Datasheet

L-5RS5

5G Ultraband Hinged Monople Blade Antenna

CELLULAR | WIFI

The L-5RS5 is an ultraband antenna for 5G, LTE, and WCDMA that can also cover Wi-Fi frequencies. It's a compact and durable external antenna with a wide band and high efficiency.

The L-5RS5 allows the antenna to be positioned for optimum performance compared to a fixed whip design. The antenna attaches with an SMA connector.

190 x 16 x 10 mm

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Document Information

Product	L-5RS5
Part Number	L-5RS5
Description	5G Ultraband Hinged Monople Blade 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-5RS5 is an ultraband hinged monopole blade cellular antenna for 5G, LTE, 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

- Supports 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	690 - 960	MHz	2.0	0.9 d Bi	30%
5G/LTE	1710 - 5000	MHz	3.0	3.5 d Bi	60%
2.4G WiFi	2400 2500	MHz	4.0	0.3 d Bi	50%

Frequency Range	690 – 5000 MHz	Radiation	Omnidirectional
Impedance	50 Ω	Electrical Type	Monopole
Polarization	Linear		

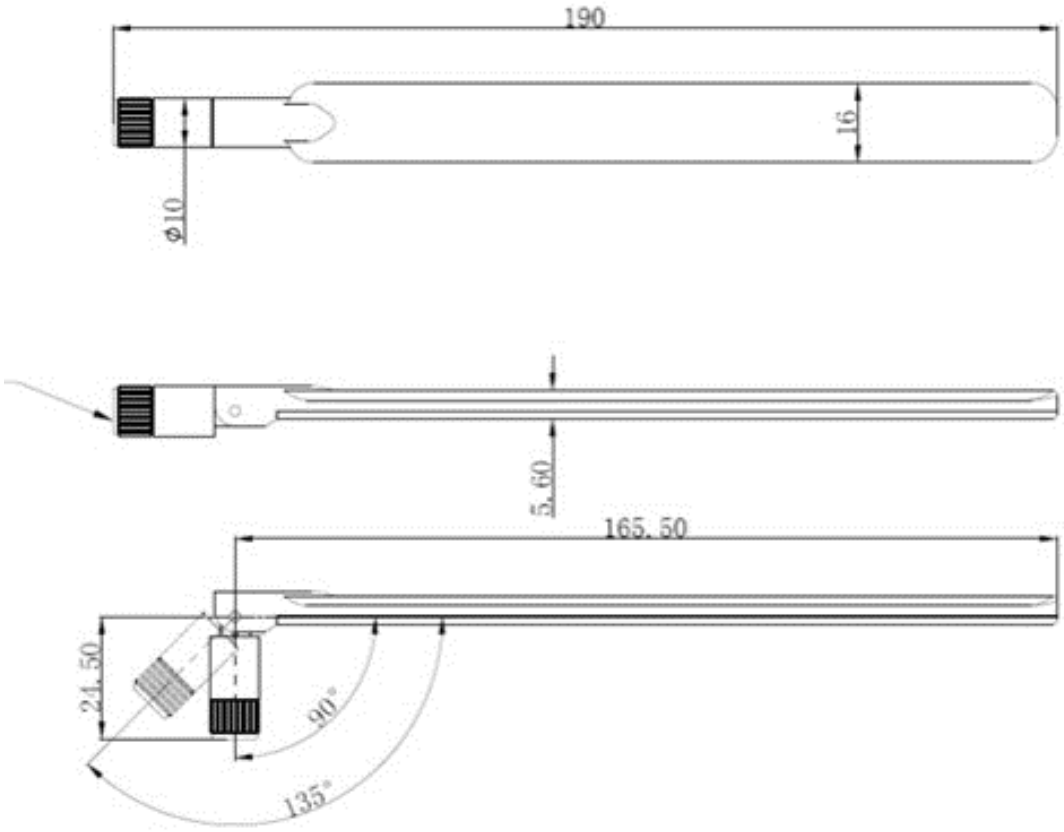
Mechanical Specifications

Type	Hinge / Swivel Blade Type	Casing	Yes
Dimensions	190 x 16 x 10 mm	Color	Black
Connector (Termination)	SMA Plug (male pin)	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



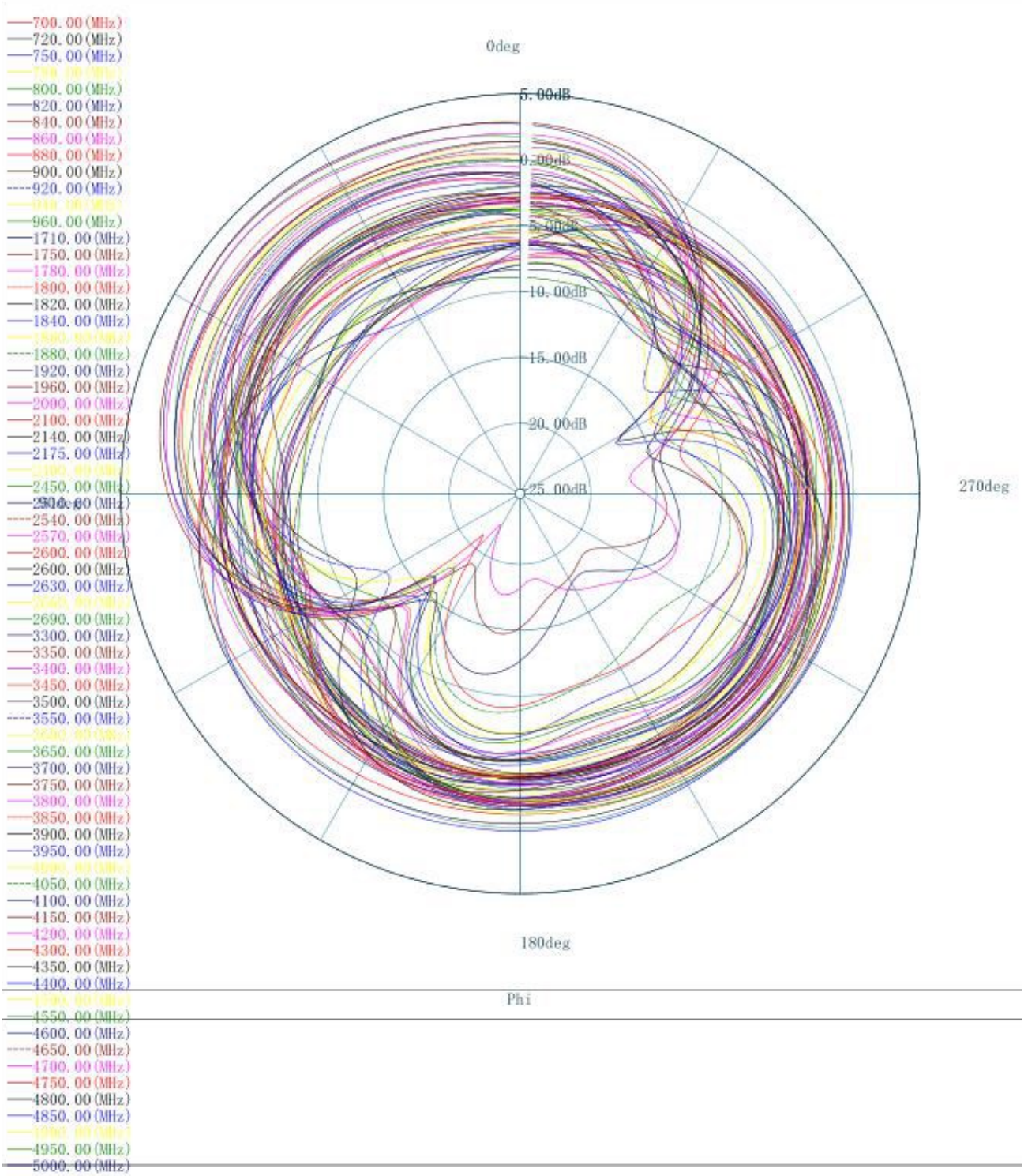
Radiation Pattern

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.

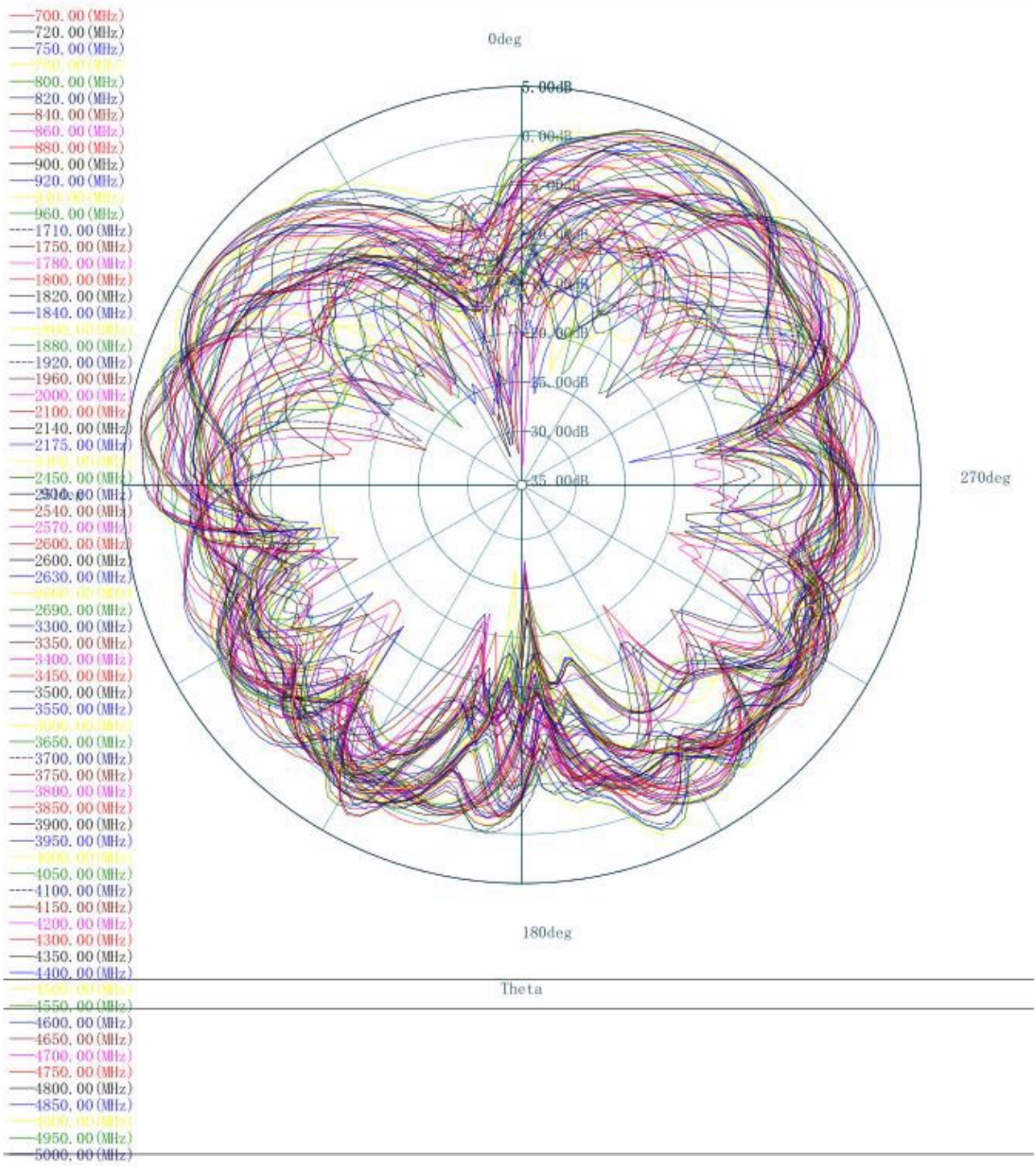
XY Plane (H)

690 – 5000 MHz



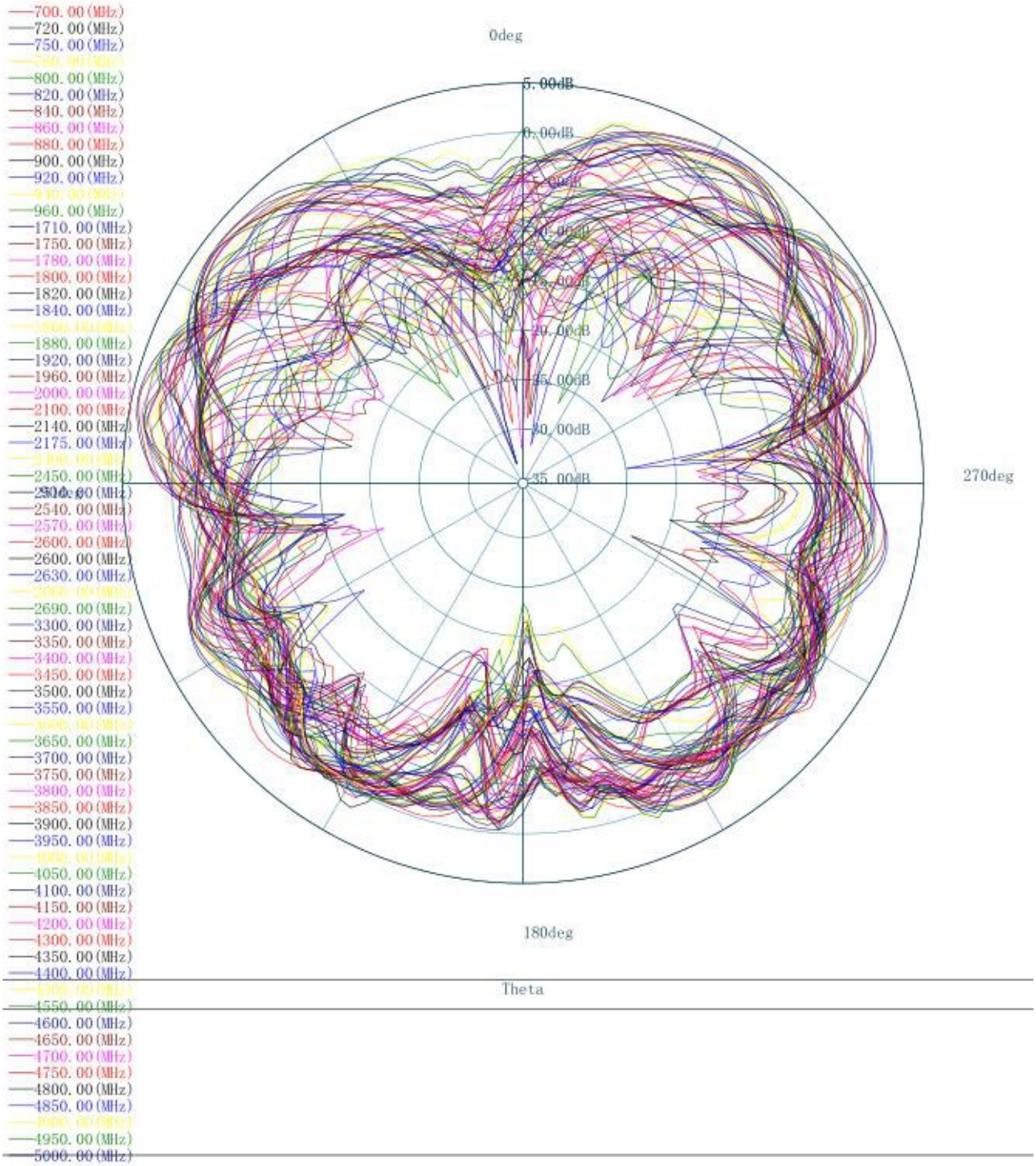
YZ Plane (E1)

690 – 5000 MHz



YZ Plane (E2)

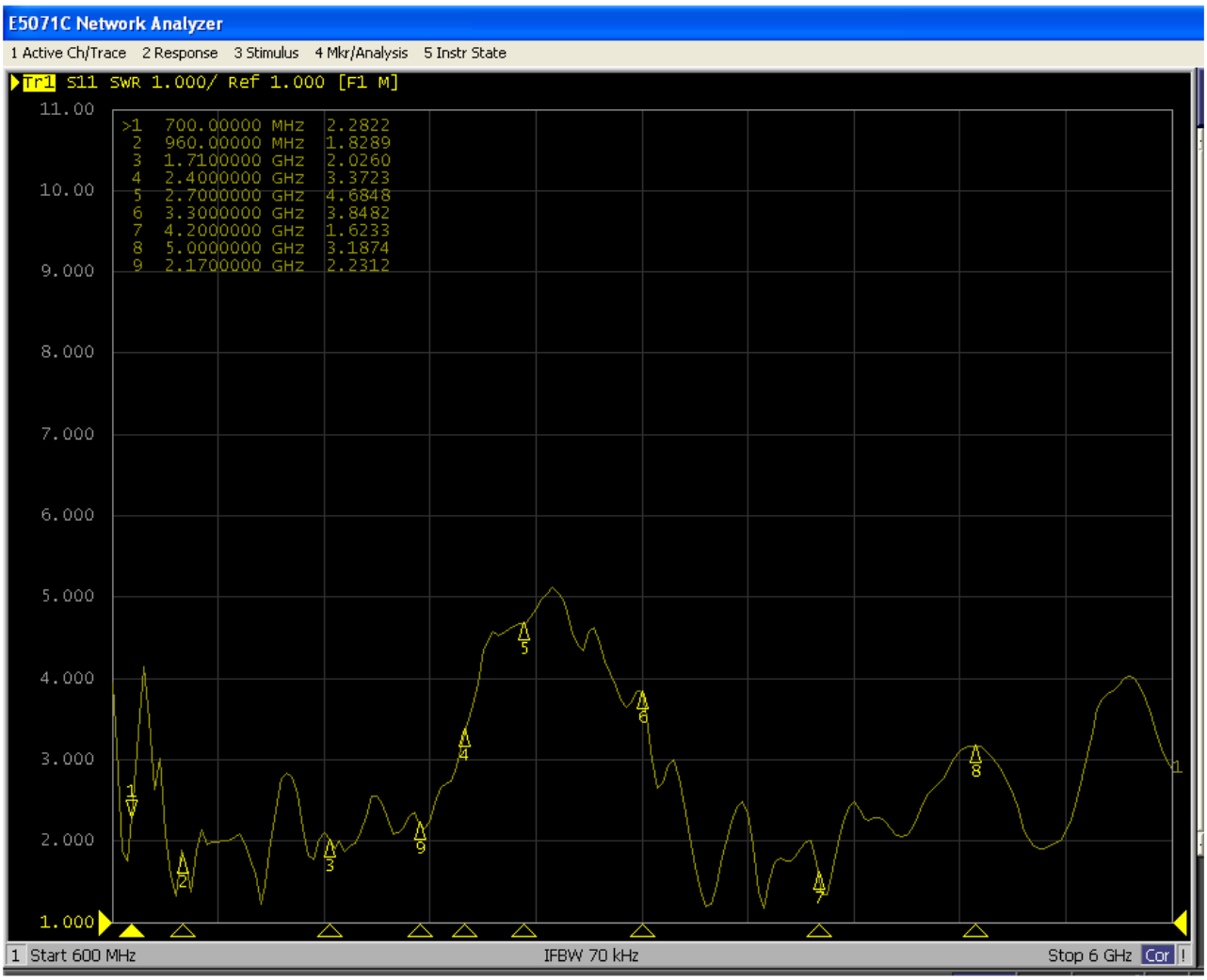
690 – 5000 MHz

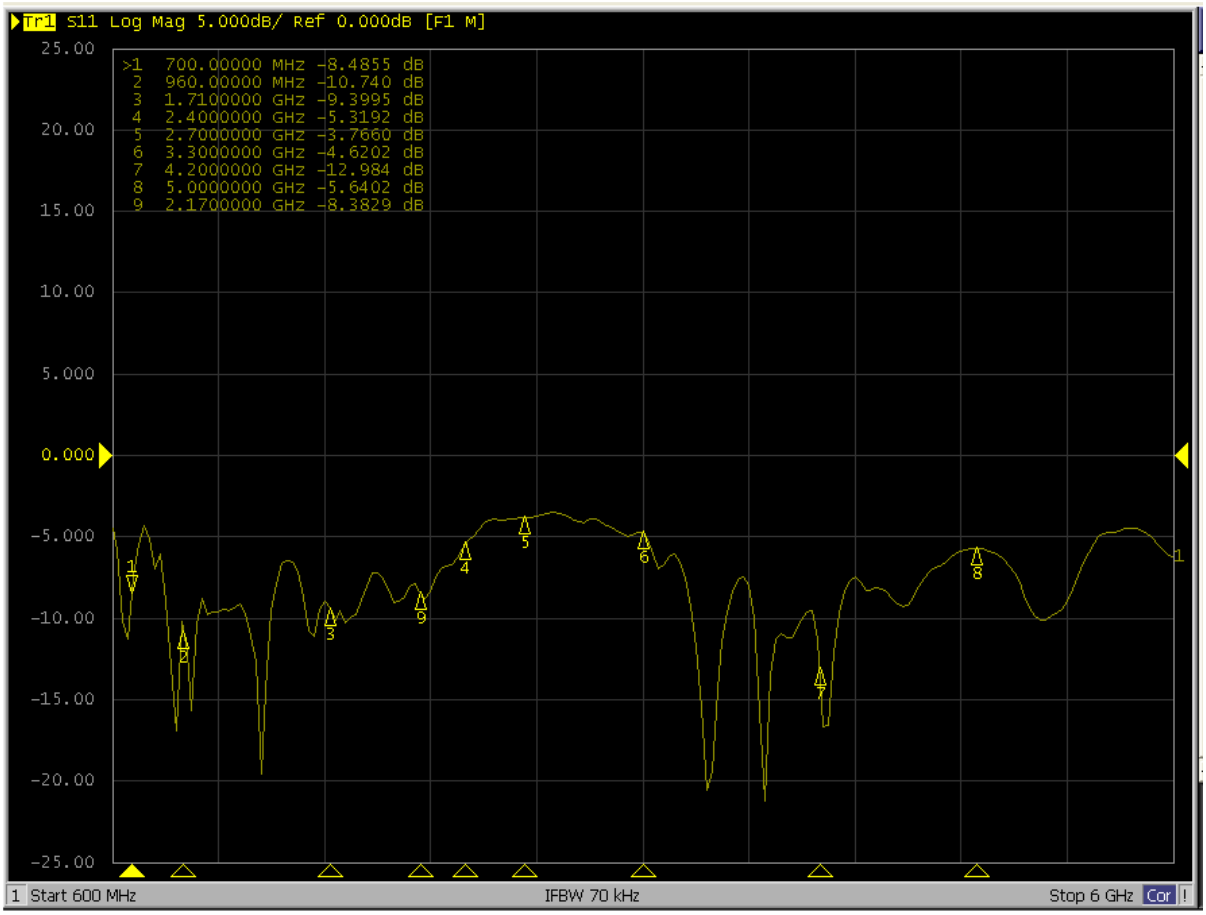


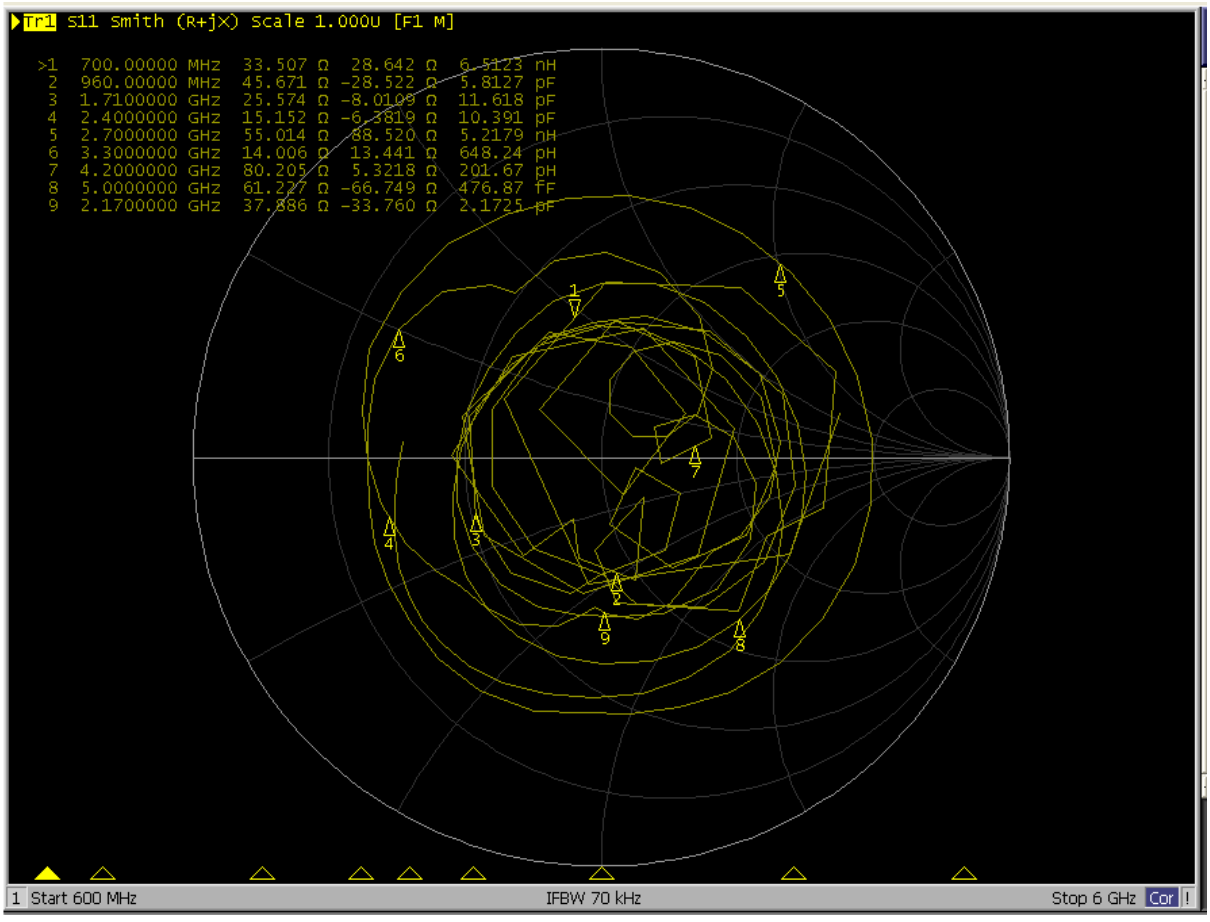
Antenna Smith and VSWR

Frequency		VSWR
700	MHz	2.28
960	MHz	1.83
1710	MHz	2.03
2170	MHz	2.23
2400	MHz	3.37

Frequency		VSWR
2700	MHz	4.68
3300	MHz	3.85
4200	MHz	1.62
5000	MHz	3.19




Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]
>1 700.00000 MHz -8.4855 dB
2 960.00000 MHz -10.740 dB
3 1.7100000 GHz -9.3995 dB
4 2.4000000 GHz -5.3192 dB
5 2.7000000 GHz -3.7660 dB
6 3.3000000 GHz -4.6202 dB
7 4.2000000 GHz -12.984 dB
8 5.0000000 GHz -5.6402 dB
9 2.1700000 GHz -8.3829 dB
25.00
20.00
15.00
10.00
5.000
0.000
-5.000
-10.00
-15.00
-20.00
-25.00
1 Start 600 MHz
IFBW 70 kHz
Stop 6 GHz
Cor


Tr1 S11 Smith (R+jX) Scale 1.000U [F1 M]
>1 700.00000 MHz 33.507 Ω 28.642 Ω 6.5123 nH
2 960.00000 MHz 45.671 Ω -28.522 Ω 5.8127 pF
3 1.7100000 GHz 25.574 Ω -8.0109 Ω 11.618 pF
4 2.4000000 GHz 15.152 Ω -6.3819 Ω 10.391 pF
5 2.7000000 GHz 55.014 Ω 88.520 Ω 5.2179 nH
6 3.3000000 GHz 14.006 Ω 13.441 Ω 648.24 pH
7 4.2000000 GHz 80.205 Ω 5.3218 Ω 201.67 pH
8 5.0000000 GHz 61.227 Ω -66.749 Ω 476.87 fF
9 2.1700000 GHz 37.886 Ω -33.760 Ω 2.1725 pF
1 Start 600 MHz
IFBW 70 kHz
Stop 6 GHz
Cor

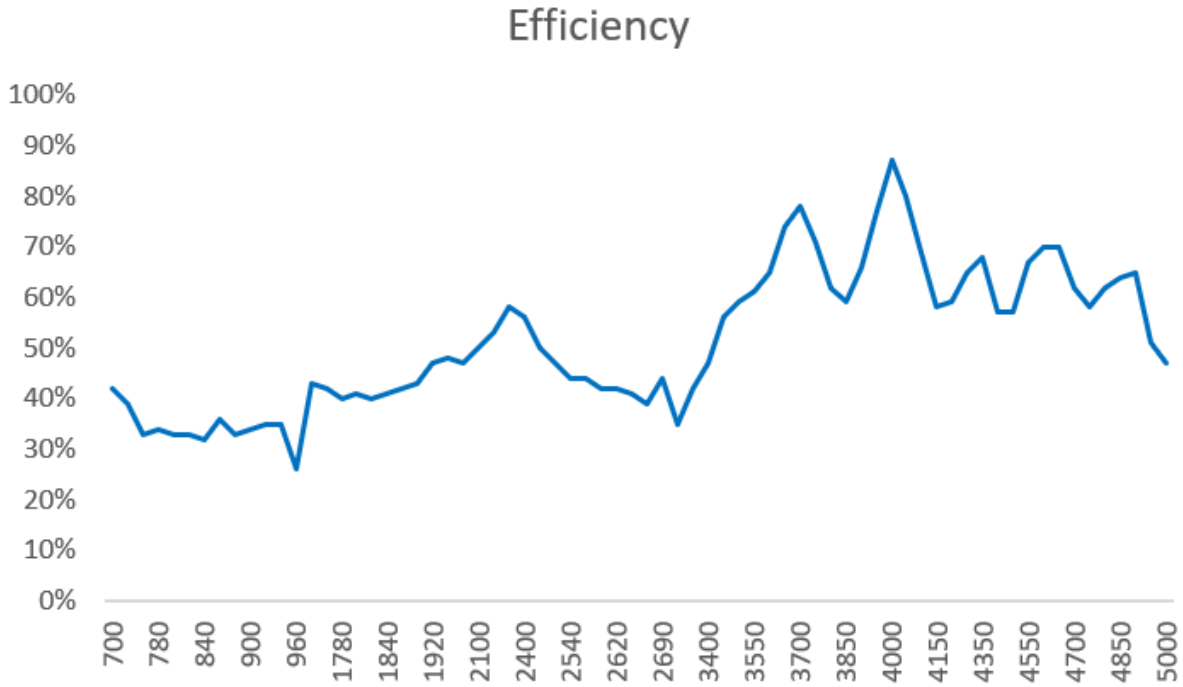
Antenna Efficiency and Gain

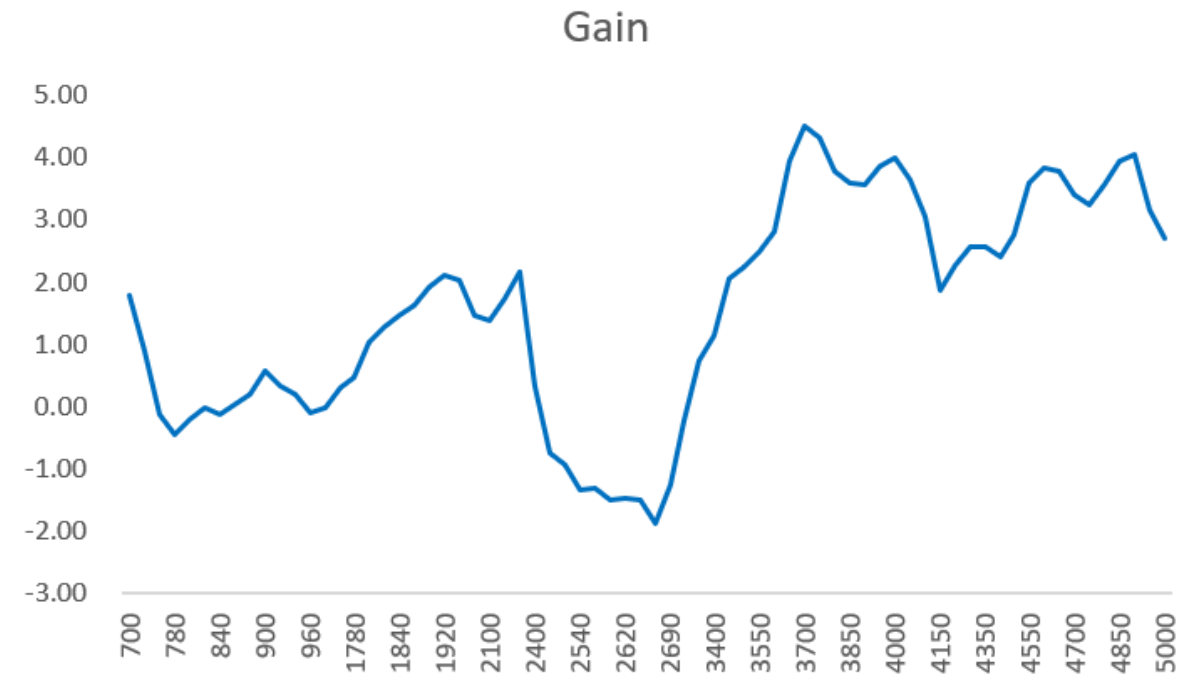
Frequency		Efficiency	Gain
700	MHz	42%	1.783761
720	MHz	39%	0.890741
750	MHz	33%	-0.12828
780	MHz	34%	-0.45956
800	MHz	33%	-0.20808
820	MHz	33%	-0.0144
840	MHz	32%	-0.13659
860	MHz	36%	0.041994
880	MHz	33%	0.203658
900	MHz	34%	0.571466
920	MHz	35%	0.338999
940	MHz	35%	0.183709
960	MHz	26%	-0.09476
1710	MHz	43%	-0.02434
1750	MHz	42%	0.298152
1780	MHz	40%	0.471098
1800	MHz	41%	1.040608
1820	MHz	40%	1.2861
1840	MHz	41%	1.473263
1860	MHz	42%	1.623503
1880	MHz	43%	1.931468
1920	MHz	47%	2.099569
1960	MHz	48%	2.018197
2000	MHz	47%	1.473569
2100	MHz	50%	1.39377
2140	MHz	53%	1.726693
2175	MHz	58%	2.172426
2400	MHz	56%	0.328195
2450	MHz	50%	-0.73559

Frequency		Efficiency	Gain
2660	MHz	39%	-1.8817
2690	MHz	44%	-1.25529
3300	MHz	35%	-0.23599
3350	MHz	42%	0.728816
3400	MHz	47%	1.131403
3450	MHz	56%	2.047809
3500	MHz	59%	2.233292
3550	MHz	61%	2.485264
3600	MHz	65%	2.808609
3650	MHz	74%	3.938261
3700	MHz	78%	4.517392
3750	MHz	71%	4.322729
3800	MHz	62%	3.769347
3850	MHz	59%	3.599531
3900	MHz	66%	3.56734
3950	MHz	77%	3.858711
4000	MHz	87%	3.981758
4050	MHz	80%	3.631606
4100	MHz	69%	3.038897
4150	MHz	58%	1.87155
4200	MHz	59%	2.271835
4300	MHz	65%	2.572706
4350	MHz	68%	2.553556
4400	MHz	57%	2.39339
4500	MHz	57%	2.759182
4550	MHz	67%	3.586088
4600	MHz	70%	3.844289
4650	MHz	70%	3.789895
4700	MHz	62%	3.40368

2510	MHz	47%	-0.94884
2540	MHz	44%	-1.34797
2570	MHz	44%	-1.31463
2600	MHz	42%	-1.51177
2620	MHz	42%	-1.48193
2630	MHz	41%	-1.49499

4750	MHz	58%	3.2308
4800	MHz	62%	3.561489
4850	MHz	64%	3.937201
4900	MHz	65%	4.04742
4950	MHz	51%	3.146747
5000	MHz	47%	2.695036





Environmental Data

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

Ordering Information

Product Variants

Part Number	Description
L-5RS5	5G Ultraband Hinged Monople Blade 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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