

# Antenna

# YE0009AA 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](mailto: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
-	2020-06-10	Kenny YIN	Creation of the document
1.0	2020-06-10	Kenny YIN	First official release
1.1	2021-01-12	Kenny YIN	Updated images in Efficiency and Gain (Chapter 4).
1.2	2021-01-27	Kenny YIN	Added IP rating description.
2.0	2021-04-25	Kenny YIN	Updated all test data in the datasheets and some other data.
2.1	2021-07-25	Kenny YIN	1. Updated working temperature. (Chapter 3) 2. Added detailed passive electrical specifications. (Chapter 3)
2.2	2021-11-27	Kenny YIN	Updated the product description in Chapter 1.
2.3	2022-10-17	Aria CHU	Deleted the IP rating.

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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	824–2700 MHz
Input Impedence	50 Ω
VSWR	≤ 3.0
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.)	2.67	-	-	2.75	2.68	-	-	-
Average Efficiency (%)	40	-	-	62	63	-	-	-
Max. Peak Gain (dBi)	1.7	-	-	1.9	2.6	-	-	-

#### Mechanical Specifications

Antenna Size	190 mm × 16 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black

## 4 Overall Performance

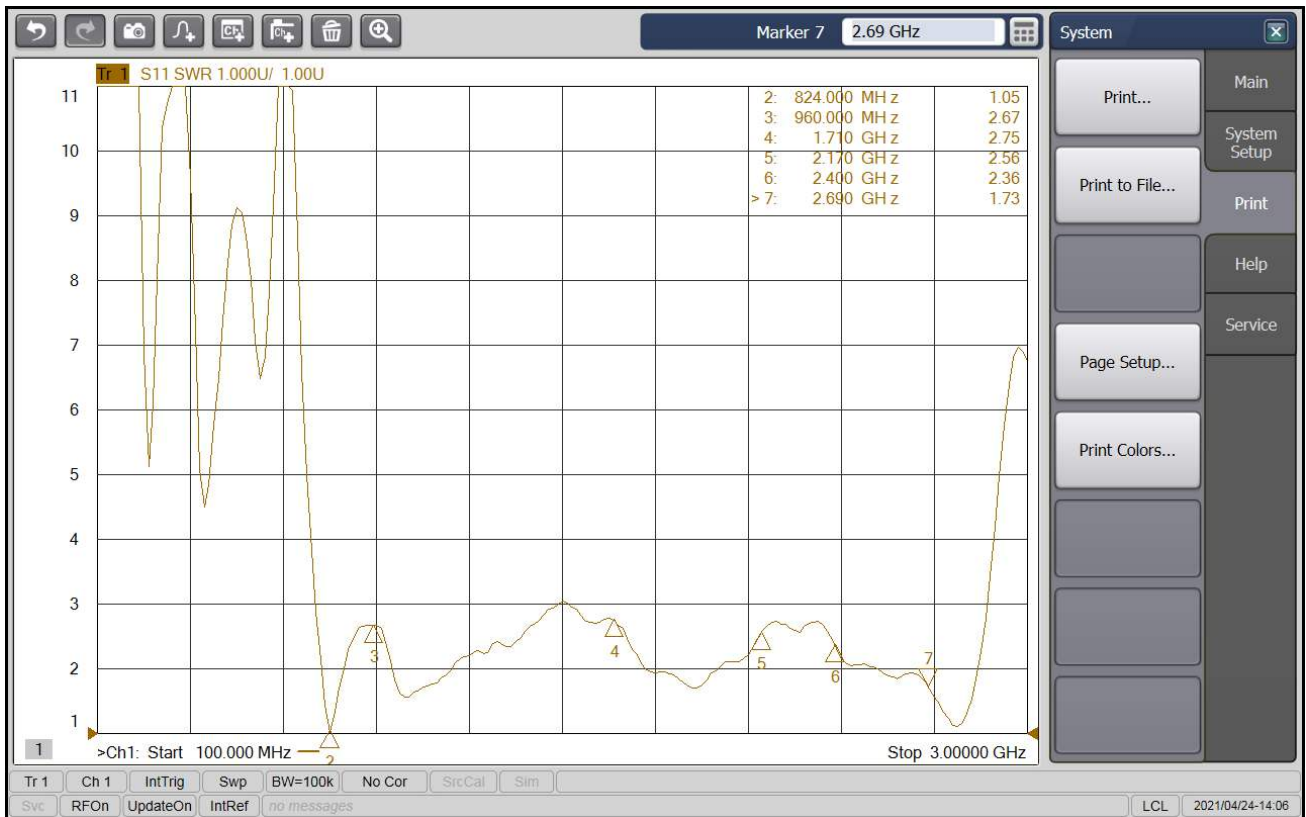
### 4.1. Test Environment

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



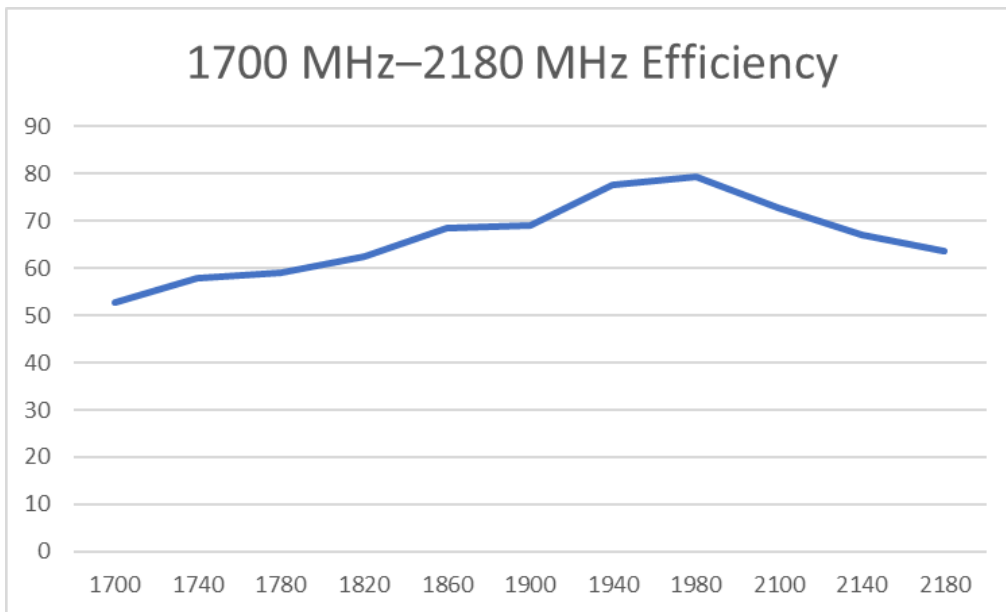
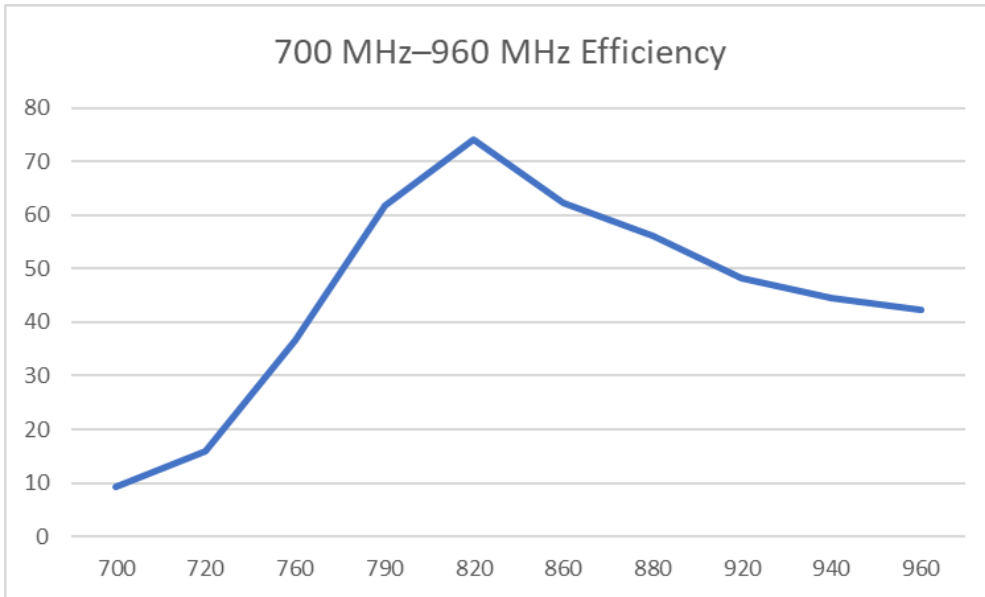


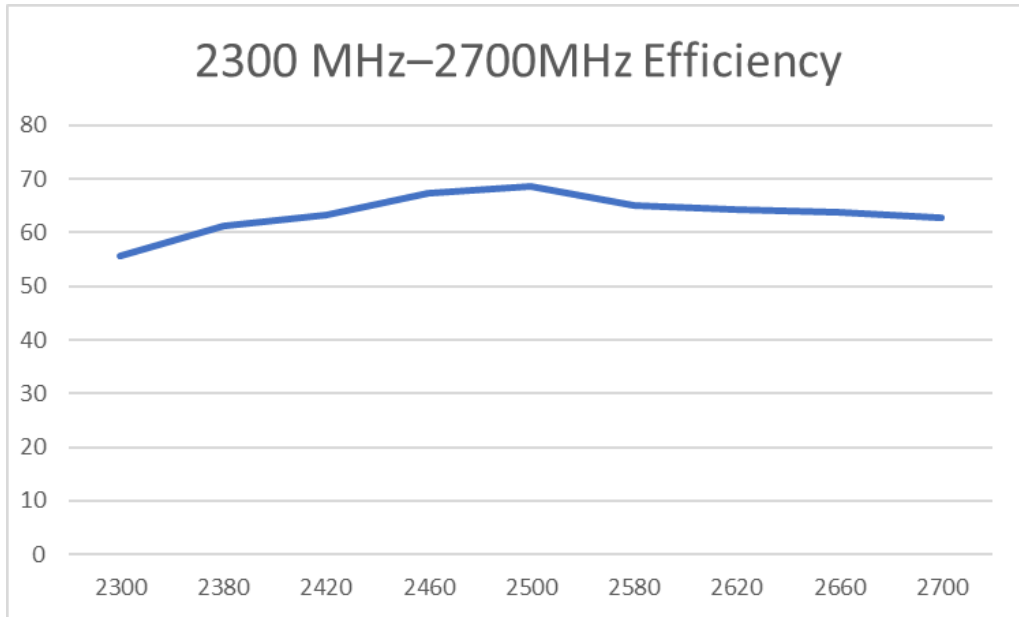
## 4.2. VSWR



<b>Frequency (MHz)</b>	824	960	1710	2170	2400	2690
<b>VSWR</b>	1.05	2.67	2.75	2.56	2.36	1.73

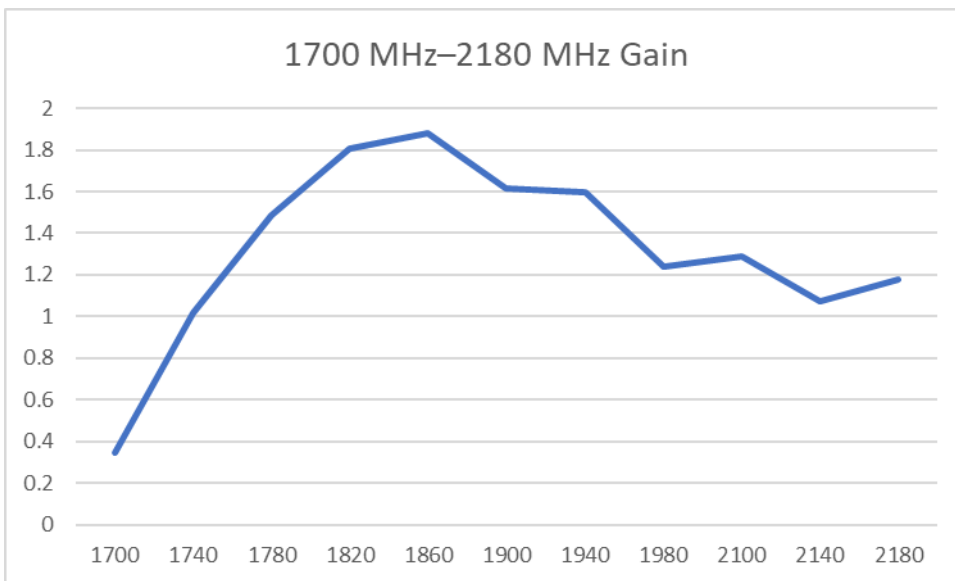
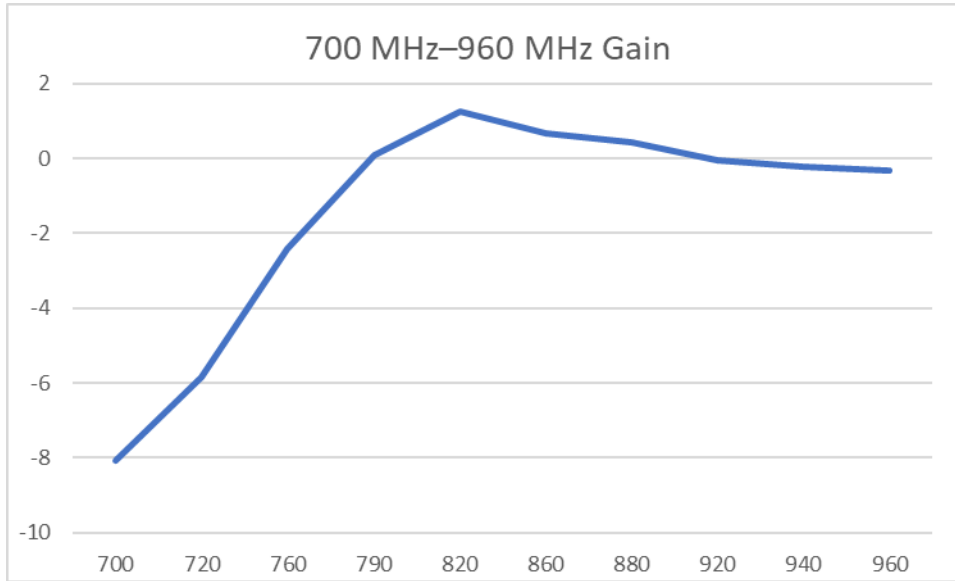
### 4.3. Efficiency

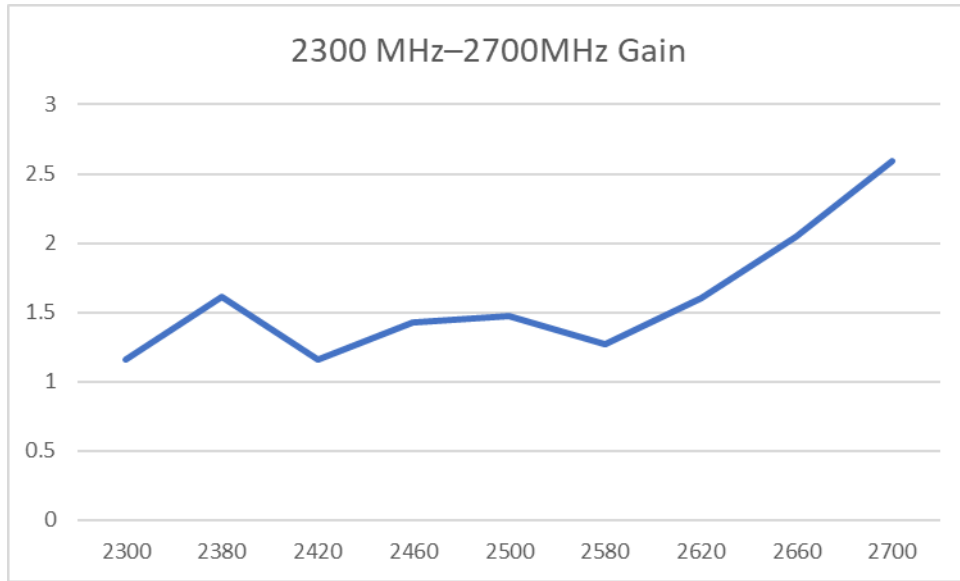




<b>Frequency (MHz)</b>	820	880	960	1700	1860	2420	2500	2700
<b>Efficiency (%)</b>	74	56	42	53	69	63	69	63

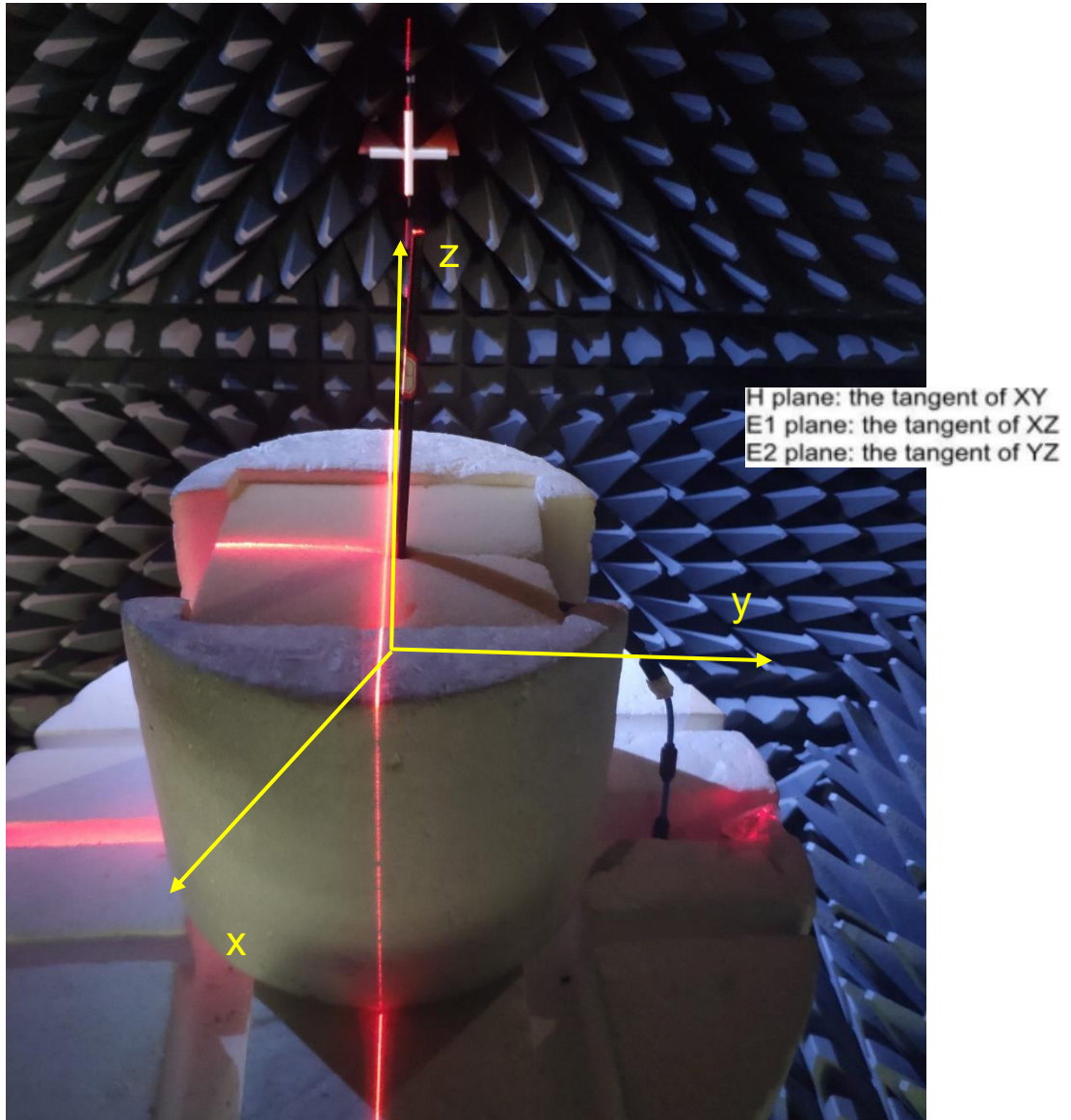
### 4.4. Gain



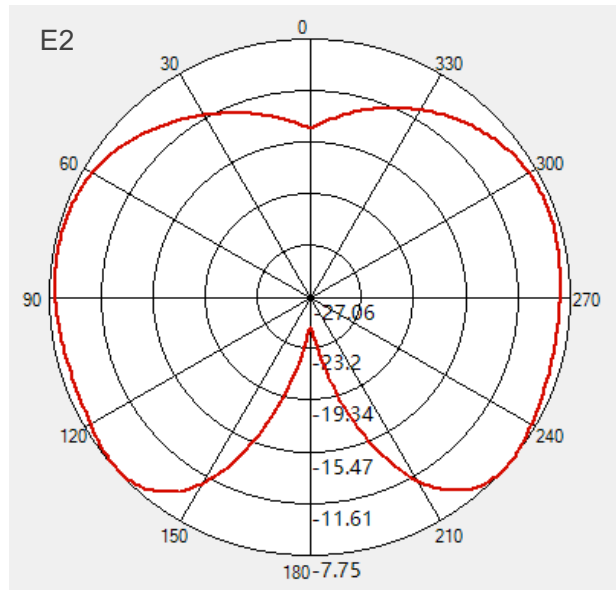
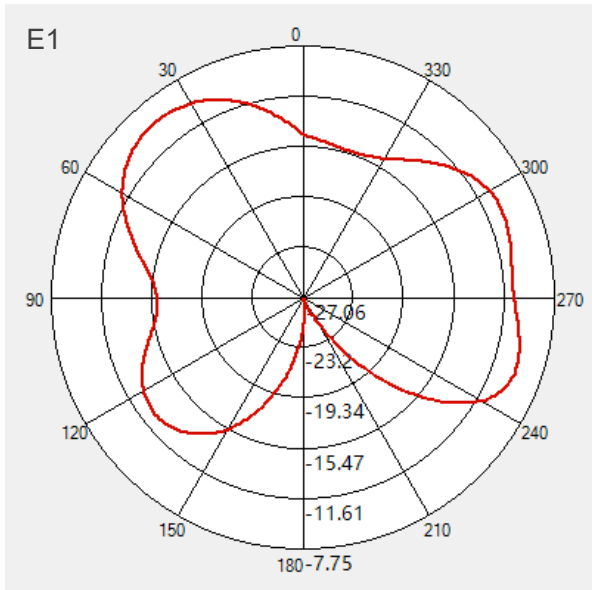
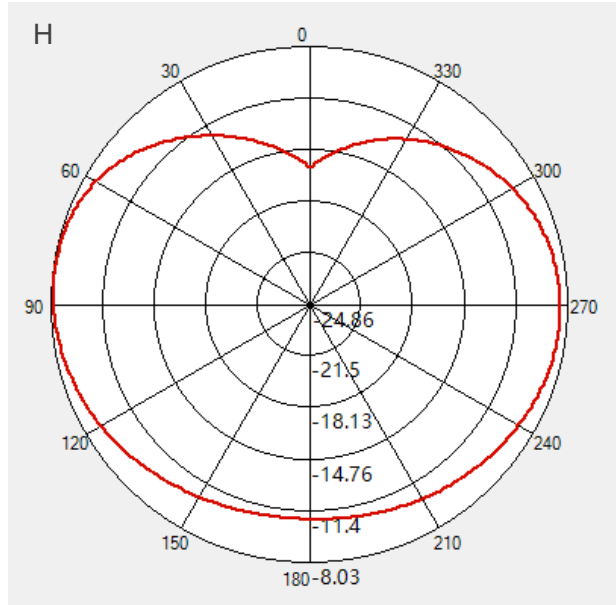
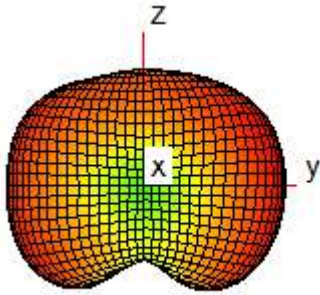


<b>Frequency (MHz)</b>	820	880	960	1700	1860	2420	2500	2700
<b>Gain (dBi)</b>	1.3	0.4	-0.3	0.3	1.9	1.2	1.5	2.6

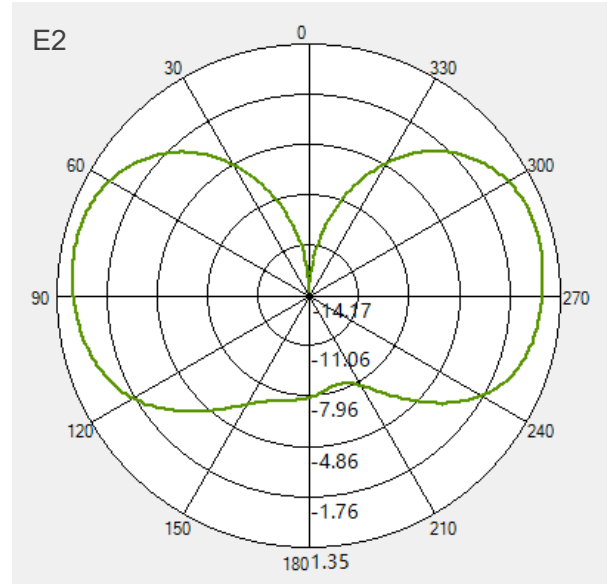
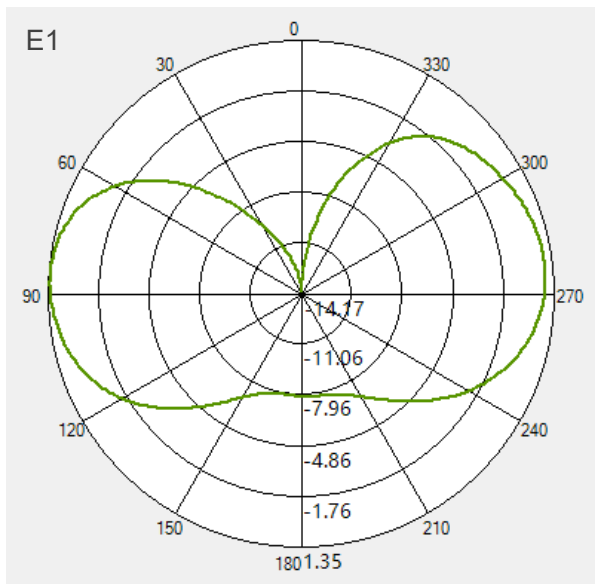
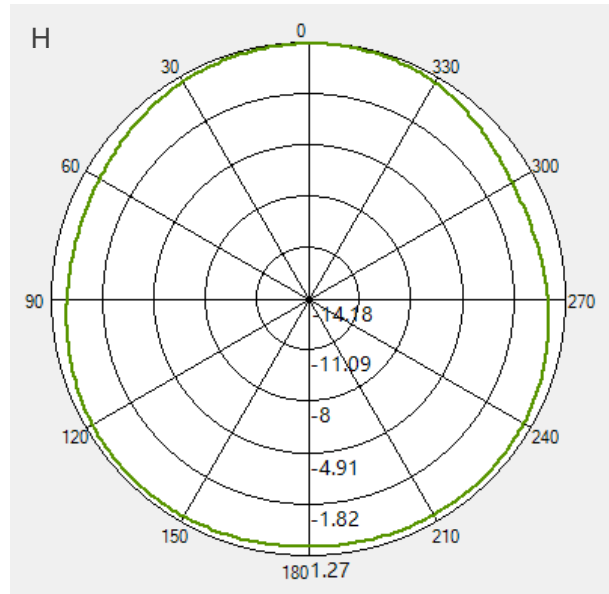
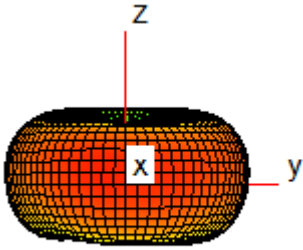
### 4.5. Radiation Pattern



4.5.1. 700 MHz

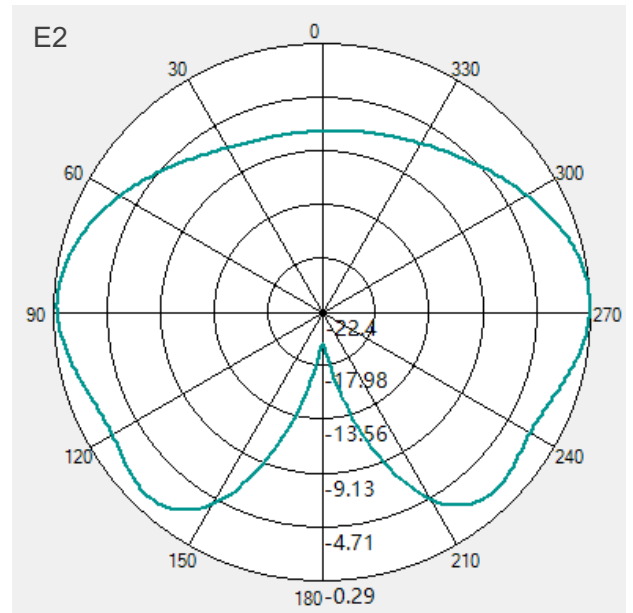
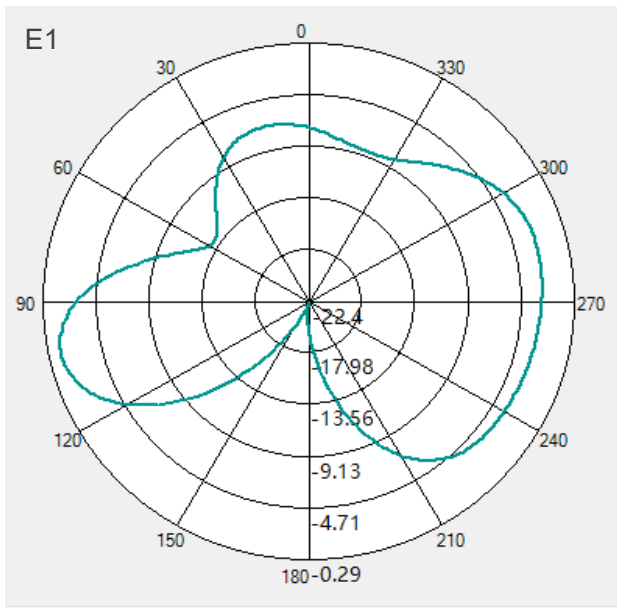
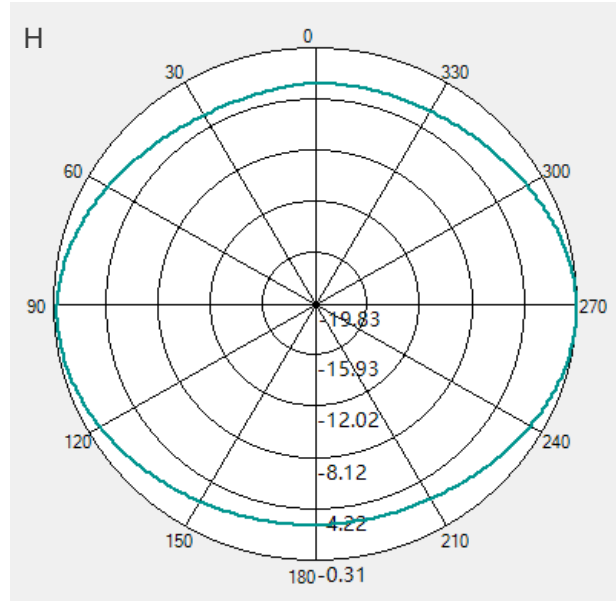
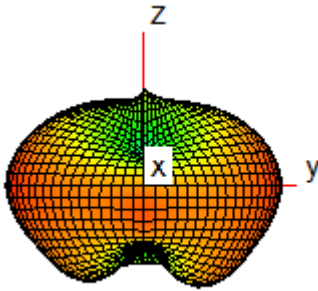


4.5.2. 820 MHz

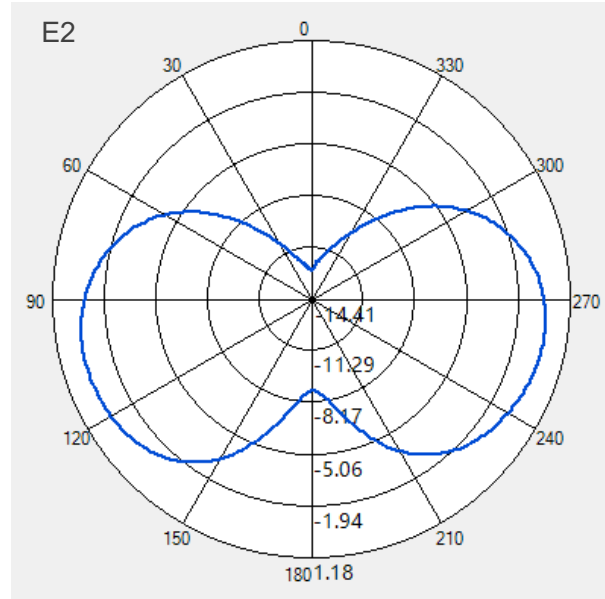
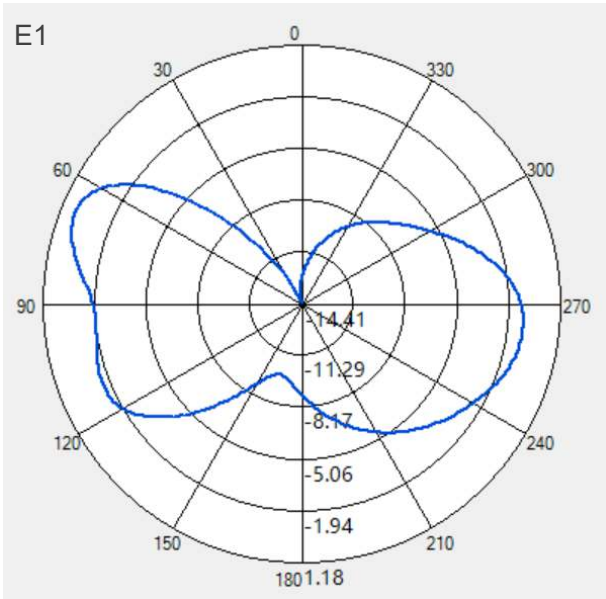
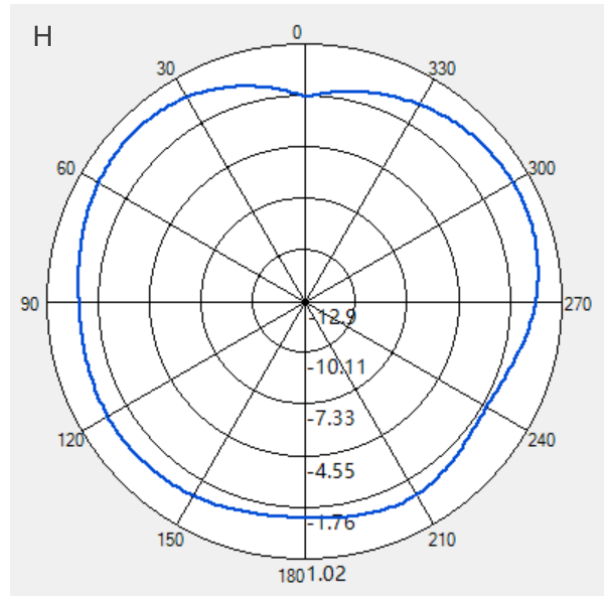
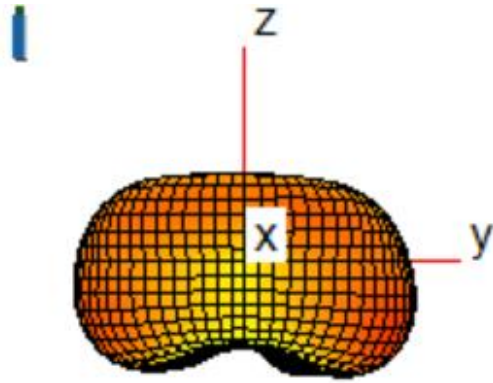




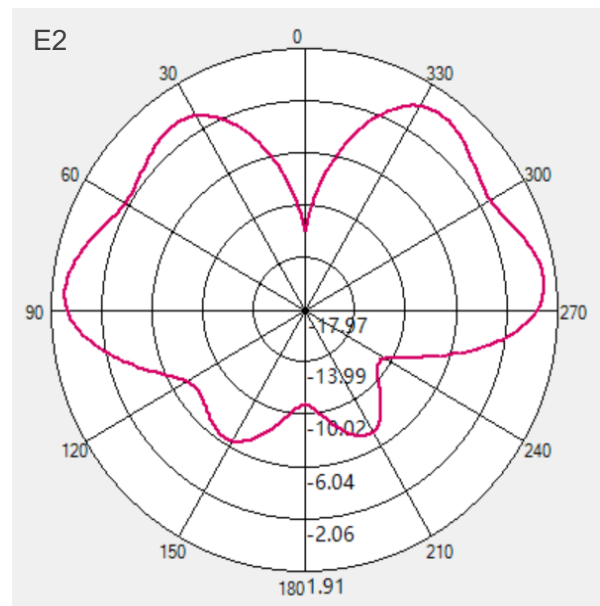
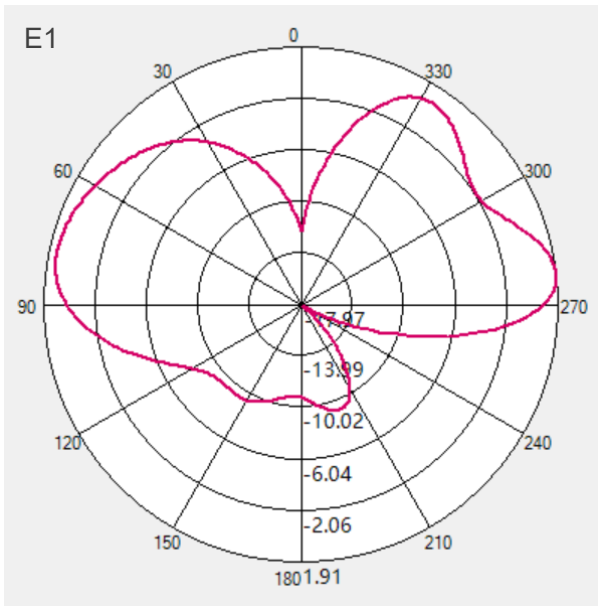
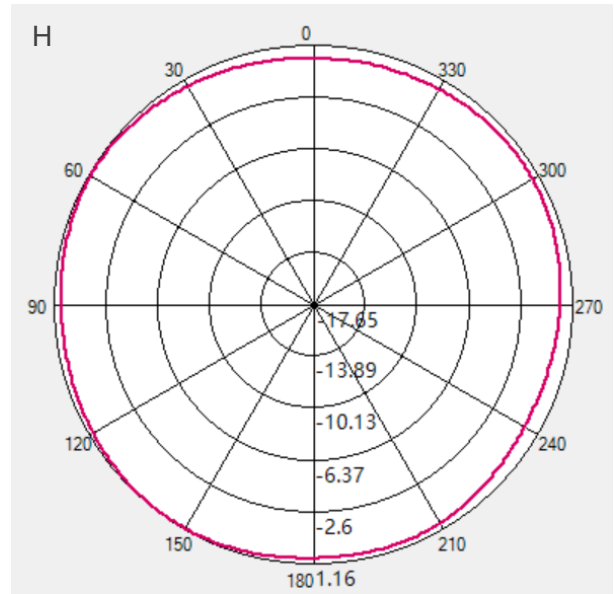
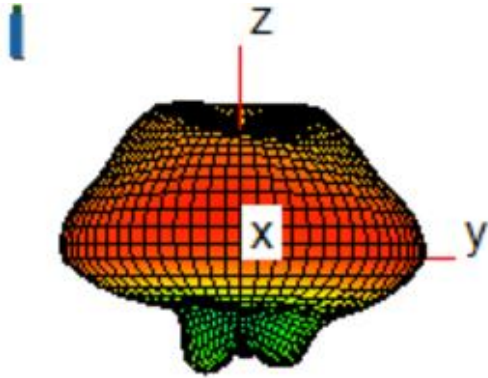
4.5.3. 960 MHz



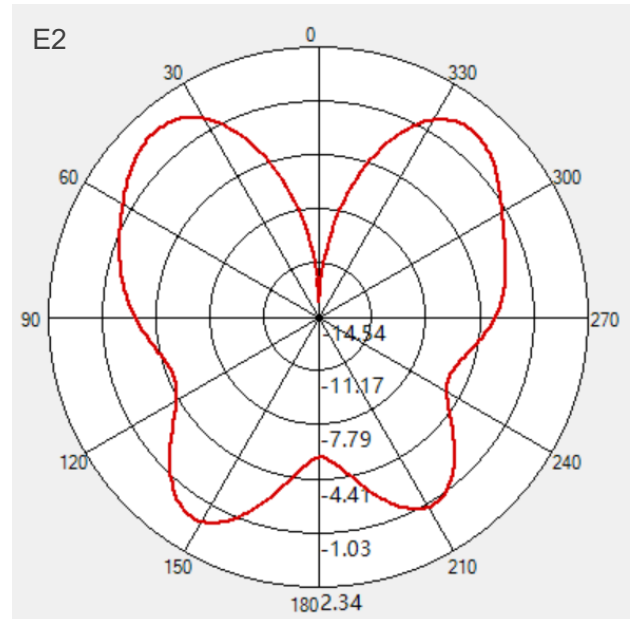
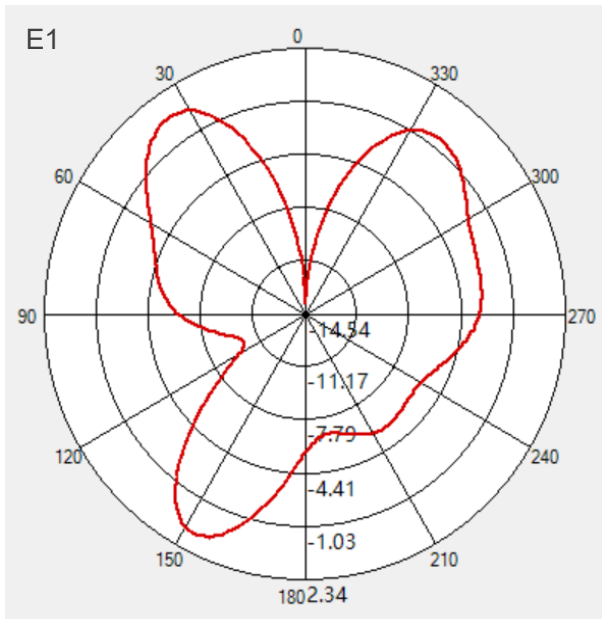
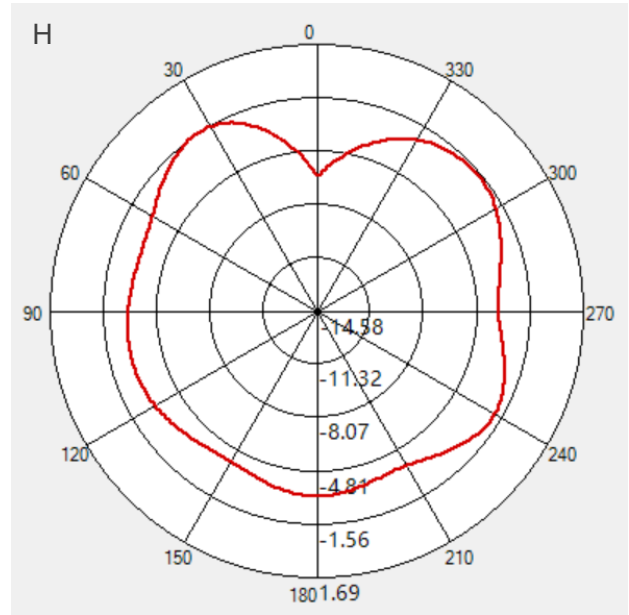
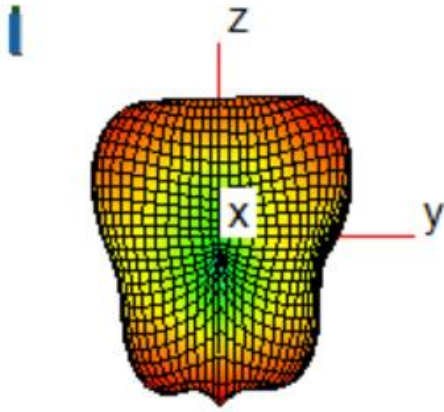
4.5.4. 1710 MHz



4.5.5. 2400 MHz



4.5.6. 2690 MHz



### 5 Product Size

