

APPROVAL SHEET

RoHS
compliance

CUSTOMER : 凌華
ISSUE DATE : 2021.12.01

APPROVED			
COMPANY	APPROVED BY	CHECK BY	PREPARED BY
	Wayne Yang	Wayne Yang	Iris Lin
APPROVAL NO :			
MODEL : PC-W09-01			
Customer NO :			



Product Name: WiFi 2.4G/5.8GHz Antenna

Part Number: PC-W09-01

Features:

- Support WiFi 2.4G/5.8GHz Bands
- Cable: 1.37 mm Mini-Coax
- IPEX 4L Connector
- Customizable Cables and Connectors
- RoHS & RECH Compliant

Applications:

- Smart Home
- Surveillance Cameras
- Connected Wearable Device
- Router and Gateway

WiFi 2.4G/5.8GHz Antenna

MODEL: PC-W09-01

Rev.A

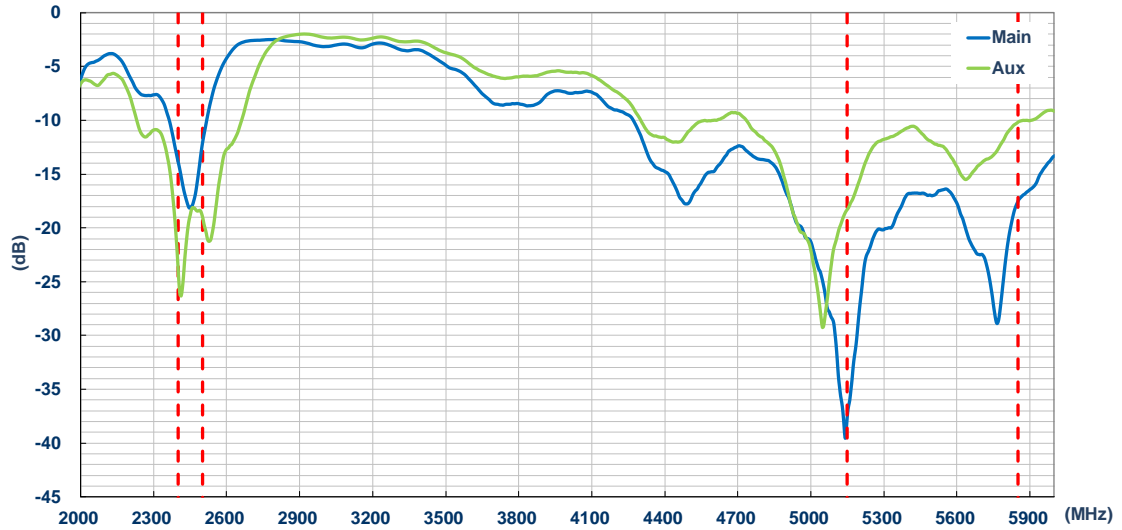
I. Specifications:

Items		Specifications						
Electrical Characteristics								
Frequencies (MHz)		2400	2450	2500	5150	5350	5750	5850
Efficiency (%)	Main	66.99	69.02	66.53	69.50	55.21	69.02	74.64
	Aux	78.16	71.78	68.23	65.31	65.31	64.71	62.81
Average Gain (dBi)	Main	-1.74	-1.61	-1.77	-1.58	-2.58	-1.61	-1.27
	Aux	-1.07	-1.44	-1.66	-1.85	-1.85	-1.89	-2.02
Peak Gain (dBi)	Main	0.24	0.41	1.31	2.92	2.01	2.46	2.24
	Aux	0.99	0.75	1.41	1.77	2.89	2.66	2.33
V.S.W.R		< 2						
Return Loss (dB)		< -10						
Impedance (Ω)		50						
Polarization		Linear						
Physical Condition								
Dimensions (mm)		23.0(L) x 10.0(W) x 0.25(T)						
Connector		IPEX 4L						
Cable		1.37 mm Mini-Coax						
Cable Length (mm)		110						
Environmental Conditions								
Operation Temperature (°C)		-40 ~ +85						
Storage Temperature (°C)		-40 ~ +85						
Relative Humidity		95% non-condensing						

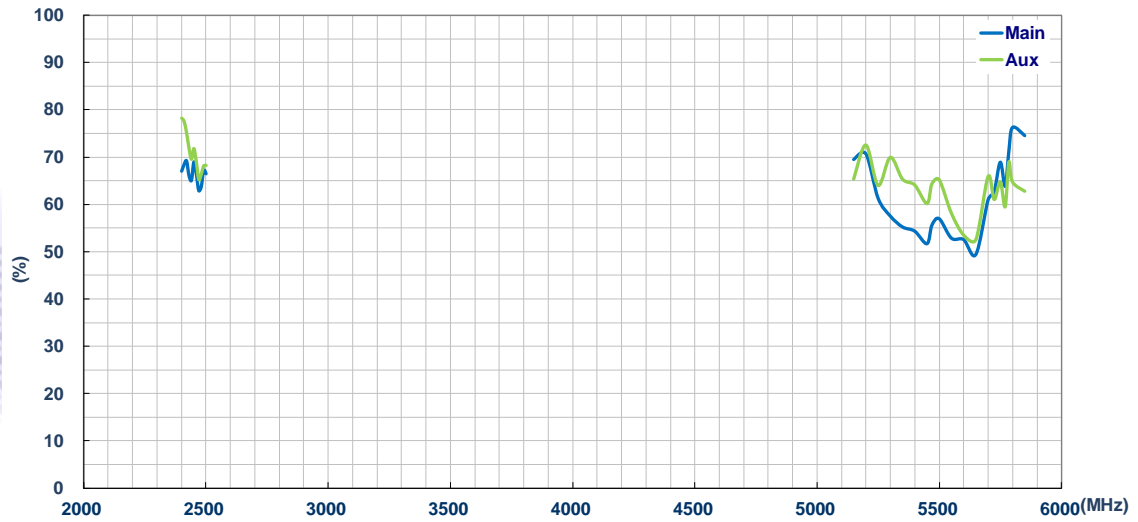
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II. Antenna Technical Parameters:

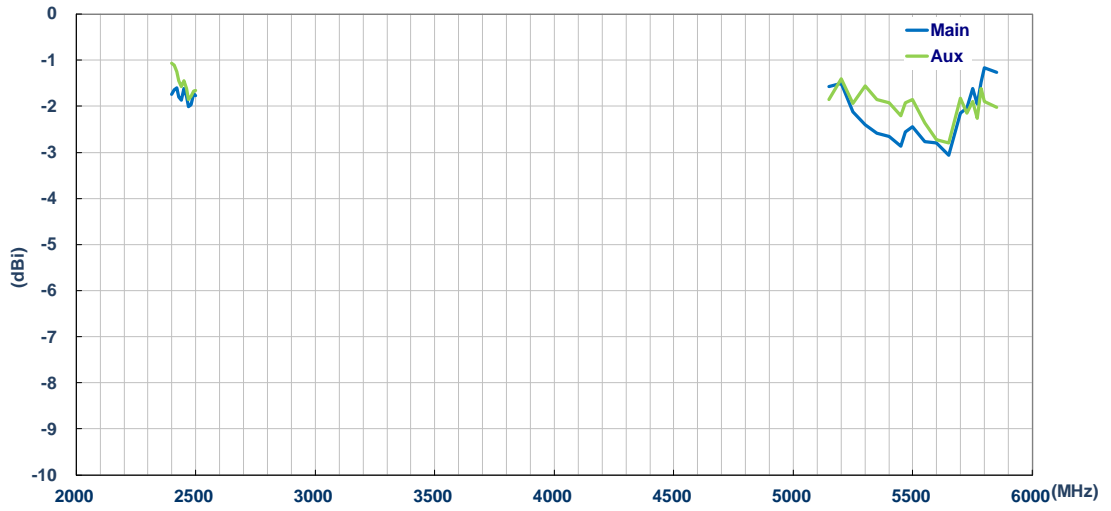
S11 (dB)



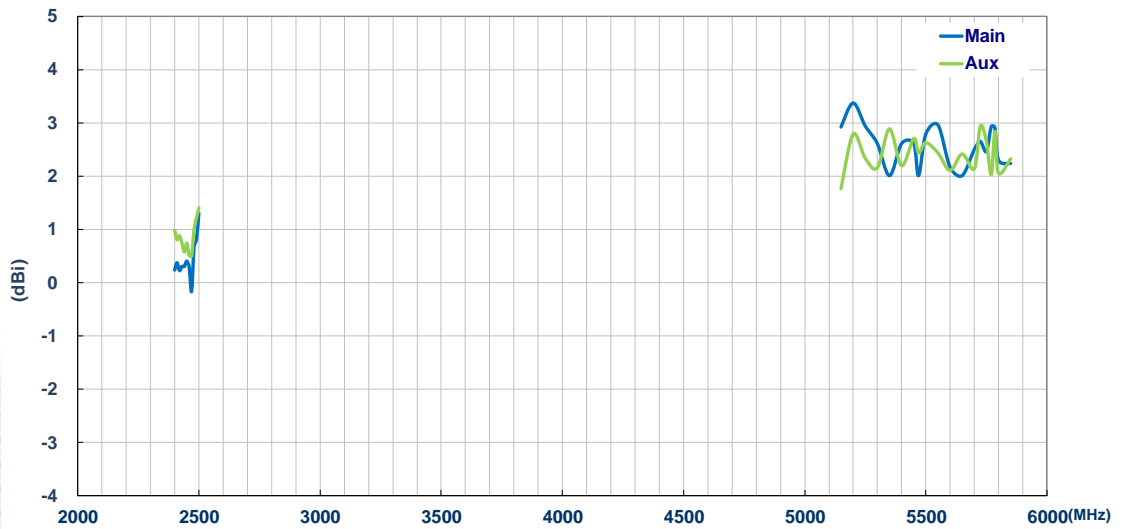
Efficiency (%)



Average Gain (dBi)

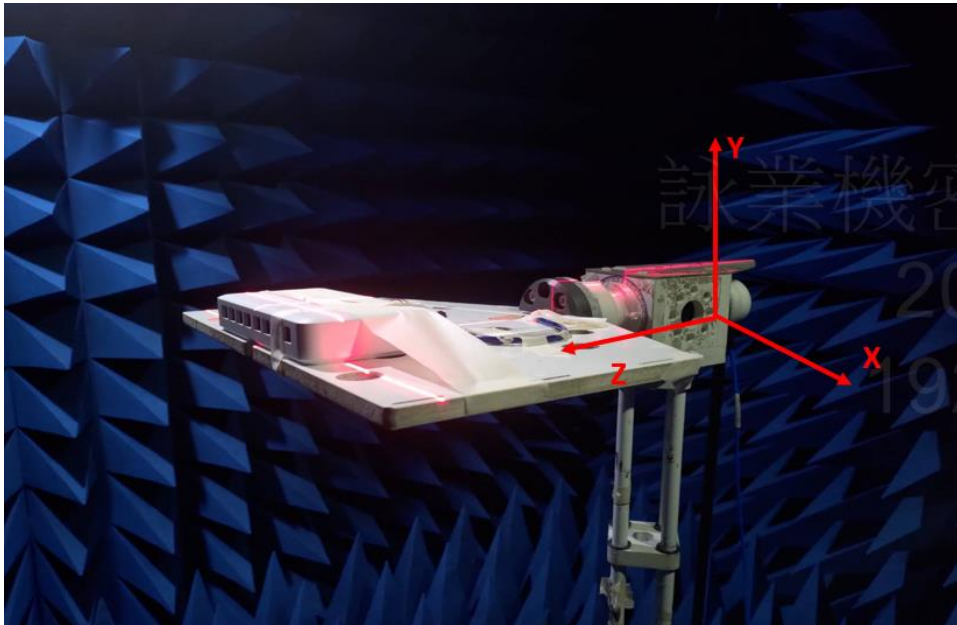


Peak Gain (dBi)



III. Antenna Radiation Pattern Measurement:

The antenna radiation patterns are measured in 3D Anechoic Chamber. The measurement setup is as show below,

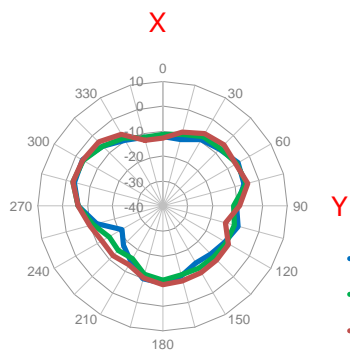


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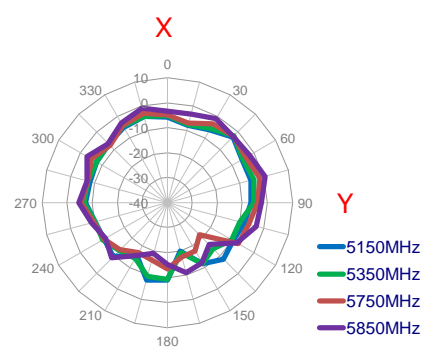
A) 2D Radiation Pattern:

Main

X-Y plane

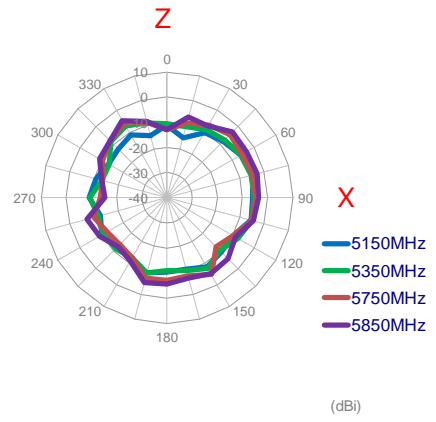
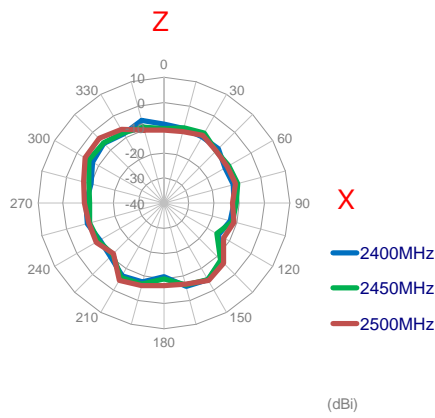


(dBi)

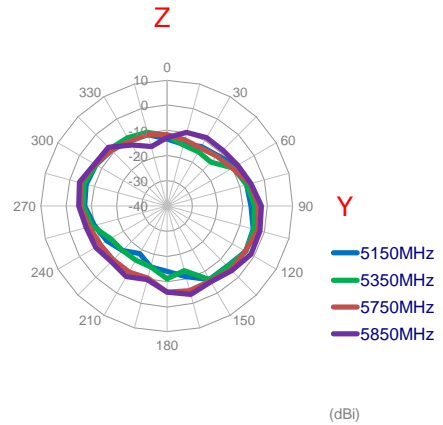
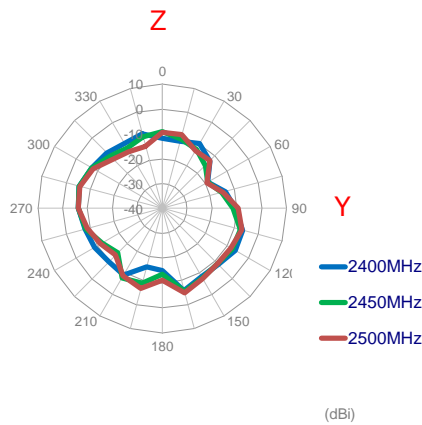


(dBi)

X-Z plane

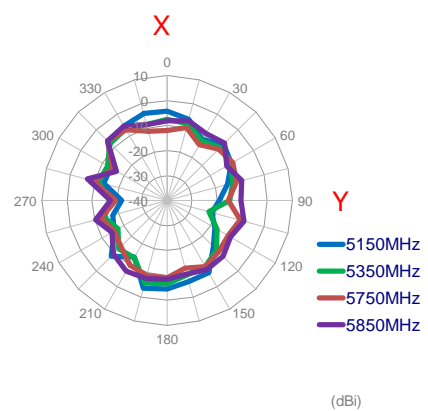
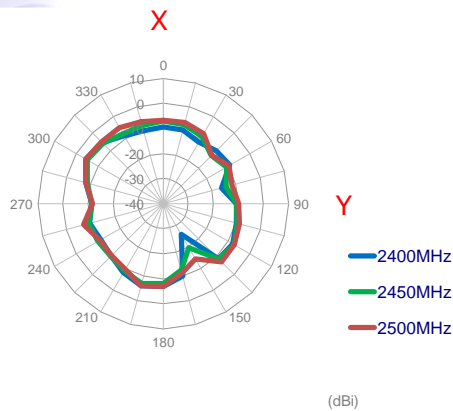


Y-Z plane



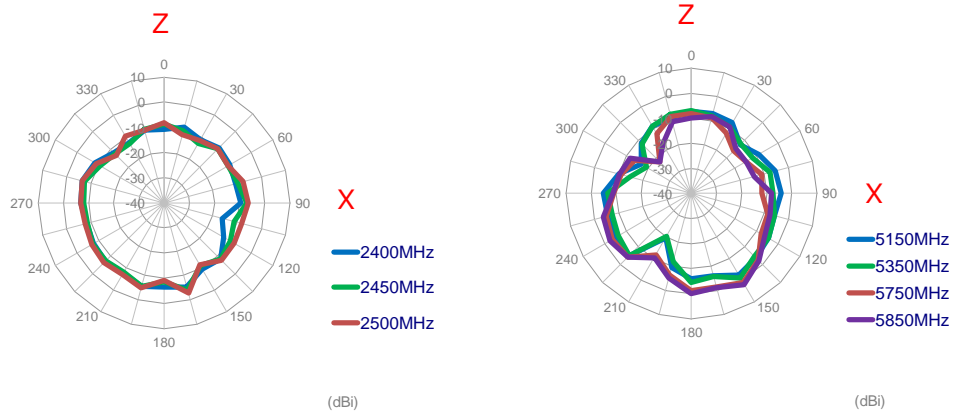
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X-Y plane

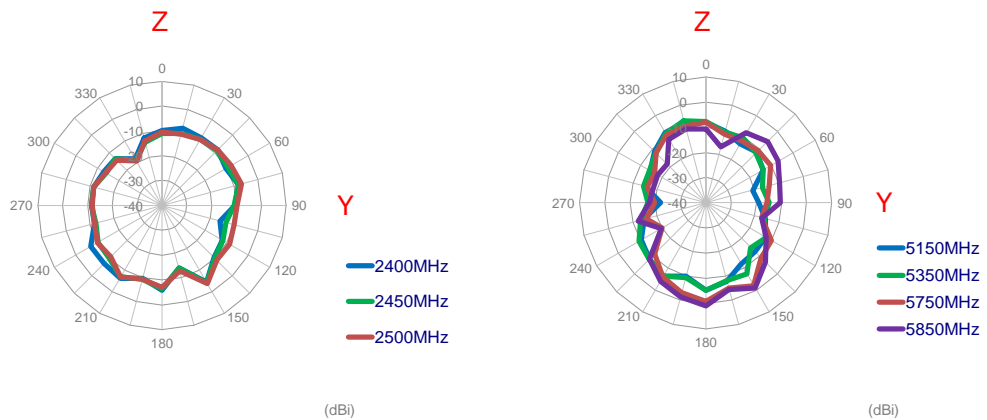


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X-Z plane



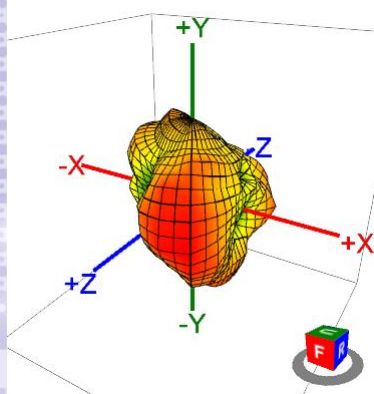
Y-Z plane



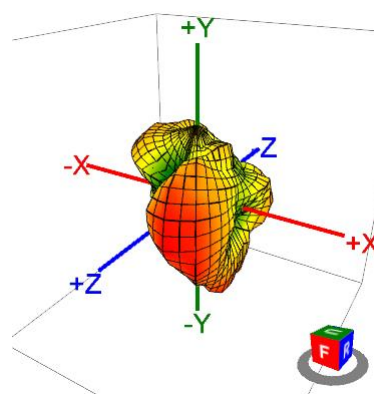
B) 3D Radiation Pattern:

Main

2400MHz

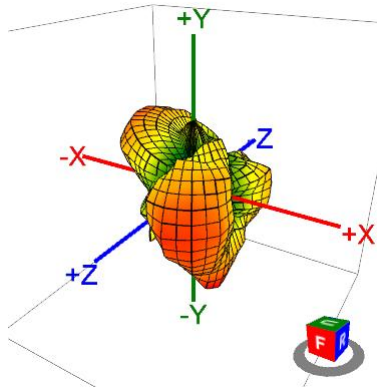


2450MHz

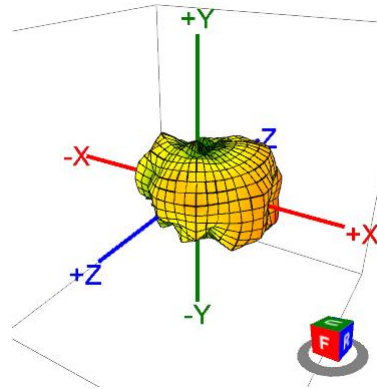


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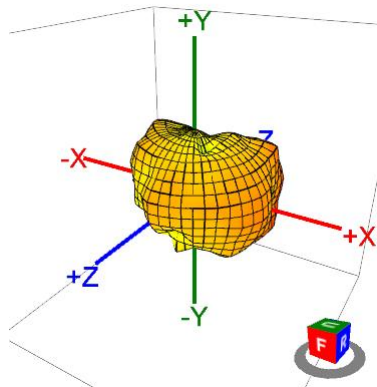
2500MHz



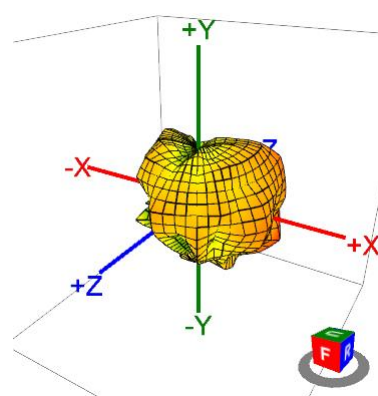
5150MHz



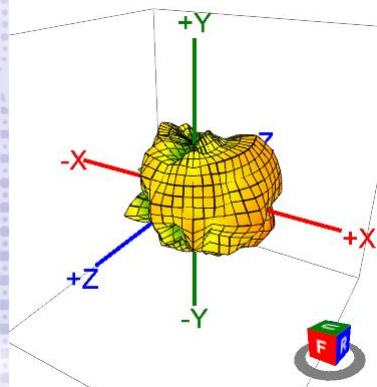
5350MHz



5750MHz



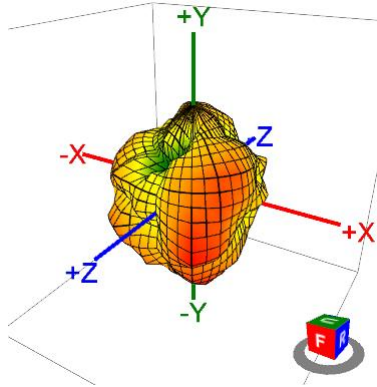
5850MHz



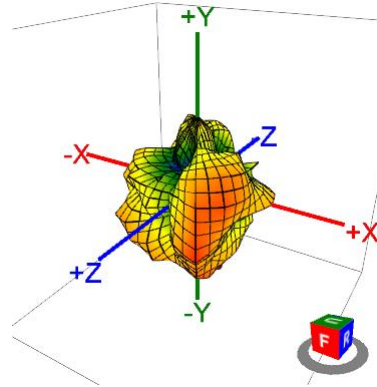
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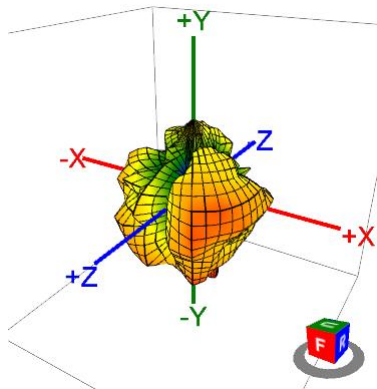
2400MHz



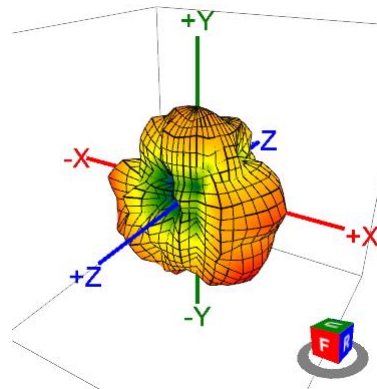
2450MHz



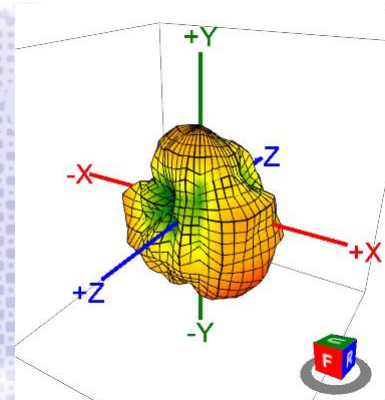
2500MHz



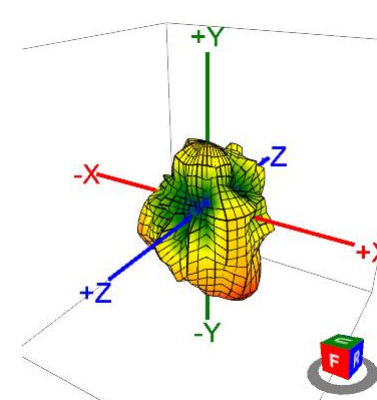
5150MHz



5350MHz

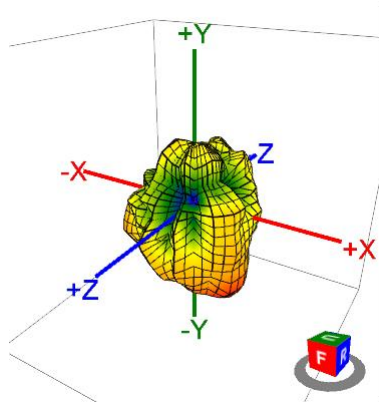


5750MHz

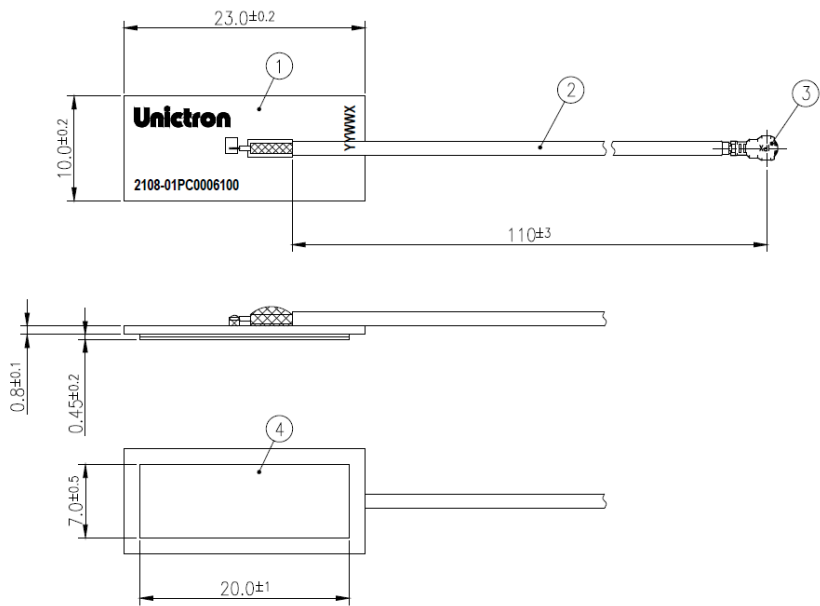


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5850MHz



IV. Mechanical Drawing (Unit:mm):



- Notes :
1. All material must be RoHS compliant.
 2. IP Code : None.

4	Double Adhesive	3M/9888T	White Liner	1
3	IPEX 4L Connector(20632-001R-37)	Copper Alloy	Au Plated	1
2	OD1.37 Coaxial Cable	FEP	Black	1
1	PCB Board	NP-140 (0.8t)	Green	1
No	NAME	MATERIAL	FINISH	QTY

V. Highest Peak Gain with Cable Loss (dBi): [values found in spec sheets]

Antenna vendor Part Number (main & aux parts)	Type	Antenna Vendor	2400	5150	5350	5850	Cable loss	Connector Type	Cable length
Main : PC-W09-01	dipole		1.31	2.92	2.01	2.24	2.4G : 1.63 5G : 2.52	I-PEX MHF4-L	110mm
AUX : PC-W09-01	dipole		1.41	1.77	2.89	2.33	2.4G : 1.63 5G : 2.52	I-PEX MHF4-L	110mm

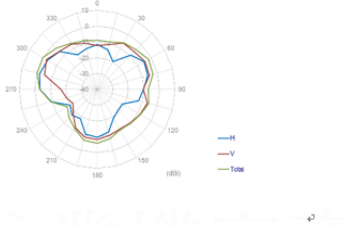
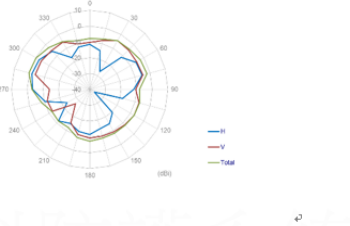
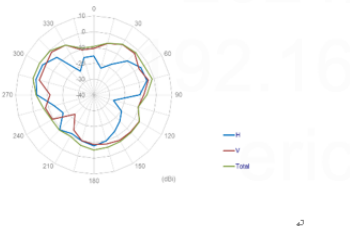
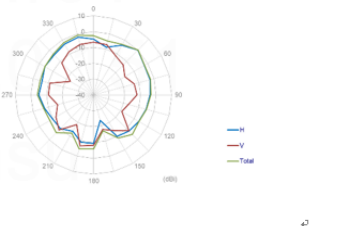
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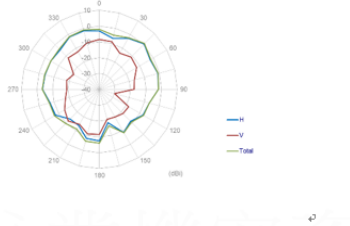
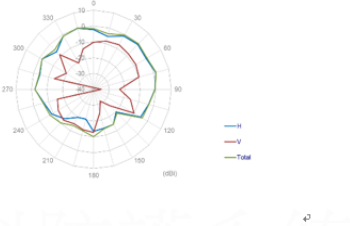
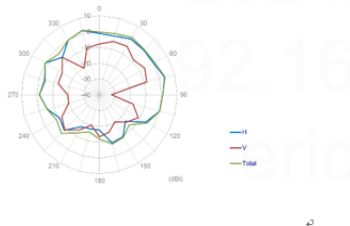


VI. Antenna Gain Data:

Main

Antenna Gain Data					
Frequencies (MHz)	H (dBi)	V (dBi)	Average (dBi)	Peak (dBi)	Efficiency (%)
2400	-1.21	-2.40	-1.74	0.24	66.99
2450	-0.98	-2.30	-1.61	0.41	69.02
2500	0.14	-1.82	-1.77	1.31	66.53
5150	2.91	-5.02	-1.58	2.92	69.50
5350	2.98	-4.10	-2.58	2.01	55.21
5725	3.59	-2.36	-1.61	2.46	69.02
5850	6.17	-1.28	-1.27	2.24	74.64

			
Frequency ^o	2400 MHz ^o	Frequency ^o	2450 MHz ^o
Horizontal (dbi) Peak ^o	-1.21 ^o	Horizontal (dbi) Peak ^o	-0.98 ^o
Vertical (dbi) Peak ^o	-2.4 ^o	Vertical (dbi) Peak ^o	-2.3 ^o
			
Frequency ^o	2500 MHz ^o	Frequency ^o	5150 MHz ^o
Horizontal (dbi) Peak ^o	0.14 ^o	Horizontal (dbi) Peak ^o	2.91 ^o
Vertical (dbi) Peak ^o	-1.82 ^o	Vertical (dbi) Peak ^o	-5.02 ^o

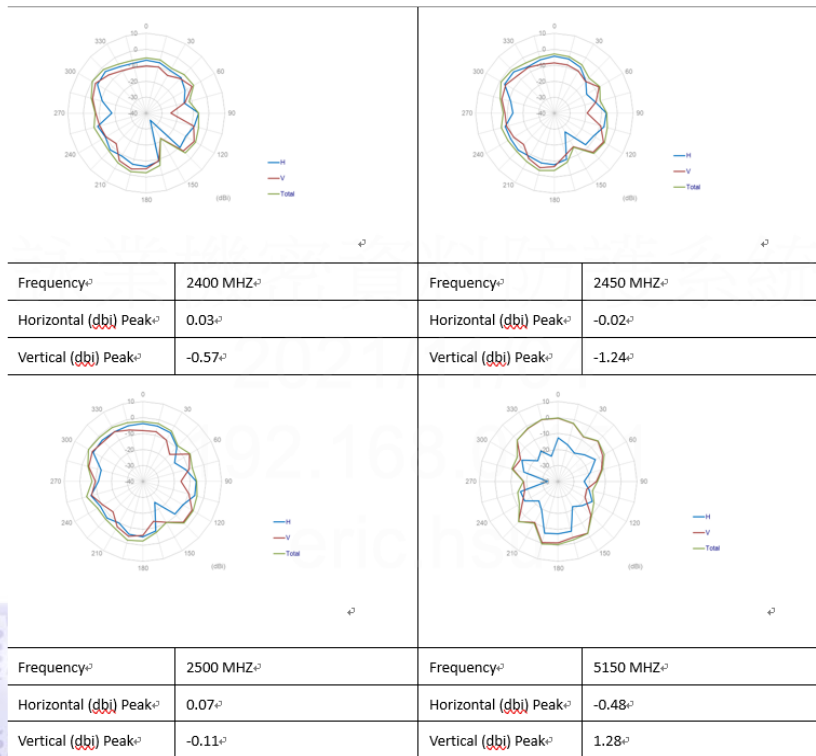
			
Frequency ^o	5350 MHz ^o	Frequency ^o	5725 MHz ^o
Horizontal (dbi) Peak ^o	2.98 ^o	Horizontal (dbi) Peak ^o	3.59 ^o
Vertical (dbi) Peak ^o	-4.1 ^o	Vertical (dbi) Peak ^o	-2.36 ^o
			
Frequency ^o	5850 MHz ^o	Frequency ^o	
Horizontal (dbi) Peak ^o	6.17 ^o	Horizontal (dbi) Peak ^o	
Vertical (dbi) Peak ^o	-1.28 ^o	Vertical (dbi) Peak ^o	

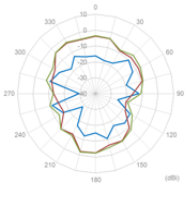
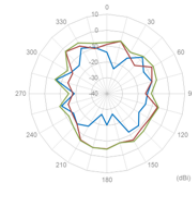
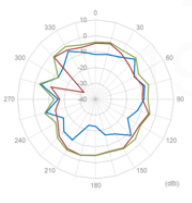

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Antenna Gain Data					
Frequencies (MHz)	H (dBi)	V (dBi)	Average (dBi)	Peak (dBi)	Efficiency (%)
2400	0.03	-0.57	-1.07	0.99	78.16
2450	-0.02	-1.24	-1.44	0.75	71.78
2500	0.07	-0.11	-1.66	1.41	68.23
5150	-0.48	1.28	-1.85	1.77	65.31
5350	-1.25	2.42	-1.85	2.89	65.31
5725	3.03	5.81	-1.89	2.66	64.71
5850	4.92	6.81	-2.02	2.33	62.81



			
Frequency ^o	5350 MHz ^o	Frequency ^o	5725 MHz ^o
Horizontal (dbi) Peak ^o	-1.25 ^o	Horizontal (dbi) Peak ^o	3.03 ^o
Vertical (dbi) Peak ^o	2.42 ^o	Vertical (dbi) Peak ^o	5.81 ^o
			
Frequency ^o	5850 MHz ^o	Frequency ^o	
Horizontal (dbi) Peak ^o	4.92 ^o	Horizontal (dbi) Peak ^o	
Vertical (dbi) Peak ^o	6.81 ^o	Vertical (dbi) Peak ^o	

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