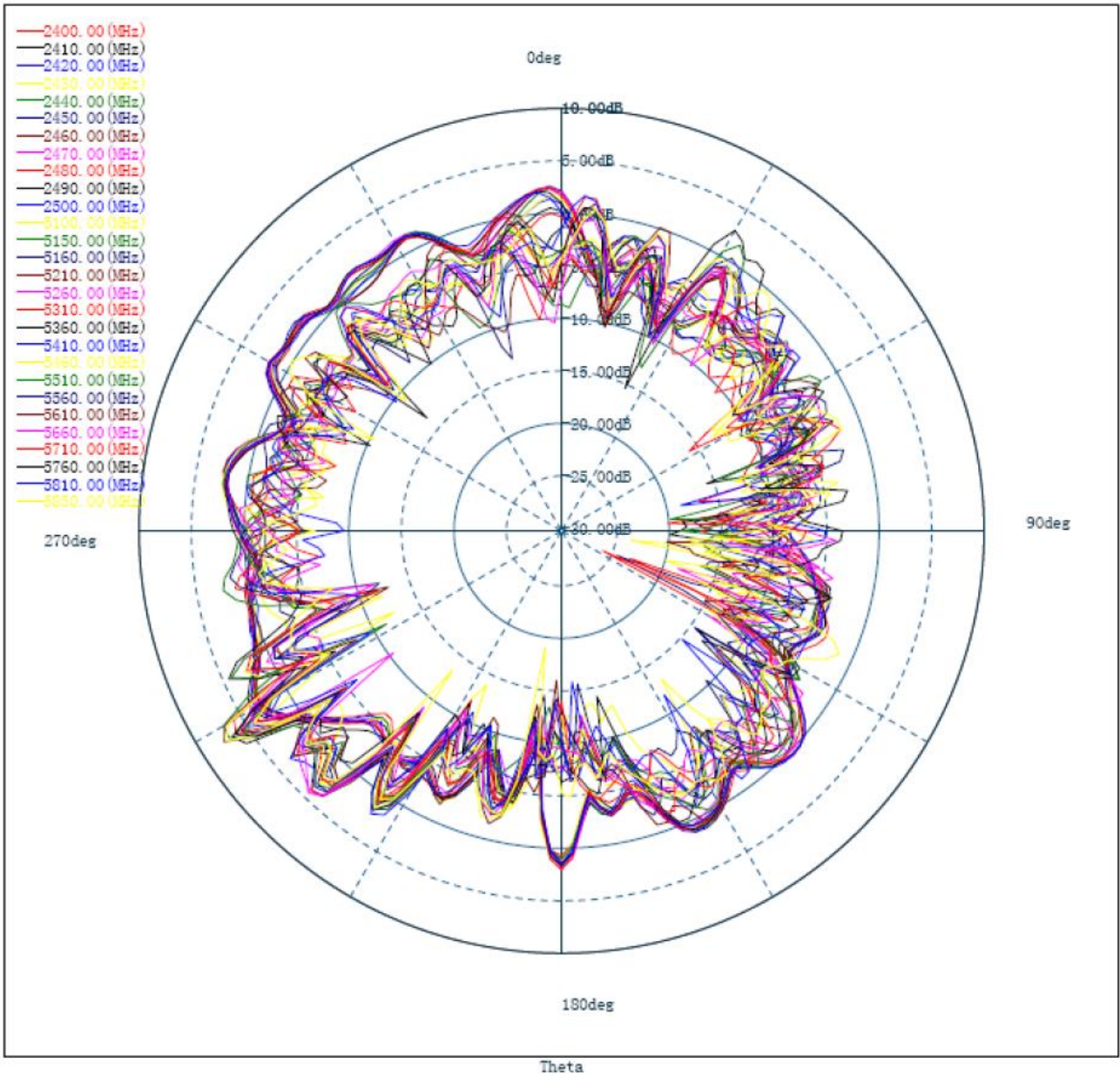
YZ Plane (E1)

2400 – 5850 MHz



YZ Plane (E2)

2400 – 5850 MHz



Antenna Smith and VSWR

Frequency		VSWR
2400	MHz	1.2
2500	MHz	1.2

Frequency		VSWR
5100	MHz	1.4
5700	MHz	1.8

Antenna Efficiency and Gain

Frequency		Efficiency	Gain
2400	MHz	0.64	4.179387
2410	MHz	0.65	4.23549
2420	MHz	0.66	4.203856
2430	MHz	0.67	4.416081
2440	MHz	0.67	4.281232
2450	MHz	0.66	4.210731
2460	MHz	0.66	4.423337
2470	MHz	0.66	4.632001
2480	MHz	0.66	4.265686
2490	MHz	0.67	4.430046
2500	MHz	0.66	4.258506
5100	MHz	0.53	4.065487
5150	MHz	0.59	5.838038

Frequency		Efficiency	Gain
5210	MHz	0.51	5.047396
5260	MHz	0.56	5.292868
5310	MHz	0.58	5.3598
5360	MHz	0.56	5.187105
5410	MHz	0.61	6.113821
5510	MHz	0.60	5.367092
5560	MHz	0.57	5.42973
5610	MHz	0.61	5.043188
5660	MHz	0.56	5.429487
5710	MHz	0.60	4.962898
5760	MHz	0.63	5.232216
5810	MHz	0.58	4.939093
5850	MHz	0.61	4.457408

Environmental Data

Operating Temperature -40 °C to +85 °C

IP Rating IP66

Compliance RoHS

Ordering Information

Product Variants

Part Number	Description
W-1RA3	2.4G/5.8G WIFI Antenna

About MIOT

Miot Wireless Solutions, headquartered in Suzhou, China, was established in 2017. It has subsidiaries in Canada, the United States, Brazil, and EMEA. MIOT is a professional designer and manufacturer of Antennas and IoT PCBA products, providing turn-key service to customers worldwide.

Our talented R&D team has experienced antenna, hardware, and software engineers who can participate in your new project, from something simple like antenna/selection and design, to complete turn-key services, which entails taking your concept and ideas through design, prototyping, debugging, certification, and manufacturing. Miot offers reliable products at reasonable prices with fast delivery times to help you get ahead in the market.

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