



Antenna Datasheet

Product OC: YECT102WAAH

Version: 1.3

Date: 2025-04-09

Status: Released

Product Name: 5G Terminal Mount Rubber Dipole External Antenna

Key Features:

Frequency Band: 600–960 MHz, 1710–2690 MHz, 3300–6000 MHz

Dimensions: 231 mm × 54.5 mm × 14.5 mm

Efficiency: Up to 86 % (FS)

RoHS and REACH Compliant

IP66 (housing)

Overview

YECT102WAAH is a 5G external antenna measuring 231 mm × 54.5 mm × 14.5 mm. This ultra-wide-band 5G antenna provides broad coverage from 600–960 MHz, 1710–2690 MHz, 3300–6000 MHz whilst offering backward-compatibility to support 4G/3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is terminated with TNC Male connector. Ideal for applications where the antenna is required to be discrete, this low profile, terminal mount omni-directional antenna, is easy to install with maximum durability assured thanks to its IP66 rated, PC enclosure. The YECT102WAAH can be used in harsh environments thanks to its robust UV resistant (UL 746c f1) and flame resistant (UL 94 V-0) enclosure.

The antenna is designed as dipole type to work with various GND plane sizes or in free space for ease of integration with a hinged TNC Male connector to achieve the optimum position. Hinged structure helps to avoid other antennas or objects by rotating to different directions when mounted on terminals. This omni-directional antenna is ideally suited for access points, terminals and routers, high speed video, real-time streaming, public transportation, offering great performance with its high gain and efficiency.

Typical applications include:

- Access points, terminals and routers
- High speed video
- Real-time streaming
- Public transportation

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

Contents

Overview	1
Contents	2
1 Specification	3
1.1. Electrical.....	3
1.2. Mechanical & Environmental	5
2 Drawing	6
3 Detailed Performance	7
3.1. S-Parameter Test	7
3.1.1. VSWR.....	7
3.1.2. Return Loss	8
3.2. Radiation Performance Test.....	9
3.2.1. Efficiency	9
3.2.2. Average Gain	10
3.2.3. Peak Gain.....	11
3.2.4. 3D & 2D Radiation Pattern.....	12
3.2.4.1. Test Condition: In Free Space	12
3.2.4.2. Test Condition: On 130 mm × 130 mm EVB	17
4 Packaging	22
Contact Us	24
Legal Notices	25
Revision History	27

1 Specification

Test Condition: In Free Space & On 130 mm × 130 mm EVB

1.1. Electrical

Electrical	
Frequency Range	600–960 MHz, 1710–2690 MHz, 3300–6000 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	FS	1.5	1.3	1.7	-	2.5	1.3	1.2	1.5	1.9	1.3	1.4
	EVB	1.8	1.7	2.6	-	2.5	1.6	1.3	1.2	1.9	1.8	3.3
Max. Return Loss (dB)	FS	-13.7	-17.8	-11.9	-	-7.5	-18.3	-21.1	-13.9	-10.1	-17.4	-14.9
	EVB	-10.6	-11.7	-7.0	-	-7.3	-12.5	-17.1	-21.0	-10.1	-10.7	-5.4
AVG Eff. (%)	FS	66.4	70.6	56.2	-	65.5	80.4	73.3	77.6	69.4	66.3	59.5
	EVB	60.8	79.0	75.2	-	69.7	74.5	72.4	72.0	67.1	57.7	51.9
AVG AVG Gain (dB)	FS	-1.8	-1.5	-2.5	-	-1.8	-0.9	-1.3	-1.1	-1.6	-1.8	-2.3
	EVB	-2.2	-1.0	-1.3	-	-1.6	-1.3	-1.4	-1.4	-1.7	-2.4	-2.9
Max. Peak Gain (dBi)	FS	1.5	1.1	1.7	-	1.5	3.7	3.4	4.0	5.3	5.5	4.2
	EVB	0.1	1.5	1.4	-	3.1	4.2	4.3	4.3	3.5	4.0	4.1
VSWR	FS	≤ 2.5										

	EVB	≤ 3.3
Return	FS	≤ -7.5 dB
Loss	EVB	≤ -5.4 dB
Peak Gain	FS	≤ 5.5 dBi
	EVB	≤ 4.3 dBi

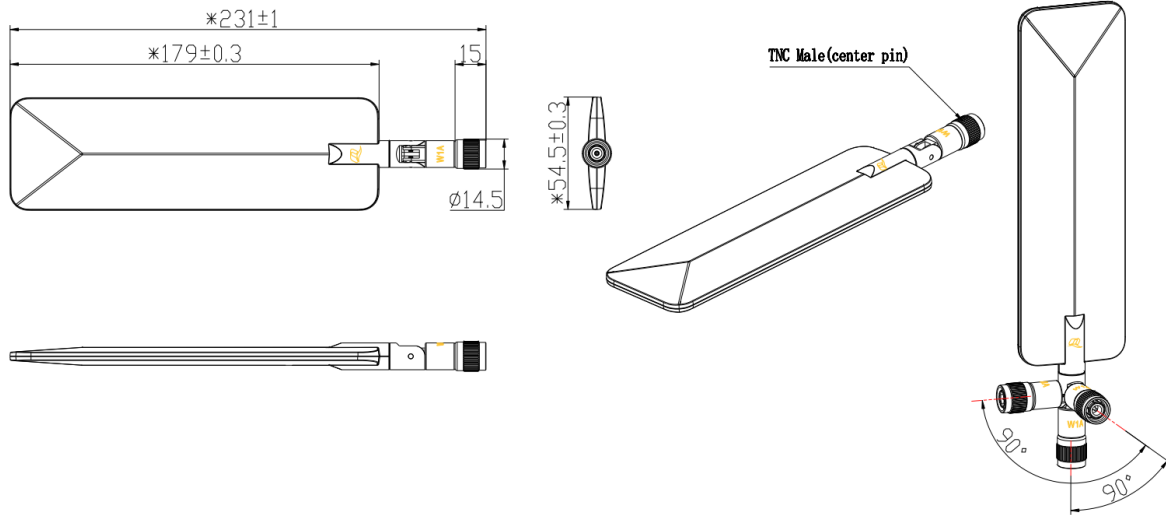
Note:

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

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	231 mm × 54.5 mm × 14.5 mm
Casing Material & Color	PC & Black
Connector Type	TNC Male
Mounting Type	Terminal
Weight	Typ. 85 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	Antenna plastic housing could meet IP66
RoHS & REACH Compliant	Yes
Housing Flame Rating	UL 94 V-0
Housing UV Resistant	UL 746c f1

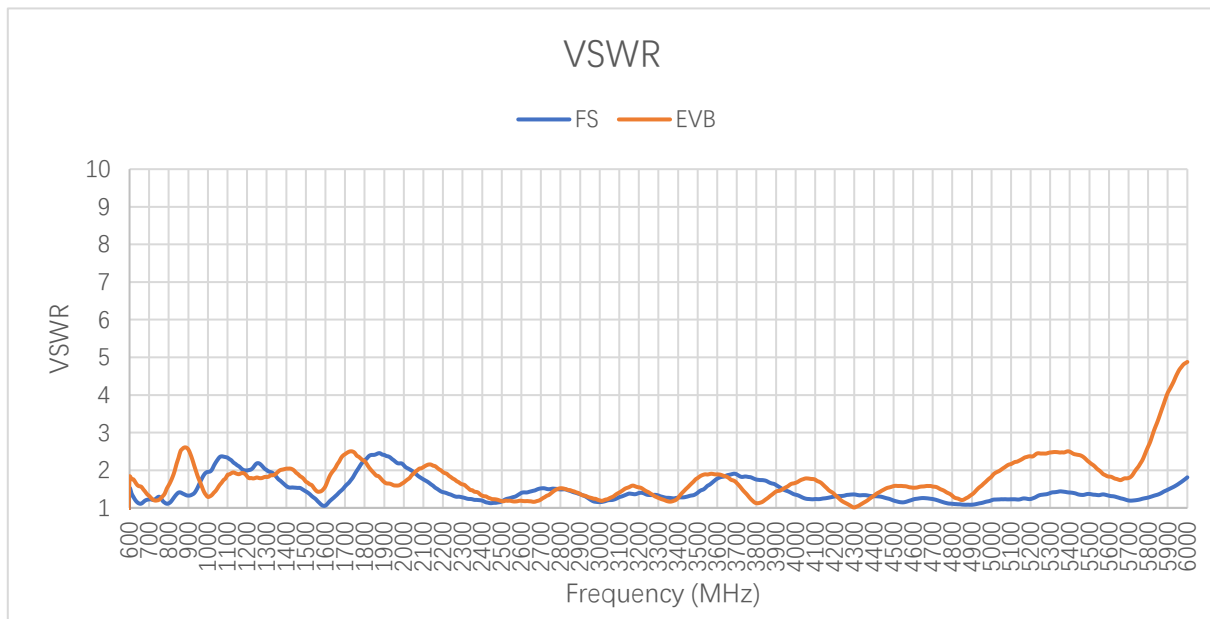
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

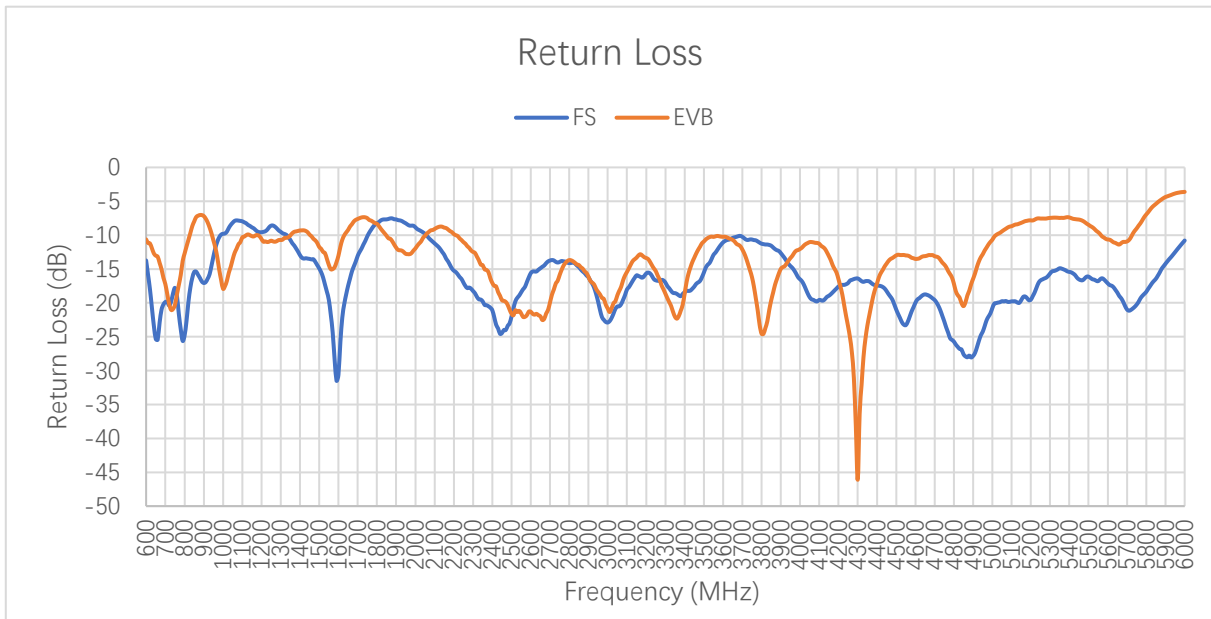
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	820	900	960	1440	1710	1740	1880
FS	1.5	1.2	1.2	1.3	1.3	1.7	-	1.6	1.8	2.4
EVB	1.8	1.7	1.3	2.0	2.6	1.7	-	2.5	2.5	1.8
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
FS	2.3	1.6	1.2	1.1	1.4	1.8	1.2	1.2	1.4	1.8
EVB	1.6	2.1	1.5	1.2	1.2	1.9	1.6	1.8	2.2	4.9

3.1.2. Return Loss

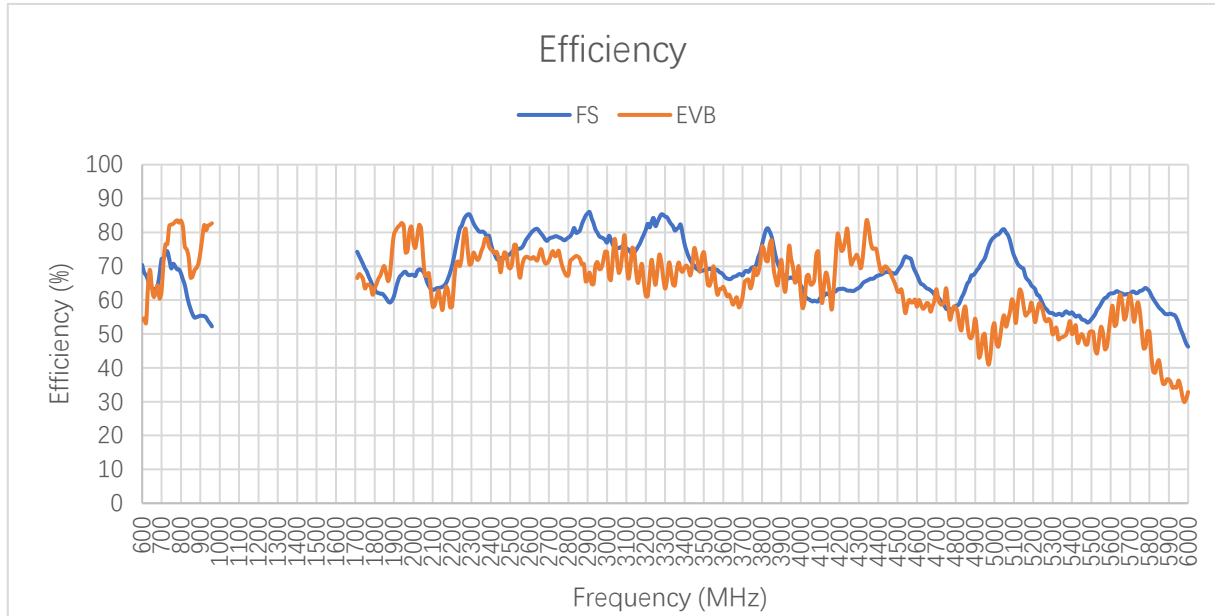


Return Loss (dB)

Frequency (MHz)	600	630	710	820	900	960	1440	1710	1740	1880
FS	-13.7	-20.7	-19.9	-17.7	-17.1	-11.9	-	-12.5	-10.8	-7.5
EVB	-10.6	-11.9	-18.7	-9.7	-7.2	-11.9	-	-7.5	-7.4	-10.9
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
FS	-8.3	-12.5	-19.8	-24.5	-15.6	-11.1	-19.6	-20.8	-16.1	-10.8
EVB	-12.8	-8.8	-14.4	-19.6	-21.3	-10.2	-13.1	-10.7	-8.5	-3.6

3.2. Radiation Performance Test

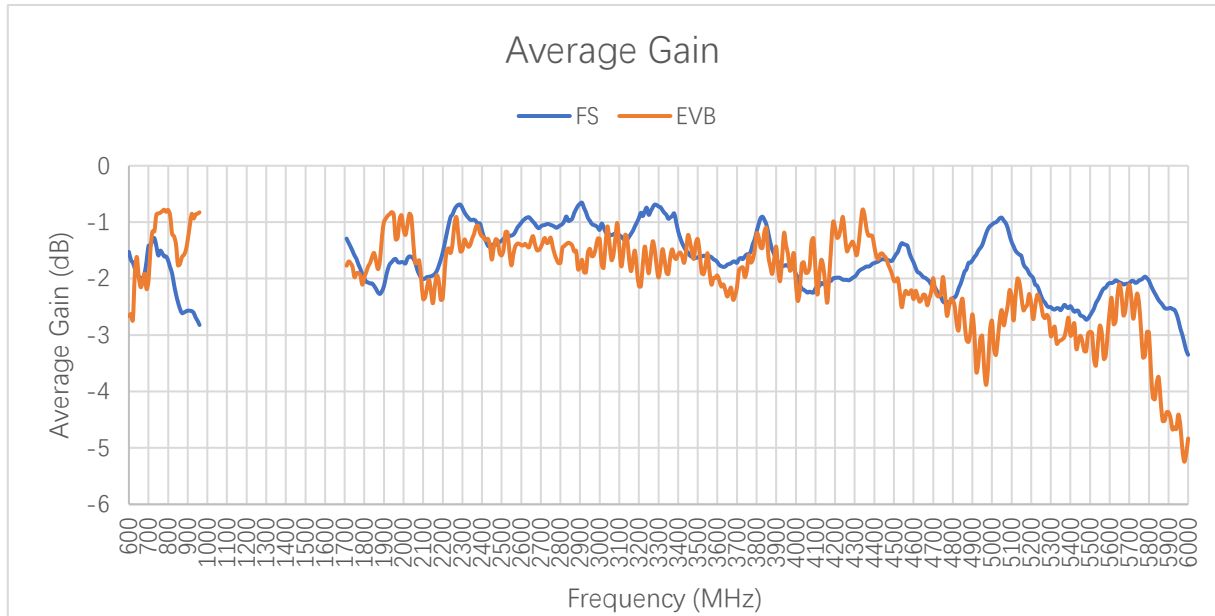
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	820	900	960	1440	1710	1740	1880
FS	70.4	65.8	72.3	61.6	55.4	52.2	-	74.3	70.6	59.3
EVB	54.1	64.0	71.2	75.0	73.9	82.7	-	66.5	66.2	67.9
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
FS	68.2	63.7	80.2	72.3	79.2	67.5	61.4	78.6	54.3	46.2
EVB	82.0	59.9	74.3	68.2	72.3	63.9	63.2	53.1	50.8	32.9

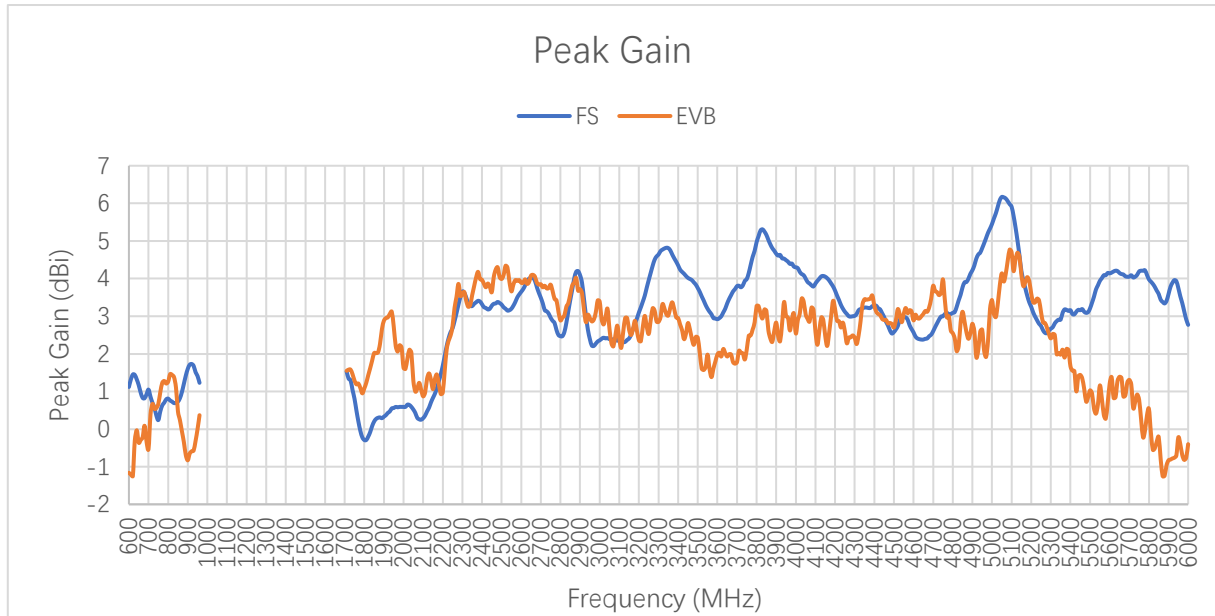
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	820	900	960	1440	1710	1740	1880
FS	-1.5	-1.8	-1.4	-2.1	-2.6	-2.8	-	-1.3	-1.5	-2.3
EVB	-2.7	-1.9	-1.5	-1.3	-1.3	-0.8	-	-1.8	-1.8	-1.7
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
FS	-1.7	-2.0	-1.0	-1.4	-1.0	-1.7	-2.1	-1.0	-2.7	-3.3
EVB	-0.8	-2.2	-1.3	-1.7	-1.4	-1.9	-2.0	-2.8	-2.9	-4.8

3.2.3. Peak Gain



Peak Gain (dBi)

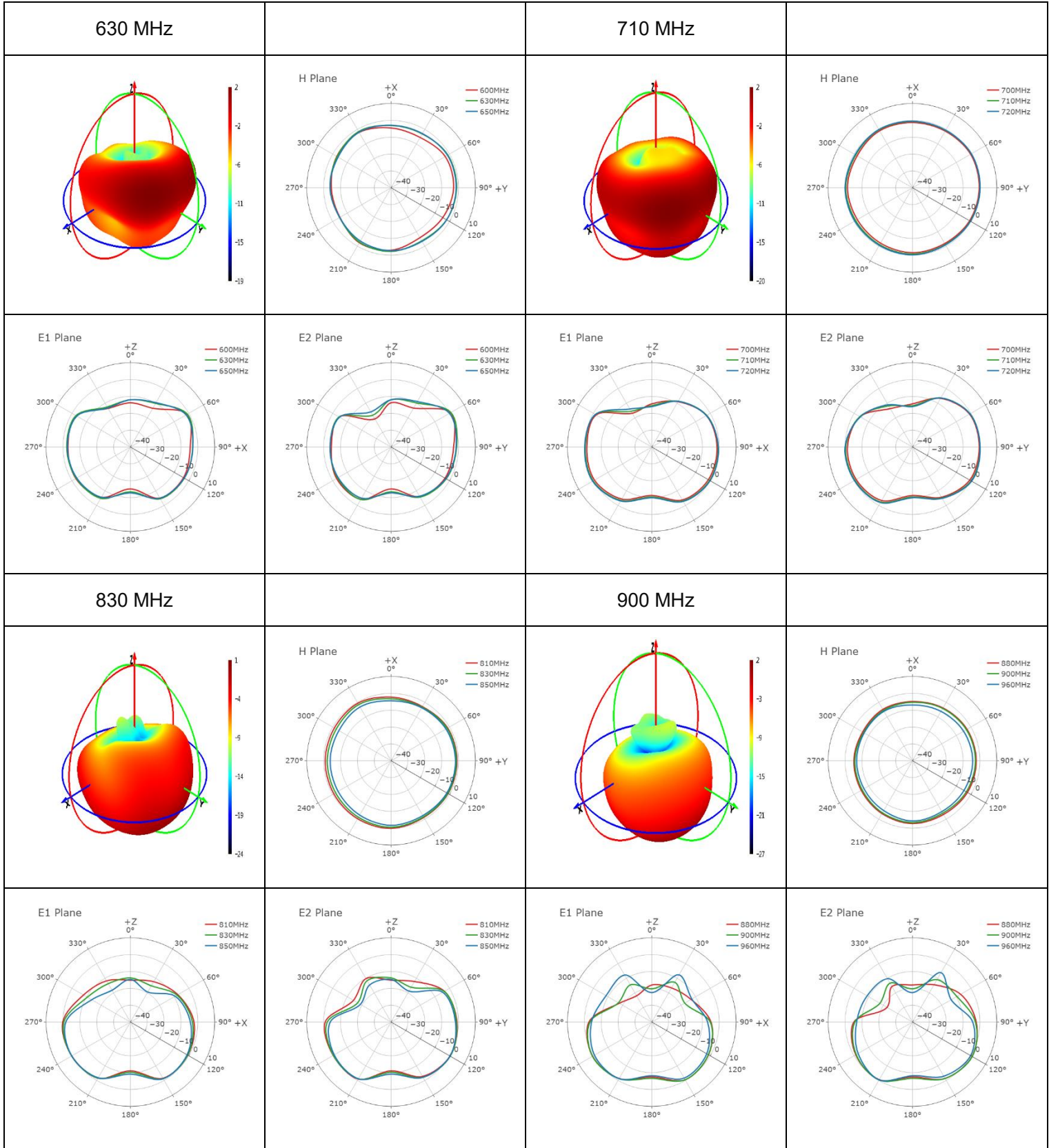
Frequency (MHz)	600	630	710	820	900	960	1440	1710	1740	1880
FS	1.1	1.4	0.9	0.7	1.6	1.2	-	1.5	1.0	0.3
EVB	-1.2	-0.3	0.4	1.4	-0.8	0.4	-	1.6	1.5	2.3
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
FS	0.6	0.7	3.3	3.3	3.7	2.9	2.6	5.5	3.2	2.8
EVB	2.7	1.3	3.6	3.6	3.9	2.0	3.8	3.4	1.0	-0.4

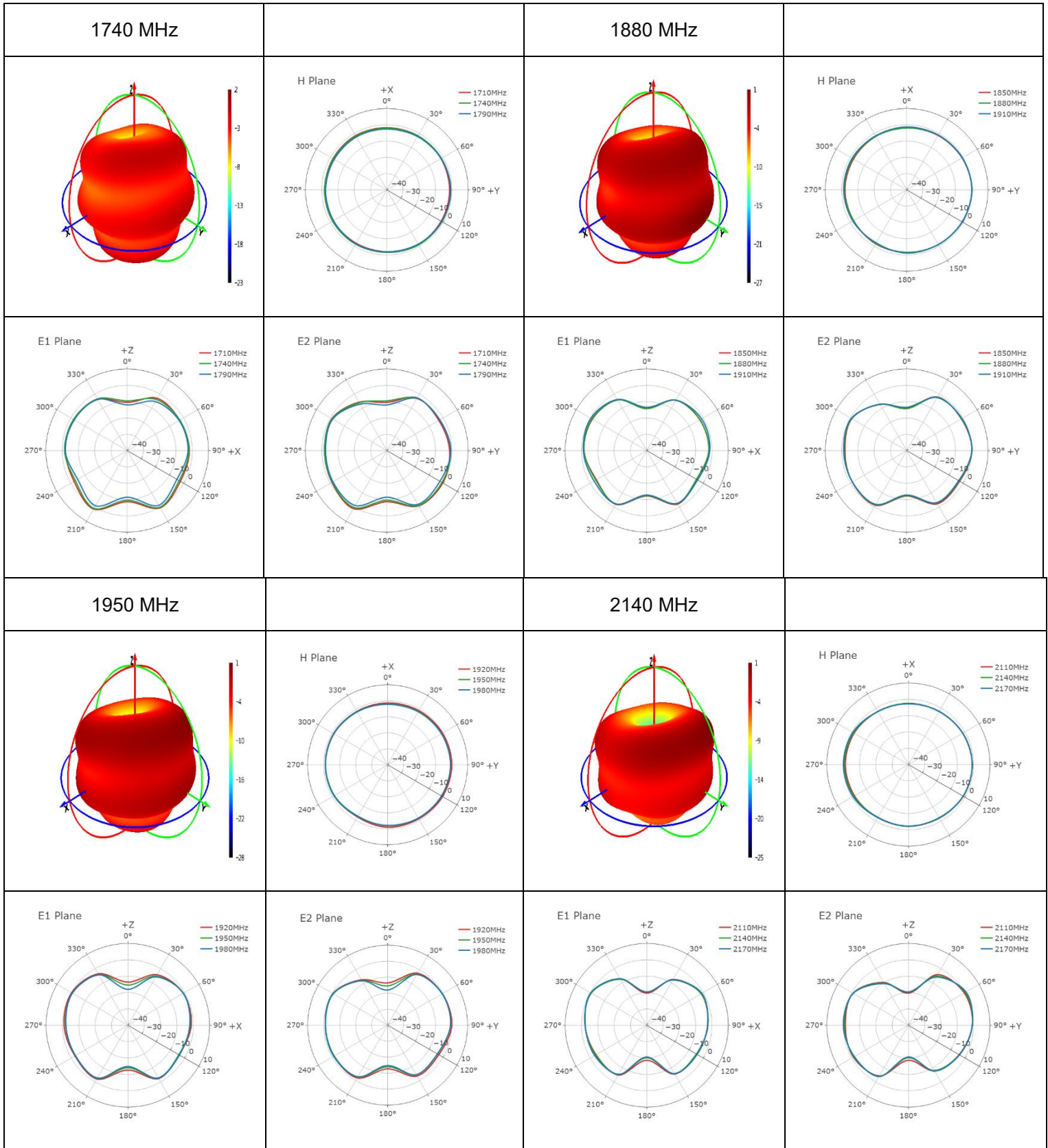
3.2.4. 3D & 2D Radiation Pattern

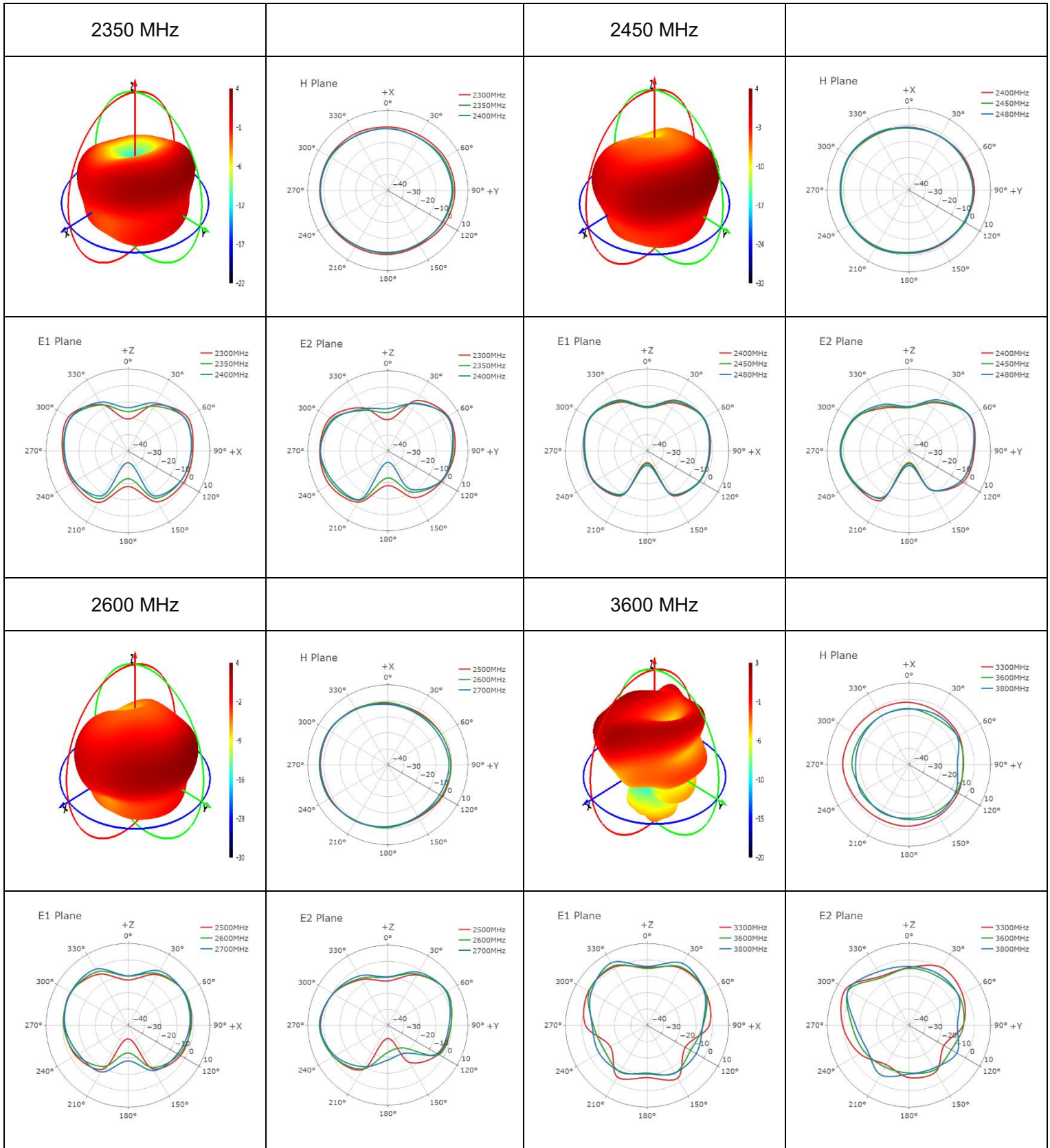
3.2.4.1. Test Condition: In Free Space

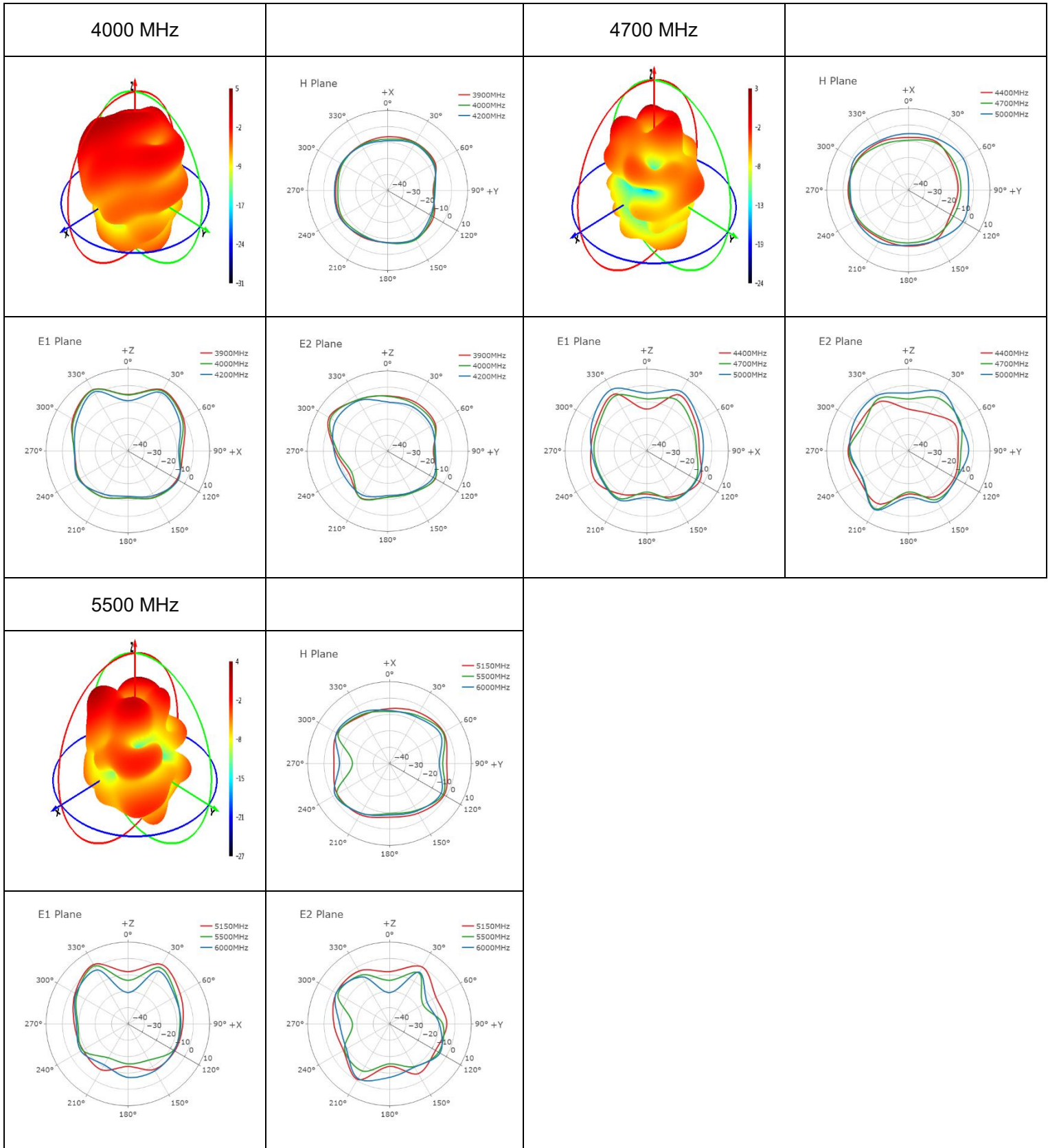
- Test Chamber: GL-S-1





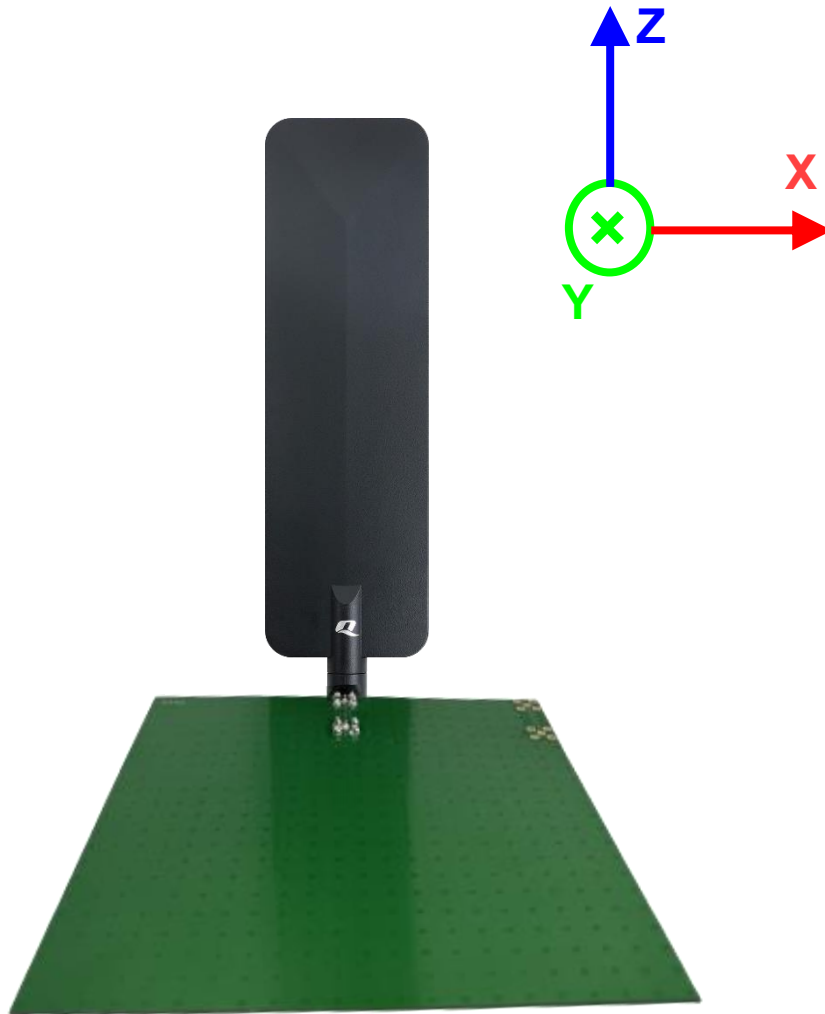


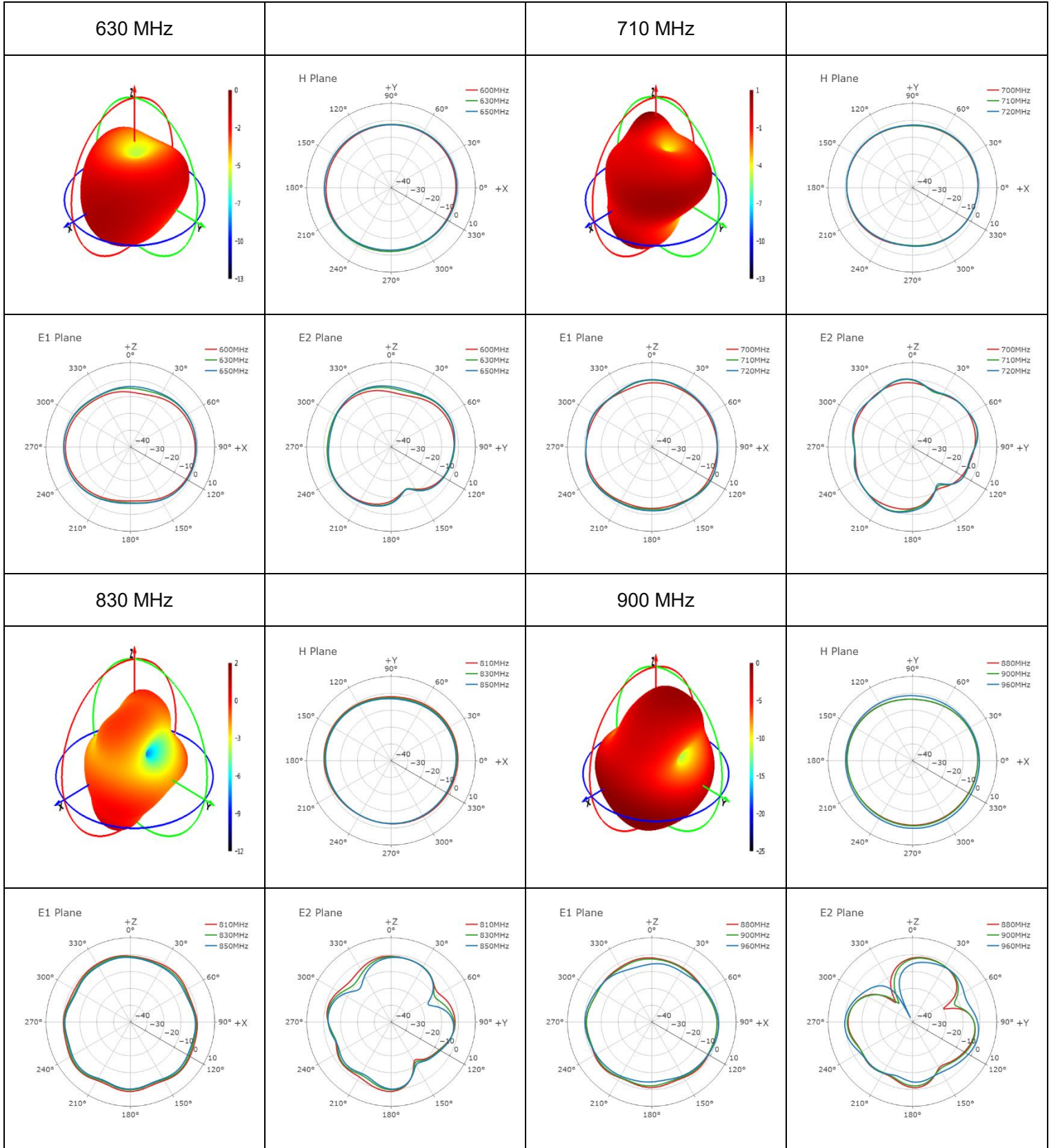


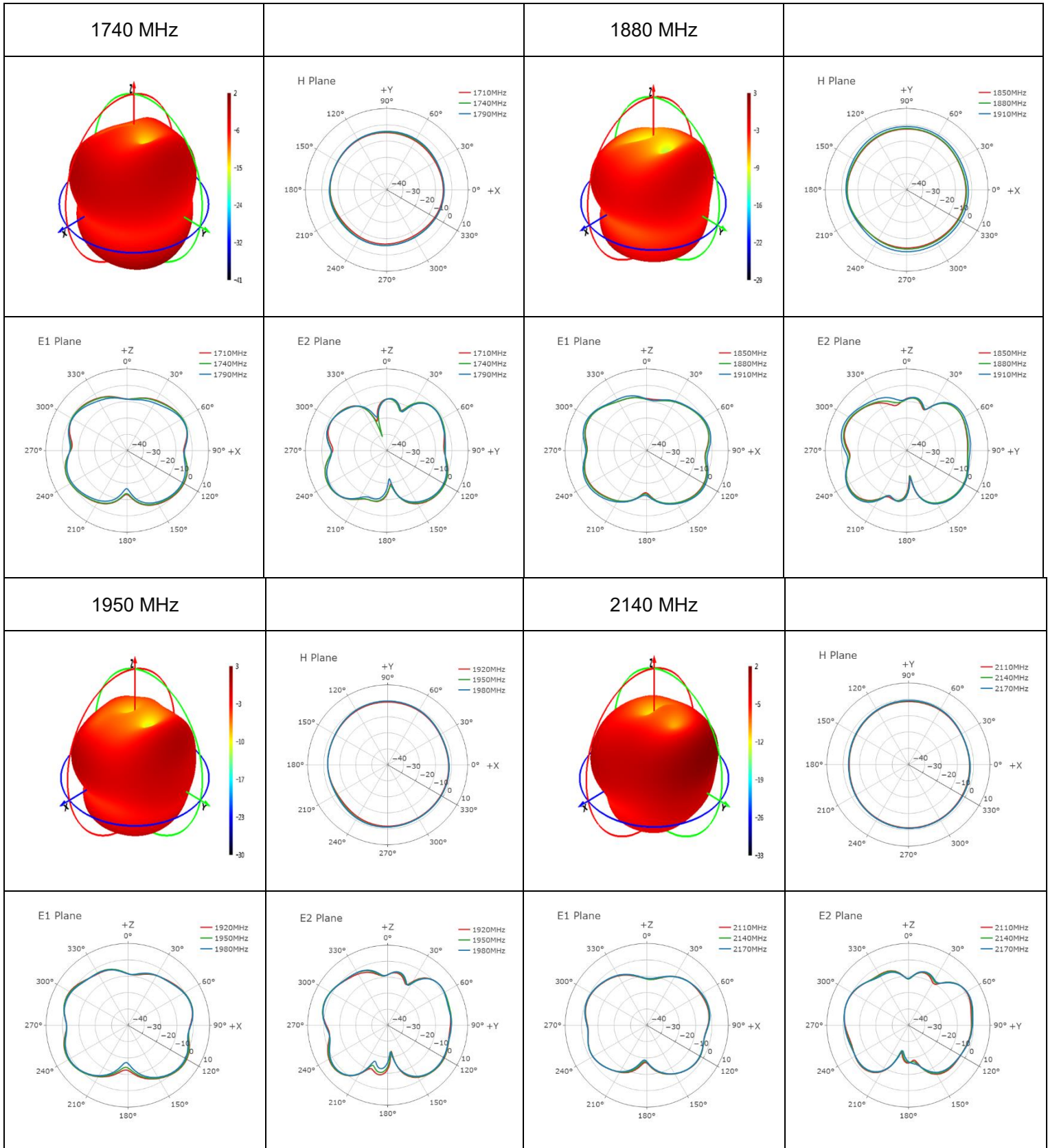


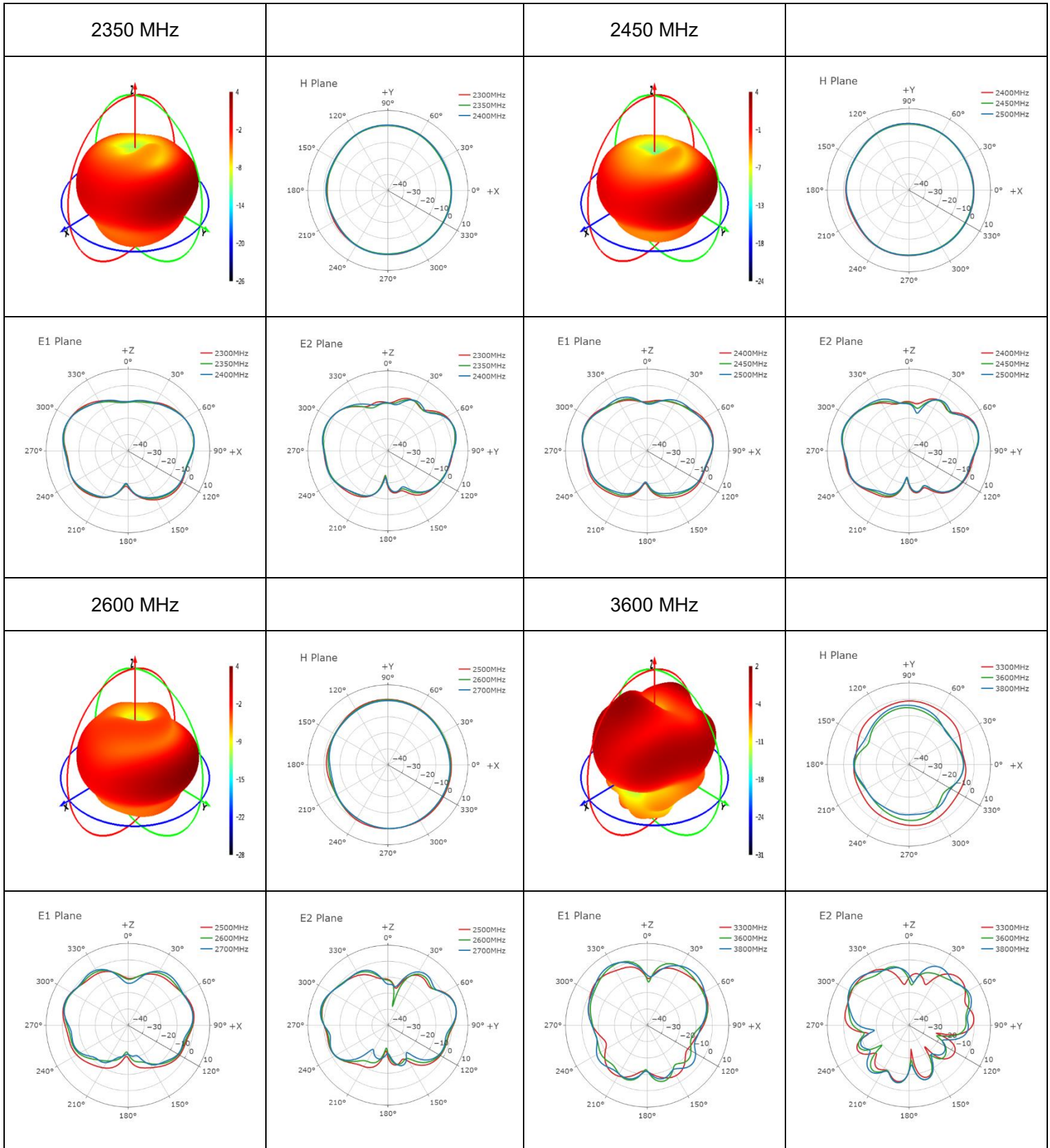
3.2.4.2. Test Condition: On 130 mm × 130 mm EVB

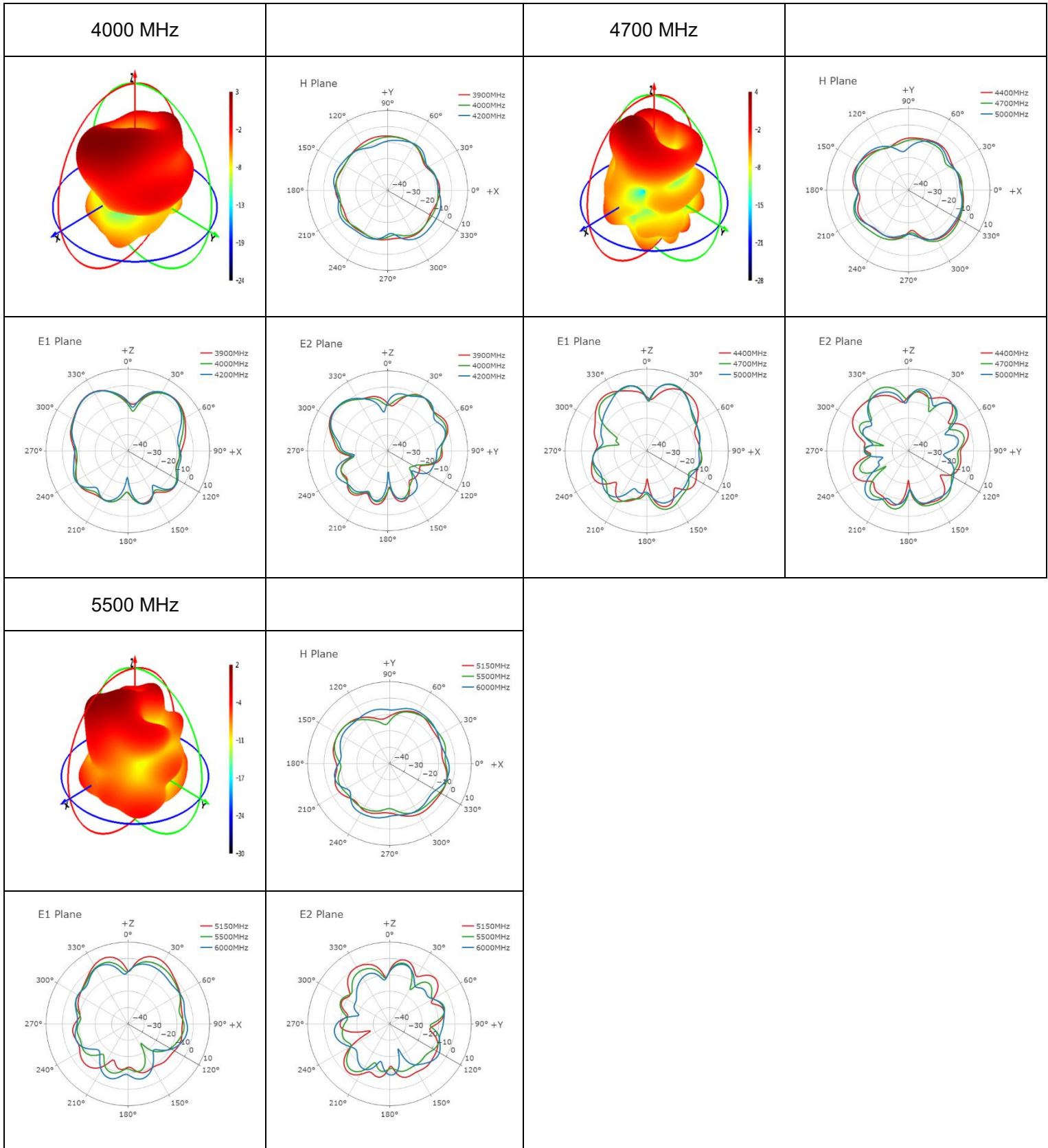
- Test Chamber: GL-S-1






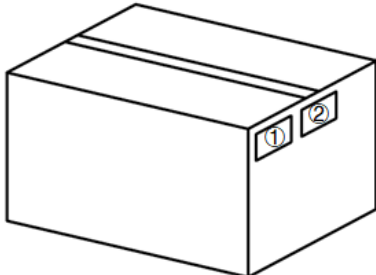


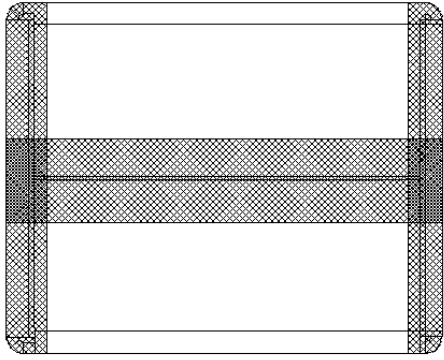






4 Packaging

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>10 pcs antenna products in a PE bag. (10 PCS / PE Bag)</p> <p><u>PE Bag Size: L × W = 320 × 220 mm</u></p>
3		<p>(10 PE Bags / Carton Box) (100 PCS Antennas / Carton Box)</p> <p><u>Carton Size:</u> <u>L × W × H = 405 × 293 × 185 mm</u></p>
4		<p>Position for Attaching Labels</p> <ul style="list-style-type: none"> ① Carton Label ② Quality Label

5	 A technical drawing of an H-shaped sealing carton. It consists of two vertical rectangular sections connected by two horizontal rectangular sections, forming an 'H' shape. The entire structure is filled with a cross-hatched pattern, indicating a mesh or woven material. The corners of the vertical sections are rounded.	<p>Sealing Cartons H-shaped 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:

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

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

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

For technical support, or to report documentation errors, please visit:

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

Or email us at: support@quectel.com.

Legal Notices

We offer information as a service to you. The provided information is based on your requirements and we make every effort to ensure its quality. You agree that you are responsible for using independent analysis and evaluation in designing intended products, and we provide reference designs for illustrative purposes only. Before using any hardware, software or service guided by this document, please read this notice carefully. Even though we employ commercially reasonable efforts to provide the best possible experience, you hereby acknowledge and agree that this document and related services hereunder are provided to you on an “as available” basis. We may revise or restate this document from time to time at our sole discretion without any prior notice to you.

Use and Disclosure Restrictions

License Agreements

Documents and information provided by us shall be kept confidential, unless specific permission is granted. They shall not be accessed or used for any purpose except as expressly provided herein.

Copyright

Our and third-party products hereunder may contain copyrighted material. Such copyrighted material shall not be copied, reproduced, distributed, merged, published, translated, or modified without prior written consent. We and the third party have exclusive rights over copyrighted material. No license shall be granted or conveyed under any patents, copyrights, trademarks, or service mark rights. To avoid ambiguities, purchasing in any form cannot be deemed as granting a license other than the normal non-exclusive, royalty-free license to use the material. We reserve the right to take legal action for noncompliance with abovementioned requirements, unauthorized use, or other illegal or malicious use of the material.

Trademarks

Except as otherwise set forth herein, nothing in this document shall be construed as conferring any rights to use any trademark, trade name or name, abbreviation, or counterfeit product thereof owned by Quectel or any third party in advertising, publicity, or other aspects.

Third-Party Rights

This document may refer to hardware, software and/or documentation owned by one or more third parties (“third-party materials”). Use of such third-party materials shall be governed by all restrictions and obligations applicable thereto.

We make no warranty or representation, either express or implied, regarding the third-party materials, including but not limited to any implied or statutory, warranties of merchantability or fitness for a particular purpose, quiet enjoyment, system integration, information accuracy, and non-infringement of any third-party intellectual property rights with regard to the licensed technology or use thereof. Nothing herein constitutes a representation or warranty by us to either develop, enhance, modify, distribute, market, sell, offer for sale, or otherwise maintain production of any our products or any other hardware, software, device, tool, information, or product. We moreover disclaim any and all warranties arising from the course of dealing or usage of trade.

Privacy Policy

To implement module functionality, certain device data are uploaded to Quectel's or third-party's servers, including carriers, chipset suppliers or customer-designated servers. Quectel, strictly abiding by the relevant laws and regulations, shall retain, use, disclose or otherwise process relevant data for the purpose of performing the service only or as permitted by applicable laws. Before data interaction with third parties, please be informed of their privacy and data security policy.

Disclaimer

- a) We acknowledge no liability for any injury or damage arising from the reliance upon the information.
- b) We shall bear no liability resulting from any inaccuracies or omissions, or from the use of the information contained herein.
- c) While we have made every effort to ensure that the functions and features under development are free from errors, it is possible that they could contain errors, inaccuracies, and omissions. Unless otherwise provided by valid agreement, we make no warranties of any kind, either implied or express, and exclude all liability for any loss or damage suffered in connection with the use of features and functions under development, to the maximum extent permitted by law, regardless of whether such loss or damage may have been foreseeable.
- d) We are not responsible for the accessibility, safety, accuracy, availability, legality, or completeness of information, advertising, commercial offers, products, services, and materials on third-party websites and third-party resources.

Copyright © Quectel Wireless Solutions Co., Ltd. 2025. All rights reserved.

Revision History

Version	Date	Author	Note
-	2024-05-11	Mordecai LIU/ Hart HU/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-05-11	Mordecai LIU/ Hart HU/ David LIU/ Rainey LIAO	First official release
1.1	2024-09-25	Rainey LIAO	Updated antenna picture (Homepage and Chapter 3.2.4).
1.2	2024-11-05	Shea LI/ Rainey LIAO	<ol style="list-style-type: none">1. Updated the overview.2. Added housing flame rating and housing UV resistant (Chapter 1.2).3. Updated Chapter 2.
1.3	2025-04-09	Rainey LIAO	Updated the antenna image (Cover page).

QUECTEL

www.quectel.com