



# ARY196-0346-005-00

Engineer : Ting

Report date : 2022/08/24 REV.02





# FORTINET®

**FG-1501G**

**FG-1500G, FG-1500G-DC, FG-1501G-DC,**

**FG-801F, FG-800F, FG-800F-DC, FG-801F-DC**

**Engineer : Ting**

**Report date : 2022/08/24 REV.02**



# Revision History

Revision	Date	Engineer	Description
01	2022/08/22	Ting	New Release
02	2022/08/24	Ting	Update Data

# Antenna specification

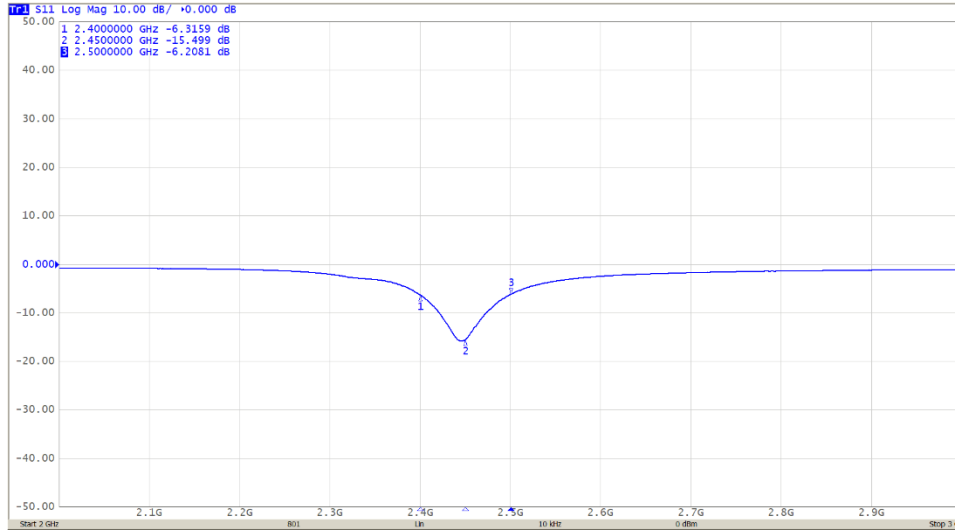
ANT1

Item	Specification
Antenna Type	PIFA
Operating Frequency(MHz)	2400-2500
Bandwidth	100MHz (Min.)
Return Loss	6dB Typical
Polarization	Linear
Azimuth Bandwidth	Omni-directional
Peak Gain	1.82dBi (Max)
Impedance	50Ω
Material	FPC
Maximum Power	1W
V.S.W.R	3 : 1
Radiation	Omni directional
Efficiency	36% (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

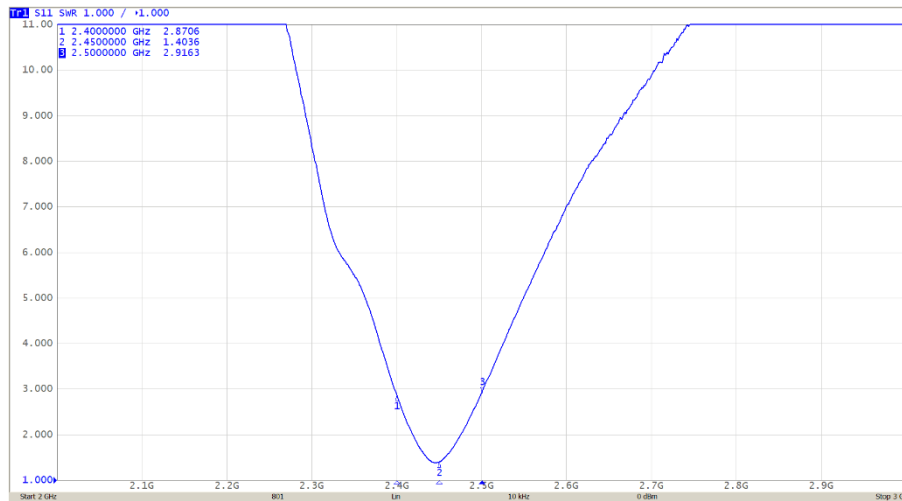
ANT1



Frequency (MHz)	2400	2450	2500
S11(dB)	-6.31	-15.49	-6.2

# VSWR

ANT1



Frequency (MHz)	2400	2450	2500
	2.87	1.4	2.91

# The antenna anechoic chamber measurement



ANT1

# 3D Gain Total

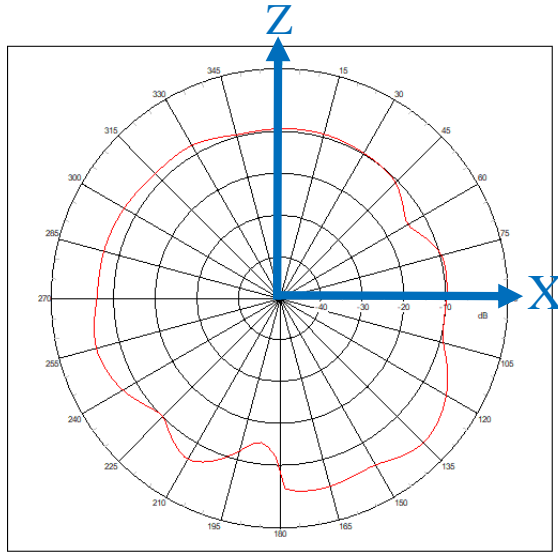
Frequency(GHz)	Peak Gain W/ Cable Loss (dBi)	3D-avg Gain(dBi)	Efficiency(%)	Peak Gain W/O Cable Loss (dBi)	Cable loss(dB)
2.4	0.59	-5.26	30	1.06	0.47
2.41	0.79	-5	32	1.28	0.49
2.42	1.04	-4.87	33	1.54	0.50
2.43	1.35	-4.69	34	1.85	0.50
2.44	1.52	-4.57	35	2.04	0.52
2.45	1.18	-4.42	36	1.70	0.52
2.46	1.52	-4.57	35	2.06	0.54
2.47	1.82	-4.56	35	2.37	0.55
2.48	1.37	-4.63	34	1.92	0.55
2.49	1.32	-4.98	32	1.88	0.56
2.5	0.46	-5.04	31	1.07	0.61

# 2D Pattern

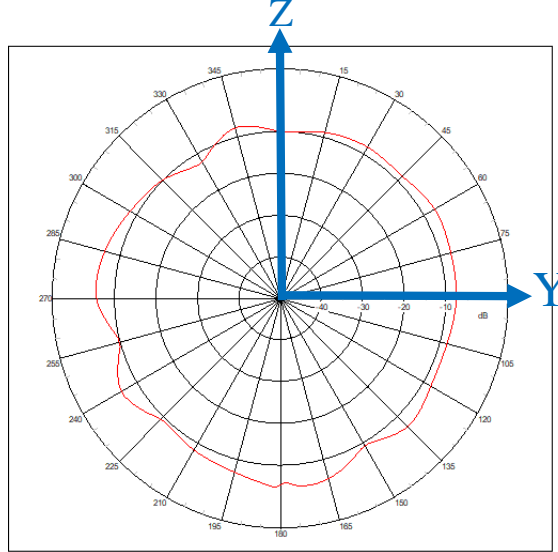
ANT1

Frequency: 2400 MHz

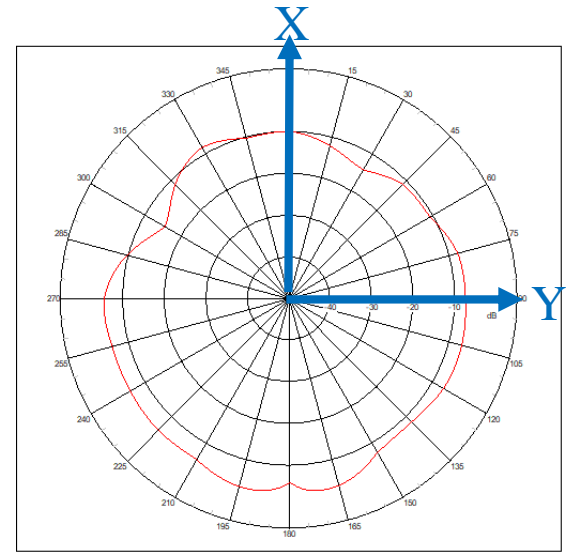
## XZ-plane



## YZ-plane



## XY-plane

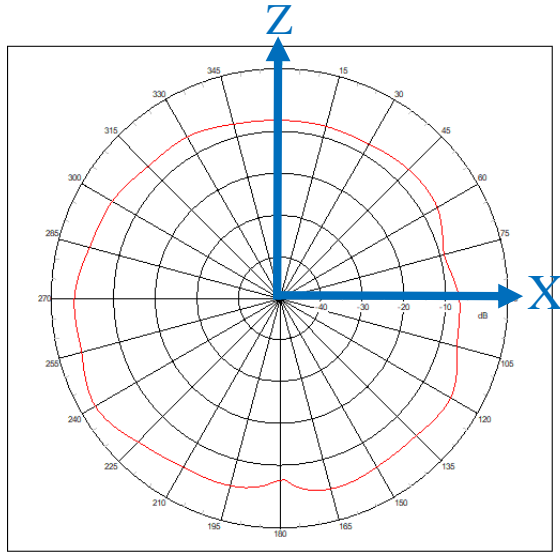


# 2D Pattern

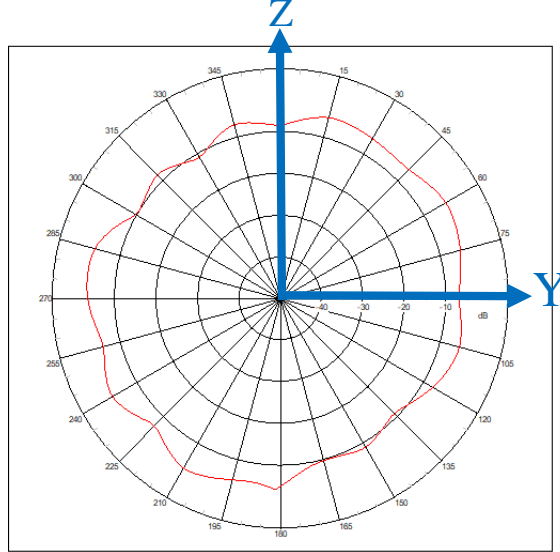
ANT1

Frequency: 2450 MHz

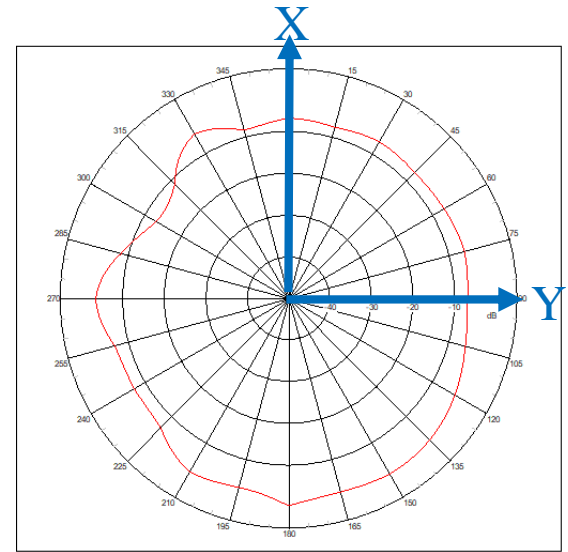
## XZ-plane



## YZ-plane



## XY-plane

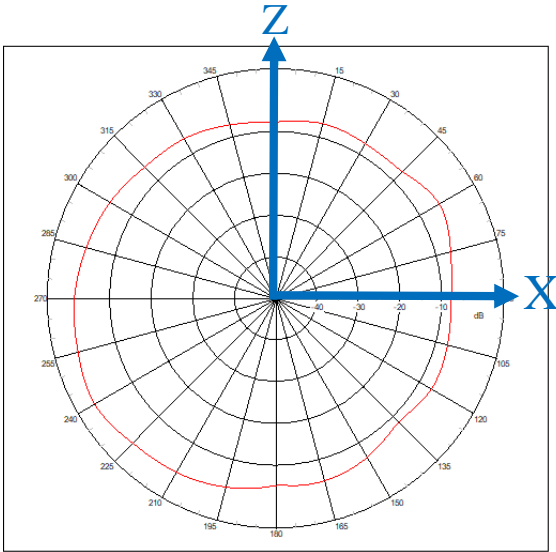


# 2D Pattern

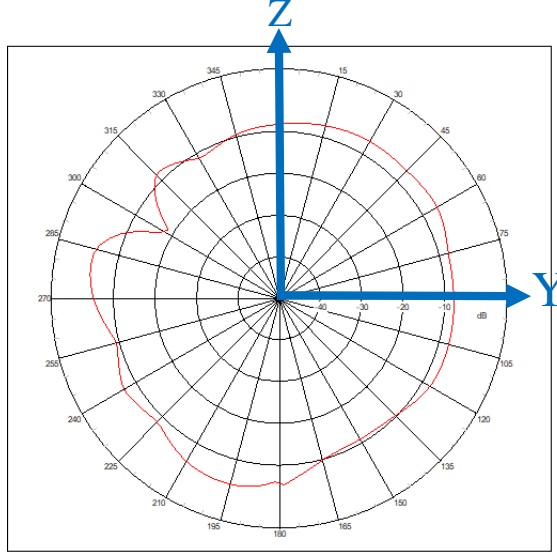
ANT1

Frequency: 2500 MHz

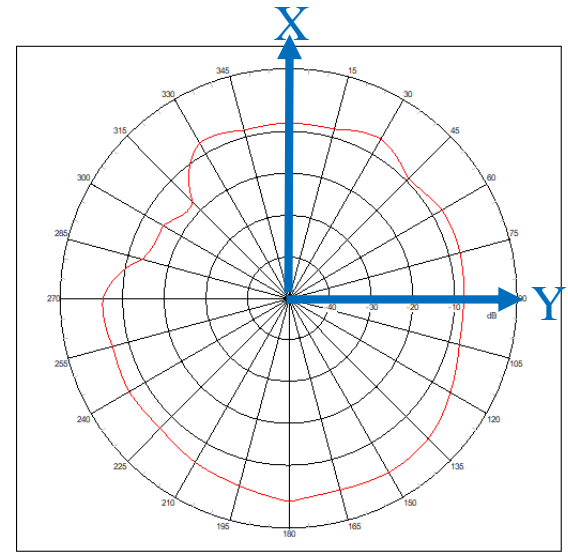
## XZ-plane



## YZ-plane



## XY-plane



# Conclusion

- 對於MS-S325而言，原始天線在上機台情況下 $S_{11}$ 參數是有頻偏。經由調整後的天線在 $S_{11}$ 參數皆 $< -6$  dB，且效率最高為36%。



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