

Antenna Placement for LS06

2023/04/25



Smarter Solutions for a Smarter Future

Agenda

- **Summary**
- **Antenna Configuration**
- **Test equipment list**
- **Test Method**
- **Antenna Placement**
- **Efficiency**
- **VSWR / Isolation**



Antenna

■ Model Name / Type

Antenna	Model Name	Description
WLAN1	95XKAC15.GG7	LS06, DUAL_1, ANTENNA, 1.37 LL, BLACK, XKAC-T55
WLAN2	95XKAC15.GG8	LS06, DUAL_2, ANTENNA, 1.37 LL, WHITE, XKAC-T55
DECT	95XKAC15.GG9	LS06, DECT, ANTENNA, 1.37 LL, RED, XKAC-T55

■ Manufacture / Address

- 啟基永昌通訊(昆山)有限公司
- 地址: 江蘇省昆山市精密機械產業園杜鵑路121號
- WebCom Communication (Kunshan) Corporation - Kunshan Plant
- Address: 121 DuJuan Rd., Precision Machinery Industrial Park, KunShan City, Jiangsu Province, P.R.C



Summary

■ WNC propose

- WLANx2 (Dual band antenna) for 2 elements design (PCB+Metal)
- DECT antenna for 1 element design (PCB+Metal)

■ WiFi Antenna Measured results as below

- VSWR 2:1 for all antennas
- $Y=7\text{mm}+3\text{mm}/Z=4.5\text{mm}$ with isolator Efficiency:

Average 61% for WiFi 2.4GHz,

average 62% for WiFi 5GHz,

Average 62% for DECT antenna ,

■ Isolation

WLAN1→WLAN2 : Dect Band> 40dB , 2G> 26dB , 5G> 27dB

WLAN1→Dect : Dect Band> 27dB , 2G> 26dB , 5G> 30dB

Dect→WLAN2 : Dect Band> 28dB , 2G> 32dB , 5G> 32dB



Antenna Configuration

Model Name: LS06

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

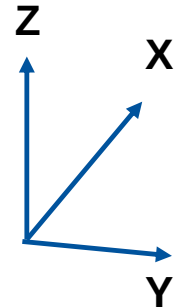
Test personal name: Harry Lin

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.

Test Photo: Please refer as Annex Test Photo.

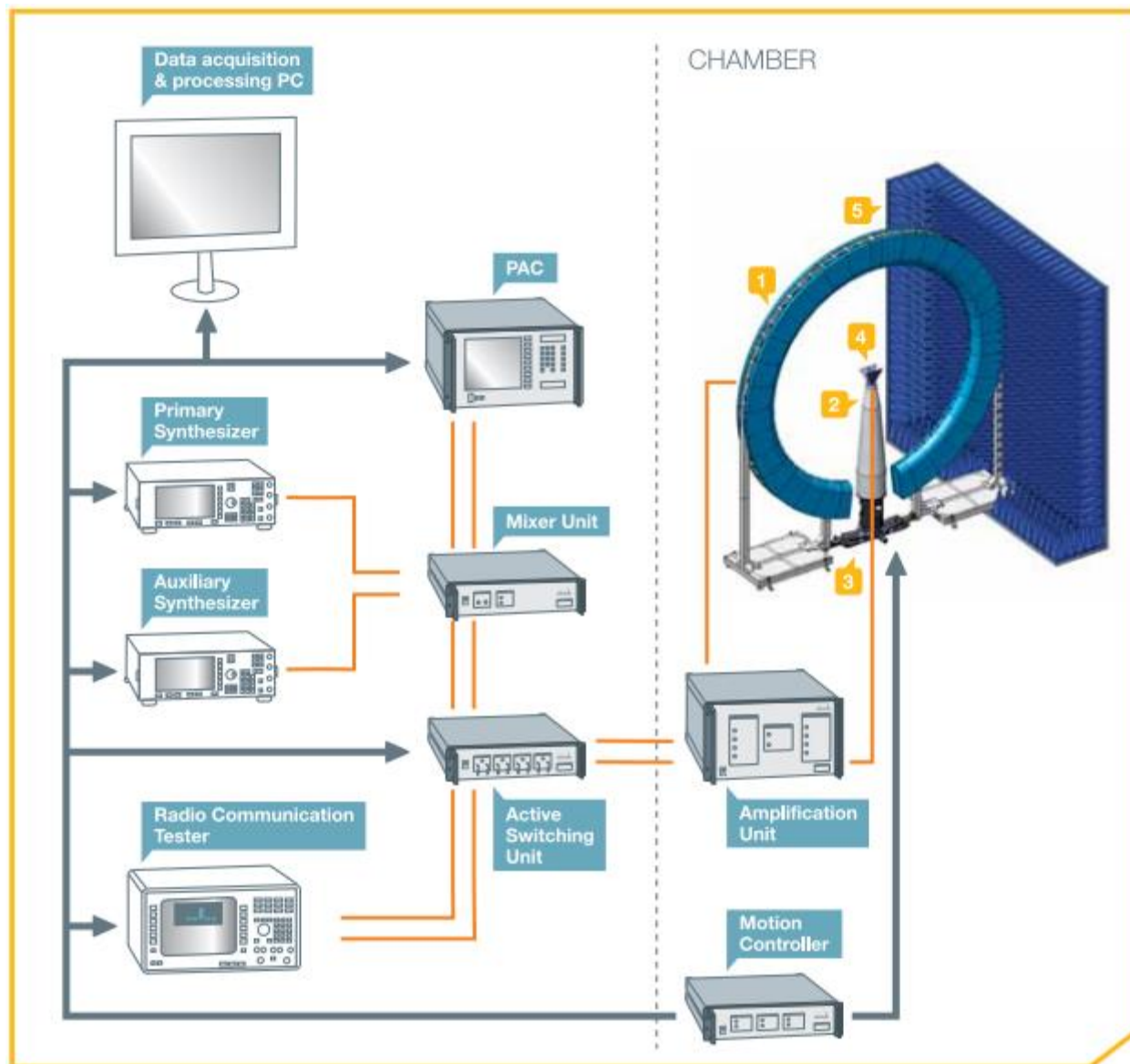


Test equipment list

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

Test Method



Antenna Placement

Please refer to LS06 Antenna Annex Test Setup

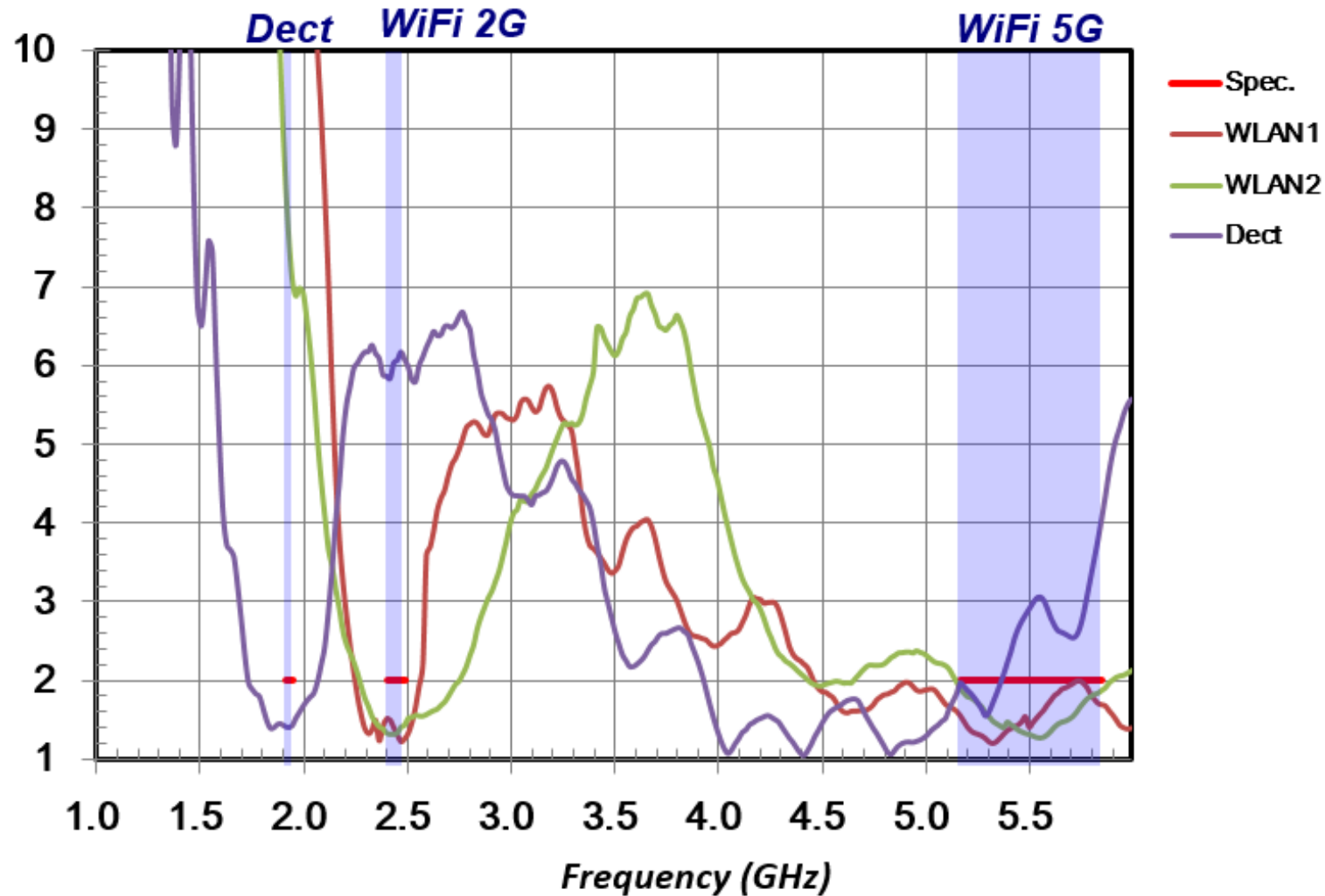


Efficiency / Peak Gain

2/22		2400	2450	2500	Avg.	5150	5550	5850	Avg.
WLAN1	Eff.	60%	62%	61%	61%	62%	61%	60%	61%
	Avg. Gain	-2.22	-2.08	-2.15		-2.08	-2.15	-2.22	
	Peak Gain	1.92	2.07	1.84		3.62	2.94	3.41	
WLAN2	Eff.	60%	61%	60%	60%	63%	63%	61%	62%
	Avg. Gain	-2.22	-2.15	-2.22		-2.01	-2.01	-2.15	
	Peak Gain	2.16	2.55	2.80		3.95	2.92	3.42	
		1920	1925	1930	Avg.				
DECT	Eff.	61%	63%	63%	62%				
	Avg. Gain	-2.15	-2.01	-2.01					
	Peak Gain	1.88	1.67	1.73					

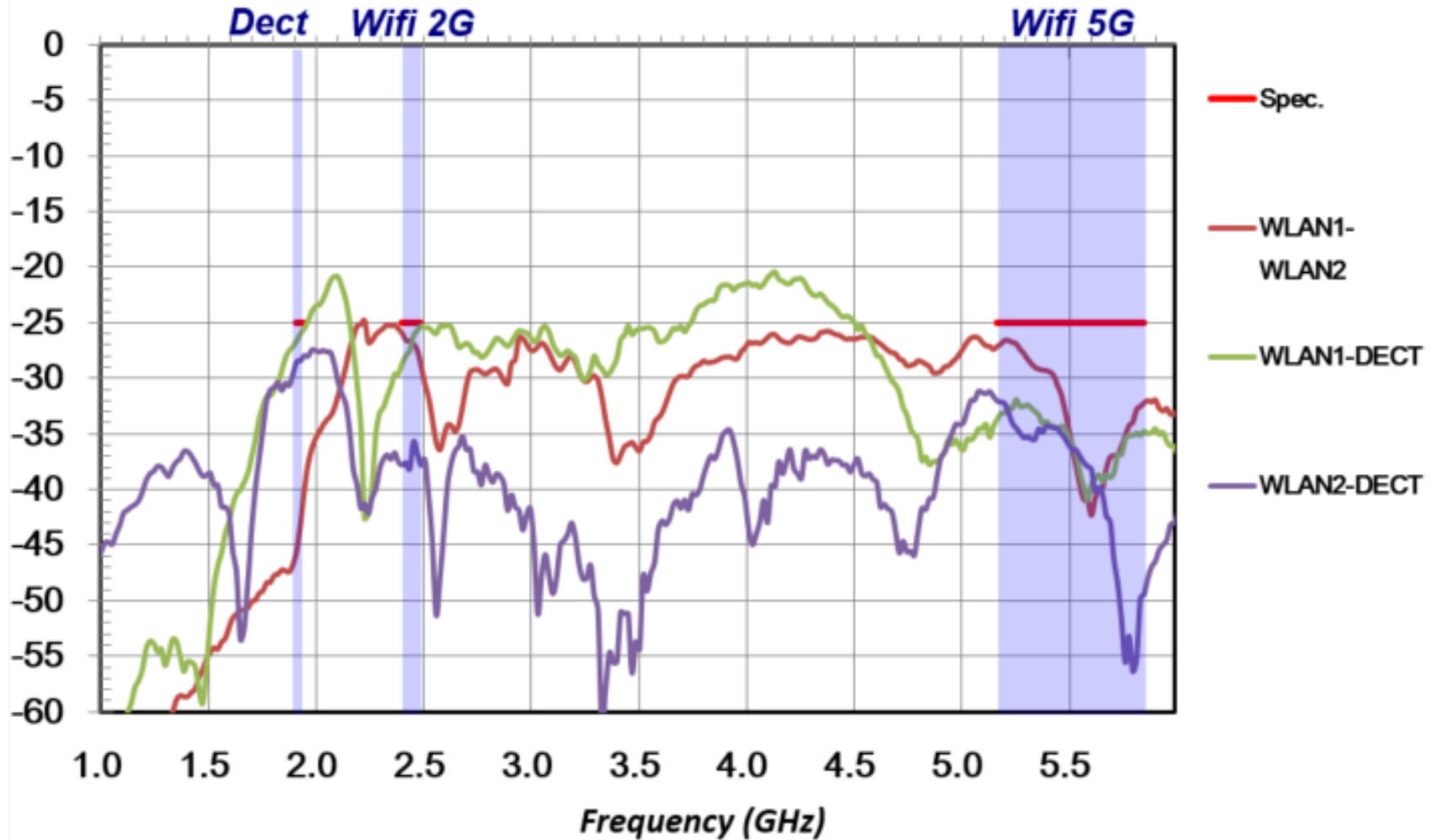
Unit, Avg. Gain [dBi], Peak Gain [dBi]

LS06 VSWR

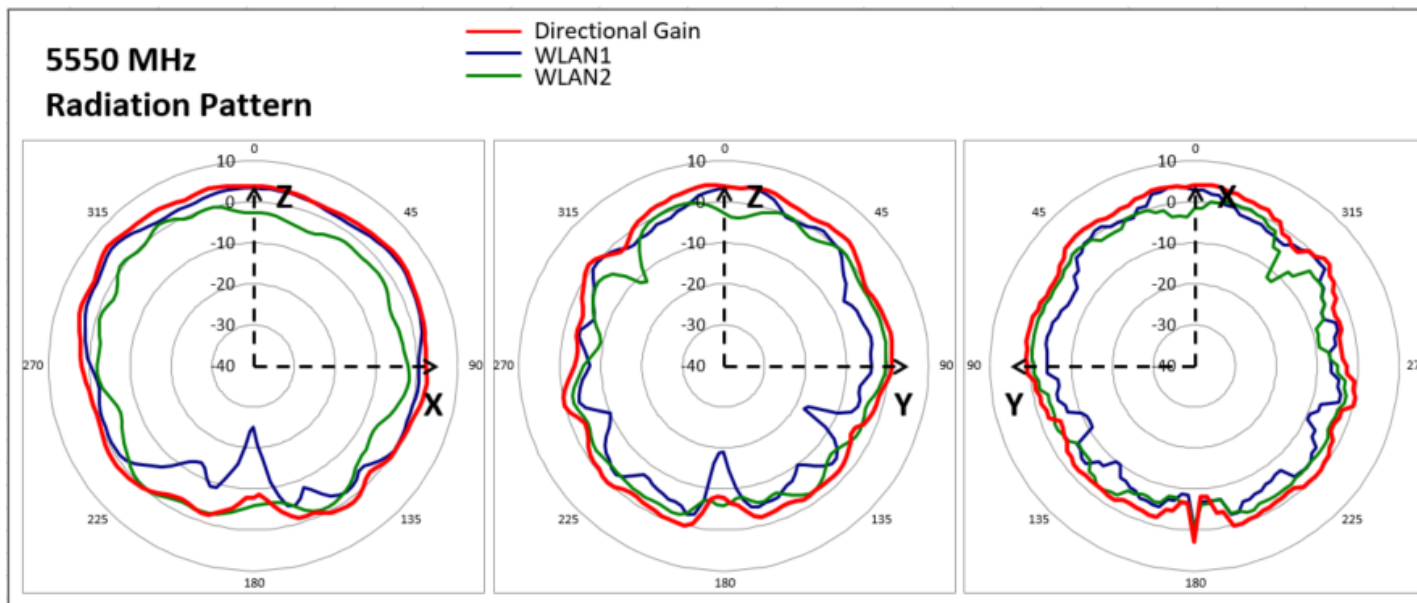
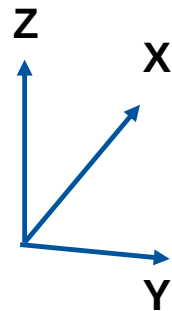
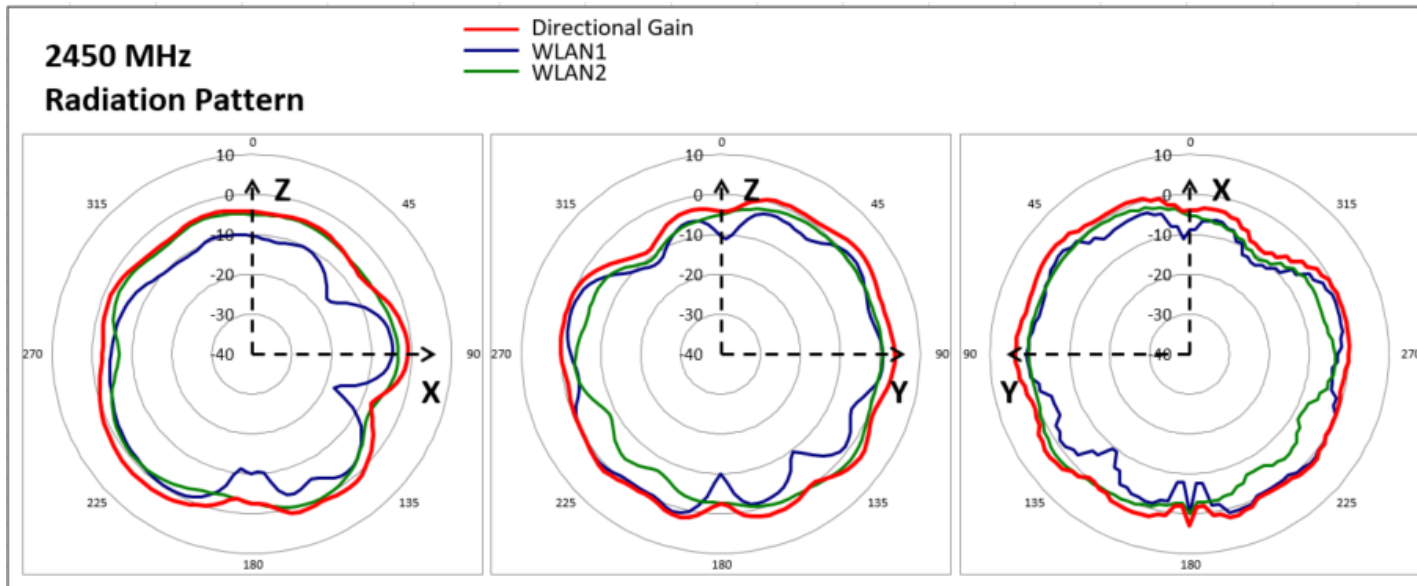


Isolation PCB+Metal

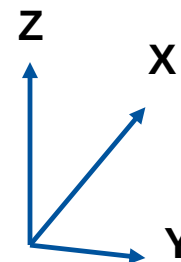
isolation



Antenna Pattern



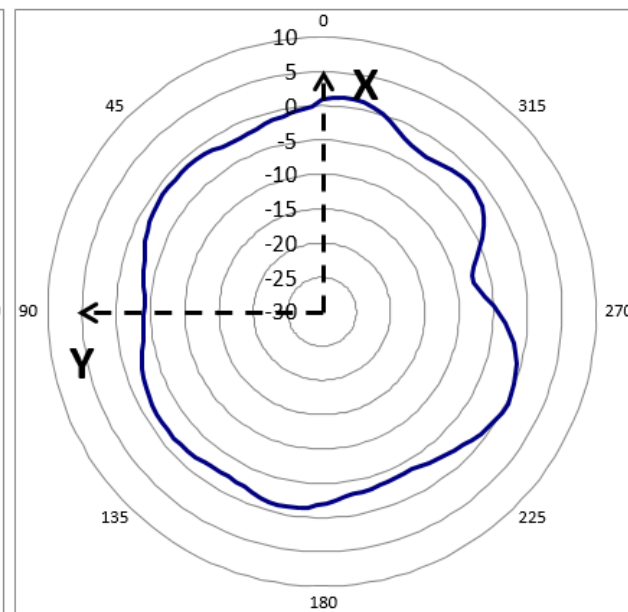
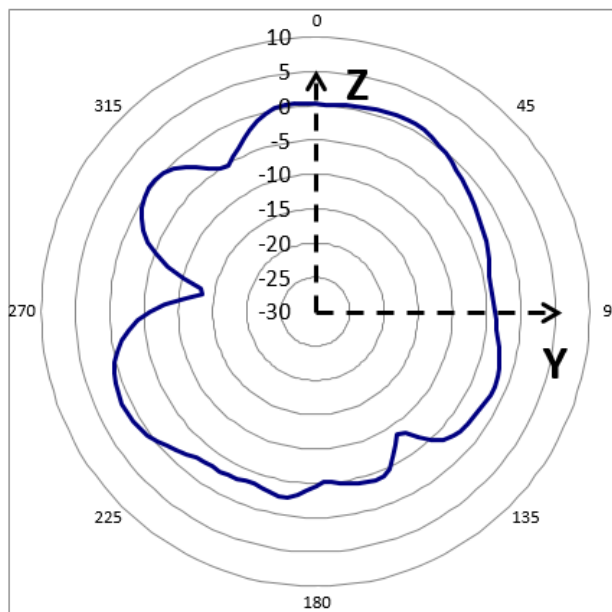
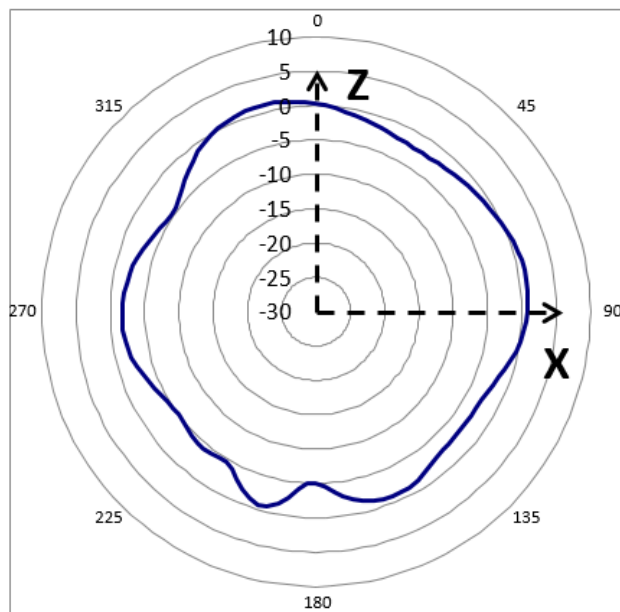
Antenna Pattern-DECT



1920 MHz

Radiation Pattern

— DECT



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