



Antenna Datasheet

Product OC: YPR00A0AA

Version: 2.0

Date: 2023-04-27

Status: Released

Product Name: LTE Antenna

Key Features:

Frequency Band: 700–2700 MHz

Dimensions: 194.3 × 15.95 mm

Efficiency: Up to 69.68 % (FS)

RoHS Compliant

IP66

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 130 × 130 mm EVB & Free Space

1.1. Electrical

Electrical	
Frequency Range	700–2700 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
	Band	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	EVB	-	3.1	4.8	-	4.0	2.2	4.2	5.7	-	-	-	
	FS	-	1.9	2.1	-	3.3	2.6	3.3	5.1	-	-	-	
Max. Return Loss (dB)	EVB	-	-5.9	-3.6	-	-4.4	-8.4	-4.3	-3.1	-	-	-	
	FS	-	-10.1	-9.2	-	-5.4	-6.9	-5.4	-3.5	-	-	-	
AVG Eff. (%)	EVB	-	45.1	35.9	-	51.0	50.5	39.4	20.3	-	-	-	
	FS	-	48.6	34.2	-	51.1	57.6	48.6	34.4	-	-	-	
AVG Gain (dB)	EVB	-	-3.5	-4.6	-	-3.0	-3.0	-4.1	-7.0	-	-	-	
	FS	-	-3.1	-4.8	-	-3.0	-2.4	-3.1	-4.7	-	-	-	
Max. Peak	EVB	-	-1.0	0.5	-	2.4	3.9	3.6	3.5	-	-	-	

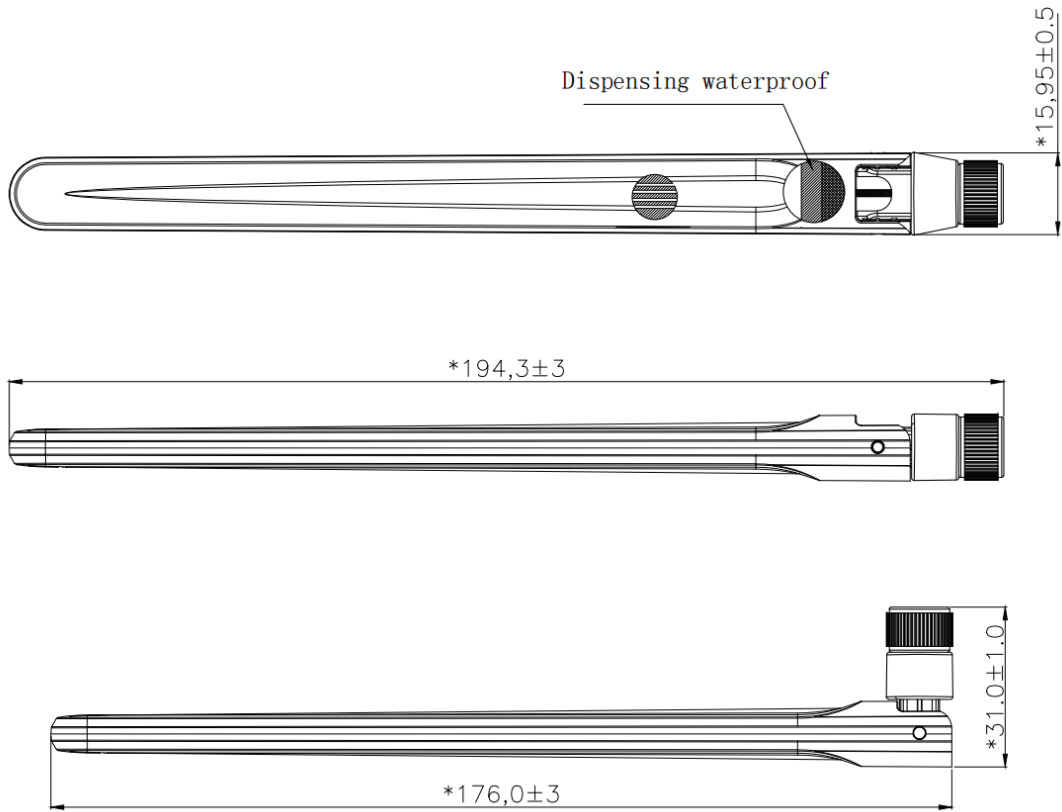
Gain (dBi)	FS	-	-1.1	-1.4	-	1.1	3.9	4.1	3.6	-	-	-
VSWR	EVB		≤ 5.7									
	FS		≤ 5.1									
Return Loss	EVB		≤ -3.1 dB									
	FS		≤ -3.5 dB									
Peak Gain	EVB		≤ 2.3 dBi									
	FS		≤ 1.1 dBi									

- FS: Free Space
- EVB: On 130 × 130 mm EVB

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	194.3 × 15.95 mm
Casing Material & Color	ABS & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ.18.3 g
Environmental	
Operation Temperature	-20 °C to +70 °C
Storage Temperature	-20 °C to +70 °C
Ingress Protection (IP) Rating	IP66
RoHS Compliant	Yes

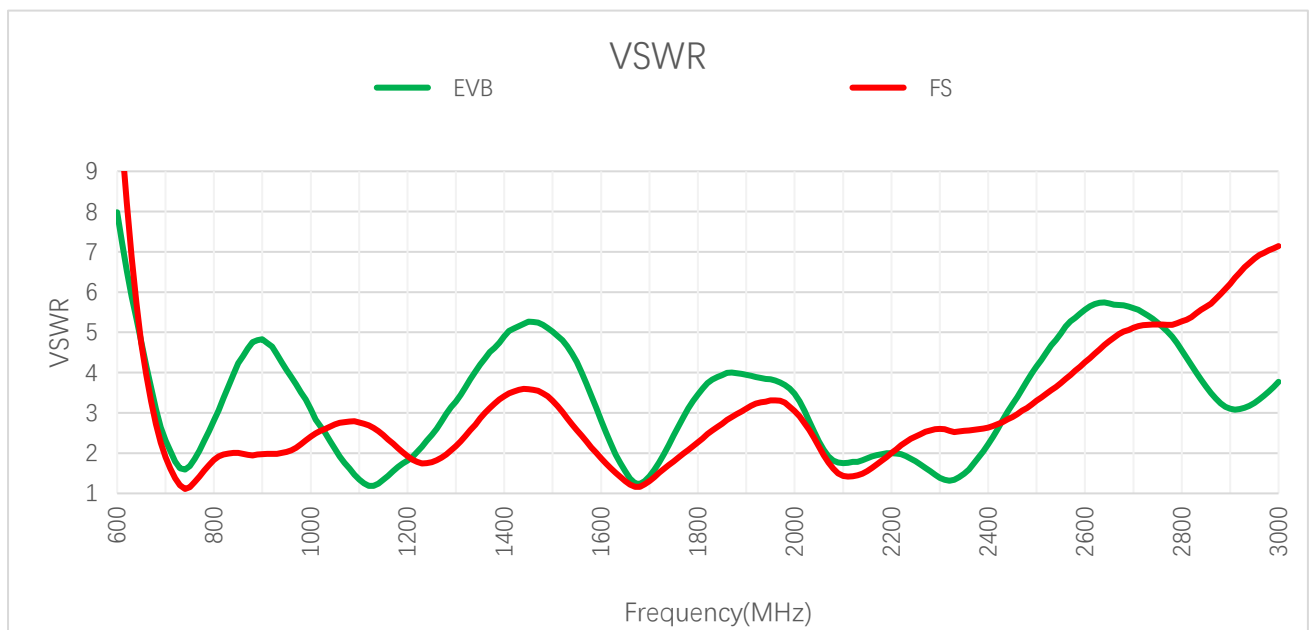
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

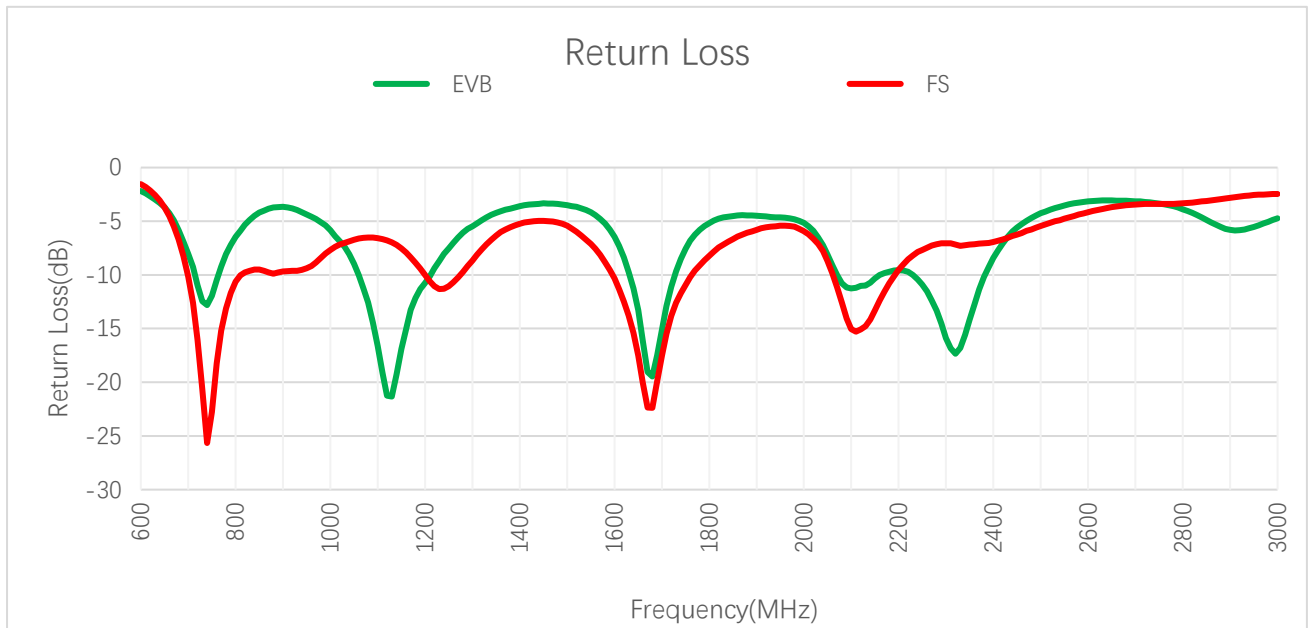
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880	
VSWR	EVB	-	-	2.1	3.7	4.8	3.9	-	1.6	2.2	4.0
	FS	-	-	1.6	2.0	2.0	2.1	-	1.4	1.7	3.0
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000	
VSWR	EVB	3.8	1.8	1.5	3.2	5.6	5.6	-	-	-	-
	FS	3.3	1.5	2.6	2.9	4.3	5.1	-	-	-	-

3.1.2. Return Loss

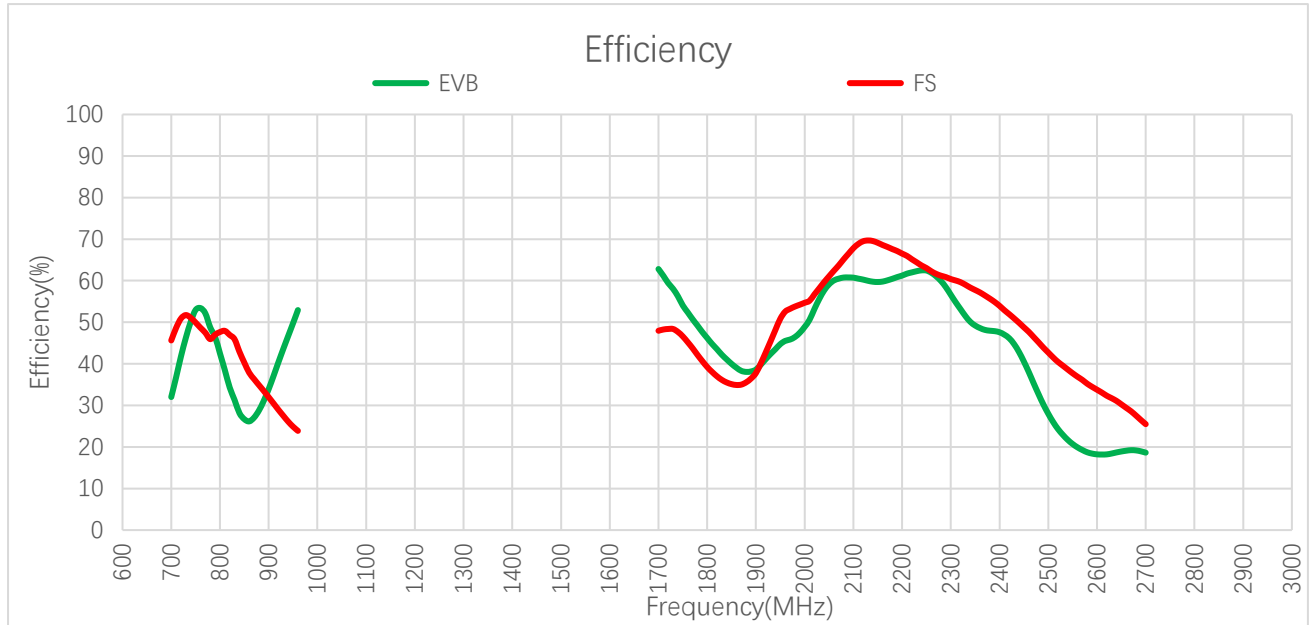


Return Loss (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	EVB	-	-	-9.3	-4.9	-3.6	-4.6	-	-12.9	-8.5	-4.5
	FS	-	-	-12.6	-9.6	-9.7	-9.2	-	-15.5	-11.7	-6.1
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	EVB	-4.6	-10.7	-14.2	-5.6	-3.2	-3.1	-	-	-	-
	FS	-5.4	-14.2	-7.2	-6.3	-4.2	-3.5	-	-	-	-

3.2. Radiation Performance Test

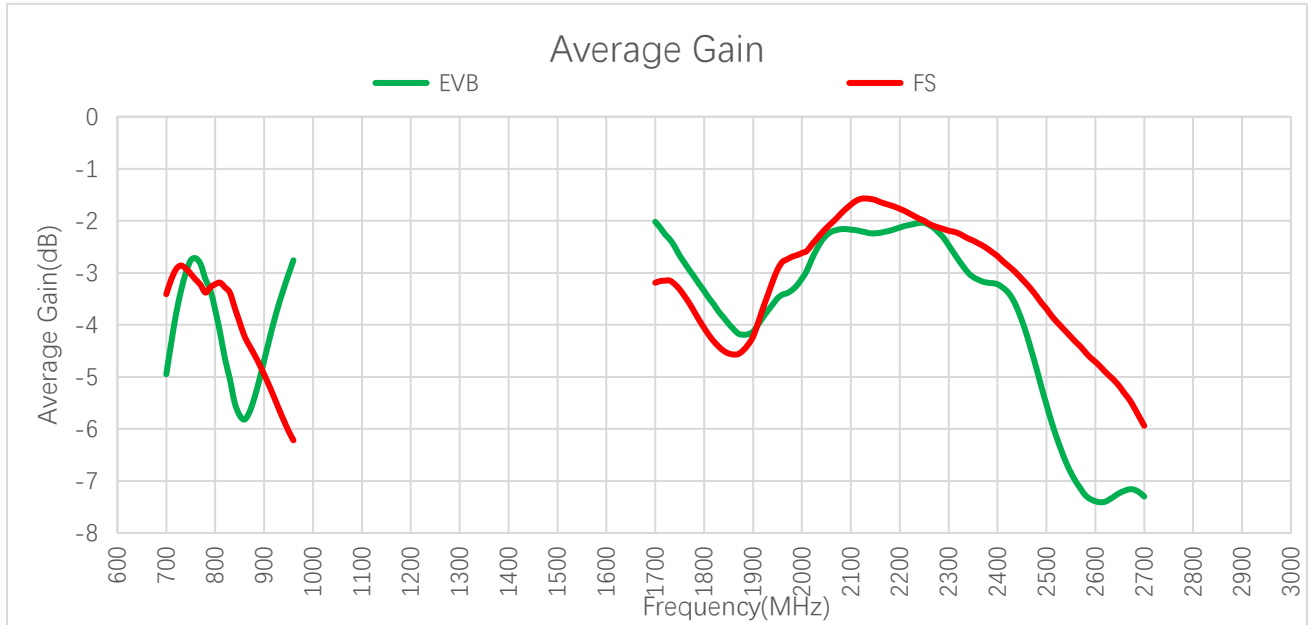
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	EVB	-	-	36.7	31.3	33.9	52.9	-	61.2	56.2	38.1
	FS	-	-	48.6	45.9	32.0	23.9	-	48.3	47.7	35.6
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	EVB	44.7	59.8	49.2	40.5	18.2	19.0	-	-	-	-
	FS	50.8	69.5	57.8	48.8	33.8	26.5	-	-	-	-

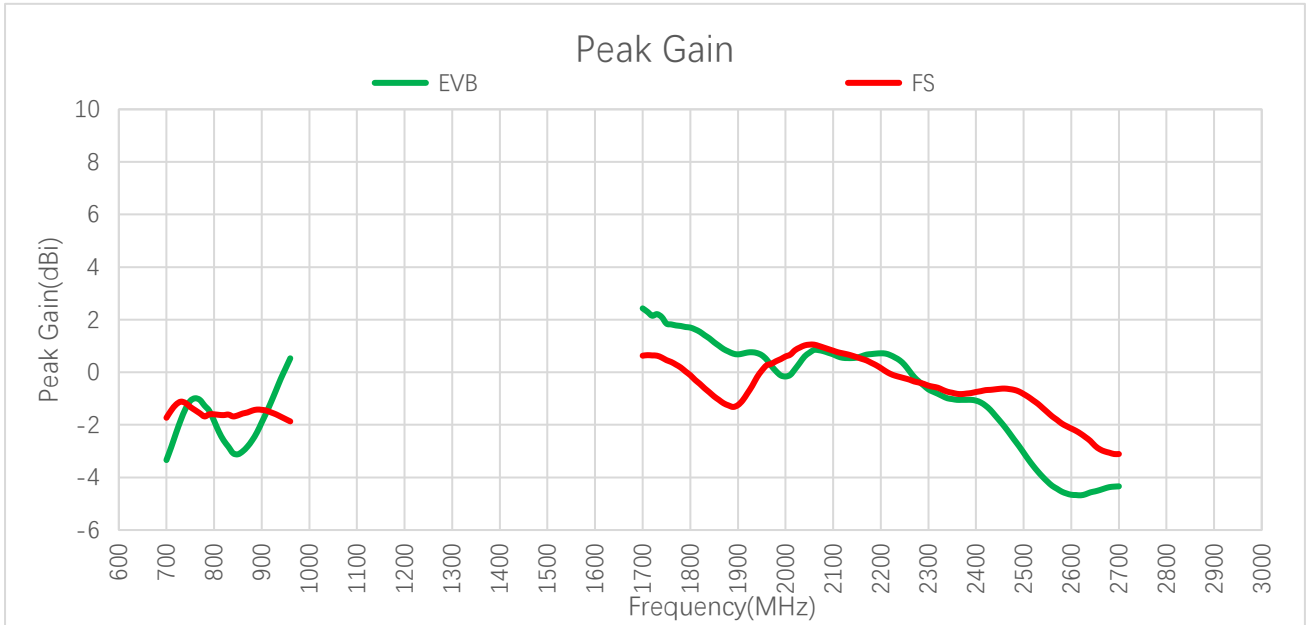
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	EVB	-	-	-4.4	-5.0	-4.7	-2.8	-	-2.1	-2.5	-4.2
	FS	-	-	-3.1	-3.4	-5.0	-6.2	-	-3.2	-3.2	-4.5
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	EVB	-3.5	-2.2	-3.1	-3.9	-7.4	-7.2	-	-	-	-
	FS	-2.9	-1.6	-2.4	-3.1	-4.7	-5.8	-	-	-	-

3.2.3. Peak Gain



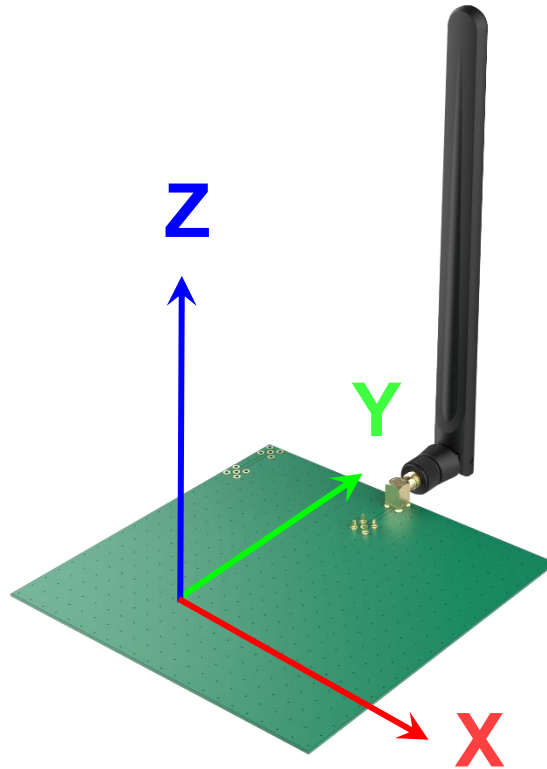
Peak Gain (dBi)

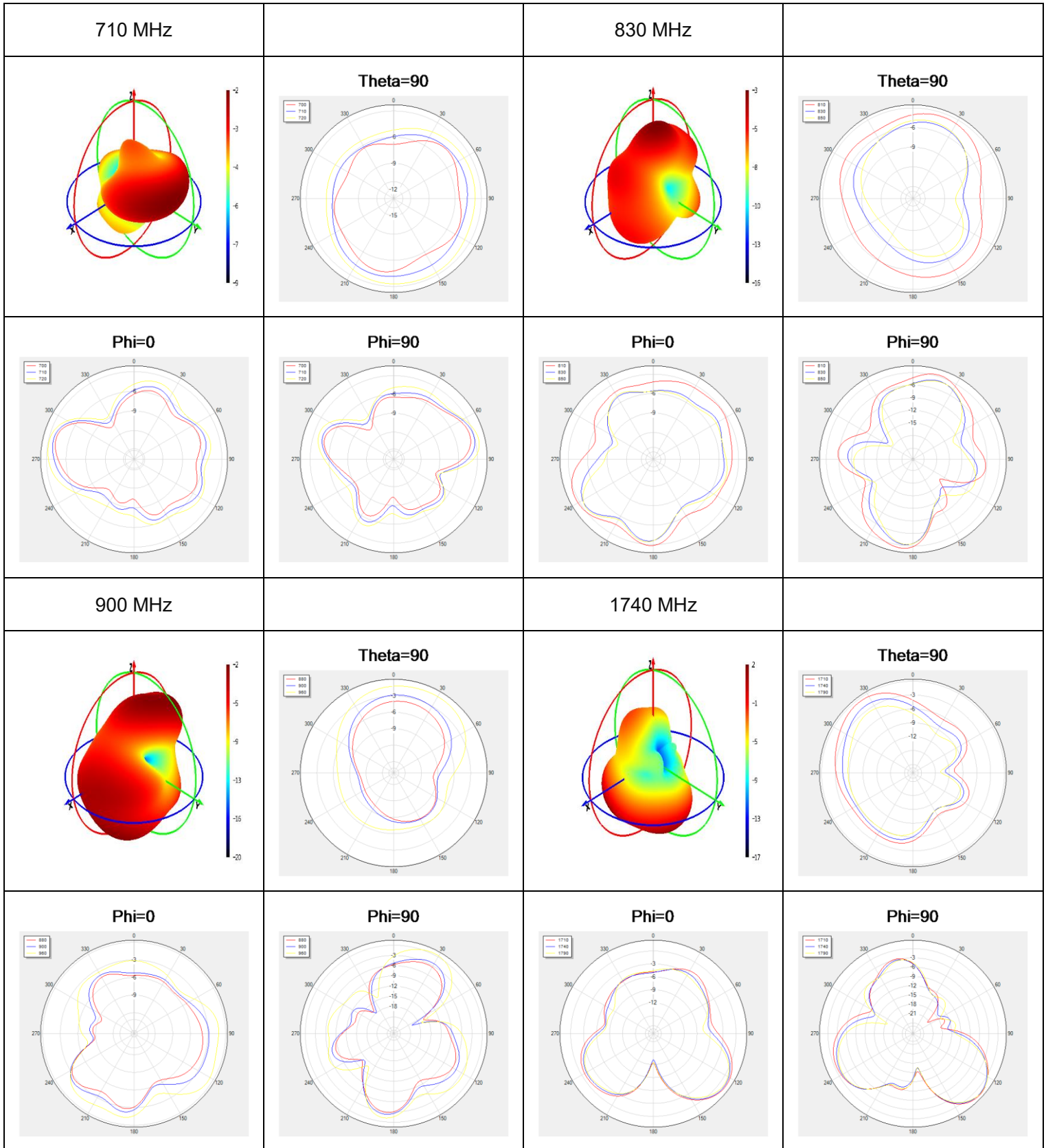
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	EVB	-	-	-2.9	-2.8	-1.9	0.5	-	2.3	2.1	0.8
	FS	-	-	-1.5	-1.6	-1.4	-1.9	-	0.7	0.6	-1.3
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	EVB	0.7	0.5	-1.0	-1.9	-4.7	-4.4	-	-	-	-
	FS	0.1	0.6	-0.8	-0.6	-2.1	-3.1	-	-	-	-

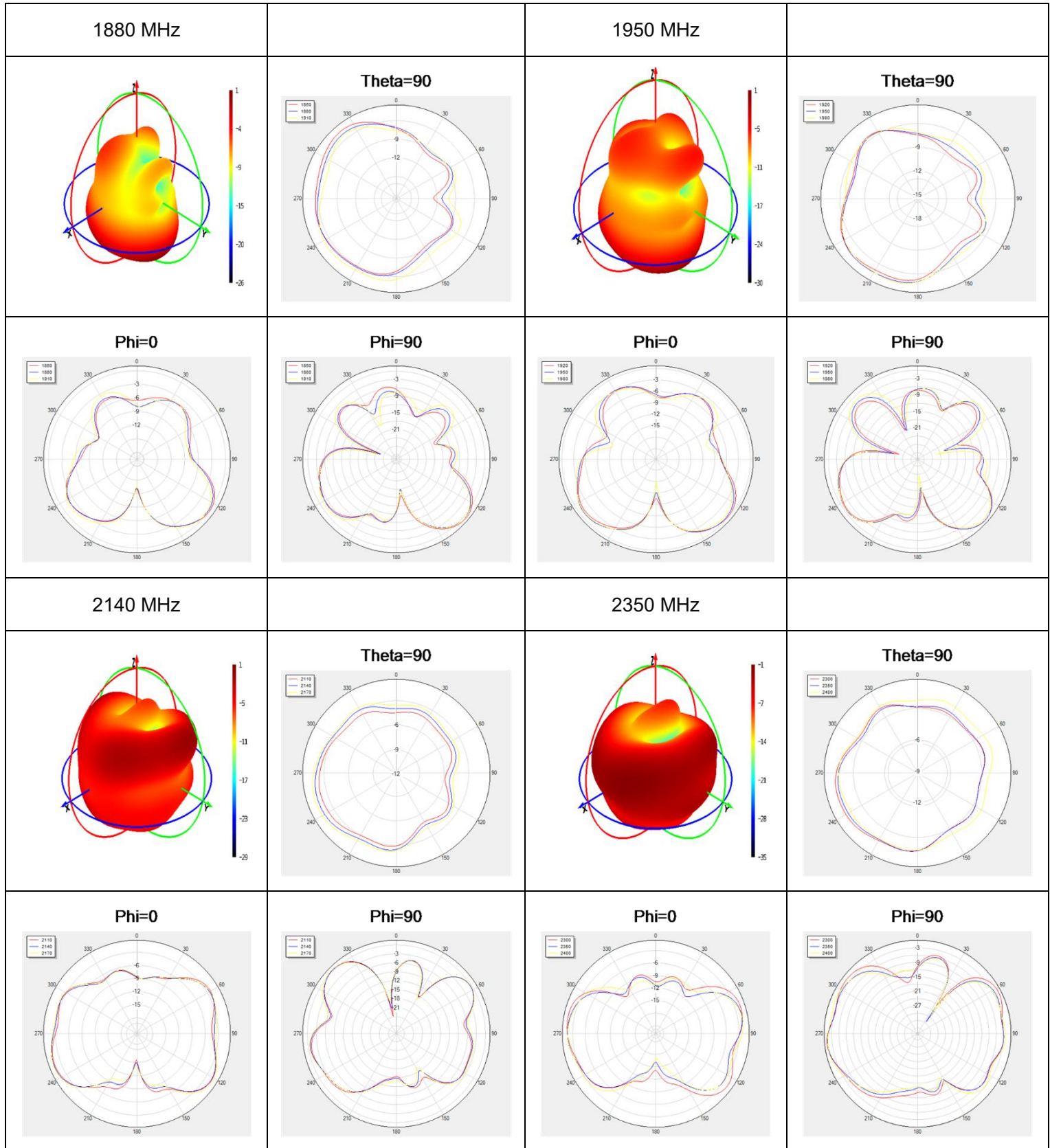
3.2.4. 3D & 2D Radiation Pattern

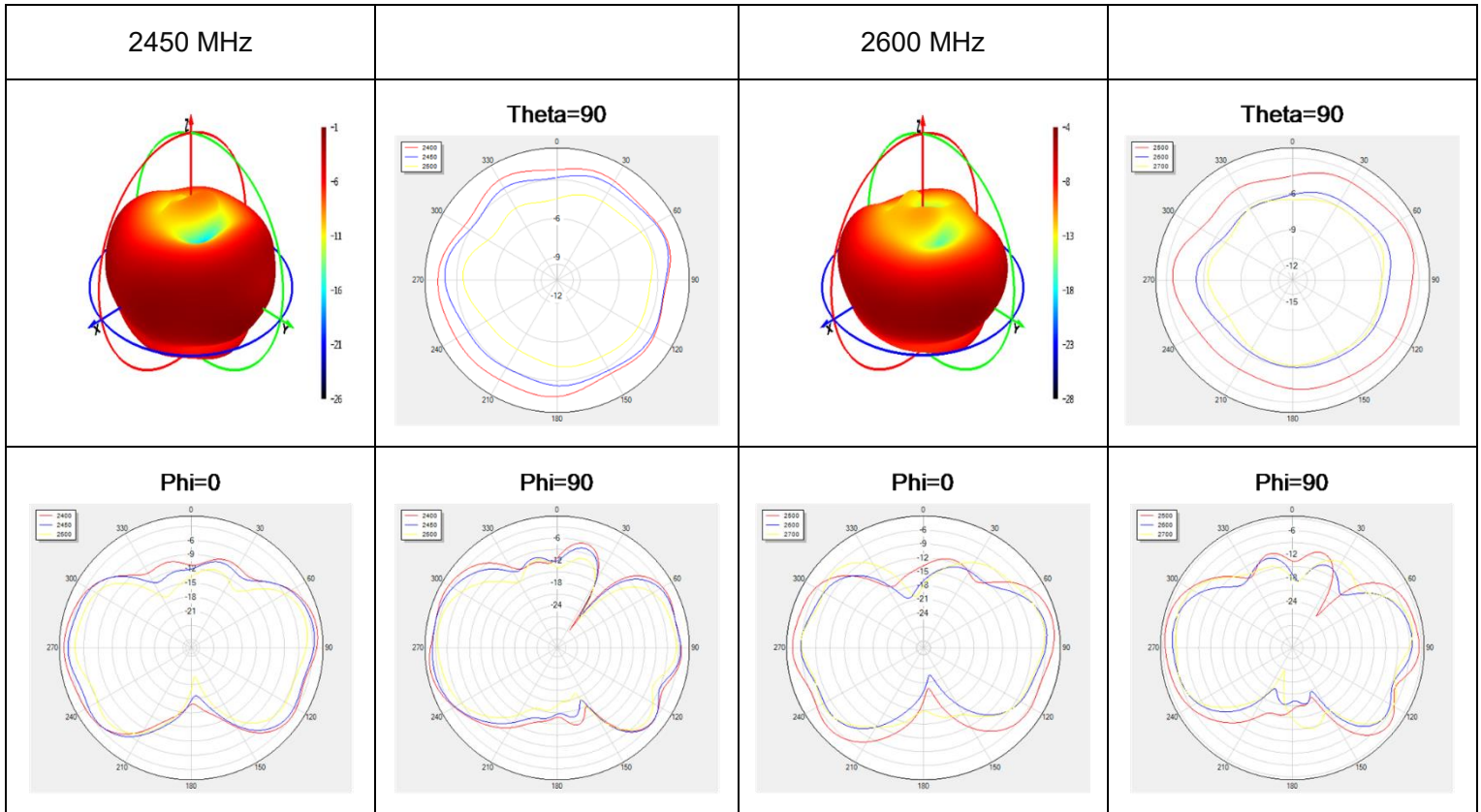
3.2.4.1. Test Condition: On 130 × 130 mm EVB

- Test Chamber: GL-S-1



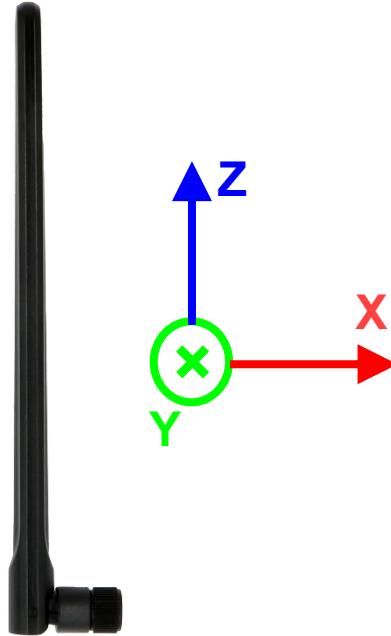


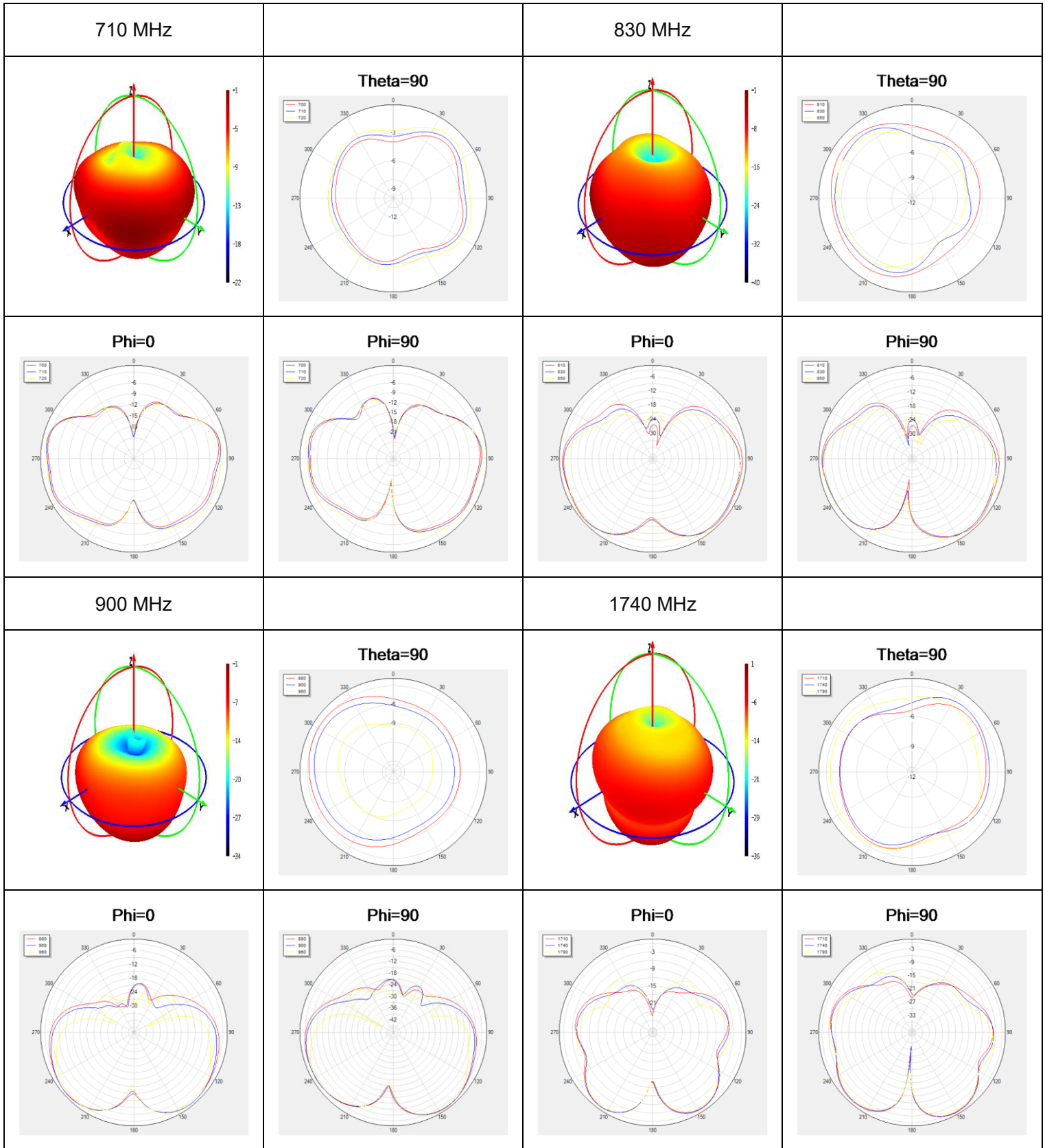


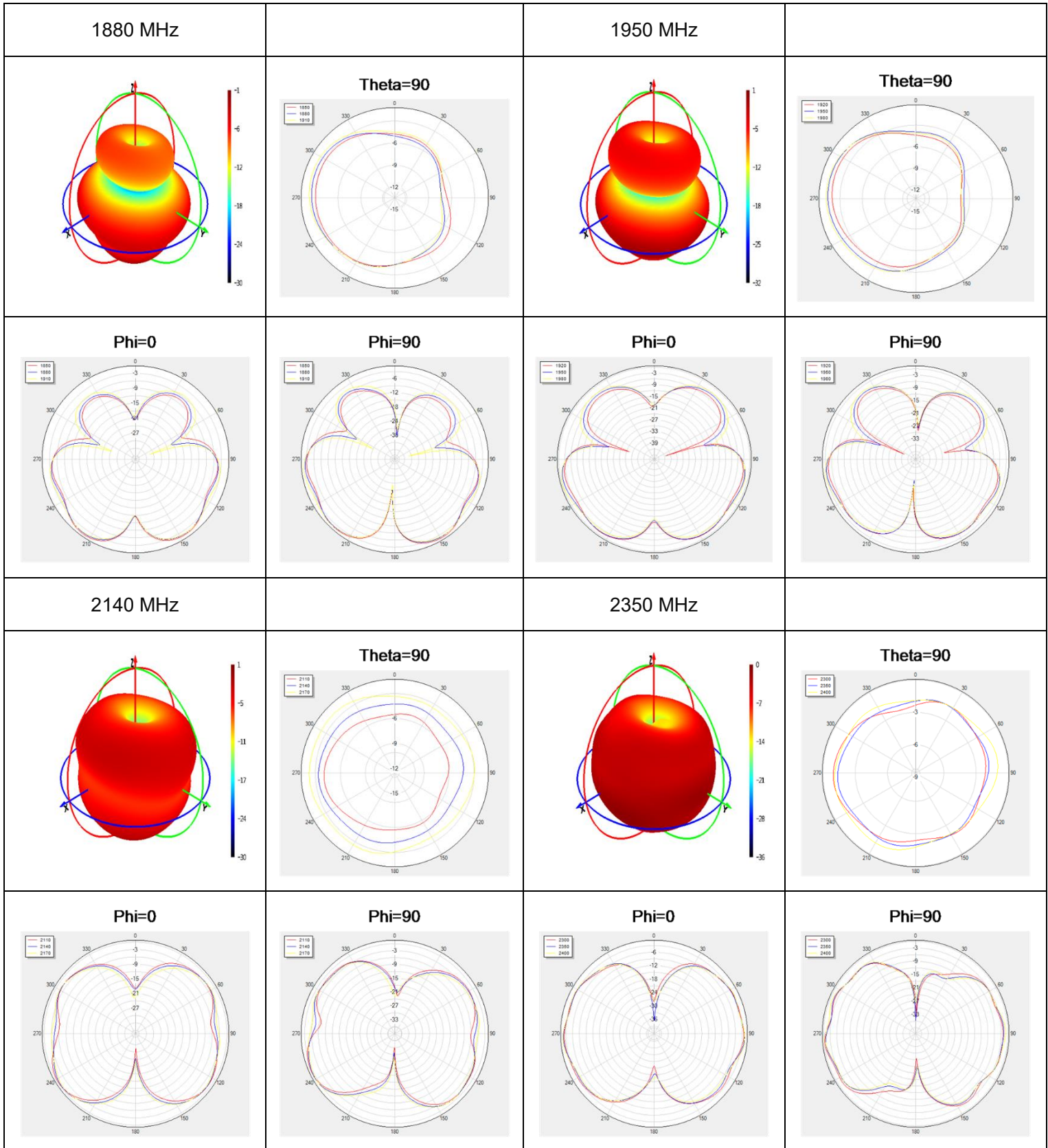


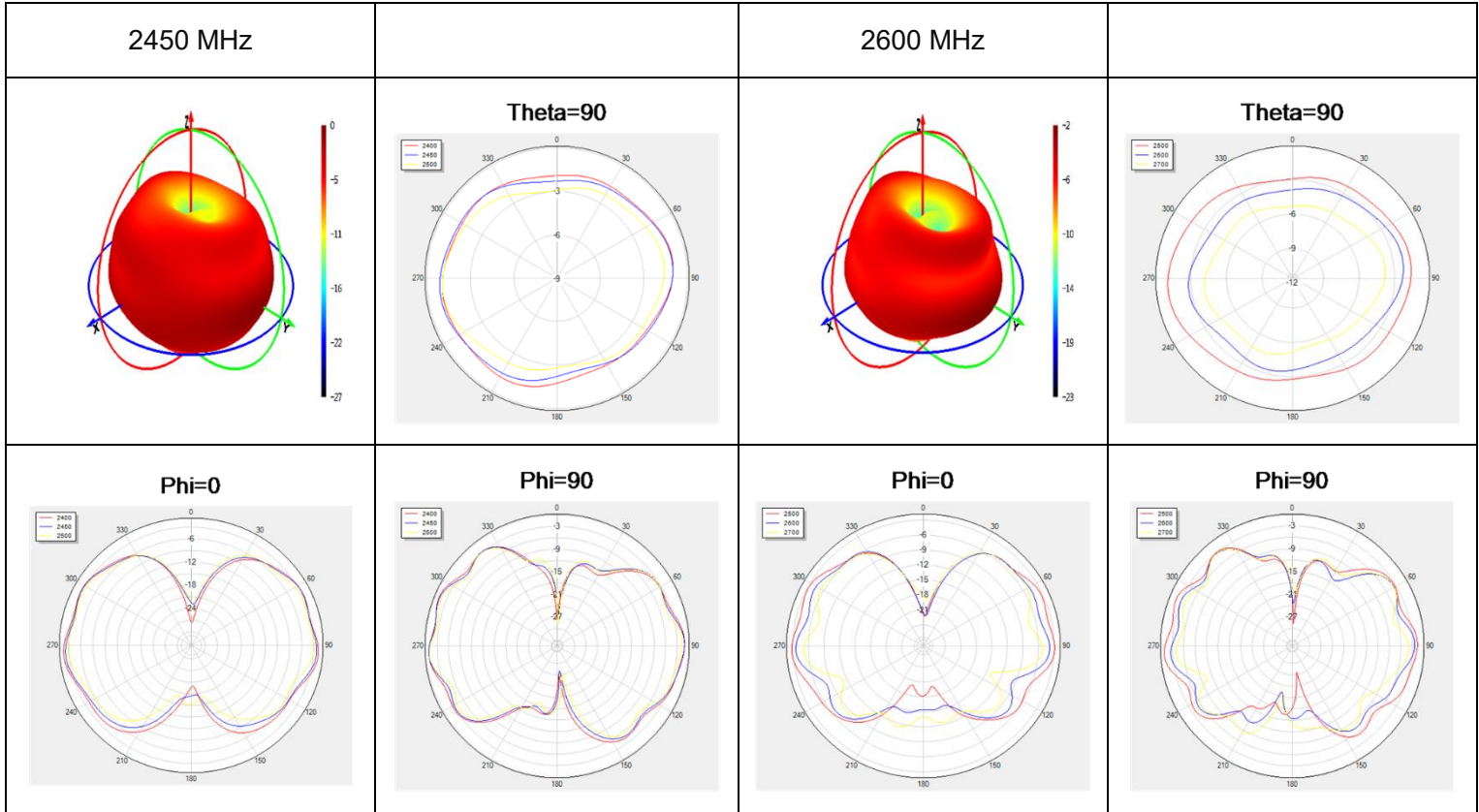
3.2.4.2. Test Condition: Free Space

- Test Chamber: GL-S-1



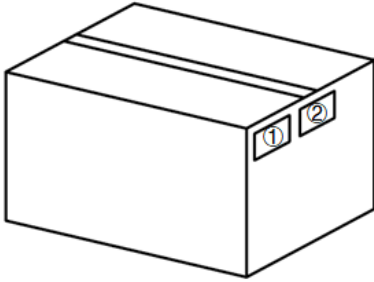
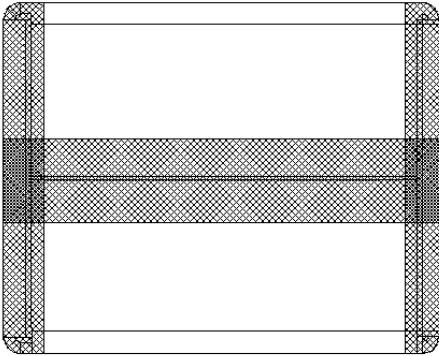






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>Put the product in a one-piece bag; Each one-piece bag contains 10 products.</p>
2		<p>40 pcs antenna products in a PE bag; (40 pcs antennas per PE bag)</p>
3		<p>(15 PE bags per carton box) (600 pcs antennas per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 450 × 240 × 290 mm</u></p>

4		<p>Position for Attaching Labels</p> <ul style="list-style-type: none">① Carton Label② Quality Label
5		<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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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
-	2021-06-18	Jason LONG/ Aria CHU	Creation of the document
1.0	2021-06-18	Jason LONG/ Aria CHU	First official release
1.1	2021-11-27	Jason LONG/ Aria CHU	Updated the product description (Chapter 1).
2.0	2023-04-27	Joyful HUANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.

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