Gandalf_Sound Bar Antenna **APPROVAL SHEET**

Customer Name: Wistron

Date:2023/01/09 **Doc. Version:** A01

OEM P/N	0ACNXL21005N	0ACNXL21006N	
Wistron P/N	025.9022Y.0001	025.90230.0001	
Description	**Antennas Type：PCB Antenna for WLAN 802.11a/b/g/n/ac application** **Connector Type：IPEX NGFF Connector for 1.13 cable** **Cable Type：OD 1.13 RF Normal Cable** **Impedance：50Ω** **Polarization：Linear** **Radiation pattern：Omni-directional**		
Version			

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer
		Justin Tseng Rober Ku Wesley Song

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1. Introduction

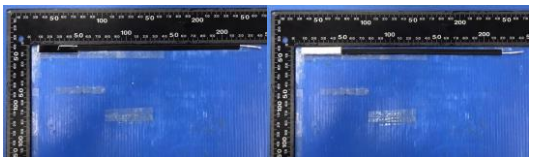
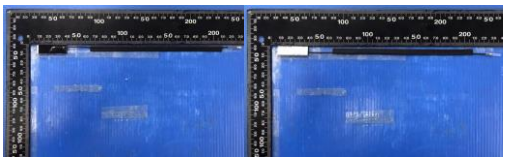
Antenna for 802.11 a/b/g/n/ac system

Antenna 1 (PCB)

1. Location: Right of the Sound Bar
2.Cable length of Antenna 1 : 190mm, White

Antenna 2 (PCB)

1. Location: Right front of the Sound Bar
2.Cable length of Antenna 2 : 190mm, Black

	Antenna 1	Antenna 2
Position	Right of the Sound Bar	Right front of the Sound Bar
Antenna Type	PCB Antenna	PCB Antenna
Cable	1.13 (Normal) x 190 mm, White IPEX NGFF connector	1.13 (Normal) x 190 mm, Black IPEX NGFF connector
Photos	 正面 背面	 正面 背面
Position		
Antenna Type		
Cable		
Photos		

2. Revision History

Date	Version	Revision History
1201y22	**1.0**	MP

3. Product Specifications

3.1 Specifications of Antenna Design

3.1.1 VSWR

VSWR	2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.85 GHz)				
	2.40 GHz	2.45GHz	2.50GHz	5.15 GHz	5.25GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz	5.785 GHz	5.85 GHz
Antenna 1	1.40	1.25	1.28	2.19	1.96	1.88	1.72	1.68	1.65	1.57	1.52

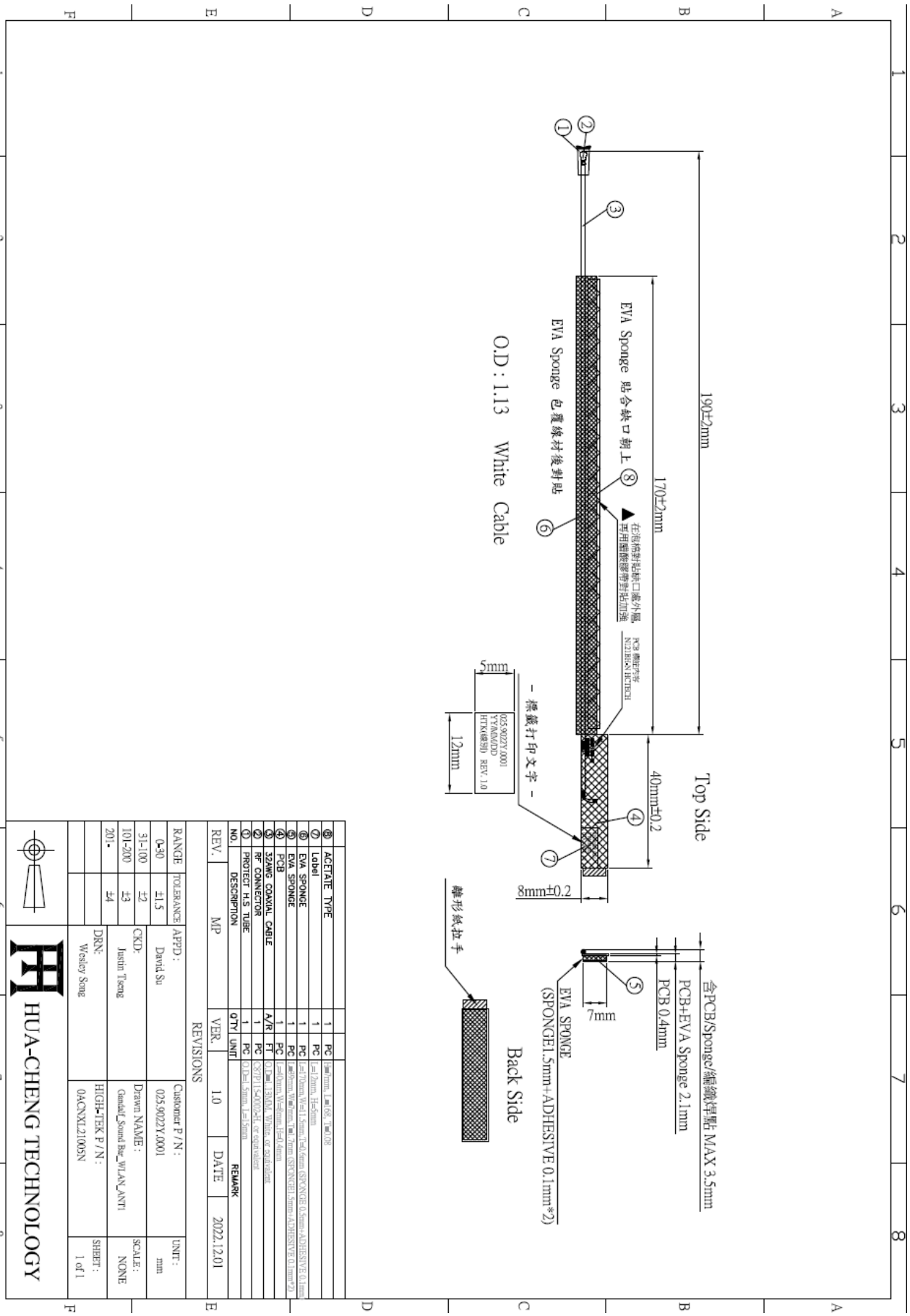
VSWR	2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.85 GHz)				
	2.40 GHz	2.45GHz	2.50GHz	5.15 GHz	5.25GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz	5.785 GHz	5.85 GHz
Antenna 2	2.21	1.87	2.22	2.19	2.08	2.24	1.98	1.75	1.56	1.64	1.74

3.1.2 Average gain and peak gain

Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.85 GHz)				
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz	5.785 GHz	5.85 GHz
Antenna 1	Peak dBi	2.82	2.83	2.1	2.53	2.34	2.58	2.26	2.91	2.69	2.45	2.49
	Avg dB	-2.50	-2.58	-2.49	-4.07	-4.20	-3.98	-3.46	-3.24	-3.34	-3.58	-3.53
Antenna 2	Peak dBi	0.07	-0.86	-1.38	2.79	2.7	2.06	1.74	1.18	1.93	2.38	1.88
	Avg dB	-3.37	-3.30	-3.31	-2.65	-2.67	-2.87	-3.05	-3.11	-2.73	-2.91	-3.13

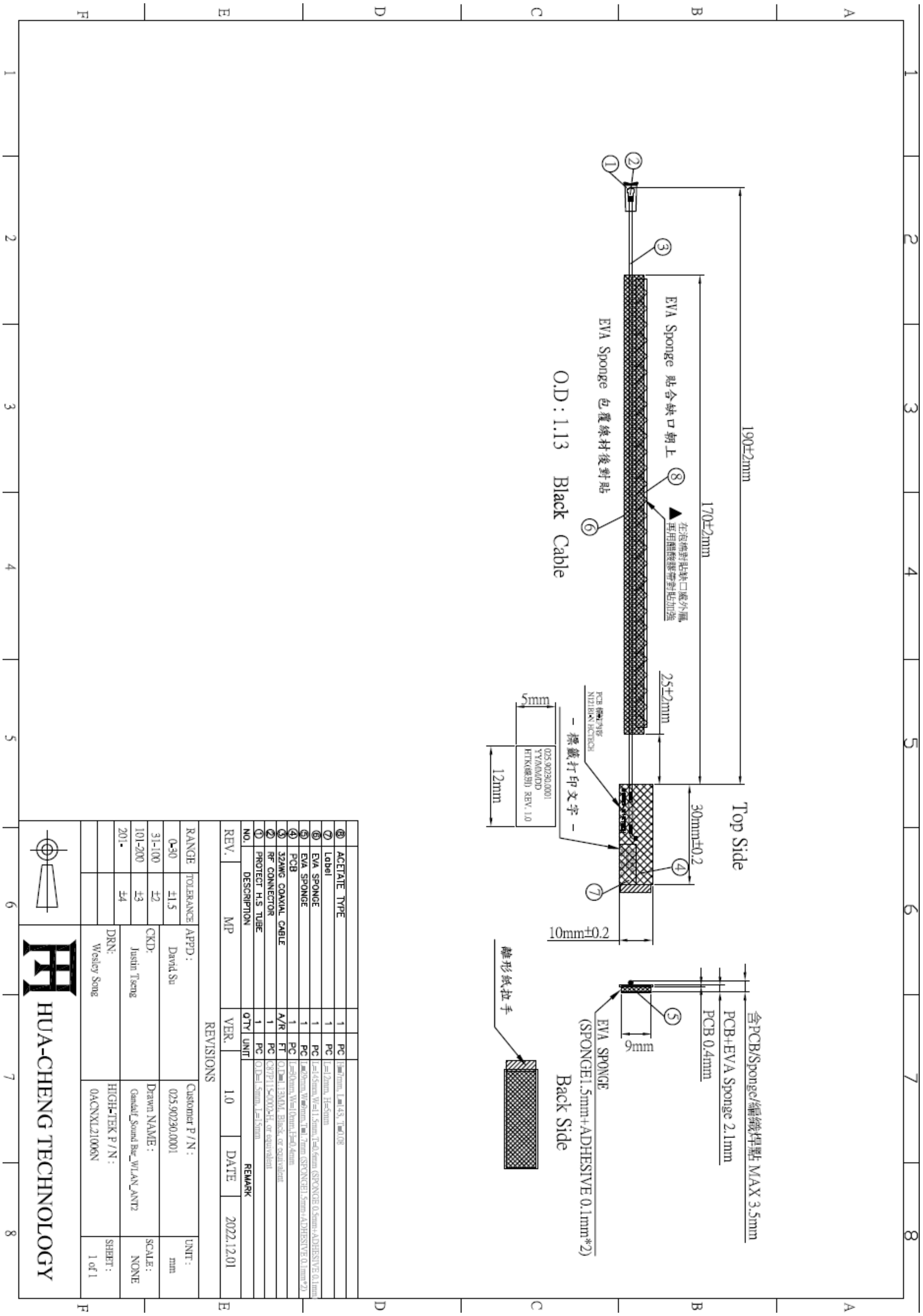
3.2 Mechanical Specifications

Antenna 1:



NO.	DESCRIPTION	QTY	UNIT
⑧	ACETATE TYPE	1	PC
⑦	Label	1	PC
⑥	EVA SPONGE	1	PC
⑤	EVA SPONGE	1	PC
④	PCB	1	PC
③	32AWG COAXIAL CABLE	A/R	FT
②	RF CONNECTOR	1	PC
①	PROTECT H.S TUBE	1	PC

Antenna 2:


190±2mm
170±2mm
25±2mm
30mm±0.2
10mm±0.2
Top Side
Back Side
O.D : 1.13 Black Cable
HUA-CHENG TECHNOLOGY

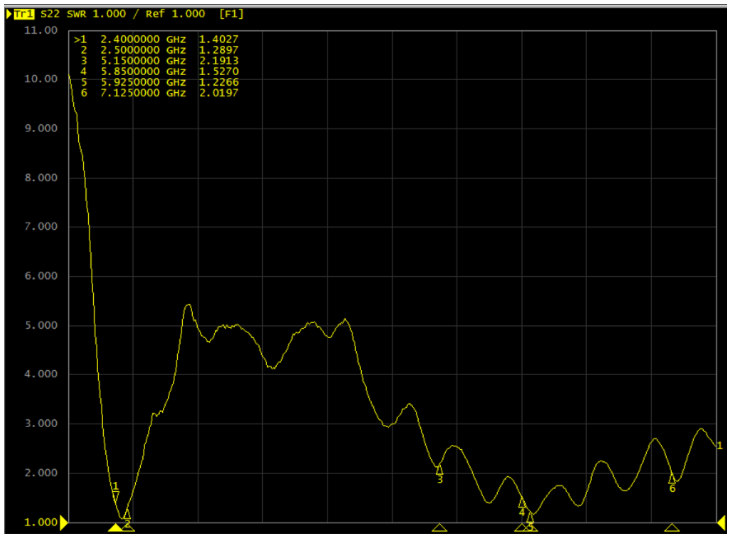
3.3 Antenna Material List

Antenna 1 & Antenna 2
1. PCB 2. Coaxial cable and IPEX NGFF connector 3. EVA SPONGE 4. Label 5. ACETATE TYPE

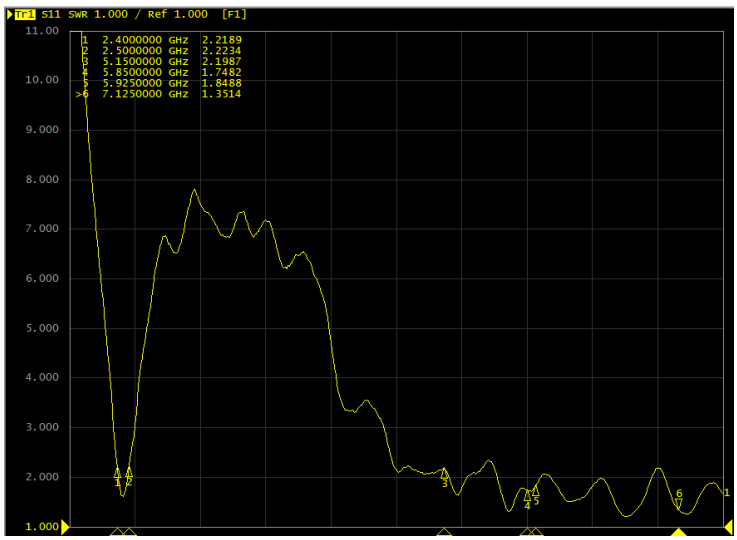
4 Antenna Performance

4.1 VSWR

Antenna 1



Antenna 2



4.2 Peak Gain and Average Gain

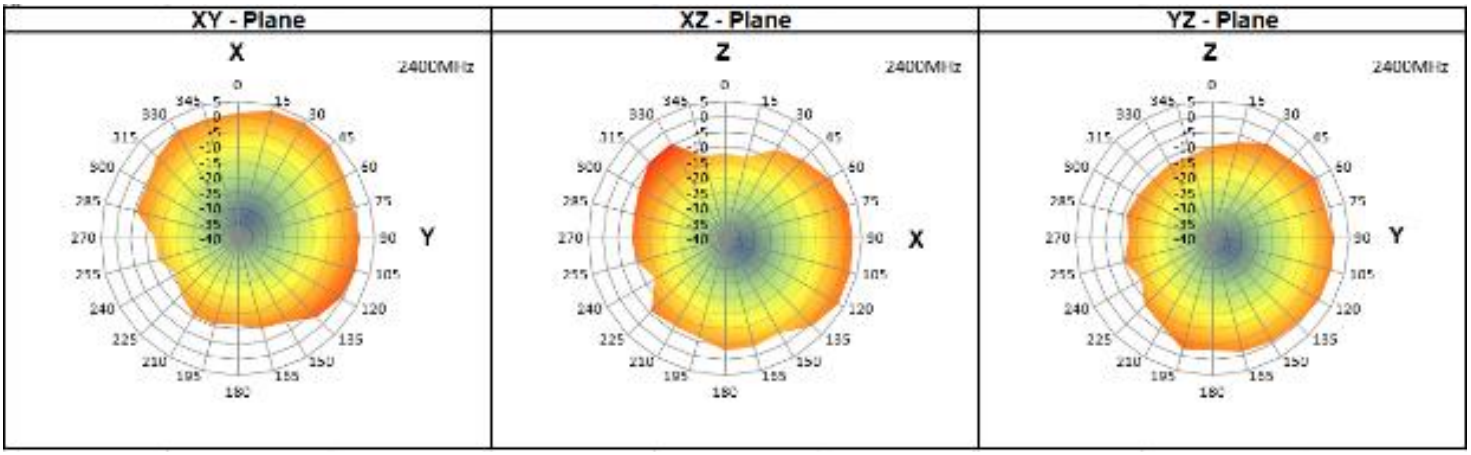
	Antenna 1 Gain Data				
Frequency	2D		3D		
	H-peak gain(dBi).	V-peak gain(dBi).	Peak gain(dBi)	Average gain(dBi)	Efficiency(%)
2400 MHz	1.87	-6.35	2.82	-2.50	56.29
2450 MHz	2.19	-5.23	2.83	-2.58	55.16
2500 MHz	1.38	-5.32	2.10	-2.49	56.34
5150 MHz	2.12	-6.86	2.53	-4.07	39.19
5250 MHz	1.74	-5.37	2.34	-4.20	38.03
5350 MHz	1.89	-6.25	2.58	-3.98	40.02
5470 MHz	1.27	-5.16	2.26	-3.46	45.12
5600 MHz	2.26	-3.99	2.91	-3.24	47.45
5725 MHz	0.92	-2.71	2.69	-3.34	46.38
5785 MHz	-0.04	-1.66	2.45	-3.58	43.83
5850 MHz	0.51	-1.46	2.49	-3.53	44.32

	Antenna 2 Gain Data				
Frequency	2D		3D		
	H-peak gain(dBi).	V-peak gain(dBi).	Peak gain(dBi)	Average gain(dBi)	Efficiency(%)
2400 MHz	-0.76	-2.97	0.07	-3.37	46.03
2450 MHz	-1.54	-1.95	-0.86	-3.30	46.72
2500 MHz	-1.64	-1.63	-1.38	-3.31	46.63
5150 MHz	-0.02	0.04	2.79	-2.65	54.33
5250 MHz	1.23	0.25	2.70	-2.67	54.13
5350 MHz	1.17	-0.89	2.06	-2.87	51.66
5470 MHz	-0.62	-2.73	1.74	-3.05	49.56
5600 MHz	-1.31	-1.03	1.18	-3.11	48.85
5725 MHz	-1.07	-1.01	1.93	-2.73	53.36
5785 MHz	-0.23	-0.23	2.38	-2.91	51.19
5850 MHz	0.21	-0.51	1.88	-3.13	48.69

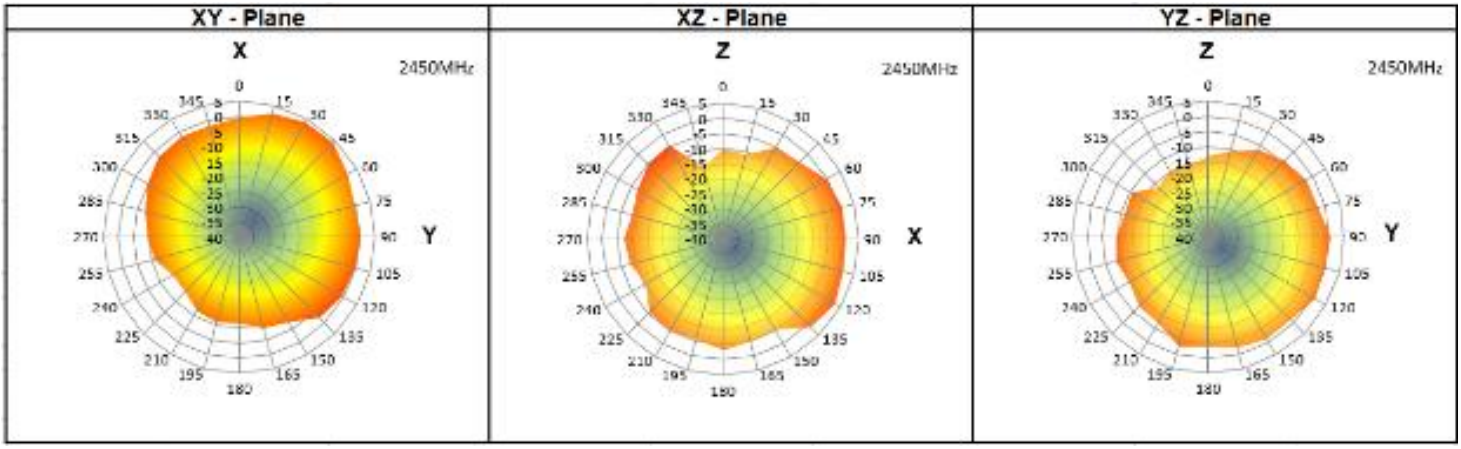
4.3 Antenna 2D Pattern

Antenna 1

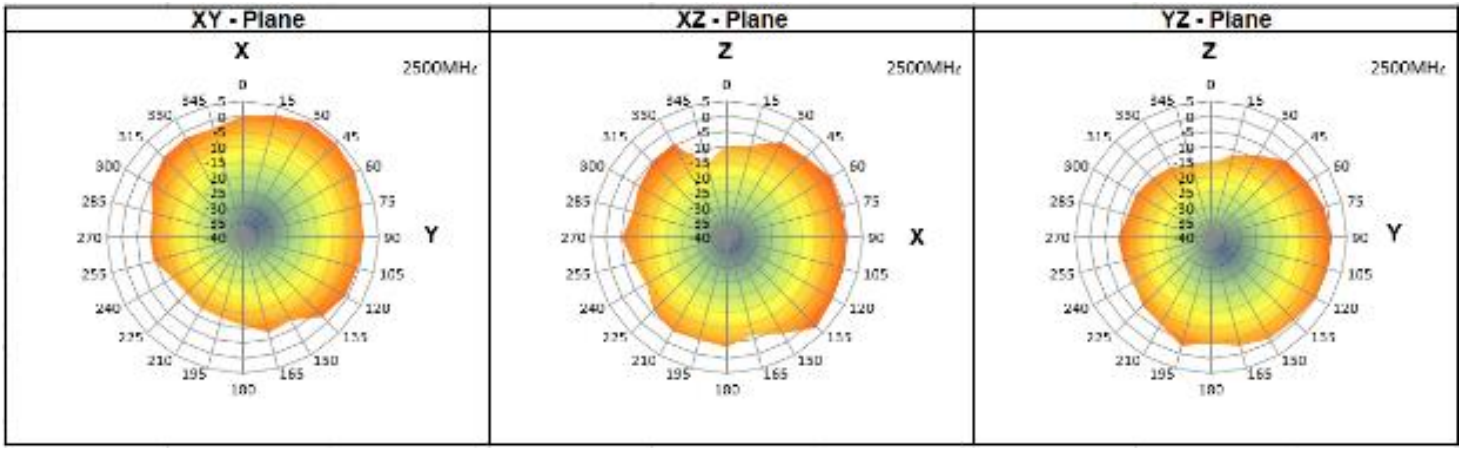
2400 MHz



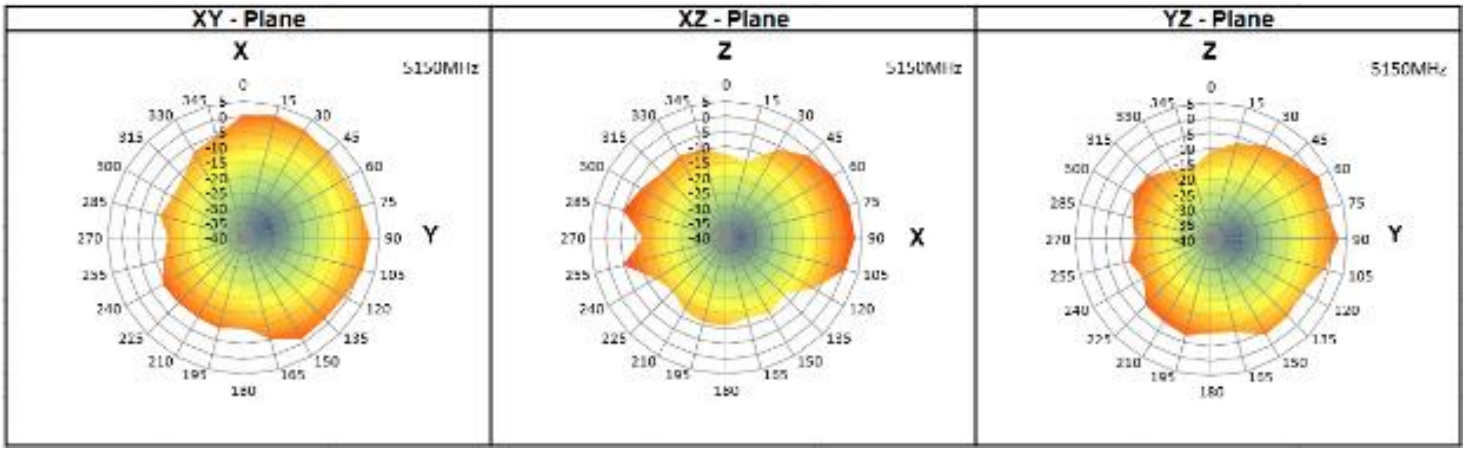
2450 MHz



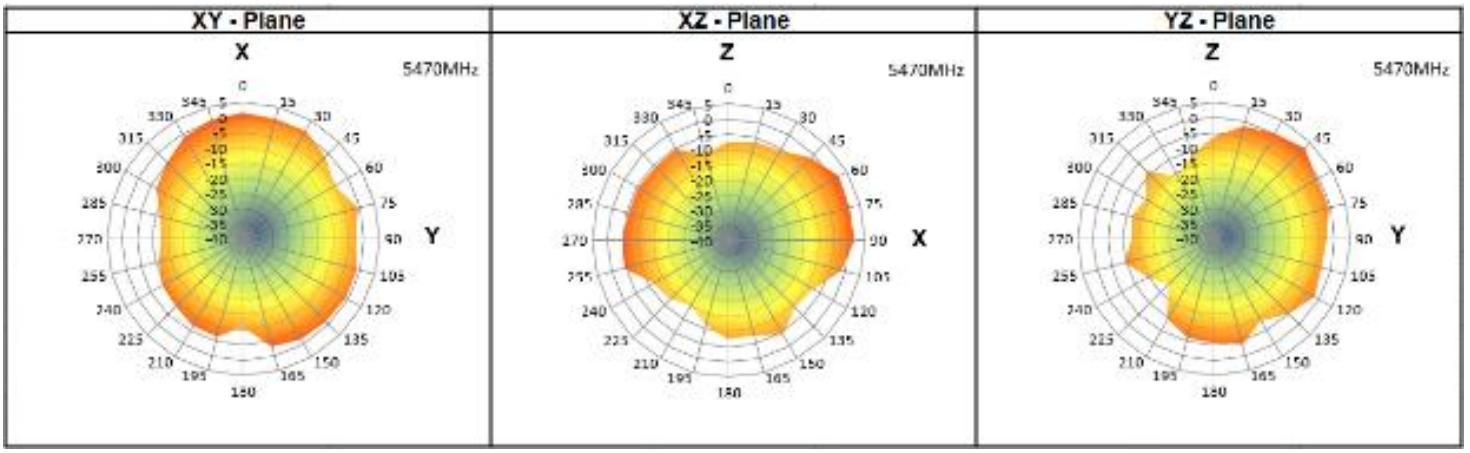
2500 MHz



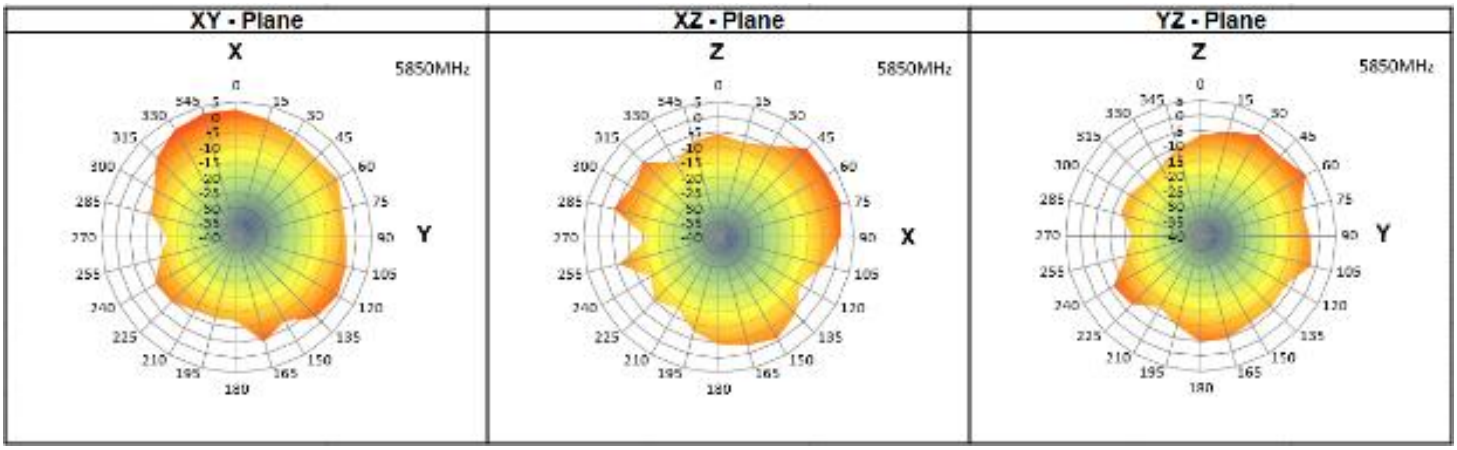
5150 MHz



5470 MHz

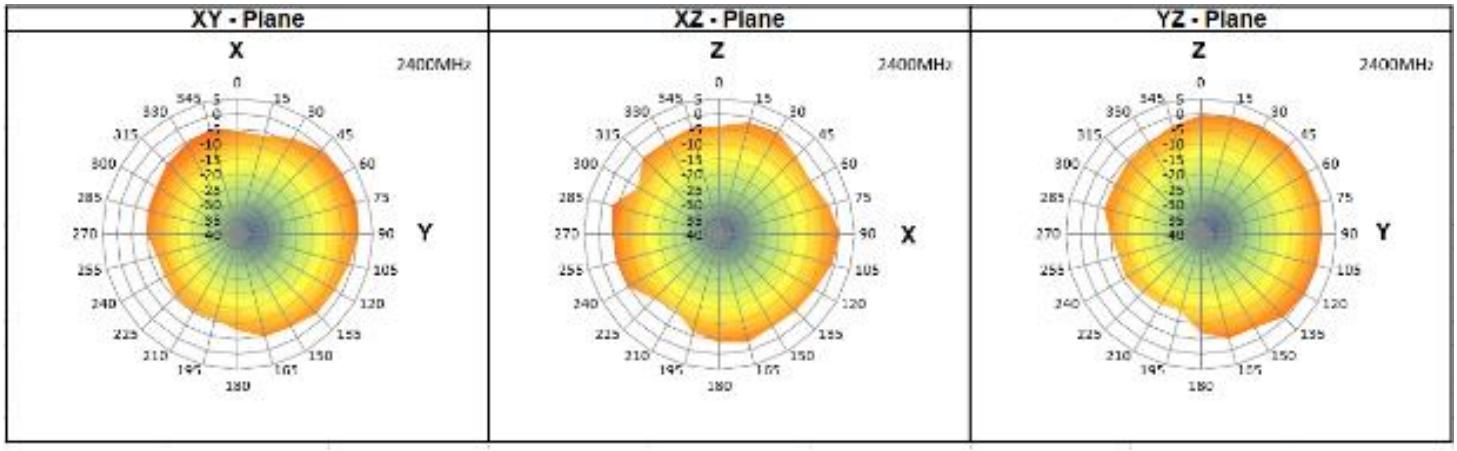


5850 MHz

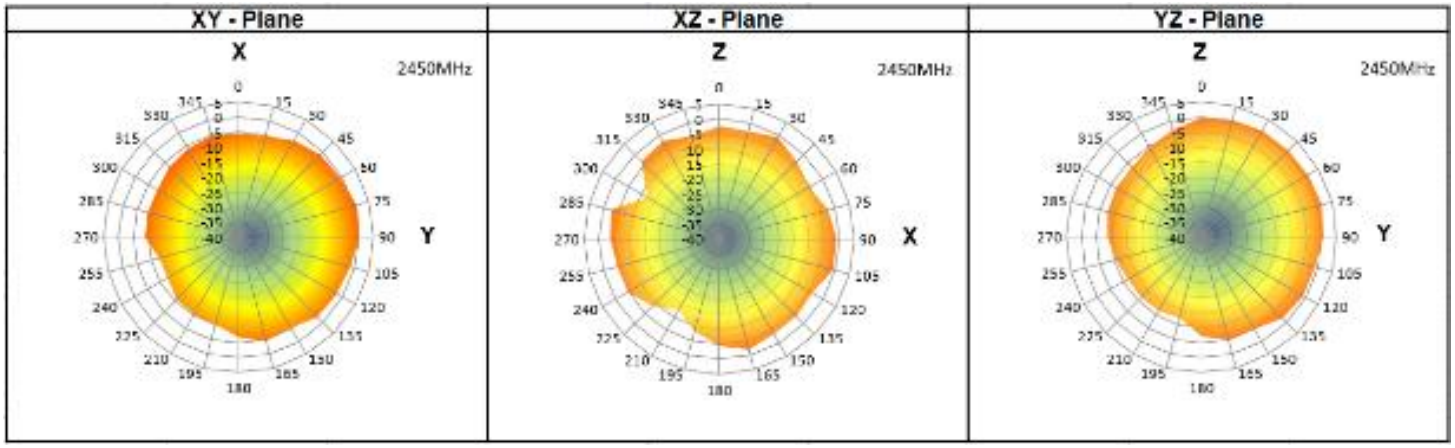


Antenna 2

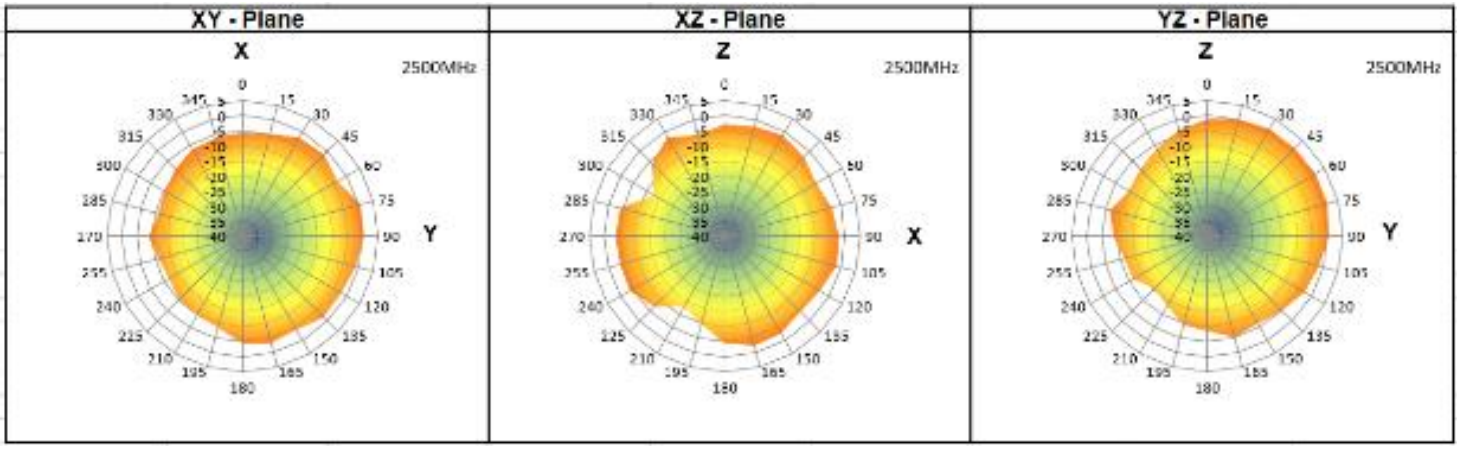
2400 MHz



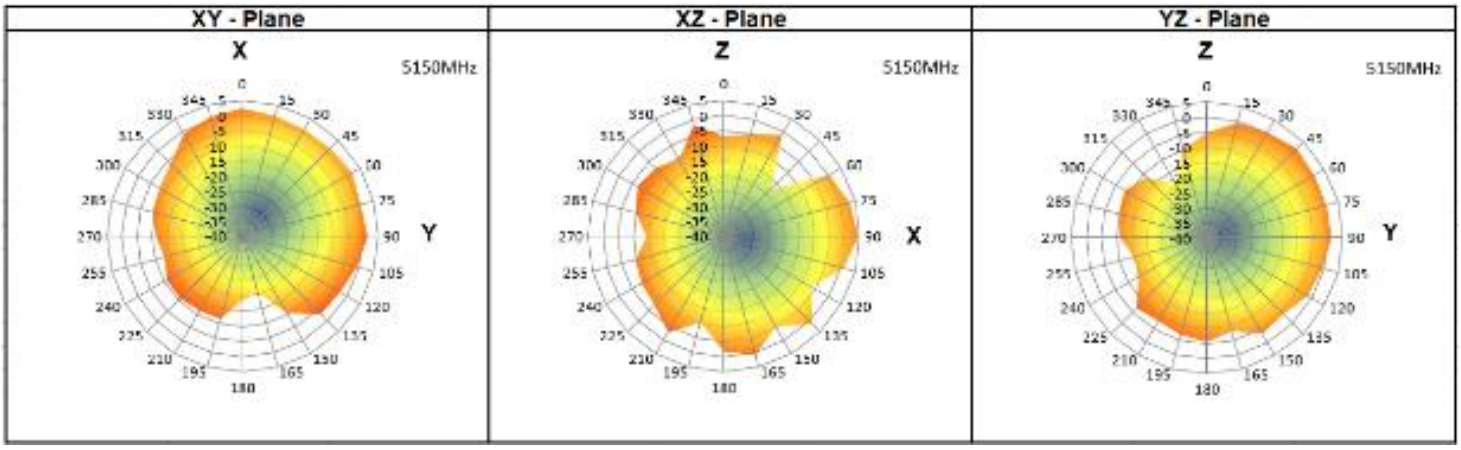
2450 MHz



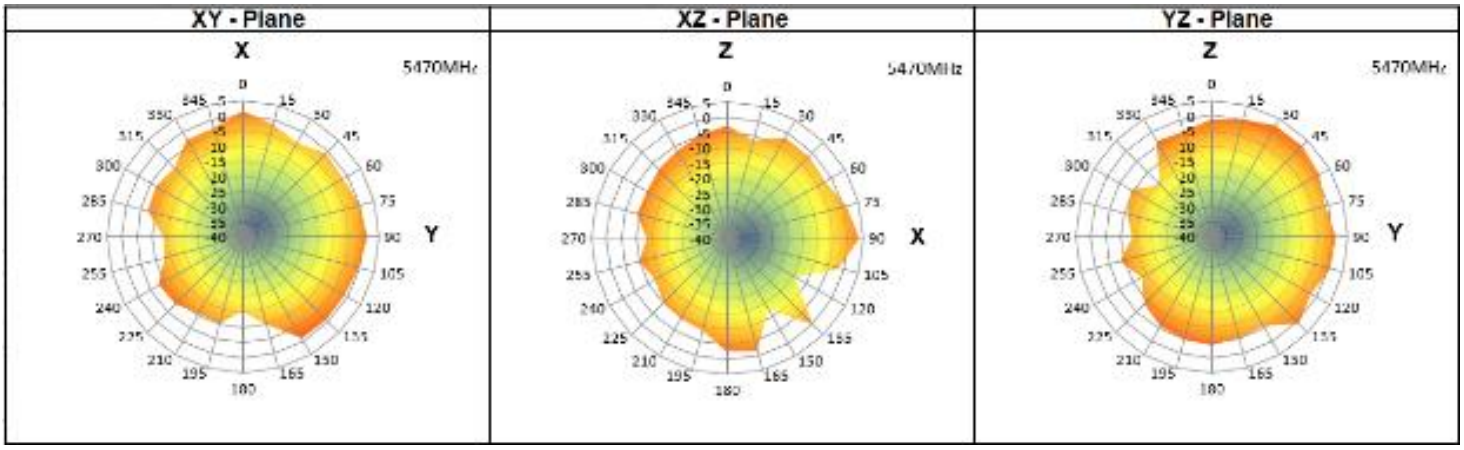
2500 MHz



5150 MHz



5470 MHz



5850 MHz