Datasheet

L-1RA6

Multiband 2G 3G 4G LTE /2.4G WIFI Antenna

CELLULAR WIFI

The L-1RA6 is an Multiband 2G 3G 4G LTE /2.4G WIFI Antenna. It's a compact and durable external antenna with a wide band and high efficiency.

The L-1RA6 allows the antenna to be positioned for optimum performance compared to a fixed whip design. The antenna attaches with an SMA connector.

208 x 14 mm

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Document Information

Product	L-1RA6
Part Number	L-1RA6
Description	Multiband 2G 3G 4G LTE /2.4G WIFI Antenna
Version	2.0 (current)
Date	26-Jul-2023
Status	Released

Revision History

Version	Date	Author	Changes
1.0	16-Dec-2020	Amy Li	Initial Release
2.0	26-Jul-2023	Ivy Liao	New layout and design

Product Overview

Product Description

The L-1RA6 is an Multiband 2G 3G 4G LTE /2.4G WIFI Antenna, and WCDMA that can also cover Wi-Fi frequencies. It's a compact and durable external antenna with an ultra-wide range and high efficiency. It's an ideal solution for cellular IoT applications requiring a durable and cost-effective external antenna.

The hinged swivel design allows the antenna to be positioned for optimum performance and reduces the potential for damage from impact compared to a fixed blade design. The antenna attaches with an SMA plug (male pin) connector.

Key Features

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

Applications

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

Electrical Specifications

Frequency				VSWR	Peak Gain	Efficiency
4G/LTE	824 - 960		MHz	2.2	0.2 d Bi	55%
4G/LTE	1710 - 2170		MHz	1.9	2.2 d Bi	65%
4G/LTE	2500	2690	MHz	4.5	0 d Bi	53%
2.4G WiFi	2400	2500	MHz	3.6	-0.2 d Bi	57%

Frequency Range	824 – 2690 MHz	Radiation	Omnidirectional
Impedance	50 Ω	Electrical Type	Monopole
Polarization	Vertical		

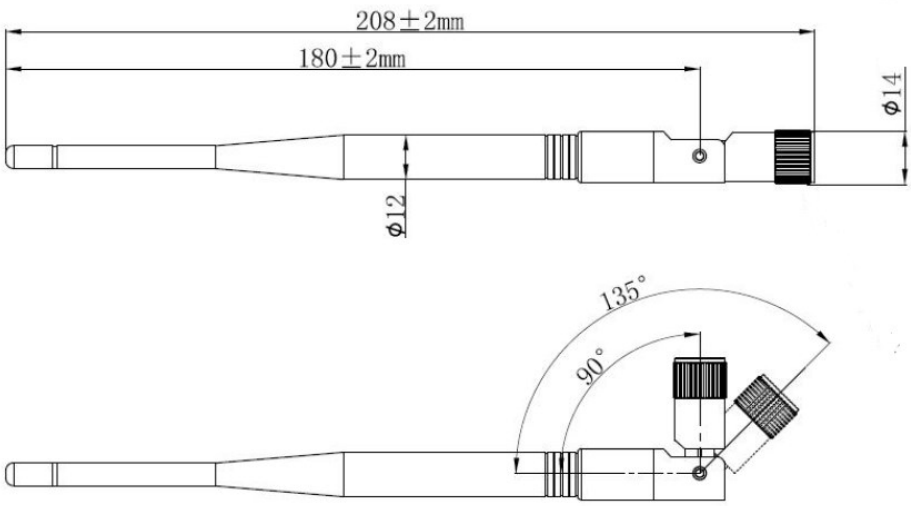
Mechanical Specifications

Type	Hinge / Swivel Blade Type	Casing	Yes
Dimensions	208 x 14 mm	Color	Black
Connector (Termination)	SMA Male	Material	PC + ABS
Mounting Type	Connector Mount	Weight	TBC (to be confirmed)

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.

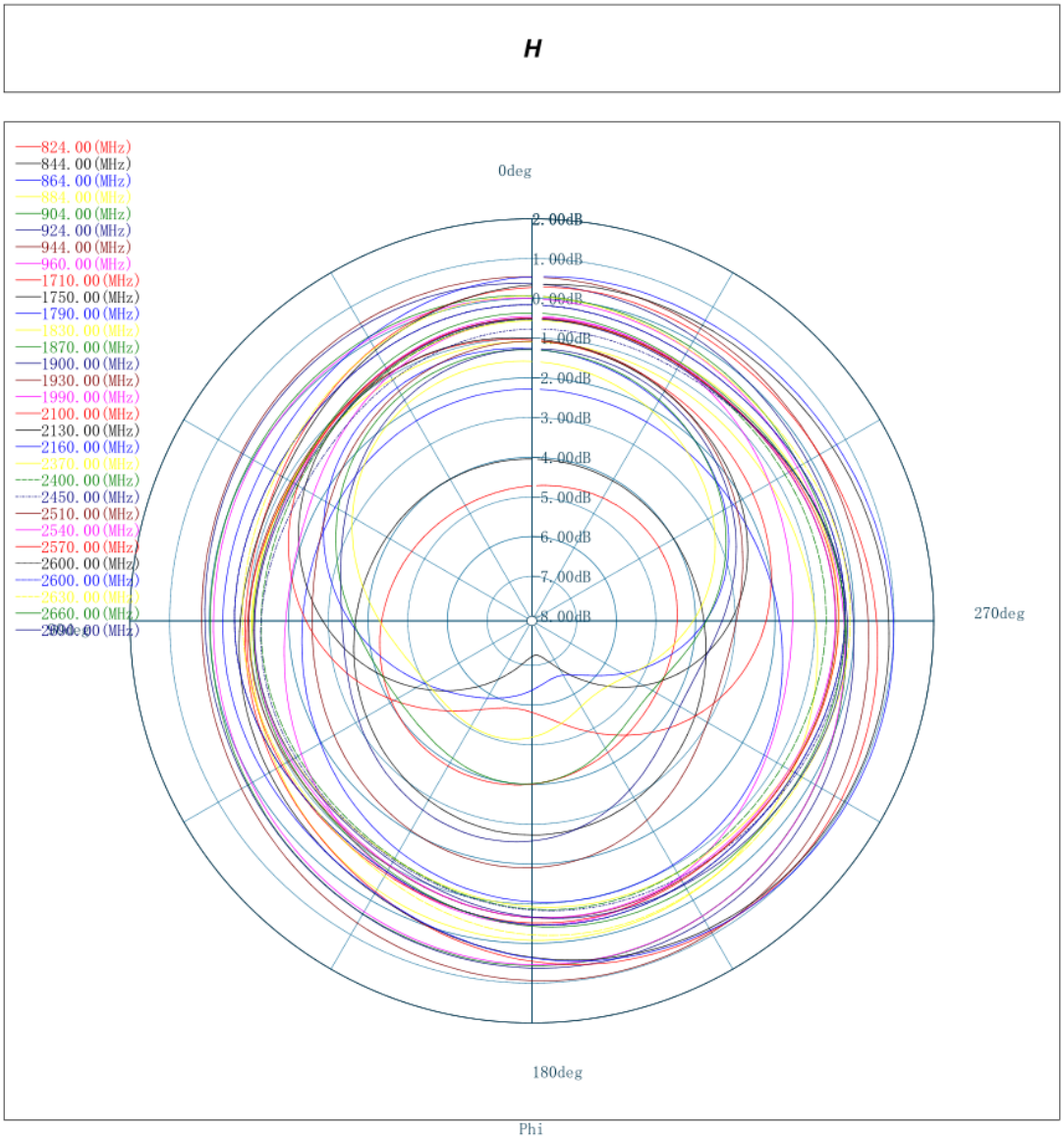
Product Image and Dimensions



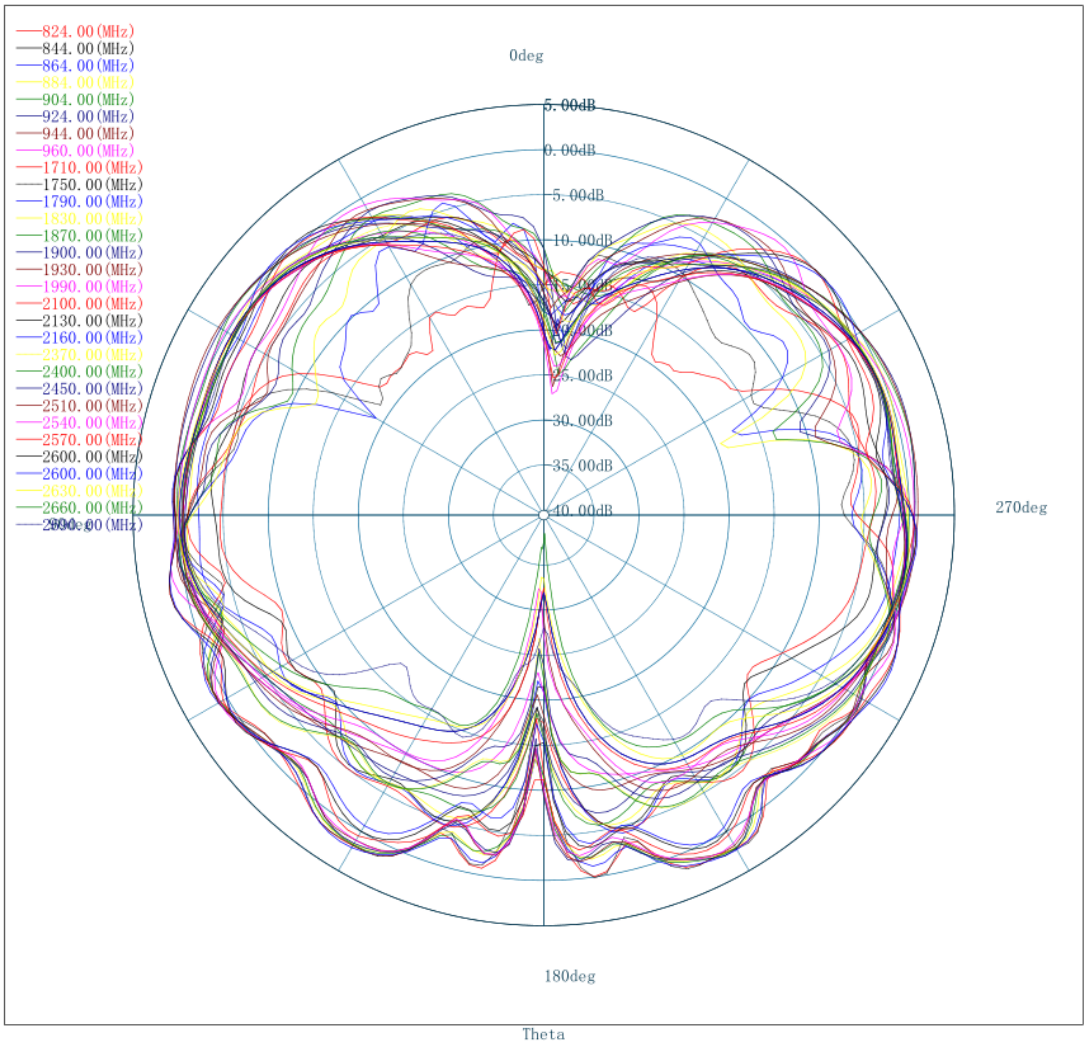
Radiation Pattern

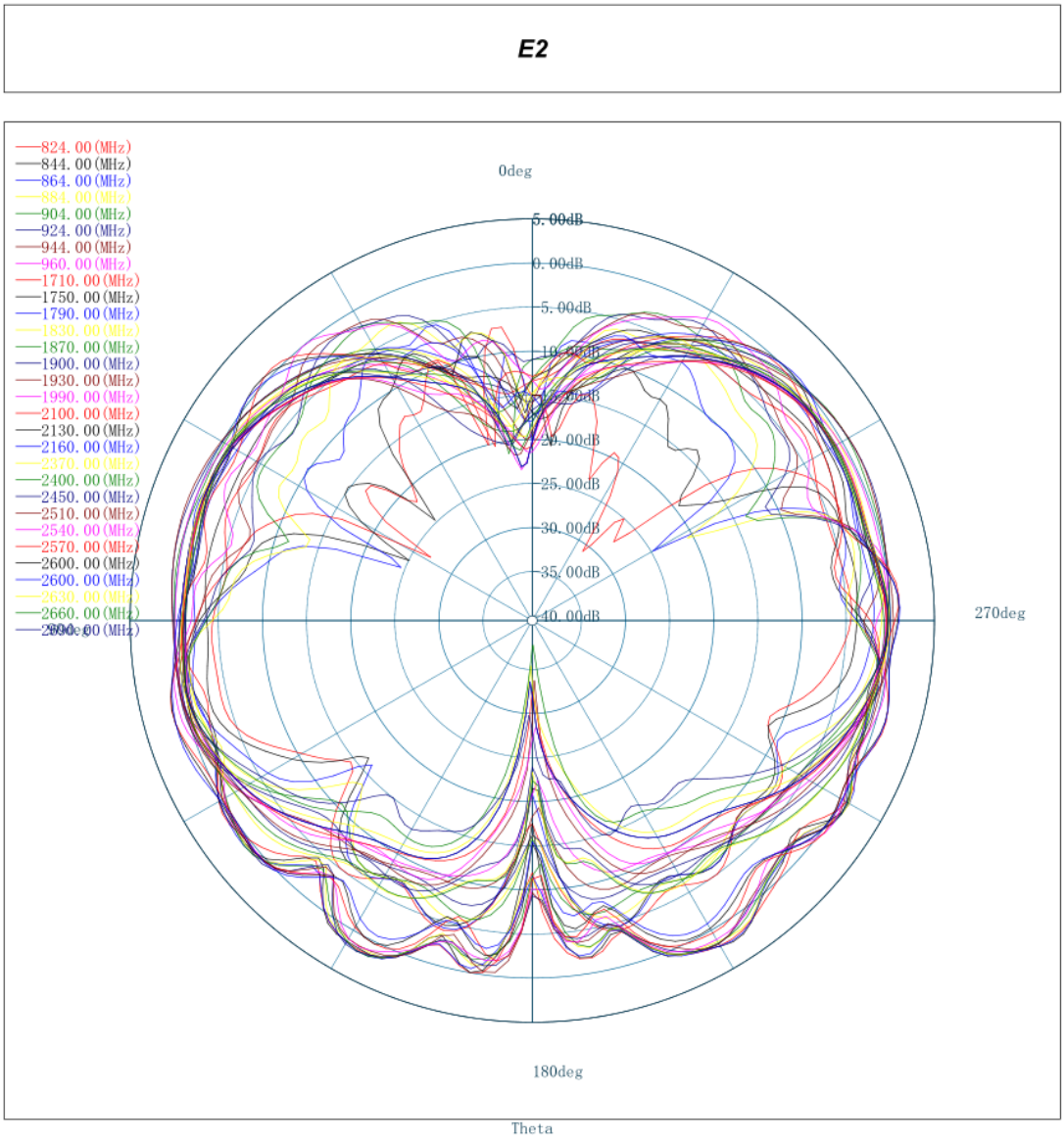
A radiation pattern is a graphical representation of the directional properties of an antenna. It shows how electromagnetic waves are distributed in space in relation to the direction of propagation.

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



E1


824.00(MHz)
844.00(MHz)
864.00(MHz)
884.00(MHz)
904.00(MHz)
924.00(MHz)
944.00(MHz)
960.00(MHz)
1710.00(MHz)
1750.00(MHz)
1790.00(MHz)
1830.00(MHz)
1870.00(MHz)
1900.00(MHz)
1930.00(MHz)
1990.00(MHz)
2100.00(MHz)
2130.00(MHz)
2160.00(MHz)
2370.00(MHz)
2400.00(MHz)
2450.00(MHz)
2510.00(MHz)
2540.00(MHz)
2570.00(MHz)
2600.00(MHz)
2600.00(MHz)
2630.00(MHz)
2660.00(MHz)
0deg
5.00dB
0.00dB
5.00dB
10.00dB
25.00dB
30.00dB
35.00dB
270deg
180deg
Theta



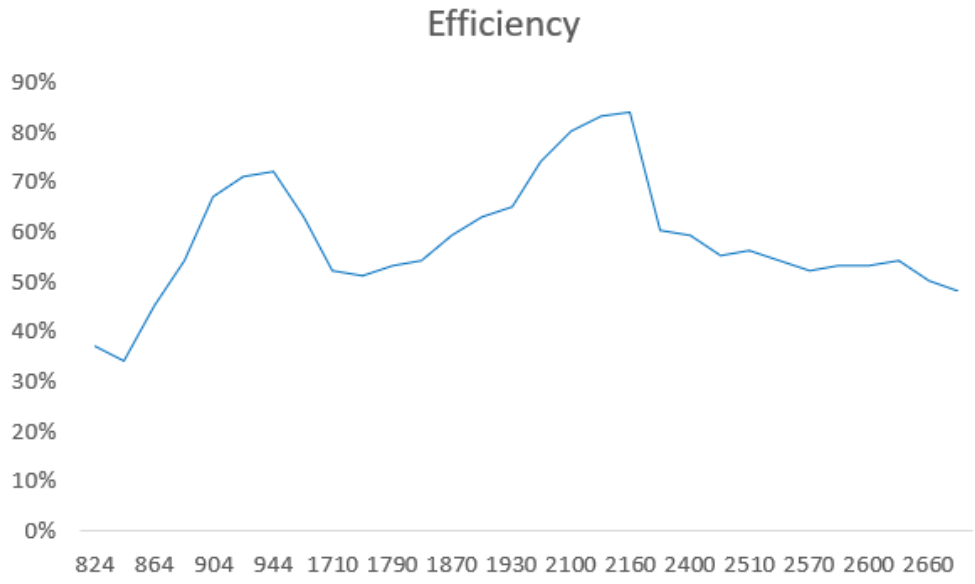
Antenna Efficiency and Gain

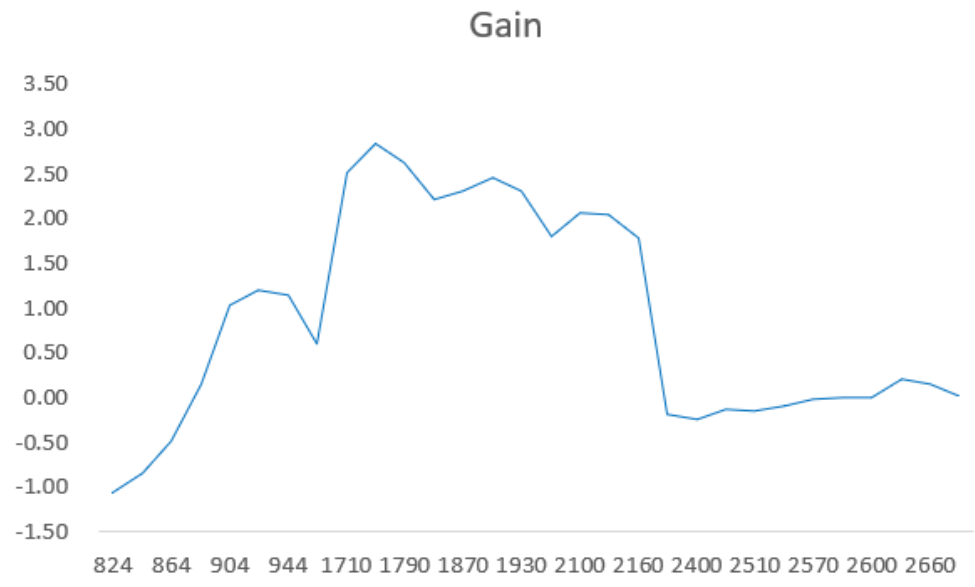
Frequency		Efficiency	Gain
824	MHz	37%	-1.06475
844	MHz	34%	-0.8534
864	MHz	45%	-0.50535
884	MHz	54%	0.130676
904	MHz	67%	1.012312
924	MHz	71%	1.19102
944	MHz	72%	1.138027

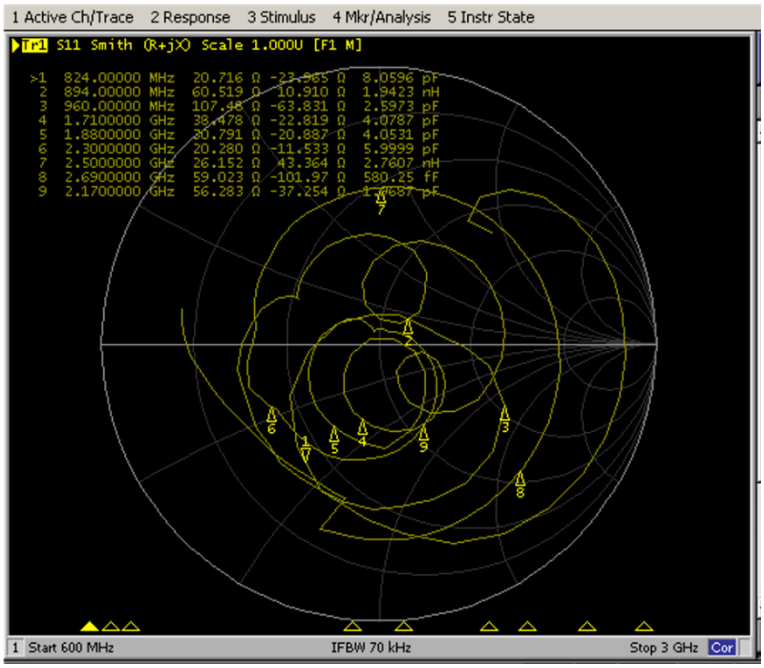
Frequency		Efficiency	Gain
1990	MHz	74%	1.778423
2100	MHz	80%	2.04468
2130	MHz	83%	2.031783
2160	MHz	84%	1.776229
2370	MHz	60%	-0.19573
2400	MHz	59%	-0.26156
2450	MHz	55%	-0.14844

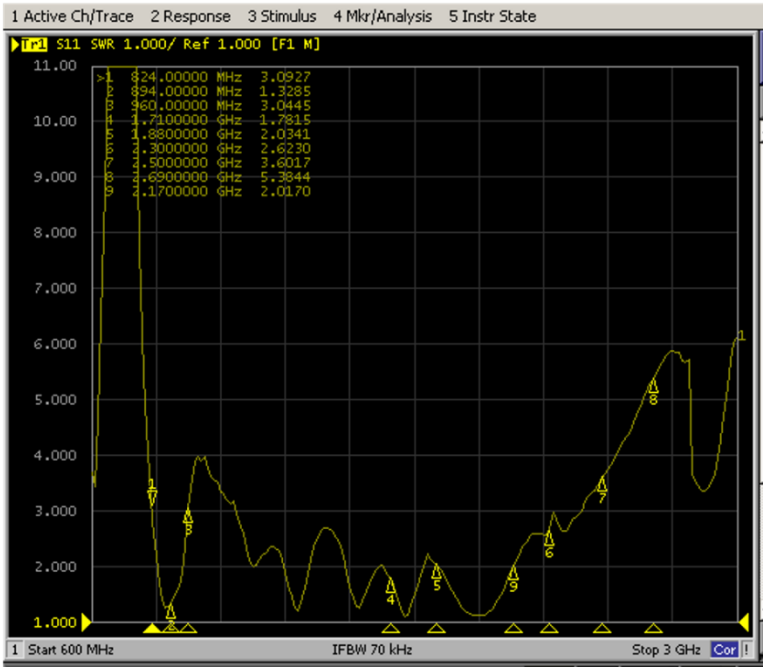
960	MHz	63%	0.596109
1710	MHz	52%	2.497846
1750	MHz	51%	2.815747
1790	MHz	53%	2.618875
1830	MHz	54%	2.193959
1870	MHz	59%	2.290403
1900	MHz	63%	2.445543
1930	MHz	65%	2.295456

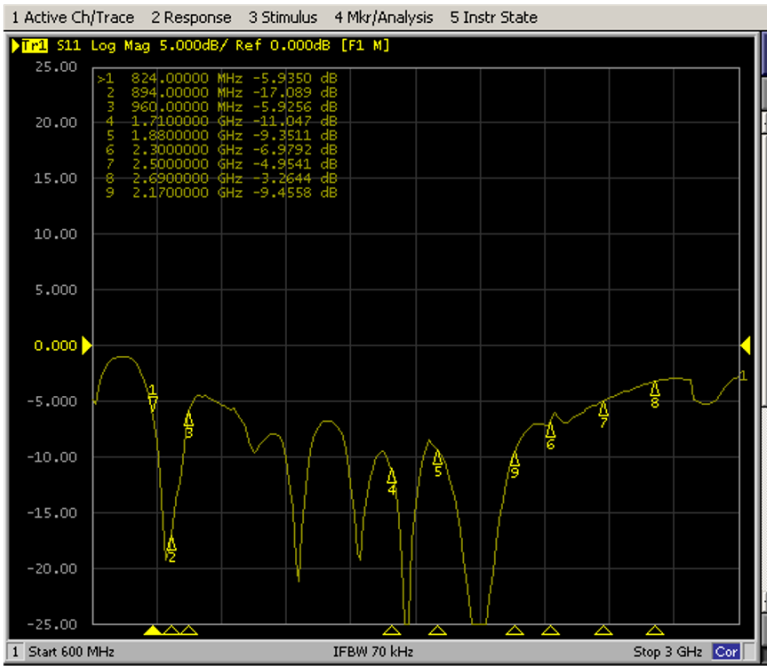
2510	MHz	56%	-0.1612
2540	MHz	54%	-0.10696
2570	MHz	52%	-0.02821
2600	MHz	53%	-0.01748
2600	MHz	53%	-0.00655
2630	MHz	54%	0.201642
2660	MHz	50%	0.136702
2690	MHz	48%	0.007074






1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 M]
>1 824.00000 MHz 20.716 Ω -23.985 Ω 8.0596 pF
2 894.00000 MHz 60.519 Ω 10.910 Ω 1.9423 nH
3 960.00000 MHz 107.48 Ω -63.831 Ω 2.5973 pF
4 1.7100000 GHz 38.478 Ω -22.819 Ω 4.0787 pF
5 1.8800000 GHz 30.791 Ω -20.887 Ω 4.0531 pF
6 2.3000000 GHz 20.280 Ω -11.533 Ω 5.9999 pF
7 2.5000000 GHz 26.152 Ω 43.364 Ω 2.7607 nH
8 2.6900000 GHz 59.023 Ω -101.97 Ω 580.25 fF
9 2.1700000 GHz 56.283 Ω -37.254 Ω 1.7687 pF
1 Start 600 MHz
IFBW 70 kHz
Stop 3 GHz
Cor


1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [F1 M]
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
>1 824.00000 MHz 3.0927
2 894.00000 MHz 1.3285
3 960.00000 MHz 3.0445
4 1.7100000 GHz 1.7815
5 1.8800000 GHz 2.0341
6 2.3000000 GHz 2.6230
7 2.5000000 GHz 3.6017
8 2.6900000 GHz 5.3844
9 2.1700000 GHz 2.0170
1 Start 600 MHz
IFBW 70 kHz
Stop 3 GHz
Cor



Environmental Data

Operating Temperature	-20 °C to +80 °C
IP Rating	IP55
Compliance	RoHS

Ordering Information

Product Variants

Part Number	Description
L-1RA6	Multiband 2G 3G 4G LTE /2.4G 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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