

# Antenna

# YRM00A3AA Datasheet

## Antenna Services

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Status: Preliminary



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**Quectel Wireless Solutions Co., Ltd.**

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: [info@quectel.com](mailto:info@quectel.com)

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# About the Document

## Revision History

Version	Date	Author	Note
-	2022-08-03	Qinming PENG/ Shea LI	Creation of the document
1.0	2022-08-03	Qinming PENG/ Shea LI	First official release

## Contents

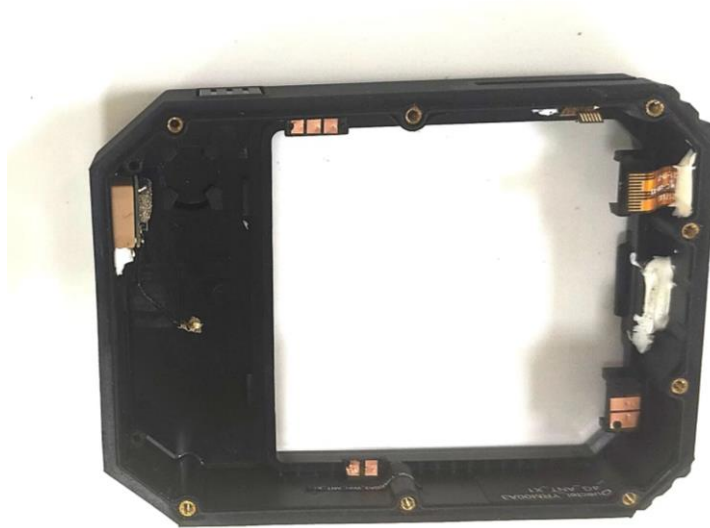
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## 1 Product Description

Quectel Wi-Fi antenna covers 2.4 GHz, 5 GHz, and up to 7 GHz bands, fully satisfying customers' requirements for Wi-Fi 5, Wi-Fi 6, and Wi-Fi 6E. There are various antenna types, including built-in FPC antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.

## 2 Product Features

- 4G MAIN+4G DIV+WiFi
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	4G MAIN: 698MHz-960MHz; 1710MHz-2170MHz 4G DIV: 700MHz-2170MH WIFI: 2400MHz-2500MHz; 5150MHz-5850MHz
Input Impedence	50 $\Omega$
VSWR	4G MAIN $\leq$ 3.0 4G DIV $\leq$ 3.0 WIFI $\leq$ 3.0
Gain	4G MAIN $\leq$ 0dBi 4G DIV $\leq$ 0dBi WIFI $\leq$ 4.0 dBi
Polarization Type	Linear

#### Detailed Passive Electrical Specifications (4G MAIN)

Frequency Range (MHz)	700-740	824-2170
VSWR (Max.)	2.04	2.49
Average Efficiency (%)	20.61	29.83
Max. Peak Gain (dBi)	-3.89	-0.54

#### Detailed Passive Electrical Specifications (4G DIV)

Frequency Range (MHz)	700-740	750-790	824-2170
VSWR (Max.)	2.91	2.96	4.1
Average Efficiency (%)	15.64	18.23	24.54
Max. Peak Gain (dBi)	-5.15	-3.85	-1.4

#### Detailed Passive Electrical Specifications (WIFI)

Frequency Range (MHz)	2400-2500	5150-5850
VSWR (Max.)	2.3	2.79
Average Efficiency (%)	32.78	34.65
Max. Peak Gain (dBi)	-0.24	1.14

#### Mechanical Specifications

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Antenna Size(mm)	94x68x21.45
Material	FPC
Working Temperature	-20 °C to +85 °C
Weight	Typical 36g
Color	Black
Mounting Type	Adhesive

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## 4 Overall Performance

### 4.1. Test Environment

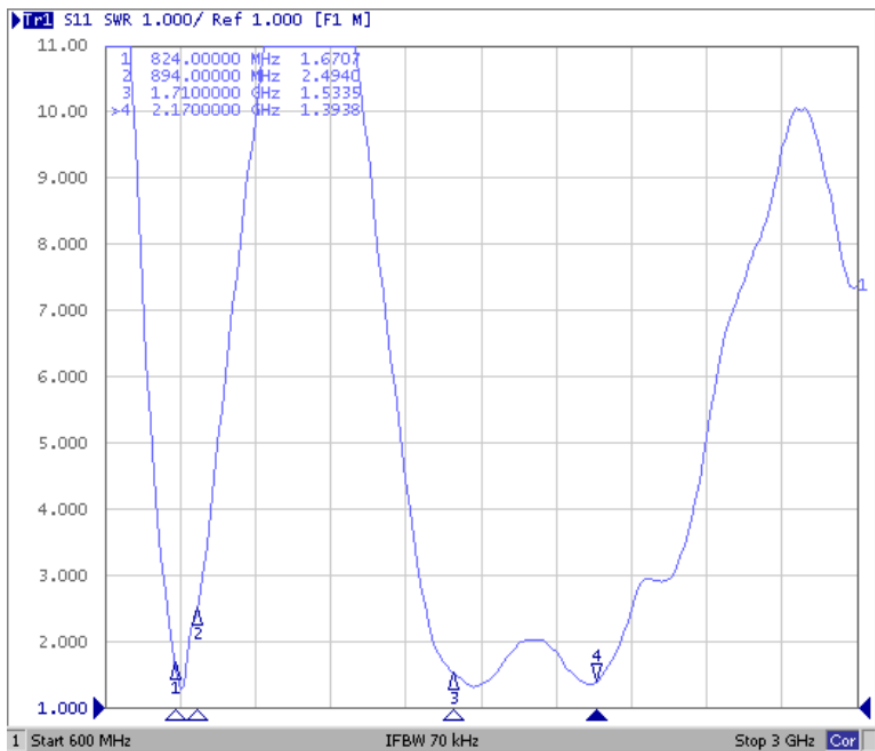
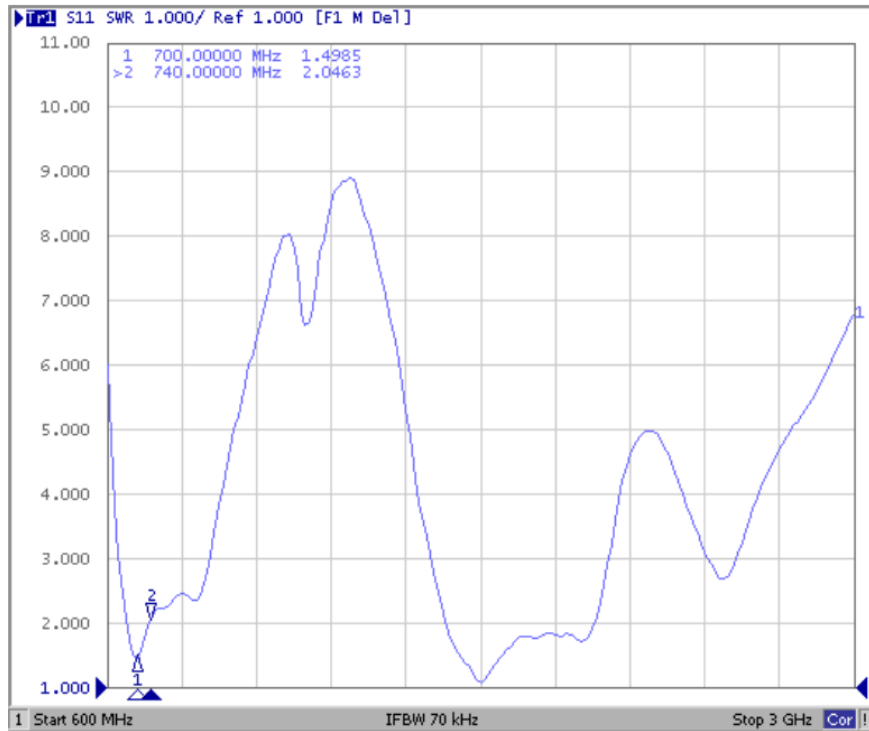
- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz





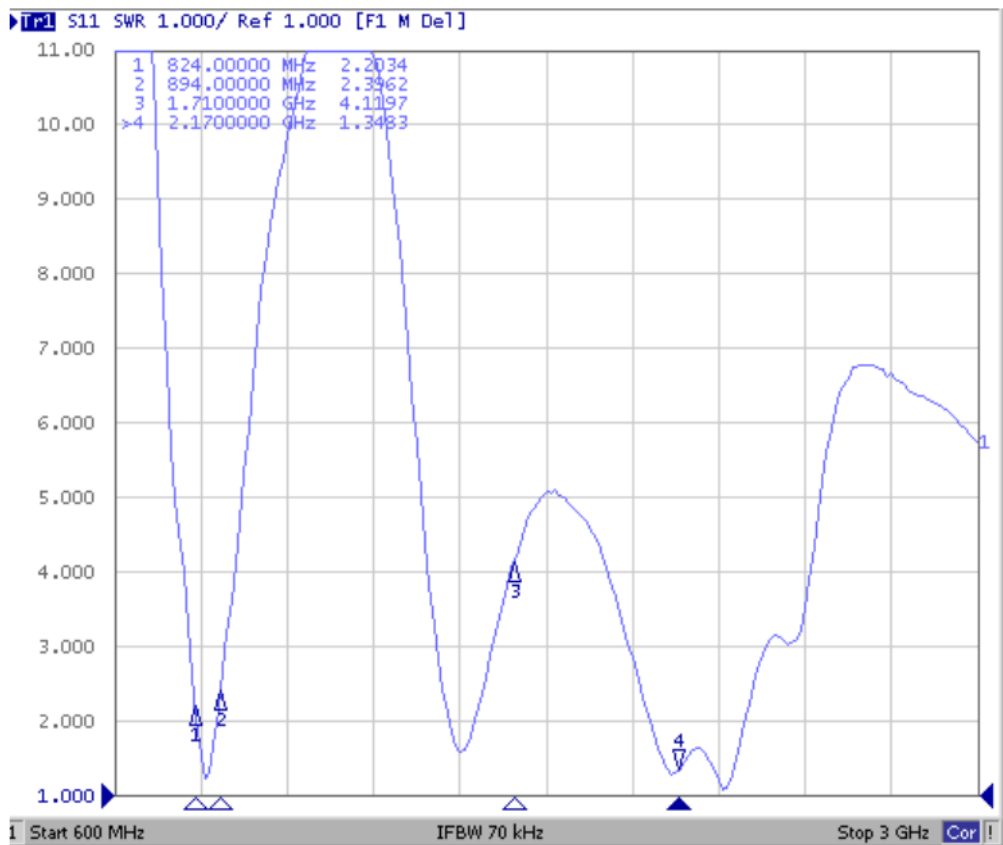
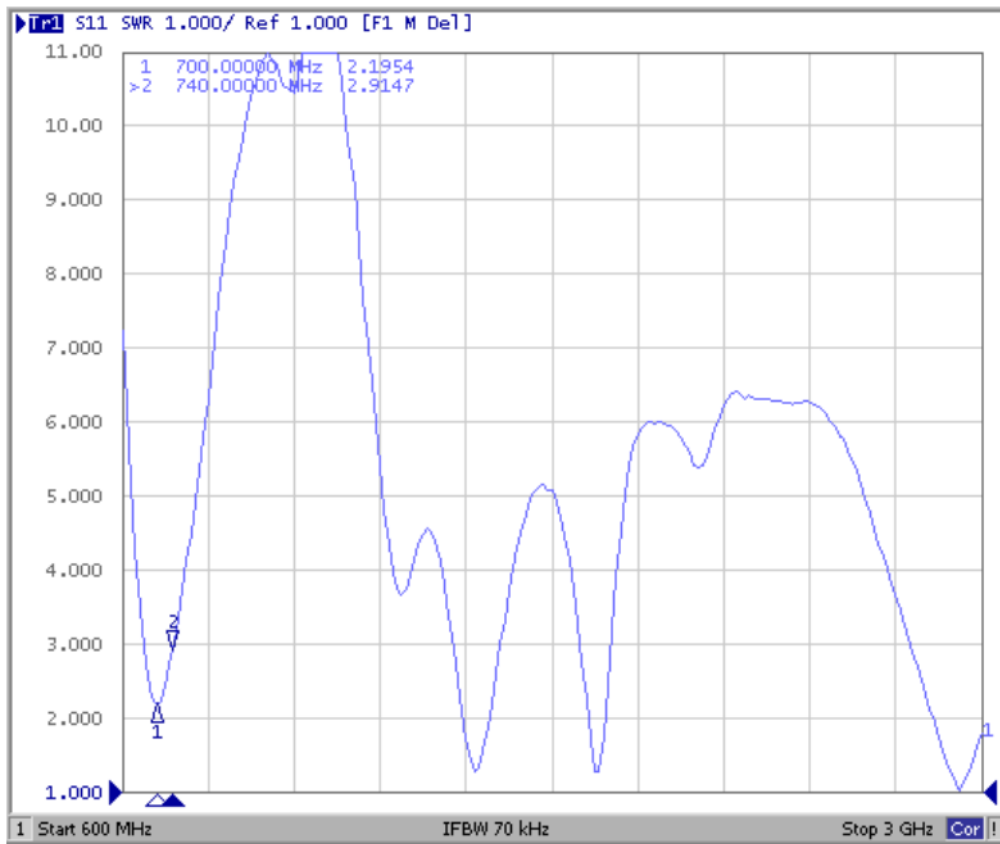
## 4.2. VSWR

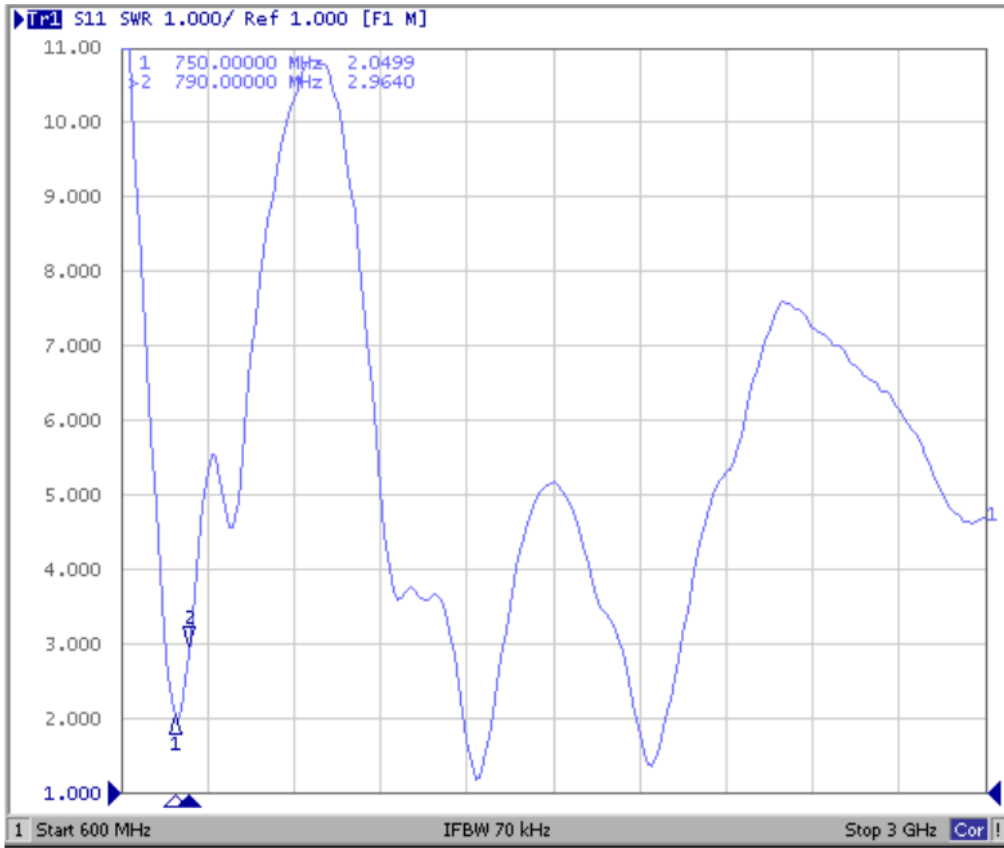
4G MAIN



Frequency (MHz)	700	740	750	790	824	894	1710	2170
VSWR	1.49	2.04	1.42	1.36	1.67	2.49	1.53	1.39

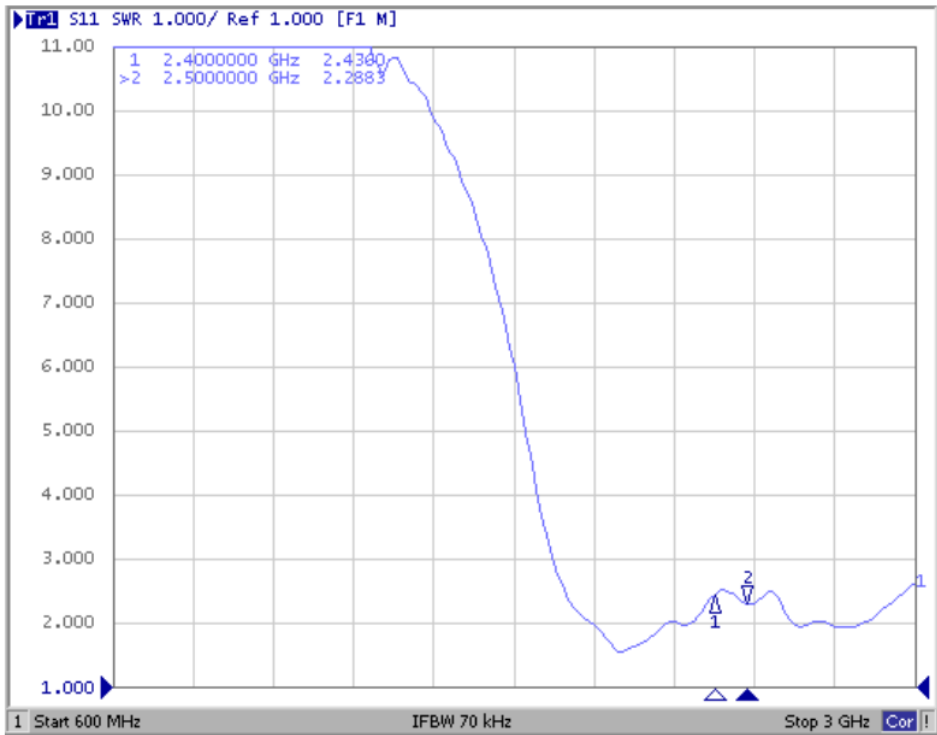
4G DIV





Frequency (MHz)	700	740	750	790	824	894	1710	2170
VSWR	2.19	2.91	2	2.96	2.2	2.39	4.11	1.34

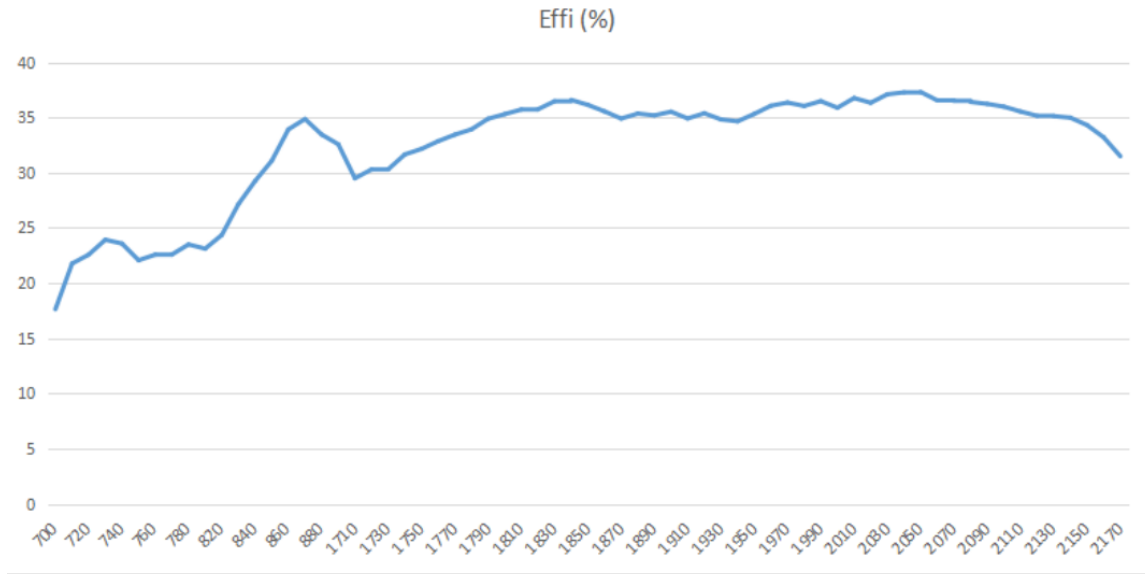
WIFI



<b>Frequency (MHz)</b>	2400	2500	5150	5500	5850
<b>VSWR</b>	2.43	2.28	2.79	1.86	2.72

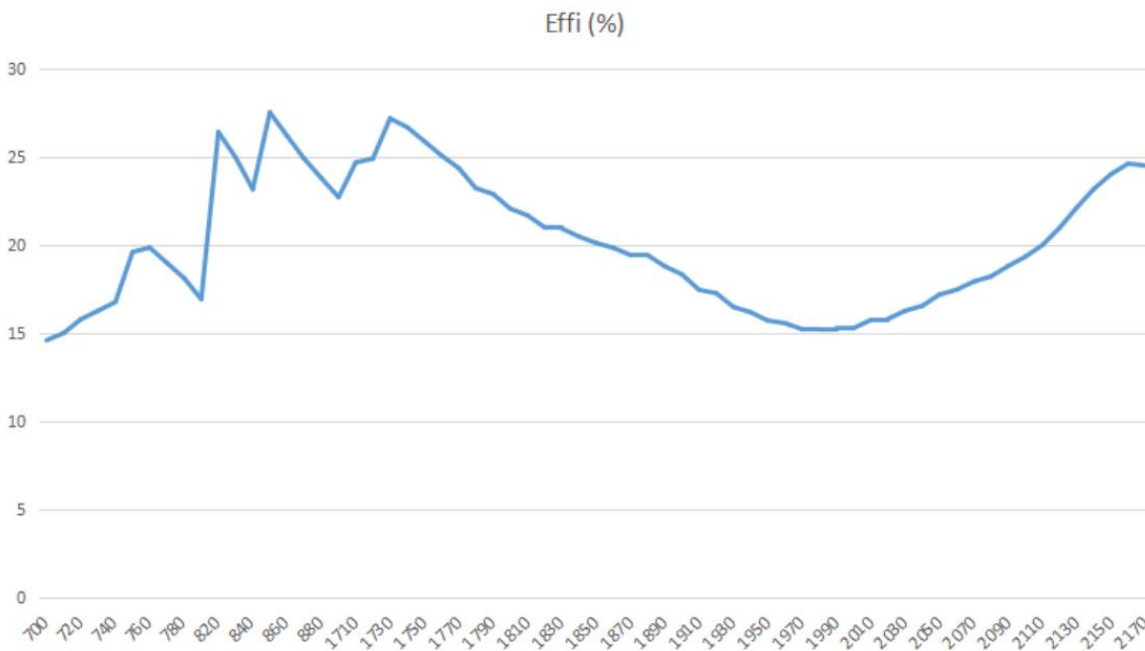
### 4.3. Efficiency

#### 4G MAIN



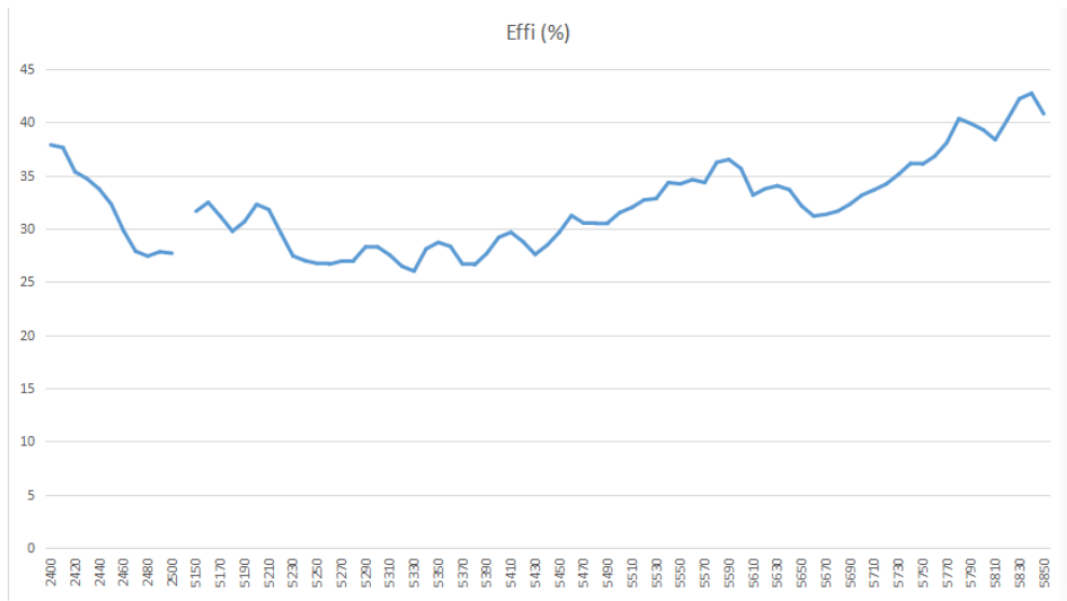
<b>Frequency (MHz)</b>	700	740	750	790	824	894	1710	2170
<b>Efficiency (%)</b>	17.64	23.58	22.07	23.12	25.76	32.58	29.5	31.5

#### 4G DIV



<b>Frequency (MHz)</b>	700	740	750	790	824	894	1710	2170
<b>Efficiency (%)</b>	14.56	16.73	19.57	16.89	26.38	22.68	24.65	24.47

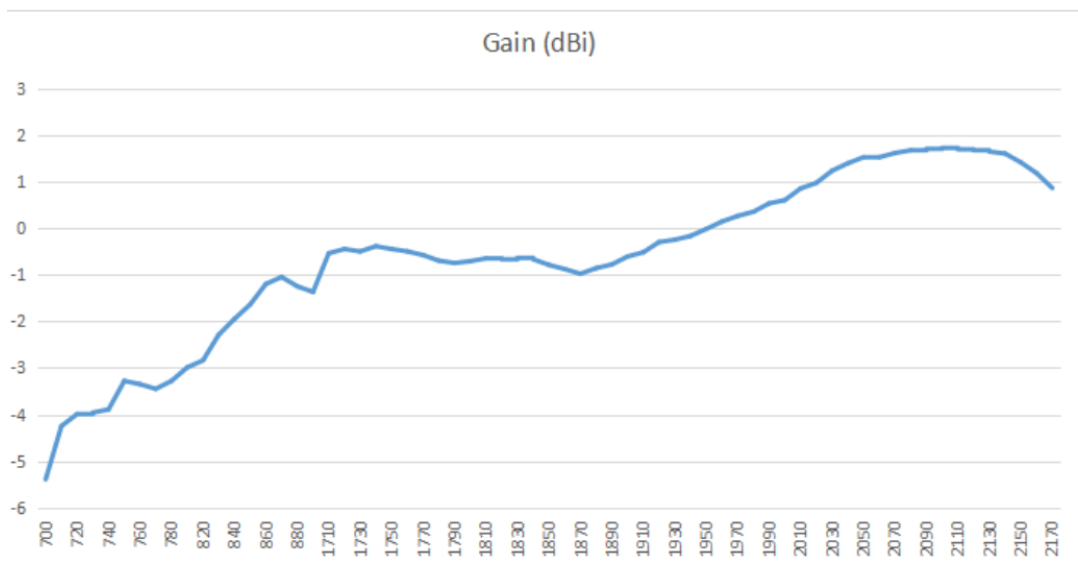
WIFI



<b>Frequency (MHz)</b>	2400	2500	5150	5500	5850
<b>Efficiency (%)</b>	37.87	27.69	31.64	31.52	40.8

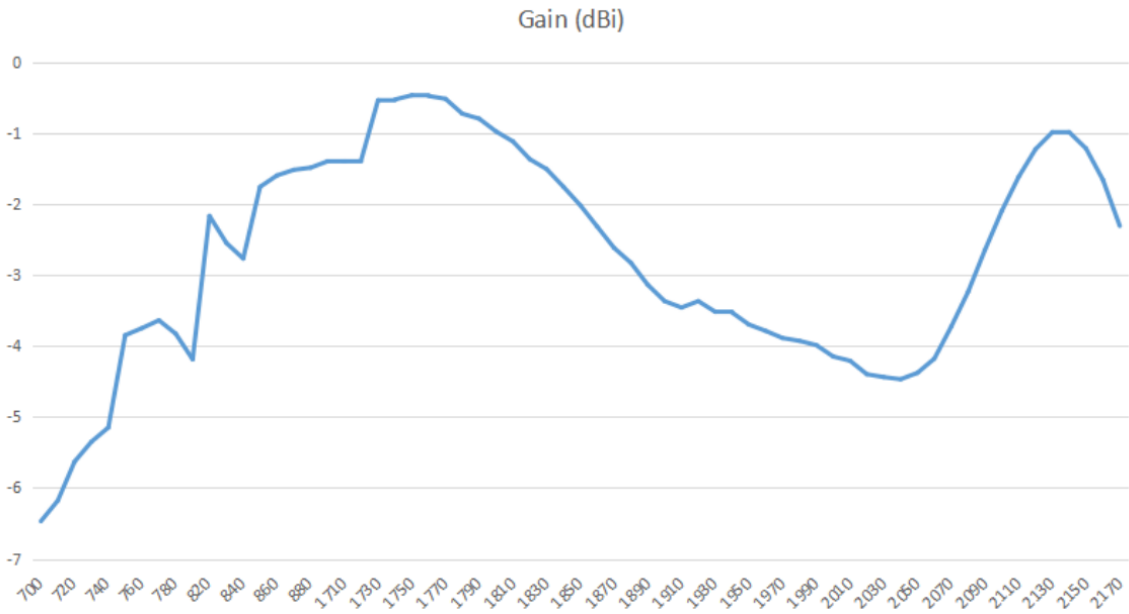
**4.4. Gain**

4G MAIN



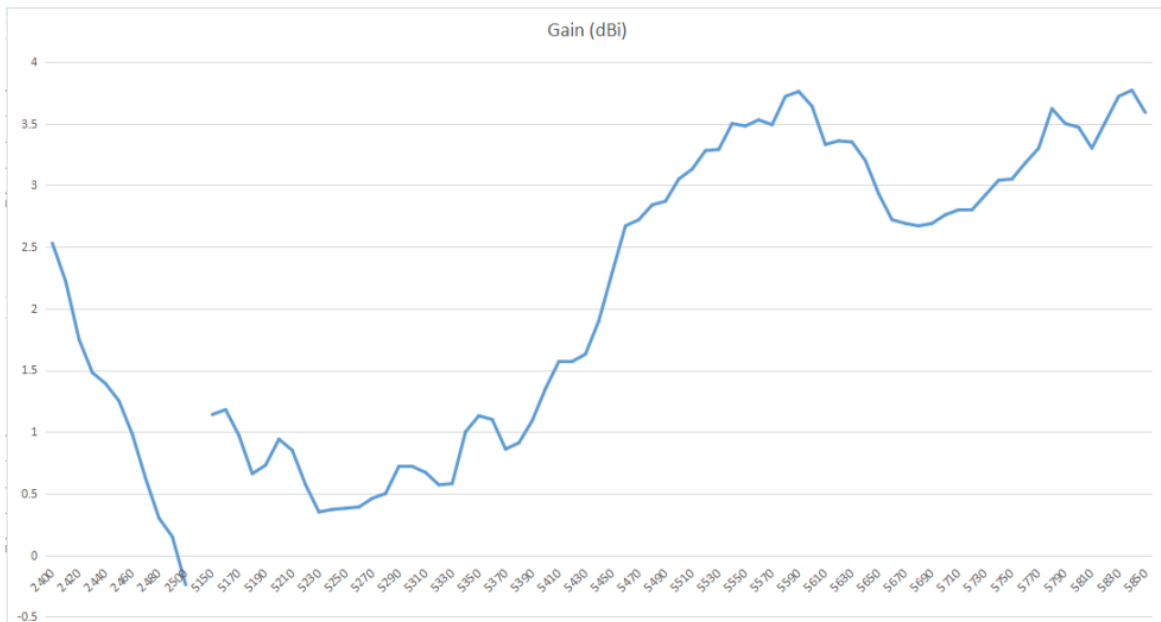
<b>Frequency (MHz)</b>	700	740	750	790	824	894	1710	2170
<b>Gain (dBi)</b>	-5.39	-3.89	-3.28	-2.99	-2.56	-1.37	-0.54	-0.86

4G DIV



<b>Frequency (MHz)</b>	700	740	750	790	824	894	1710	2170
<b>Gain (dBi)</b>	-6.47	-5.15	-3.85	-4.19	-2.17	-1.4	-1.4	-2.31

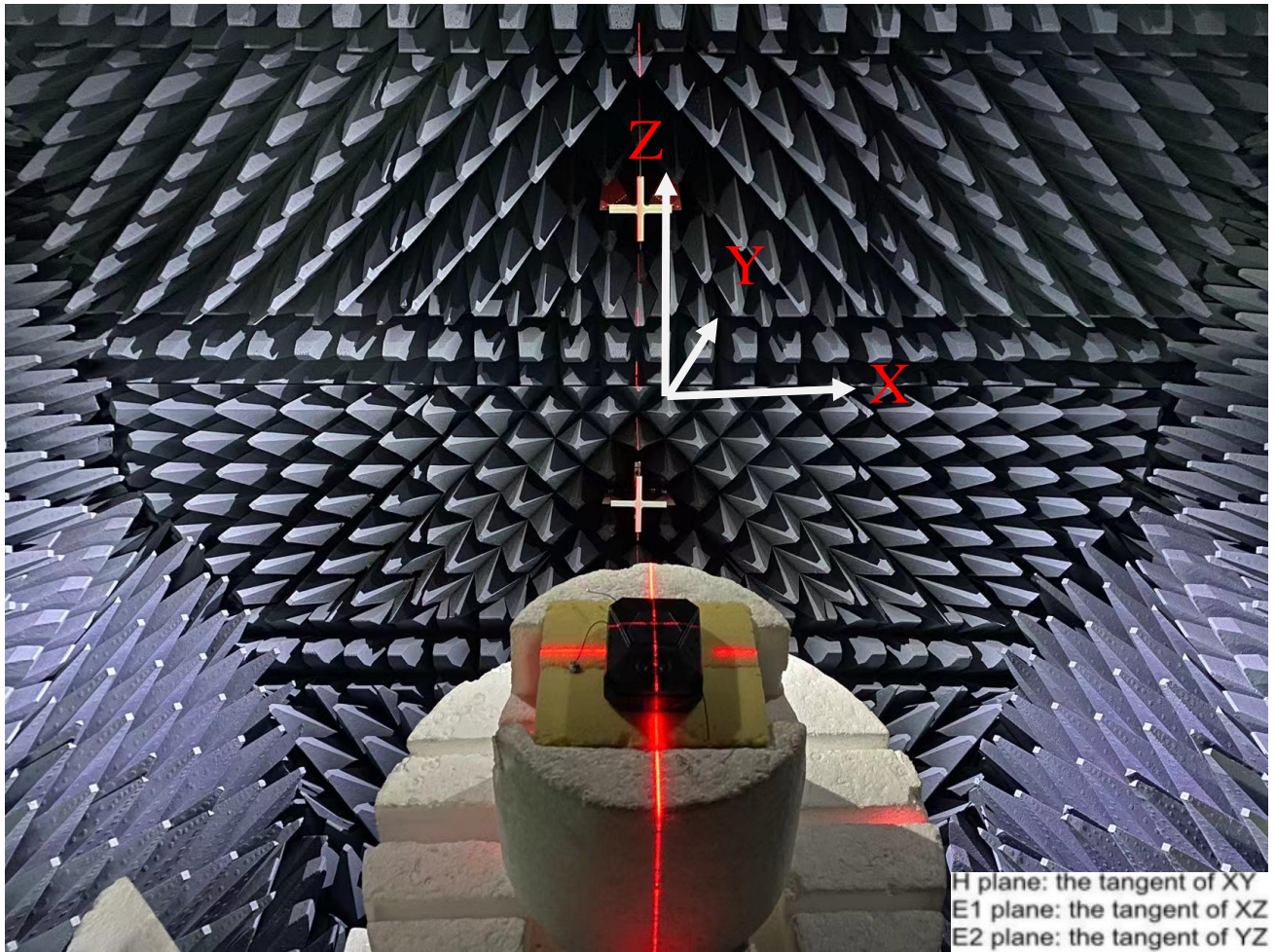
WIFI



<b>Frequency (MHz)</b>	2400	2500	5150	5500	5850
<b>Gain (dBi)</b>	2.53	-0.24	1.14	3.03	3.59

## 4.5. Radiation Pattern

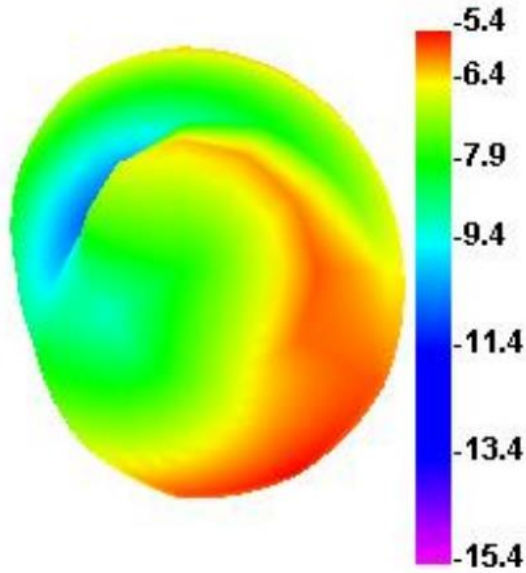
- Test condition: free space



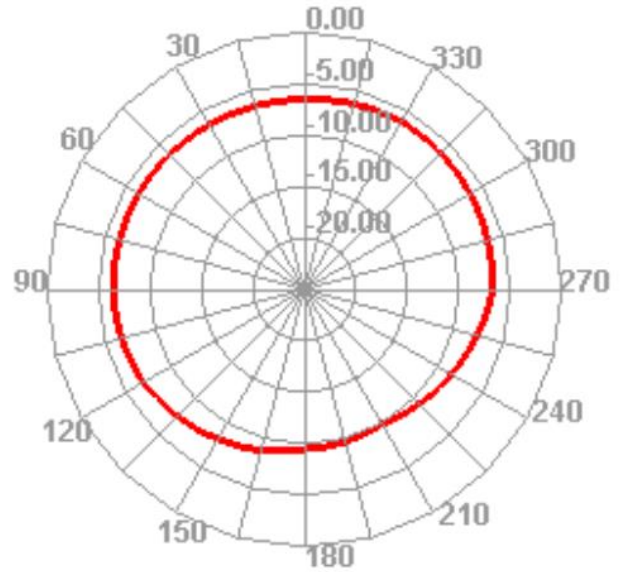


4G MAIN

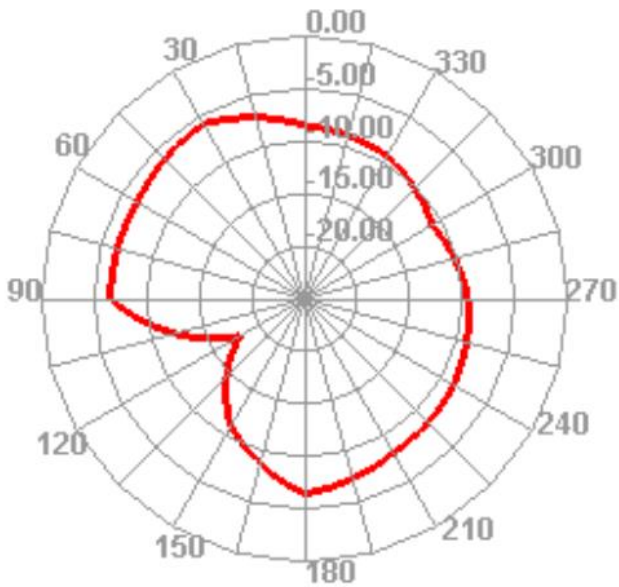
**700.000MHz**



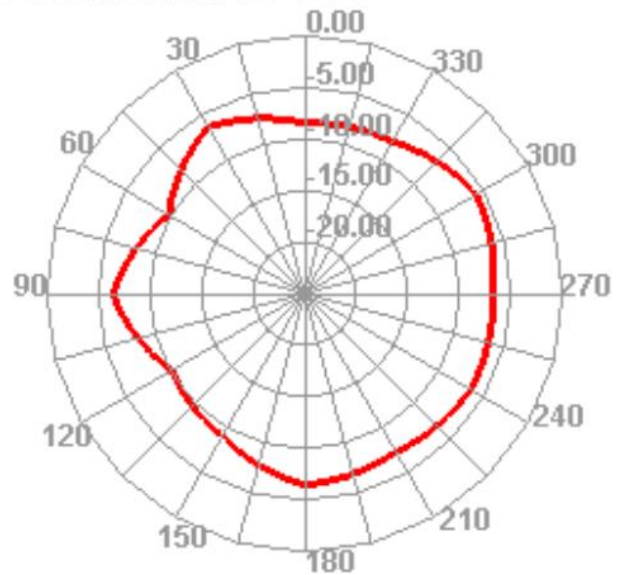
**700.000MHz H**



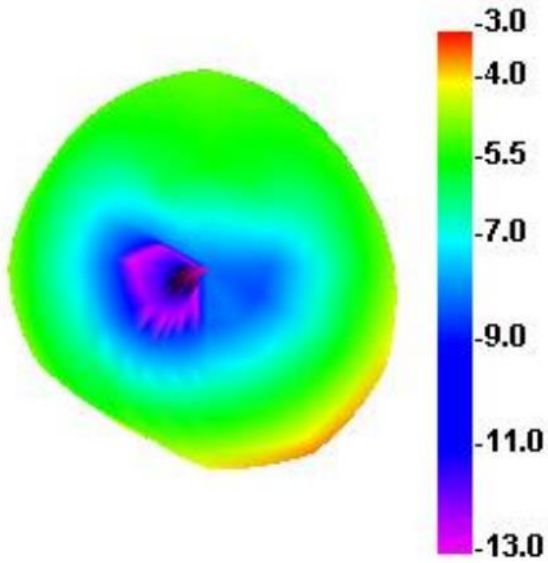
**700.000MHz E1**



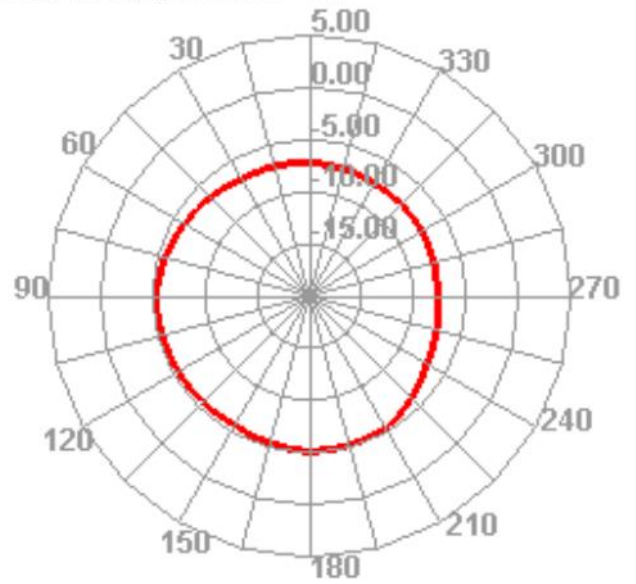
**700.000MHz E2**



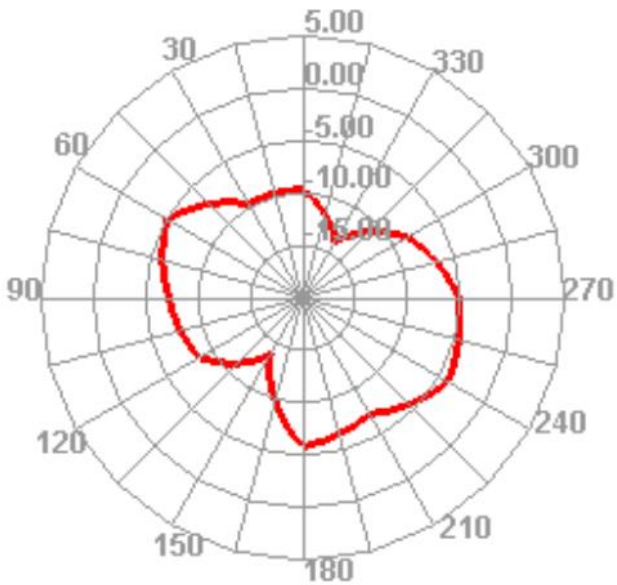
**790.000MHz**



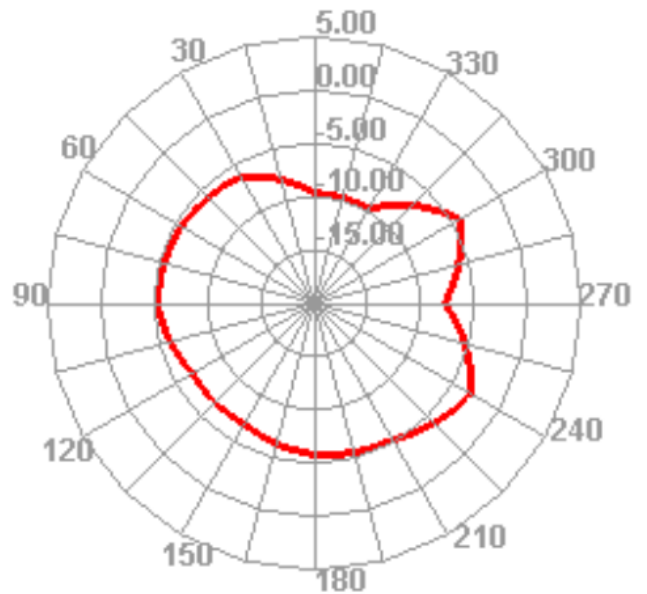
**790.000MHz H**



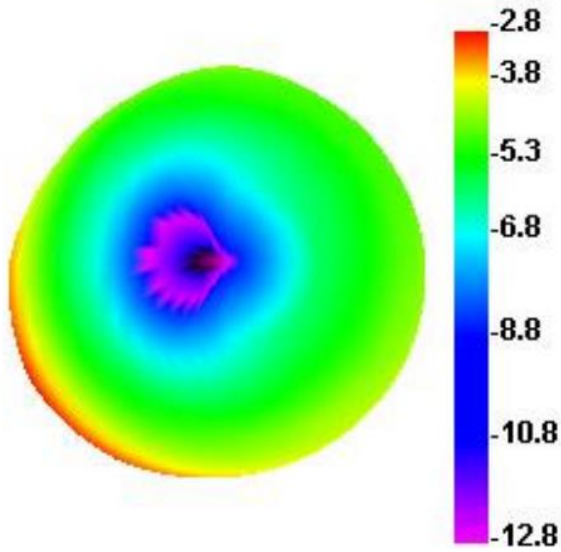
**790.000MHz E1**



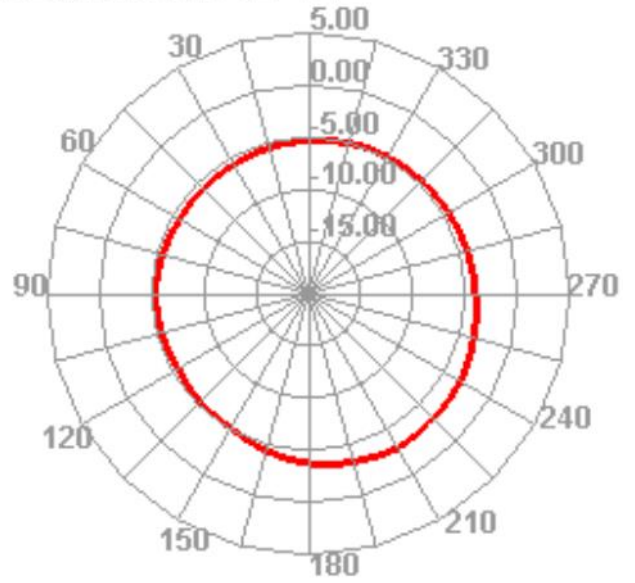
**790.000MHz E2**



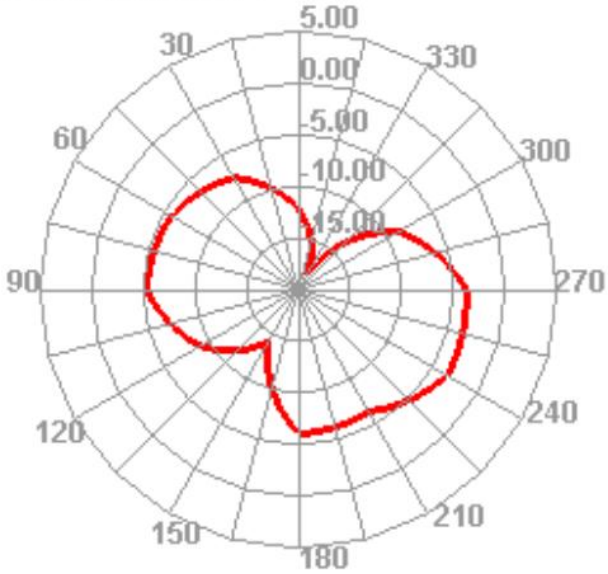
**820.000MHz**



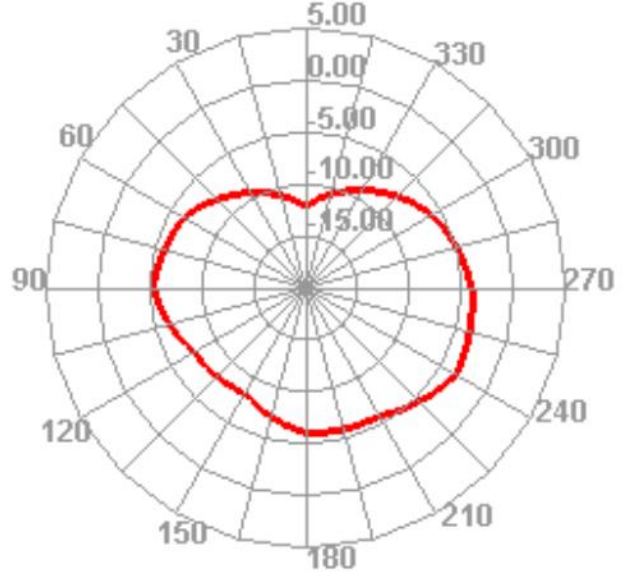
**820.000MHz H**



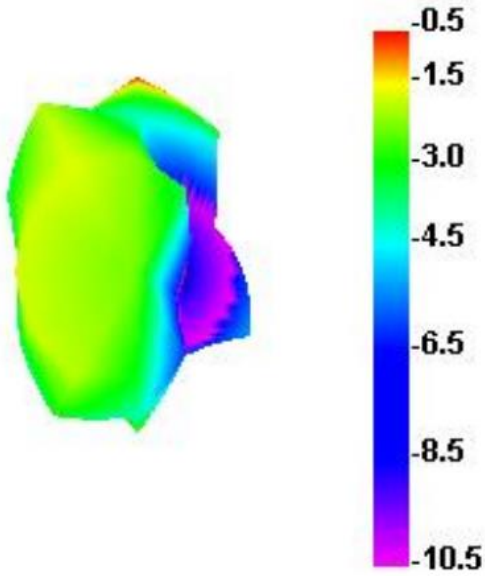
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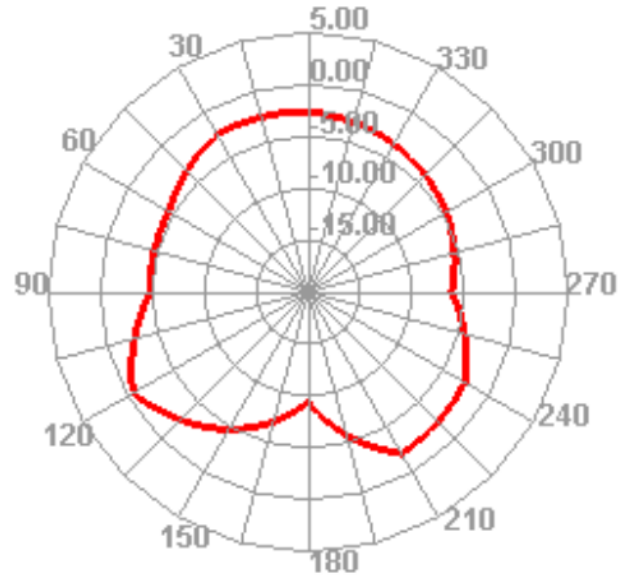
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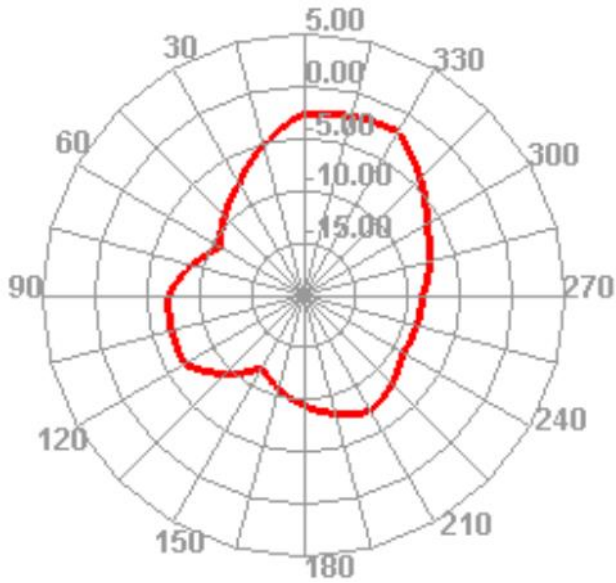
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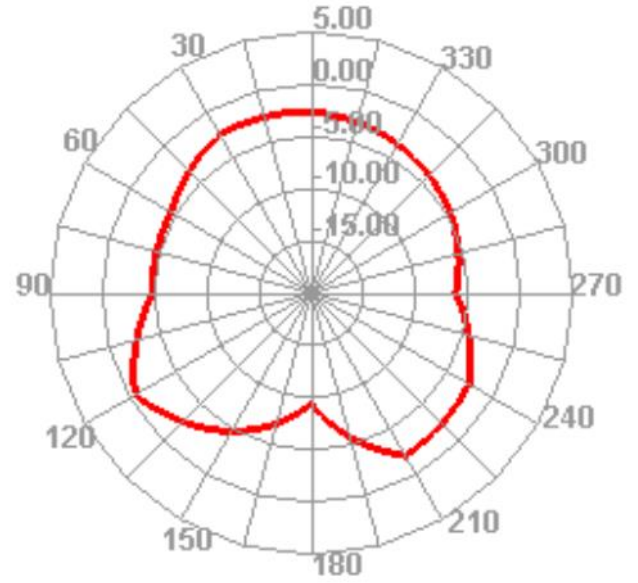
**1710.000MHz E2**



**1710.000MHz E1**

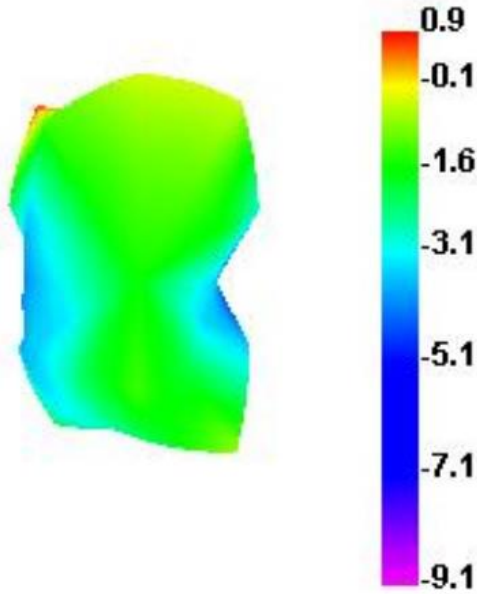


**1710.000MHz E2**

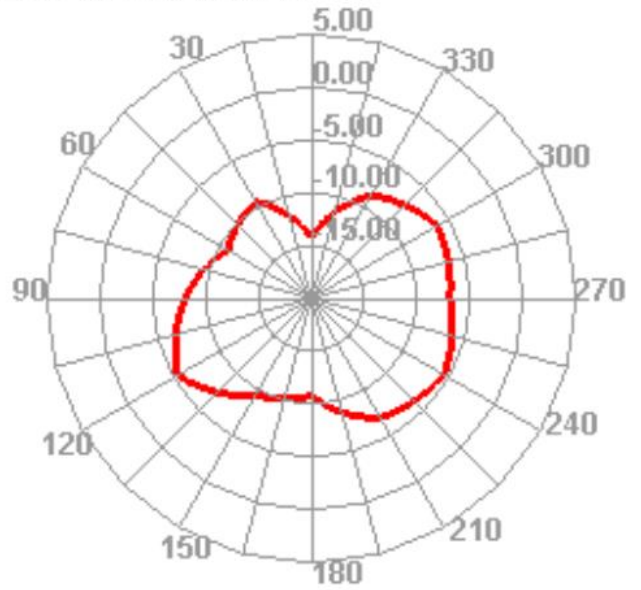




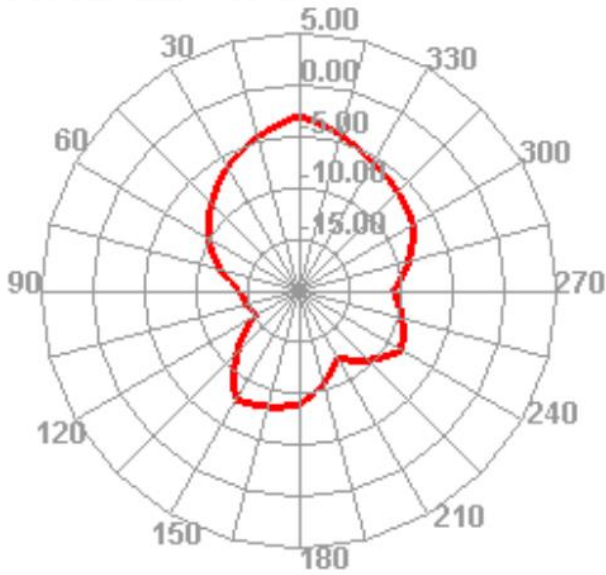
**2170.000MHz**



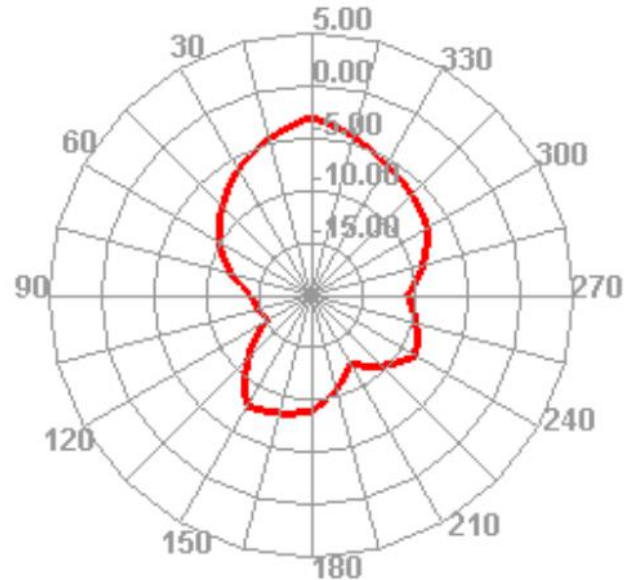
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**2170.000MHz E1**

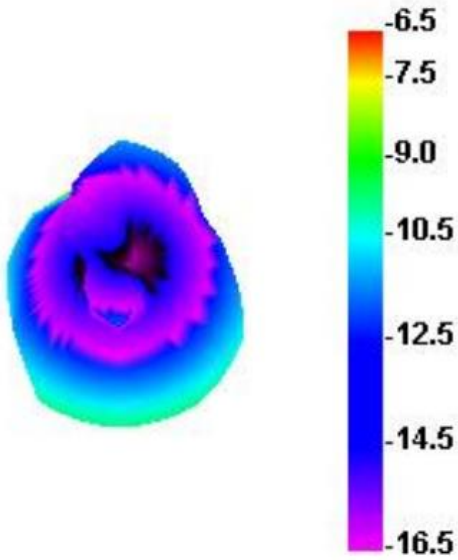


**2170.000MHz E1**

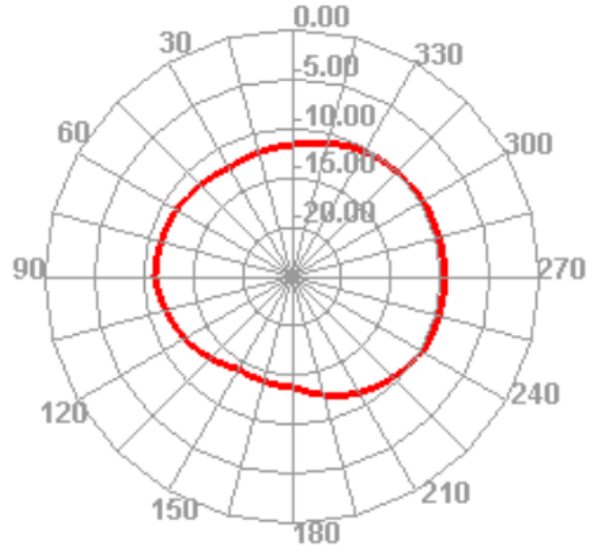


4G DIV

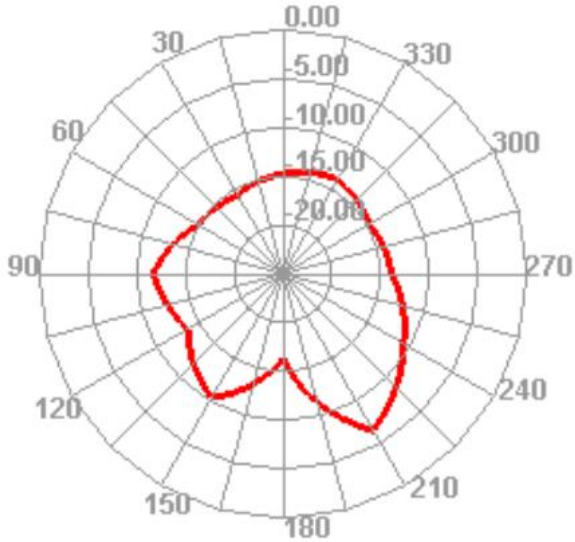
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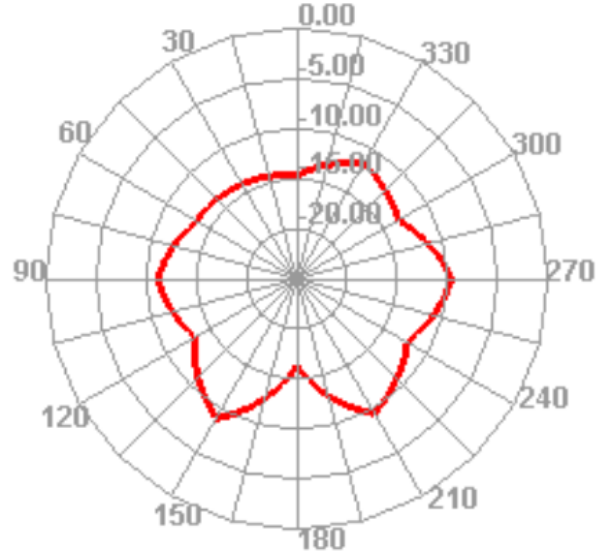
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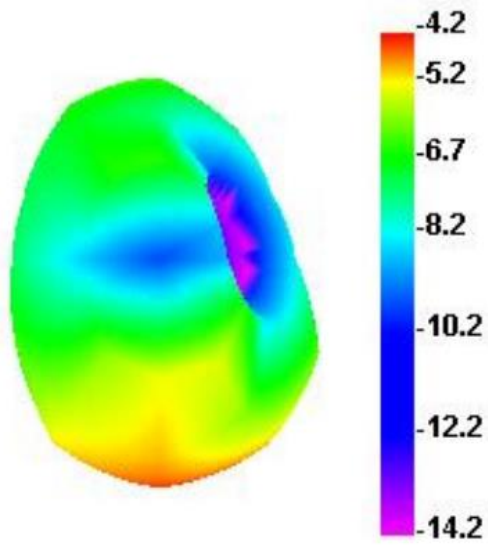
### 700.000MHz E1



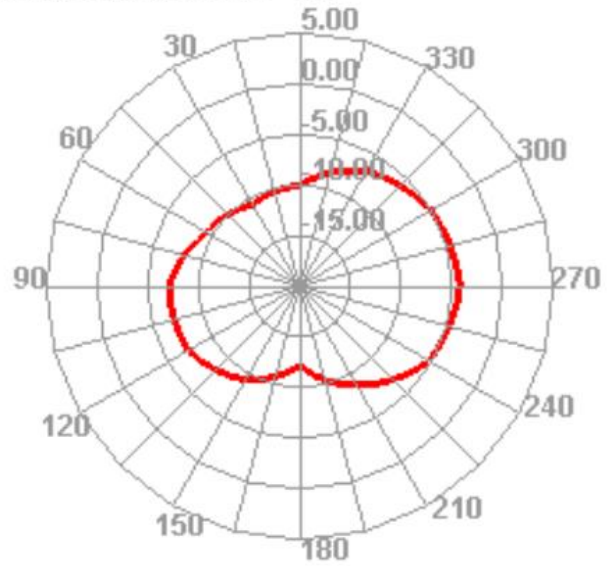
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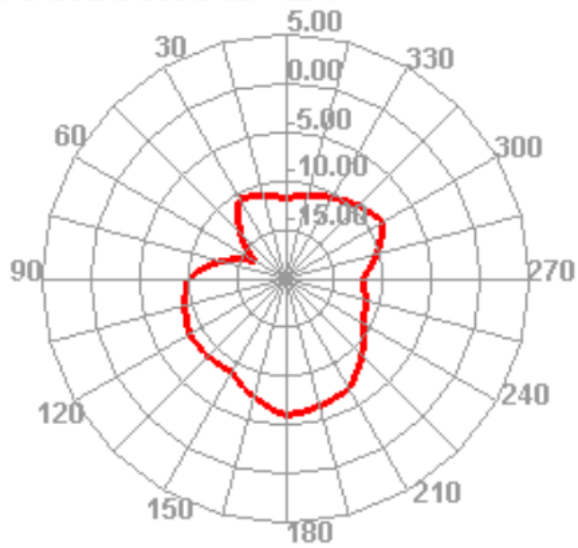
**790.000MHz**



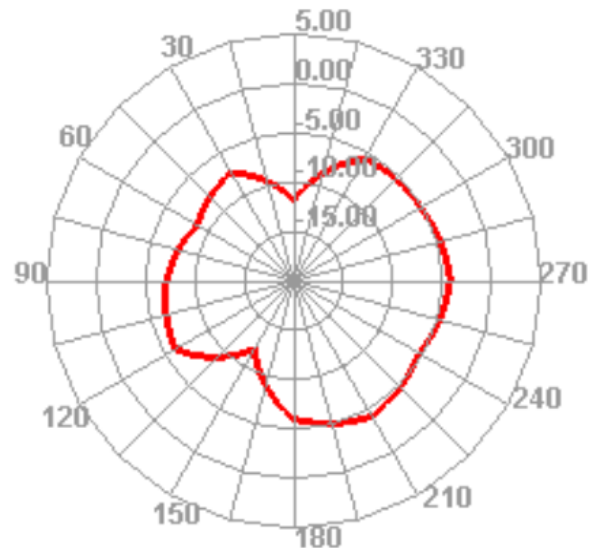
**790.000MHz H**



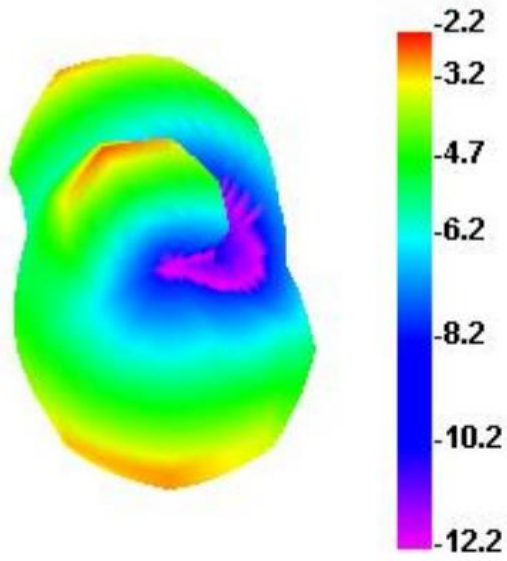
**790.000MHz E1**



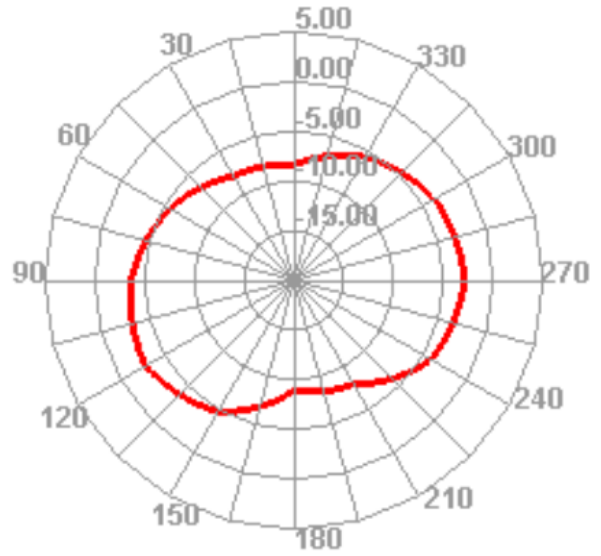
**790.000MHz E2**



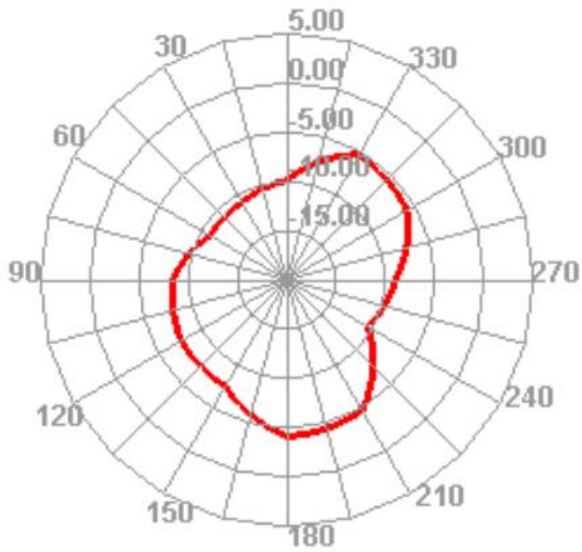
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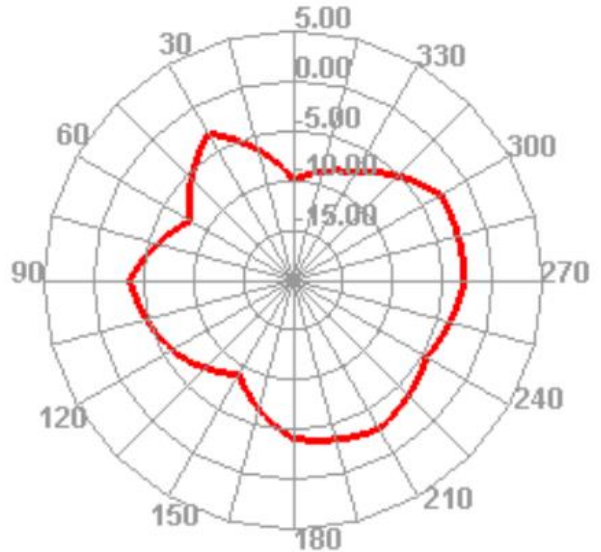
### 820.000MHz H



### 820.000MHz E1

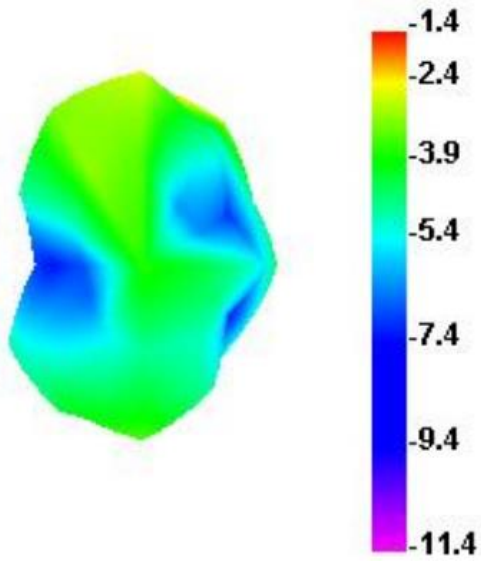


### 820.000MHz E2

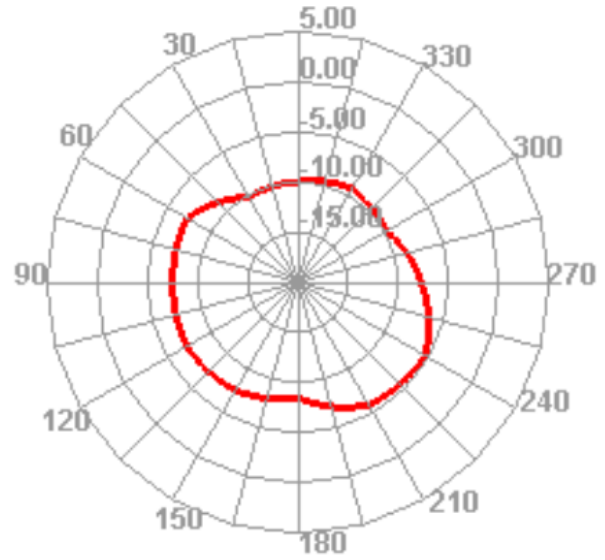




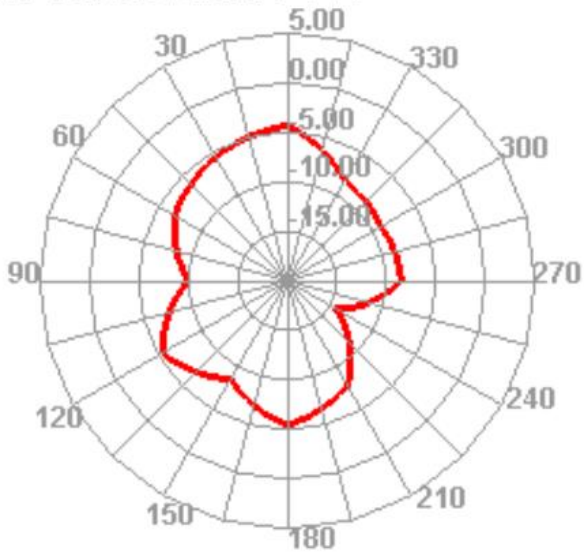
### 1710.000MHz



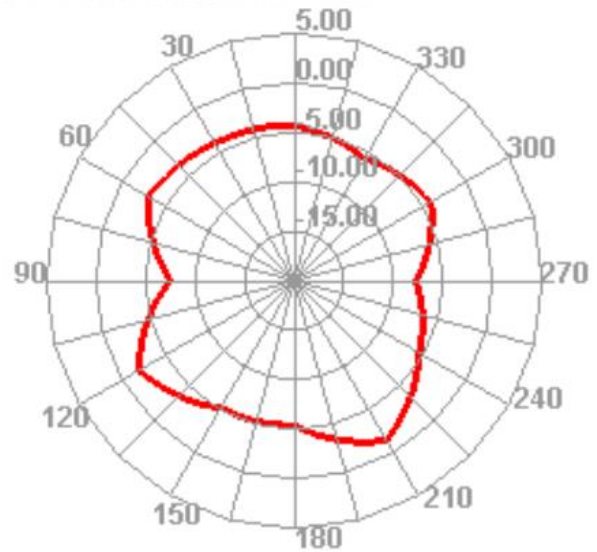
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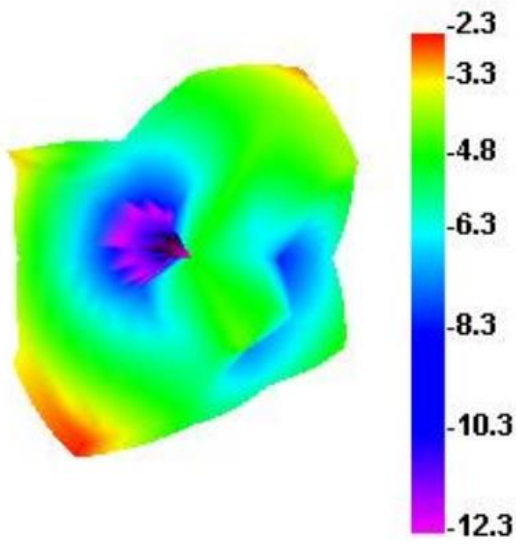
### 1710.000MHz E1



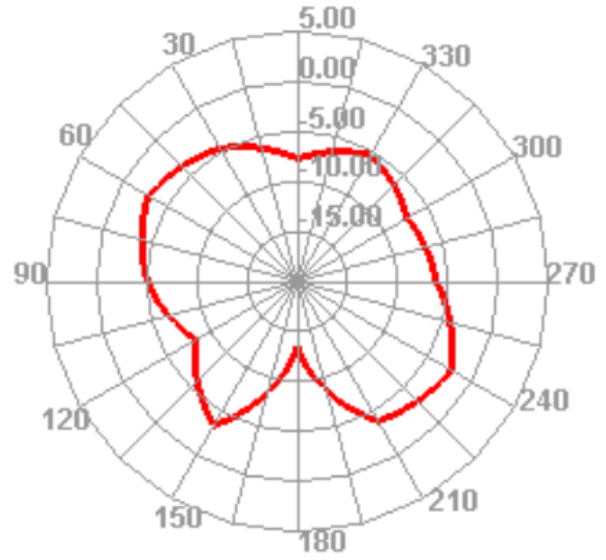
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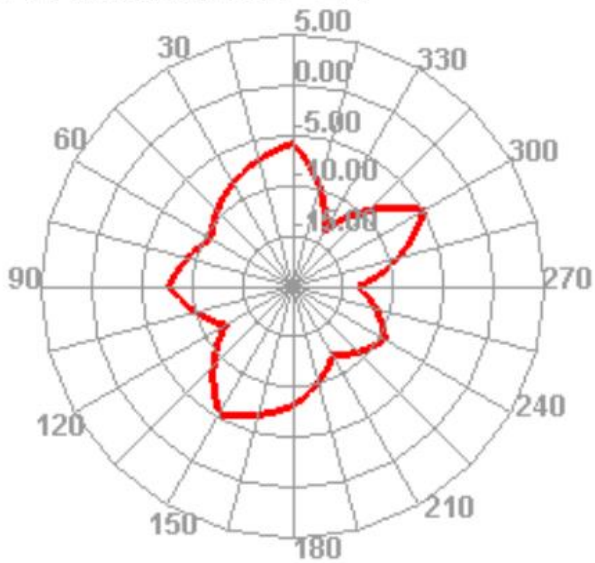
**2170.000MHz**



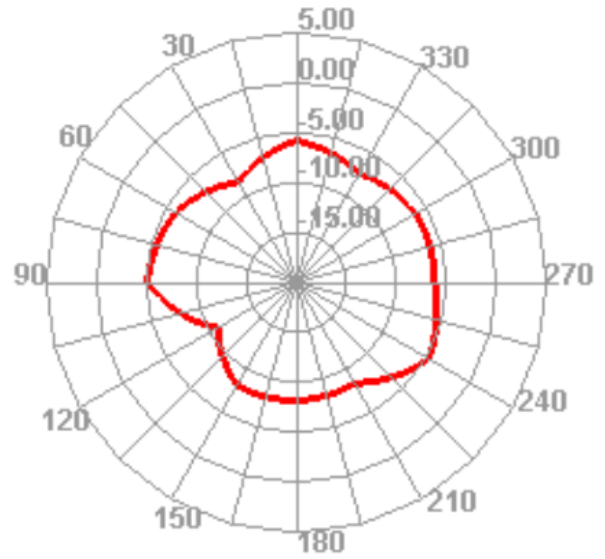
**2170.000MHz H**



**2170.000MHz E1**

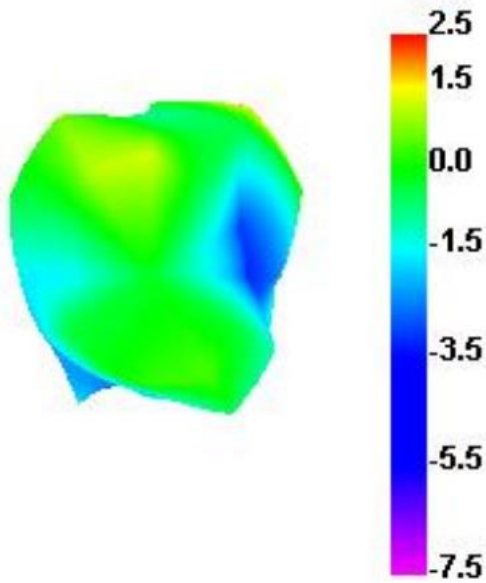


**2170.000MHz E2**

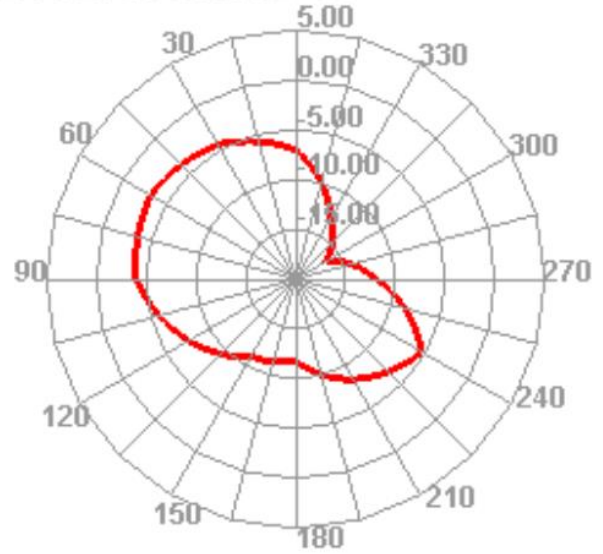


WIFI

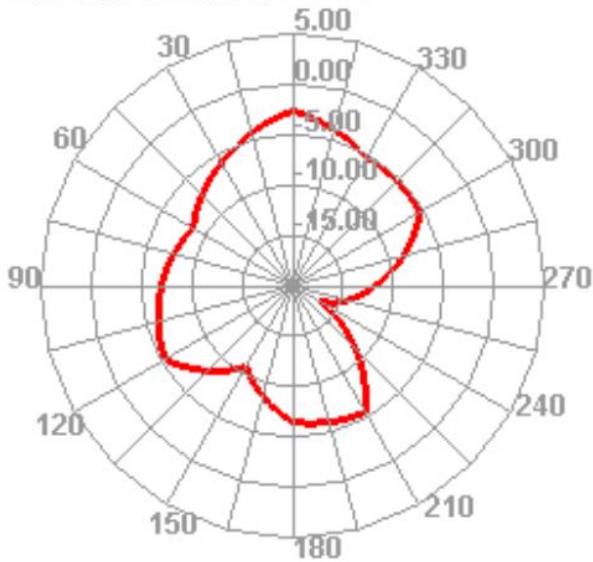
### 2400.000MHz



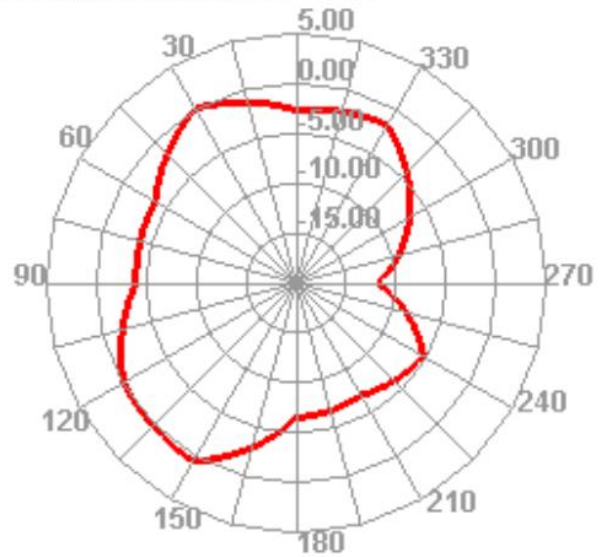
### 2400.000MHz H



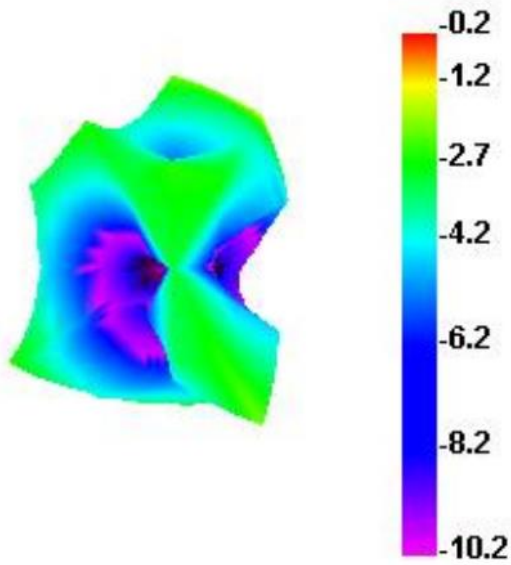
### 2400.000MHz E1



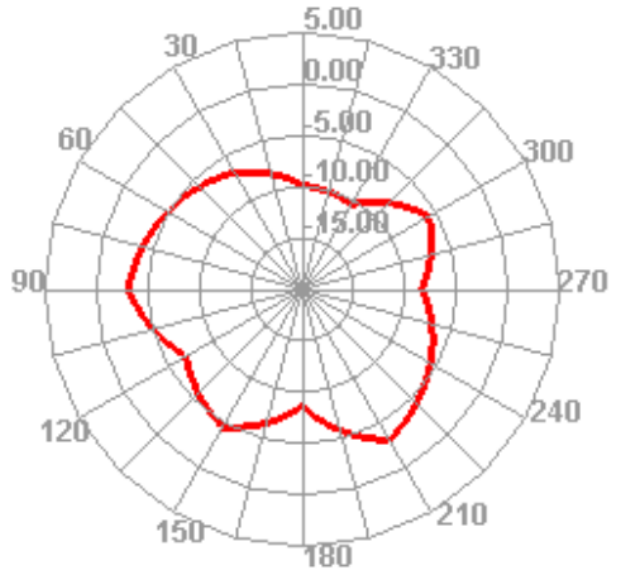
### 2400.000MHz E2



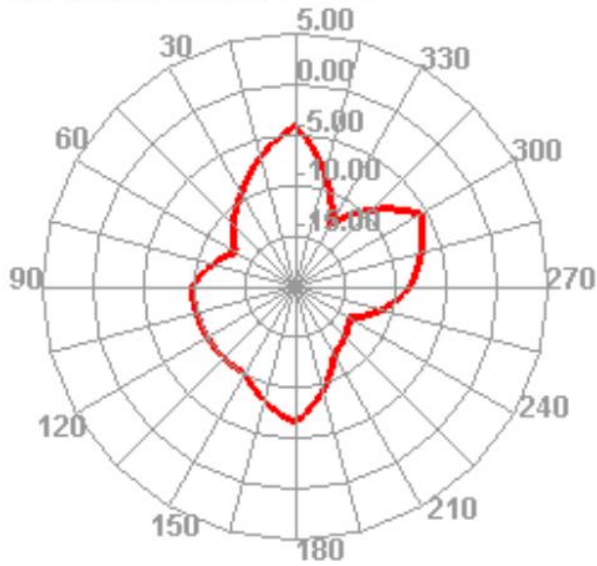
### 2500.000MHz



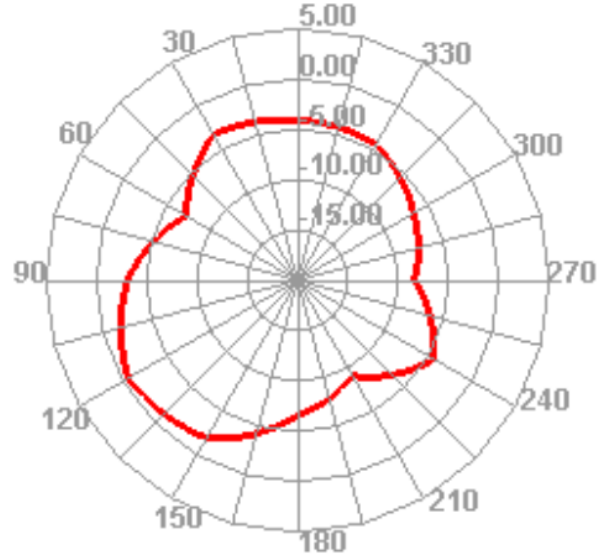
### 2500.000MHz H



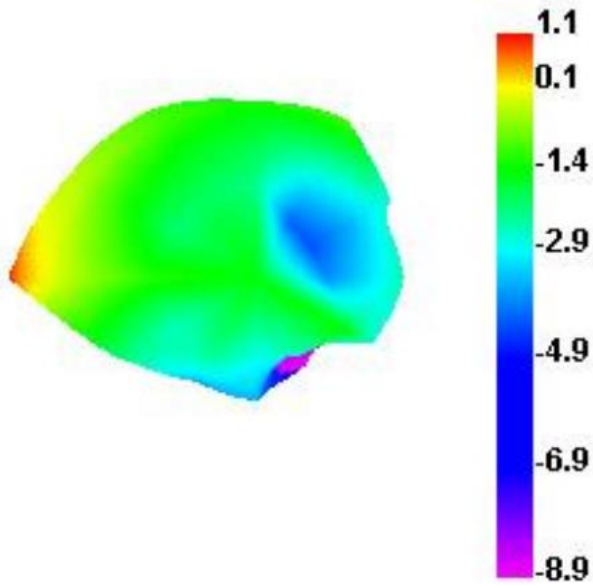
### 2500.000MHz E1



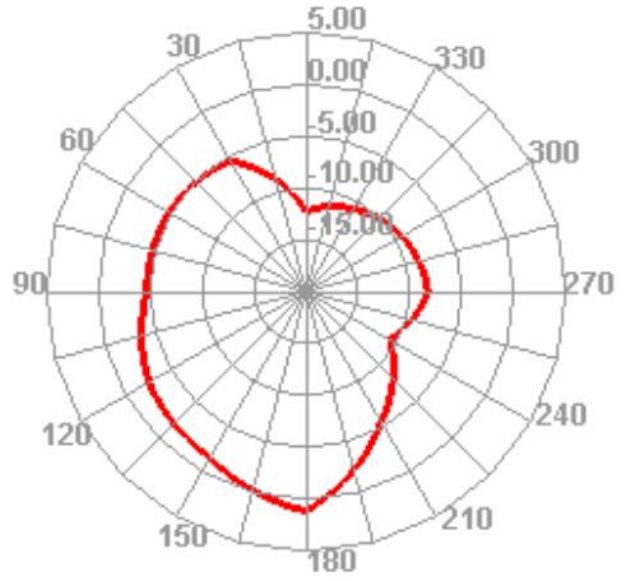
### 2500.000MHz E2



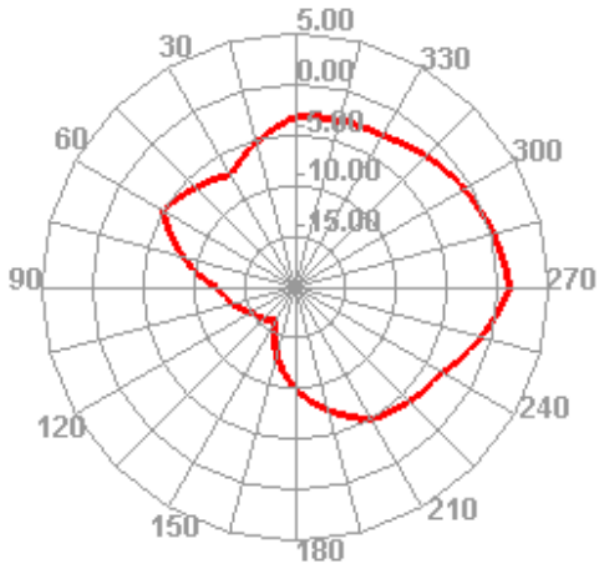
**5150.000MHz**



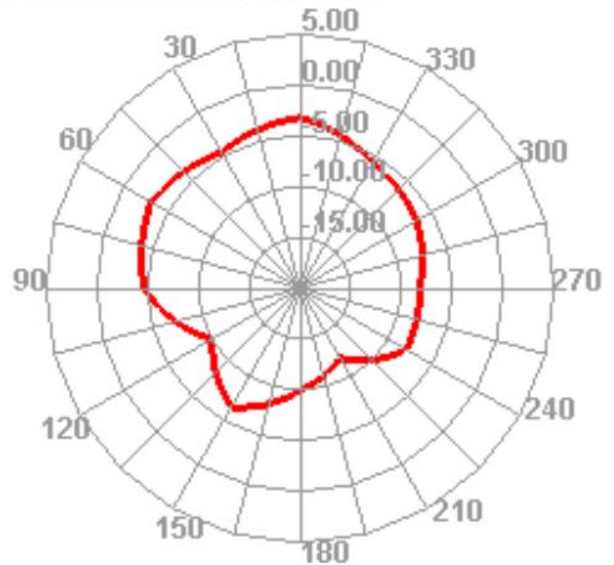
**5150.000MHz H**



**5150.000MHz E1**

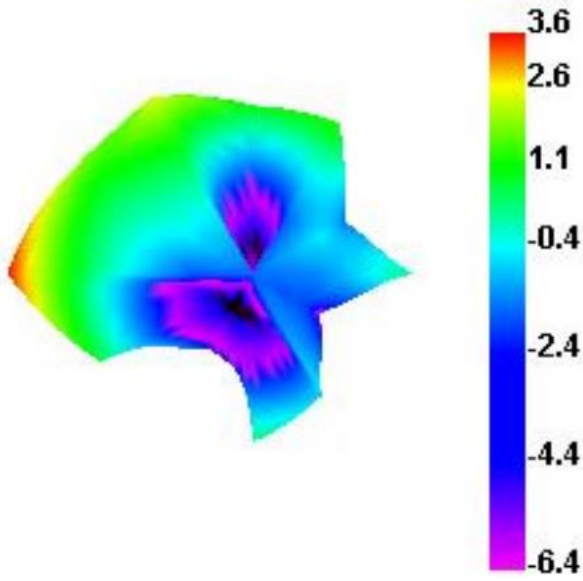


**5150.000MHz E2**

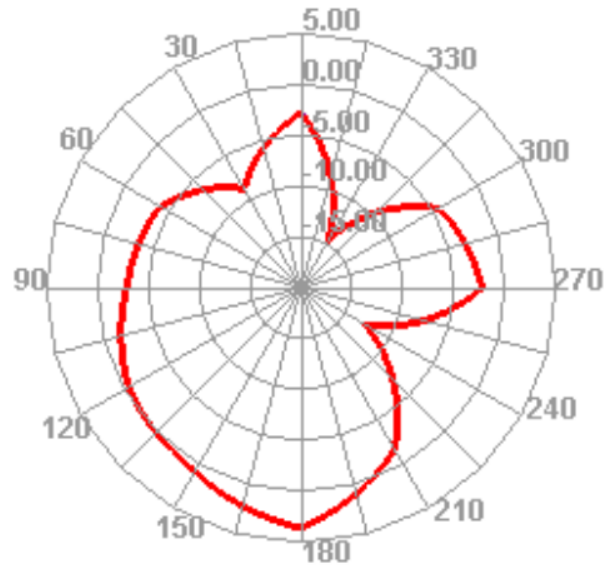




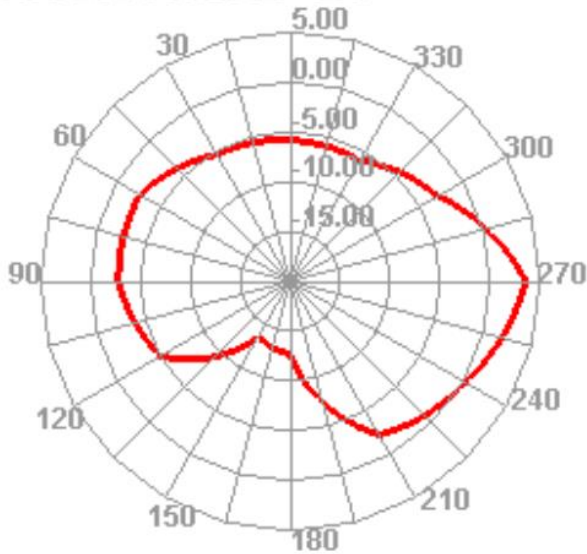
### 5850.000MHz



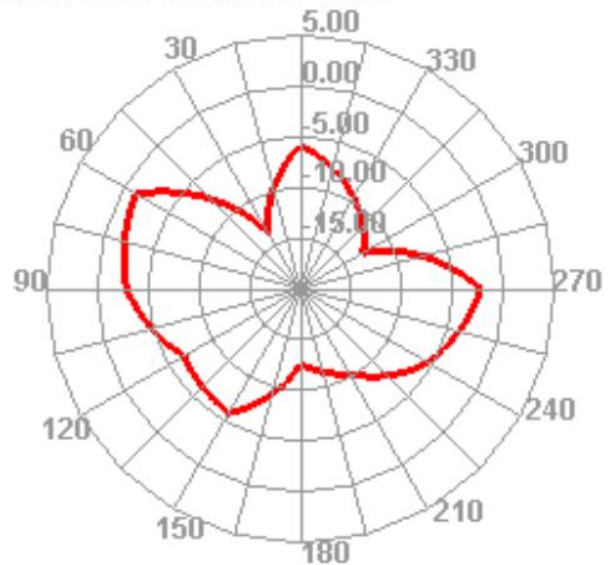
### 5850.000MHz H



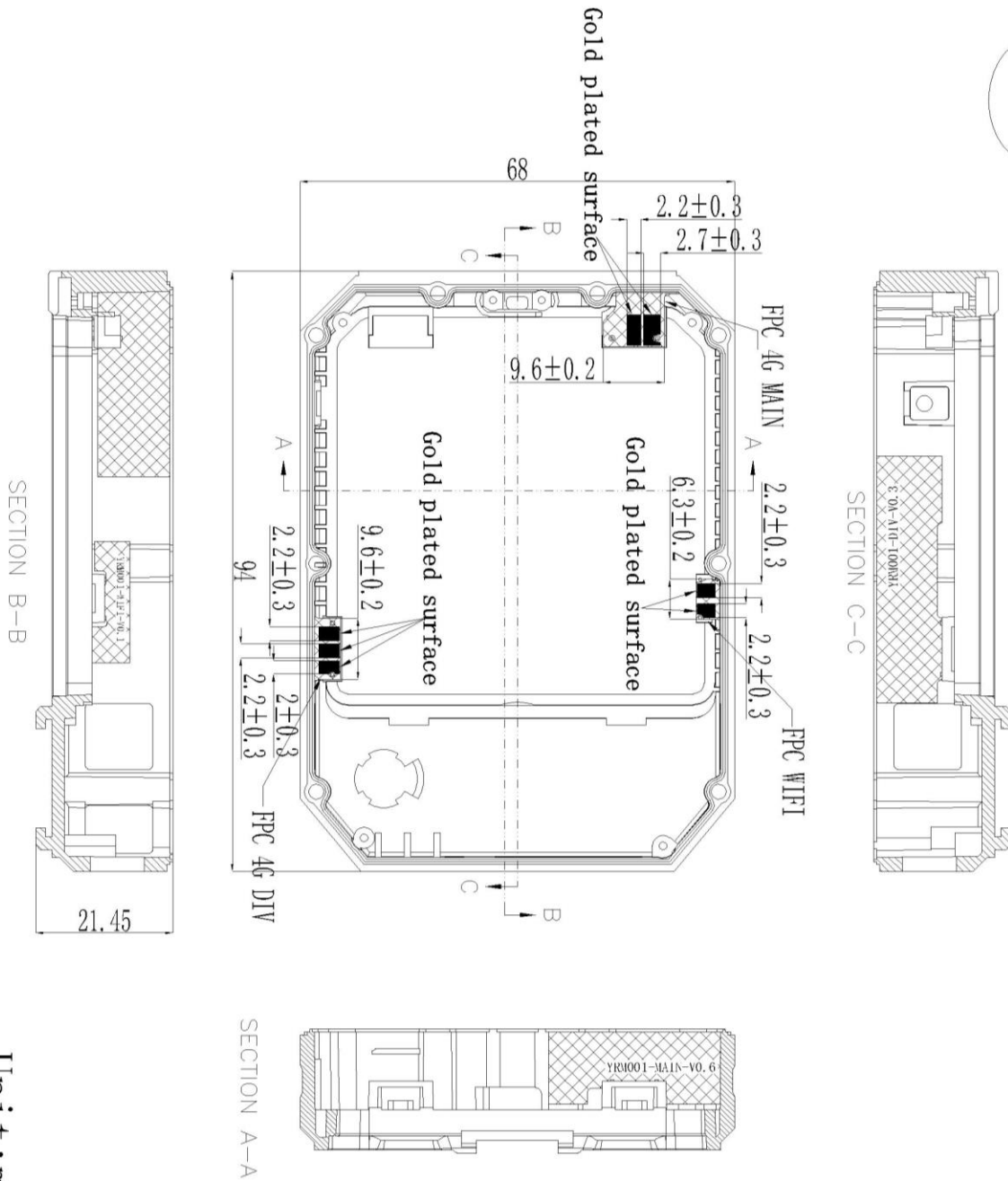
### 5850.000MHz E1



### 5850.000MHz E2



**5 Product Size**



Unit: mm