



Antenna Datasheet

Product OC: YE0006AA

Version: 3.1

Date: 2023-08-15

Status: Released

Product Name: 4G Sucker Antenna

Key Features:

Frequency Band: 700–960 MHz, 1710–2690 MHz

Dimensions: Φ 30 × 318 mm

Efficiency: Up to 65 % (MP)

RoHS Compliant

IP65

Overview

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. 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	700–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
SPEC	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	-	3.0	3.0	-	2.9	2.1	2.5	2.4	-	-	-
	FS	-	3.2	2.7	-	2.6	2.0	2.6	2.5	-	-	-
Max. Return Loss (dB)	MP	-	-6.0	-6.1	-	-6.3	-8.8	-7.4	-7.7	-	-	-
	FS	-	-5.7	-6.8	-	-6.9	-9.3	-6.9	-7.4	-	-	-
AVG Eff. (%)	MP	-	46.2	53.5	-	33.6	28.3	27.1	35.3	-	-	-
	FS	-	24.4	42.9	-	33.8	26.7	23.7	33.7	-	-	-
AVG AVG Gain (dB)	MP	-	-3.4	-2.8	-	-4.8	-5.5	-5.7	-4.6	-	-	-
	FS	-	-6.1	-3.7	-	-4.8	-5.7	-6.2	-4.8	-	-	-
Max. Peak	MP	-	0.1	0.7	-	4.5	0.8	1.2	3.0	-	-	-

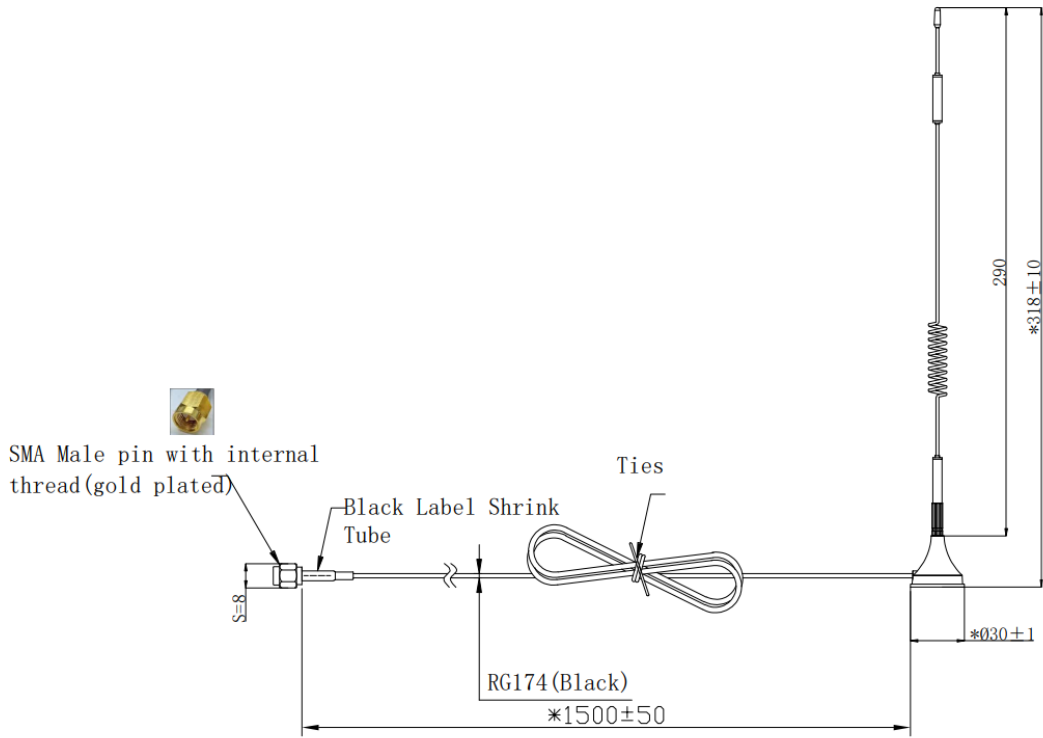
Gain (dBi)	FS	-	-2.1	2.6	-	4.9	-0.9	-0.8	2.6	-	-	-
VSWR	MP										≤ 3	
	FS										≤ 3.2	
Return Loss	MP										≤ -6 dB	
	FS										≤ -5.7 dB	
Peak Gain	MP										≤ 4.5 dBi	
	FS										≤ 4.9 dBi	

- FS: Free Space
- MP: On 300 × 300 mm Metal Plane

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 30 × 318 mm
Material & Color	Carbon Steel & Black
Cable Type & Color & Length	RG 174 & Black & 1500 mm
Connector Type	SMA Male
Mounting Type	Magnet
Weight	Typ. 41.8 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP65
RoHS Compliant	Yes

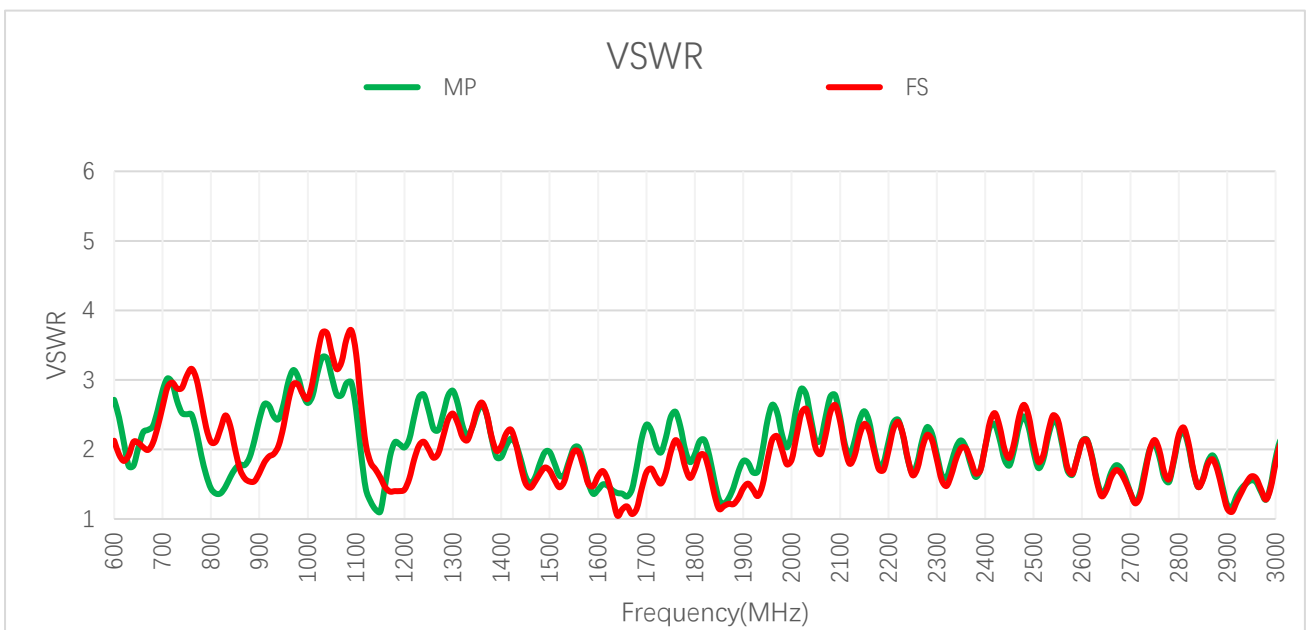
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

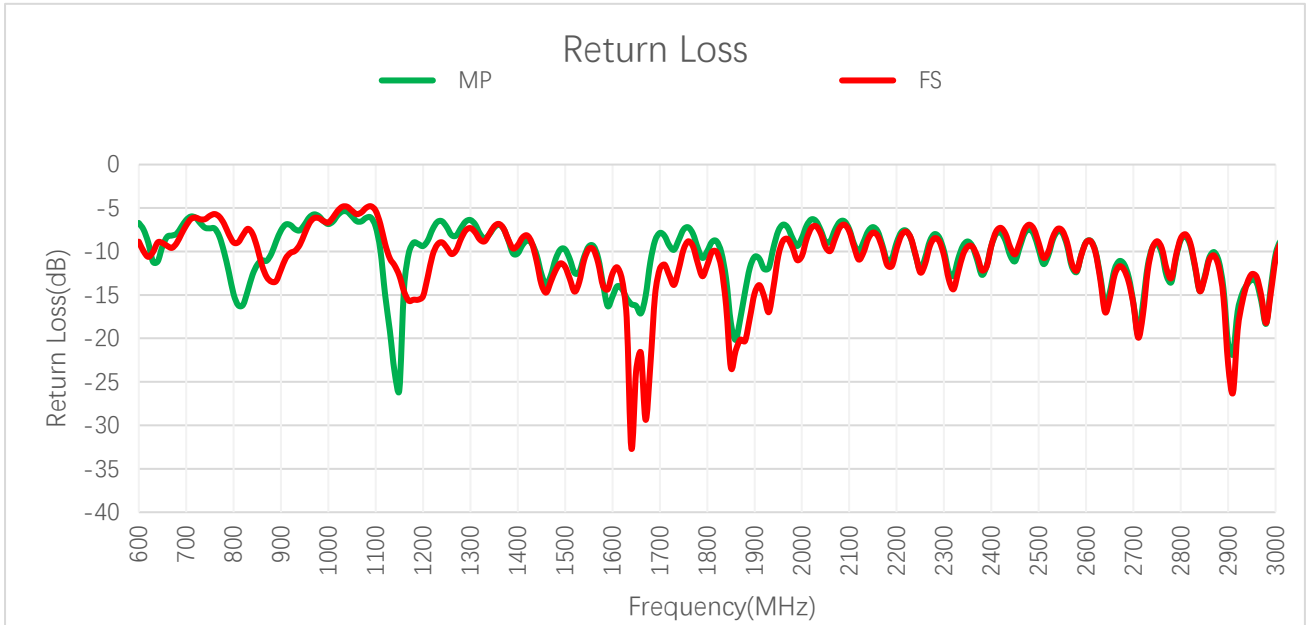
3.1.1. VSWR



VSWR

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
VSWR	MP	-	-	3.0	1.5	2.4	3.0	-	2.3	2.2	1.5
	FS	-	-	2.9	2.5	1.7	2.7	-	1.7	1.7	1.2
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	MP	2.4	2.4	2.1	1.8	2.1	1.6	-	-	-	-
	FS	1.8	2.2	2.0	1.9	2.1	1.5	-	-	-	-

3.1.2. Return Loss

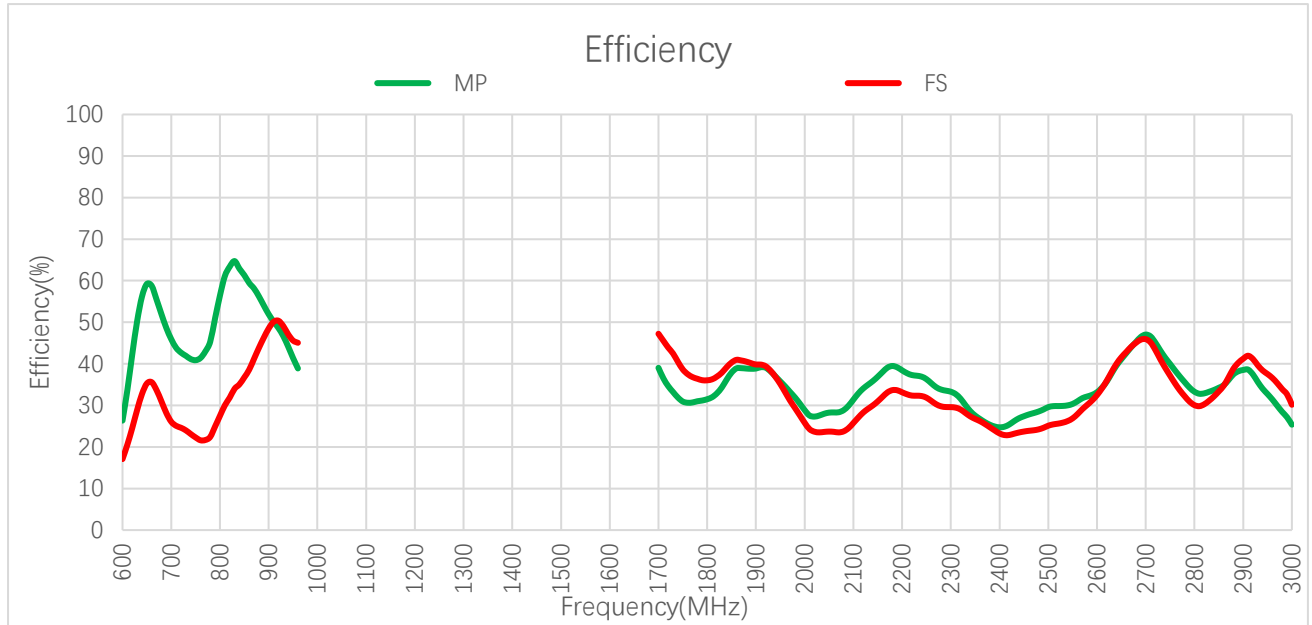


Return Loss (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	MP	-	-	-6.0	-14.5	-7.6	-6.1	-	-8.2	-8.7	-14.6
	FS	-	-	-6.3	-7.4	-12.1	-6.8	-	-11.5	-12.0	-20.3
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	MP	-7.7	-7.7	-8.8	-11.1	-8.9	-13.0	-	-	-	-
	FS	-10.5	-8.5	-9.4	-10.3	-9.0	-13.5	-	-	-	-

3.2. Radiation Performance Test

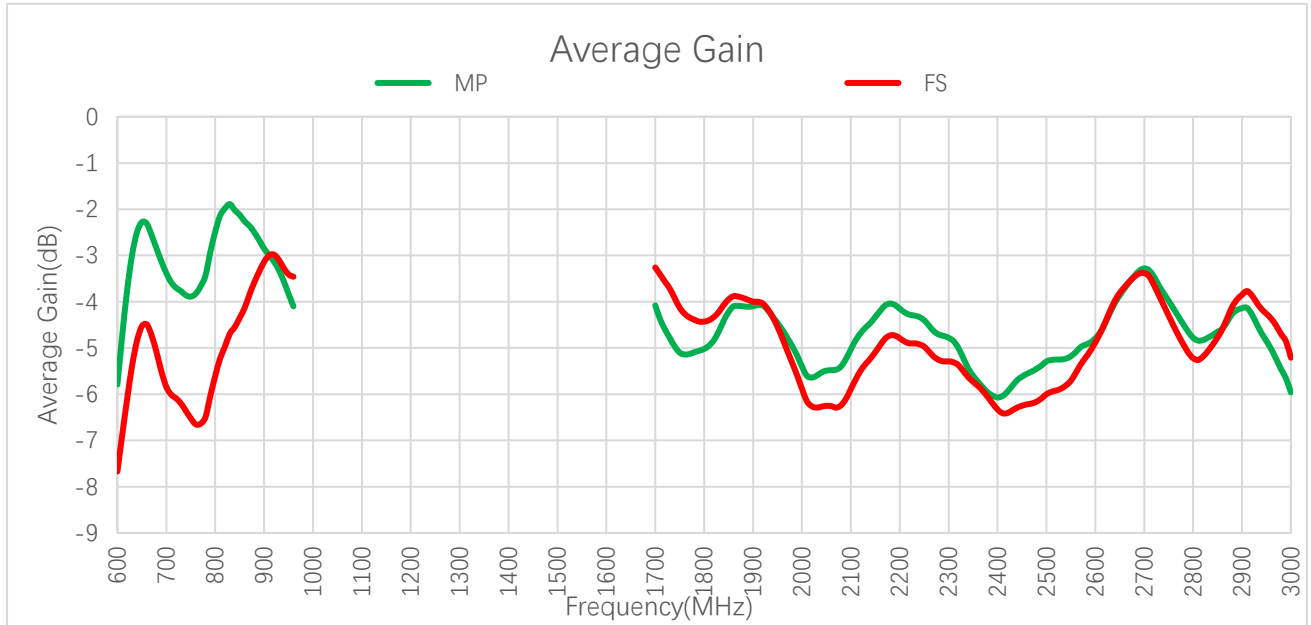
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	MP	-	-	43.9	64.7	51.9	38.9	-	36.5	31.9	38.9
	FS	-	-	25.1	34.0	48.5	45.1	-	45.6	40.5	40.5
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	MP	35.8	35.9	27.5	27.4	33.2	46.5	-	-	-	-
	FS	35.2	30.0	26.7	23.7	32.5	45.8	-	-	-	-

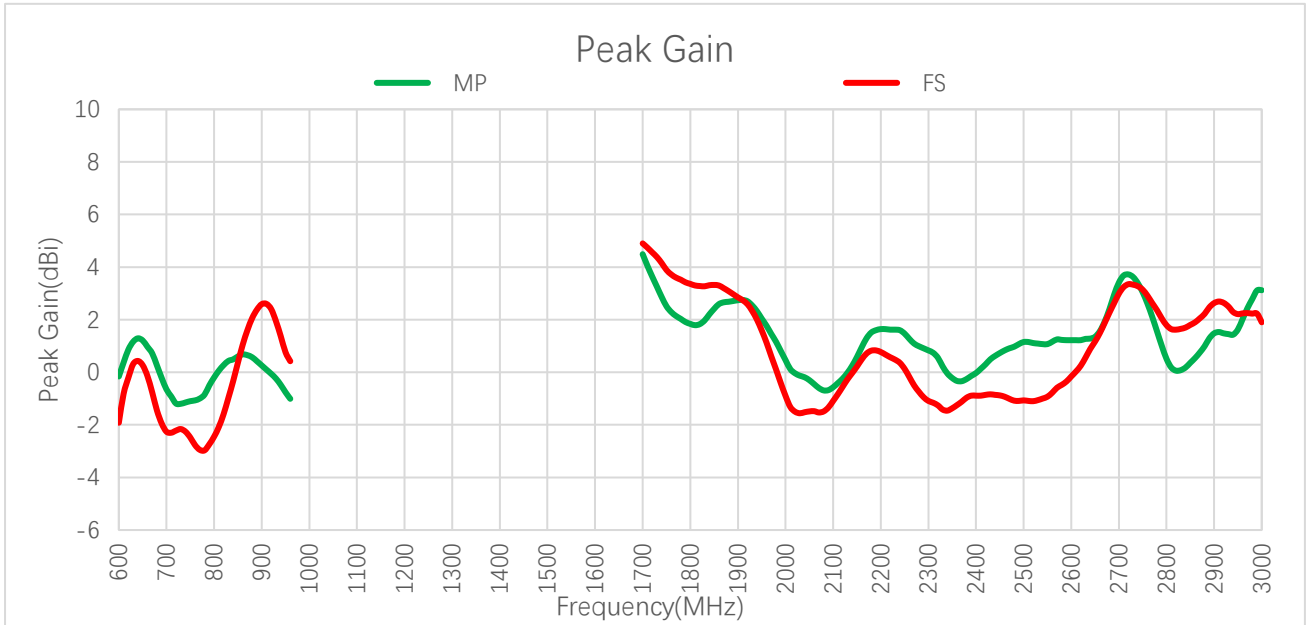
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	MP	-	-	-3.6	-1.9	-2.9	-4.1	-	-4.4	-5.0	-4.1
	FS	-	-	-6.0	-4.7	-3.1	-3.5	-	-3.4	-3.9	-3.9
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	MP	-4.5	-4.5	-5.6	-5.6	-4.8	-3.3	-	-	-	-
	FS	-4.5	-5.2	-5.7	-6.3	-4.9	-3.4	-	-	-	-

3.2.3. Peak Gain



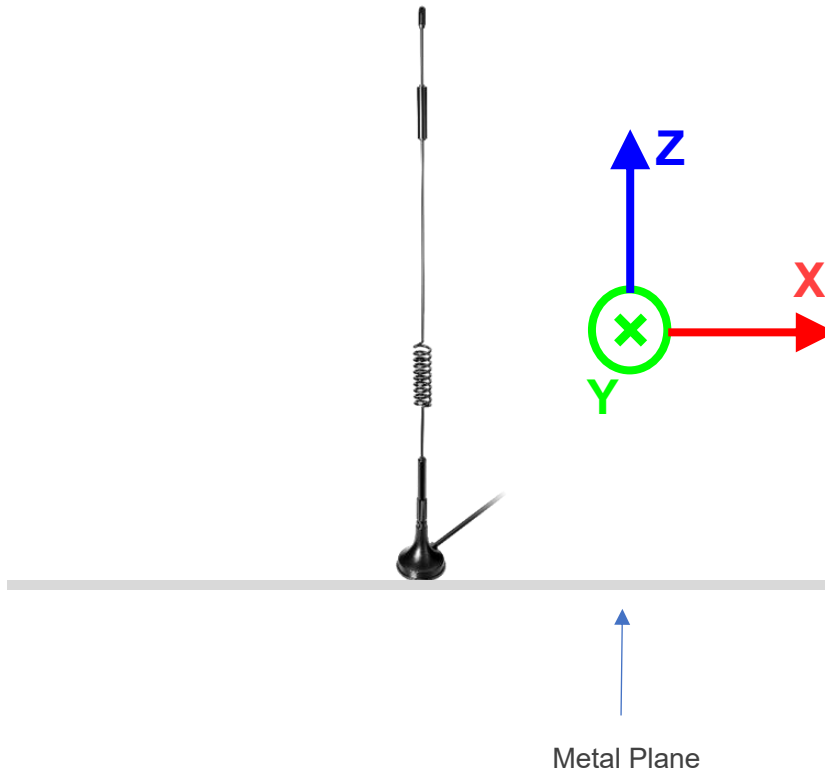
Peak Gain (dBi)

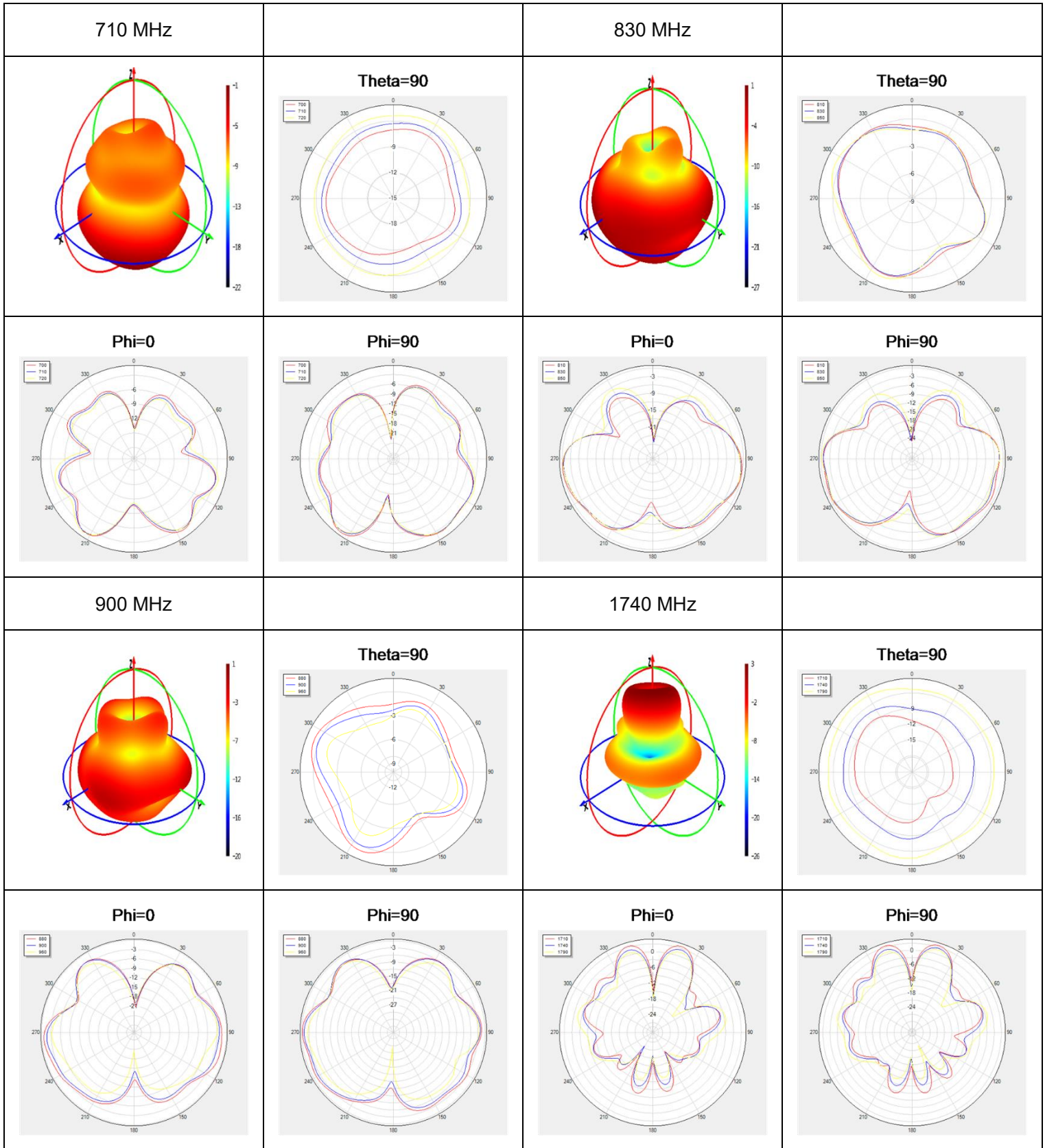
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	MP	-	-	-0.9	0.4	0.3	-1.0	-	4.1	2.9	2.7
	FS	-	-	-2.3	-1.0	2.6	0.4	-	4.7	4.2	3.1
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	MP	2.0	0.3	-0.2	0.7	1.2	3.0	-	-	-	-
	FS	1.6	0.0	-1.4	-0.9	-0.2	2.6	-	-	-	-

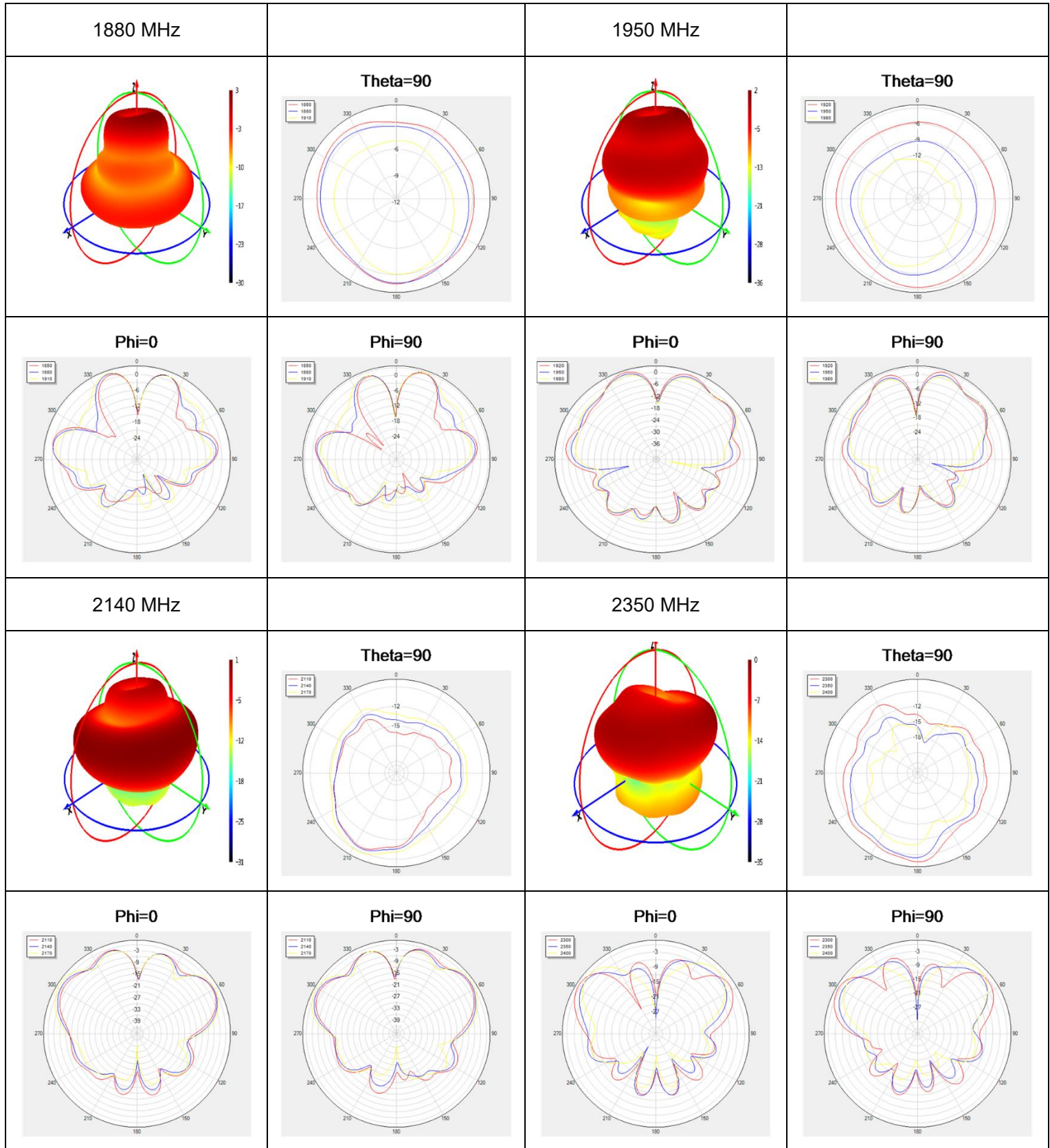
3.2.4. 3D & 2D Radiation Pattern

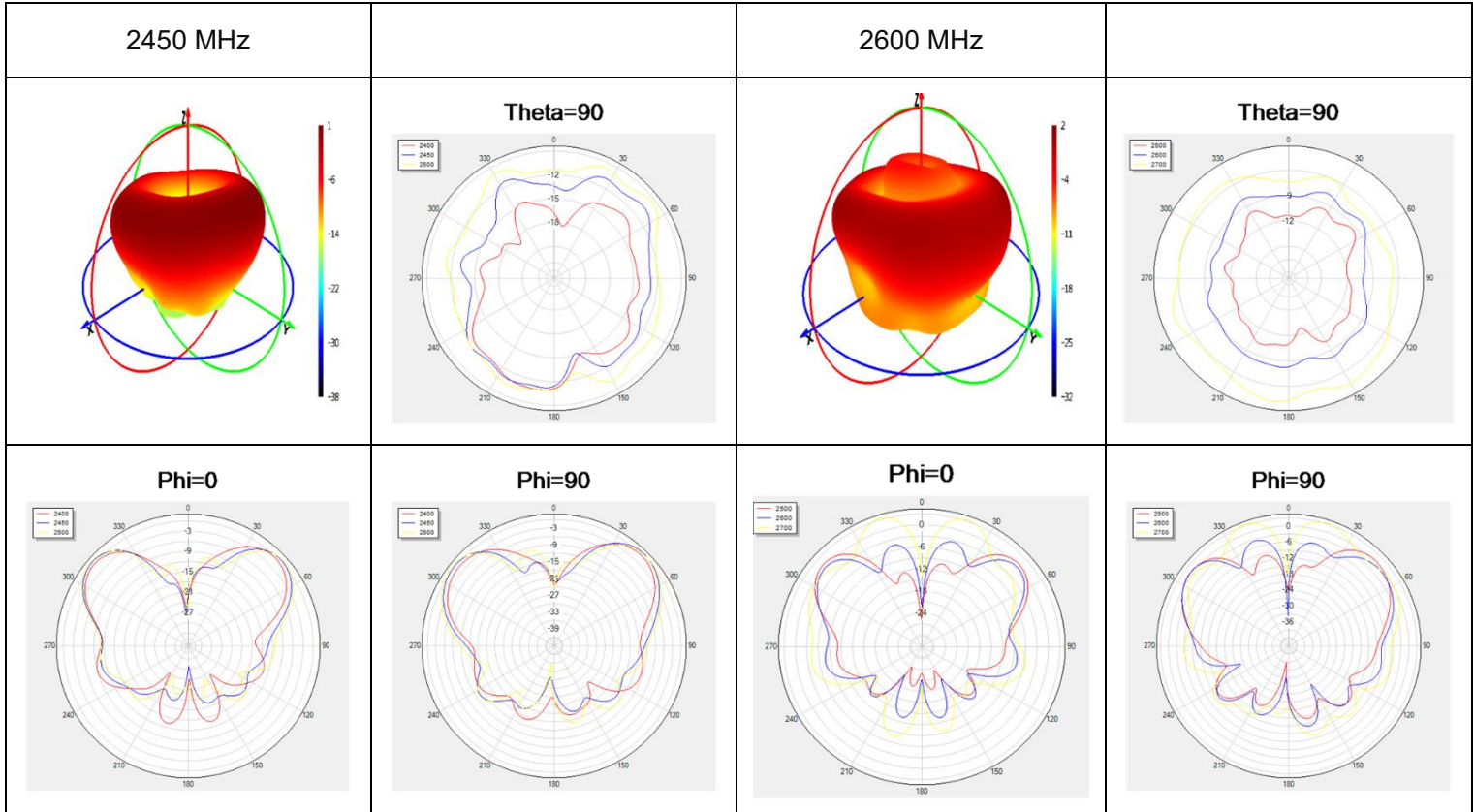
3.2.4.1. Test Condition: On 300 × 300 mm Metal Plane

- Test Chamber: GL-S-1



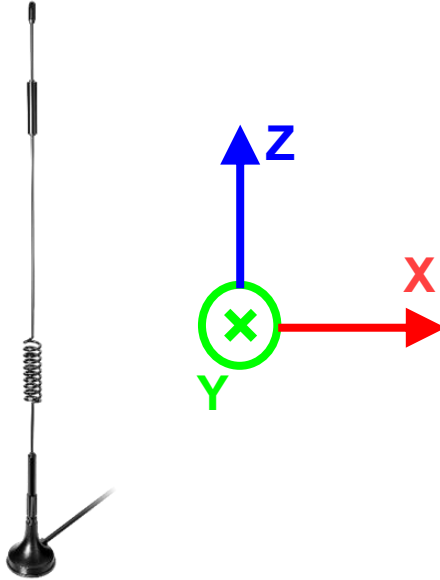


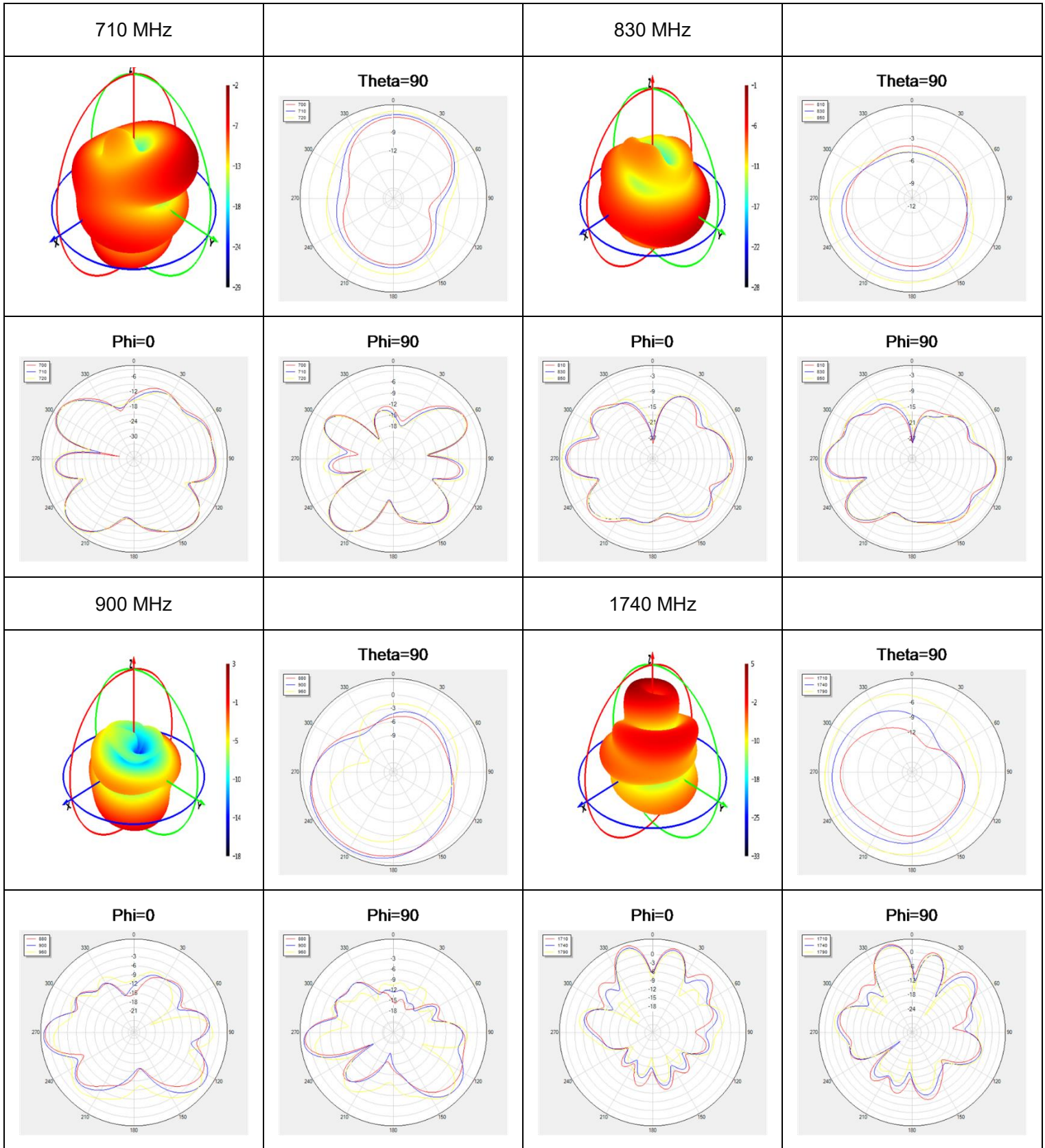


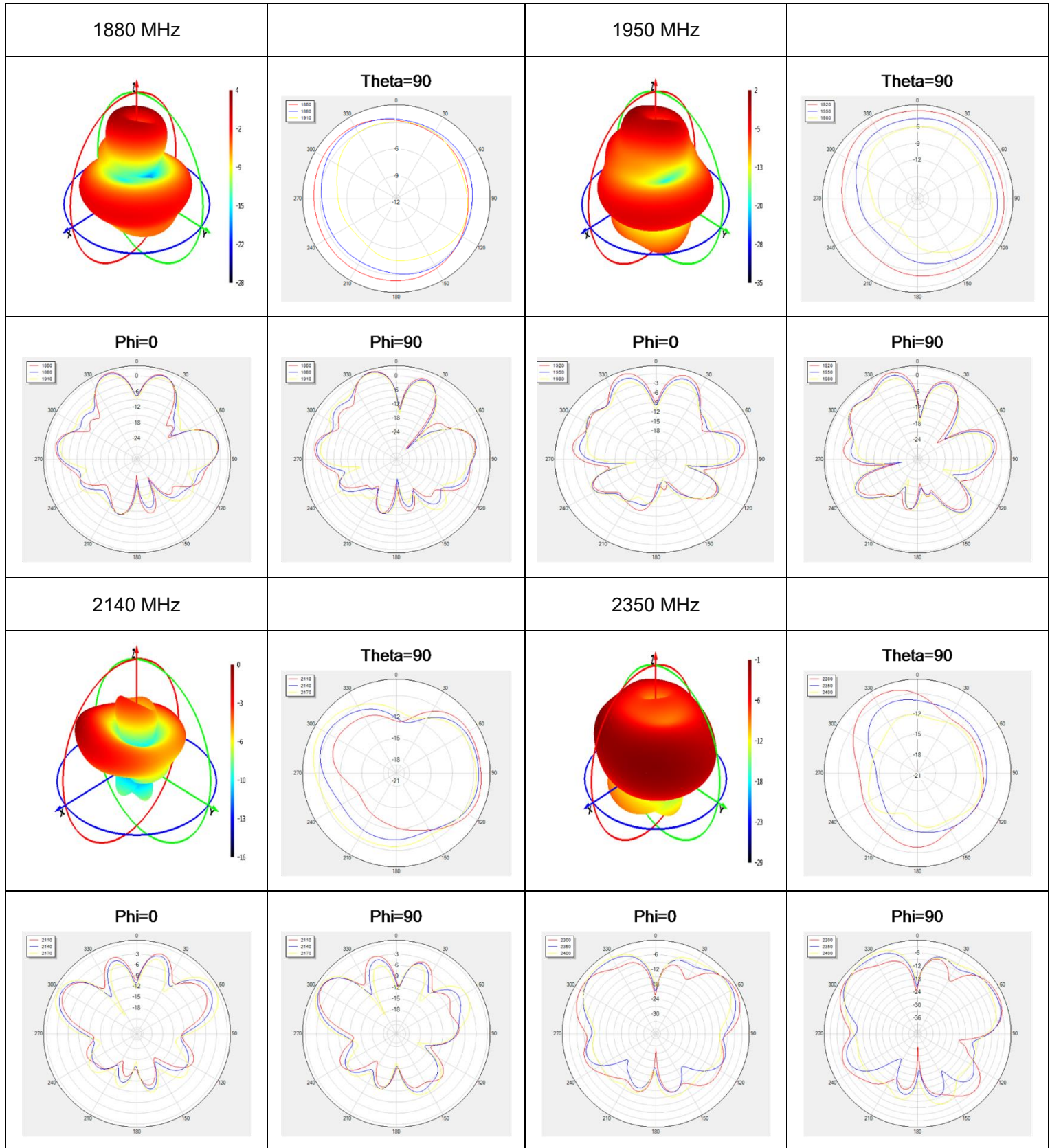


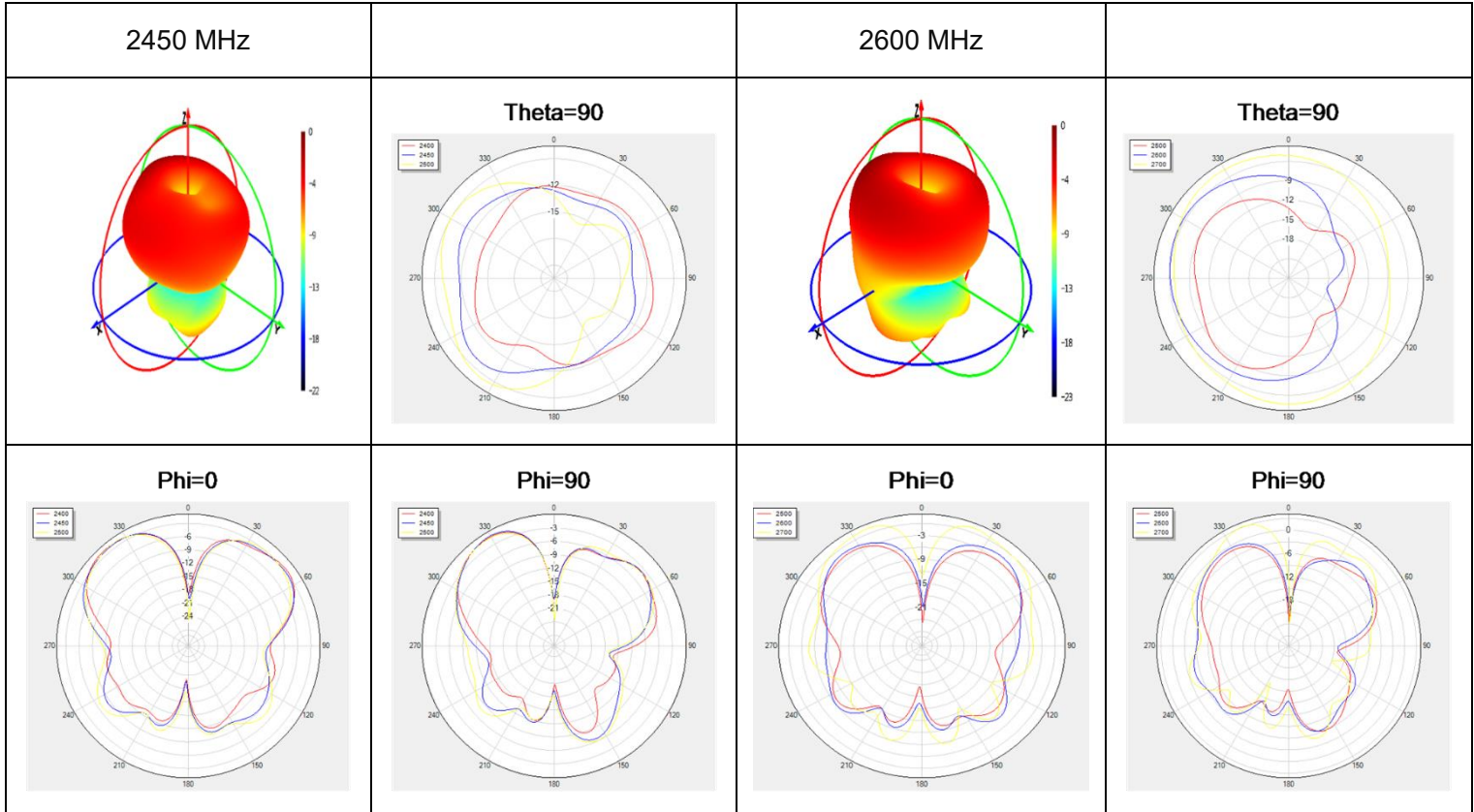
3.2.4.2. Test Condition: Free Space

- Test Chamber: GL-S-1






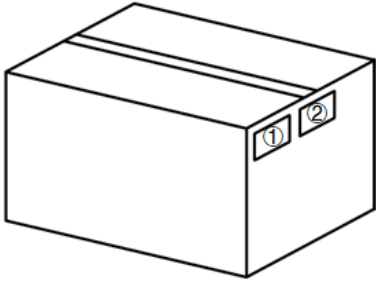
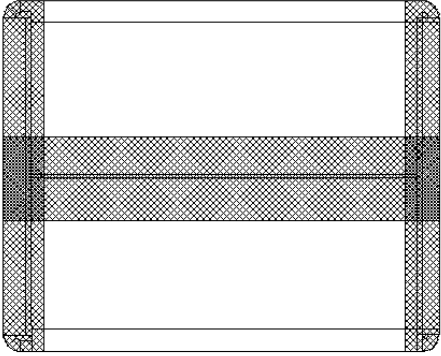






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 pc antenna product in a PE bag
		50 pcs antenna products in a big PE bag

<p>3</p>		<p>(6 pcs PE bags per carton box) (300 pcs antennas per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 370 × 370 × 295 mm</u></p>
<p>4</p>		<p>Position for Attaching Labels</p> <ul style="list-style-type: none"> ① Carton Label ② Quality Label
<p>5</p>		<p>Sealing Cartons “I” 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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Or email us at: support@quectel.com.

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Revision History

Version	Date	Author	Note
-	2021-04-14	Kenny YIN	Creation of the document
1.0	2020-06-16	Kenny YIN	First official release
1.1	2020-12-11	Kenny YIN	Updated the antenna image (Chapter 2).
1.2	2021-01-12	Kenny YIN	Updated the efficiency data (Chapter 4).
1.3	2021-01-27	Kenny YIN	Added IP rating description and installation method.
2.0	2021-04-30	Aria CHU	Updated all test data in the datasheet.
2.1	2021-07-25	Aria CHU	<ol style="list-style-type: none">1. Updated working temperature (Chapter 3).2. Added detailed passive electrical specifications (Chapter 3).
2.2	2021-12-01	Aria CHU	Updated the product description (Chapter 1).
3.0	2023-02-24	Damon ZHANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
3.1	2023-08-15	Lucky FENG	Updated the drawing (Chapter 2).

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