

Antenna Datasheet

Product OC: Y0CEA0MB7HA

Version: 1.0

Date: 2026-01-06

Status: Preliminary

Product Name: Wi-Fi FPC Antenna

Key Features:

Frequency band: 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz

Peak efficiency: 63.89 % (FS)

RoHS and REACH Compliant

Overview

Quectel Wi-Fi antenna covers 2.4 GHz, 5 GHz, and up to 7 GHz bands, fully satisfying customers' requirements for Wi-Fi 5, Wi-Fi 6, and Wi-Fi 6E/Wi-Fi 7. 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.

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1 Specification

Test Condition: Free Space & Stick on 2 mm Thick ABS Board

1.1. Electrical

Electrical	
Frequency Range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

1.1.1. WIFI 1

Specification \ Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
	Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR	FS	1.4	3.9	1.3
Max. Return Loss (dB)	FS	-15.6	-4.6	-17.1
AVG Eff. (%)	FS	53.8	50.0	47.4
AVG Gain (dB)	FS	-2.7	-3.0	-3.3
Max. Peak Gain (dBi)	FS	3.1	2.5	3.2
VSWR	FS	≤ 3.9		
Return Loss	FS	≤ -4.6 dB		
Peak Gain	FS	≤ 3.2 dBi		

ANT1_WIFI	
Frequency	2400~2500MHz & 5150~5850MHz
Impedance	50Ohm
Antenna Type	Monopole
Antenna Gain(dBi)	2.4G 3.1 5G 2.5 6G 3.2
Radiation pattern	Omni-Directional

1.1.2. WIFI 2

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR	FS		1.6	2.4	1.9
Max. Return Loss (dB)	FS		-12.4	-7.7	-10.1
AVG Eff. (%)	FS		58.2	44.7	43.5
AVG Gain (dB)	FS		-2.4	-3.5	-3.6
Max. Peak Gain (dBi)	FS		3.0	1.5	2.9
VSWR	FS		≤ 2.4		
Return Loss	FS		≤ -7.7 dB		
Peak Gain	FS		≤ 3.0 dBi		

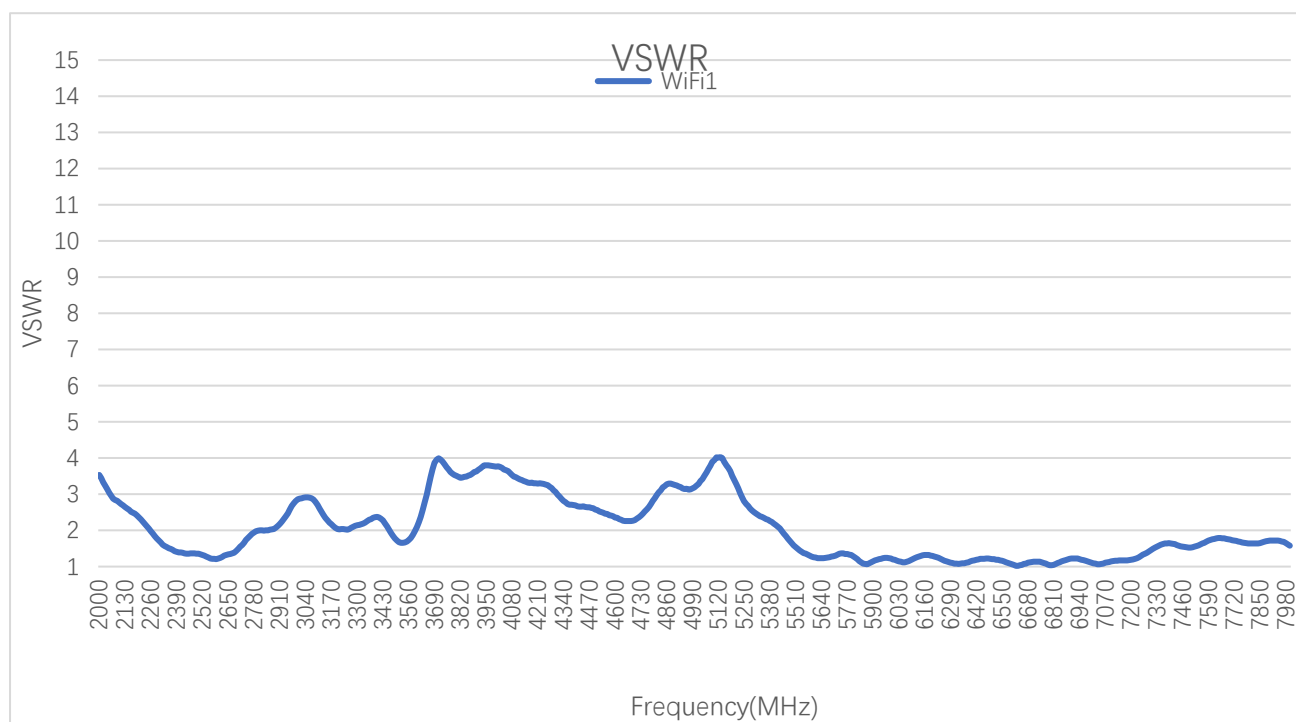
ANT2_WIFI	
Frequency	2400~2500MHz & 5150~5850MHz
Impedance	50Ohm
Antenna Type	Monopole
Antenna Gain(dBi)	2.4G 3.0 5G 1.4 6G 2.9
Radiation pattern	Omni-Directional

FS: Free Space

2 Detailed Performance

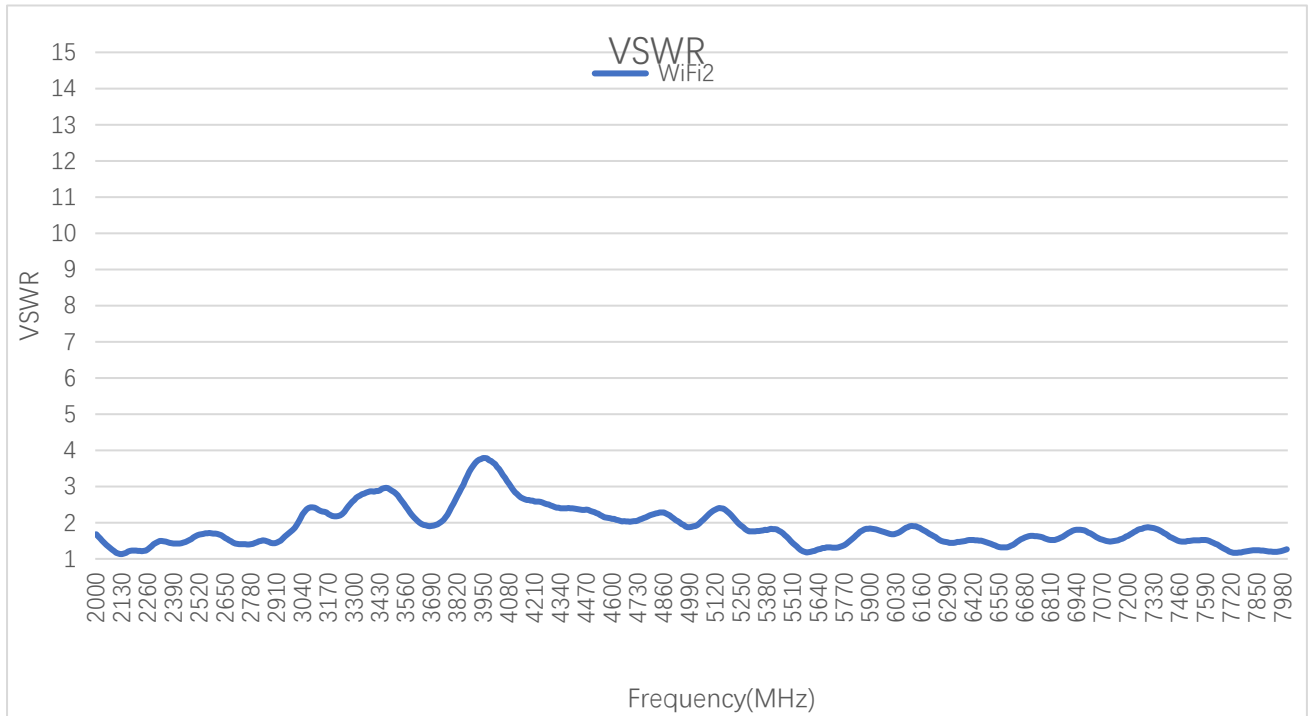
2.1. S-Parameter Test

2.1.1. VSWR



VSWR-WiFi 1

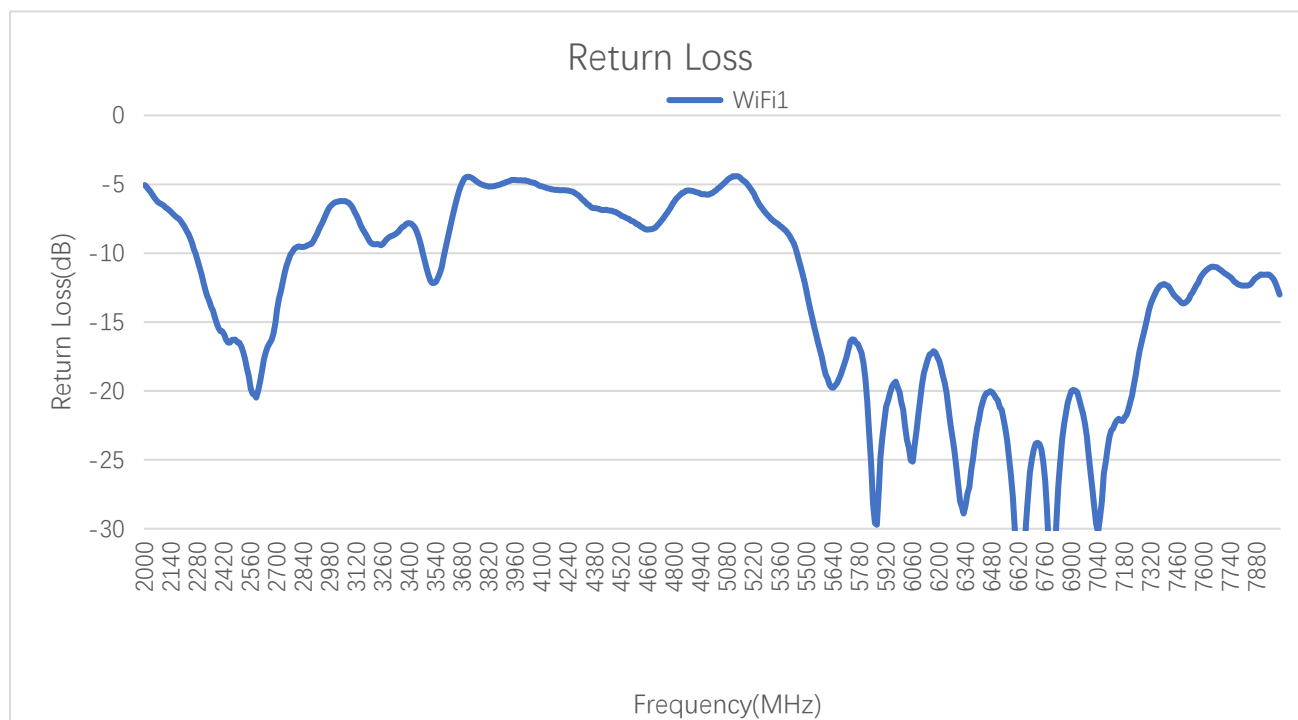
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
FS	1.4	1.4	1.4	3.9	1.6	1.1	1.2	1.2	1.2



VSWR-WiFi 2

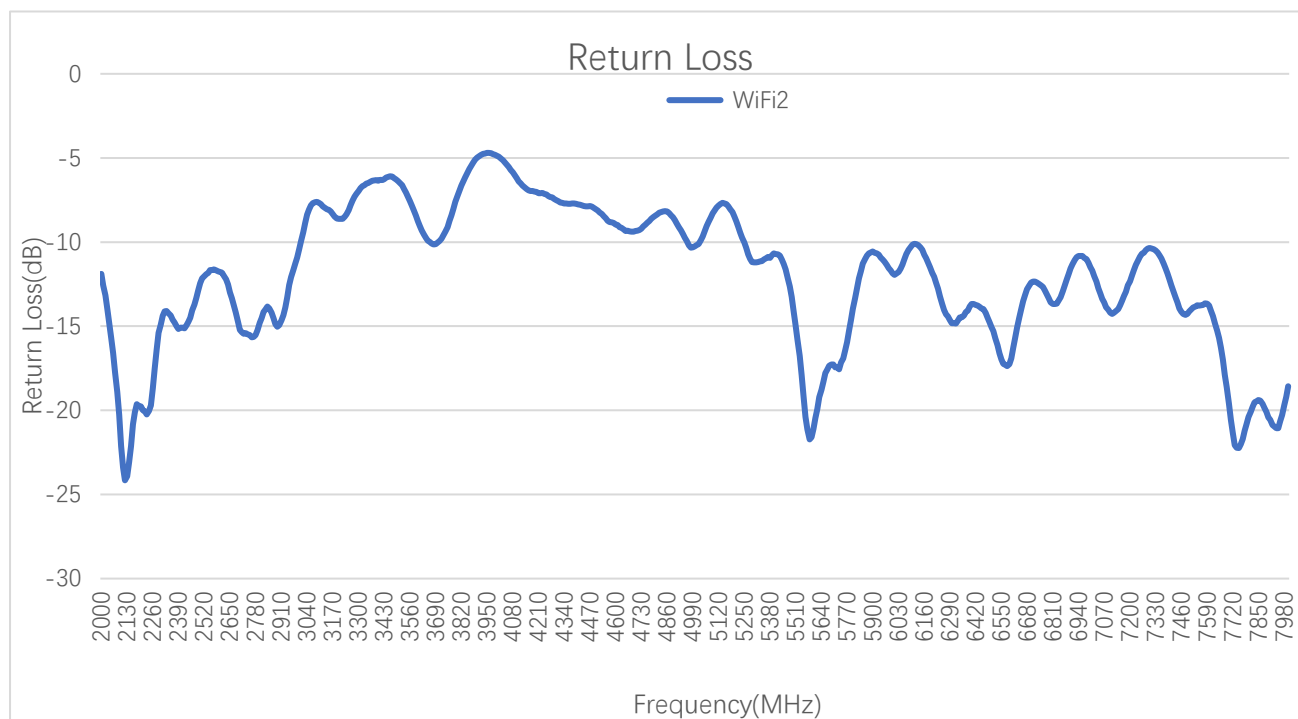
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
FS	1.4	1.5	1.6	2.4	1.5	1.7	1.8	1.4	1.5

2.1.2. Return Loss



Return Loss (dB)-WiFi 1

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
FS	-15.6	-16.5	-16.5	-4.6	-12.9	-28.2	-21.1	-21.2	-22.7

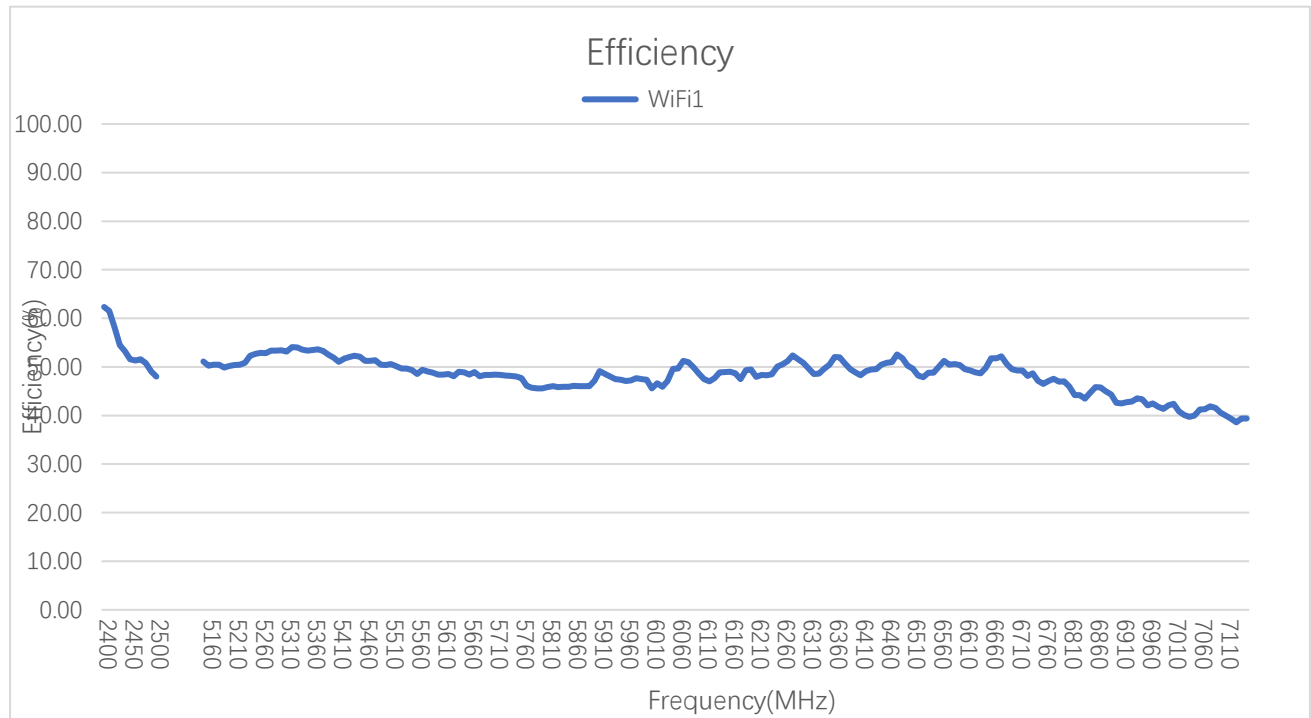


Return Loss (dB)-WiFi 2

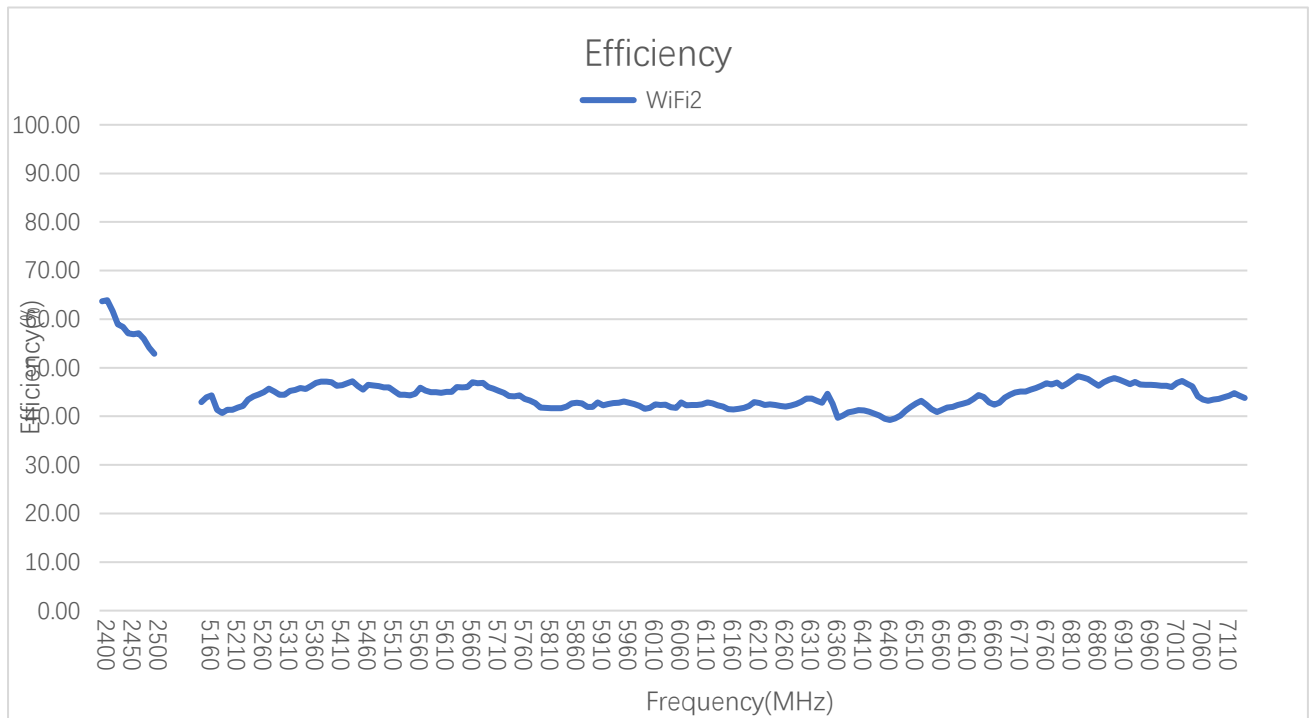
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
FS	-15.1	-14.5	-12.4	-7.7	-14.1	-11.3	-10.7	-15.7	-14.2

2.2. Radiation Performance Test

2.2.1. Efficiency



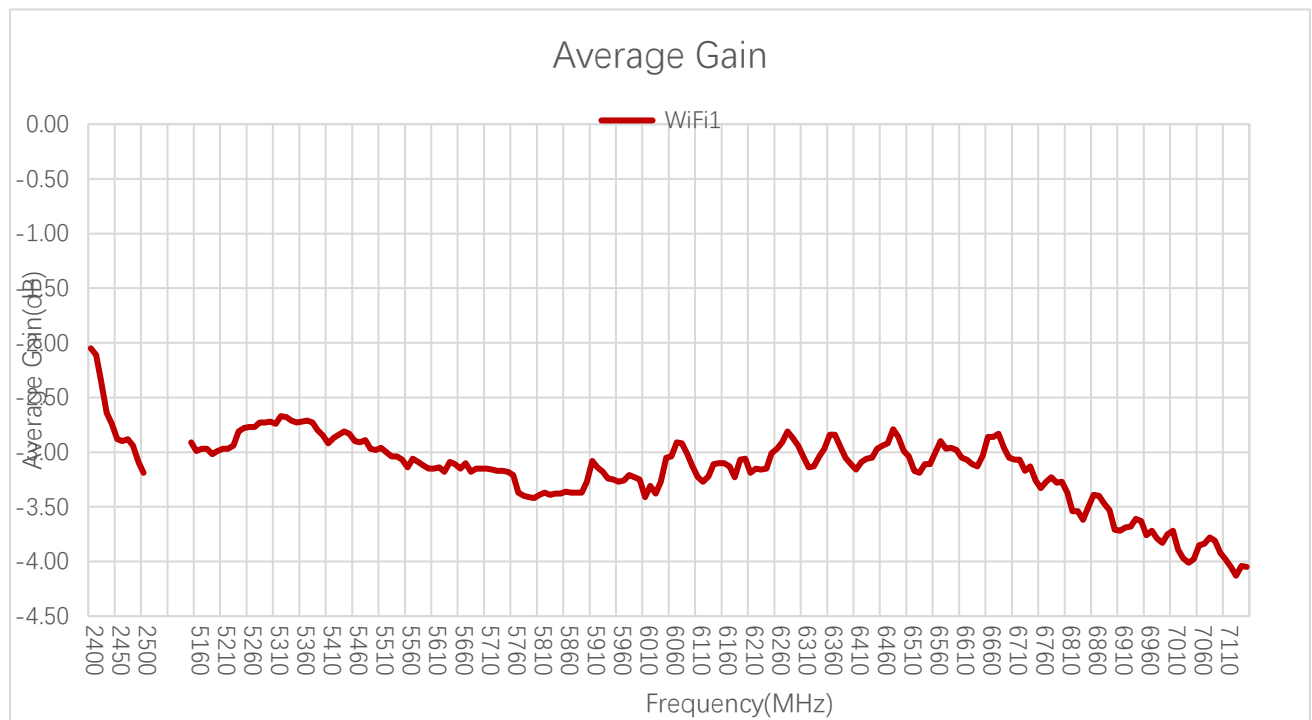
Efficiency (%) WiFi 1									
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	62.3	51.6	48.0	51.1	50.4	45.9	48.5	48.2	39.4



Efficiency (%) WiFi 2

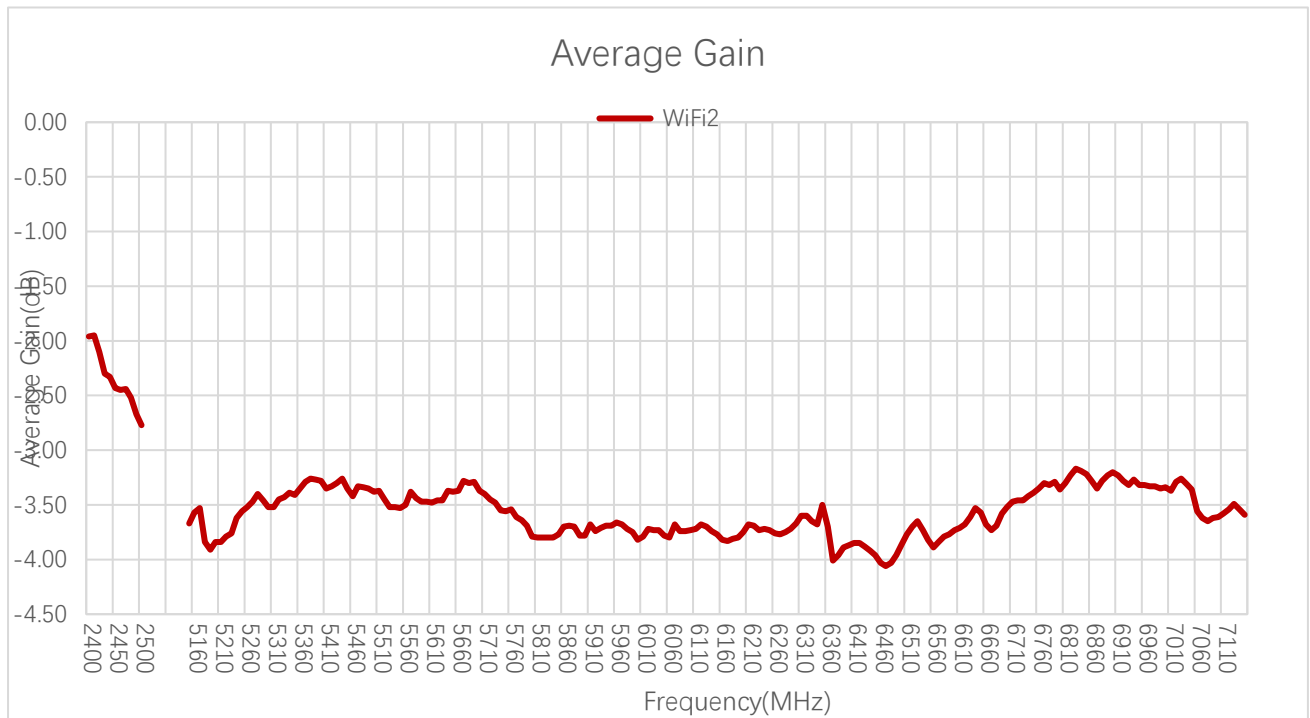
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	63.7	57.1	52.9	42.9	45.9	42.0	42.2	42.6	44.2

2.2.2. Average Gain



Average Gain (dB) WiFi 1

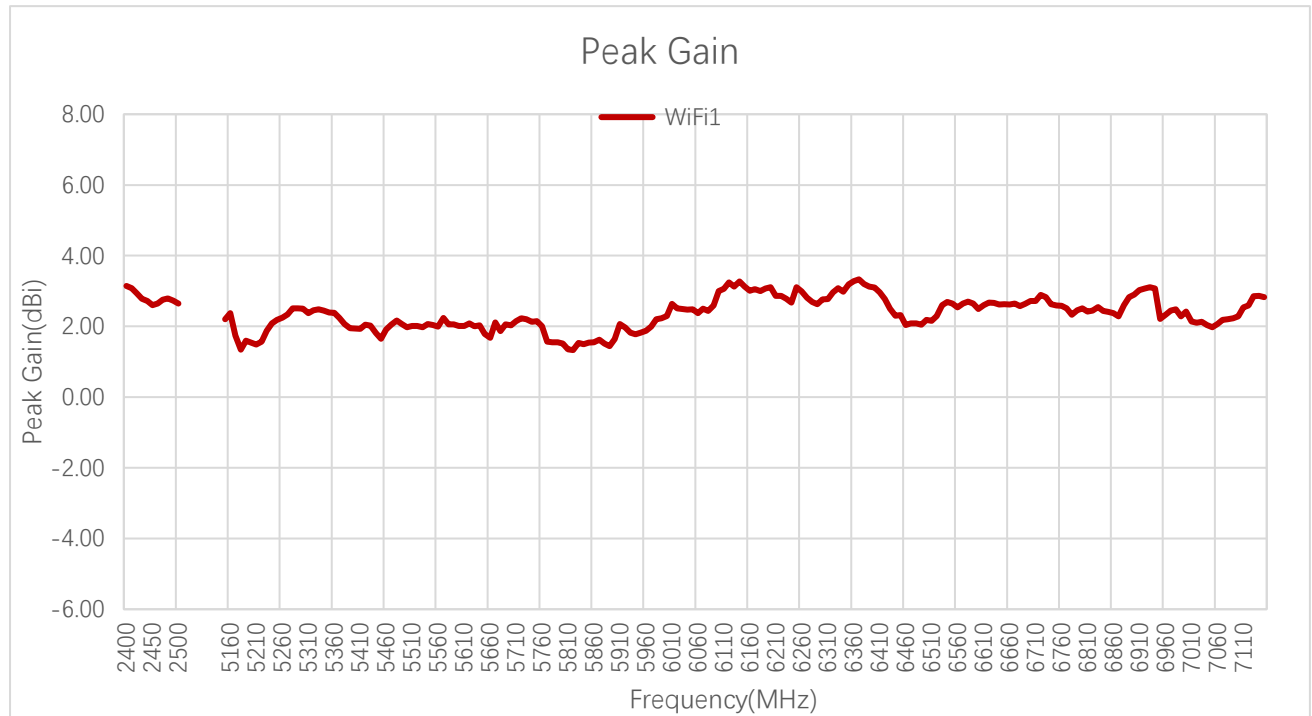
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	-2.1	-2.9	-3.2	-2.9	-3.0	-3.4	-3.1	-3.2	-4.1



Average Gain (dB) WiFi 2

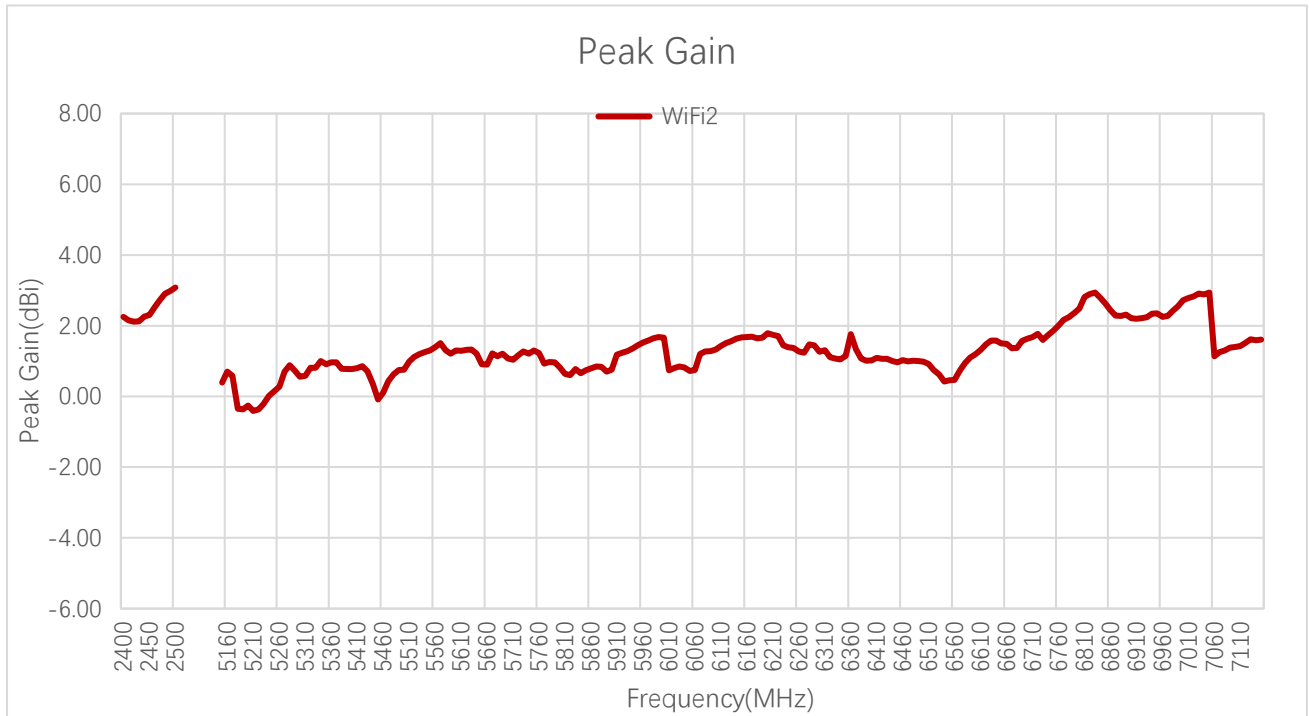
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	-2.0	-2.4	-2.8	-3.7	-3.4	-3.8	-3.7	-3.7	-3.5

2.2.3. Peak Gain



Peak Gain (dBi) WiFi 1

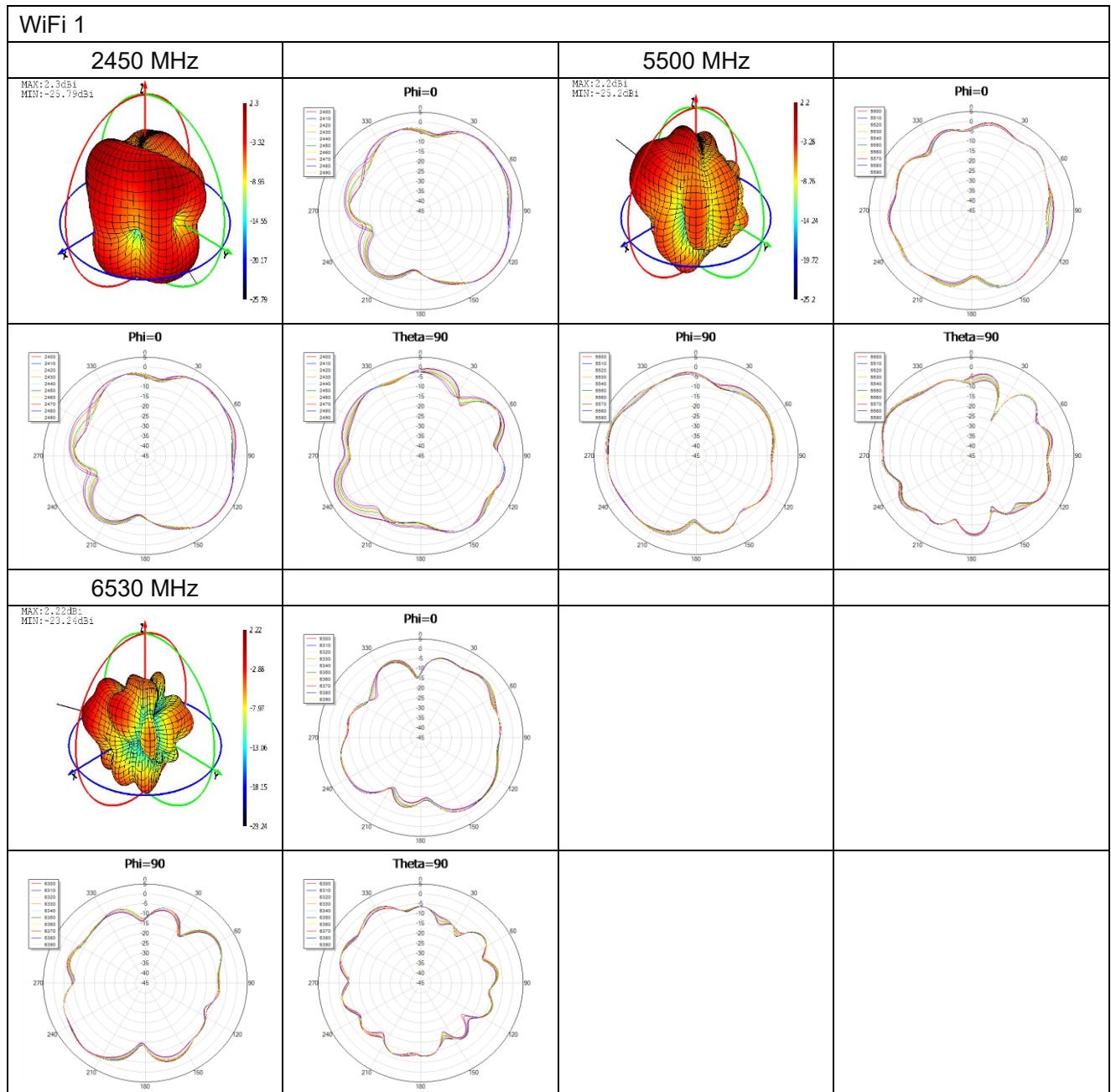
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	3.1	2.6	2.7	2.2	2.0	1.5	2.0	2.3	2.6



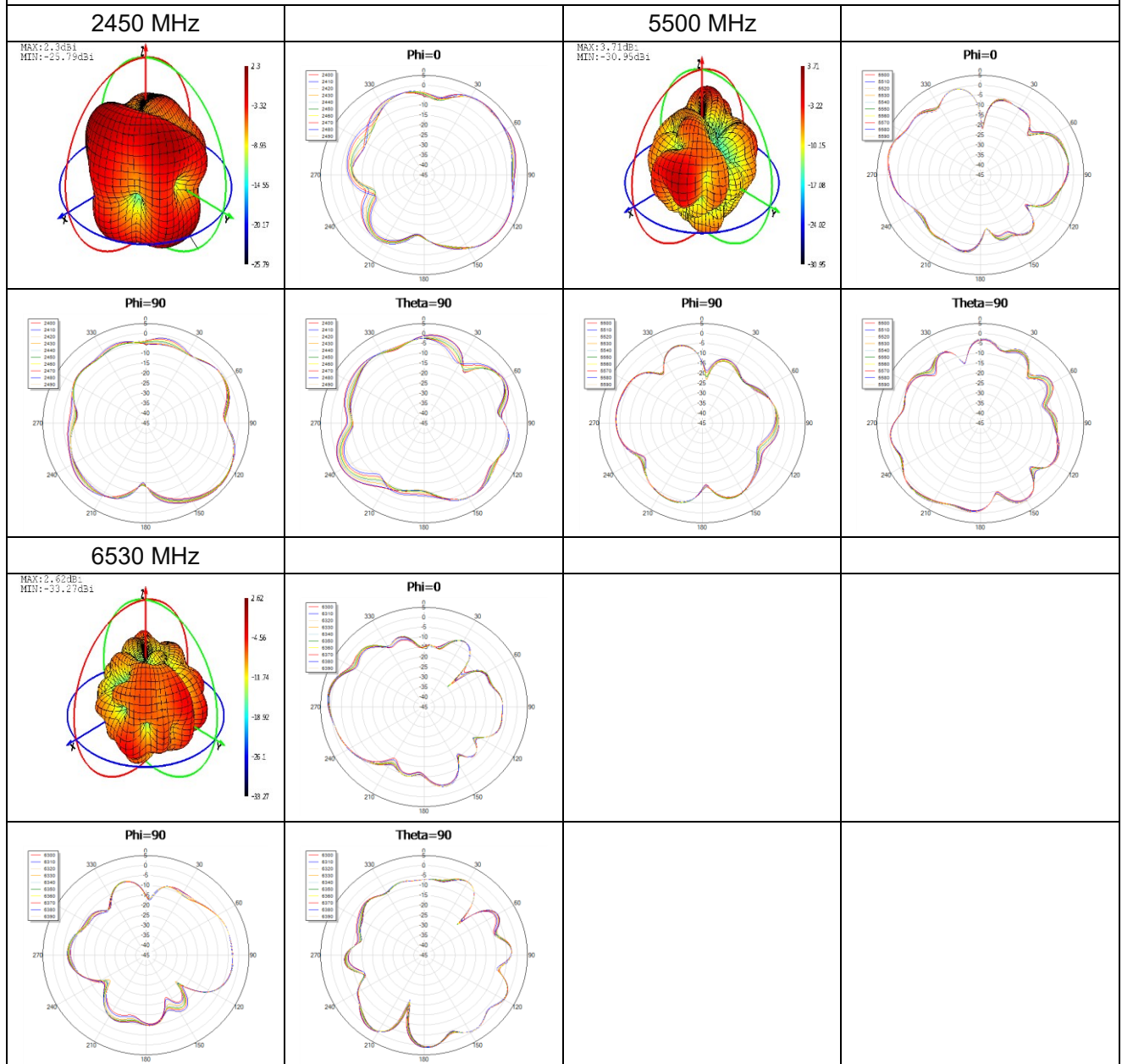
Peak Gain (dBi) WiFi 2

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	2.3	2.3	3.1	0.4	0.8	0.7	1.2	0.8	1.5

2.2.4. 3D & 2D Radiation Pattern



WiFi 2



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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