

Antenna

YB0014AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2020-09-11	Kenny YIN	Creation of the document
1.0	2020-09-11	Kenny YIN	First official release
1.1	2021-01-18	Kenny YIN	Updated the antenna image in Chapter 2.
2.0	2021-04-02	Kenny YIN	Updated the data in Product Specifications and the test data in the datasheets.

Contents

About the Document.....	3
Contents.....	4
1 Product Description.....	5
2 Product Features	5
3 Product Specifications	6
4 Overall Performance.....	7
4.1. Test Environment	7
4.2. VSWR.....	8
4.2.1. 4G.....	8
4.2.2. 4G DIV.....	9
4.3. Efficiency.....	10
4.3.1. 4G.....	10
4.3.2. 4G DIV.....	11
4.4. Gain.....	12
4.4.1. 4G.....	12
4.4.2. 4G DIV.....	13
4.4.3. GNSS	14
4.5. Radiation Patterns.....	15
4.5.1. 4G.....	16
4.5.2. 4G DIV.....	20
5 Product Size	25

1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless 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 LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	4G: 698–1000 MHz; 1700–2700 MHz 4G DIV: 698–1000 MHz; 1700–2700 MHz GNSS: 1561–1571 MHz; 1602–1606 MHz
Input Impedence	50 Ω
VSWR	4G: ≤ 3.0 4G DIV: ≤ 4.0
Gain	LNA (28 \pm 2) 2/3/4G (1.0) 4G DIV (1.0)
Polarization Type	Linear (4G MAIN) Circular (GNSS)

Mechanical Specifications

Antenna Size	81 mm x 27.5 mm, RG174 Length = 3000 mm
Casing	ABS + PC
Connector Type	SMA Male (with center pin)
Working Temperature	-20 °C to +85 °C
Radome Color	Black
IP Rating	IP66
Installation Method	Adhesive

4 Overall Performance

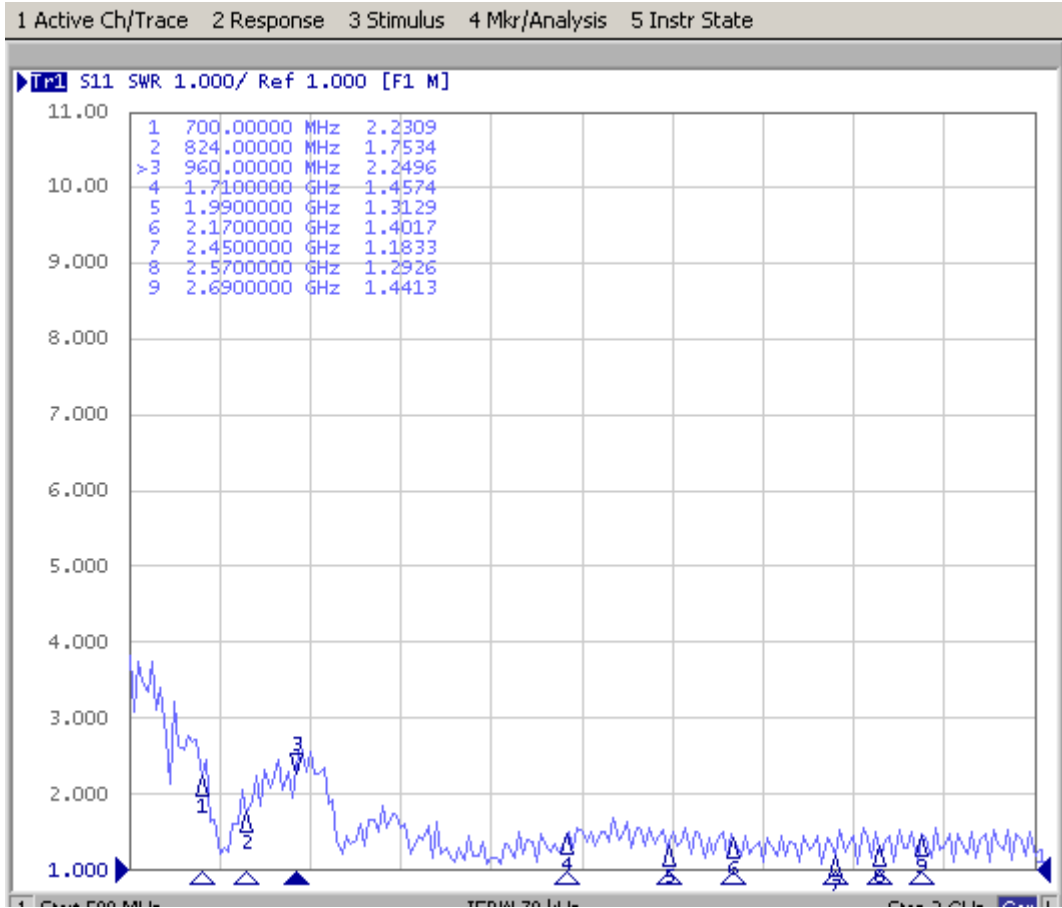
4.1. Test Environment

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



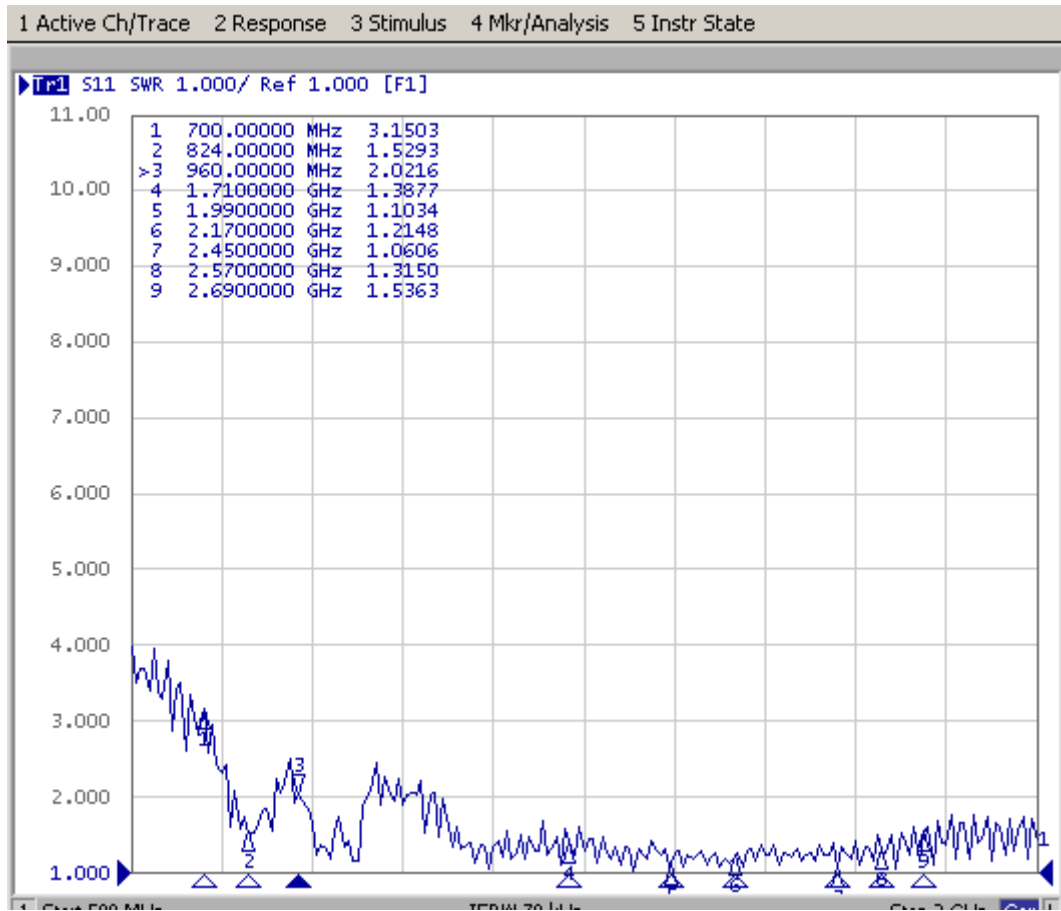
4.2. VSWR

4.2.1. 4G



Frequency (MHz)	700	824	960	1710	1990	2170	2450	2570	2690
VSWR	2.23	1.75	2.25	1.46	1.31	1.4	1.18	1.29	1.44

4.2.2. 4G DIV

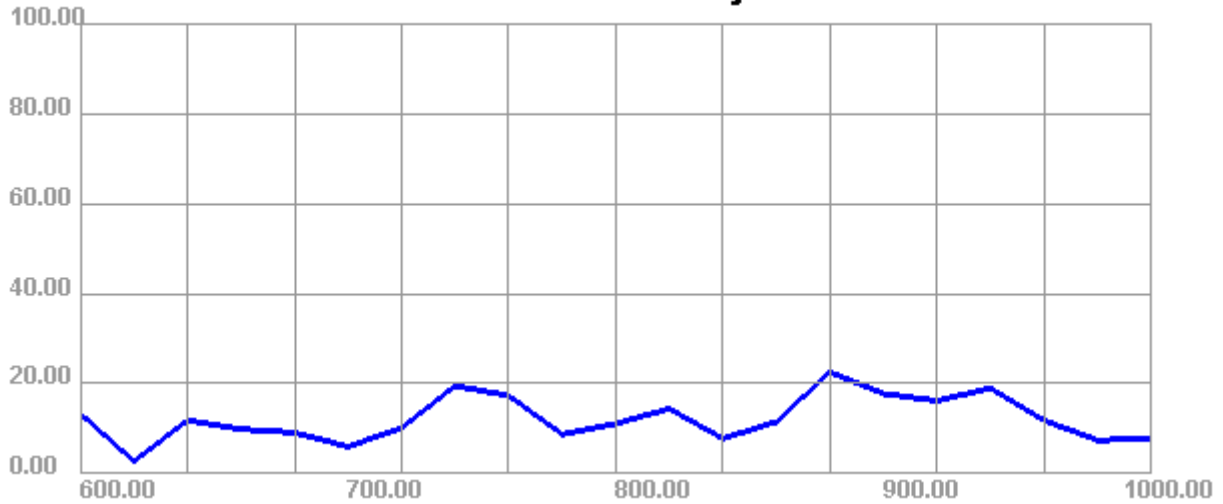


Frequency (MHz)	700	824	960	1710	1990	2170	2450	2570	2690
VSWR	3.15	1.53	2.02	1.39	1.1	1.21	1.06	1.32	1.54

4.3. Efficiency

4.3.1. 4G

600.00MHz - 1000.00MHz Efficiency



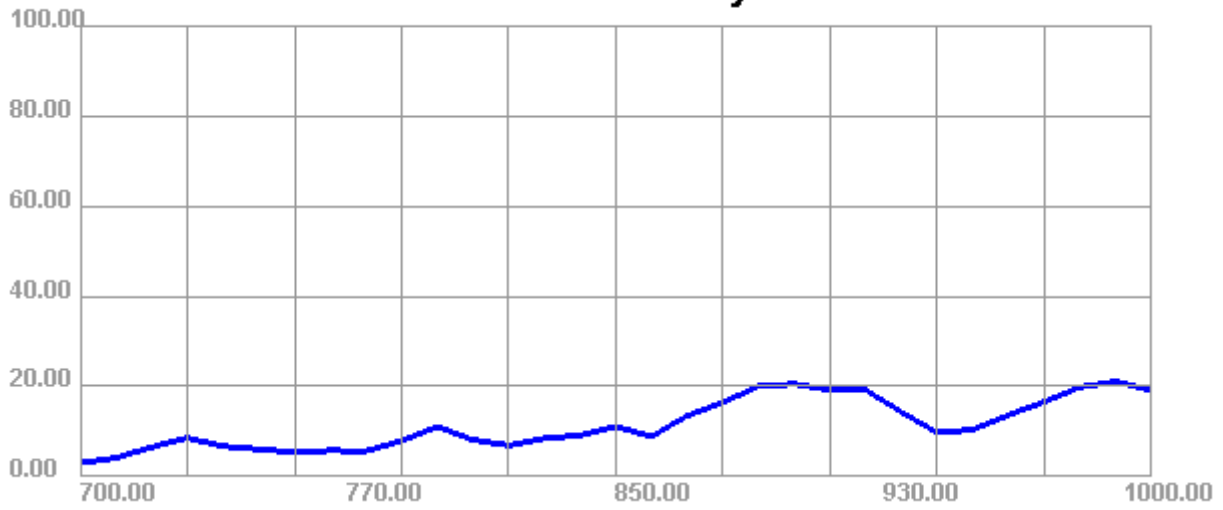
1700.00MHz - 2700.00MHz Efficiency



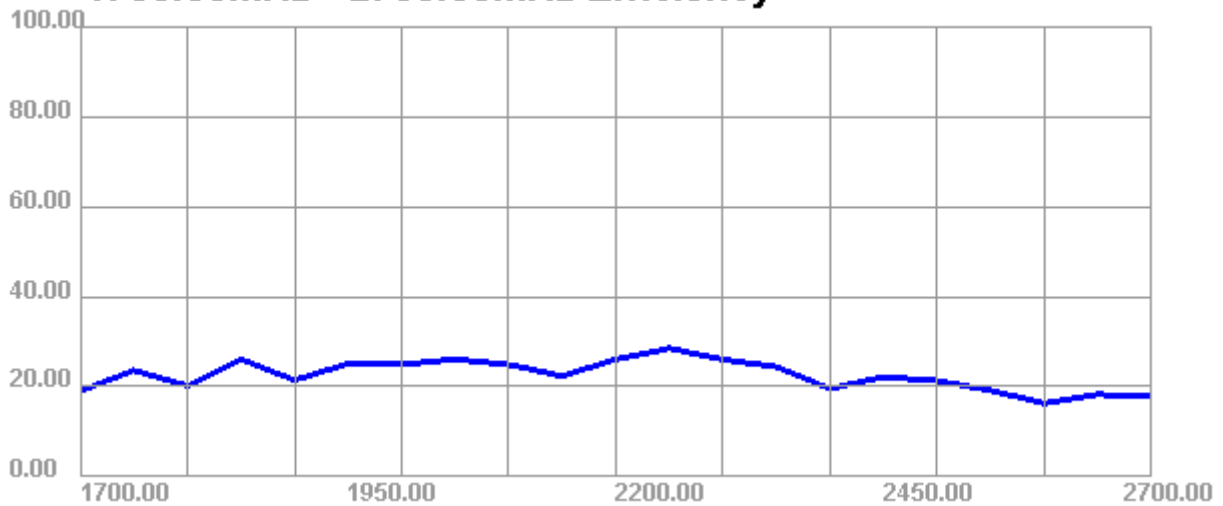
Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Efficiency (%)	17.35	11.54	11.84	18.21	26.77	19.54	16.98	14.68

4.3.2. 4G DIV

700.00MHz - 1000.00MHz Efficiency



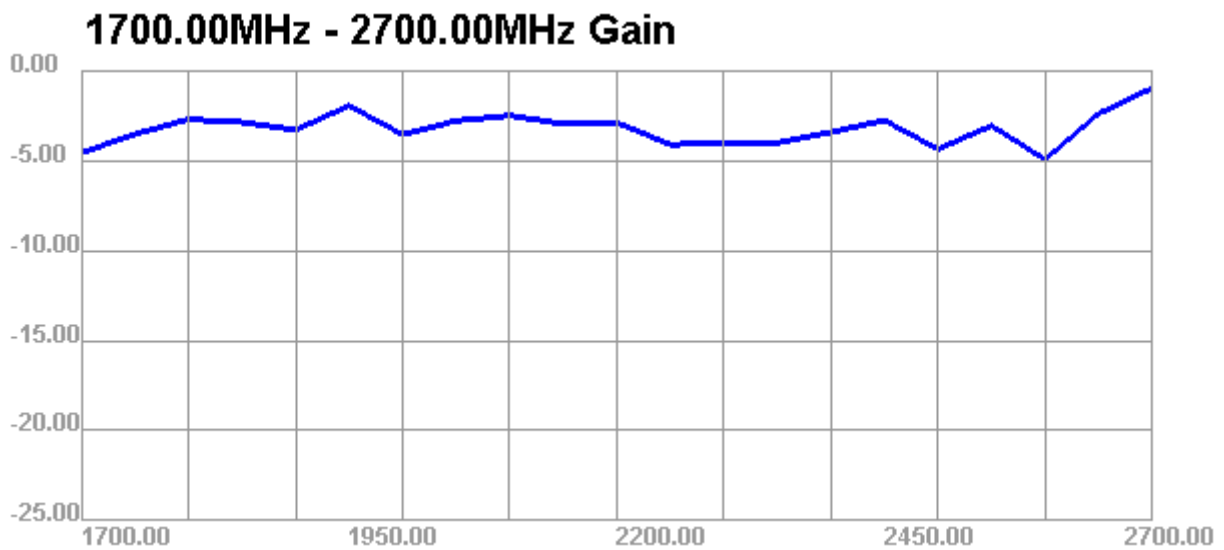
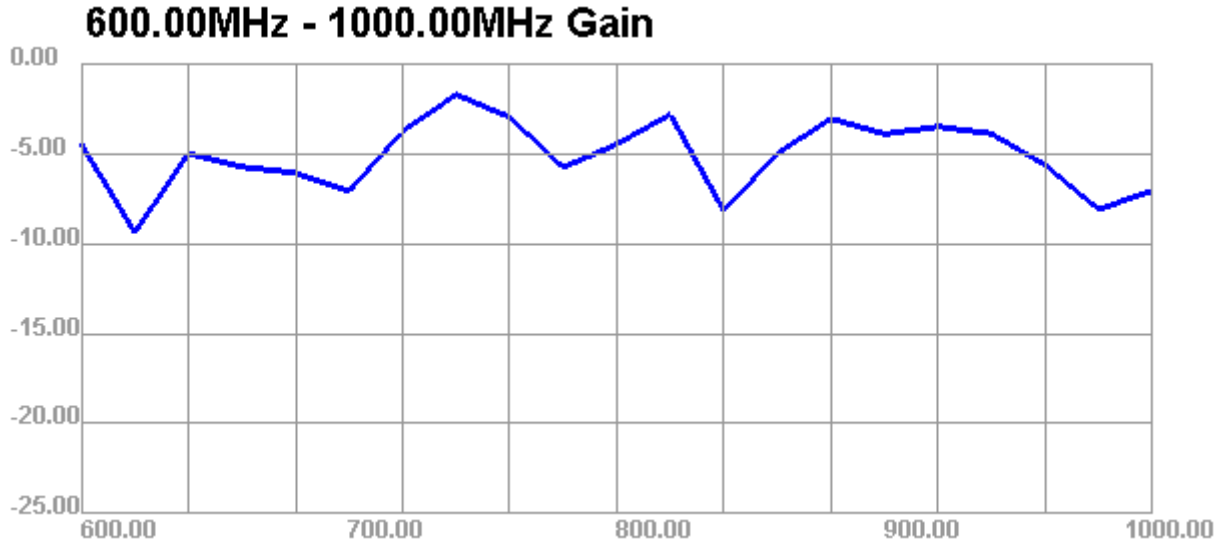
1700.00MHz - 2700.00MHz Efficiency



Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Efficiency (%)	5.41	8.91	13.65	19.02	25.13	26.07	22.17	18.26

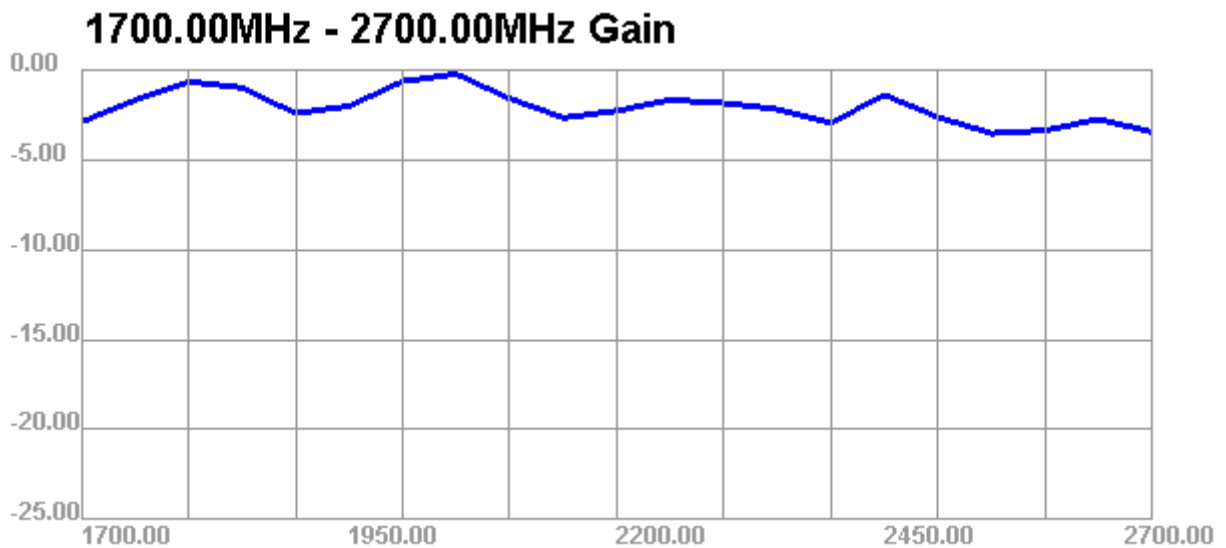
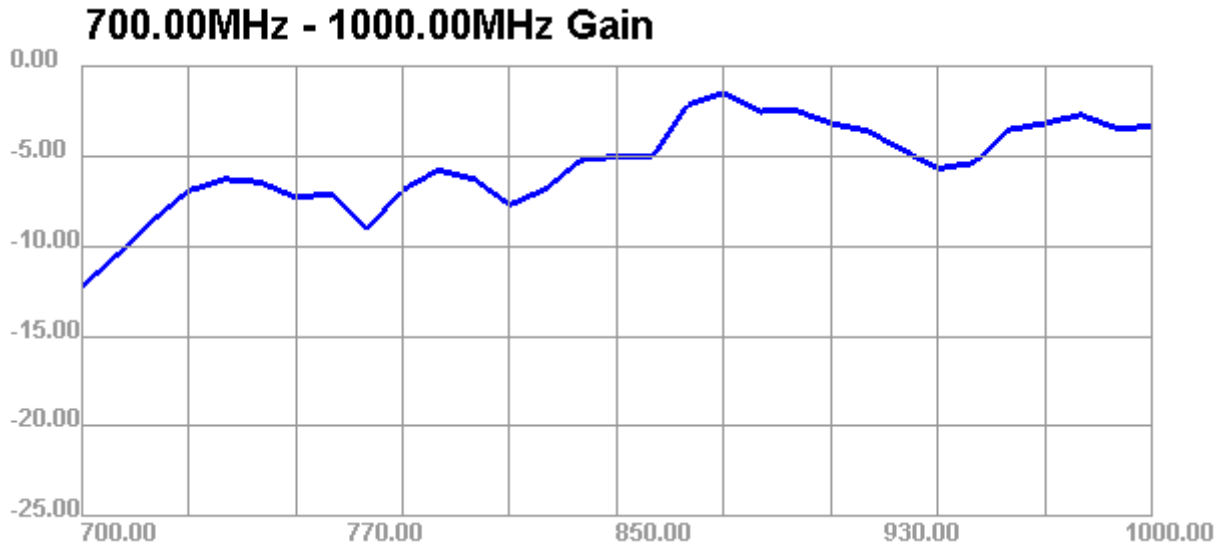
4.4. Gain

4.4.1. 4G



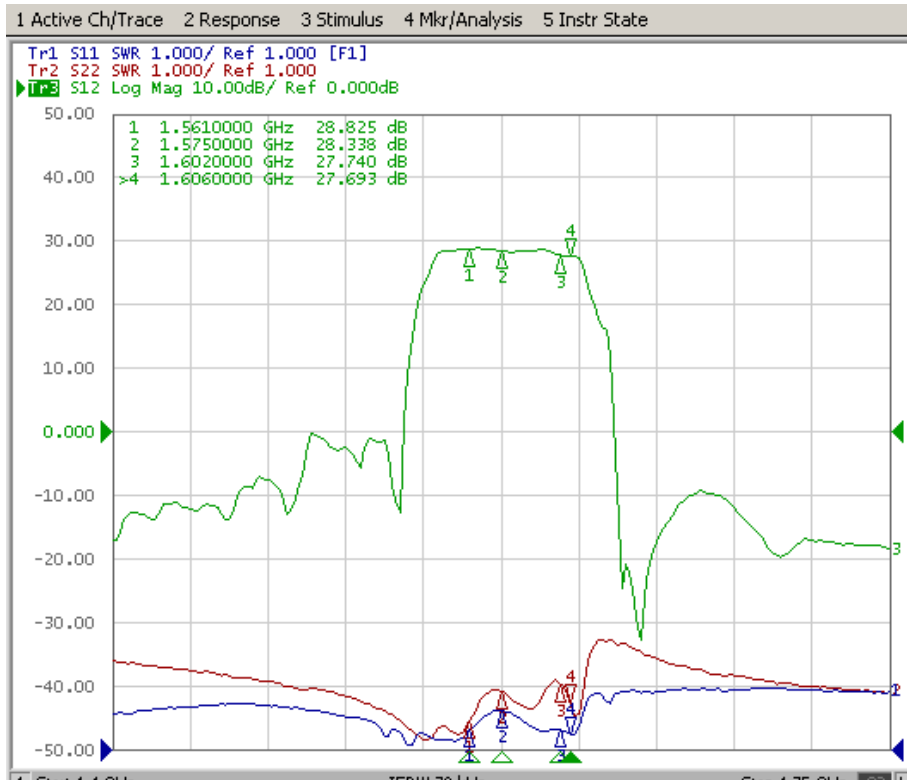
Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Gain (dBi)	-2.97	-4.98	-5.62	-4.57	-1.94	-2.87	-2.75	-2.38

4.4.2. 4G DIV



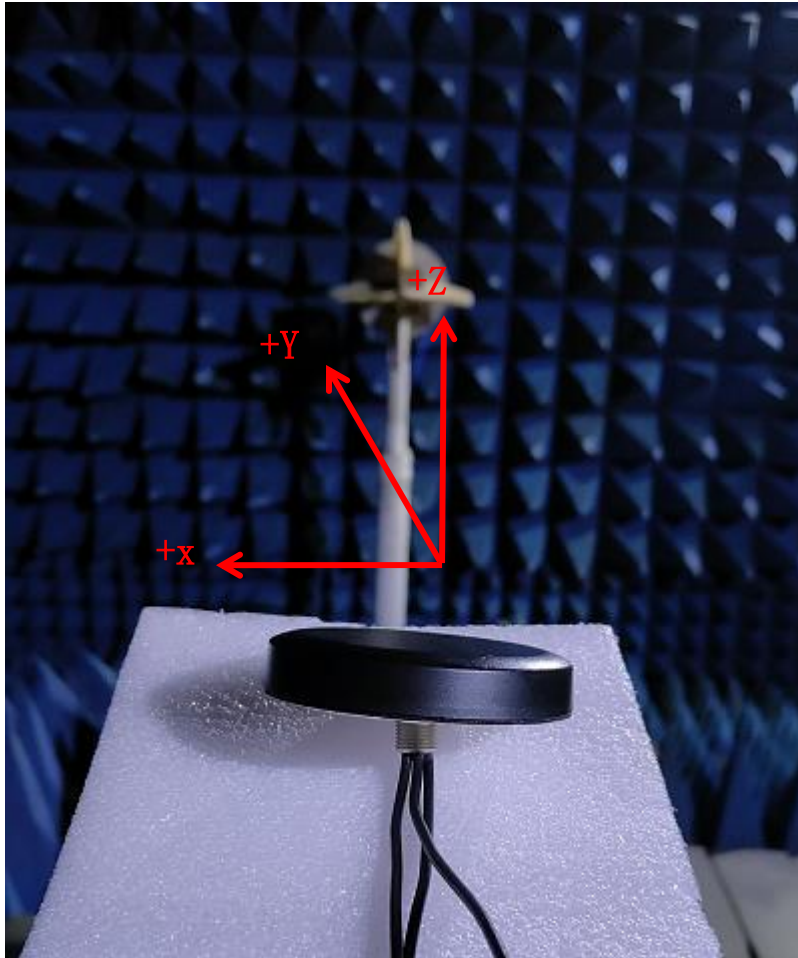
Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Gain (dBi)	-7.29	-5.04	-3.54	-2.91	-2.02	-2.28	-1.41	-2.75

4.4.3. GNSS



Frequency (MHz)	1561	1575	1602	1606
Gain (dBi)	28.82	28.34	27.74	27.69

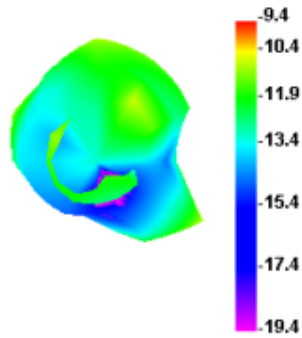
4.5. Radiation Patterns



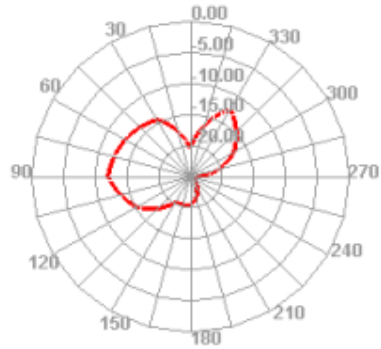
Note: Z is directed towards reflector antenna; Y is directed towards sky; X is directed towards OTA chamber door.

4.5.1. 4G

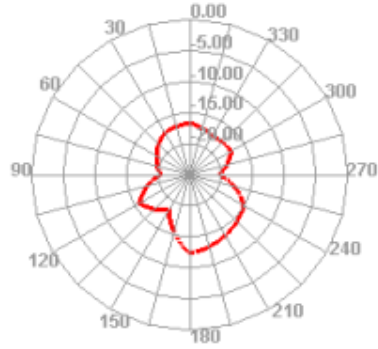
620.000MHz



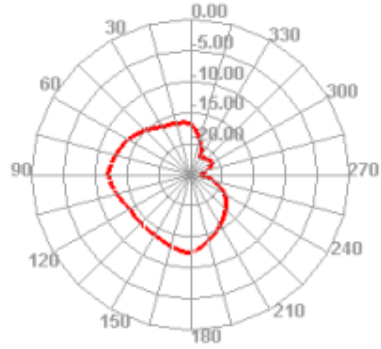
620.000MHz H



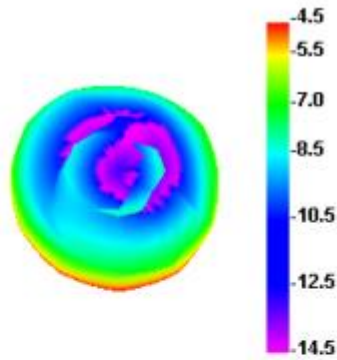
620.000MHz E1



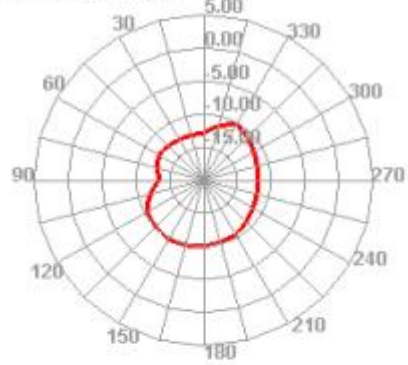
620.000MHz E2



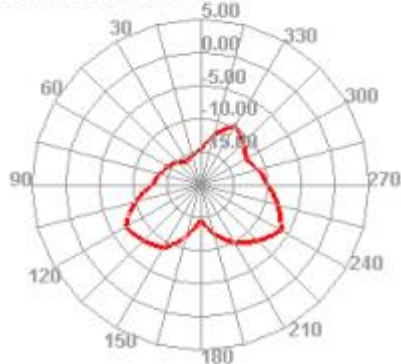
800.000MHz



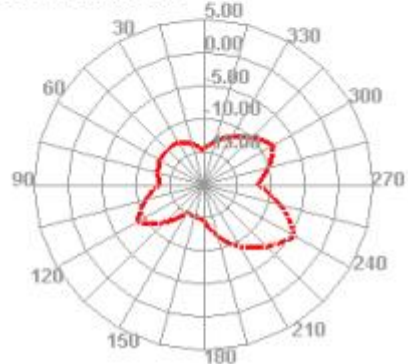
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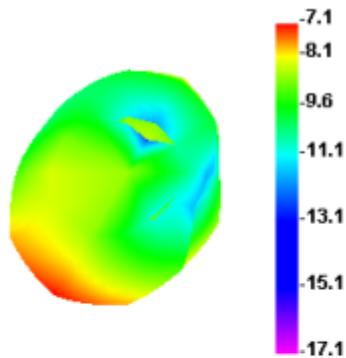
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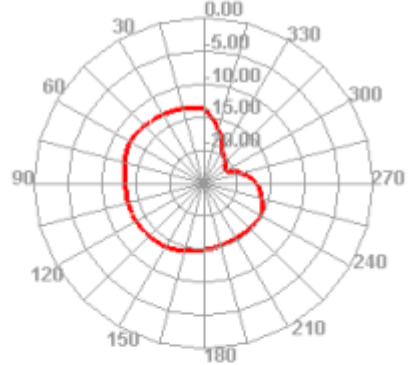
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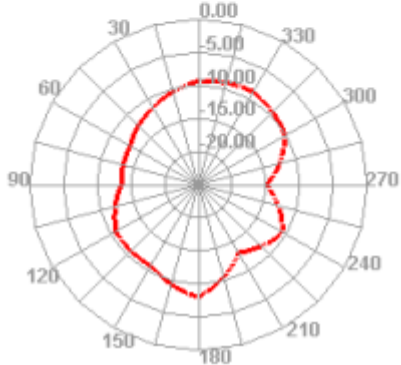
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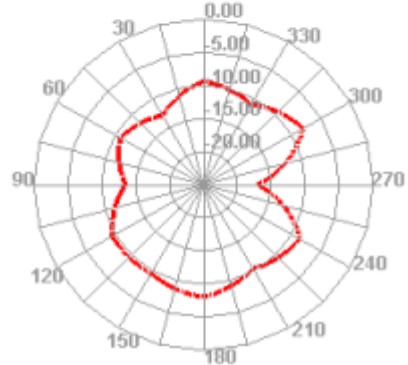
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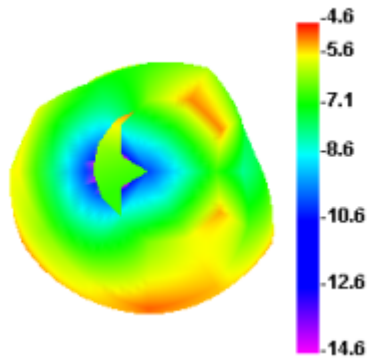
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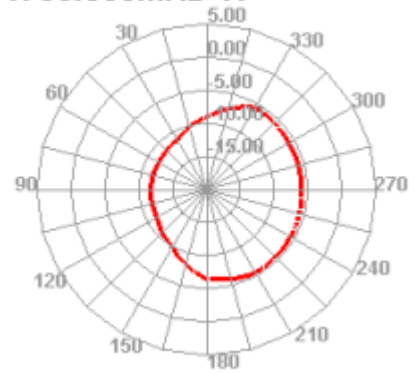
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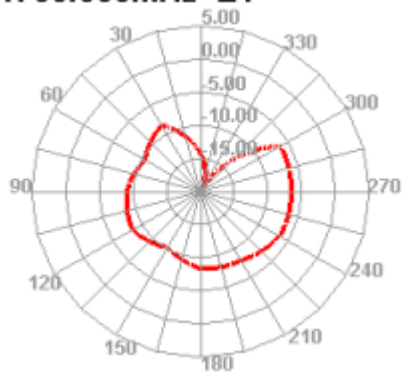
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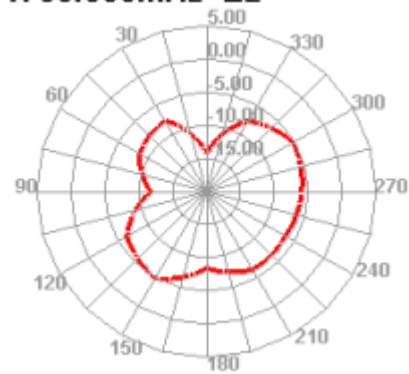
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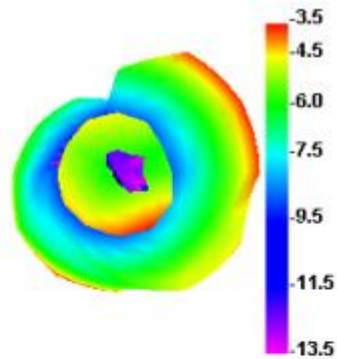
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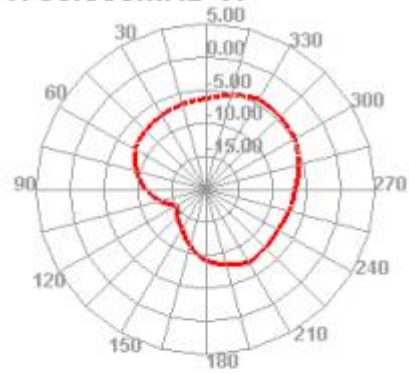
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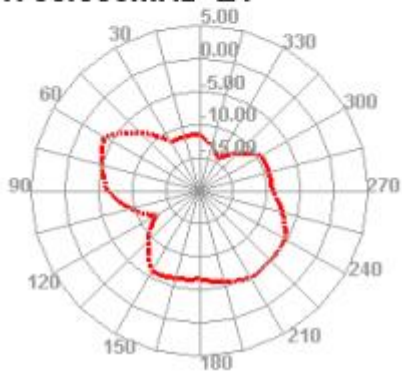
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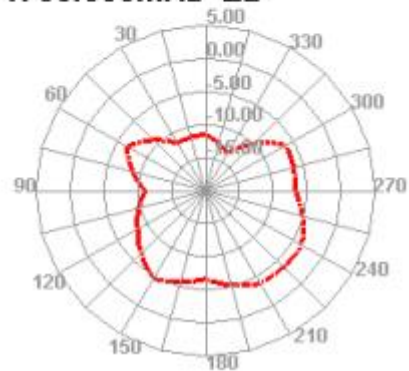
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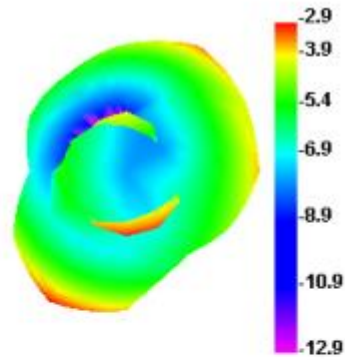
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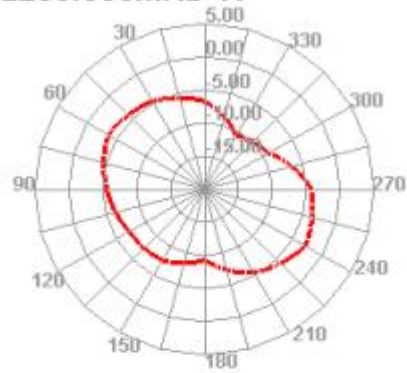
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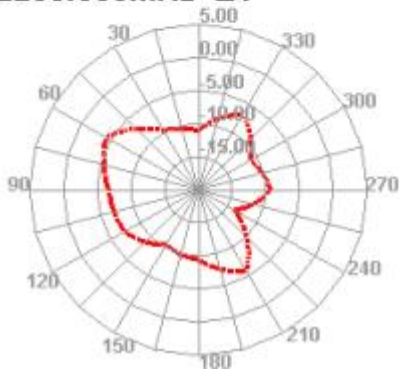
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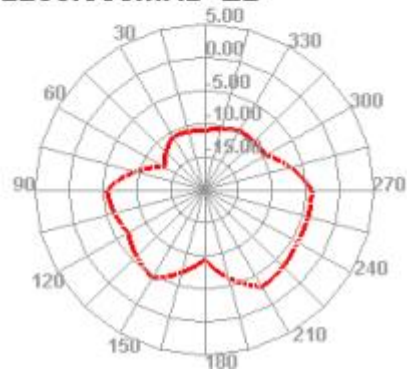
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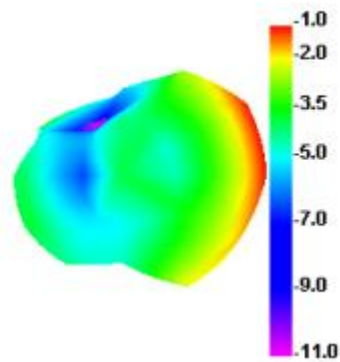
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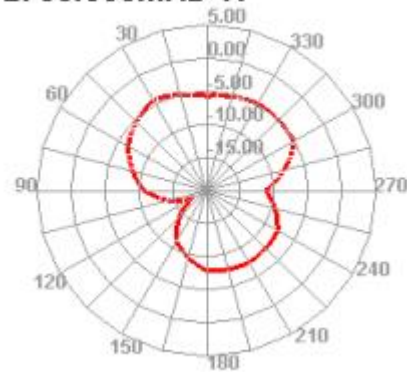
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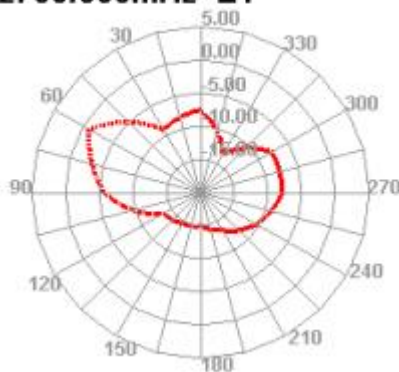
2700.000MHz



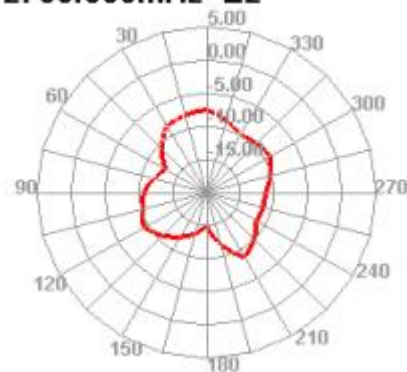
2700.000MHz H



2700.000MHz E1

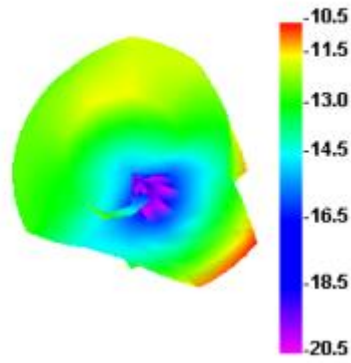


2700.000MHz E2

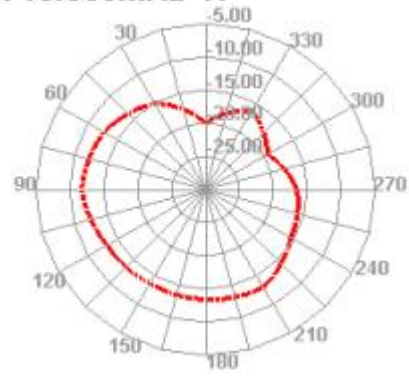


4.5.2. 4G DIV

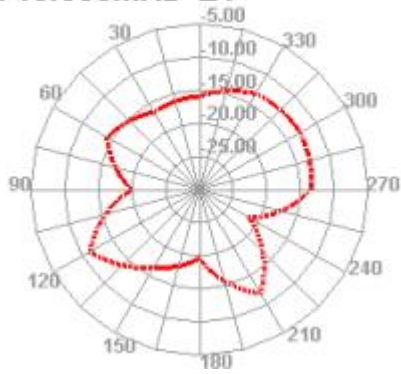
710.000MHz



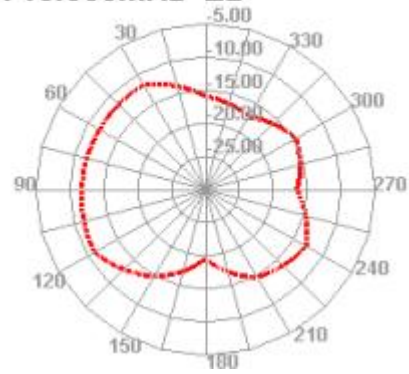
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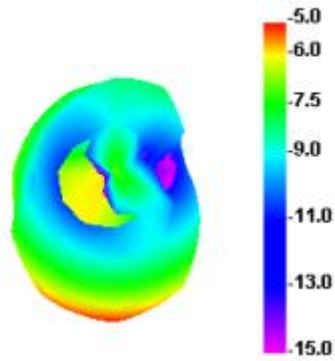
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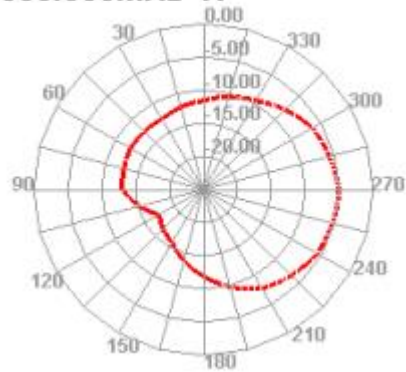
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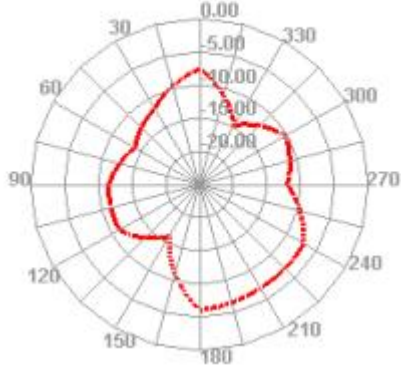
850.000MHz



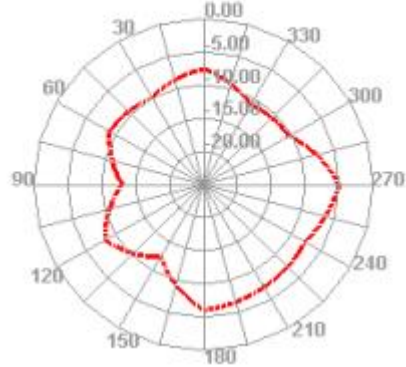
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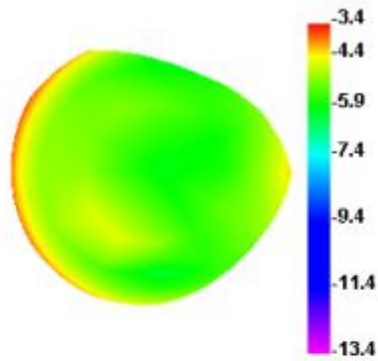
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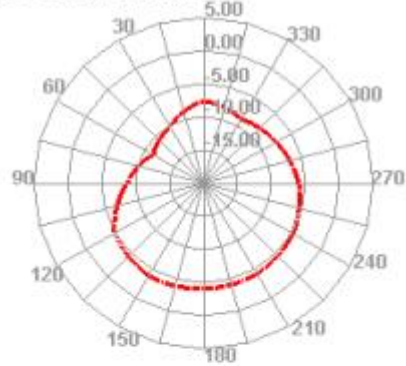
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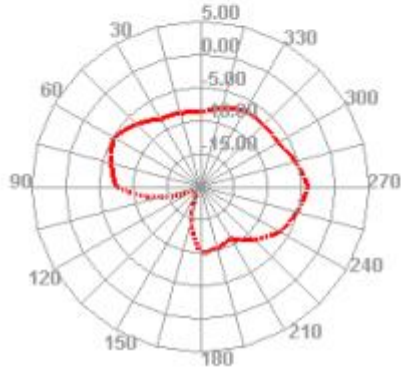
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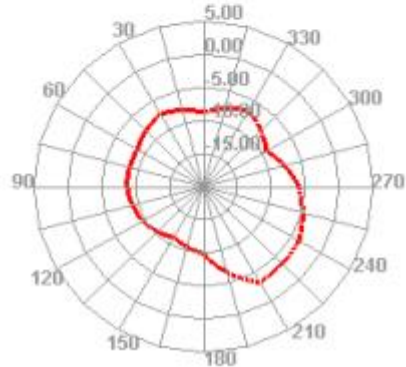
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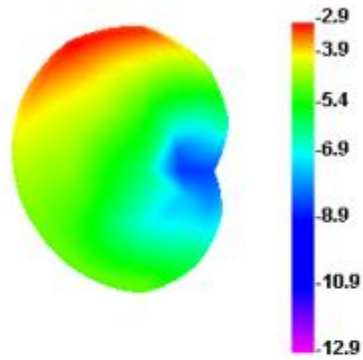
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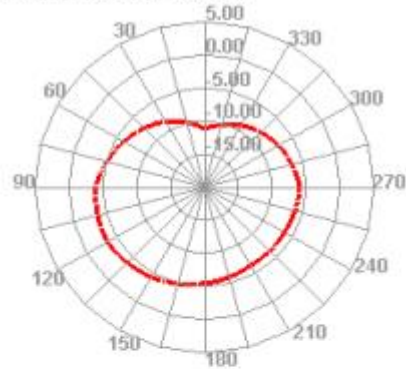
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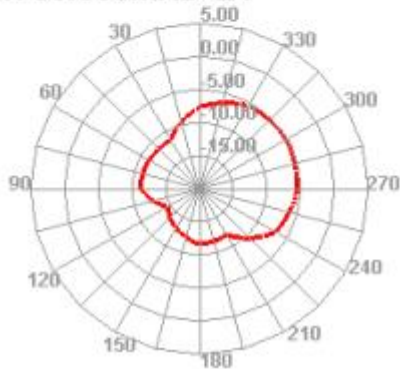
1700.000MHz



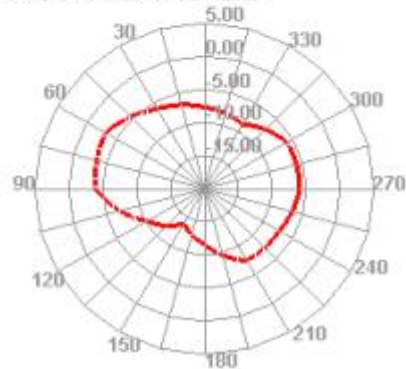
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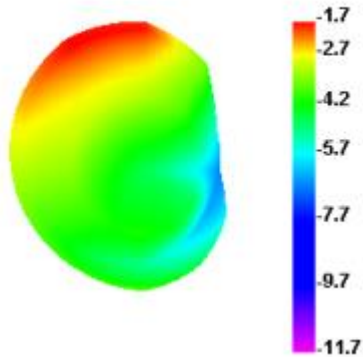
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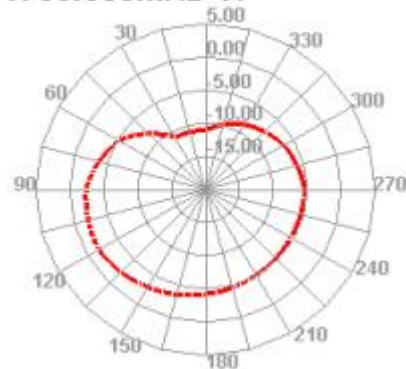
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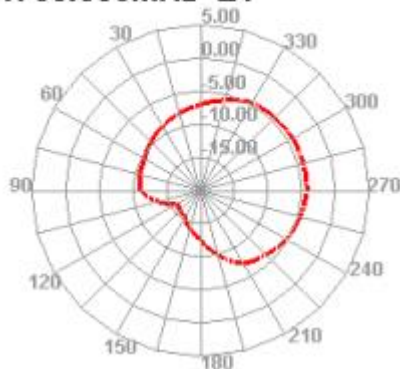
1750.000MHz



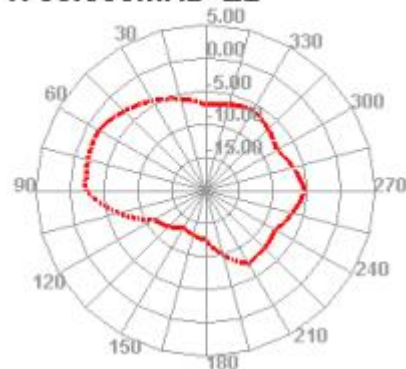
1750.000MHz H



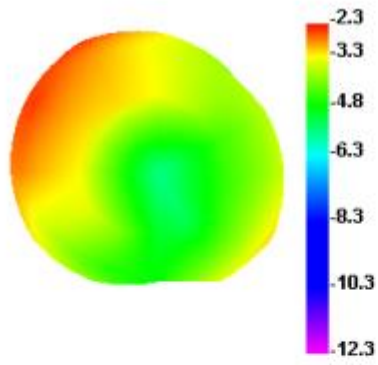
1750.000MHz E1



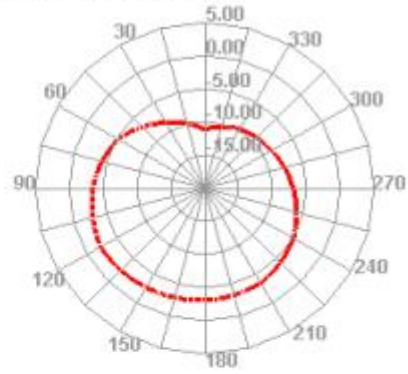
1750.000MHz E2



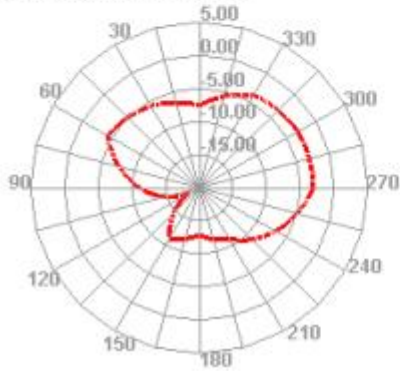
2200.000MHz



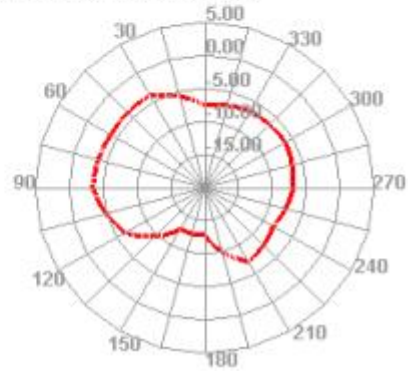
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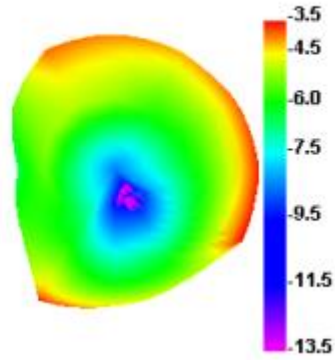
2200.000MHz E1



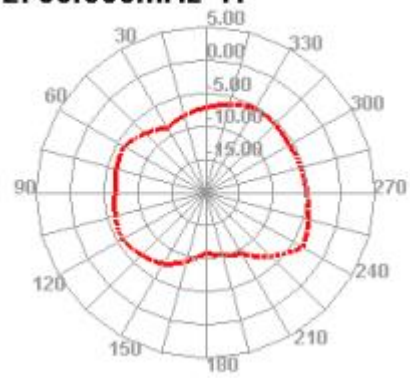
2200.000MHz E2



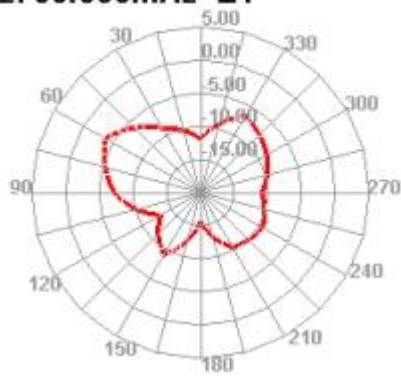
2700.000MHz



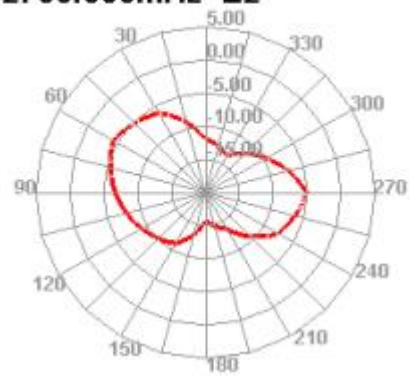
2700.000MHz H



2700.000MHz E1



2700.000MHz E2



5 Product Size

