

4-in-1 4G/5G MiMo IOT Antenna

LG-IN2929

PANORAMA ANTENNAS



LG-IN2929

- Low Profile 2x2 MiMo Antenna for 4G/5G
- 1x L1/L5 GPS/GNSS
- SiSo WiFi 2.4/5.0/7.2GHz
- Meets IP69K for ingress protection

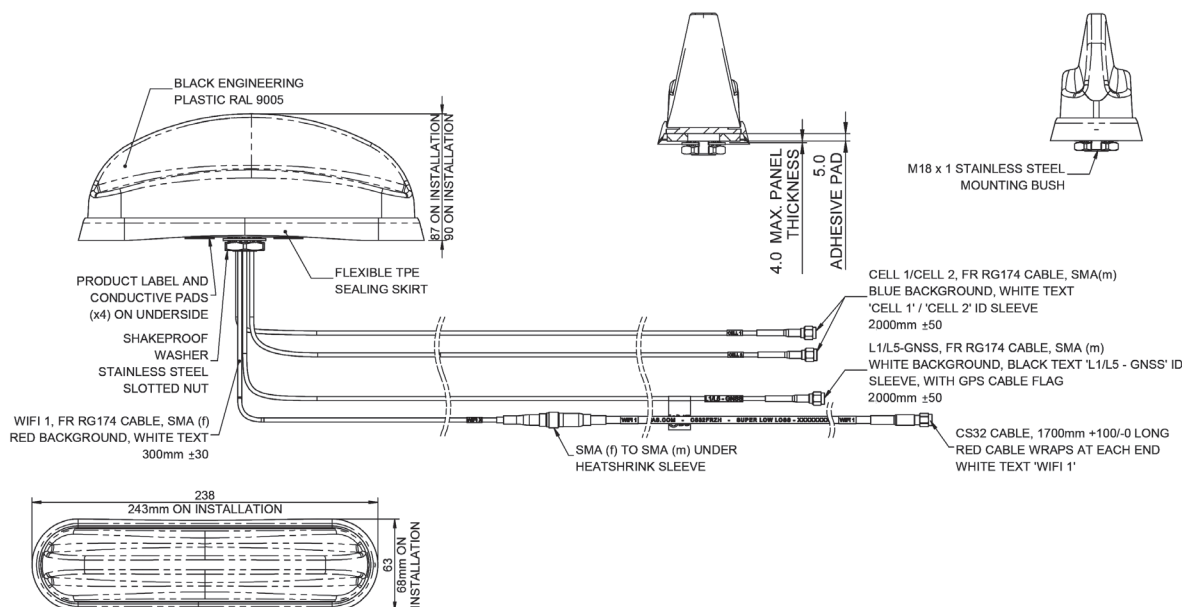
The LG-IN2929 platform features 2x2 MiMo antenna function for 4G/5G (617-960/1427-6000MHz), SiSo dual-band WiFi which supports WiFi 6E and an active antenna for L1/L5 GPS/GNSS with advanced filtering for LTE Band 13/14 operation.

The LG-IN2929 is designed for use on conductive metal panels but can be used on non-conductive panels with some reduction in performance in the 600MHz band.

This antenna is ideal for IoT applications including vending machines, kiosks, display screens and payment terminals where a cost-effective, efficient and robust antenna is essential. Supplied with integral flexible FR RG174 and CS32 cables and requiring only a single hole mounting, the LG-IN2929 is a convenient and easy to install solution for a range of applications.

Technical Drawing

LG-IN2929 Shown



4-in-1 4G/5G MiMo IoT Antenna

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Product Data

Part No.

LG-IN2929

Electrical Data

Frequency Range (MHz)	Element 1	1x 1164-1189 / 1559-1612 - Patch Antenna
	Elements 2 & 3	2x 617-960, 1427-6000 - PiFA Antenna
	Element 4	1x 2.4/5.0/7.1GHz - PiFA Antenna
Peak gain: Isotropic*		3dBi (617-960MHz)
	Elements 2 & 3	5dBi (1427-3800MHz)
		4dBi (4900-6000MHz)
	Element 4	5dBi (2396-2485MHz)
		6dBi (4900-7200MHz)
Isolation**	4G/5G	>13dB
Typical Efficiency*	Elements 2 & 3	> 64% (617-960Mz) > 60% (1427-6000MHz)
	Element 4	> 61% (2400-2485Mz) >46% (5150-7125MHz)
Correlation Co-efficient	Elements 2 & 3	<0.2
Polarisation		Vertical
Pattern		Omni-directional
Impedance		50Ω
Max Input Power (W)		10

GPS/GNSS Data

Frequency Range (MHz)	1164-1189 / 1559-1612
Impedance	50Ω
Gain: LNA	30dB/26dB
Polarisation	Right Hand Circular
Out of Band Rejection	>48dB
Rejection @ 787MHz	>50dB
Noise Figure	-2.6dB
Operating Voltage / Current	3-5V DC (fed via coax) / Typical <20mA

Mechanical Data

Dimensions (mm) - Installed	Total Height	90 (3.54")
	Length	243 (9.56")
	Width	63 (2.48")
Operating Temp (°C)		-40° / +80°C (-40° / 176°F)
Material		LEXAN EXL9330, Silicone Rubber, Aluminium Alloy
Colour		Black
Ingress Protection		IP69K

Mounting Info

Fixing	Panel Mount
Hole Size (mm)	19 (3/4")

Cable Data		Cell	WiF	GPS/GNSS
Cable Type -		FR RG174	FR RG174 / CS32	FR RG174
Dimensions	Diameter (mm)	2.8 (0.11")	2.8 (0.11") / 5 (0.2")	2.8 (0.11")
	Length (m)	2 (6.6')	0.3 (1') / 1.7 (5.6')	2 (6.6')
	GPS/GNSS		1 x SMA Plug	
Termination	4G/5G		2 x SMA plug	
	WiFi		1 x SMA Reverse Polarity Plug	

*Swept peak gain and efficiency measured in free space with 0.5m (1.64') of FR RG174 cable. Efficiency is average efficiency over stated bands.

**Typical isolation measured in free space with 0.5m (1.64') of FR RG174 cable

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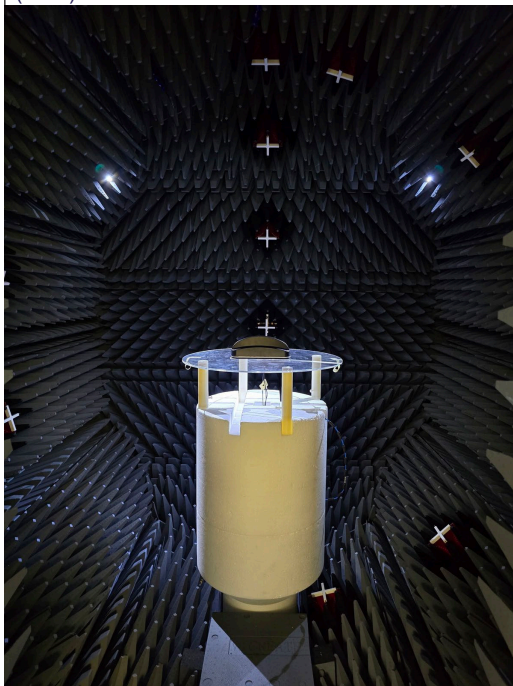
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Electrical Data WiFi - Free Space

Measurement Conditions

LG-IN2929 measured in free space with 0.5m (1.64') of FR RG174 cable

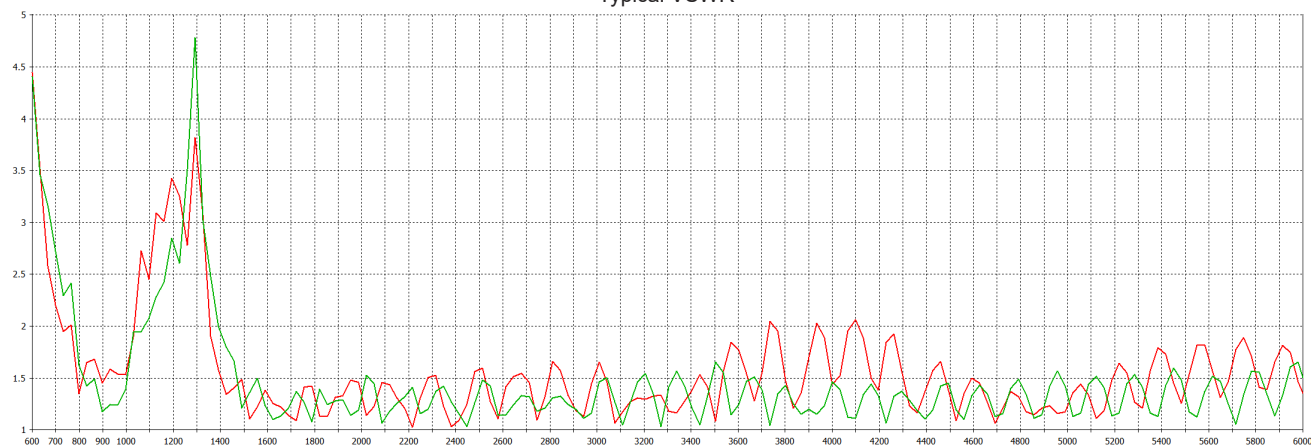


4G/5G Antennas

Frequency Range (MHz)	LTE Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
617-698	71, 105	Cell A	2.2	47
		Cell B	1.8	48
699-798	12,13, 14 17,28	Cell A	3.1	65
		Cell B	2.1	65
807- 862	5,19,20,26,27	Cell A	3.2	73
		Cell B	2.7	73
880-960	8	Cell A	3.3	72
		Cell B	2.7	73
1427-1518	11, 21, 74,75,76	Cell A	3.2	79
		Cell B	3.1	76
1710-1920	2,3,4,9,25,35,39,66	Cell A	3.6	69
		Cell B	3.2	66
1920-2170	1,23	Cell A	3.9	74
		Cell B	3.4	73
2300-2400	30,40	Cell A	3.9	75
		Cell B	4.0	75
2496-2690	7,38,41	Cell A	4.2	75
		Cell B	4.3	76
3300-4200	22,42,43,48,77,78	Cell A	5.1	60
		Cell B	4.9	59
4400-5000	79	Cell A	3.9	58
		Cell B	4.9	57
5000-6000	96, 102, 104	Cell A	4.0	52
		Cell B	4.9	47

Electrical Data Cell - Free Space

Typical VSWR*

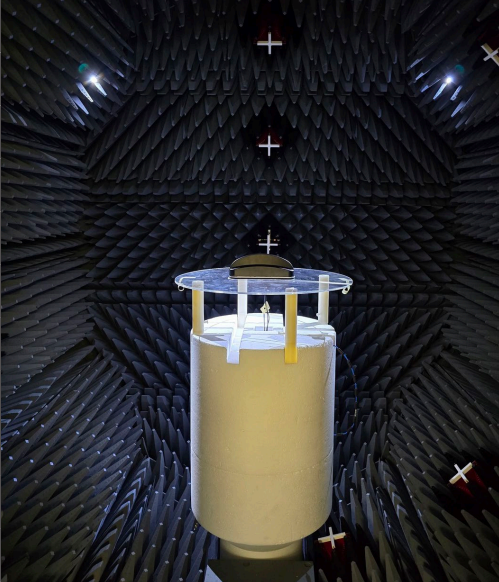


*VSWR measured in free space with 0.5m (1.64') of FR RG174 cable

4-in-1 4G/5G MiMo IOT Antenna

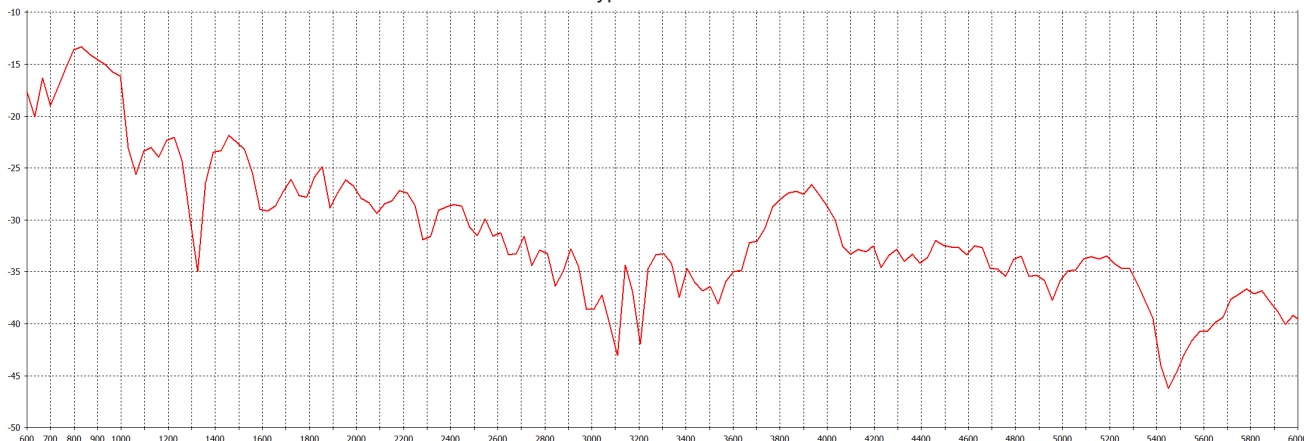
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Electrical Data WiFi - Free Space

Measurement Conditions	WiFi Antennas				
LG-IN2929 measured in free space with 0.5m (1.64') of FR RG174 cable	Frequency Range (MHz)	WiFi Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	2396-2485	2.4GHz	WiFi 1	4.9	61
	5150-5250	UNII-1	WiFi 1	4.7	59
	5250-5350	UNII-2A	WiFi 1	5.2	58
	5350-5470	UNII-2B	WiFi 1	5.2	56
	5470-5725	UNII-2C	WiFi 1	6.1	53
	5725-5850	UNII-3	WiFi 1	6.3	50
	5850-5925	UNII-4	WiFi 1	6.2	47
	5925-6425	UNII-5	WiFi 1	6.0	43
	6425-6525	UNII-6	WiFi 1	3.8	37
	6525-6875	UNII-7	WiFi 1	4.2	34
	6875-7125	UNII-8	WiFi 1	1.6	29

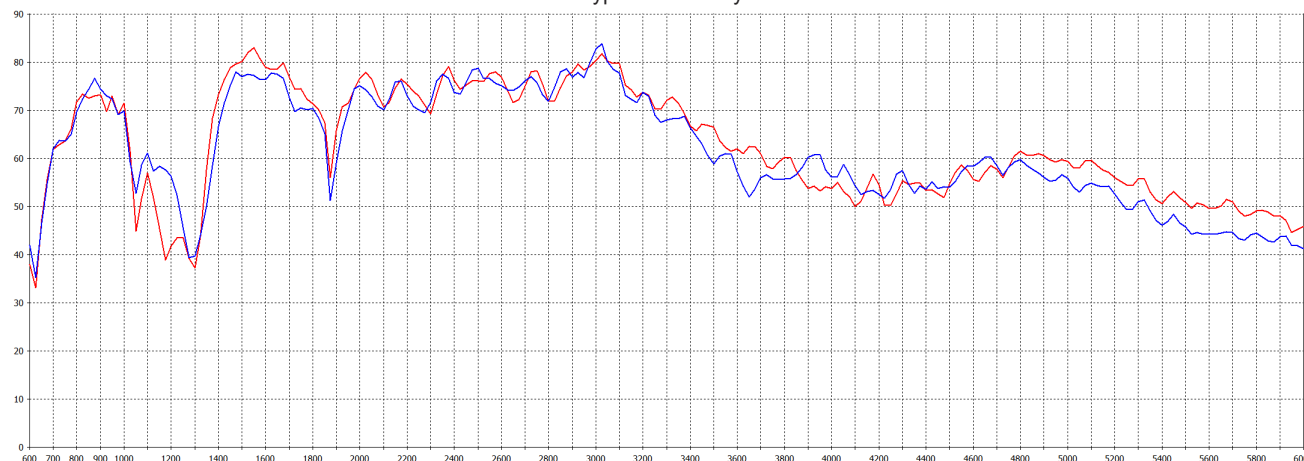
Electrical Data Cell - Free Space

Typical Isolation*



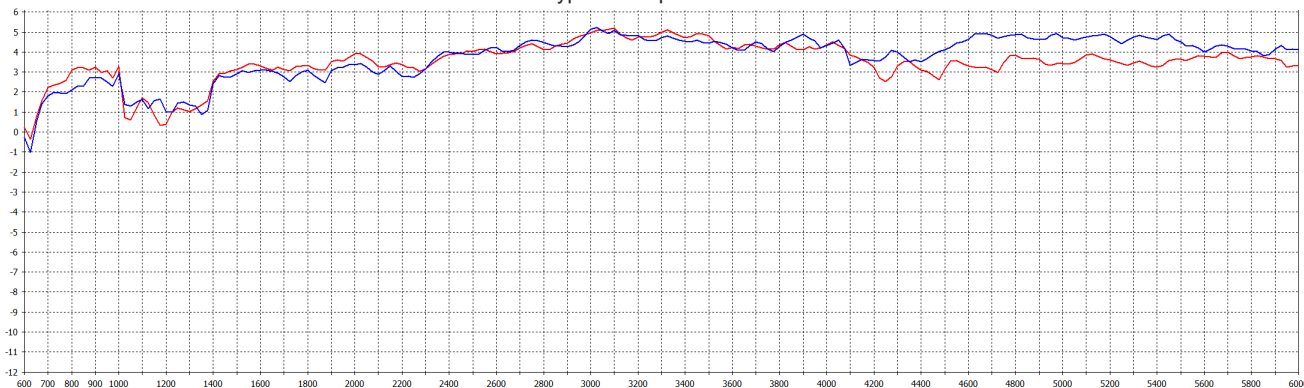
*Isolation measured in free space with 0.5m (1.64') of FR RG174 cable

Typical Efficiency*



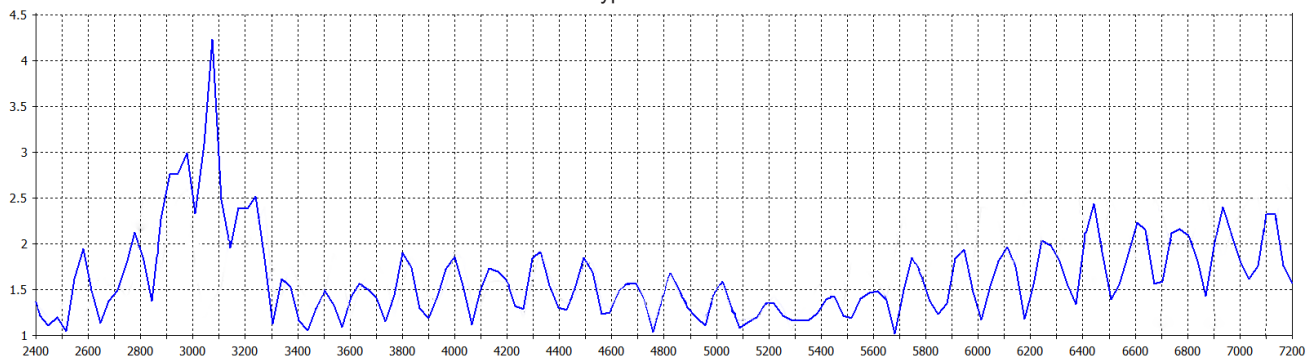
*Efficiency measured in free space with 0.5m (1.64') of FR RG174 cable

Typical Swept Peak Gain*



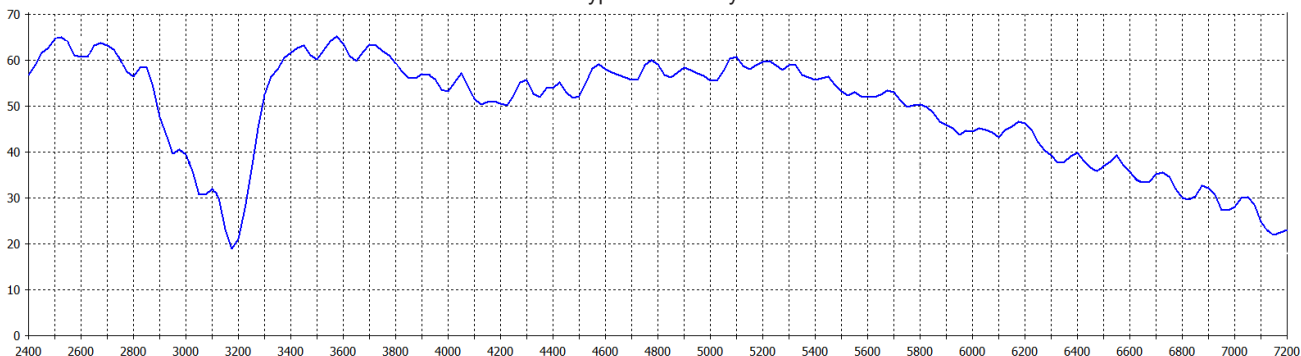
*Peak Gain measured in free space with 0.5m (1.64') of FR RG174 cable

Typical VSWR*



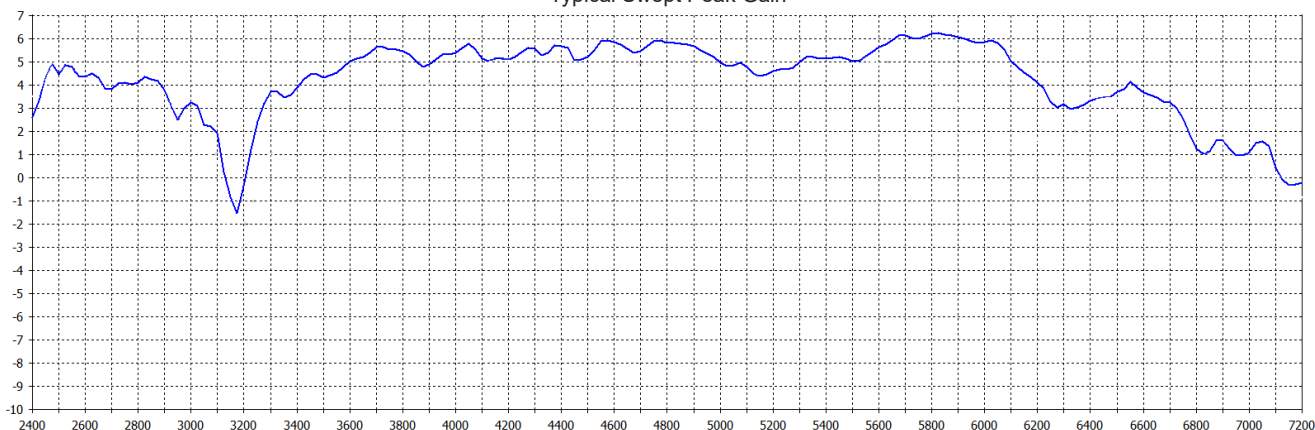
*VSWR measured in free space with 0.5m (1.64') of FR RG174 cable

Typical Efficiency*



*Efficiency measured in free space with 0.5m (1.64') of FR RG174 cable

Typical Swept Peak Gain*



*Peak Gain measured in free space with 0.5m (1.64') of FR RG174 cable

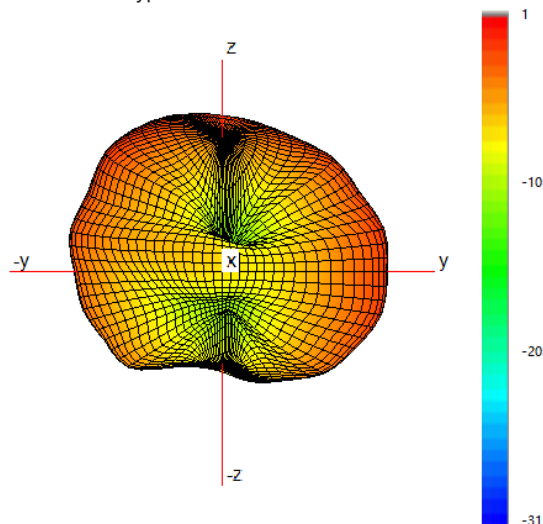
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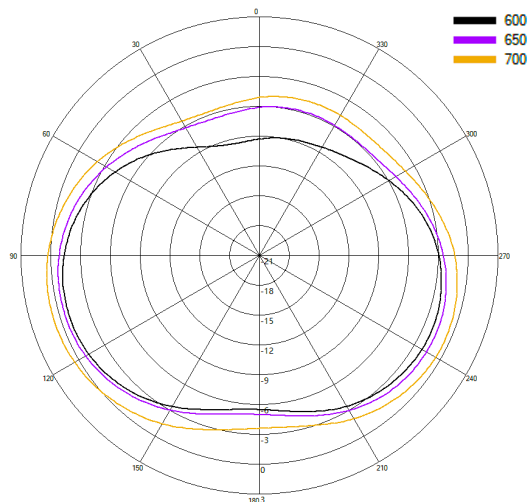
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3D Pattern Data in
Free Space Cell A

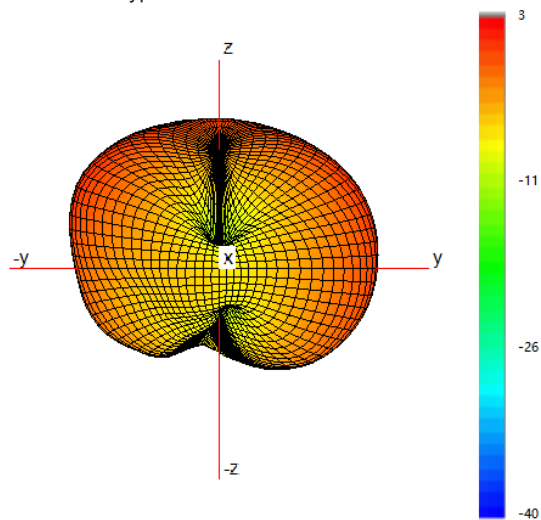
Typical 3D Pattern- Cell A - 650 MHz



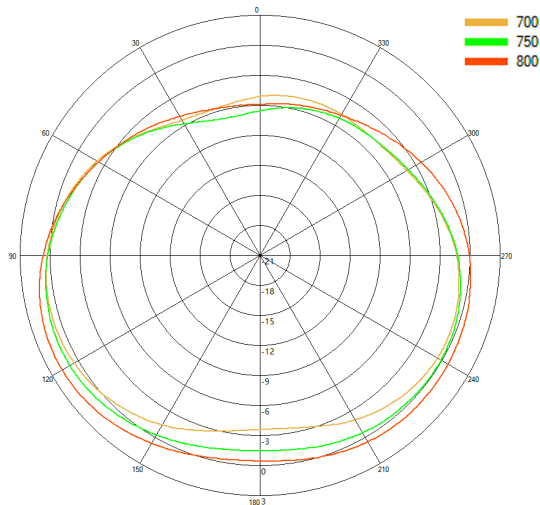
Typical H Plane- Cell A - Patterns- 600-700MHz



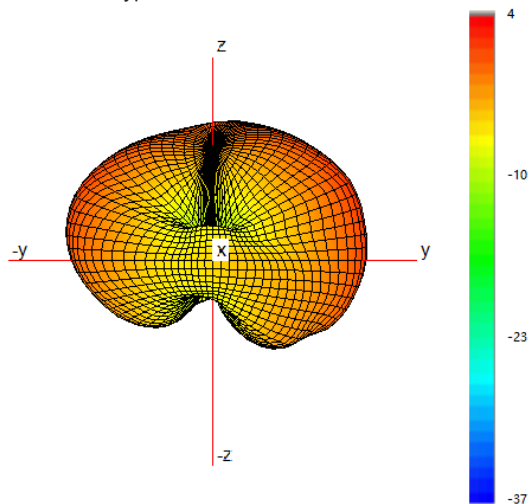
Typical 3D Pattern- Cell A - 750 MHz



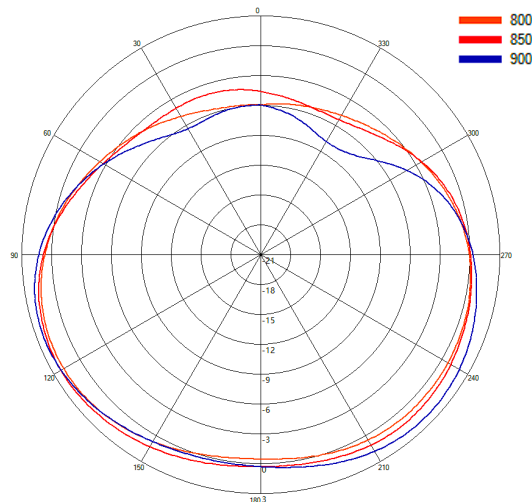
Typical H Plane- Cell A - Patterns- 700-800MHz



Typical 3D Pattern- Cell A - 850 MHz



Typical H Plane- Cell A - Patterns- 800-900MHz



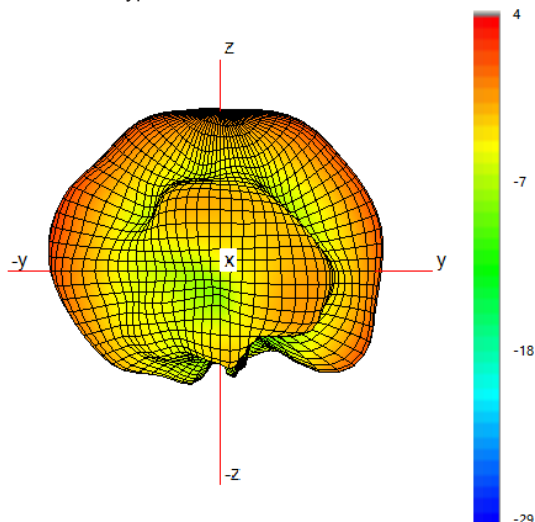
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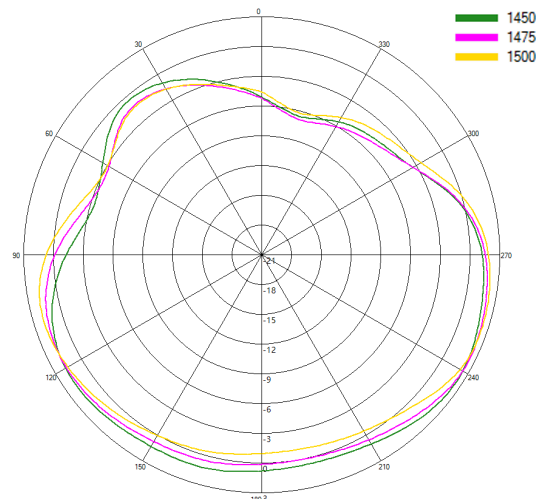
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3D Pattern Data in
Free Space Cell A

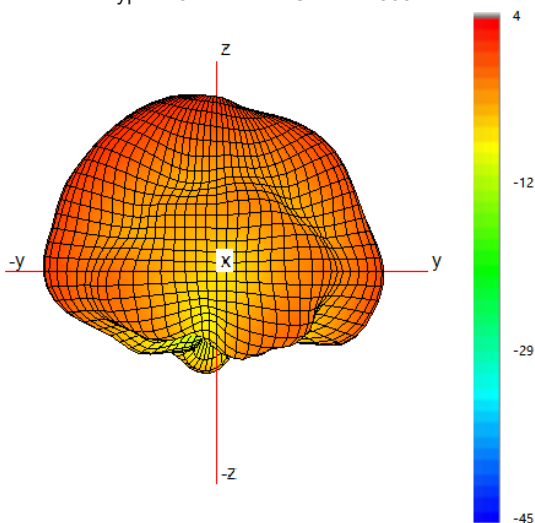
Typical 3D Pattern- Cell A - 1475 MHz



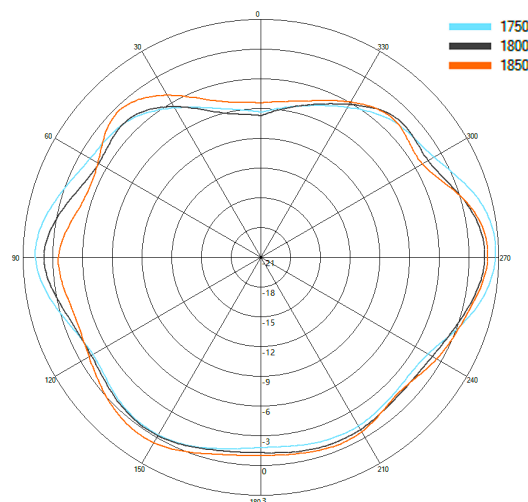
Typical H Plane- Cell A- Patterns- 1450-1500 MHz



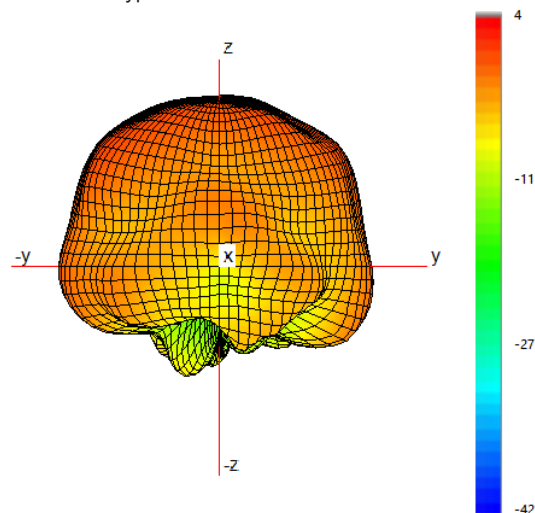
Typical 3D Pattern- Cell A - 1800 MHz



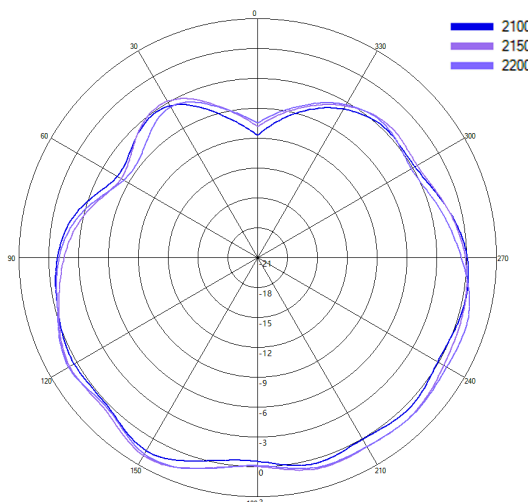
Typical H Plane- Cell A- Patterns- 1750-1850 MHz



Typical 3D Pattern- Cell A - 2150 MHz



Typical H Plane- Cell A- Patterns- 2100-2200 MHz



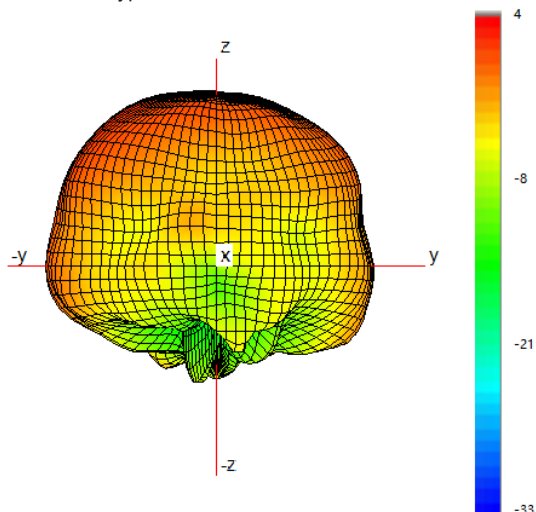
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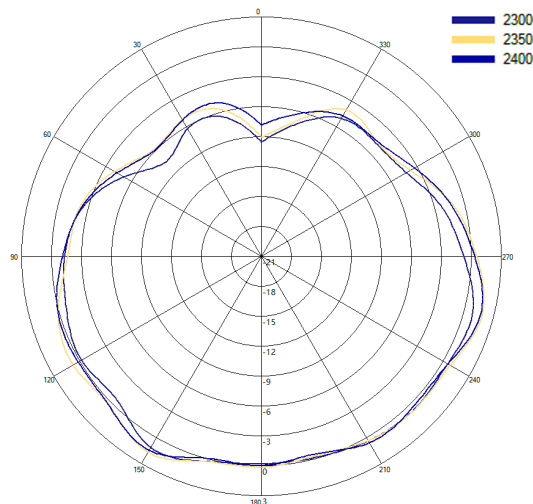
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3D Pattern Data in
Free Space Cell A

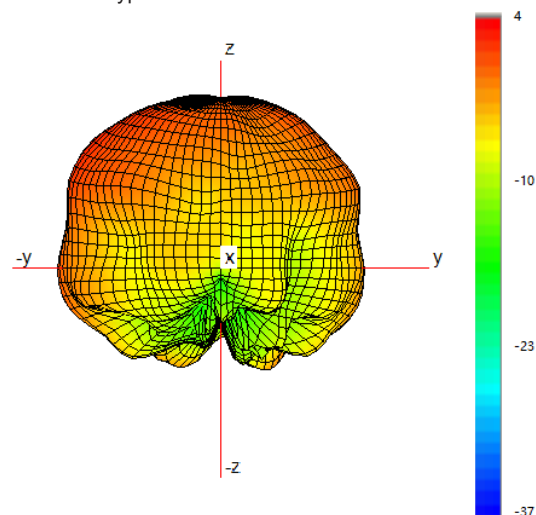
Typical 3D Pattern- Cell A - 2350 MHz



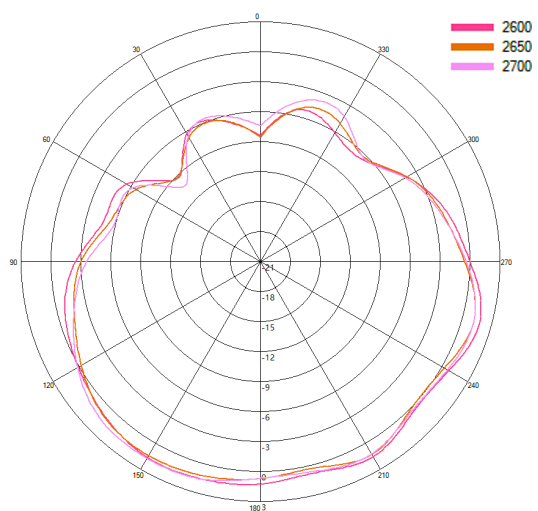
Typical H Plane- Cell A - Patterns- 2300-2400 MHz



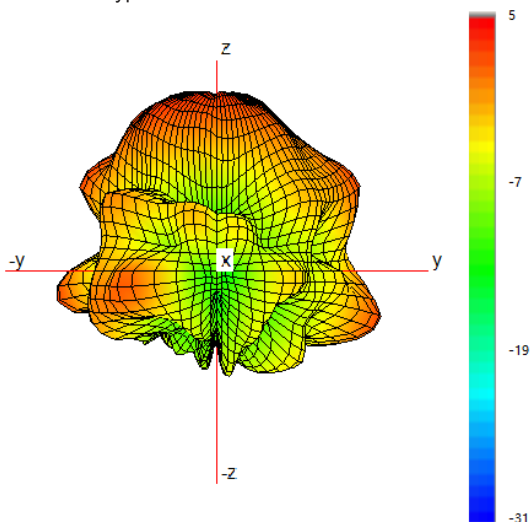
Typical 3D Pattern- Cell A - 2650 MHz



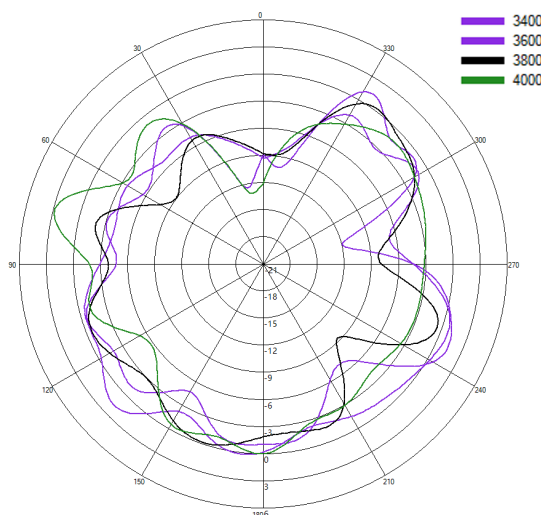
Typical H Plane- Cell A - Patterns- 2600-2700 MHz



Typical 3D Pattern- Cell A - 3600 MHz



Typical H Plane- Cell A - Patterns- 3400-4000 MHz



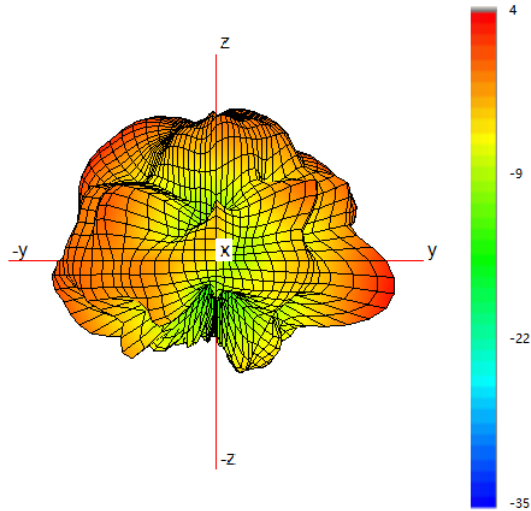
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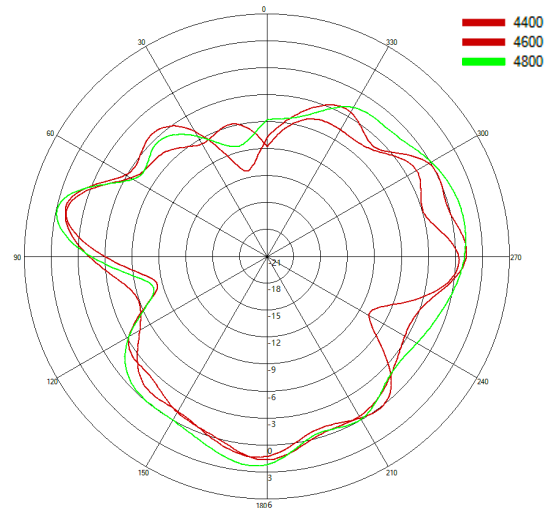
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3D Pattern Data in
Free Space Cell A

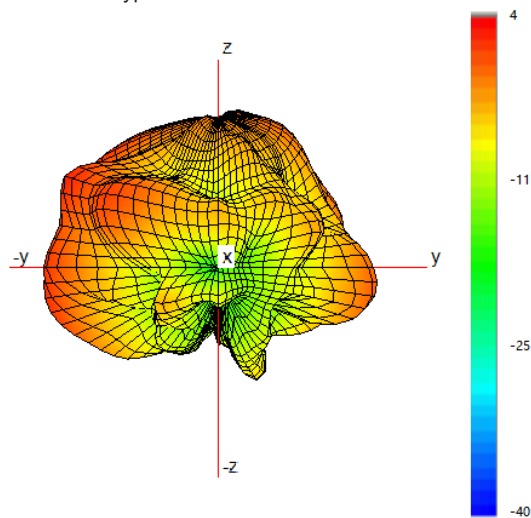
Typical 3D Pattern- Cell A - 4700 MHz



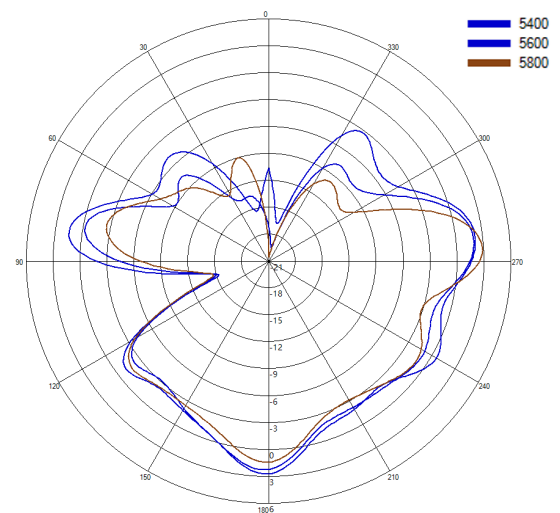
Typical H Plane- Cell A - Patterns- 4400-4800 MHz



Typical 3D Pattern- Cell A - 5600 MHz



Typical H Plane- Cell A - Patterns- 5400-5800 MHz



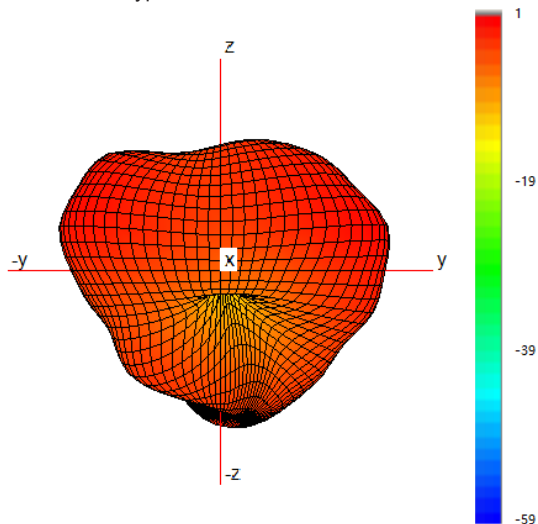
4-in-1 4G/5G MiMo IOT Antenna

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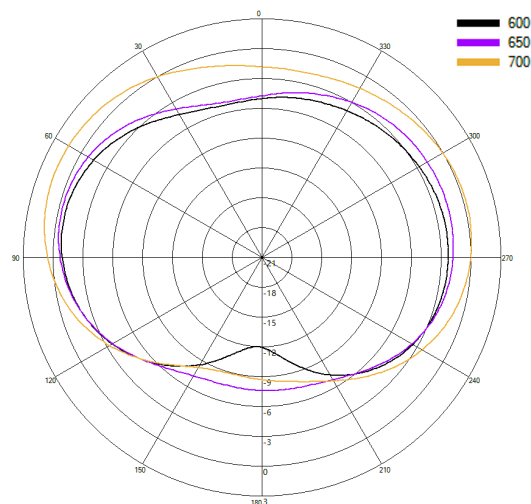
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3D Pattern Data in
Free Space Cell B

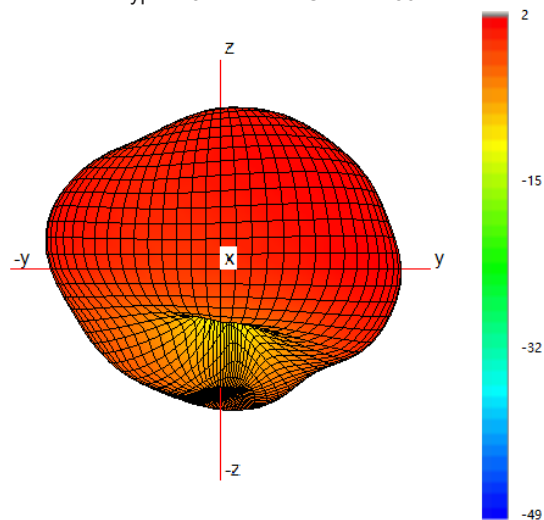
Typical 3D Pattern- Cell B - 650 MHz



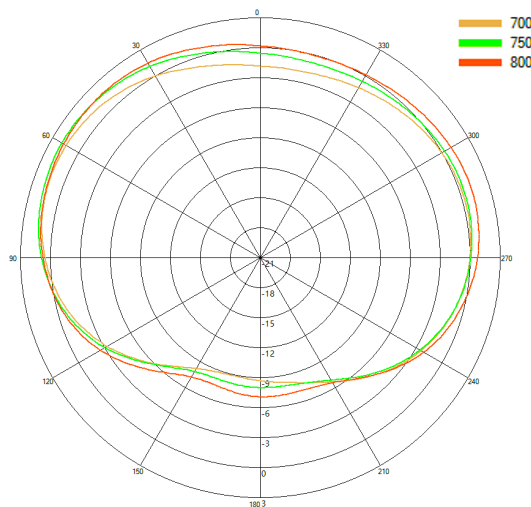
Typical H Plane- Cell B - Patterns- 600-700MHz



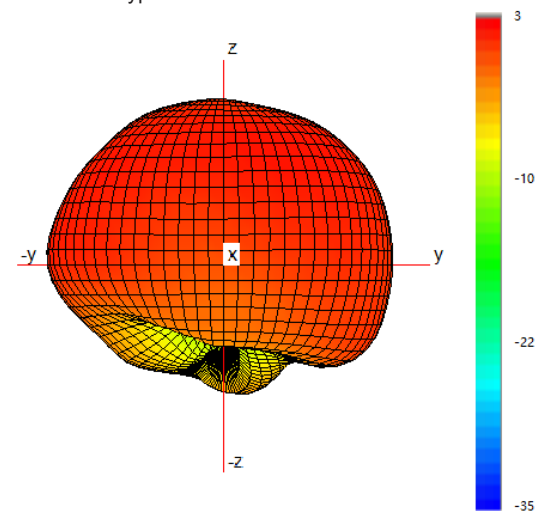
Typical 3D Pattern- Cell B - 750 MHz



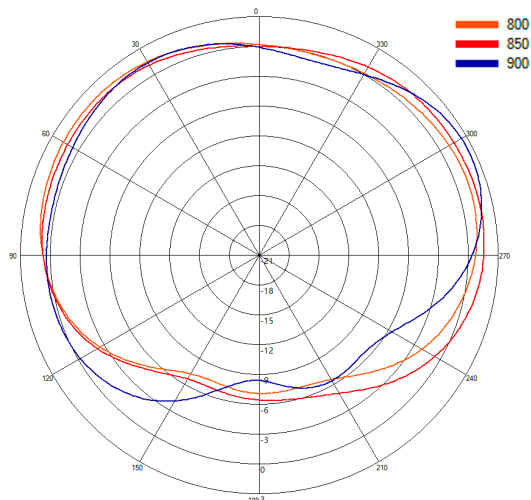
Typical H Plane- Cell B - Patterns- 700-800MHz



Typical 3D Pattern- Cell B - 850 MHz

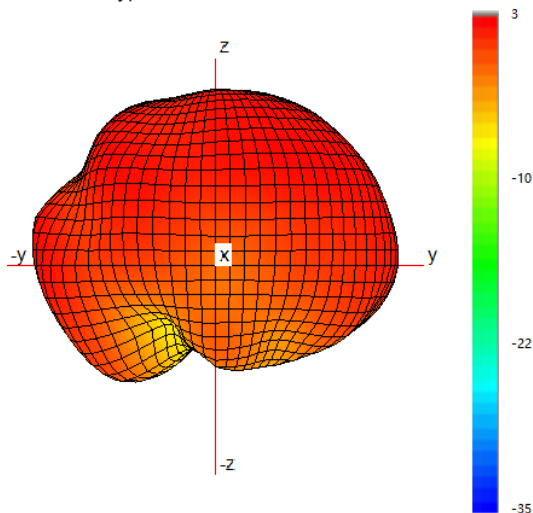


Typical H Plane- Cell B - Patterns- 800-900MHz

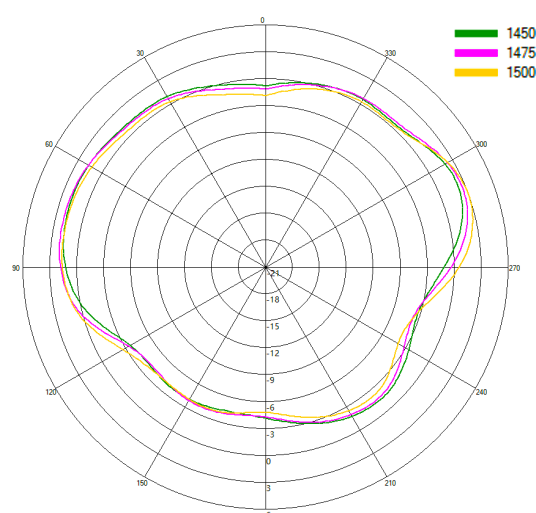


3D Pattern Data in
Free Space Cell B

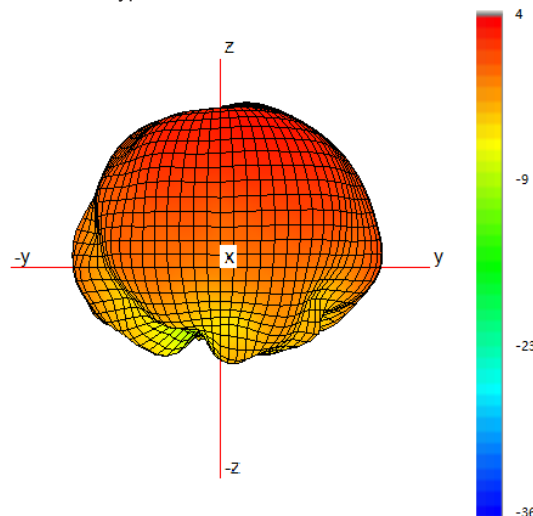
Typical 3D Pattern- Cell B - 1475 MHz



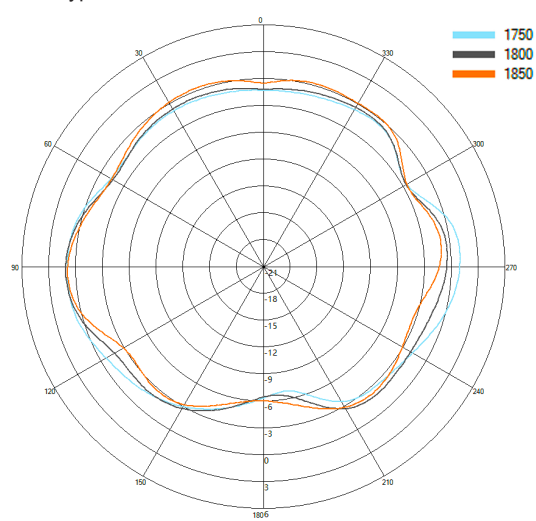
Typical H Plane- Cell B- Patterns- 1450-1500 MHz



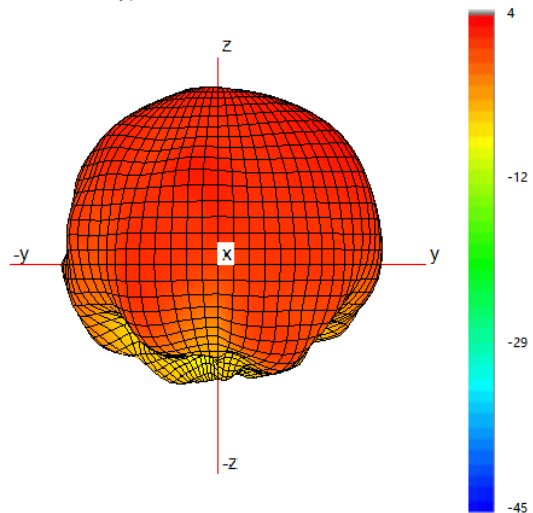
Typical 3D Pattern- Cell B - 1800 MHz



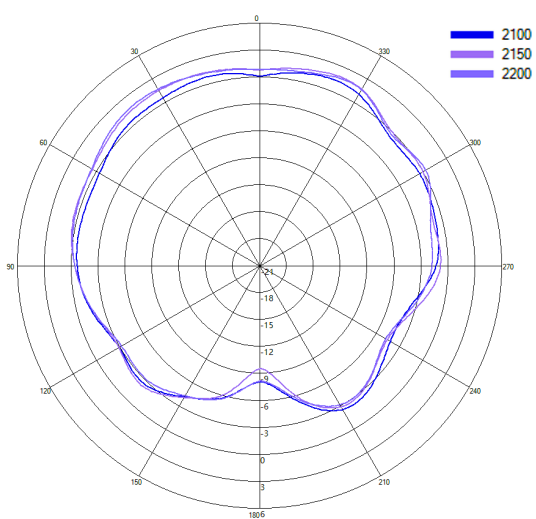
Typical H Plane- Cell B- Patterns- 1750-1850 MHz



Typical 3D Pattern- Cell B - 2150 MHz



Typical H Plane- Cell B- Patterns- 2100-2200 MHz



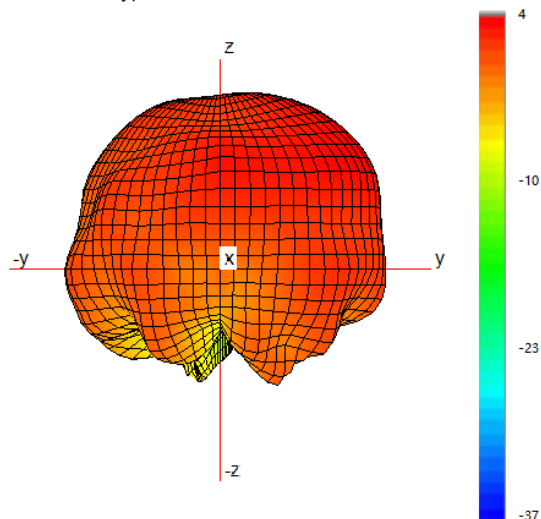
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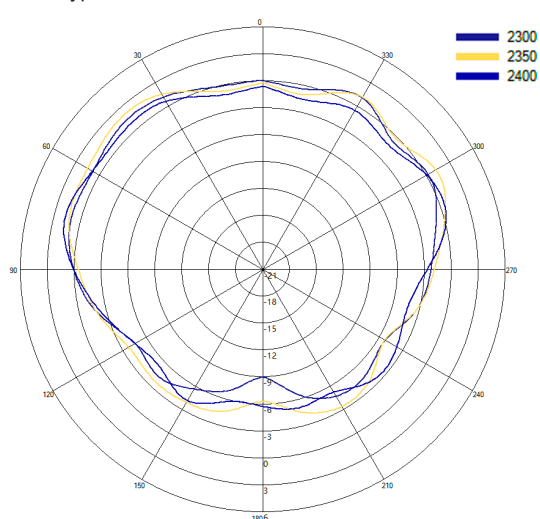
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3D Pattern Data in
Free Space Cell B

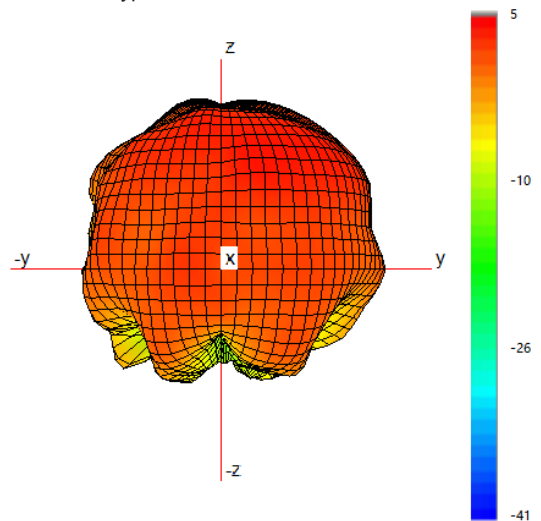
Typical 3D Pattern- Cell B - 2350 MHz



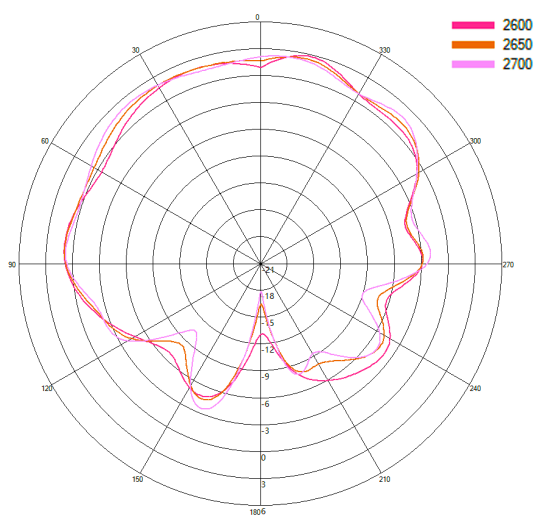
Typical H Plane- Cell B - Patterns- 2300-2400 MHz



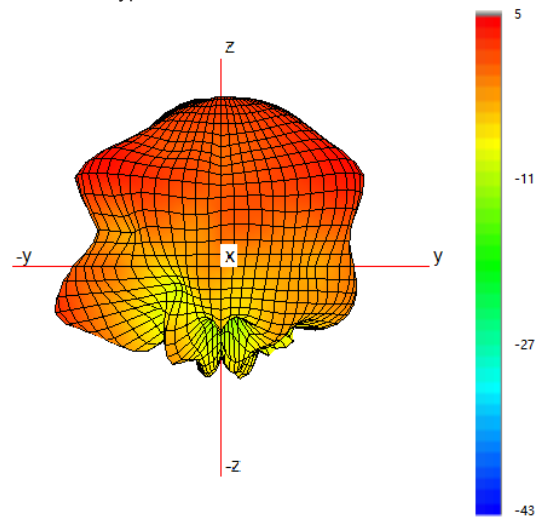
Typical 3D Pattern- Cell B - 2650 MHz



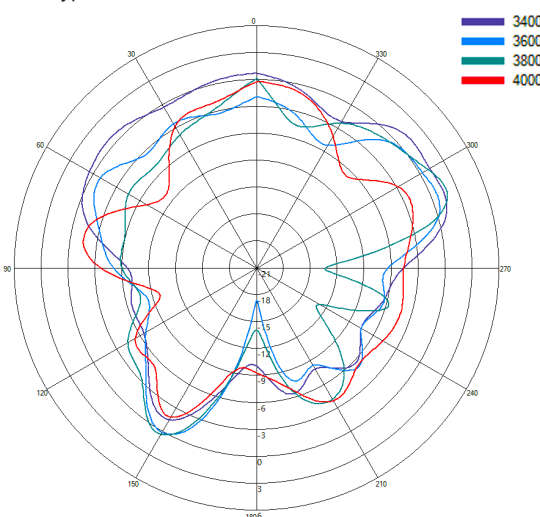
Typical H Plane- Cell B - Patterns- 2600-2700 MHz



Typical 3D Pattern- Cell B - 3600 MHz



Typical H Plane- Cell B - Patterns- 3400-4000 MHz



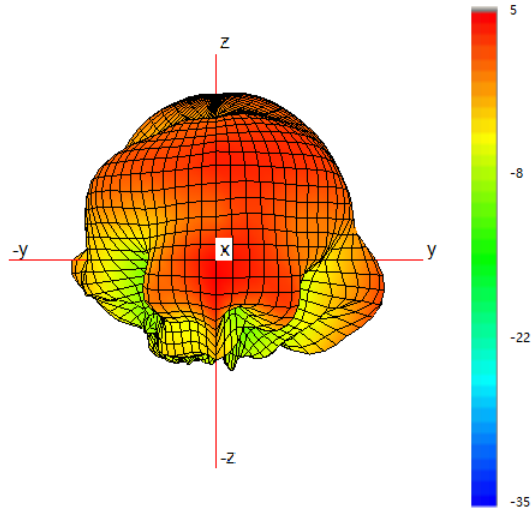
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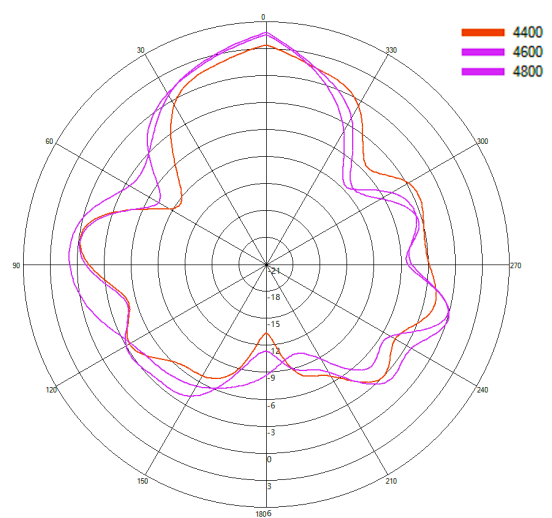
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3D Pattern Data in
Free Space Cell B

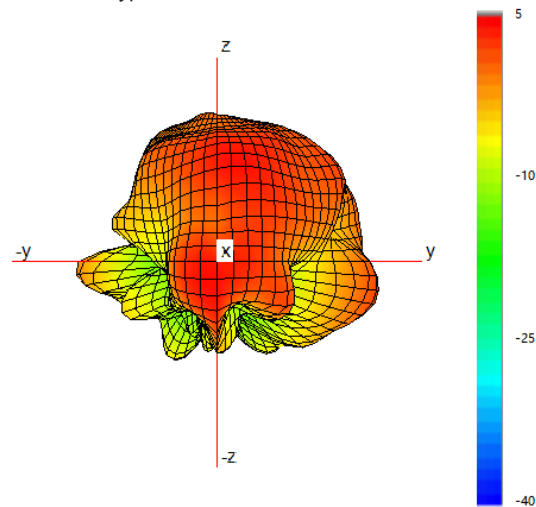
Typical 3D Pattern- Cell B - 4700 MHz



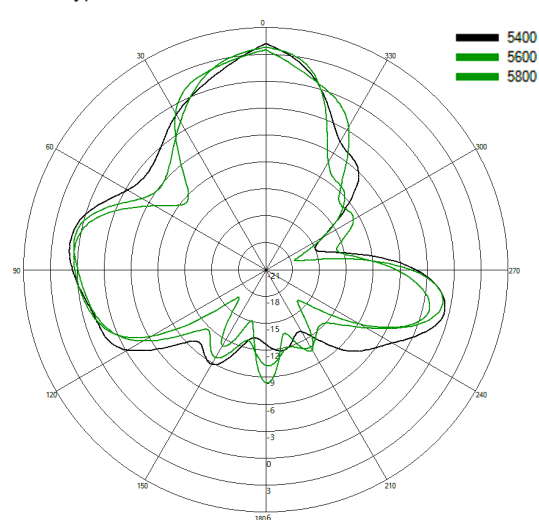
Typical H Plane- Cell B- Patterns- 4400-4800 MHz



Typical 3D Pattern- Cell B - 5600 MHz



Typical H Plane- Cell B- Patterns- 5400-5800 MHz



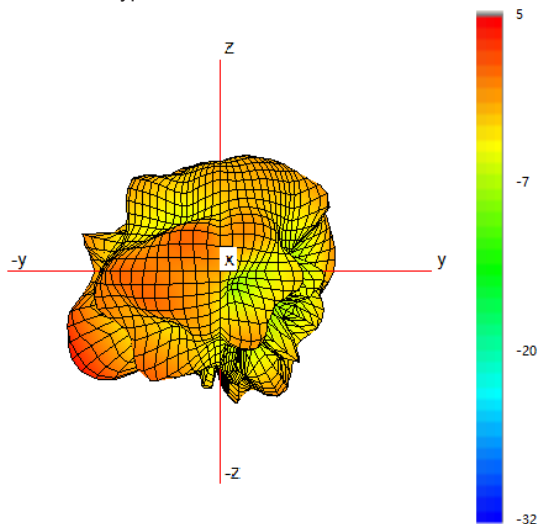
4-in-1 4G/5G MiMo IOT Antenna

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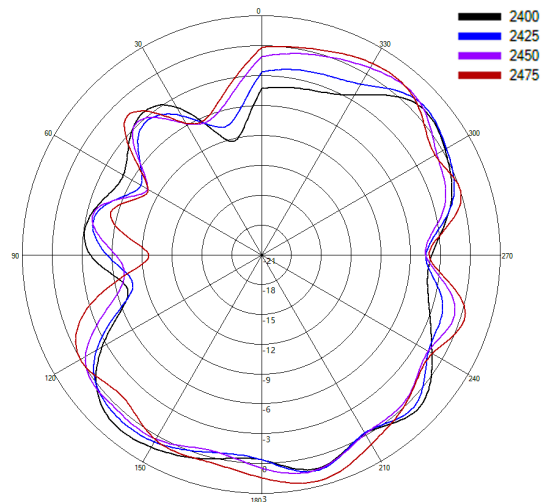
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3D Pattern Data in
Free Space WiFi - 1

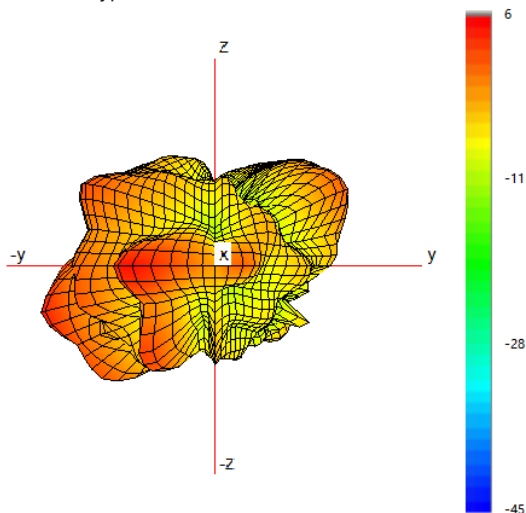
Typical 3D Pattern- WiFi - 1 - 2450 MHz



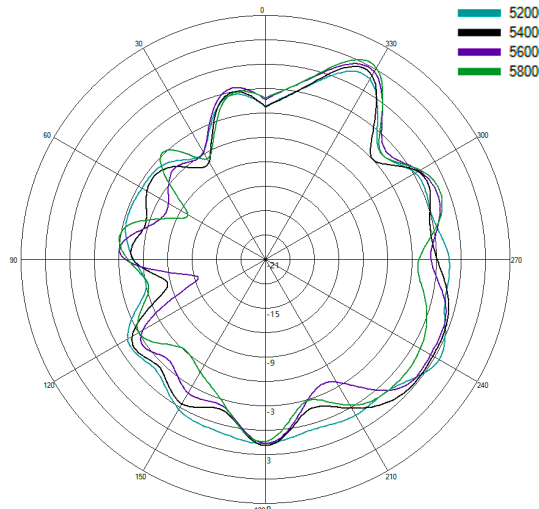
Typical H Plane- WiFi - 1 - Patterns- 2400-2475MHz



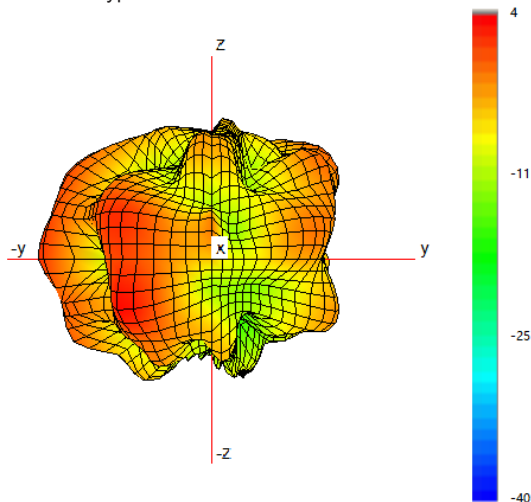
Typical 3D Pattern- WiFi - 1 - 5500 MHz



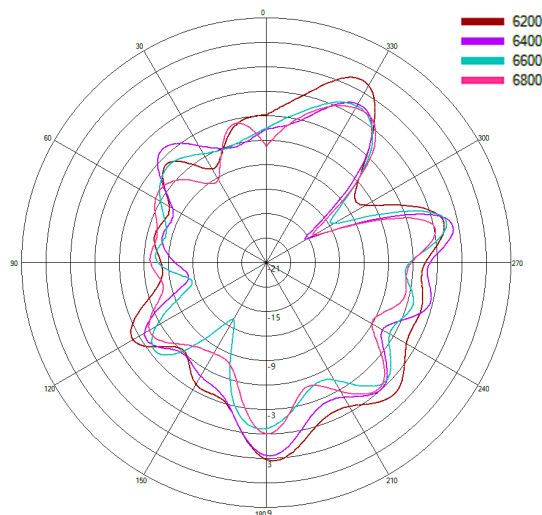
Typical H Plane- WiFi - 1 - Patterns- 5200-5800MHz



Typical 3D Pattern- WiFi - 1 - 6500 MHz



Typical H Plane- WiFi - 1 - Patterns- 6200-6800MHz



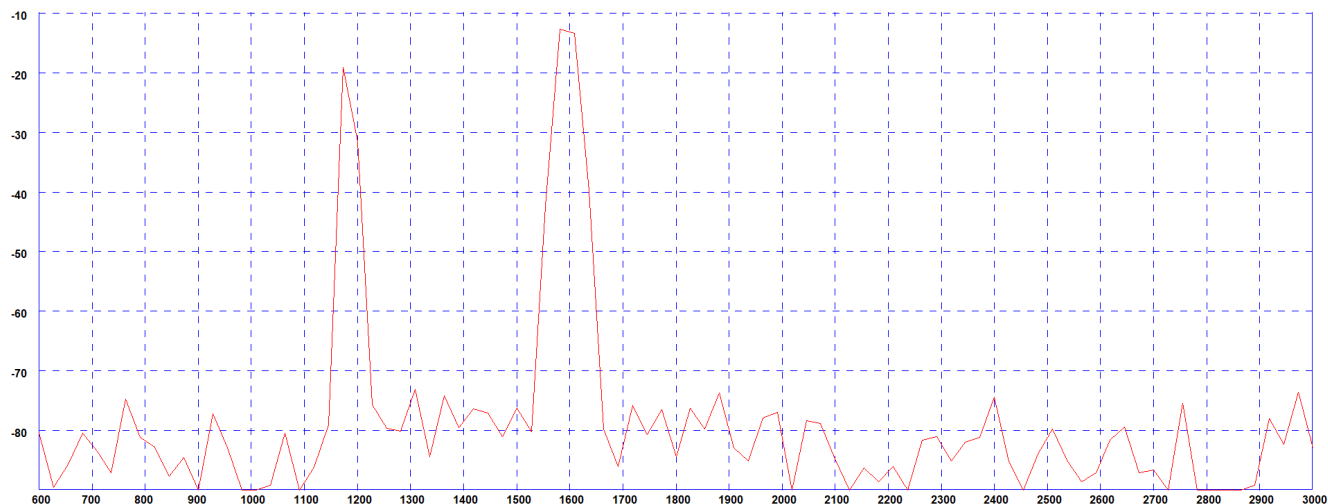
4-in-1 4G/5G MiMo IOT Antenna

LG-IN2929

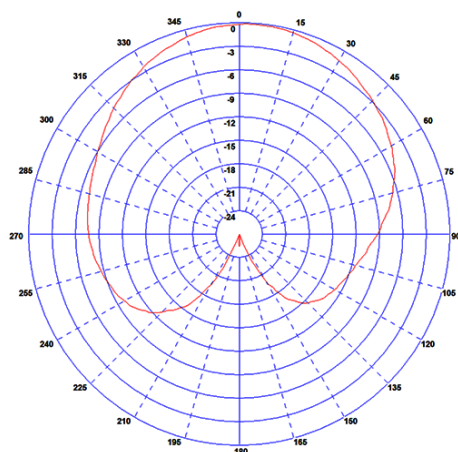
PANORAMA ANTENNAS

Electrical Data- L1/
L5 GPS/GNSS

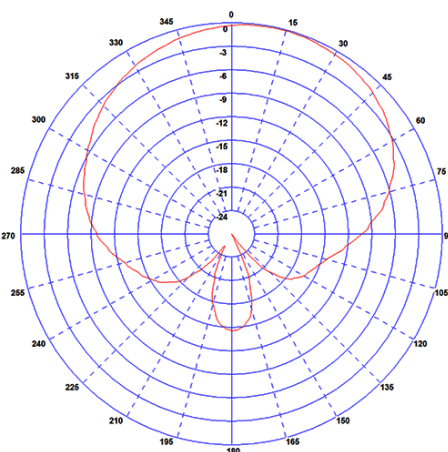
Swept Gain GPS/GNSS



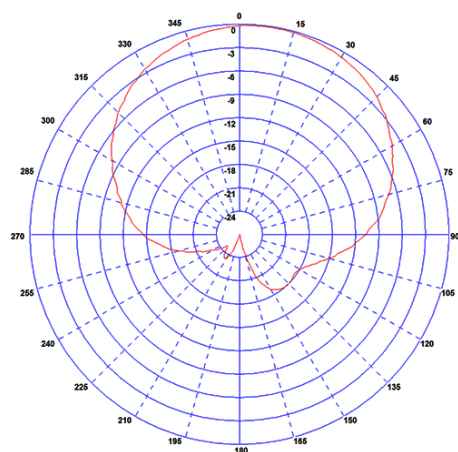
Typical E Plane Pattern - GPS/GNSS 1575 MHz



Typical E Plane Pattern - GPS/GNSS 1602 MHz



Typical E Plane Pattern - GPS/GNSS 1176 MHz



GPS/GNSS Measurements taken on 190x190mm (7.4" x 7.4") ground plane excluding cable loss