

L-1RA7

4G/Wi-Fi Multiband Hinged-Whip Antenna

CELLULAR

Wi-Fi

The L-1RA7 is a connector mount antenna supporting 4G, 3G, 2G cellular, and 2.4G Wi-Fi networks, which operates within a frequency range of 690 to 2690 MHz.

With its wide frequency range, the L-1RA7 antenna is compatible with various cellular networks used for voice and data communication. It can be used in applications such as wireless communication systems, IoT devices, mobile routers, and other wireless devices that require reliable cellular connectivity.



115 x Ø 11 mm

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Document Information

Product	L-1RA7
Part Number	L-1RA7
Description	4G/Wi-Fi Multiband Hinged-Whip Antenna
Version	2.0 (current)
Date	4-Jul-2023
Status	Released

Revision History

Version	Date	Author	Changes
1.0	16-Dec-2020	Amy Li	Initial Release
2.0	4-Jul-2023	Ivy Liao	New layout and design

Product Overview

Product Description

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Key Features

- Support GSM / LTE / 2.4G WIFI
- Small and exquisite
- High Reliability/Sensitivity
- Compact Size, Easy to install
- IP Rating 66
- RoHS Compliant

Applications

- LTE / WIFI radios
- Gateways
- Set-Top Boxes
- Security
- Transportation
- Smart agriculture

Electrical Specifications

Frequency			VSWR	Peak Gain	Efficiency
LTE	690 - 960	MHz	1.7	3.4 d Bi	52%
LTE	1710 - 2170	MHz	1.8	3.5 d Bi	61%
LTE/Wi-Fi	2400 - 2690	MHz	2.5	5.2 d Bi	55%

Frequency Range 690 – 2690 MHz

Impedance 50 Ω

Polarization Linear

Radiation Omnidirectional

Electrical Type Monopole

Mechanical Specifications

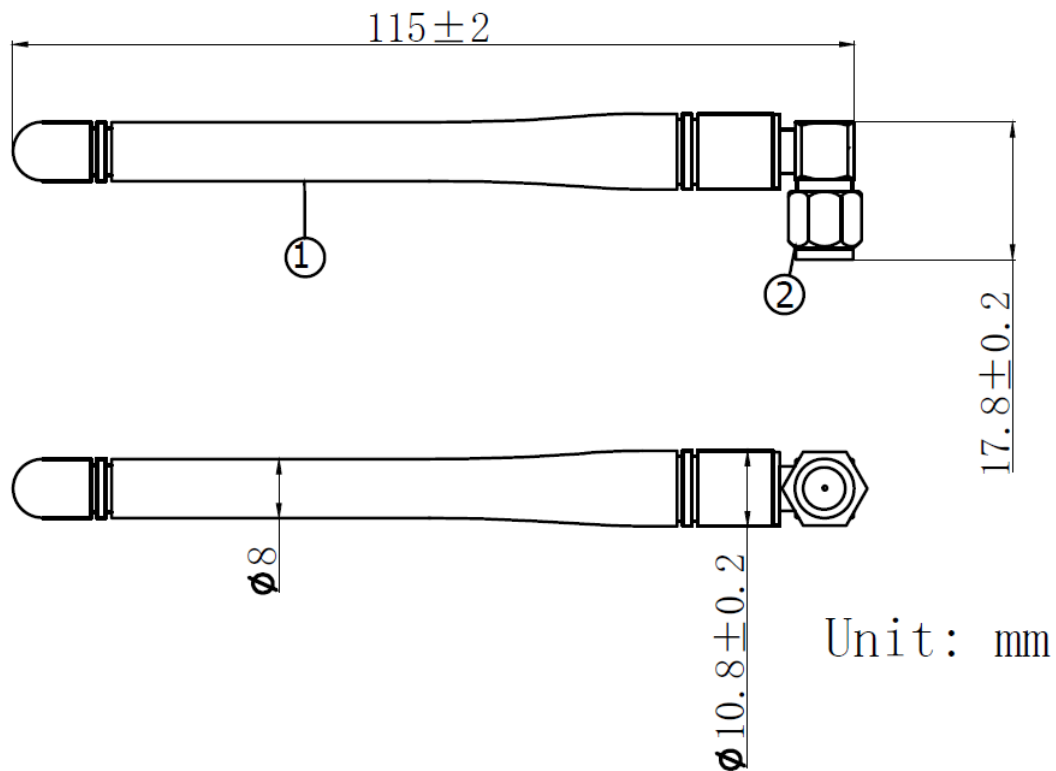
Type	Hinge Whip	Casing	Yes
Dimensions	115 x Ø 11 mm	Color	Black
Mounting Type	Connector Mount	Material	PC + ABS
Connector	90° SMA male		

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





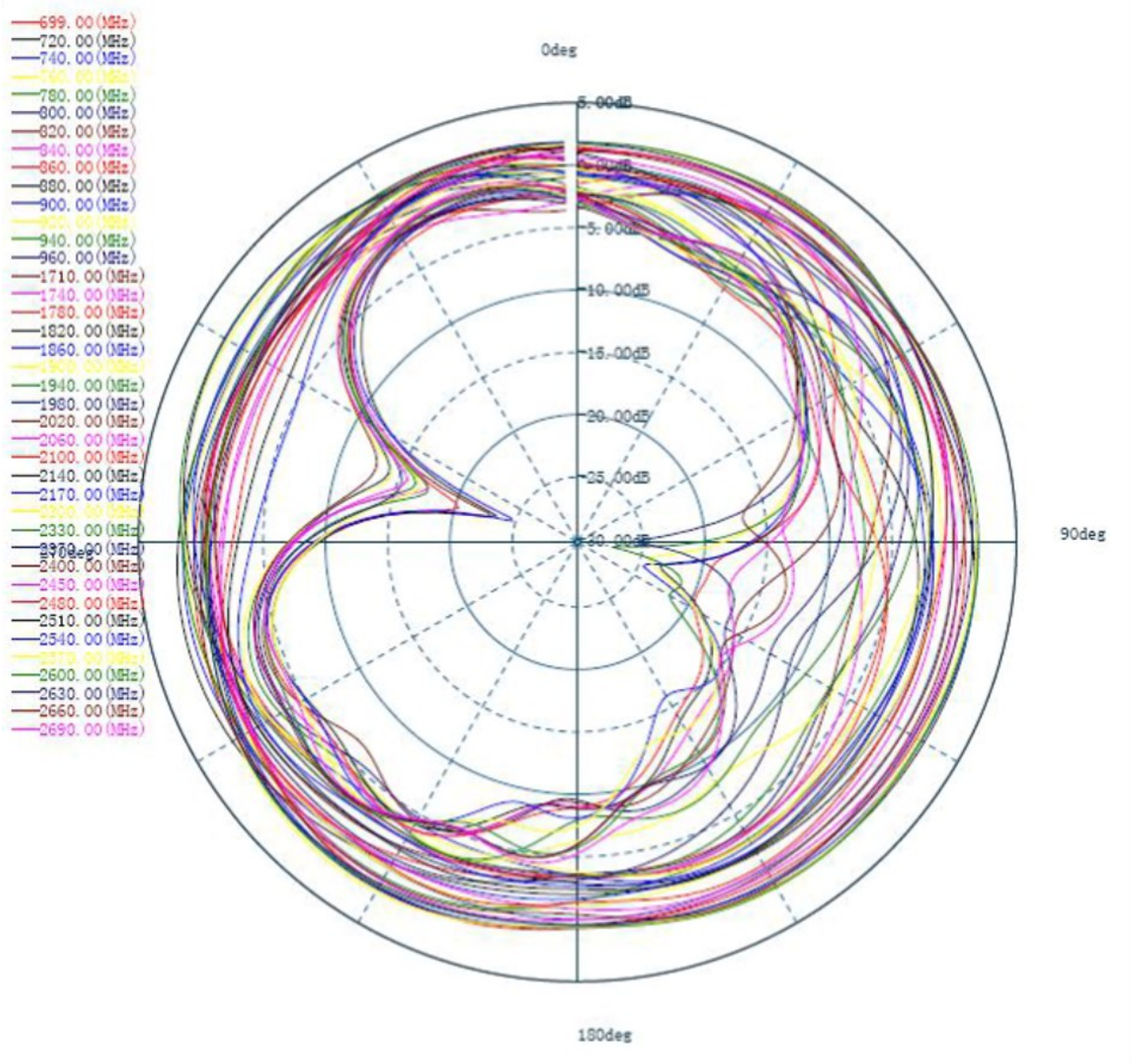
Radiation Pattern

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.

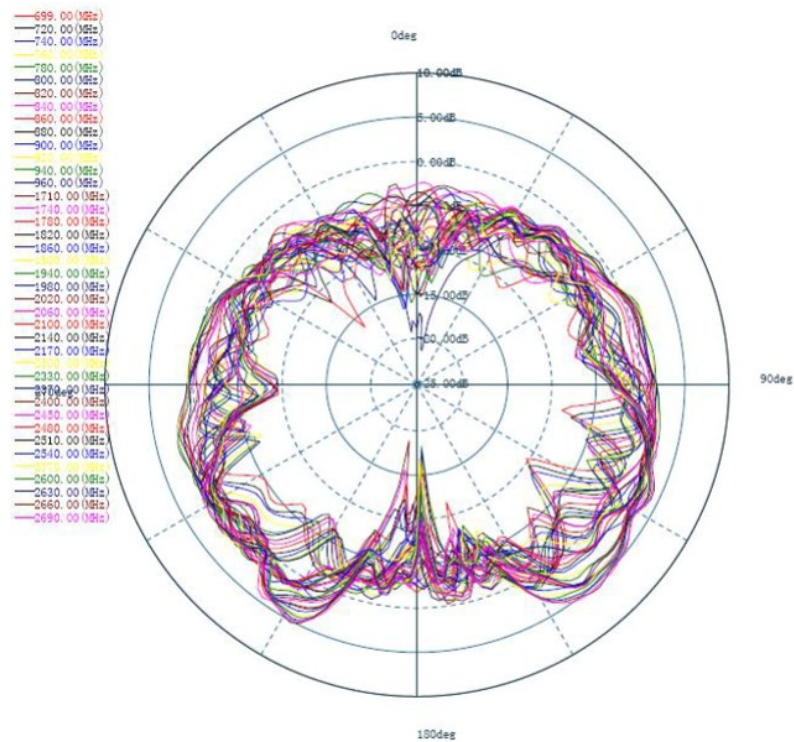
XY Plane (H)

690 – 2690 MHz



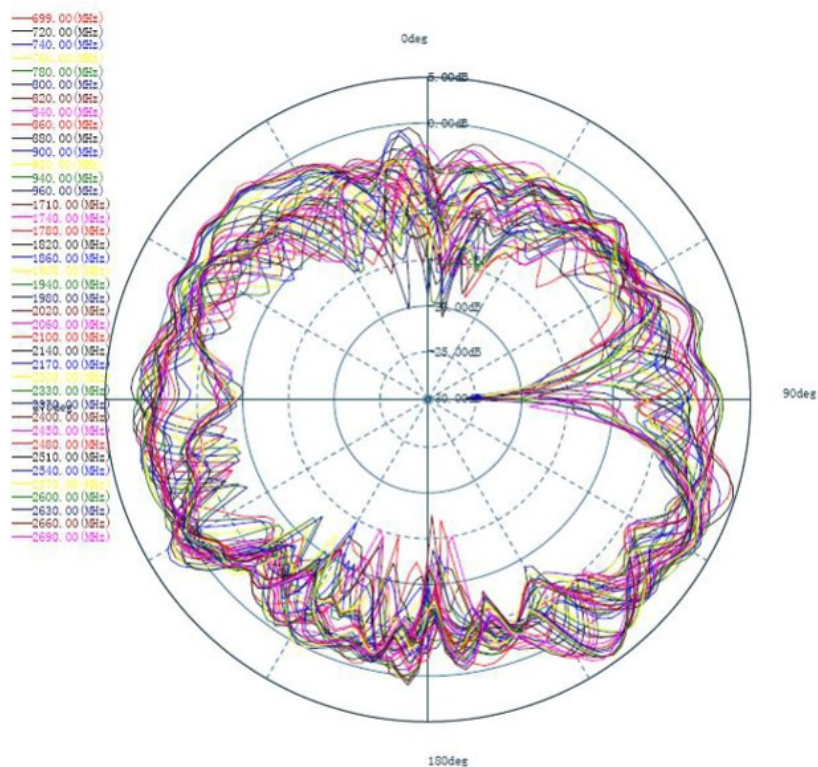
YZ Plane (E1)

690 – 2690 MHz



YZ Plane (E2)

690 – 2690 MHz

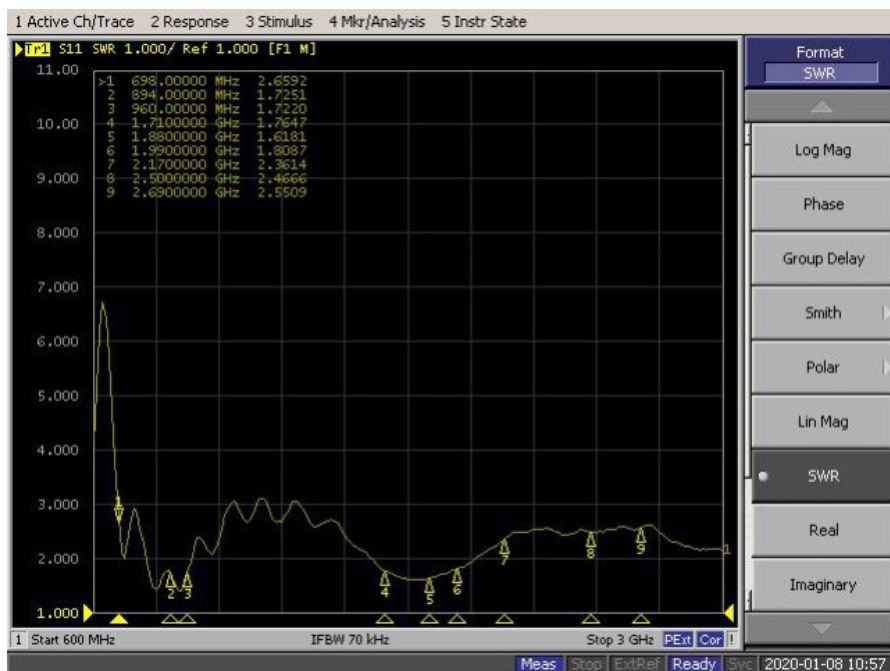
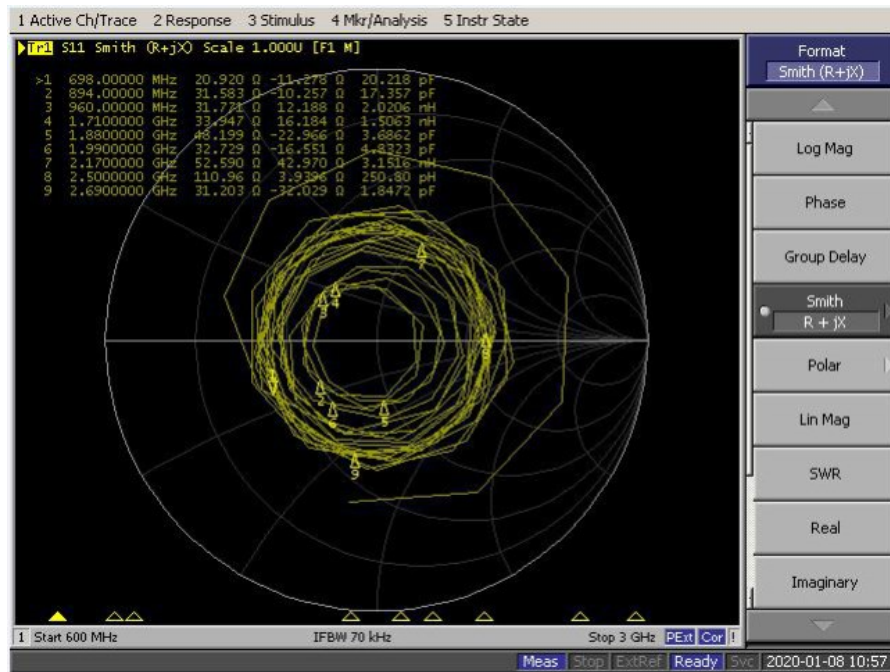


Antenna Smith and VSWR



Frequency	VSWR
698 MHz	2.7
894 MHz	1.7
960 MHz	1.7
1710 MHz	1.8

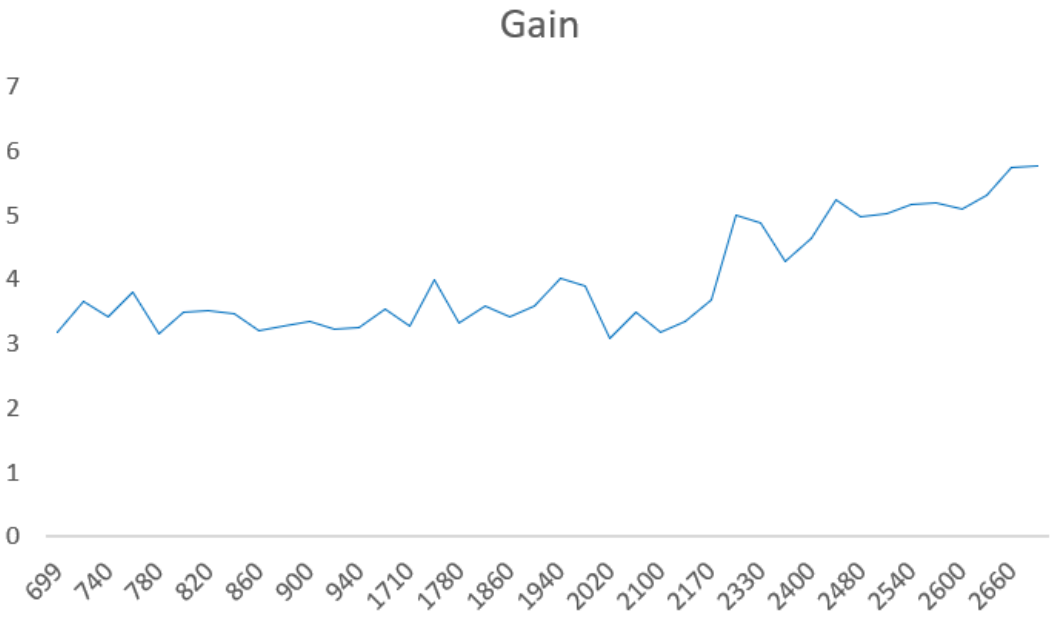
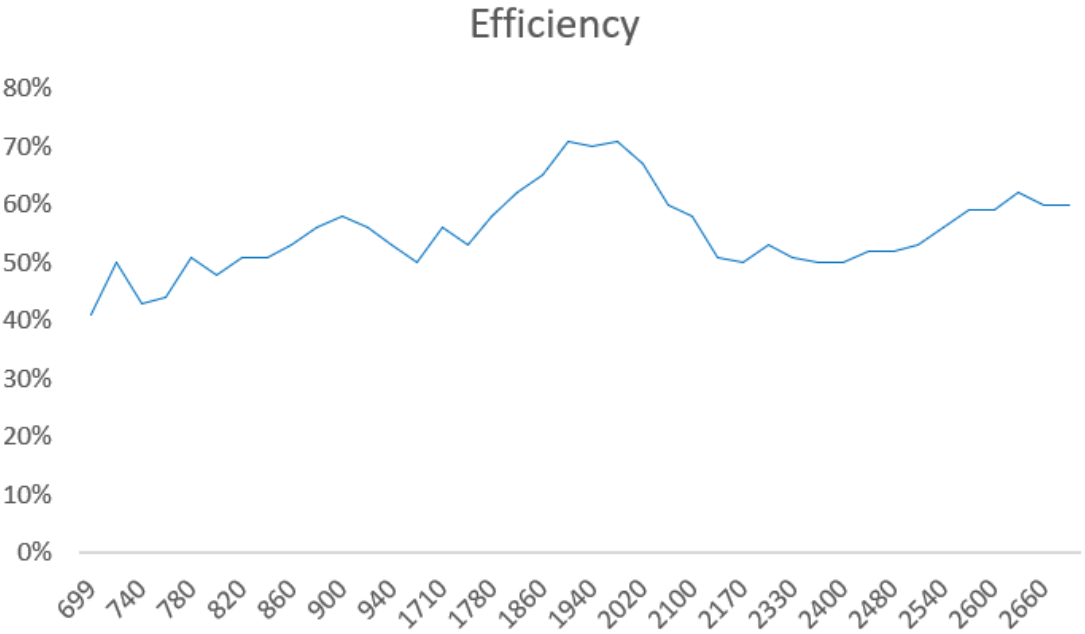
Frequency	VSWR
1880 MHz	1.6
2170 MHz	2.3
2400 MHz	2.4
2690 MHz	2.5



Antenna Efficiency and Gain

Frequency		Efficiency	Gain
699	MHz	41%	3.187268
720	MHz	50%	3.653499
740	MHz	43%	3.428539
760	MHz	44%	3.807145
780	MHz	51%	3.156396
800	MHz	48%	3.500001
820	MHz	51%	3.524059
840	MHz	51%	3.473653
860	MHz	53%	3.200639
880	MHz	56%	3.277643
900	MHz	58%	3.353002
920	MHz	56%	3.233816
940	MHz	53%	3.246641
960	MHz	50%	3.542606
1710	MHz	56%	3.281347
1740	MHz	53%	3.998074
1780	MHz	58%	3.316948
1820	MHz	62%	3.598512
1860	MHz	65%	3.426071
1900	MHz	71%	3.577335

Frequency		Efficiency	Gain
1940	MHz	70%	4.016176
1980	MHz	71%	3.906667
2020	MHz	67%	3.091654
2060	MHz	60%	3.483115
2100	MHz	58%	3.177725
2140	MHz	51%	3.360463
2170	MHz	50%	3.688802
2300	MHz	53%	4.992819
2330	MHz	51%	4.871623
2370	MHz	50%	4.291939
2400	MHz	50%	4.639098
2450	MHz	52%	5.242113
2480	MHz	52%	4.980145
2510	MHz	53%	5.025075
2540	MHz	56%	5.17465
2570	MHz	59%	5.190761
2600	MHz	59%	5.101402
2630	MHz	62%	5.3255
2660	MHz	60%	5.754507
2690	MHz	60%	5.771837



Environmental Data

Operating Temperature -20 °C to +80 °C

Compliance RoHS

Ordering Information

Product Variants

Part Number	Description
L-1RA3	4G/Wi-Fi Multiband Hinged-Blade Antenna (194 x 13 mm)
L-1RA6	4G/Wi-Fi Multiband Hinged-Whip Antenna (208 x 14 mm)
L-1RA7	4G/Wi-Fi Multiband Hinged-Whip Antenna (115 x 11 mm)
L-1RA8	4G/Wi-Fi Multiband Hinged-Blade Antenna (154 x 13 mm)
L-1RA9	4G/Wi-Fi Multiband Sucker Antenna (176 x 30 mm)
L-1RA10	4G Multiband Fixed-Whip Antenna (115 x 10 mm)

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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