

Antenna Datasheet

Product OC: SDC103A

Version: 1.0

Date: 2025-10-22

Product Name: Wi-Fi PCB Antenna

Key Features:

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

Peak efficiency: 73.8 %

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1 Specification

Test Condition: Free Space

1.1. Electrical

Electrical	
Frequency Range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Impedance	50 Ω

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR	Wi-Fi 1		2.8	1.8	2.5
	Wi-Fi 2		2.3	2.3	3.9
Max. Return Loss (dB)	Wi-Fi 1		-6.6	-10.8	-7.2
	Wi-Fi 2		-8.1	-8.0	-4.6
AVG Eff. (%)	Wi-Fi 1		52.0	52.9	49.9
	Wi-Fi 2		42.1	48.7	40.5
AVG Gain (dB)	Wi-Fi 1		-2.9	-2.8	-3.2
	Wi-Fi 2		-3.8	-3.1	-4.0
Max. Peak Gain (dBi)	Wi-Fi 1		0.8	1.0	0.6
	Wi-Fi 2		0.0	1.1	0.5
VSWR	Wi-Fi 1		≤ 2.8		
	Wi-Fi 2		≤ 3.9		
Return Loss	Wi-Fi 1		≤ -6.6 dB		
	Wi-Fi 2		≤ -4.6 dB		

Peak Gain	Wi-Fi 1	≤ 1.0 dBi
	Wi-Fi 2	≤ 1.1 dBi

1.2. Antenna Information

Peak Gain(dBi)			
2400-2483.5 MHz	ANT 1:0.8 ANT 2:0.0	5925-6425 MHz	ANT 1: -0.5 ANT 2: 0.0
5150-5250 MHz	ANT 1: 1.0 ANT 2:0.4	6425-6525 MHz	ANT 1: 0.6 ANT 2: 0.5
5250-5350 MHz	ANT 1: 0.9 ANT 2:0.3	6525-6875 MHz	ANT 1: -0.3 ANT 2: -0.7
5470-5725 MHz	ANT 1: 0.8 ANT 2: 0.5	6875-7125 MHz	ANT 1: -0.1 ANT 2: -0.7
5725-5850 MHz	ANT 1: 0.4 ANT 2:1.0		

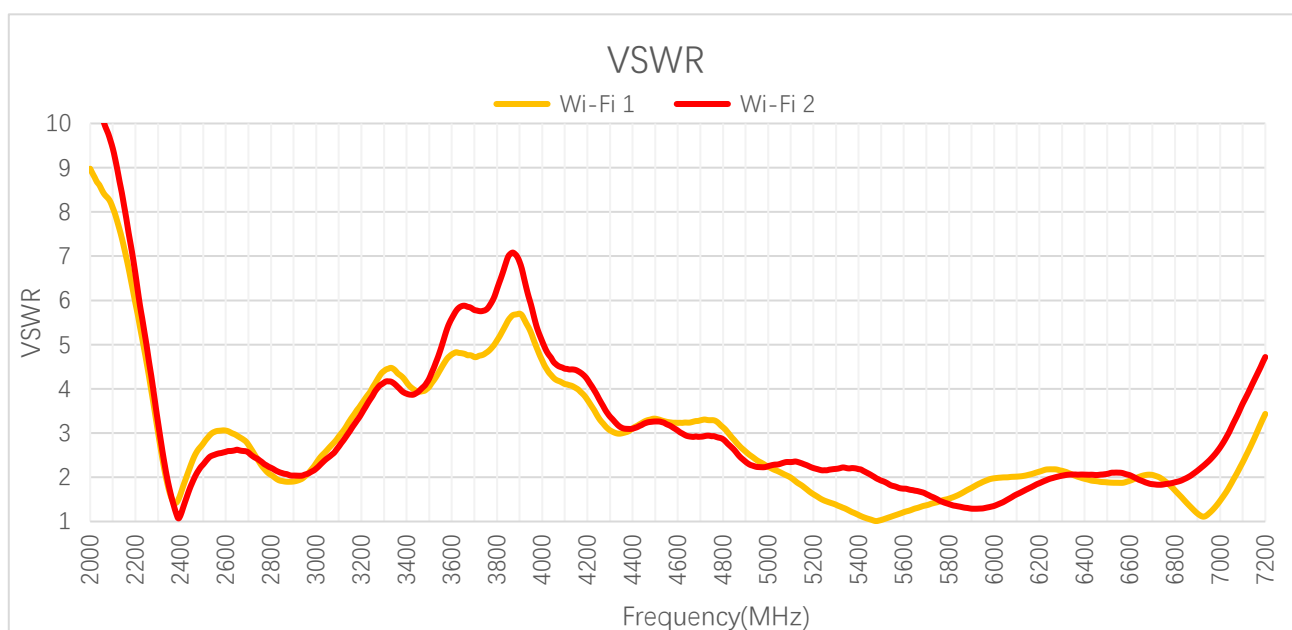
1.3. Test Information

Name Of The Test Software	MaxSign Libra
Test Instrument	Keysight E5071C
Test Instrument Balibration Date	2025-11-01~2025-12-01
Test Engineer Signature	<i>Jacob.mo</i>

2 Detailed Performance

2.1. S-Parameter Test

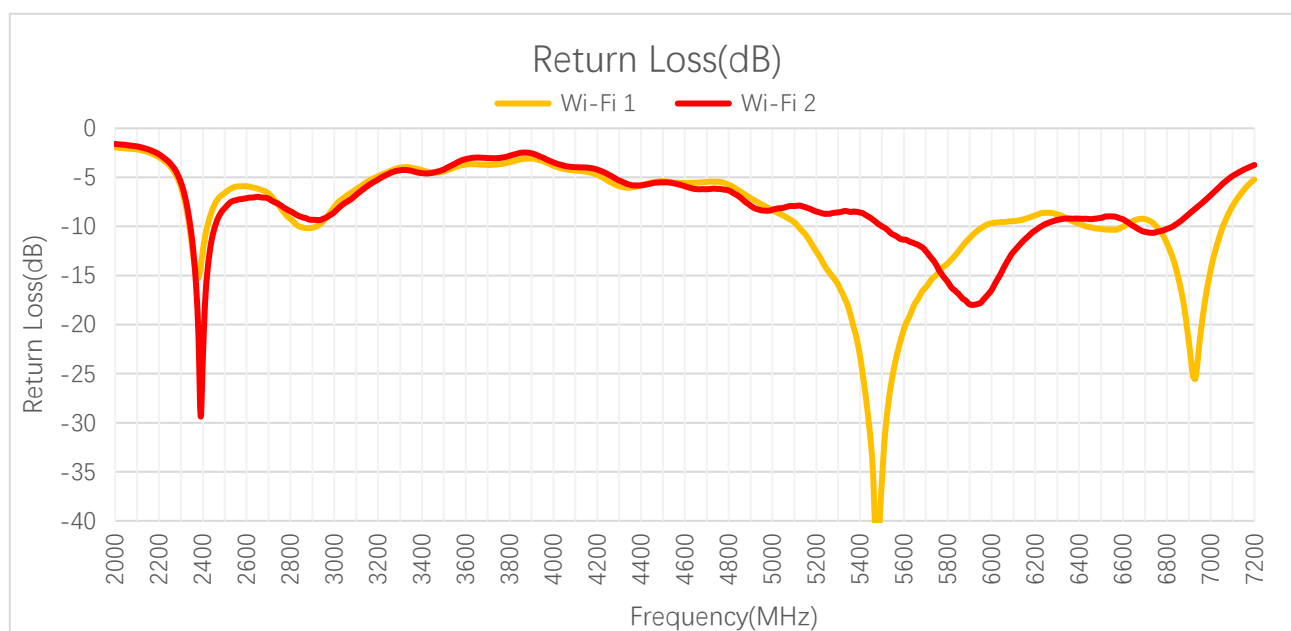
2.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
Wi-Fi 1	1.6	2.3	2.8	1.8	1.0	1.6	1.8	1.9	2.5
Wi-Fi 2	1.1	1.9	2.3	2.3	1.9	1.3	1.3	2.1	3.9

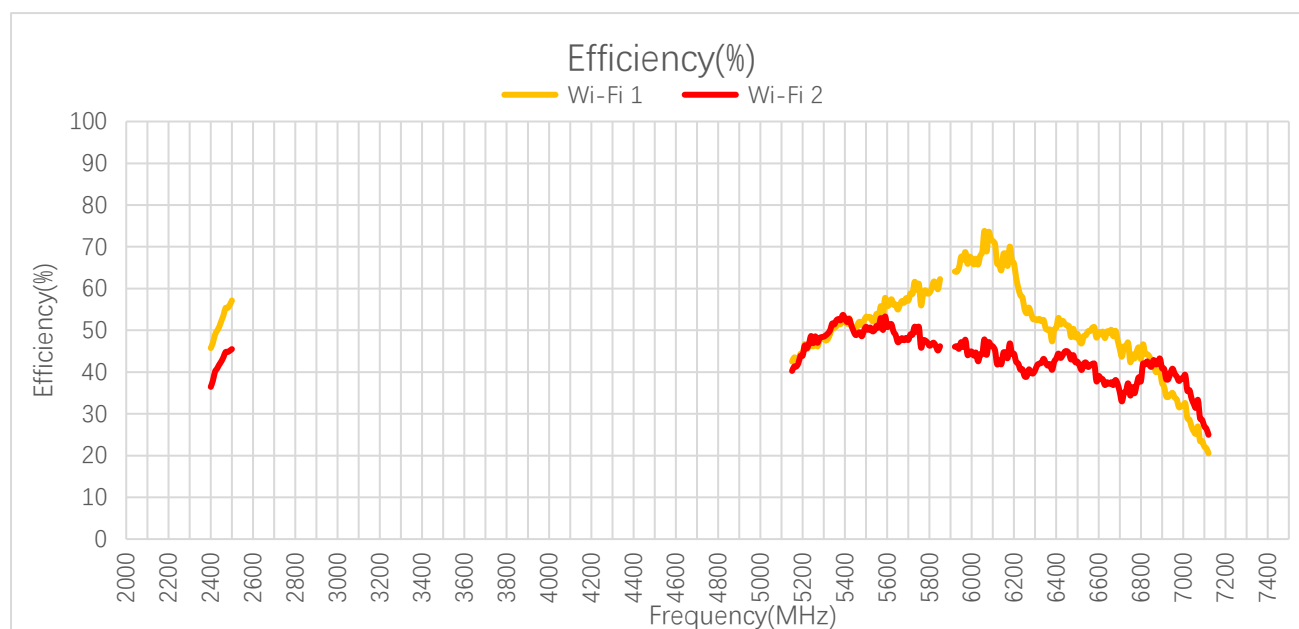
2.1.2. Return Loss



Return Loss (dB)									
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
Wi-Fi 1	-12.5	-7.9	-6.6	-10.8	-35.8	-12.5	-10.7	-10.3	-7.2
Wi-Fi 2	-23.4	-10.4	-8.1	-8.0	-10.0	-16.9	-18.0	-9.0	-4.6

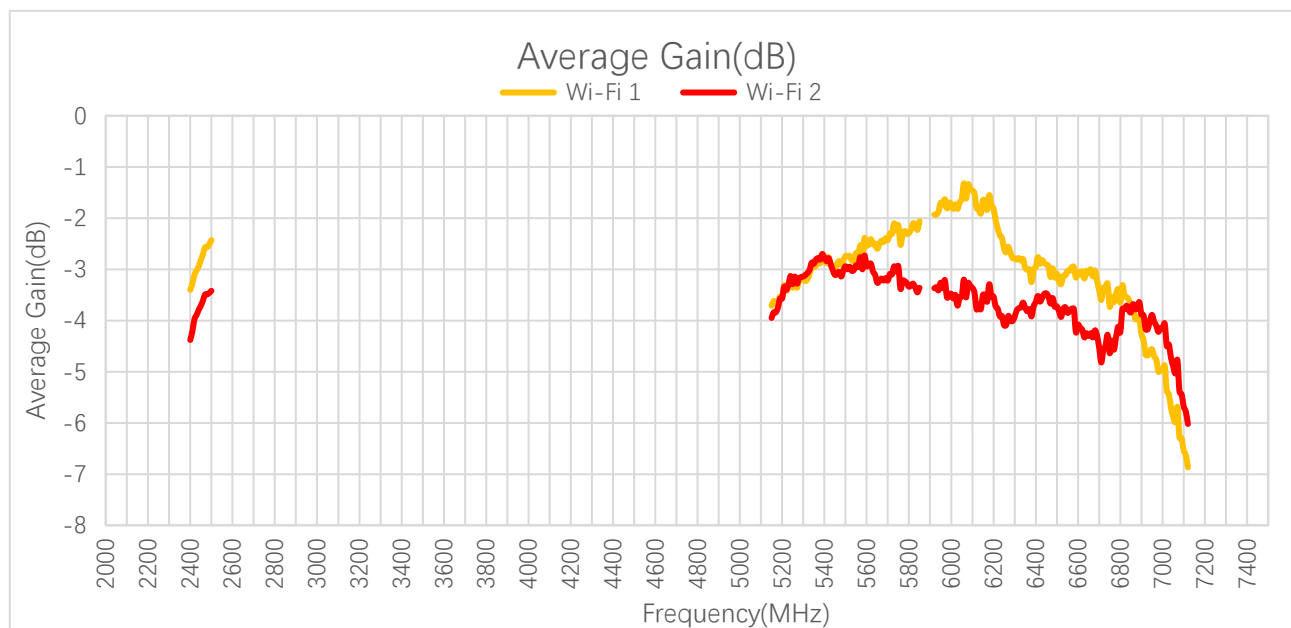
2.2. Radiation Performance Test

2.2.1. Efficiency



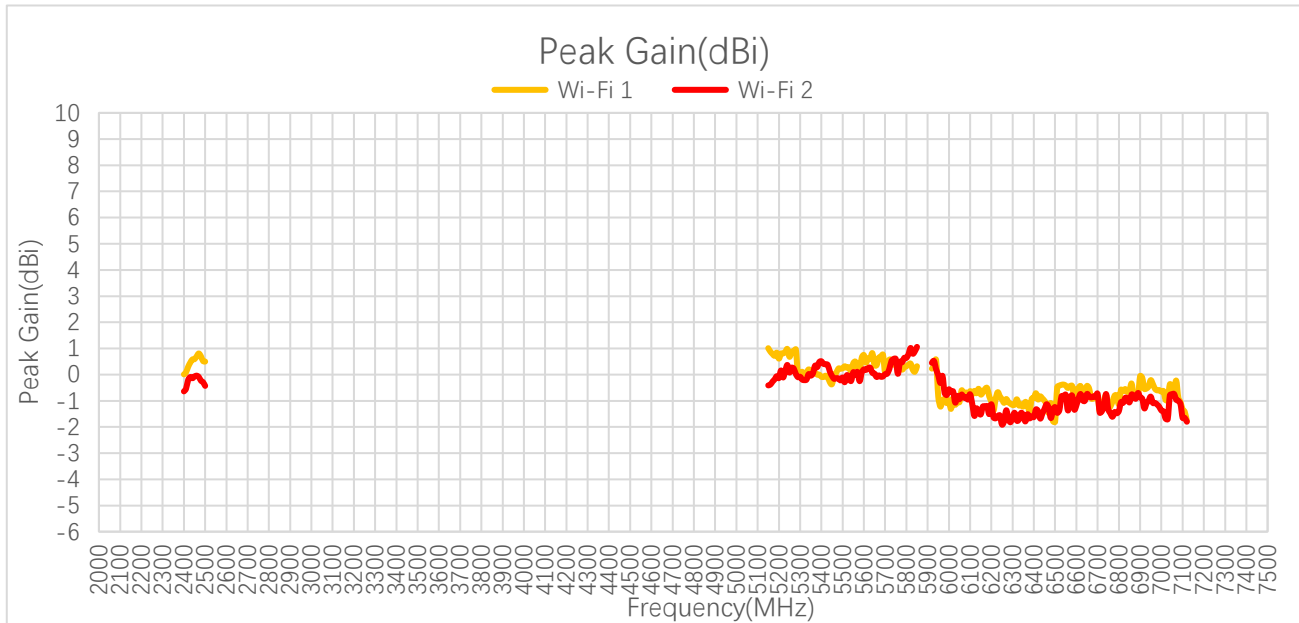
Efficiency (%)									
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Wi-Fi 1	45.8	52.2	57.1	42.5	53.2	62.3	64.1	46.9	20.5
Wi-Fi 2	36.5	42.6	45.5	40.3	50.9	46.2	46.1	40.5	25.0

2.2.2. Average Gain



Average Gain (dB)									
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Wi-Fi 1	-3.4	-2.8	-2.4	-3.7	-2.7	-2.1	-1.9	-3.3	-6.9
Wi-Fi 2	-4.4	-3.7	-3.4	-4.0	-2.9	-3.4	-3.4	-3.9	-6.0

2.2.3. Peak Gain

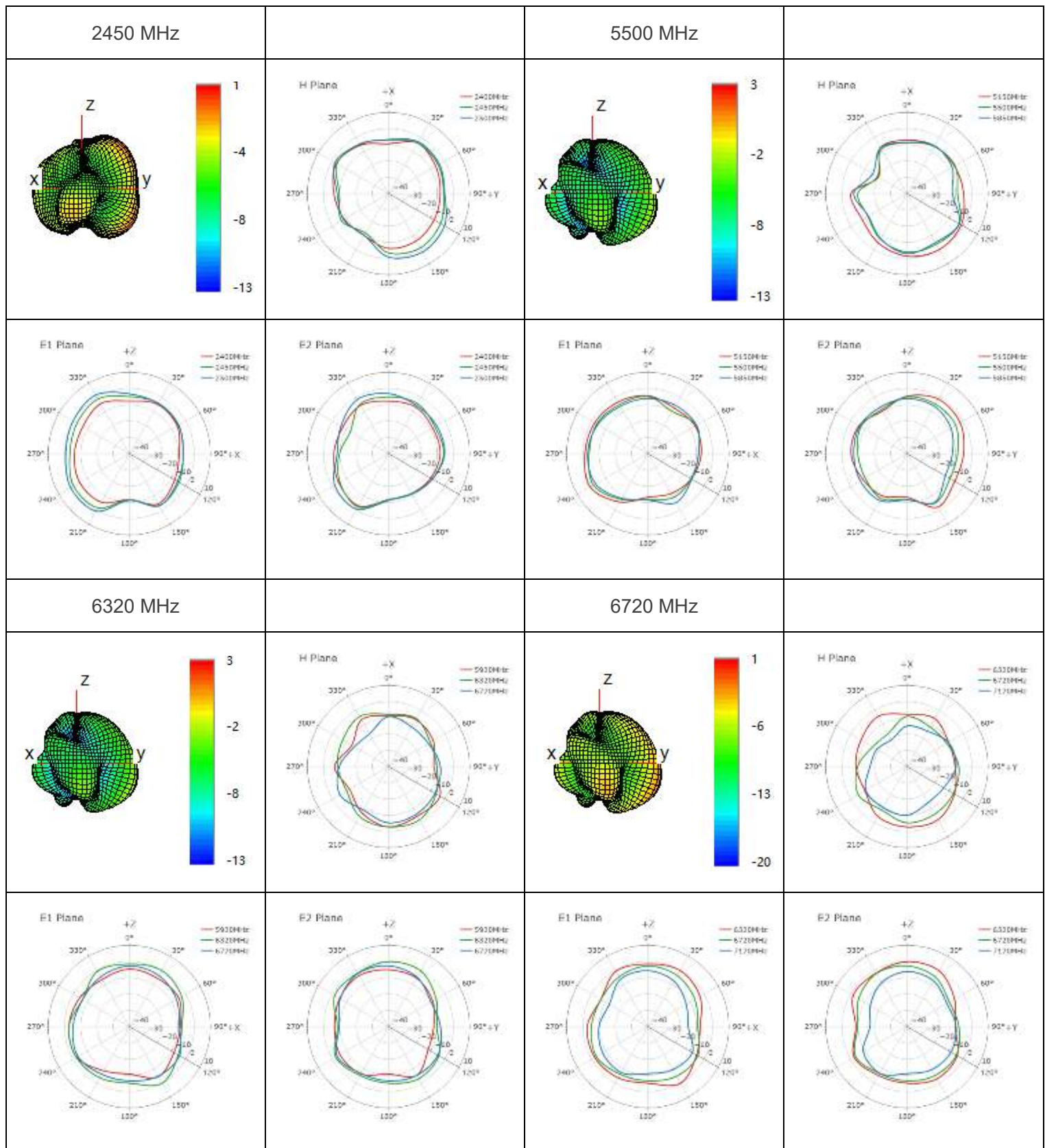


Peak Gain (dBi)									
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Wi-Fi 1	0.0	0.6	0.5	1.0	0.2	0.3	0.2	-0.4	-1.8
Wi-Fi 2	-0.6	-0.1	-0.4	-0.4	-0.1	1.1	0.5	-1.4	-1.8

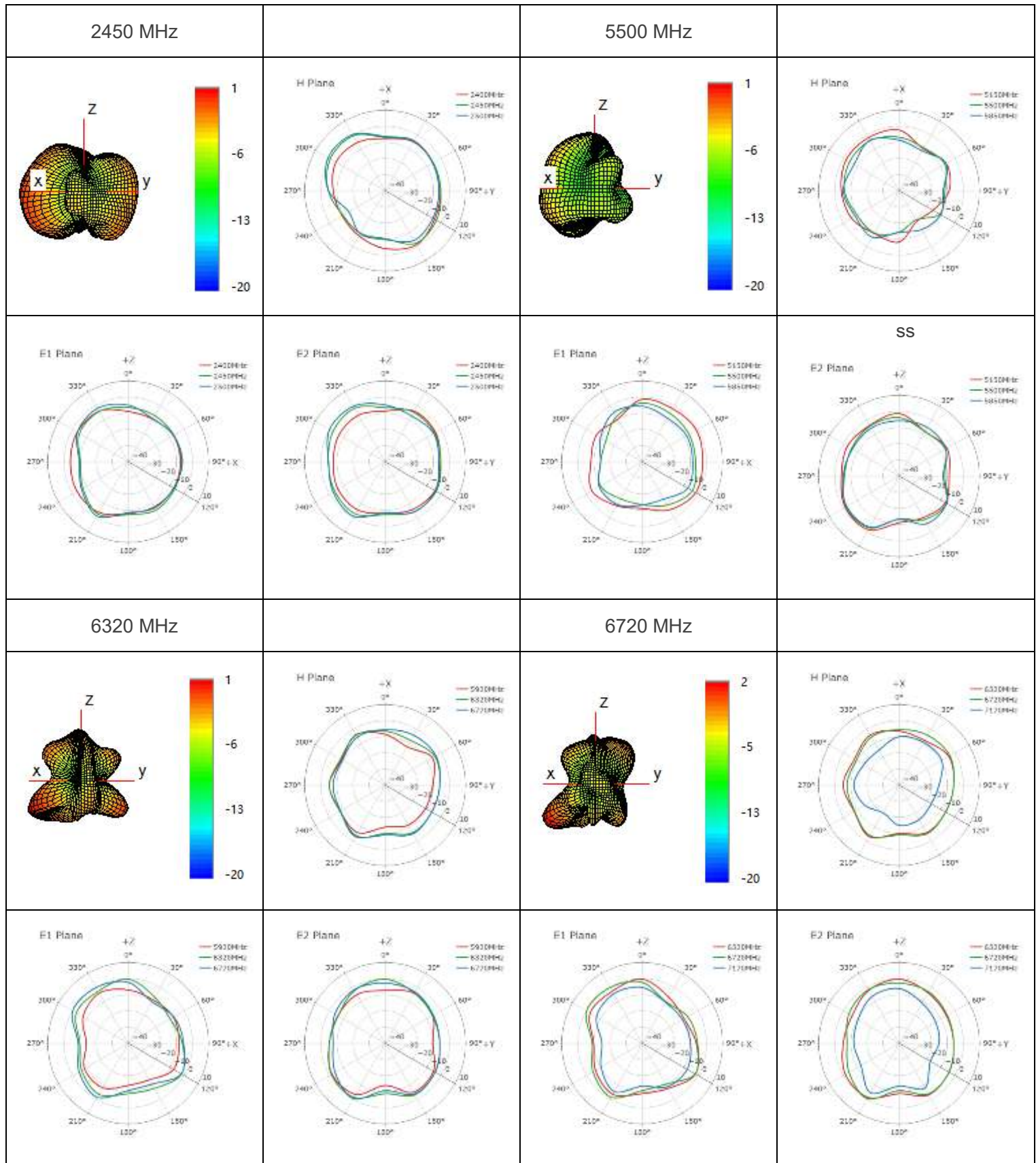
2.2.4. 3D & 2D Radiation Pattern

- Test Chamber: GL-G-1

2.2.4.1. Wi-Fi 1



2.2.4.2. Wi-Fi 2



Contact Us

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Revision History

Version	Date	Author	Note
-	2025-10-22	Jacob.MO	Creation of the document
1.0	2025-10-22	Jacob.MO	First official release



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