

Antenna

YE0021AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-08-20	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 and installation method.
2.0	2021-04-28	Aria CHU	Updated all test data in the datasheets.
2.1	2021-07-25	Aria CHU	1. Updated working temperature. (Chapter 3) 2. Added detailed passive electrical specifications. (Chapter 3)
2.2	2021-11-09	Kenny YIN	Updated the antenna drawing (Chapter 6).
2.3	2021-12-01	Kenny YIN	Updated the product description in Chapter 1.

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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.

2 Product Features

- 4G Antenna
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	690–960 MHz, 1710–2690 MHz
Input Impedence	50 Ω
VSWR	≤ 3.0
Gain	≤ 3.3 dBi
Polarization Type	Vertical

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.)	2.09	-	-	3.0	2.7	-	-	-
Average Efficiency (%)	40	-	-	41	26	-	-	-
Max. Peak Gain (dBi)	3.3	-	-	1.2	-0.3	-	-	-

Mechanical Specifications

Antenna Size	109 mm × 29.8 mm RG174, Cable Length = 1500 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-20 °C to +60 °C
Radome Color	Black
Mounting Type	Magnet
IP Rating	IP65

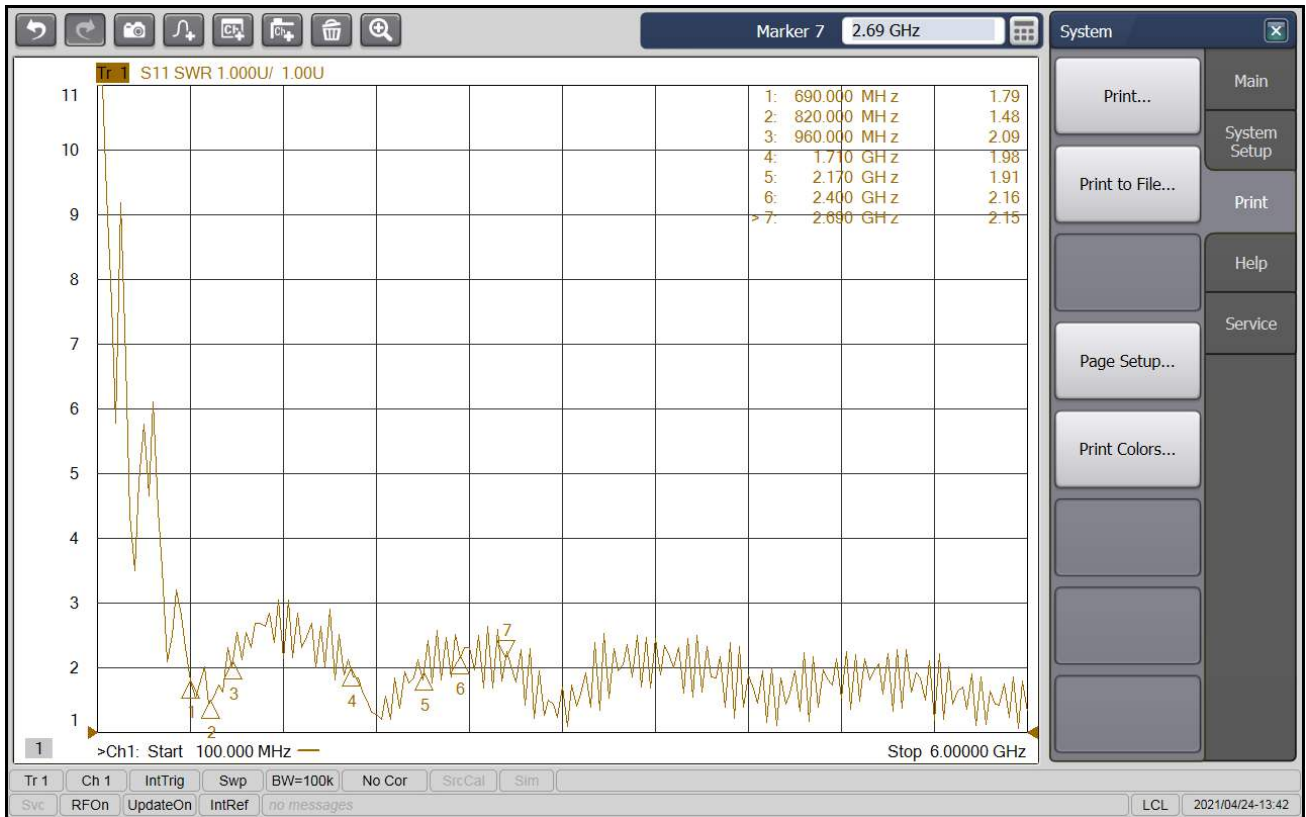
4 Overall Performance

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.

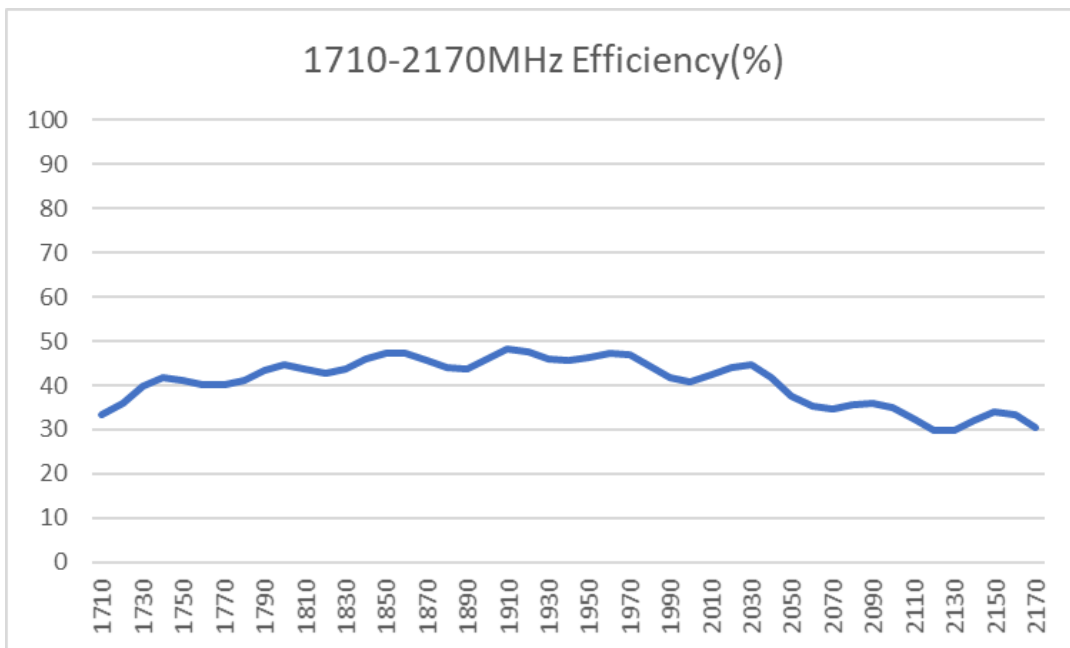
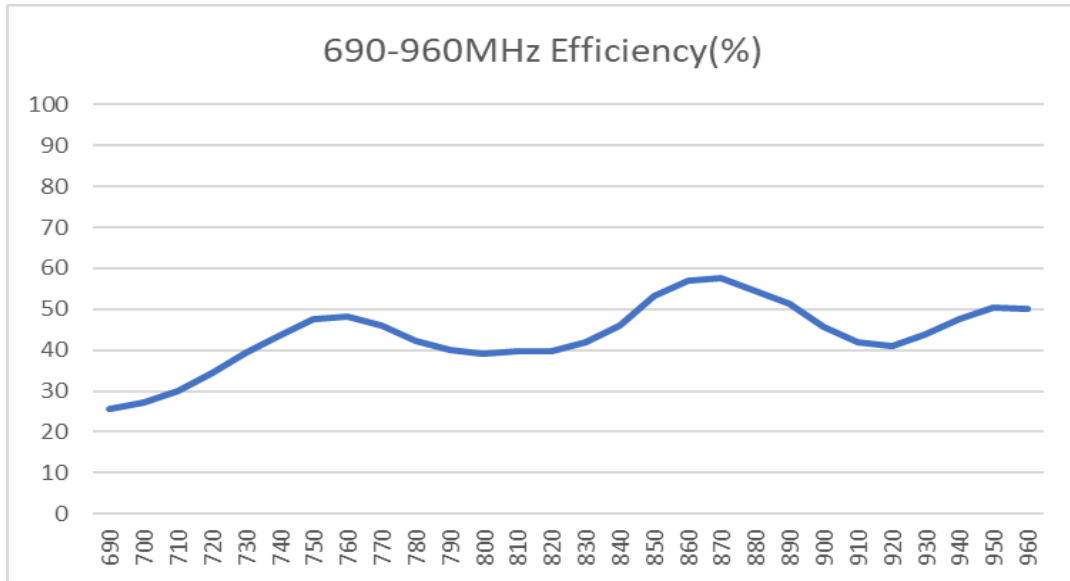


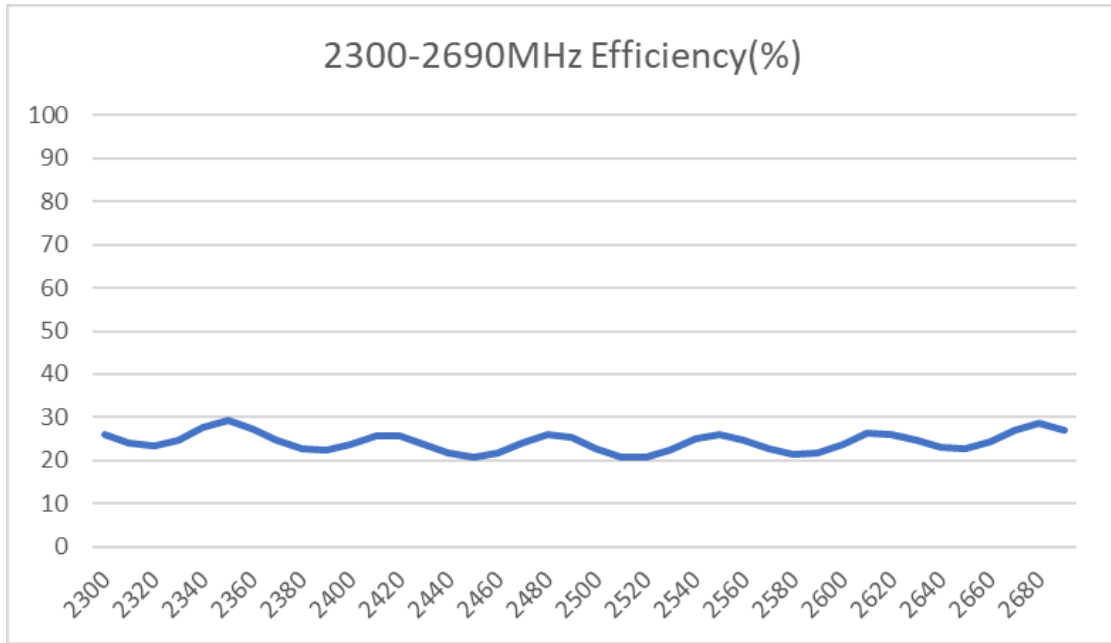
4.2. VSWR



Frequency (MHz)	690	820	960	1710	2170	2400	2690
VSWR	1.79	1.48	2.09	1.98	1.91	2.16	2.15

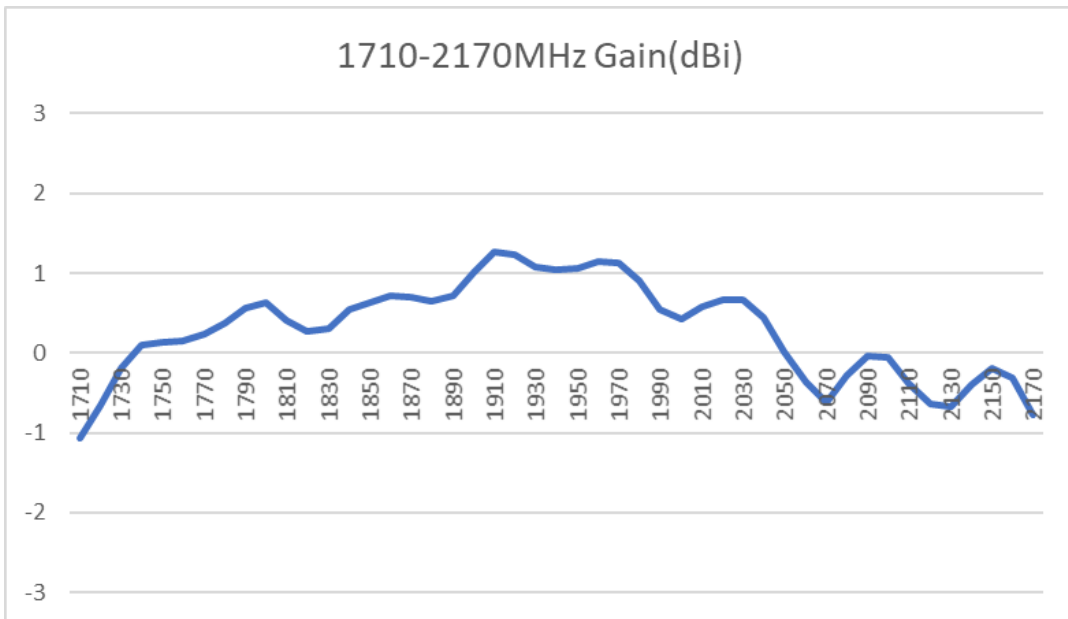
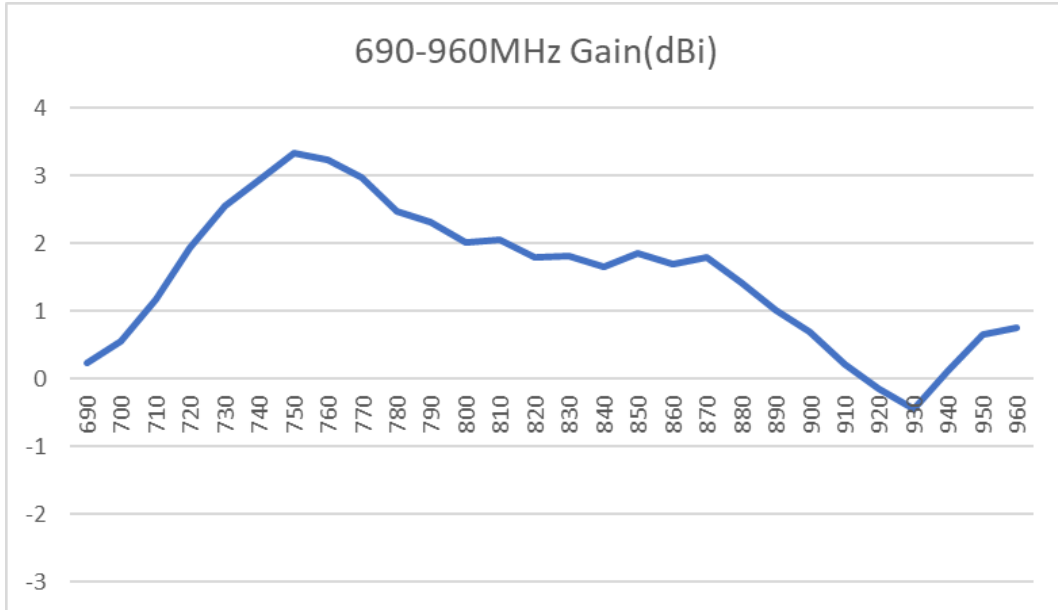
4.3. Efficiency

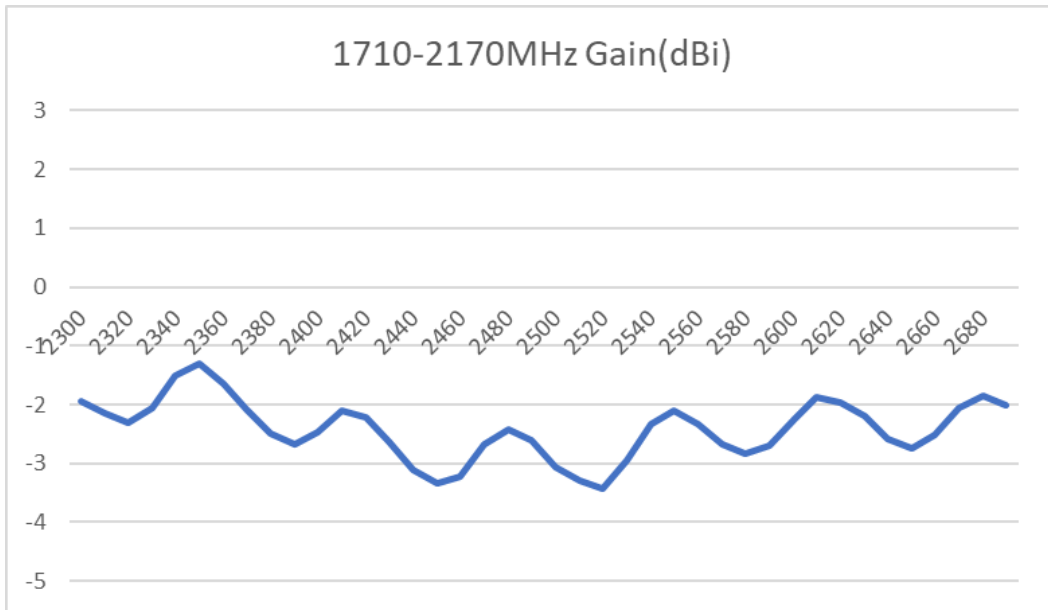




Frequency (MHz)	690	790	820	960	1710	2170	2400	2690
Efficiency (%)	25.69	40.17	39.87	50.09	33.23	30.48	23.80	27.04

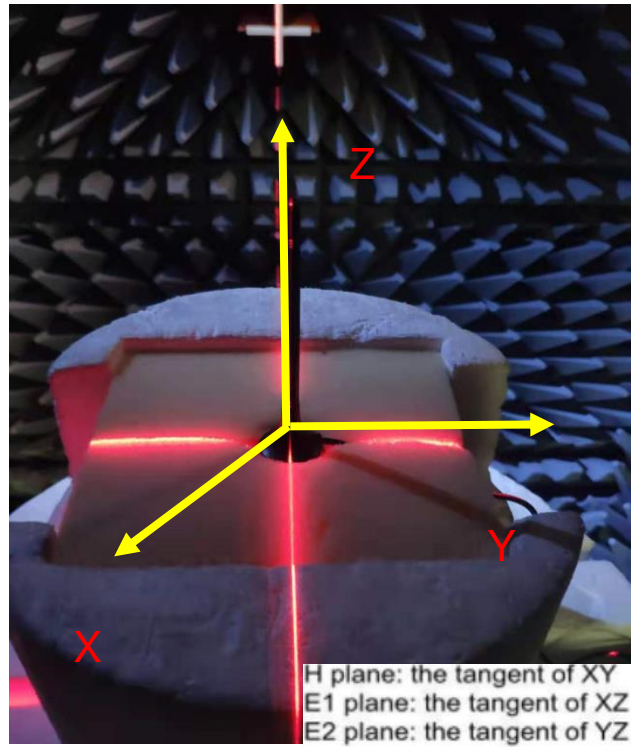
4.4. Gain



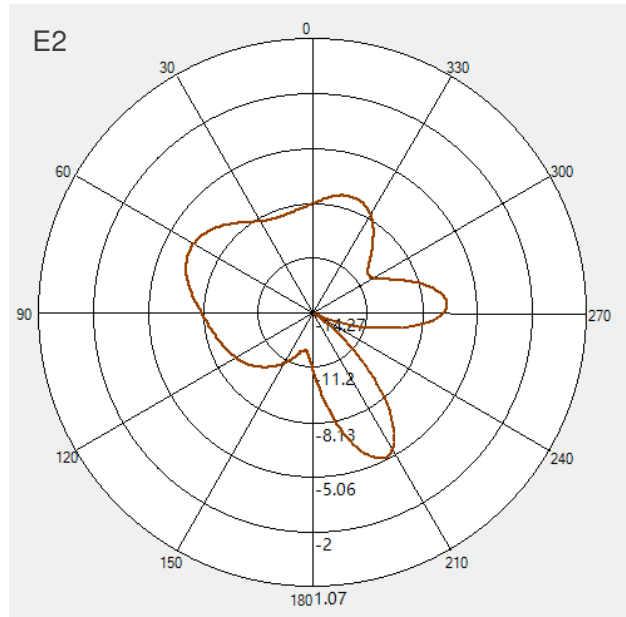
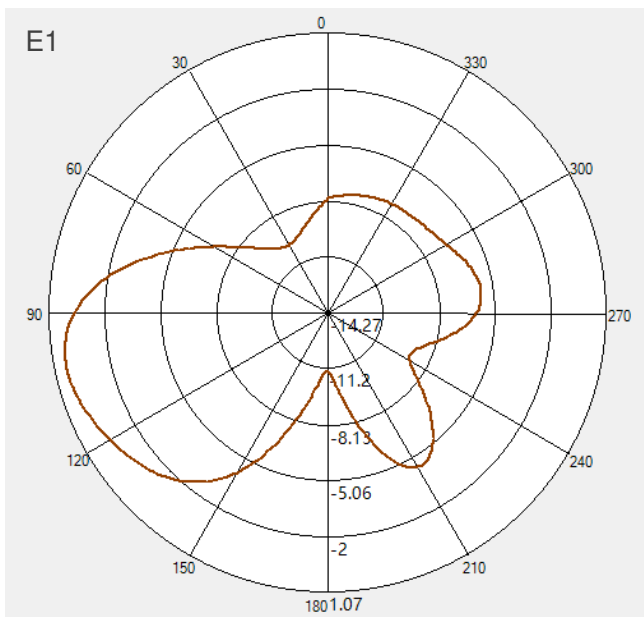
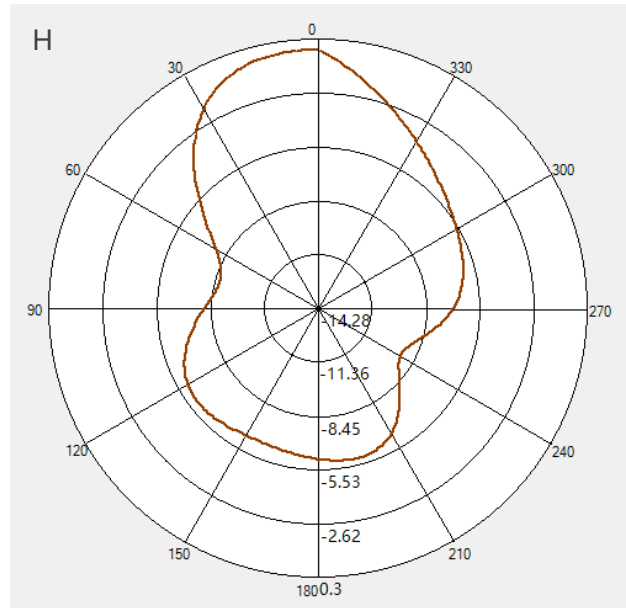
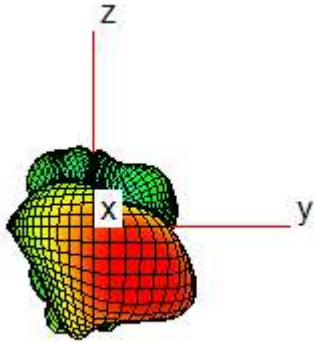


Frequency (MHz)	690	790	820	960	1710	2170	2400	2690
Gain (dBi)	0.24	2.31	1.78	0.76	-1.06	-0.77	-2.46	-2.01

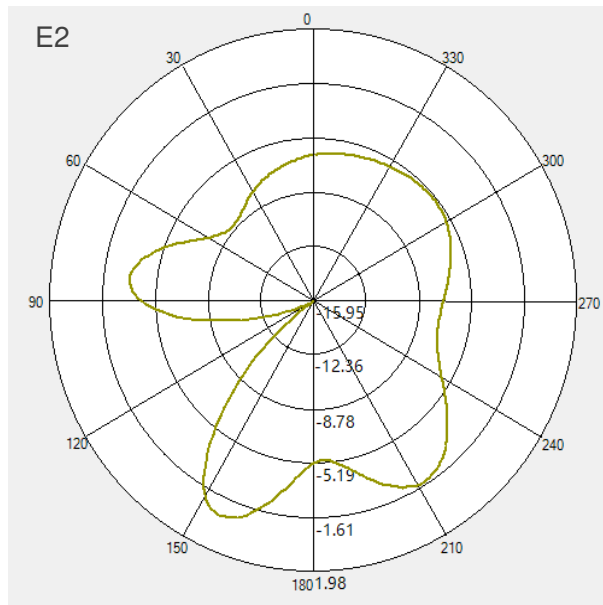
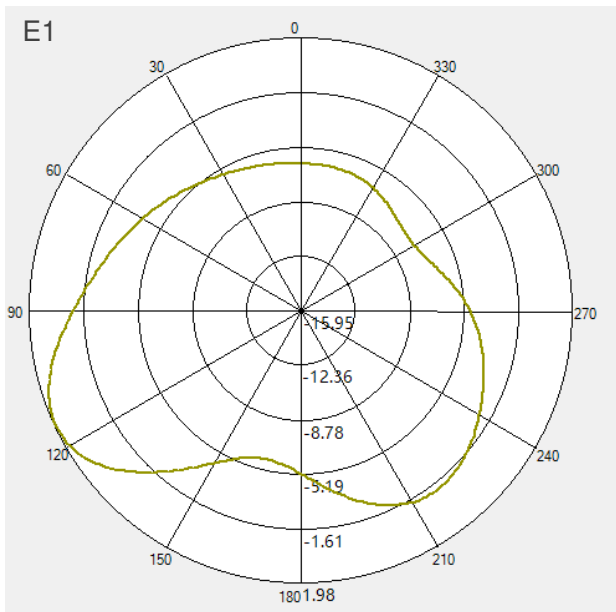
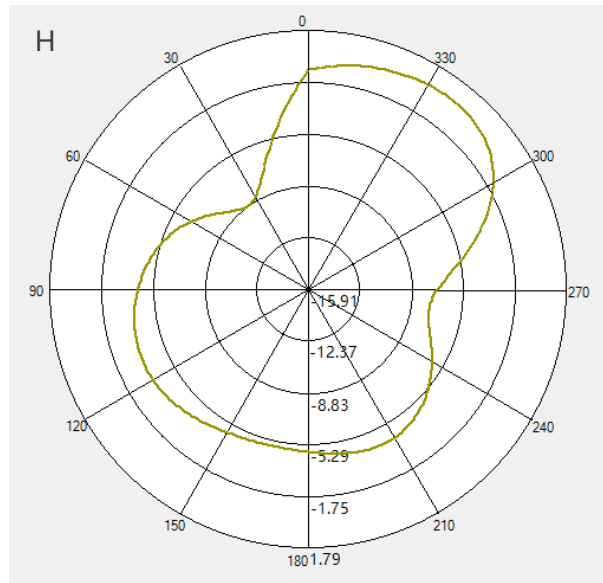
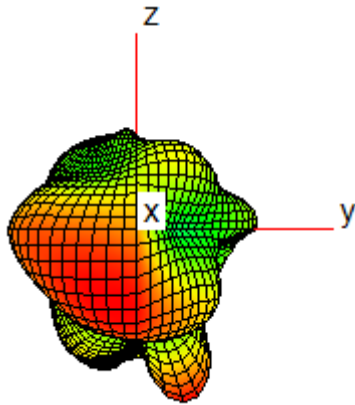
4.5. Radiation Pattern



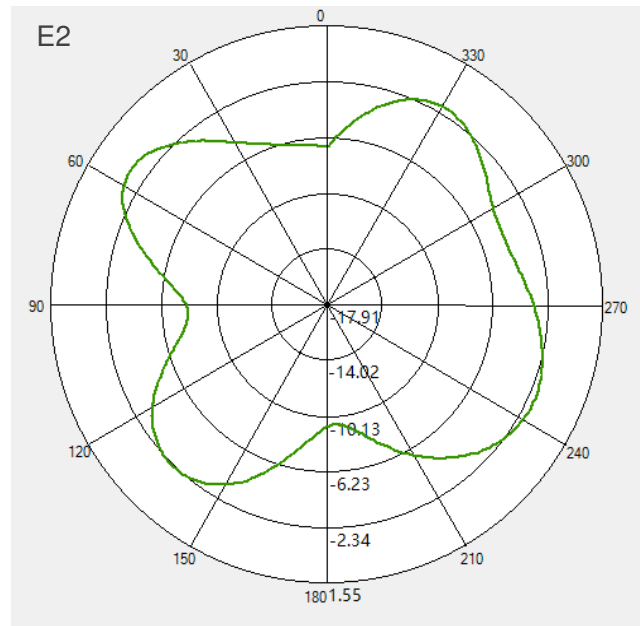
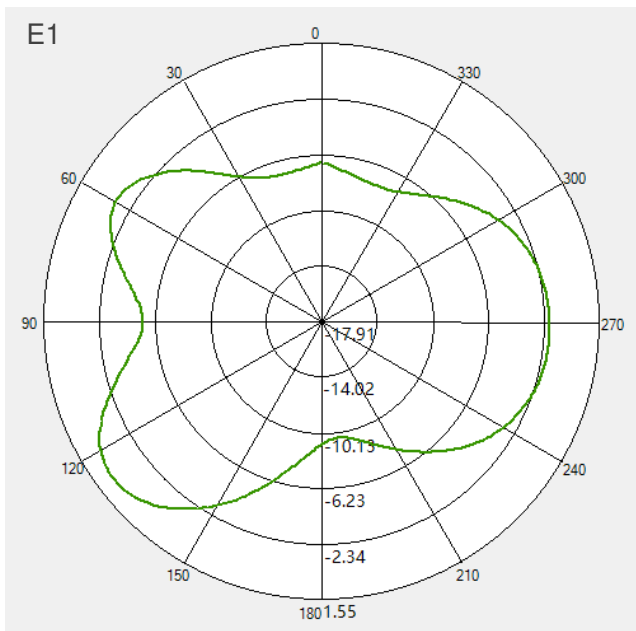
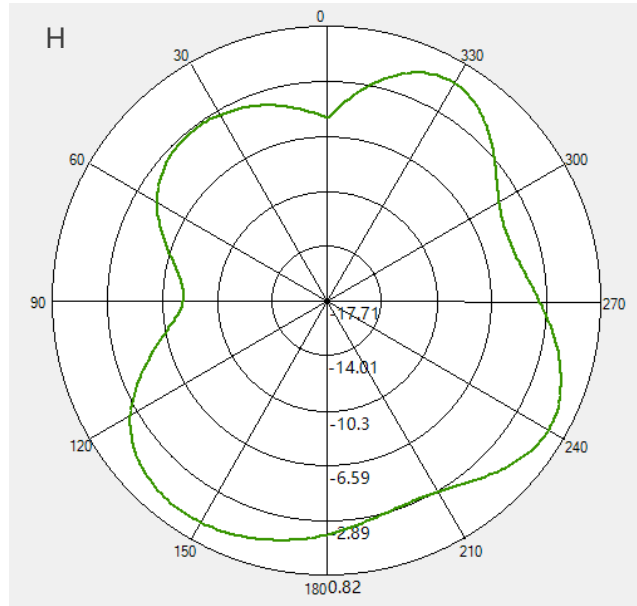
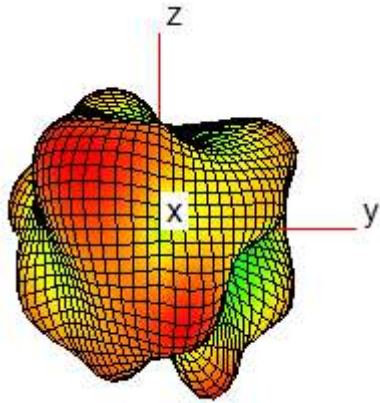
4.5.1. 690 MHz



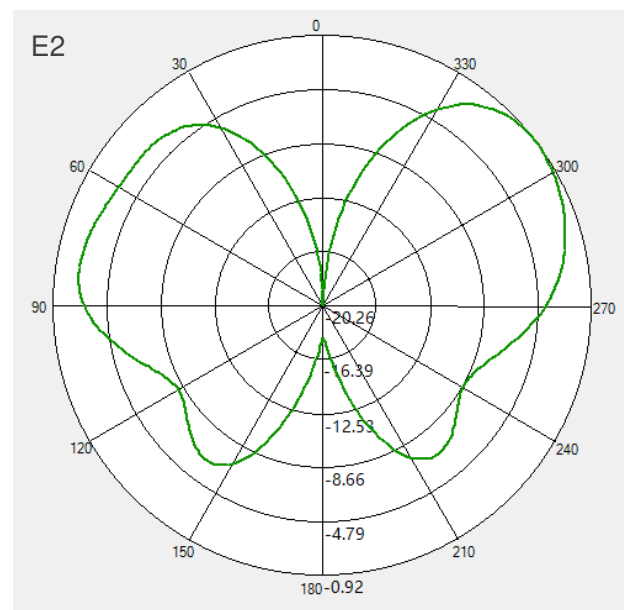
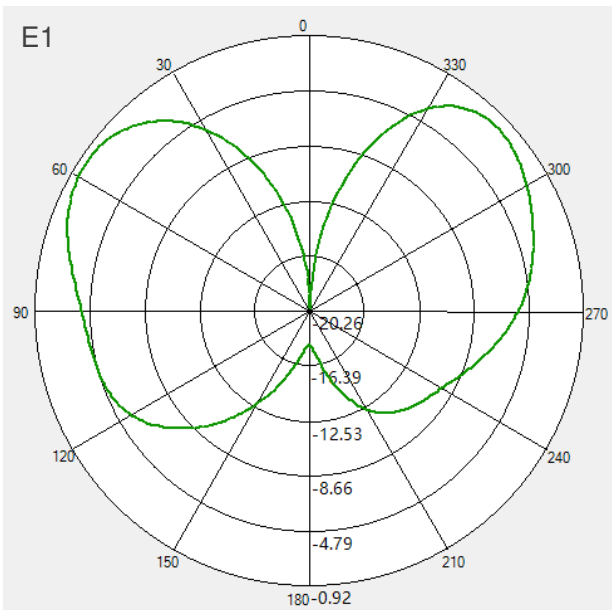
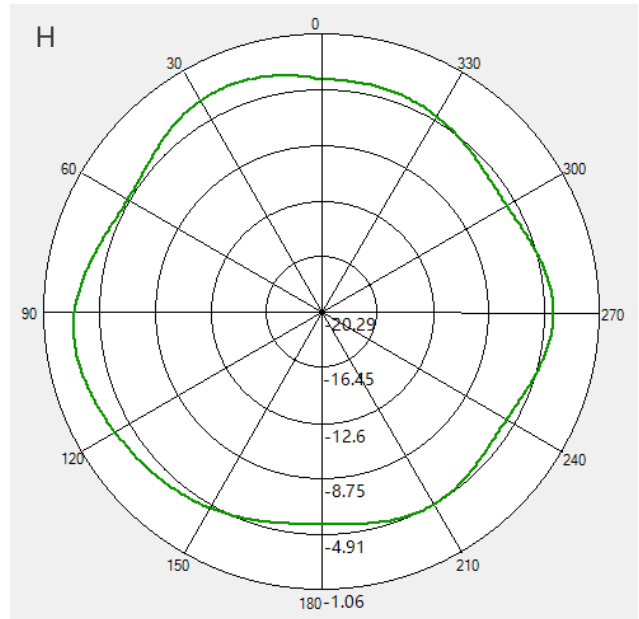
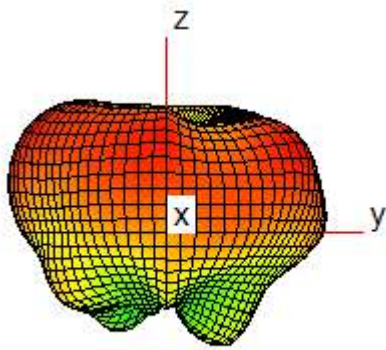
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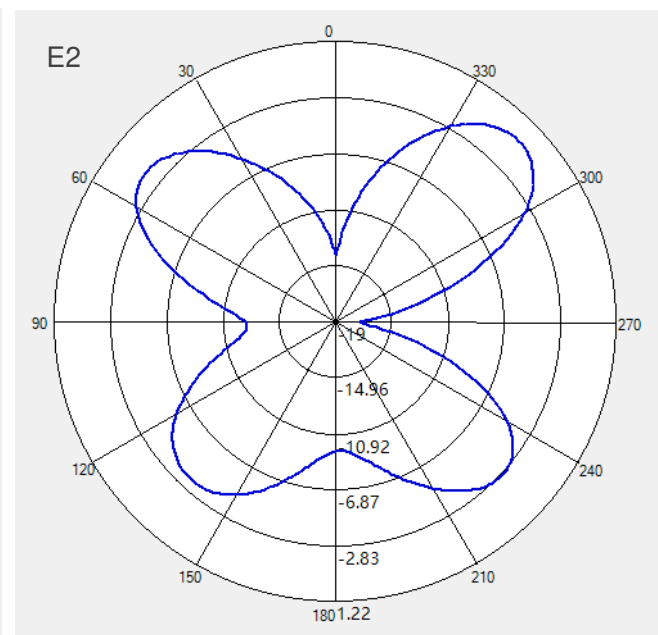
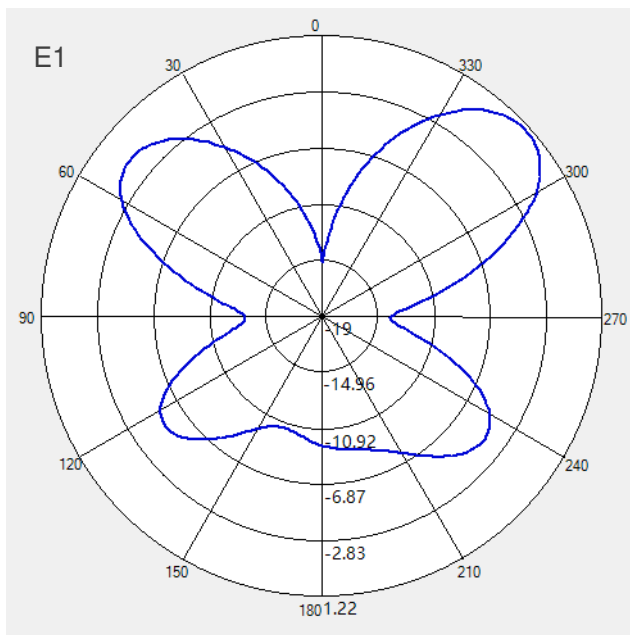
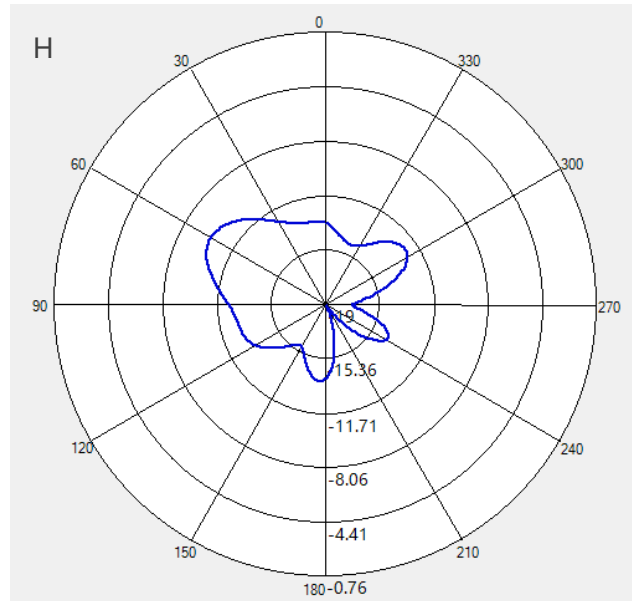
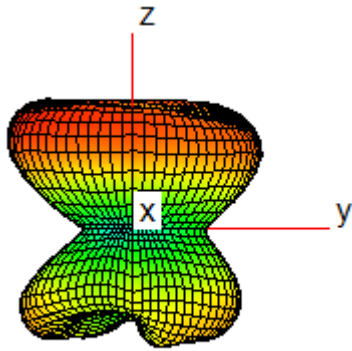
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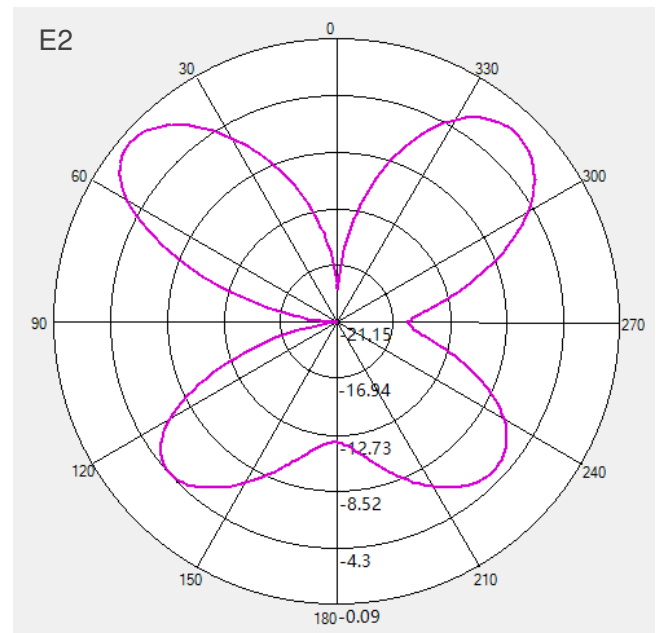
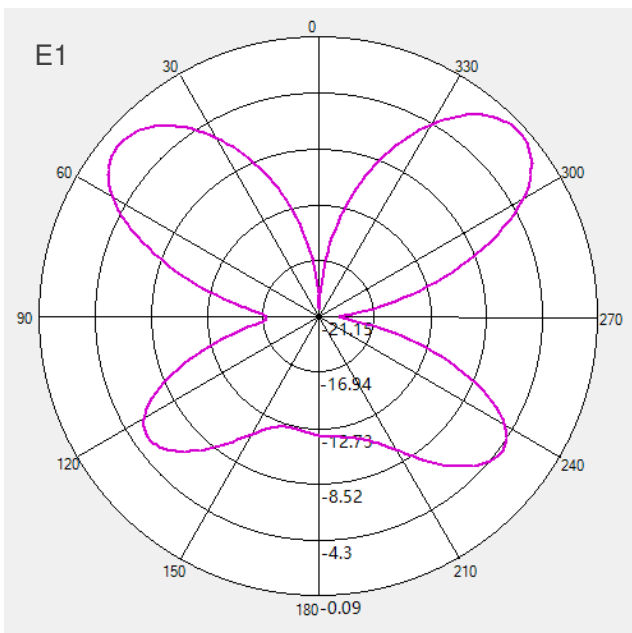
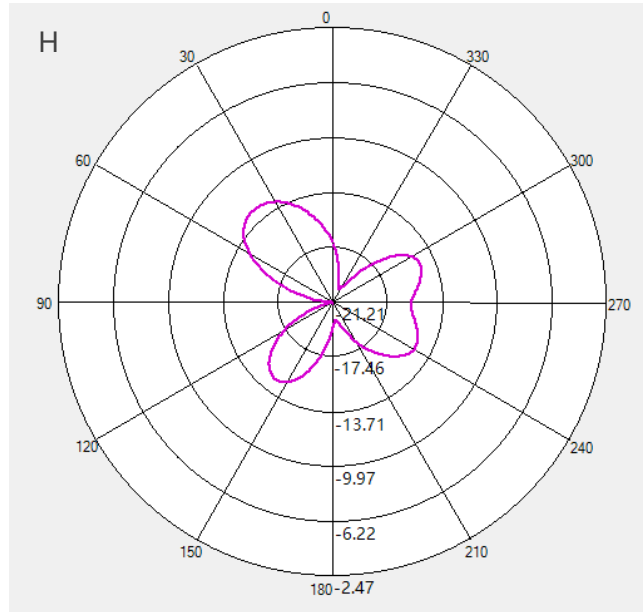
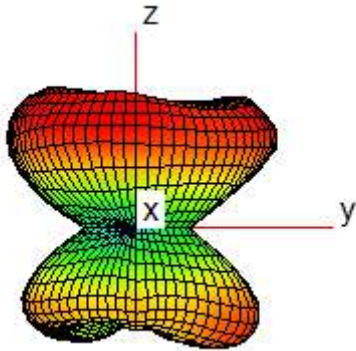
4.5.4. 1710 MHz



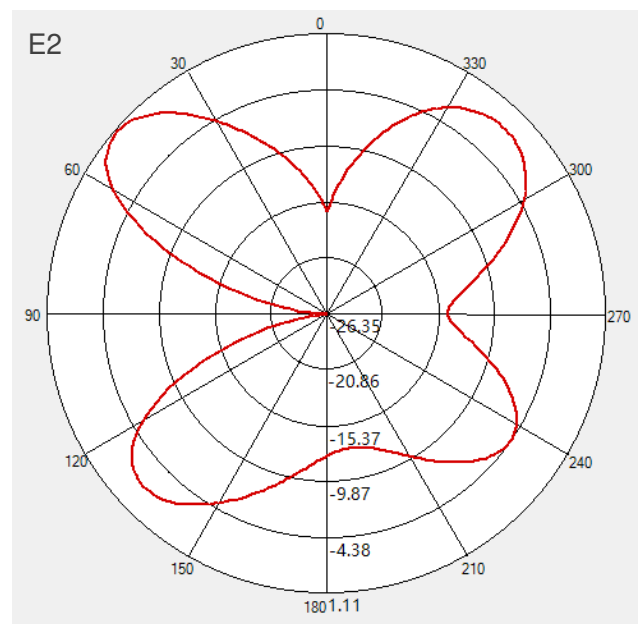
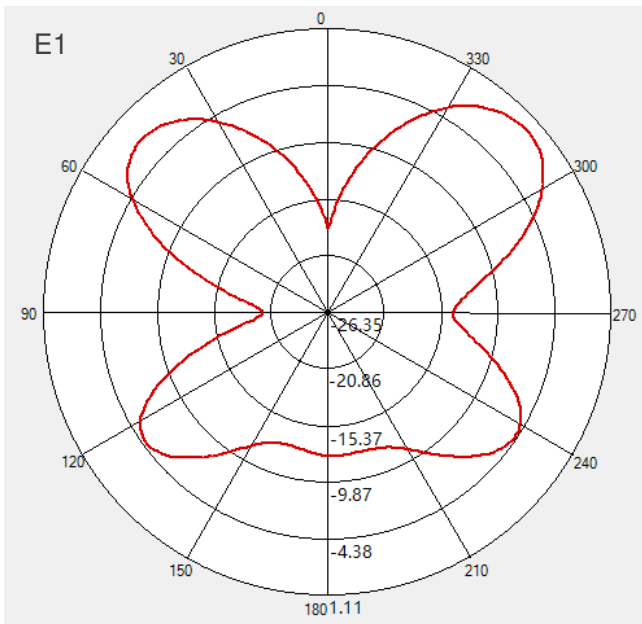
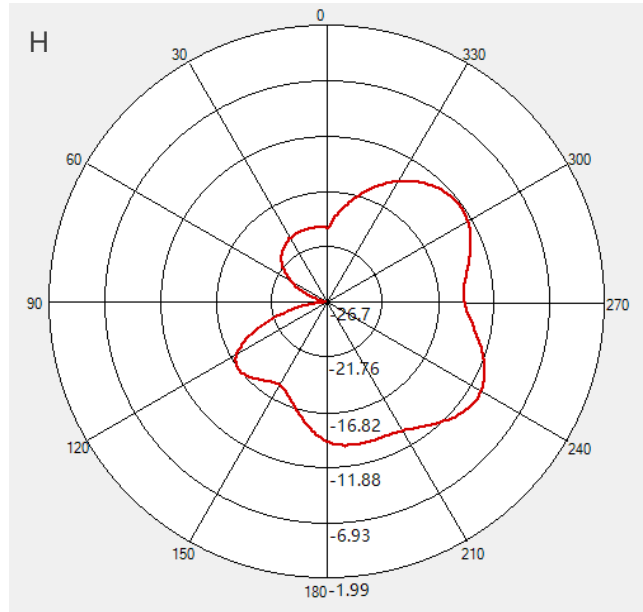
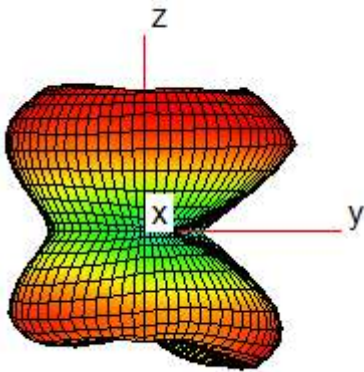
4.5.5. 2170 MHz



4.5.6. 2400 MHz



4.5.7. 2690 MHz



5 Product Size

