



Vision Antenna Test Report

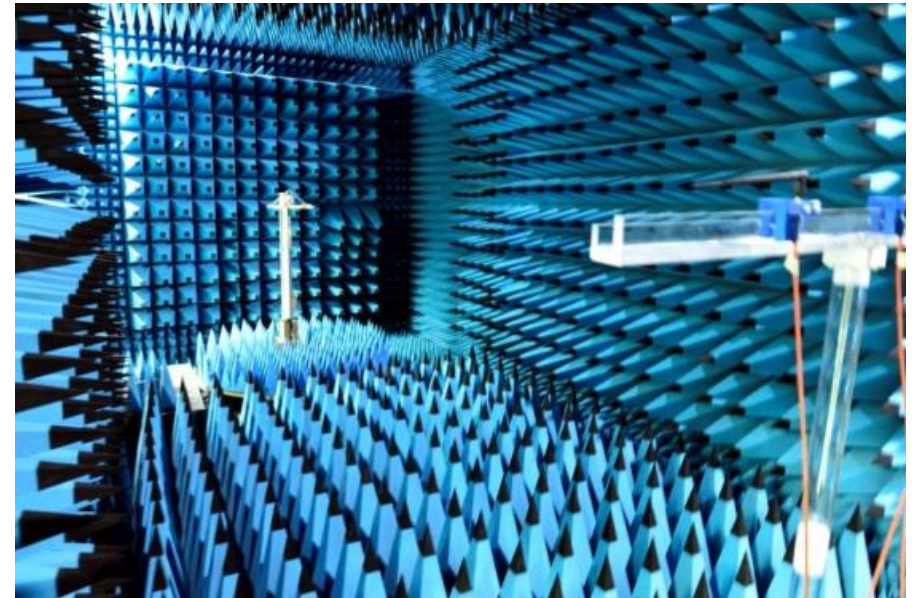
Senao Networks, Inc.

Customer	Meraki
Project	Vision
Project Description	2/5G antenna*2 External LTE*2
Date	2023/05/15
Prepared by	Tony
Report Version	A04

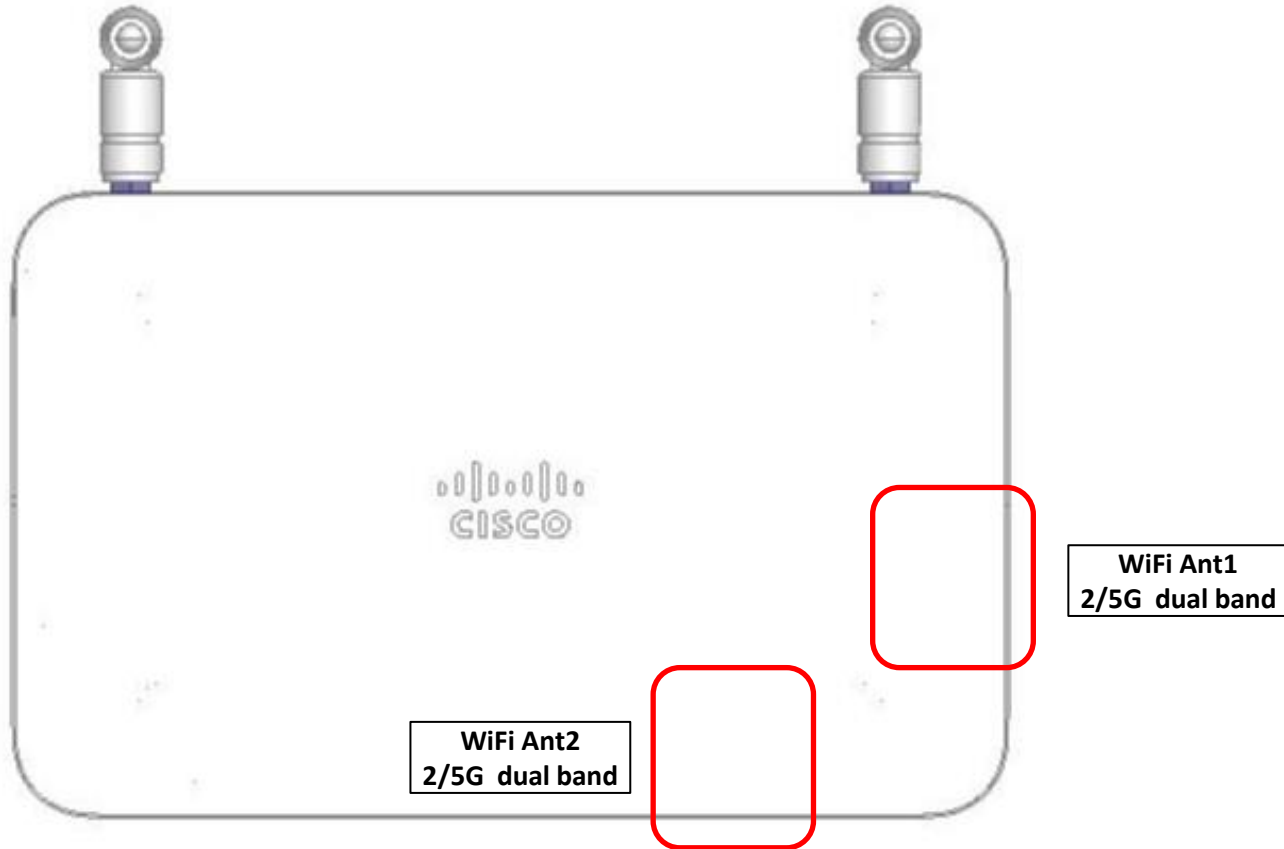
- **Agenda**
 - Antenna Development Resource
 - Placement and Specification
 - S11 & Isolation
 - Radiation Pattern
 - Combine Pattern
 - Efficiency and Gain
 - Conclusions

Antenna manufacturer's - BWANT

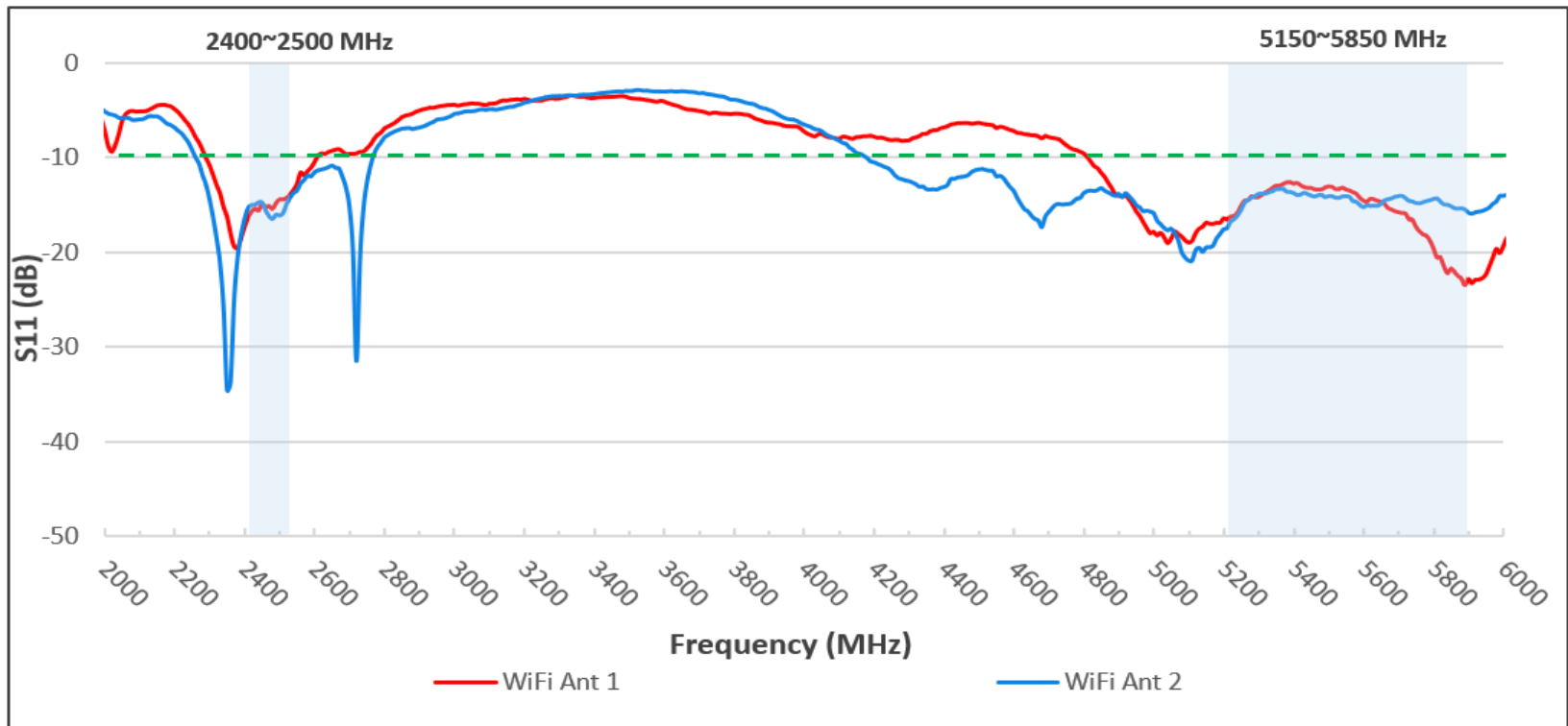
- Size: 7.32M(L)x3.66M(W)X3.66M(H)
- Testing range from 400MHz to 7GHz
- Chamber Isolation : 10KHz to 10GHz >100dB (NSA 94-106)
- Calibration antenna : BWANT SD650 /SD740 /SD900 /SD1150 /SD1575 /SD1800 /SD2140 /SD2450 /SD3200 /SD3600 /SD4550 /SD5400 /HA-0508
- Calibration date: 2022/10/27
- Test software : BWANT 3D Passive



3D Anechoic Chamber

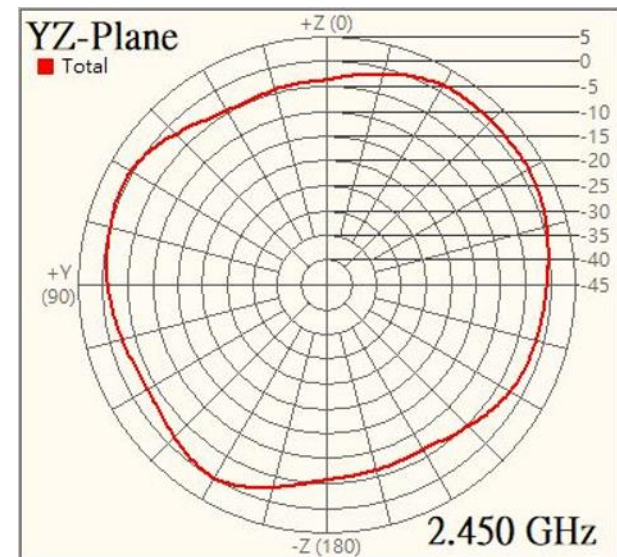
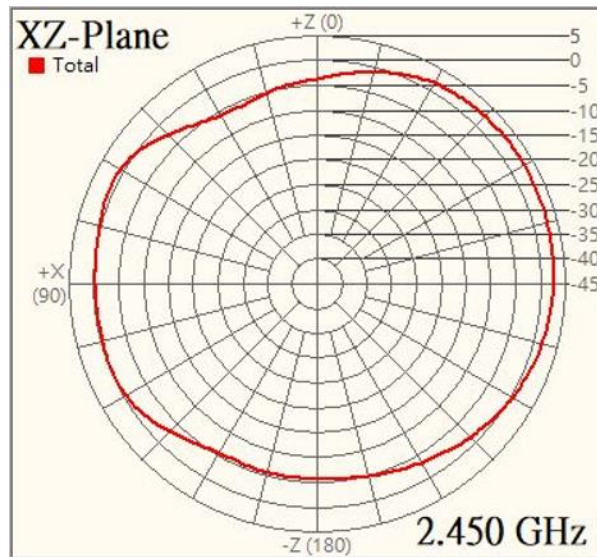
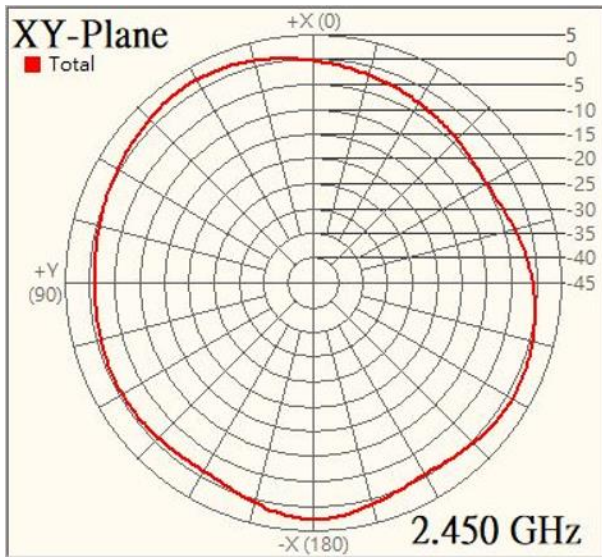
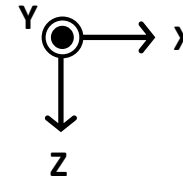
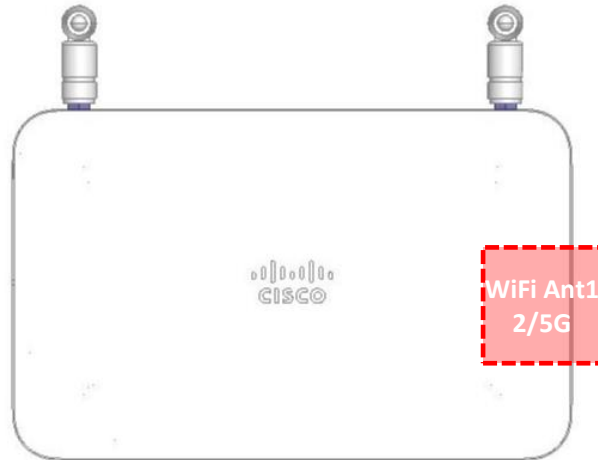


Ant No.	Brand name	Model Name	Operating Band	Gain (dBi)	Efficiency (%)	Ant Type	Material	Feeding
WiFi Ant1	SENAO	5718A0722300	2400MHz ~ 2500MHz, 5150MHz ~ 5850MHz	3.93@2G	80.09@2G	PIFA	Metal	Cable
				5.55@5G	81.10@5G			
WiFi Ant2	SENAO	5718A0723300	2400MHz ~ 2500MHz, 5150MHz ~ 5850MHz	4.40@2G	80.20@2G	PIFA	Metal	Cable
				5.49@5G	80.52@5G			

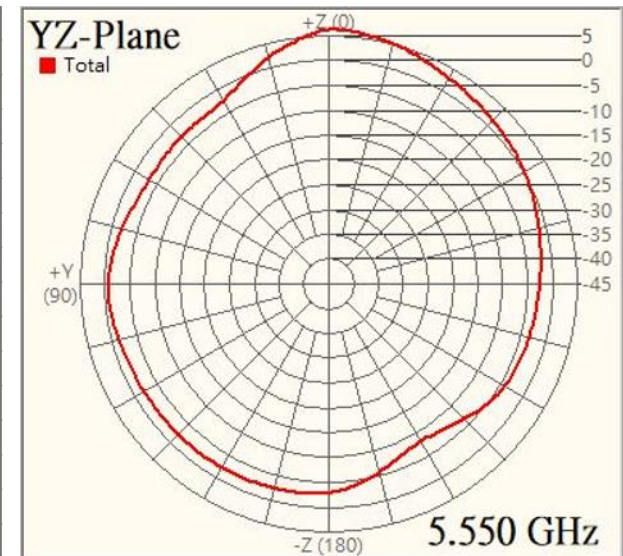
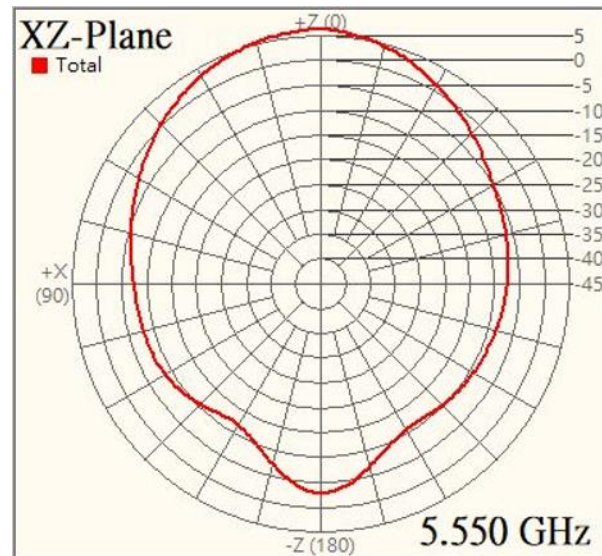
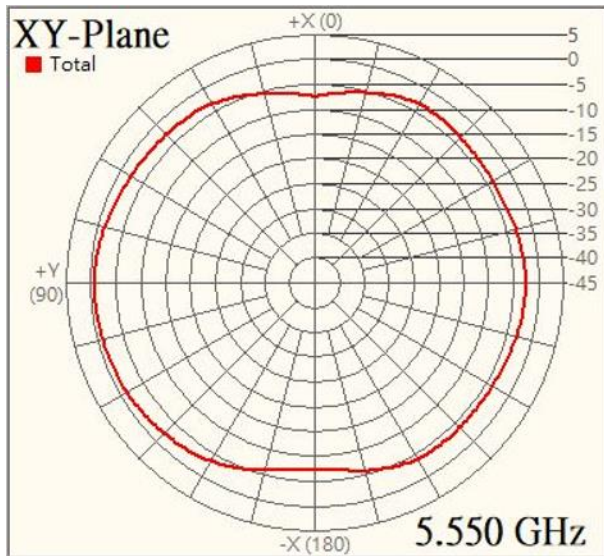
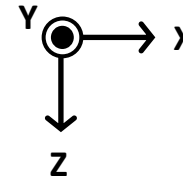
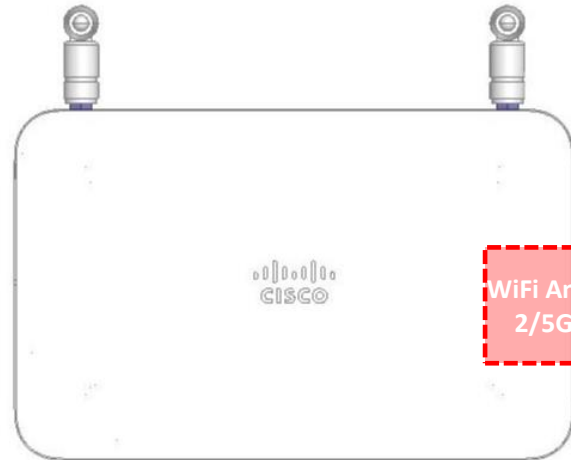


Antenna S11		
Freq. (MHz)	WiFi ANT1	WiFi ANT2
2400	-17.34	-16.52
2450	-14.89	-14.80
2500	-14.42	-16.17
5150	-16.89	-19.53
5500	-13.39	-14.13
5850	-21.70	-15.16

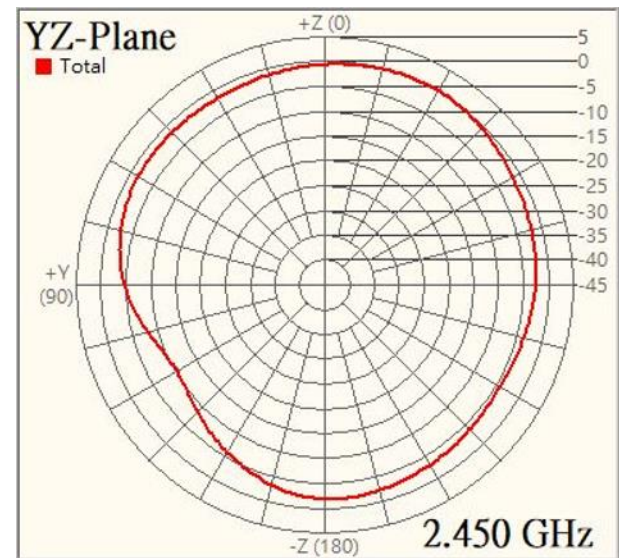
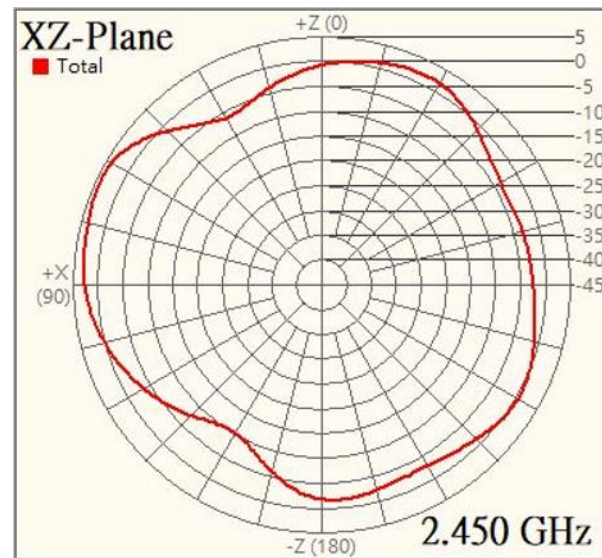
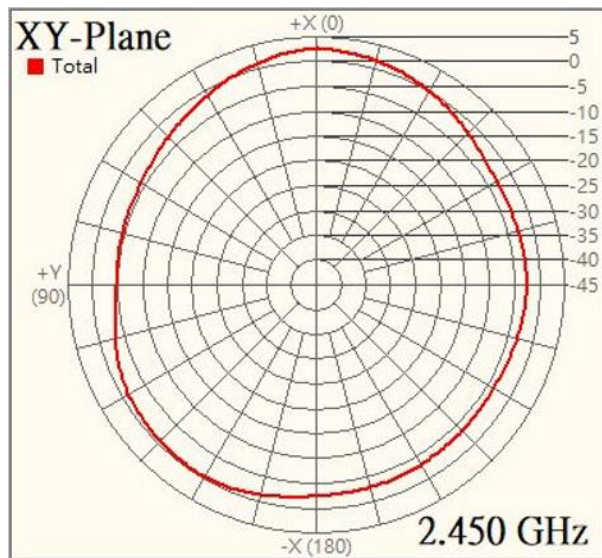
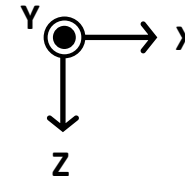
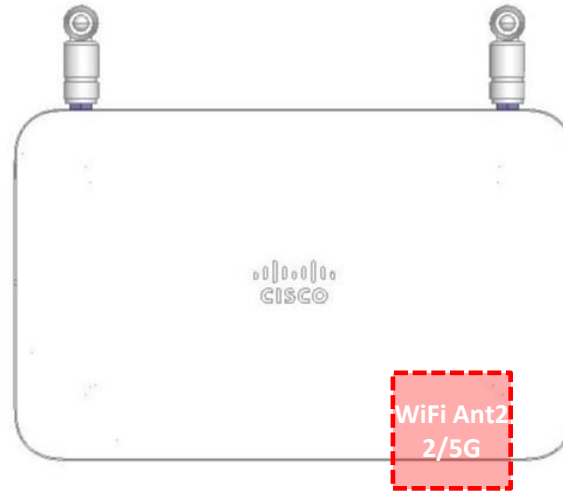
2D Radiation Pattern – WiFi ANT1 @ 2.45GHz



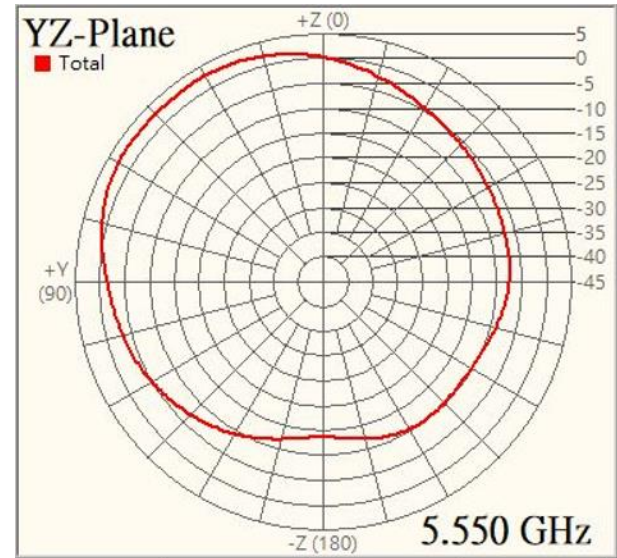
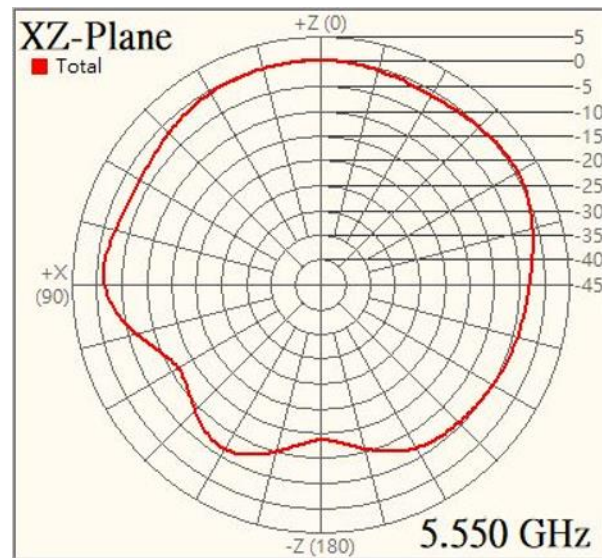
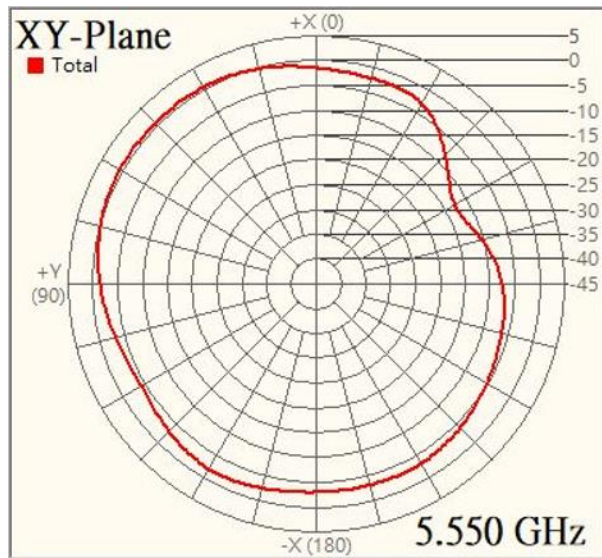
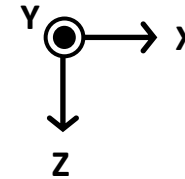
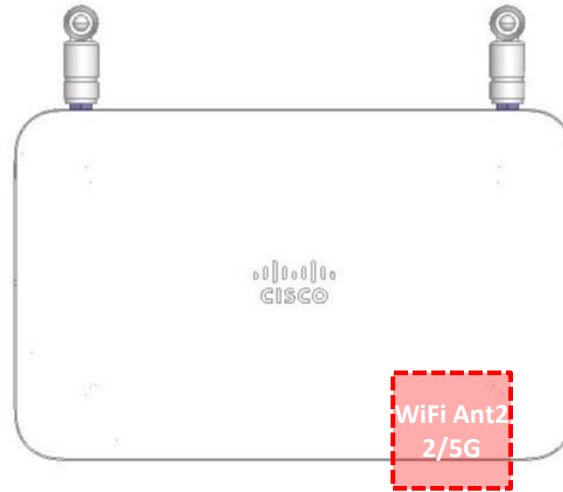
2D Radiation Pattern – WiFi ANT1 @ 5.55GHz



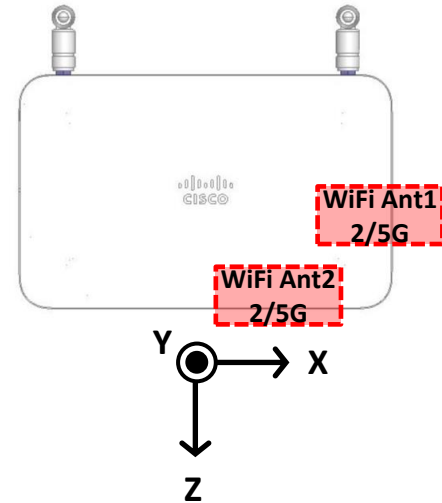
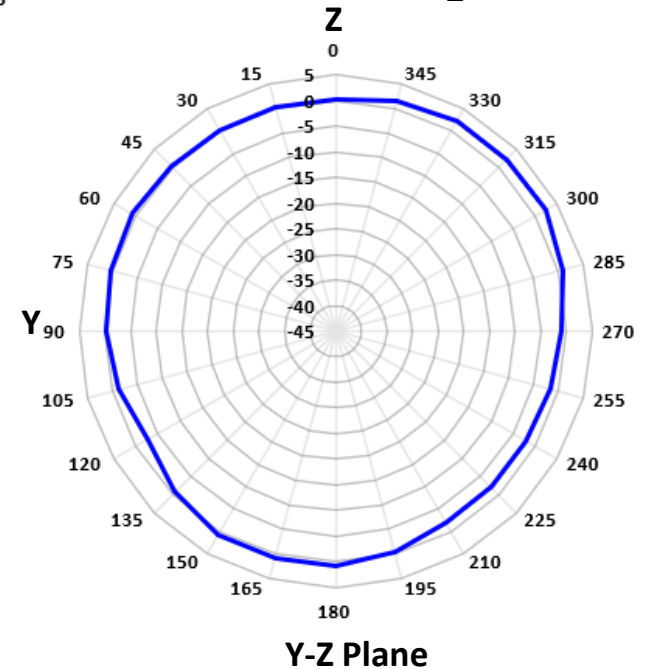
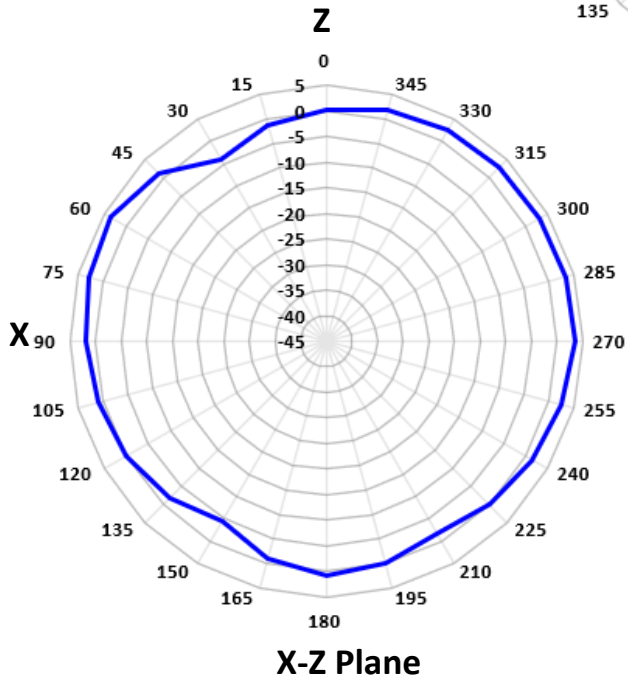
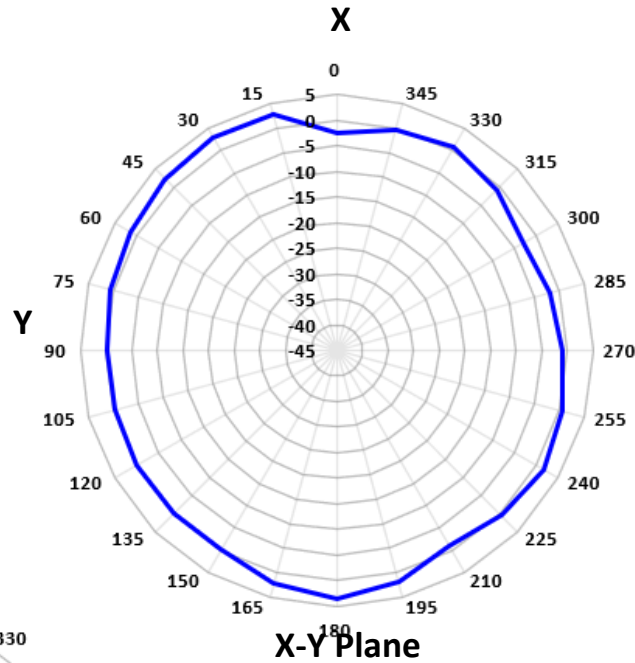
2D Radiation Pattern – WiFi ANT2 @ 2.45GHz

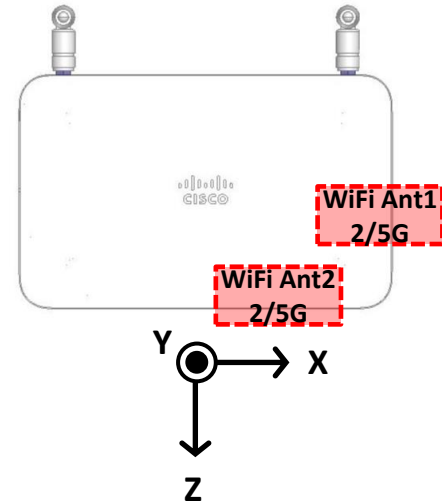
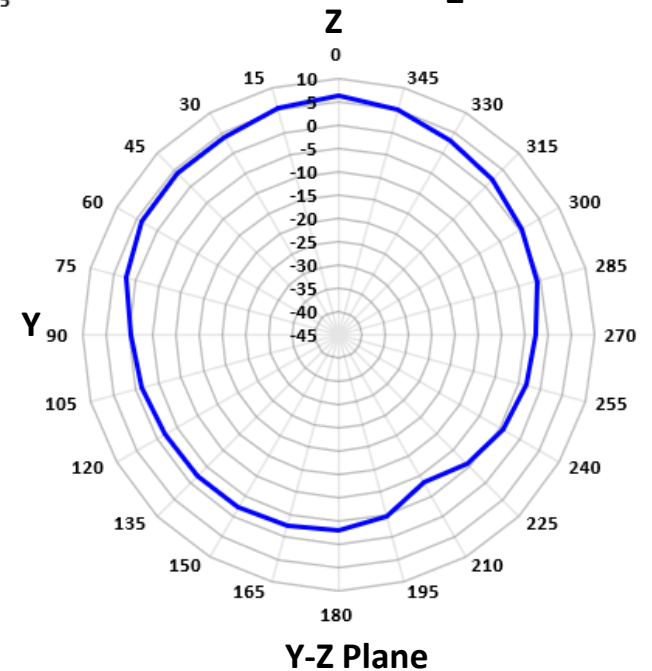
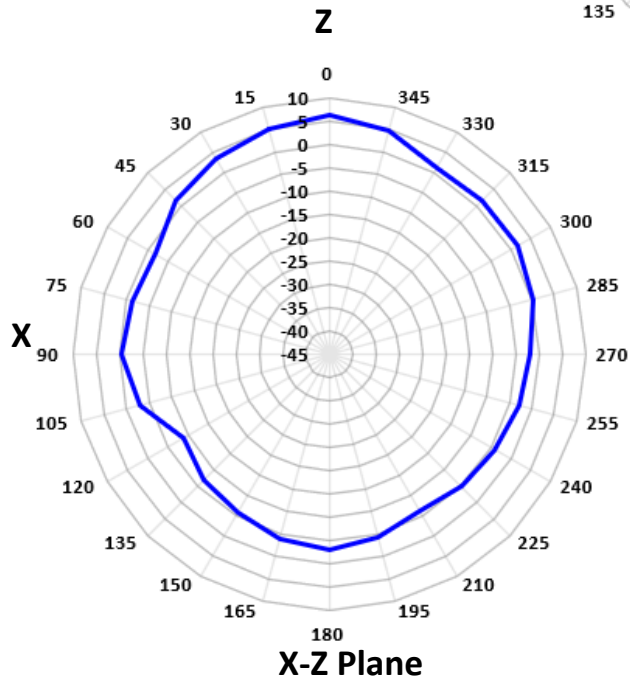
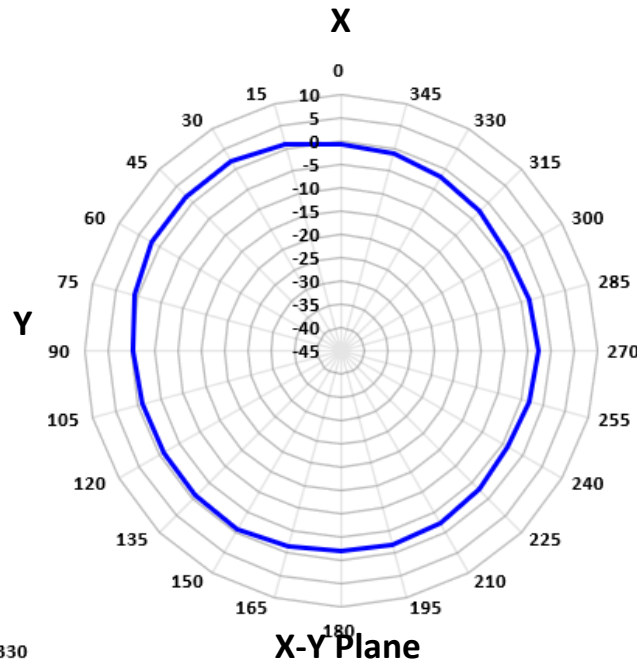


2D Radiation Pattern – WiFi ANT2 @ 5.55GHz



- Combine two WiFi antenna pattern, and the pattern is close to omnidirectional.





Antenna Efficiency and Gain				
Freq. (MHz)	WiFi ANT 1		WiFi ANT 2	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
2400	75.07	3.73	74.74	3.69
2450	79.01	3.93	77.03	4.02
2500	80.09	3.71	80.20	4.40
5150	76.95	5.08	77.42	5.49
5500	76.70	5.55	78.55	4.82
5850	81.10	5.24	80.52	4.89