



## **Antenna Report**

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## 1. Antenna Information

### 1.1. Antenna Mode and Brand

Ant.	WLAN 6GHz	Brand	Mode Name	Antenna Type	Connector
1	1	WNC	81XKAC15.GFD	Dipole	I-PEX
2	2	WNC	81XKAC15.GFE	Dipole	I-PEX
3	3	WNC	81XKAC15.GFF	Dipole	I-PEX
4	4	WNC	81XKAC15.GFG	Dipole	I-PEX

**Antenna Brand and address:** Wistron NeWeb Corporation , 20 Park Avenue II (or Yuanchiu 2nd Rd.), Hsinchu Science Park, Hsinchu 300, Taiwan

## 2. Measurement setup info. & test method, Test Procedure

### 2.1. Antenna Configuration

Model Name: LCS3

Address: 20 Park Avenue II, Hsinchu Science Park, Hsinchu

Test personal name: Harry Lin

Test equipment: MVG SG64 multi-probe chamber

Test software: NPAC Spherical Measurement V1.5.4

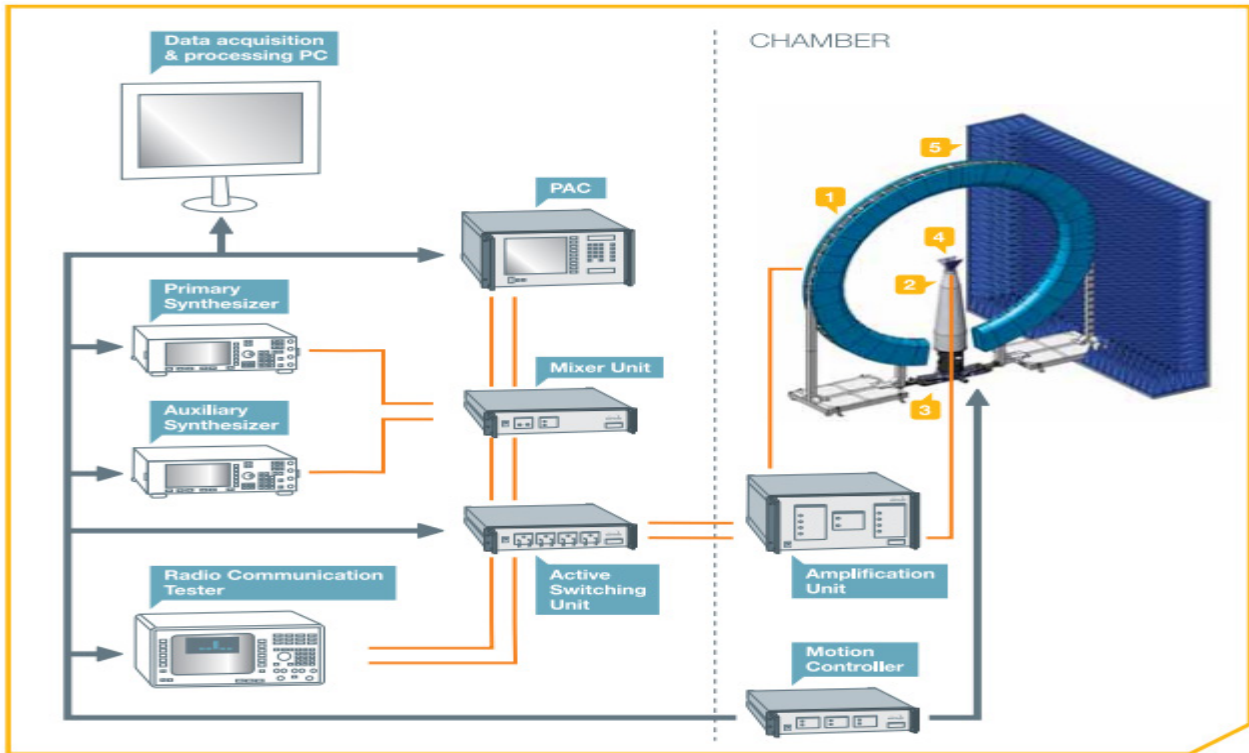
Test description: DUT place in SG64 chamber, and run the antenna passive measurement.

### 2.2. Test equipment list

MVG SG64 Measurement System

Item	Device	Type/Model	Serial#	Manufacturer	Cal.Date	Cal.Due Date
1	SG64 Chamber	Standard	SG64	MVG	2022/6/15	2023/6/1
2	Turn Table	Customization	-	Machinery Dept.	N/A	N/A
3	New Probe Array Controller	N/A	1102341-4535	MVG	N/A	N/A
4	Power Supply Unit	N/A	1103211-13204	MVG	N/A	N/A
5	Active Switching Unit	N/A	1102347-7214	MVG	N/A	N/A
6	TX Amplification Unit	N/A	1102527-5909	MVG	N/A	N/A
7	RX Amplification Unit	N/A	1102536-3823	MVG	N/A	N/A
8	Transfer Switching Unit	N/A	1102183-3351	MVG	N/A	N/A
9	Mixer Unit	N/A	1102545-7208	MVG	N/A	N/A
10	Power And Control Unit	N/A	1102706-7209	MVG	N/A	N/A
11	Cable 13.7m - 400MHz to 18GHz	SS402	00100A1F5A1XXS	Woken	2022/6/15	2023/6/1
12	Temperature & Humidity Meter	HTC-01	-	Metravi	N/A	N/A

## 2.3. Test Method



Measurement antenna : Dual Polarization Horn antenna

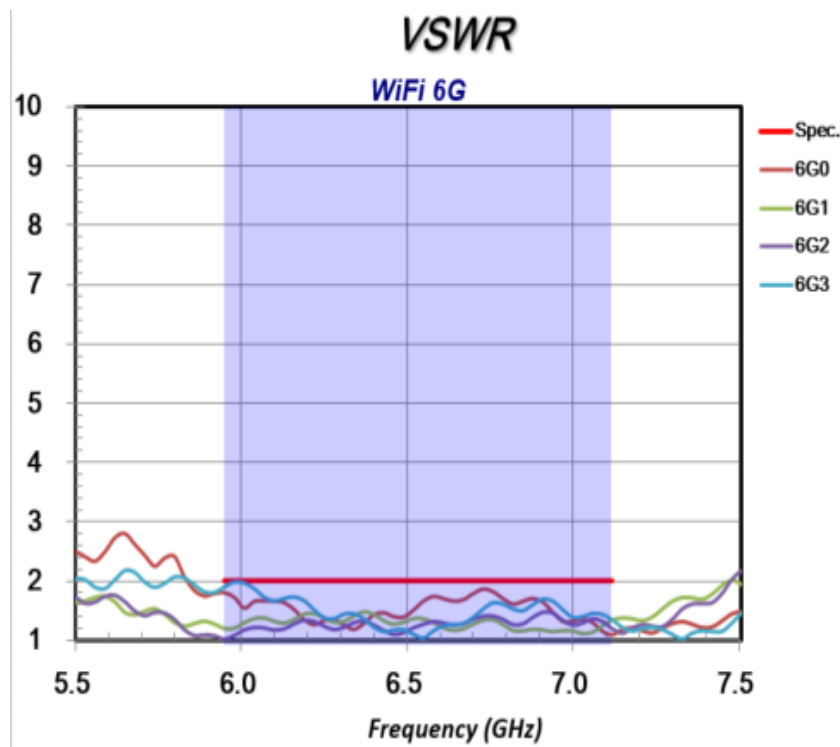
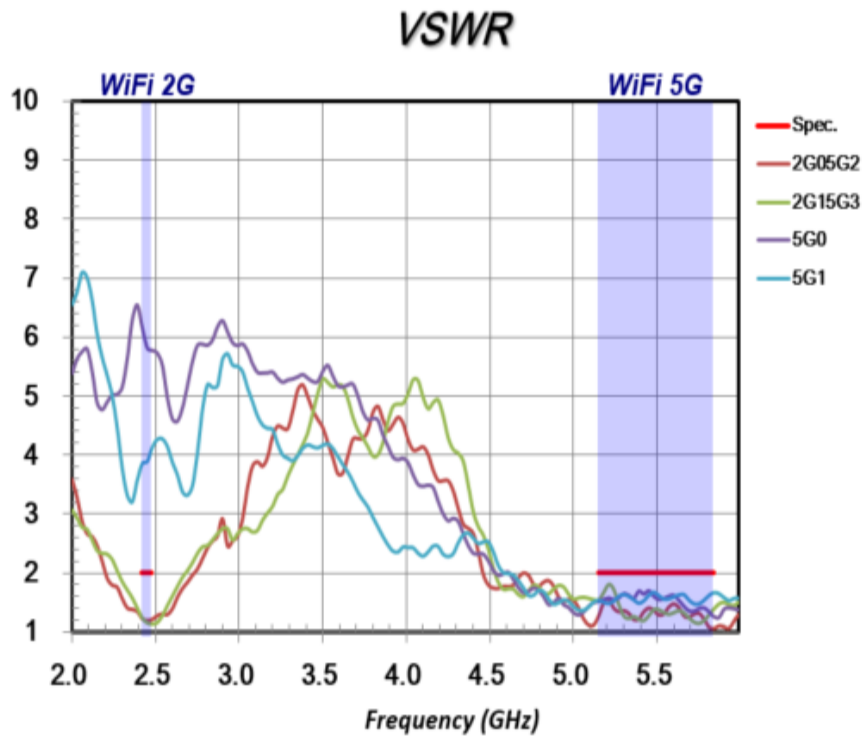
Turntable: Phi-axis

Ring :Theta-axis

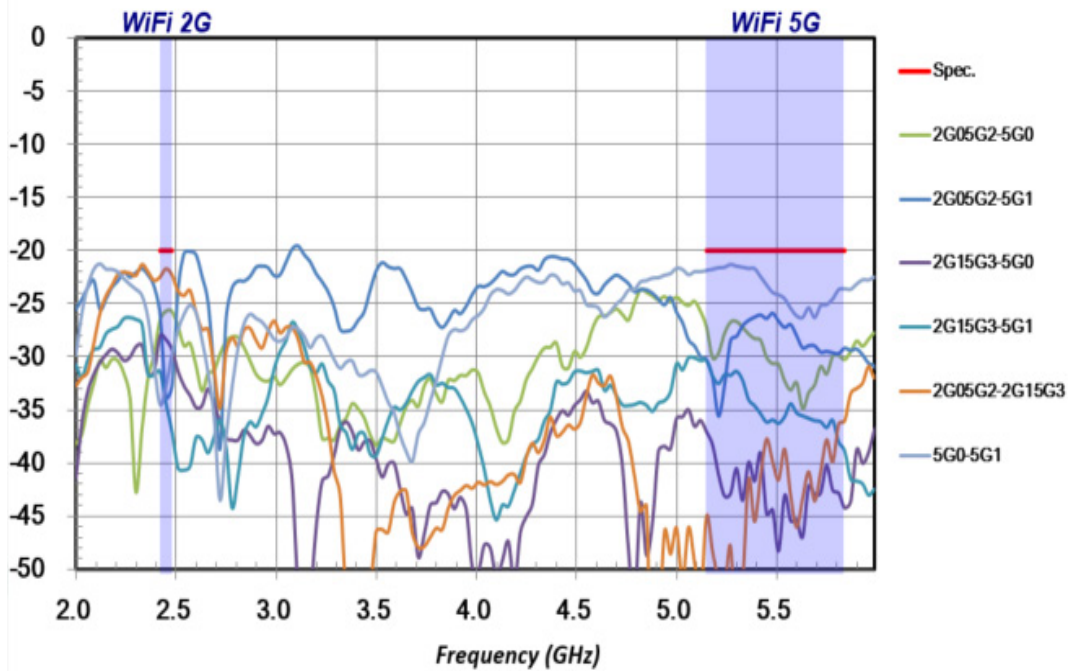
EUT set on multi-axis positioner and adjust EUT's physical center to measurement reference center. Measurement antenna set at phi polarization and 1.5 meter height. Port 1 of Network analyzer connect to antenna 1 of EUT. Record G value every 3 degree from 0 to 357 degree on Phi angle and 0 to 180 on Theta angle of single axis positioner. Then set measurement antenna to theta polarization and repeat process. Repeat process to each antenna of EUT.

## 3. Test Result

### 3.1. VSWR & ISO

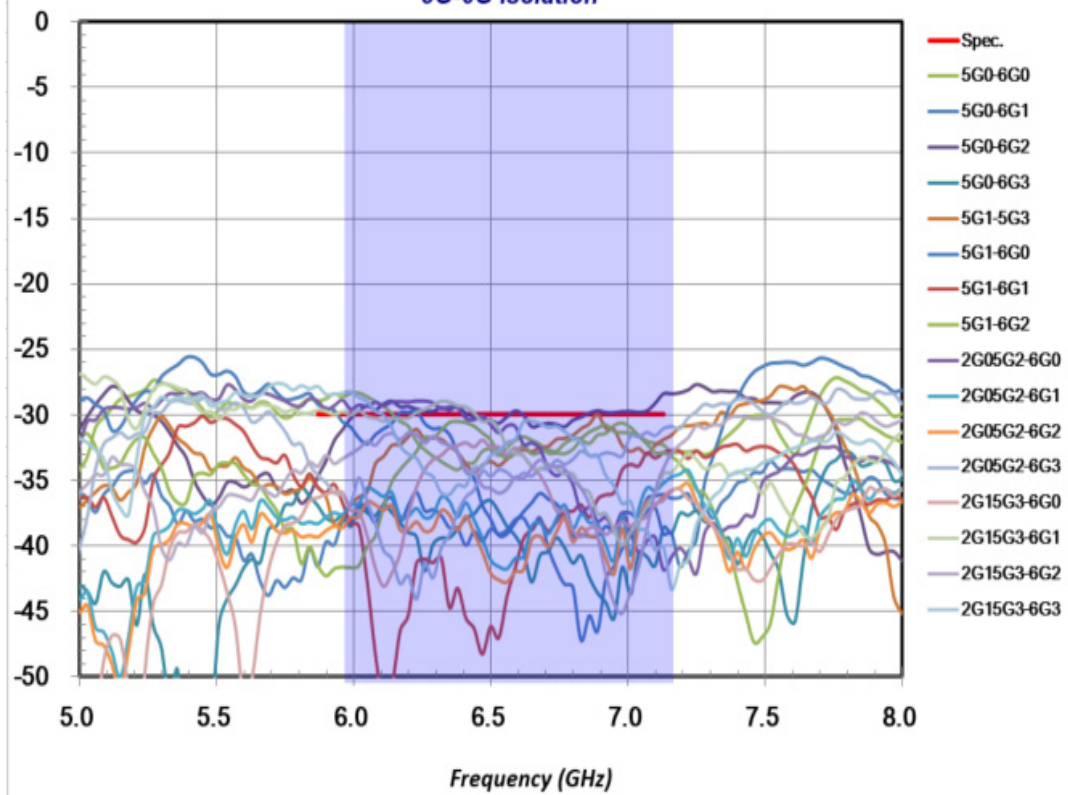


## Dual to 5G



## 2G/5G to 6G

### 5G-6G isolation



## 3.2. Antenna gain

		2400	2450	2500	Avg.	5150	5350	5550	5750	5850	Avg.
2G05G2	Avg. Gain	-1.49	-1.43	-1.43		-1.43	-1.49	-1.31	-1.49	-1.49	
	Peak Gain	3.28	3.10	3.32		4.36	4.55	4.80	4.51	4.48	
2G15G3	Avg. Gain	-1.55	-1.49	-1.43		-1.55	-1.55	-1.49	-1.37	-1.49	
	Peak Gain	3.15	3.44	3.31		3.56	4.46	4.18	4.96	4.33	

		5150	5350	5550	5750	5850	Avg.
5G0	Avg. Gain	-1.55	-1.49	-1.49	-1.55	-1.55	
	Peak Gain	5.21	5.50	5.47	5.36	5.31	
5G1	Avg. Gain	-1.49	-1.37	-1.43	-1.43	-1.55	
	Peak Gain	4.71	4.78	4.89	4.95	5.40	

		UNII-5 5925~6425	UNII-6 6245~6525	UNII-6 6525~6875	UNII-7 6875~7125	Avg.
6G0 (81XKAC15.GFD)	Avg. Gain	-1.87	-1.67	-1.37	-1.74	
	Peak Gain	3.00	3.70	3.11	3.23	
6G1 (81XKAC15.GFE)	Avg. Gain	-1.67	-1.61	-1.49	-1.67	
	Peak Gain	3.68	3.56	3.60	3.60	
6G2 (81XKAC15.GFF)	Avg. Gain	-1.61	-1.37	-1.61	-1.74	
	Peak Gain	4.75	4.70	4.90	4.93	
6G3 (81XKAC15.GFEG)	Avg. Gain	-1.55	-1.43	-1.67	-1.61	
	Peak Gain	4.84	4.55	4.21	3.93	

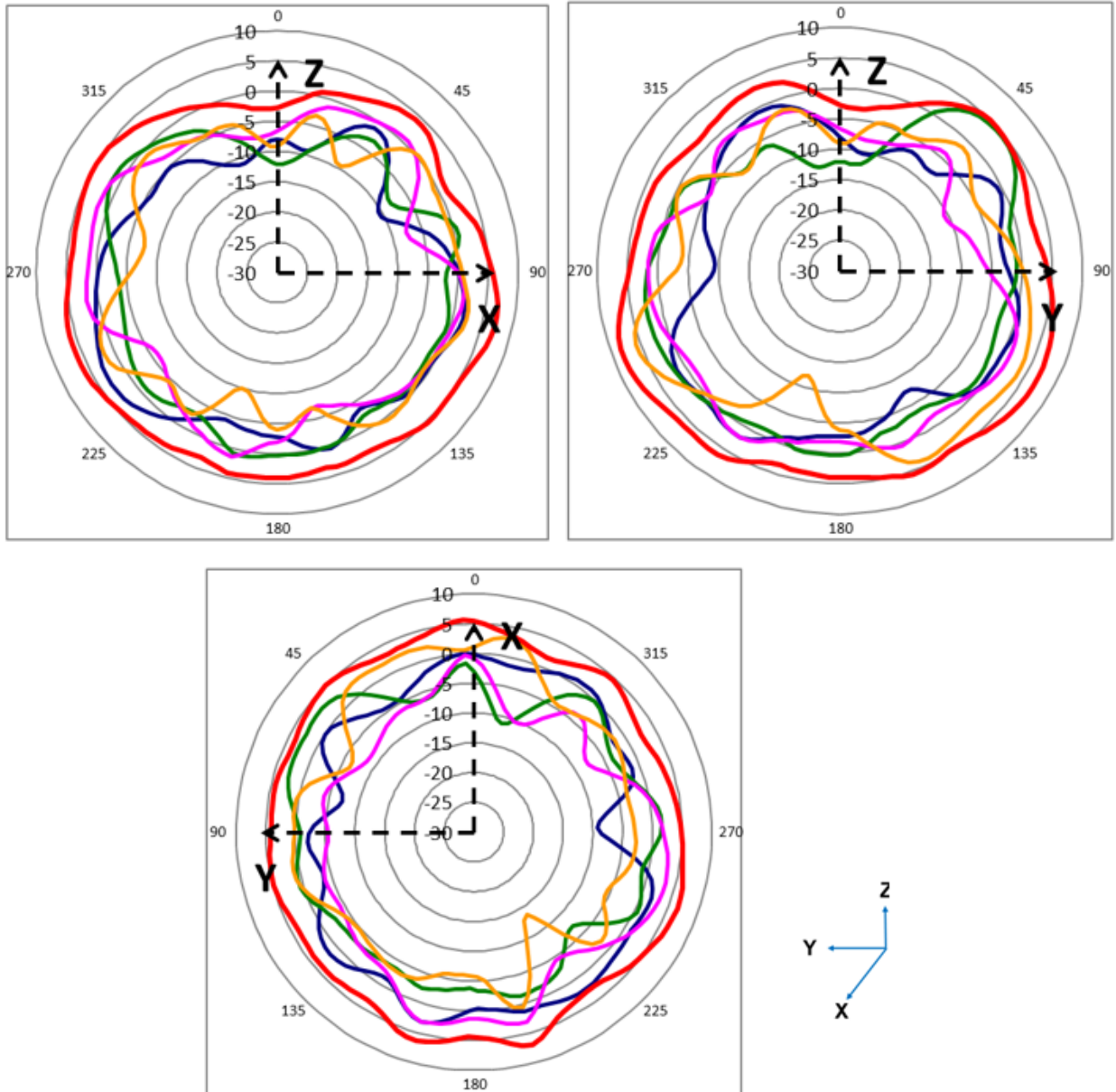
Freq[Hz]	UNII-5 5925~6425	UNII-6 6245~6525	UNII-7 6525~6875	UNII-8 6875~7125
Ant 6G0 Max Gain(dBi)	3	3.7	3.11	3.23
Ant 6G1 Max Gain(dBi)	3.68	3.56	3.6	3.6
Ant 6G2 Max Gain(dBi)	4.75	4.7	4.9	4.93
Ant 6G3 Max Gain(dBi)	4.84	4.55	4.21	3.93
Ant 6G0 Polarization/ $\theta$ ( $^\circ$ )/ $\varphi$ ( $^\circ$ )	theta/75/105	theta/75/105	theta/75/105	theta/75/285
Ant 6G1 Polarization/ $\theta$ ( $^\circ$ )/ $\varphi$ ( $^\circ$ )	theta/60/150	theta/60/150	theta/60/150	phi/75/285
Ant 6G2 Polarization/ $\theta$ ( $^\circ$ )/ $\varphi$ ( $^\circ$ )	theta/45/105	theta/120/285	theta/105/285	Phi/30/345
Ant 6G3 Polarization/ $\theta$ ( $^\circ$ )/ $\varphi$ ( $^\circ$ )	theta/75/345	theta/75/345	theta/75/180	theta/75/180
Max Gain(dBi)	4.84	4.7	4.9	4.93

Above Peak Gain= on board antenna peak gain-path loss+ Chamber's receiving RX peak gain.

## 3.3. Radiation Pattern

### UNII-8 Radiation Pattern

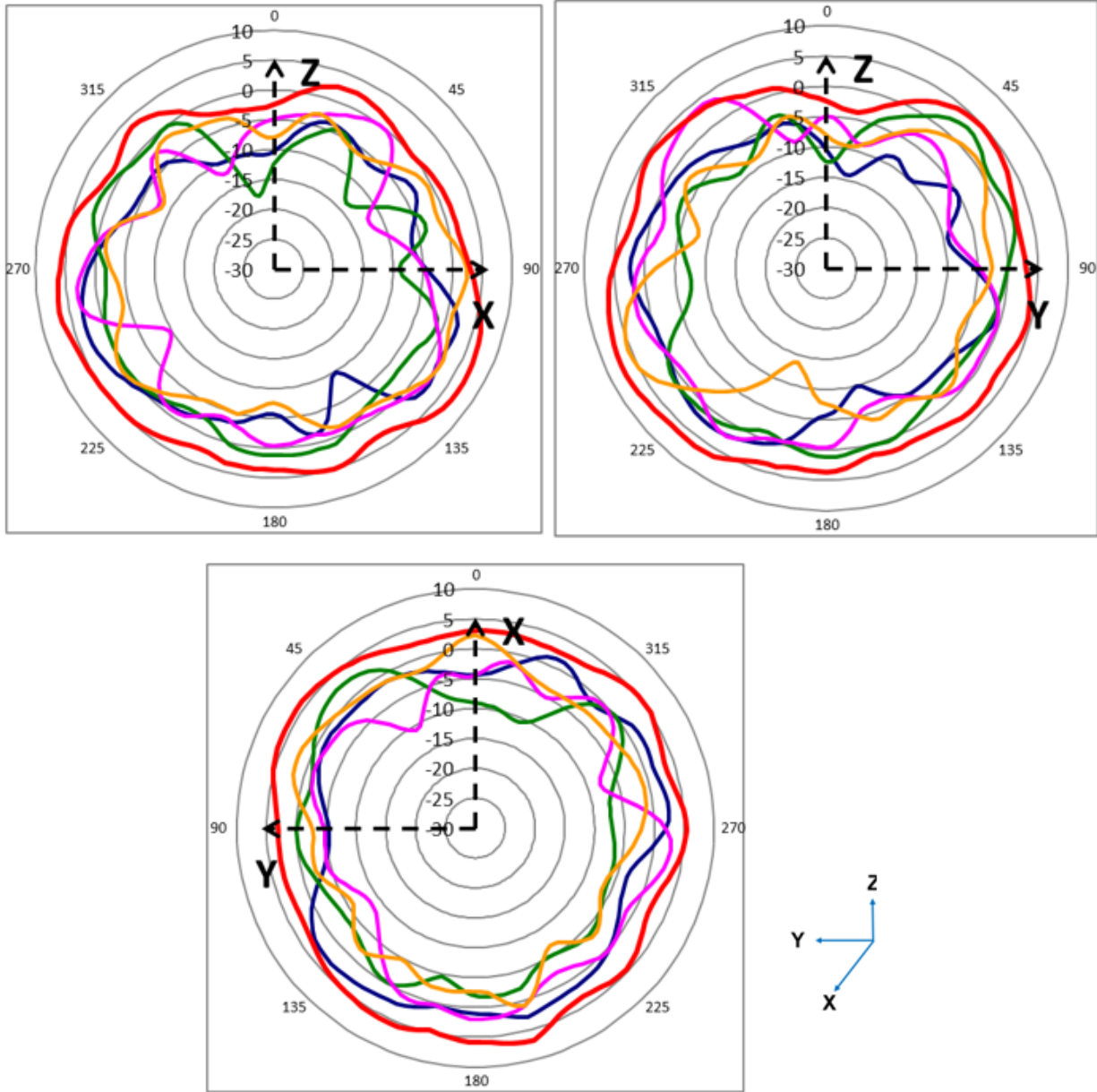
- Directional Gain
- 6G3
- 6G2
- 6G1
- 6G0





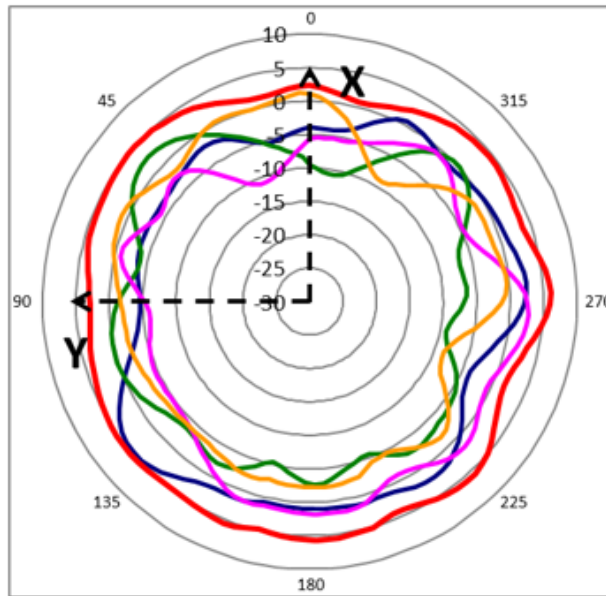
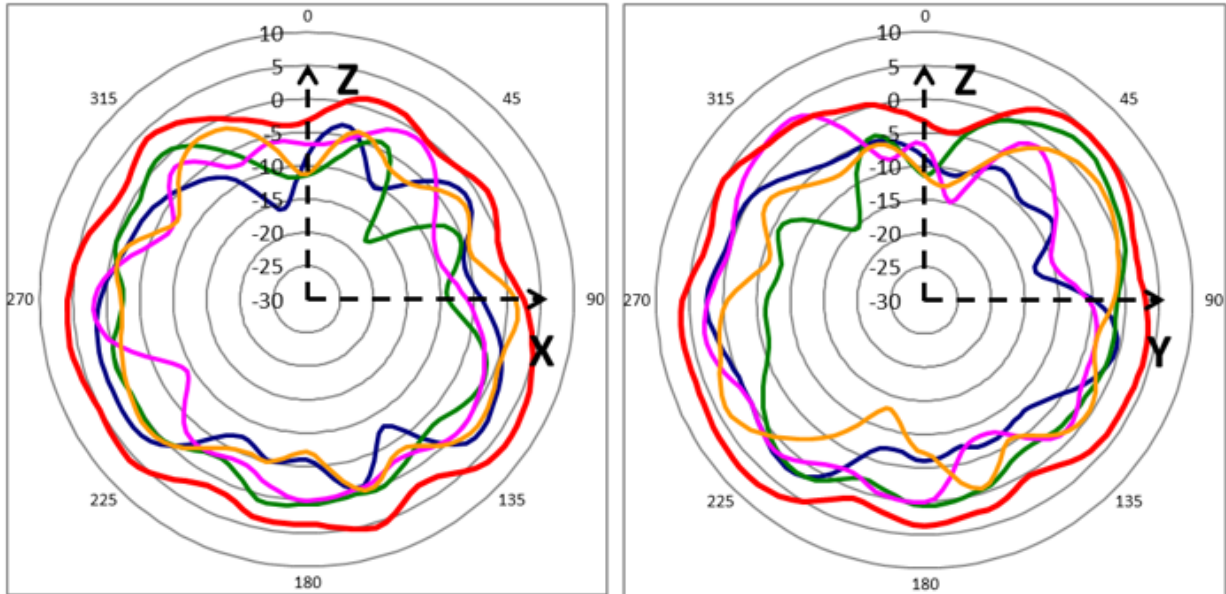
## UNII-7 Radiation Pattern

- Directional Gain
- 6G3
- 6G2
- 6G1
- 6G0



## UNII-6 Radiation Pattern

- Directional Gain
- 6G3
- 6G2
- 6G1
- 6G0



## UNII-5 Radiation Pattern

- Directional Gain
- 6G3
- 6G2
- 6G1
- 6G0

