

Antenna

YKL001AA Datasheet

Antenna Services

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Status: Released



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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-06-02	Kenny YIN	Initial
1.1	2020-12-16	Kenny YIN	Updated the gain data.
2.0	2021-03-29	Kenny YIN	Updated the data (4G).

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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/Bluetooth/GNSS
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	4G: 700–1000 MHz; 1710–2690 MHz Bluetooth: 2400–2500 MHz GPS & BD: 1575.42 ±10 MHz; 1561 ±10 MHz
Input Impedence	50 Ω
VSWR	≤ 6.0
Gain	4G: ≤ 3 dBi Bluetooth: ≤ 2.65 dBi GNSS: 25 ±3 dBi
Polarization Type	Linear (4G MAIN/BT); Circular (GNSS)

Mechanical Specifications

Antenna Size (mm)	50 mm × 33 mm × 48 mm
Casing	PC + ABS
Connector Type	SMA Male
Working Temperature	-20 °C to +85 °C
Radome Color	Black
IP Rating	IP66
Installation method	Adhesive

4 Overall Performance

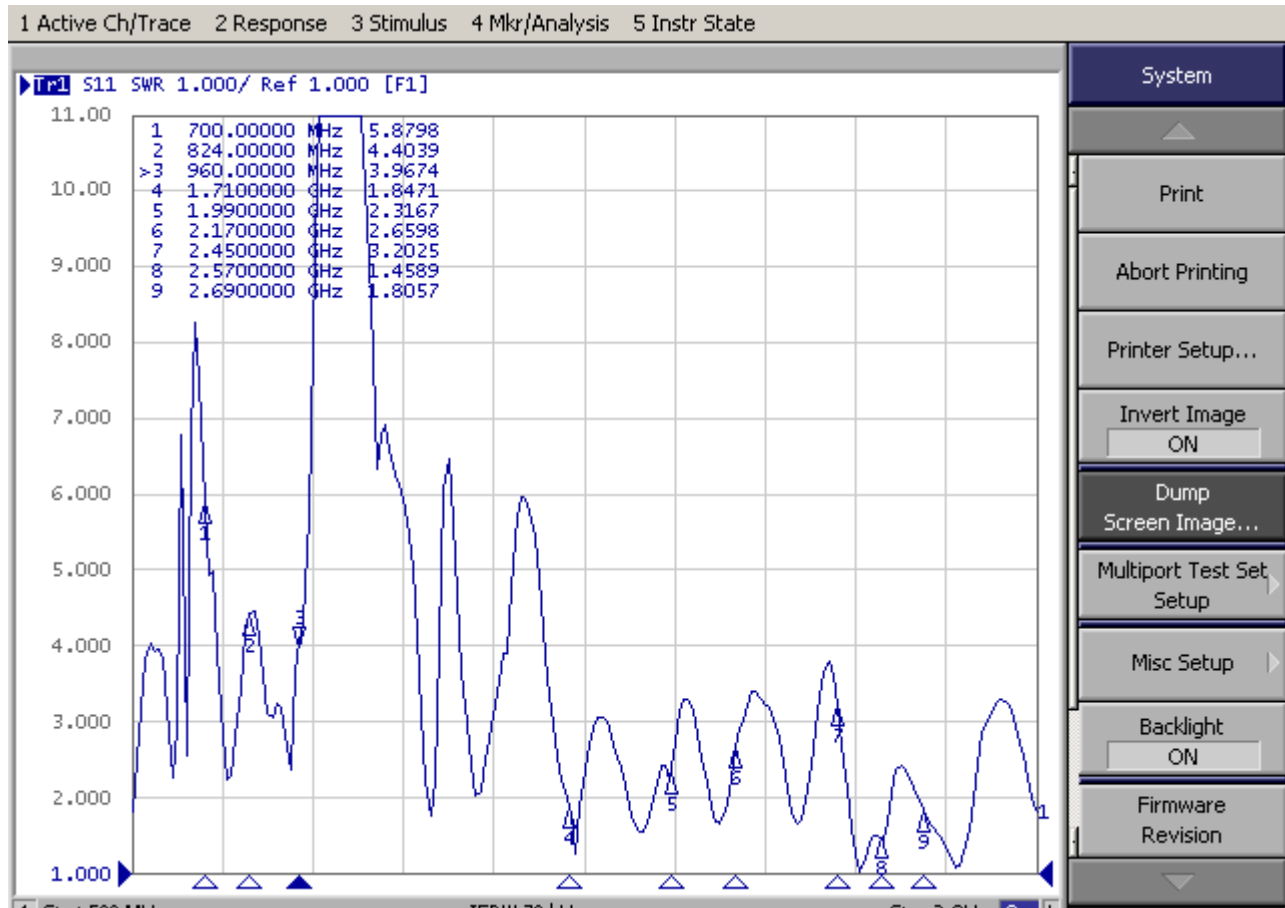
4.1. Test Environment

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



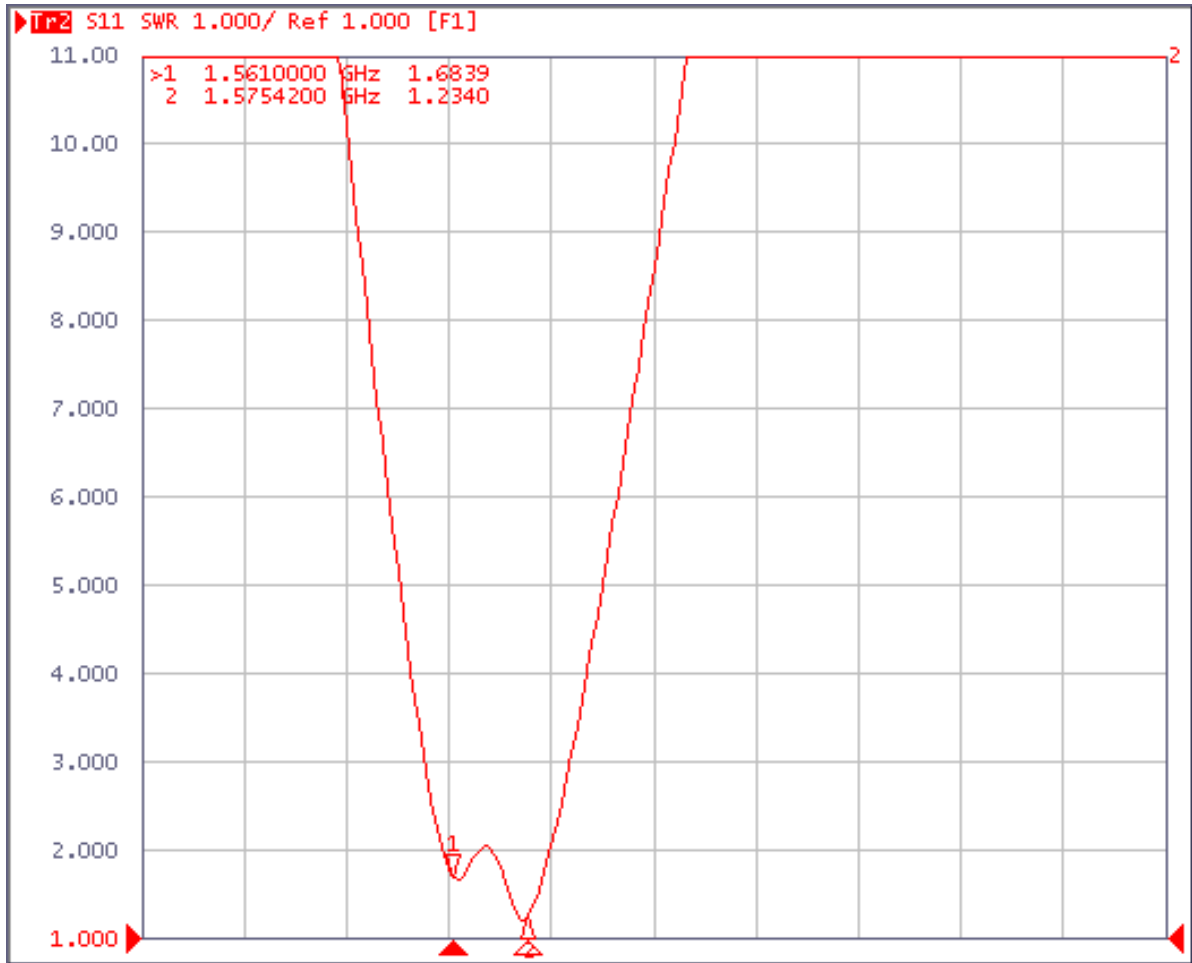
4.2. VSWR

4.2.1. 4G



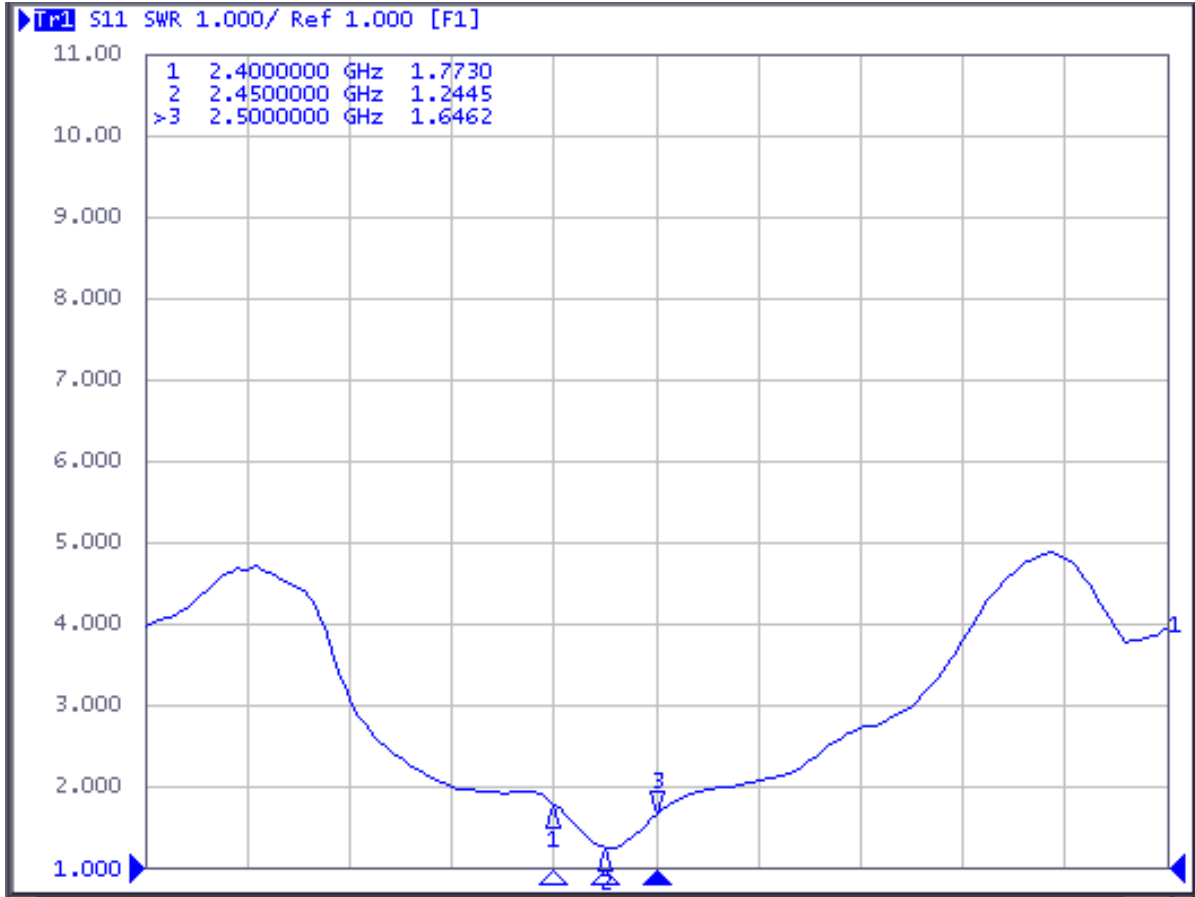
Frequency (MHz)	700	824	960	1710	1990	2170	2450	2570	2690
VSWR	5.88	4.40	3.97	1.85	2.32	2.66	3.20	1.46	1.81

4.2.2. GPS & BD



Frequency (MHz)	1561	1575
VSWR	1.68	1.23

4.2.3. Bluetooth

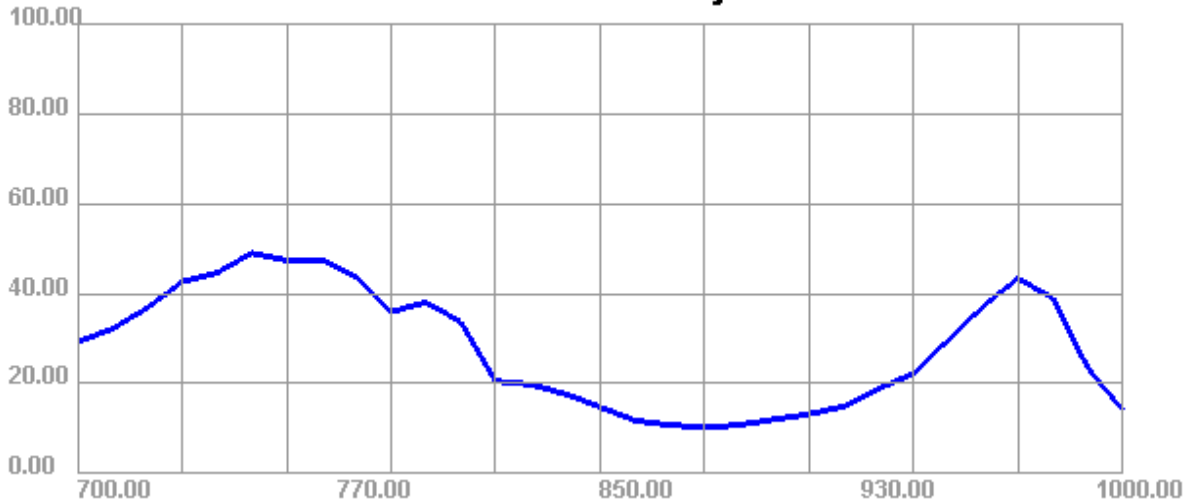


Frequency (MHz)	2400	2450	2500
VSWR	1.77	1.24	1.65

4.3. Efficiency

4.3.1. 4G

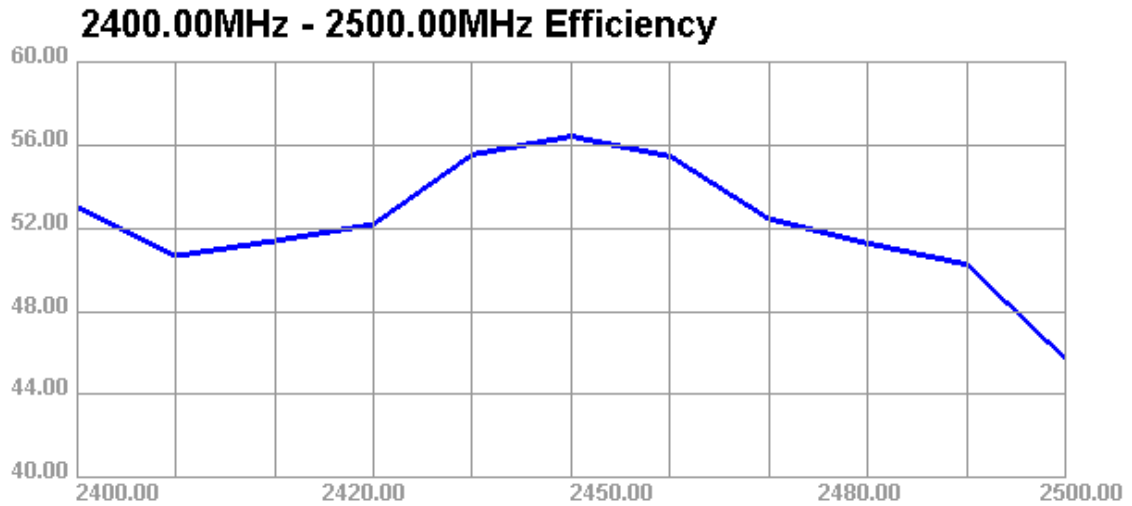
700.00MHz - 1000.00MHz Efficiency



1700.00MHz - 2700.00MHz Efficiency



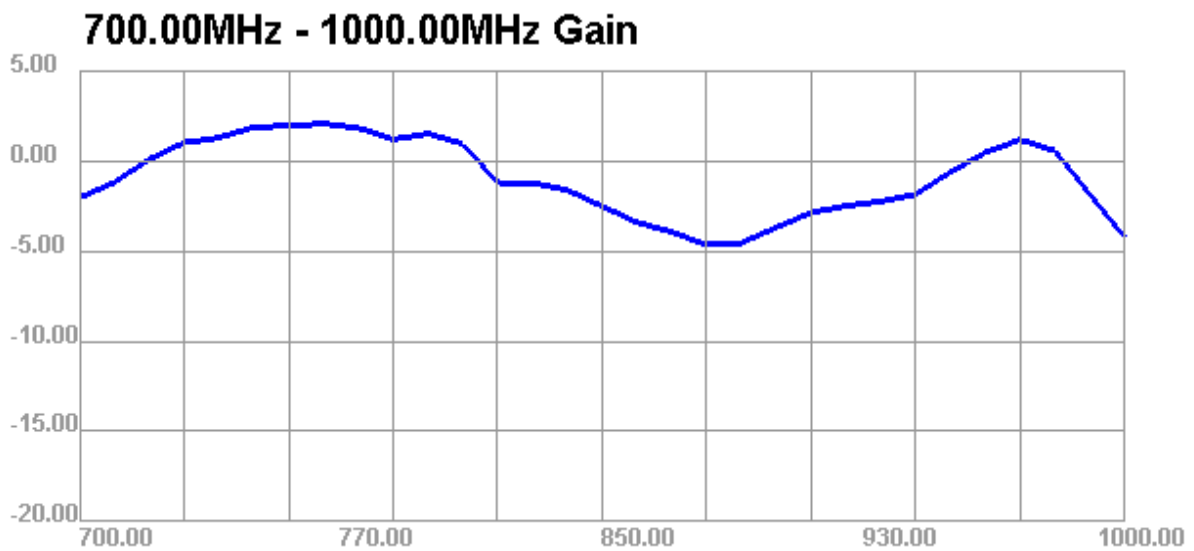
Frequency (MHz)	700	820	860	900	940	960	1700	1950	2200	2450	2700
Efficiency (%)	29.32	20.58	11.81	12.08	22.35	37.2	43.92	59.93	51.75	34.13	86.1



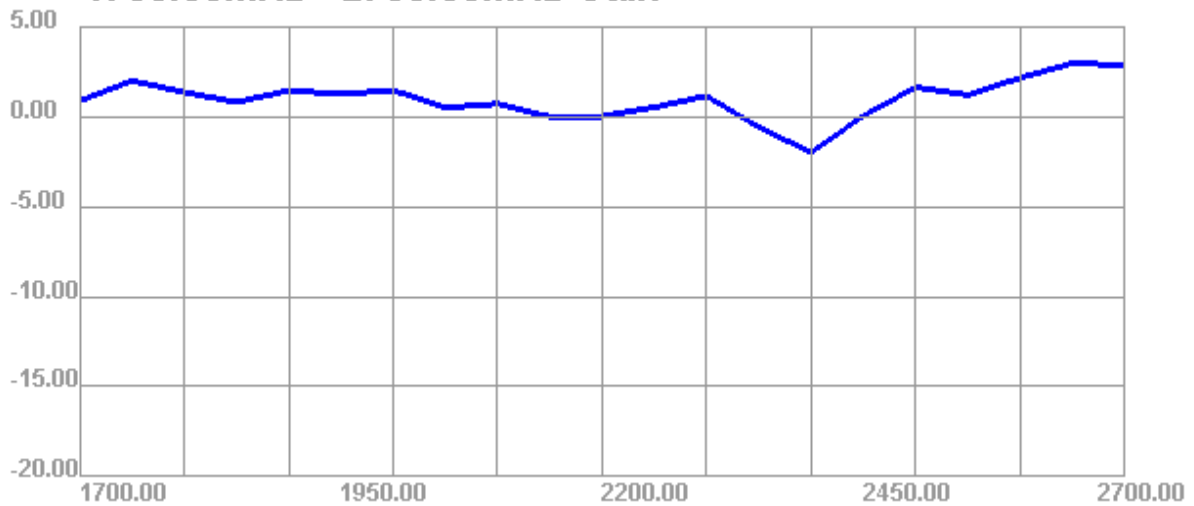
Frequency (MHz)	2400	2420	2450	2480	2500
Efficiency (%)	53.04	51.39	56.42	51.27	45.72

4.4. Gain

4.4.1. 4G



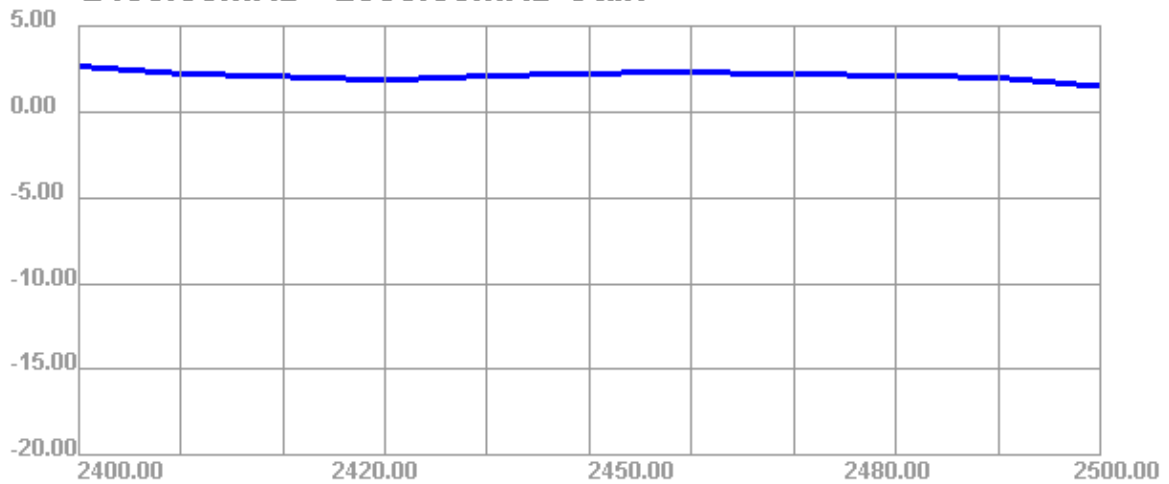
1700.00MHz - 2700.00MHz Gain



Frequency (MHz)	700	820	860	900	940	960	1700	1950	2200	2450	2700
Gain (dBi)	-2.03	-1.2	-3.4	-3.69	-1.85	0.47	0.87	1.26	0.02	0.04	2.87

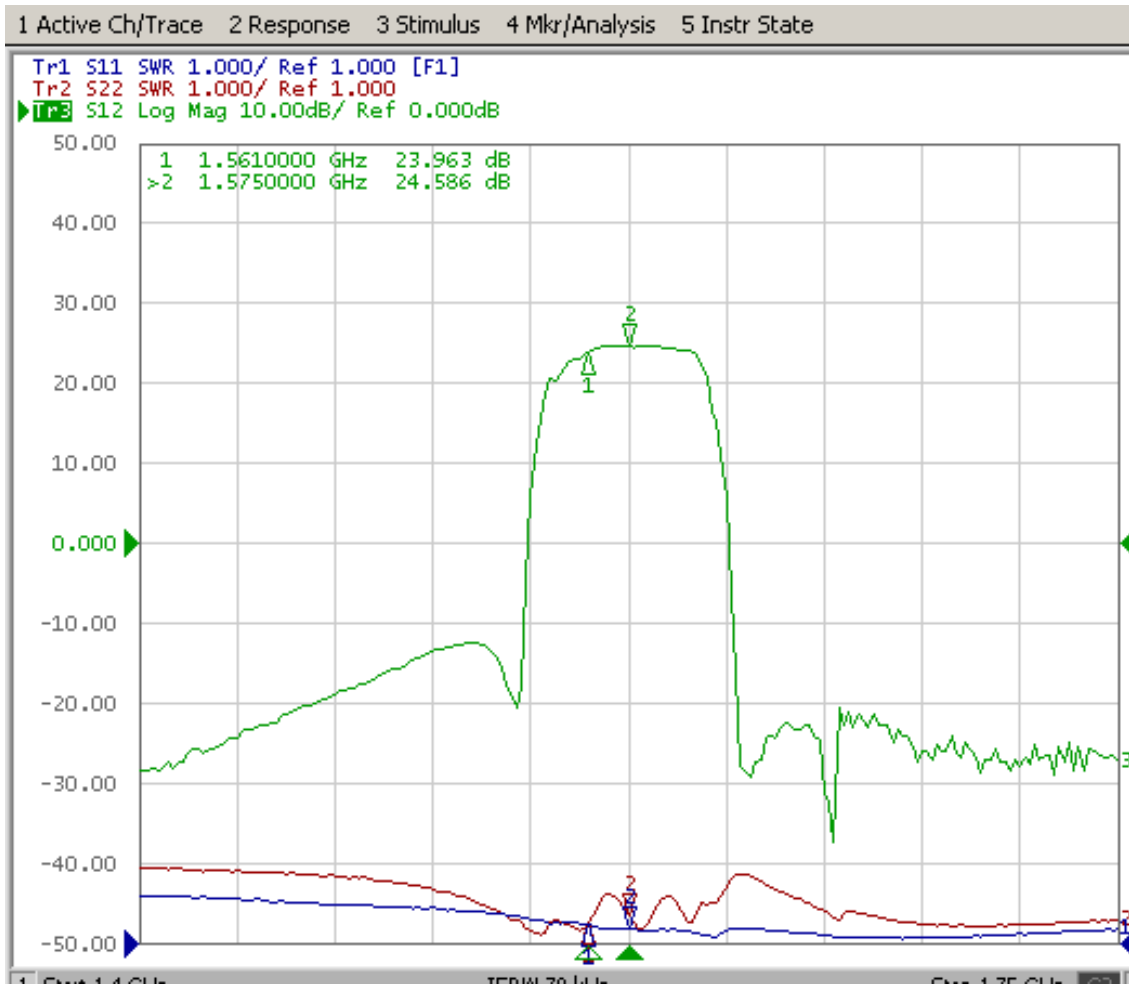
4.4.2. Bluetooth

2400.00MHz - 2500.00MHz Gain



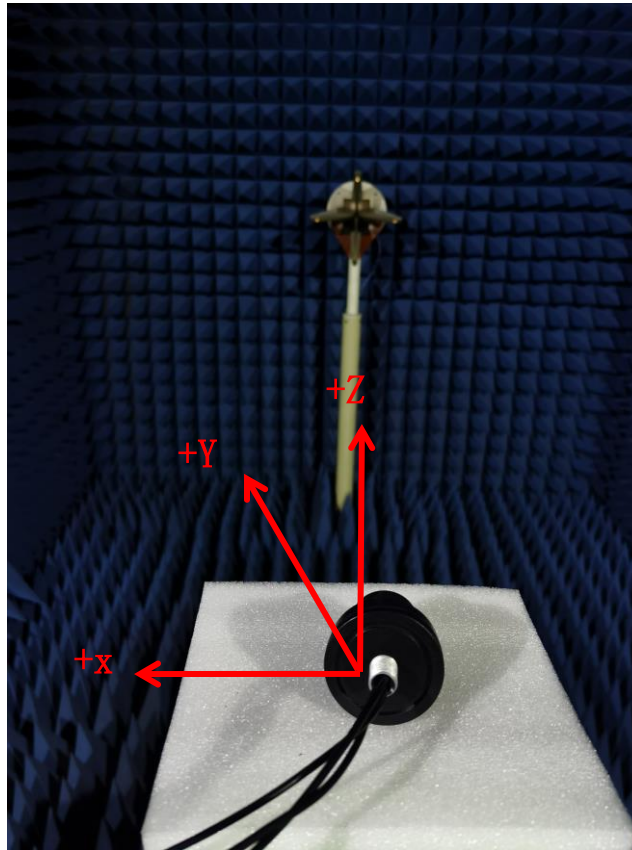
Frequency (MHz)	2400	2420	2450	2480	2500
Gain	2.65	2.04	2.23	2.11	1.47

4.4.3. GNSS



Frequency (MHz)	1561	1575
Gain	23.96	24.58

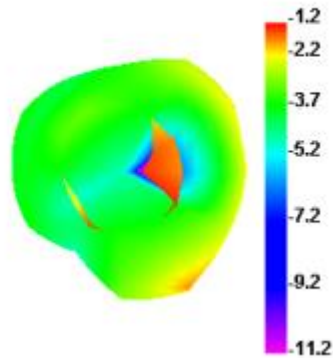
4.5. Radiation Patterns



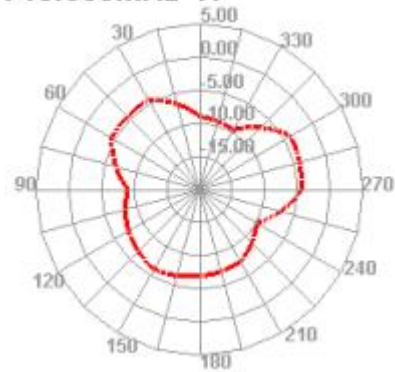
Note: The Z-axis faces the reflector antenna, the Y-axis faces the sky, and the X-axis faces the direction of the darkroom door

4.5.1. 4G

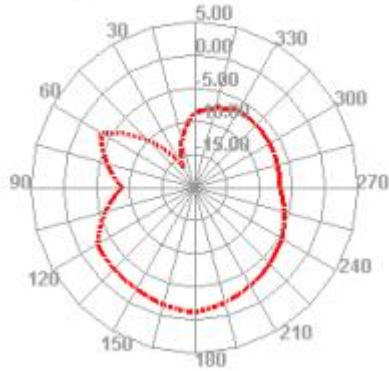
710.000MHz



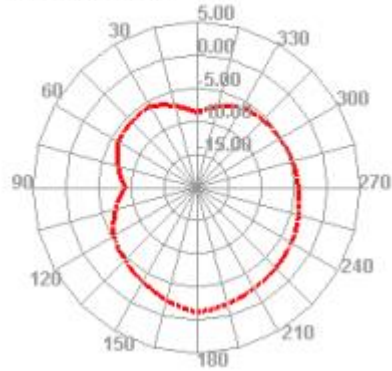
710.000MHz H



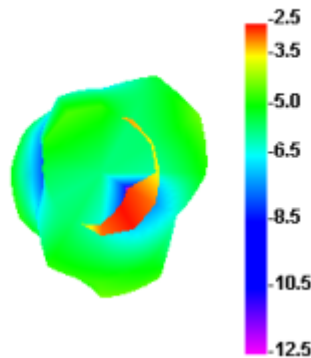
710.000MHz E1



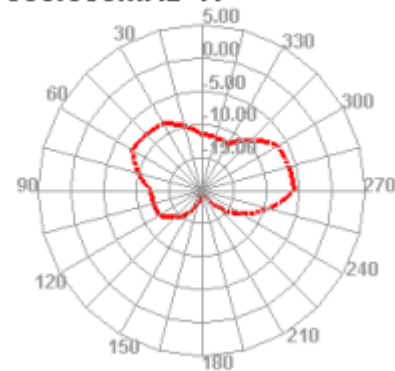
710.000MHz E2



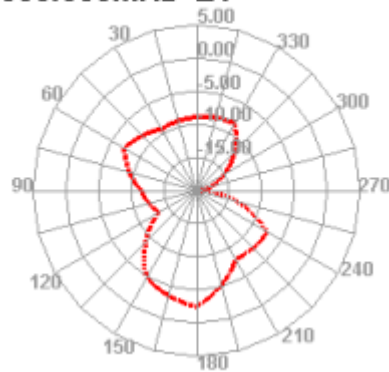
850.000MHz



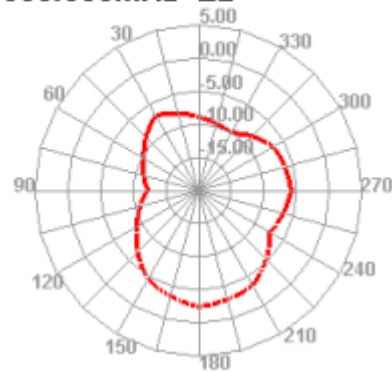
850.000MHz H



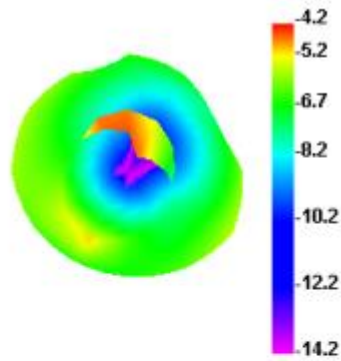
850.000MHz E1



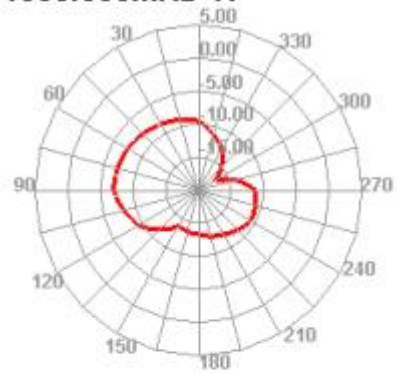
850.000MHz E2



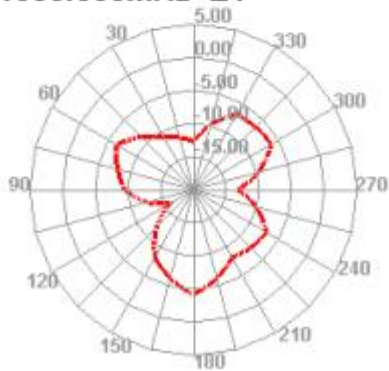
1000.000MHz



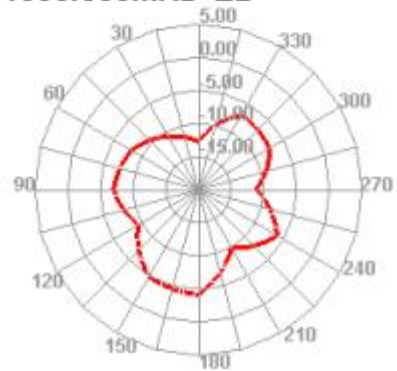
1000.000MHz H



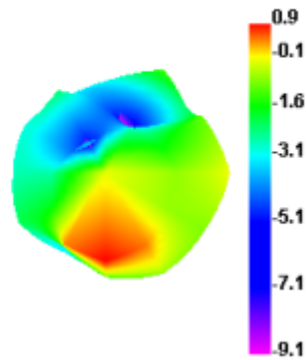
1000.000MHz E1



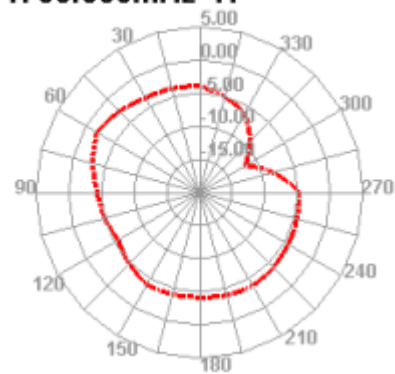
1000.000MHz E2



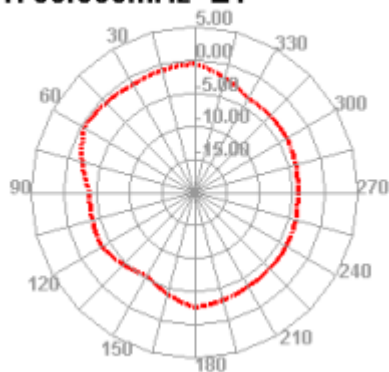
1700.000MHz



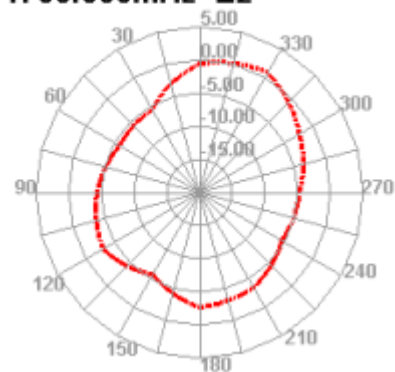
1700.000MHz H



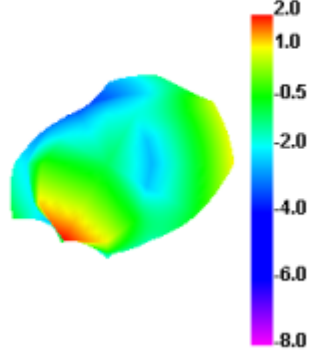
1700.000MHz E1



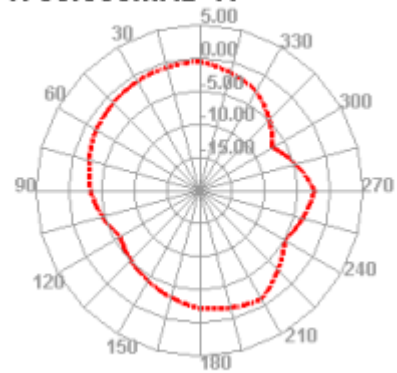
1700.000MHz E2



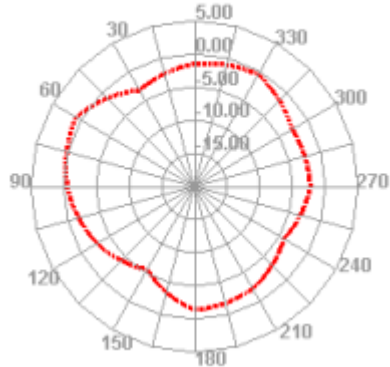
1750.000MHz



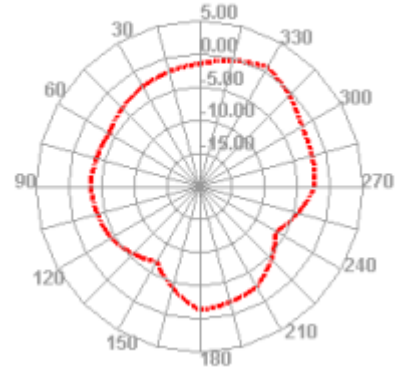
1750.000MHz H



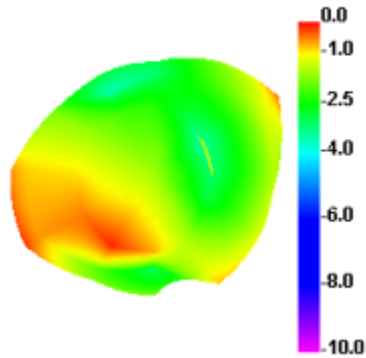
1750.000MHz E1



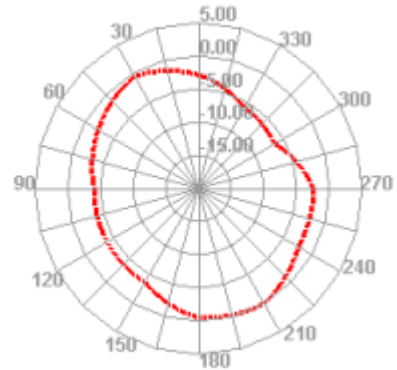
1750.000MHz E2



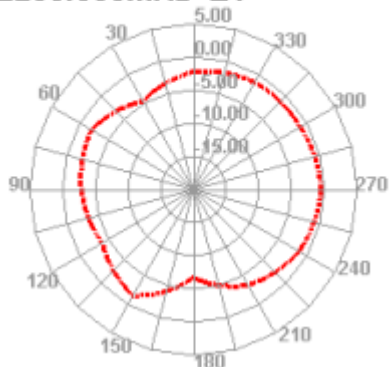
2200.000MHz



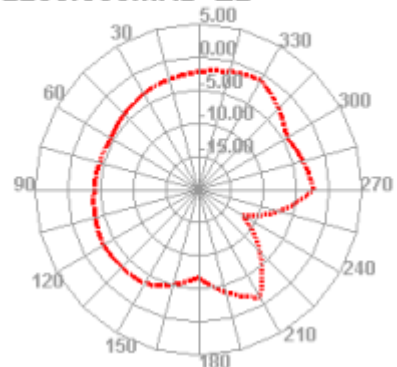
2200.000MHz H



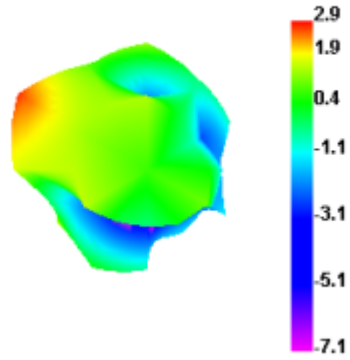
2200.000MHz E1



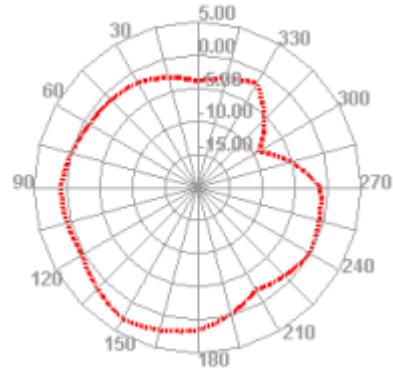
2200.000MHz E2



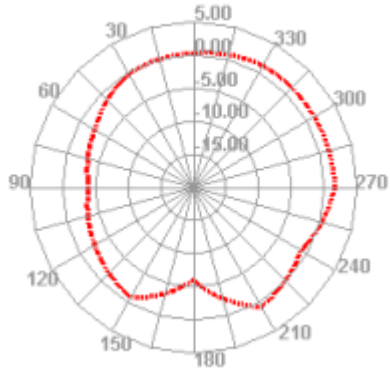
2700.000MHz



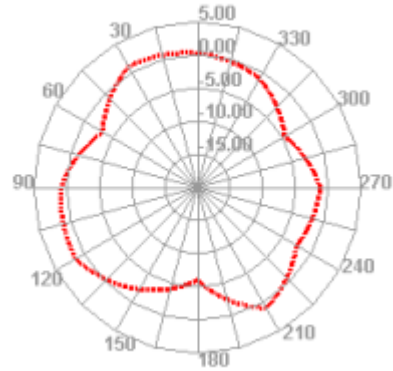
2700.000MHz H



2700.000MHz E1

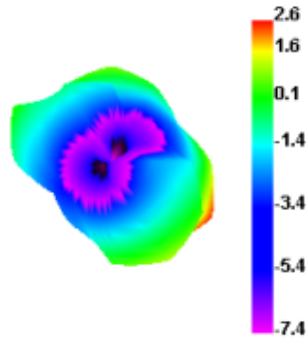


2700.000MHz E2

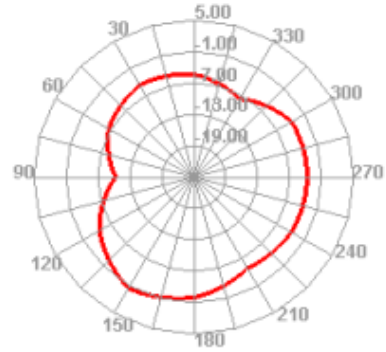


4.5.2. Bluetooth

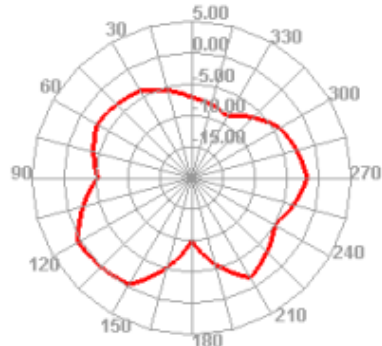
2400.000MHz



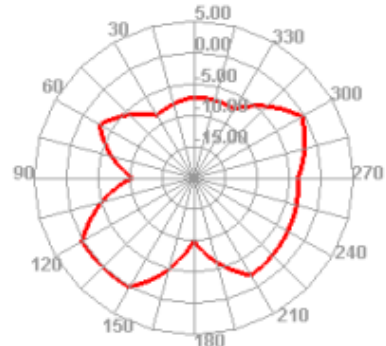
2400.000MHz H



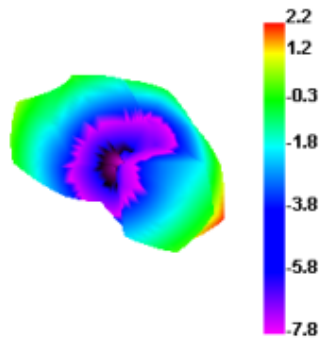
2400.000MHz E1



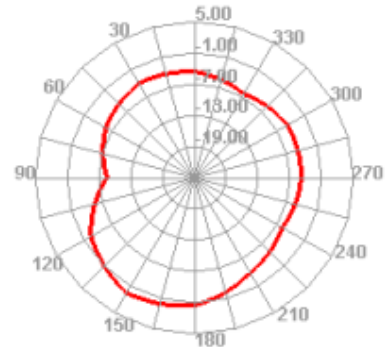
2400.000MHz E2



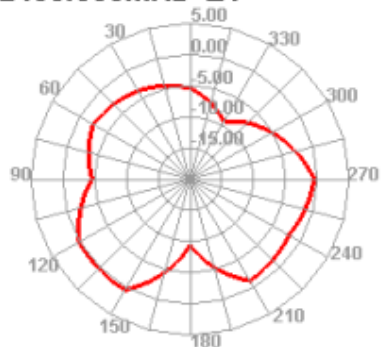
2450.000MHz



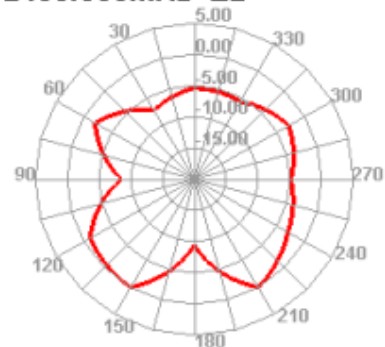
2450.000MHz H



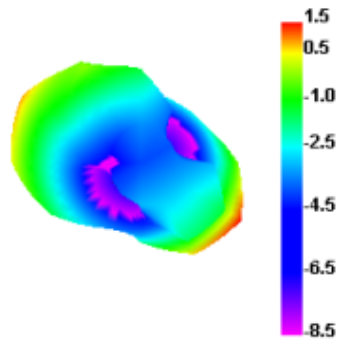
2450.000MHz E1



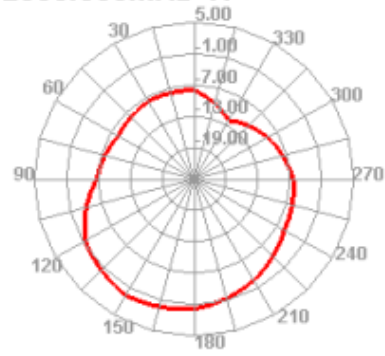
2450.000MHz E2



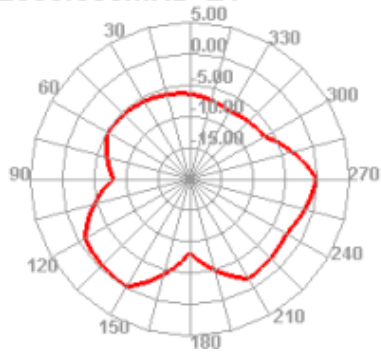
2500.000MHz



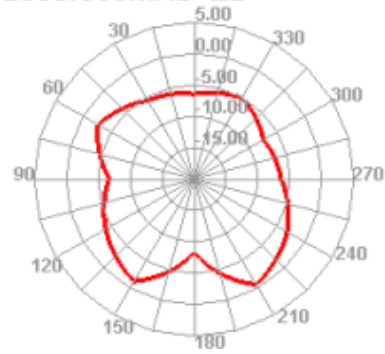
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



5 Product Size

