

L-5RC1

Multiband 5G/LTE Antenna

CELLULAR

WIFI

The L-5RC1 is a cellular antenna for 5G, LTE, and WCDMA that can also cover Wi-Fi frequencies. With a frequency range spanning from 699MHz to 960MHz and extending up to 5000MHz from 1710MHz, it's a versatile solution for all your connectivity needs. It's a compact and durable external antenna with wide-band and high efficiency.

The L-5RC1 allows the antenna to be positioned for optimum performance compared to a fixed whip design. The antenna attaches with an SMA connector.



246 mm

Document Information

Product	L-5RC1
Part Number	L-5RC1
Description	Multiband 5G/LTE Antenna
Version	2.0 (current)
Date	7-Sep-2023
Status	Released

Revision History

Version	Date	Author	Changes
1.0	16-Dec-2020	Amy li	Initial Release
2.0	7-Sep-2023	Ivy liao	New layout and design

Product Overview

Product Description

The L-5RC1 is a cellular antenna for 5G, LTE, and WCDMA that can also cover Wi-Fi frequencies. With a frequency range spanning from 699MHz to 960MHz and extending up to 5000MHz from 1710MHz. 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-5RC1 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
- IP 67/68

Applications

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

Electrical Specifications

Frequency			VSWR	Peak Gain	Efficiency
5G/LTE	699 - 960	MHz	3.3	1.9 d Bi	40%
5G/LTE	1710 - 5000	MHz	1.8	5.0 d Bi	50%

Frequency Range	699 – 5000 MHz
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Impedance	50 Ω
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Polarization	Linear
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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	246 mm
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Mounting Type	Connector Mount
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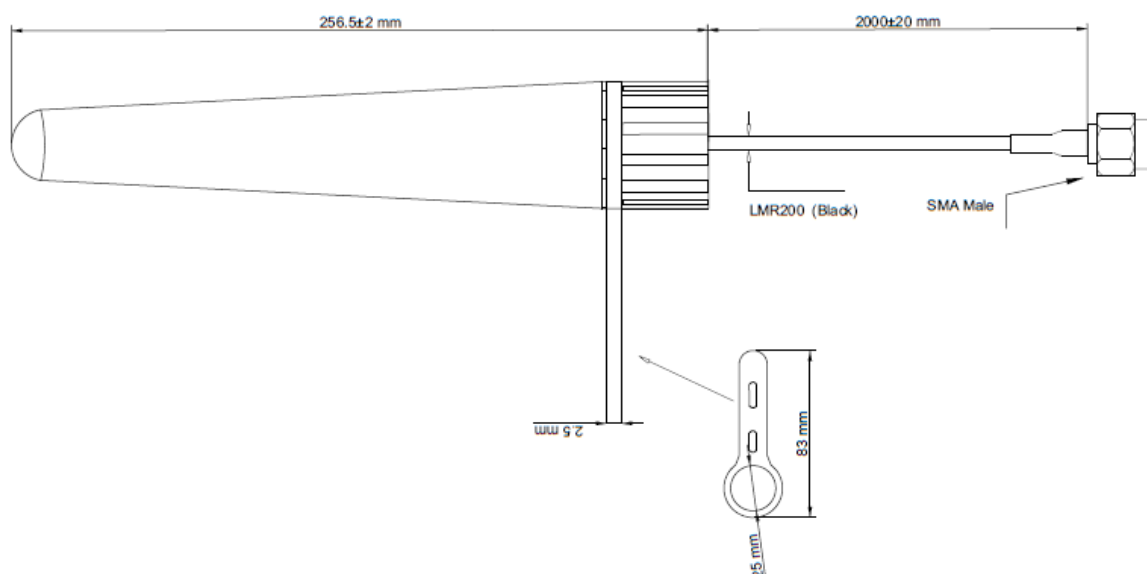
Casing	N/A
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Connector (Termination)	SMA Plug (male pin)	Color	Black
Cable type	A/N	Material	PC + ABS

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.

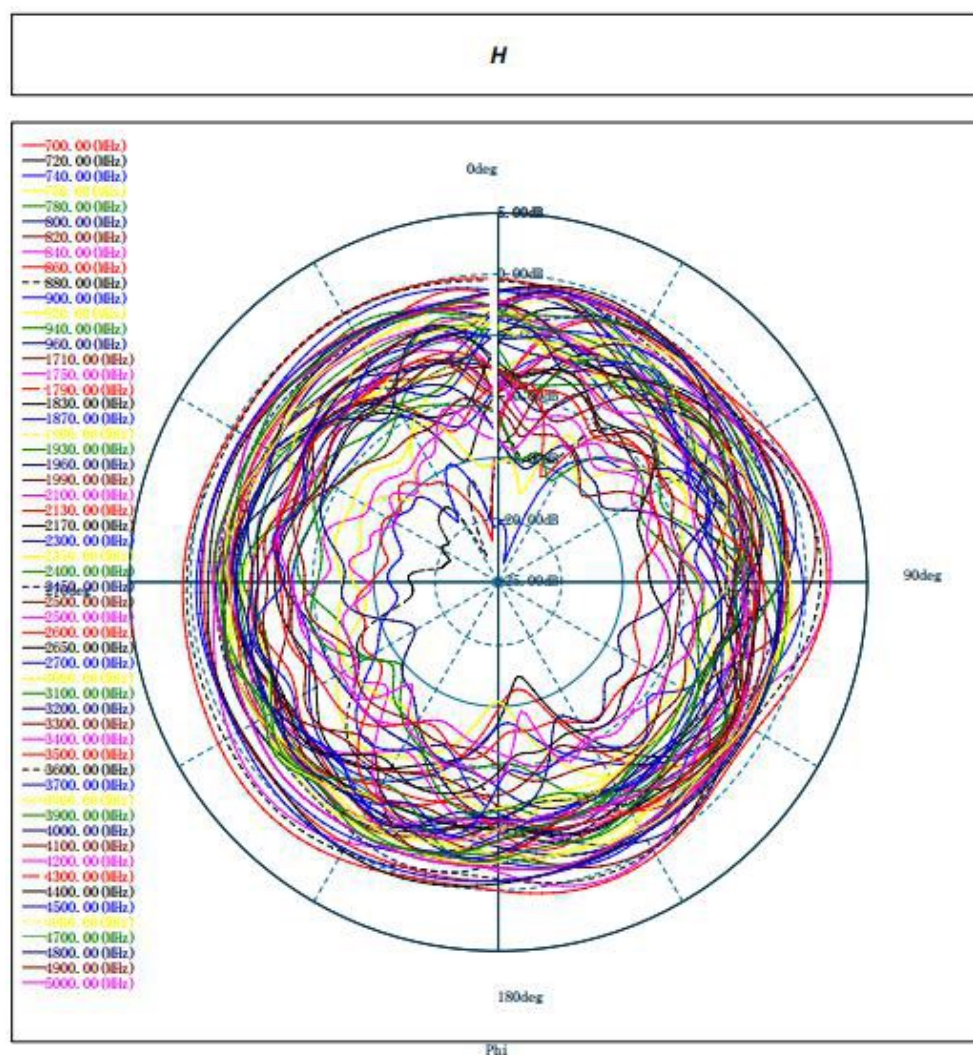
By understanding the information provided by a radiation pattern, it is possible to optimize the design and performance of an antenna for specific applications.

Test Setup

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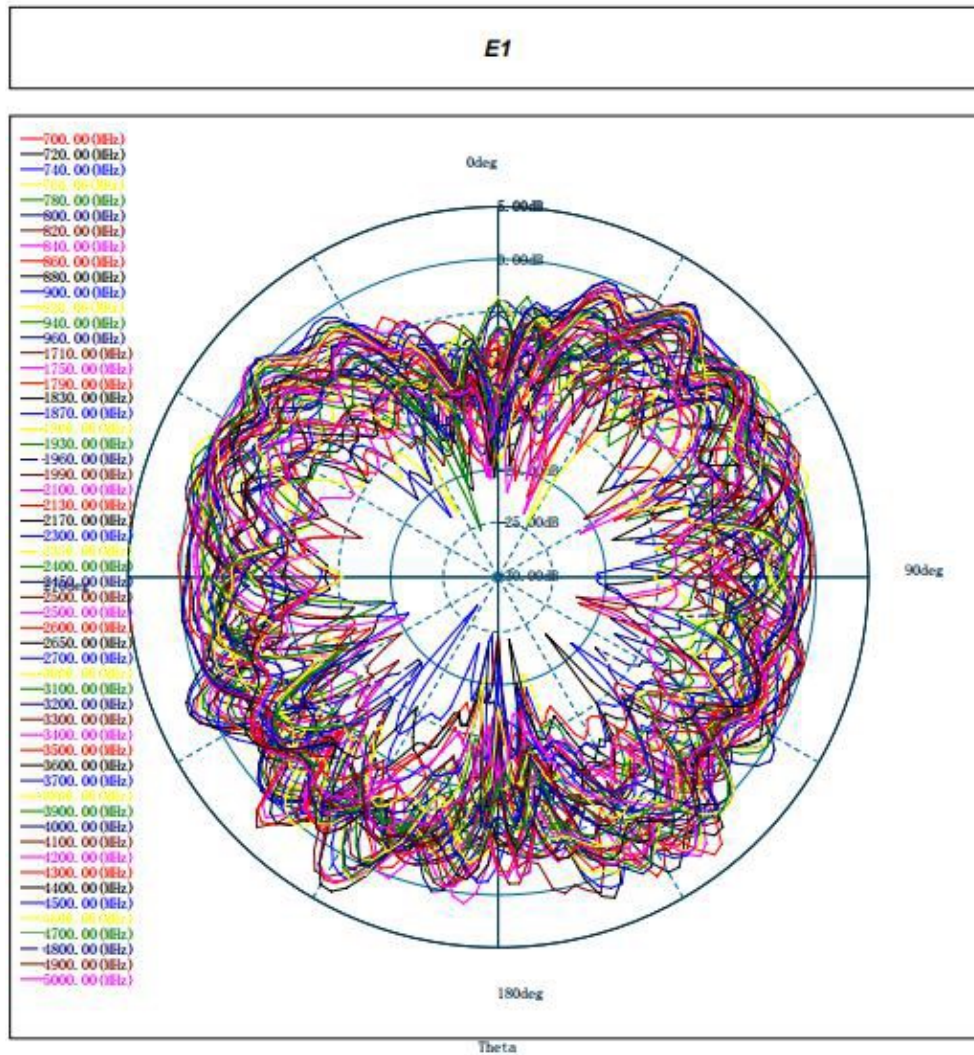
XY Plane (H)

699 – 5000 MHz



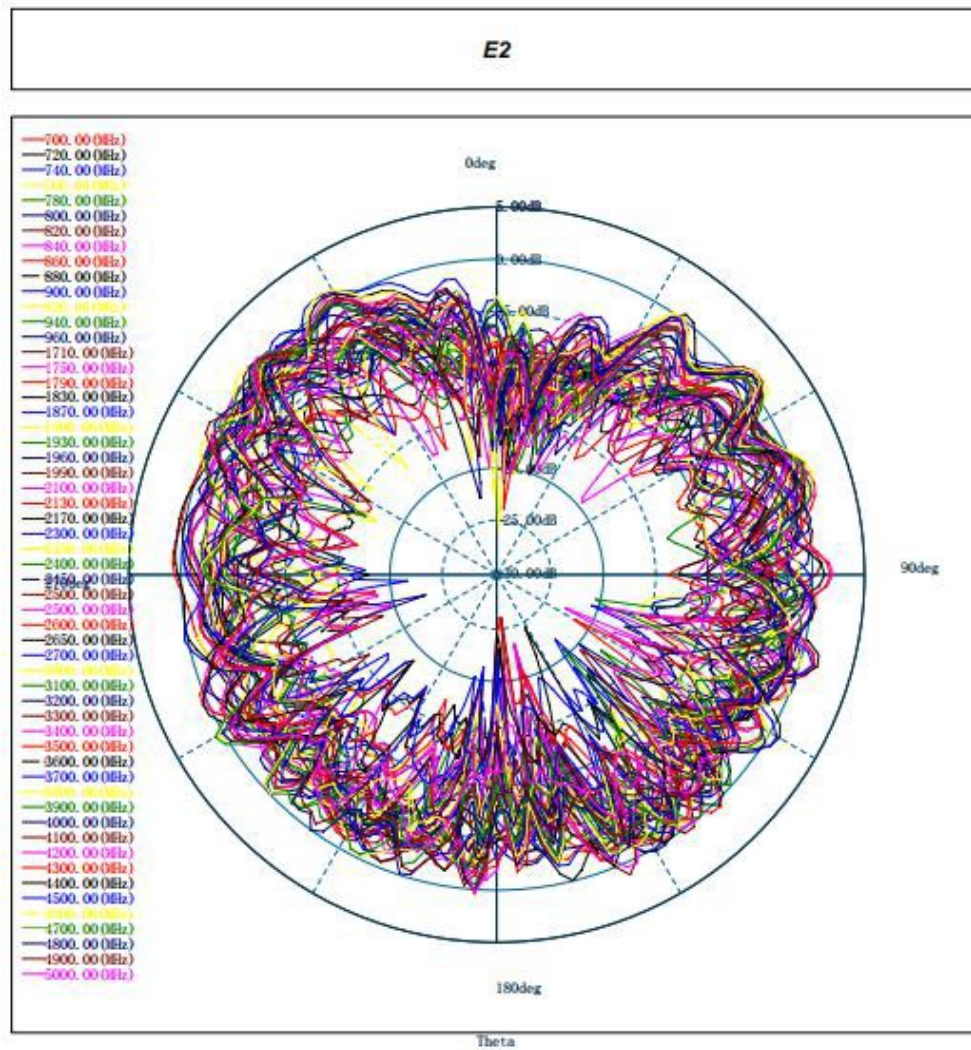
XZ Plane (E1)

699 – 5000 MHz



YZ Plane (E2)

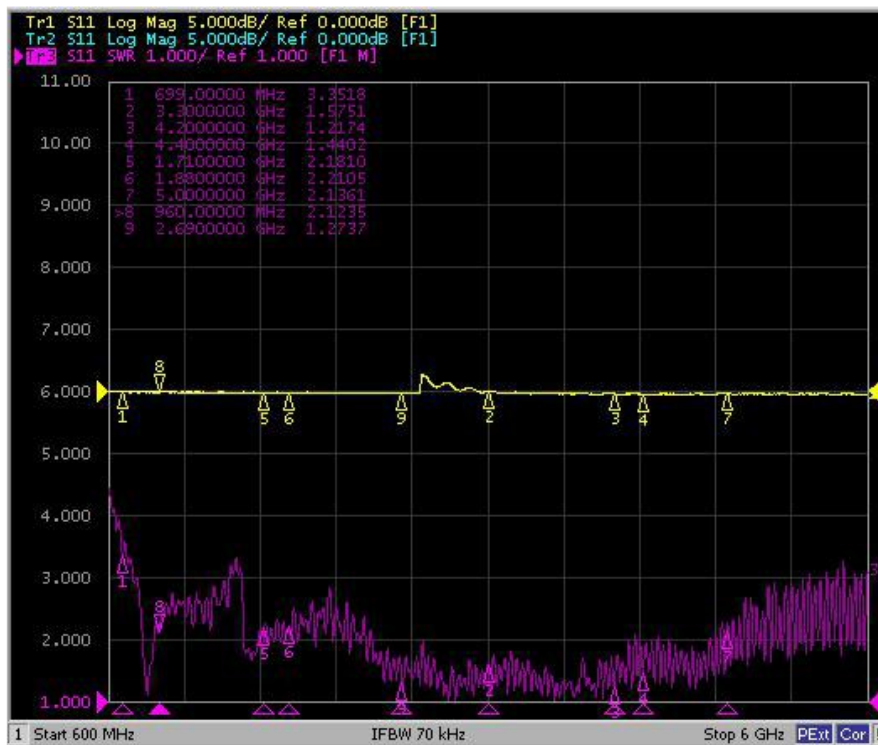
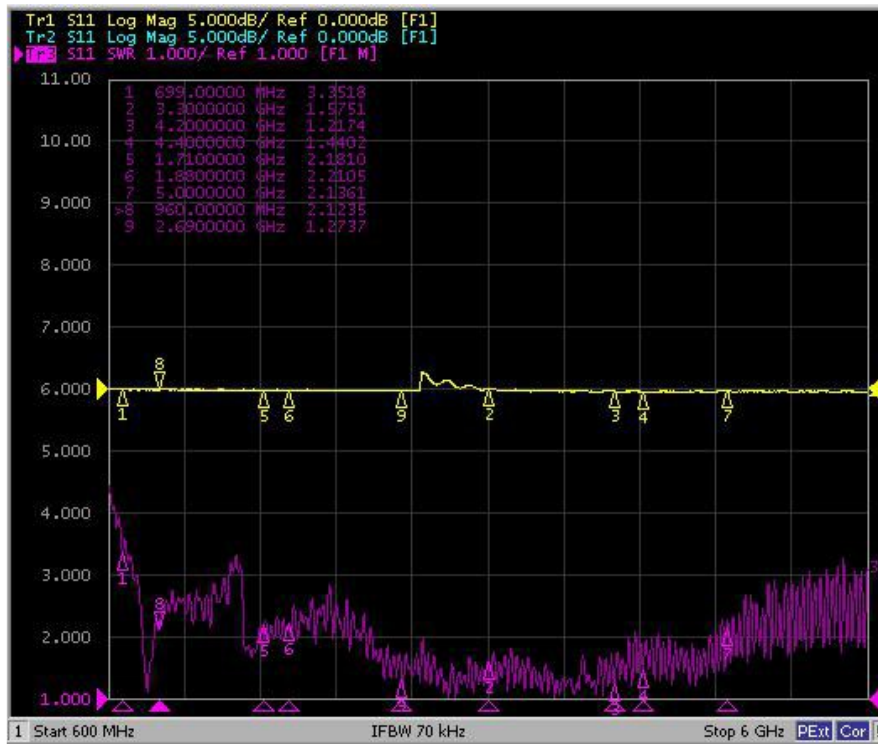
690 – 5000 MHz



Antenna Smith and VSWR

Frequency		VSWR
700	MHz	3.4
960	MHz	2.1
1710	MHz	2.1
1880	MHz	2.2
2690	MHz	1.3

Frequency		VSWR
3300	MHz	1.6
4200	MHz	1.2
4400	MHz	1.4
5000	MHz	2.1

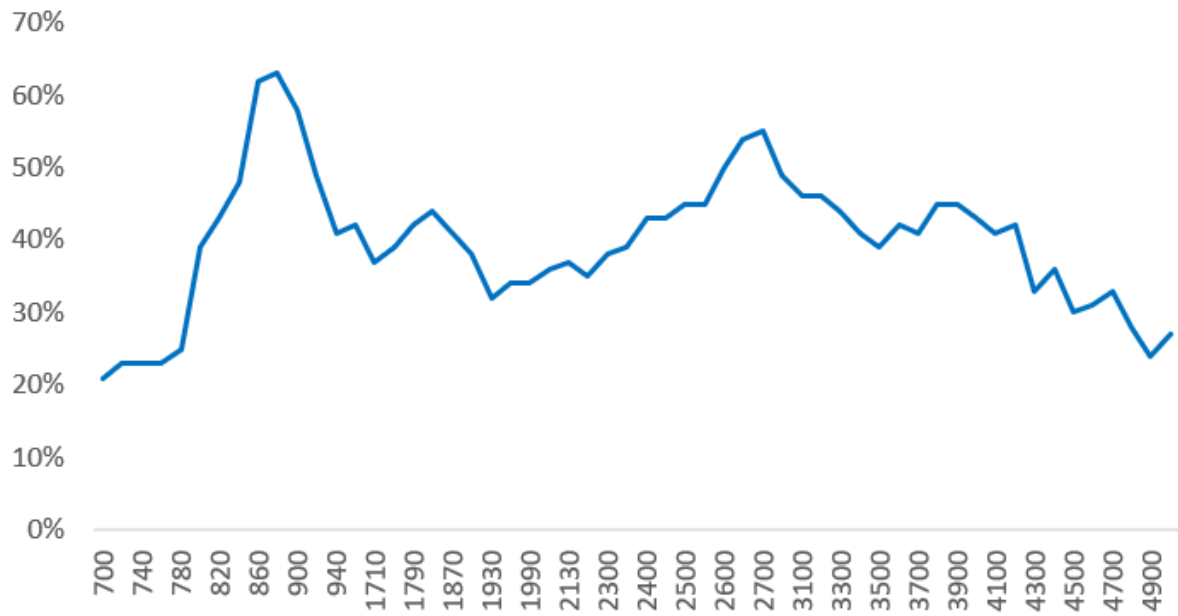


Antenna Efficiency and Gain

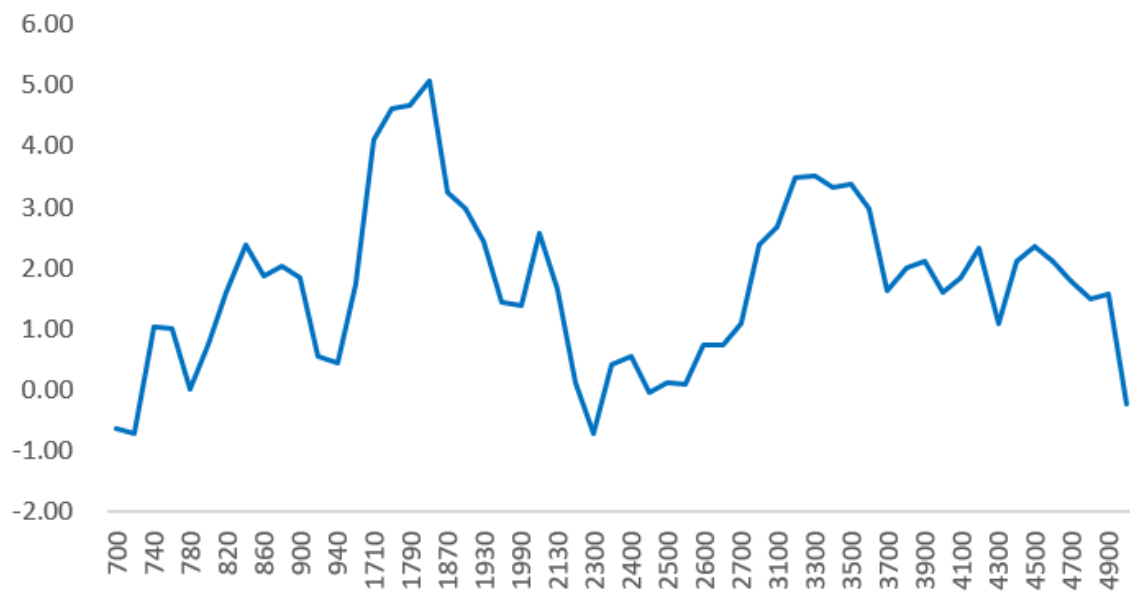
Frequency		Efficiency	Gain
700	MHz	21%	-0.629702
720	MHz	23%	-0.717539
740	MHz	23%	1.0396
760	MHz	23%	1.014598
780	MHz	25%	0.01826
800	MHz	39%	0.726915
820	MHz	43%	1.606871
840	MHz	48%	2.393801
860	MHz	62%	1.864849
880	MHz	63%	2.020515
900	MHz	58%	1.846359
920	MHz	49%	0.550949
940	MHz	41%	0.441239
960	MHz	42%	1.734602
1710	MHz	37%	4.103859
1750	MHz	39%	4.629829
1790	MHz	42%	4.67173
1830	MHz	44%	5.073136
1870	MHz	41%	3.233657
1900	MHz	38%	2.981841
1930	MHz	32%	2.440471
1960	MHz	34%	1.427533
1990	MHz	34%	1.376123
2100	MHz	36%	2.574421
2130	MHz	37%	1.666132
2170	MHz	35%	0.112126
2300	MHz	38%	-0.719269
2350	MHz	39%	0.423841

Frequency		Efficiency	Gain
2400	MHz	43%	0.557941
2450	MHz	43%	-0.043859
2500	MHz	45%	0.115959
2500	MHz	45%	0.078658
2600	MHz	50%	0.74554
2650	MHz	54%	0.738655
2700	MHz	55%	1.097013
3000	MHz	49%	2.370782
3100	MHz	46%	2.688132
3200	MHz	46%	3.483913
3300	MHz	44%	3.501186
3400	MHz	41%	3.326973
3500	MHz	39%	3.390884
3600	MHz	42%	2.961686
3700	MHz	41%	1.627656
3800	MHz	45%	2.015007
3900	MHz	45%	2.122729
4000	MHz	43%	1.590436
4100	MHz	41%	1.851418
4200	MHz	42%	2.333469
4300	MHz	33%	1.087241
4400	MHz	36%	2.114238
4500	MHz	30%	2.34822
4600	MHz	31%	2.104014
4700	MHz	33%	1.79176
4800	MHz	28%	1.491192
4900	MHz	24%	1.576894
5000	MHz	27%	-0.227176

Efficiency



Gain



Environmental Data

Operating Temperature	-20°C to +80°C
Vibration	N/A
IP Rating	IP67/68

Ordering Information

Product Variants

Part Number	Description
L-5RC1	Multiband 5G/LTE/Wi-Fi Antenna with SMA Connector

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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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