

Antenna

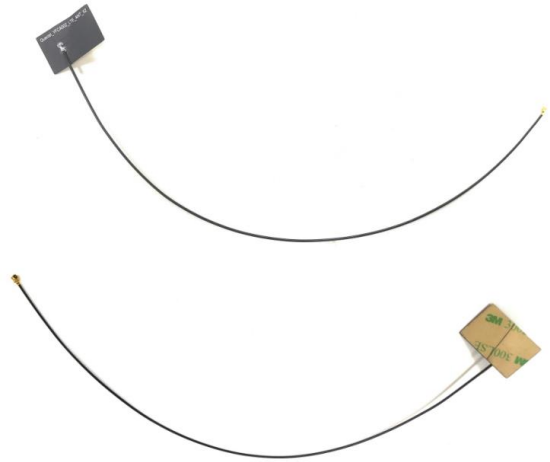
YFCA002FA Datasheet

Antenna Services

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Status: Preliminary



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About the Document

Revision History

Version	Date	Author	Note
-	2022-09-14	Kane LIU Joye WANG	Creation of the document
1.0	2022-09-14	Kane LIU Joye WANG	First official release

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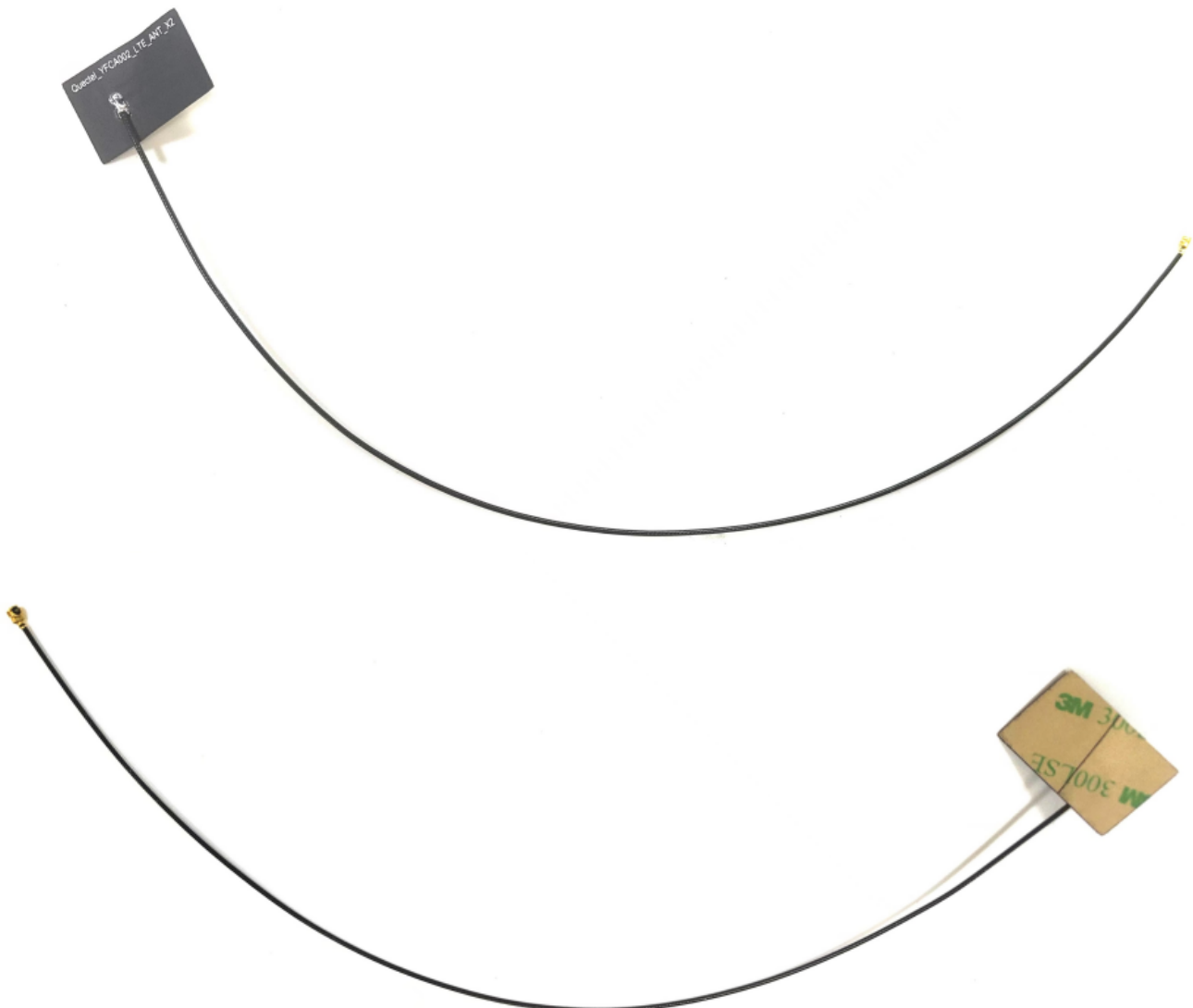
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1 Product Description

This Quectel embedded 4G FPC 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

- Cellular 4G
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	698MHz-960MHz,1710MHz-2690MHz
Input Impedence	50 Ω
VSWR	≤ 5.0
Gain	≤ 4 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2450–2690	3300–4000	4000–5000
VSWR (Max.)	4.3	-	-	2.1	1.9	-	-
Average Efficiency (%)	27.02	-	-	56.02	53.03	-	-
Max. Peak Gain (dBi)	-0.66	-	-	3.6	3.21	-	-

Mechanical Specifications

Antenna Size(mm)	30 × 20
Material	FPC
Cable Type & Length	Φ 1.13 black & 300 mm
Connector Type	IPEX 1
Working Temperature	-40 °C to +85 °C
Weight	Typical 1.15g
Color	Black
Mounting Type	Adhesive

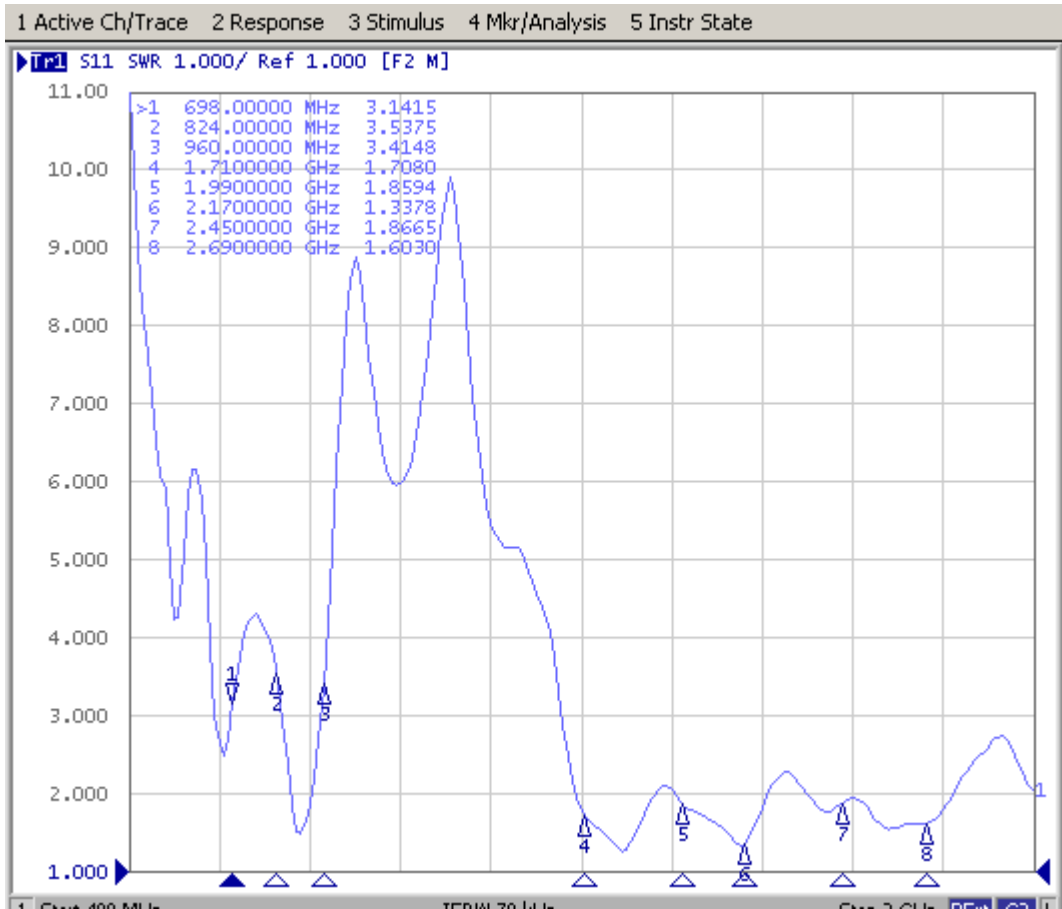
4 Overall Performance

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

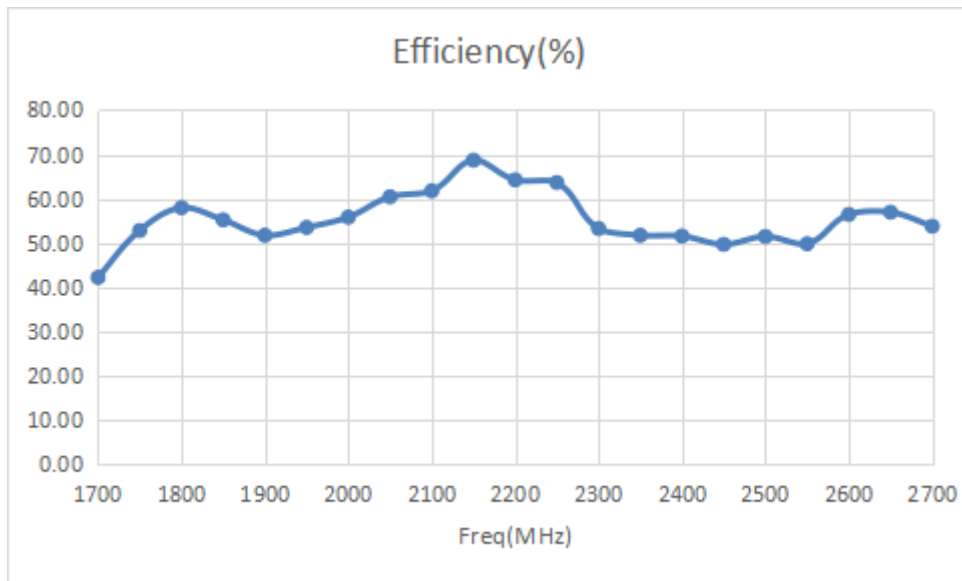
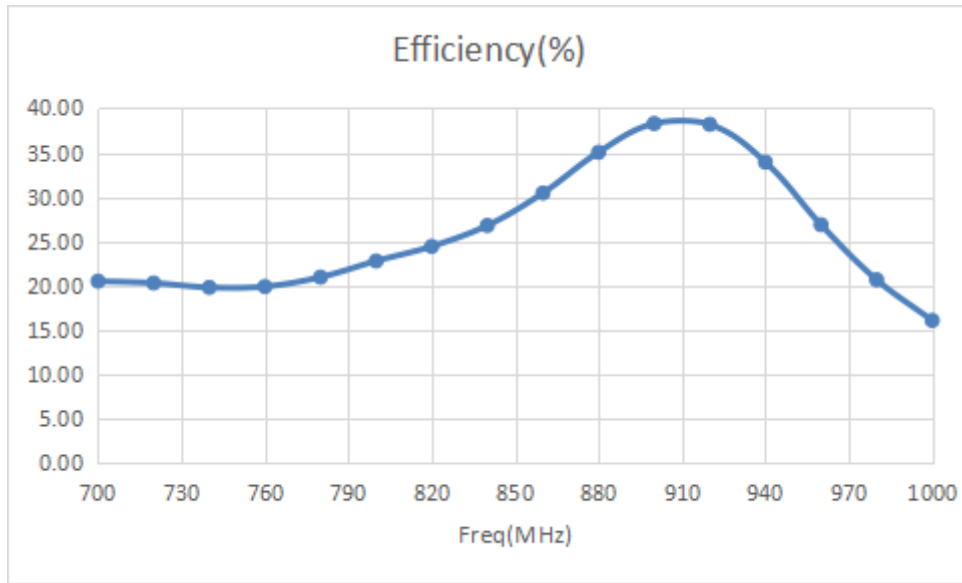


4.2. VSWR



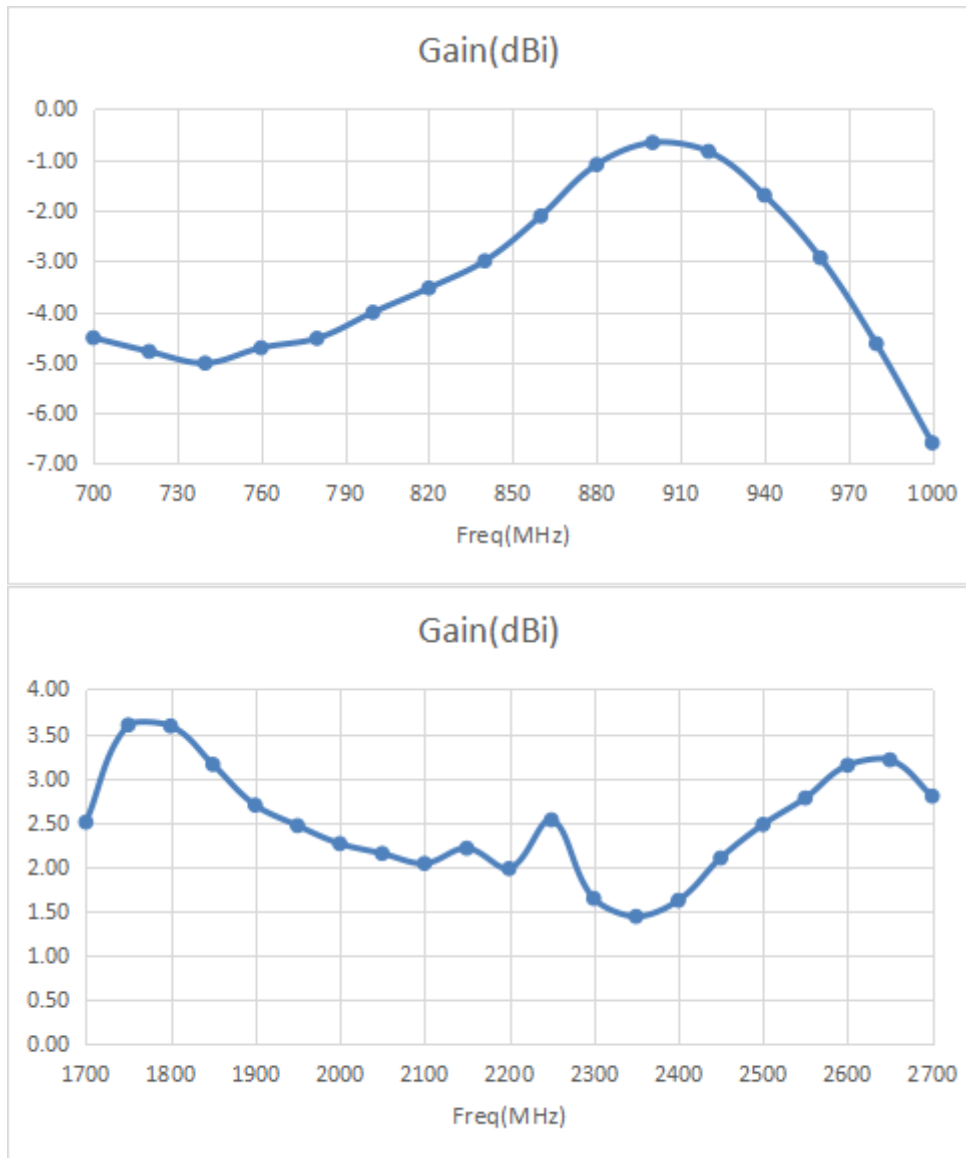
Frequency (MHz)	698	824	960	1710	1990	2170	2450	2690
VSWR	3.14	3.53	3.41	1.7	1.85	1.33	1.86	1.6

4.3. Efficiency



Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Efficiency (%)	20.52	26.80	26.88	42.23	53.52	68.70	49.69	53.79

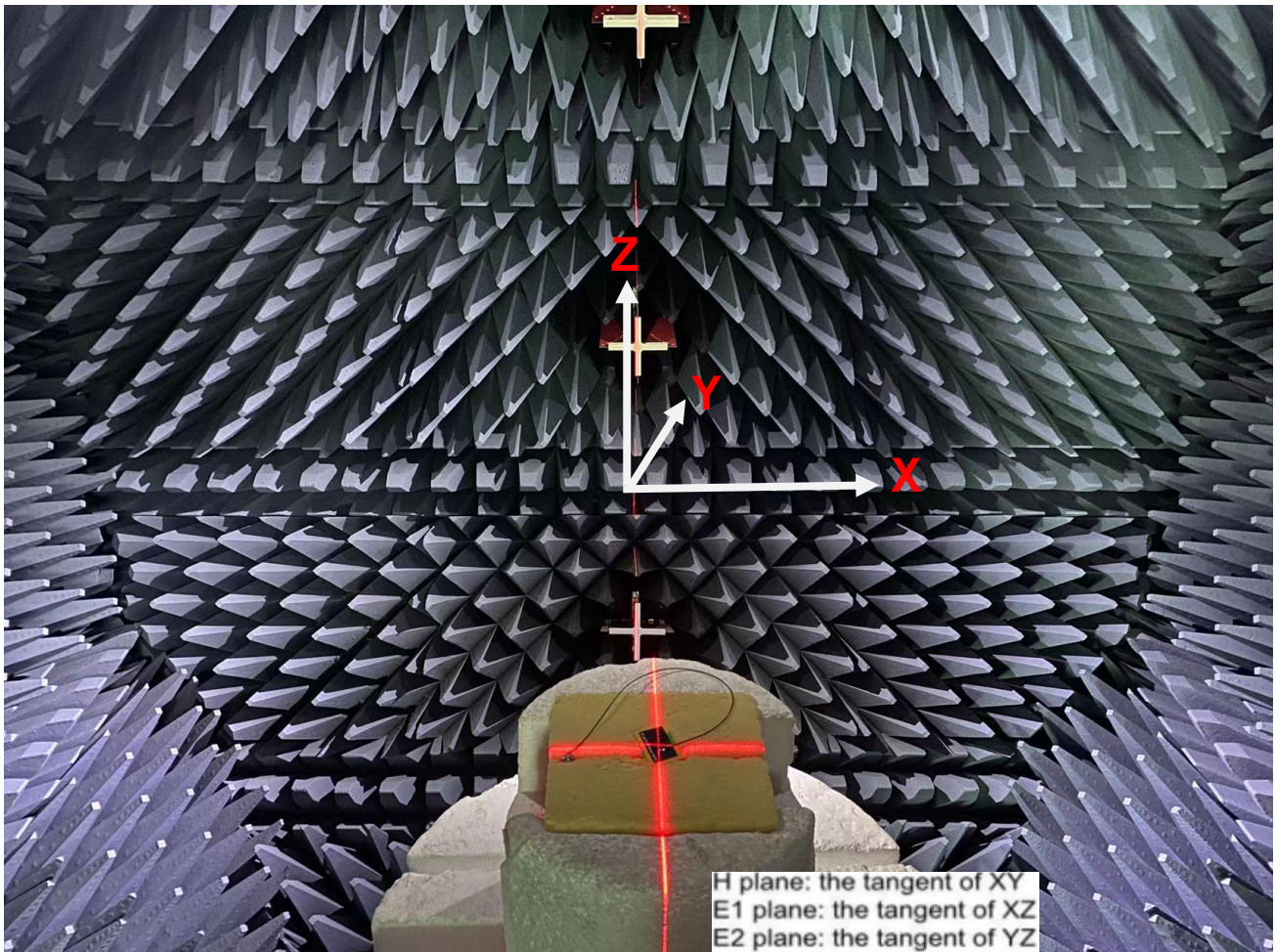
4.4. Gain



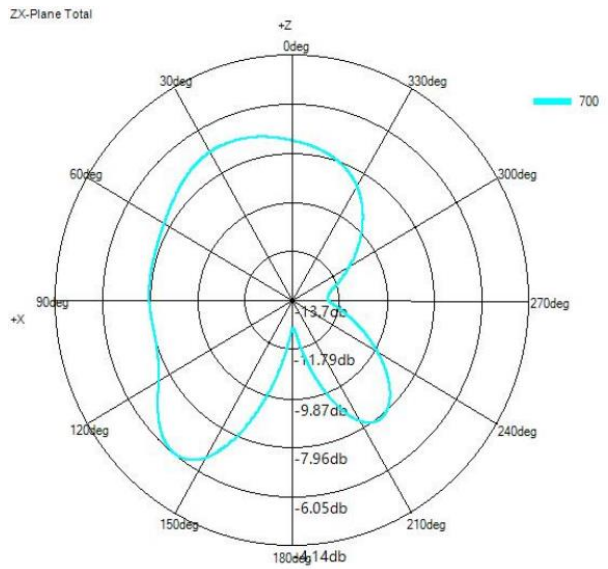
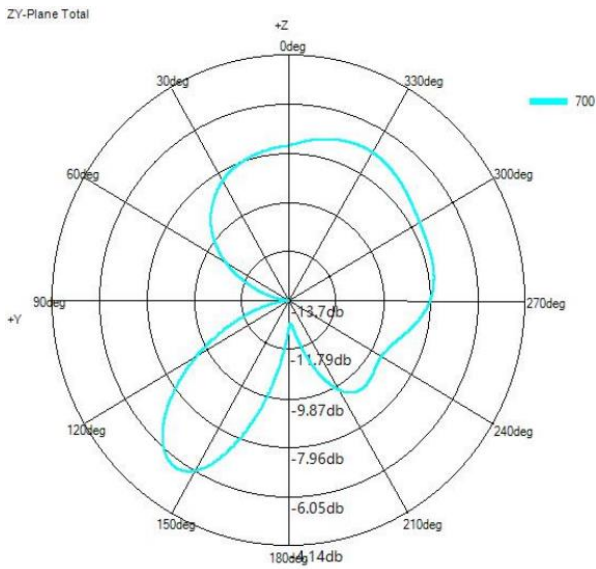
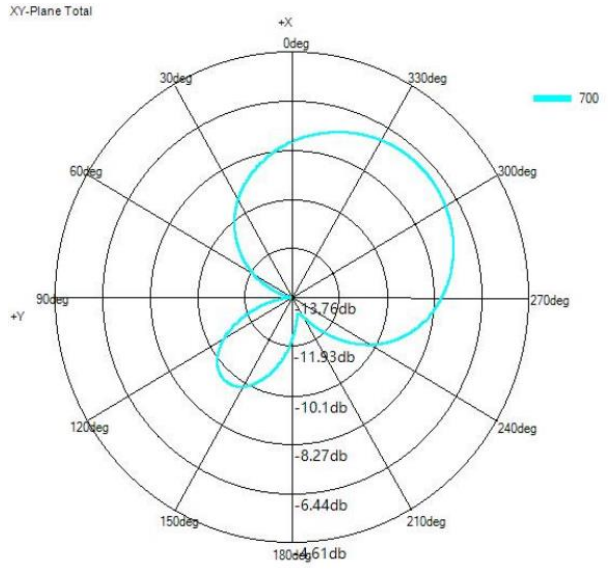
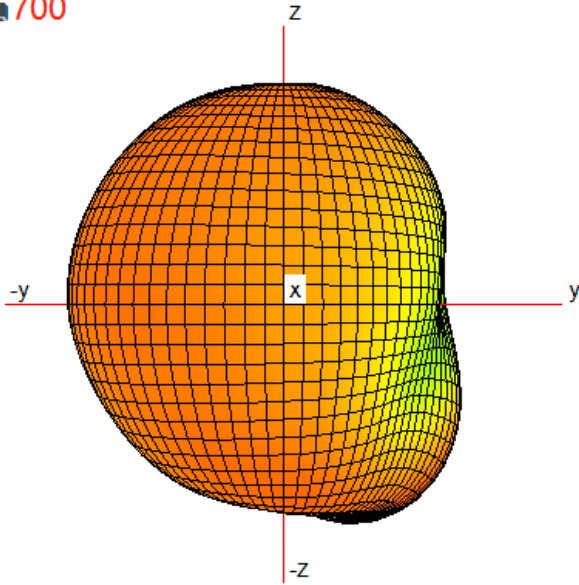
Frequency (MHz)	700	840	960	1700	1950	2150	2450	2700
Gain (dBi)	-4.52	-3.00	-2.94	2.50	2.46	2.21	2.10	2.80

4.5. Radiation Pattern

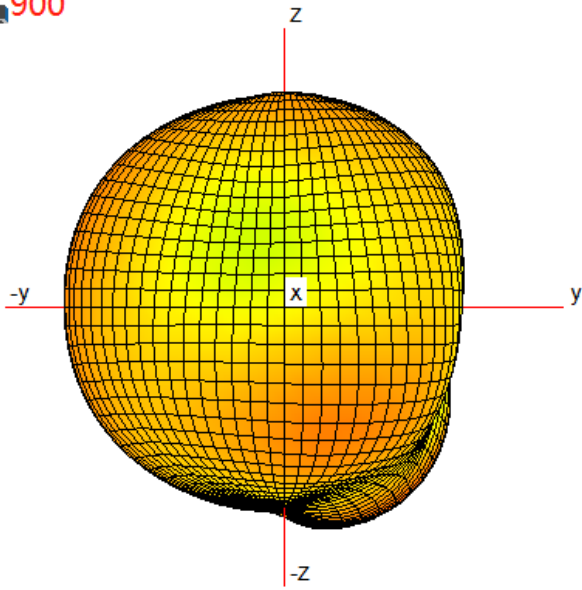
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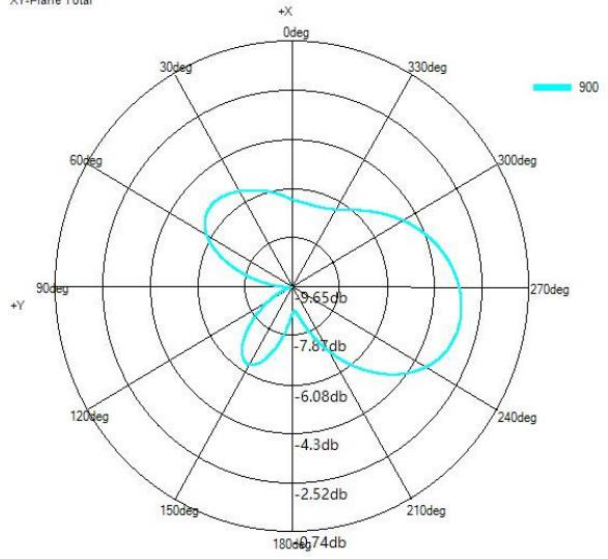
700



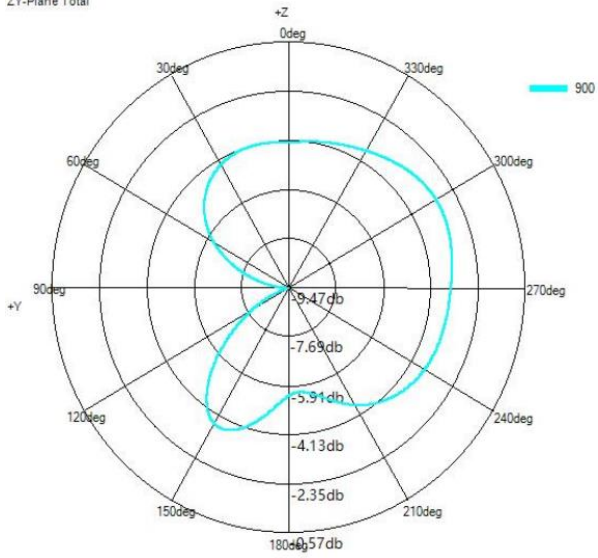
900



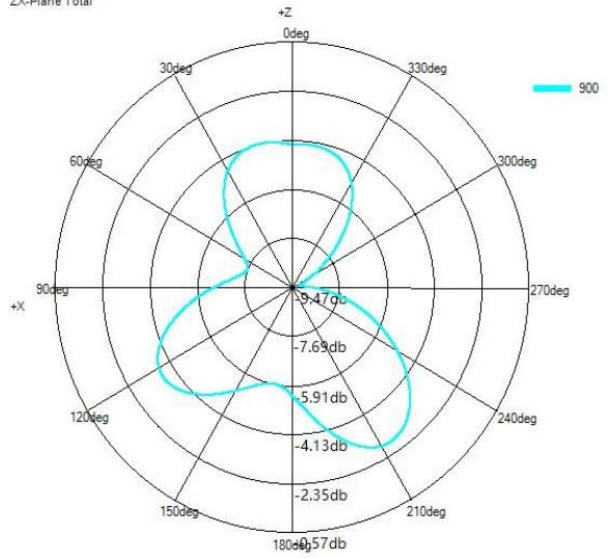
XY-Plane Total



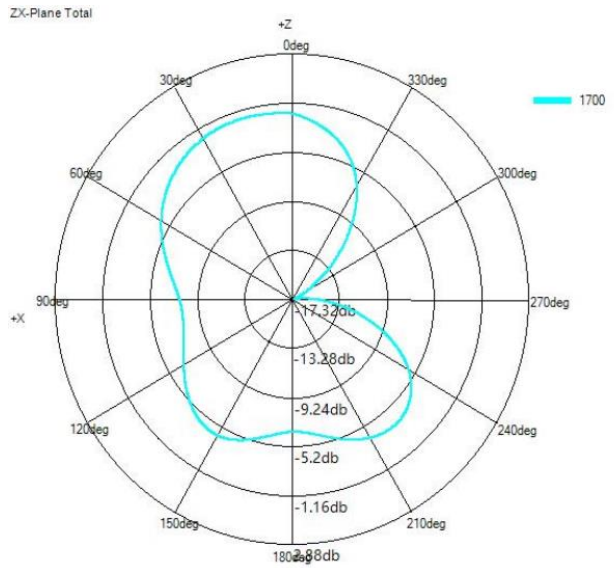
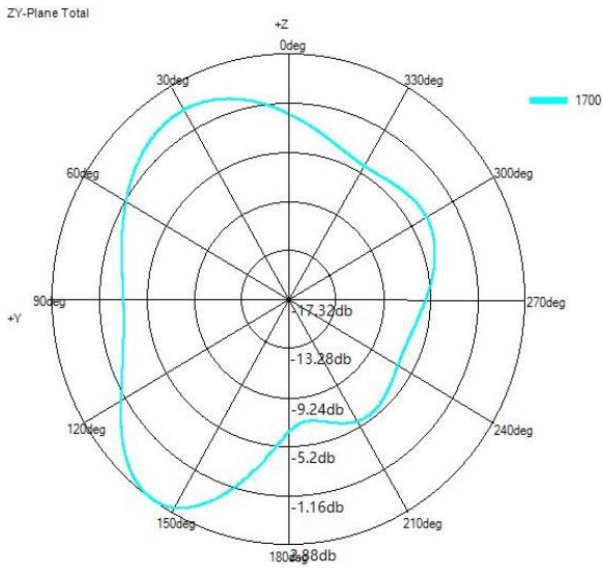
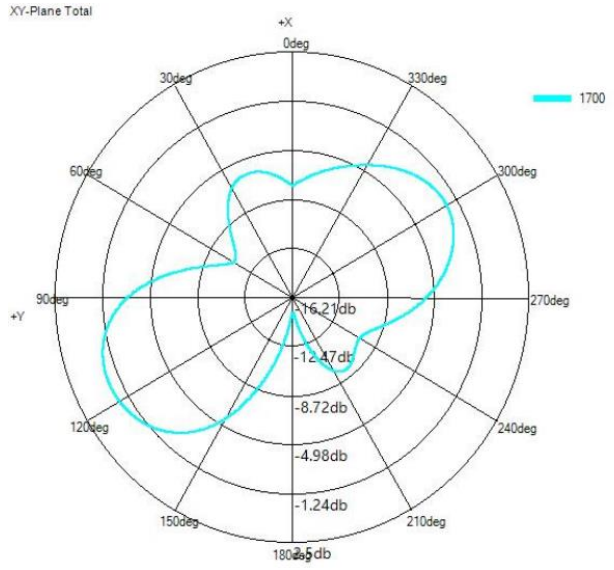
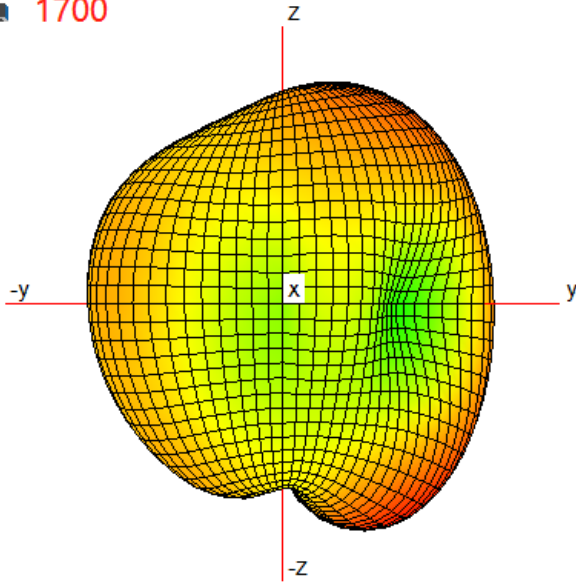
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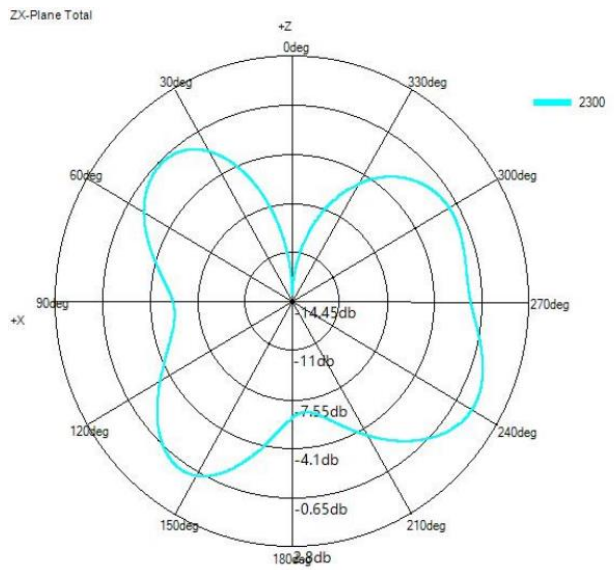
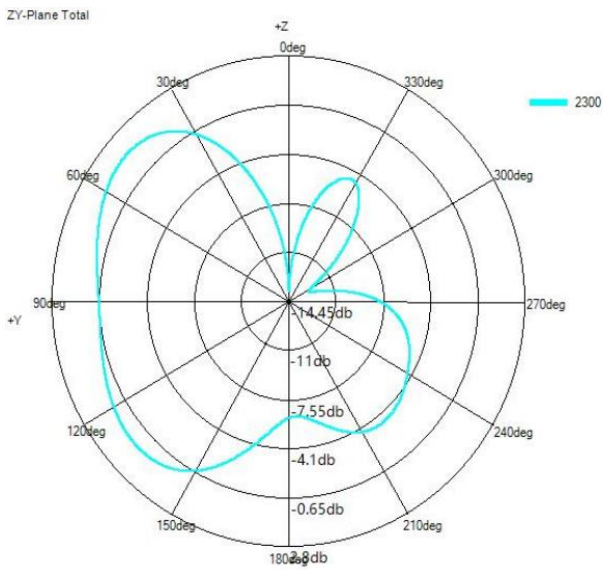
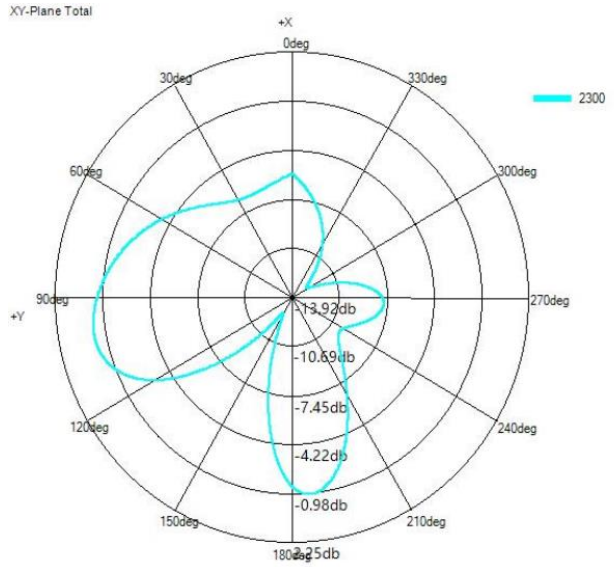
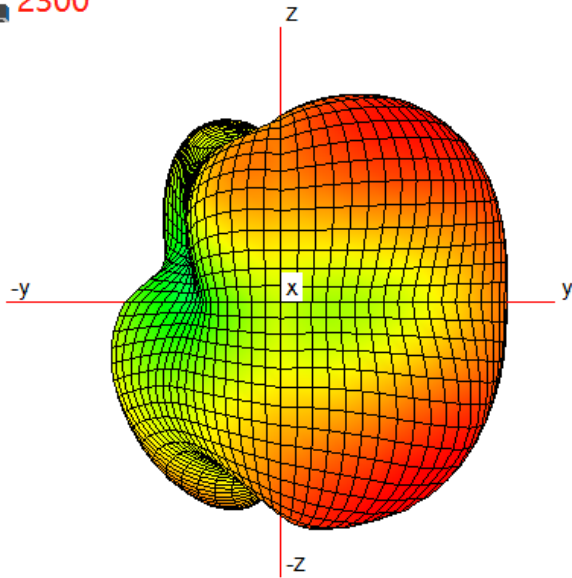
ZX-Plane Total



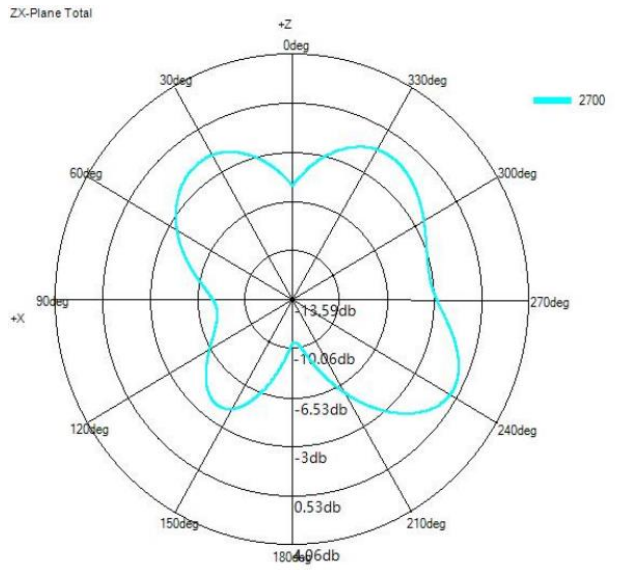
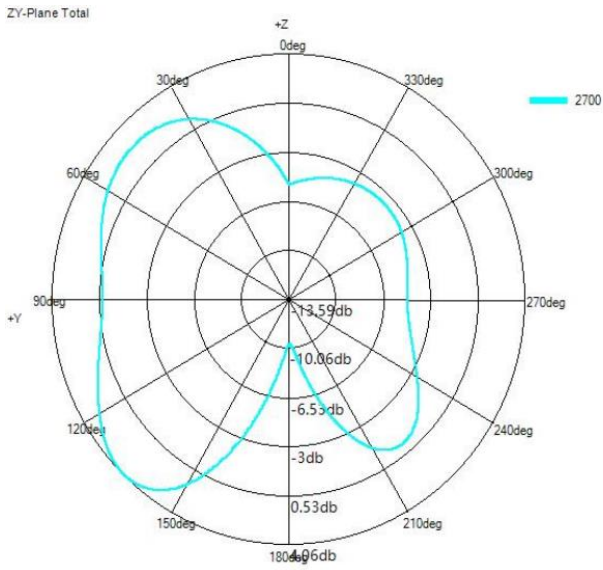
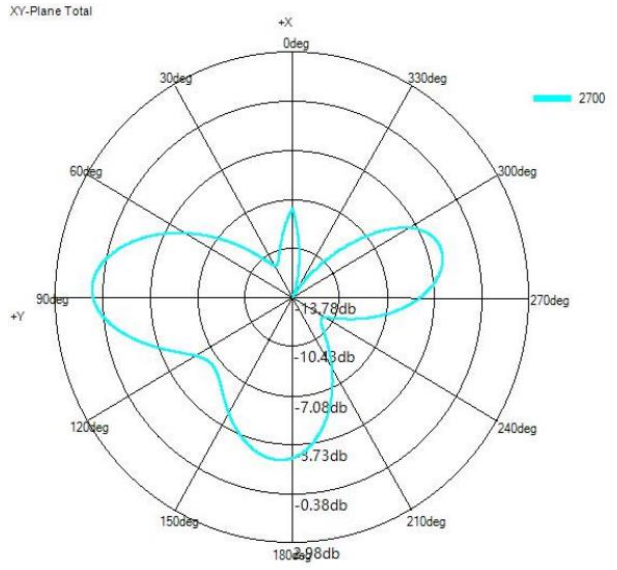
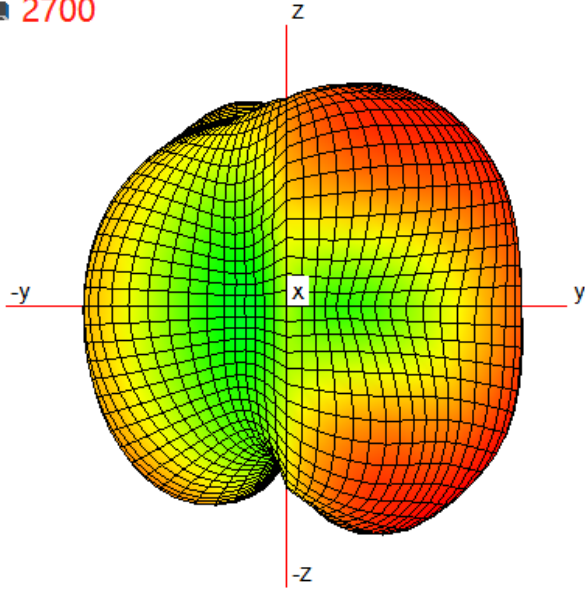
1700



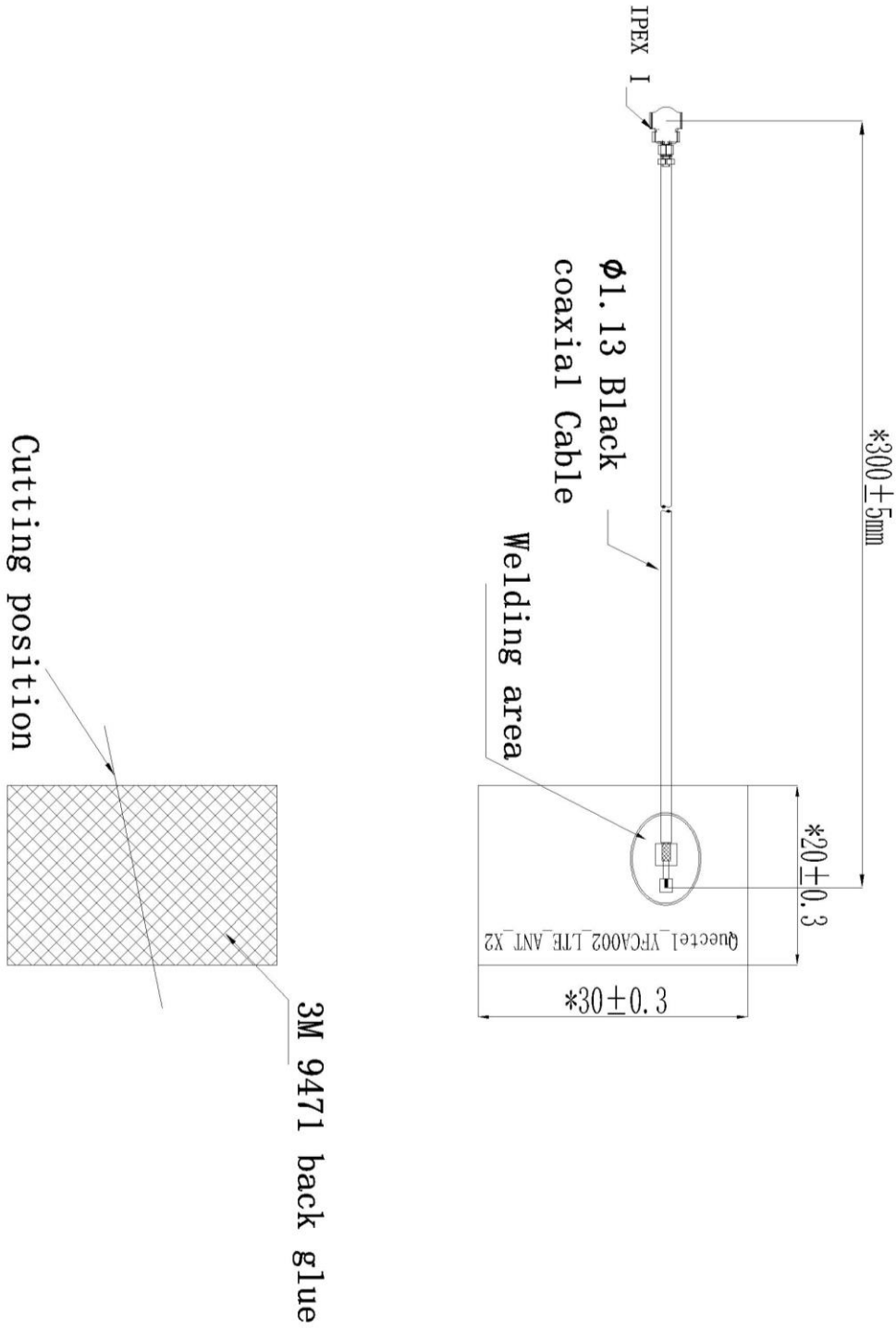
2300



2700



5 Product Size



Unit: mm