

Antenna Datasheet

Product OC: YBL01AFCA

Version: 1.0

Date: 2023-05-25

Status: Preliminary

Product Name: WIFI FPC Antenna

Key Features:

Frequency Band: 2400–2500 MHz, 5150–5850 MHz

Dimensions: 26.88 * 7.56mm

Efficiency: Up to 48.95%

RoHS and REACH Compliant

Overview

Quectel Wi-Fi antenna covers 2.4 GHz and 5 GHz dual-bands, fully satisfying customers' requirements for Wi-Fi 5 and Wi-Fi 6. There are various antenna types, including built-in FPC/PCB antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.

Contents

Overview.....	2
Contents.....	3
1 Specification.....	4
1.1. Electrical.....	4
1.2. Mechanical, Environmental & Storage.....	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. OTA Test Data	9
3.3. Radiation Performance Test.....	10
3.3.1. Efficiency	10
3.3.2. Average Gain	11
3.3.3. Peak Gain.....	12
3.3.4. 3D & 2D Radiation Pattern.....	13
4 Packaging	16
Contact US	17
Legal Notices	18
Revision History	20

1 Specification

Test Condition: Free Space

1.1. Electrical

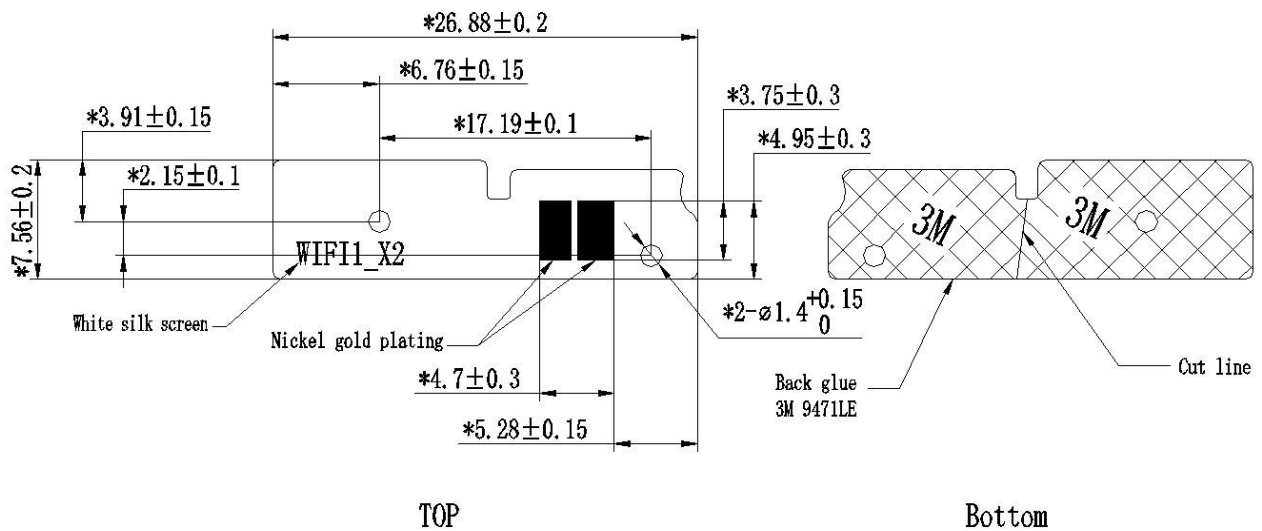
Electrical	
Frequency Range	2400-2500 MHz, 5150-5850 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Specification	Band	Band	WIFI 2G	WIFI 5G	WIFI 7G
		Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR			3.2	2.1	-
Max. Return Loss (dB)			-5.7	-9.2	-
AVG Eff. (%)			40.6	42.3	-
AVG AVG Gain (dB)			-3.9	-3.8	-
Max. Peak Gain (dBi)			1.6	2.3	-
VSWR			≤ 3.2		
Return Loss			≤ -5.7 dB		
Peak Gain			≤ 2.3 dBi		

1.2. Mechanical, Environmental & Storage

Mechanical	
Antenna Dimensions	26.88 * 7.56 mm
Material & Color	FPC & Black
Mounting Type	Adhesive
Weight	Typ. 0.05 g
Environmental	
Operation Temperature	-40 °C to +85 °C
RoHS & REACH 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

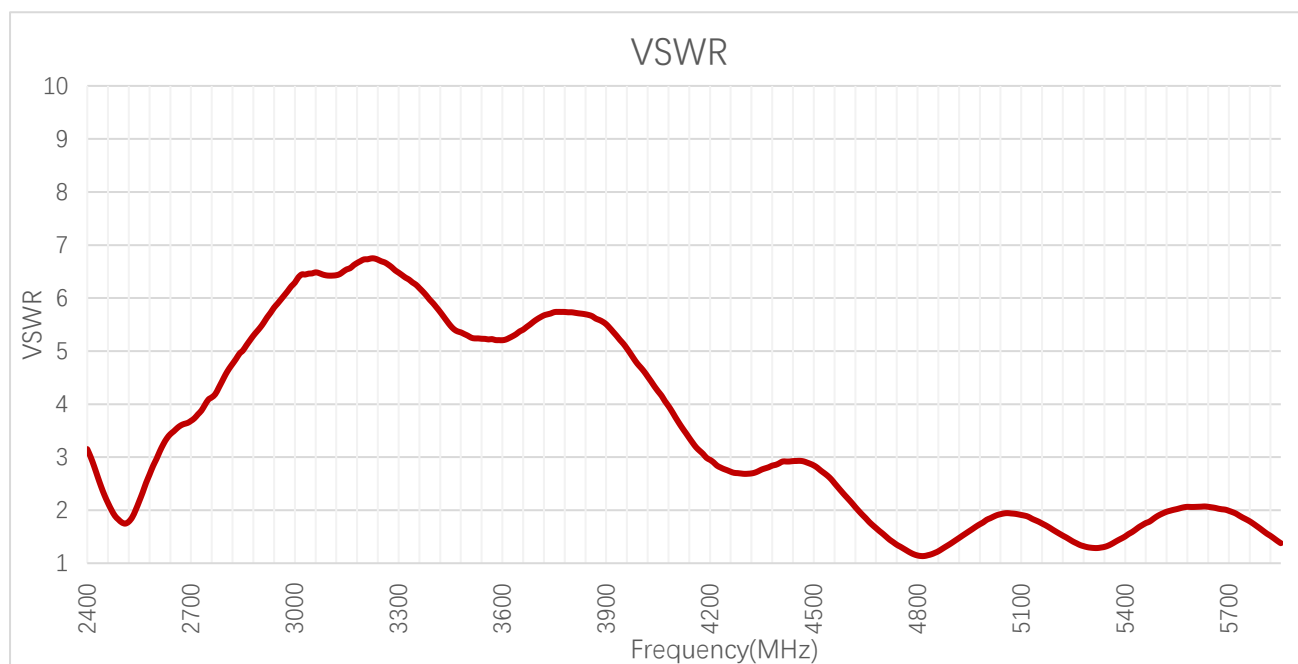
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

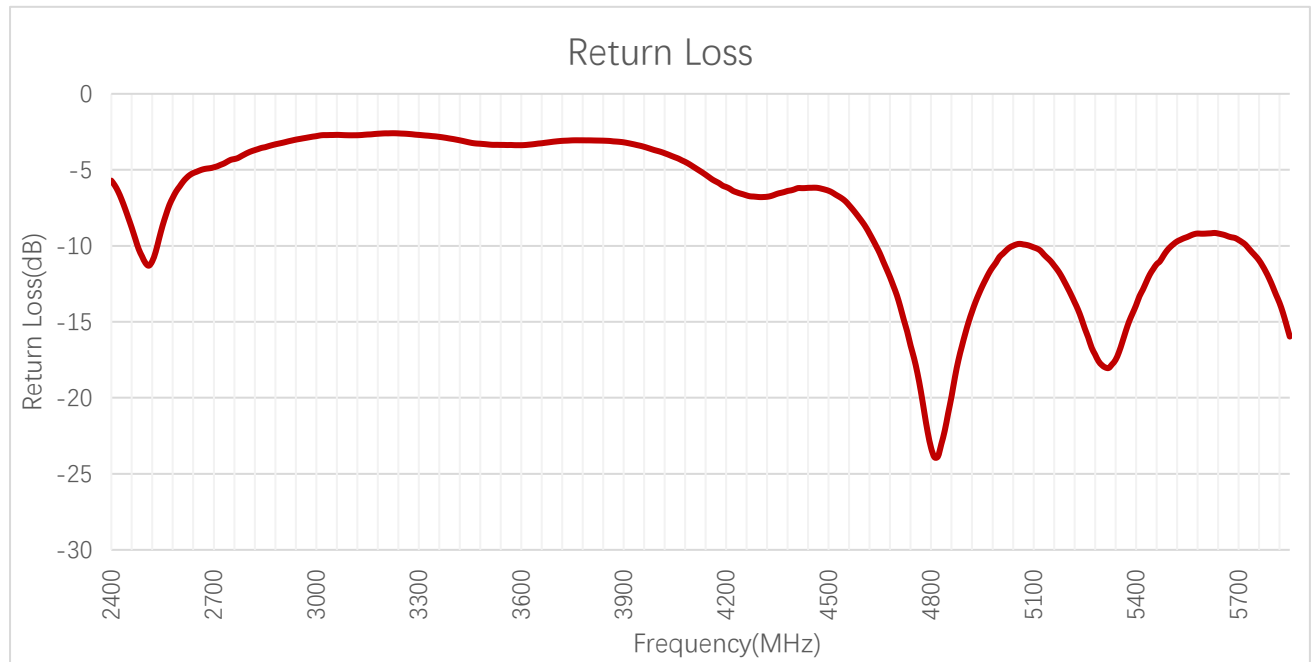
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
VSWR	3.2	2.3	1.8	1.8	1.9	1.4	-	-	-	-

3.1.2. Return Loss



Return Loss (dB)

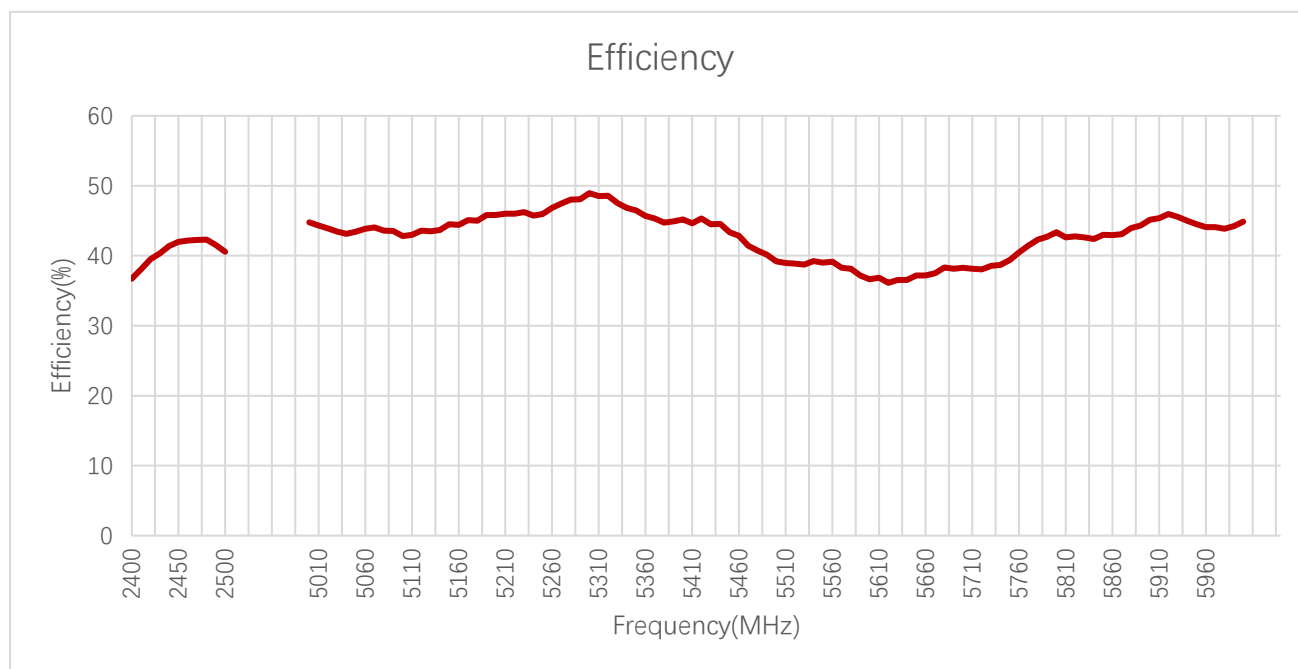
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	-5.7	-8.2	-11.1	-11.0	-10.1	-16.0	-	-	-	-

3.2. OTA Test Data

Band		Channel	TRP (dBm)	Channel	TIS (dBm)
WIFI	WIFI-A	36	18.07	36	-70.55
		100	17.65	100	-73.78
		161	16.1	161	-73.99
	WIFI-B	1	15.84	1	-84.36
		6	16.43	6	-84.88
		11	17.49	11	-79.62

3.3. Radiation Performance Test

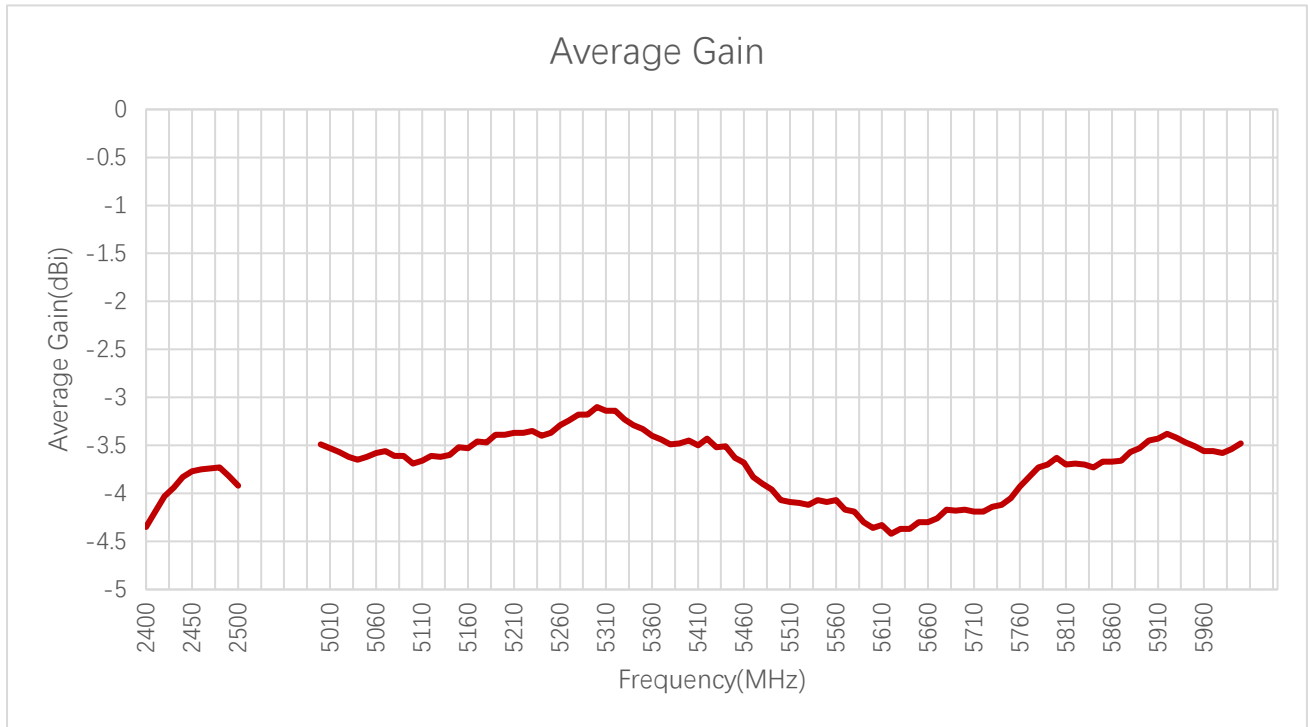
3.3.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	36.7	42.0	40.6	44.5	39.2	43.0	-	-	-	-

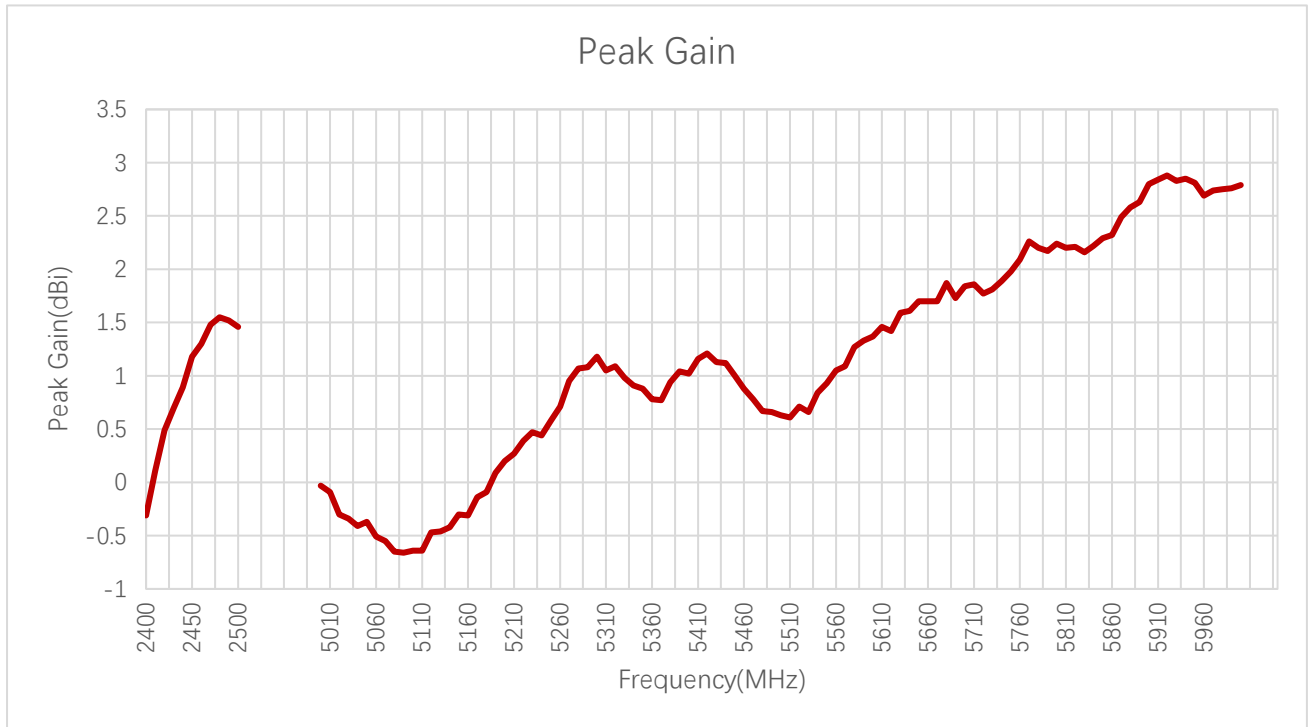
3.3.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	-4.4	-3.8	-3.9	-3.5	-4.1	-3.7	-	-	-	-

3.3.3. Peak Gain

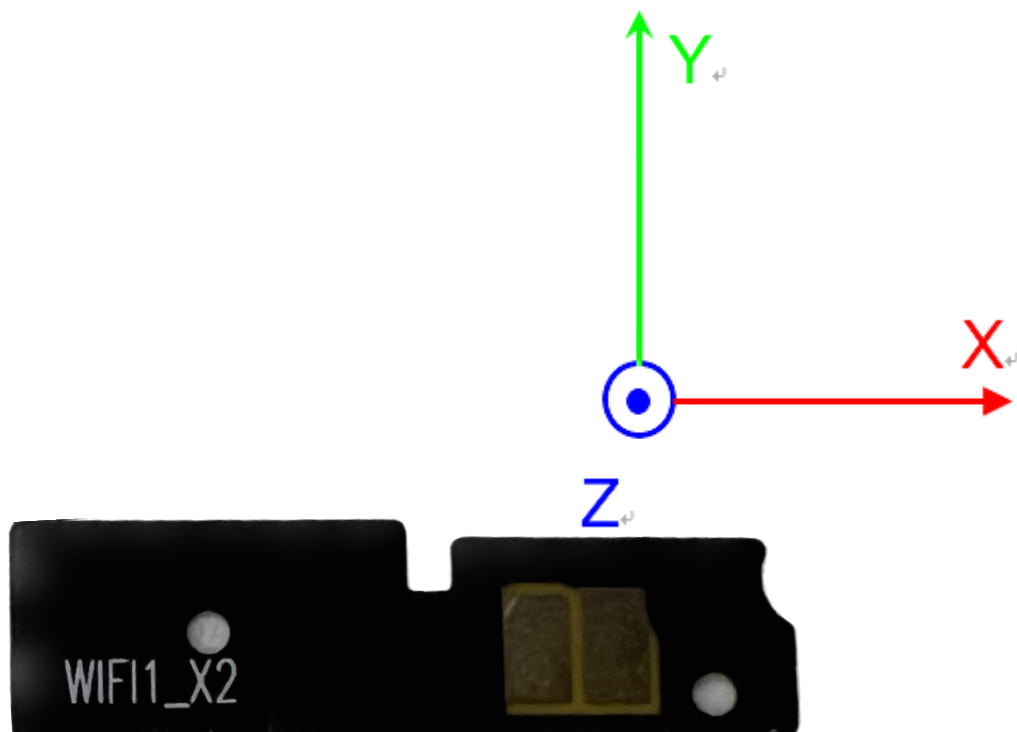


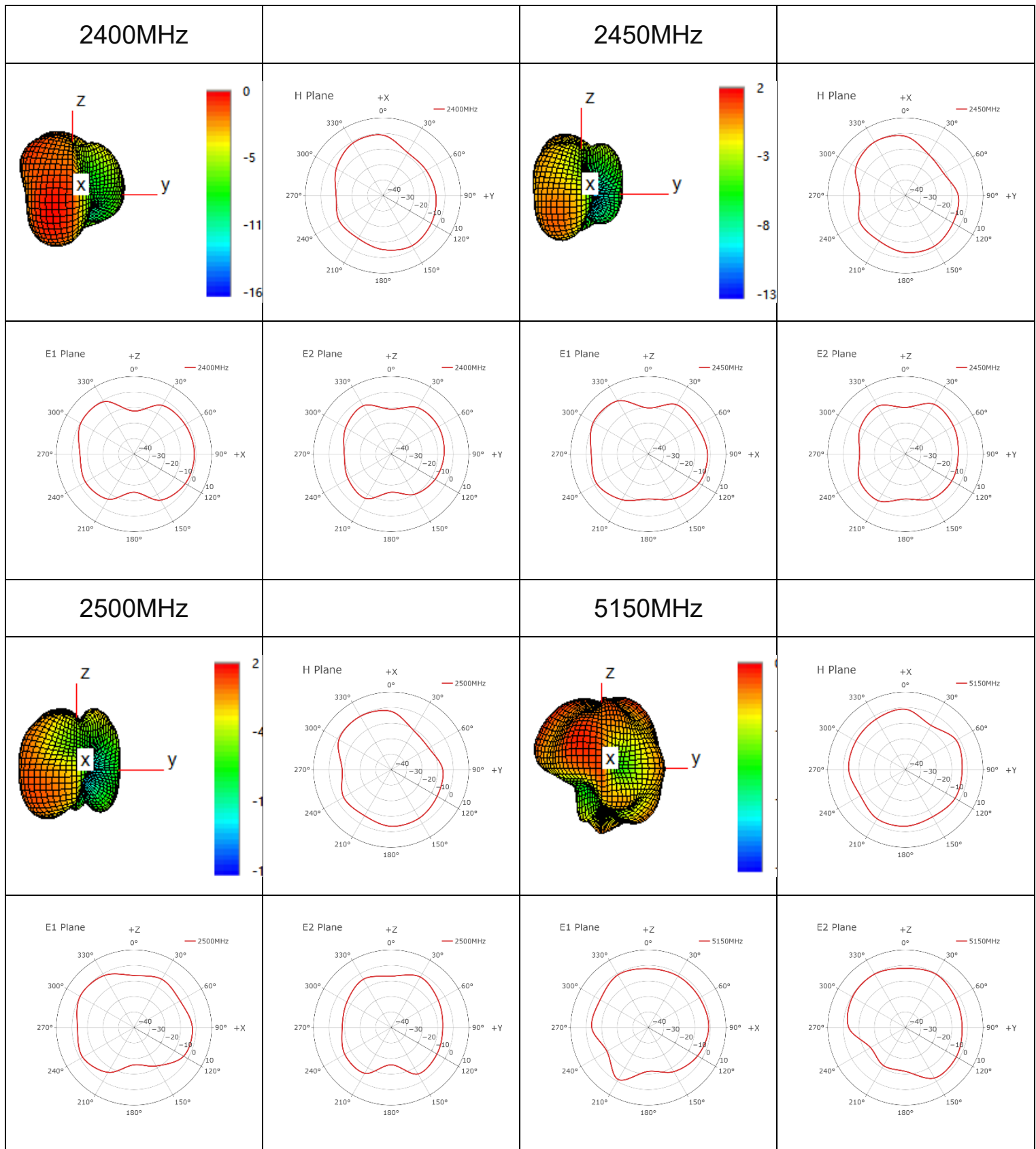
Peak Gain (dBi)

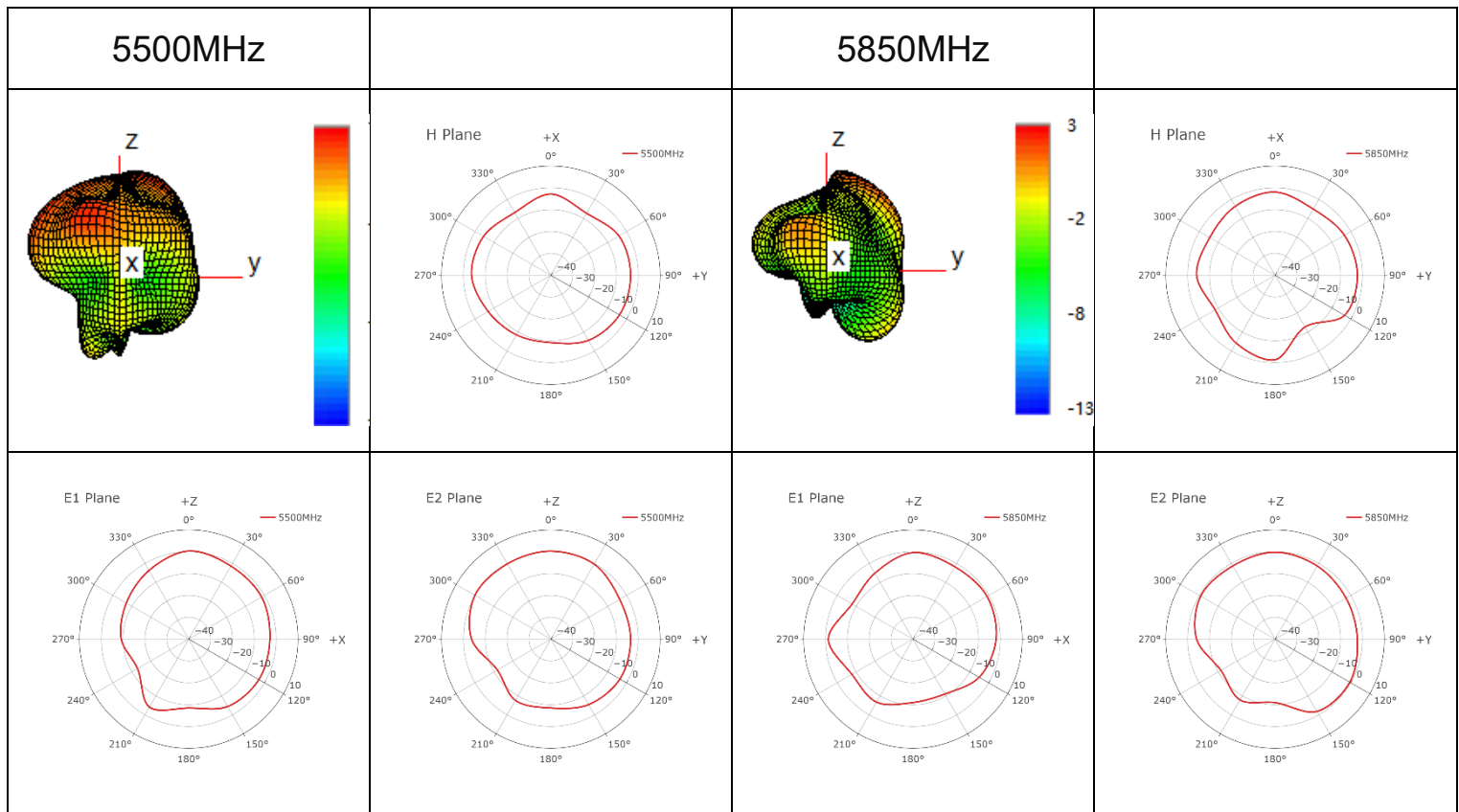
Frequency (MHz)	2400	2480	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dBi)	-0.3	1.6	1.5	-0.3	0.6	2.3	-	-	-	-

3.3.4. 3D & 2D Radiation Pattern

- Test Condition: Free Space
- Test Chamber: FS-G-1







4 Packaging

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:

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Revision History

Version	Date	Author	Note
-	2023-05-25	Jim Xu Jason Long David Liu Bunny Zhang	Creation of the document
1.0	2023-05-25	Jim Xu Jason Long David Liu Bunny Zhang	First official release



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