Antenna Datasheet

Product OC: Y0YHT00A0AA
Version: 1.0
Date: 2023-11-29
Status: Preliminary

Product Name: External 5G Antenna
Key Features:
Frequency Band: 600-960 MHz; 1710-2690 MHz; 3300-5000 MHz
Dimensions: Φ29.8 * 240.5 mm
Efficiency: Up to 56%
RoHS and REACH Compliant
IP65

Overview

This Quectel external 5G antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal omni-directional antenna solution to ensure high-speed data transmission, which can be widely used in a diversity of wireless communication devices such as AP, routers, outdoor equipment, real-time monitoring equipment, and many more. The antenna is designed to work with any ground plane size or in free space for ease of integration. Quectel also offers flexible installation with custom cable length and connector options.

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1 Specification

Test Condition: On 300×300mm Metal Plane

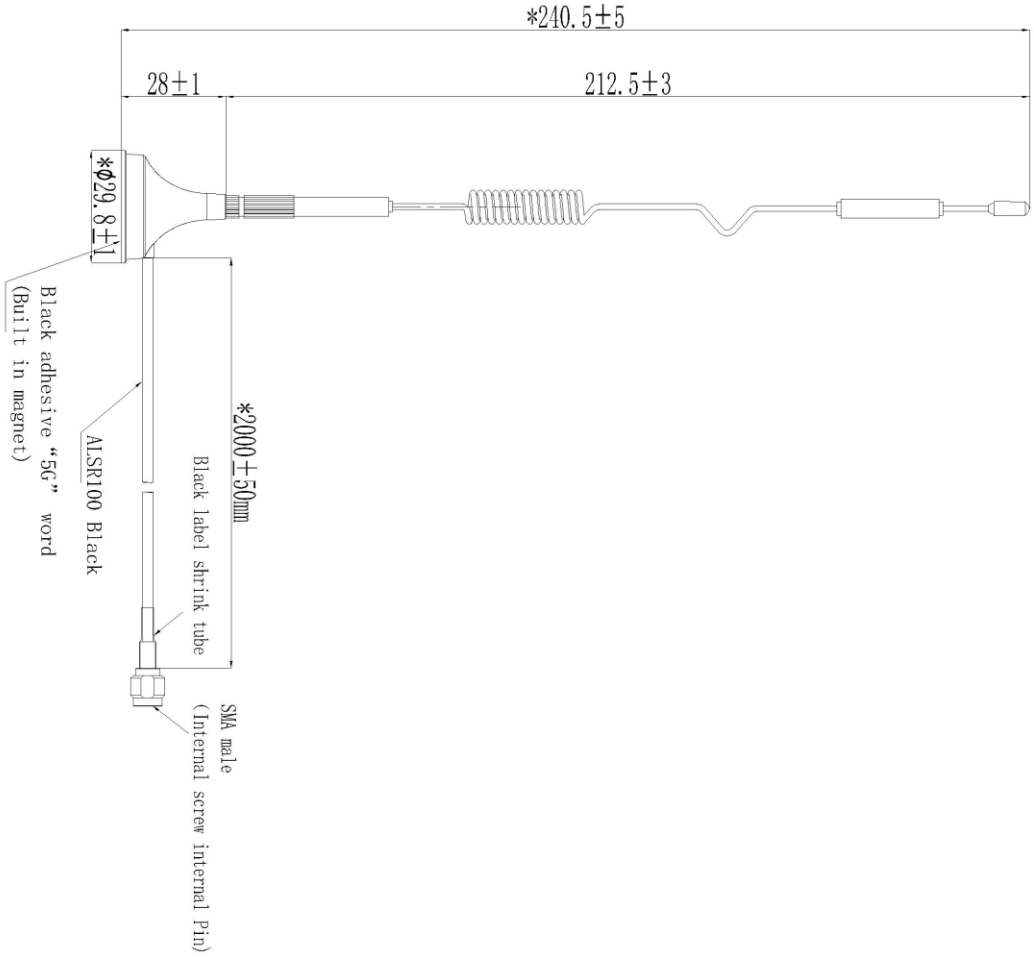
1.1. Electrical

Electrical	
Frequency Range	600-960 MHz; 1710-2690 MHz; 3300-5000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional
VSWR	≤ 4.5
Peak Gain	≤ 2.3 dBi

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 29.8 × 240.5 mm
Material & Color	Carbon Steel & Black
Cable Type & Color & Length	ALSR100 & Black & 2000 mm
Connector Type	SMA Male
Mounting Type	Magnet
Weight	Typ.48.2g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP65
RoHS and REACH Compliant	Yes

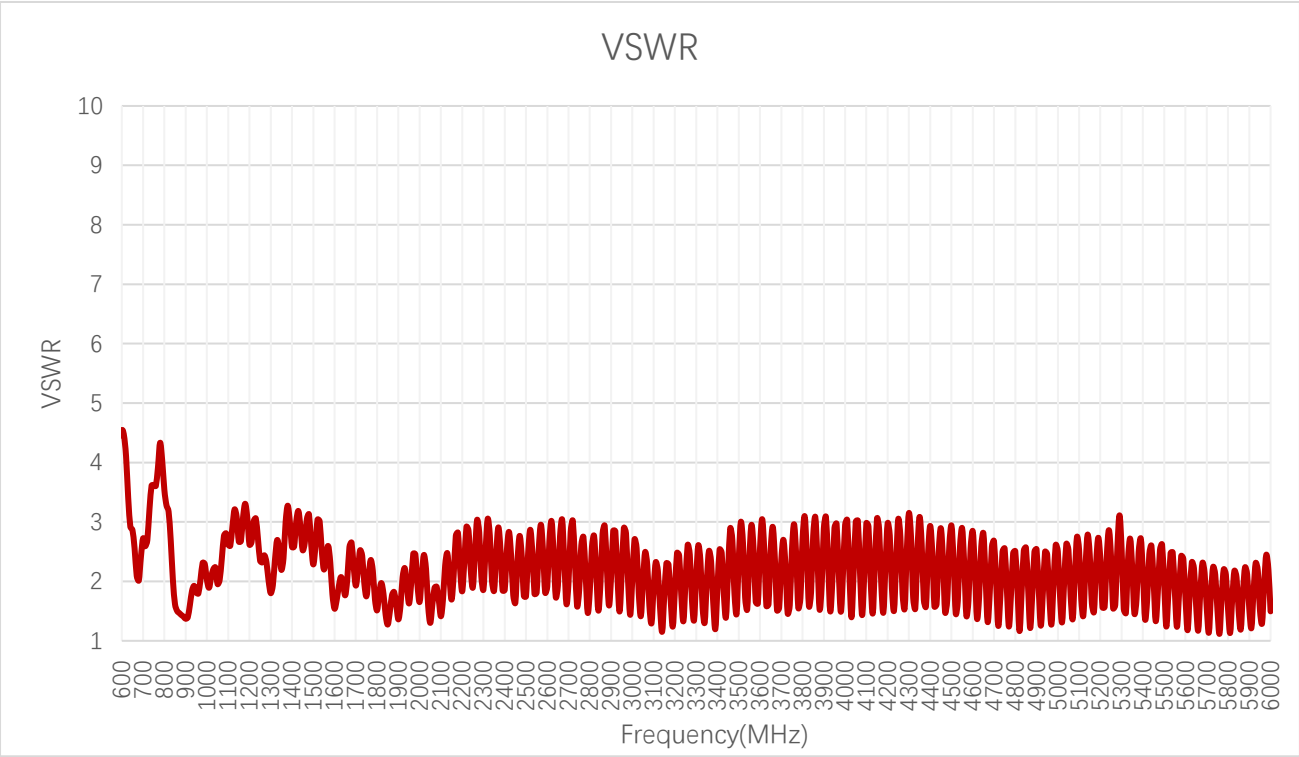
2 Drawing


*240.5±5
212.5±3
28±1
*Φ29.8±1
*2000±50mm
Black adhesive "5G" word
(Built in magnet)
ALSR100 Black
Black label shrink tube
SMA male
(Internal screw internal Pin)

3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR

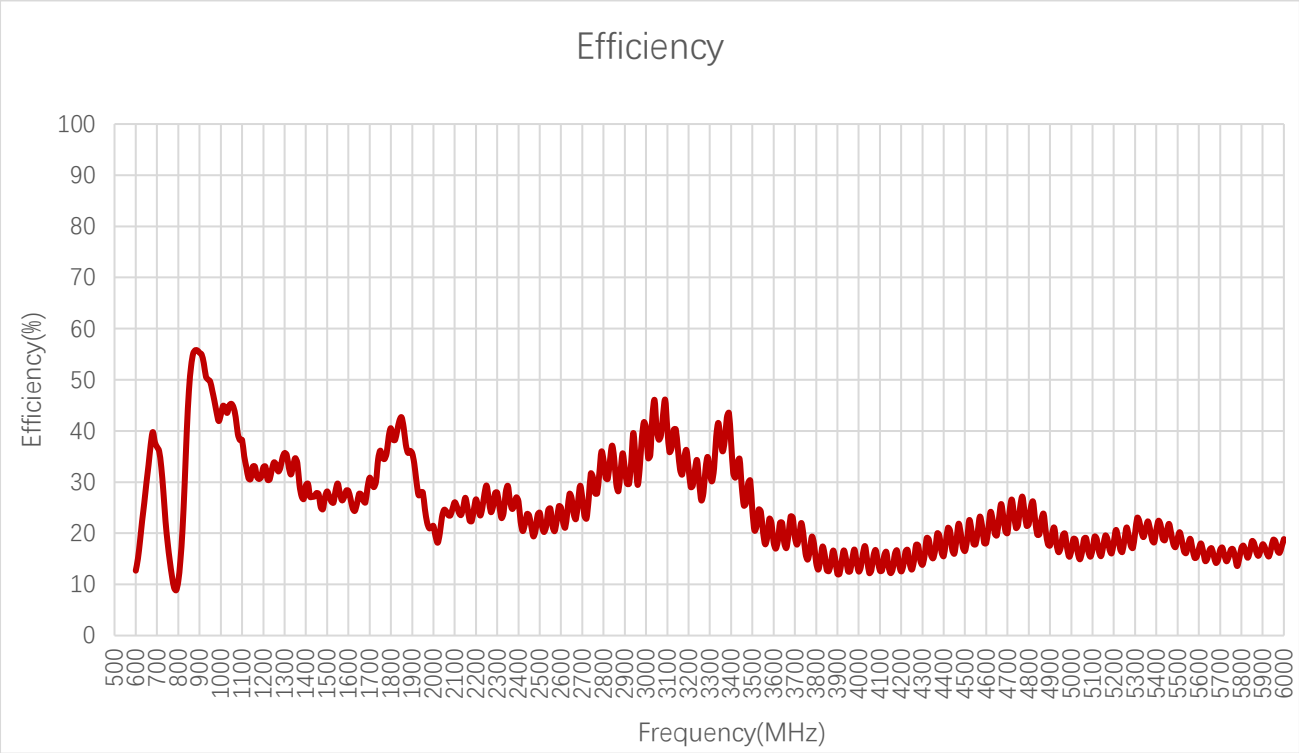


VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	4.5	3.4	2.6	2.7	1.4	1.8	-	2.2	2.0	1.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
VSWR	1.6	2.1	1.8	1.6	1.9	2.6	2.7	2.5	-	-

3.2. Radiation Performance Test

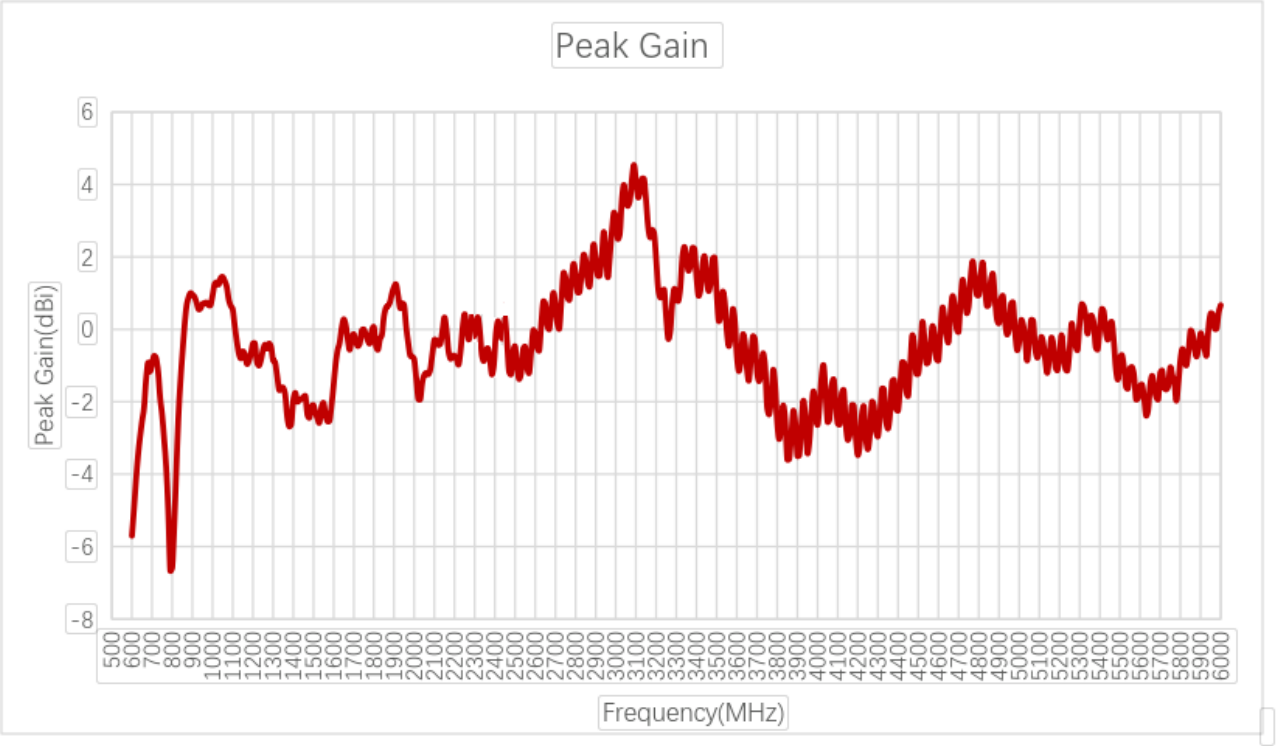
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Efficiency (%)	12.7	22.4	36.0	29.8	55.3	47.8	-	29.9	34.5	35.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	28.0	25.0	29.3	23.5	25.0	18.2	20.1	16.5	-	-

3.2.2. Peak Gain

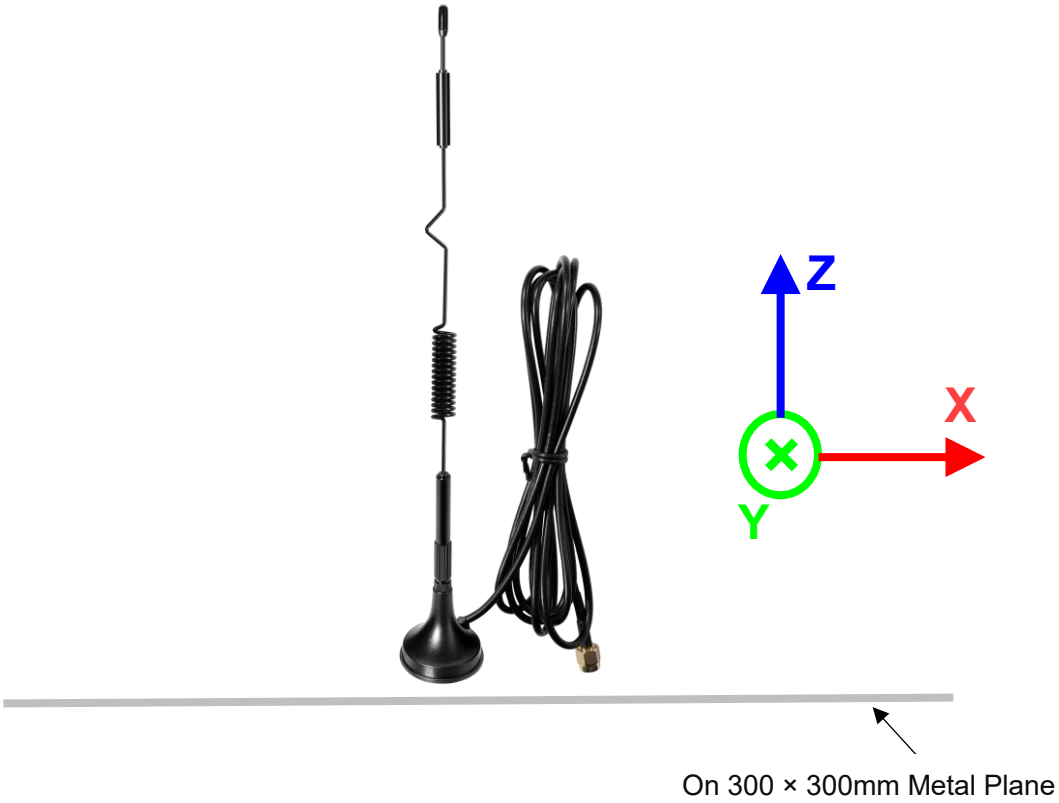


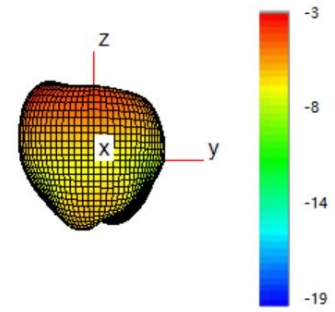
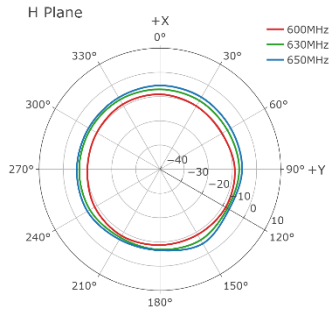
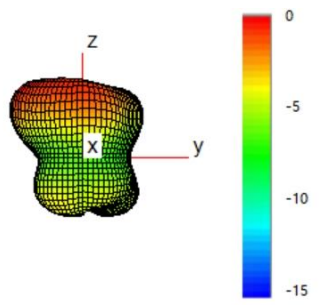
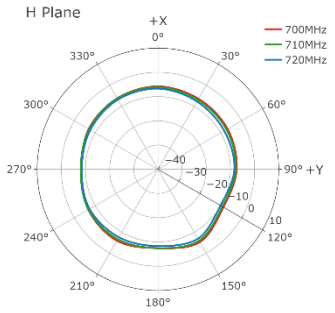
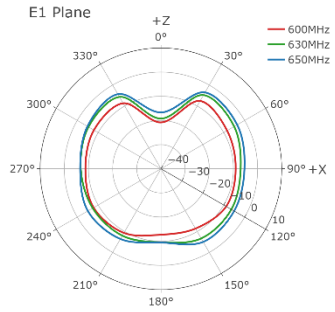
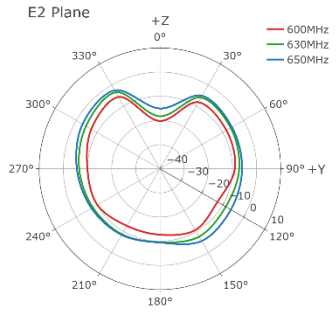
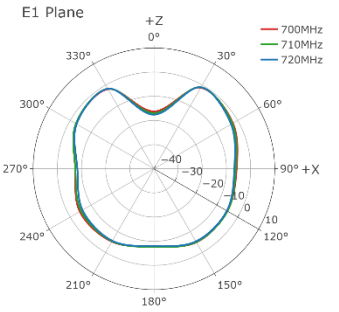
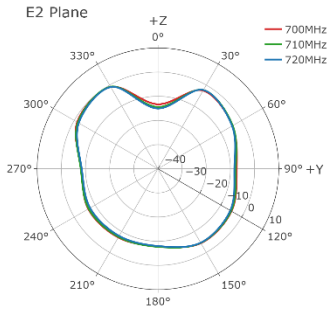
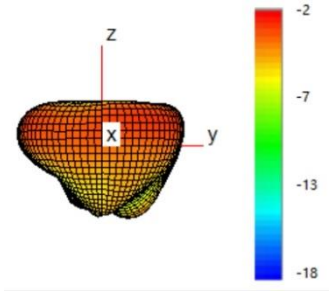
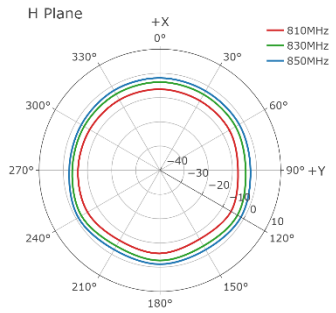
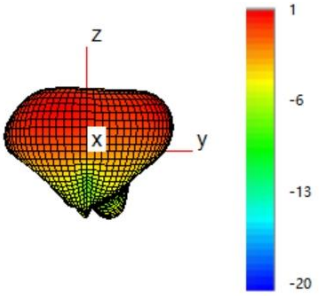
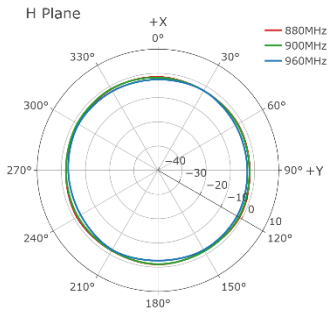
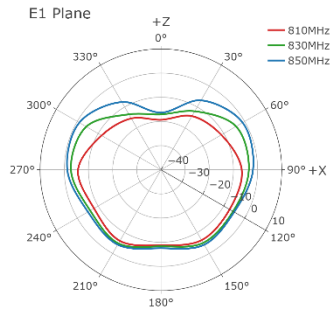
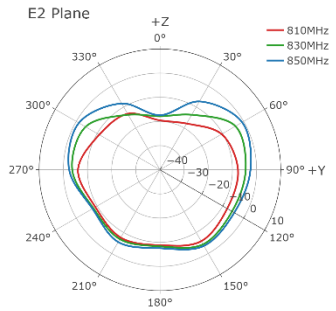
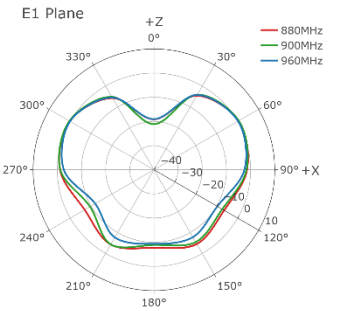
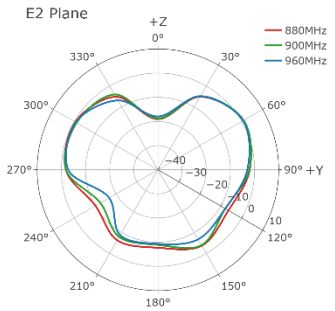
Peak Gain (dBi)

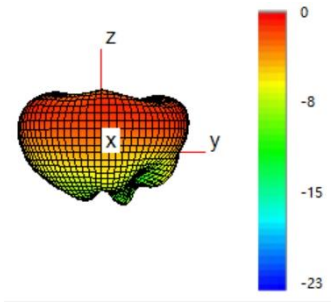
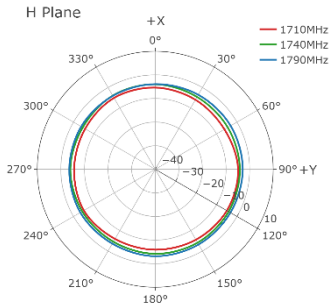
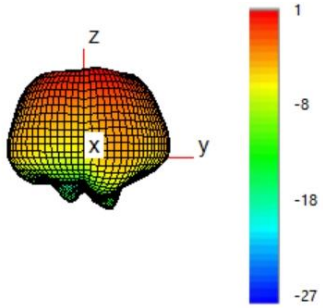
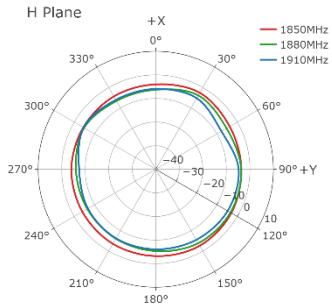
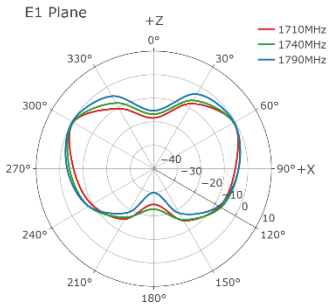
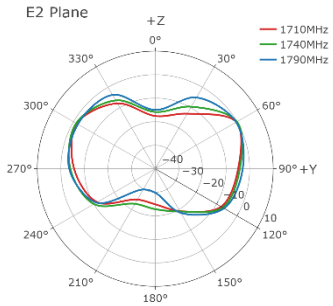
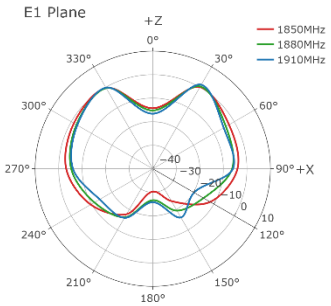
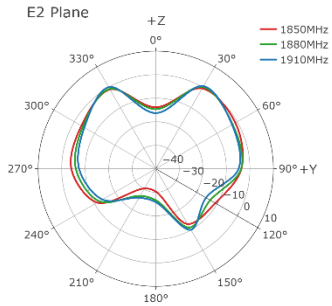
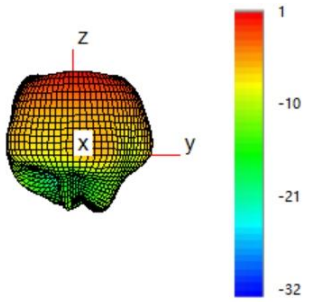
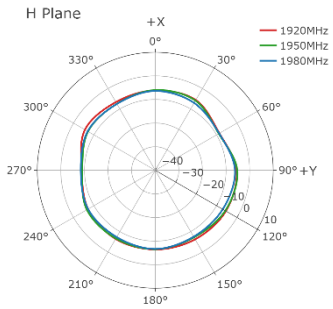
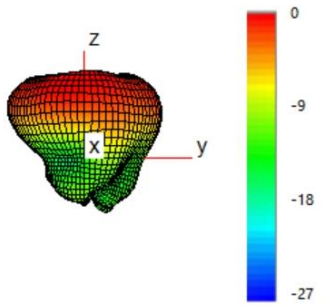
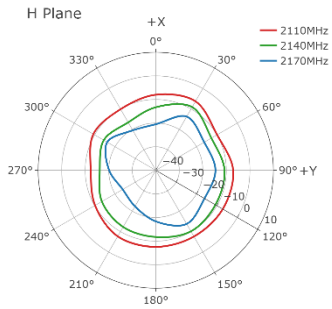
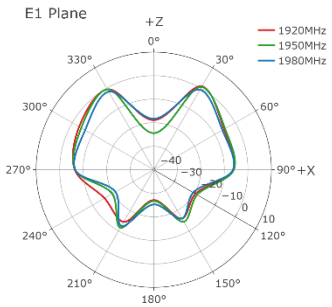
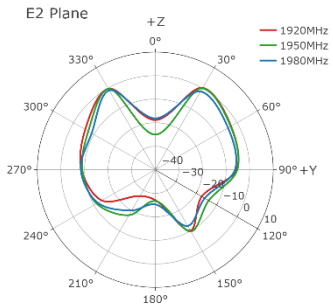
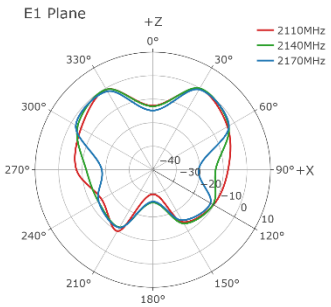
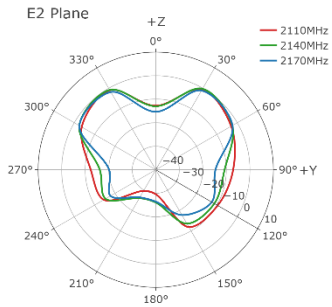
Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Peak Gain (dBi)	-5.7	-3.5	-0.7	-2.5	1.0	0.7	-	-0.3	0.0	0.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	0.7	0.0	-0.6	0.4	-0.1	-0.7	-0.1	-0.3	-	-

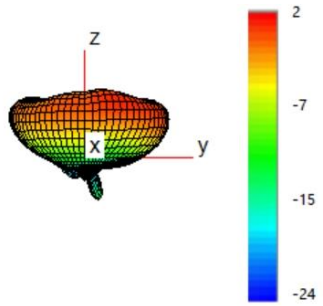
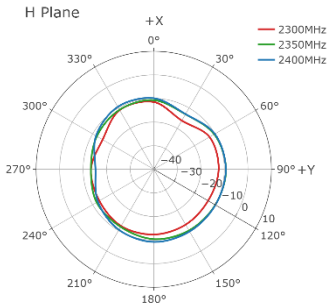
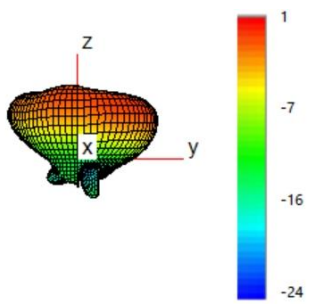
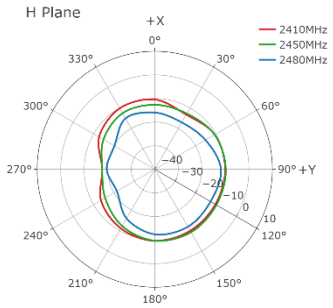
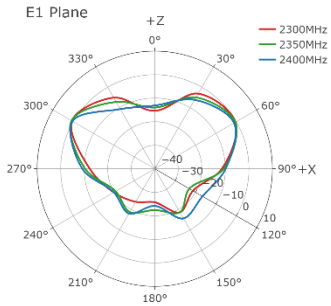
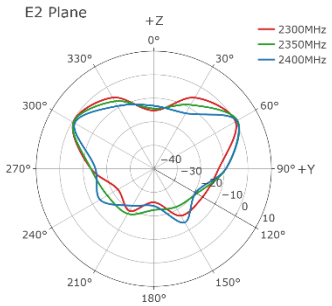
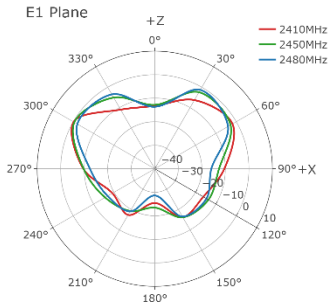
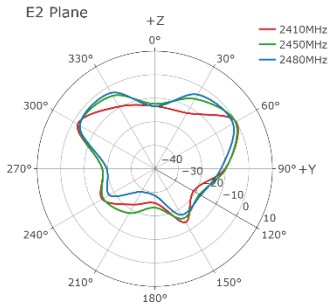
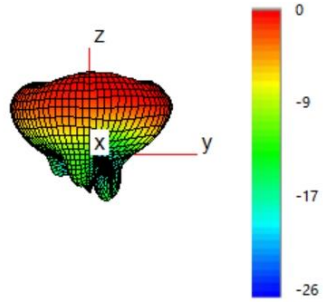
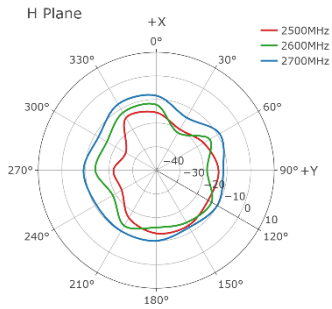
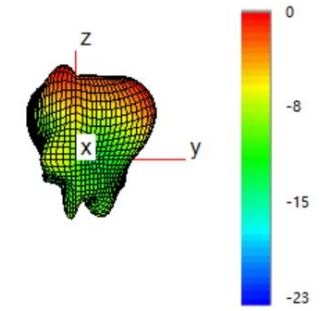
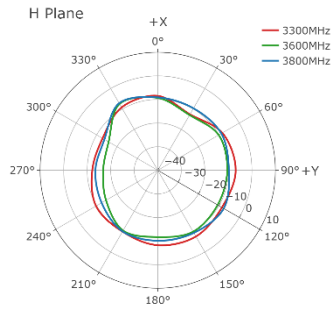
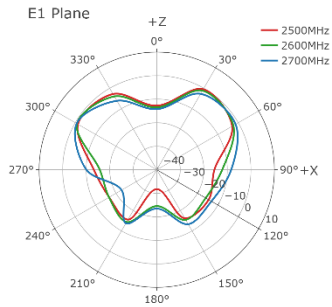
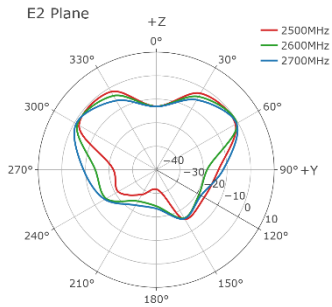
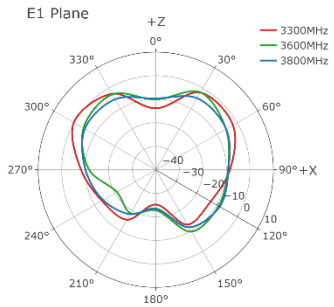
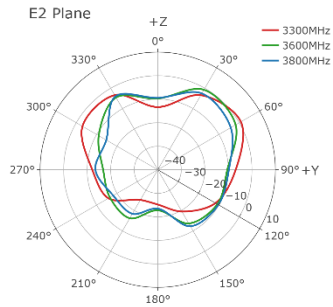
3.2.3. 2D Radiation Pattern

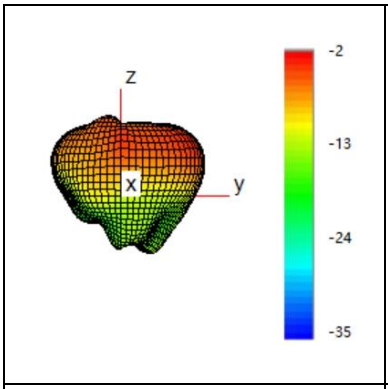
- Test Condition: On 300 × 300mm Metal Plane
- Test Chamber: HF-G-1

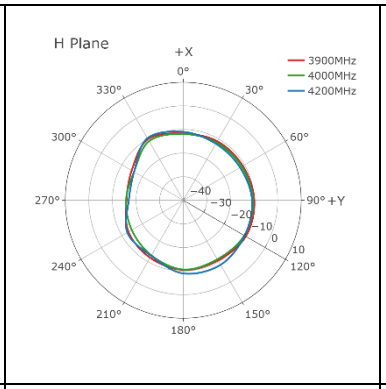


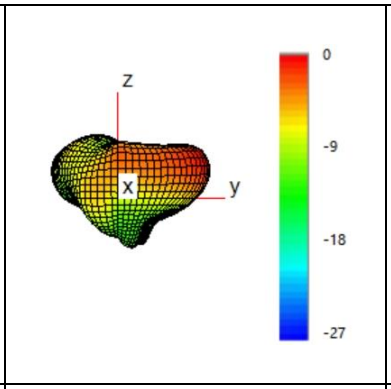
630 MHz		710MHz	
			
			
830 MHz		900 MHz	
			
			

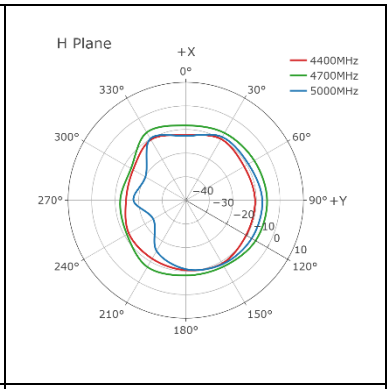
1740 MHz		1880MHz	
			
			
1950 MHz		2140MHz	
			
			

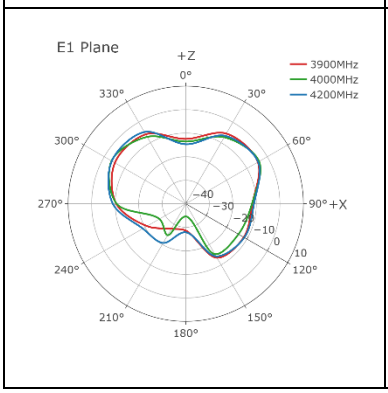
2350MHz		2450 MHz	
			
			
2600 MHz		3600MHz	
			
			
4000 MHz		4700MHz	

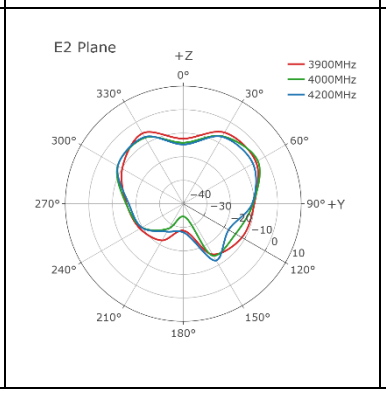

Z
X
y
-2
-13
-24
-35

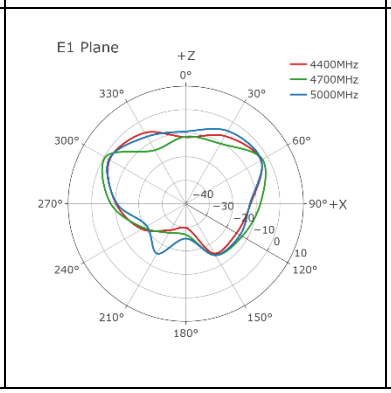

H Plane
+X
90° +Y
3900MHz
4000MHz
4200MHz

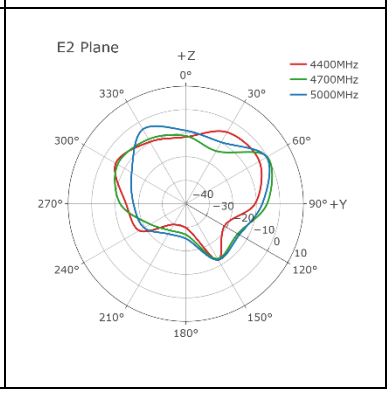

Z
X
y
0
-9
-18
-27


H Plane
+X
90° +Y
4400MHz
4700MHz
5000MHz


E1 Plane
+Z
90° +X
3900MHz
4000MHz
4200MHz


E2 Plane
+Z
90° +Y
3900MHz
4000MHz
4200MHz


E1 Plane
+Z
90° +X
4400MHz
4700MHz
5000MHz


E2 Plane
+Z
90° +Y
4400MHz
4700MHz
5000MHz

4 Packaging

Contact US

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Revision History

Version	Date	Author	Note
-	2023-11-29	Winfred WU Joye WANG David LIU Vinnie LIU	Creation of the document
1.0	2023-11-29	Winfred WU Joye WANG David LIU Vinnie LIU	First official release

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