

# Antenna

# YF0022DA Datasheet

## Antenna Services

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# About the Document

## Revision History

Version	Date	Author	Note
-	2023-02-07	Richard LIU/ Joye WANG	Creation of the document
1.0	2023-02-07	Richard LIU/ Joye WANG	First official release

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## 1 Product Description

This Quectel embedded 4G FPC/PCB antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal antenna for a smooth and stable connection with high-efficiency data transmission even under the influence of the device's internal structure. Ground plane independent, it's designed to be mounted directly to the underside of either a plastic or non-metallic enclosure. Ease of integration with a cable and connector which can be customized to meet your product design and RF module.

## 2 Product Features

- LTE Full-Band PCB Antenna
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	700–960 MHz, 1710–2170 MHz, 2300–2690 MHz
Input Impedance	50 Ω
VSWR	≤ 3.83
Gain	≤ 1.51 dBi
Polarization Type	Linear

#### Detailed Passive Electrical Specifications

Frequency Range (MHz)	700–960	1176–1280	1400–1610	1710–2170	2300–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	3.83	-	-	3.78	1.48	-	-	-
Average Efficiency (%)	18	-	-	44	62	-	-	-
Max. Peak Gain (dBi)	-2.09	-	-	1.51	1.18	-	-	-

#### Mechanical Specifications

Antenna Size (mm)	40 × 15 × 0.8
Material	PCB
Cable Type & Length	Φ1.13 Black & 74.5 mm
Connector	IPEX 1
Color	Black
Weight	Typ. 1.6 g
Mounting Type	Adhesive
Working Temperature	-40 °C to +85 °C

## 4 Overall Performance

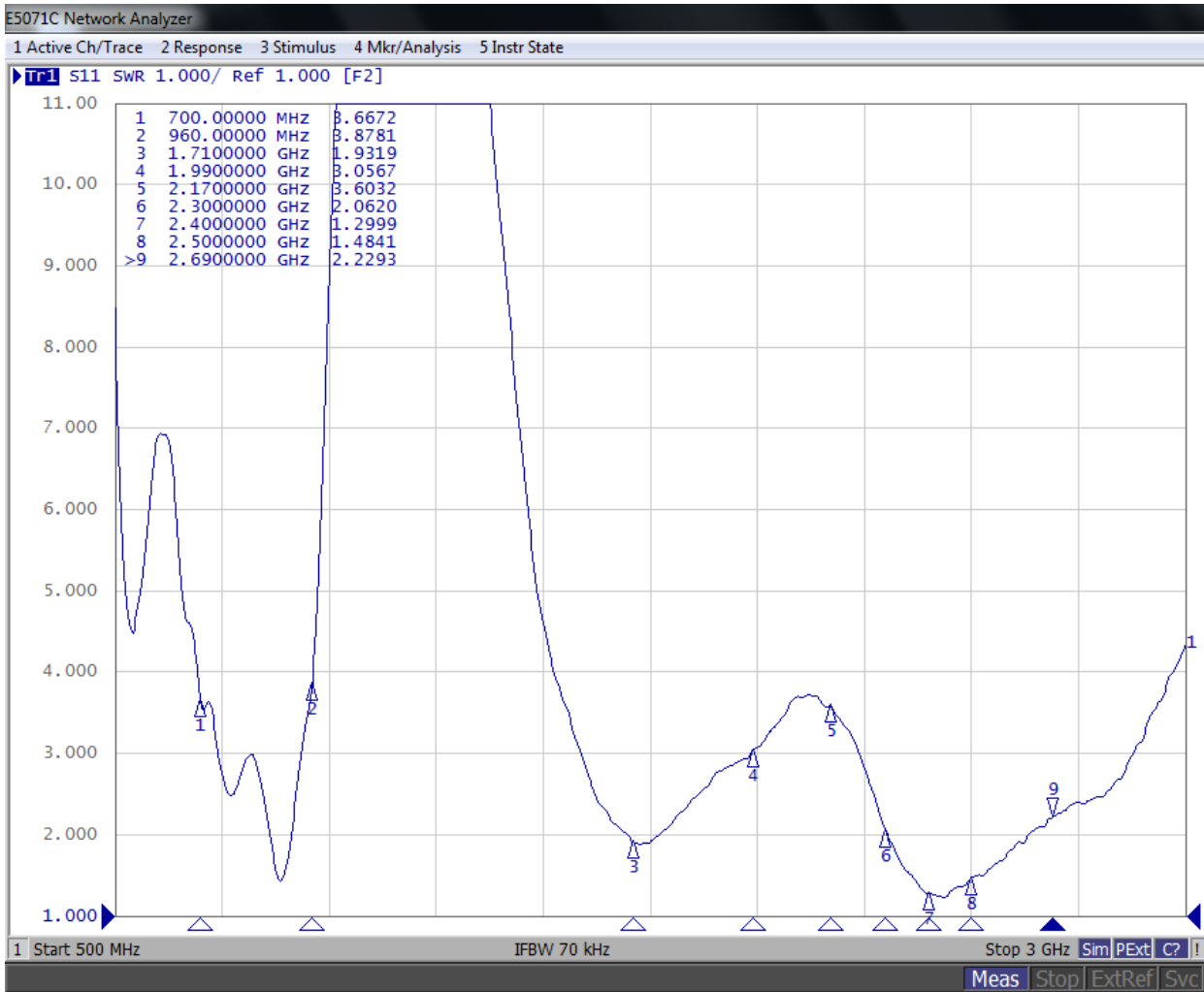
### 4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone®2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



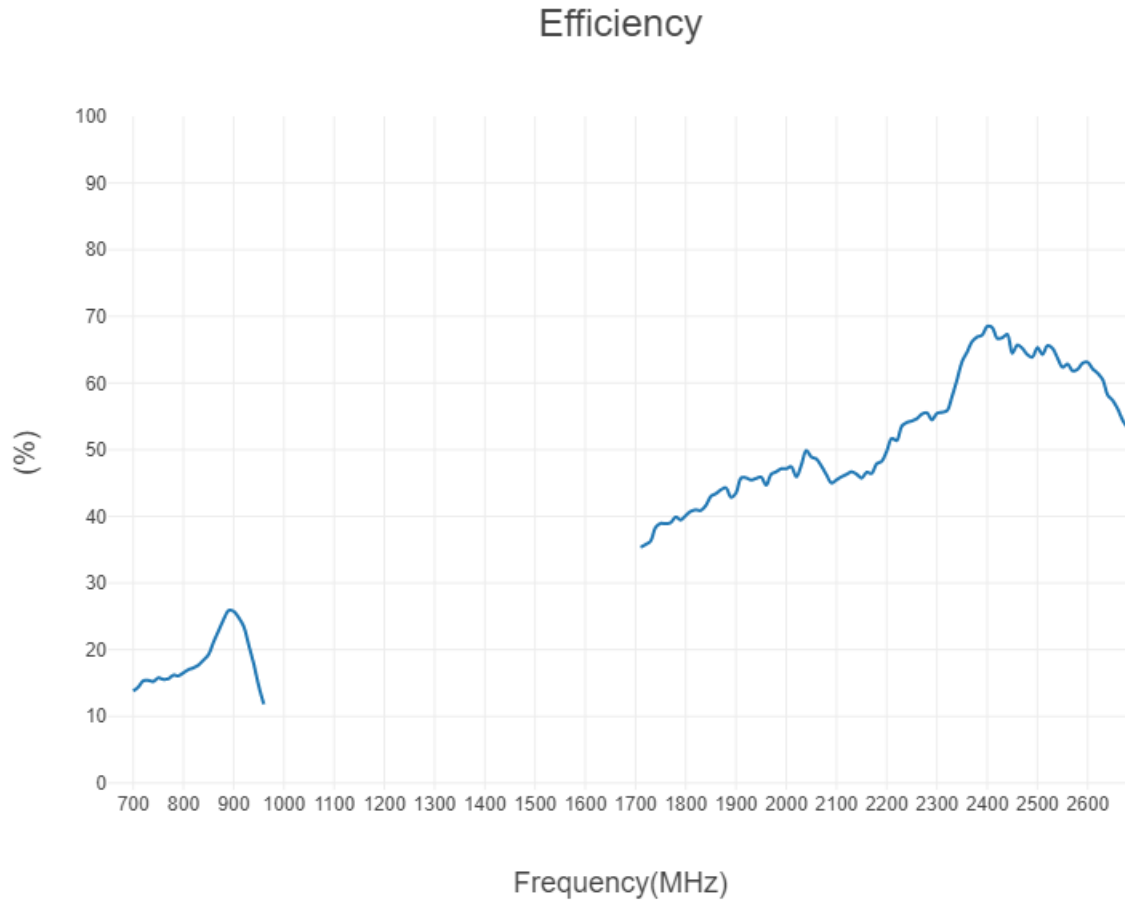


## 4.2. VSWR



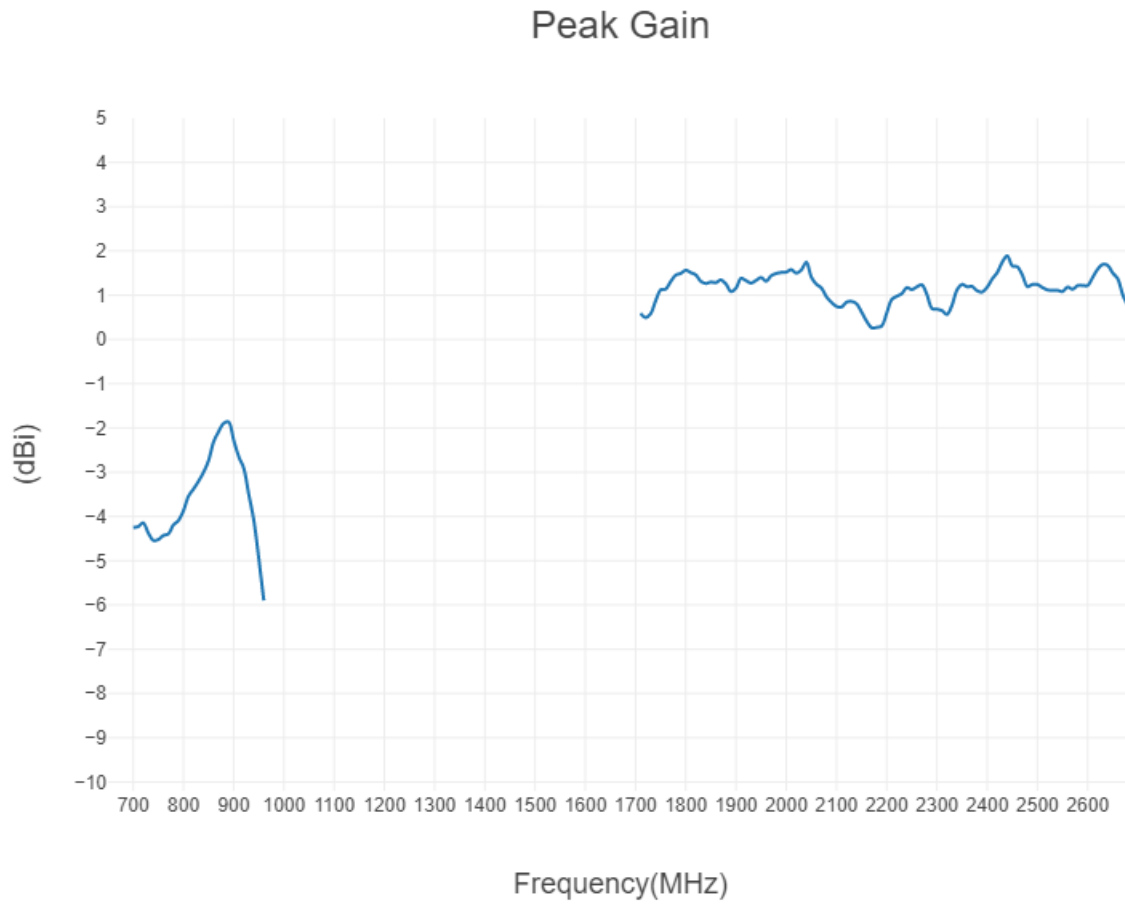
Frequency (MHz)	700	960	1710	1990	2170	2300	2400	2500	2690
VSWR	3.66	3.87	1.91	3.05	3.60	2.06	1.29	1.48	2.22

### 4.3. Efficiency



<b>Frequency (MHz)</b>	700	960	1710	1990	2170	2300	2400	2510	2690
<b>Efficiency (%)</b>	13.8	11.8	35.4	47.1	46.4	55.5	68.5	64.3	53.3

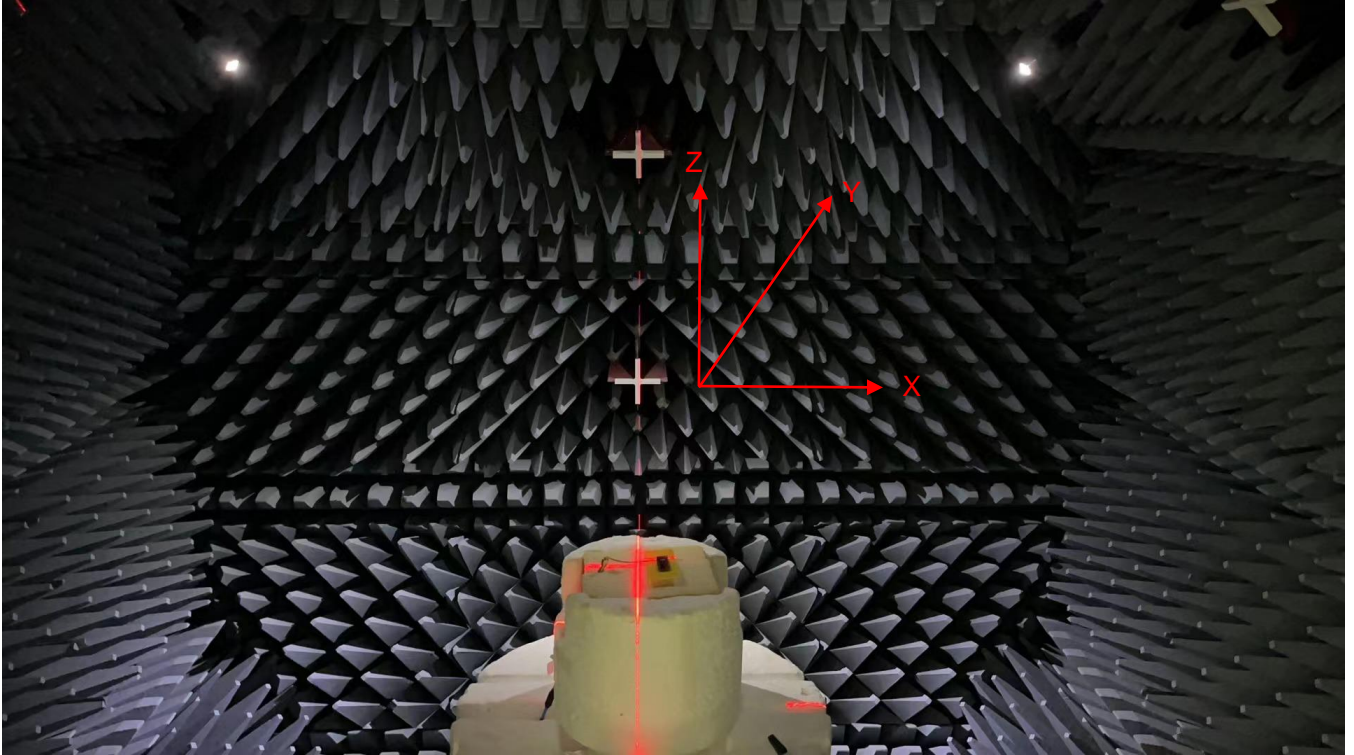
### 4.4. Peak Gain

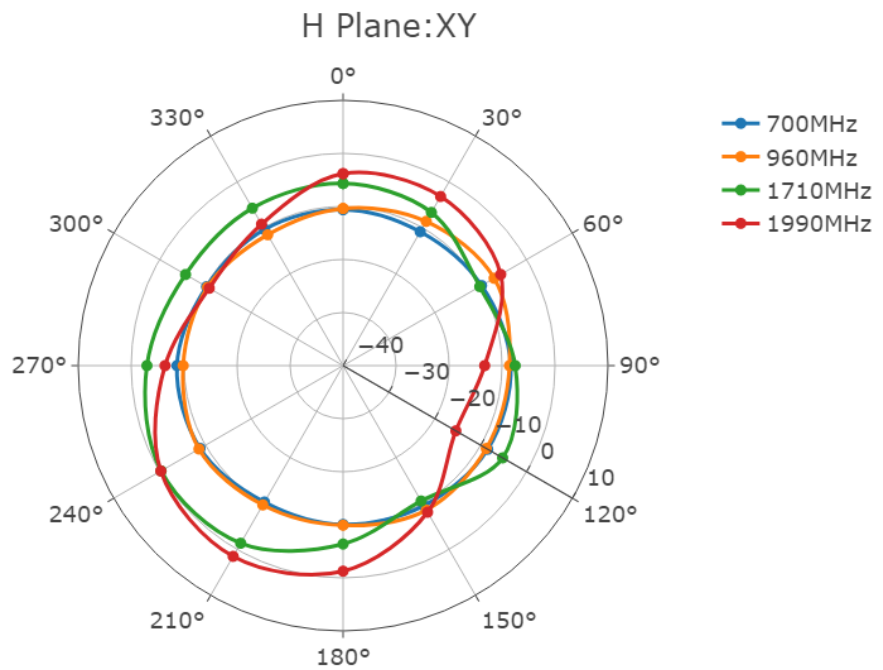
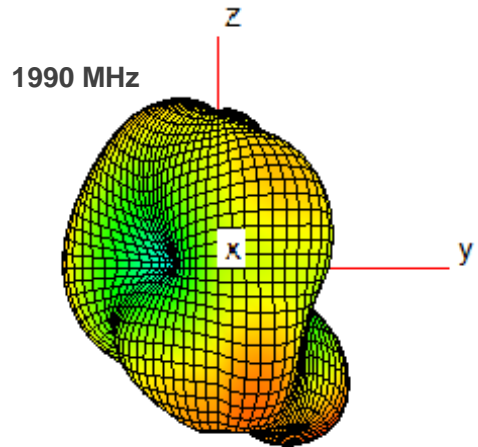
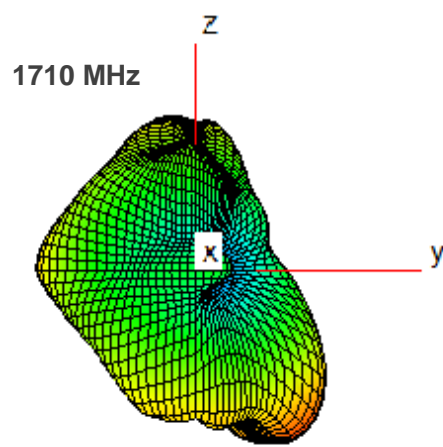
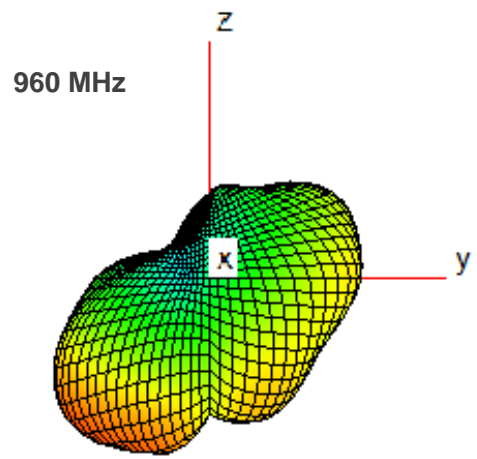
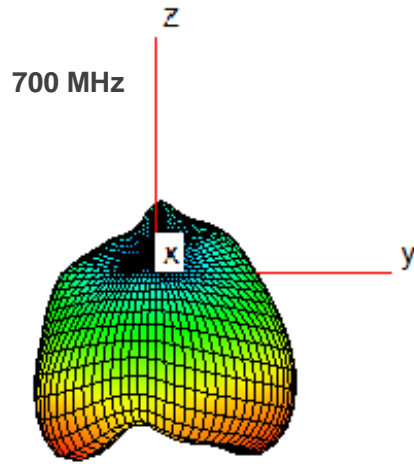


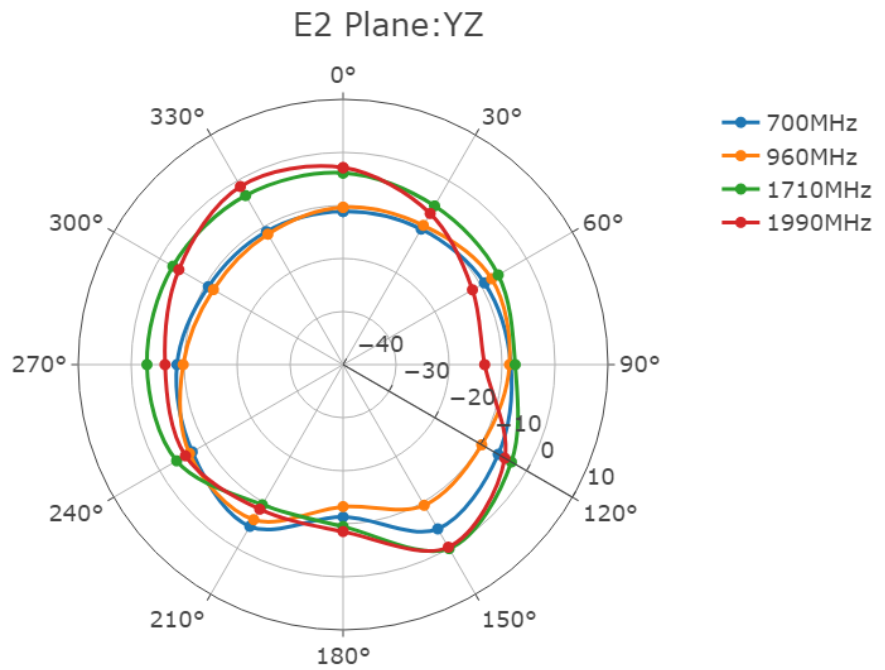
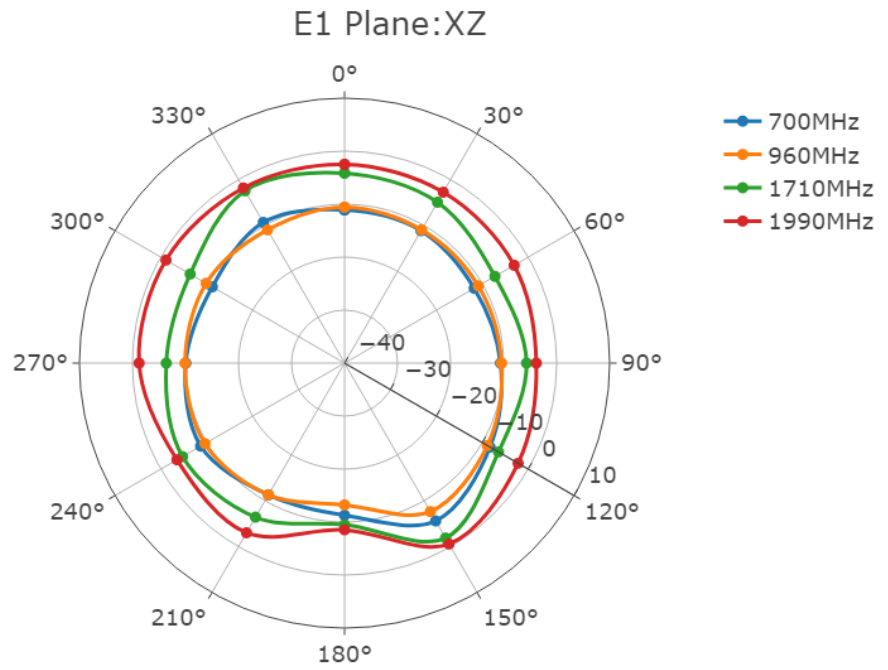
Frequency (MHz)	700	960	1710	1990	2170	2300	2400	2510	2690
Peak Gain (dBi)	-4.25	-5.90	0.59	1.51	0.26	0.78	1.18	1.17	0.78

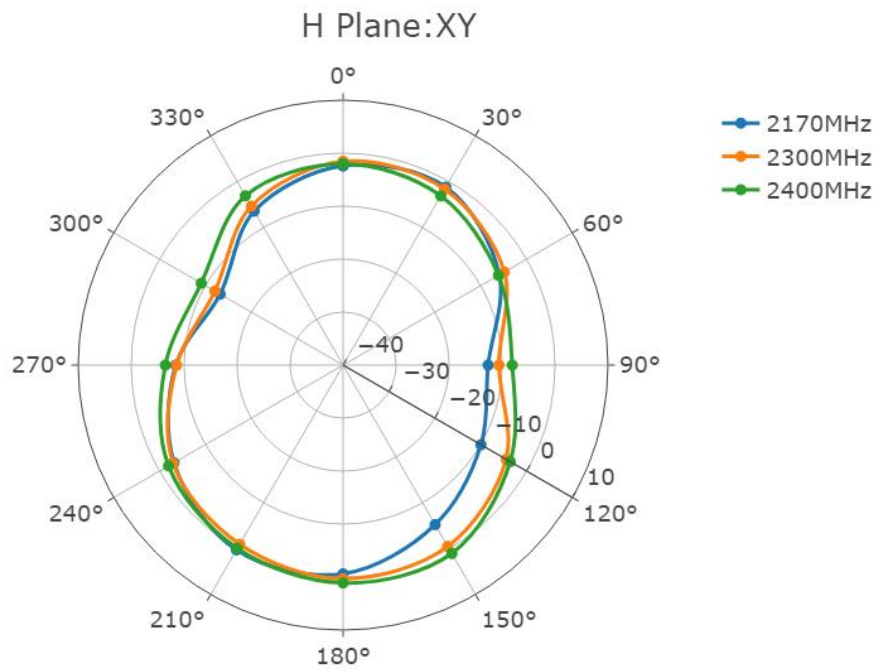
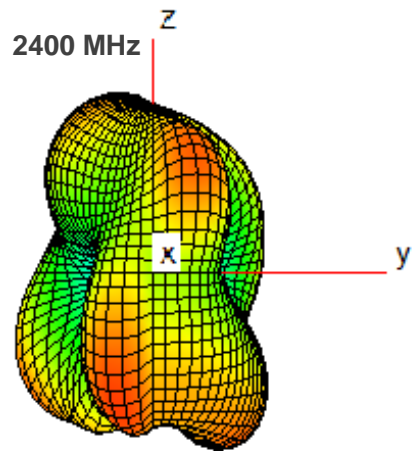
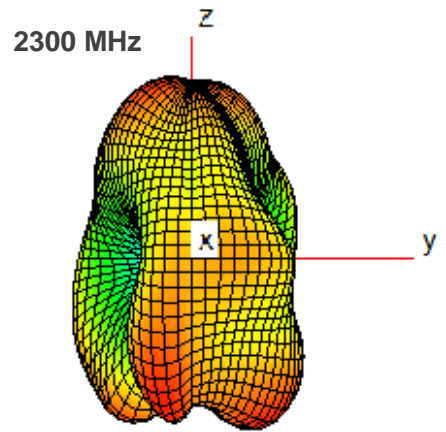
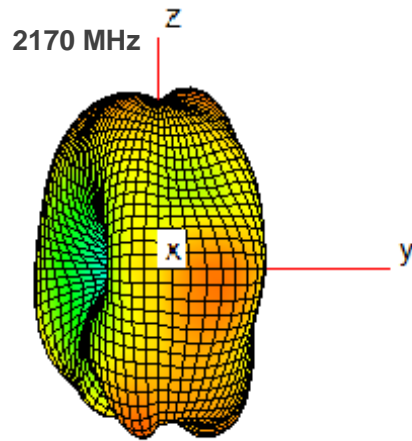
## 4.5. Radiation Pattern

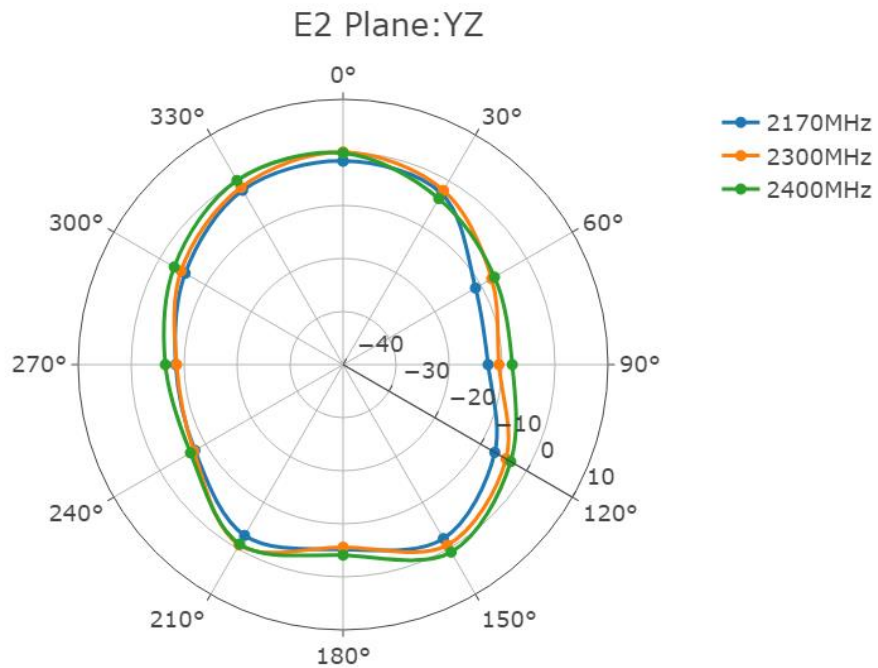
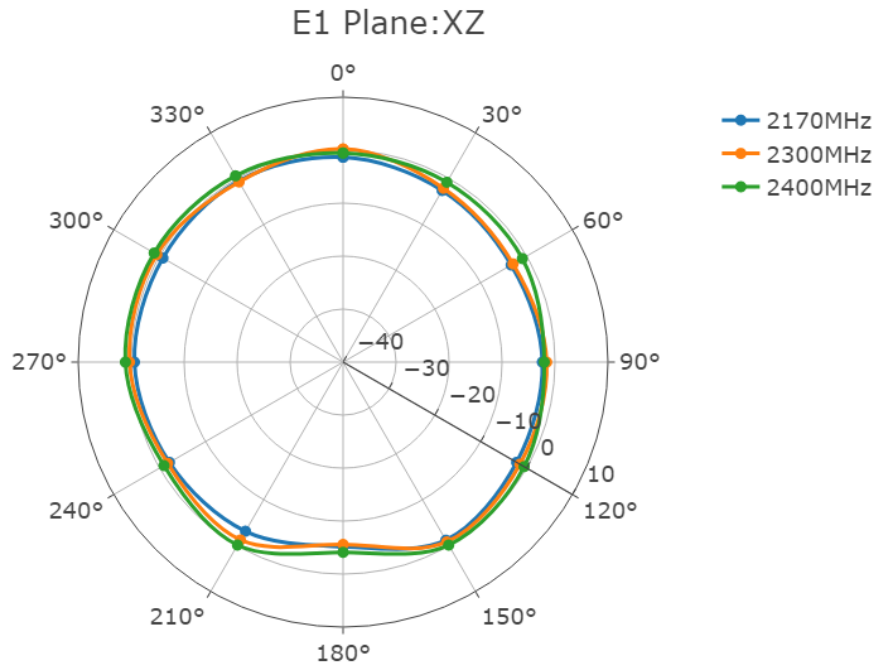
- Test condition: stick on a 1 mm thick FR4 board.



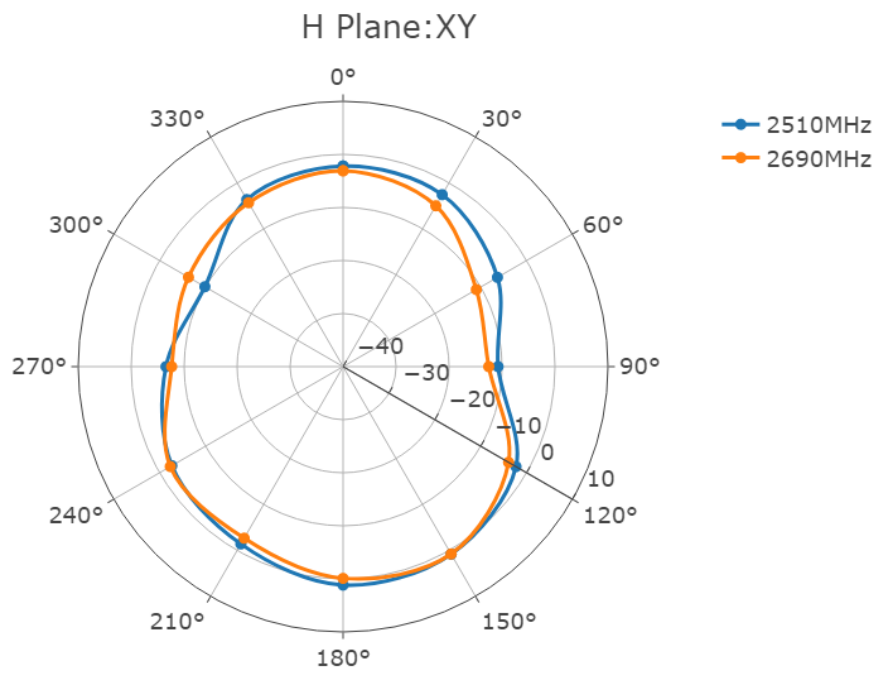
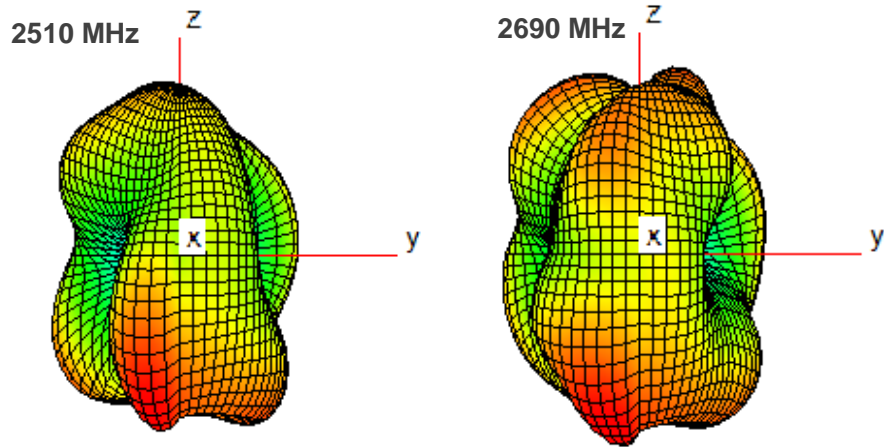




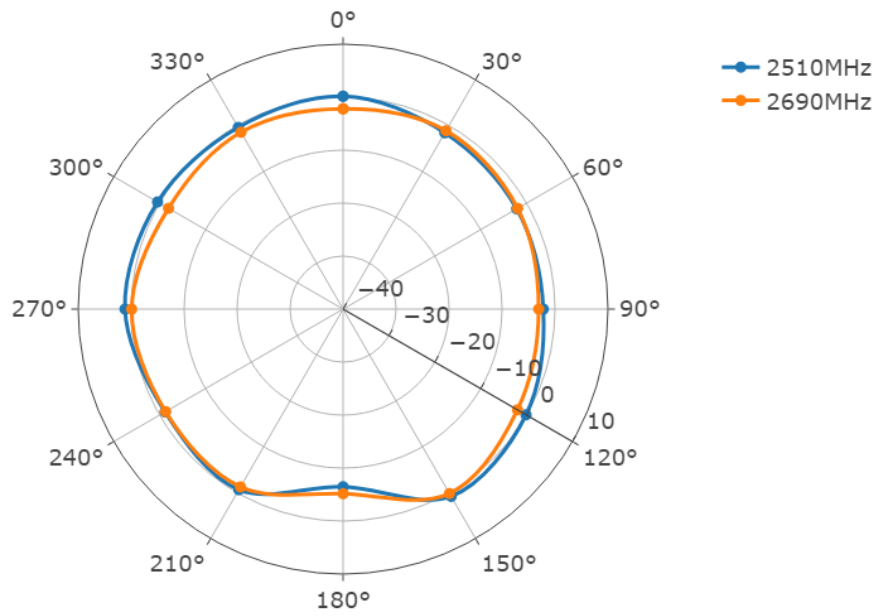




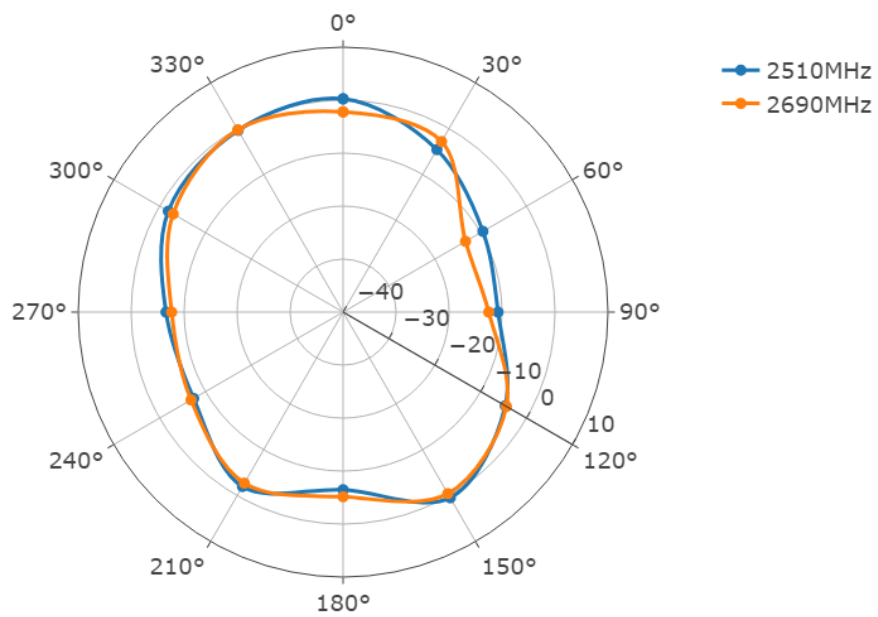




E1 Plane:XZ



E2 Plane:YZ



## 5 Product Size

ROHS

