

Antenna

YECT002AA Datasheet

Antenna Services

Version: 2.2

Date: 2022-03-14

Status: Released

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About the Document

Revision History

Version	Date	Author	Note
-	2021-06-29	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-06-29	Kenny YIN/ Aria CHU	First official release
1.1	2021-07-25	Kenny YIN/ Aria CHU	1. Updated working temperature (Chapter 3). 2. Added detailed passive electrical specifications (Chapter 3).
2.0	2021-09-17	Vinnie LIU	Updated all test data in this datasheet.
2.1	2021-11-27	Vinnie LIU	Updated the product description in Chapter 1.
2.2	2022-03-14	Vinnie LIU	Updated the antenna drawing (Chapter 5).

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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.

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	700–960 MHz, 1710–2690 MHz
Input Impedence	50 Ω
VSWR	≤ 3.7
Gain	≤ 3 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications

Frequency Range (MHz)	700–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	3.68	-	-	2.45	2.02	-	-	-
Average Efficiency (%)	34	-	-	49	60	-	-	-
Max. Peak Gain (dBi)	-0.01	-	-	1.38	2.9	-	-	-

Mechanical Specifications

Antenna Size	196.2 mm × 16 mm × 13 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
IP Rating	IP55

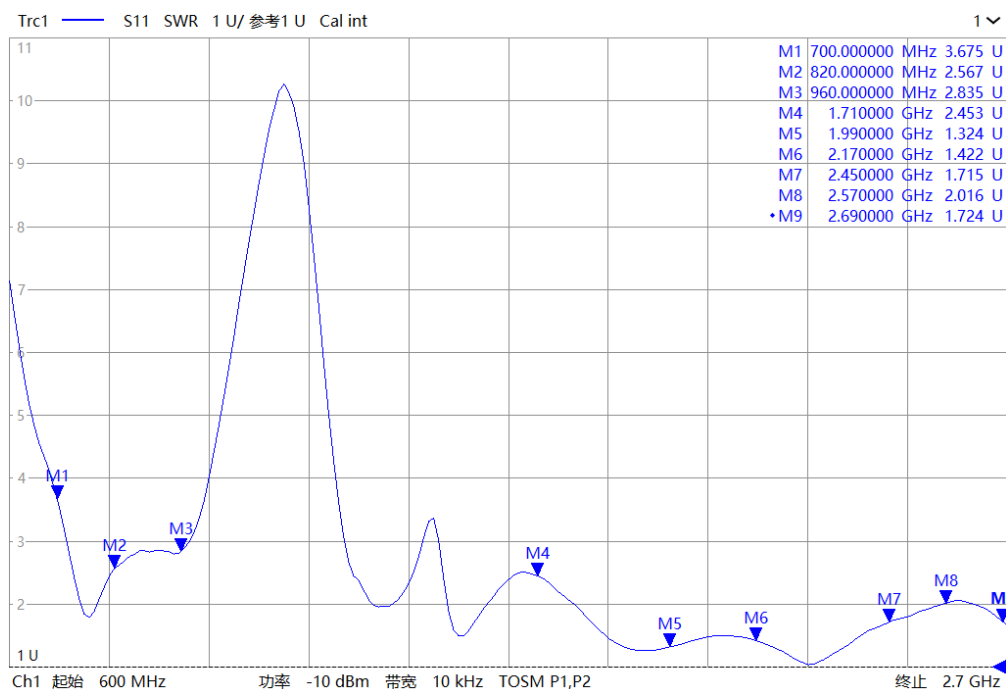
4 Overall Performance

4.1. Test Environment

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



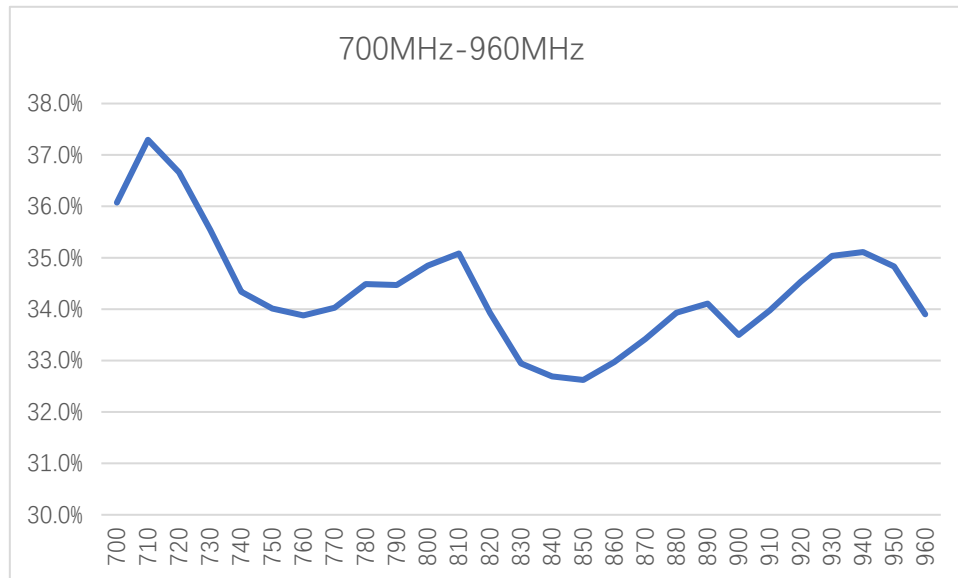
4.2. VSWR



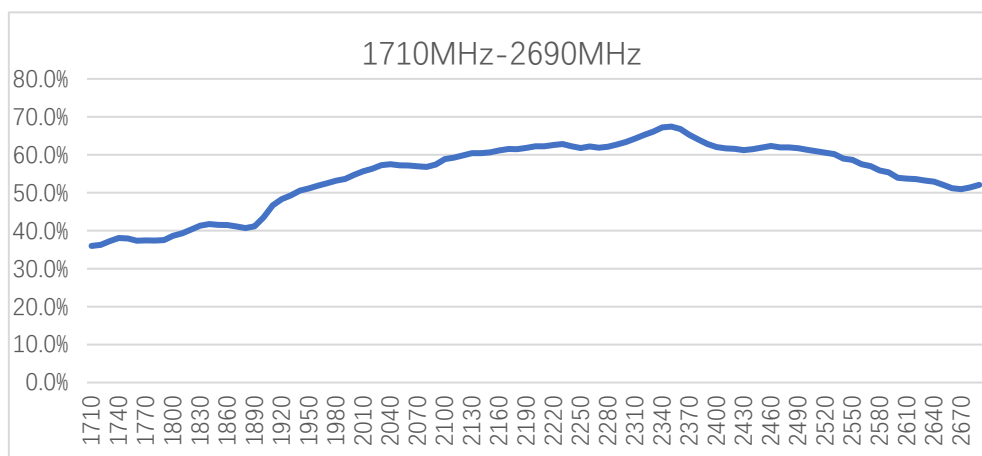
Frequency (MHz)	700	820	960	1710	1990	2170	2450	2570	2690
VSWR	3.68	2.57	2.84	2.45	1.32	1.42	1.72	2.02	1.72

4.3. Efficiency

4.3.1. 700–960 MHz



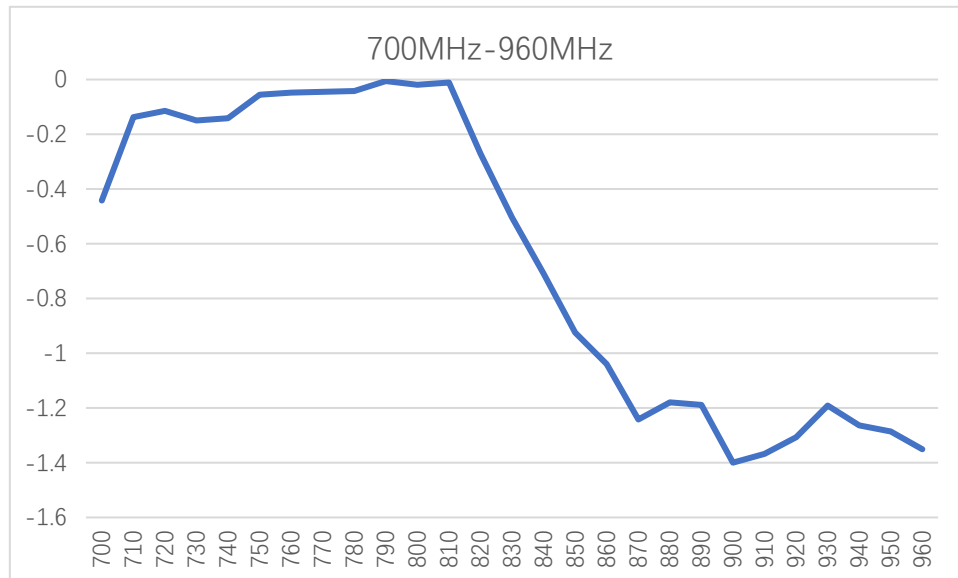
4.3.2. 1710–2690 MHz



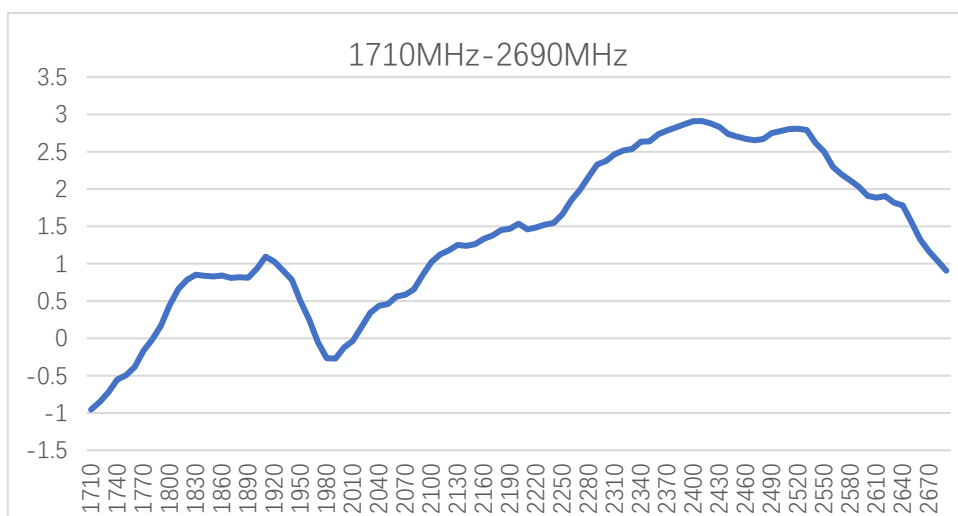
Frequency (MHz)	700	820	960	1710	1990	2170	2450	2570	2690
Efficiency (%)	36	34	34	36	54	62	62	57	52

4.4. Gain

4.4.1. 700–960 MHz



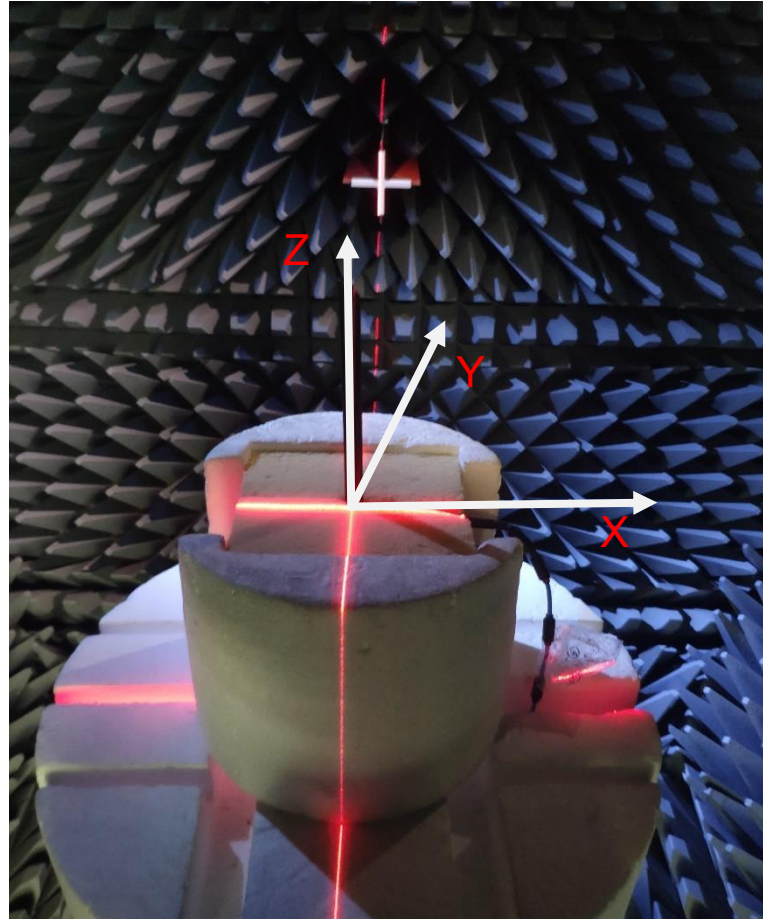
4.4.2. 1710–2690 MHz



Frequency (MHz)	700	820	960	1710	1990	2170	2450	2570	2690
Gain (dBi)	-0.4	-0.3	-1.4	-1.0	-0.3	1.4	2.7	2.2	0.9

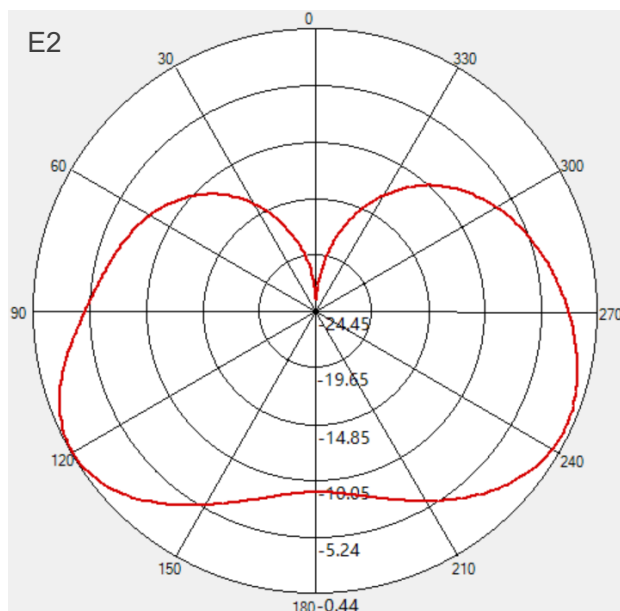
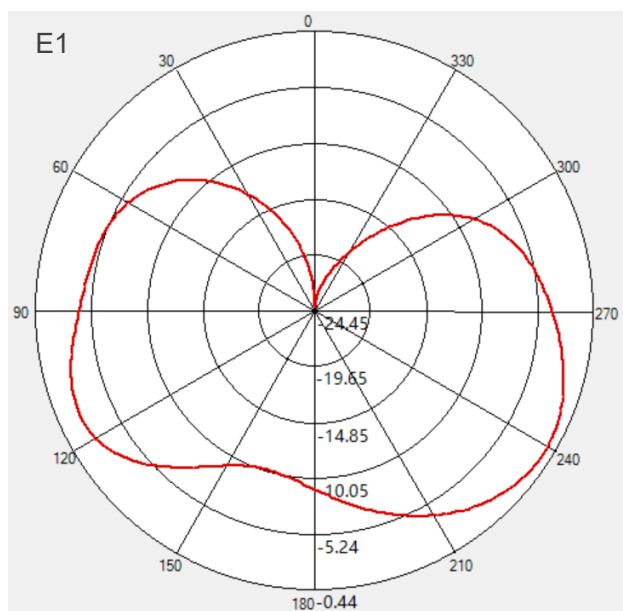
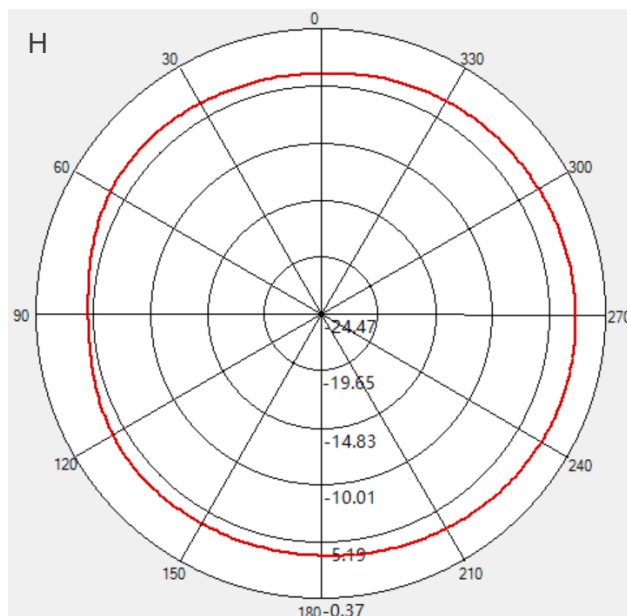
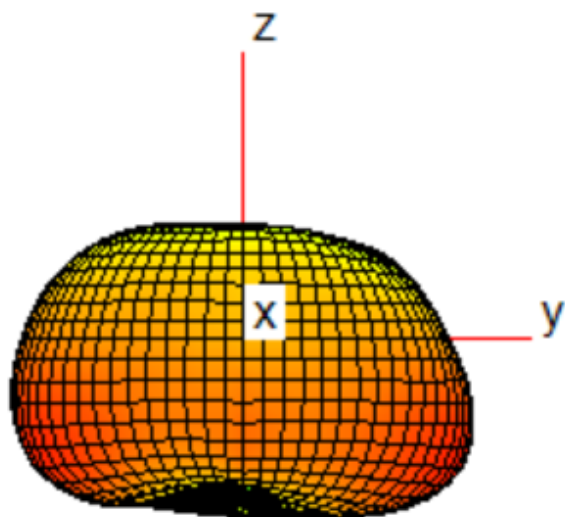
4.5. Radiation Pattern

- Test condition: free space.

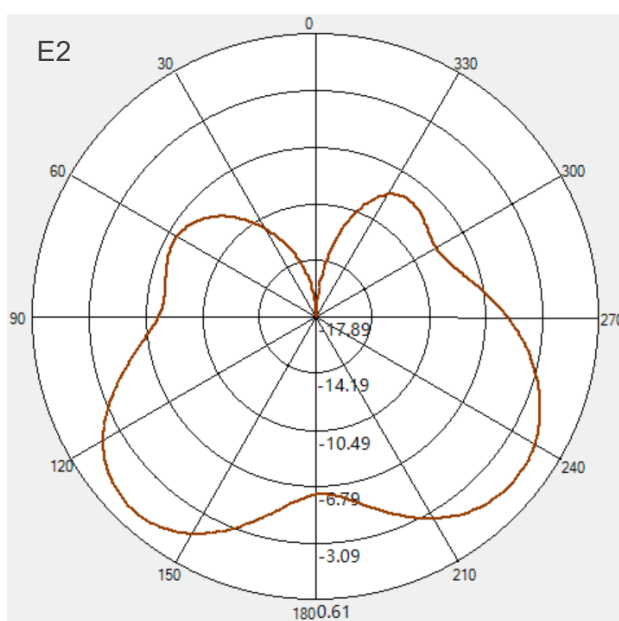
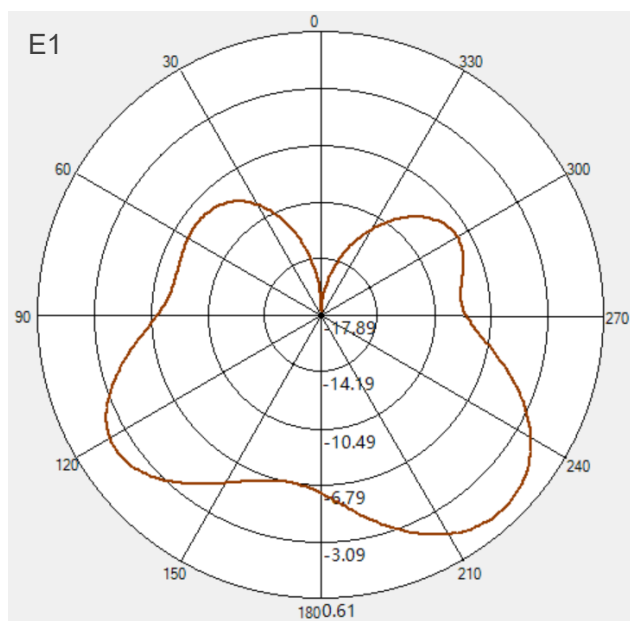
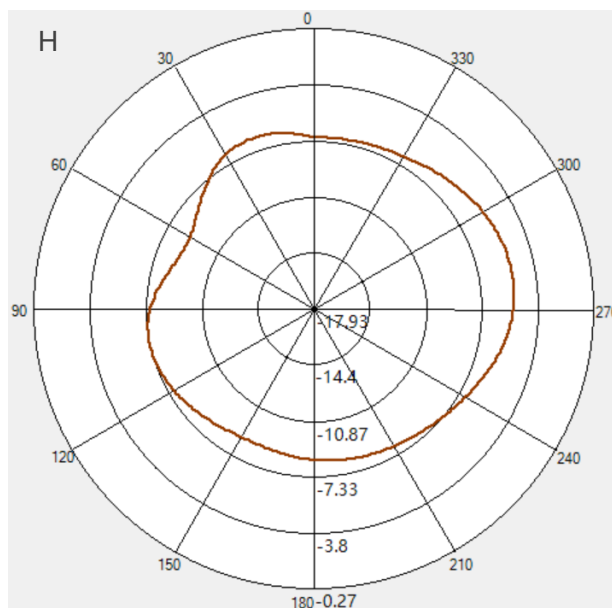
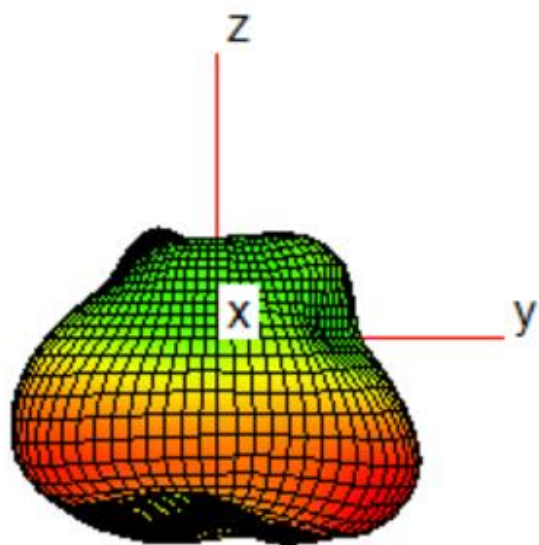


H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

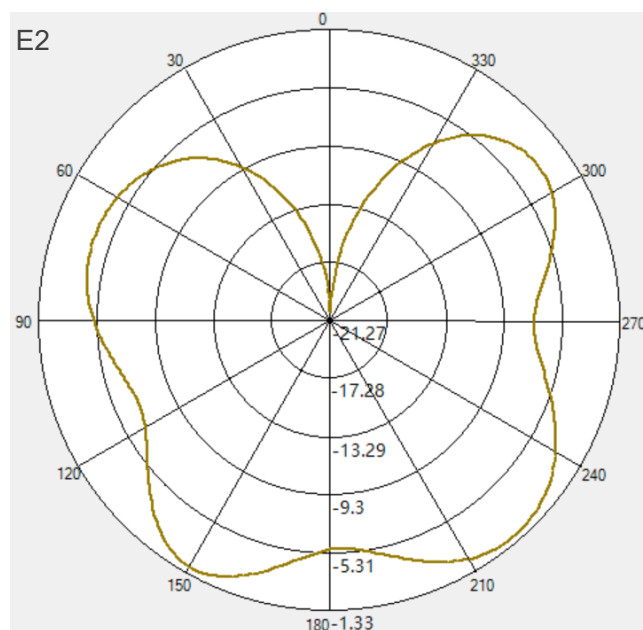
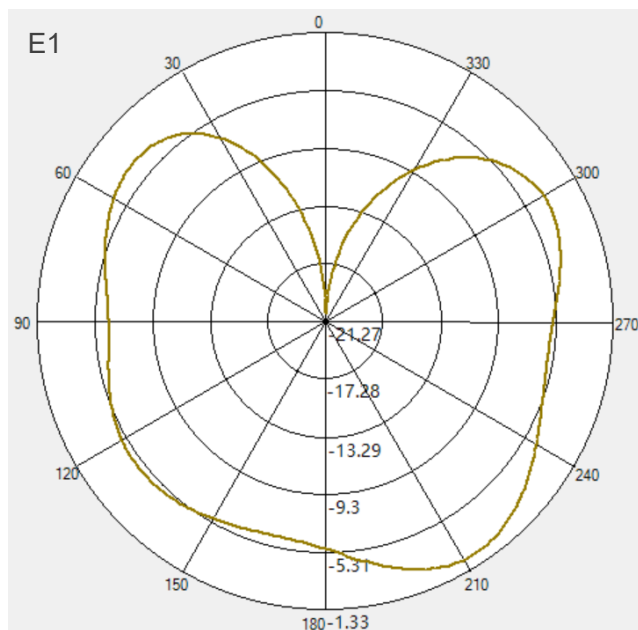
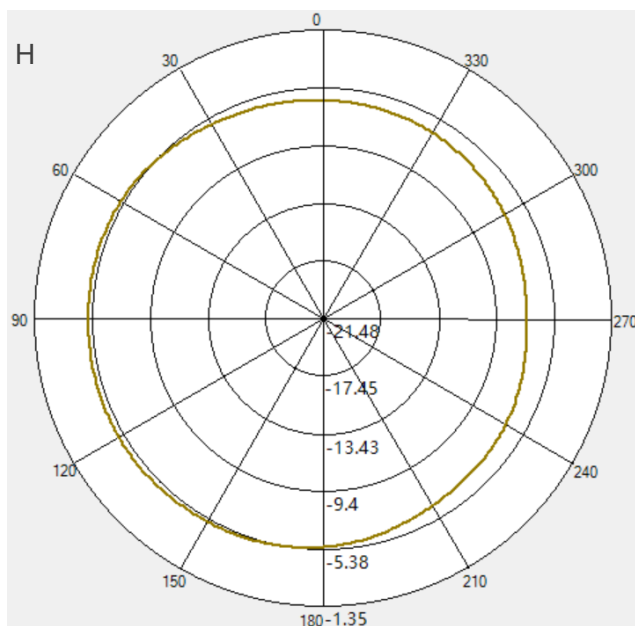
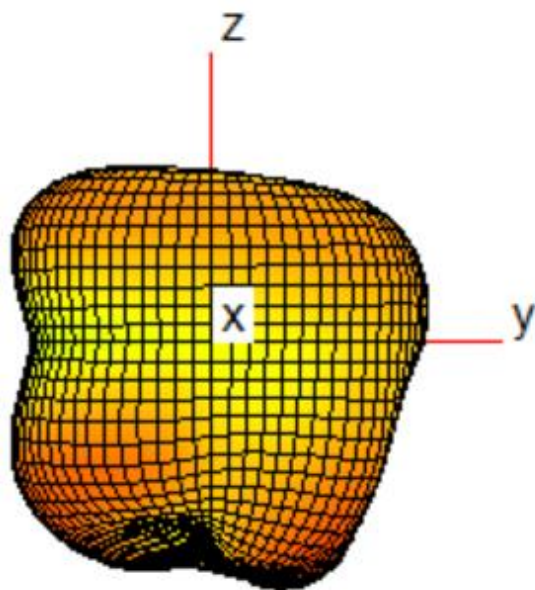
4.5.1. 700 MHz



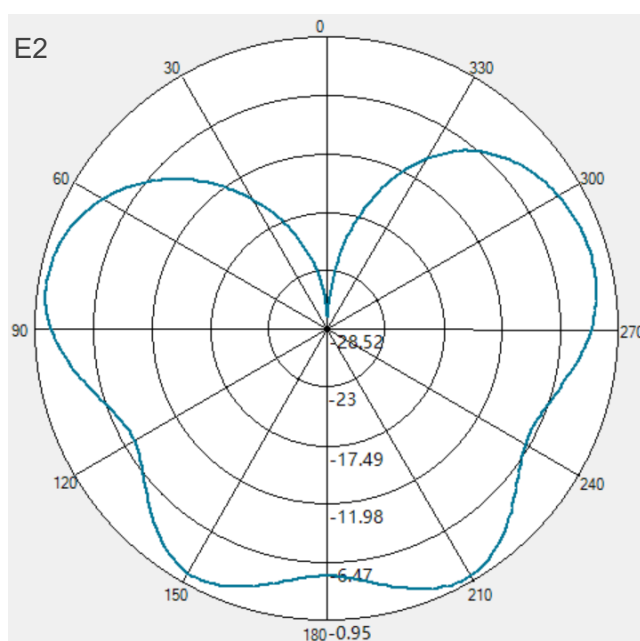
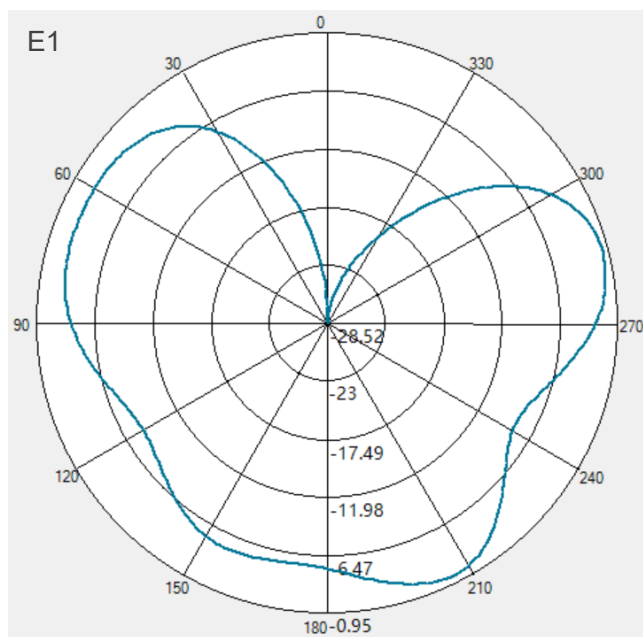
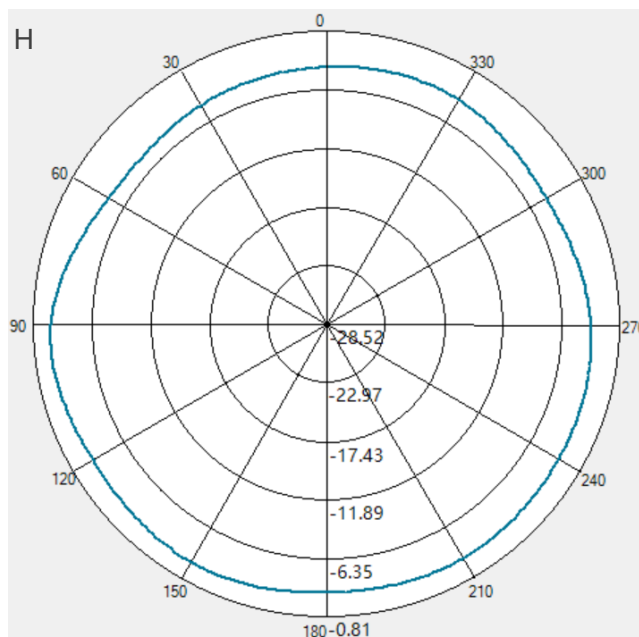
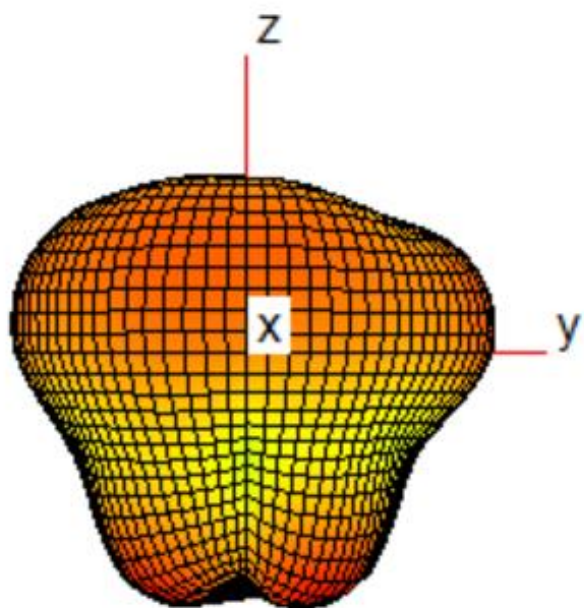
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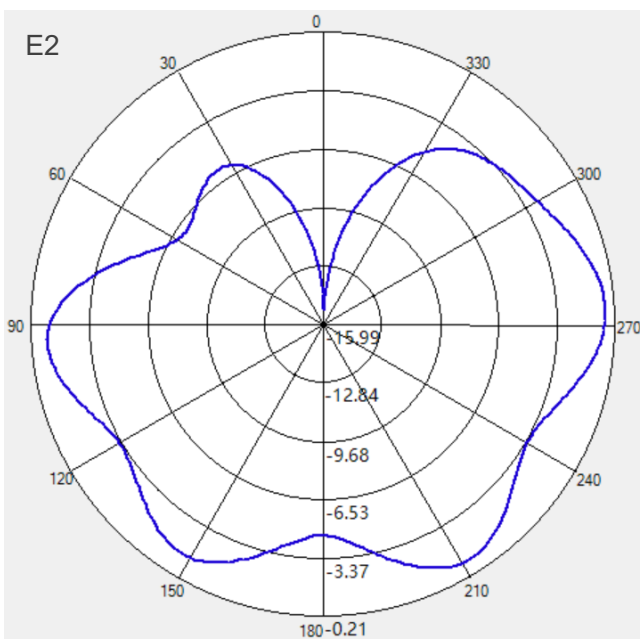
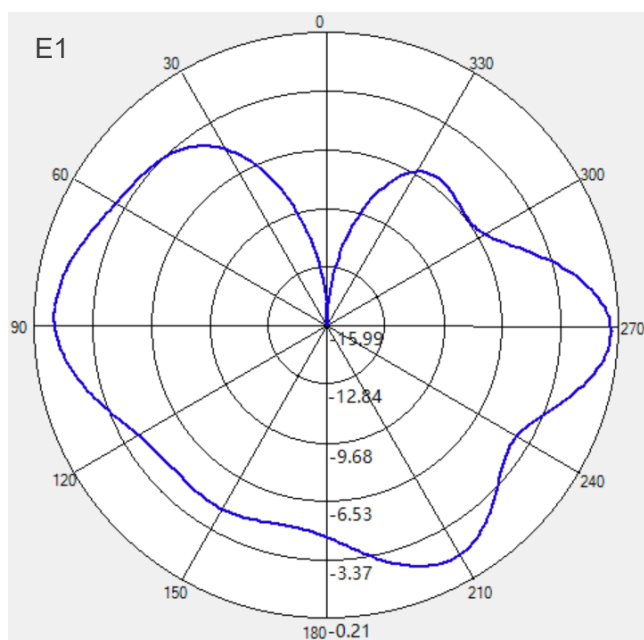
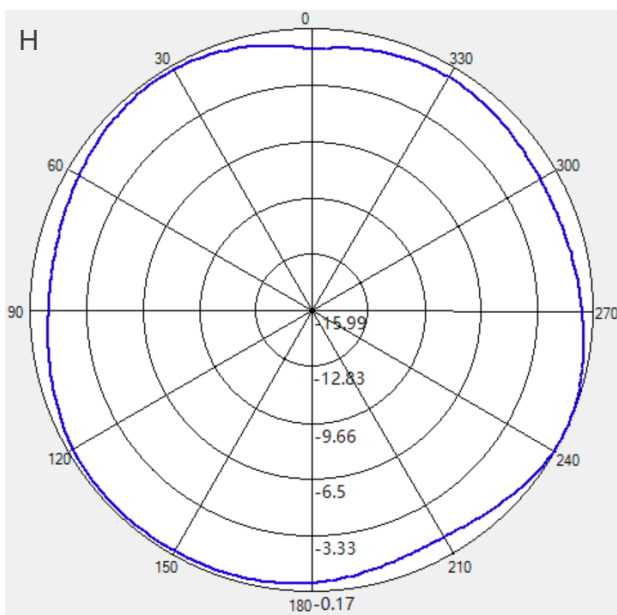
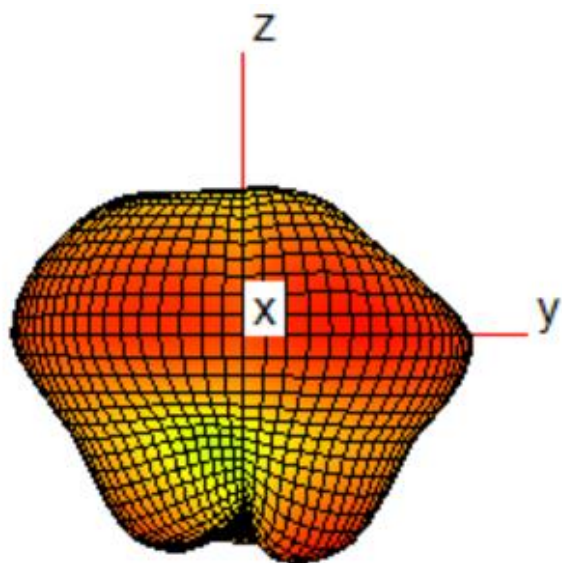
4.5.3. 960 MHz



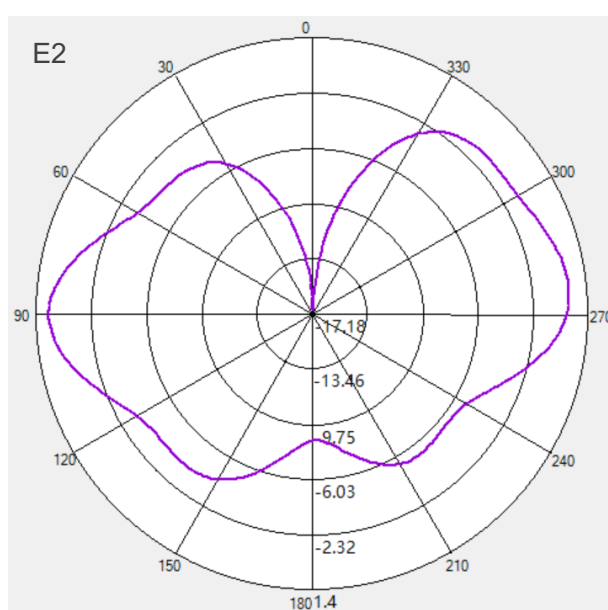
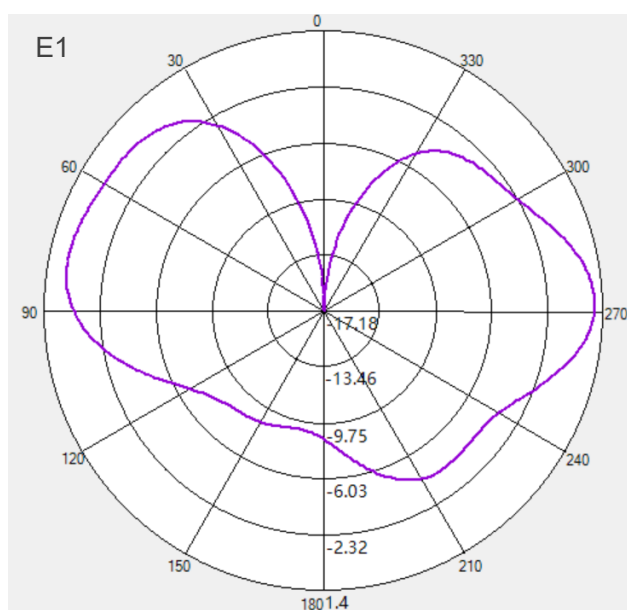
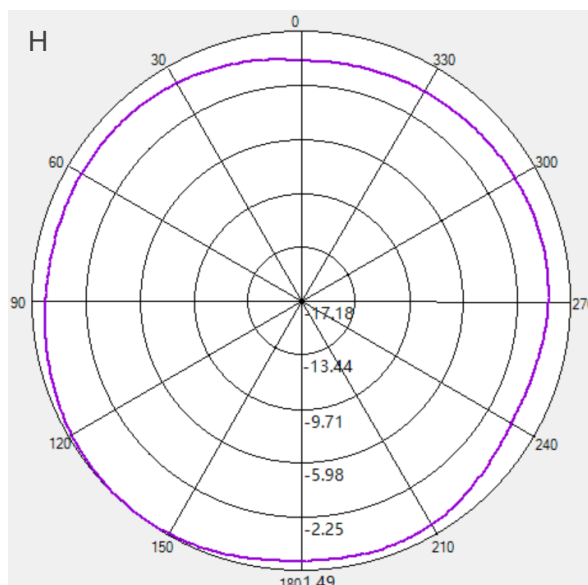
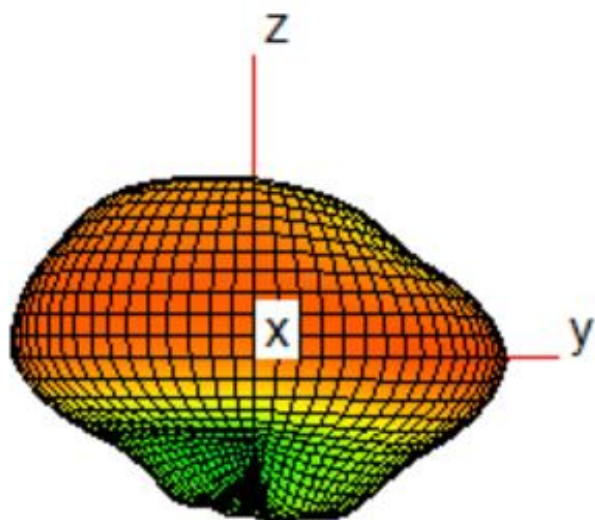
4.5.4. 1710 MHz



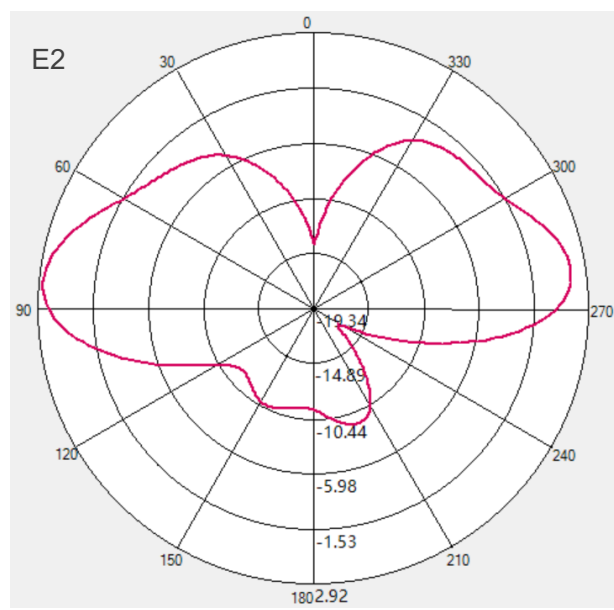
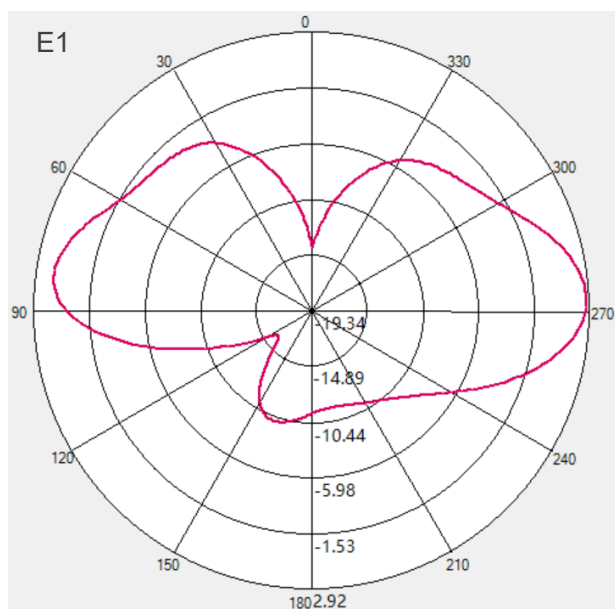
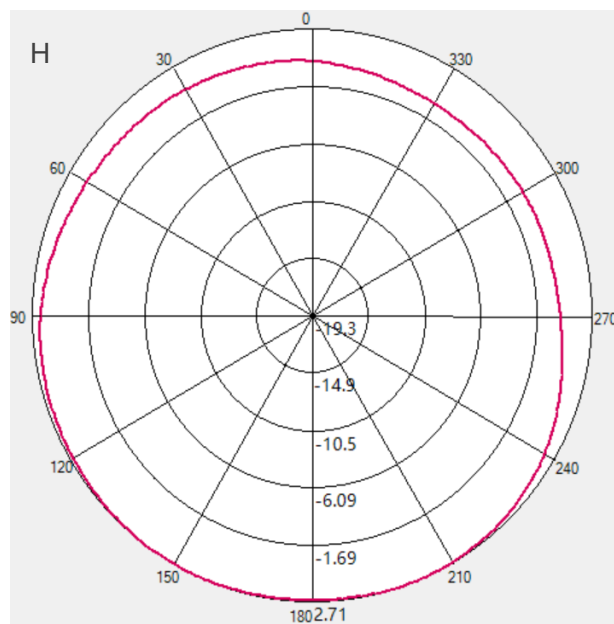
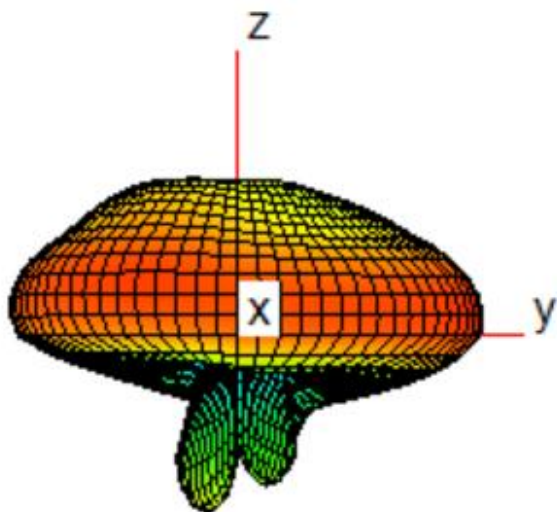
4.5.5. 1990 MHz



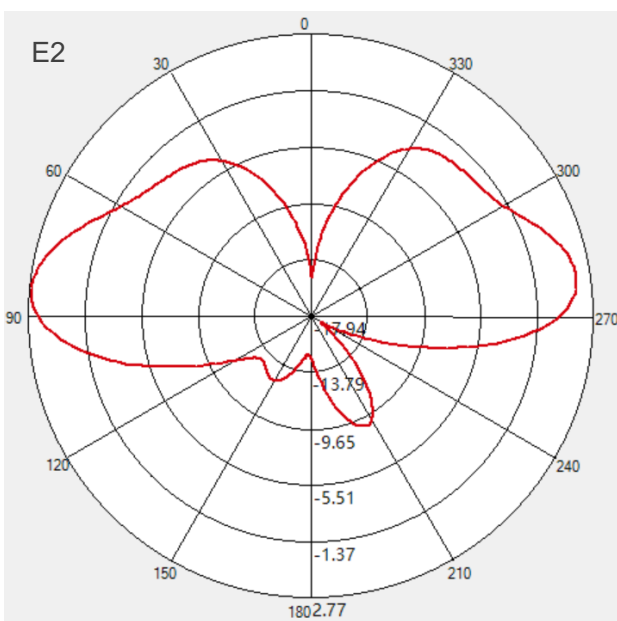
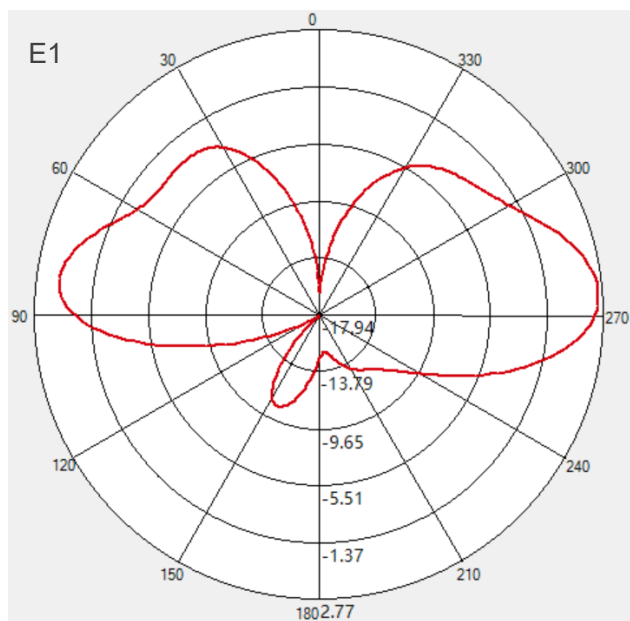
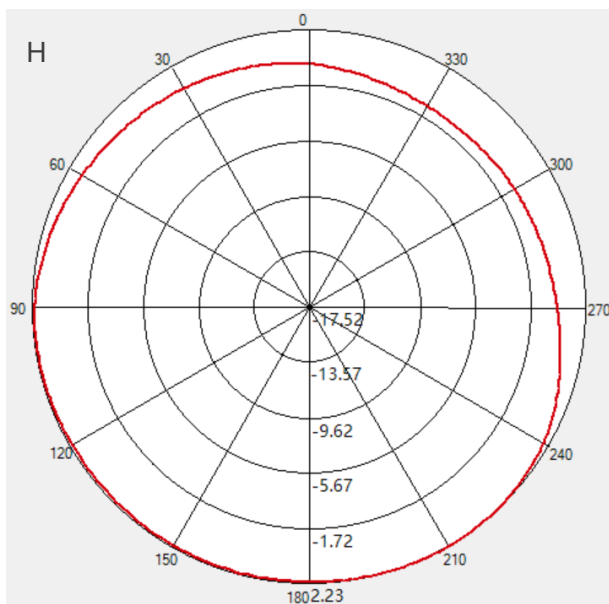
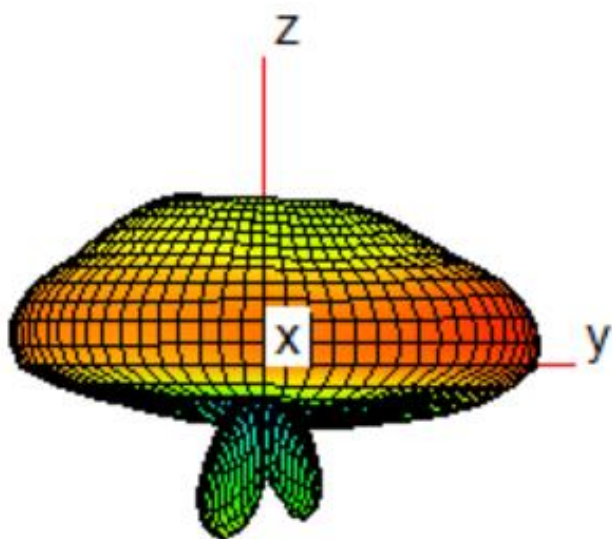
4.5.6. 2170 MHz



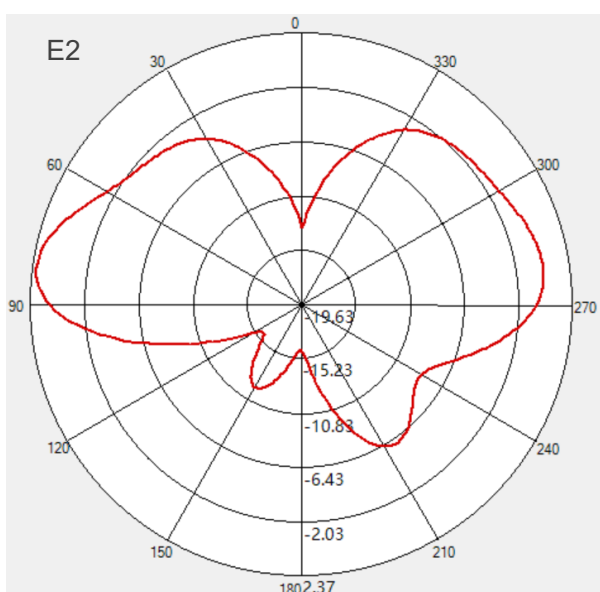
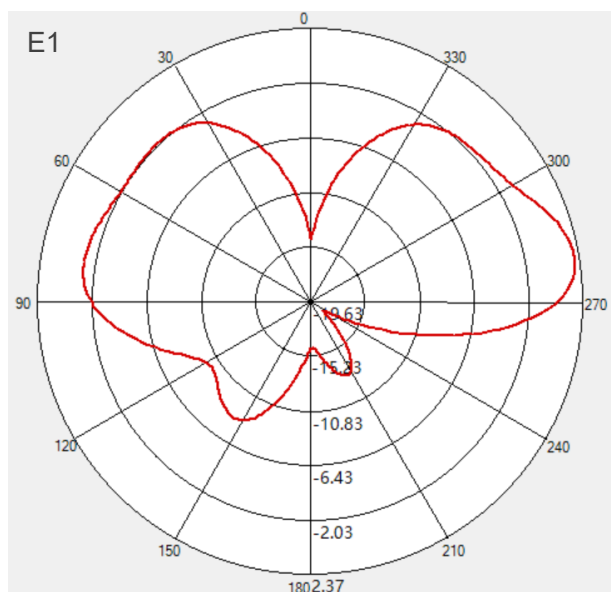
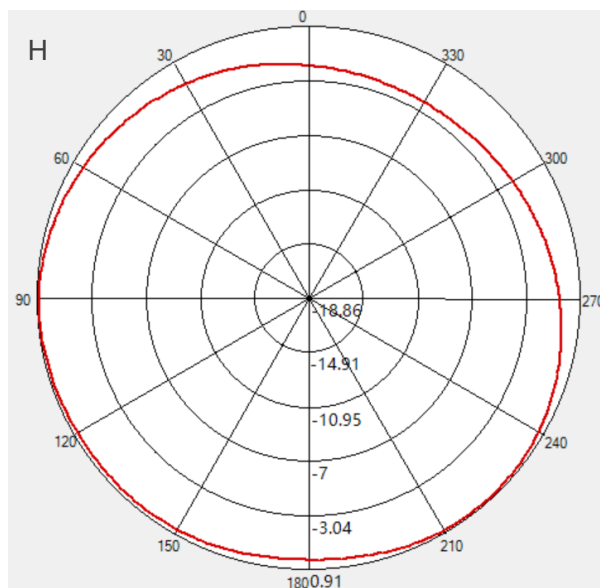
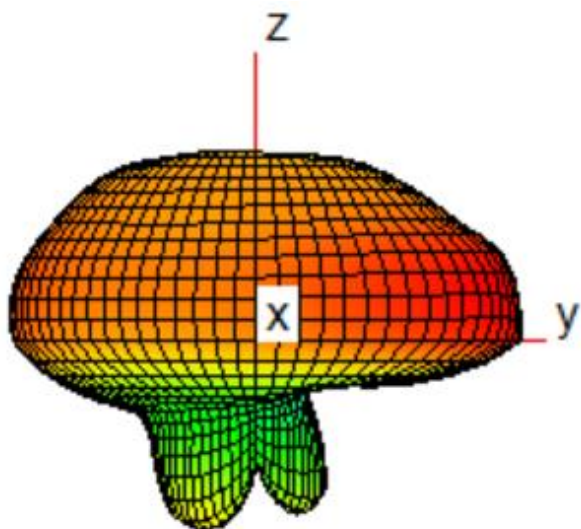
4.5.7. 2450 MHz



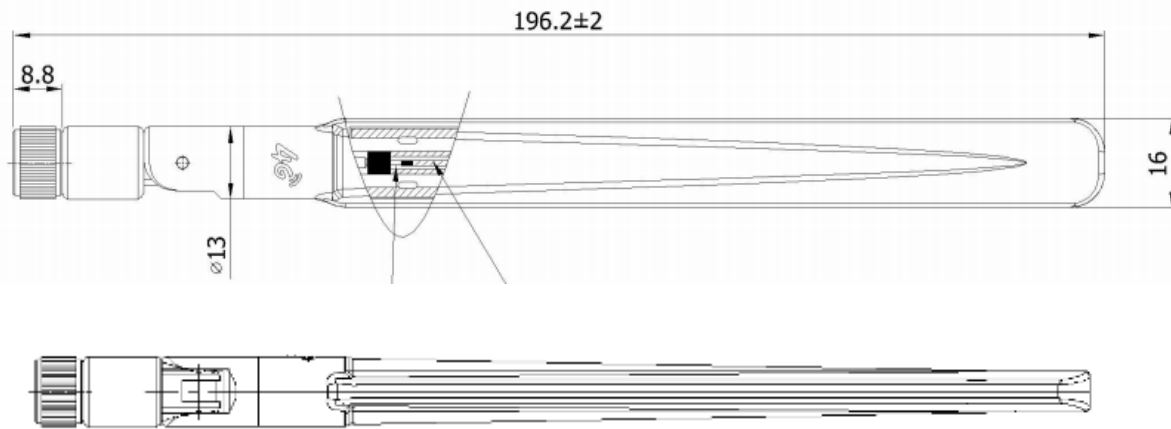
4.5.8. 2570 MHz



4.5.9. 2690 MHz



5 Product Size



ROHS