

Antenna

YDX001AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-09-10	Kenny YIN	Initial
1.1	2020-12-11	Kenny YIN	Updated the antenna image in Chapter 2.
1.2	2021-01-27	Kenny YIN	Added IP rating description.
1.3	2021-07-25	Kenny YIN	1. Updated working temperature. (Chapter 3) 2. Added detailed passive electrical specifications. (Chapter 3)
1.4	2021-12-01	Kenny YIN	Updated the product description in Chapter 1.
2.0	2022-03-10	Vinnie LIU	Updated the RF data (Chapter 4).
2.1	2022-10-17	Aria CHU	Deleted the IP rating.

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.....	10
4.5. Radiation Pattern	11
4.5.1. 824 MHz	12
4.5.2. 954 MHz	12
4.5.3. 1754 MHz	13
4.5.4. 2304 MHz	14
4.5.5. 2690 MHz	14
5 Product Size	15

1 Product Description

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Quectel also offers flexible installation with custom cable length and connector options.

2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	824–2700 MHz
Input Impedence	50 Ω
VSWR	≤ 6.0
Gain	≤ 3.0 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.)	5.5	-	-	3.2	2.6	-	-	-
Average Efficiency (%)	61.8	-	-	52.4	83.3	-	-	-
Max. Peak Gain (dBi)	1.5	-	-	2.02	2.22	-	-	-

Mechanical Specifications

Antenna Size	208 mm \times Φ 12 mm
Casing	PC + ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Radome Color	Black

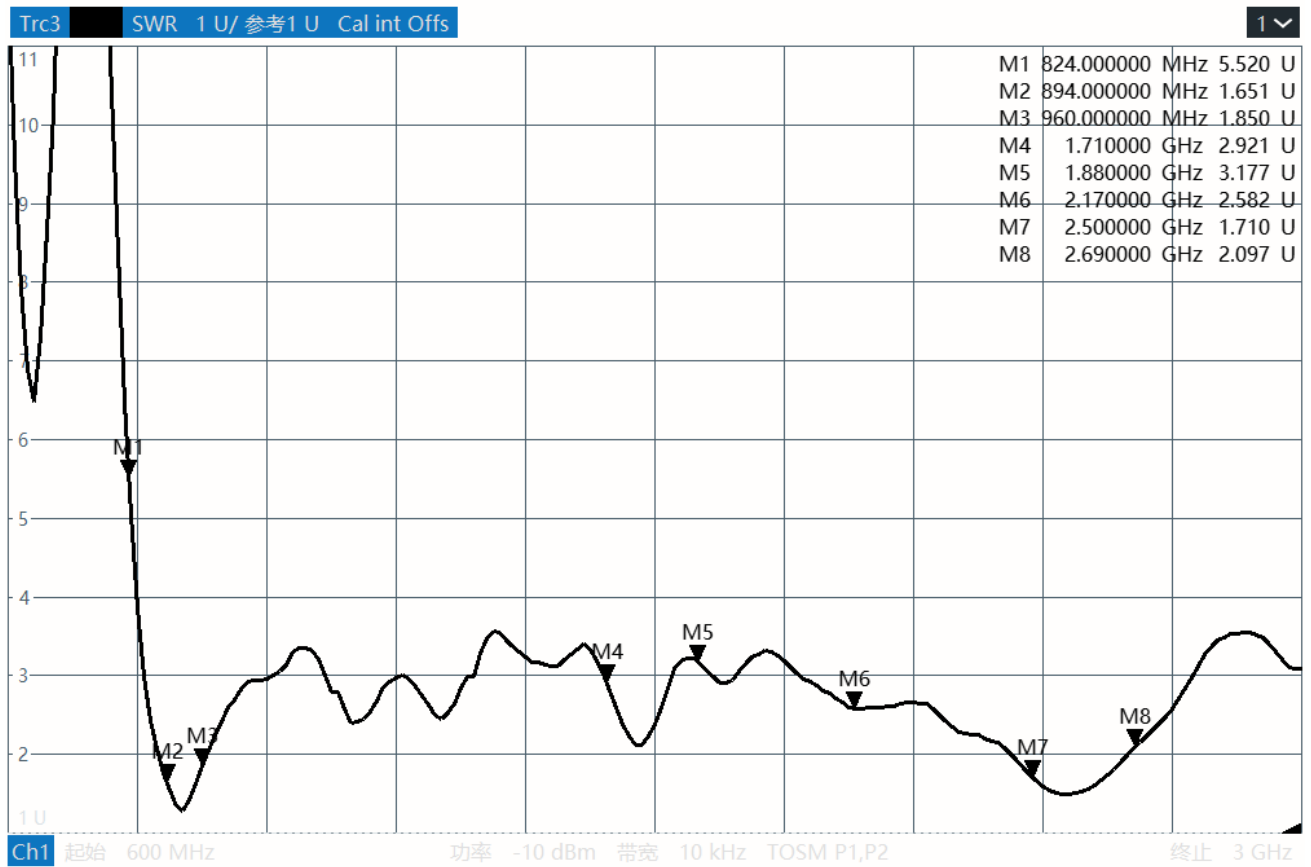
4 Overall Performance

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.

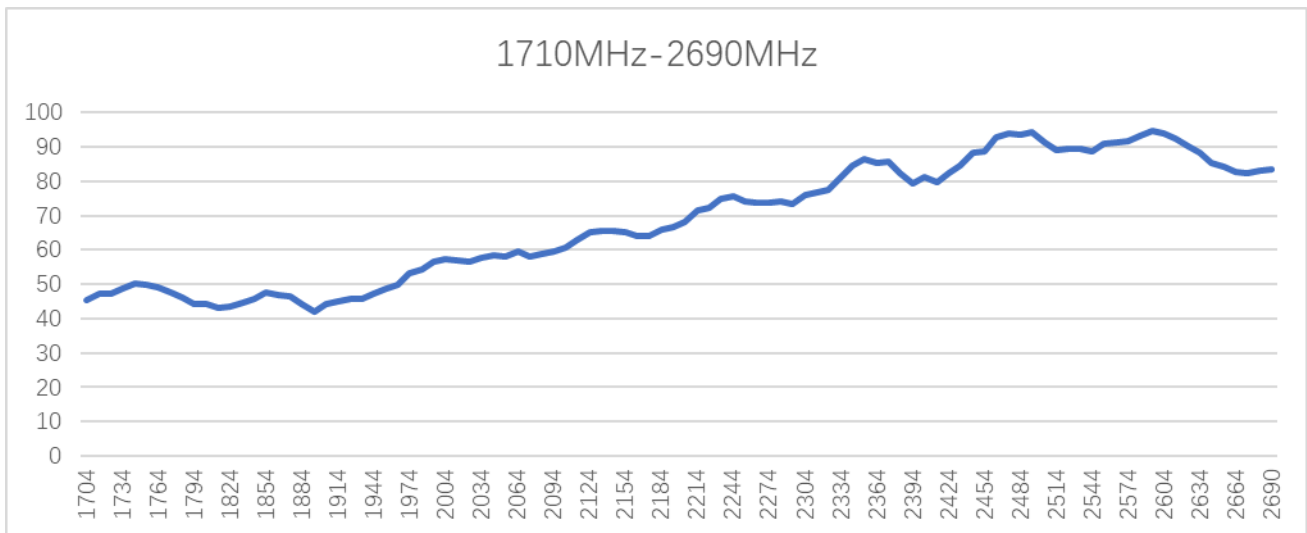
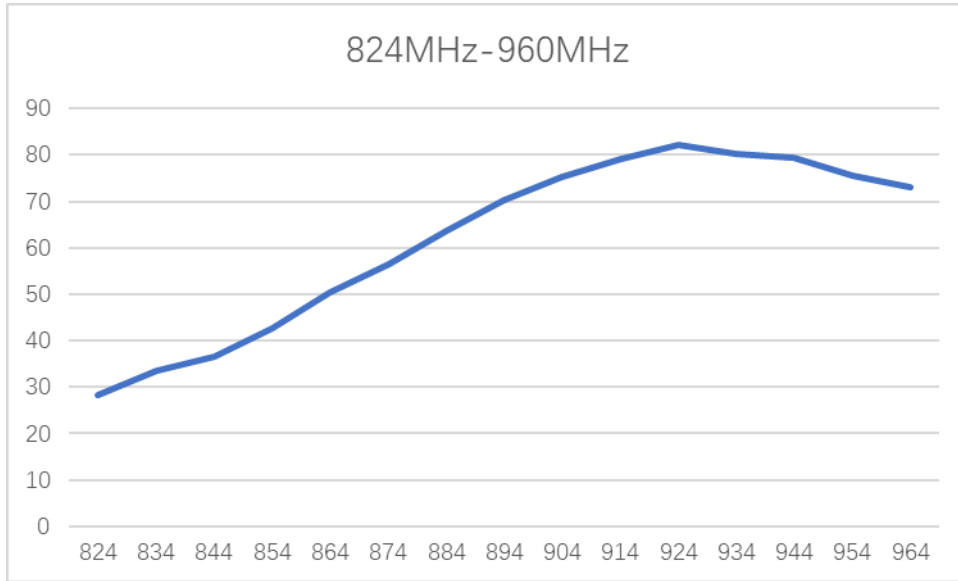


4.2. VSWR



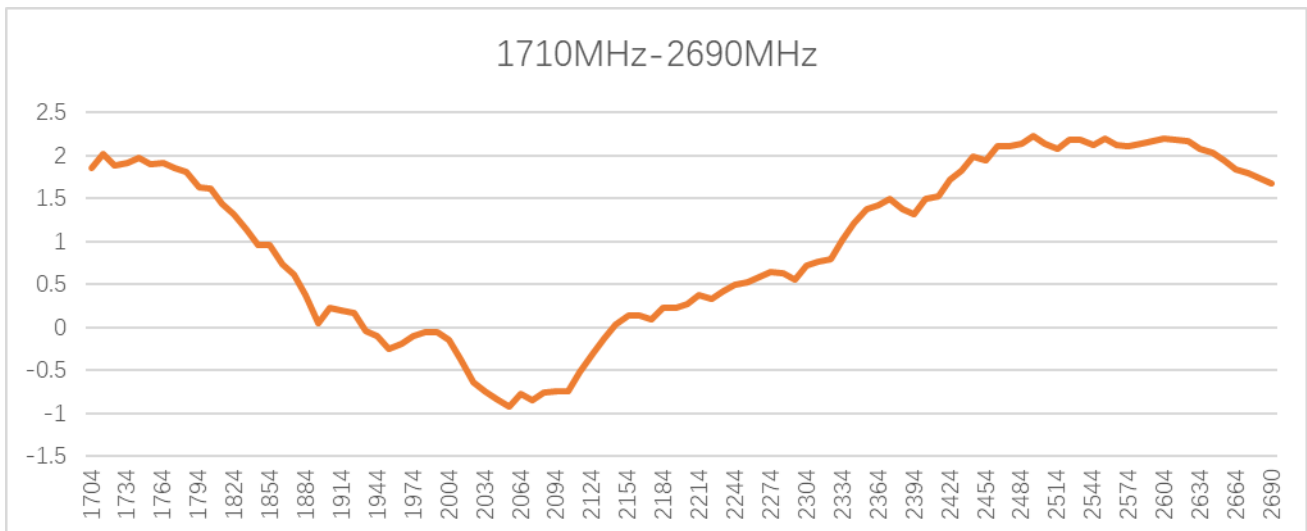
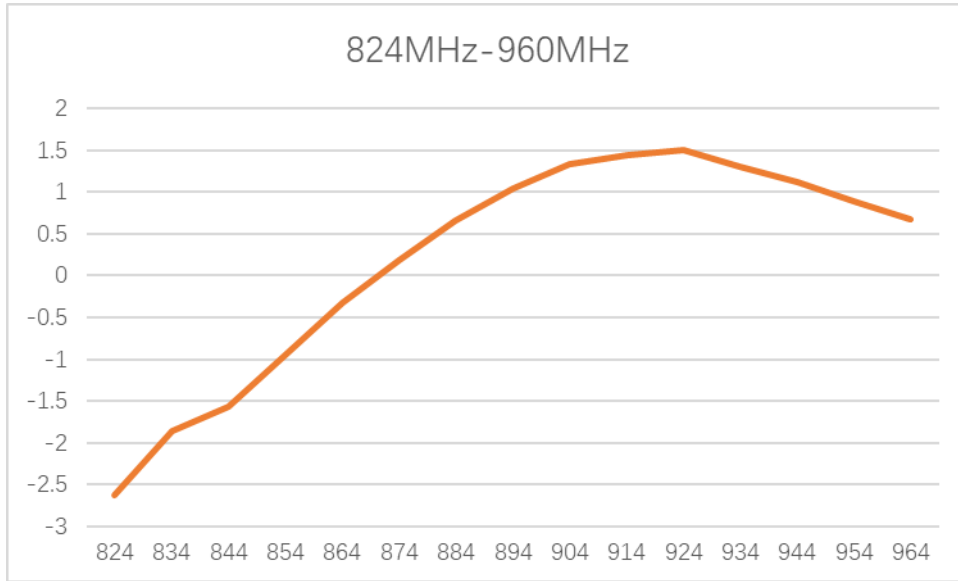
Frequency (MHz)	824	894	960	1710	1880	2170	2500	2690
VSWR	5.52	1.65	1.86	2.92	3.17	2.58	1.71	2.09

4.3. Efficiency



Frequency (MHz)	824	894	964	1714	1884	2174	2504	2690
Efficiency (%)	28.19	70.17	72.93	47.18	44.24	63.99	91.31	83.31

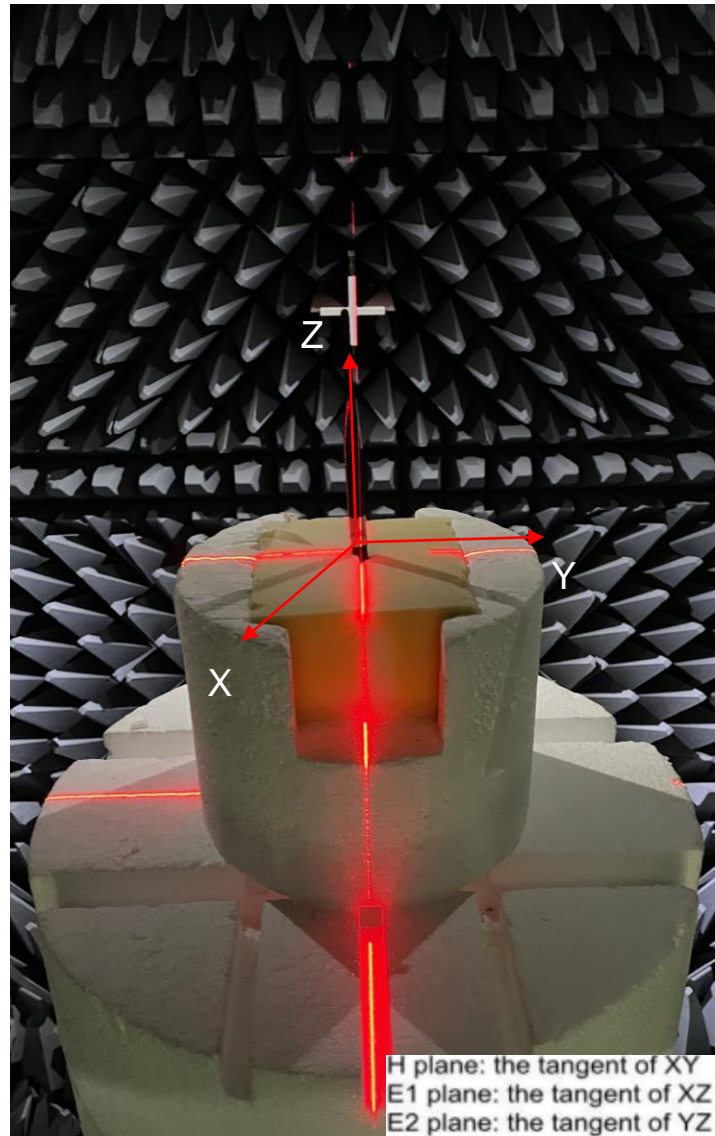
4.4. Gain



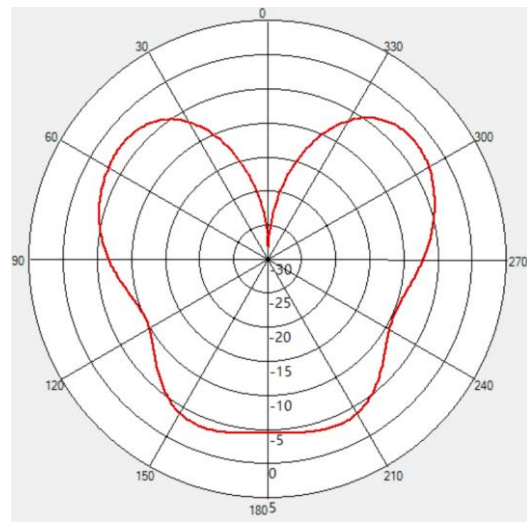
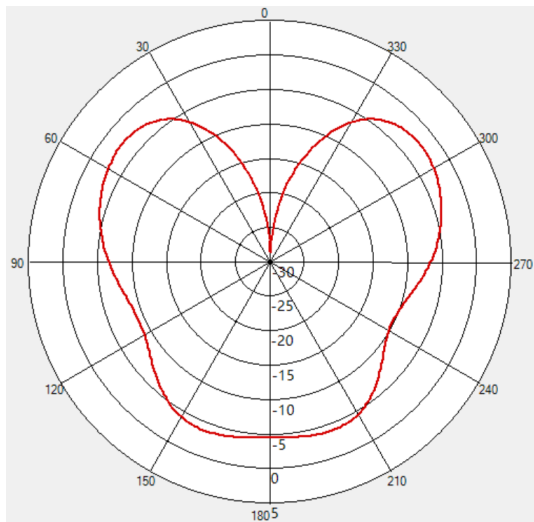
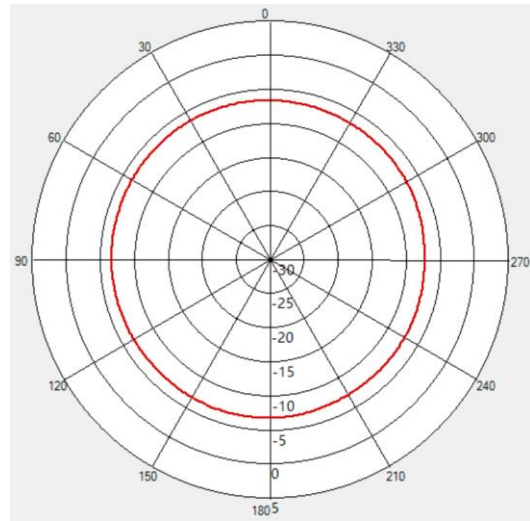
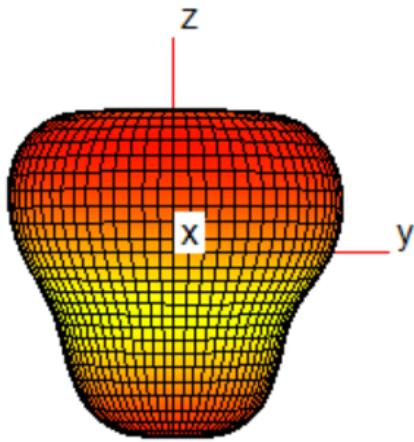
Frequency (MHz)	824	894	964	1714	1884	2174	2504	2690
Gain (dBi)	-2.63	1.04	0.68	2.02	0.37	0.09	2.13	1.67

4.5. Radiation Pattern

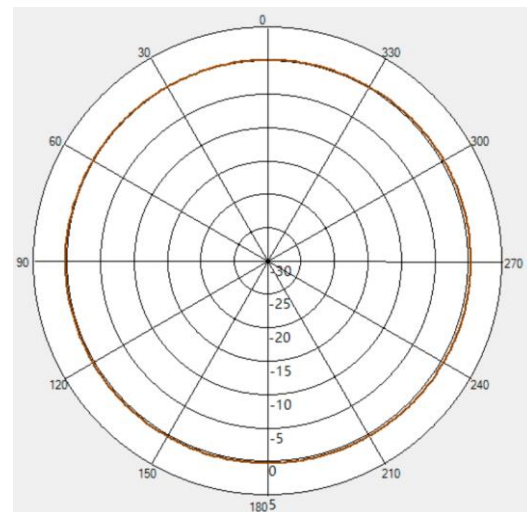
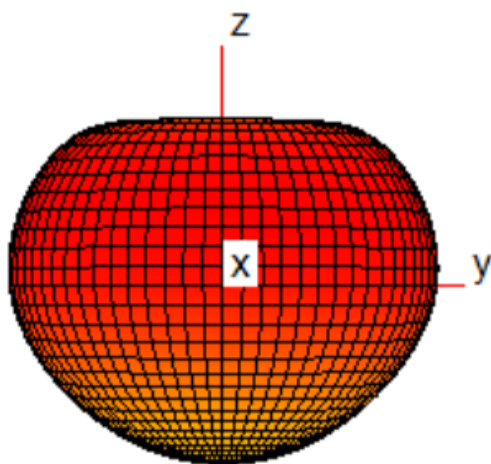
- Test condition: free space.

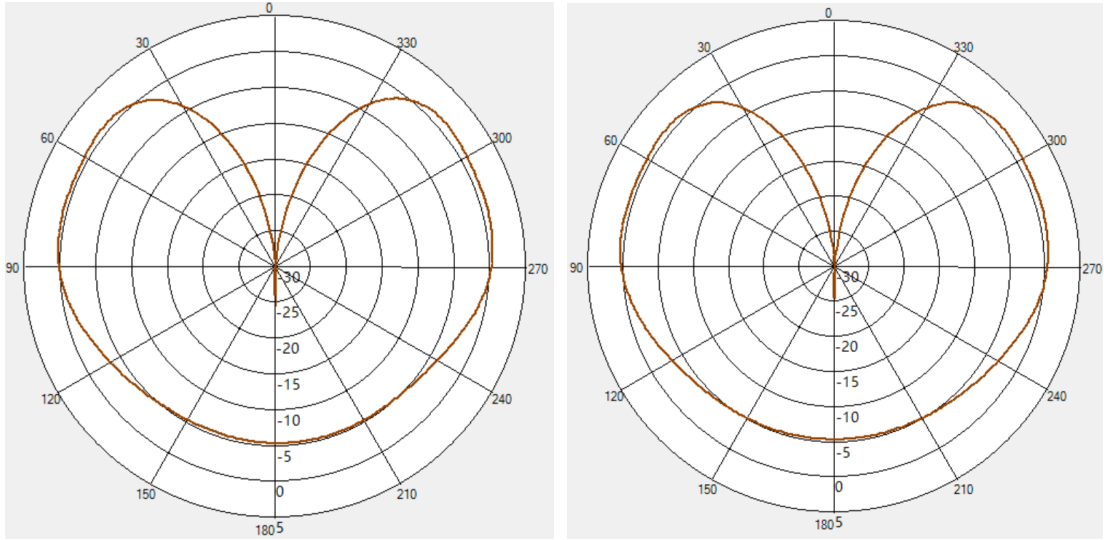


4.5.1. 824 MHz

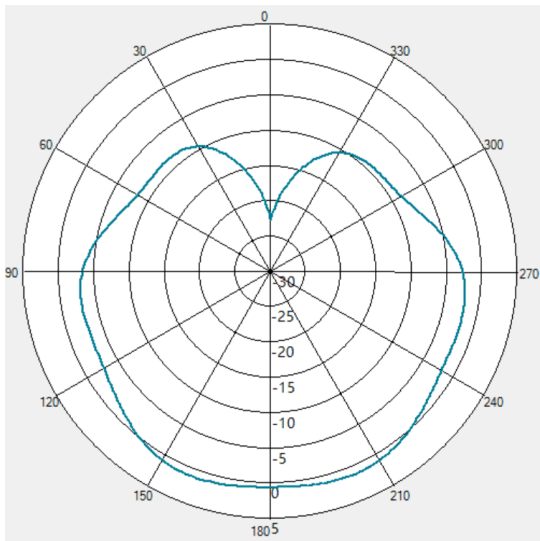
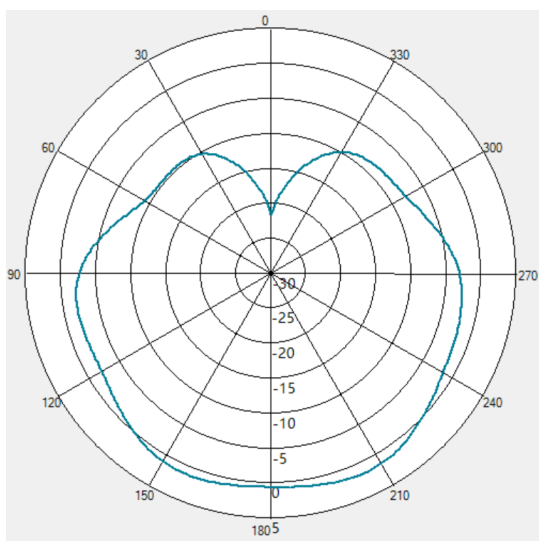
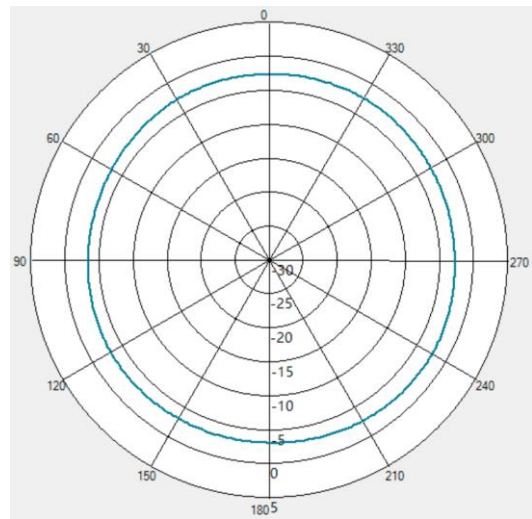
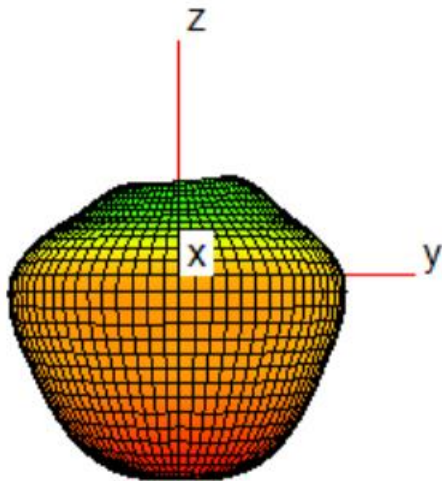


4.5.2. 954 MHz

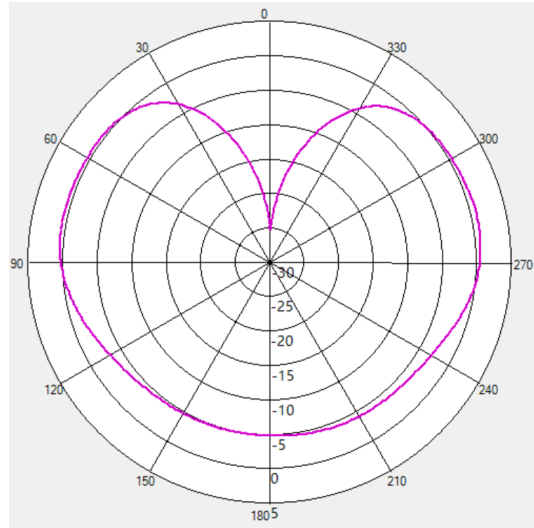
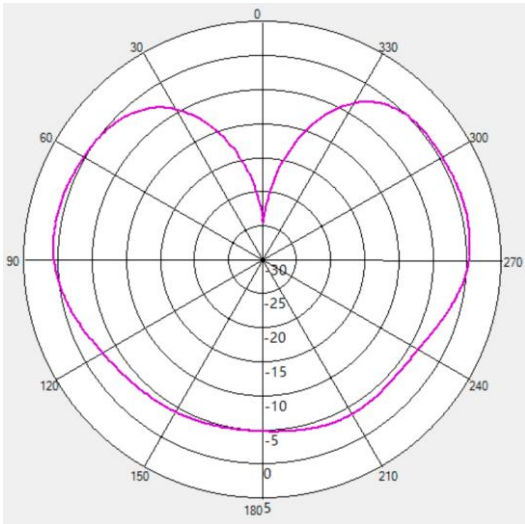
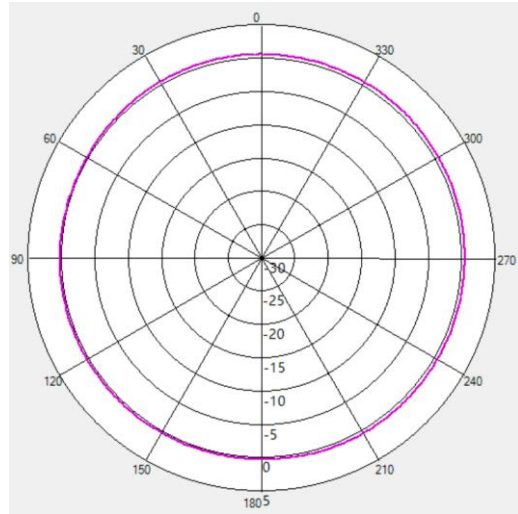
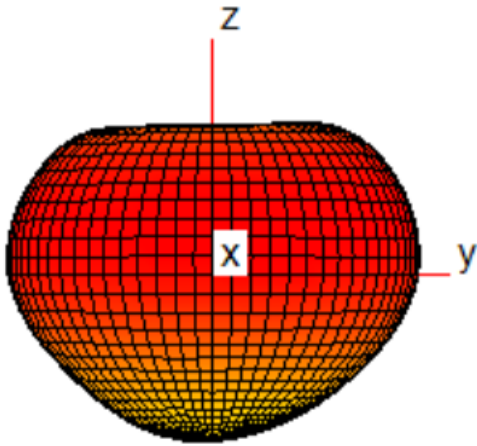




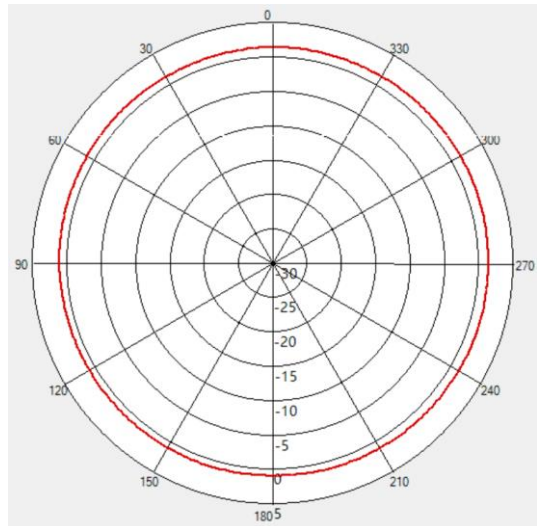
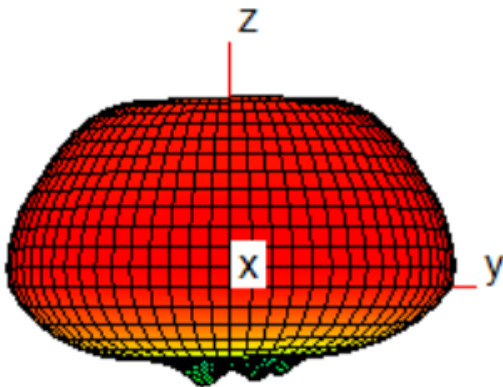
4.5.3. 1754 MHz

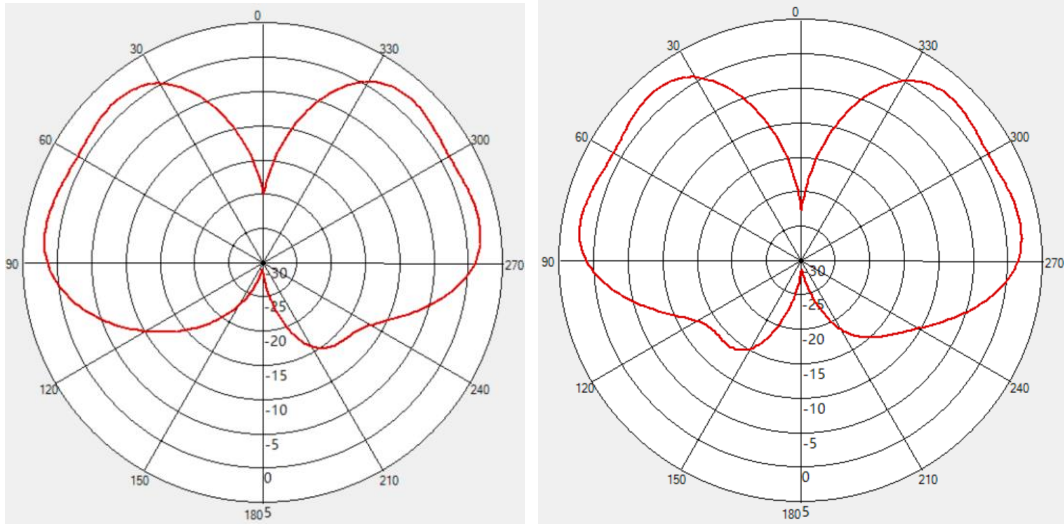


4.5.4. 2304 MHz



4.5.5. 2690 MHz





5 Product Size

