



规格承认书

Approval Sheet

Manufacturer Fujian Newland Auto-ID

Tech Co., Ltd.

Add Newland Science & Technology Park No.1 Rujiang West Rd.,
Mawei district, Fuzhou, Fujian, China

(Customer Name)

产品名称 NW20 WIF16-1 LDS

(Specification)

客户料号 302-NW2000001

(Customer P/N)

产品料号

(O/I)

送样日期 2024-07-30

(Date)

1. Project picture



WiFi6-1-L



WiFi6-2-R

2. Passive testing

Objective: To test the passive parameters of antenna as accurately as possible.

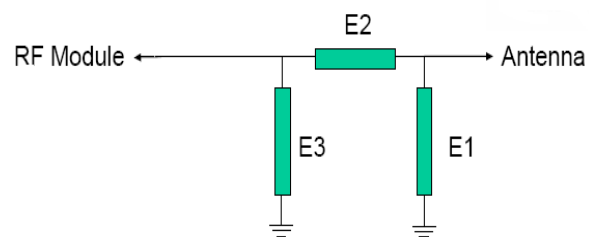
Method: This fixture is a 50 ohm coaxial cable, one end of which is connected to the test point at the back end of the matching circuit of the mobile phone motherboard (the front section of the RF test hole), and the other section is connected to the SMA connector. The details are as follows :

The following table shows the performance test indicators for the NW20 production antenna:

NW20-WIFI/BT antenna				
	frequency (MHz)	VSWR	frequency (MHz)	VSWR

frequency band	transmitting terminal		receiving terminal	
BT	2400-2480	≤ 2.0	2400-2480	≤ 2.0
2.4GWIFI	2400-2500	≤ 2.0	2400-2500	≤ 2.0
5GWIFI	5150-5850	≤ 2.5	5150-5850	≤ 3.0

3. match circuit

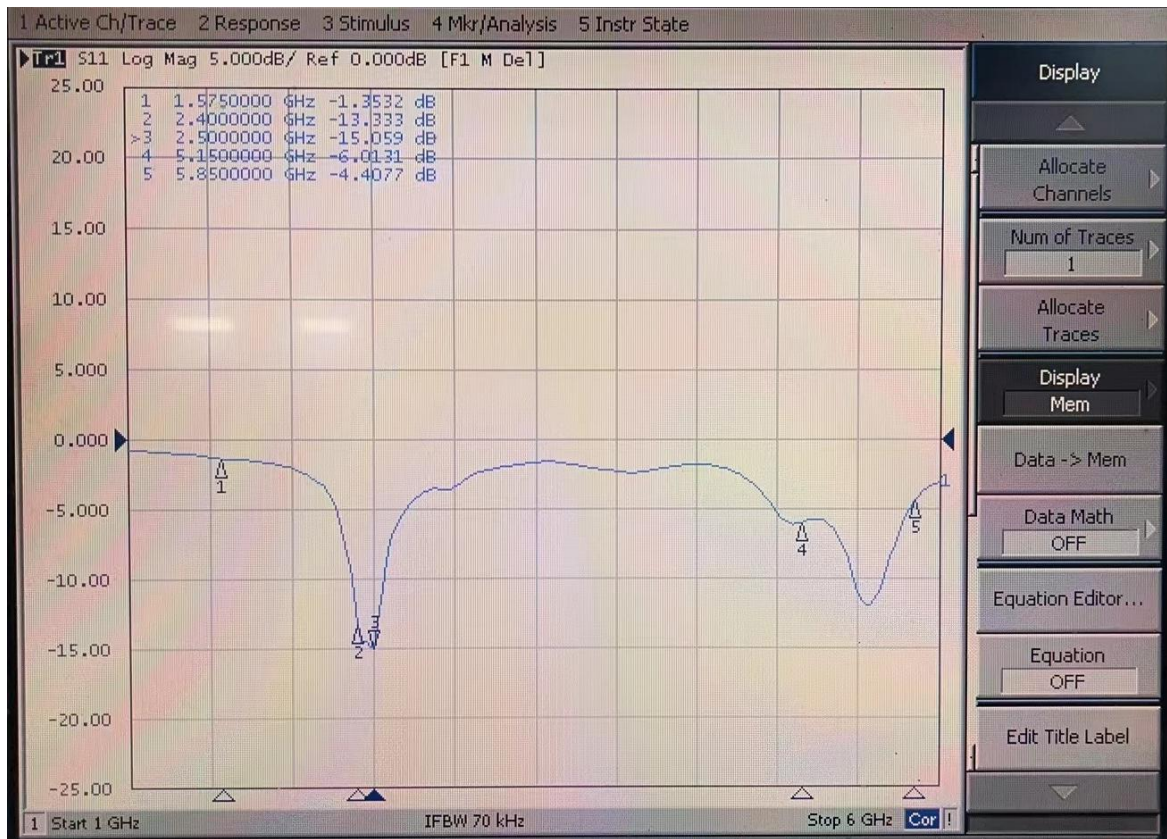


Element	Matched value
E1	
E2	0 Ohm
E3	

4. S11 Test

4.1 S11 Test method specification standard

Handling of test fixtures : From the antenna 50 ohm test point on the PCB of the phone, a hard cable is used to lead out the SMA-J connector, which is connected to the copper tube with the choke, and then connected to the other devices in turn.

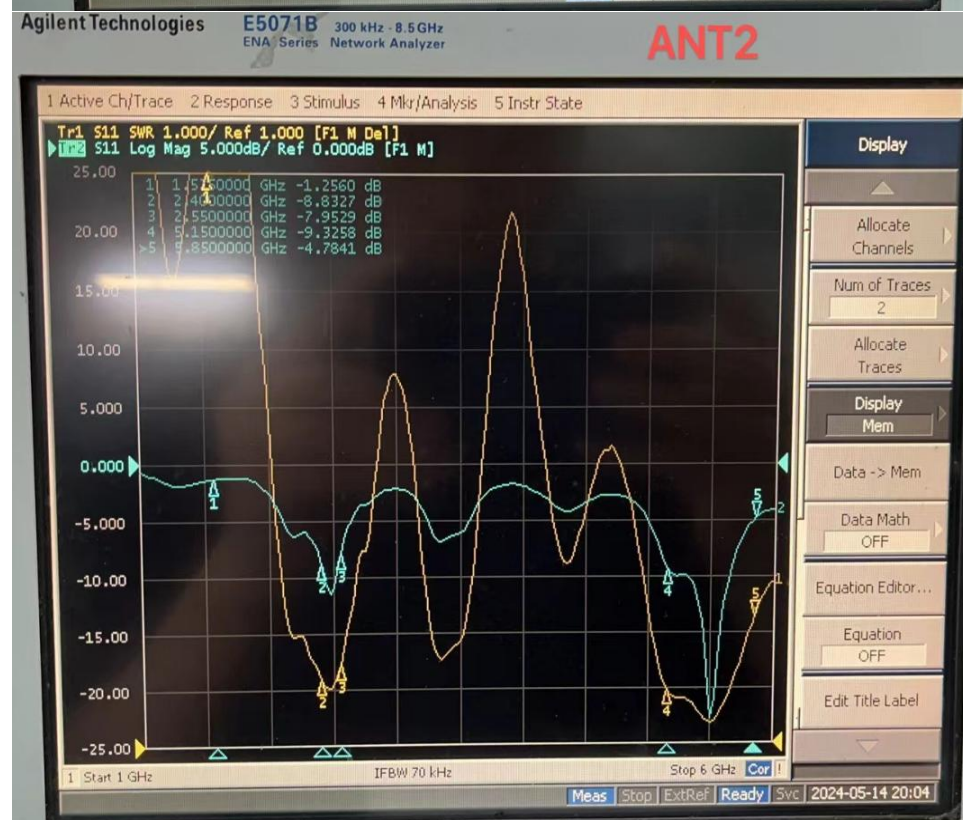


S11

5 : antenna test

channel	2.4G-11b			2.4G-11g		
	CH1	CH6	CH11	CH1	CH6	CH11
TRP(dBm)	13.49	14.91	14.48	12.45	13.53	13.46
TIS(dBm)	-83.31	-83.57	-84.75	-70.12	-70.57	-71.31
channel	2.4G-11N			2.4G-11AX		
	CH1	CH6	CH11	CH1	CH6	CH11
TRP(dBm)	12.55	13.18	13.45	11.69	11.59	12.06
TIS(dBm)	-70.65	-71.40	-70.51	-61.70	-61.37	-60.25
channel	5G-11A			5G-11AC		
	CH36	CH60	CH165	CH36	CH60	CH165
TRP(dBm)	13.73	13.06	12.54	13.53	12.55	12.12

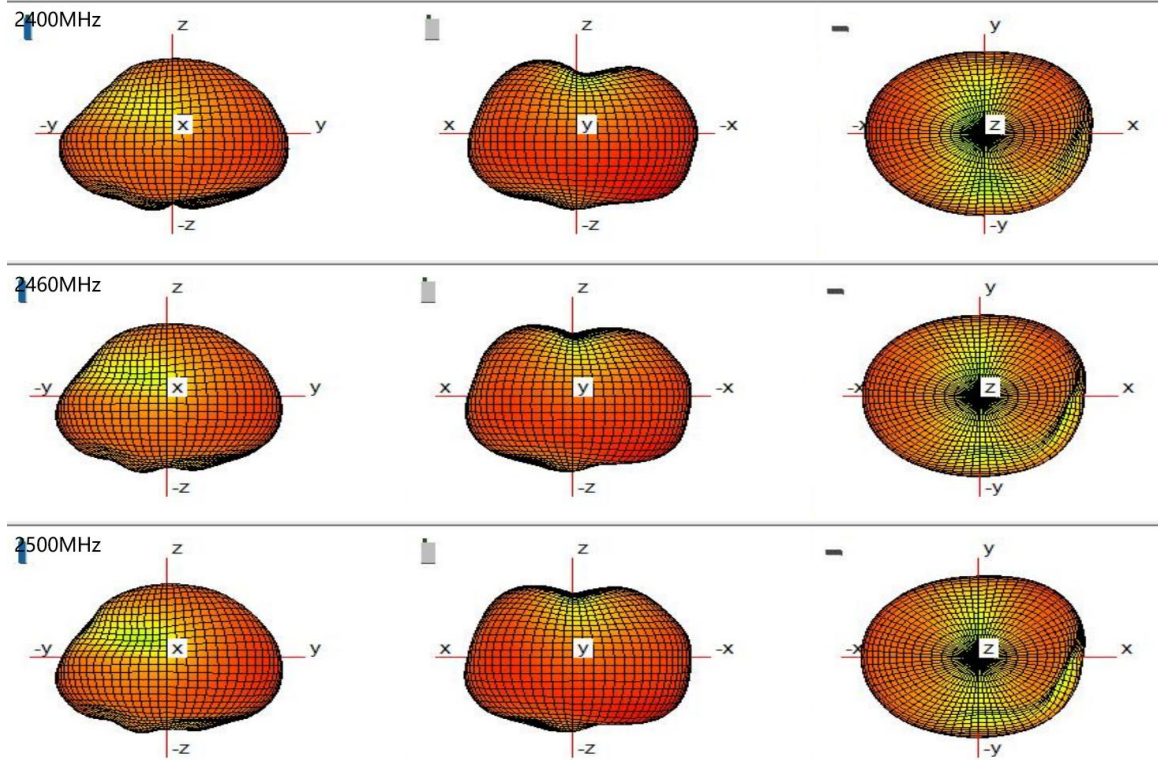
TIS(dBm)	-71.09	-71.44	-71.78	-65.39	-65.85	-65.40
channel	5G-11N			5G-11AX		
	CH36	CH60	CH165	CH36	CH60	CH165
TRP(dBm)	13.87	13.14	12.20	14.63	13.38	12.81
TIS(dBm)	-71.10	-71.69	-71.81	-59.51	-59.71	-59.55
channel	BT					
	CH0	CH39	CH78			
TRP(dBm)	2.94	3.27	2.66			
TIS(dBm)	-89.81	-88.68	-88.76			

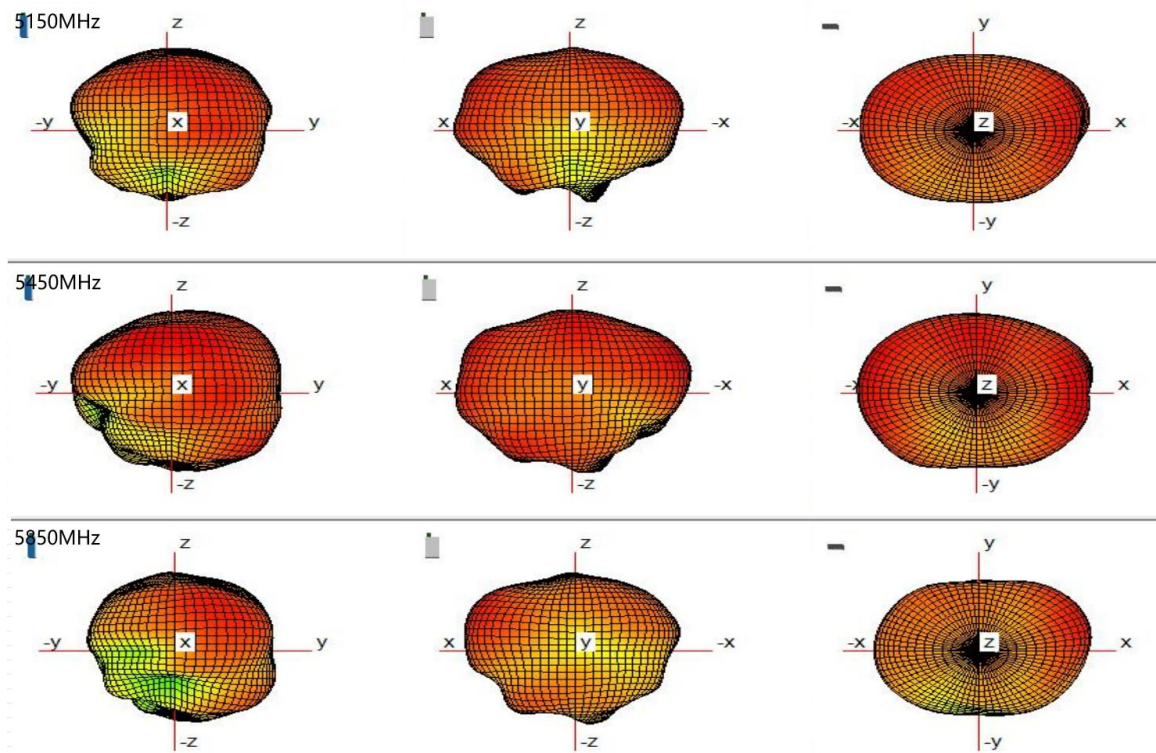




ANT1(chain 0)			
Freq(MHz)	Efficiency(dB)	Gain(dBi)	Efficiency(%)
2400	-3.4	0.58	45.75
2420	-3.3	0.67	46.76
2440	-3.64	0.29	43.24
2460	-3.74	0.11	42.29
2480	-4	-0.28	39.82
2500	-4.19	-0.67	38.13
5150	-5.11	-1.55	30.87
5170	-5.11	-1.61	30.84
5190	-4.91	-1.38	32.3
5210	-4.54	-1.02	35.12
5230	-4.61	-1.02	34.58
5250	-4.42	-0.85	36.12
5270	-4.54	-0.88	35.19
5290	-4.51	-0.77	35.38
5310	-4.48	-0.91	35.64
5330	-4.42	-0.76	36.17
5350	-4.29	-0.65	37.23
5370	-4.08	-0.48	39.06
5390	-4.02	-0.49	39.59
5410	-4.03	-0.52	39.5
5430	-4.22	-0.77	37.84
5450	-4.37	-1.01	36.55
5470	-4.55	-0.9	35.05

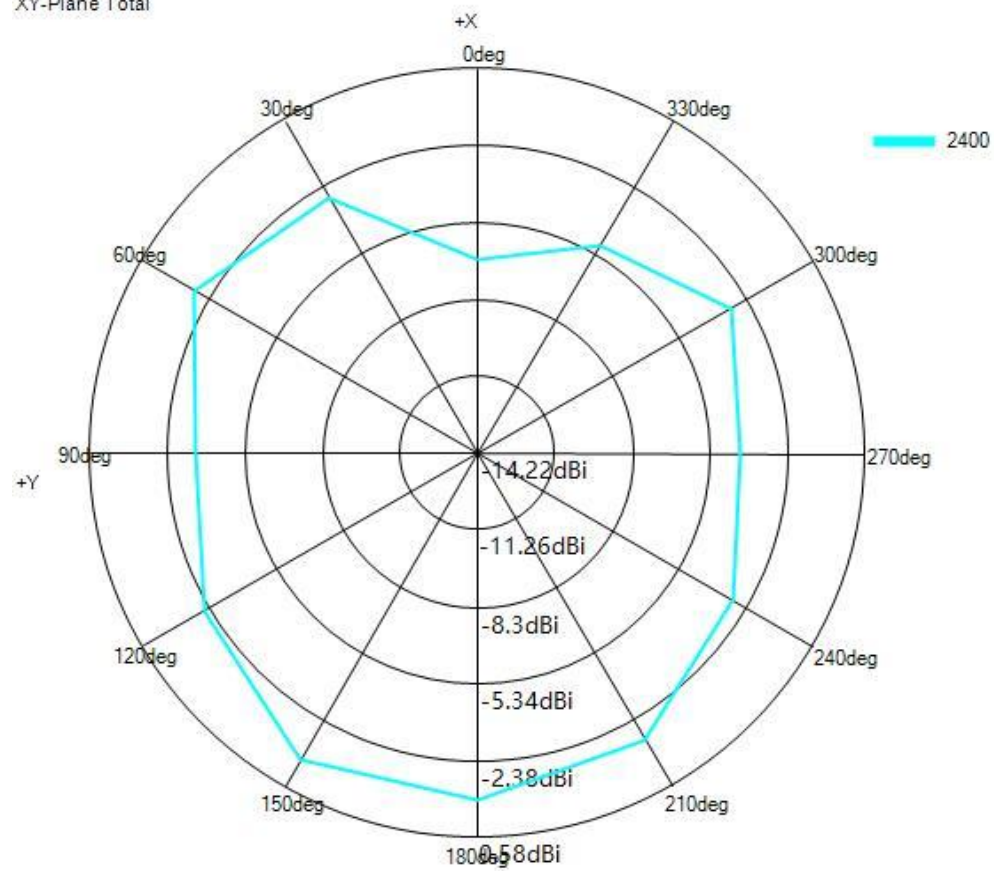
5490	-4.65	-1.04	34.26
5510	-4.67	-0.91	34.09
5530	-4.63	-0.87	34.44
5550	-4.51	-0.75	35.41
5570	-4.35	-0.68	36.71
5590	-4.22	-0.63	37.86
5610	-4.33	-0.64	36.9
5630	-4.5	-0.81	35.48
5650	-4.75	-1.02	33.53
5670	-4.69	-0.76	33.98
5690	-4.83	-0.87	32.9
5710	-5.03	-0.88	31.38
5730	-5.23	-1.02	30
5750	-5.16	-0.77	30.51
5770	-5.21	-0.78	30.16
5790	-5.55	-0.83	27.85
5810	-5.54	-0.81	27.94
5830	-5.63	-0.78	27.32
5850	-5.77	-0.85	26.46



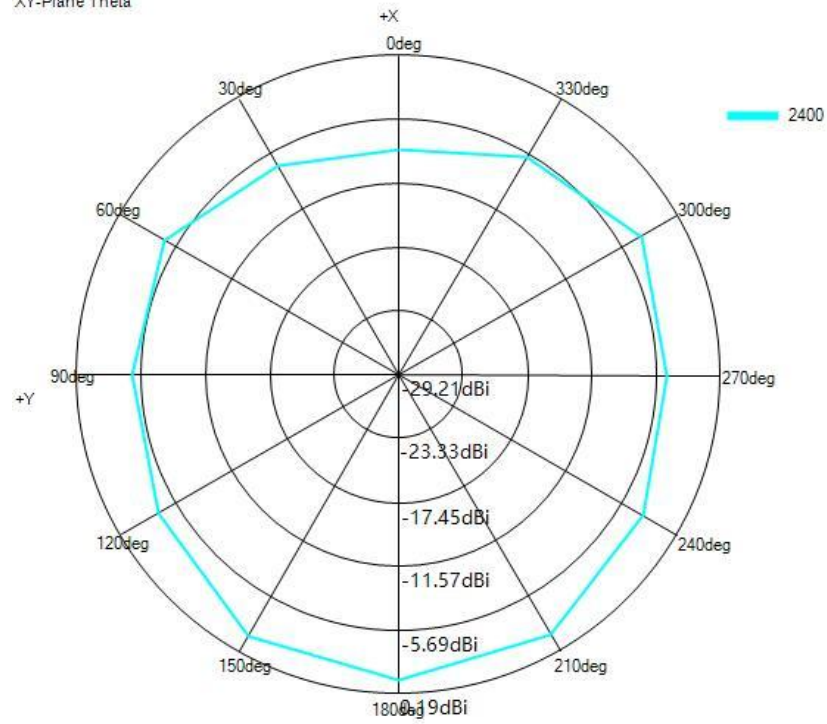


Freq(MHz) 2400

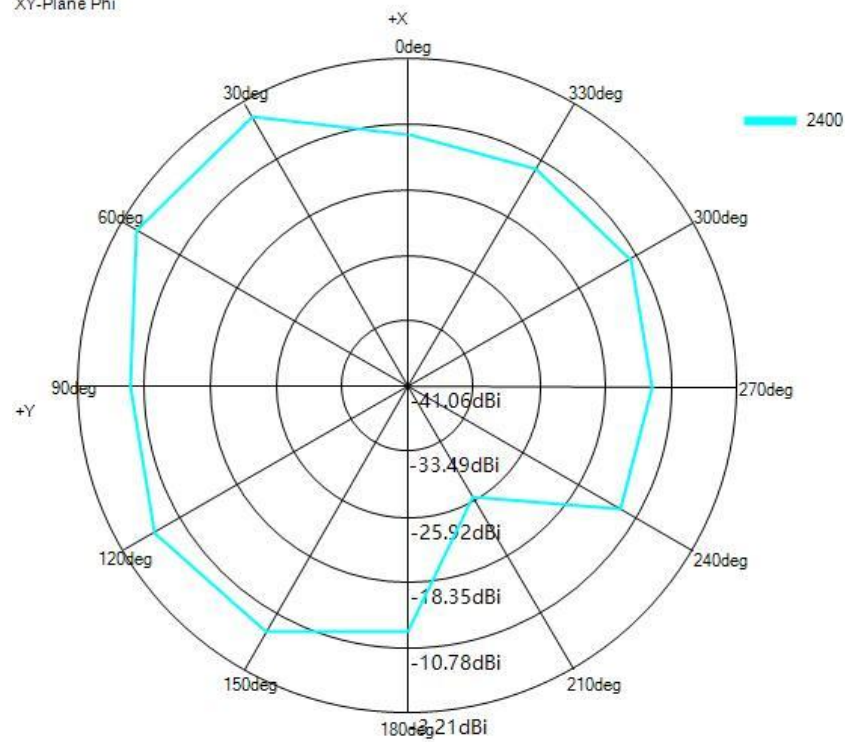
XY-Plane Total



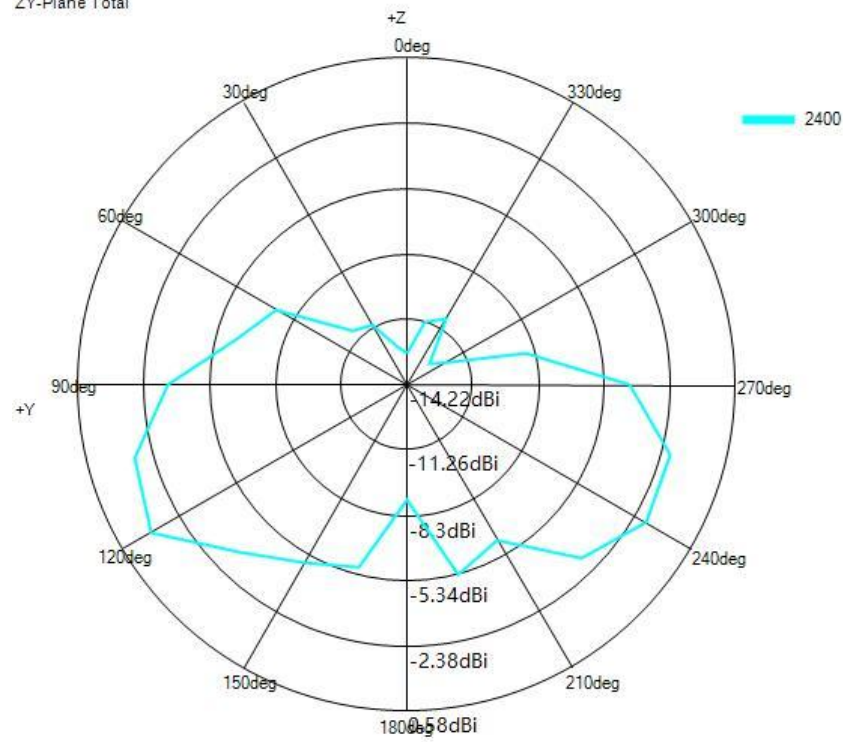
XY-Plane Theta



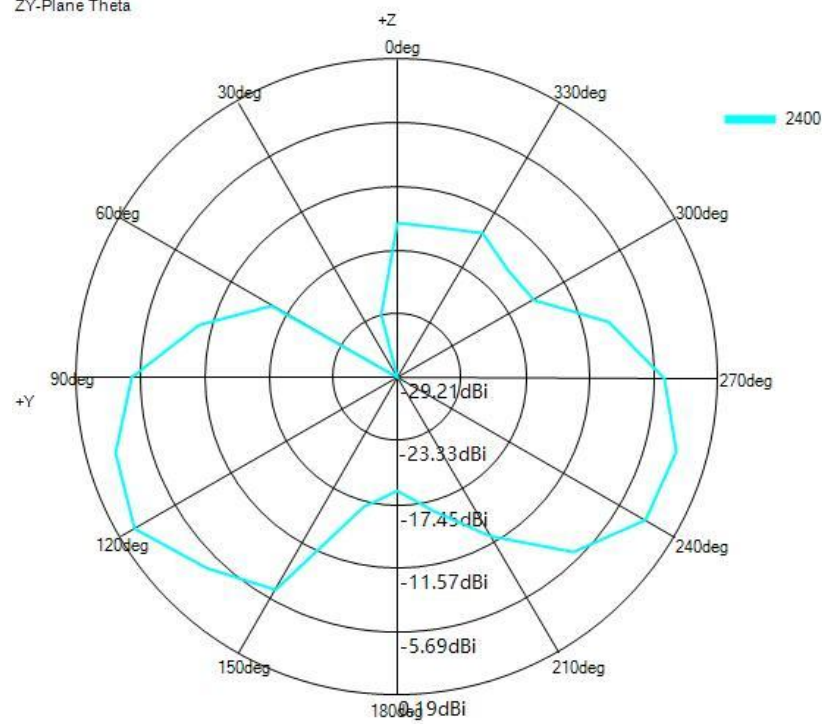
XY-Plane Phi



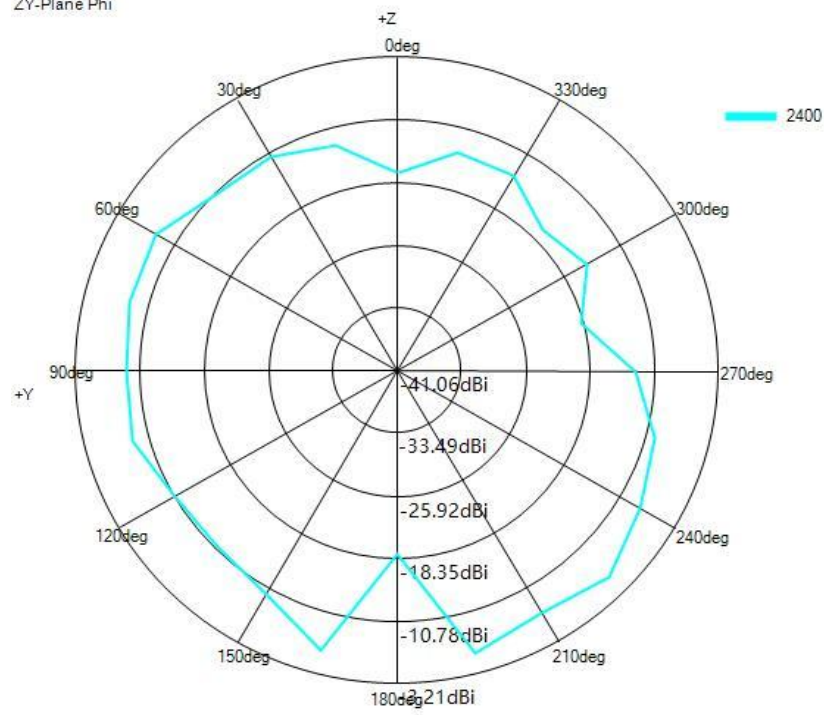
ZY-Plane Total



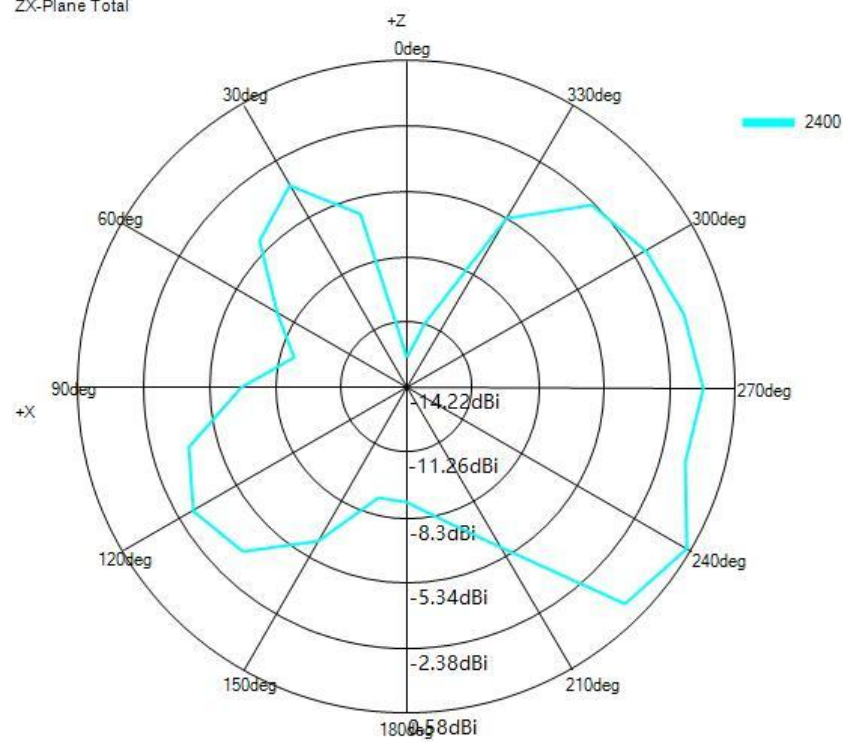
ZY-Plane Theta



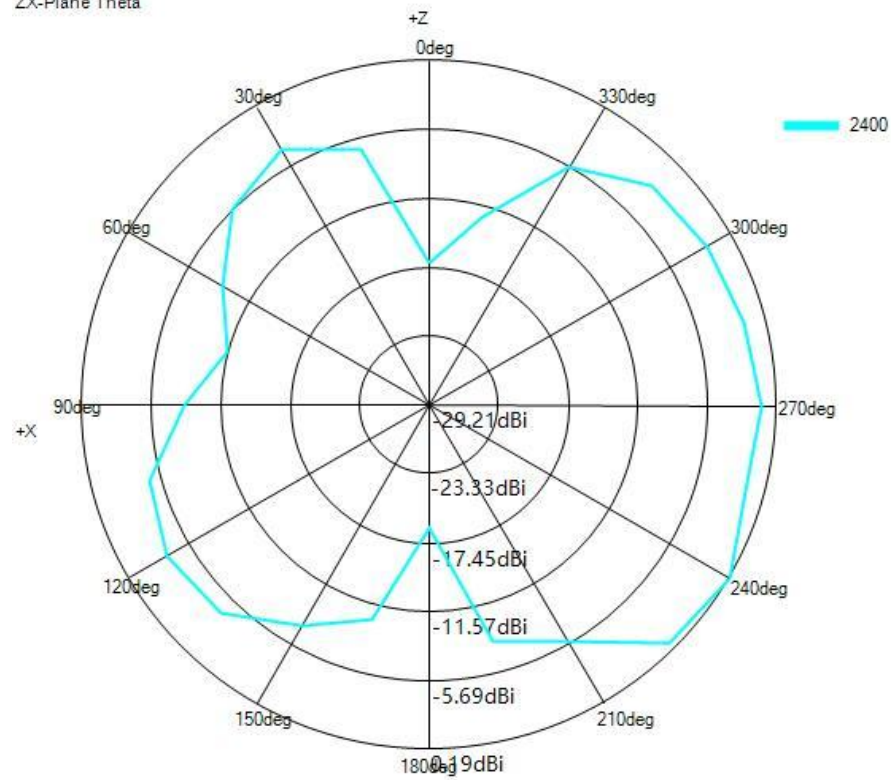
ZY-Plane Phi



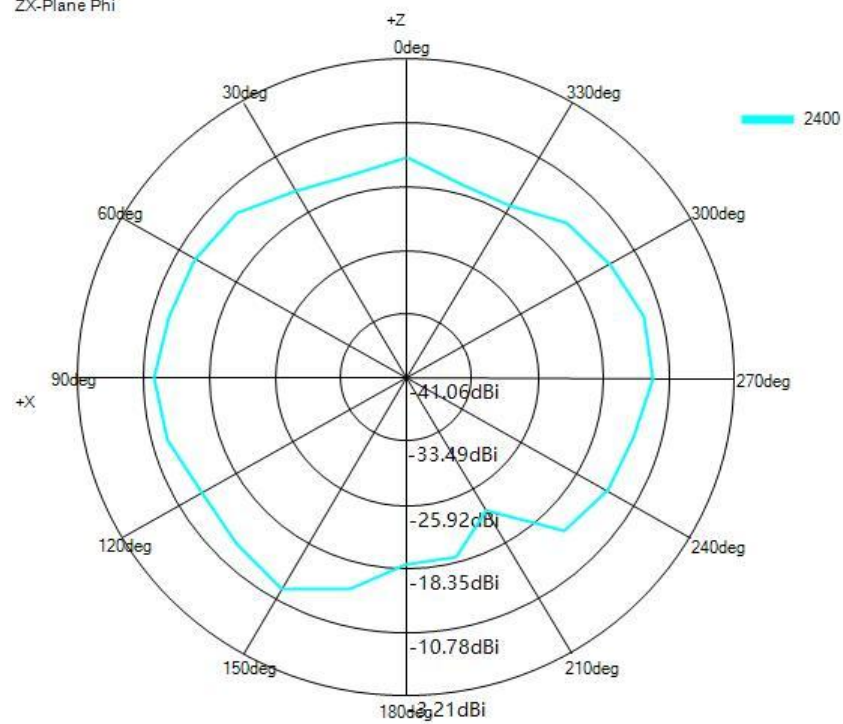
ZX-Plane Total



ZX-Plane Theta

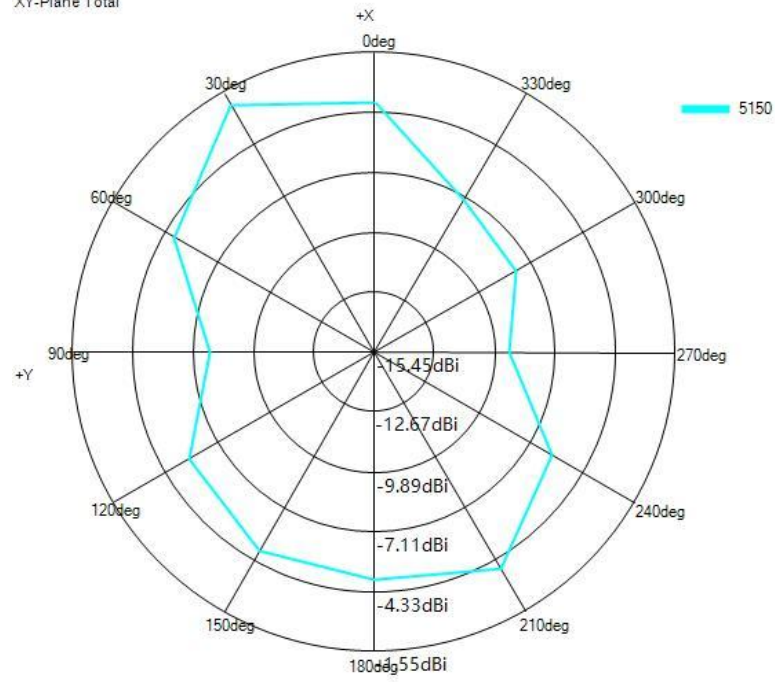


ZX-Plane Phi

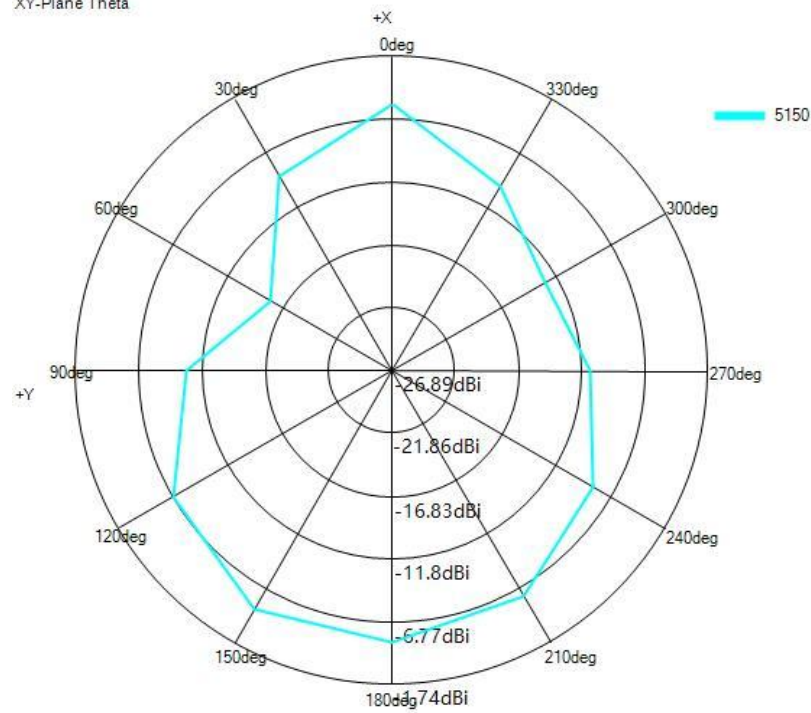


Freq(MHz) 5150

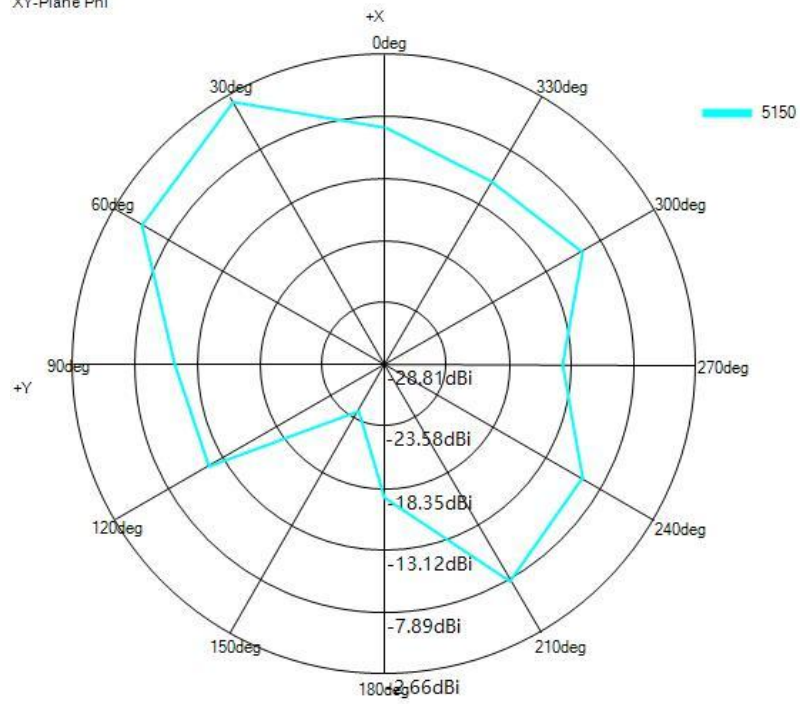
XY-Plane Total



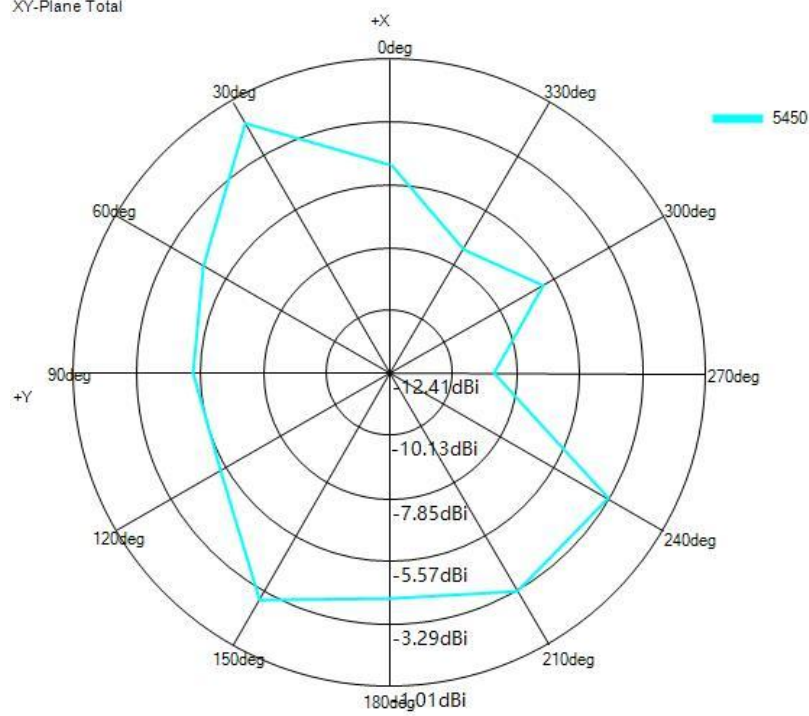
XY-Plane Theta



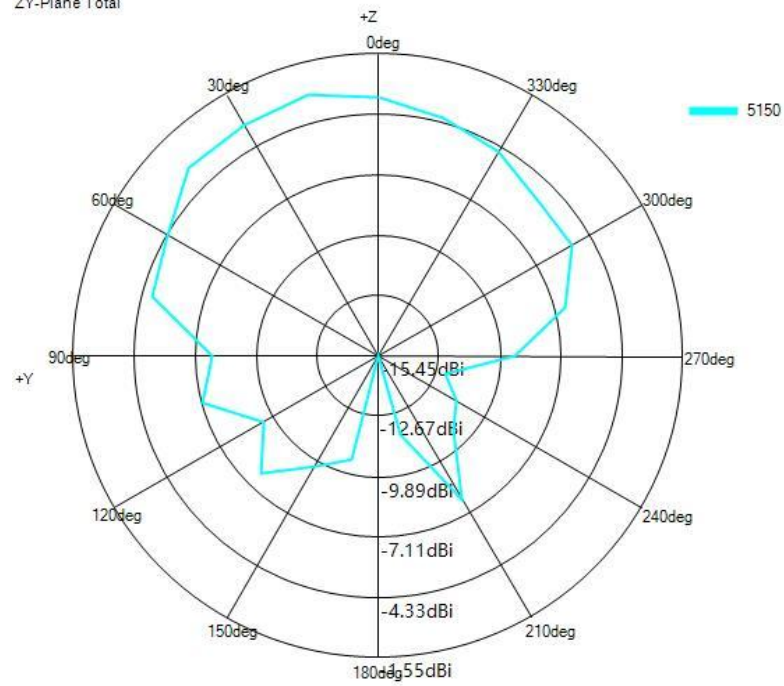
XY-Plane Phi



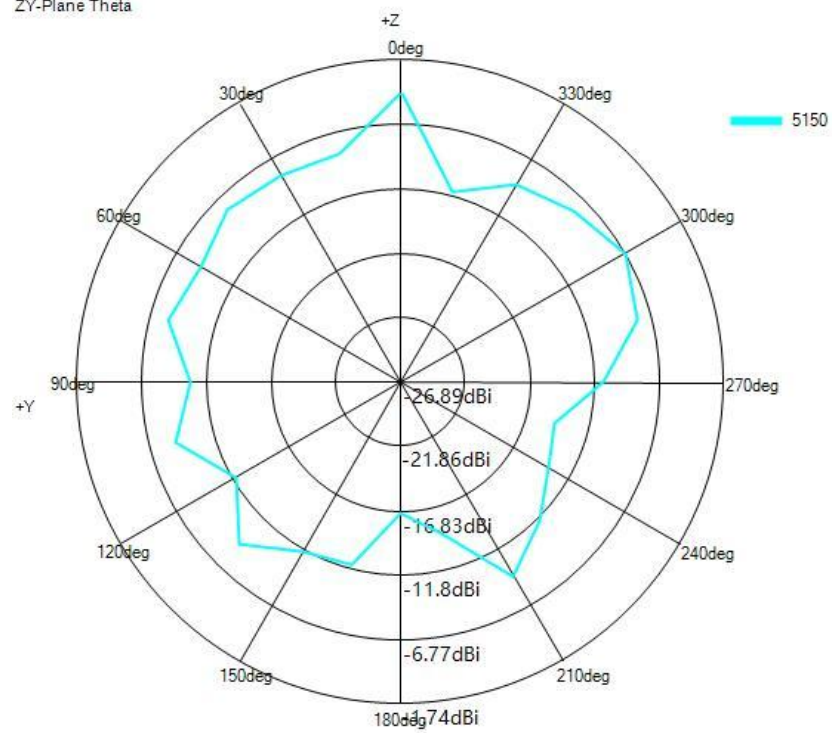
XY-Plane Total



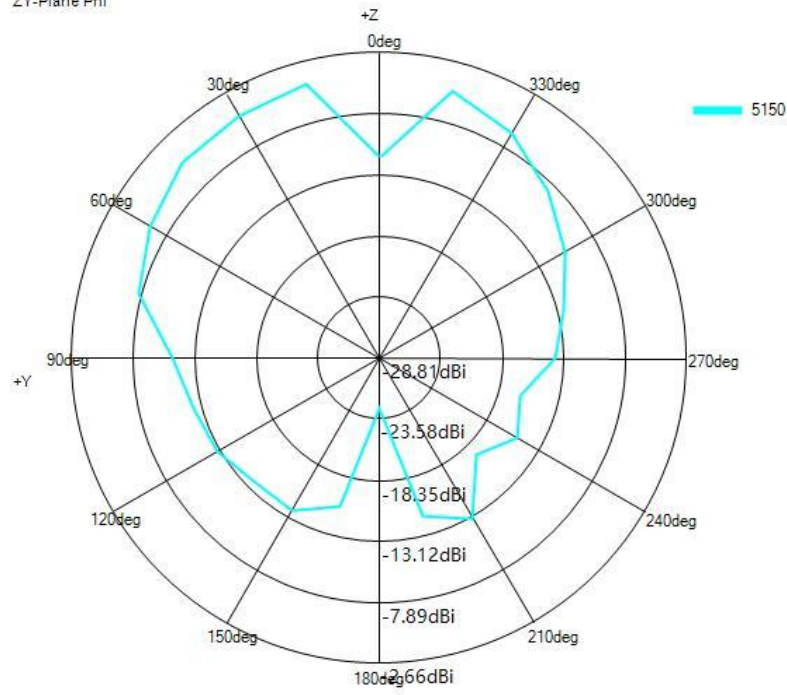
ZY-Plane Total



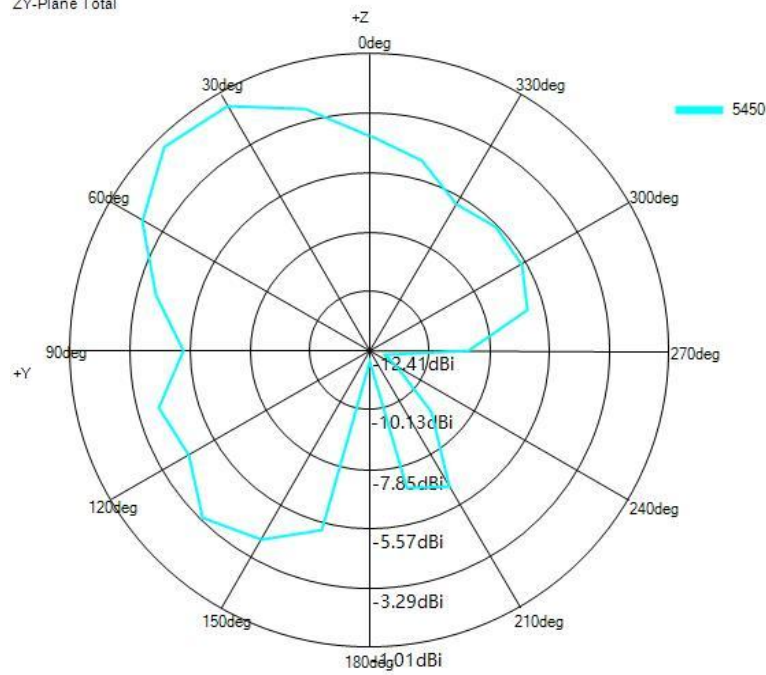
ZY-Plane Theta



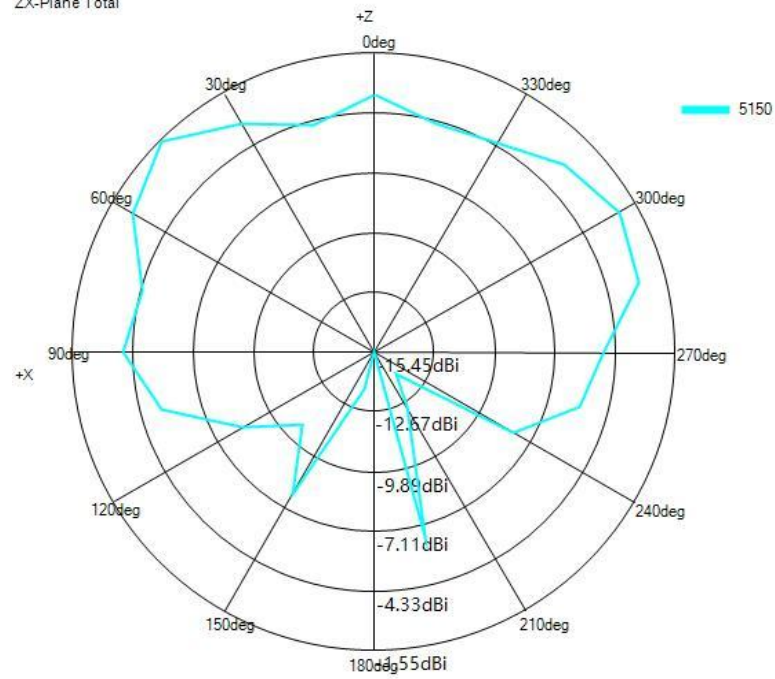
ZY-Plane Phi



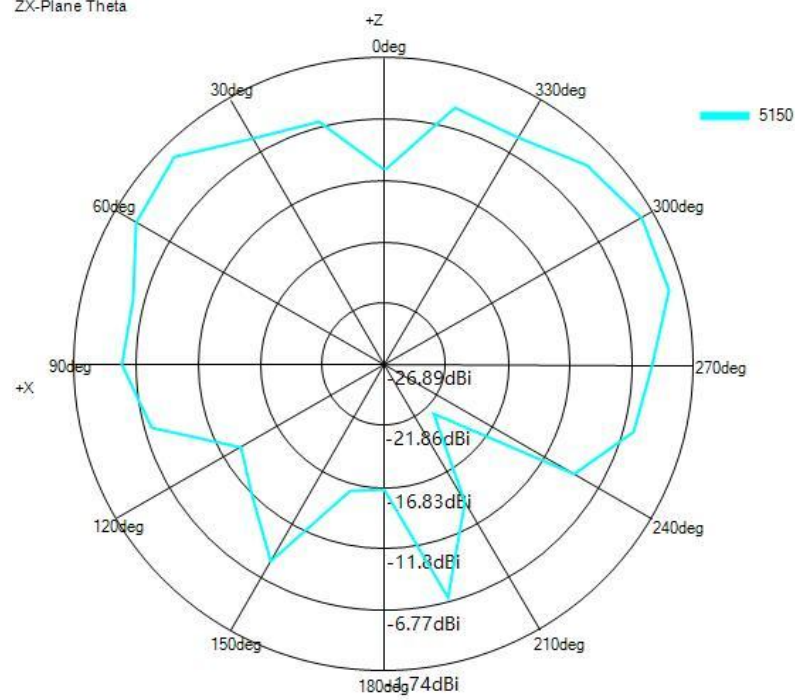
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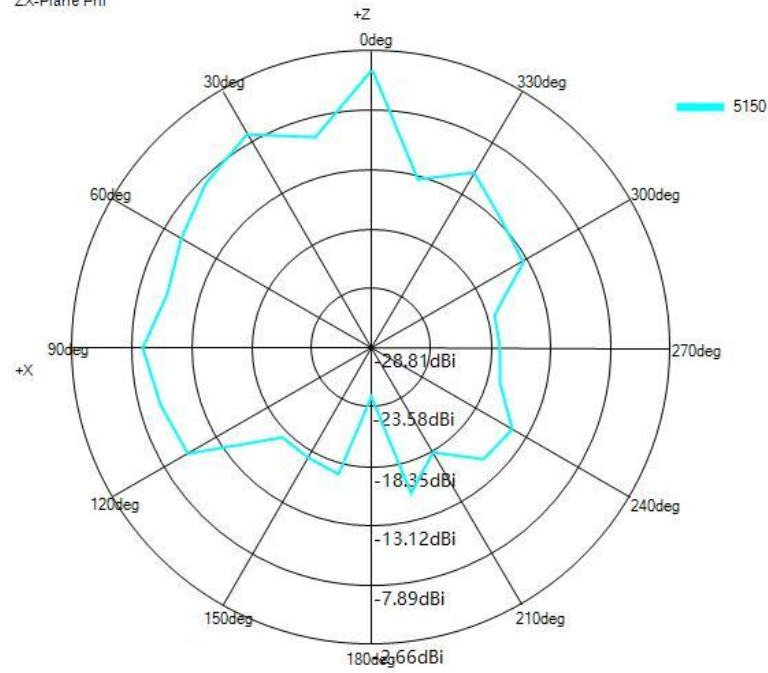
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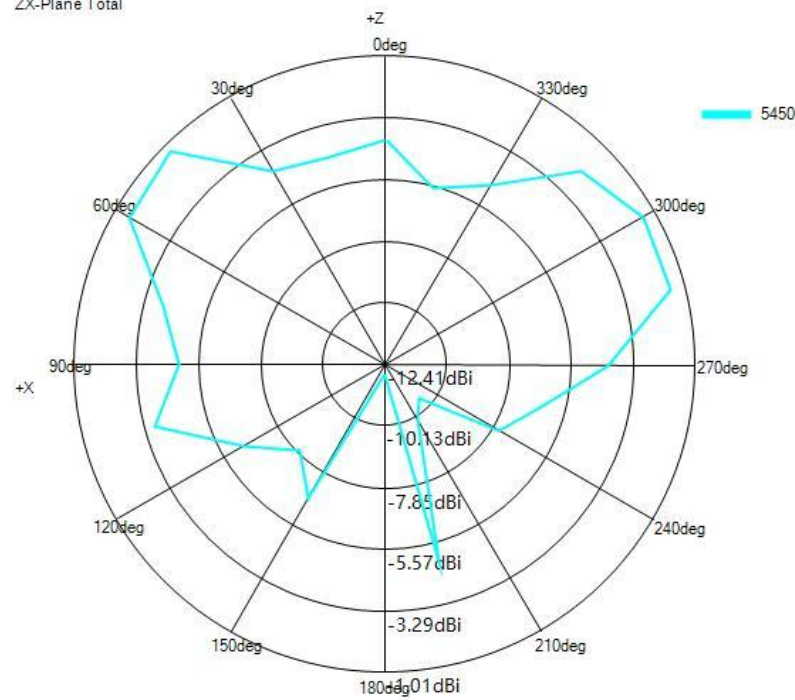
ZX-Plane Theta



ZX-Plane Phi

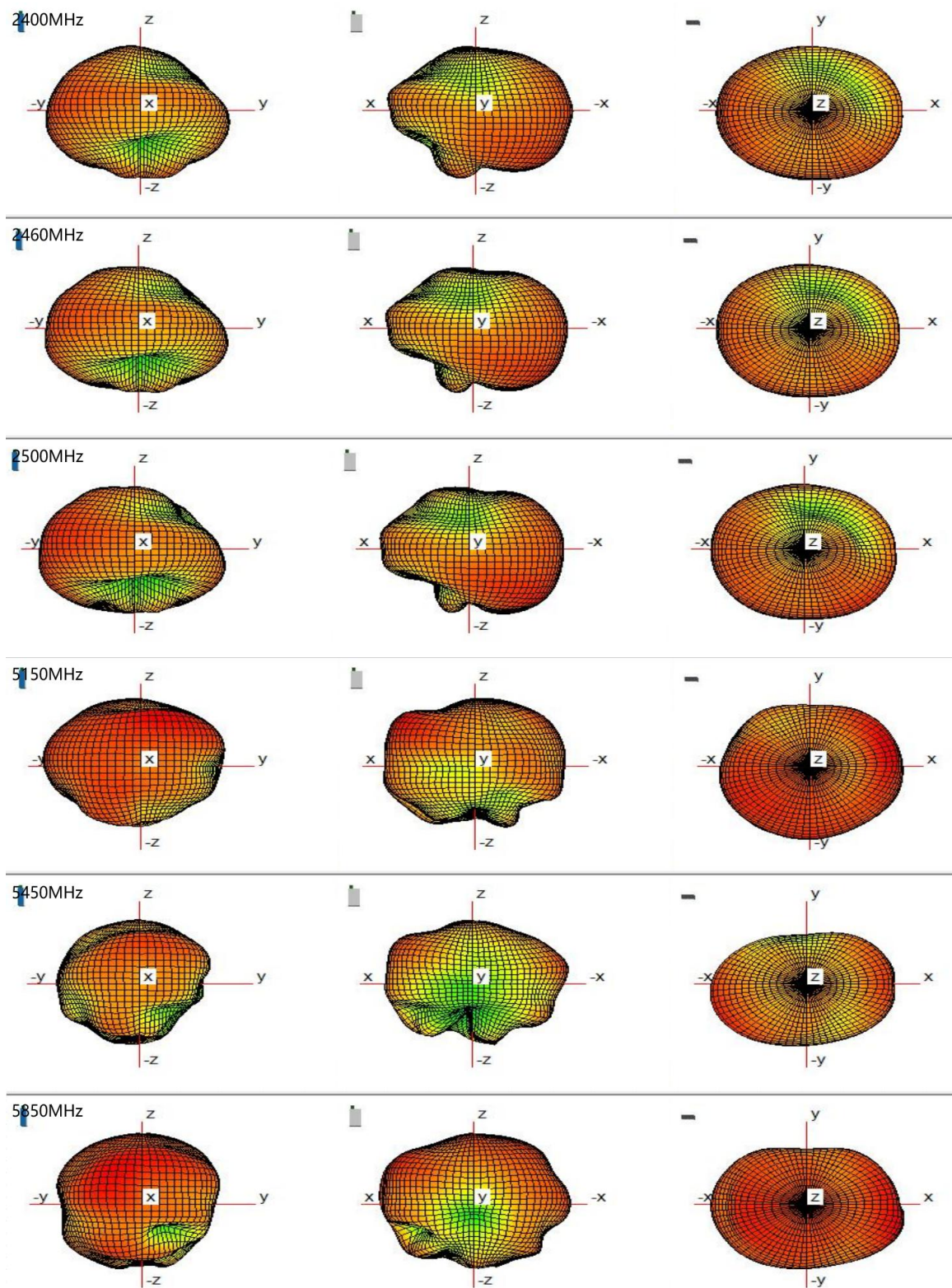


ZX-Plane Total



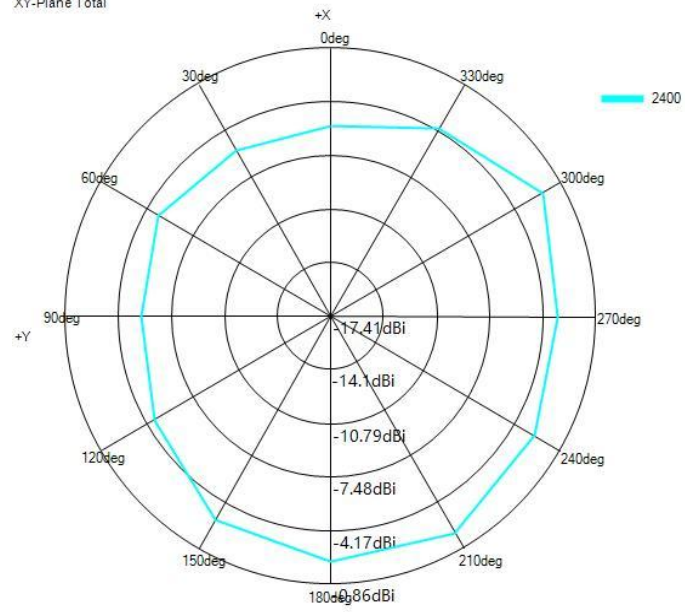
ANT2(chain 1)			
Freq(MHz)	Efficiency(dB)	Gain(dBi)	Efficiency(%)
2400	-4.34	-0.86	36.85
2420	-4.22	-0.79	37.8
2440	-4.44	-0.95	36.01
2460	-4.35	-0.85	36.74

2480	-4.46	-0.98	35.79
2500	-4.54	-1.15	35.14
5150	-5.93	-2.31	25.54
5170	-5.92	-2.52	25.59
5190	-5.7	-2.2	26.92
5210	-5.24	-1.93	29.93
5230	-5.15	-1.71	30.52
5250	-4.9	-1.39	32.33
5270	-4.93	-1.33	32.15
5290	-4.78	-1.02	33.25
5310	-4.61	-0.65	34.59
5330	-4.38	-0.24	36.46
5350	-4.14	0.26	38.51
5370	-3.78	0.74	41.88
5390	-3.61	1.03	43.52
5410	-3.49	1.24	44.82
5430	-3.49	1.28	44.77
5450	-3.58	1.22	43.86
5470	-3.69	0.99	42.71
5490	-3.74	0.75	42.24
5510	-3.74	0.72	42.25
5530	-3.72	0.53	42.48
5550	-3.59	0.5	43.77
5570	-3.44	0.63	45.31
5590	-3.28	0.69	47.03
5610	-3.36	0.43	46.08
5630	-3.5	0.12	44.72
5650	-3.71	-0.21	42.52
5670	-3.61	-0.07	43.58
5690	-3.69	-0.03	42.72
5710	-3.84	-0.16	41.35
5730	-3.99	-0.2	39.93
5750	-3.86	0.03	41.09
5770	-3.83	0.09	41.36
5790	-4.09	-0.13	38.99
5810	-4.05	-0.03	39.39
5830	-4.08	-0.09	39.08
5850	-4.11	0.01	38.8

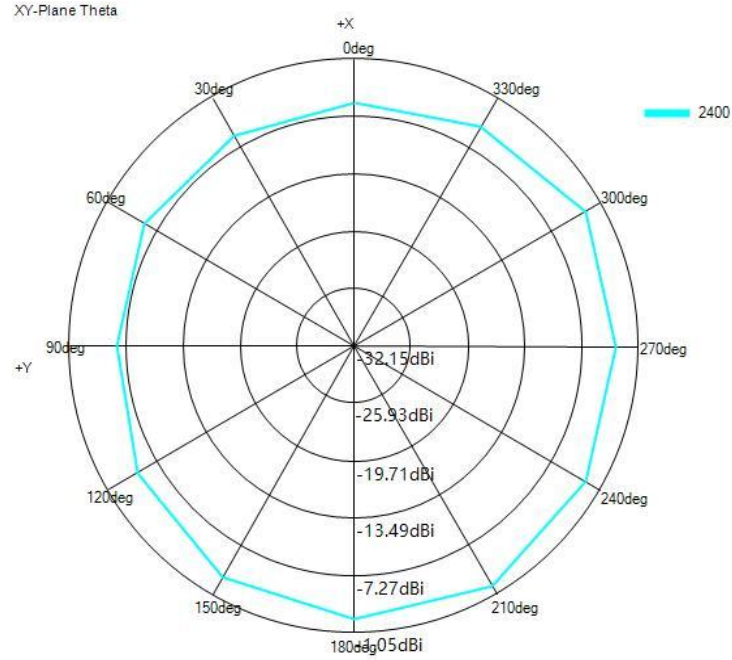


Freq(MHz) 2400

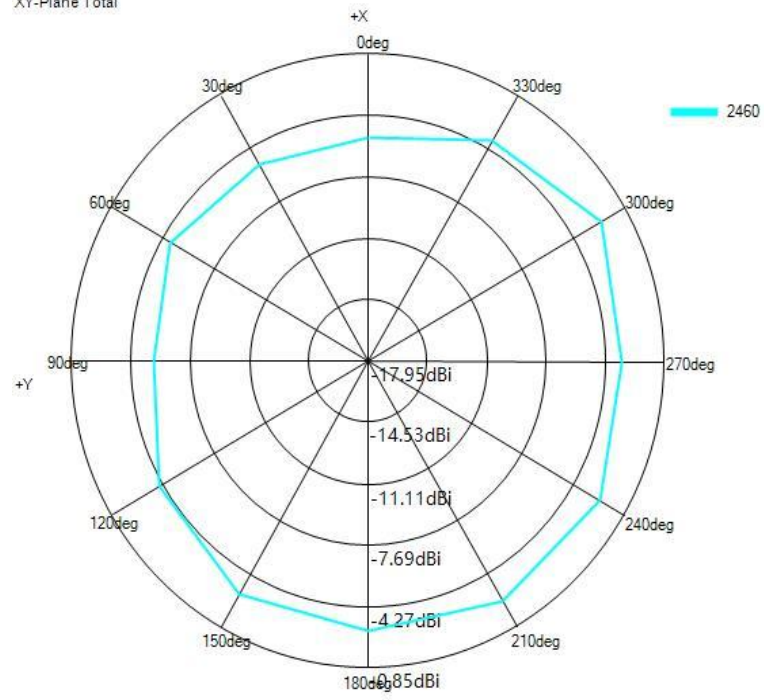
XY-Plane Total



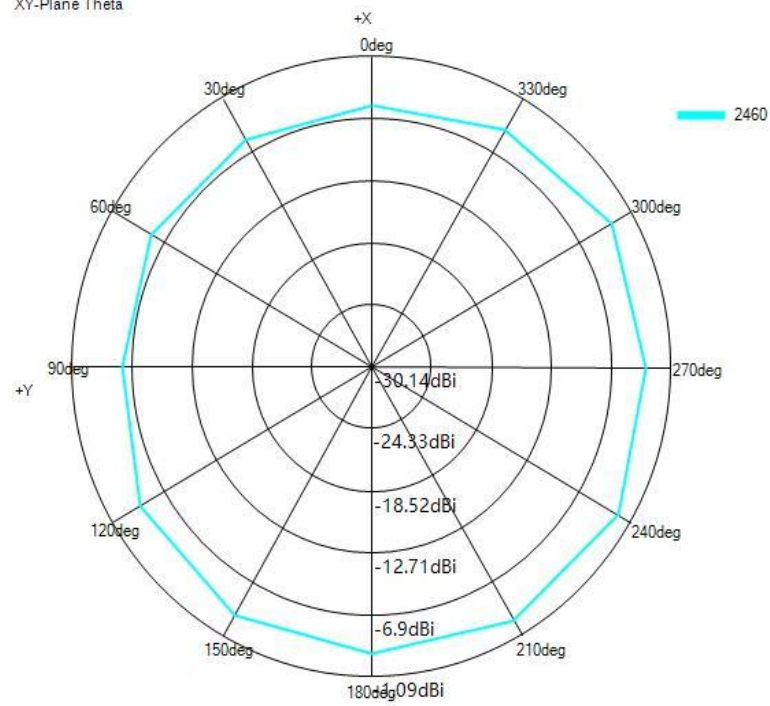
XY-Plane Theta



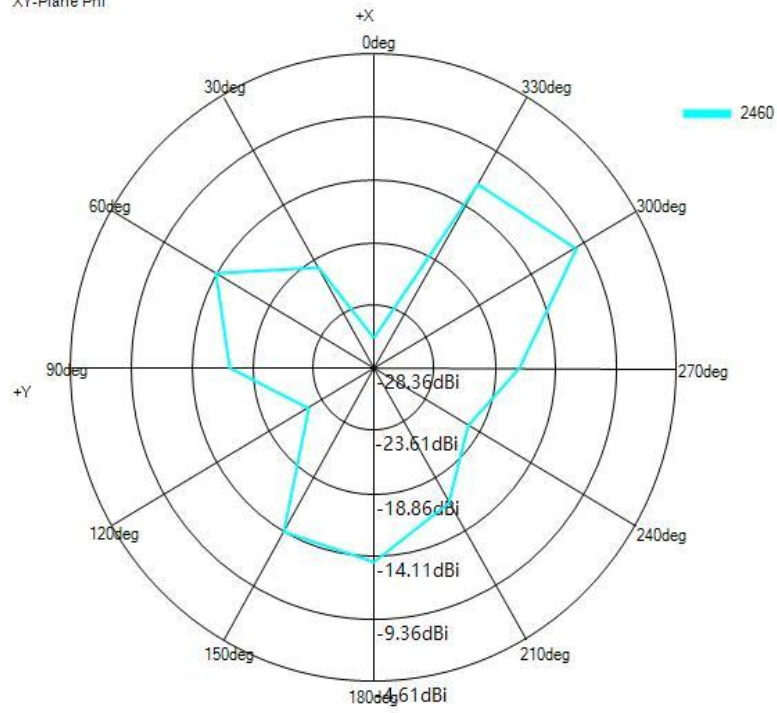
XY-Plane Total



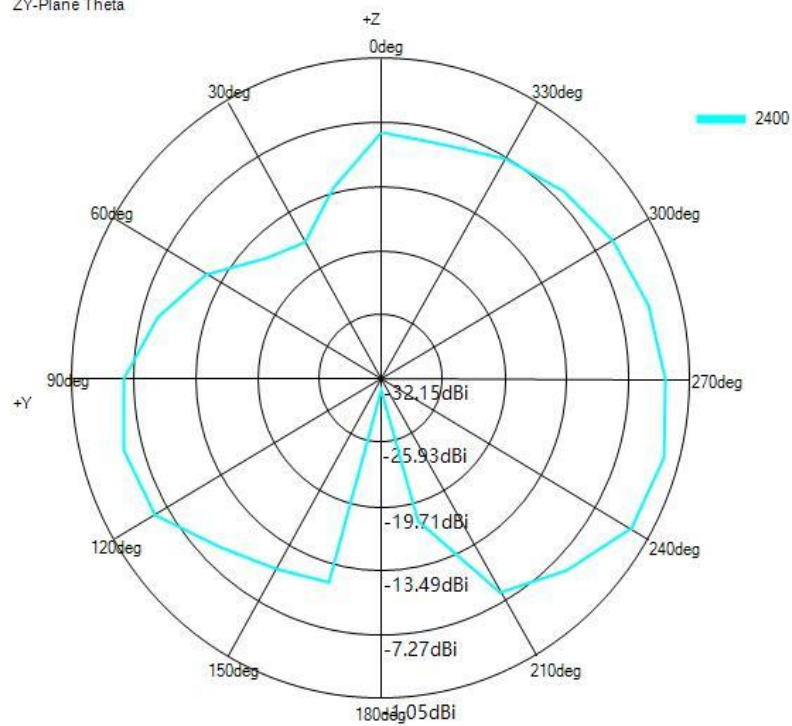
XY-Plane Theta



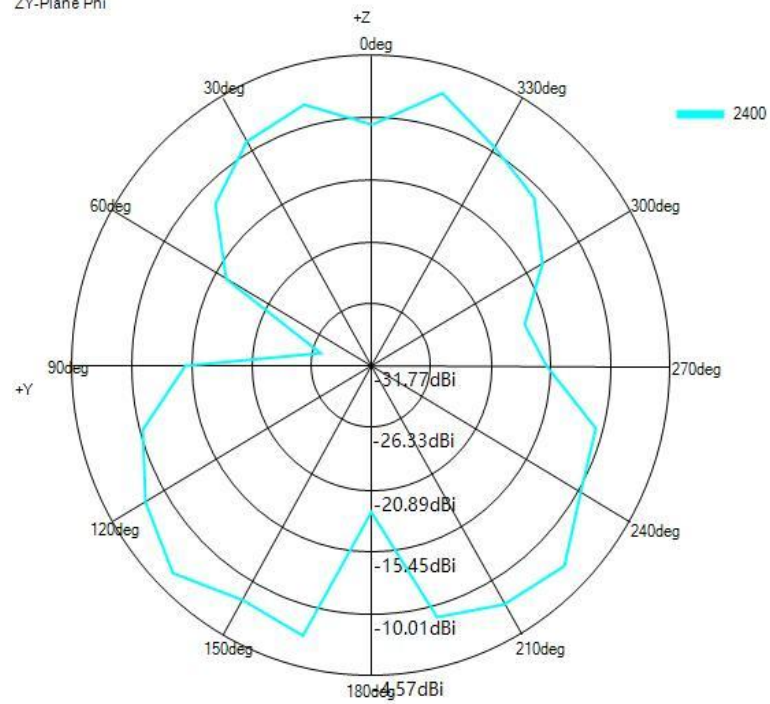
XY-Plane Phi



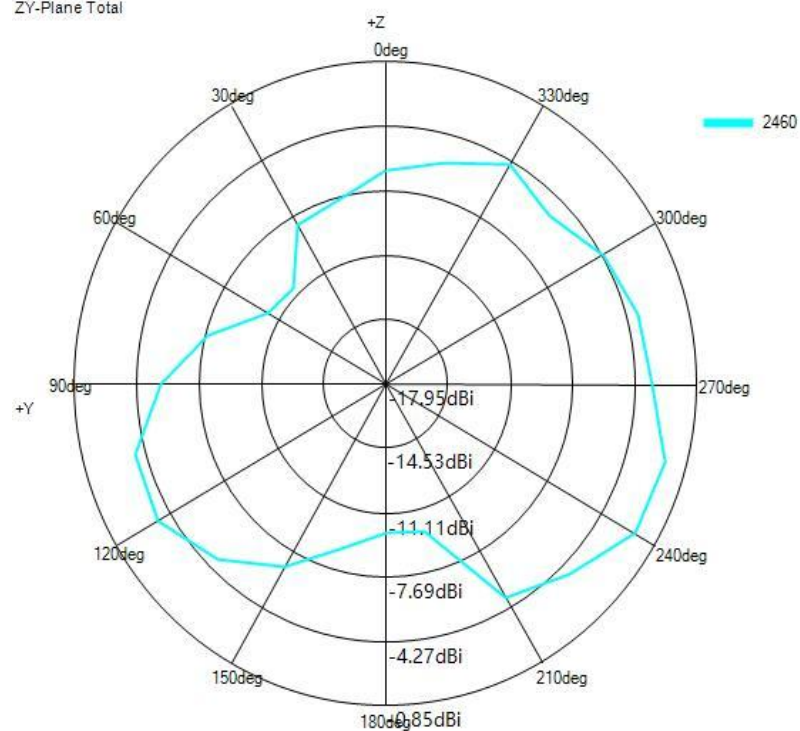
ZY-Plane Theta

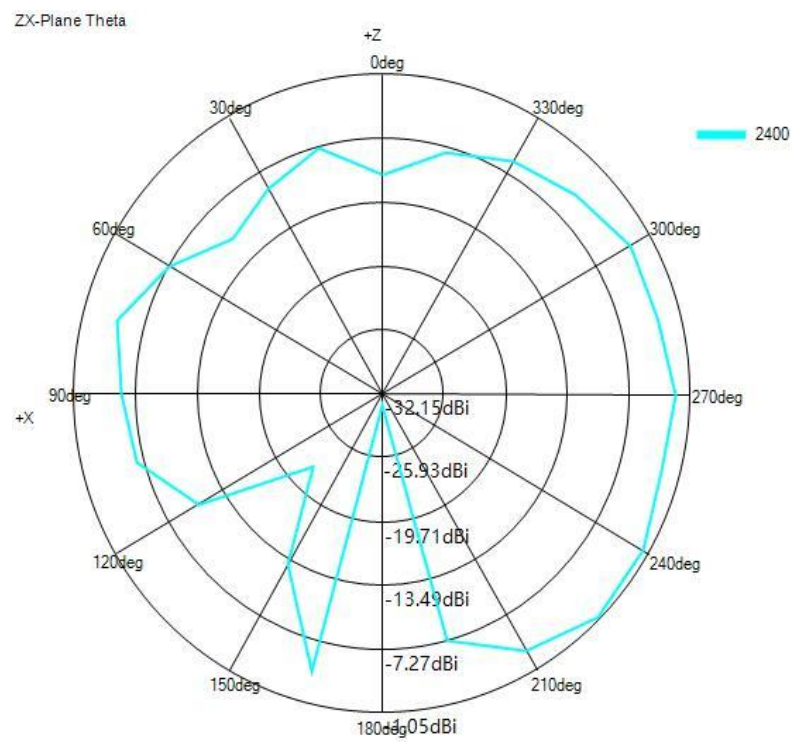
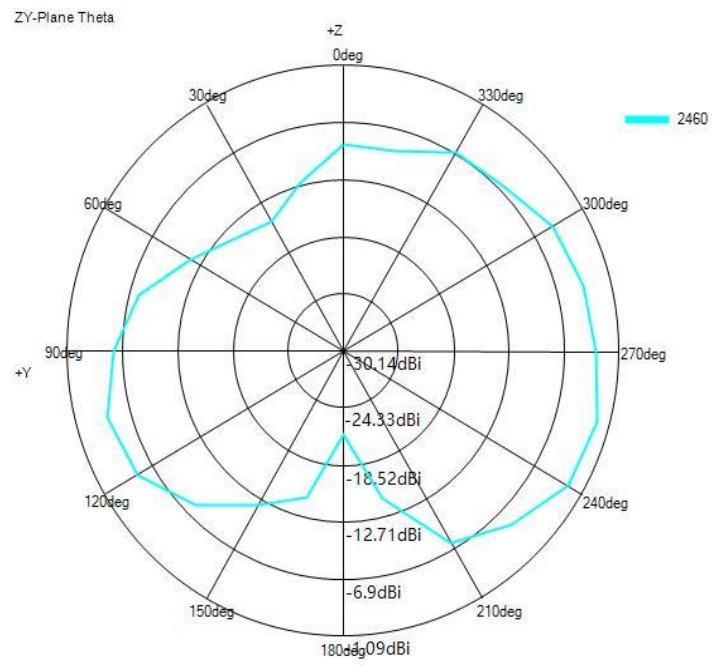


ZY-Plane Phi



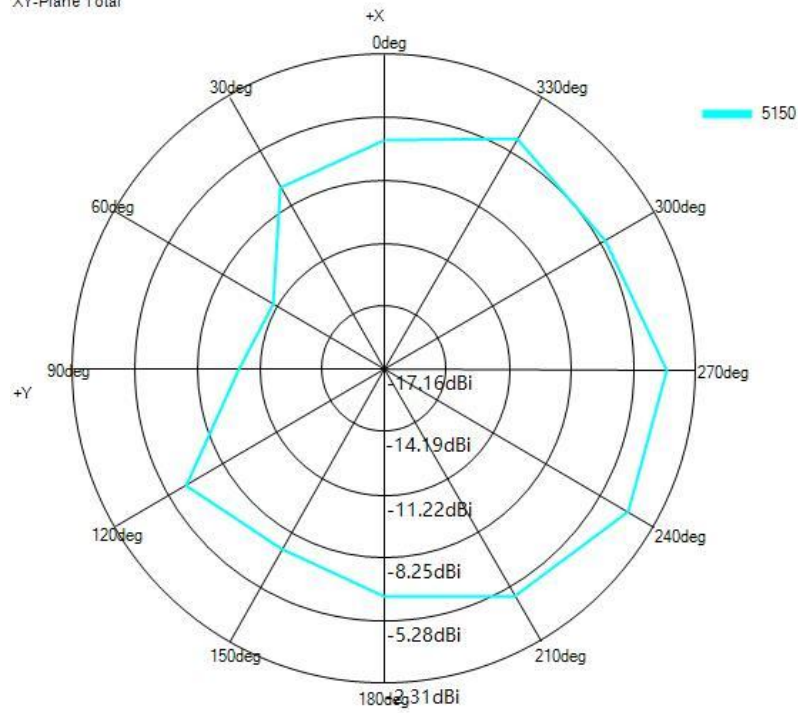
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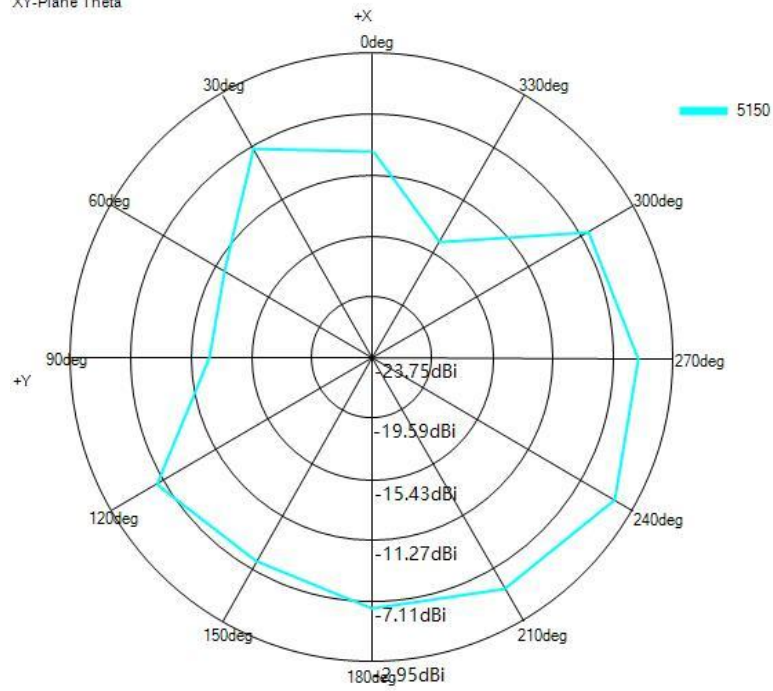


Freq(MHz) 5150

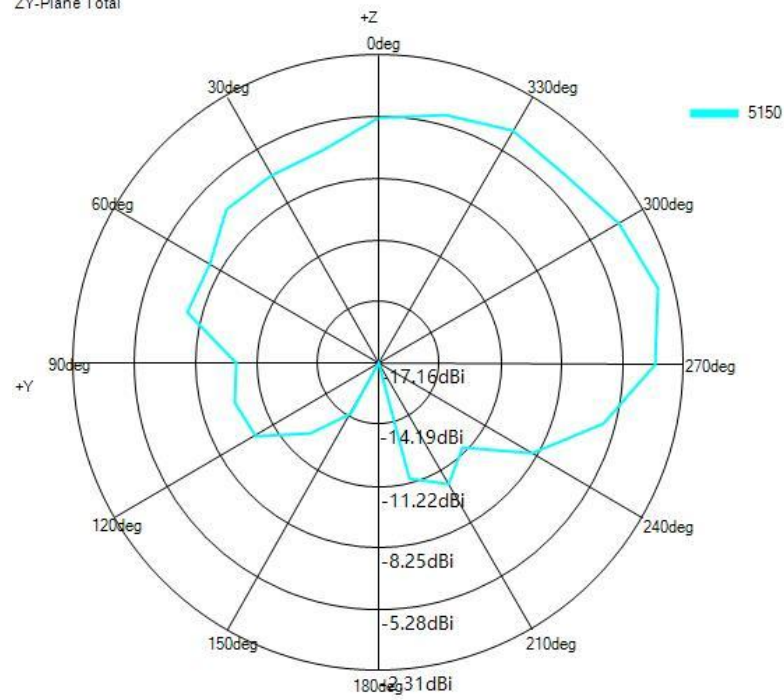
XY-Plane Total



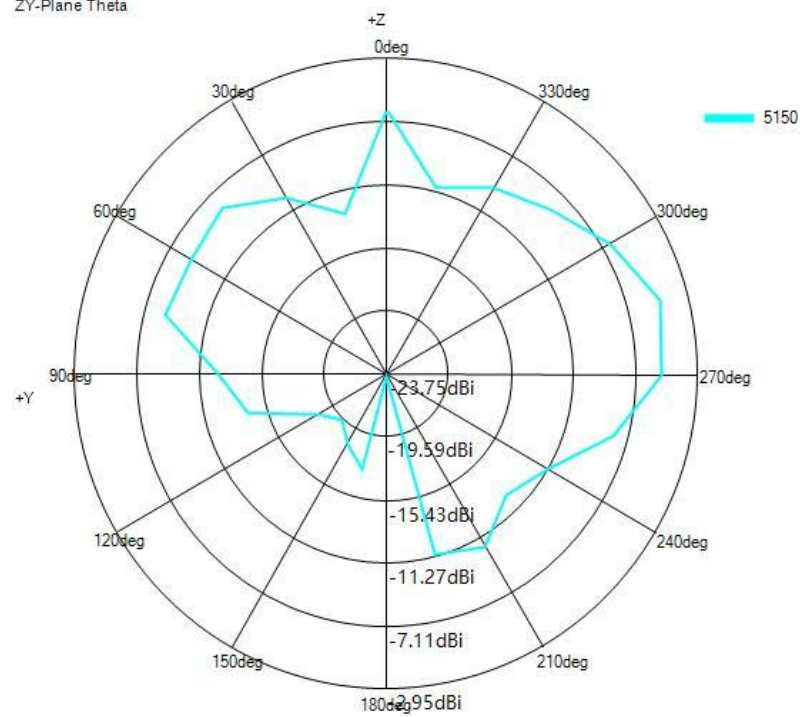
XY-Plane Theta



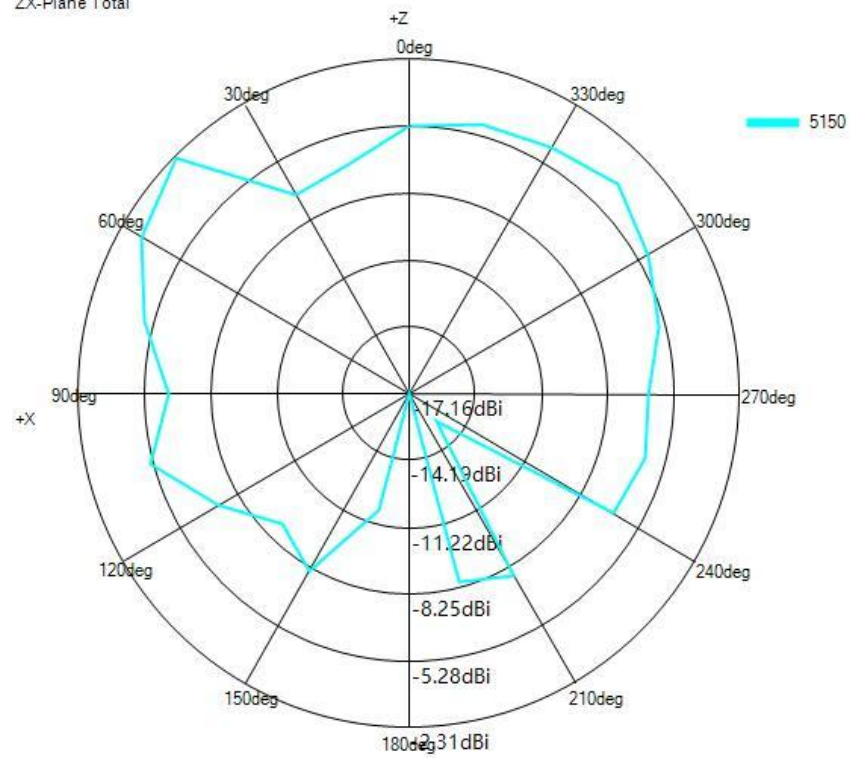
ZY-Plane Total



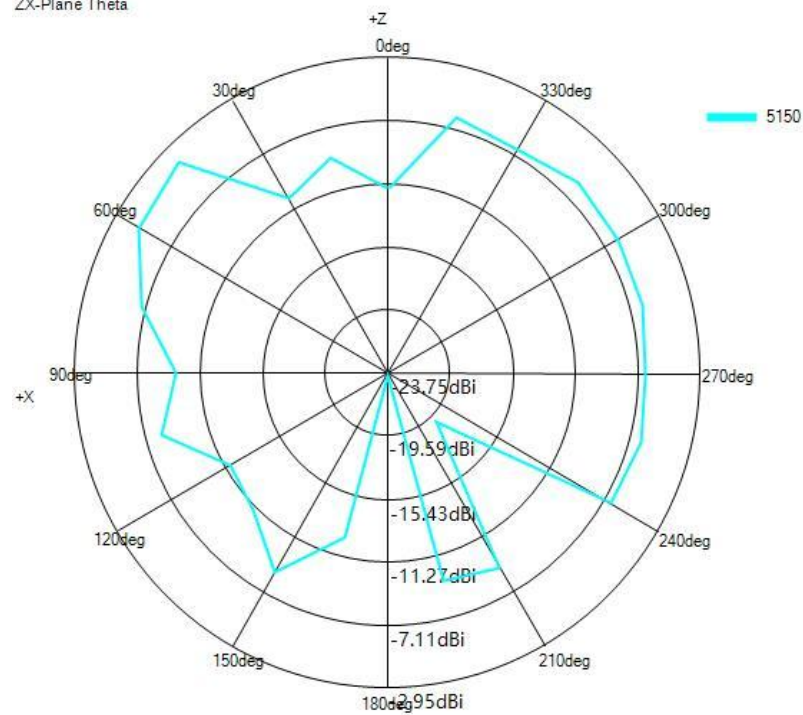
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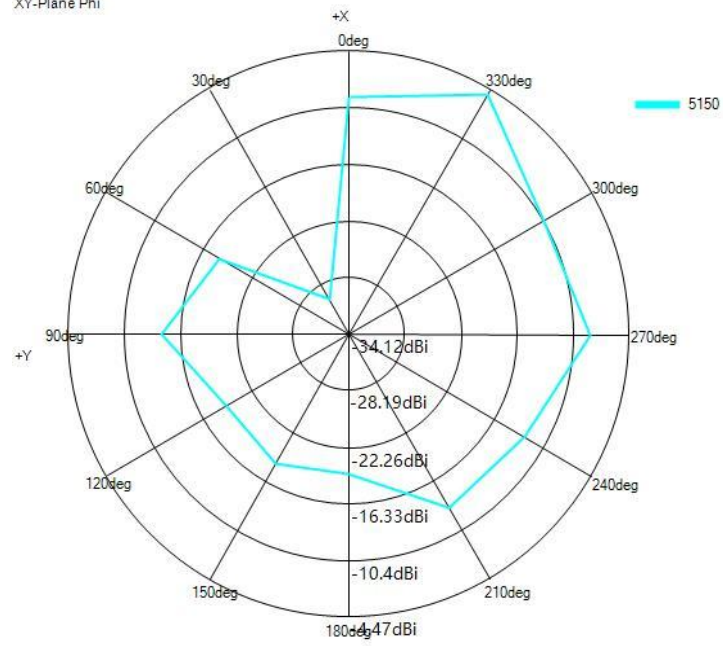
ZX-Plane Total



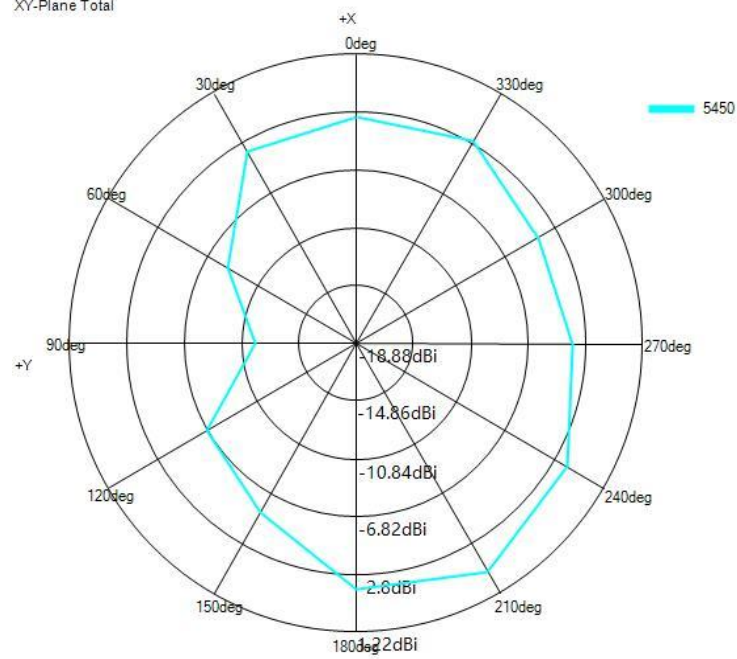
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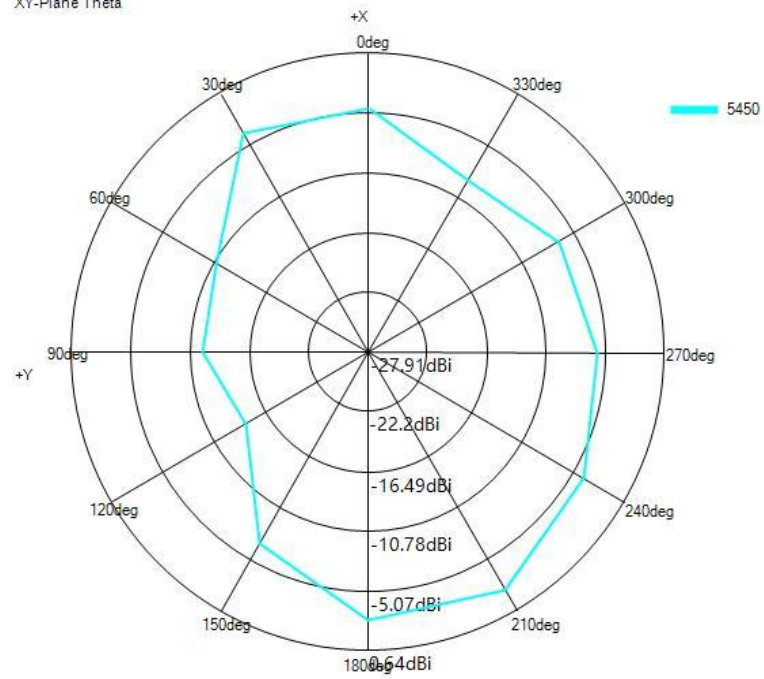
XY-Plane Phi



XY-Plane Total



XY-Plane Theta



XY-Plane Phi

