

# Antenna

# YEMN013AA Datasheet

## Antenna Services

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# About the Document

## Revision History

Version	Date	Author	Note
-	2022-06-15	Joye WANG/ Riona HAN	Creation of the document
1.0	2022-06-15	Joye WANG/ Riona HAN	First official release

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## 1 Product Description

To meet customers' requirements for the high performance, high integration, and integrated appearance of their products, Quectel provides a combined antenna box series. The antenna box can integrate a variety of antennas, such as 5G, 4G, GNSS, Wi-Fi antennas, to achieve communication functions of 5G MIMO, 4G, GNSS, and Wi-Fi. These antenna boxes can be mounted on the surface of devices via screw, adhesive or other methods, supports multiple connector types and cable lengths. It is a more flexible and reliable high-performance antenna solution for outdoor applications.

## 2 Product Features

- Cellular 4G + 4G DIIV
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	4G/4G DIV: 698–960 MHz, 1710–2690 MHz
Input Impedence	50 $\Omega$
VSWR	4G: $\leq 3.0$ 4G DIV: $\leq 3.0$
Gain	4G: $\leq 3.0$ dBi 4G DIV: $\leq 2$ dBi
Polarization Type	Linear

#### Detailed Passive Electrical Specifications (4G)

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	2.06	-	-	2.04	1.72	-	-	-
Average Efficiency (%)	26.2	-	-	42.42	40.50	-	-	-
Max. Peak Gain (dBi)	0.23	-	-	1.41	2.77	-	-	-

#### Detailed Passive Electrical Specifications (4G DIV)

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	2.9	-	-	2.81	2.9	-	-	-
Average Efficiency (%)	22.14	-	-	40.26	42.50	-	-	-
Max. Peak Gain (dBi)	-0.16	-	-	1.47	1.95	-	-	-

#### Mechanical Specifications

Antenna Size (mm)	$\Phi 81 \times 15.5$
Casing	ABS + PC
Cable Type & Length	RG174 Black & 1000 mm
Connector Type	SMA Male (Internal screw internal pin)

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Working Temperature	-40 °C to +85 °C
Weight	Typ. 74.9 g
Radome Color	Black
Mounting Type	Screw Nut
IP Rating	IP66

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## 4 Overall Performance

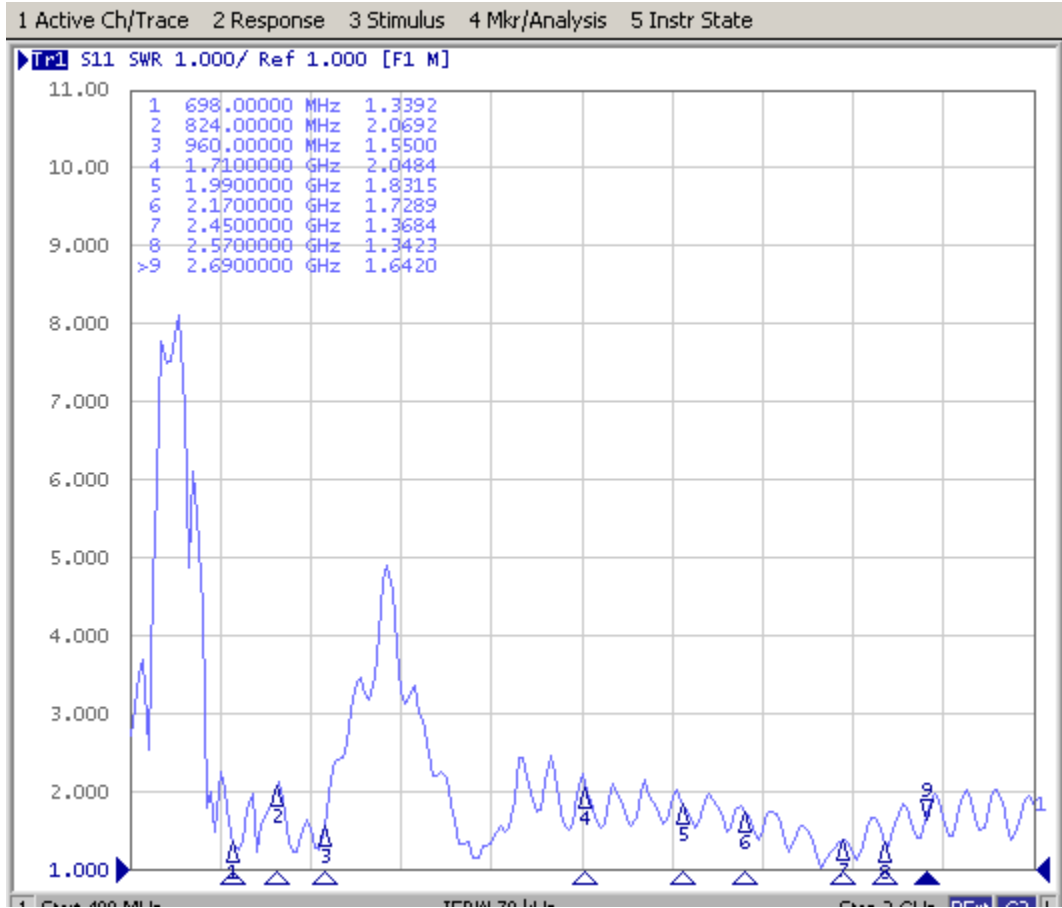
### 4.1. Test Environment

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



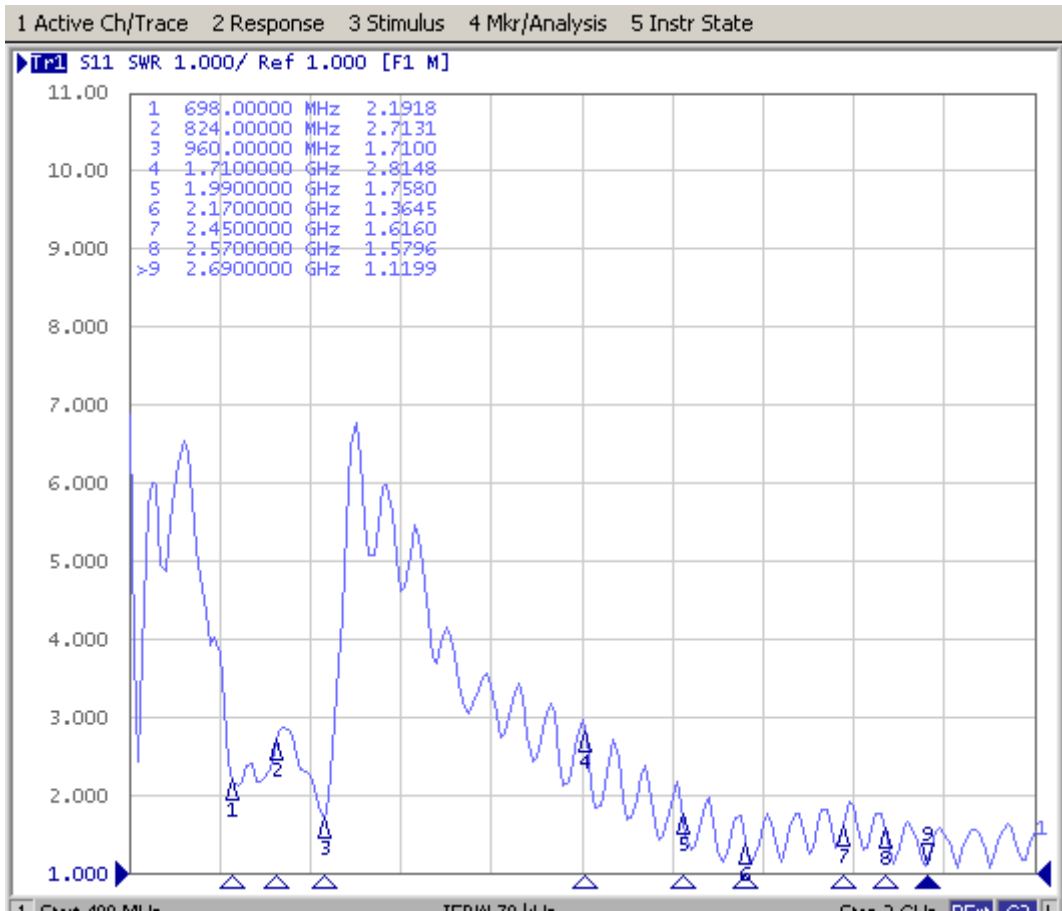
## 4.2. VSWR

- 4G



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	1.33	2.06	1.55	2.04	1.83	1.72	1.36	1.34	1.64

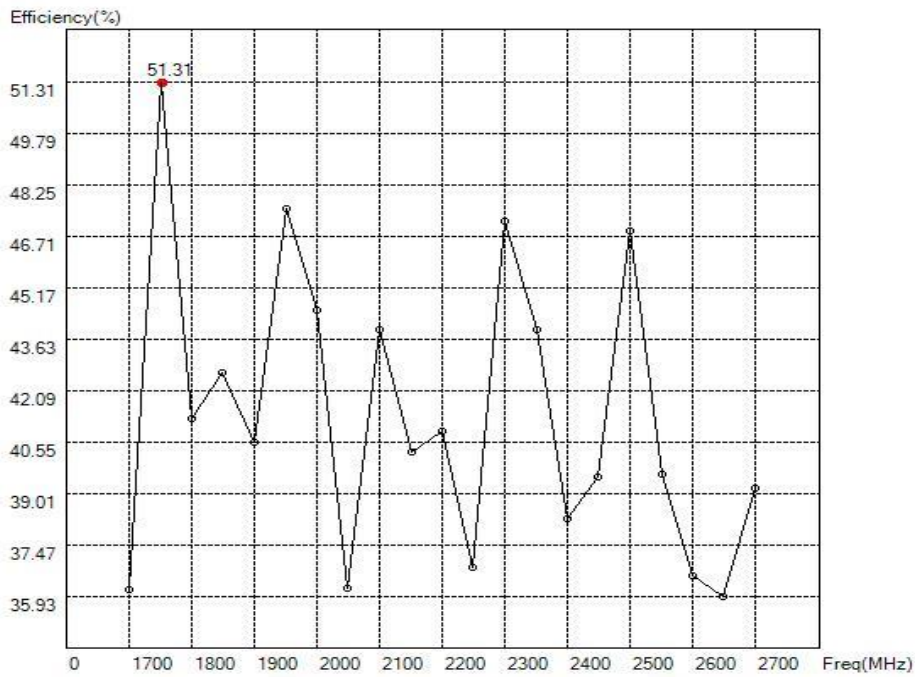
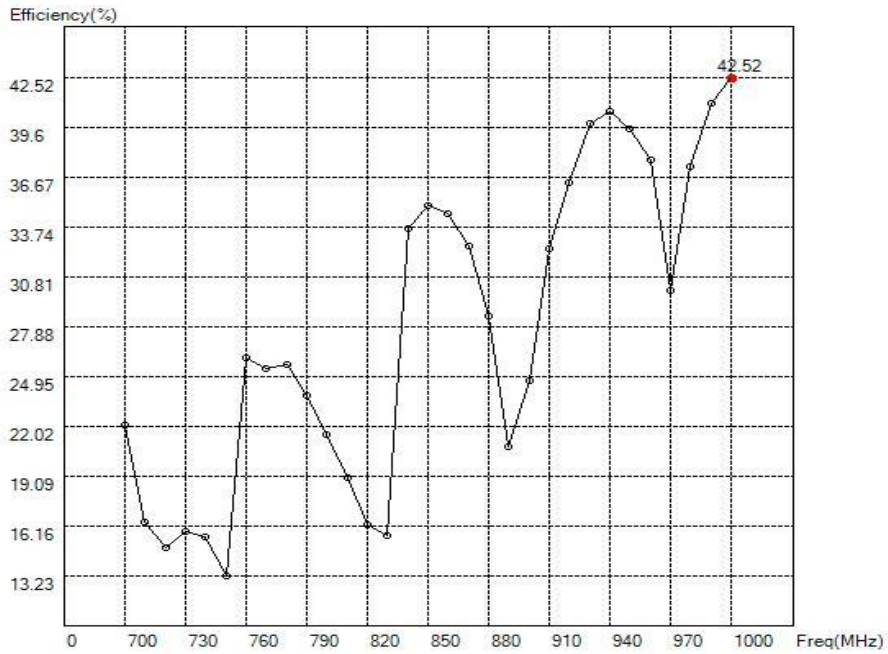
- 4G DIV



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	2.19	2.71	1.71	2.81	1.75	1.36	1.61	1.57	1.11

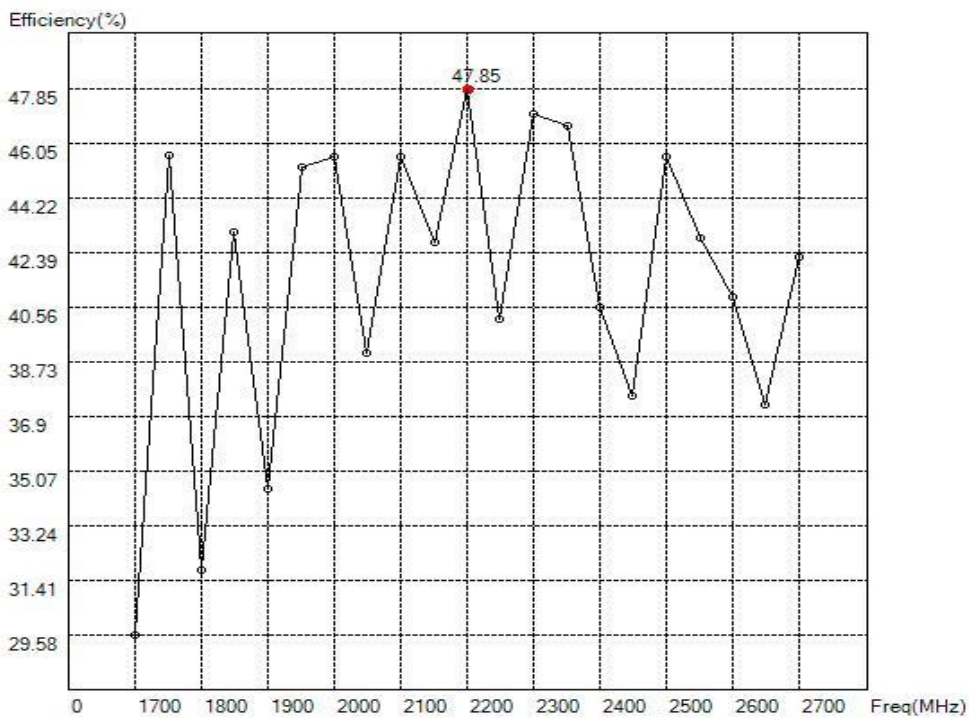
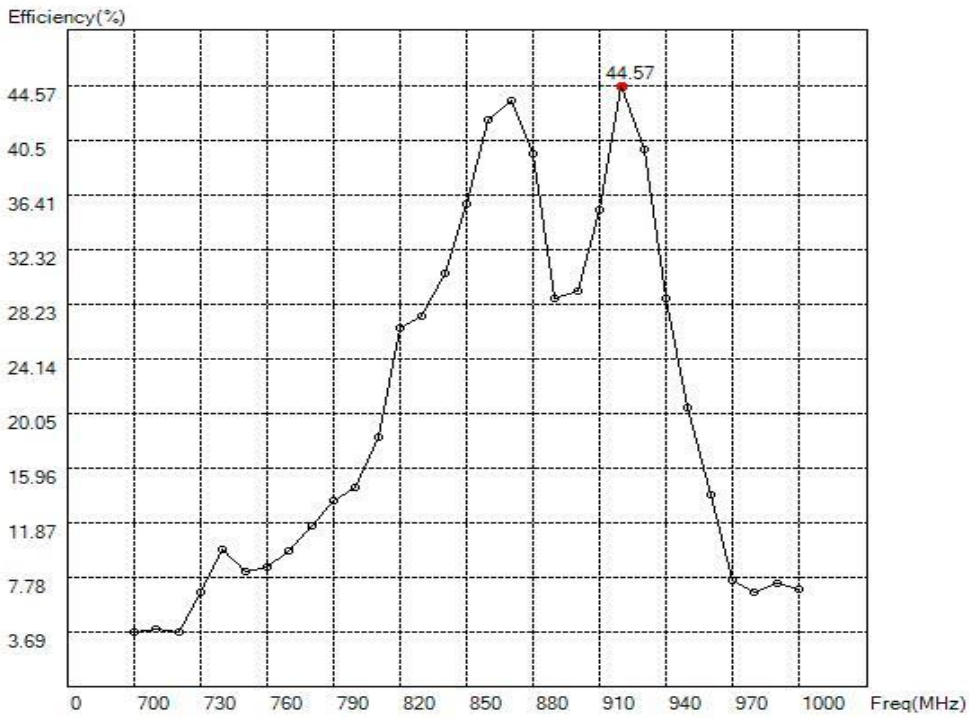
### 4.3. Efficiency

- 4G



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Efficiency (%)	22.12	33.69	37.67	36.13	47.52	40.25	39.52	39.18

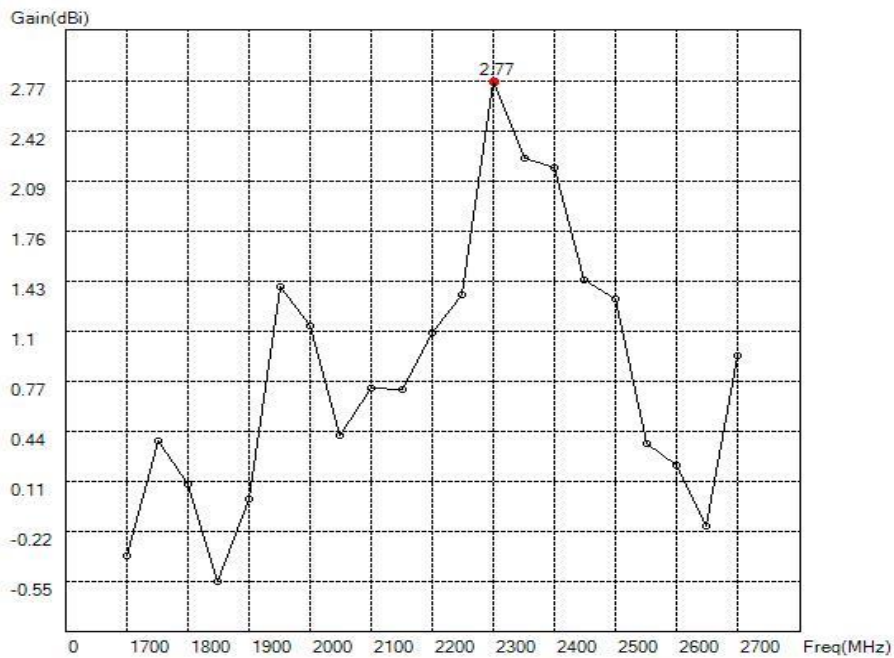
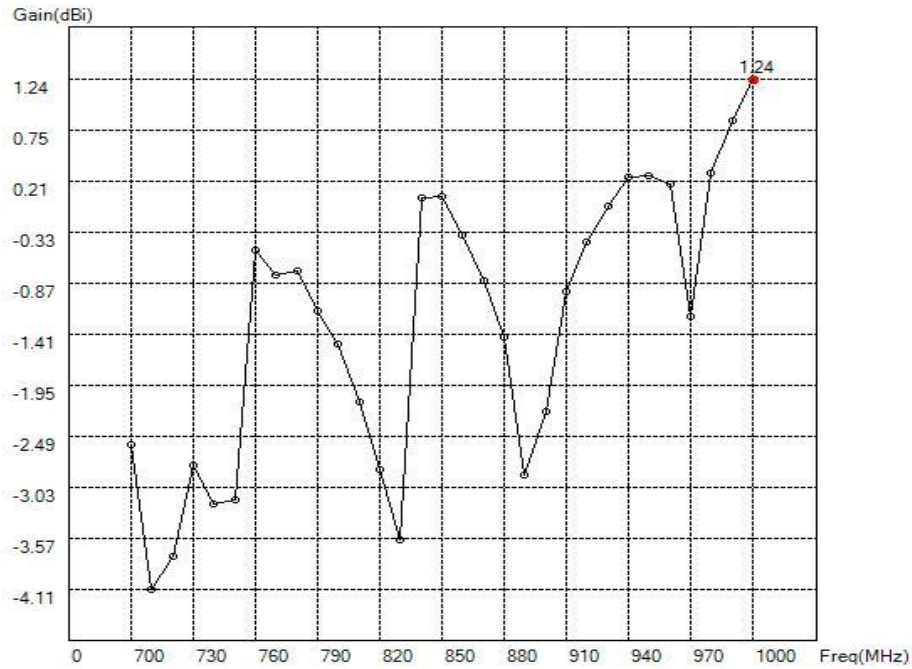
● 4G DIV



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Efficiency (%)	3.74	30.53	13.95	29.58	45.24	42.71	37.59	42.24

### 4.4. Gain

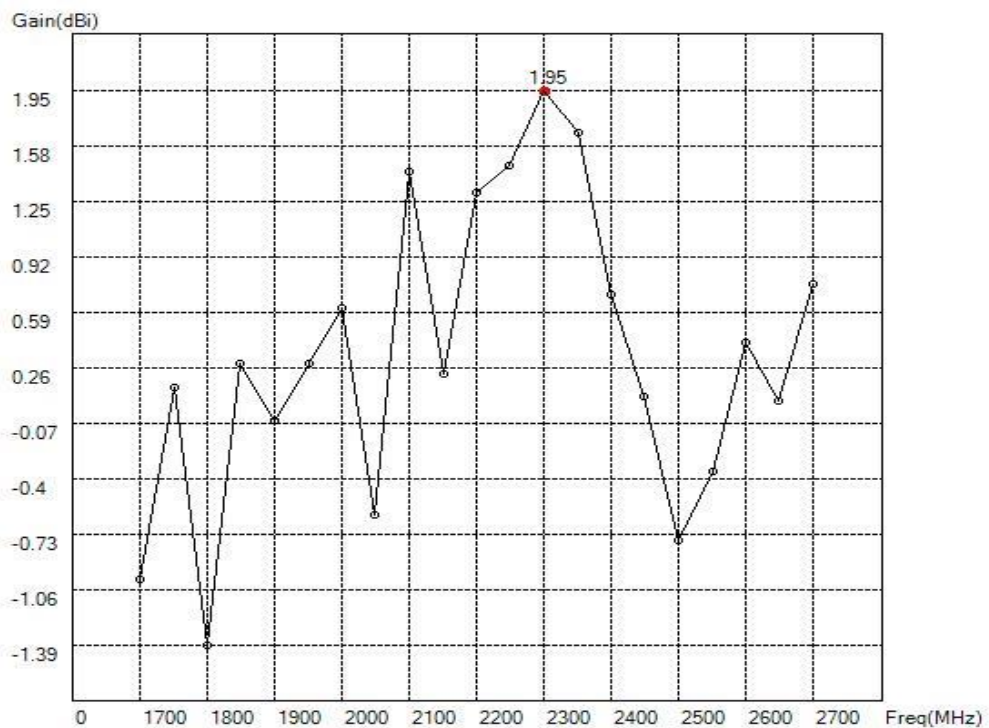
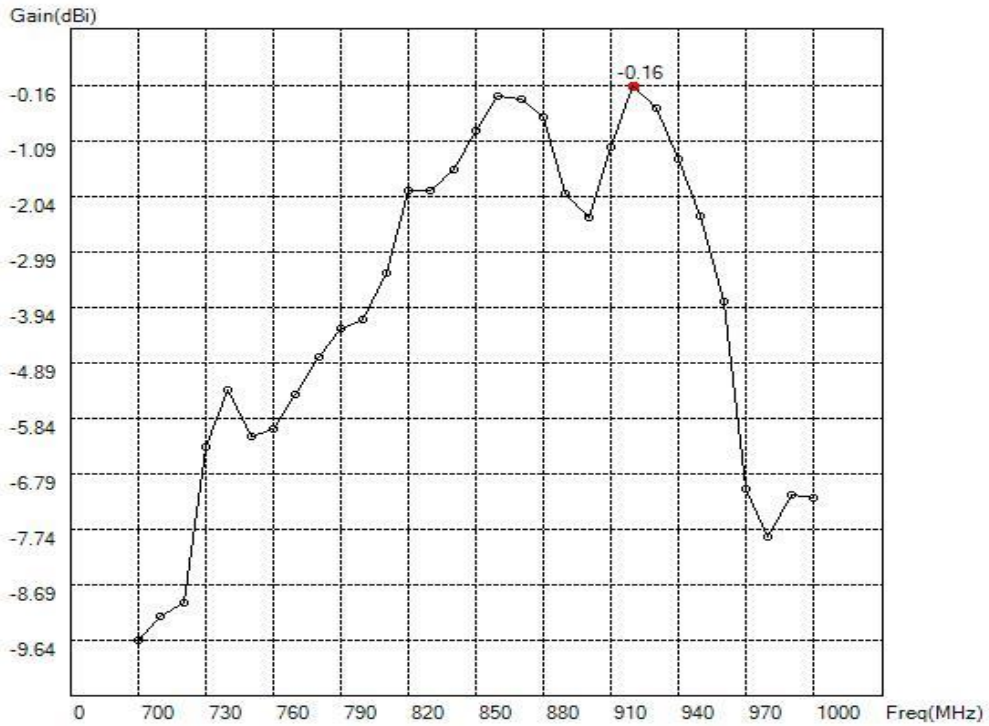
- 4G



<b>Frequency (MHz)</b>	700	840	960	1700	1950	2150	2450	2700
<b>Gain (dBi)</b>	-2.59	0.00	0.14	-0.38	1.41	0.73	1.45	0.94



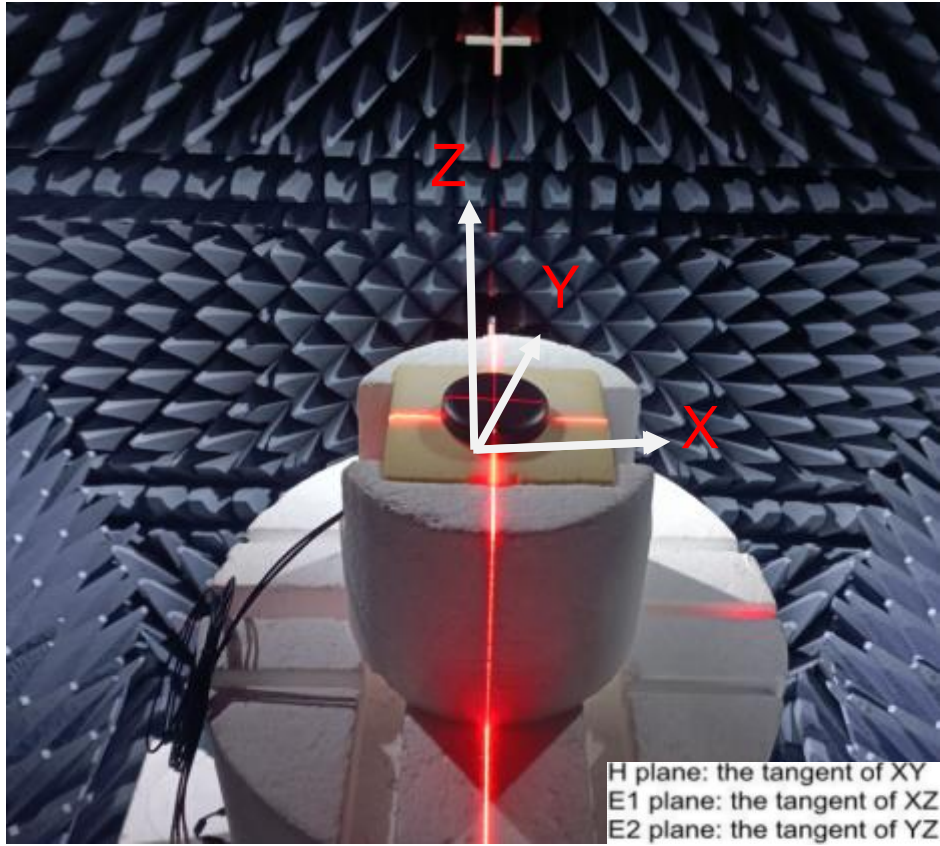
● 4G DIV



<b>Frequency (MHz)</b>	700	840	960	1700	1950	2150	2450	2700
<b>Gain (dBi)</b>	-9.64	-1.60	-3.86	-0.99	0.31	0.25	0.11	0.78

## 4.5. Radiation Pattern

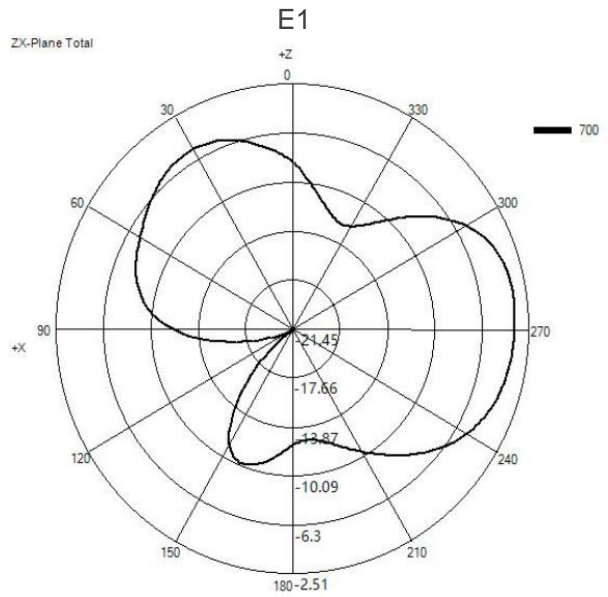
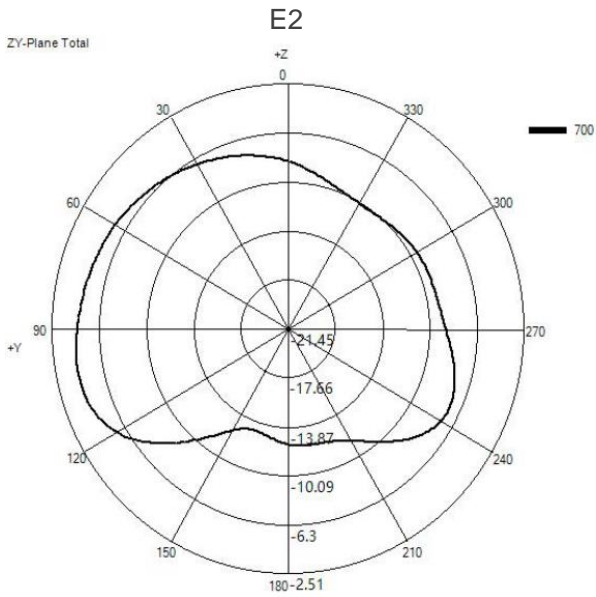
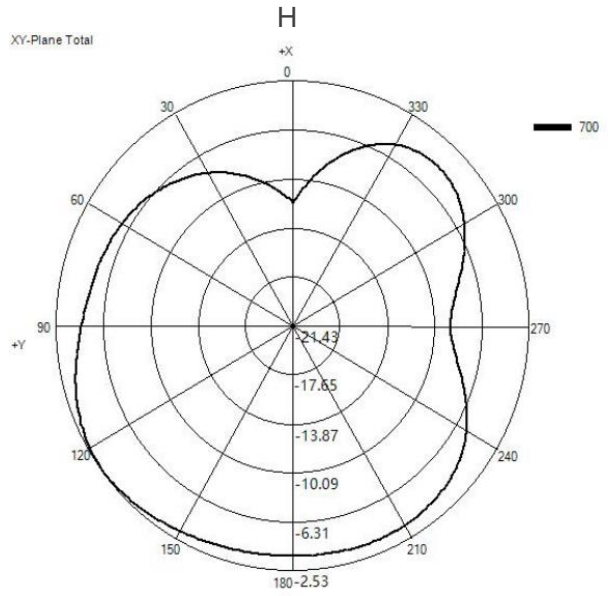
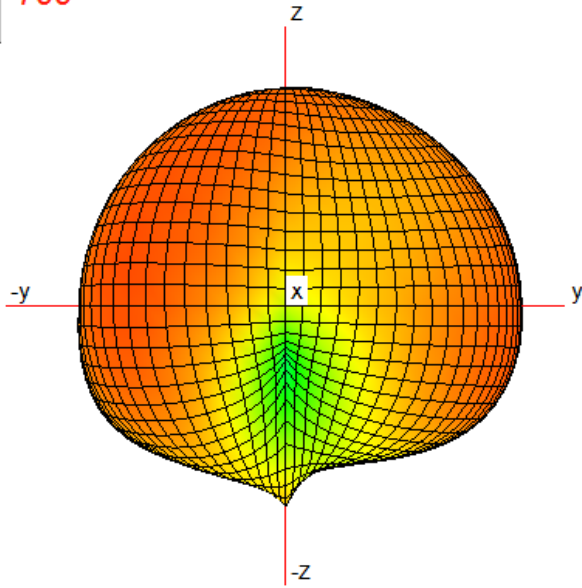
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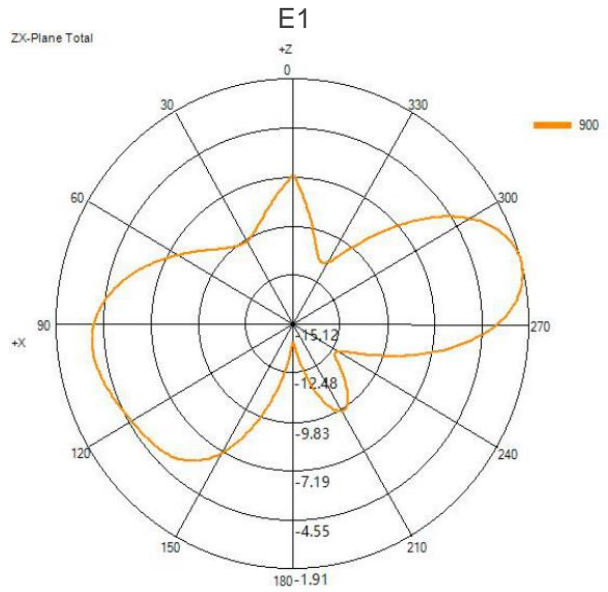
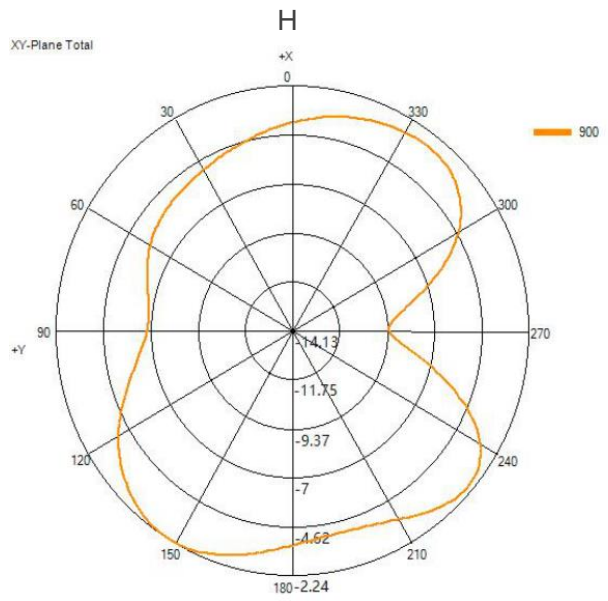
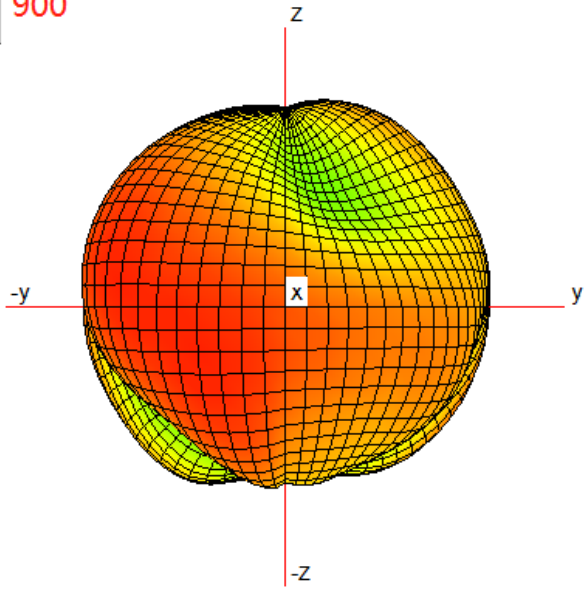


● 4G

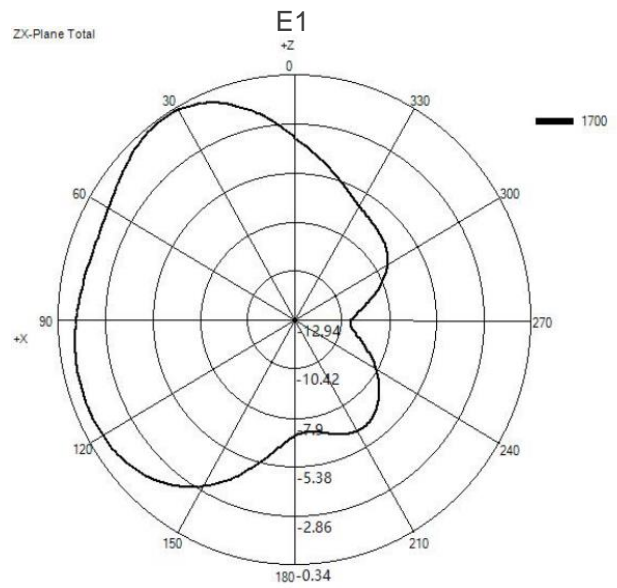
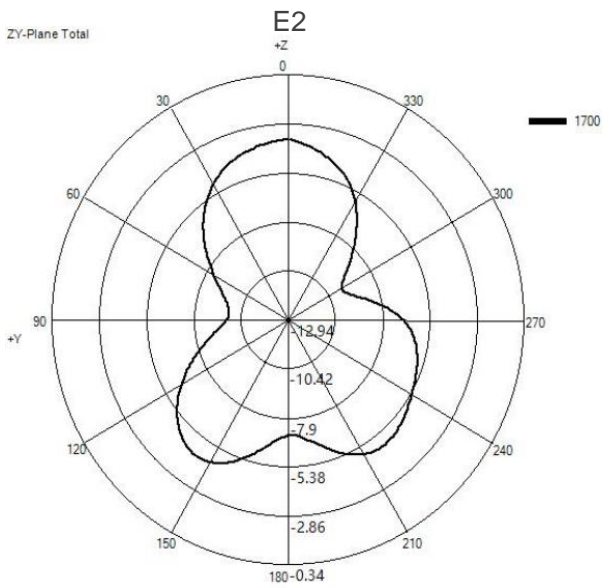
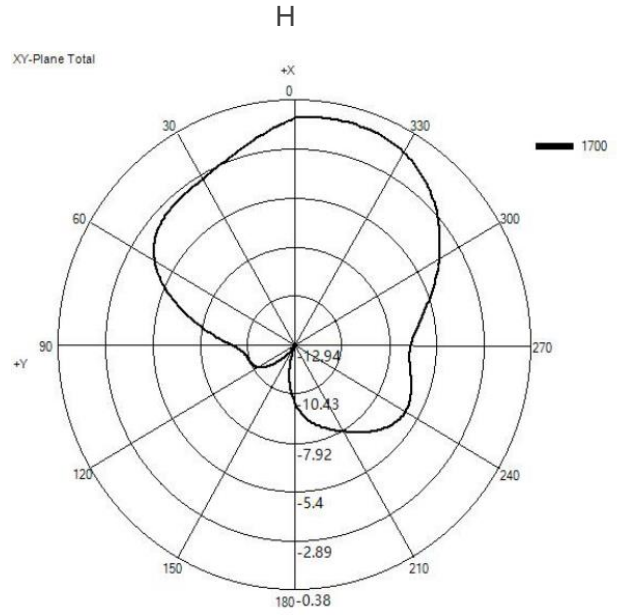
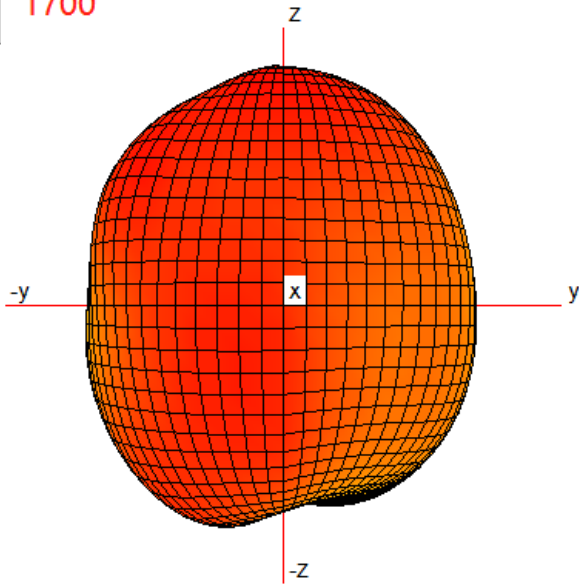
**700**

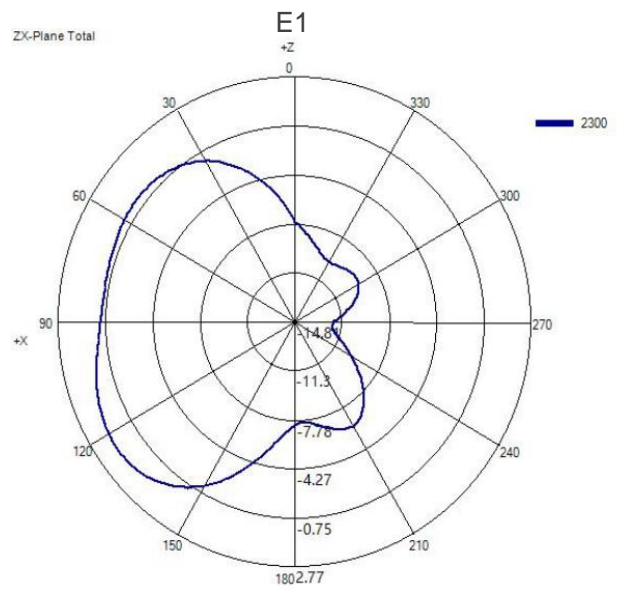
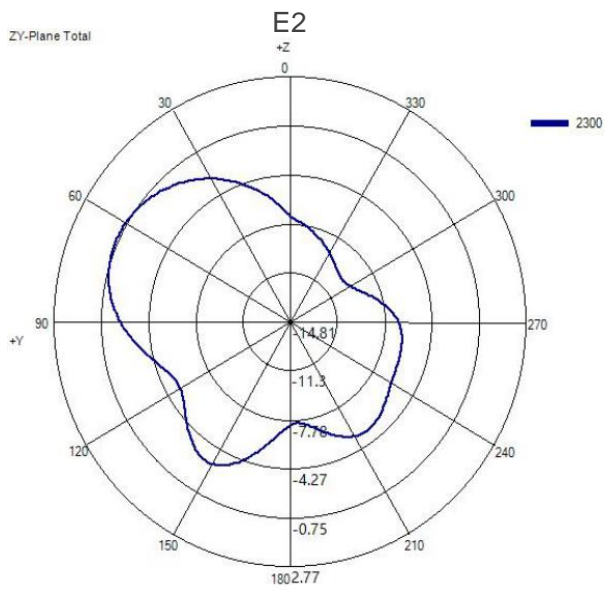
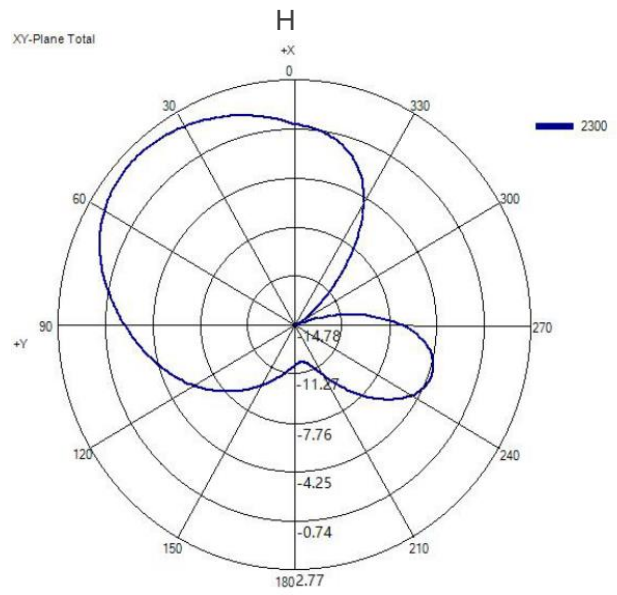
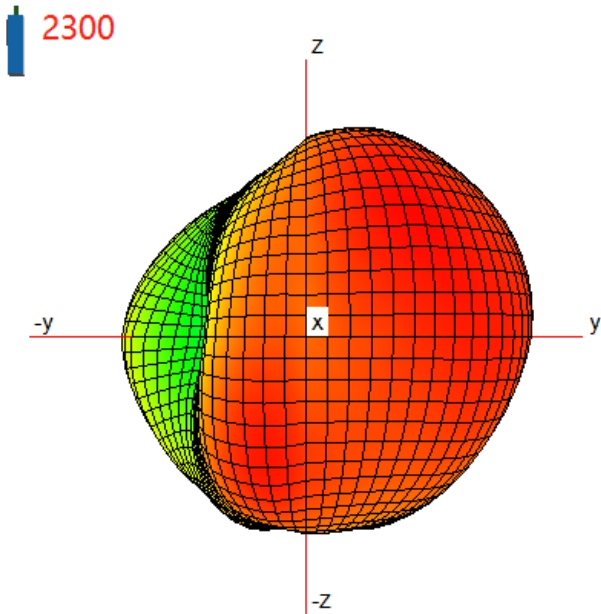


900



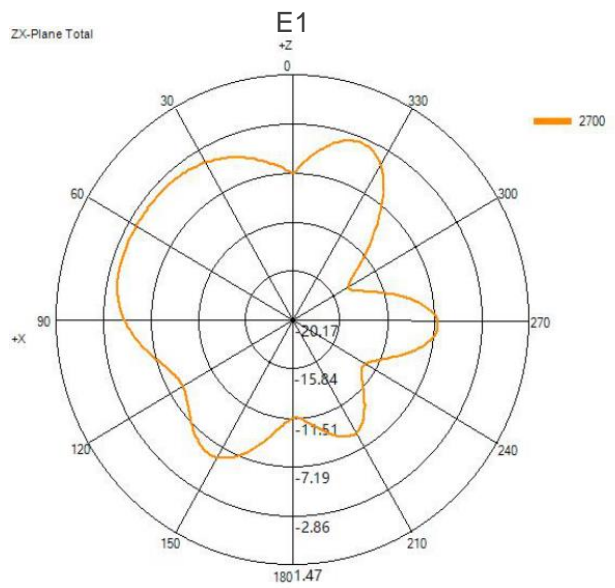
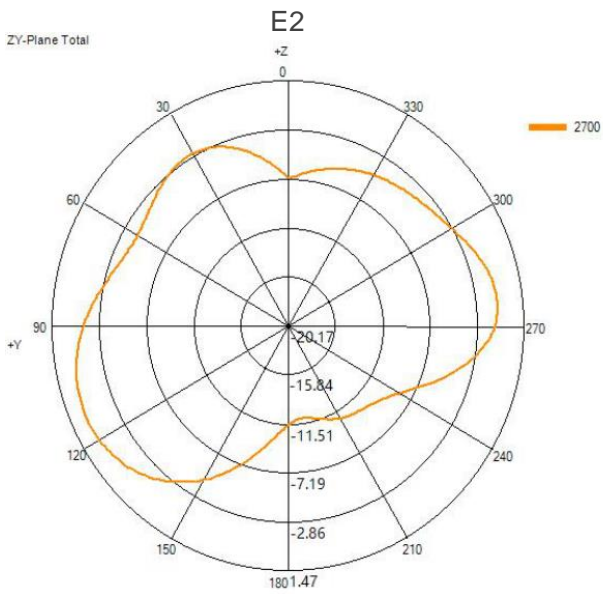
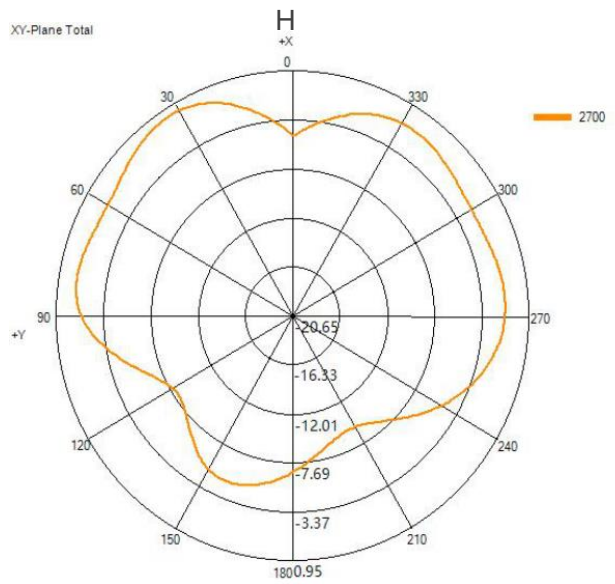
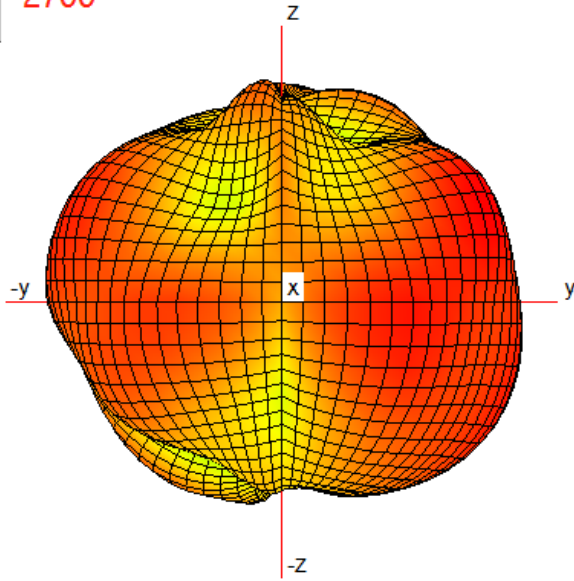
1700





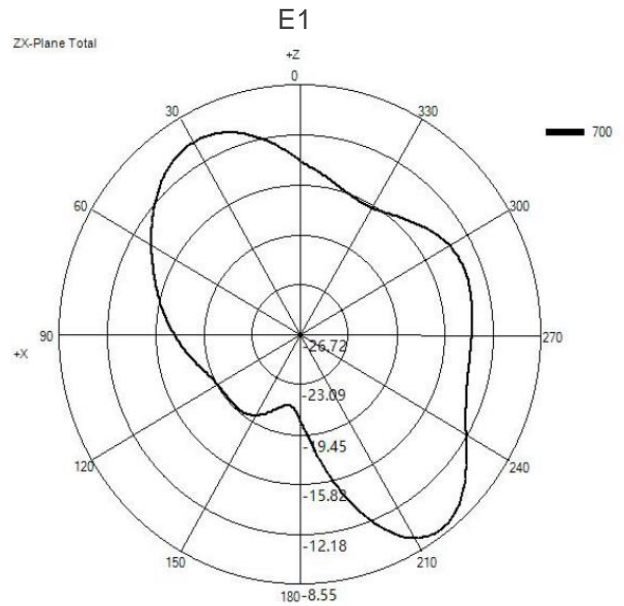
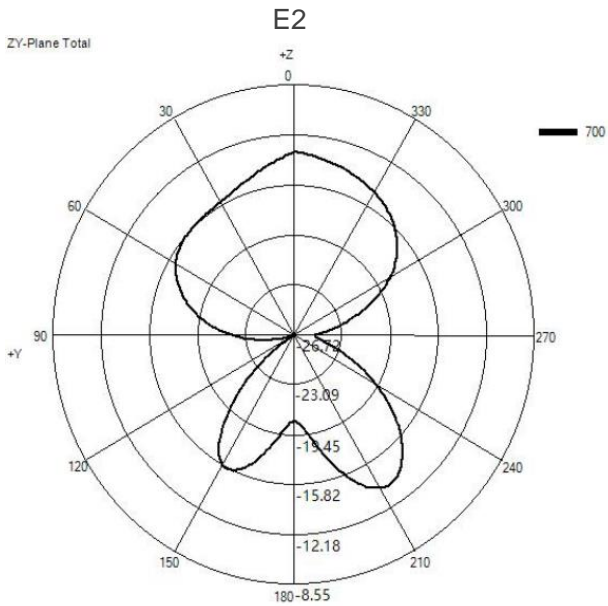
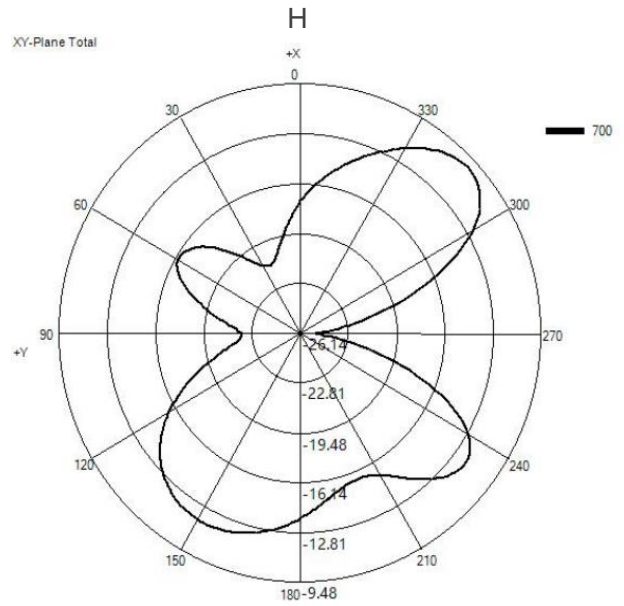
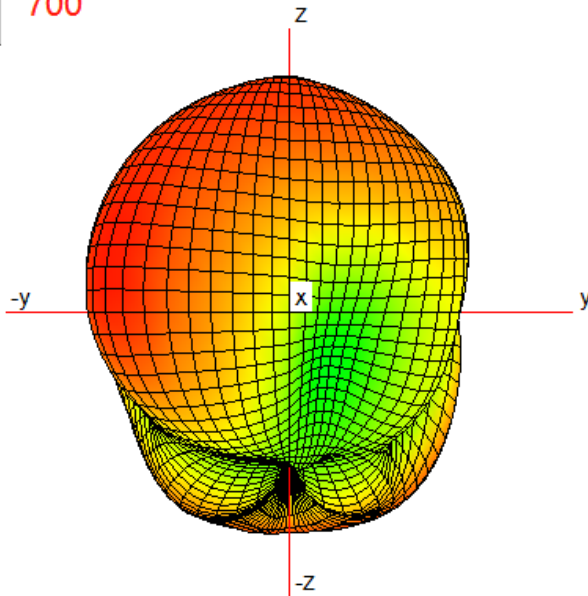


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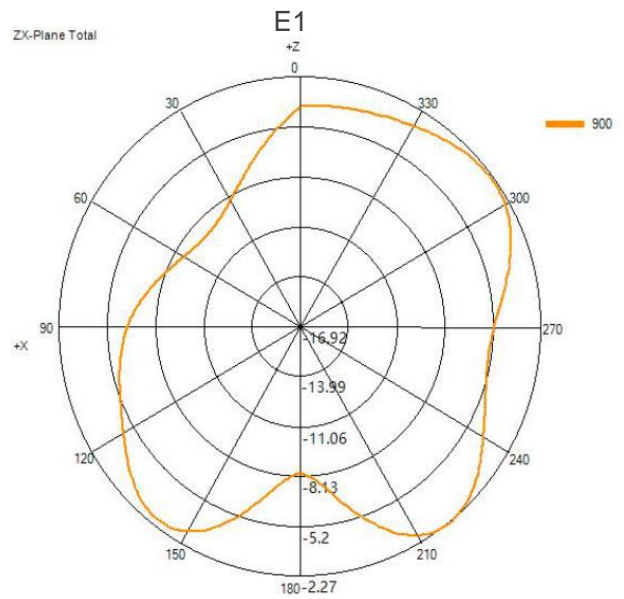
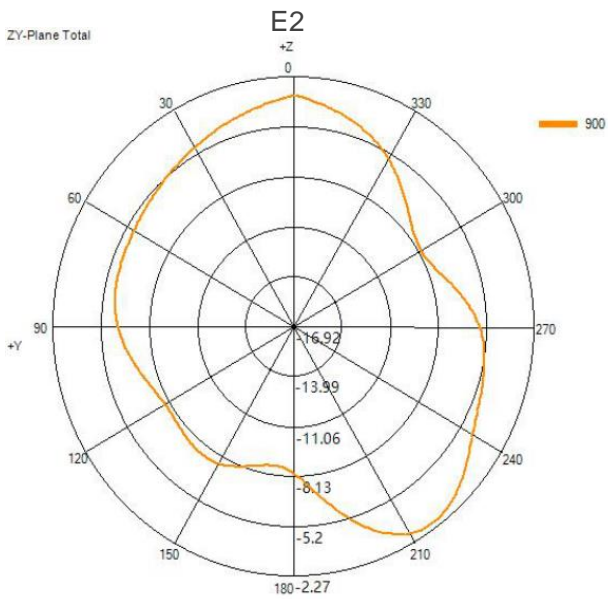
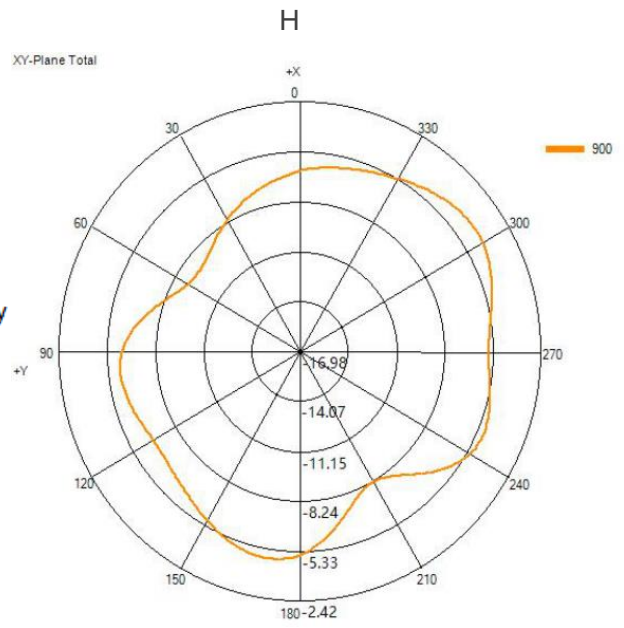
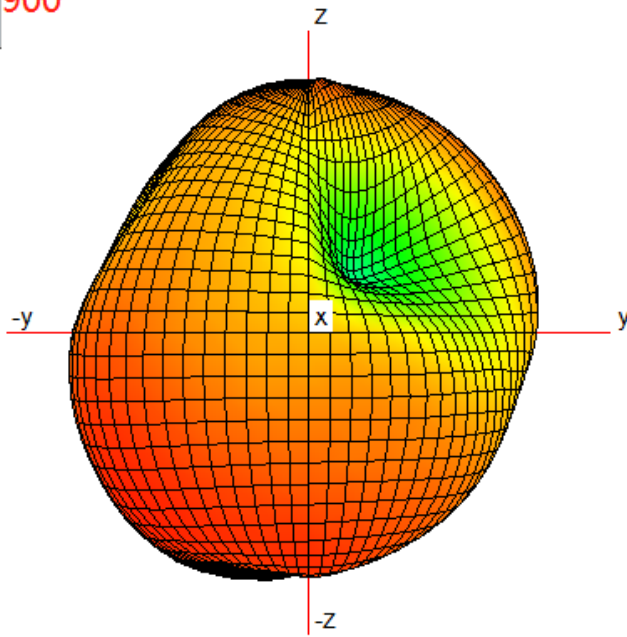


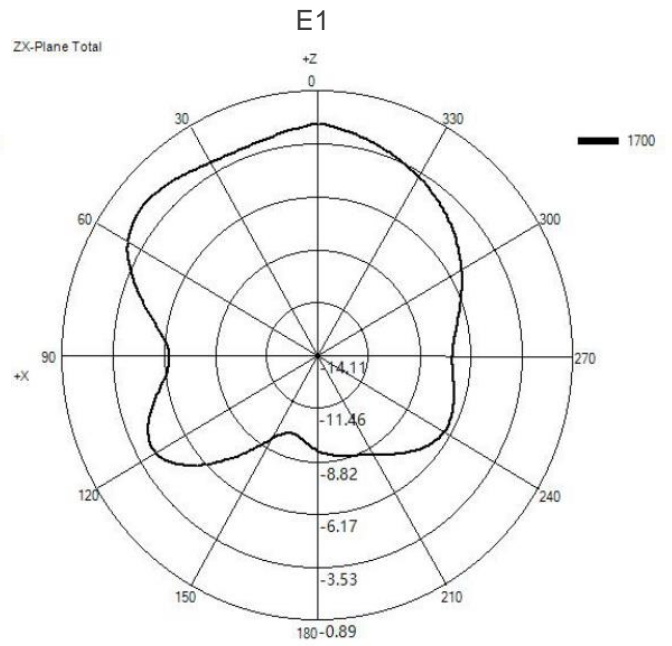
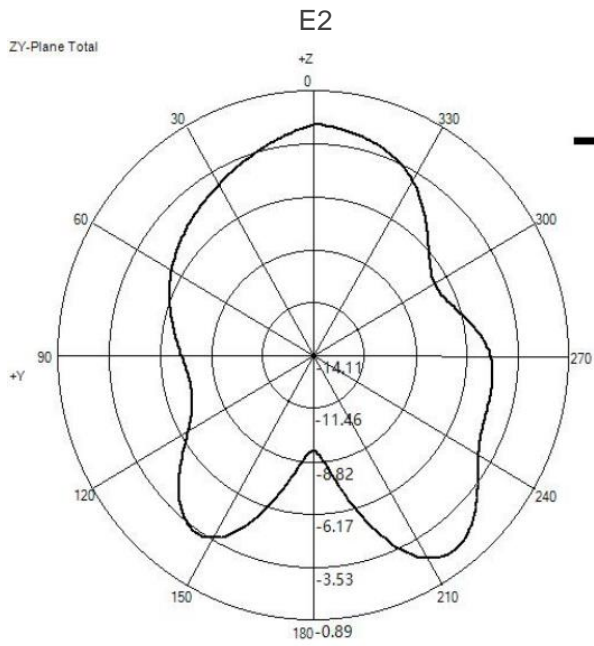
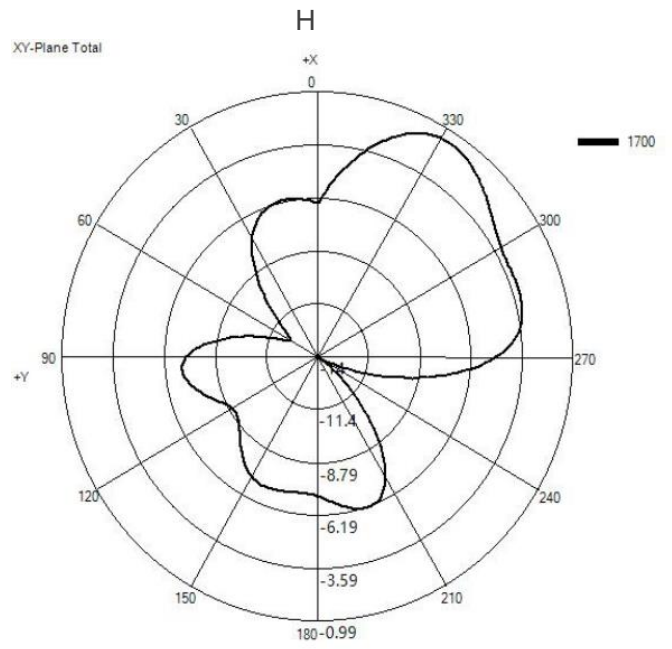
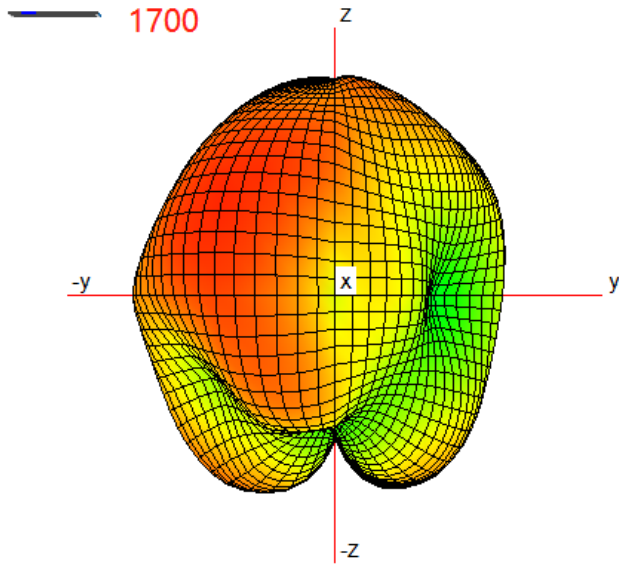
- 4G DIV

**700**

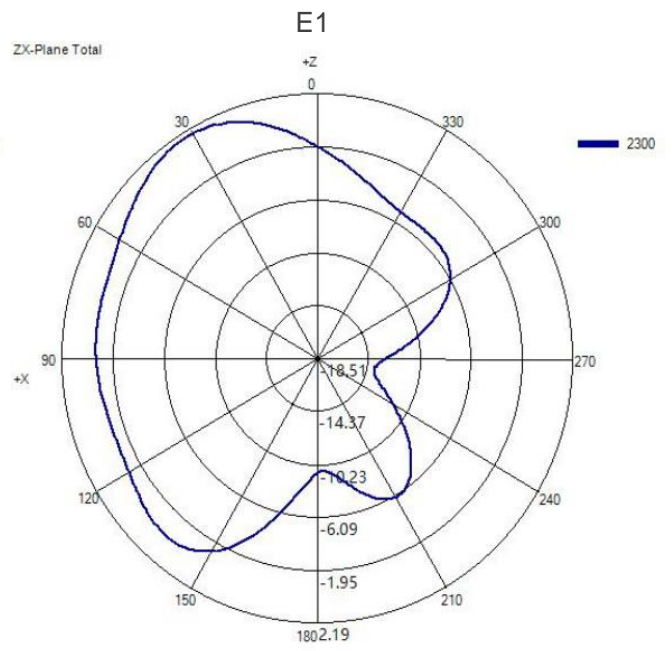
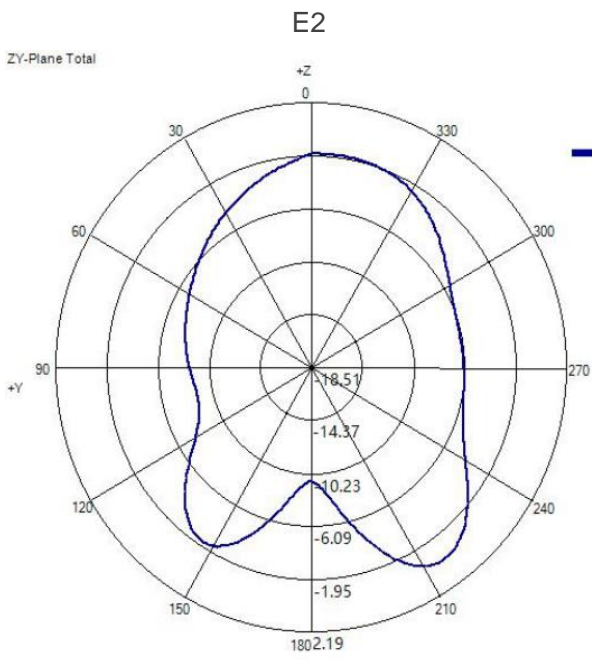
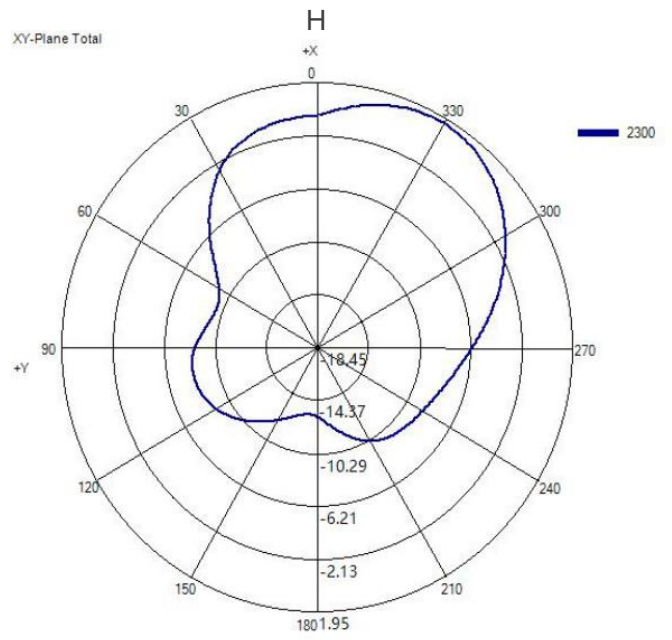
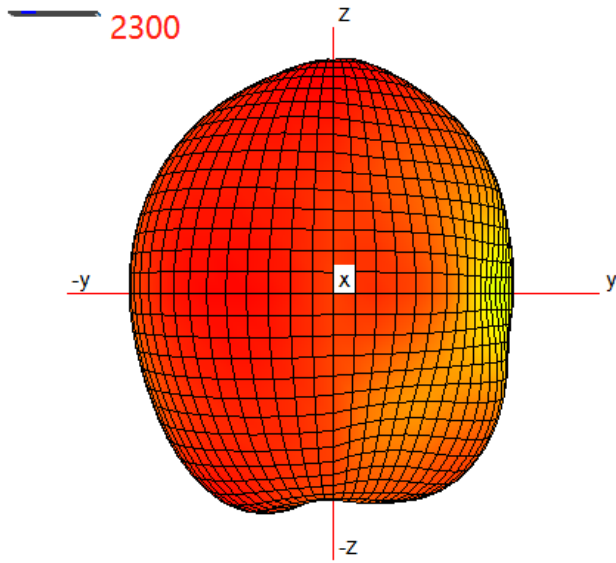


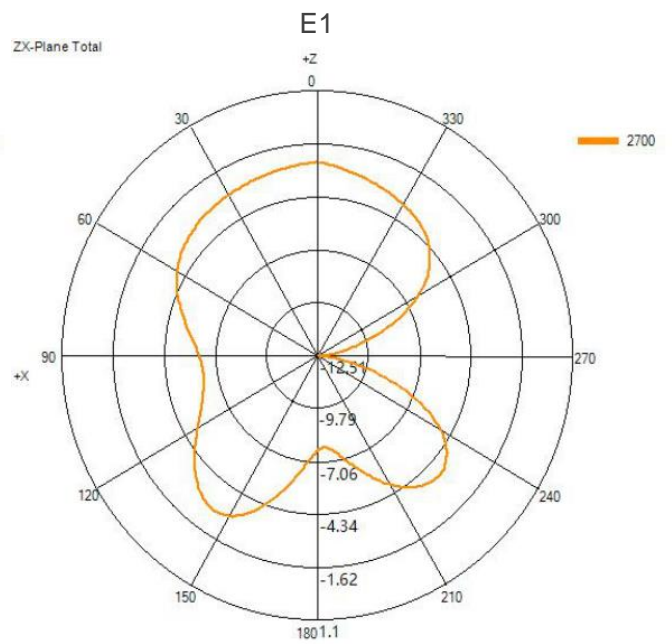
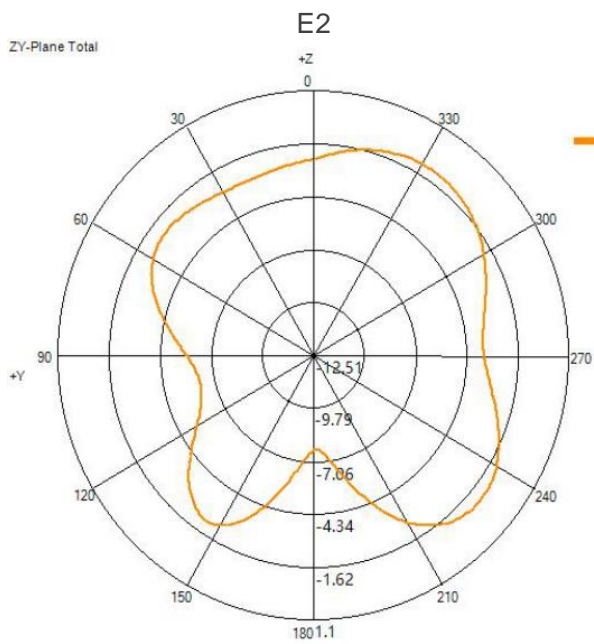
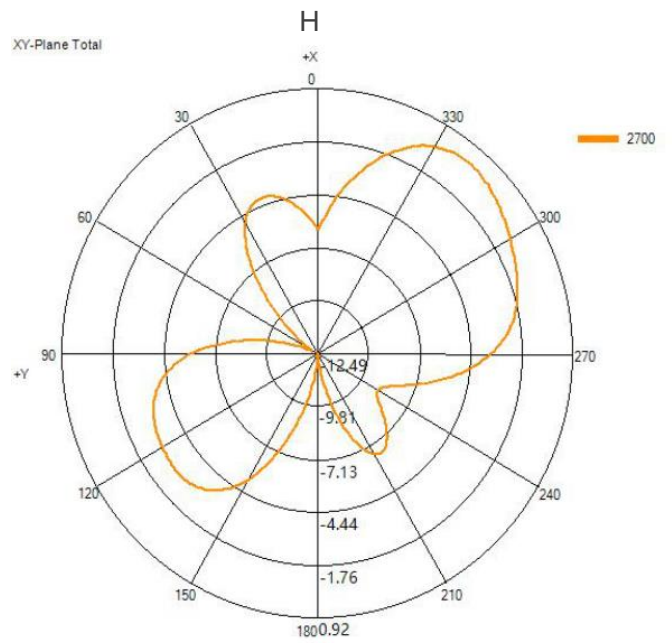
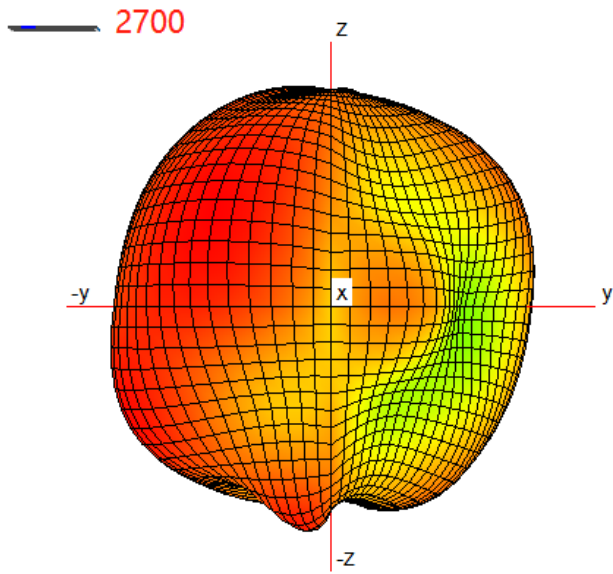
900











## 5 Product Size

