

L-5RA6

Wide band 5G External Antenna

CELLULAR

WIFI

The L-5RA6 is a cellular antenna for 5G, LTE, and WCDMA that can also cover Wi-Fi frequencies. It's a compact and durable external antenna with wide-band and high efficiency.

The L-5RA6 allows the antenna to be positioned for optimum performance compared to a fixed whip design. The antenna attaches with an SMA connector.



158 × 17.6 mm

Document Information

Product	L-5RA6
Part Number	L-5RA6
Description	Wide band 5G External Antenna
Version	2.0 (current)
Date	30-Mar-2023
Status	Released

Revision History

Version	Date	Author	Changes
1.0	16-Dec-2020	Amy li	Initial Release
2.0	30-Mar-2023	Amy li	New layout and design

Product Overview

Product Description

The L-5RA6 is a cellular antenna for 5G, LTE, and WCDMA that can also cover Wi-Fi frequencies. It's a compact and durable external antenna with wide-band and high efficiency. It's an ideal solution for cellular IoT applications requiring a durable and cost-effective external antenna.

The L-5RA6 allows the antenna to be positioned for optimum performance and reduces the potential for damage from impact compared to a fixed whip design. The antenna attaches with an SMA plug (male pin) connector.

Key Features

- Support the 5G / LTE / WCDMA/WIFI
- Wide Application
- High Reliability/Sensitivity
- Compact Size, Easy to install.
- RoHS Compliant

Applications

- LTE/Wi-Fi Radios
- Gateways
- Set-top Boxes.
- Security
- Transportation
- Smart Agriculture

Electrical Specifications

Frequency			VSWR	Peak Gain	Efficiency
5G/LTE	700 - 960	MHz	3.5	1.9 d Bi	40%
5G/LTE	1710 - 5850	MHz	1.8	5.7 d Bi	50%
2.4G Wi-Fi	2400 - 2500	MHz	2.6	7.6 d Bi	70%

Frequency Range	700 – 5850 MHz
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Impedance	50 Ω
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Polarization	Vertical
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Radiation	Omnidirectional
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Electrical Type	Dipole
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Mechanical Specifications

Type	Hinge / Swivel Blade Type
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Dimensions	158 x 17.6 mm
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Mounting Type	Connector Mount
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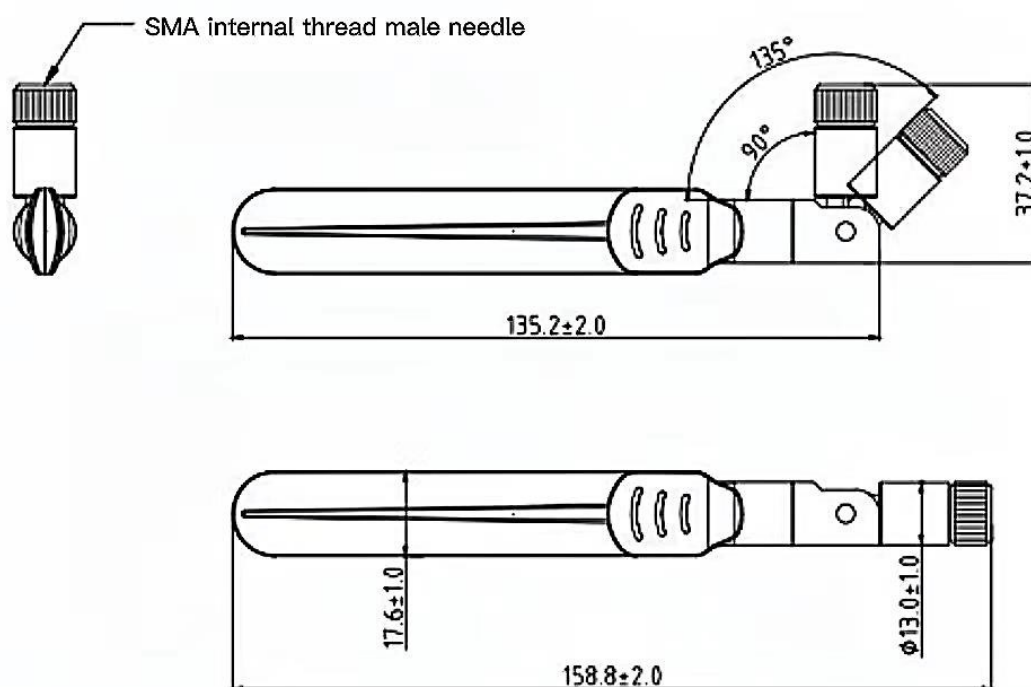
Casing	N/A
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Connector (Termination)	SMA Plug (male pin)	Color	Black
Cable type	A/N	Material	PC + ABS

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.

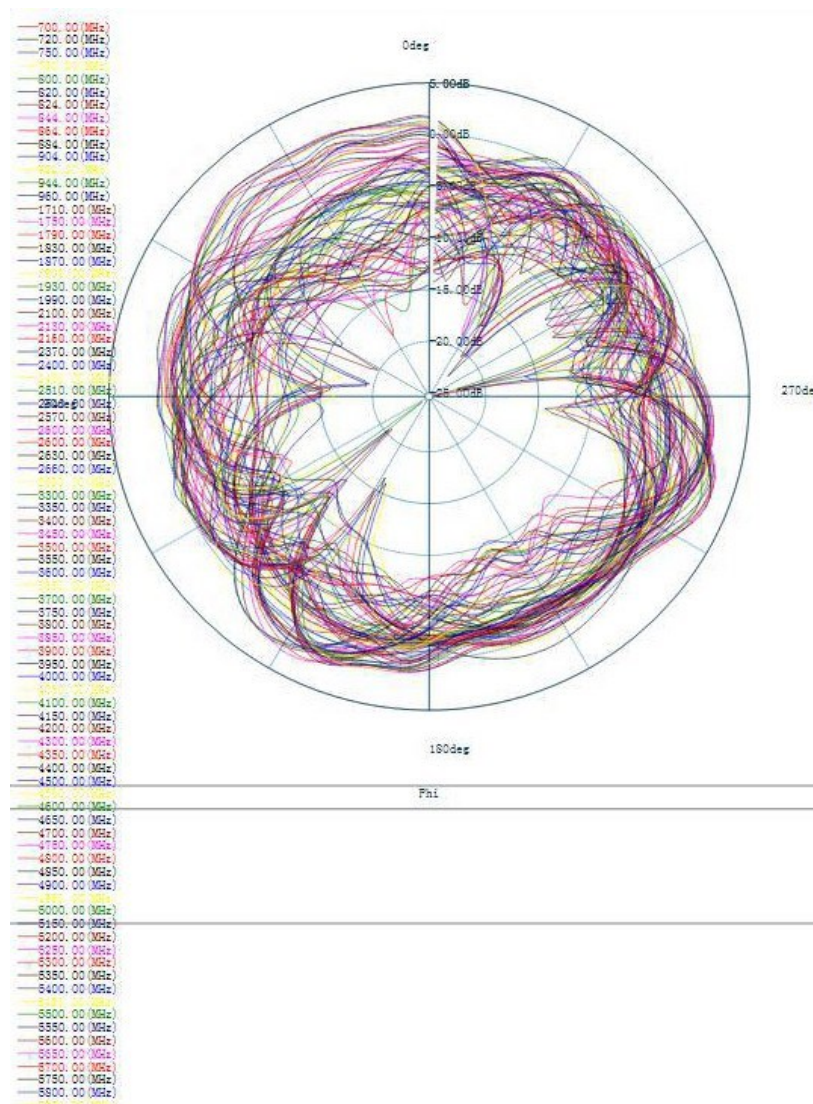
By understanding the information provided by a radiation pattern, it is possible to optimize the design and performance of an antenna for specific applications.

Test Setup

Equipment	XYZ Testing Machine	Conditions	Free space Bend
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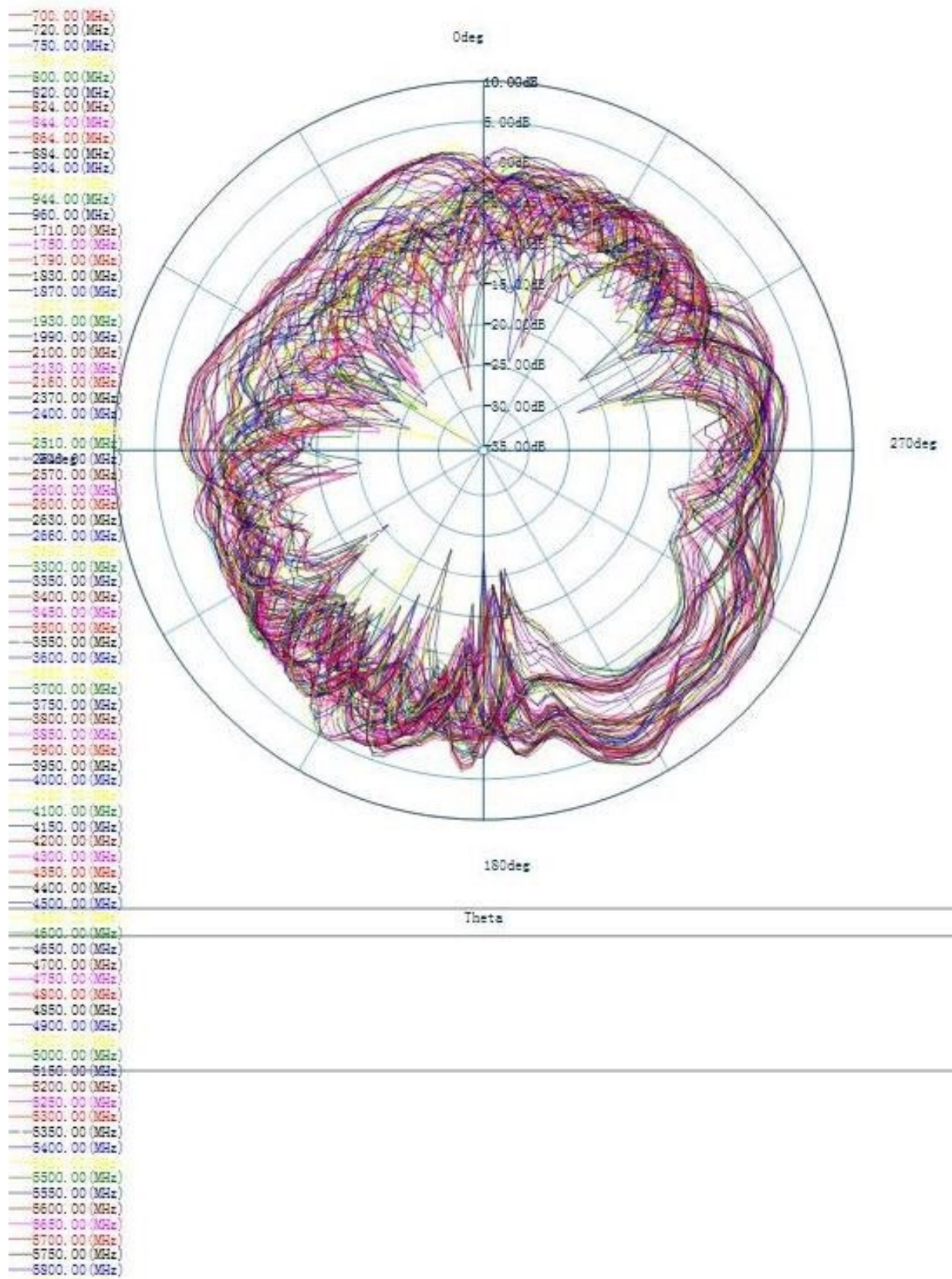
XY Plane (H)

700 – 5850 MHz



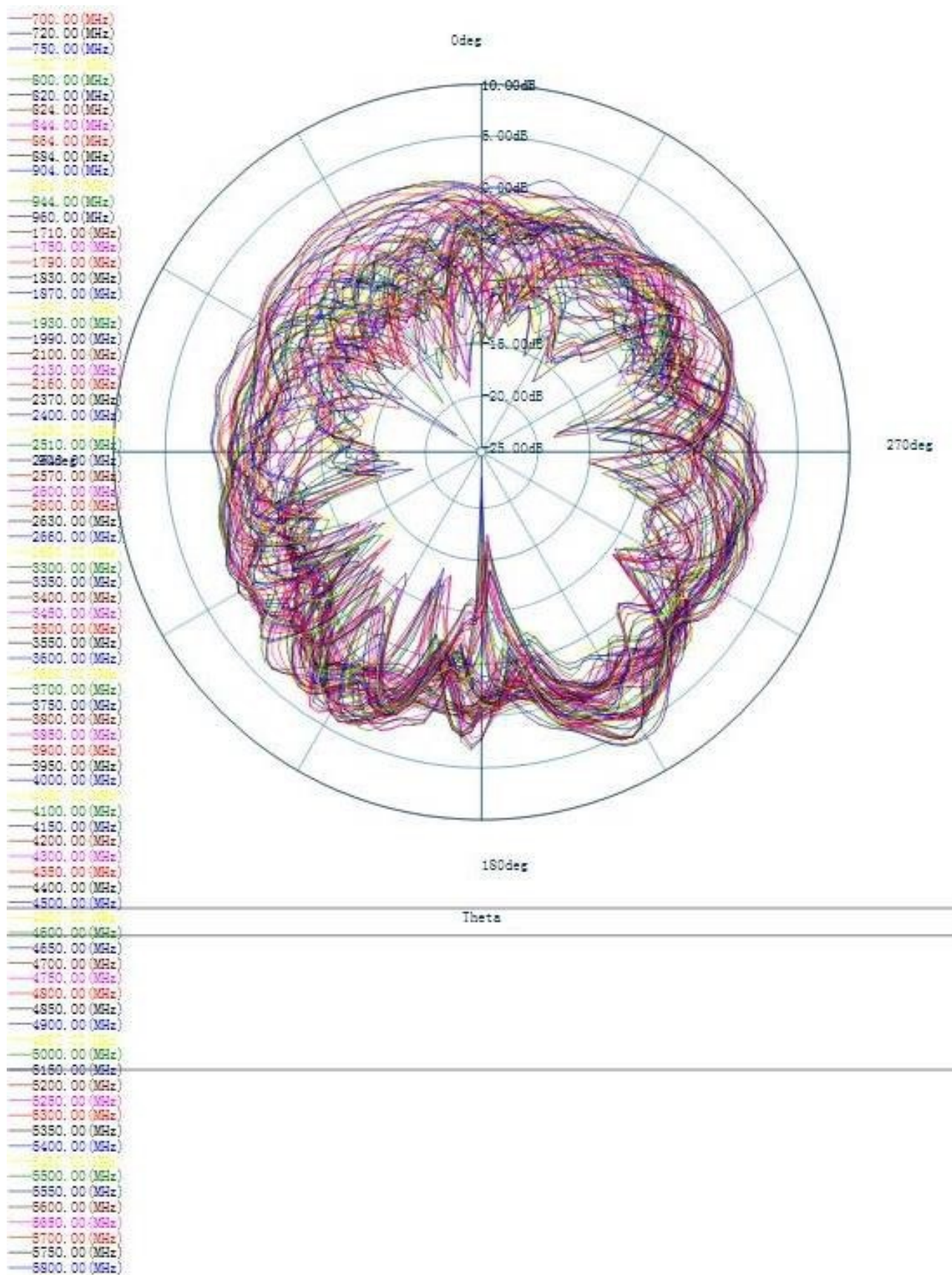
XZ Plane (E1)

750 – 5850 MHz



YZ Plane (E2)

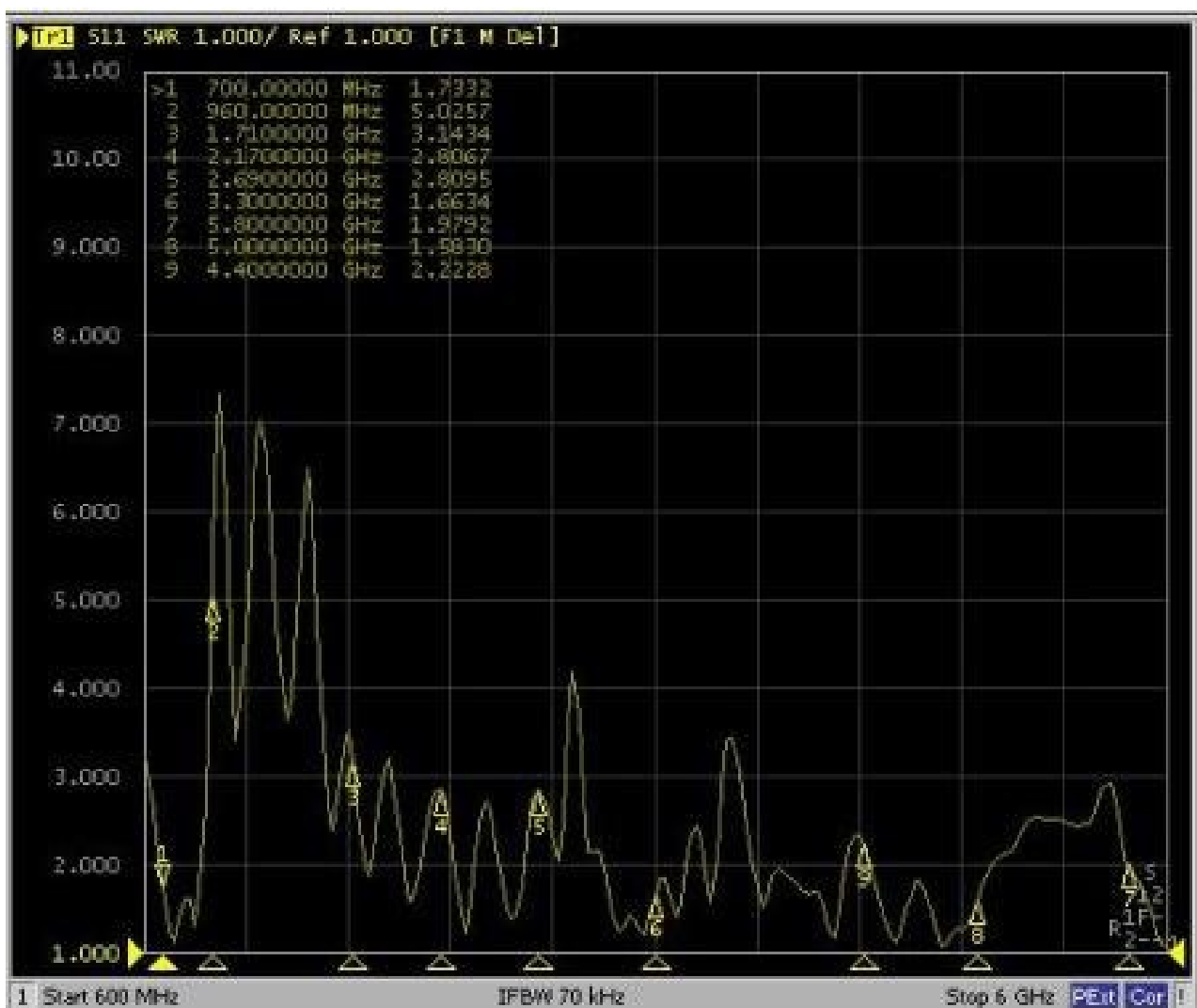
750 – 5850 MHz

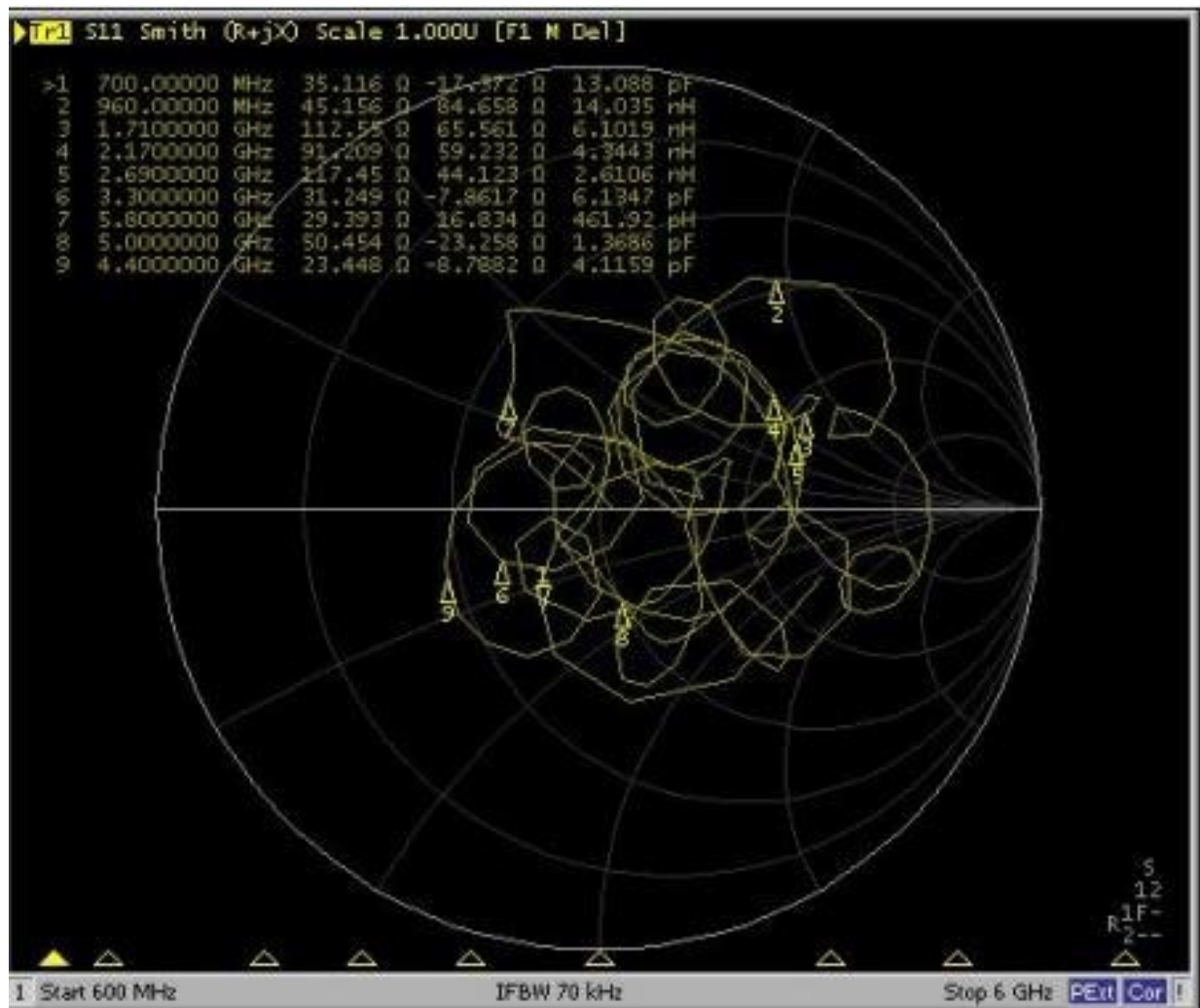


Antenna Smith and VSWR

Frequency		VSWR
700	MHz	1.73
960	MHz	5.02
1710	MHz	3.14
2170	MHz	2.80
2690	MHz	2.80

Frequency		VSWR
3300	MHz	1.66
5800	MHz	1.97
5000	MHz	1.58
4000	MHz	2.22





Antenna Efficiency and Gain

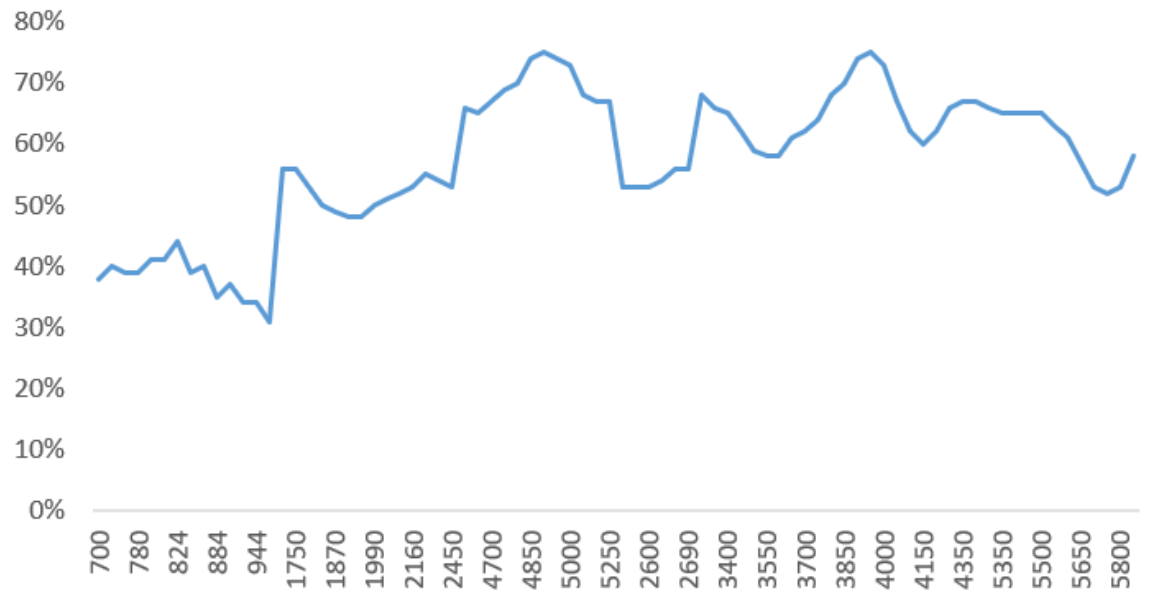
Frequency		Efficiency	Gain
700	MHz	38%	1.47
720	MHz	40%	1.29
750	MHz	39%	1.09
780	MHz	39%	1.46
800	MHz	41%	1.96
820	MHz	41%	1.63
824	MHz	44%	1.92
844	MHz	39%	1.36
864	MHz	40%	1.63
884	MHz	35%	1.33
904	MHz	37%	1.55

Frequency		Efficiency	Gain
2570	MHz	53%	5.7
2600	MHz	53%	5.76
2600	MHz	53%	5.72
2630	MHz	54%	5.71
260	MHz	56%	5.59
2690	MHz	56%	5.51
3300	MHz	68%	4.53
3350	MHz	66%	4.7
3400	MHz	65%	5.06
3450	MHz	62%	5.15
3500	MHz	59%	4.78

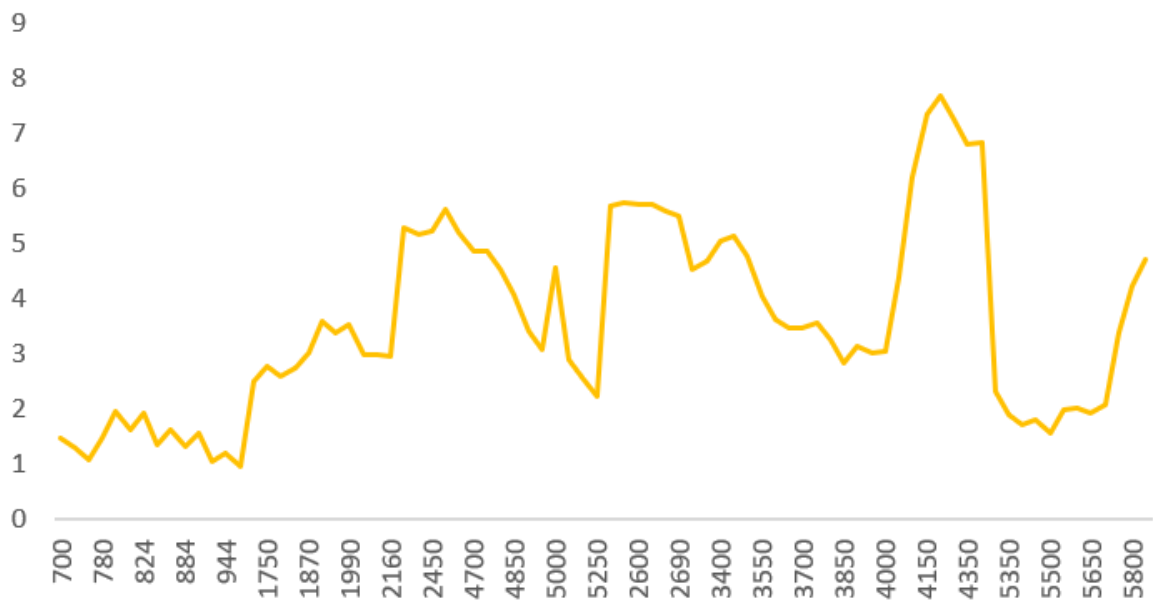
924	MHz	34%	1.04
944	MHz	34%	1.2
960	MHz	31%	0.95
1710	MHz	56%	2.5
1750	MHz	56%	2.78
1790	MHz	53%	2.6
1830	MHz	50%	2.75
1870	MHz	49%	3.03
1900	MHz	48%	3.58
1930	MHz	48%	3.37
1990	MHz	50%	3.53
2100	MHz	51%	3
2130	MHz	52%	2.99
2160	MHz	53%	2.95
2370	MHz	55%	5.3
2400	MHz	54%	5.17
2450	MHz	53%	5.24
4600	MHz	66%	5.63
4650	MHz	65%	5.2
4700	MHz	67%	4.88
4750	MHz	69%	4.88
4800	MHz	70%	4.52
4850	MHz	74%	4.09
4900	MHz	75%	3.42
4950	MHz	74%	3.07
5000	MHz	73%	4.55
5150	MHz	68%	2.9
5200	MHz	67%	2.52
5250	MHz	67%	2.23

3550	MHz	58%	4.05
3600	MHz	58%	3.64
3650	MHz	61%	3.46
3700	MHz	62%	3.47
3750	MHz	64%	3.56
3800	MHz	68%	3.25
3850	MHz	70%	2.85
3900	MHz	74%	3.13
3950	MHz	75%	3.02
4000	MHz	73%	3.06
4050	MHz	67%	4.37
4100	MHz	62%	6.21
4150	MHz	60%	7.34
4200	MHz	62%	7.68
4300	MHz	66%	7.27
4350	MHz	67%	6.82
4400	MHz	67%	6.83
5300	MHz	66%	2.32
5350	MHz	65%	1.9
5400	MHz	65%	1.72
5450	MHz	65%	1.81
5500	MHz	65%	1.57
5550	MHz	63%	1.99
5600	MHz	61%	2.02
5650	MHz	57%	1.92
5700	MHz	53%	2.08
5750	MHz	52%	3.38
5800	MHz	53%	4.24
5850	MHz	58%	4.72

Efficiency



Gain



Environmental Data

Operating Temperature	-20 °C to +80 °C
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Vibration	N/A
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IP Rating	IP55
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Ordering Information

Product Variants

Part Number	Description
L-5RA6	Multiband 5G/LTE/Wi-Fi Antenna with SMA Connector

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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