

Antenna

YWL00A0AA Datasheet

Antenna Services

Version: 1.1

Date: 2021-12-03

Status: Released



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About the Document

Revision History

Version	Date	Author	Note
-	2021-08-10	Aria CHU/ Kenny YIN	Creation of the document
1.0	2021-08-10	Aria CHU/ Kenny YIN	First official release
1.1	2021-12-03	Aria CHU/ Kenny YIN	Updated the product description in Chapter 1.

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1 Product Description

To meet customers' requirements for the high performance, high integration, and integrated appearance of their products, Quectel provides a combined antenna box series. The antenna box can integrate a variety of antennas, such as 5G, 4G, GNSS, Wi-Fi antennas, to achieve communication functions of 5G MIMO, 4G, GNSS, and Wi-Fi. These antenna boxes can be mounted on the surface of devices via screw, adhesive or other methods, supports multiple connector types and cable lengths. It is a more flexible and reliable high-performance antenna solution for outdoor applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

- Cellular 4G + 4G DIV
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	698–960 MHz, 1710–2690 MHz
Input Impedence	50 Ω
VSWR	4G: ≤ 3.0 4G DIV: ≤ 5.0
Gain	4G: ≤ 2 dBi 4G DIV: ≤ 3 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	4G: 2.72 DIV: 4.9	-	-	4G: 1.7 DIV: 2.5	4G: 2.4 DIV: 1.9	-	-	-
Average Efficiency (%)	4G: 2.0 DIV: 39	-	-	4G: 28.7 DIV: 33.2	4G: 34 DIV: 25	-	-	-
Max. Peak Gain (dBi)	4G: 0.68 DIV: 2.3	-	-	4G: 0.03 DIV: 2.72	4G: 2.0 DIV: 1.22	-	-	-

Mechanical Specifications

Antenna Size	Φ 81 mm × 27.5 mm RG174 Cable Length = 1500 mm
Casing	ABS + PC
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Screw
IP Rating	IP66

4 Overall Performance

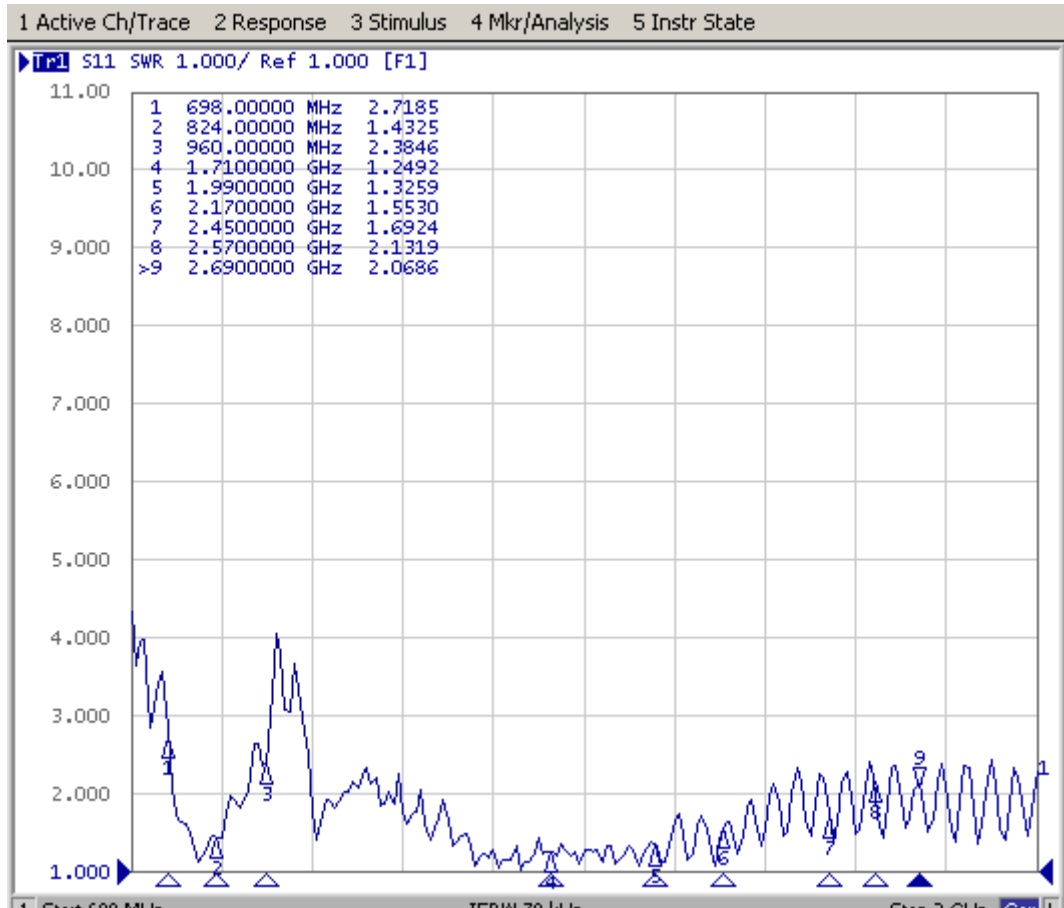
4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz



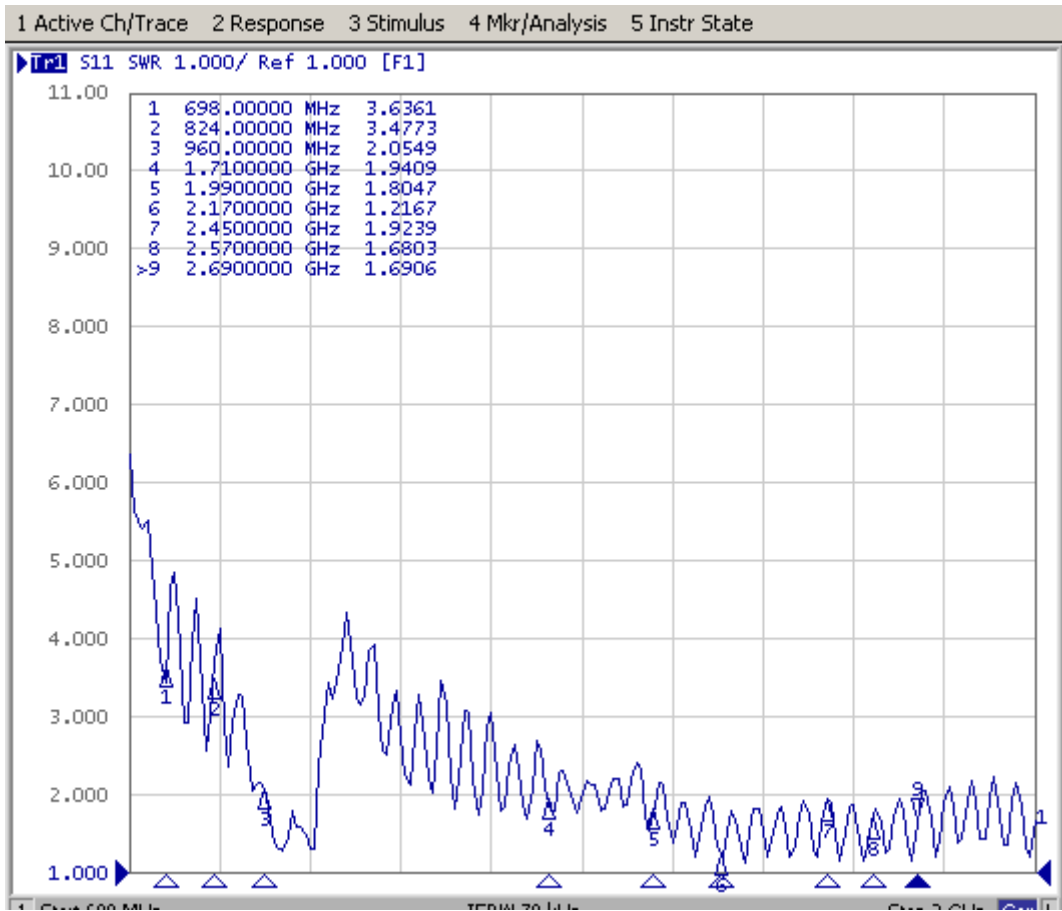
4.2. VSWR

4.2.1. 4G



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	2.72	1.43	2.38	1.25	1.33	1.55	1.69	2.13	2.07

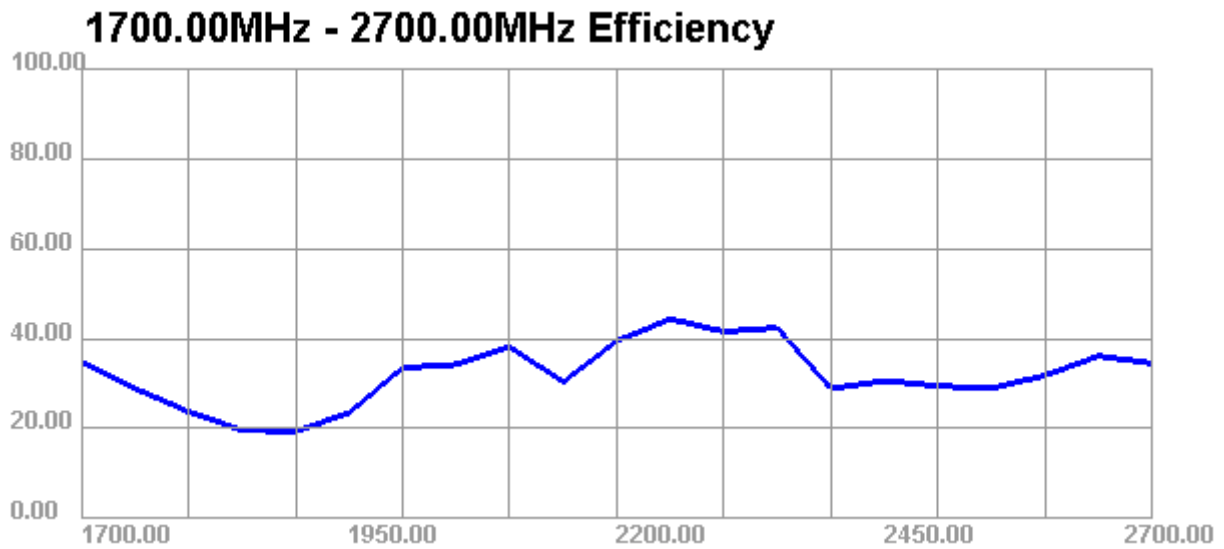
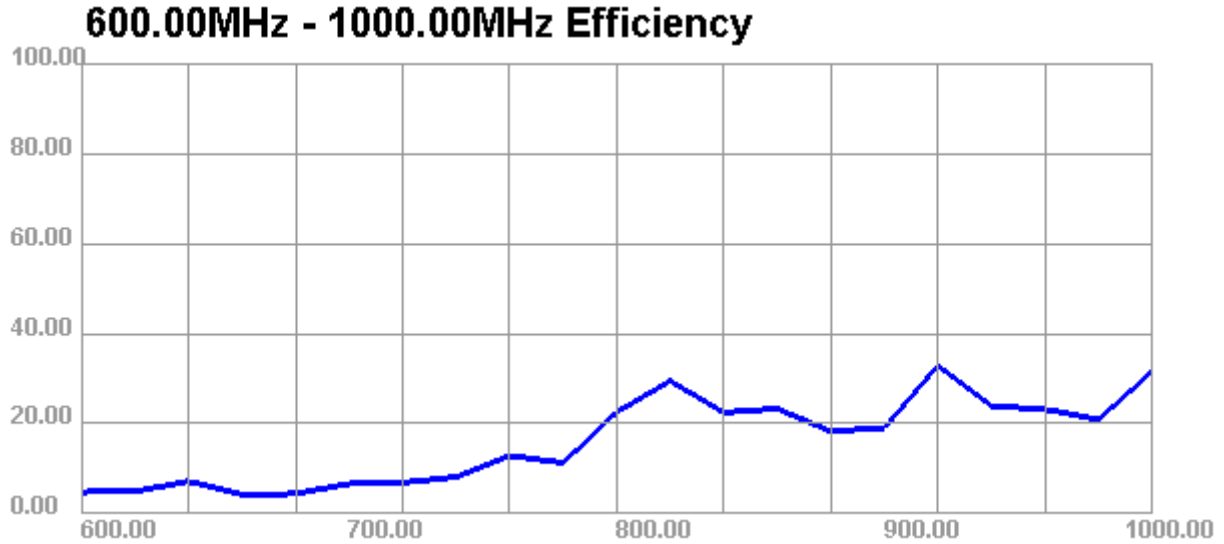
4.2.2. 4G DIV



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	3.64	3.48	2.05	1.94	1.80	1.22	1.92	1.68	1.69

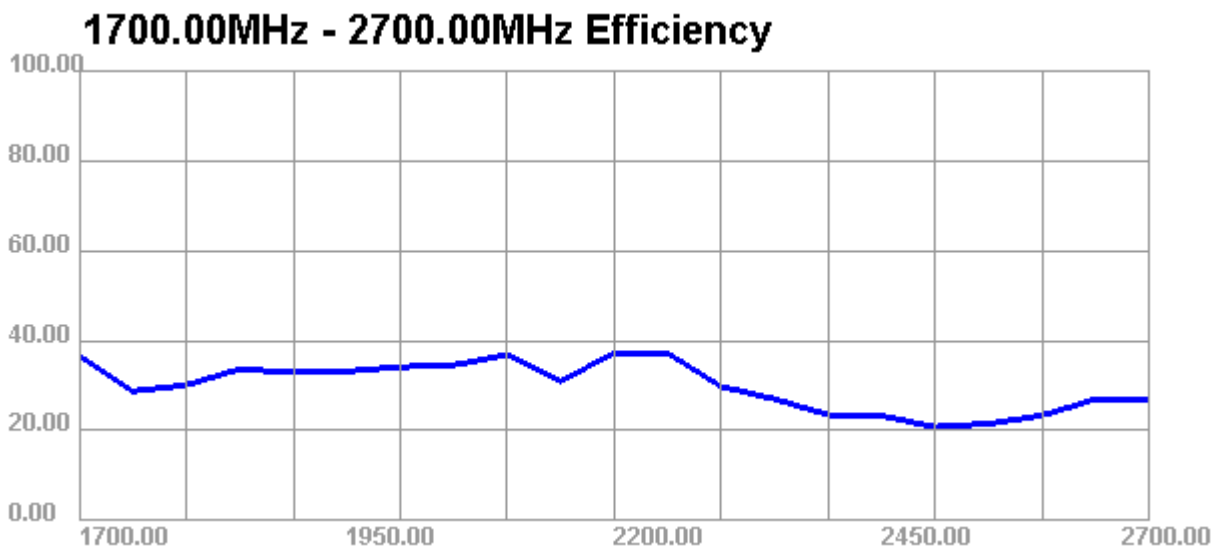
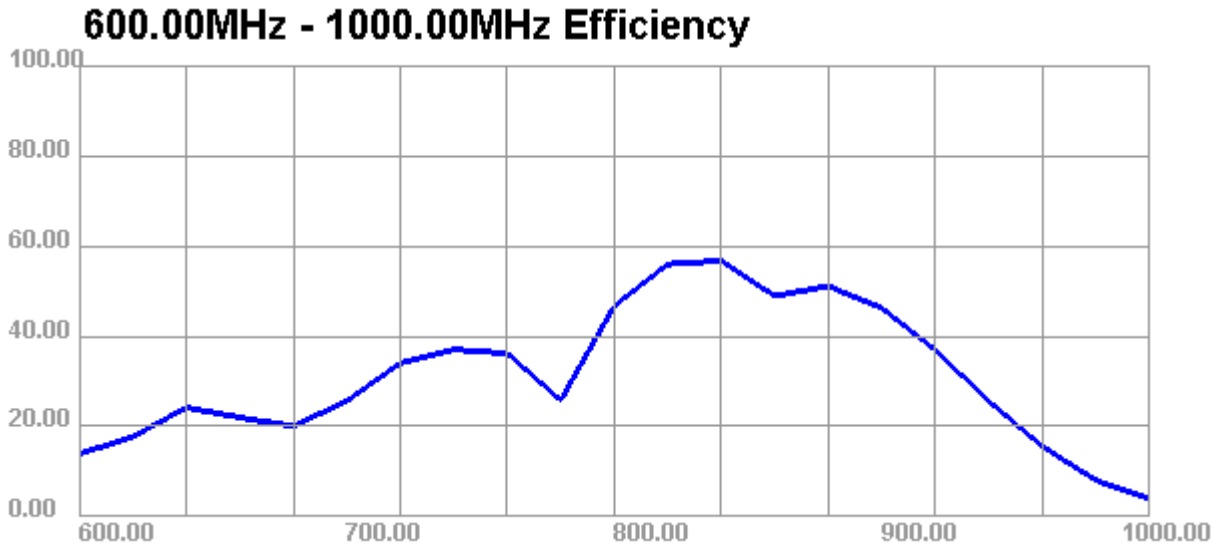
4.3. Efficiency

4.3.1. 4G



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Efficiency (%)	6.65	22.49	23.2	34.91	23.53	30.39	30.66	34.52

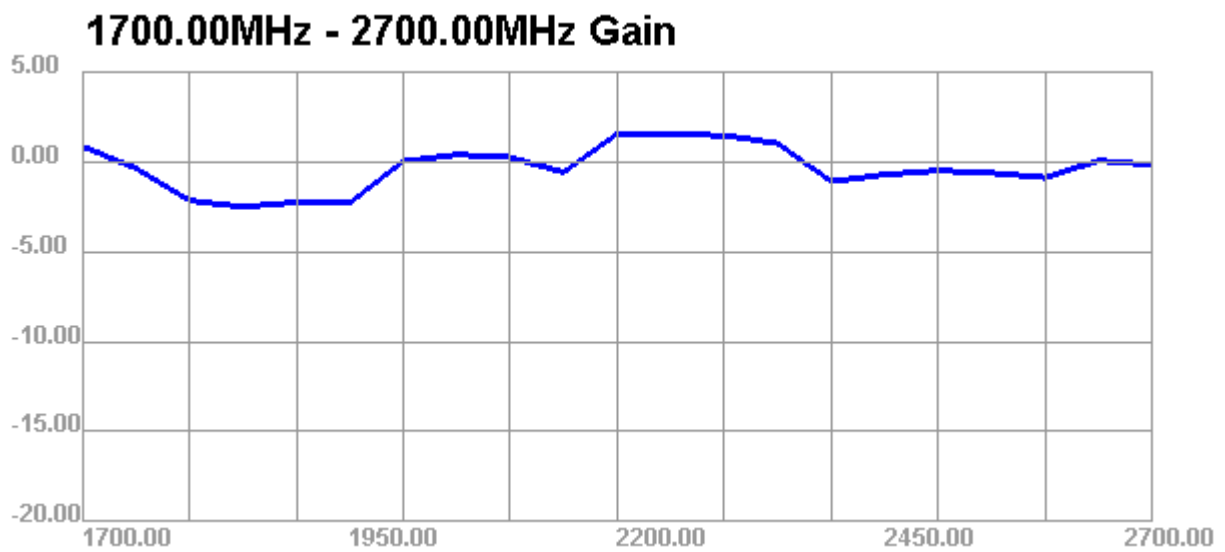
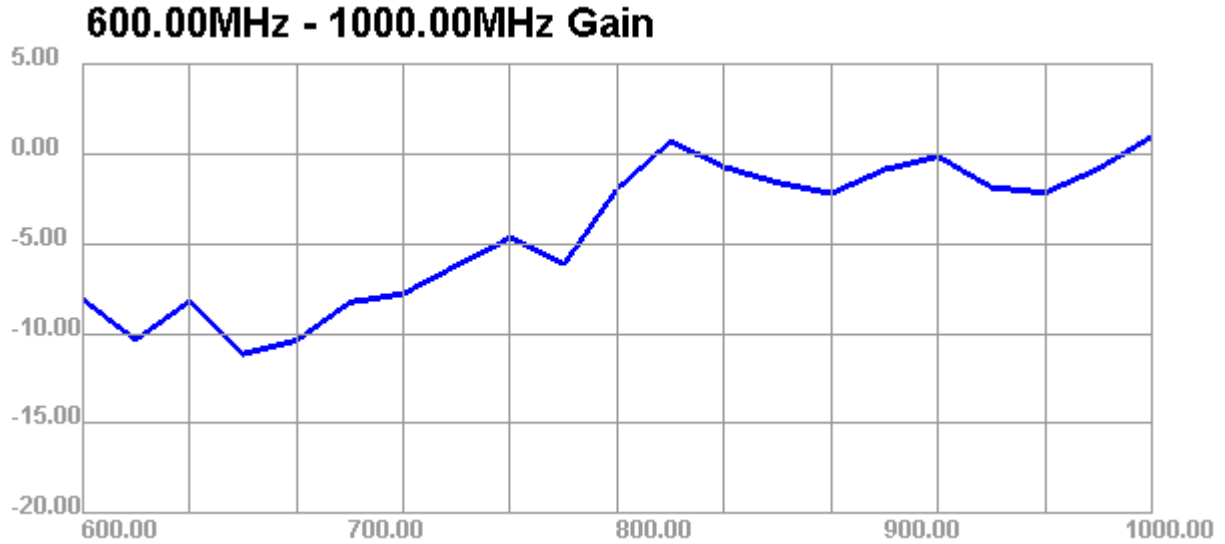
4.3.2. 4G DIV



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Efficiency (%)	25.66	56.76	15.62	36.64	33.2	31.02	23.27	26.98

4.4. Gain

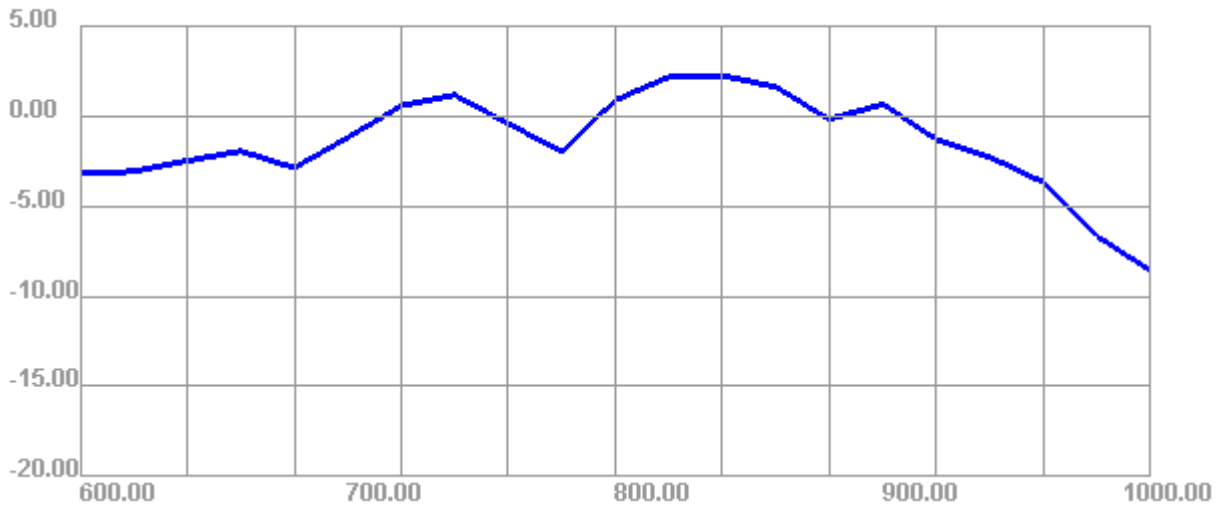
4.4.1. 4G



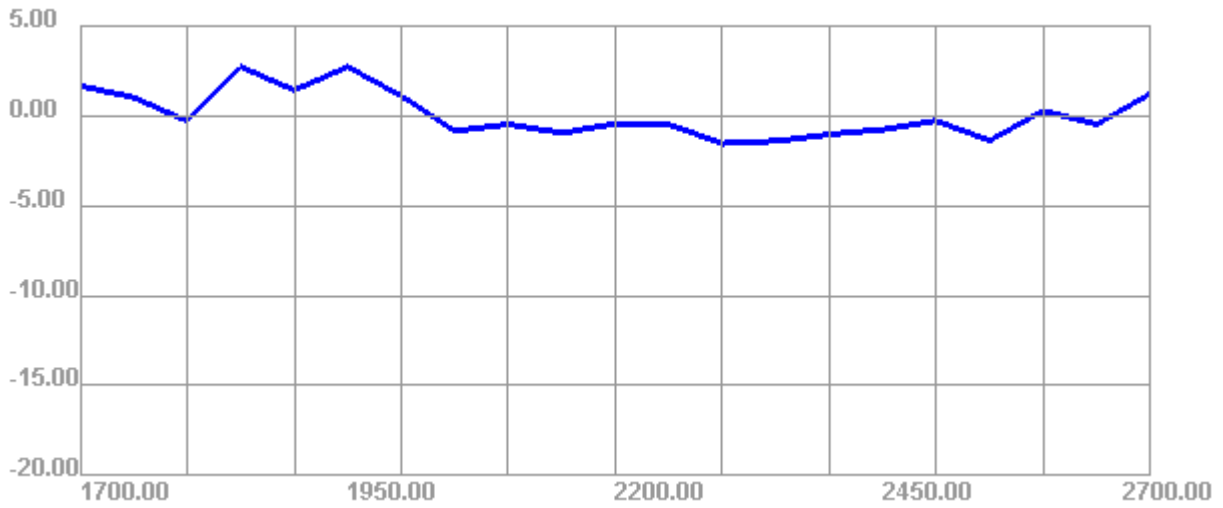
Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Gain (dBi)	-8.26	-0.74	-2.16	0.85	-2.28	-0.59	-0.72	-0.17

4.4.2. 4G DIV

600.00MHz - 1000.00MHz Gain



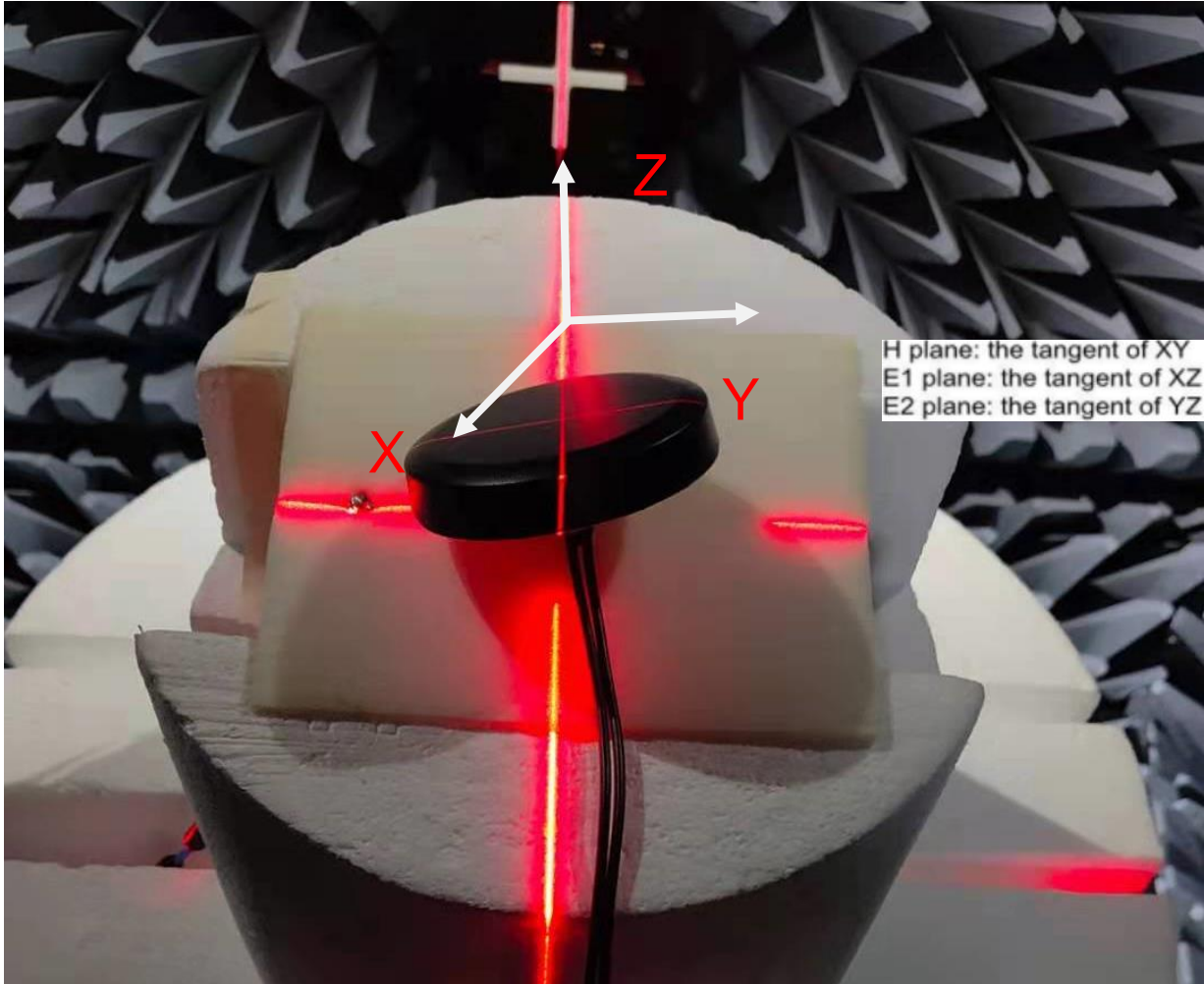
1700.00MHz - 2700.00MHz Gain



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Gain (dBi)	-1.2	2.25	-3.67	1.66	2.72	-0.96	-0.77	1.22

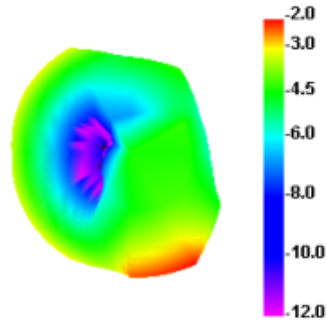
4.5. Radiation Pattern

- Test condition: free space state.

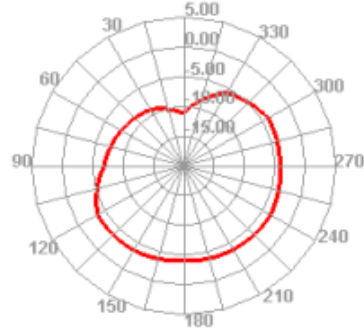


4.5.1. 4G

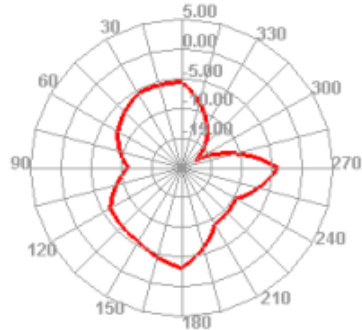
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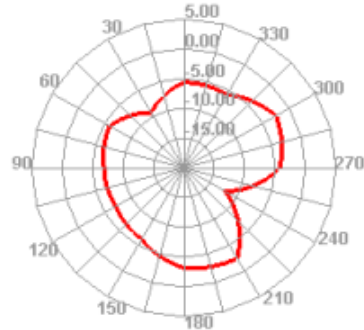
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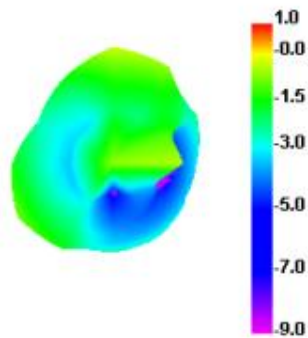
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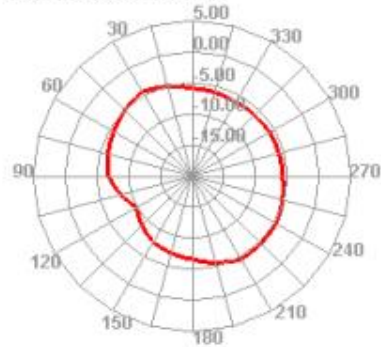
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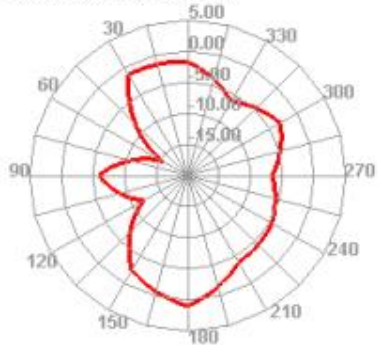
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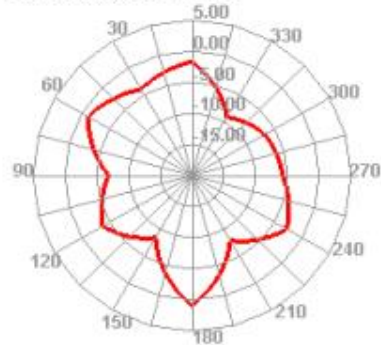
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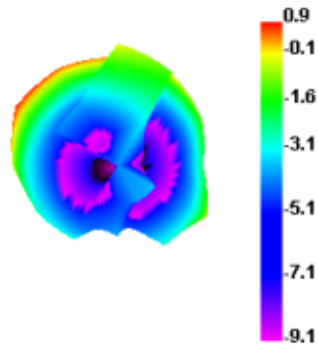
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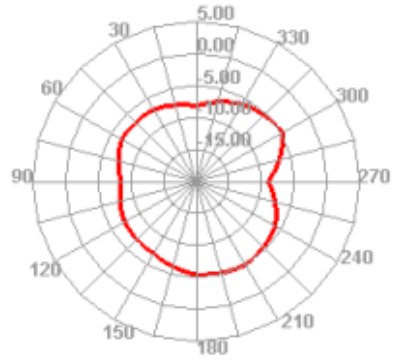
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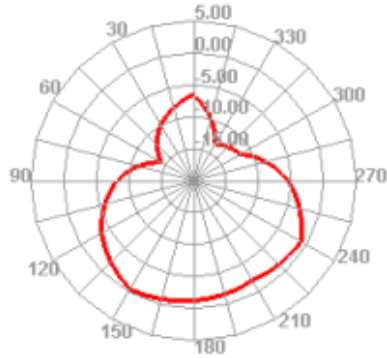
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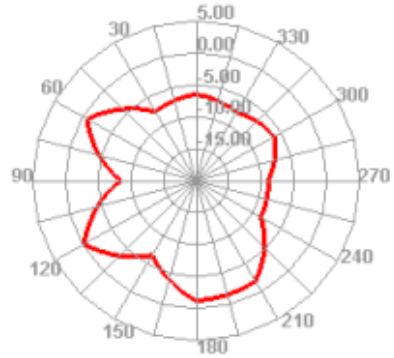
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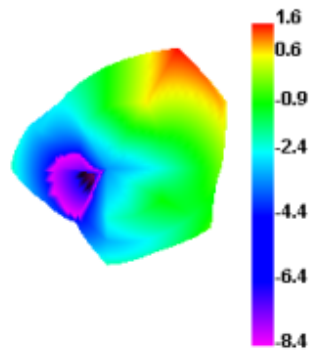
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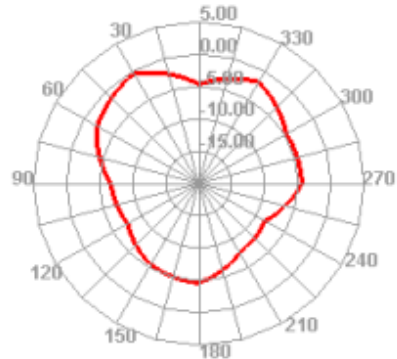
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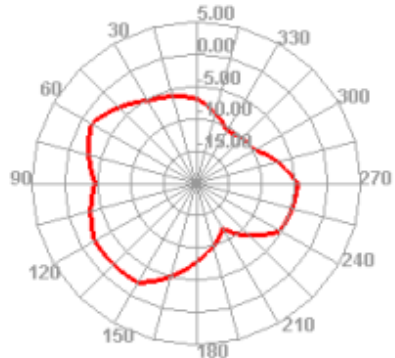
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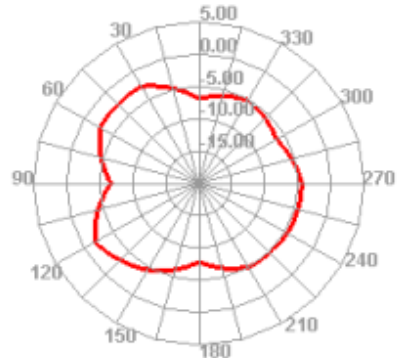
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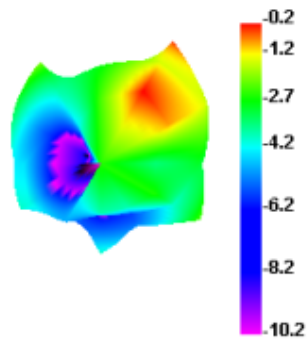
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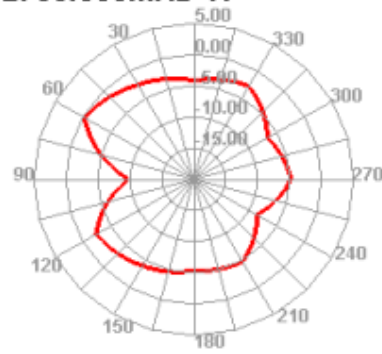
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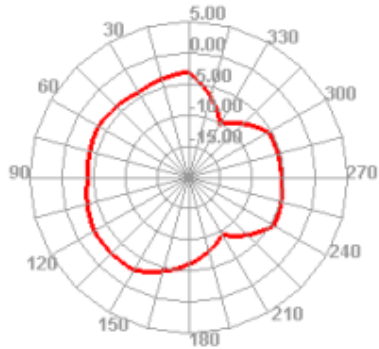
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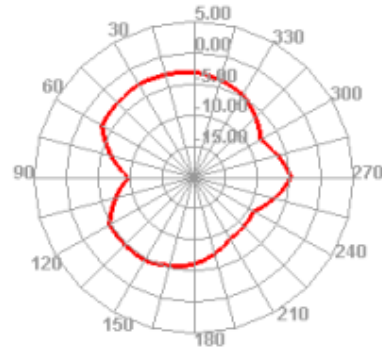
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2700.000MHz E1

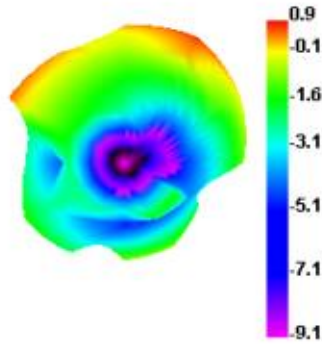


2700.000MHz E2

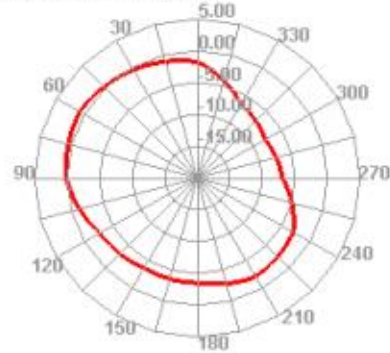


4.5.2. 4G DIV

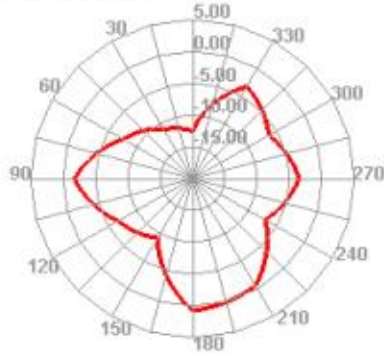
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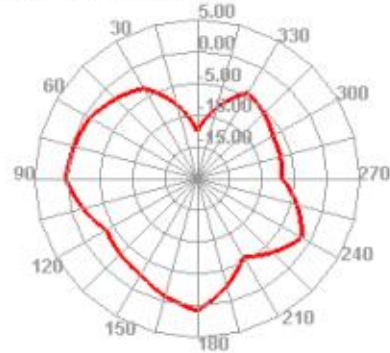
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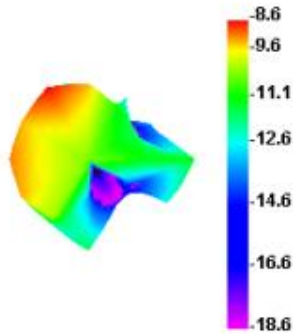
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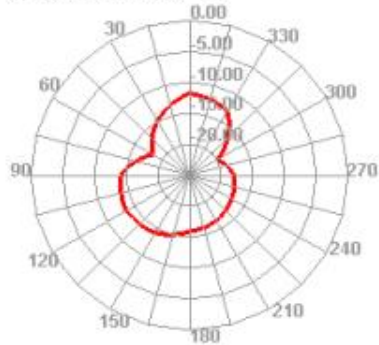
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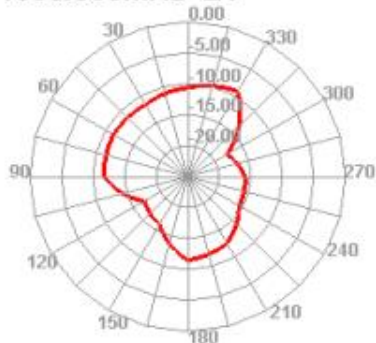
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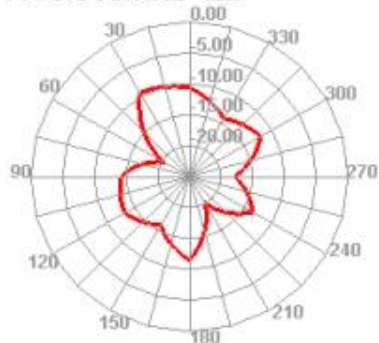
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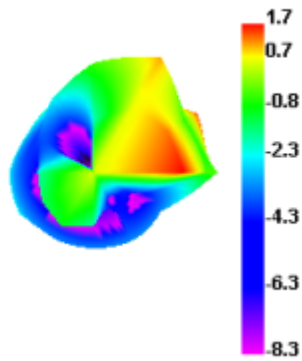
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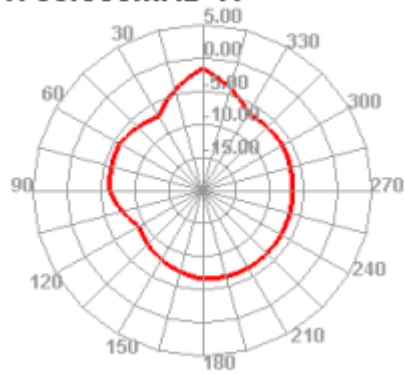
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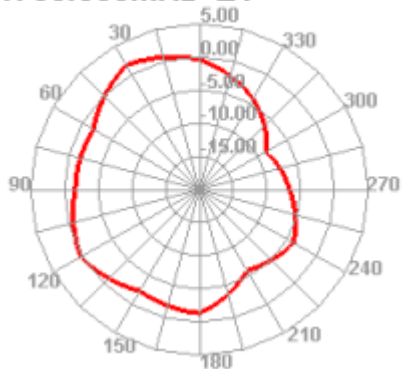
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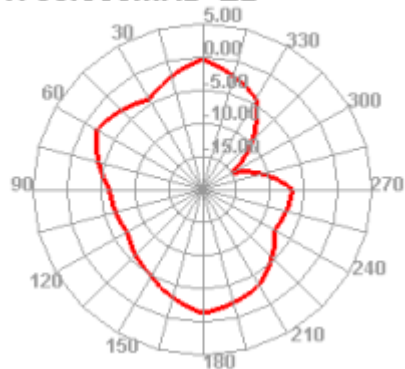
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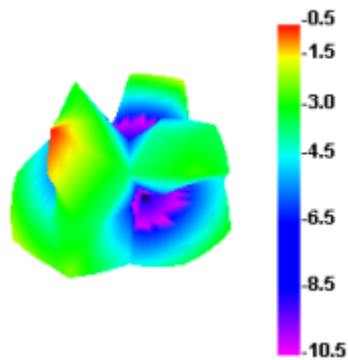
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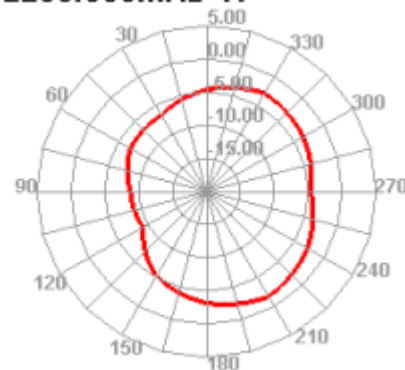
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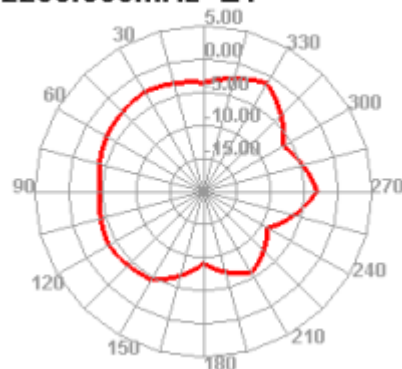
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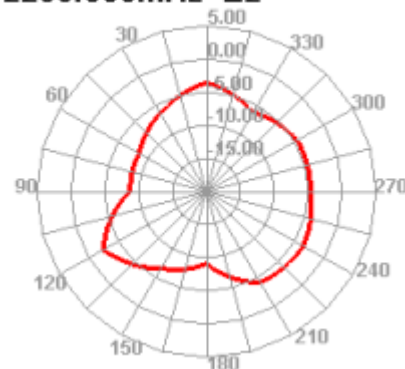
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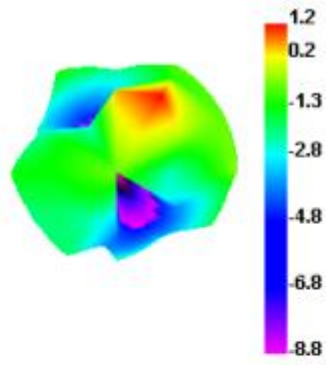
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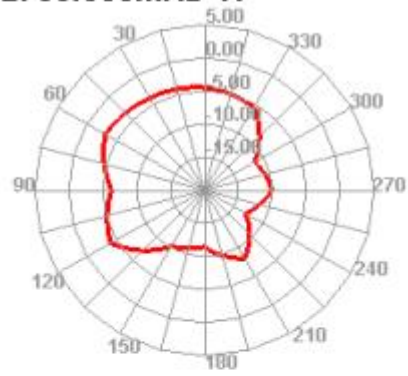
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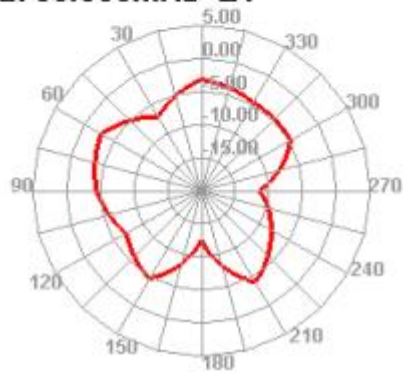
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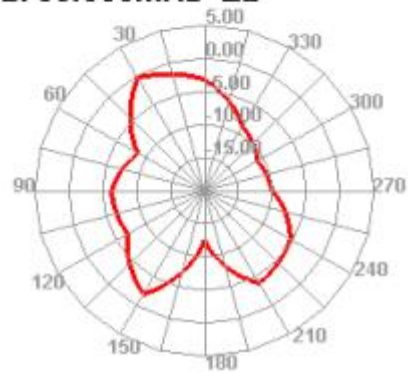
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2700.000MHz E1



2700.000MHz E2



5 Product Size

