



ARY196-0346-003-00

Engineer : Ting

Report date : 2023/01/06 REV.03



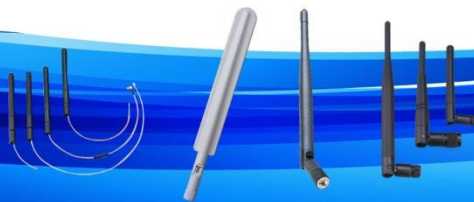


FORTINET®

FG-1001F, FG-1000F, FG-1001F-DC, FG-1000F-DC

Engineer : Ting

Report date : 2023/01/06 REV.03



Revision History

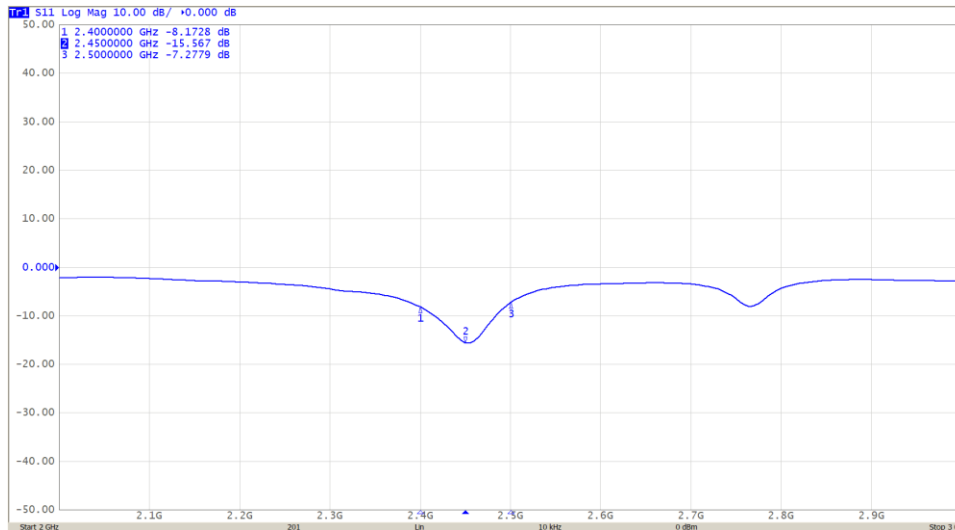
Revision	Date	Engineer	Description
01	2022/12/19	Roy	New Release
02	2022/12/29	Roy	Optimizing Antenna Efficiency
03	2023/01/06	Ting	Change Type

Antenna specification

Item	Specification
Antenna Type	PIFA
Operating Frequency(MHz)	2400-2500
Bandwidth	100MHz (Min.)
Return Loss	7.2dB Typical
Polarization	Linear
Azimuth Bandwidth	Omni-directional
Peak Gain	1.84dBi (Max)
Impedance	50Ω
Material	FPC
Maximum Power	1W
V.S.W.R	2.5: 1
Radiation	Omni directional
Efficiency	35% (Max)
Connector	MHF I
Cable type	OD: 1.13
Operating Temperature	-10~60°C
Storage temp	-10~70°C

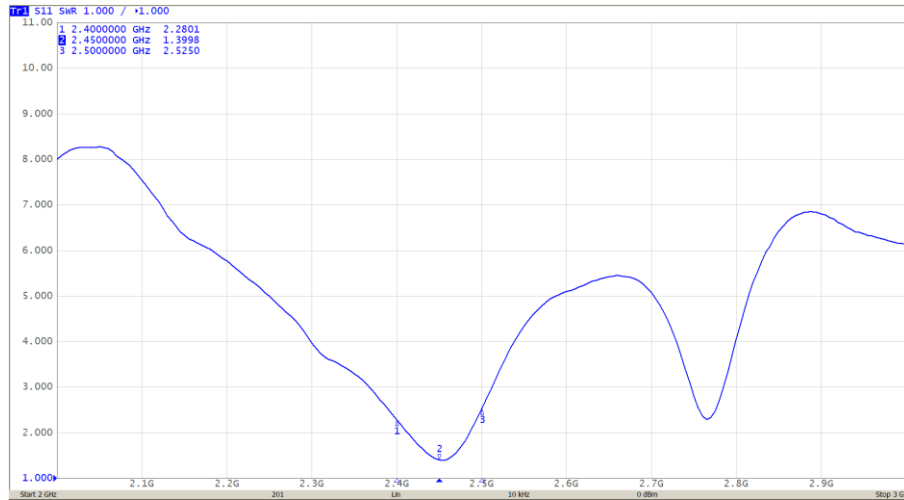
Antenna Measurement Vector Network Analyzer

S-parameter



Frequency (MHz)	2400	2450	2500
S11(dB)	-8.1	-15.5	-7.2

VSWR



Frequency (MHz)	2400	2450	2500
	2.2	1.3	2.5

The antenna anechoic chamber measurement

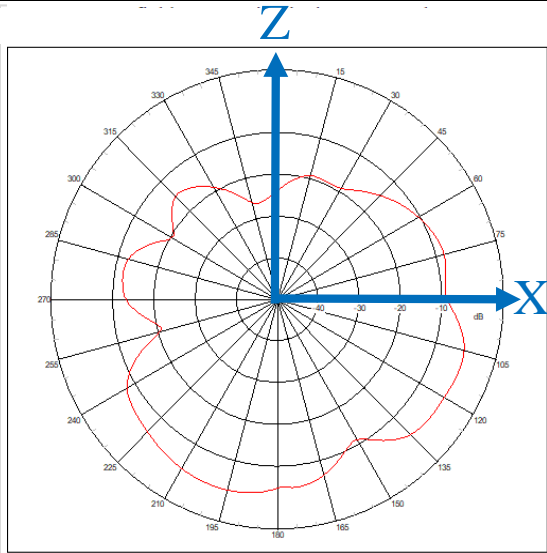
3D Gain Total

Frequency(GHz)	Peak Gain W/ Cable Loss (dBi)	3D-avg Gain(dBi)	Efficiency(%)	Peak Gain W/O Cable Loss (dBi)	Cable Loss(dB)
2.4	1.41	-5.08	31	2.29	0.88
2.41	1.79	-5.15	31	2.68	0.89
2.42	1.84	-5	32	2.74	0.90
2.43	1.75	-4.84	33	2.65	0.90
2.44	1.58	-4.62	35	2.49	0.91
2.45	1.28	-4.66	34	2.2	0.92
2.46	1	-4.83	33	1.92	0.92
2.47	1.16	-4.74	34	2.1	0.94
2.48	0.54	-4.97	32	1.49	0.95
2.49	0.21	-5.21	30	1.18	0.97
2.5	0.38	-5.45	29	1.35	0.97

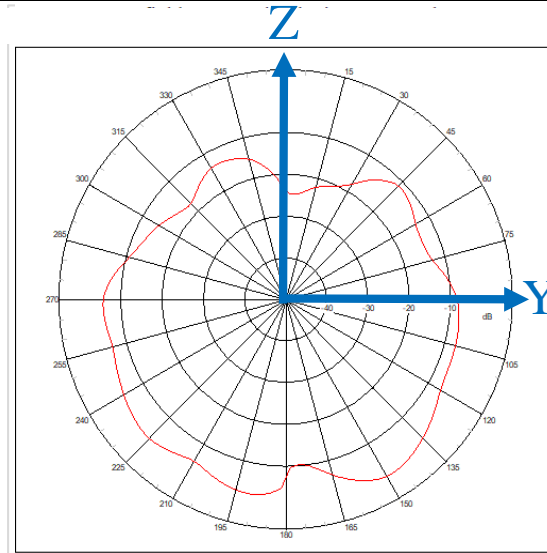
2D Pattern

Frequency: 2400 MHz

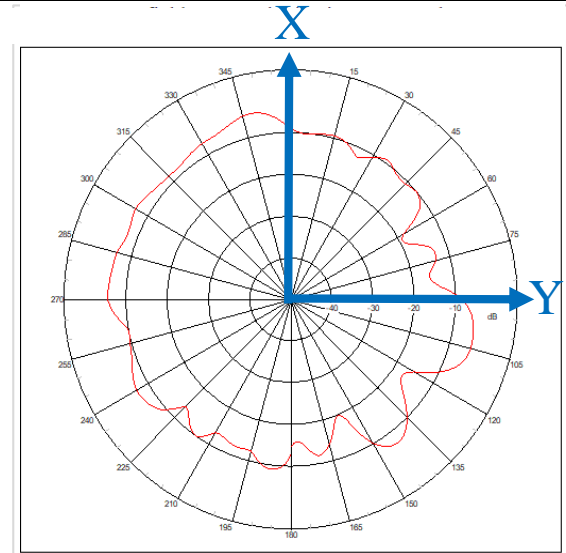
XZ-plane



YZ-plane



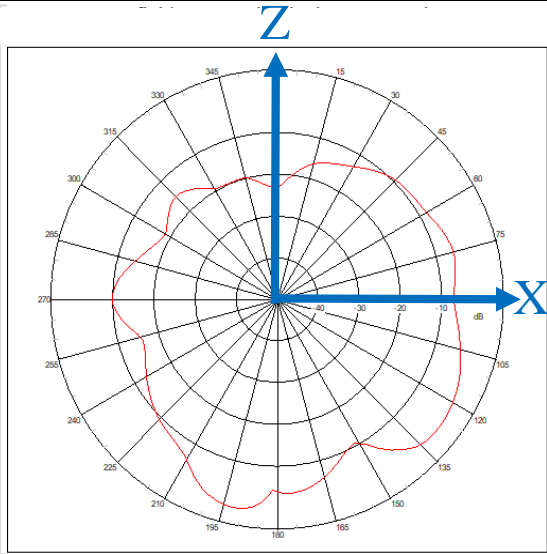
XY-plane



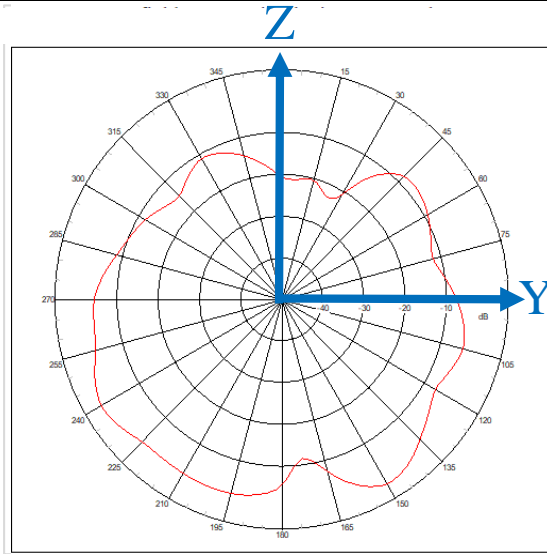
2D Pattern

Frequency: 2450 MHz

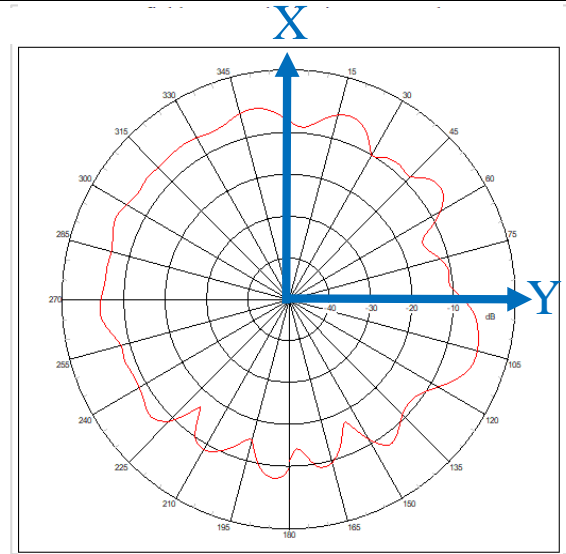
XZ-plane



YZ-plane



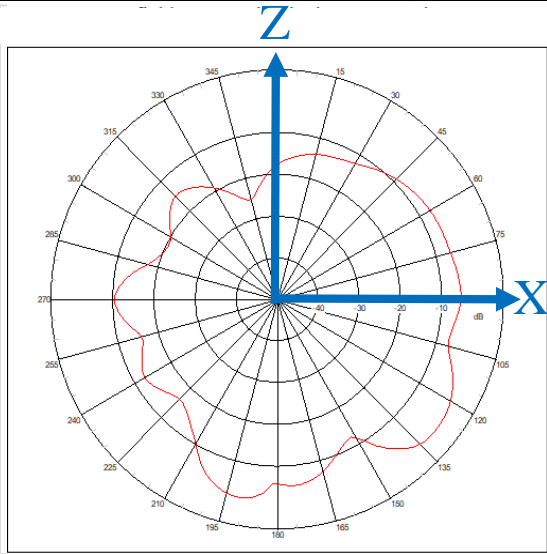
XY-plane



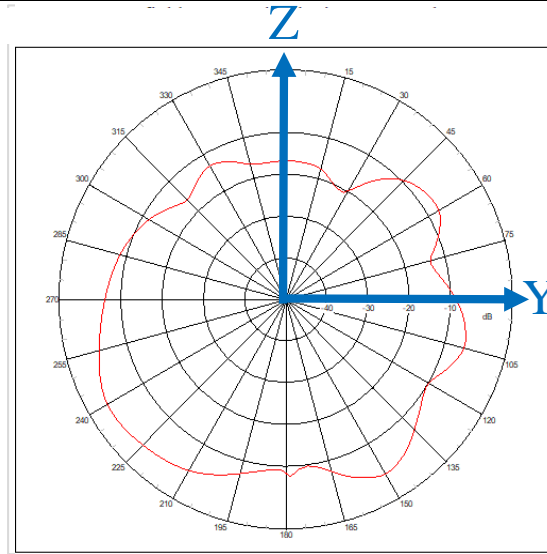
2D Pattern

Frequency: 2500 MHz

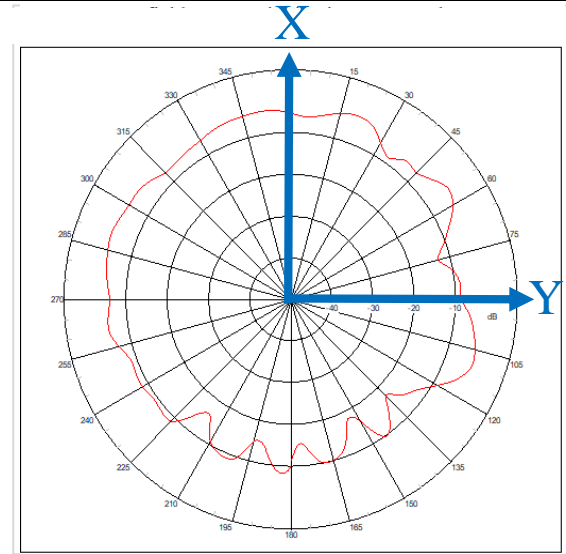
XZ-plane



YZ-plane



XY-plane



Conclusion

- 在此次調適中參考銘版調適，RL在2.45GHz達到最深點;效率最大為35%。



創造完美連結

MAKING THE PERFECT CONNECTION

www.wieson.com