

MEVO 1.5

Antenna Report

Vendor: Wieson

Test Engineer : BZ

Test date : 2025/05/14

Report Version : 02

Antenna Specification



Item	Antenna1		Antenna2	
Operating Frequency (MHz)	2400-2500	5150-5850	2400-2500	5150-5850
Bandwidth	100 MHz (Min.)	700 MHz (Min.)	100 MHz (Min.)	700 MHz (Min.)
Return Loss	10 dB (Min.)	10 dB (Min.)	10 dB (Min.)	10 dB (Min.)
Antenna Type	Dipole	Dipole	Pifa	Pifa
Peak Gain	1.40 dBi (Max)	2.42 dBi (Max)	1.48 dBi (Max)	2.74 dBi (Max)
Material	PCB			
Cable Type	40mm / 1.13 Normal (black)		50mm / 1.13 Normal (white)	
Connector	MHF I	MHF I	MHF I	MHF I
V.S.W.R	2 : 1	2 : 1	2 : 1	2 : 1
Efficiency	42%(min)	52%(min)	43%(min)	51%(min)

Antenna Photo



Note : The Photo please refer Appendix Test Photo.

ANT	ANT Type	Size(L*W*H)	Cable Type	Connector
ANT1	Dipole	29mm*26.5mm*0.4mm	40mm/1.13 Normal	MHF I
ANT2	Pifa	29.5mm*26mm*0.4mm	50mm/1.13 Normal	MHF I

S-Parameter Measurement

(a) Instrument :

Network Analyzer (Agilent N5230A).

(b) Setup :

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.

(2) Connect the antenna under test to the Network Analyzer.

(3) Measure the S_{11} (reflection coefficient) shown in Fig. 1.

(4) Generally, the S_{11} is less than -10dB to ensure the 90% power into antenna and only less than 10% power back to system.

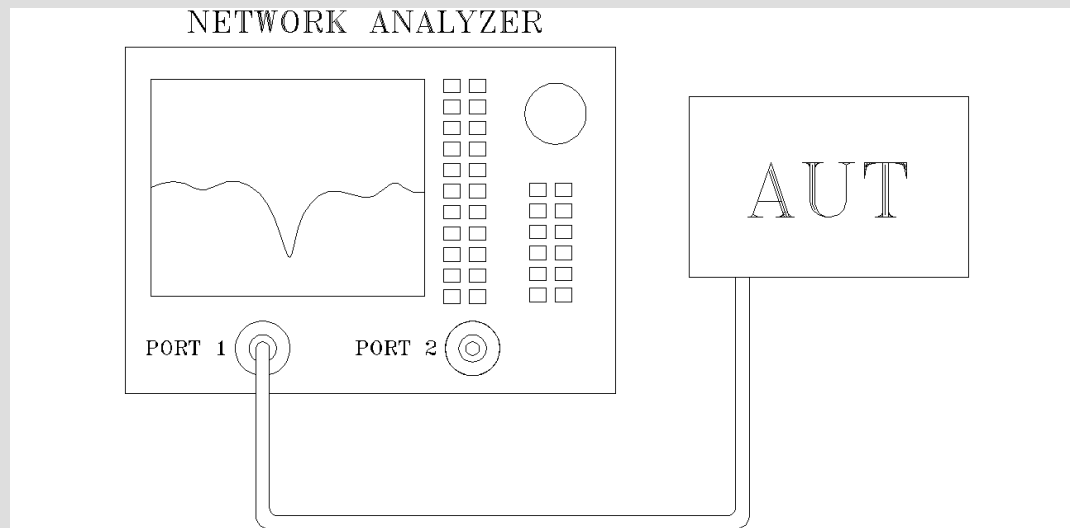
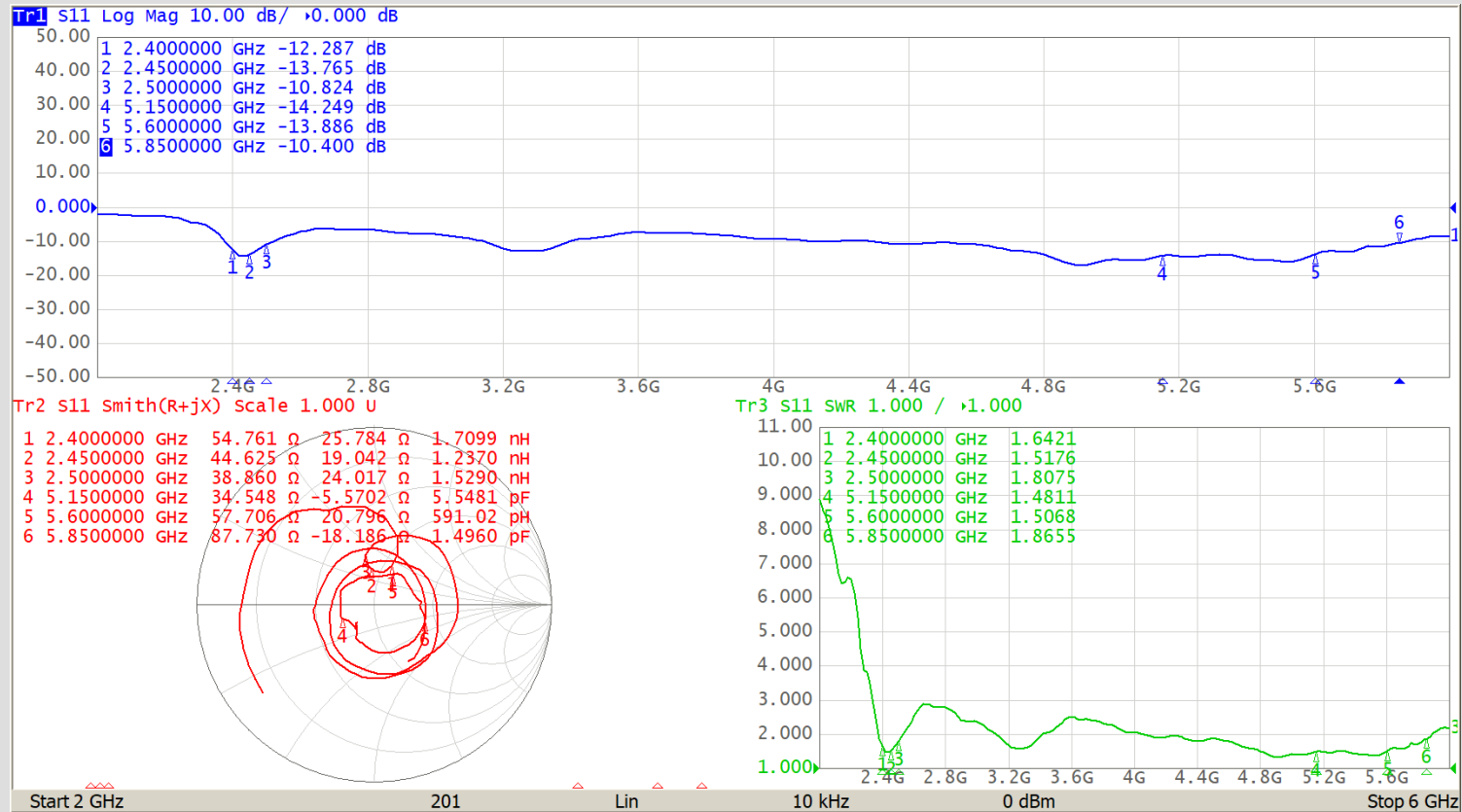


Fig.1 Antenna measured in Network Analyzer

S-Parameter – S11 Result

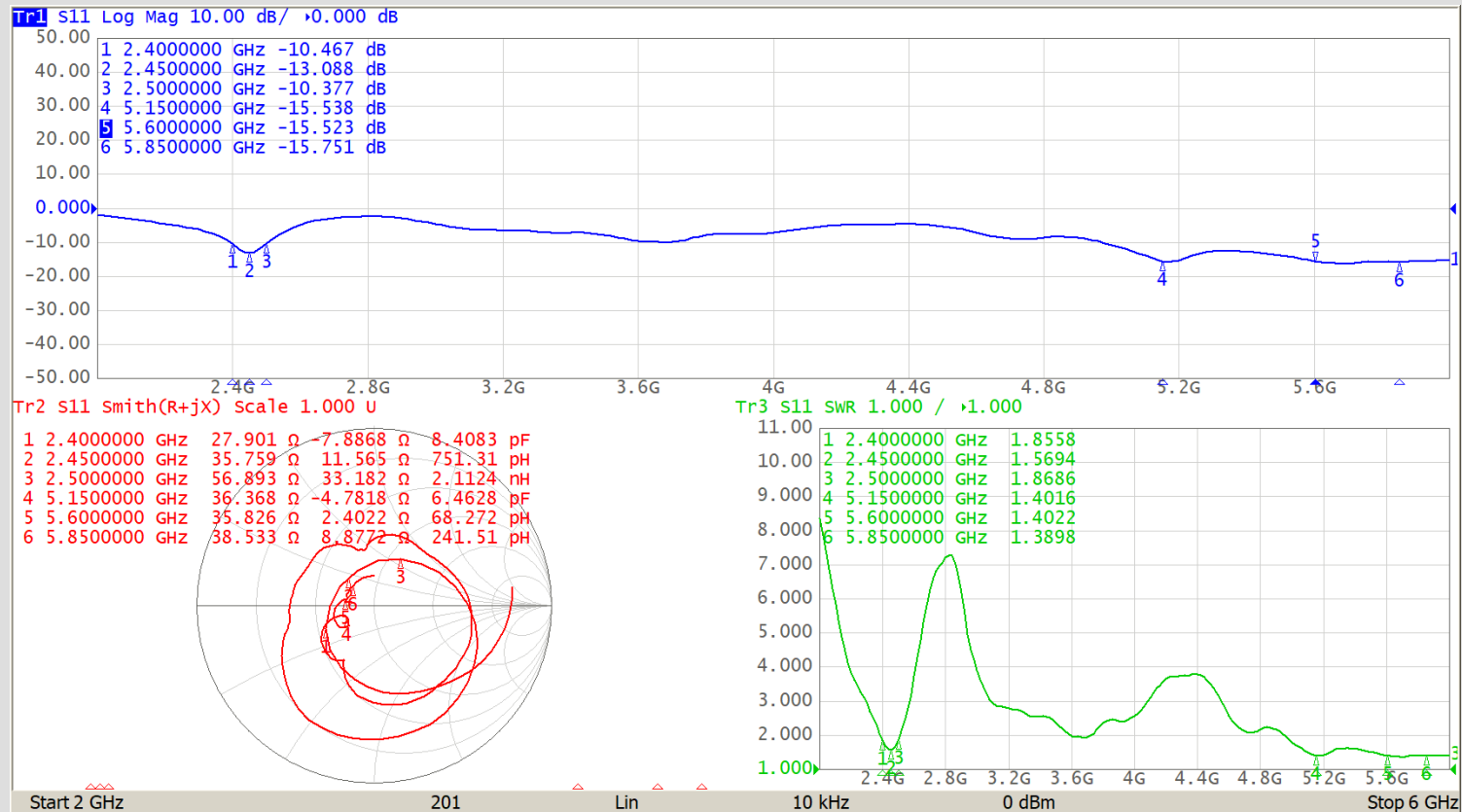
Antenna1



Frequency (MHz)	2400	2450	2500	5150	5600	5850
S11 (dB)	-12.2	-13.7	-10.8	-14.2	-13.8	-10.4

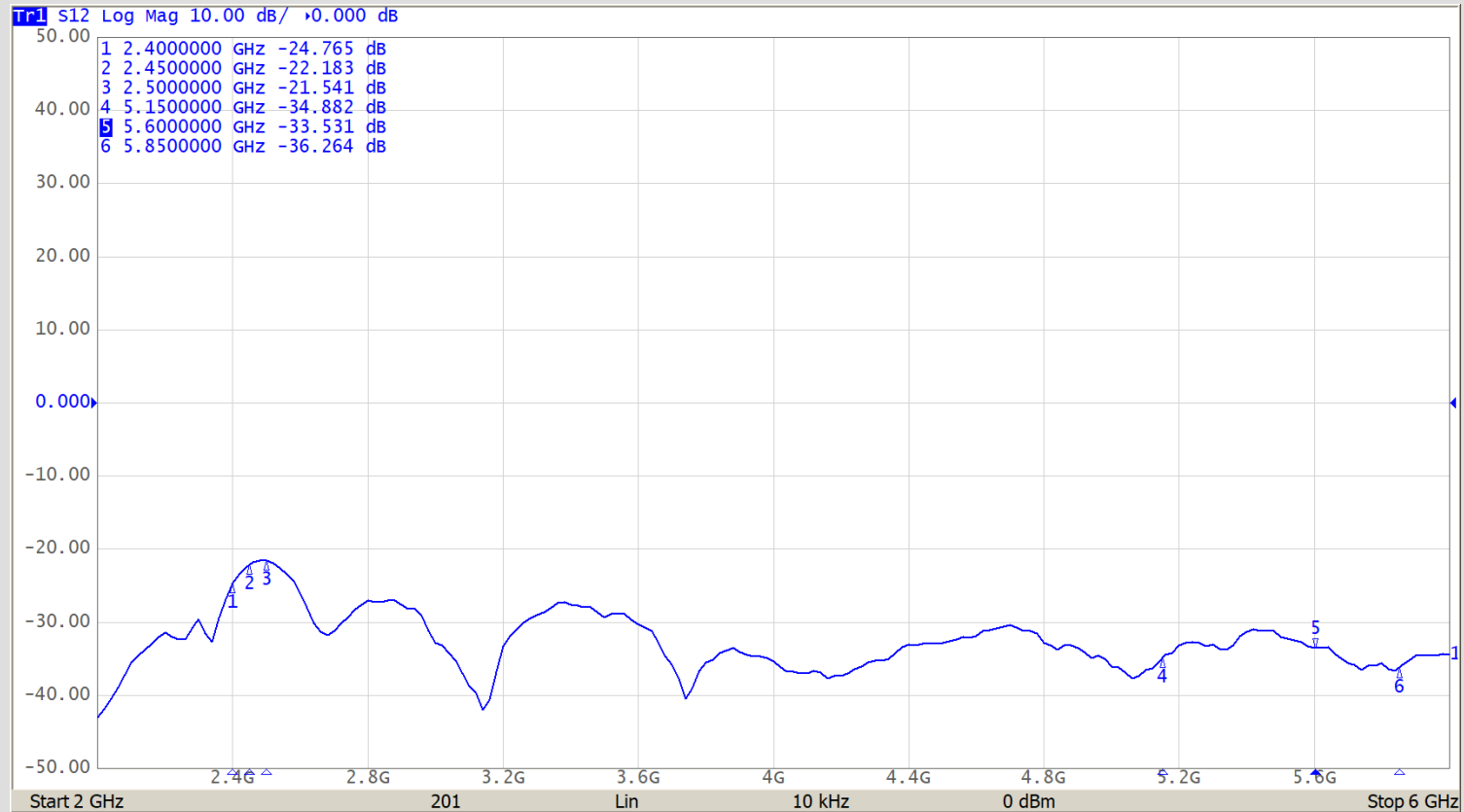
S-Parameter – S11 Result

Antenna2



Frequency (MHz)	2400	2450	2500	5150	5600	5850
S11 (dB)	-10.4	-13.0	-10.3	-15.5	-15.5	-15.7

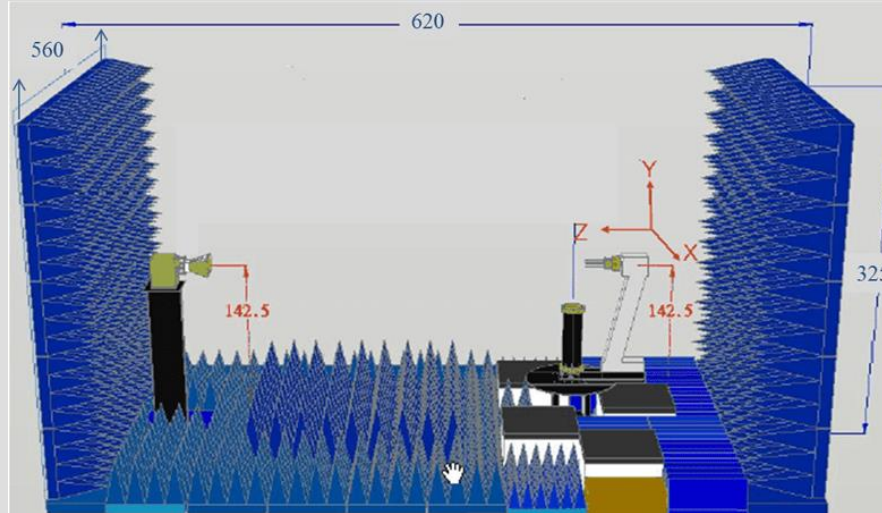
S-Parameter – Isolation



Frequency (MHz)	2400	2450	2500	5150	5600	5850
S21 (dB)	-24.7	-22.1	-21.5	-34.8	-33.5	-36.2

The Test Information Of Anechoic Chamber Description

(a) Test setup



(b) Equipment list

Device	Type/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	FCC-600L	FCC-600L-285	Wavepro	30-Apr-24	30-Apr-25
Network Analyzer	N5230A	MY45000163	Agilent Technologies	11-May-24	11-May-25
Turntable	NSI-SC-5606-3DZ	011	NSI-MI	N/A	N/A
Measurement SW	NSI 2000	SQM-SM-2000-V4	NSI-MI	N/A	N/A
Dual Polarization Vivaldi Antenna 0.6~8GHz	-	-	WavePro Inc.	30-Oct-24	30-Oct-25
Computer Monitor	HS-CM145	0410006420	CCTVINDIA	30-Aug-24	30-Aug-25
Industrial PC	IPC-610BP	-	Advantech Co.,Ltd	30-Aug-24	30-Aug-25
Standard Beam Controller(SBC)	NSI-RF-5918	070	NSI-MI	30-Oct-24	30-Oct-25
Antenna Range Controller(ARC)	NSI-SC-5911-4	0335	NSI-MI	30-Oct-24	30-Oct-25
RF Cable 240in 22GHz	UFA 210C-1-2400-300300	MFR 64639 207908-005	Carlisle Interconnect Tech.	30-Aug-24	30-Aug-25
RF Cable 240in 22GHz	UFA 210C-1-2400-300300	MFR 64639 209026-013	Carlisle Interconnect Tech.	30-Aug-24	30-Aug-25
RF Cable 60cm 26.5GHz	EC-A5-60-1678	Z0066	E-INSTRUMENT TECH LTD.	30-Aug-24	30-Aug-25

Chamber Measurement Photo



Note : The Photo please refer Appendix Test Photo.

(c) Test Procedure:

- | | |
|--|--|
| (1)Chamber normalization using reference horn antenna. | (5)Elevation scanning depending on test scope. |
| (2)DUT mounted on low-dielectric fixture. | (6)Co-pol / Cross-pol measured for each angle. |
| (3)VNA calibrated to DUT feed point. | (7)Total radiated power integrated for efficiency. |
| (4)DUT rotated 0–360° (azimuth) . | |

3D Gain Total



Antenna1

Frequency (GHz)	Peak Gain (dBi)	3D-avgGain (dBi)	Radiation Efficiency (%)
2.4	1.09	-3.71	43
2.45	1.4	-3.51	45
2.5	1.23	-3.81	42
5.15	2.26	-2.58	55
5.25	2.27	-2.49	56
5.35	2.42	-2.42	57
5.47	2.23	-2.84	52
5.6	2.38	-2.4	58
5.725	2.33	-2.19	60
5.785	2.36	-2.29	59
5.85	2.27	-2.22	60

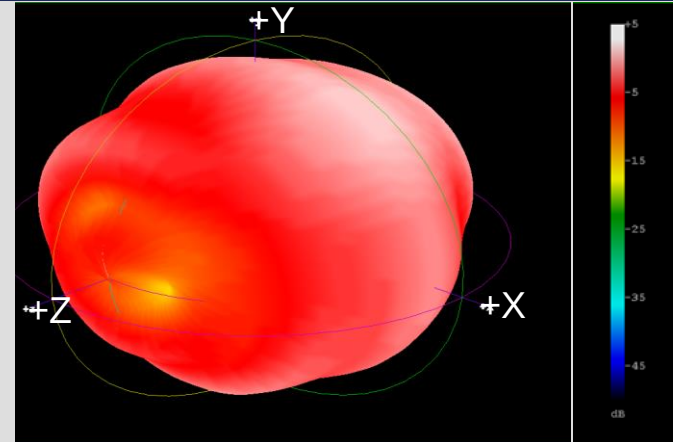
Antenna2

Frequency (GHz)	Peak Gain (dBi)	3D-avgGain (dBi)	Radiation Efficiency (%)
2.4	0.95	-3.62	43
2.45	1.48	-3.38	46
2.5	1.37	-3.66	43
5.15	2.74	-2.96	51
5.25	1.7	-2.86	52
5.35	1.87	-2.59	55
5.47	2.02	-2.51	56
5.6	2.24	-2.08	62
5.725	2.08	-1.98	63
5.785	2.13	-1.94	64
5.85	2.16	-2.03	63

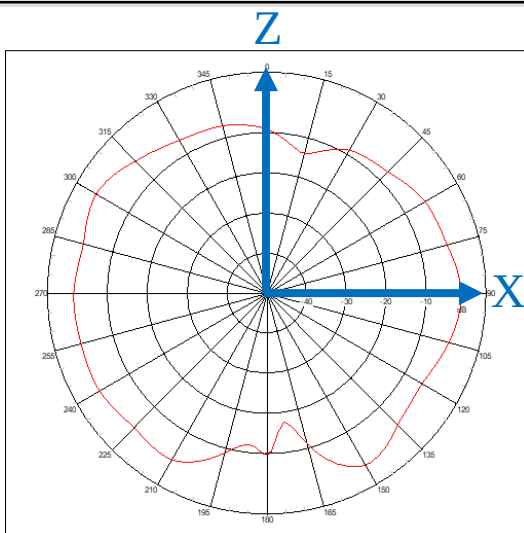
Antenna 2D/3D Pattern

Antenna1

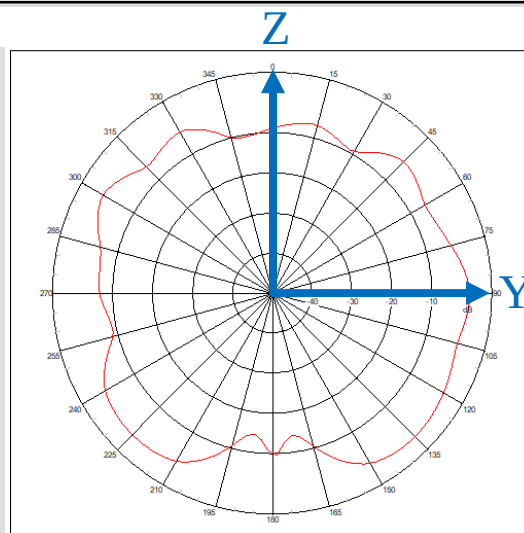
2400MHz



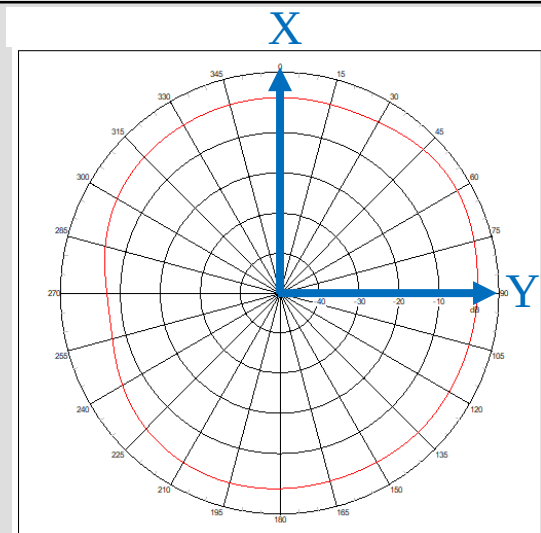
XZ-plane



YZ-plane



XY-plane

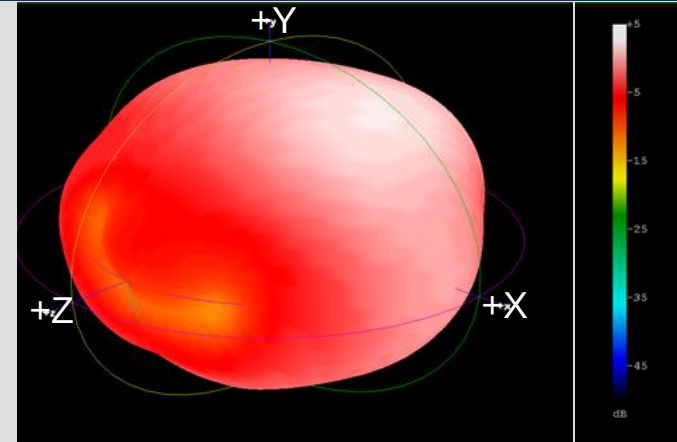


Antenna 2D/3D Pattern

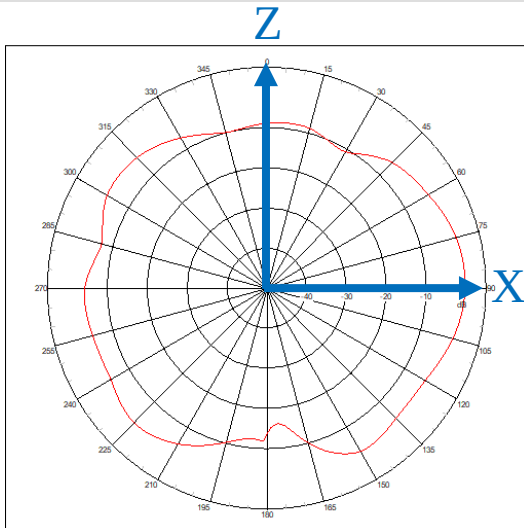


Antenna1

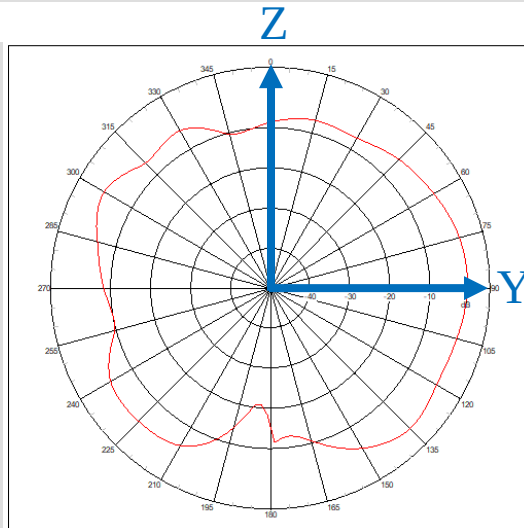
2450MHz



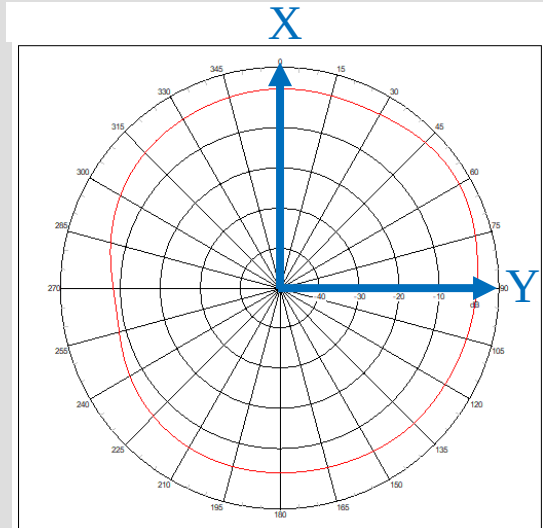
XZ-plane



YZ-plane



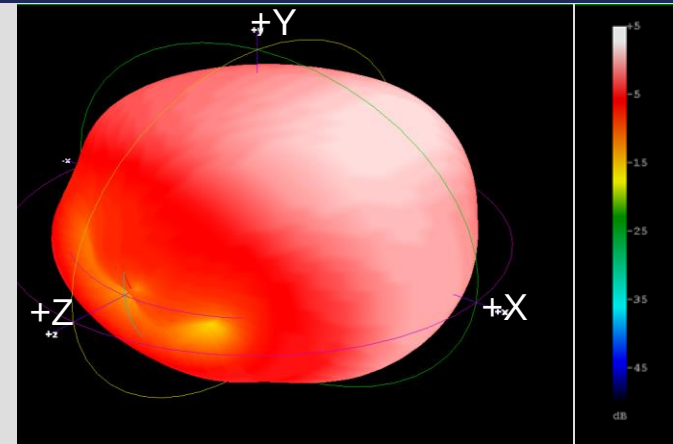
XY-plane



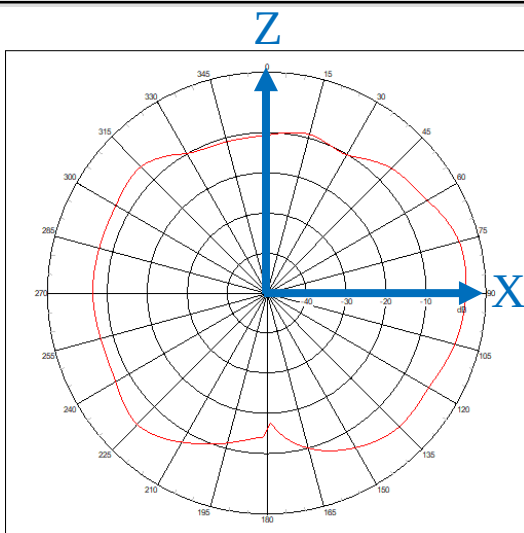
Antenna 2D/3D Pattern

Antenna1

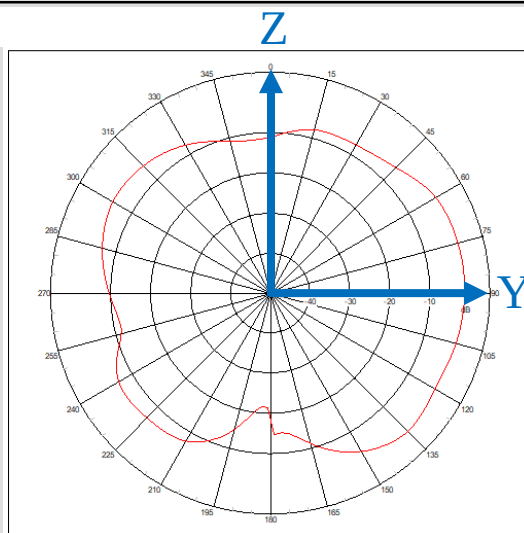
2500MHz



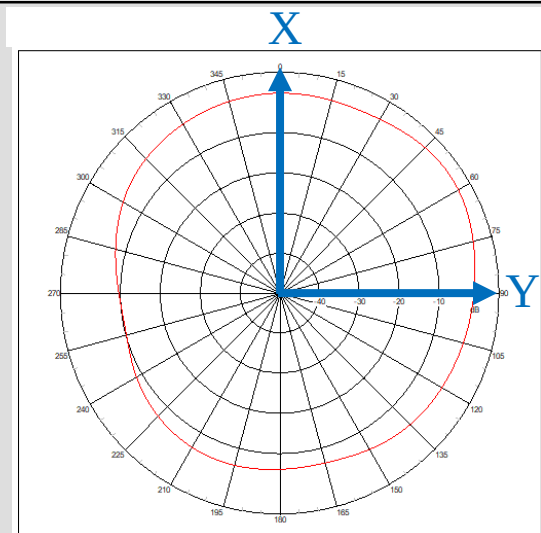
XZ-plane



YZ-plane



XY-plane

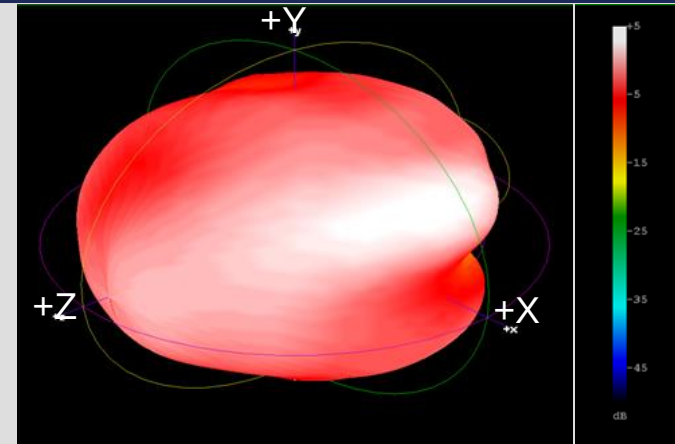


Antenna 2D/3D Pattern

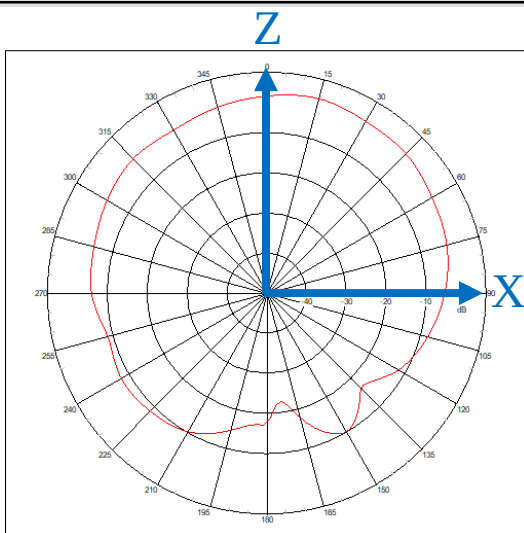


Antenna1

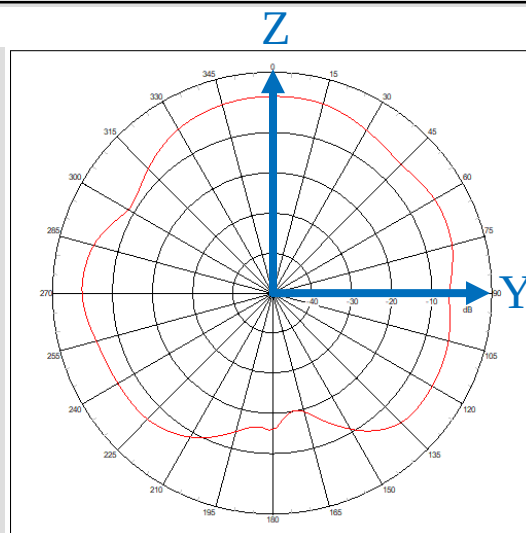
5150MHz



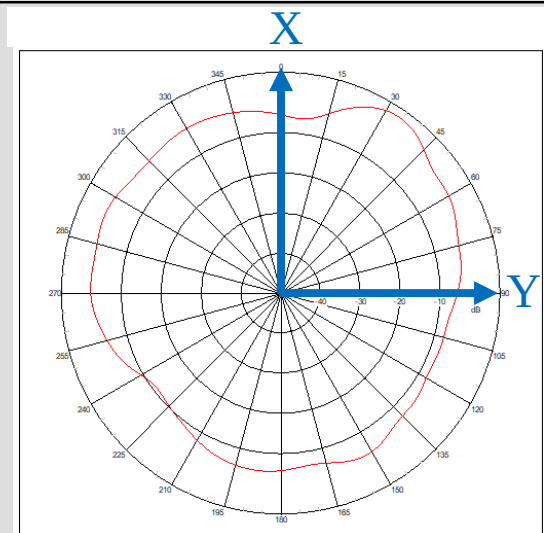
XZ-plane



YZ-plane



XY-plane

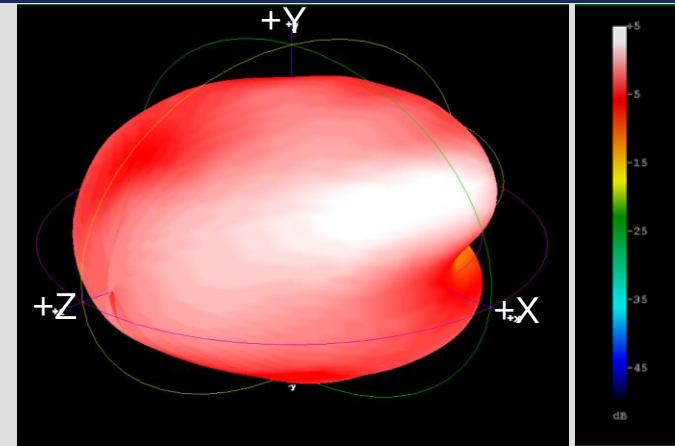


Antenna 2D/3D Pattern

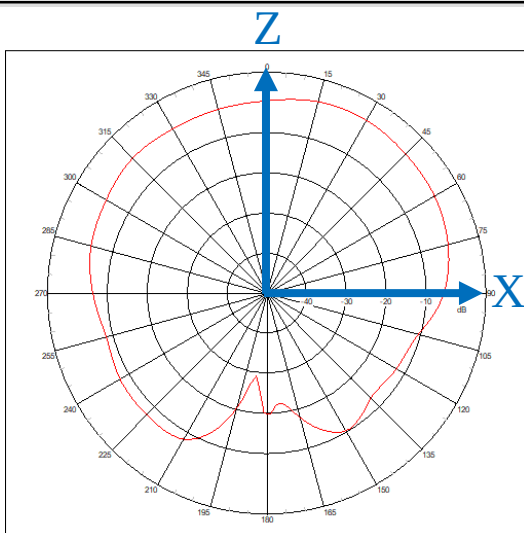


Antenna1

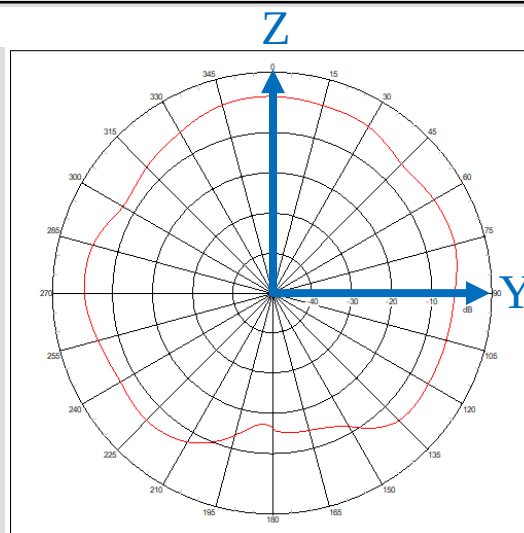
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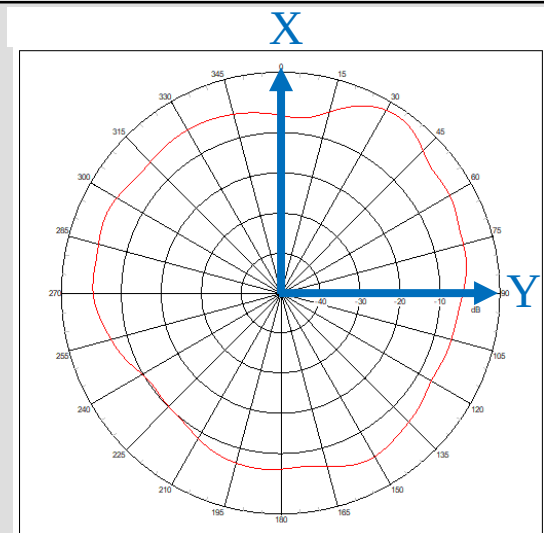
XZ-plane



YZ-plane



XY-plane

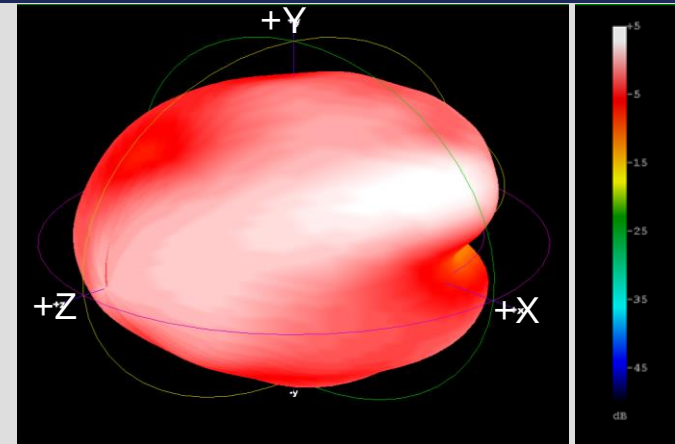


Antenna 2D/3D Pattern

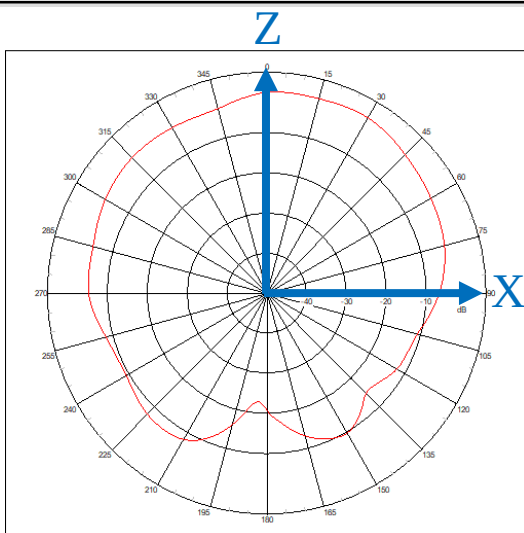


Antenna1

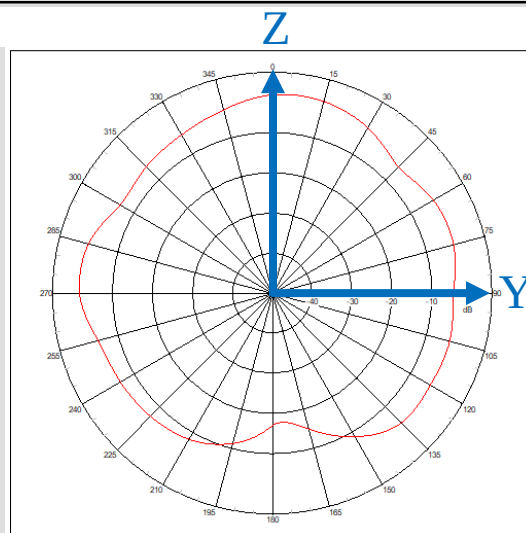
5350MHz



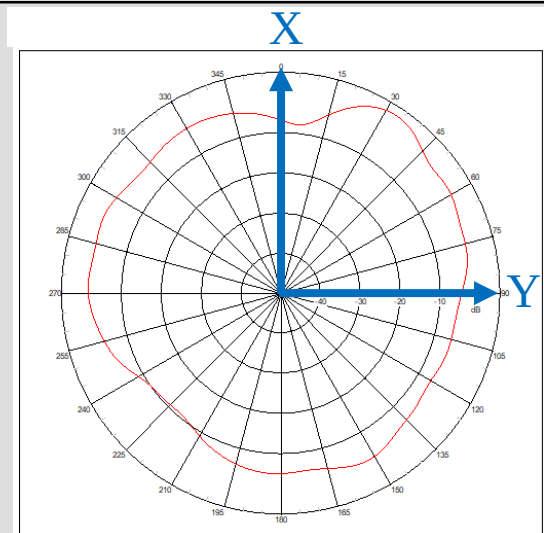
XZ-plane



YZ-plane



XY-plane

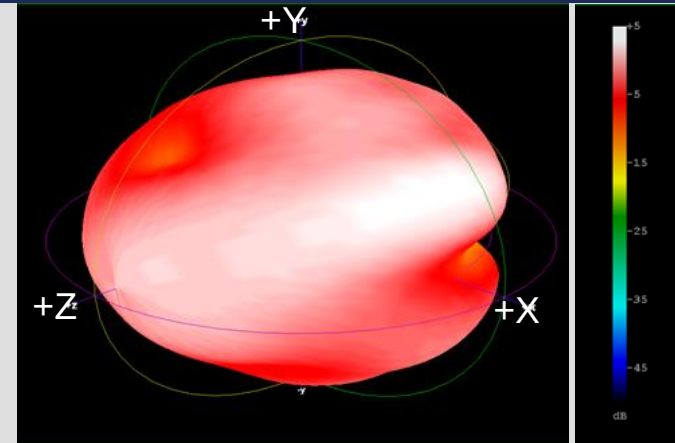


Antenna 2D/3D Pattern

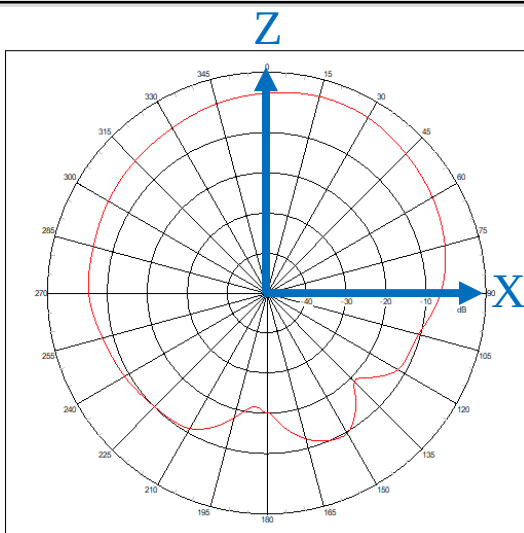


Antenna1

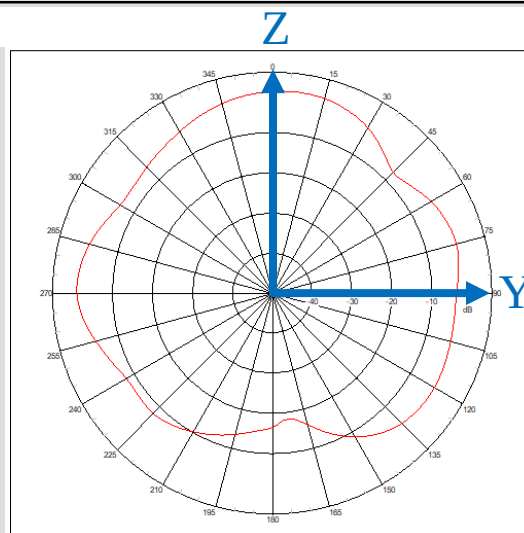
5470MHz



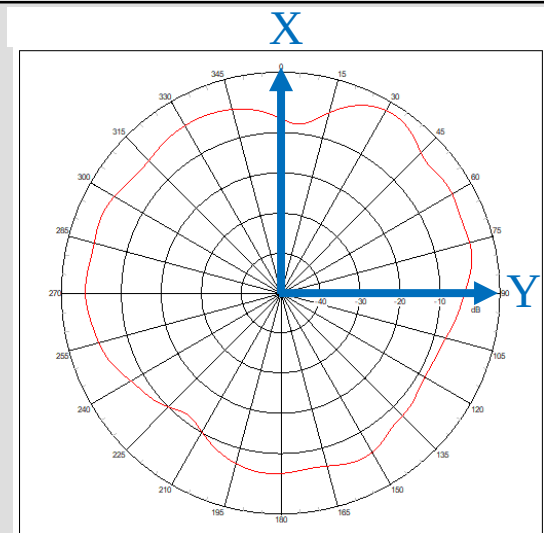
XZ-plane



YZ-plane



XY-plane

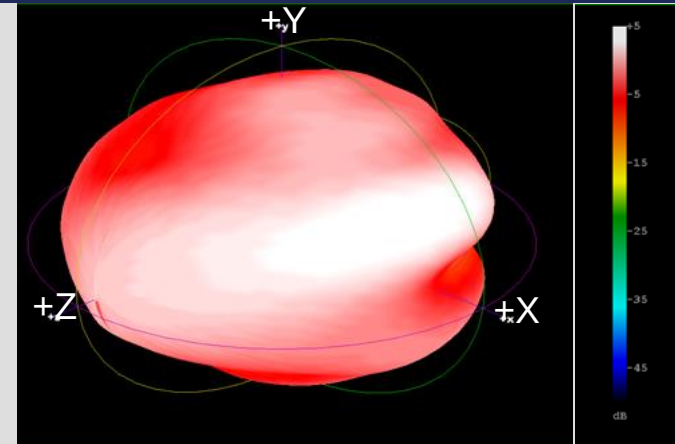


Antenna 2D/3D Pattern

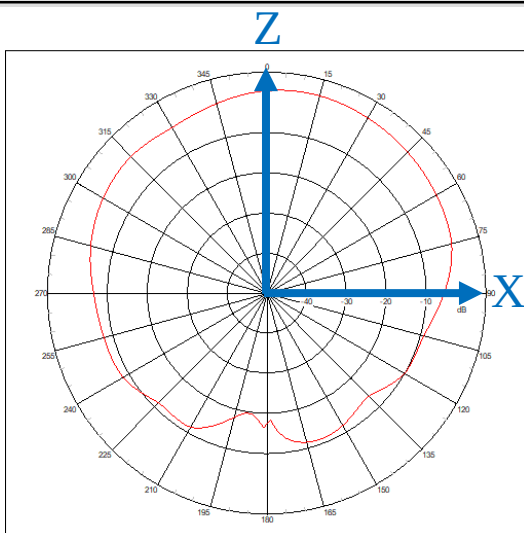


Antenna1

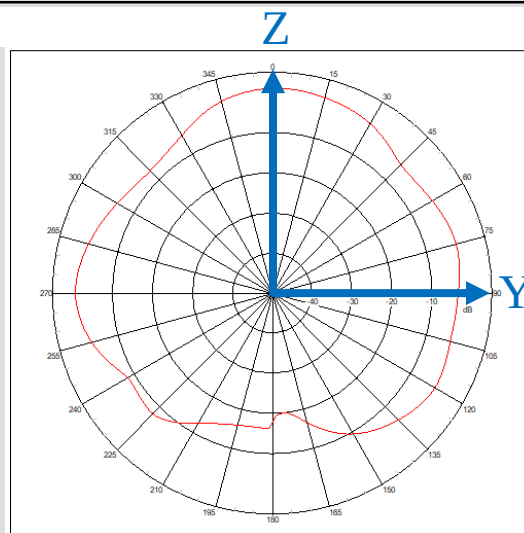
5600MHz



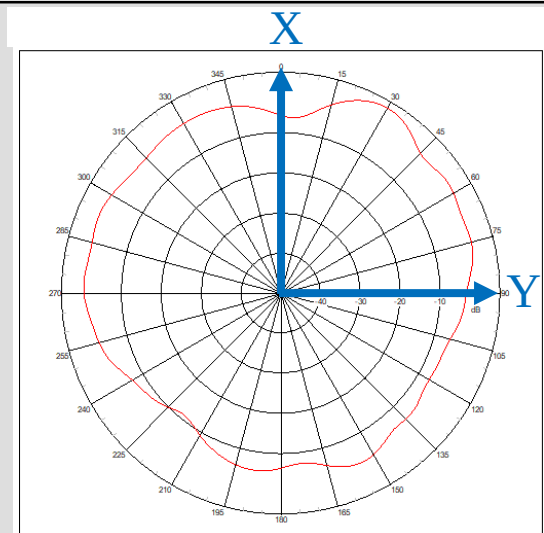
XZ-plane



YZ-plane



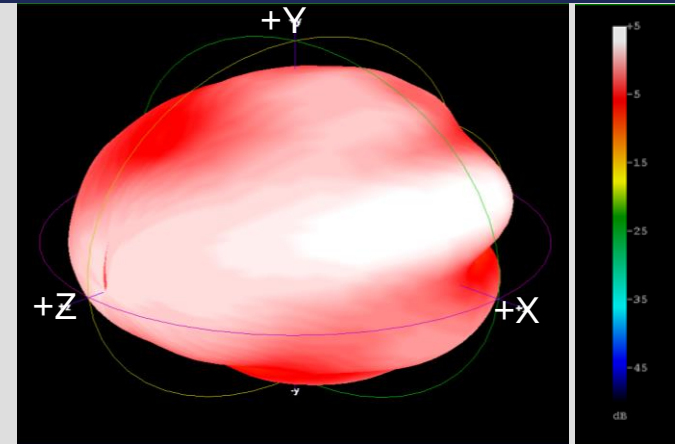
XY-plane



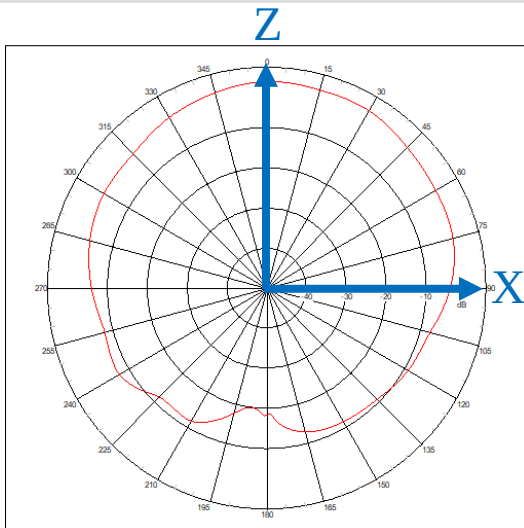
Antenna 2D/3D Pattern

Antenna1

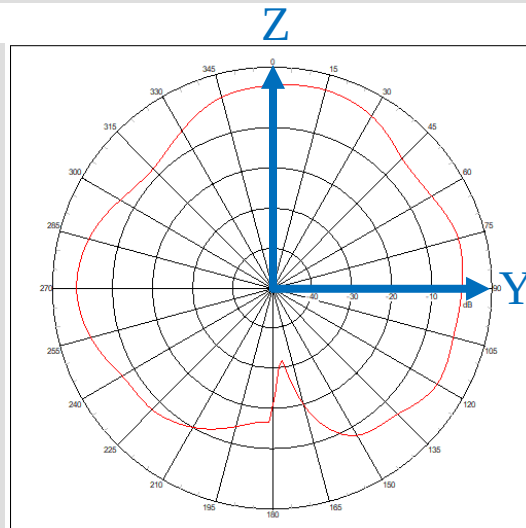
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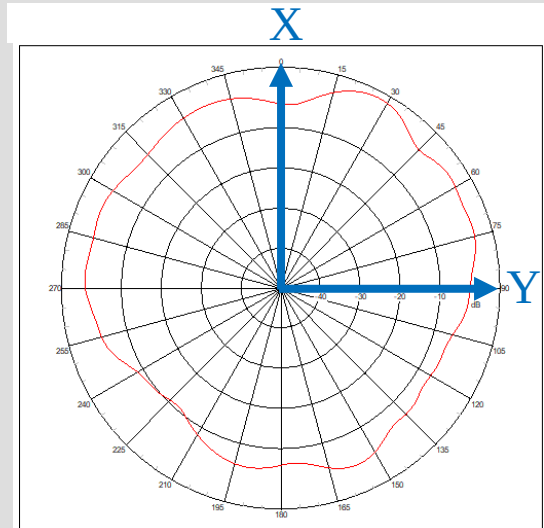
XZ-plane



YZ-plane



XY-plane

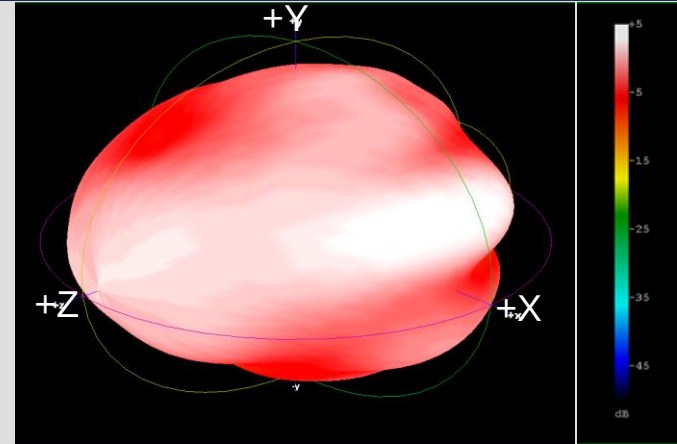


Antenna 2D/3D Pattern

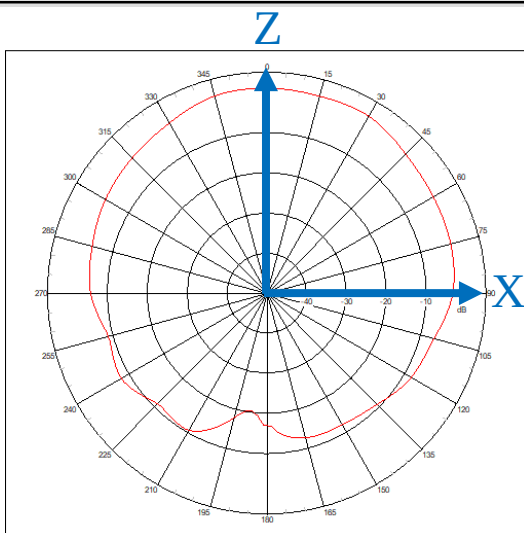


Antenna1

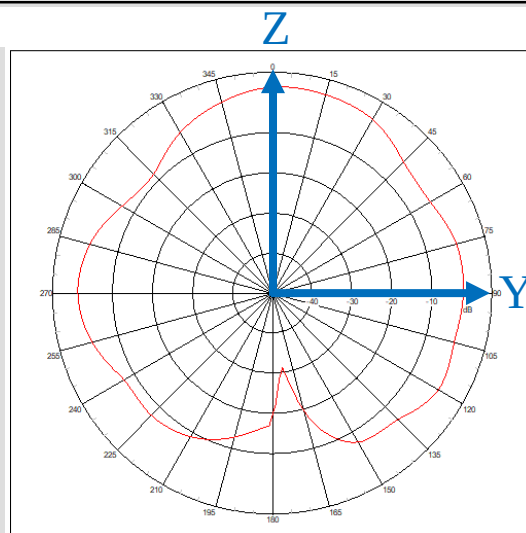
5785MHz



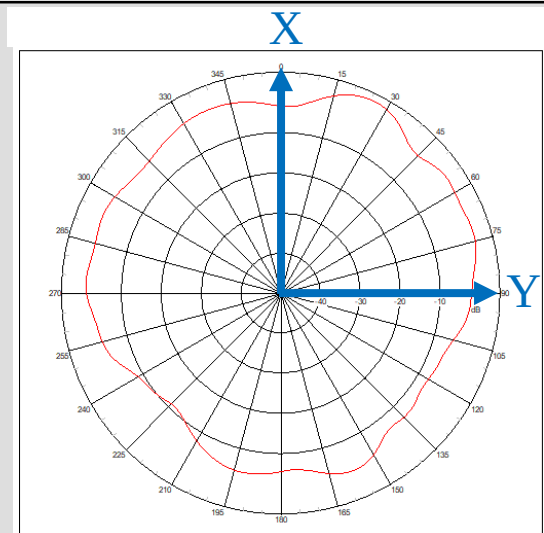
XZ-plane



YZ-plane



XY-plane

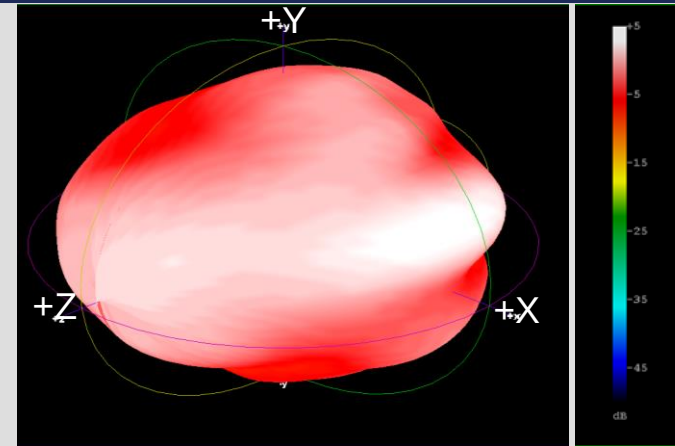


Antenna 2D/3D Pattern

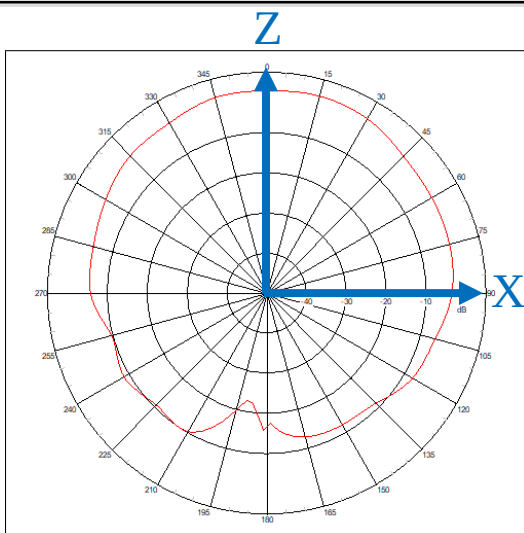


Antenna1

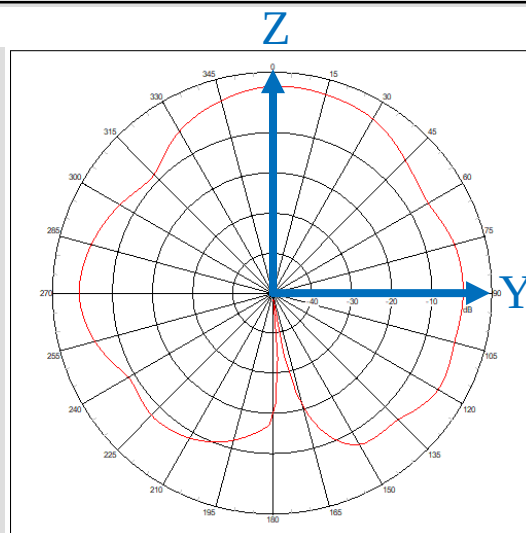
5850MHz



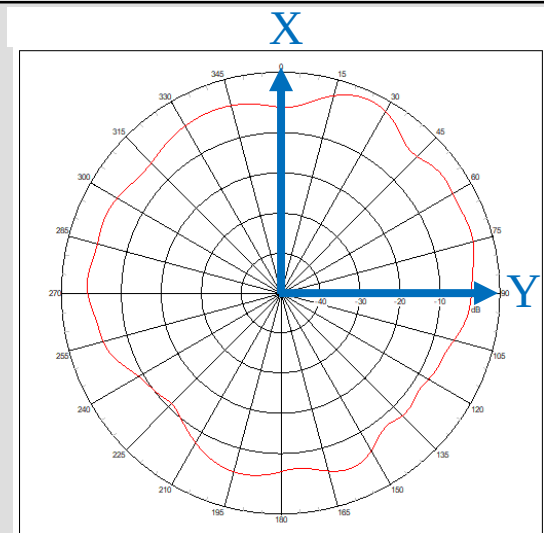
XZ-plane



YZ-plane



XY-plane

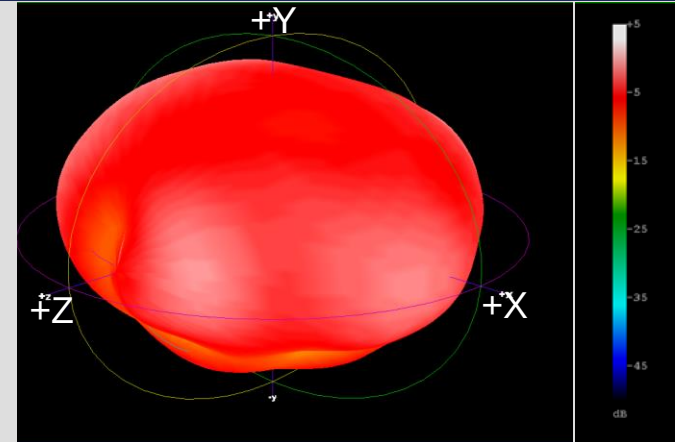


Antenna 2D/3D Pattern

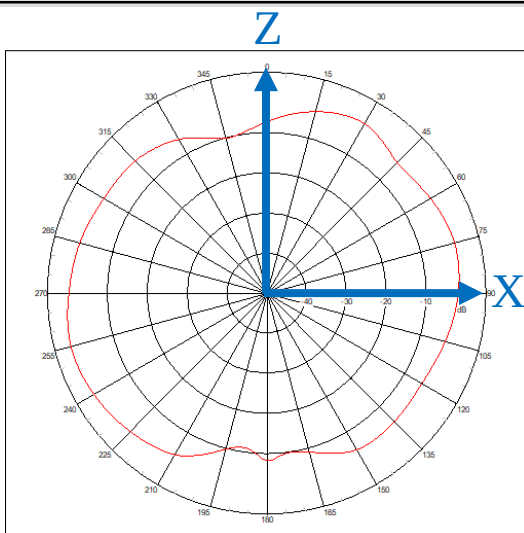


Antenna2

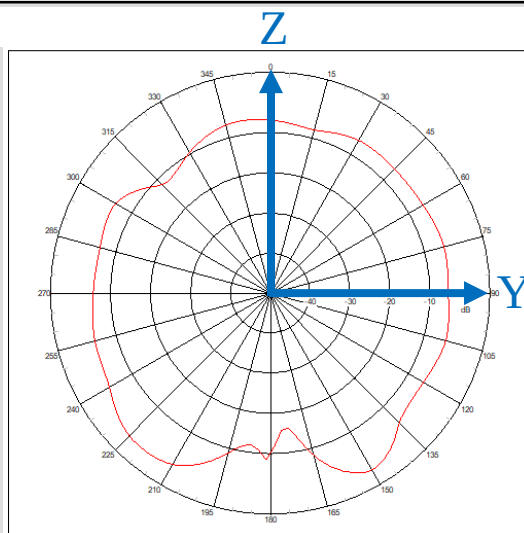
2400MHz



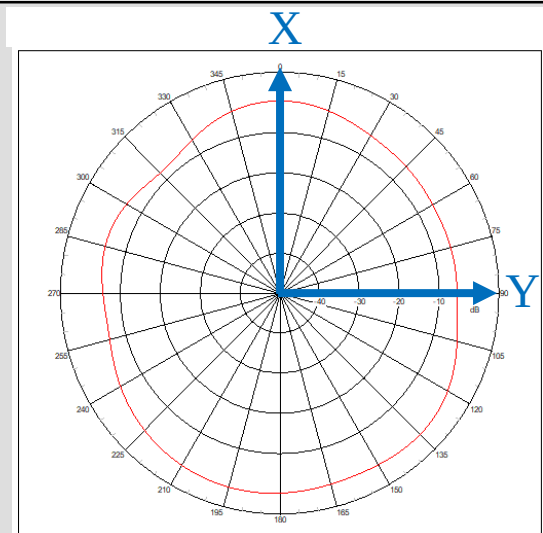
XZ-plane



YZ-plane



XY-plane

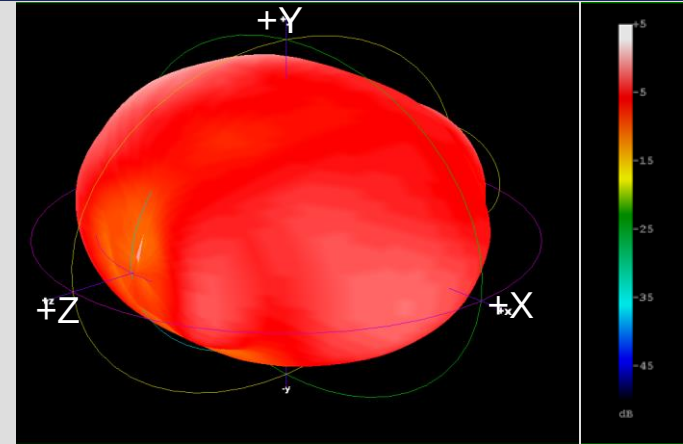


Antenna 2D/3D Pattern

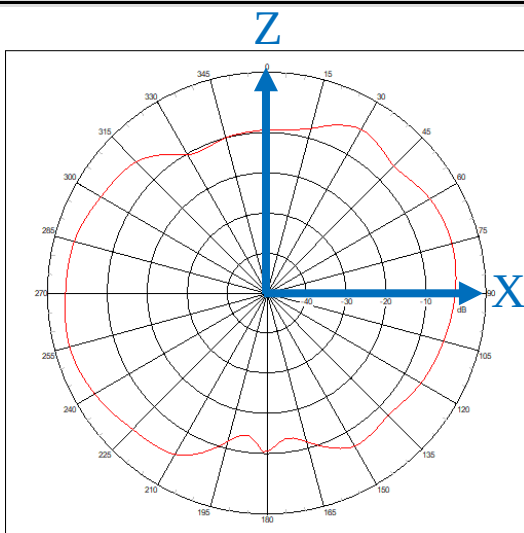


Antenna2

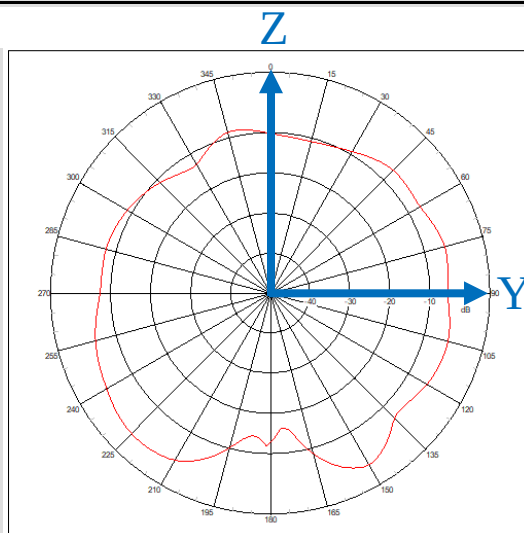
2450MHz



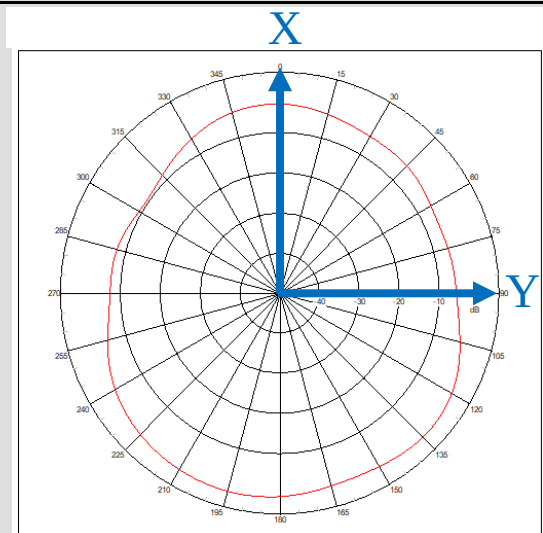
XZ-plane



YZ-plane



XY-plane

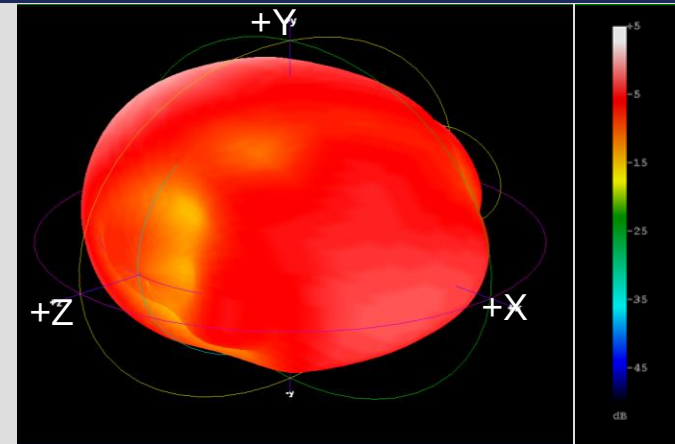


Antenna 2D/3D Pattern

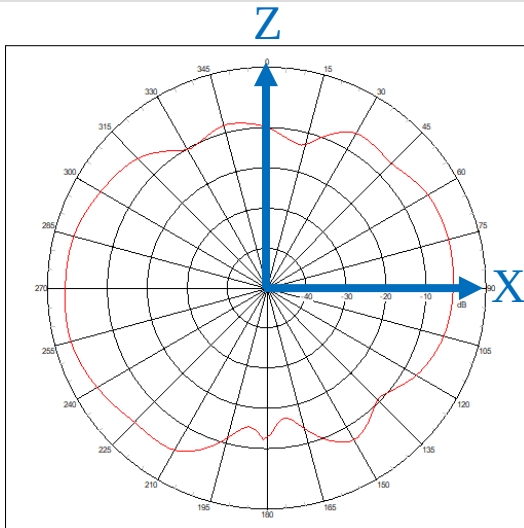


Antenna2

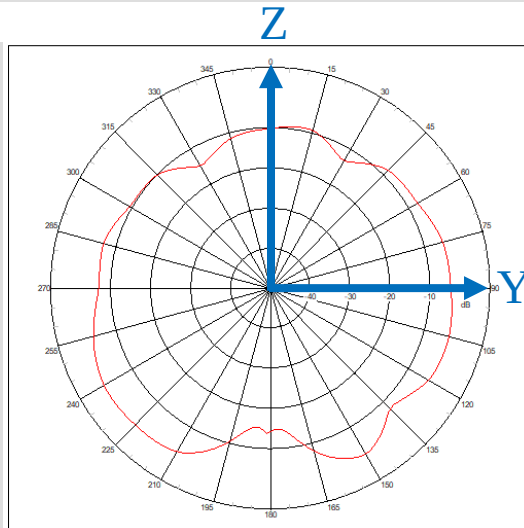
2500MHz



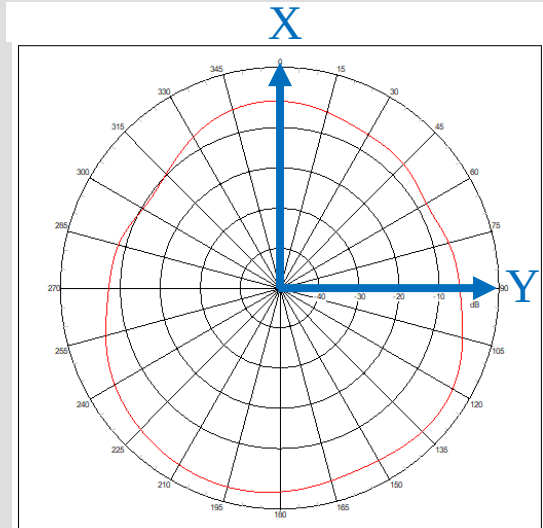
XZ-plane



YZ-plane



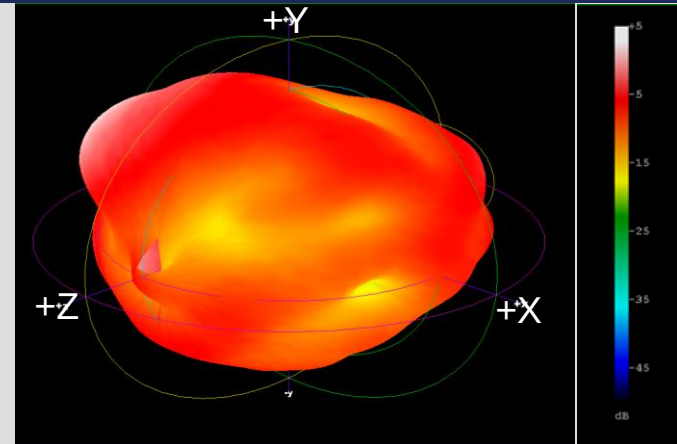
XY-plane



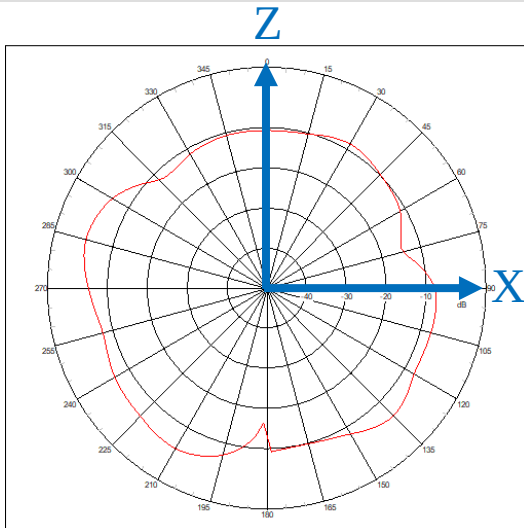
Antenna 2D/3D Pattern

Antenna2

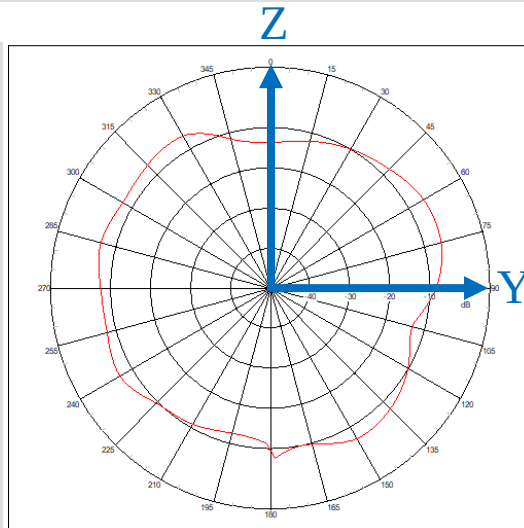
5150MHz



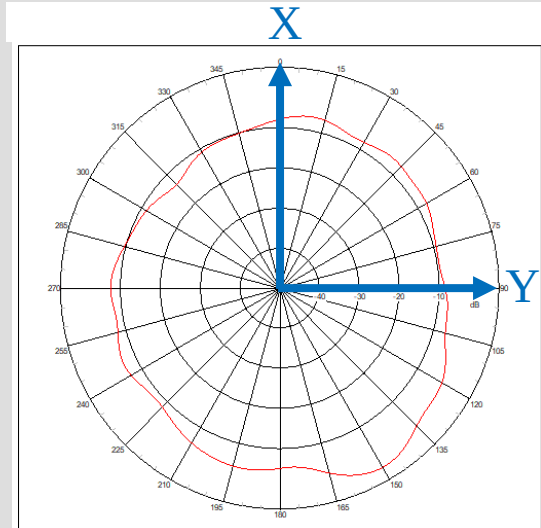
XZ-plane



YZ-plane



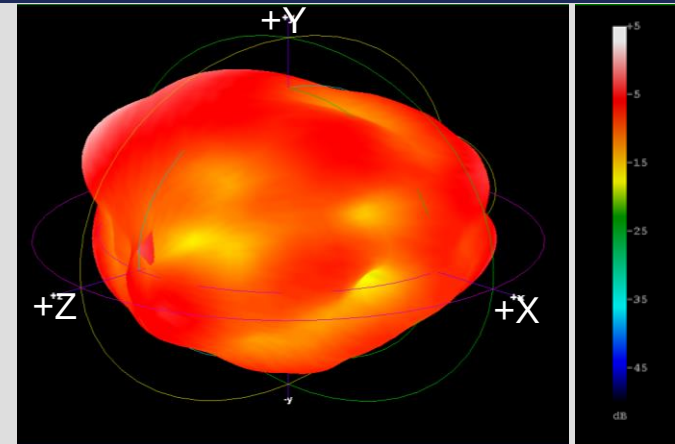
XY-plane



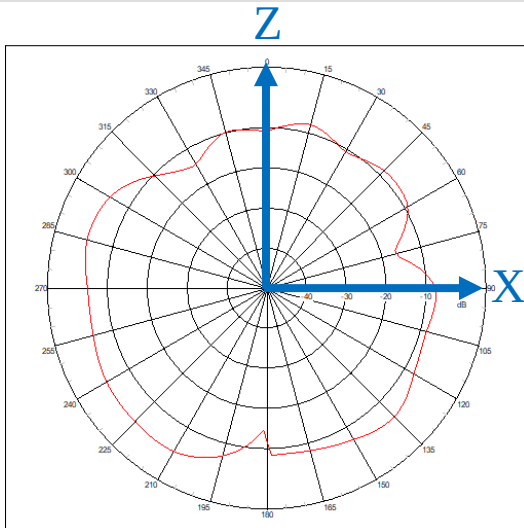
Antenna 2D/3D Pattern

Antenna2

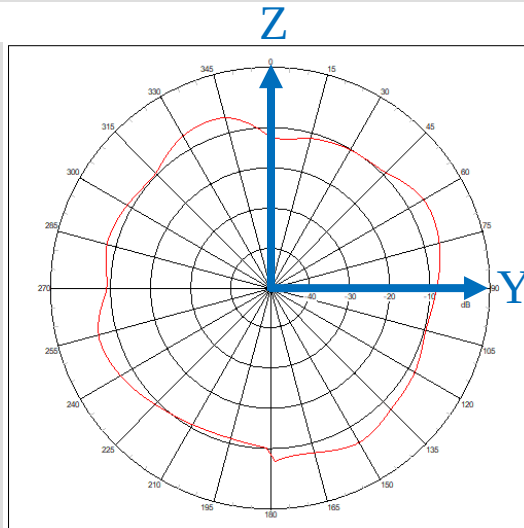
5250MHz



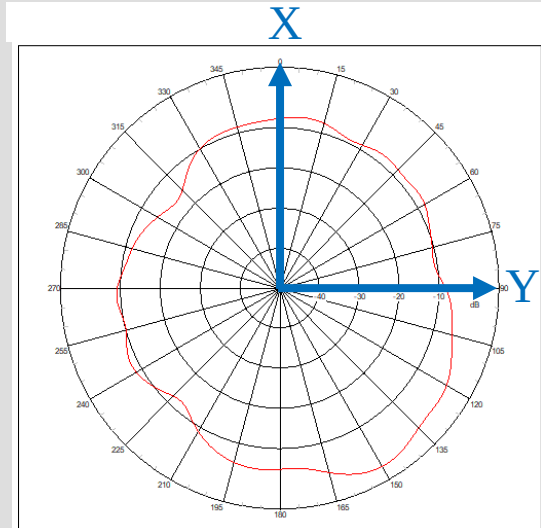
XZ-plane



YZ-plane



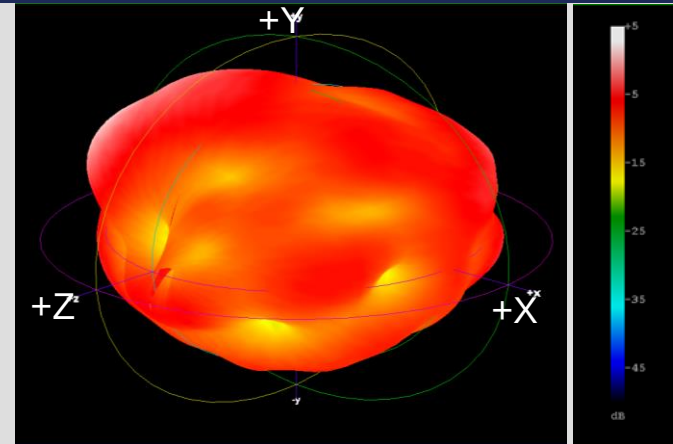
XY-plane



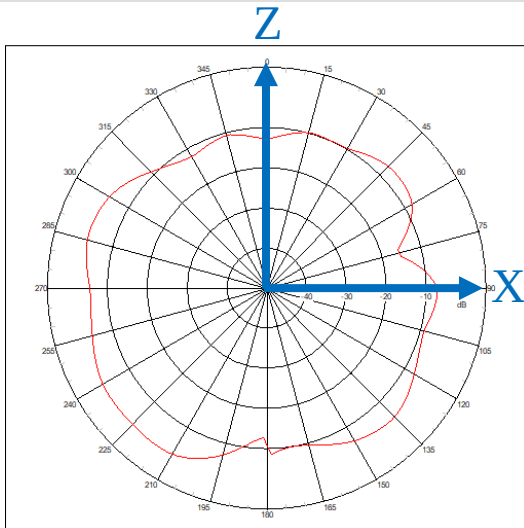
Antenna 2D/3D Pattern

Antenna2

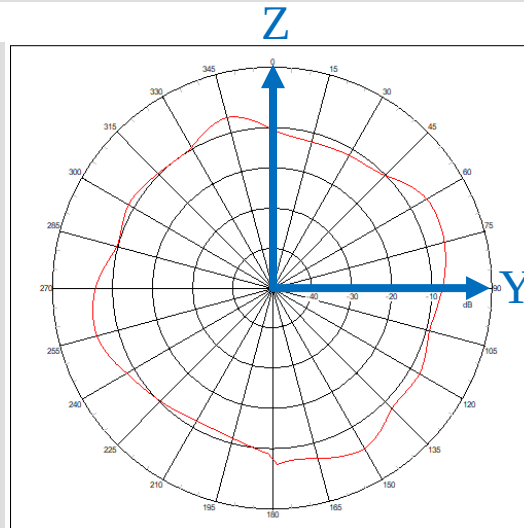
5350MHz



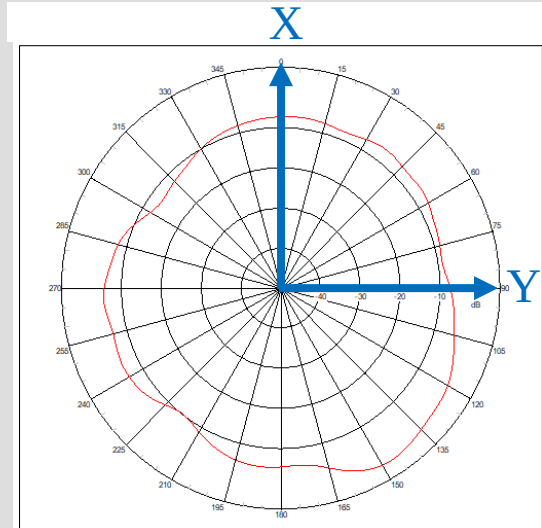
XZ-plane



YZ-plane



XY-plane

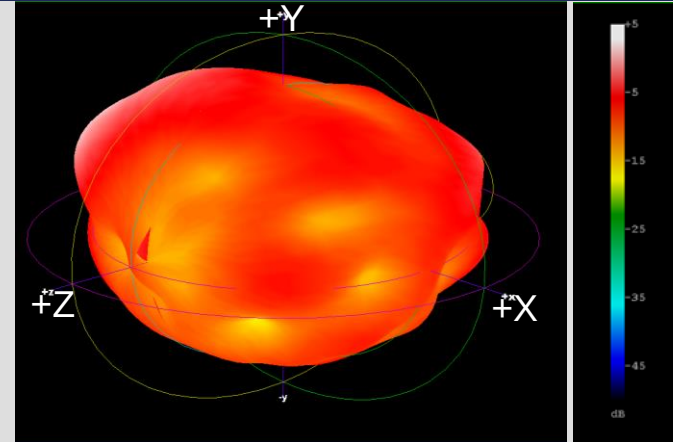


Antenna 2D/3D Pattern

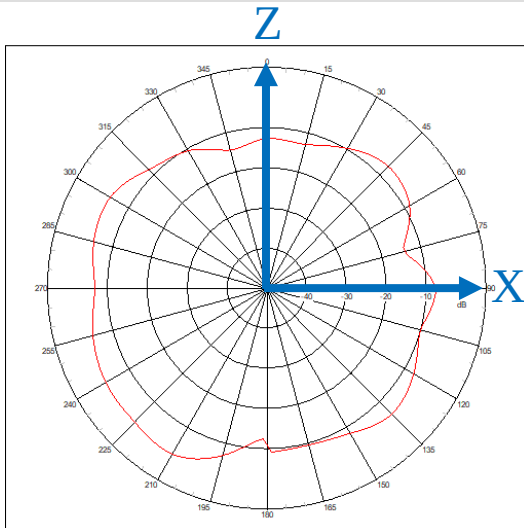


Antenna2

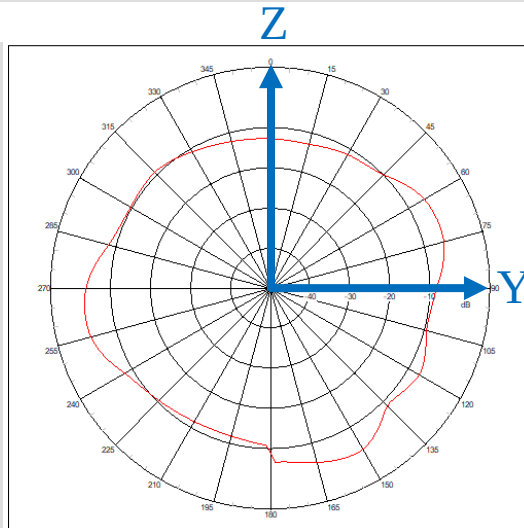
5470MHz



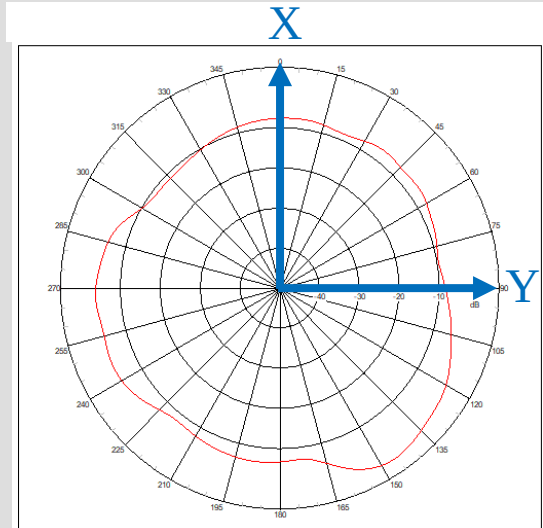
XZ-plane



YZ-plane



XY-plane

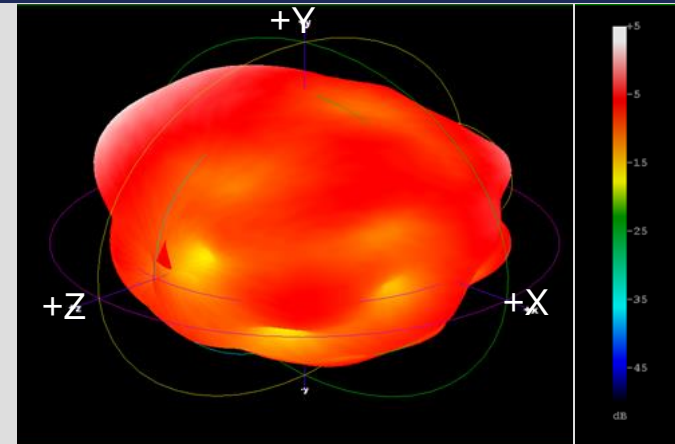


Antenna 2D/3D Pattern

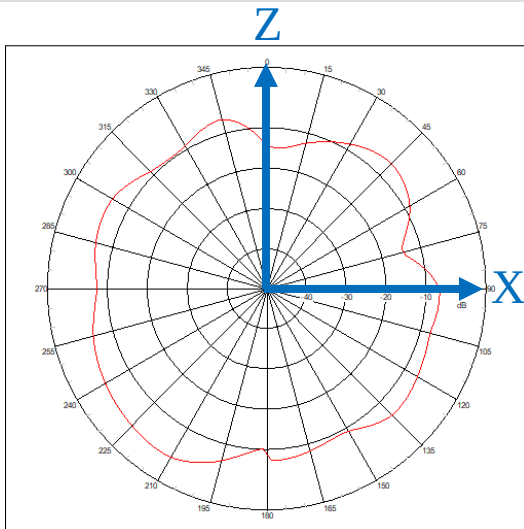


Antenna2

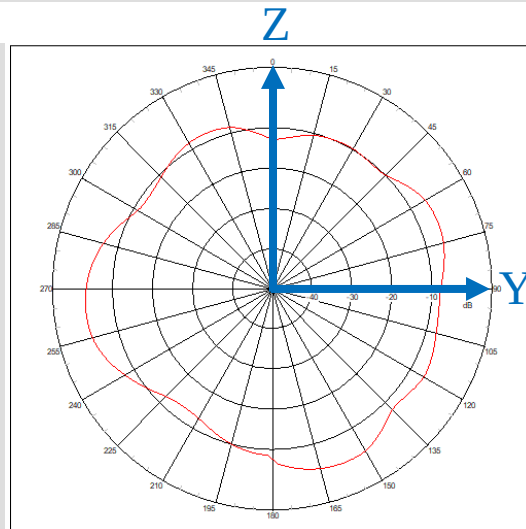
5600MHz



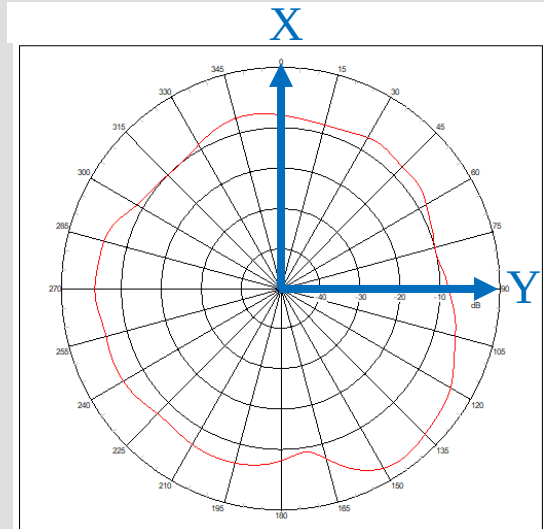
XZ-plane



YZ-plane



XY-plane

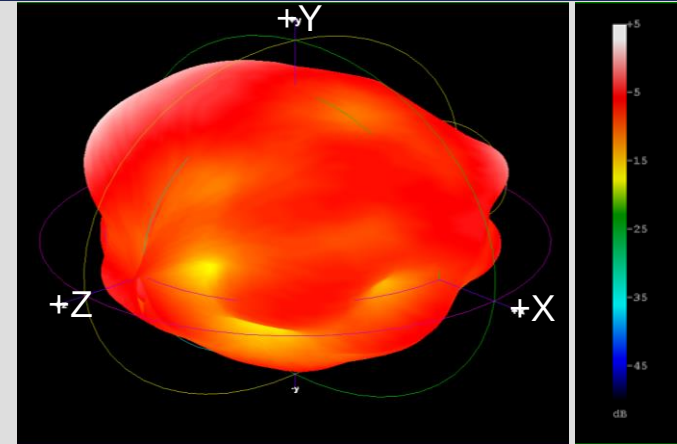


Antenna 2D/3D Pattern

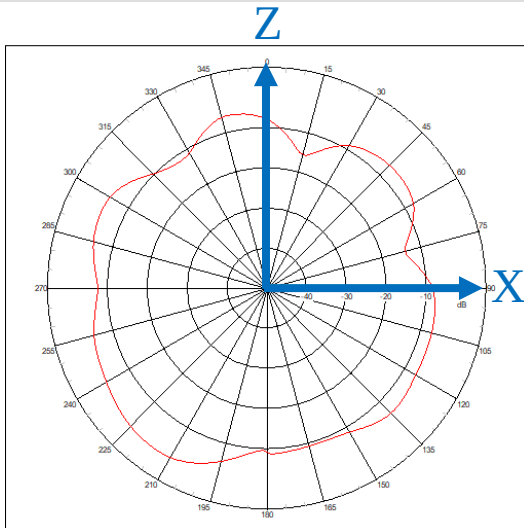


Antenna2

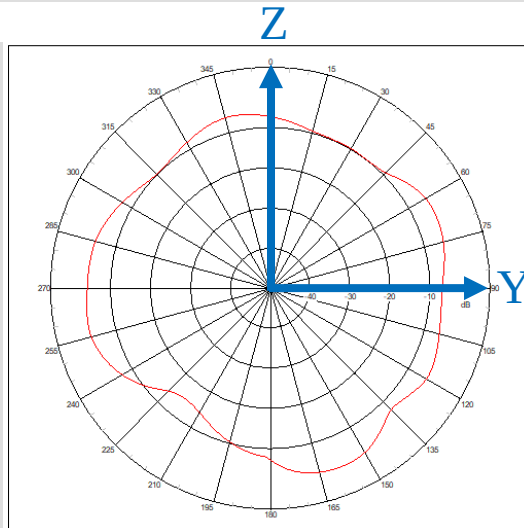
5725MHz



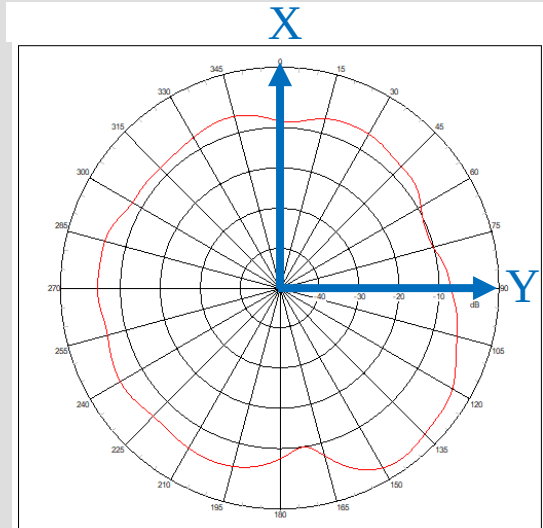
XZ-plane



YZ-plane



XY-plane

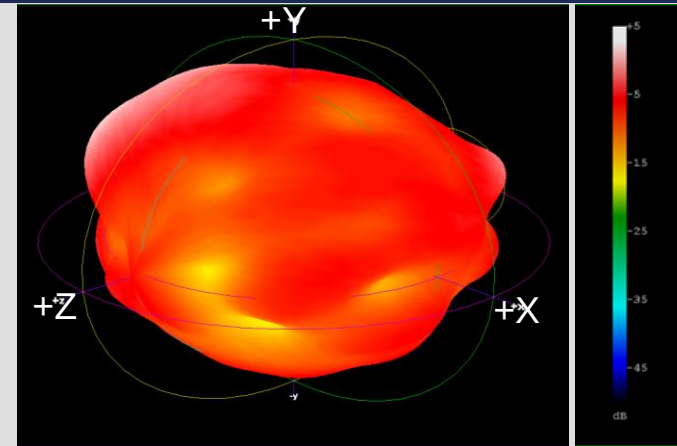


Antenna 2D/3D Pattern

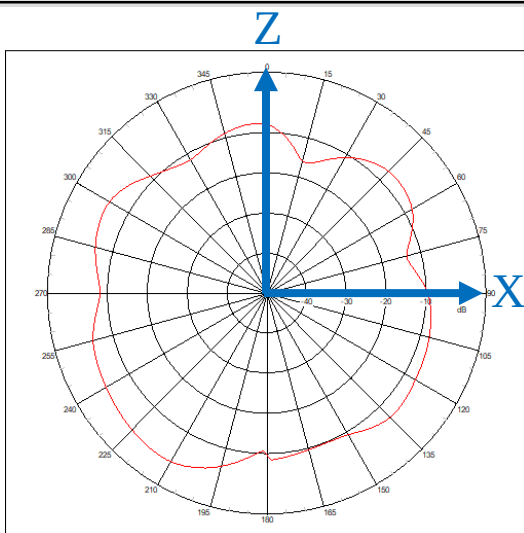


Antenna2

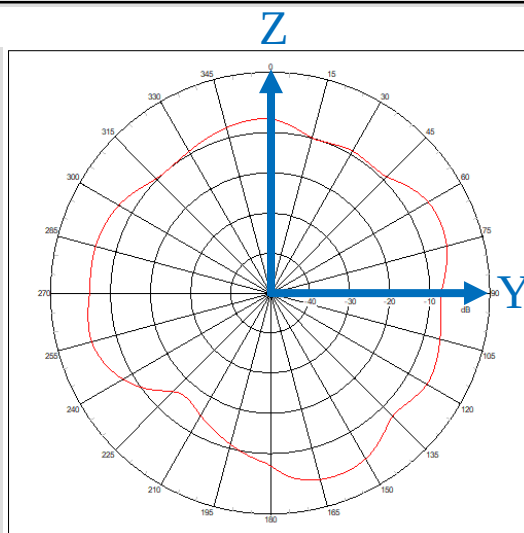
5785MHz



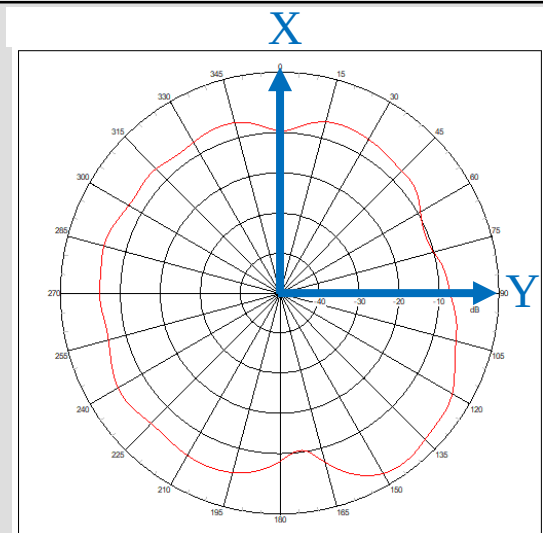
XZ-plane



YZ-plane



XY-plane

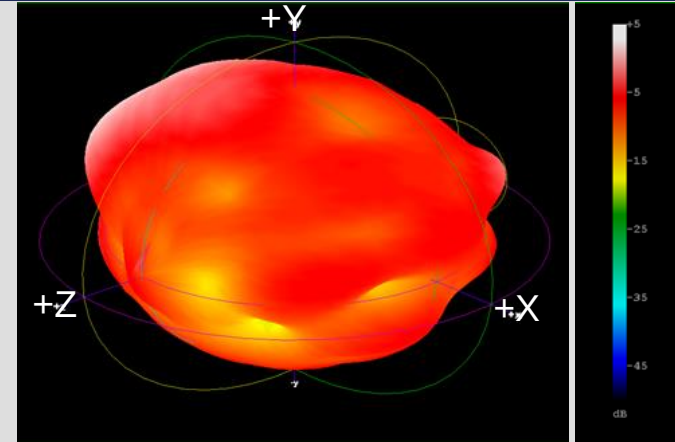


Antenna 2D/3D Pattern

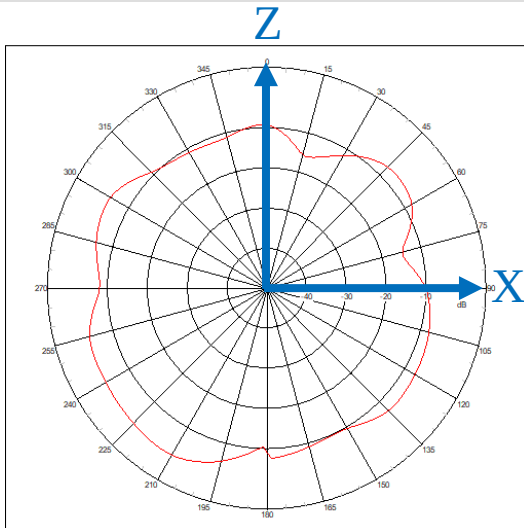


Antenna2

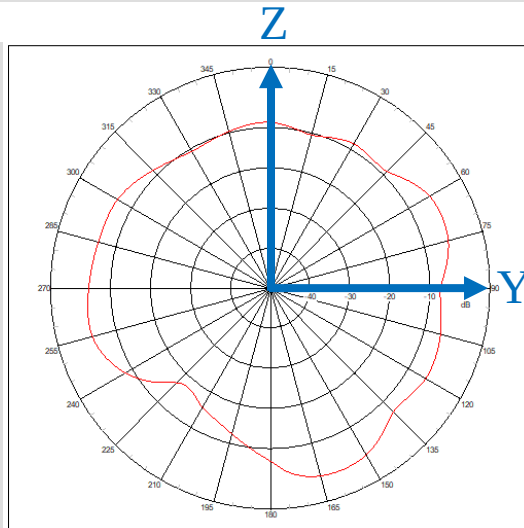
5850MHz



XZ-plane



YZ-plane



XY-plane

