



Antenna Datasheet

Product OC: YE0028AA

Version: 2.0

Date: 2023-05-11

Status: Released

Product Name: 5G Sucker Antenna

Key Features:

Frequency Band: 700–2700 MHz, 3300–5000 MHz

Dimensions: Φ 60 × 234 mm

Efficiency: Up to 85 % (FS)

RoHS Compliant

IP53

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 × 300 mm metal plane & Free Space

1.1. Electrical

Electrical	
Frequency Range	700–2700 MHz, 3300–5000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail													
SPEC	Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /N77	N79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850	
Max. VSWR	MP	-	3.4	2.1	1.9	1.9	1.3	1.3	1.6	2.0	2.4	-	
	FS	-	2.3	2.1	1.8	1.8	1.3	1.2	1.5	1.7	2.3	-	
Max. Return Loss (dB)	MP	-	-5.3	-9.0	-9.9	-10.5	-18.1	-17.3	-12.8	-9.4	-7.5	-	
	FS	-	-8.2	-9.1	-10.6	-11.3	-17.4	-19.5	-14.4	-11.4	-8.2	-	
AVG Eff. (%)	MP	-	31.0	55.8	57.0	53.7	57.5	61.0	63.0	46.8	29.8	-	
	FS	-	59.2	71.1	55.4	61.6	70.6	73.5	66.0	37.5	22.1	-	
AVG Gain (dB)	MP	-	-5.1	-2.6	-2.4	-2.7	-2.4	-2.1	-2.0	-3.6	-5.5	-	
	FS	-	-2.3	-1.5	-2.6	-2.1	-1.5	-1.3	-1.8	-4.3	-6.6	-	
Max. Peak Gain (dBi)	MP	-	0.1	0.7	1.9	2.6	1.0	1.6	4.7	4.0	4.7	-	
	FS	-	2.6	2.8	1.2	2.8	5.3	6.3	6.2	3.7	2.3	-	

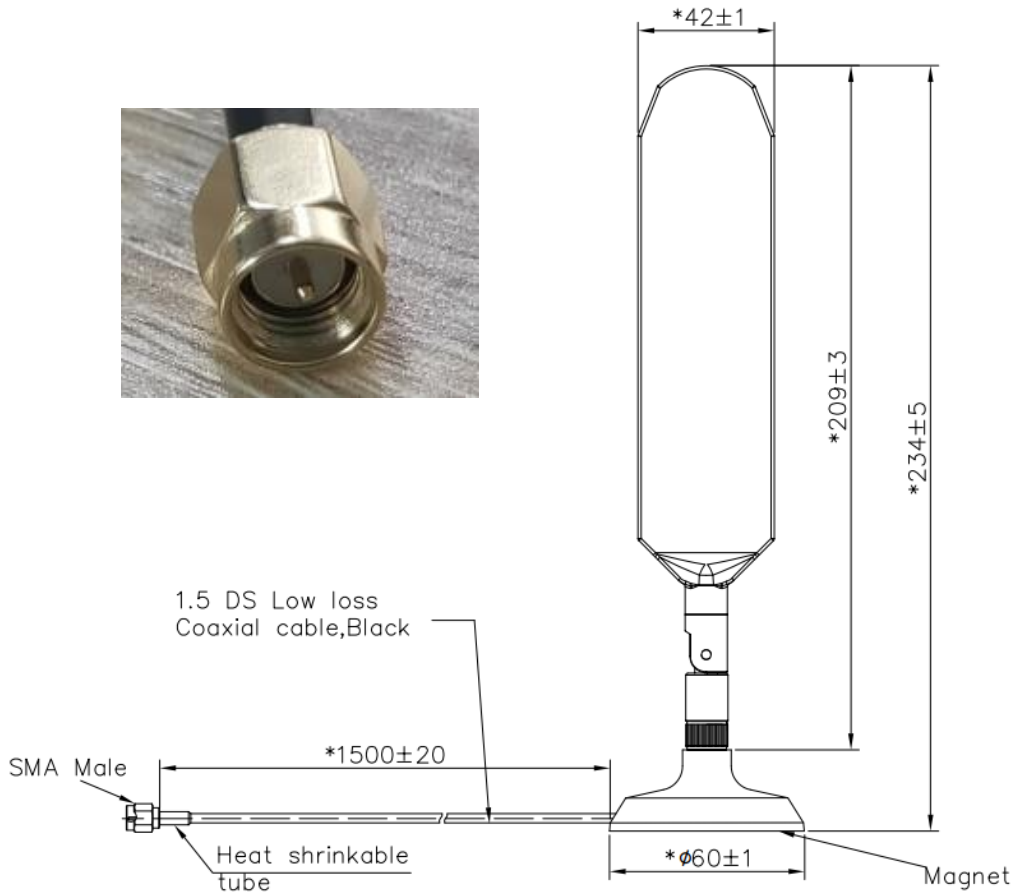
VSWR	MP	≤ 3.4
	FS	≤ 2.3
Return Loss	MP	≤ -5.3 dB
	FS	≤ -8.2 dB
Peak Gain	MP	≤ 4.7 dBi
	FS	≤ 6.3 dBi

- FS: Free Space
- MP: On 300 × 300 mm metal plane

1.2. Mechanical, Environmental & Storage

Mechanical	
Antenna Dimensions	Φ 60 × 234 mm
Material & Color	ABS & Black
Cable Type & Color & Length	1.5 DS & Black & 1500 mm
Connector Type	SMA Male
Mounting Type	Magnet
Weight	Typ. 113 g
Environmental	
Operation Temperature	-20 °C to +50 °C
Ingress Protection (IP) Rating	IP53
RoHS Compliant	Yes
Storage	
Storage Temperature	18 °C–27 °C
Humidity	30 %–80 % RH
Storage Place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging

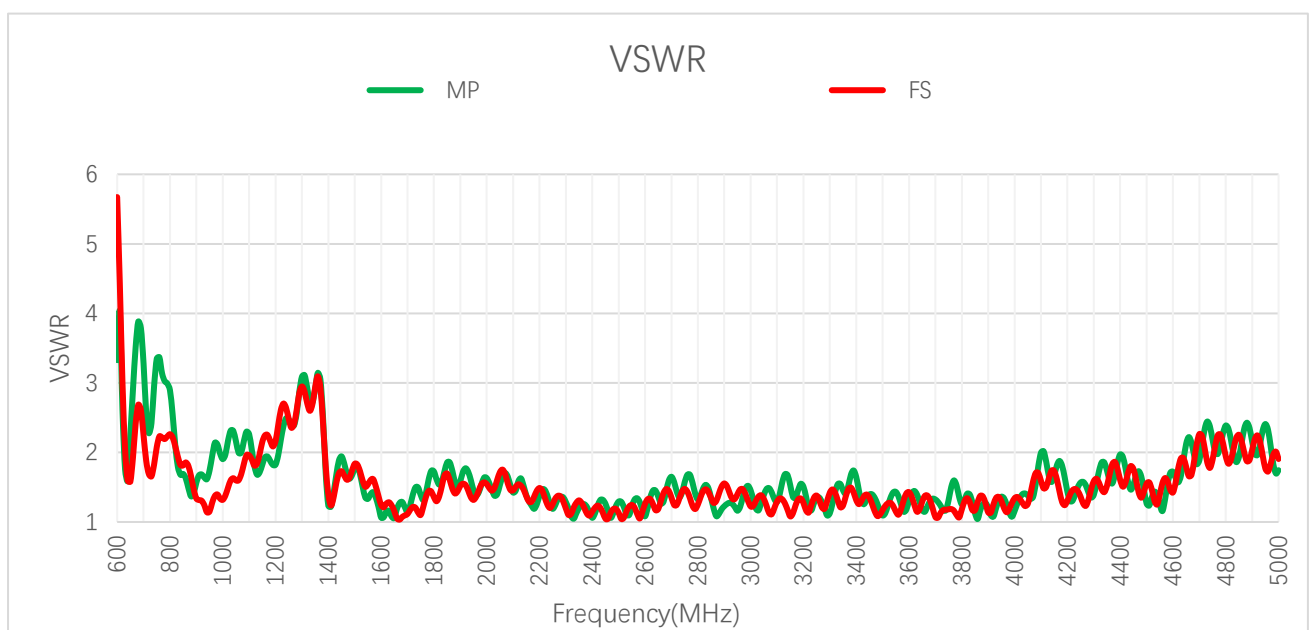
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

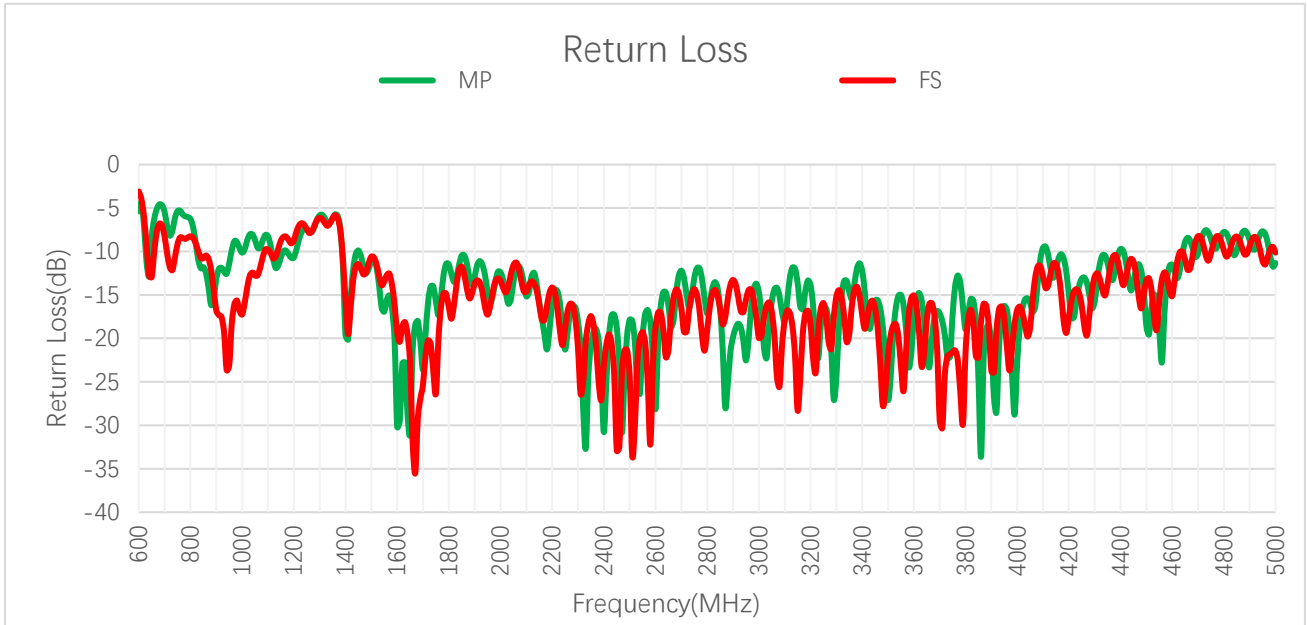
3.1.1. VSWR



VSWR

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
VSWR	MP	-	-	2.6	1.8	1.6	2.0	1.9	1.2	1.5	1.6
	FS	-	-	1.9	1.9	1.3	1.3	1.7	1.2	1.1	1.4
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
VSWR	MP	1.5	1.5	1.2	1.3	1.1	1.3	1.9	1.7	-	-
	FS	1.3	1.5	1.3	1.0	1.3	1.4	2.3	1.9	-	-

3.1.2. Return Loss

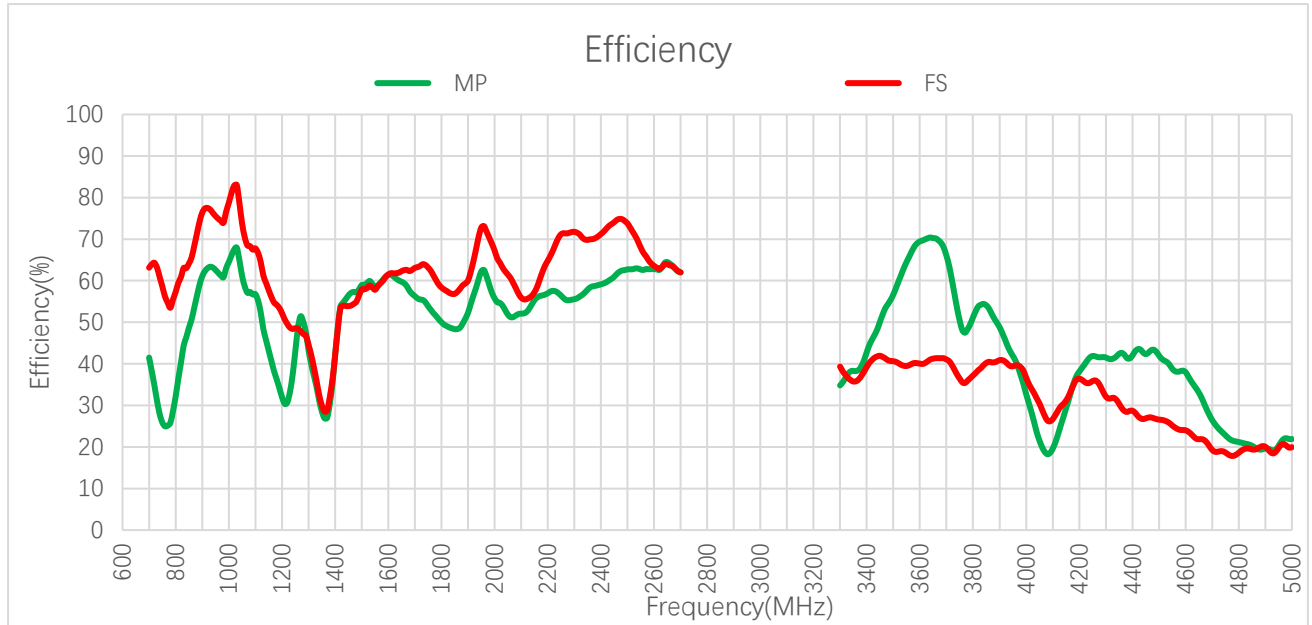


Return Loss (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	MP	-	-	-7.1	-10.9	-13.1	-9.8	-10.3	-19.5	-14.0	-13.1
	FS	-	-	-10.3	-9.9	-16.8	-18.3	-11.7	-21.9	-23.9	-15.4
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Return Loss (dB)	MP	-14.6	-13.7	-20.8	-18.7	-28.2	-17.5	-10.2	-11.3	-	-
	FS	-17.3	-14.5	-17.4	-32.9	-18.7	-15.1	-8.2	-10.1	-	-

3.2. Radiation Performance Test

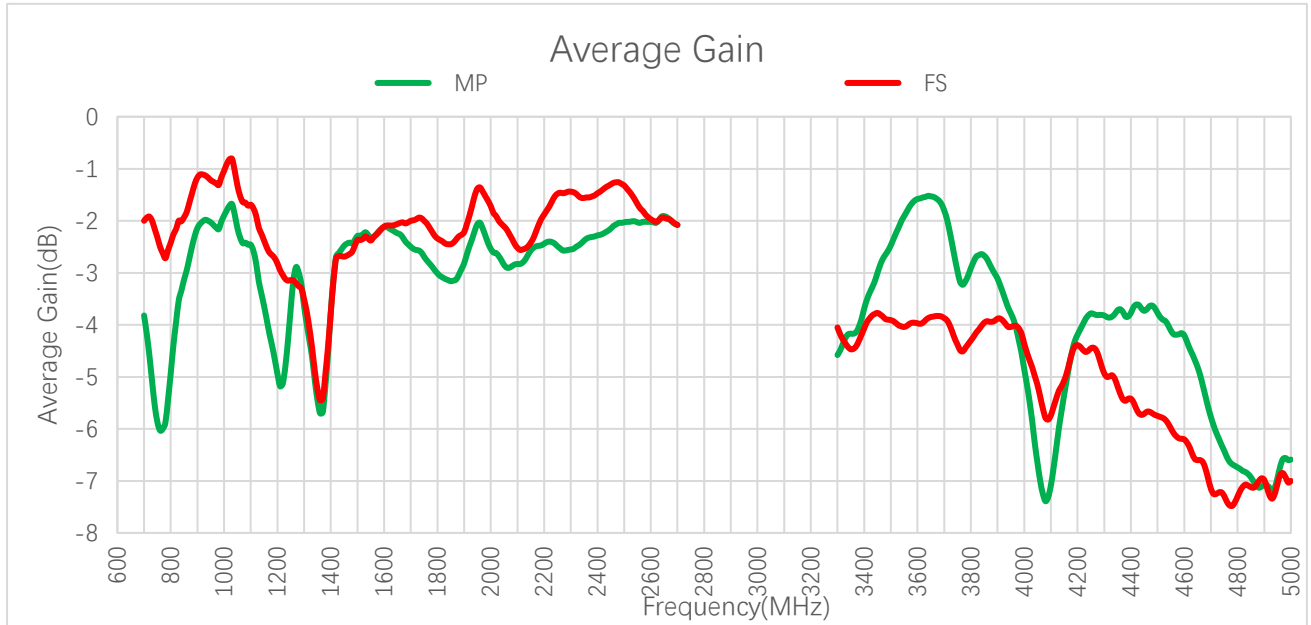
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	MP	-	-	38.3	44.4	61.1	61.9	55.6	55.8	54.8	49.7
	FS	-	-	63.9	63.1	76.4	74.9	53.9	63.3	63.8	58.9
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Efficiency (%)	MP	62.2	54.3	57.9	61.0	62.8	69.4	26.5	21.9	-	-
	FS	72.8	56.4	69.8	74.1	63.6	40.1	19.3	19.9	-	-

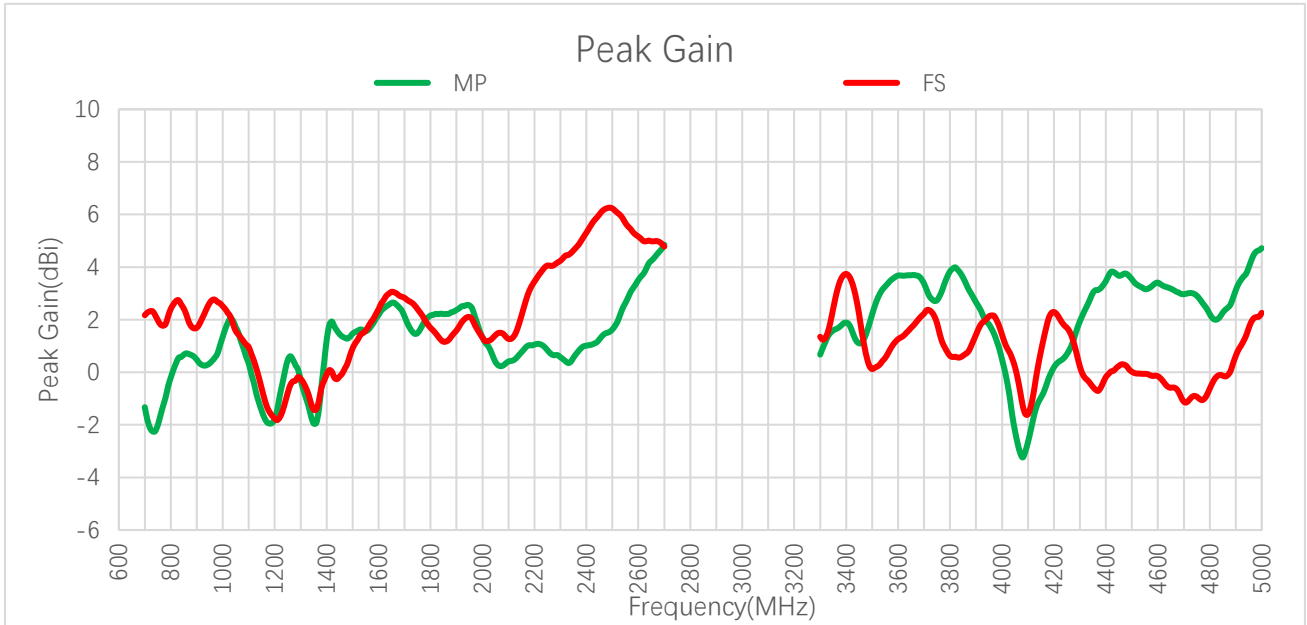
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	MP	-	-	-4.2	-3.5	-2.1	-2.1	-2.6	-2.5	-2.6	-3.0
	FS	-	-	-1.9	-2.0	-1.2	-1.3	-2.7	-2.0	-2.0	-2.3
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Average Gain (dB)	MP	-2.1	-2.7	-2.4	-2.2	-2.0	-1.6	-5.8	-6.6	-	-
	FS	-1.4	-2.5	-1.6	-1.3	-2.0	-4.0	-7.2	-7.0	-	-

3.2.3. Peak Gain



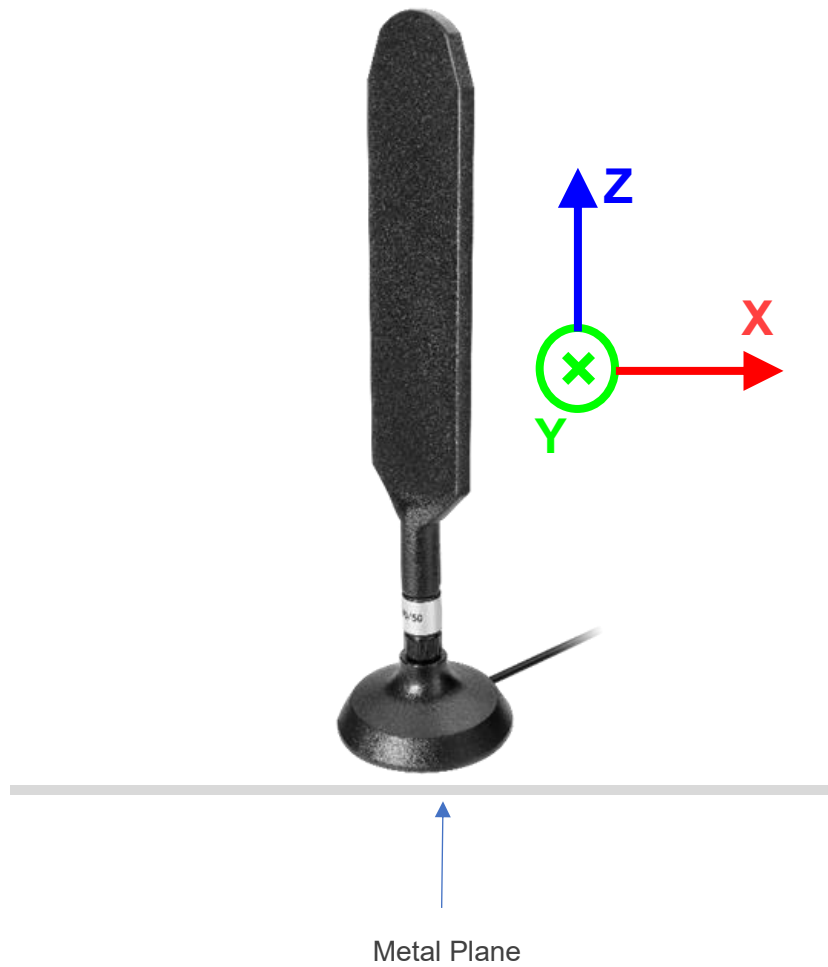
Peak Gain (dBi)

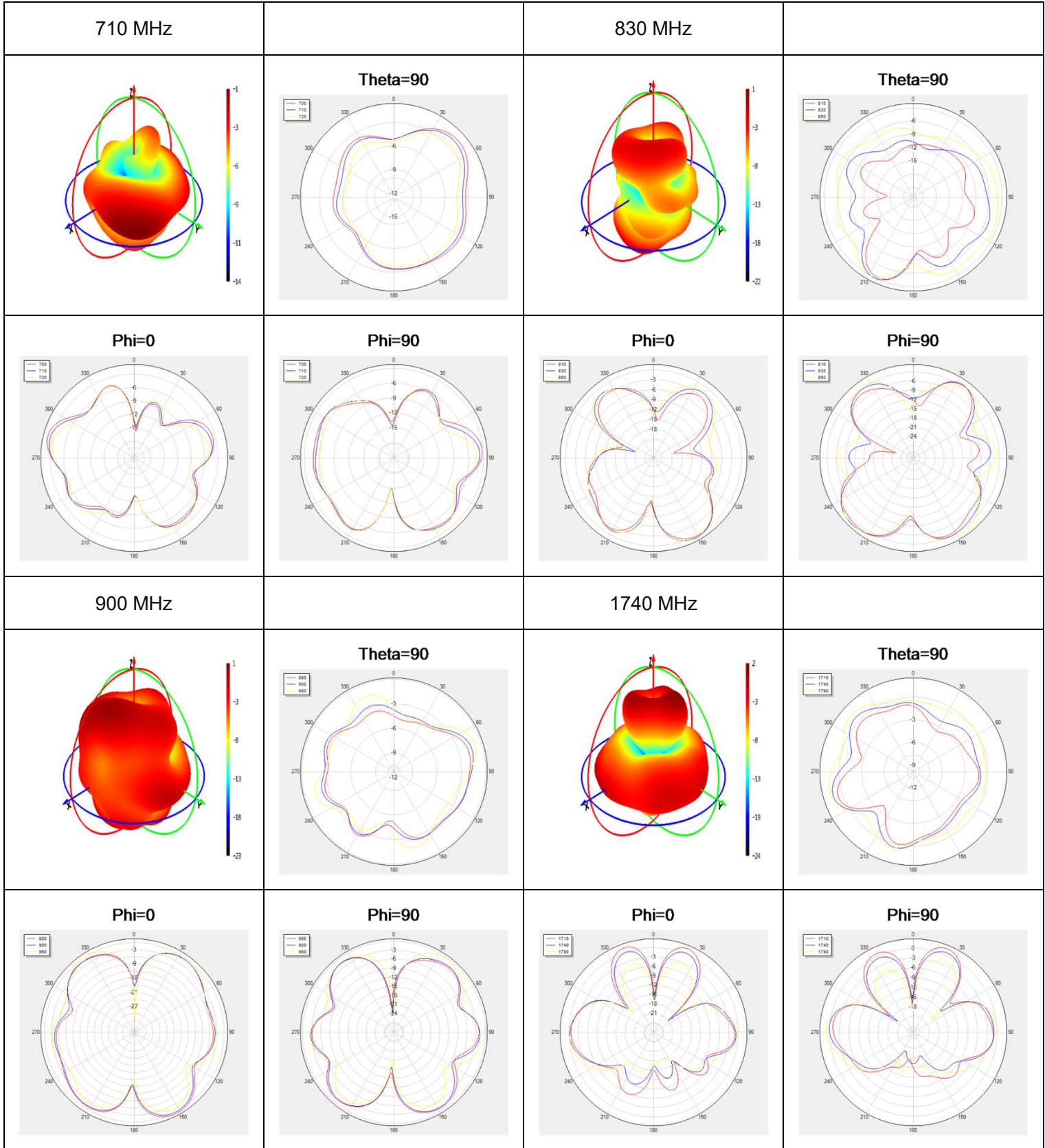
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	MP	-	-	-1.8	0.6	0.5	0.4	1.6	1.9	1.5	2.3
	FS	-	-	2.3	2.7	1.7	2.8	-0.3	2.8	2.5	1.4
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Peak Gain (dBi)	MP	2.5	0.7	0.6	1.3	3.5	3.7	3.0	4.7	-	-
	FS	2.1	1.8	4.6	6.0	5.2	1.3	-1.1	2.3	-	-

3.2.4. 3D & 2D Radiation Pattern

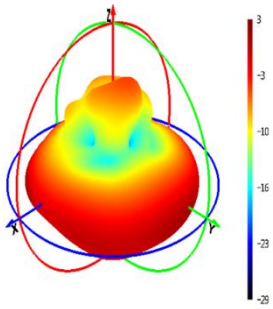
3.2.4.1. Test Condition: On 300 × 300 mm metal plane

- Test Chamber: GL-S-1

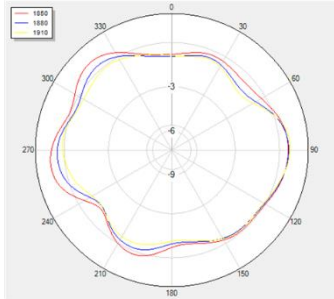




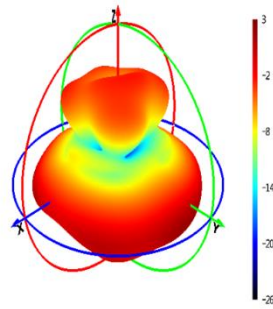
1880 MHz



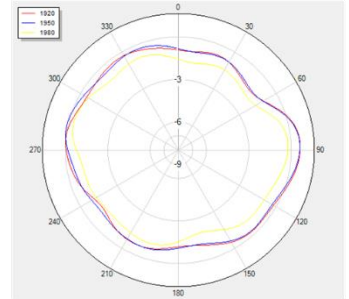
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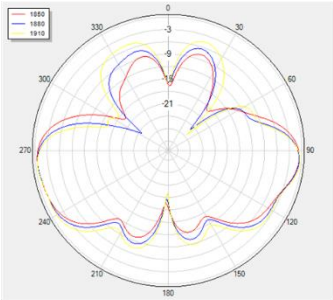
1950 MHz



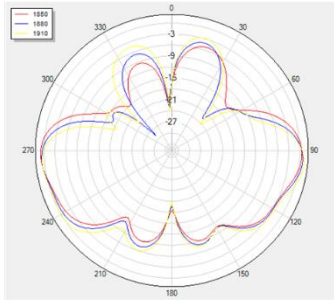
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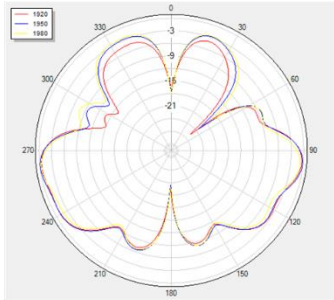
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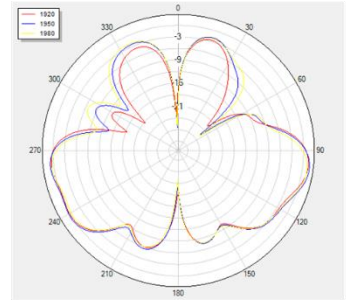
Phi=90



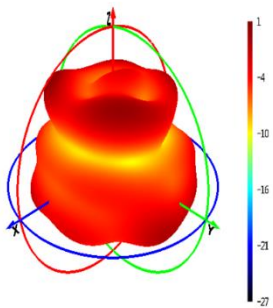
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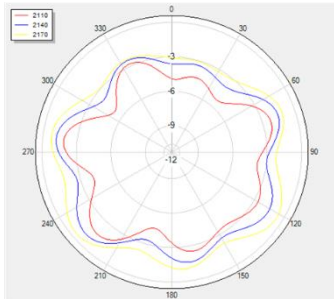
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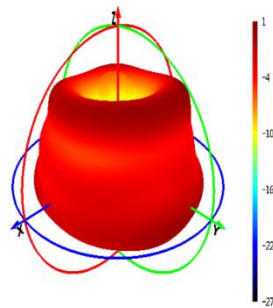
2140 MHz



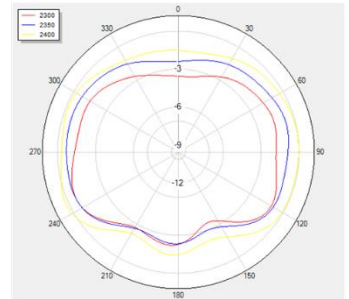
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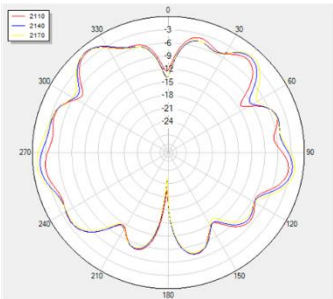
2350 MHz



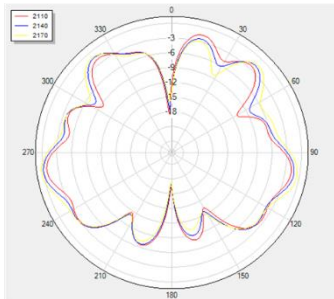
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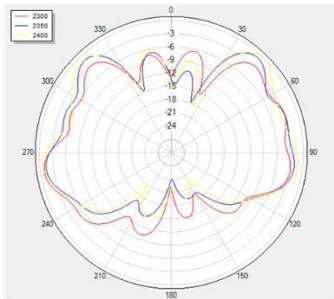
Phi=0



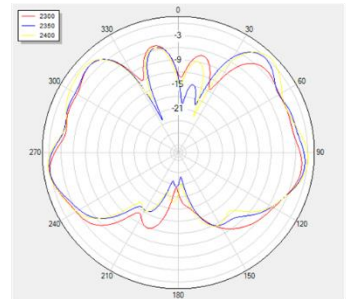
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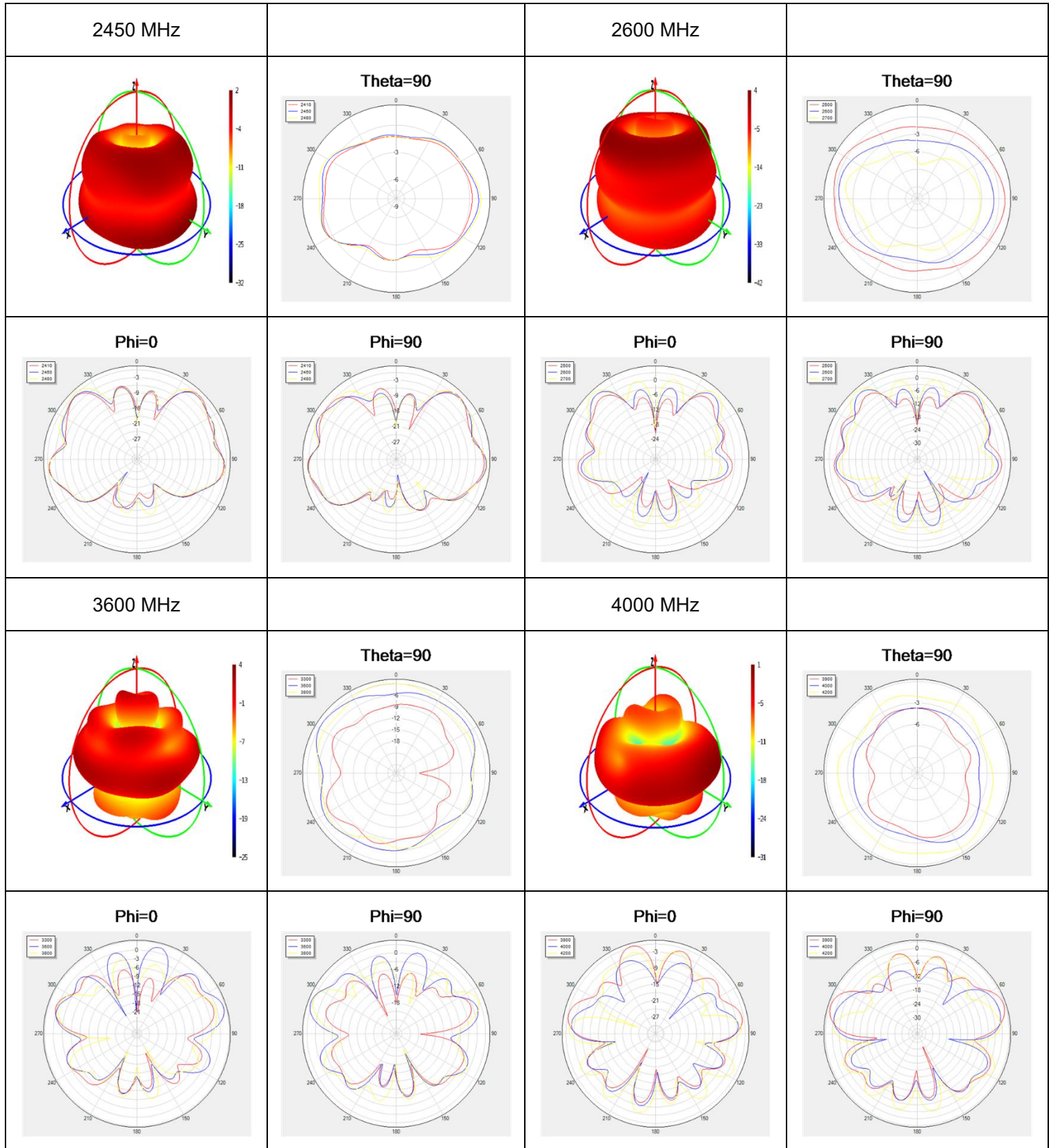


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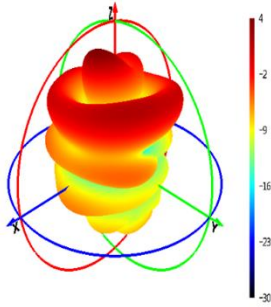


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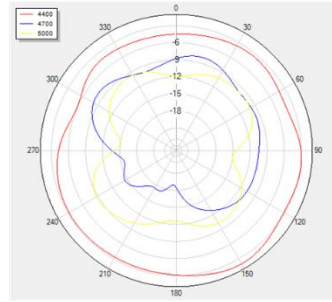




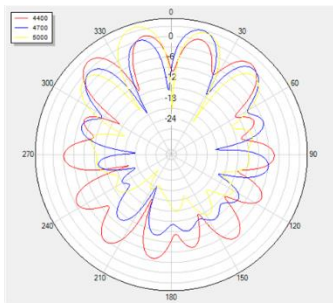
4700 MHz



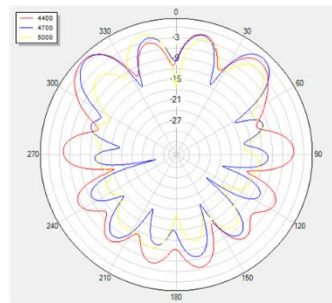
Theta=90



Phi=0

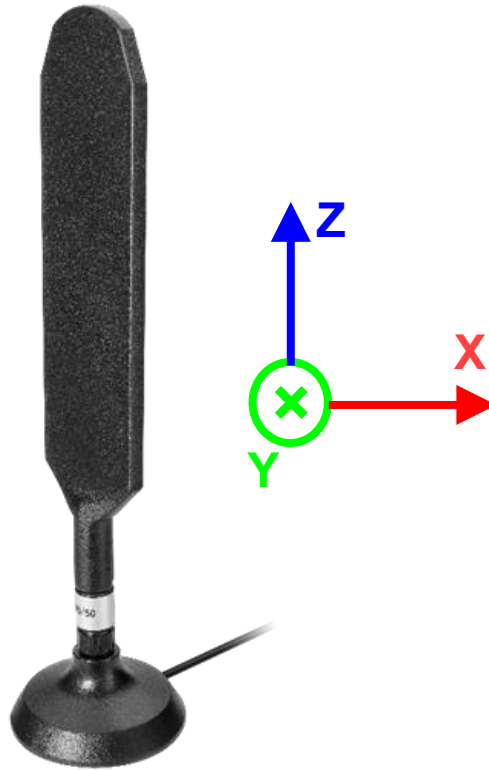


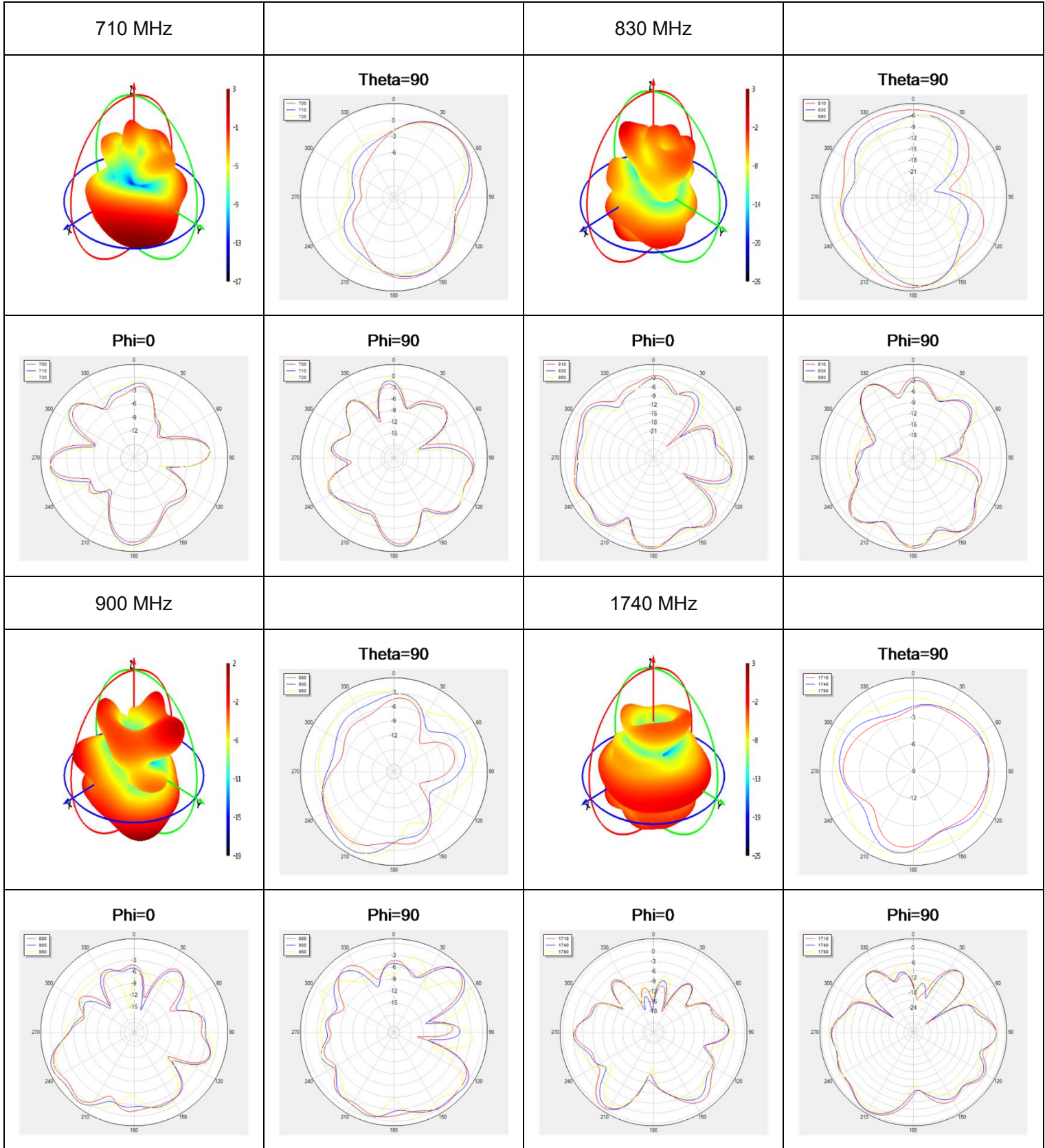
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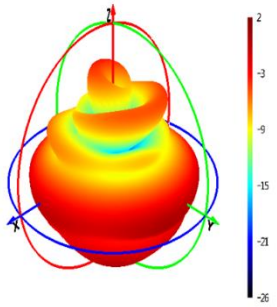
3.2.4.2. Test Condition: Free Space

- Test Chamber: GL-S-1

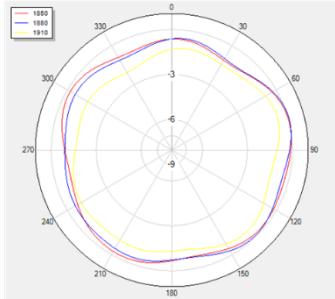




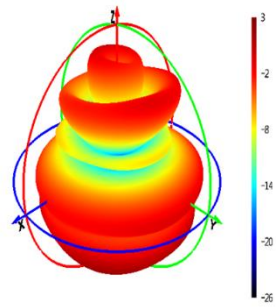
1880 MHz



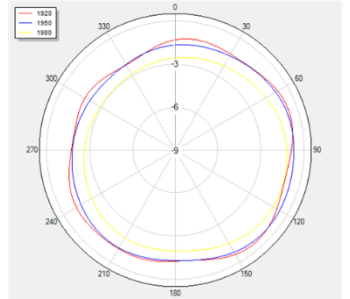
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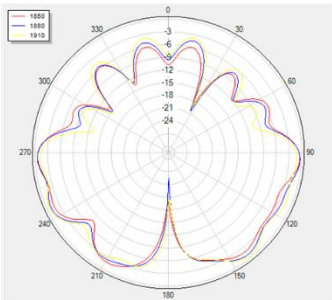
1950 MHz



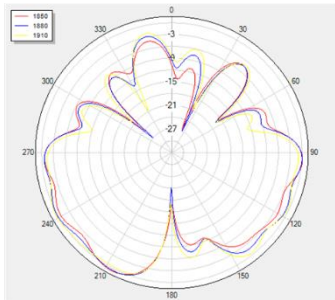
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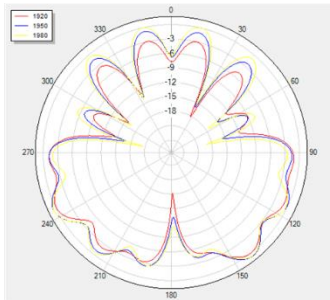
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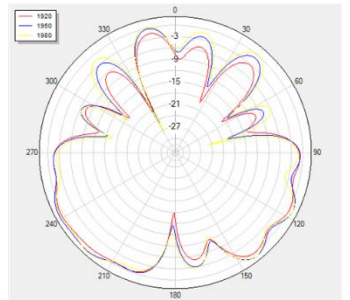
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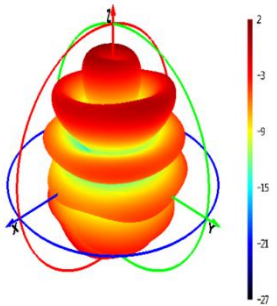
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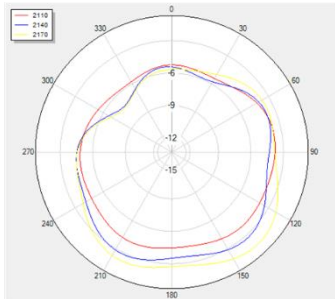
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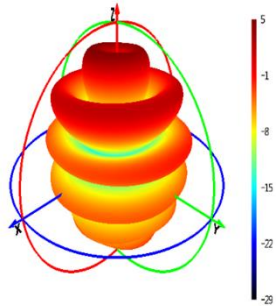
2140 MHz



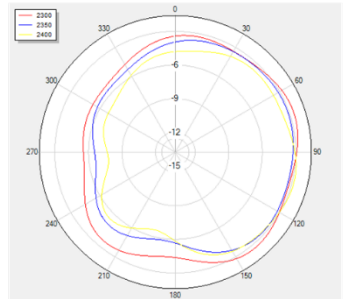
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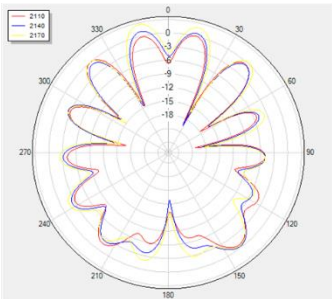
2350 MHz



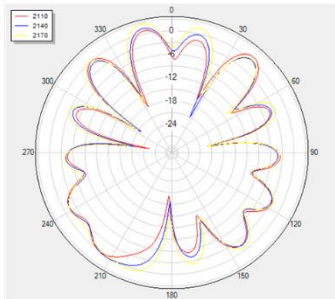
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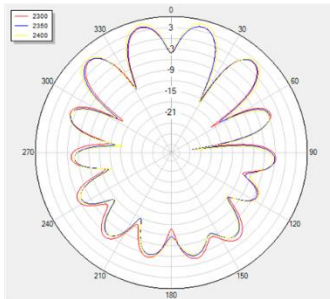
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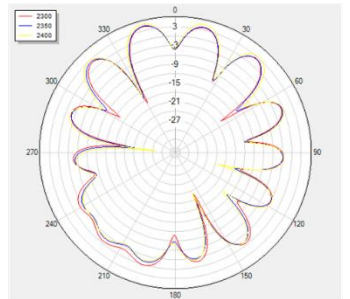
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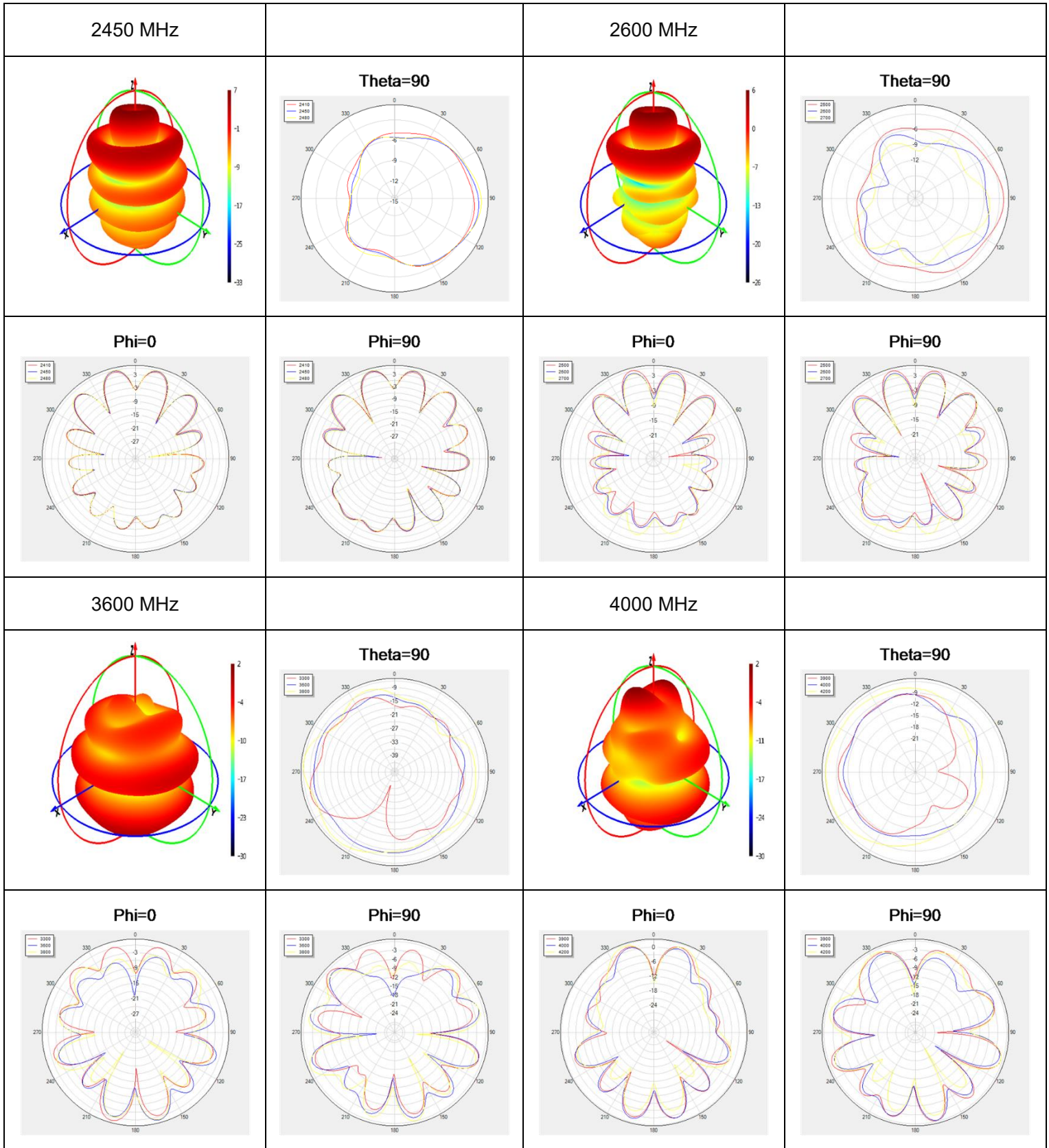


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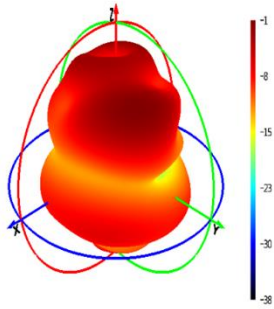


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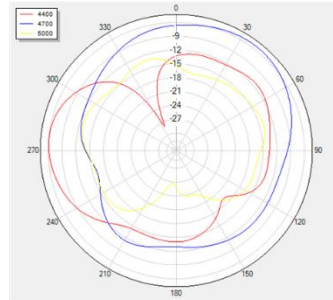




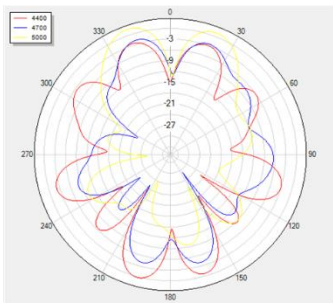
4700 MHz



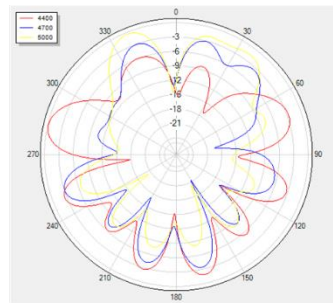
Theta=90






Phi=0



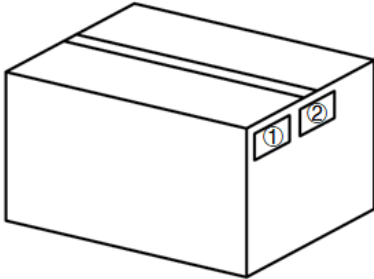
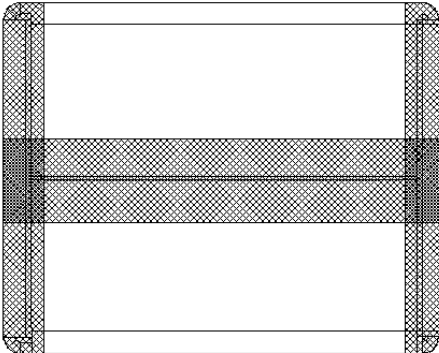


Phi=90



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Fan blades and bases are packed individually into PE bags
2		20 pcs fan blades per PE bag
3		10 bases per PE bag

<p>4</p>		<p>20 pcs fan blades and 20 bases per big PE bag</p>
<p>5</p>		<p>(5 big PE bags per carton box) (100 pcs fan blades per carton box) (100 bases per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 370 × 370 × 295 mm</u></p>
<p>6</p>		<p>Position for Attaching Labels</p> <p>① Carton Label ② Quality Label</p>
<p>7</p>		<p>Sealing Cartons “工” type sealing cartons</p>

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Email: info@quectel.com

Or our local offices. For more information, please visit:

<http://www.quectel.com/support/sales.htm>.

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Revision History

Version	Date	Author	Note
-	2020-10-15	Kenny YIN	Creation of the document
1.0	2020-10-15	Kenny YIN	First official release
1.1	2020-12-16	Kenny YIN	Updated picture of product.
1.2	2021-01-27	Kenny YIN	Added IP rating description.
1.3	2021-07-25	Kenny YIN	<ol style="list-style-type: none">1. Updated working temperature (Chapter 3).2. Added detailed passive electrical specifications (Chapter 3).
1.4	2021-11-30	Kenny YIN	Updated the product description (Chapter 1).
2.0	2023-02-24	Damon ZHANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.

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