

# Antenna

# YE0006AA Datasheet

## Antenna Services

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# About the Document

## Revision History

Version	Date	Author	Note
-	2021-04-14	Kenny YIN	Creation of the document
1.0	2020-06-16	Kenny YIN	First official release
1.1	2020-12-11	Kenny YIN	Updated the antenna image in Chapter 2.
1.2	2021-01-12	Kenny YIN	Updated the efficiency data in Chapter 4.
1.3	2021-01-27	Kenny YIN	Added IP rating description and installation method.
2.0	2021-04-30	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	2021-12-01	Aria CHU	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

- Cellular LTE
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	700–2700 MHz
Input Impedence	50 Ω
VSWR	≤ 3.0
Gain	≤ 3.5 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.)	1.97	-	-	2.3	2.3	-	-	-
Average Efficiency (%)	28	-	-	33	32	-	-	-
Max. Peak Gain (dBi)	3.5	-	-	2.8	3.0	-	-	-

#### Mechanical Specifications

Antenna Size	318 mm × Φ 30 mm RG174 Cable Length = 1500 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Magnet
IP Rating	IP65

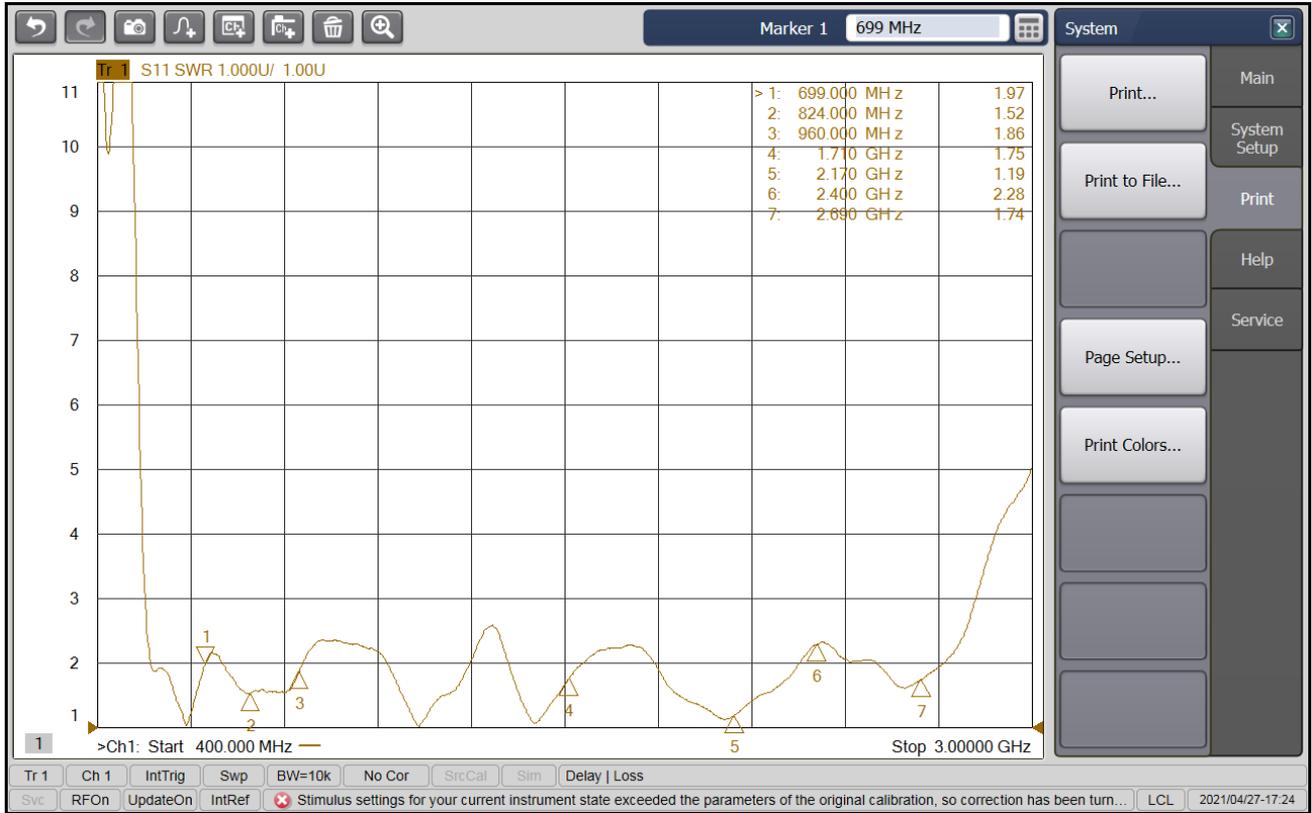
## 4 Overall Performance

### 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

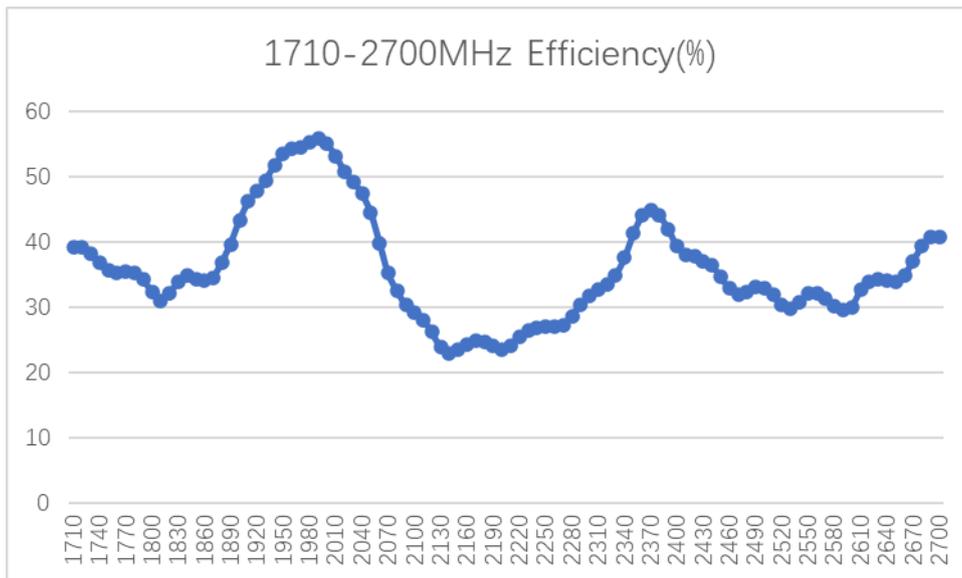
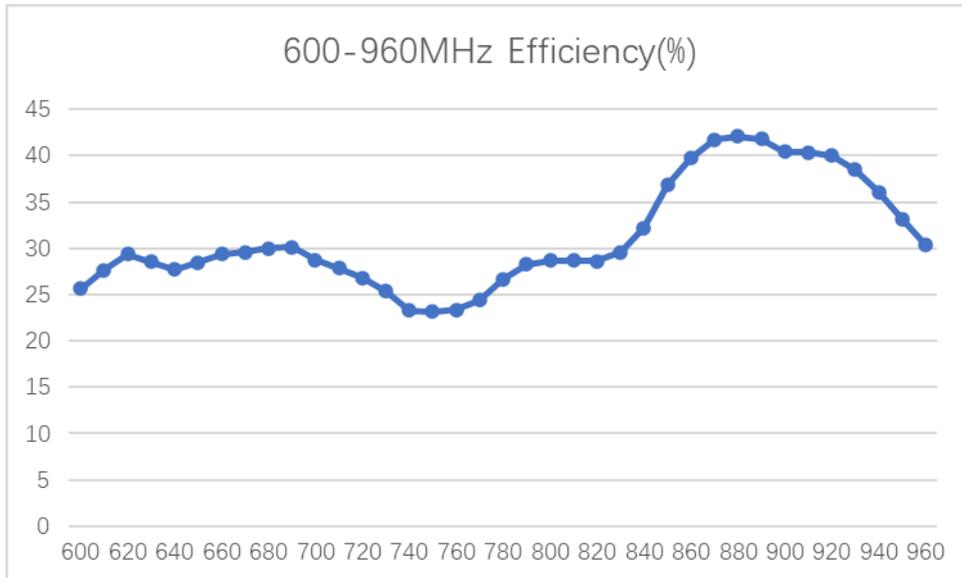


## 4.2. VSWR



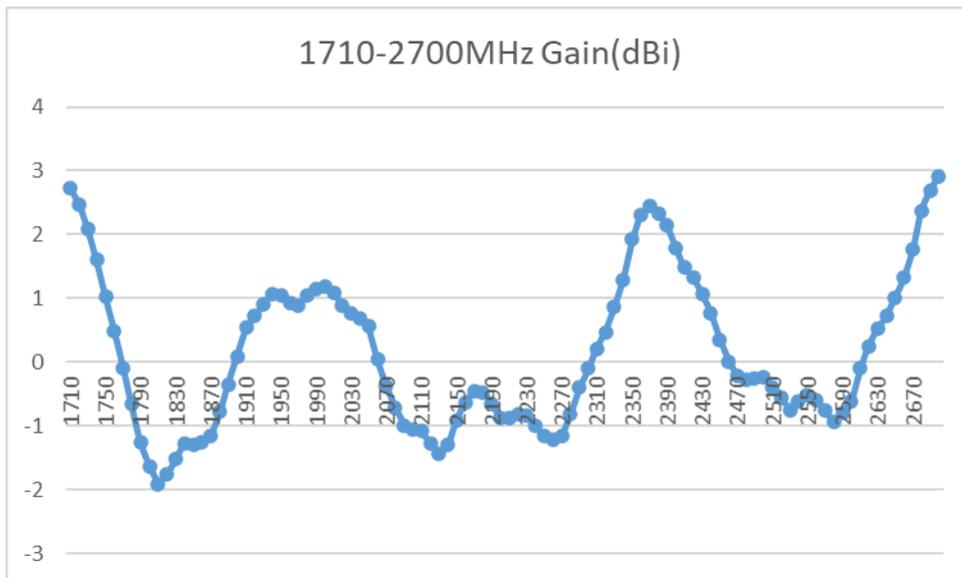
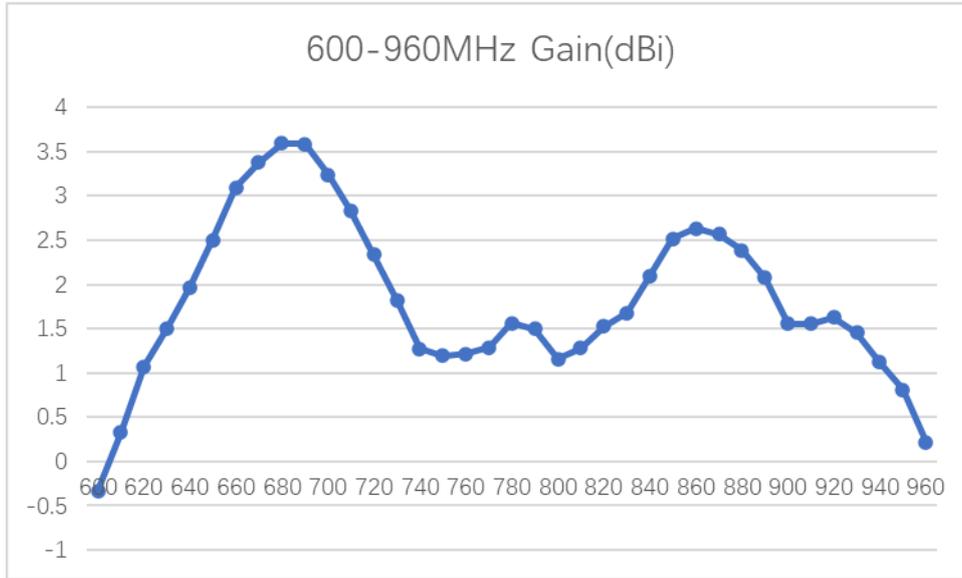
Frequency (MHz)	700	820	960	1710	2170	2400	2690
VSWR	1.97	1.52	1.86	1.75	1.19	2.28	1.74

### 4.3. Efficiency



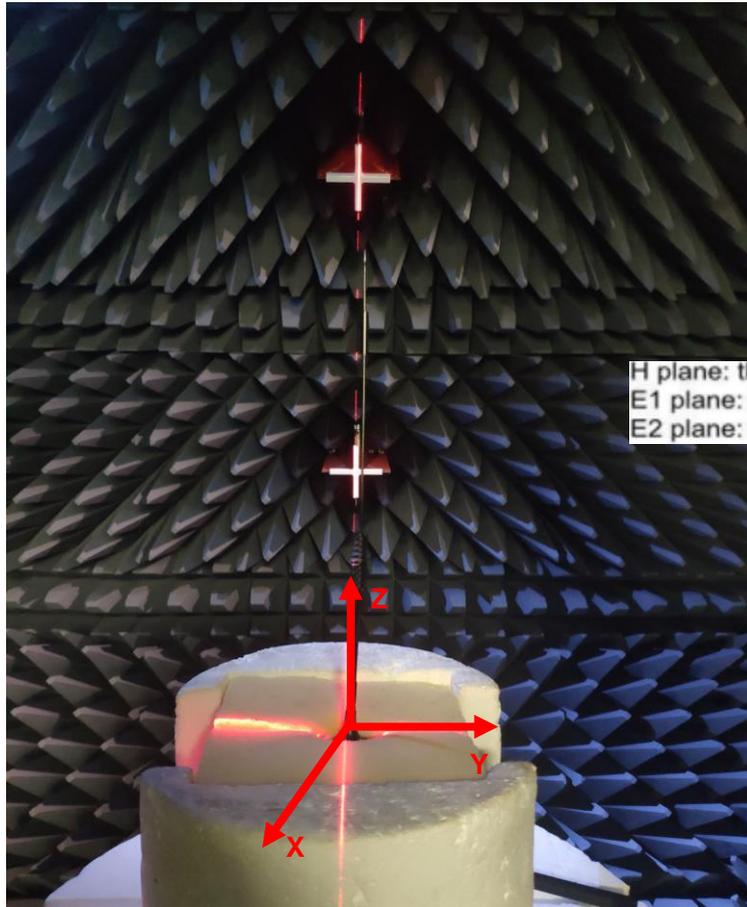
<b>Frequency (MHz)</b>	700	820	960	1710	2170	2400	2690
<b>Efficiency (%)</b>	28.7	28.6	30.4	39.3	24.9	39.5	40.8

### 4.4. Gain



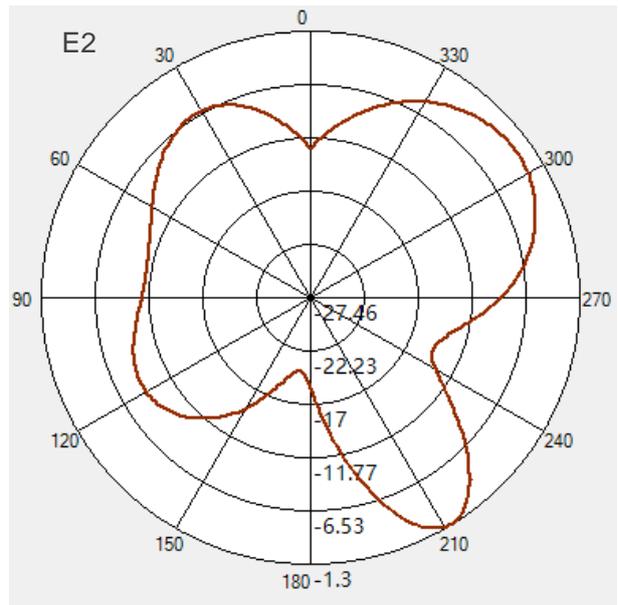
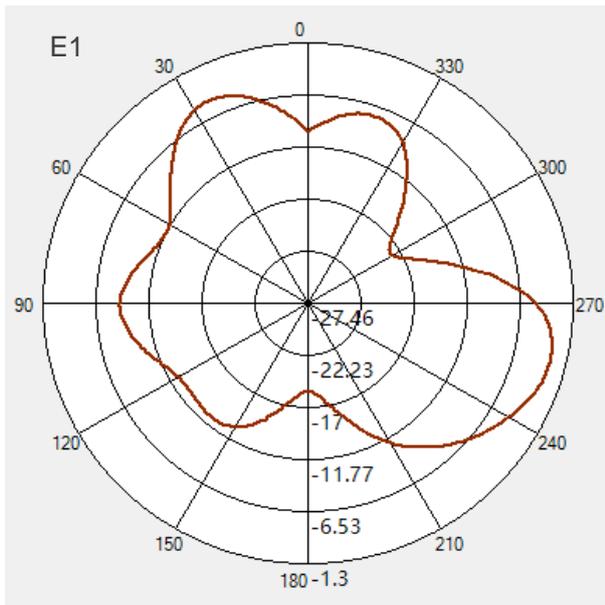
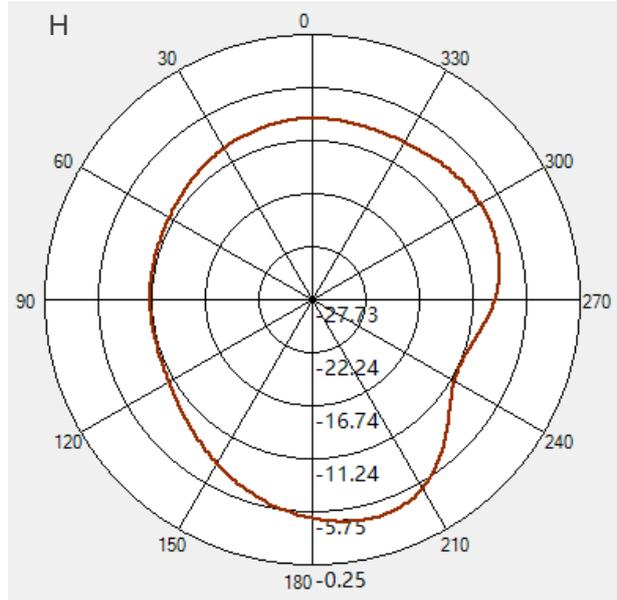
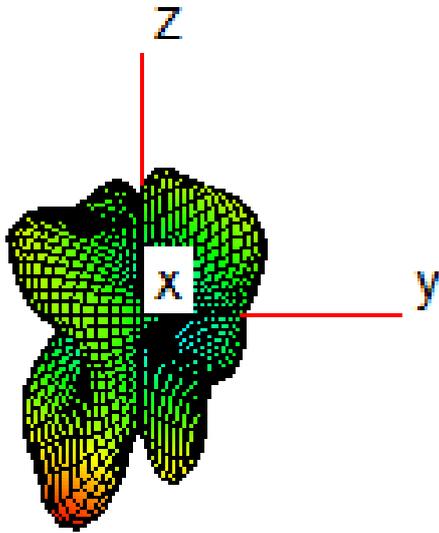
<b>Frequency (MHz)</b>	700	820	960	1710	2170	2400	2690
<b>Gain (dBi)</b>	3.24	1.53	0.22	2.72	-0.46	1.79	2.69

### 4.5. Radiation Pattern

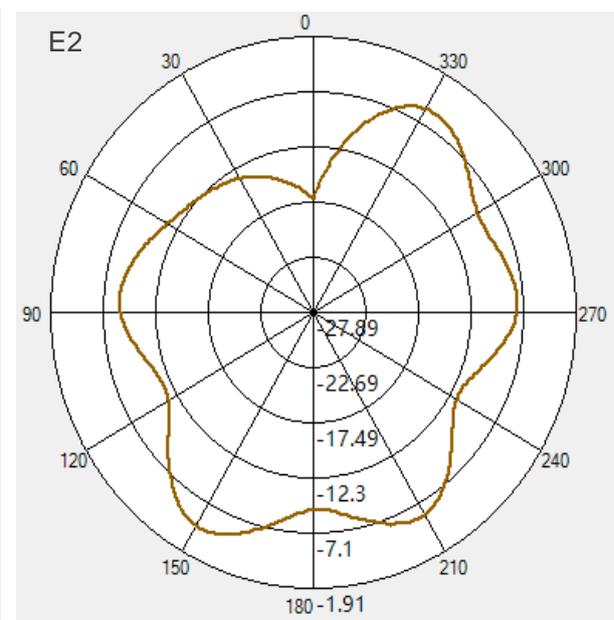
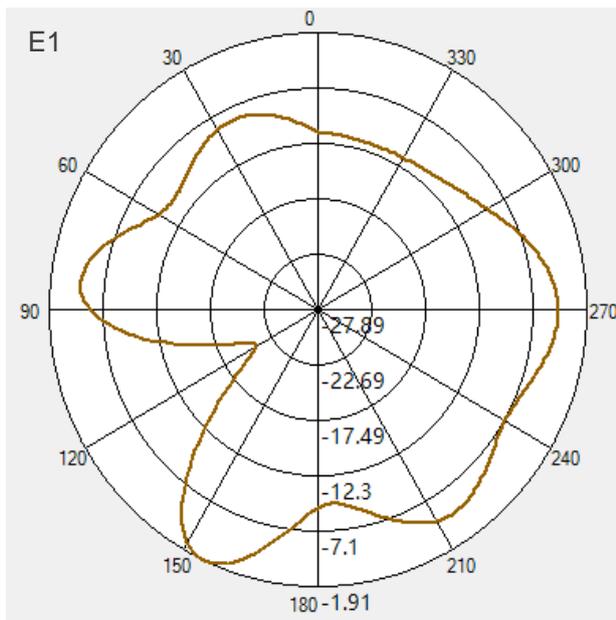
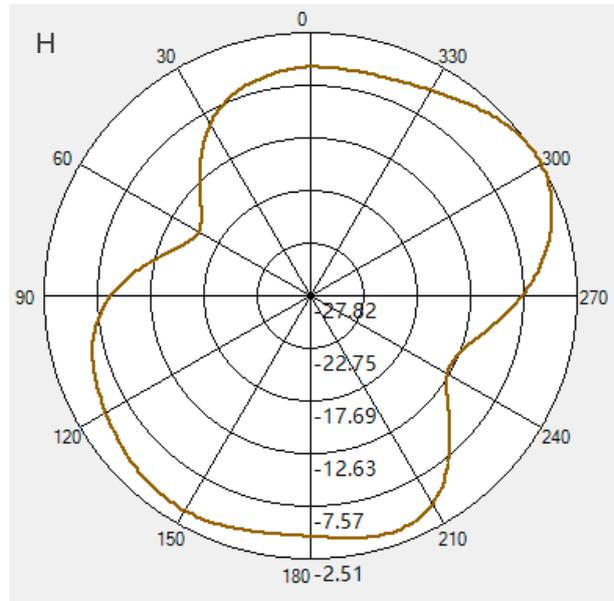
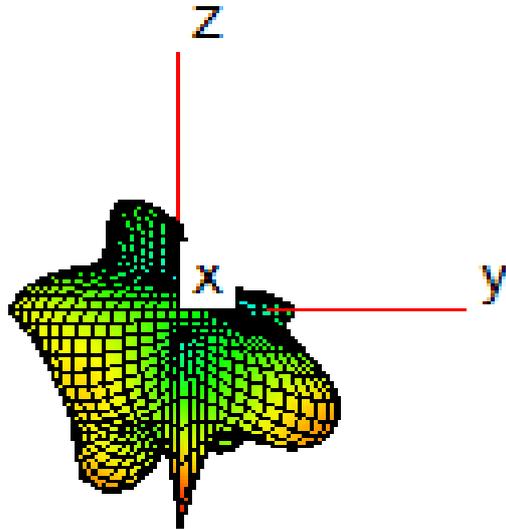


H plane: the tangent of XY  
E1 plane: the tangent of XZ  
E2 plane: the tangent of YZ

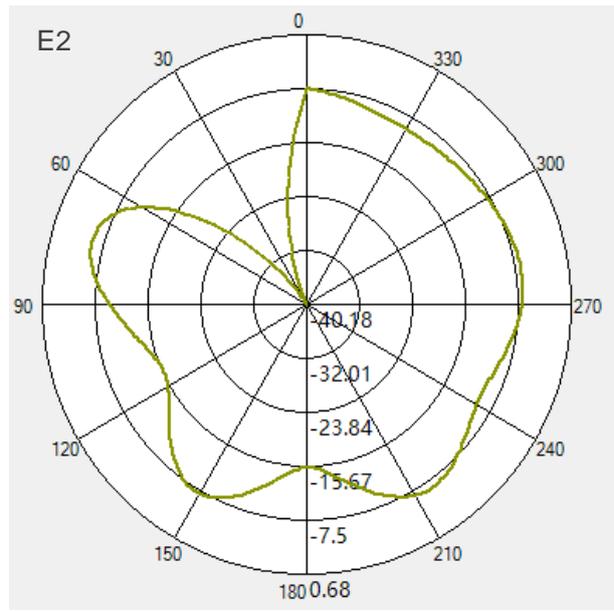
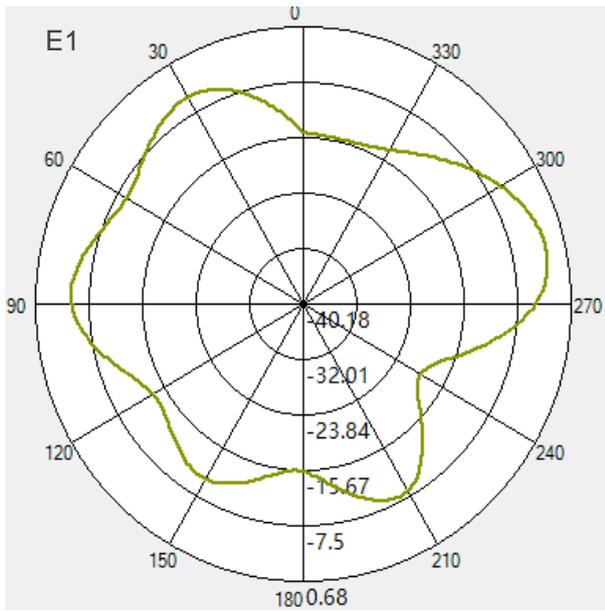
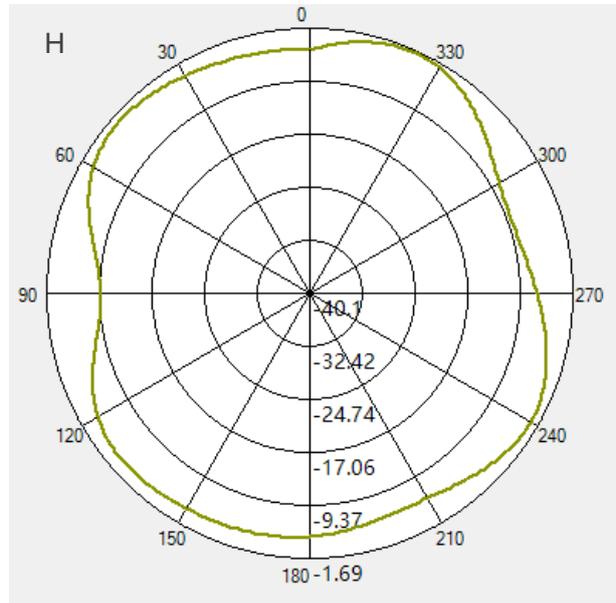
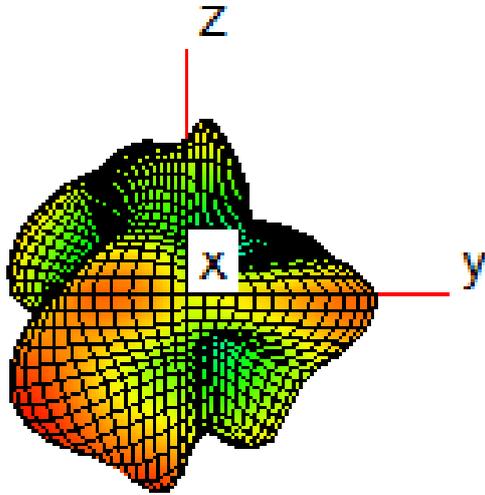
4.5.1. 700 MHz



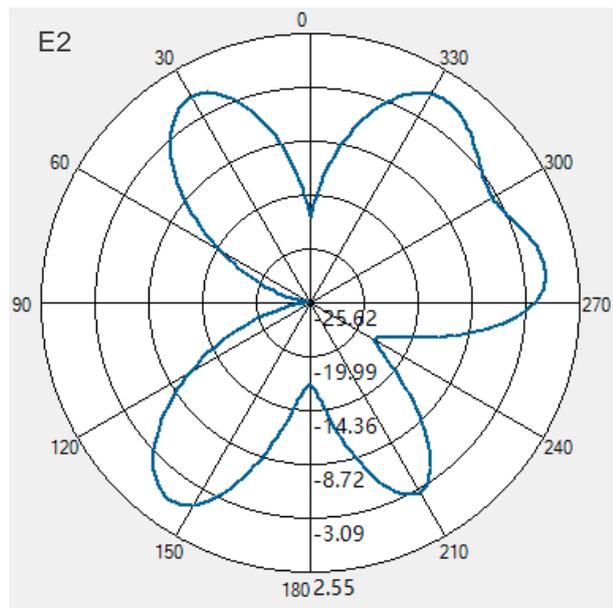
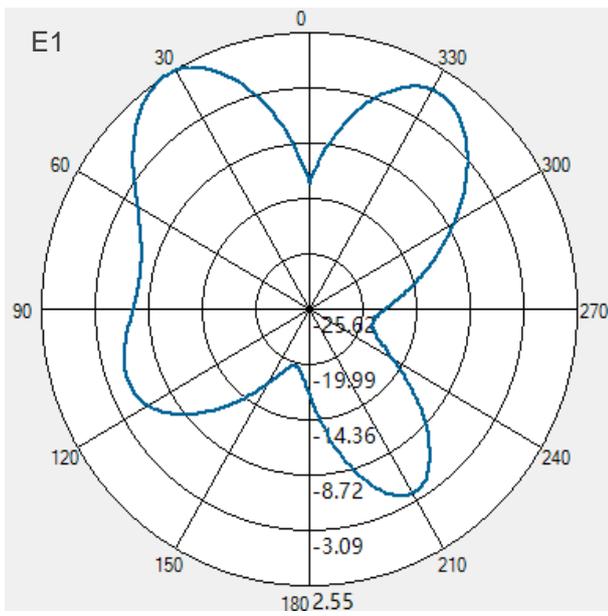
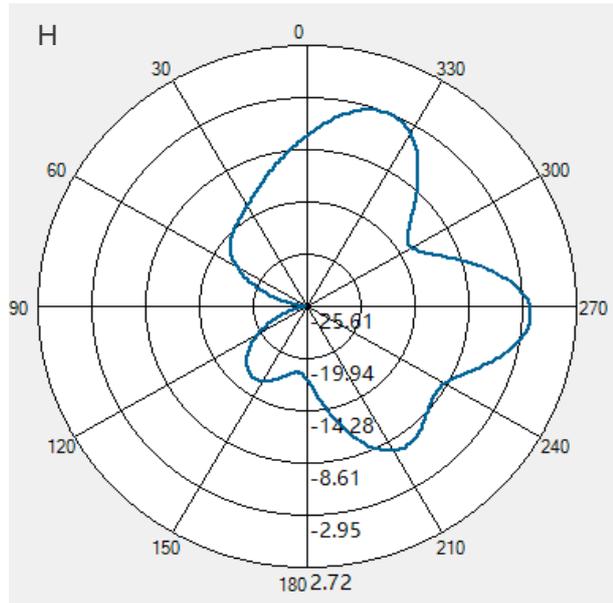
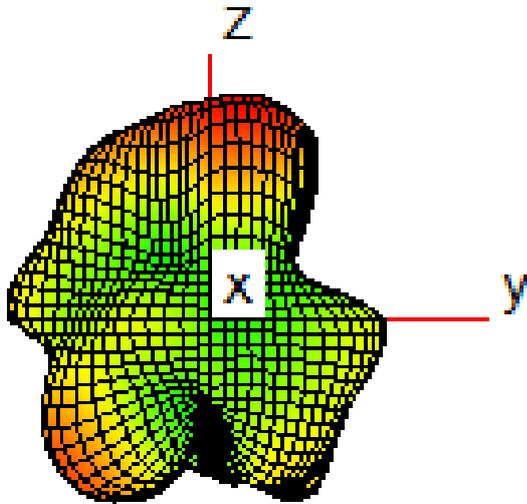
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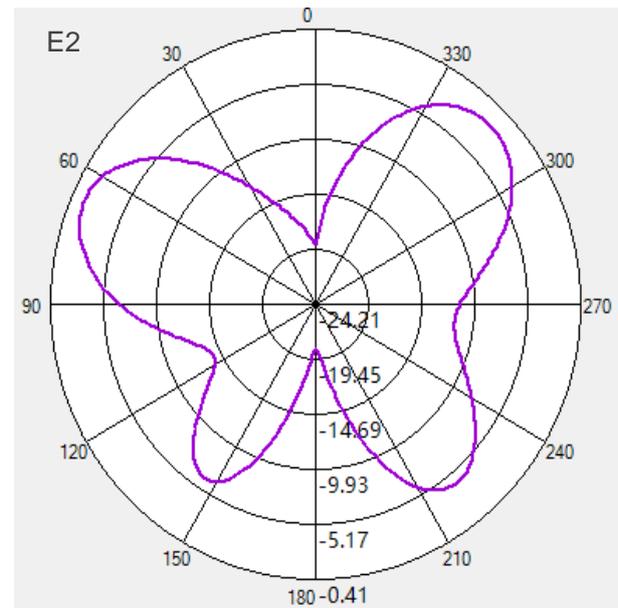
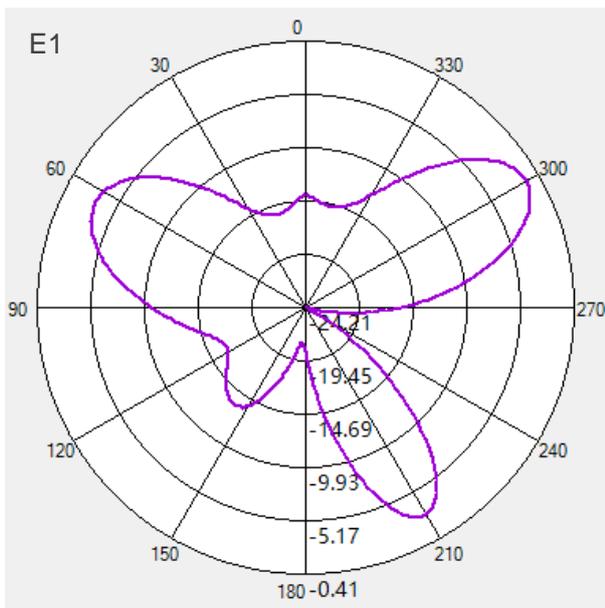
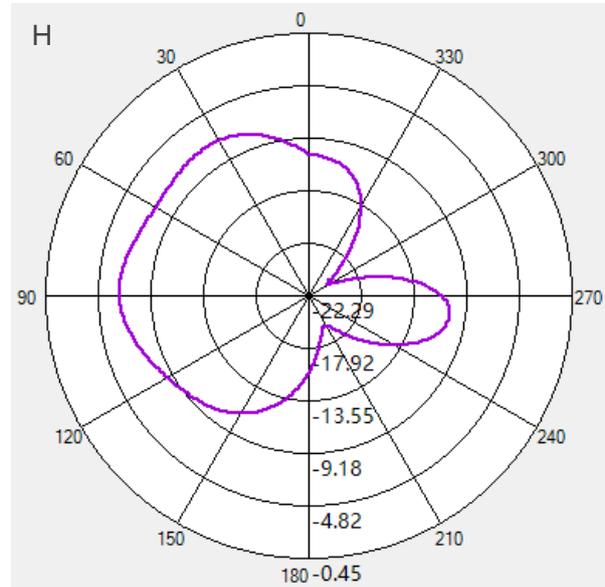
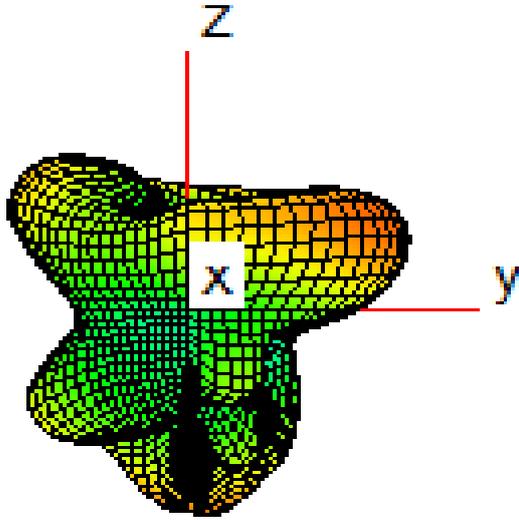
4.5.3. 960MHz



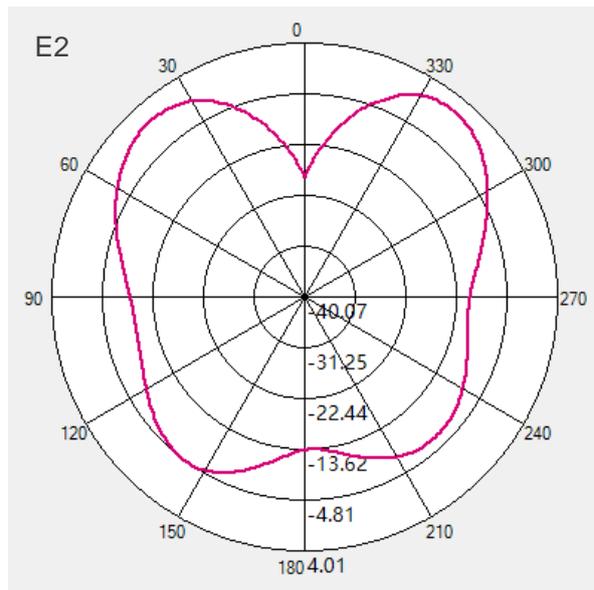
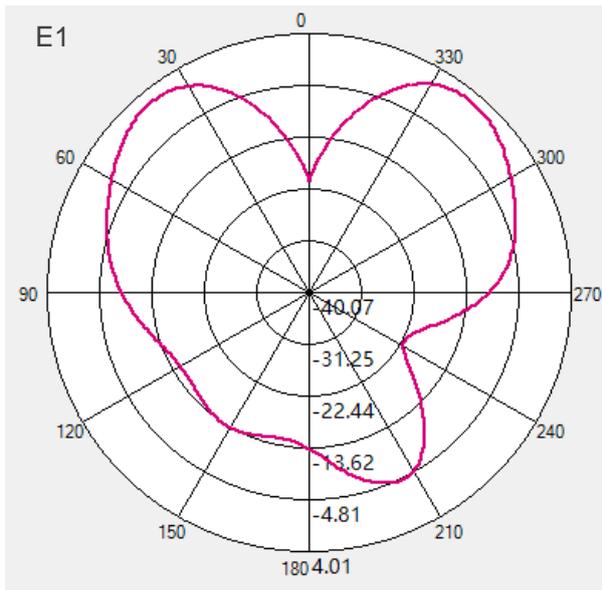
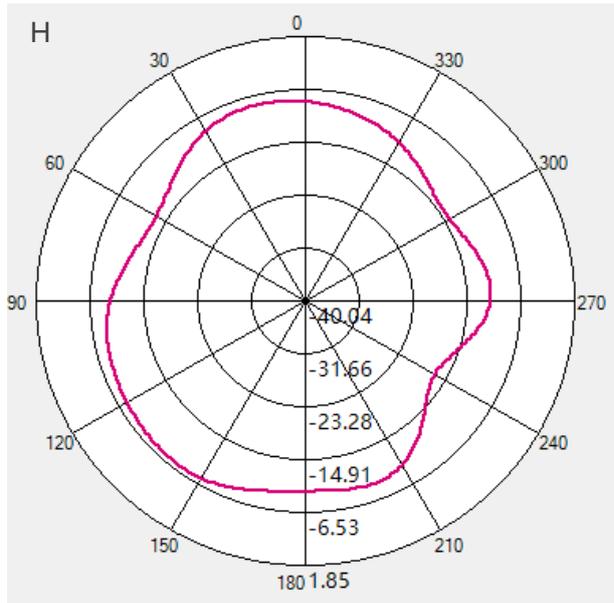
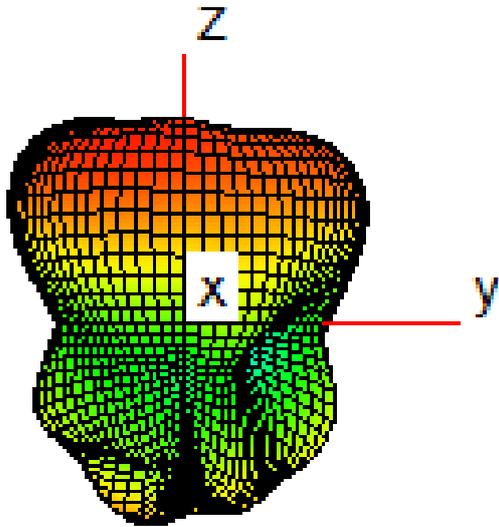
4.5.4. 1710 MHz



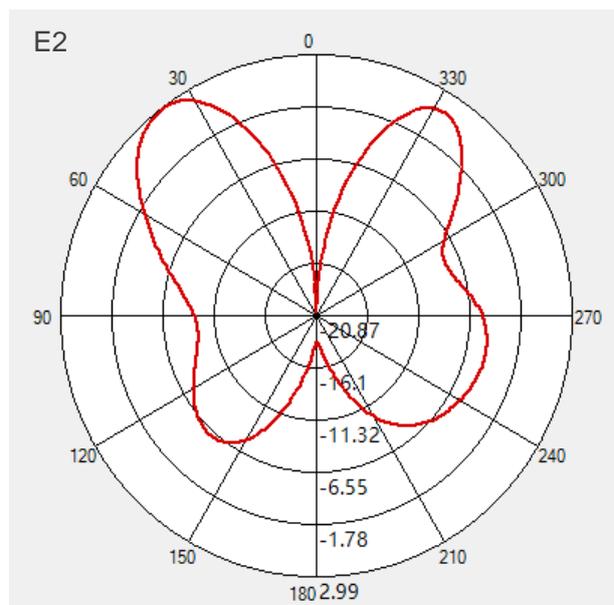
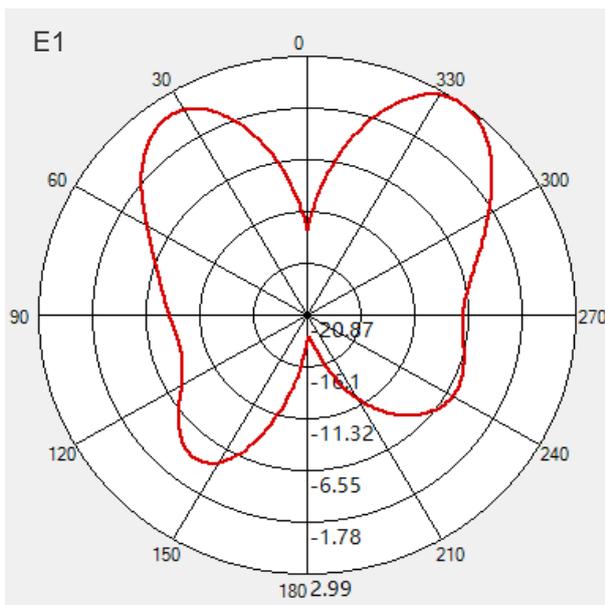
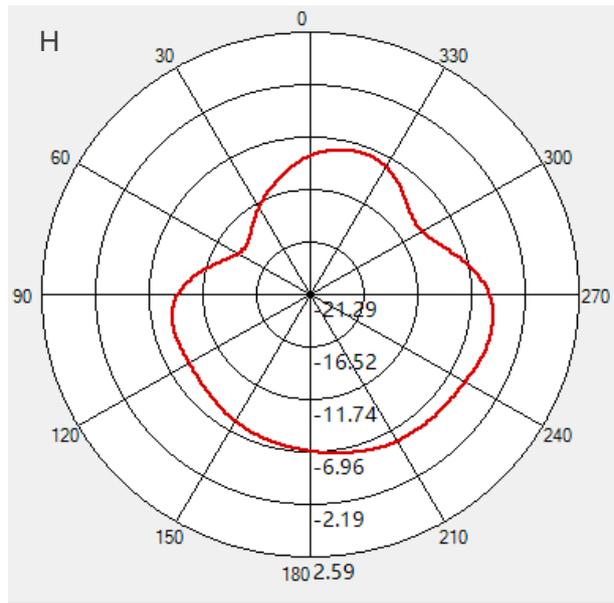
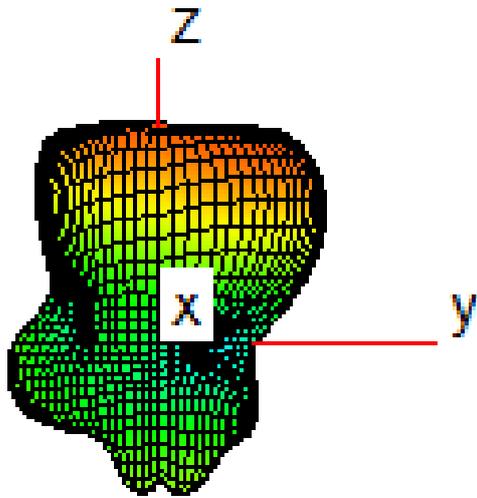
4.5.5. 2170 MHz



4.5.6. 2400 MHz



4.5.7. 2690 MHz



## 5 Product Size

