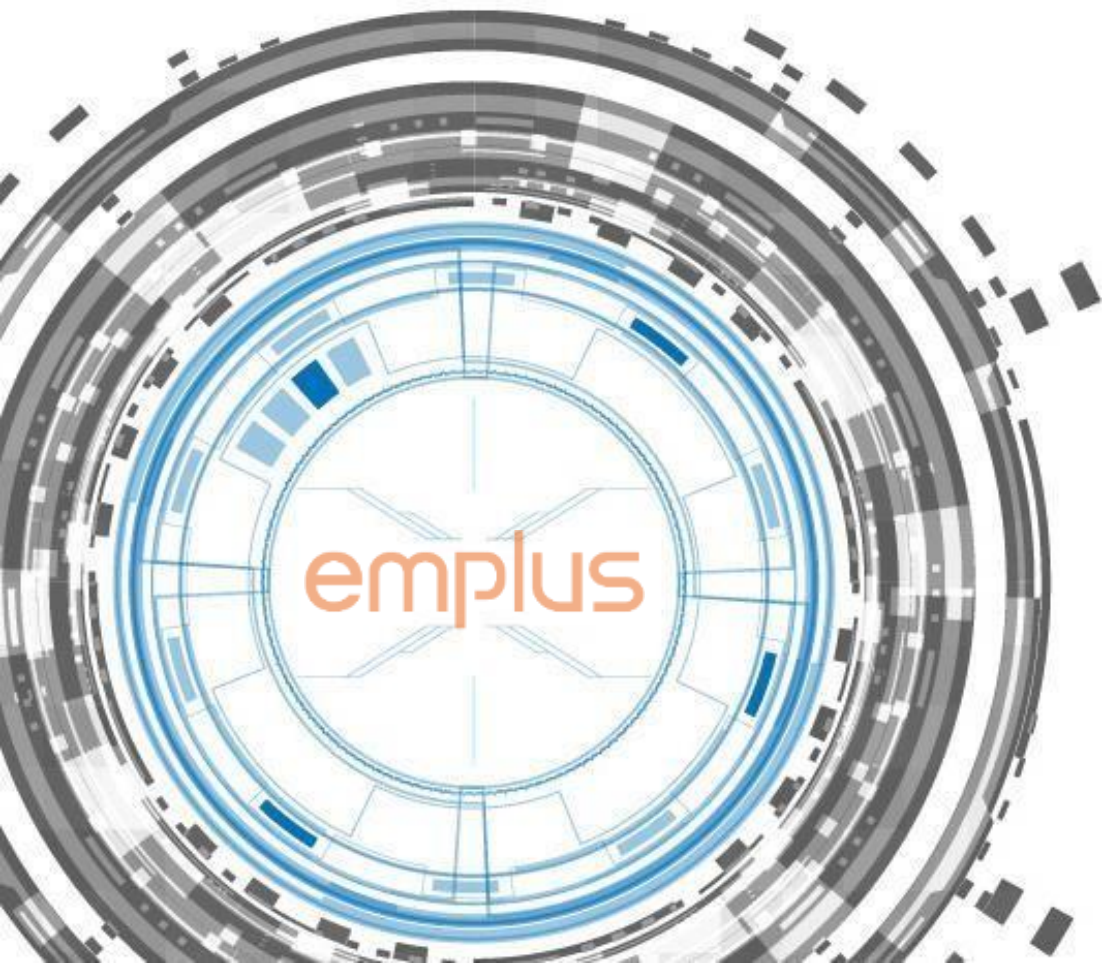




MW09 Antenna measurement report

V0.1
Tim Chao
2021/03/30

Agenda

- History
- Antenna Placement
- Antenna Information
- Test Setup
- Test Flow and Chart
- VSWR & Isolation
- Gain table
- 2D Radiation Pattern

History

Date	Description	Version
2021/03/30	Draft	V0.1

Antenna Information

Antenna	Model name
2-1	7102A0413000
2-2	7102A0413000
5-1	7102A0414000
5-2	7102A0414000

Manufactory : Master Wave Technology Co., LTD.

Add : No.81-8, Longshou St., Taoyuan City, Taoyuan County 330,
Taiwan

Antenna	Model name
BLE	7102A0564000
Scanning	7102A0565000

Manufactory : SPECON ELECTRONICS INC.

Add : Floor 5, No.268, Section 6, Minquan East Road
Neihu Dist, Taipei City, 114, Taiwan

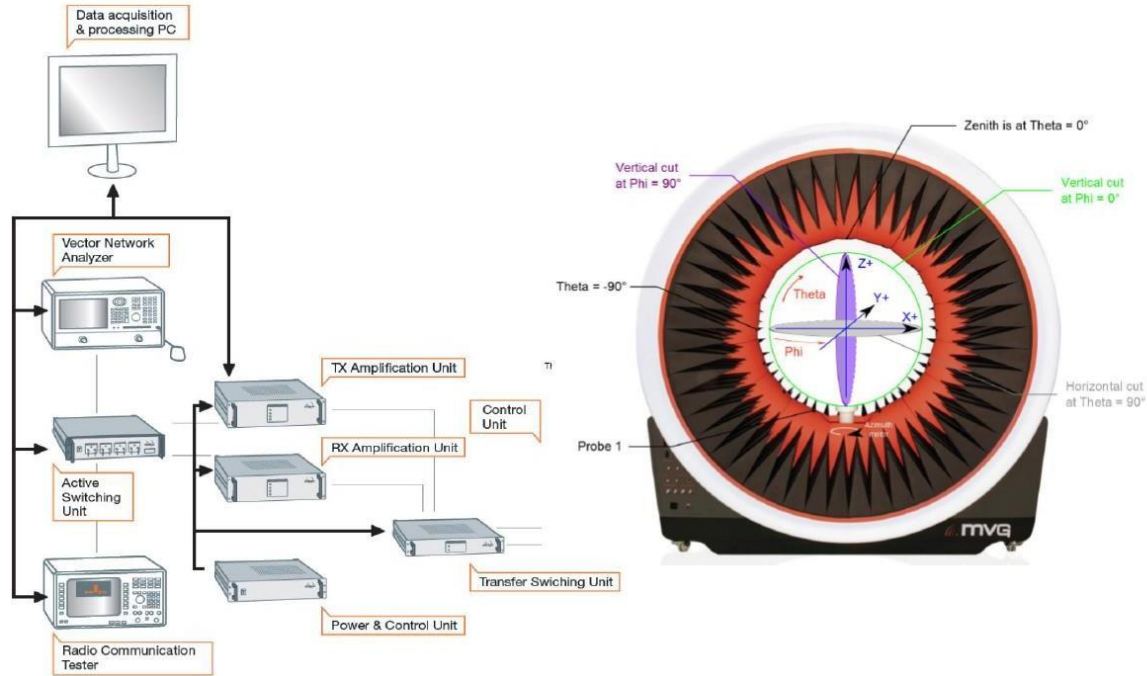
Test Setup

- Equipment and calibration date
Satimo starlab 2021/1/5
- Test date
2021/3/24
- Test member
Chris
- Test software
MVG Studio
- Test location information
awan-ant;No.207-1, Sec.3, Beixin rd., Xindian Dist.,
New Taipei City 231, Taiwan

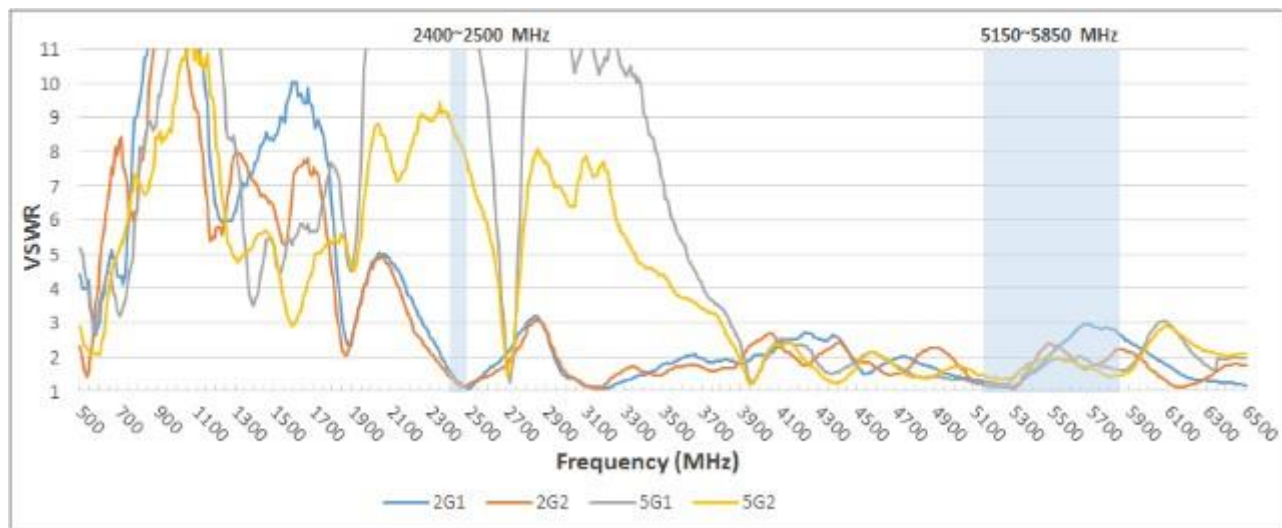
Test Flow and Chart

- Setup the DUT as previous page.
- There are dual-polarization probes in the ring absorber, which can receive the EM-wave and measurement the Theta-direction radiation pattern.
- After all probes measured, the turn table will rotate a degrees by horizontal. (Phi-direction)
- When the turn table rotate 5 degrees, doing the probes measurement again.
- After the turn table rotate 180 degrees, all the measurement will be done.

Antenna Test System

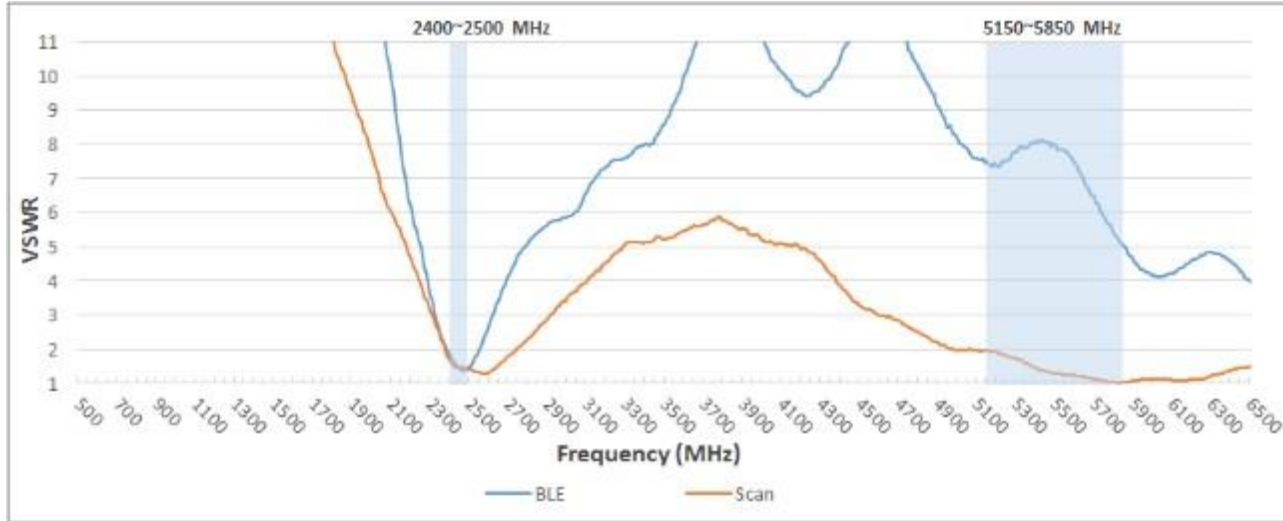


VSWR : WiFi antennas



Freq. (MHz)	VSWR			
	2G1	2G2	5G1	5G2
2400	1.60	1.43		
2450	1.25	1.19		
2500	1.09	1.19		
5150			1.18	1.47
5500			1.94	1.98
5850			1.61	1.47

VSWR : BLE & Scanning antennas



VSWR		
Freq. (MHz)	BLE	Scan
2400	1.84	1.68
2450	1.43	1.49
2500	1.48	1.43
5150		1.95
5500		1.29
5850		1.02

Isolation :

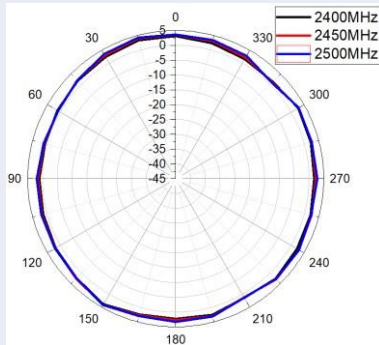
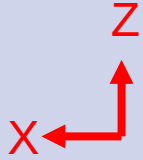
Isolation			
Freq. (MHz)	2G1-2G2	5G1-5G2	BLE-Scan
2400	-41.48	-38.92	-23.51
2450	-35.93	-39.42	-21.72
2500	-31.80	-38.33	-20.86
5150	-31.67	-24.54	-35.79
5500	-37.97	-48.13	-34.35
5850	-43.80	-45.28	-28.19

Gain table

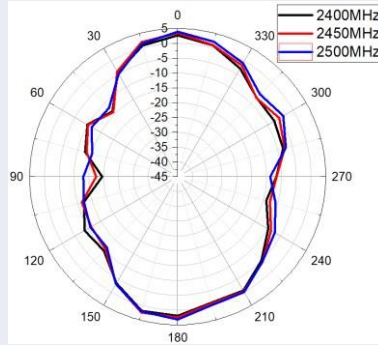
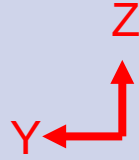
Peak Gain (dBi)	2400MHz	2450MHz	2500MHz	5150MHz	5350MHz	5500MHz	5850MHz
2-1	5.08	5.13	5.17	-	-	-	-
2-2	5.08	5.13	5.17	-	-	-	-
5-1	-	-	-	5.12	5.05	5.09	5.17
5-2	-	-	-	5.12	5.05	5.09	5.17
BLE	2.65	3.68	4.16	-	-	-	-
Scanning	1.65	1.99	2.48	4.52	4.06	3.61	3.34

2D pattern : 2-1

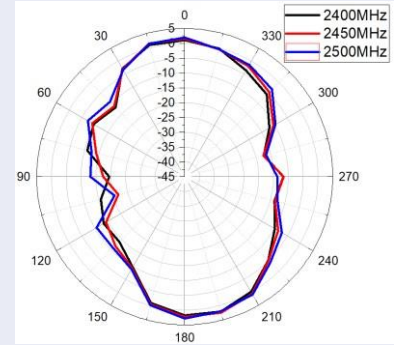
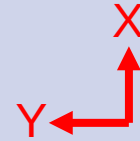
XZ



YZ

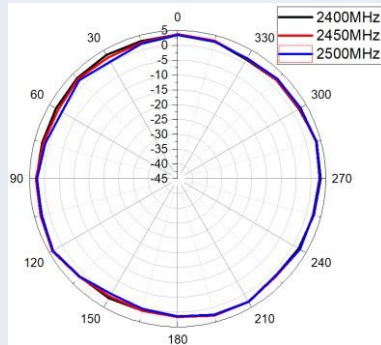
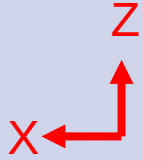


XY

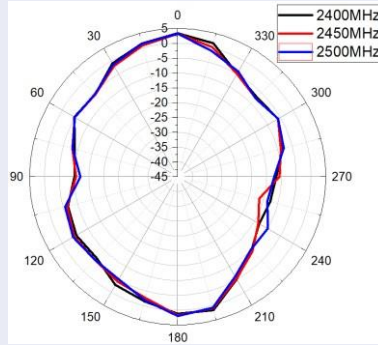
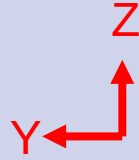


2D pattern : 2-2

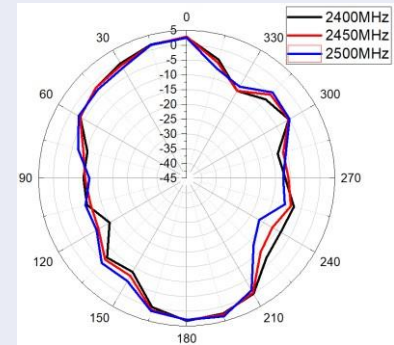
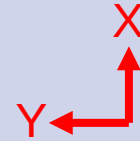
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YZ

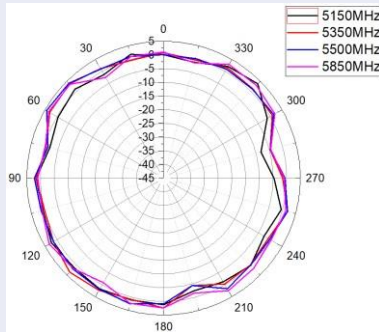
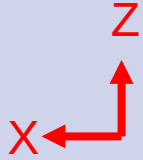


XY

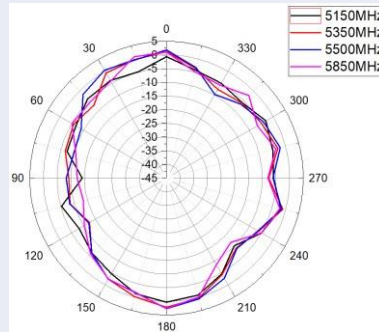
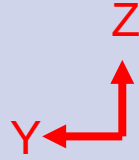


2D pattern : 5-1

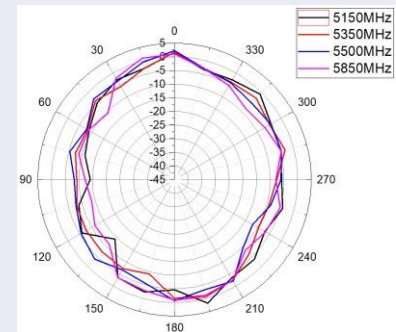
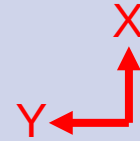
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YZ

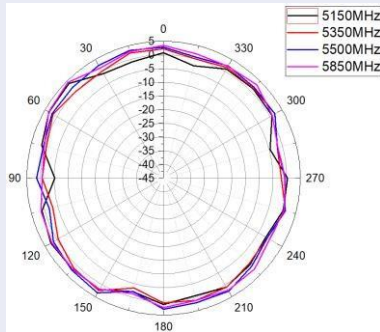
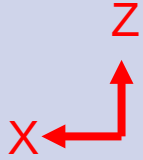


XY

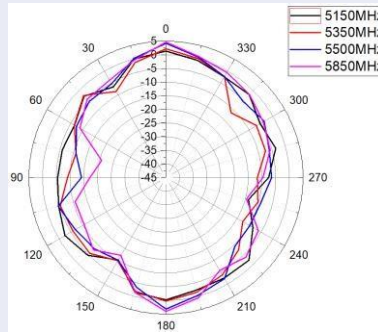
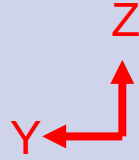


2D pattern : 5-2

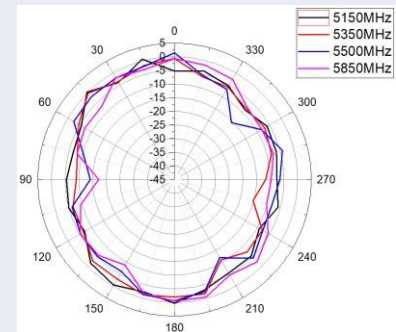
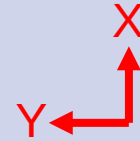
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YZ

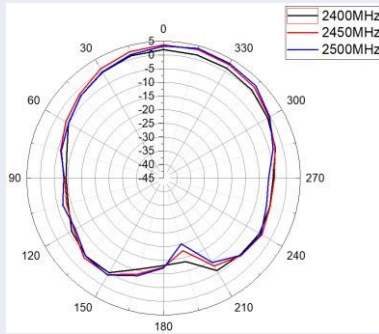
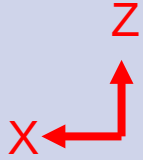


XY

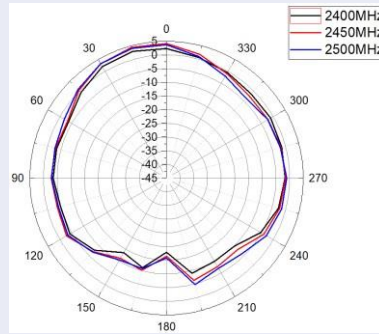
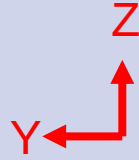


2D pattern : BLE

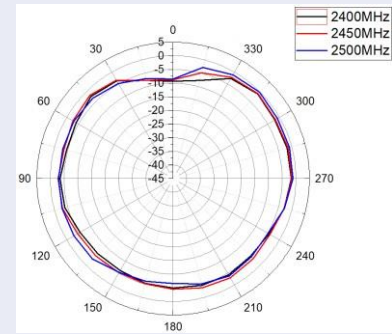
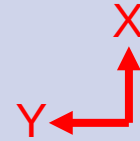
XZ



YZ

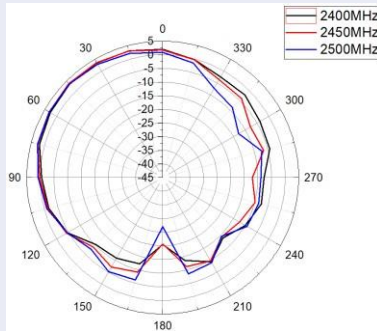
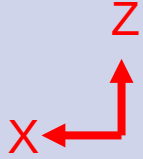


XY

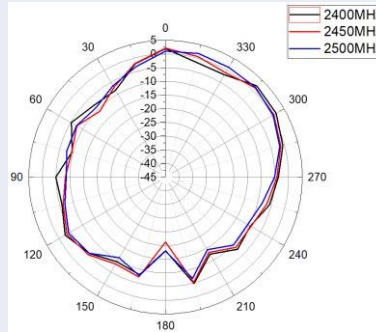
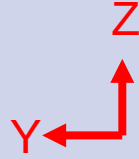


2D pattern : Scanning : 2.4GHz

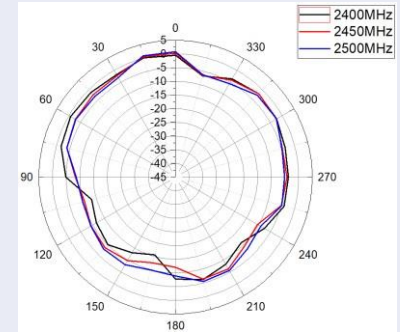
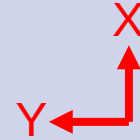
XZ



YZ

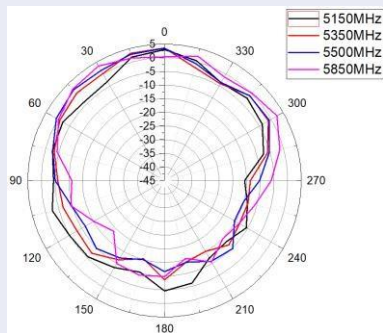
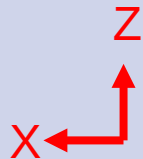


XY

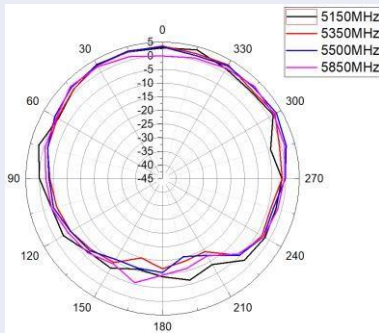
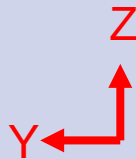


2D pattern : Scanning : 5.5GHz

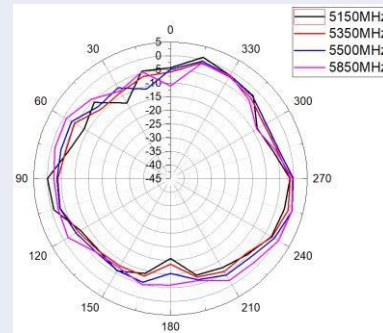
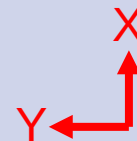
XZ



YZ



XY





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