

Antenna

YECN009AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2021-11-02	Winfred WU/ Toby WANG	Creation of the document
1.0	2021-11-02	Winfred WU/ Toby WANG	First official release
2.0	2022-08-19	Winfred WU/ Toby WANG	Updated the test data (Chapter 4).

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
4.3. Efficiency	9
4.4. Gain.....	11
4.5. Radiation Pattern.....	13
4.5.1. 600 MHz	14
4.5.2. 960 MHz	15
4.5.3. 1710 MHz	16
4.5.4. 2170 MHz	17
4.5.5. 2300 MHz	18
4.5.6. 2690 MHz	19
4.5.7. 3300 MHz	20
4.5.8. 5000 MHz	21
4.5.9. 6000 MHz	22
5 Product Size	23
6 Packaging	24

1 Product Description

This Quectel external 5G antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal omni-directional antenna solution to ensure high-speed data transmission, which can be widely used in a diversity of wireless communication devices such as AP, routers, outdoor equipment, real-time monitoring equipment, and many more. The antenna is designed to work with any ground plane size or in free space for ease of integration. Quectel also offers flexible installation with custom cable length and connector options.

2 Product Features

- Cellular 600–6000 MHz
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	600-6000 MHz
Input Impedence	50 Ω
VSWR	≤ 2.3
Gain	≤ 3.38 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications

Frequency Range (MHz)	600-960	1176-1280	1400-1610	1710-2170	2170-2690	3300-4000	4000-5000	5000-6000
VSWR (Max.)	2.2	1.9	1.8	1.97	1.95	2.1	1.8	2.3
Average Efficiency (%)	37	48.7	51.9	59.8	70.6	53.6	52.2	49.8
Max. Peak Gain (dBi)	0.11	-0.54	0.63	2.01	1.42	2.33	3.3	3.38

Mechanical Specifications

Antenna Size (mm)	200 x 21
Casing	PC
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
IP Rating	IP55

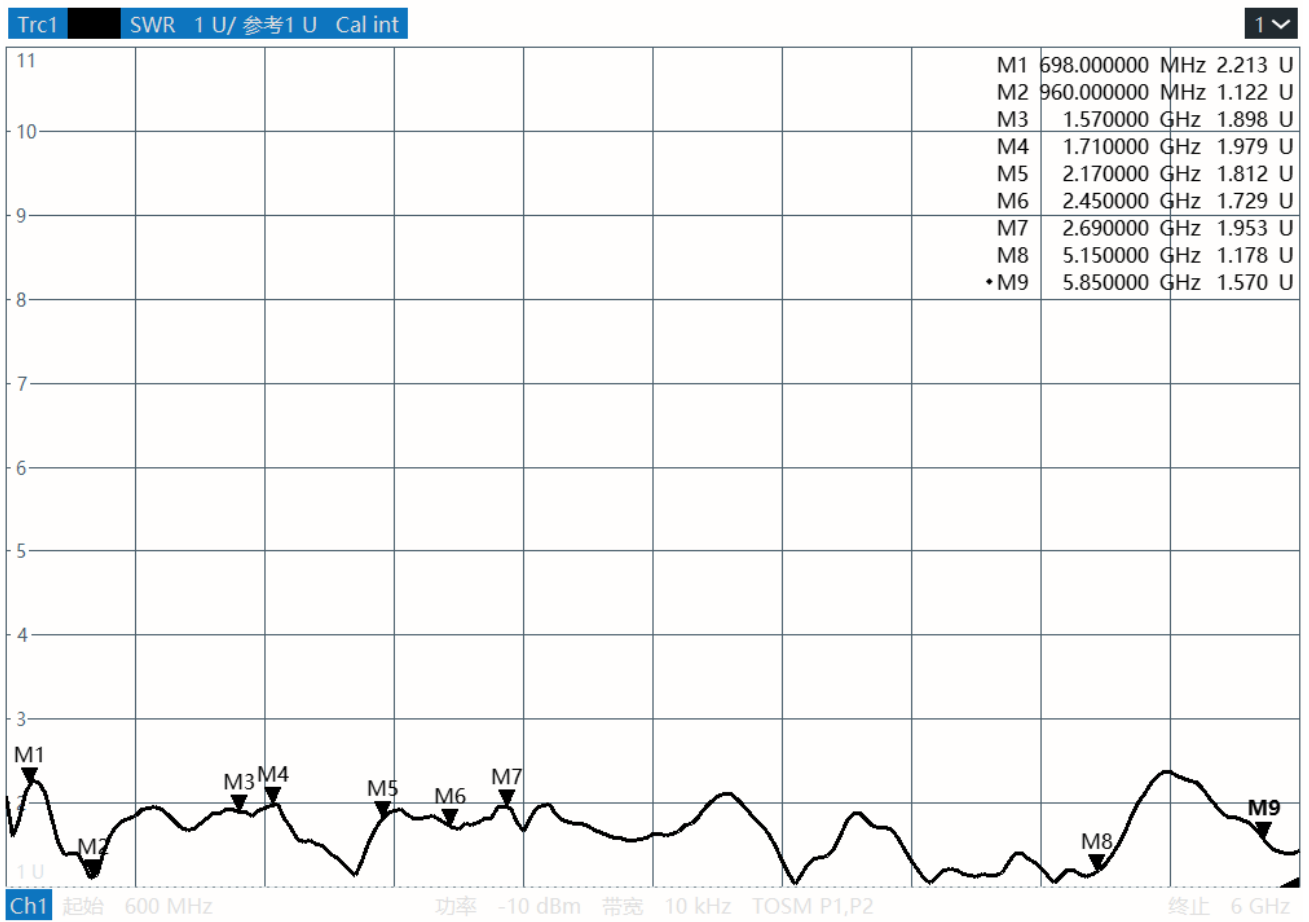
4 Overall Performance

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

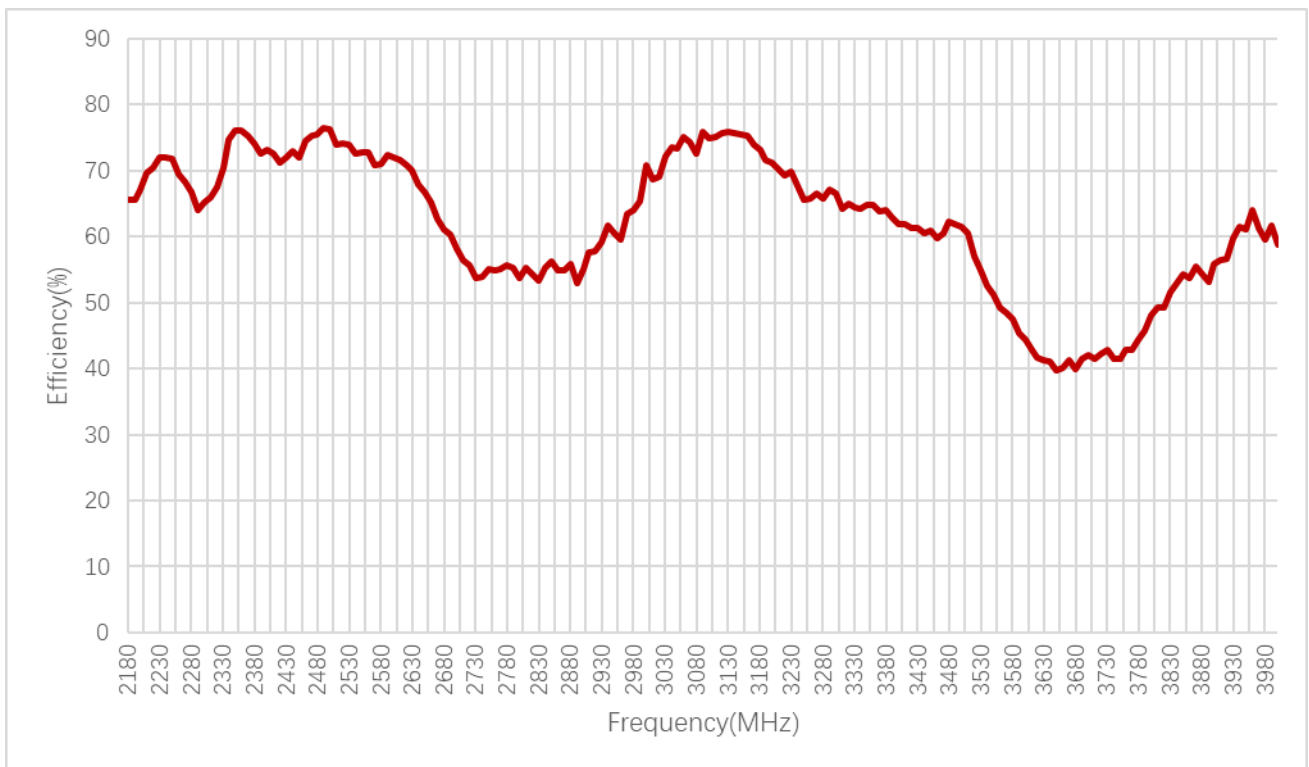
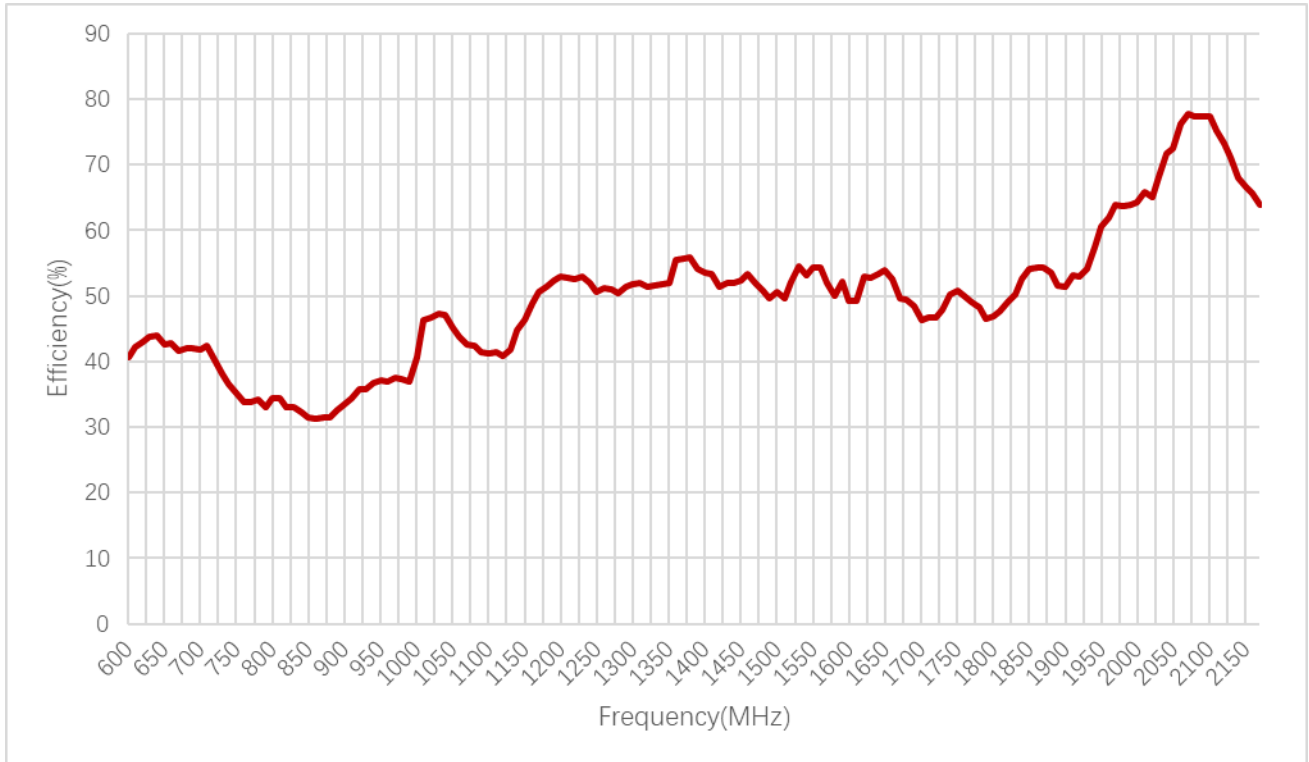


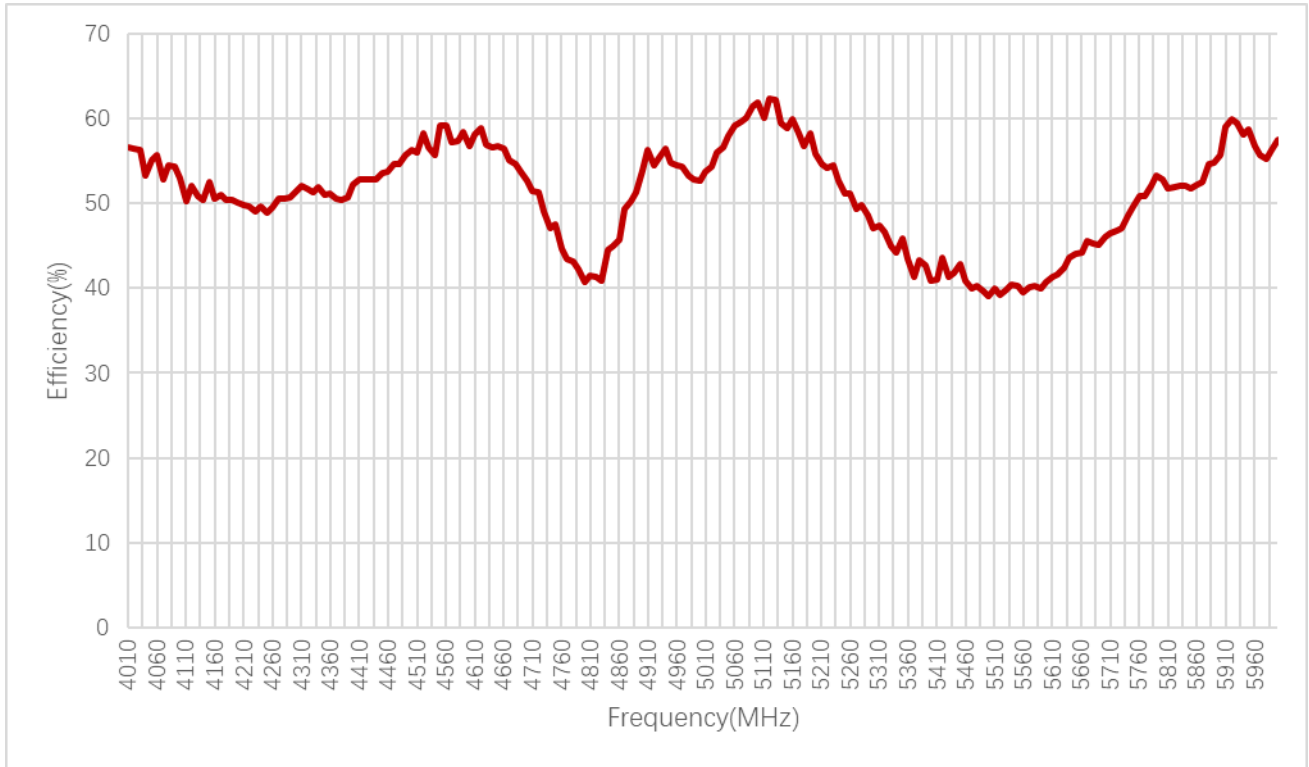
4.2. VSWR



Frequency (MHz)	698	960	1570	1710	2170	2450	2690	5150	5850
VSWR	2.21	1.12	1.89	1.98	1.81	1.73	1.95	1.18	1.57

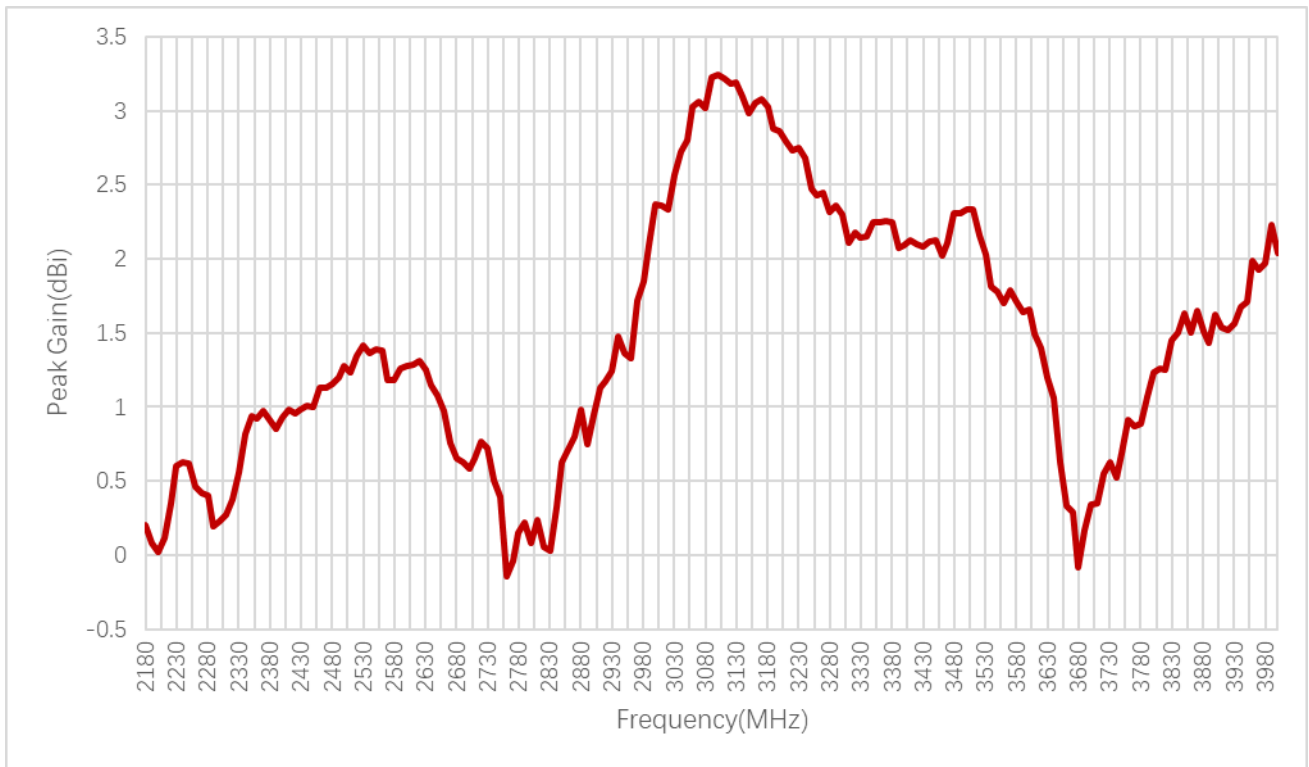
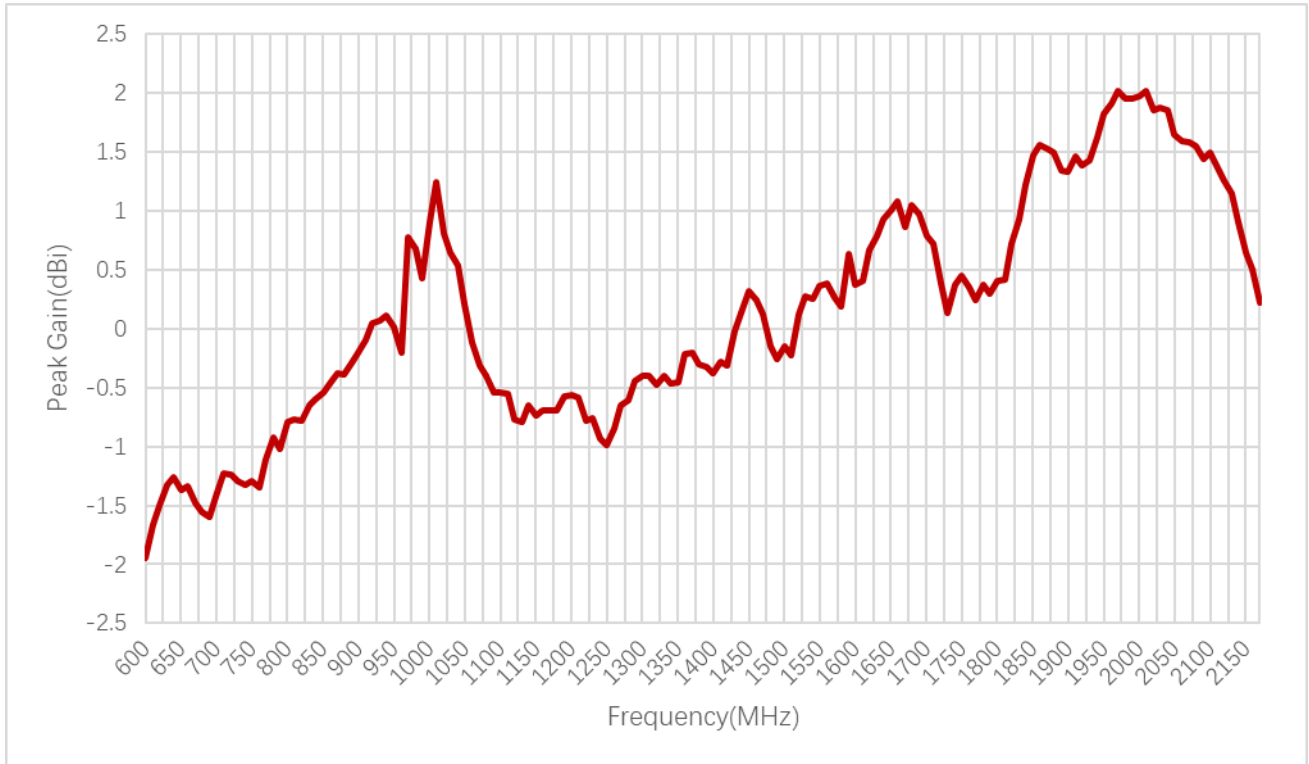
4.3. Efficiency

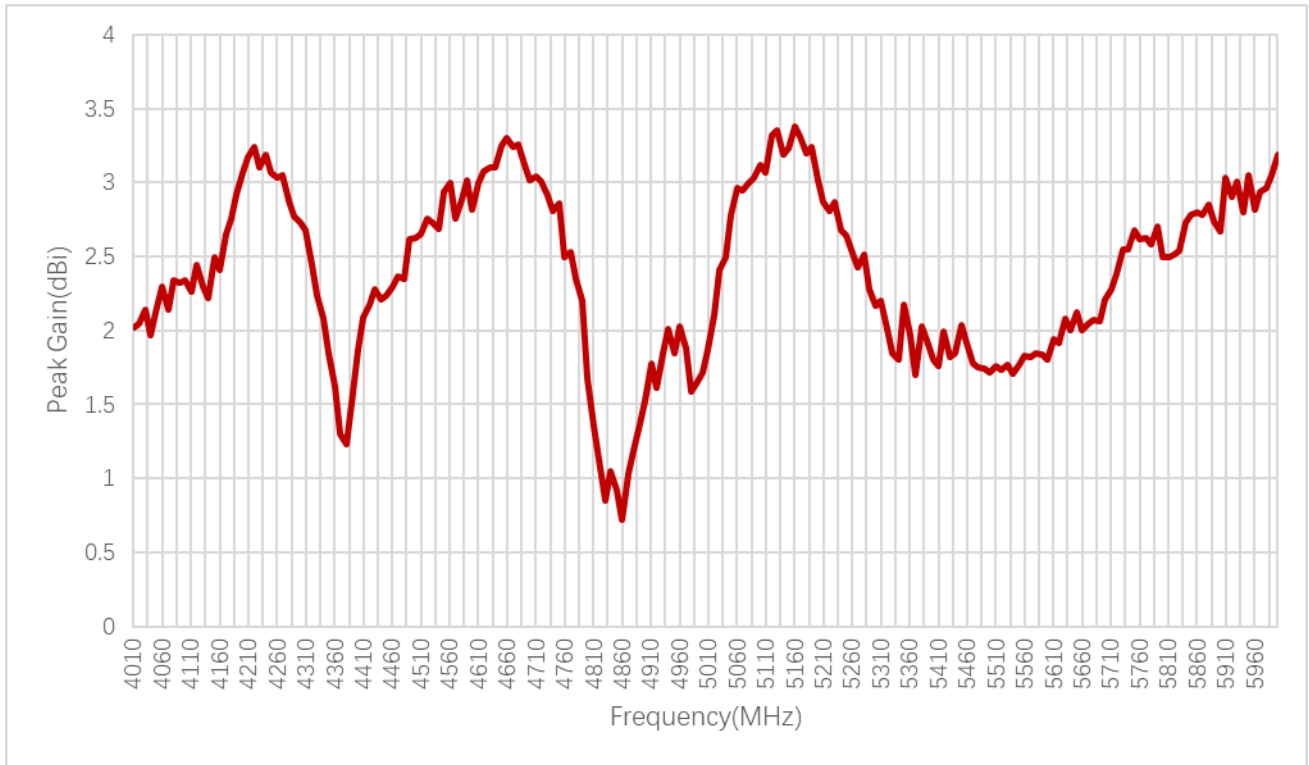




Frequency (MHz)	600	960	1710	2170	2300	2700	3300	5000	6000
Efficiency (%)	40.61	36.92	46.78	63.87	65.13	58.12	66.58	52.73	57.46

4.4. Gain

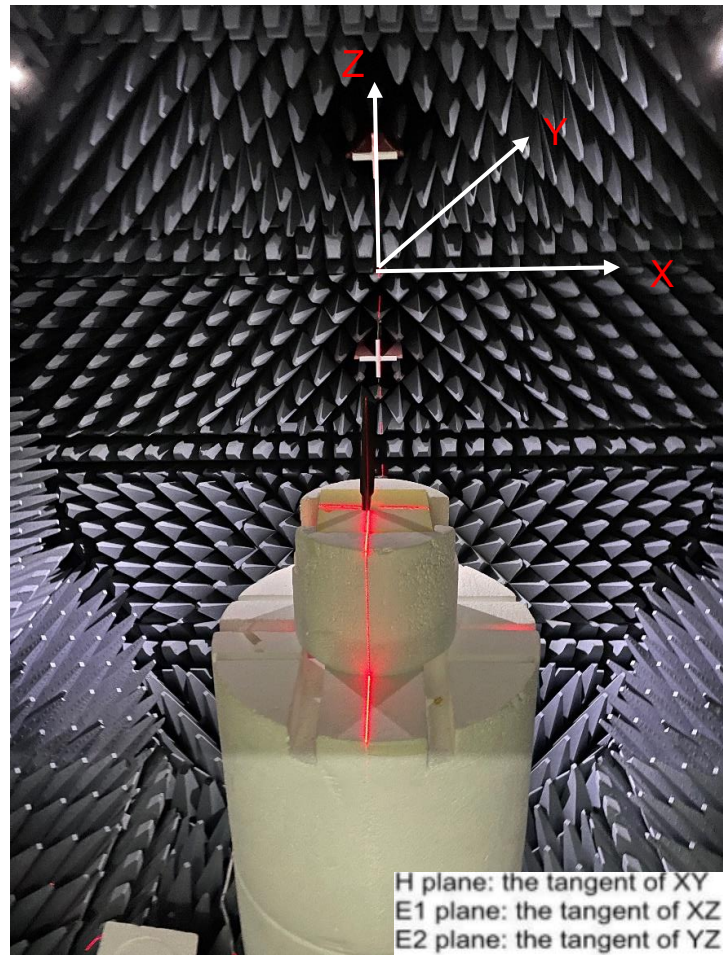




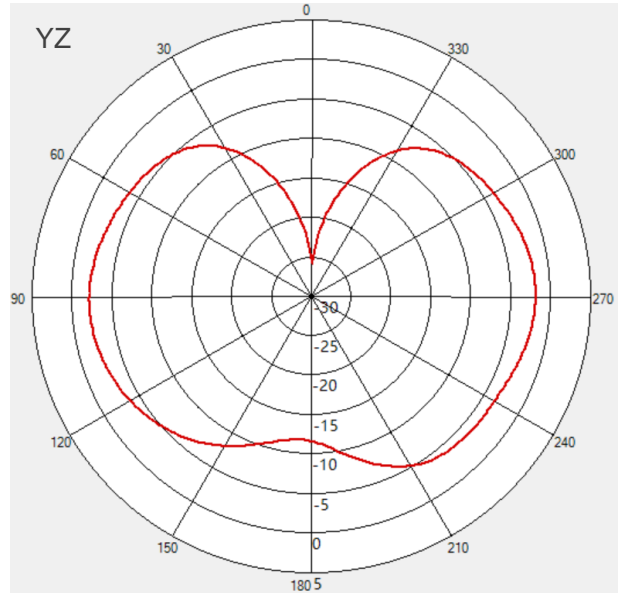
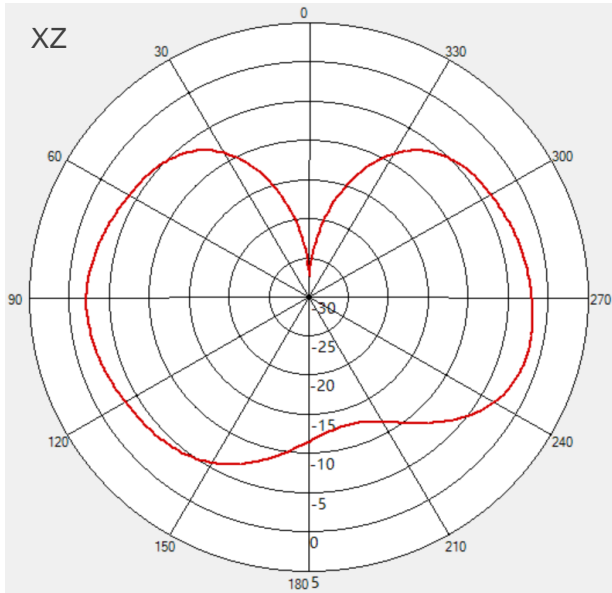
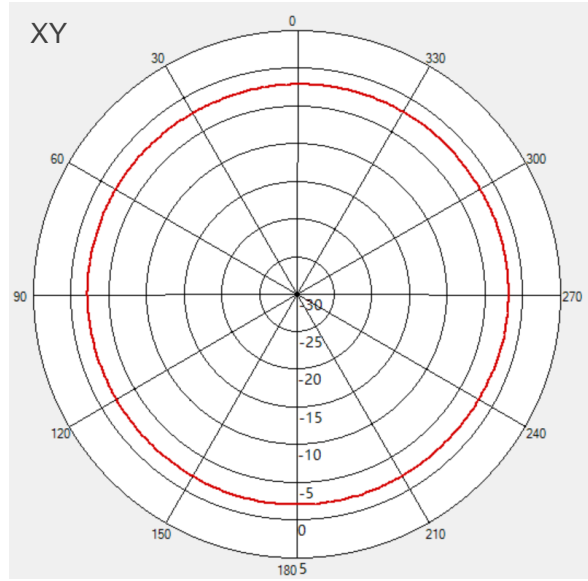
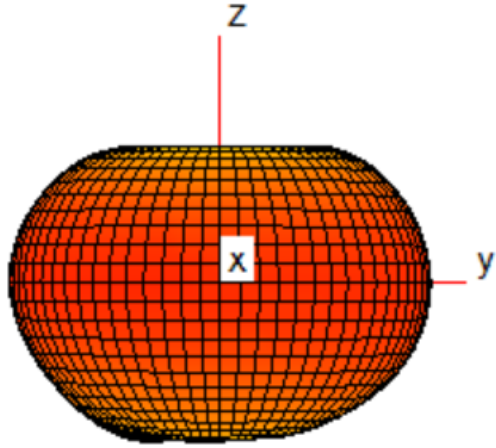
Frequency (MHz)	600	960	1710	2170	2300	2700	3300	5000	6000
Gain (dBi)	0.43	0.77	0.77	0.22	0.23	0.58	2.3	1.72	3.19

4.5. Radiation Pattern

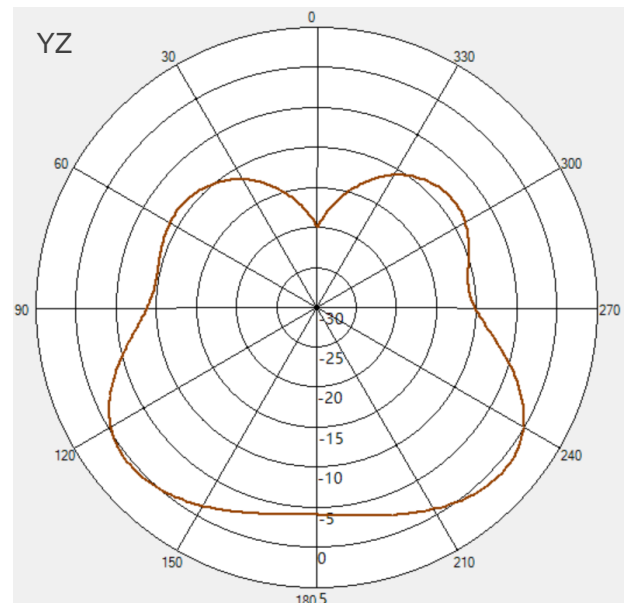
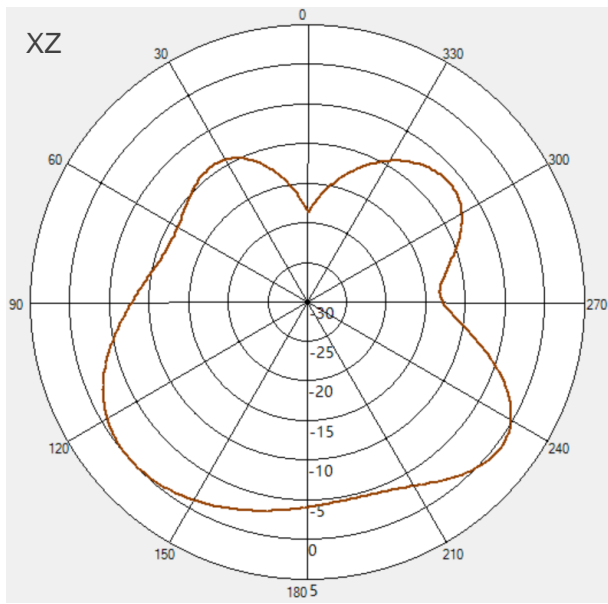
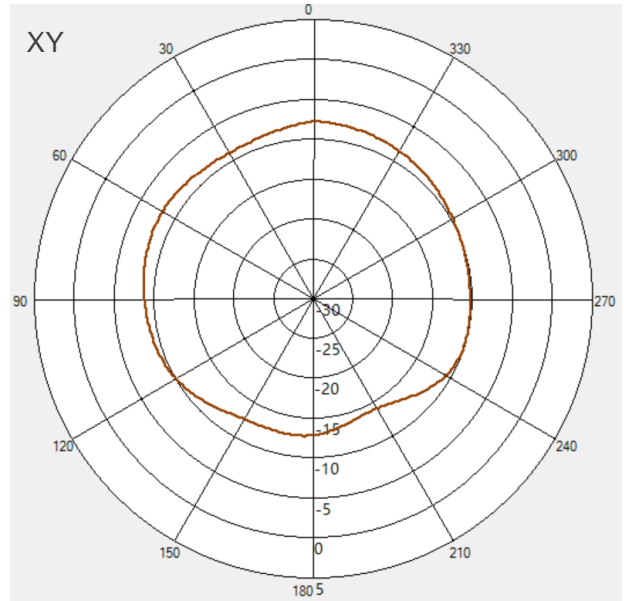
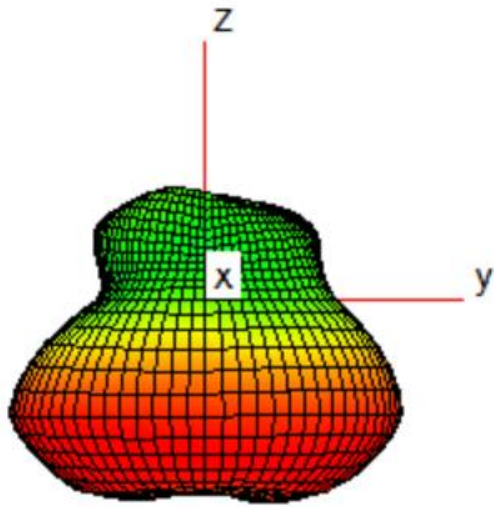
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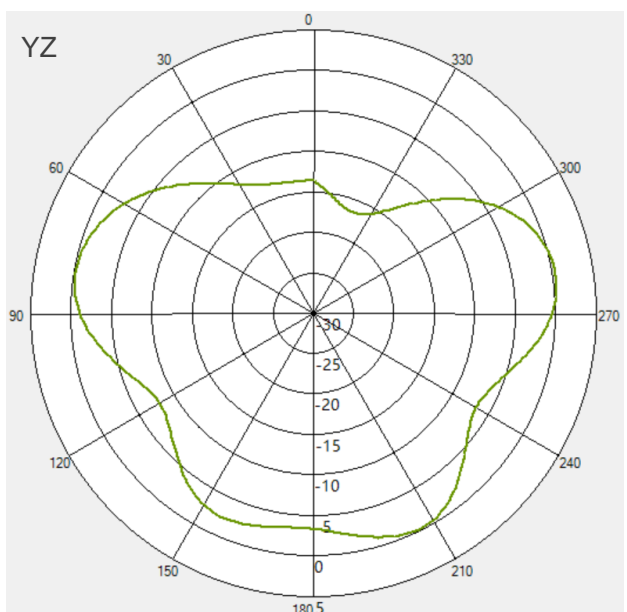
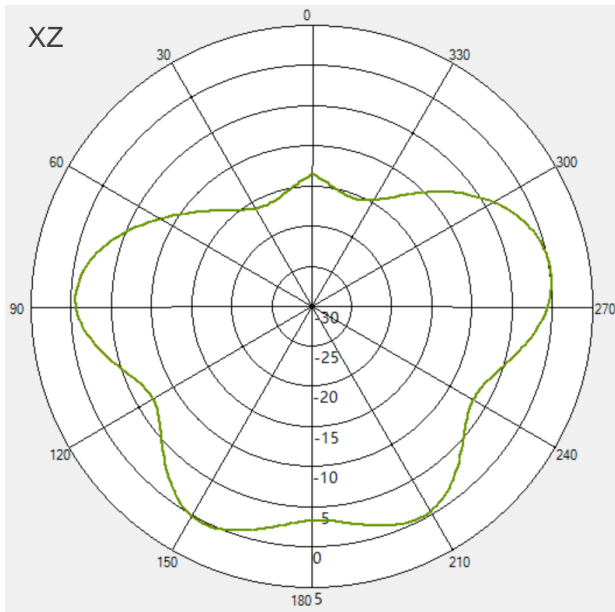
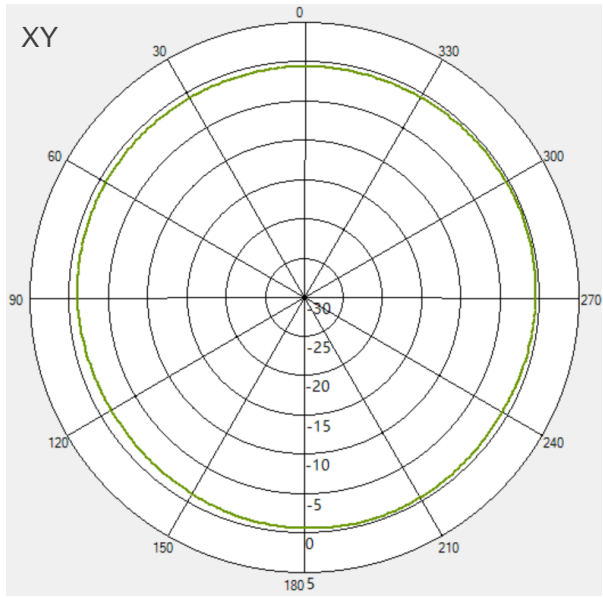
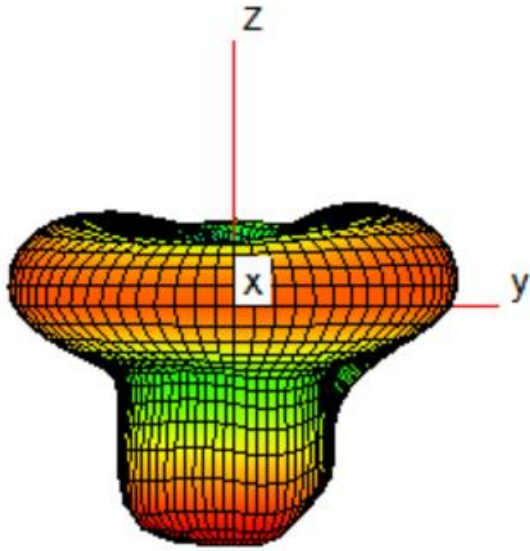
4.5.1. 600 MHz



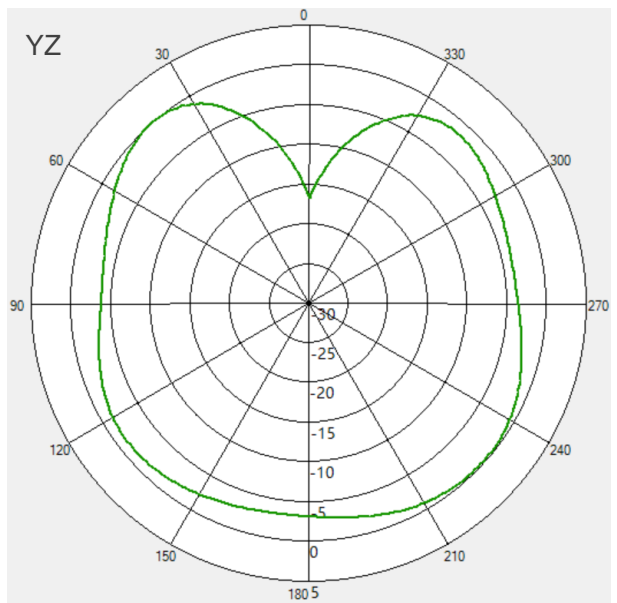
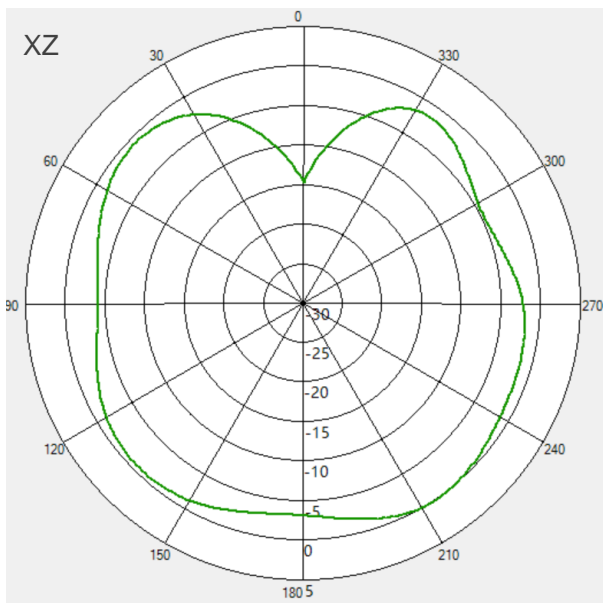
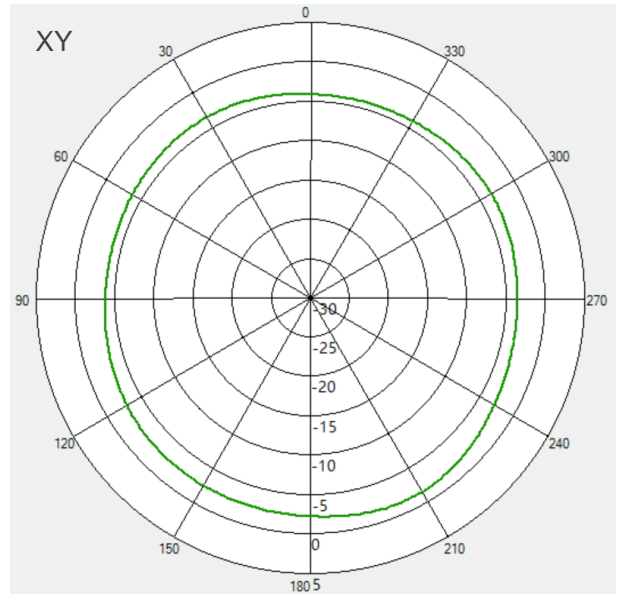
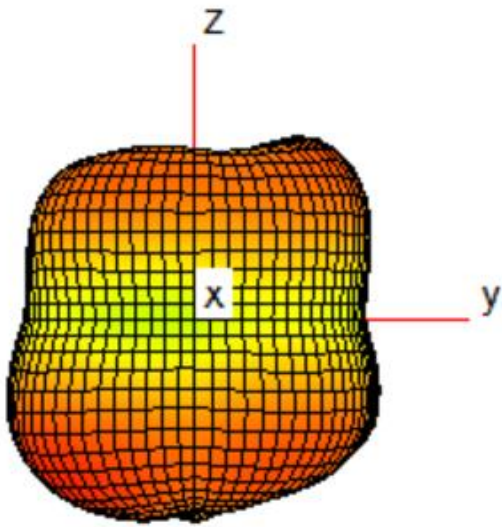
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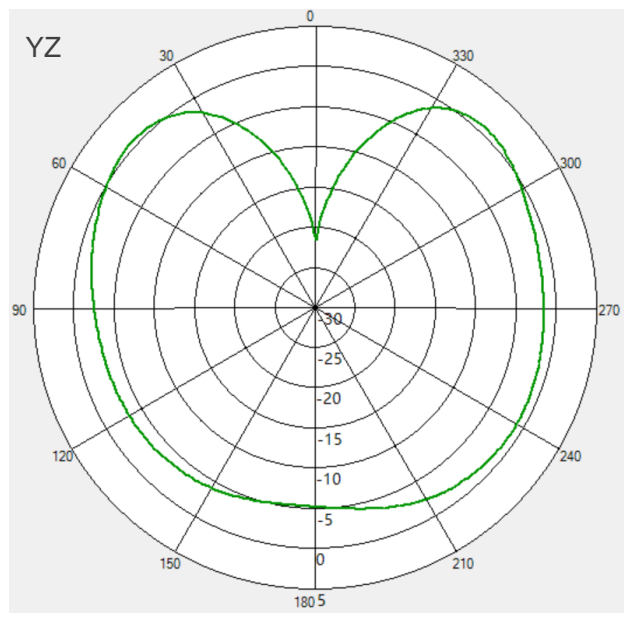
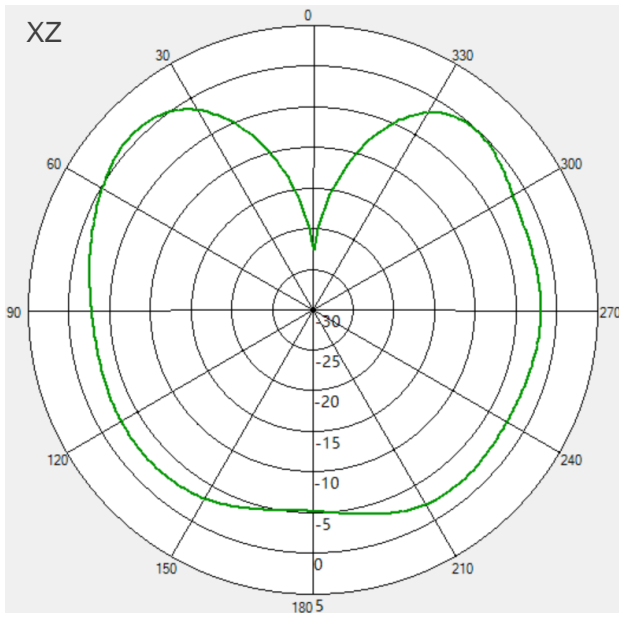
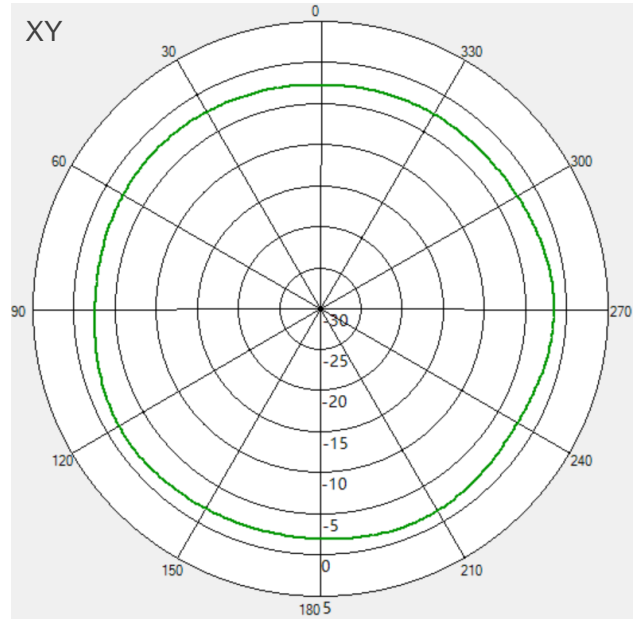
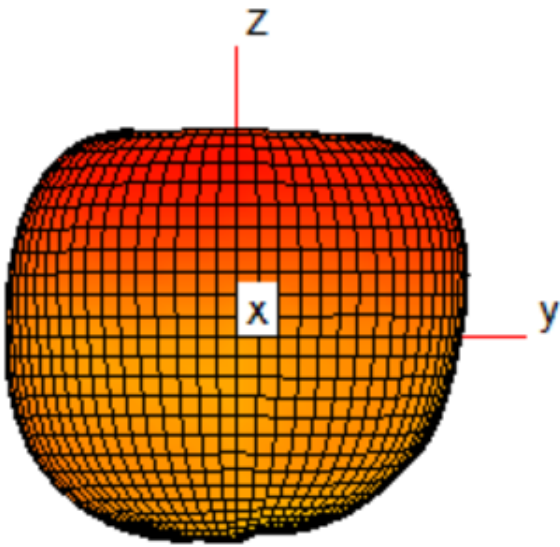
4.5.3. 1710 MHz



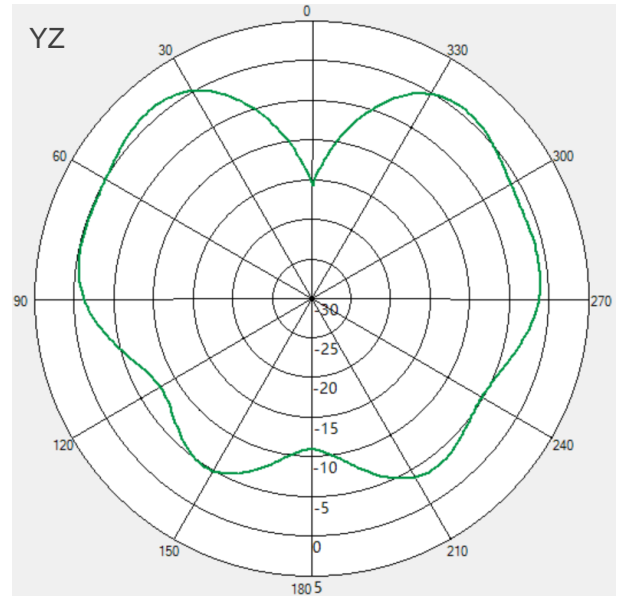
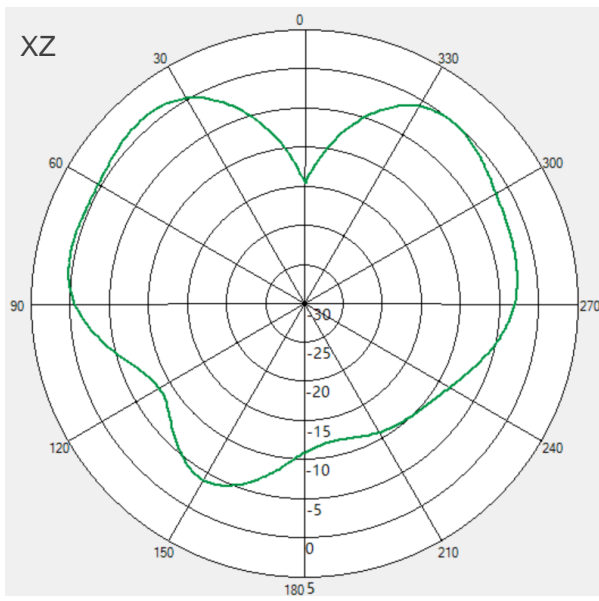
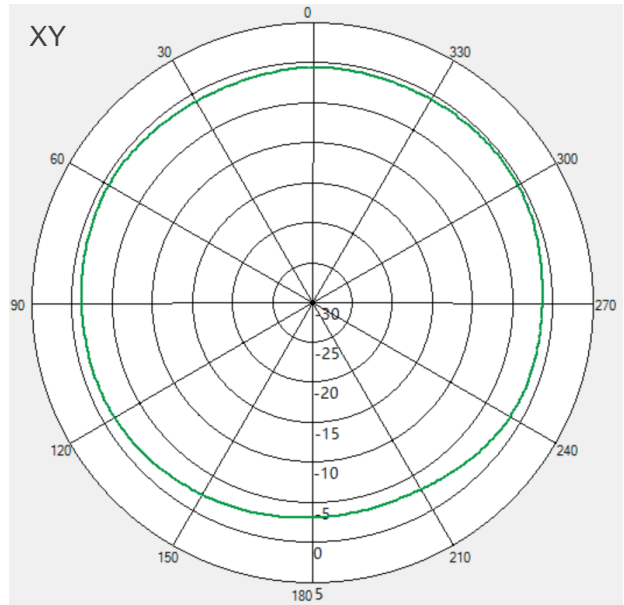
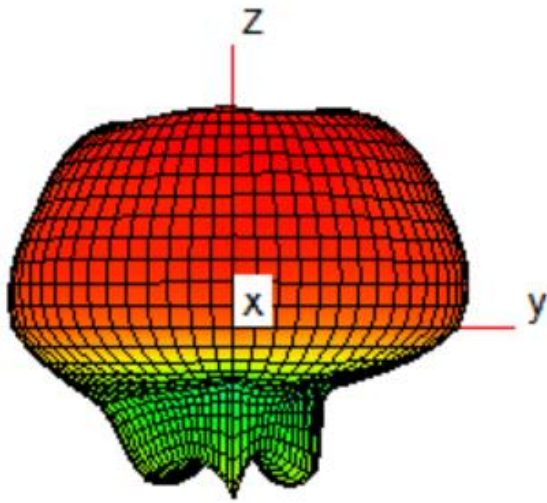
4.5.4. 2170 MHz



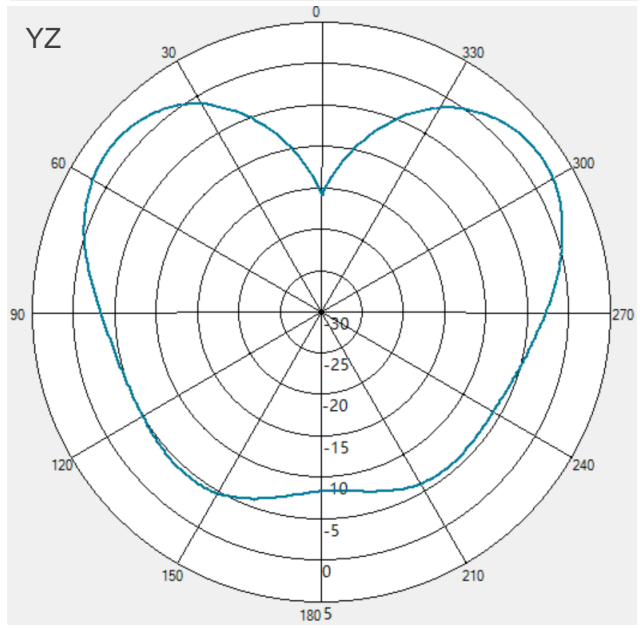
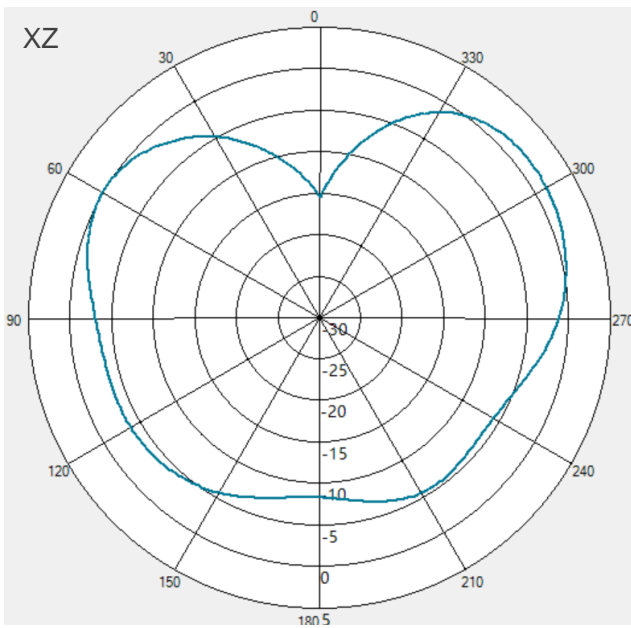
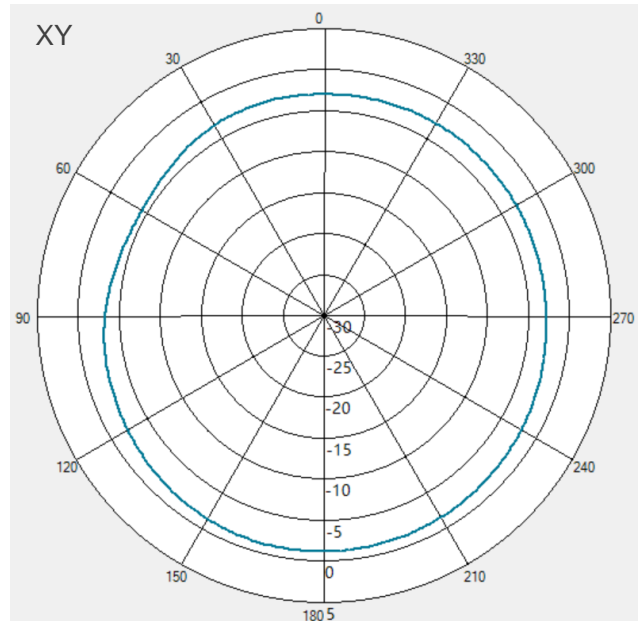
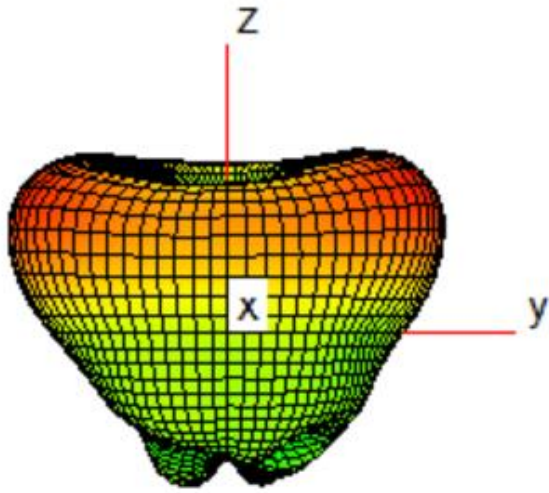
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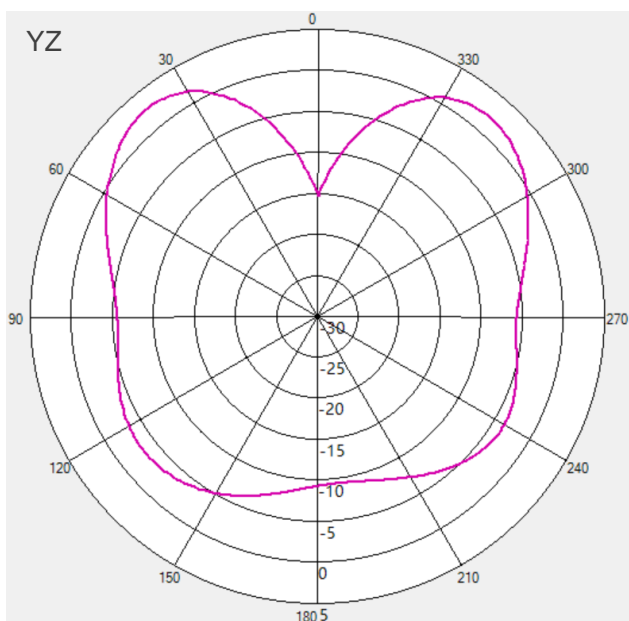
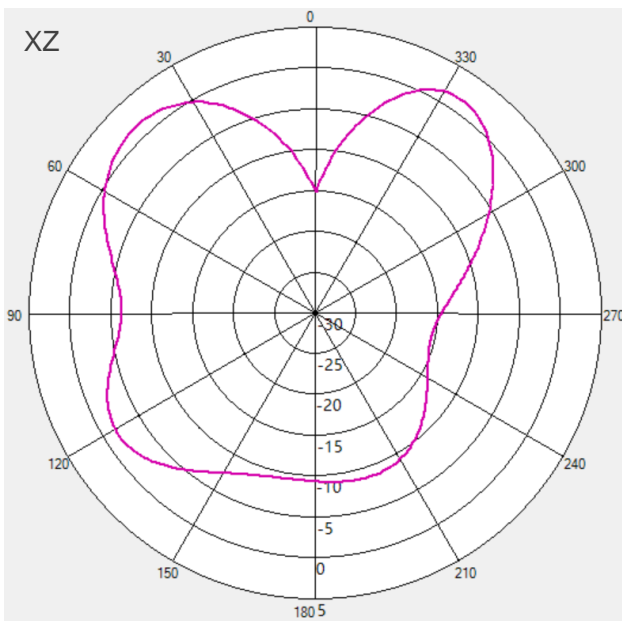
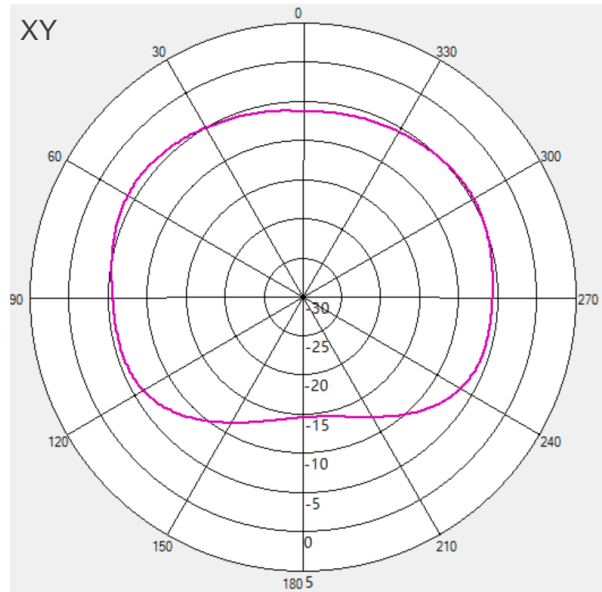
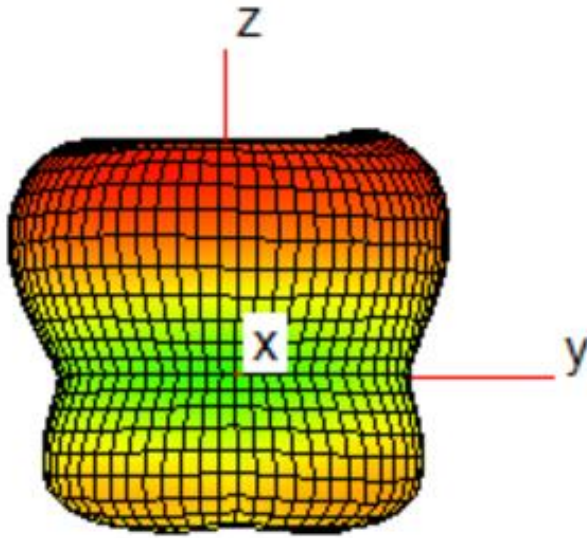
4.5.6. 2690 MHz



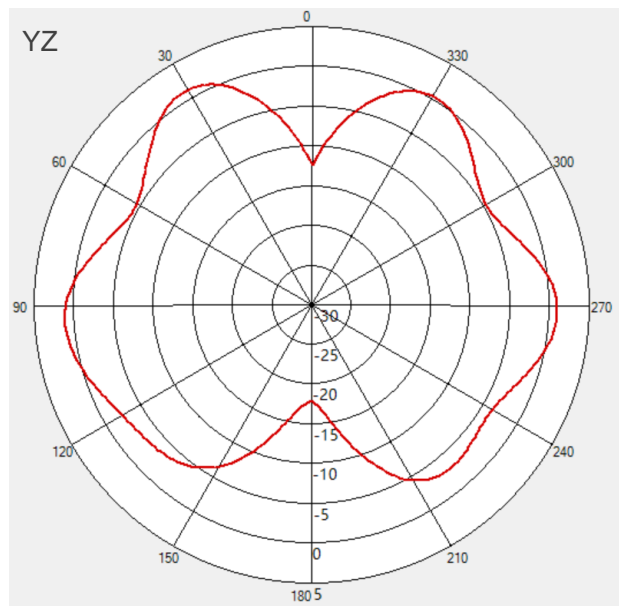
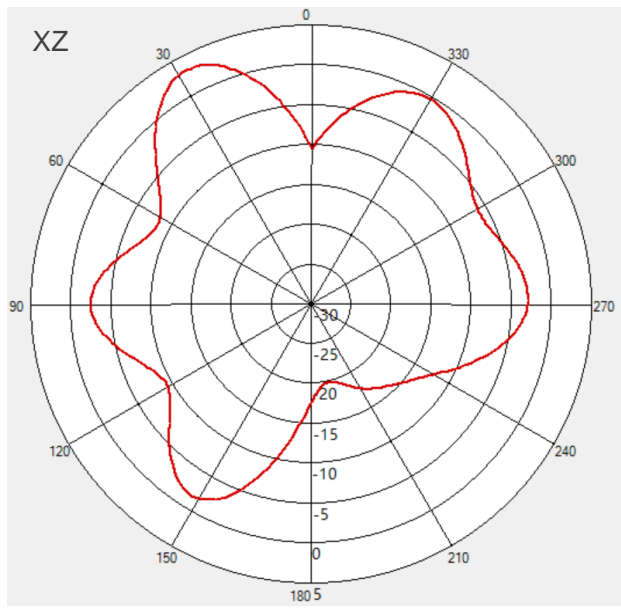
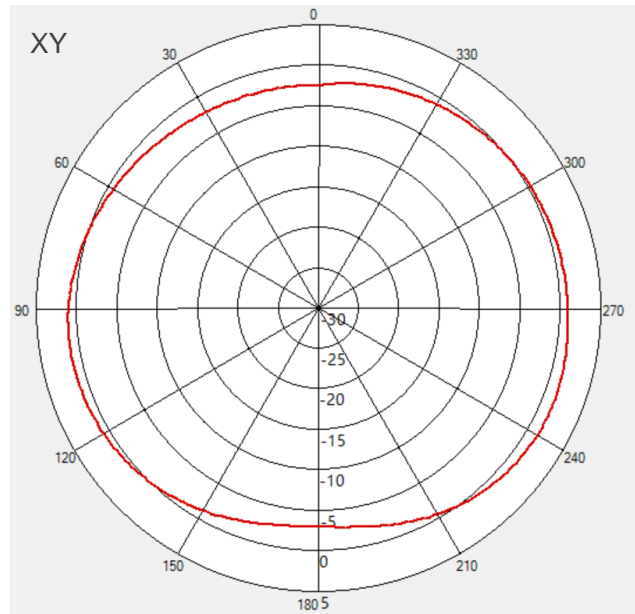
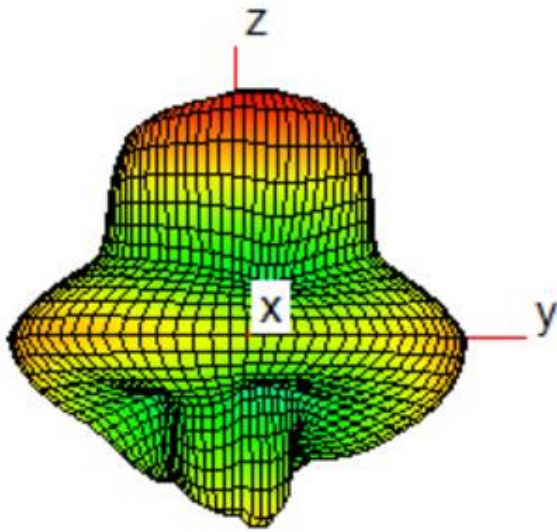
4.5.7. 3300 MHz



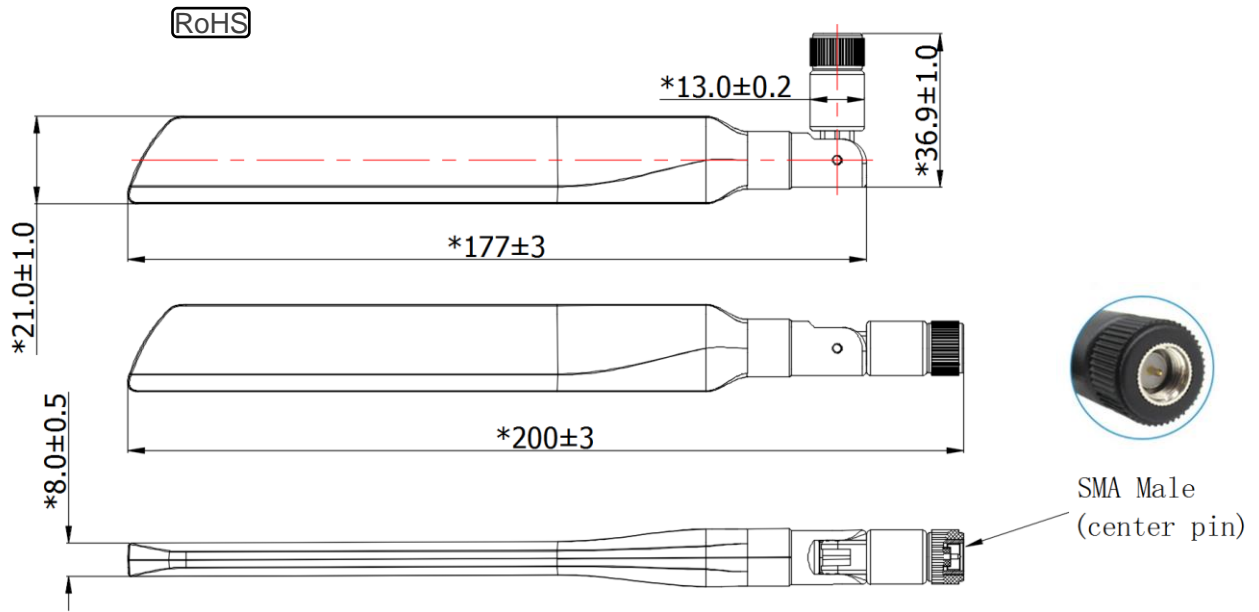
4.5.8. 5000 MHz



4.5.9. 6000 MHz



5 Product Size



6 Packaging

