

Antenna

YE0002AA Datasheet

Antenna Services

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Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local offices. For more information, please visit:

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About the Document

Revision History

Version	Date	Author	Note
-	2021-04-14	Kenny YIN	Creation of the document
1.0	2020-06-10	Kenny YIN	First official release
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 in Chapter 3.
2.0	2021-05-06	Aria CHU	Updated all test data in the datasheets.
2.1	2021-07-01	Kenny YIN	Updated working temperature in Chapter 3 and added test condition in Chapter 4.5.
2.2	2021-12-01	Kenny YIN	Updated the product description in Chapter 1.
2.3	2022-12-28	Aria CHU	Deleted the IP rating (Chapter 3).

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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

- Cellular LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	699–2700 MHz
Input Impedance	50 Ω
VSWR	≤ 3.0
Gain	≤ 3.0 dBi
Polarization Type	Linear

Mechanical Specifications

Antenna Size	174.6 mm \times 19.2 mm
Casing	ABS + PC
Connector Type	RP-SMA Male (Center Receptacle)
Working Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Radome Color	White

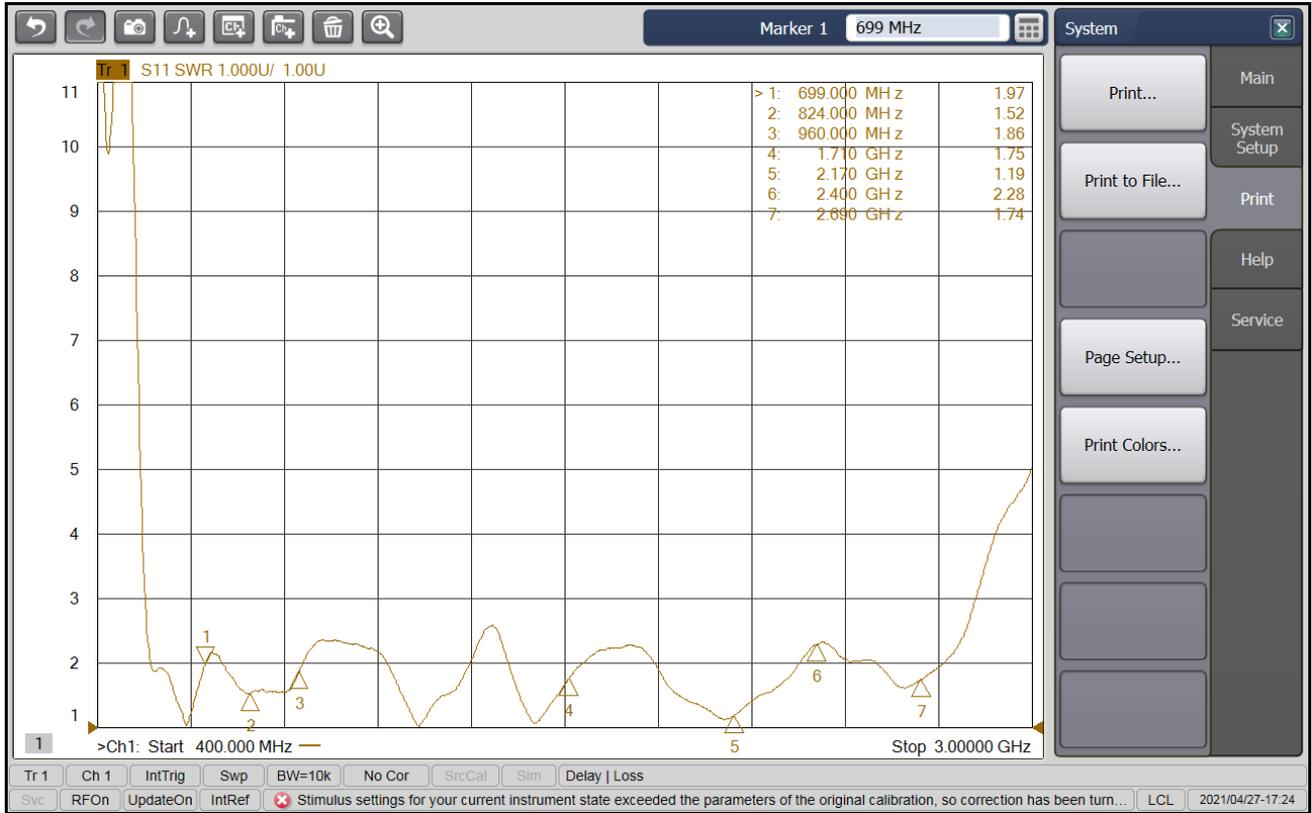
4 Overall Performance

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

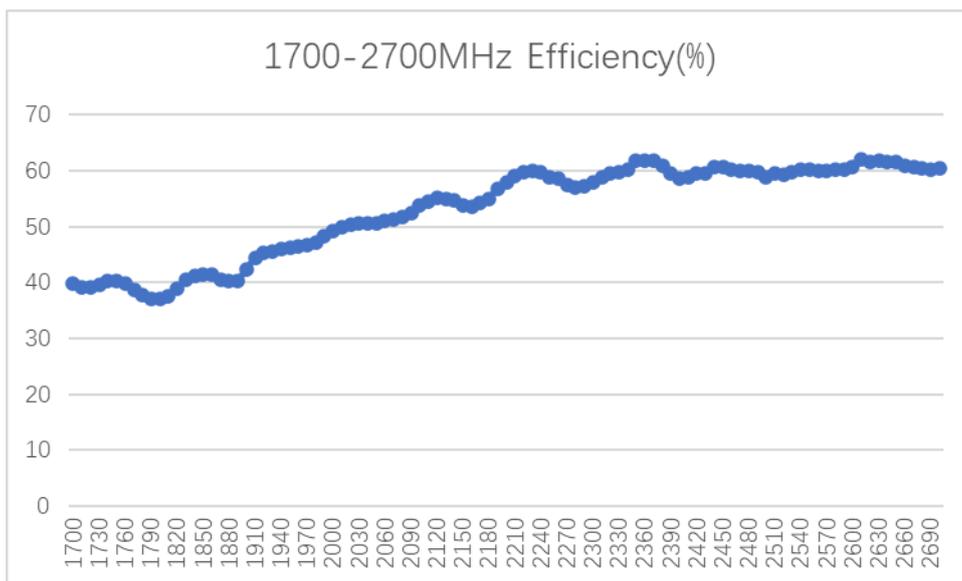
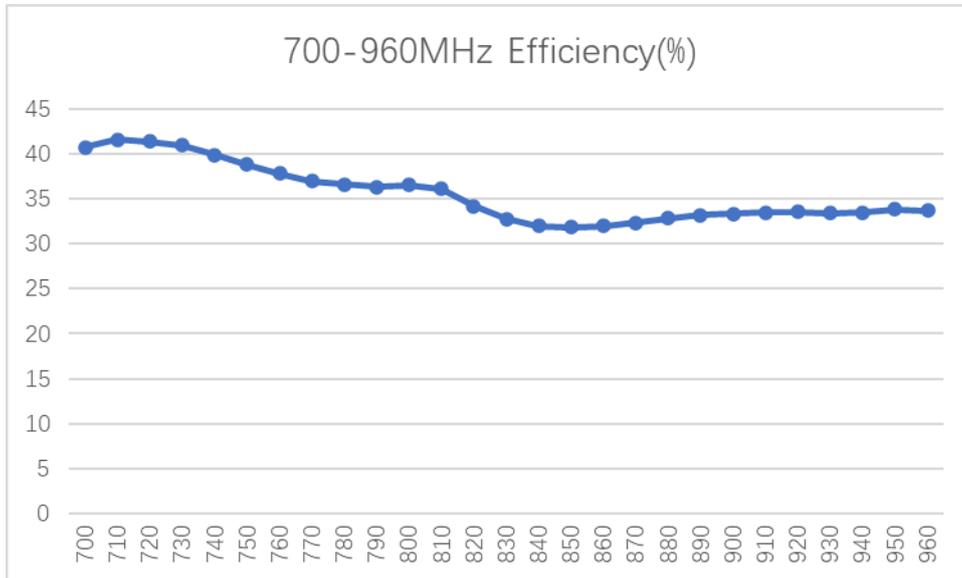


4.2. VSWR



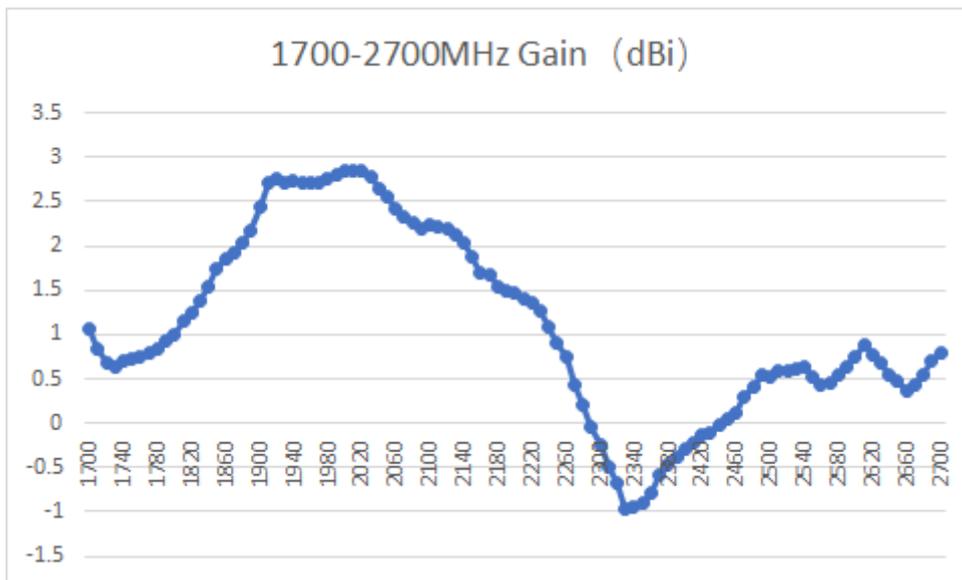
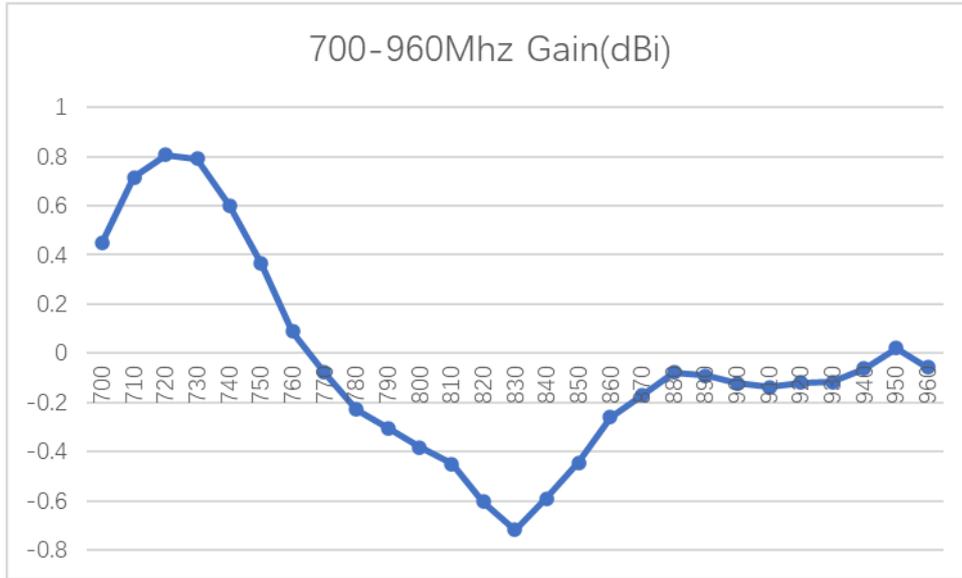
Frequency (MHz)	699	824	960	1710	2170	2400	2690
VSWR	1.97	1.52	1.86	1.75	1.19	2.28	1.74

4.3. Efficiency



Frequency (MHz)	700	820	960	1710	2170	2400	2690
Efficiency (%)	40.76	34.25	33.74	39.98	54.24	55.43	60.25

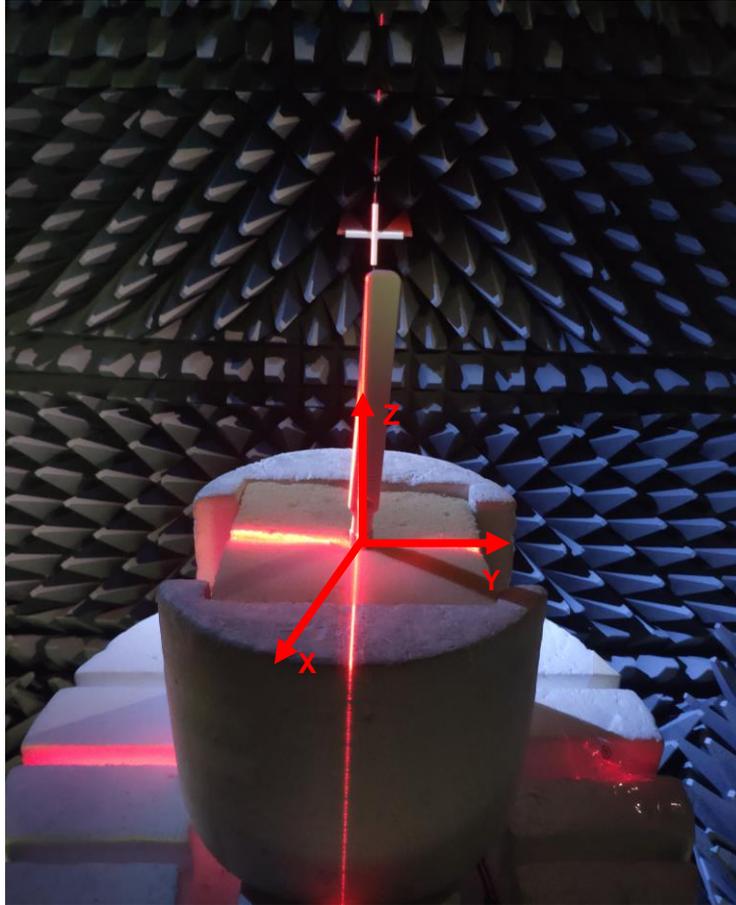
4.4. Gain



Frequency (MHz)	700	820	960	1710	2170	2400	2690
Gain (dBi)	0.45	-0.60	-0.06	0.84	1.67	-0.29	0.69

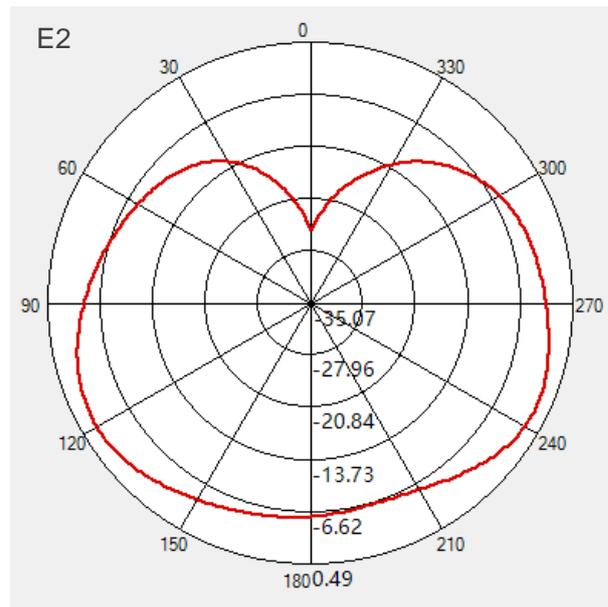
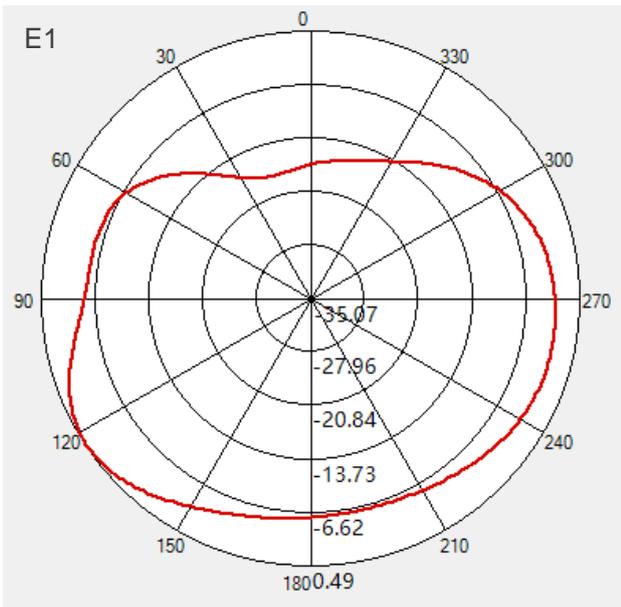
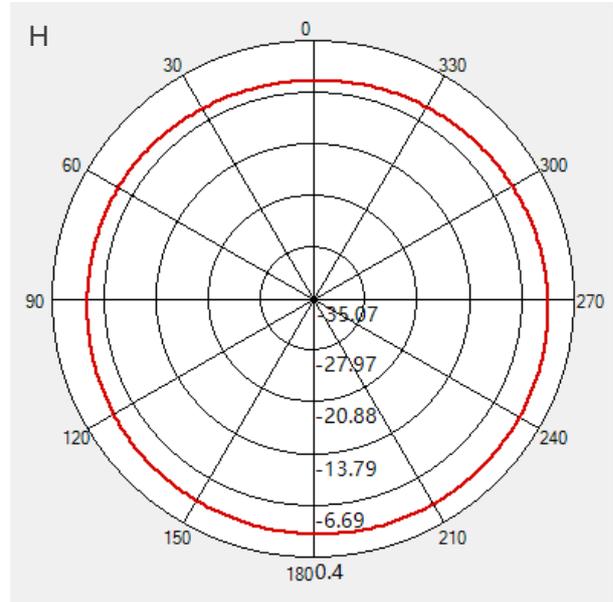
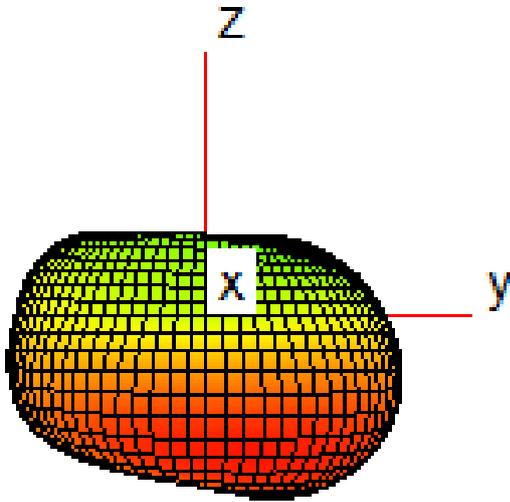
4.5. Radiation Pattern

- Test Condition: free space status.

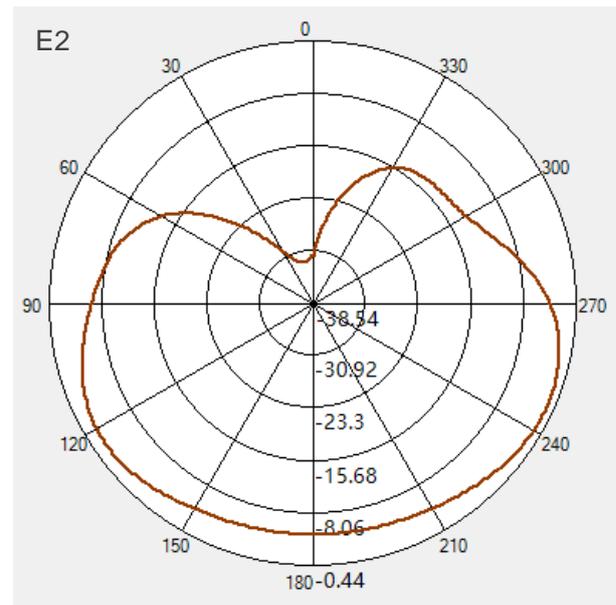
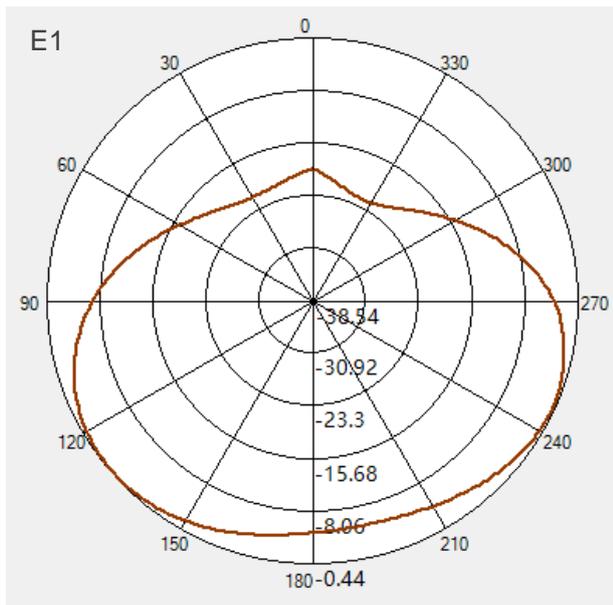
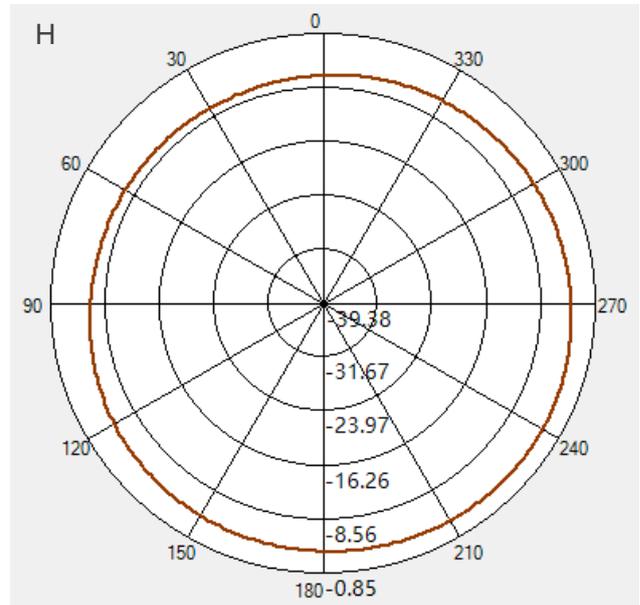
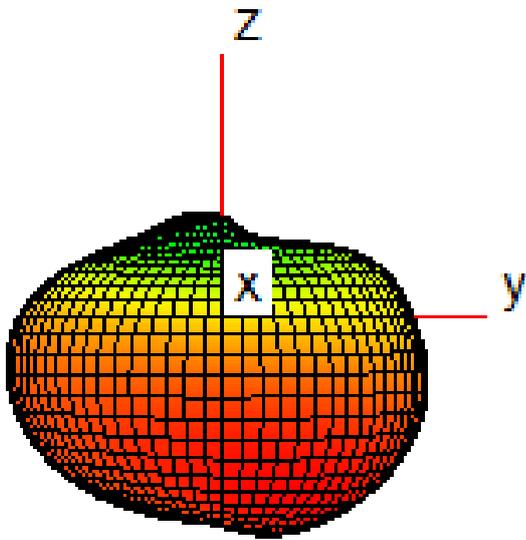


H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

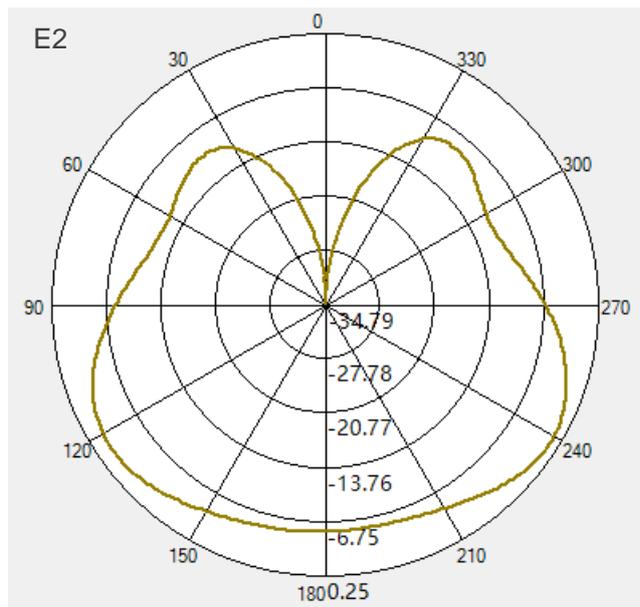
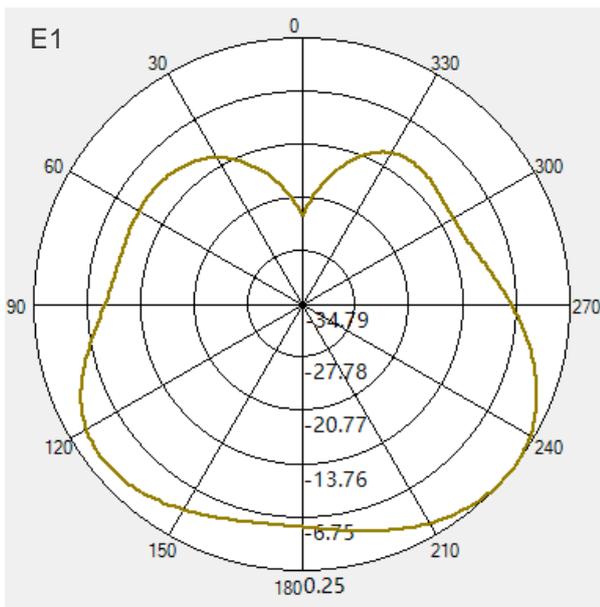
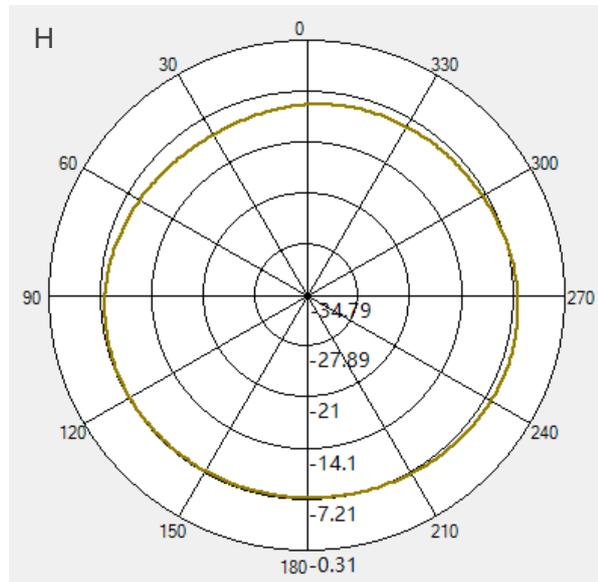
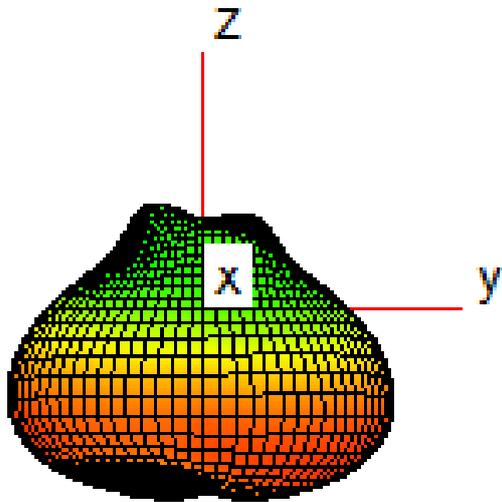
4.5.1. 700 MHz



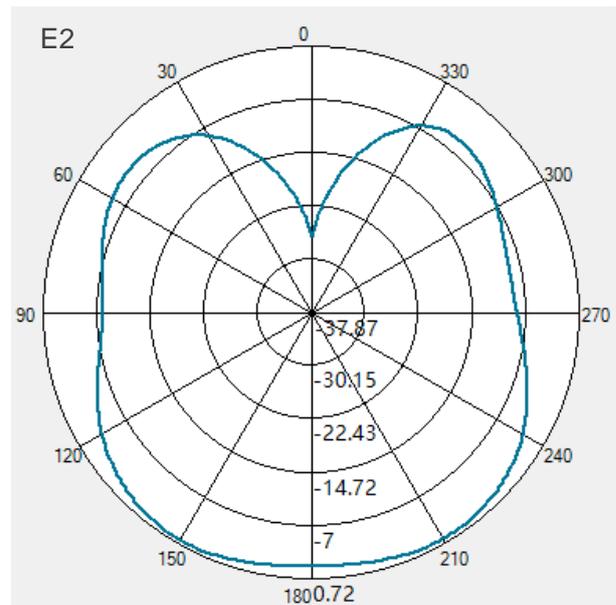
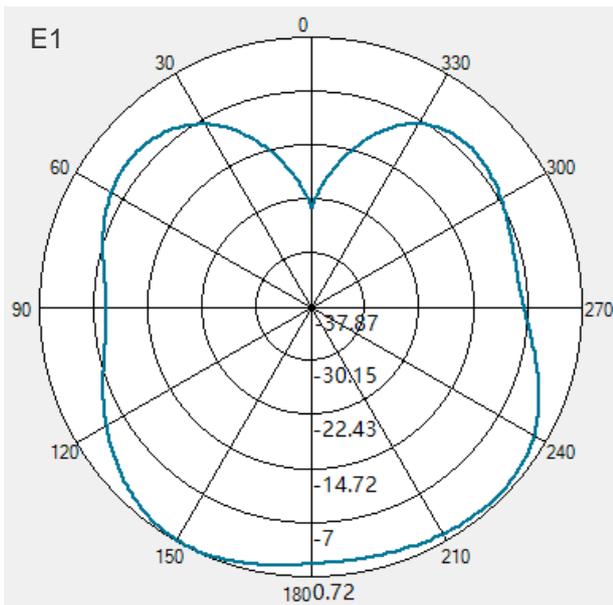
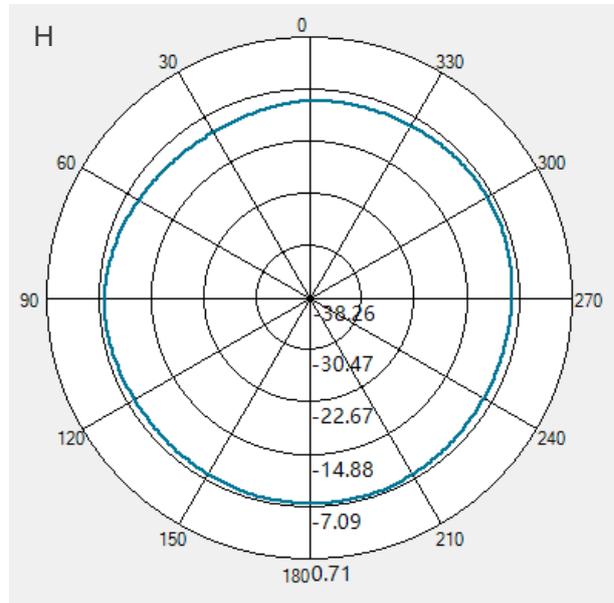
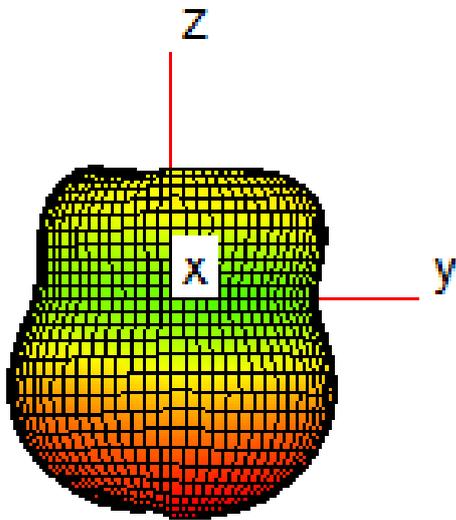
4.5.2. 820 MHz



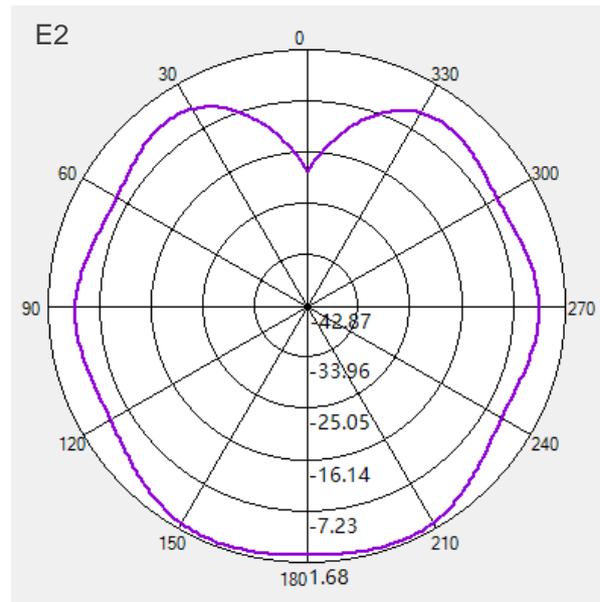
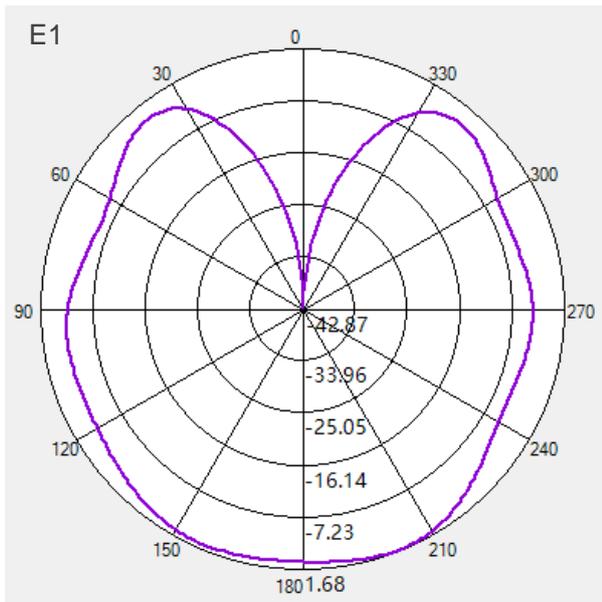
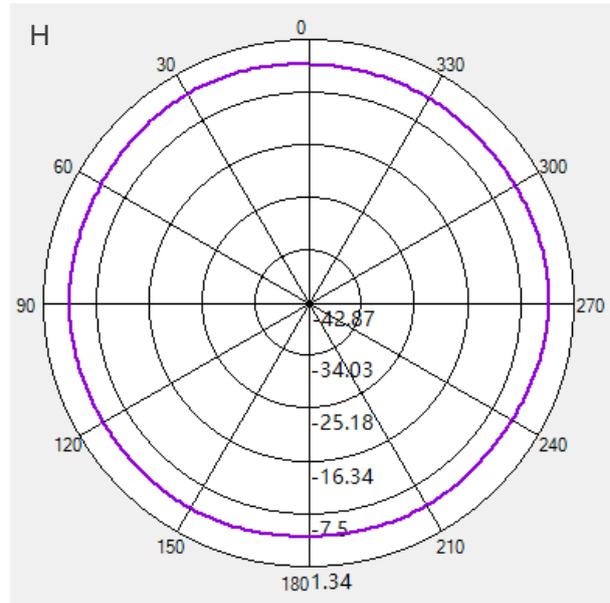
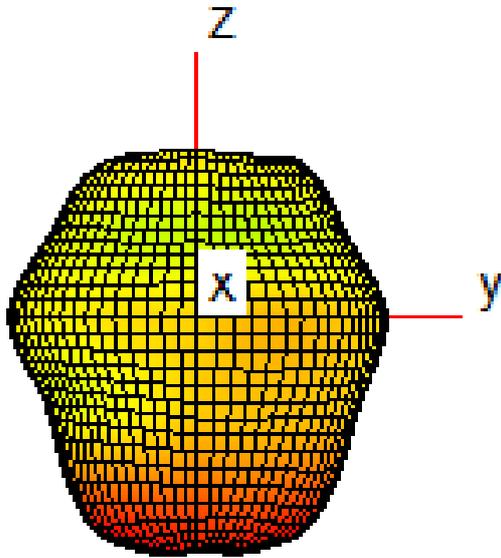
4.5.3. 960 MHz



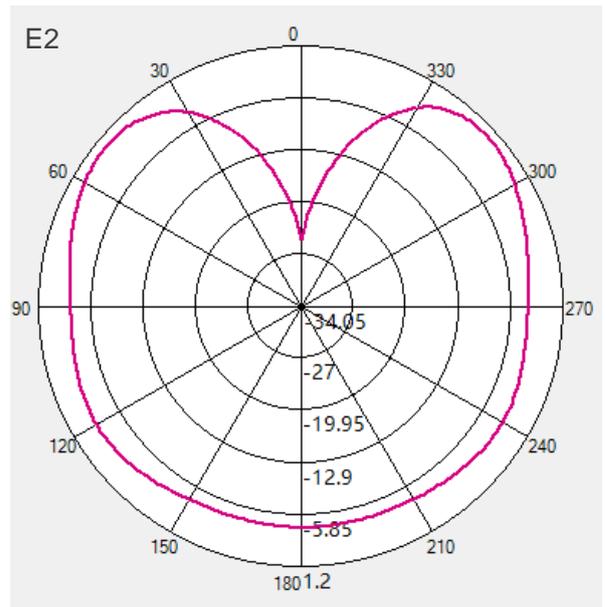
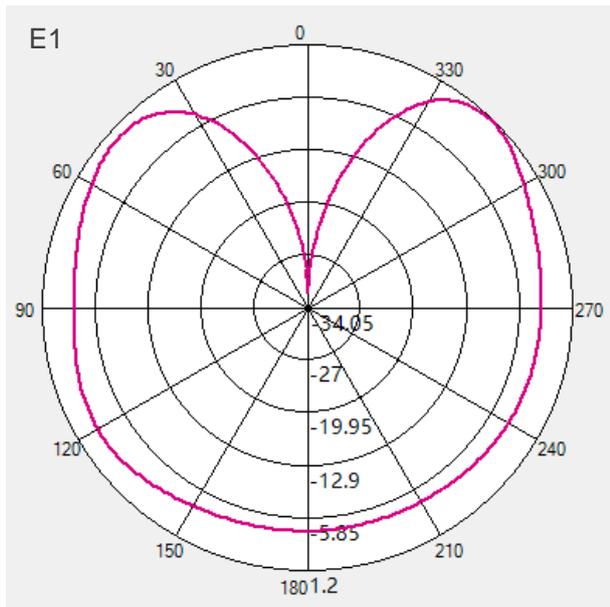
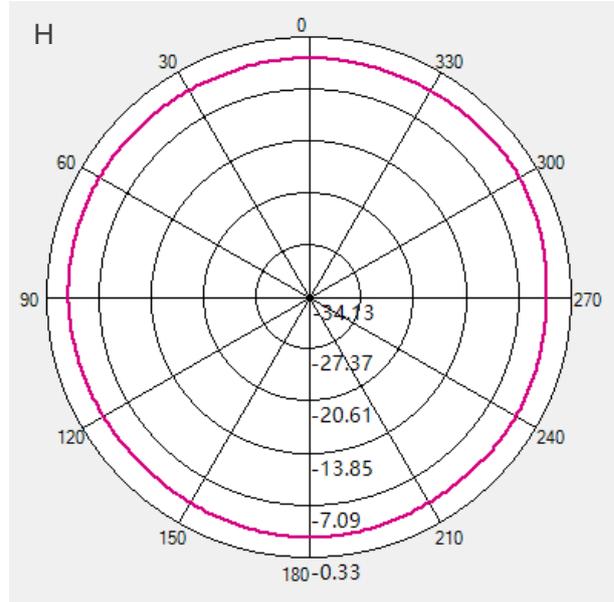
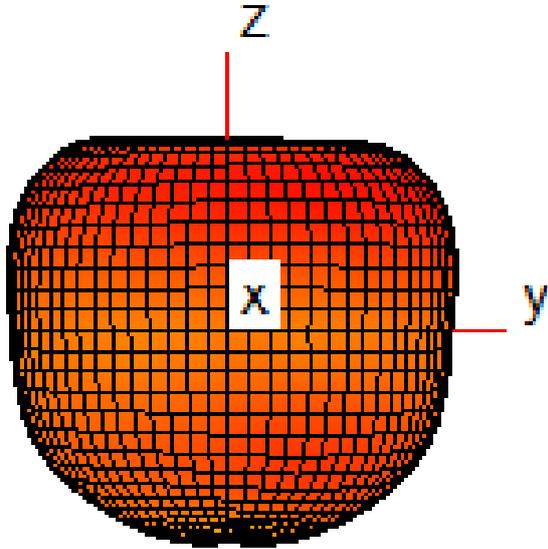
4.5.4. 1710 MHz



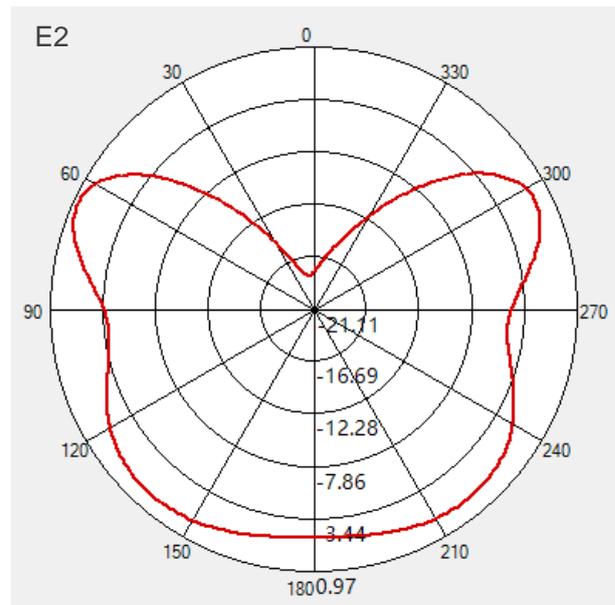
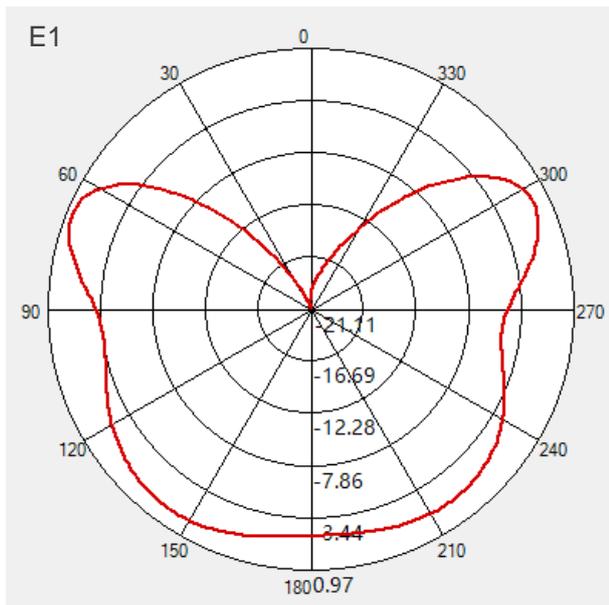
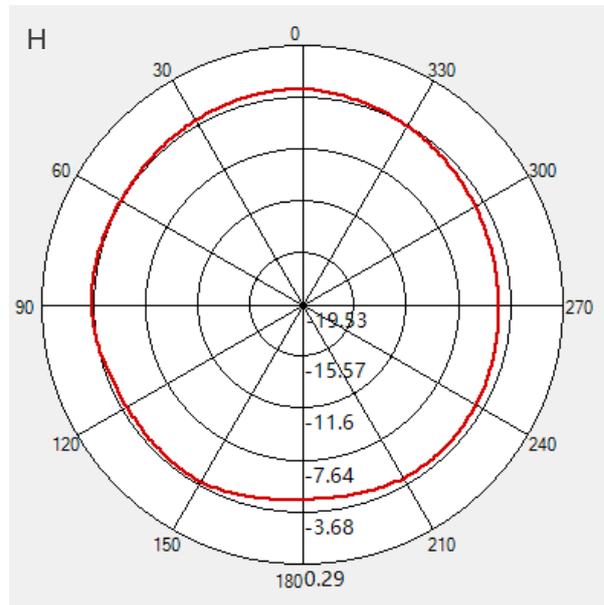
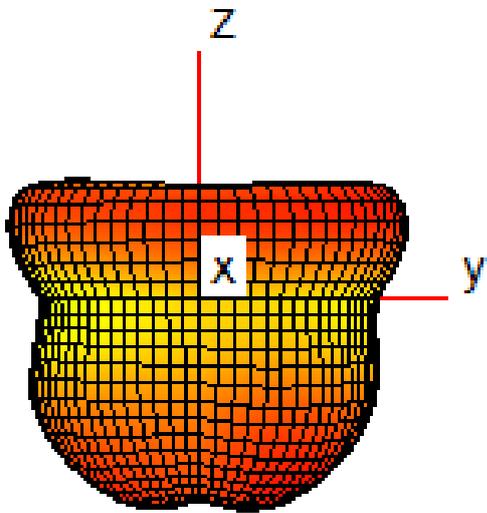
4.5.5. 2170 MHz



4.5.6. 2400 MHz



4.5.7. 2690 MHz



5 Product Size

