

Thundercomm

A2 Antenna Specification Internal

P/N:630810000098

Ver.2.0



Blockchain QR Code

www.thundercomm.com

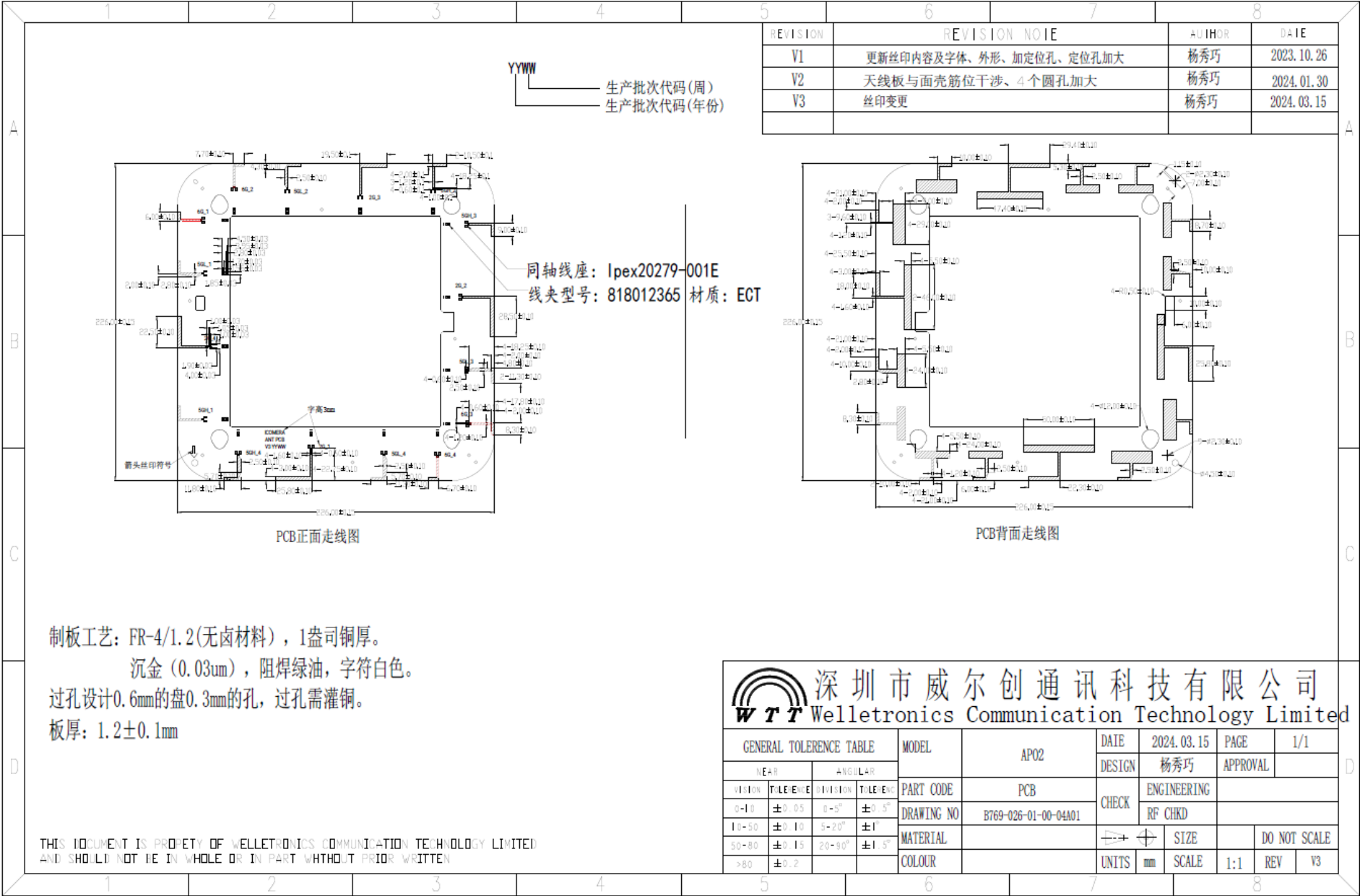
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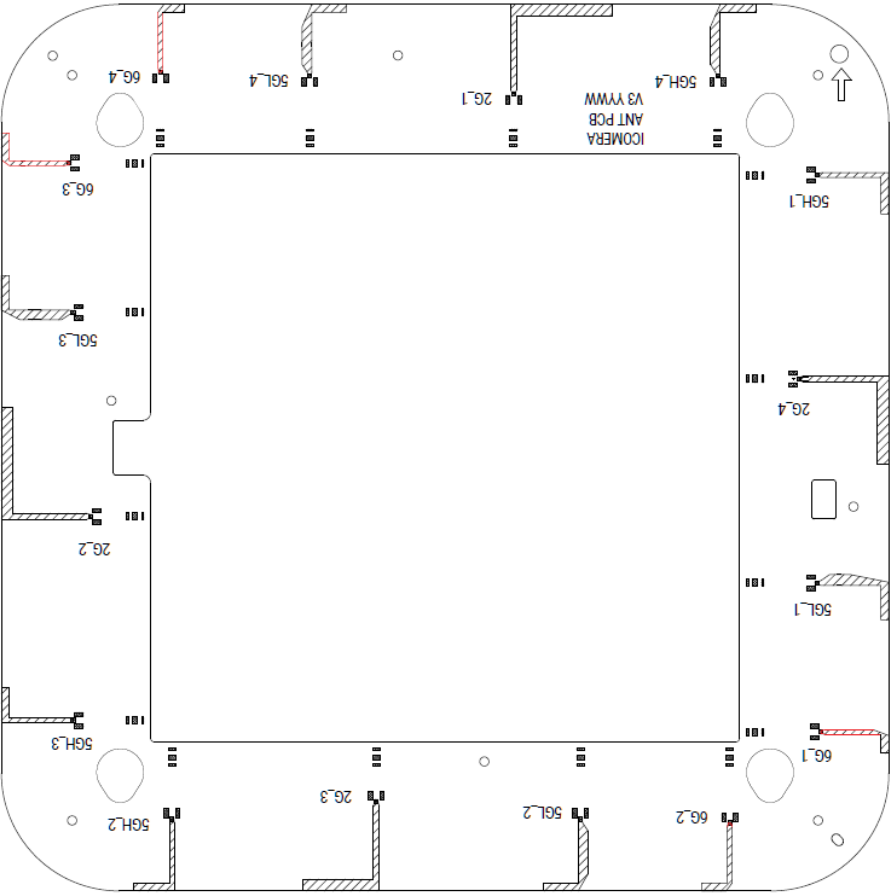
General Specification

Item	Description
Manufacturer	WelleTronics Communication Electronics
Product Name	A2 PCB Antenna
Product Number	630810000098 [B769-026-01A01]
Frequency Band	WIFI 2.4-2.5GHz x 4 WIFI 5GL : 5.15-5.45GHz x 4 WIFI 5GH : 5.47-5.85GHz x 4 WIFI 6e : 5.925-7.125GHz x 4
Antenna Concept	Dipole Antenna
Antenna Technology	PCB Antenna
Manufacturer Address	F1-3,Building 8,Tongfu Industrial Park, Dalang, Longhua new Area, Shenzhen, China

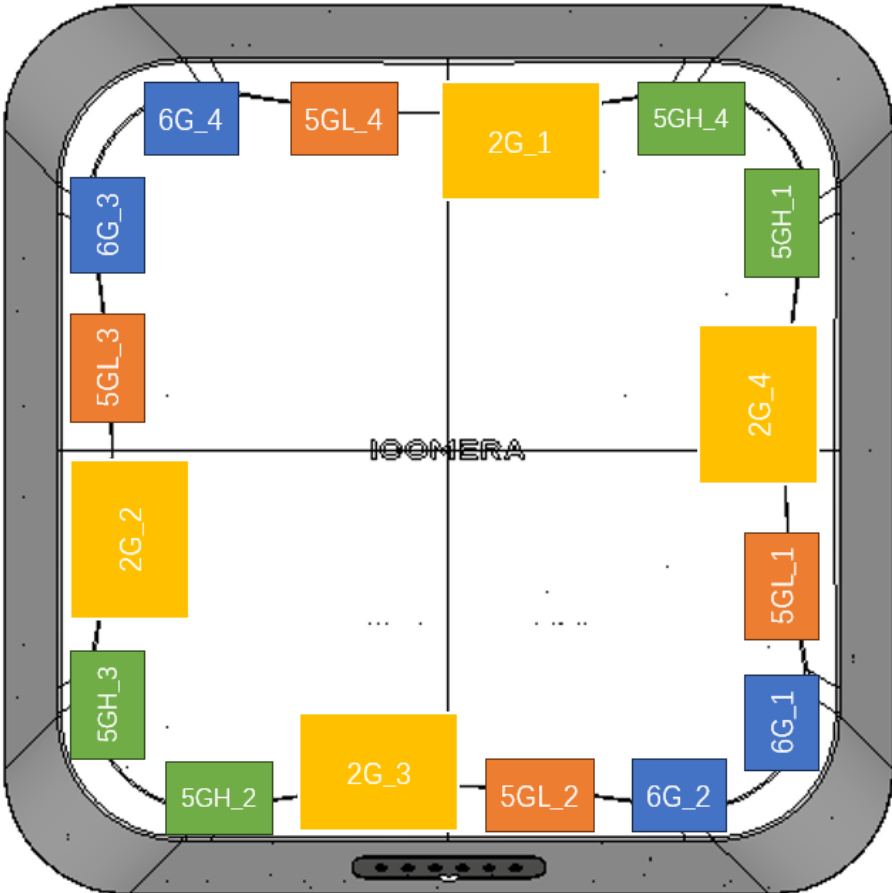
2D Drawing



Antenna Location



Top View



Top View

Antenna Gain – 2.4G antenna

Frequency (MHz)	Gain (dBi)			
	2G 1	2G 2	2G 3	2G 4
2400	5.89	5.64	2.73	5.56
2410	6.15	5.95	2.92	6.33
2420	6.08	5.74	2.84	6.4
2430	6.03	5.62	2.66	6.35
2440	6.05	5.68	3.05	6.37
2450	6.12	5.87	3.47	6.46
2460	5.97	5.87	3.48	6.28
2470	5.95	5.94	3.48	6.18
2480	5.76	5.76	3.08	5.85
2490	5.69	5.68	2.71	5.77
2500	5.71	5.62	2.74	5.75

Frequency (MHz)	Efficiency (dB)			
	2G 1	2G 2	2G 3	2G 4
2400	-2.3	-2.52	-3.22	-2.66
2410	-2.04	-2.22	-2.94	-2.3
2420	-2.24	-2.42	-3.16	-2.43
2430	-2.44	-2.61	-3.42	-2.59
2440	-2.41	-2.6	-3.31	-2.54
2450	-2.37	-2.59	-3.23	-2.48
2460	-2.43	-2.68	-3.23	-2.54
2470	-2.48	-2.76	-3.19	-2.57
2480	-2.72	-3	-3.34	-2.79
2490	-2.82	-3.08	-3.37	-2.86
2500	-2.88	-3.13	-3.37	-2.89

Antenna Gain – 5GL antenna

Frequency (MHz)	Gain(dBi)			
	5GL 1	5GL 2	5GL 3	5GL 4
5160	3.95	3.18	3.2	3.45
5180	3.81	3.17	3.35	3.64
5200	3.95	3.2	3.41	3.83
5220	3.93	3.1	3.3	3.94
5240	3.8	3.18	3.55	3.93
5260	3.45	3.48	3.71	3.82
5280	3.19	4.05	3.9	3.79
5300	3.01	4.29	3.87	3.52
5320	2.97	4.46	3.81	3.29
5340	3.3	4.8	4.03	3.36
5360	3.1	4.57	3.84	2.91
5380	3.19	4.53	3.96	2.84
5400	3.36	4.5	4.06	2.95
5420	3.06	4.18	3.78	2.72
5440	3.05	4.18	3.68	2.72
5460	2.8	3.88	3.28	2.32

Frequency (MHz)	Efficiency (dB)			
	5GL 1	5GL 2	5GL 3	5GL 4
5160	-3.15	-3.8	-3.18	-3.13
5180	-3.14	-3.75	-3.11	-3.13
5200	-3.18	-3.66	-3.02	-3.16
5220	-3.29	-3.62	-2.97	-3.25
5240	-3.4	-3.59	-2.98	-3.37
5260	-3.56	-3.69	-3.13	-3.55
5280	-3.48	-3.55	-3.11	-3.51
5300	-3.51	-3.56	-3.24	-3.6
5320	-3.5	-3.52	-3.32	-3.64
5340	-3.31	-3.3	-3.2	-3.52
5360	-3.56	-3.55	-3.47	-3.86
5380	-3.56	-3.56	-3.46	-3.96
5400	-3.47	-3.55	-3.36	-3.98
5420	-3.71	-3.85	-3.57	-4.27
5440	-3.59	-3.78	-3.41	-4.14
5460	-3.71	-3.94	-3.45	-4.2

Antenna Gain – 5GH antenna

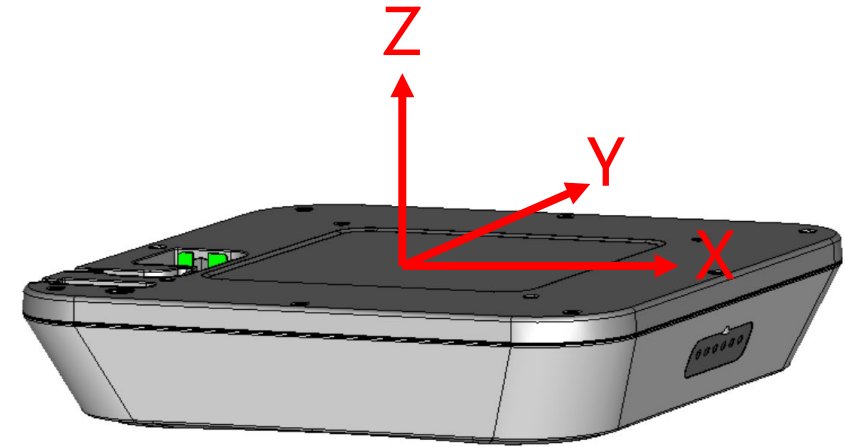
Frequency (MHz)	Gain (dBi)			
	5GH 1	5GH 2	5GH 3	5GH 4
5460	1.9	3.78	3.37	3.82
5480	1.58	3.38	3.07	3.52
5500	1.99	3.62	3.26	3.85
5520	1.83	3.19	2.85	3.53
5540	2.26	3.34	3.14	3.86
5560	3	3.59	3.64	4.17
5580	2.84	3.04	3.41	3.58
5600	3.61	3.45	4.31	4.02
5620	3.31	2.79	4.25	3.46
5640	3.22	2.48	4.34	3.14
5660	3.36	2.44	4.68	3.17
5680	2.73	1.87	4.27	2.63
5700	3.04	2.5	4.95	3.07
5720	2.51	2.26	4.64	2.58
5740	2.48	2.3	4.67	2.42
5760	2.79	2.72	5.02	2.64
5780	2.45	2.36	4.6	2.06
5800	2.63	2.44	4.52	2.02
5820	2.6	2.38	4.25	1.87
5840	2.91	2.61	4.28	1.91
5860	3.13	2.69	4.21	1.89

Frequency (MHz)	Efficiency (dB)			
	5GH 1	5GH 2	5GH 3	5GH 4
5460	-4.45	-3.32	-3.92	-3.27
5480	-4.67	-3.72	-4.21	-3.52
5500	-4.2	-3.54	-3.82	-3.12
5520	-4.38	-4.04	-4.12	-3.45
5540	-3.95	-3.97	-3.85	-3.19
5560	-3.36	-3.73	-3.44	-2.85
5580	-3.6	-4.18	-3.8	-3.31
5600	-2.82	-3.61	-3.12	-2.72
5620	-3.11	-4.02	-3.45	-3.16
5640	-3.2	-4.13	-3.49	-3.32
5660	-3.11	-3.95	-3.27	-3.25
5680	-3.72	-4.41	-3.73	-3.82
5700	-3.42	-3.92	-3.23	-3.48
5720	-3.99	-4.18	-3.59	-3.96
5740	-4.06	-4.03	-3.59	-4.02
5760	-3.79	-3.55	-3.27	-3.74
5780	-4.17	-3.79	-3.69	-4.17
5800	-4.12	-3.61	-3.69	-4.2
5820	-4.25	-3.69	-3.92	-4.42
5840	-4.08	-3.57	-3.89	-4.36
5860	-3.97	-3.54	-3.93	-4.33

Antenna Gain – 6G antenna

Frequency (MHz)		5900	5920	5940	5960	5980	6000	6020	6040	6060	6080	6100	6120	6140	6160	6180	6200	6220	6240	6260	6280	6300	6320	6340	6360	6380	6400	6420	6440	6460	6480	6500
Gain (dBi)	6G_1	1.83	2.11	2.38	2.57	2.86	3.02	2.99	2.92	2.56	2.44	2.28	2.63	2.87	2.87	3.21	3.18	3.06	3.02	2.7	2.45	2.32	2.05	1.9	1.47	1.33	1.52	1.31	1.64	1.88	1.54	1.23
	6G_2	2.94	2.75	2.72	2.75	2.68	2.63	2.61	2.48	2.17	2.56	2.43	2.5	2.44	2.51	3.01	3.04	2.95	2.88	2.35	2.02	1.76	1.5	1.48	1.6	1.87	2.2	2.19	2.45	2.5	2.01	1.65
	6G_3	2.94	2.77	2.69	2.64	2.45	2.37	2.36	2.24	1.88	2.02	2.11	2.69	3.29	3.35	3.82	3.86	3.9	4.06	3.9	3.86	3.8	3.72	3.69	3.64	3.65	3.78	3.5	3.43	3.55	3.25	3.24
	6G_4	4.14	4.11	4.18	4.36	4.31	4.24	4.1	3.97	3.77	4.15	4.06	4.12	4.28	4.08	4.25	4	3.73	3.78	3.5	3.43	3.29	2.99	2.75	2.39	2.13	1.97	1.68	1.81	2.01	1.86	1.97
Frequency (MHz)		6520	6540	6560	6580	6600	6620	6640	6660	6680	6700	6720	6740	6760	6780	6800	6820	6840	6860	6880	6900	6920	6940	6960	6980	7000	7020	7040	7060	7080	7100	7120
Gain (dBi)	6G_1	1.03	0.71	0.77	0.73	0.94	0.86	0.78	1.16	1.28	1.36	1.72	1.95	1.99	1.89	1.6	1.18	0.77	0.46	0.17	-0.3	-0.5	-0.5	-0.3	-0.2	0.06	0.34	0.41	0.55	0.96	1.39	1.57
	6G_2	1.3	1.22	1.57	1.85	1.97	2.11	2.15	2.27	2.23	2.07	1.78	1.42	1.1	1	0.92	0.76	0.46	0.53	0.62	0.49	0.53	0.64	0.8	0.7	0.5	0.55	0.43	0.28	0.09	-0	-0.3
	6G_3	3.2	3.04	2.93	2.71	2.59	2.51	2.29	2.17	2.66	2.98	3.07	3.1	3.04	3.03	3.04	3.15	3.26	3.35	3.24	2.69	2.29	2.05	1.93	1.77	1.4	1.49	1.23	1.17	1.03	0.96	0.73
	6G_4	1.77	1.55	1.48	1.34	1.22	1.57	1.86	2.26	2.64	2.74	2.64	2.96	3.02	2.91	2.6	2.21	1.87	1.59	1.5	1.03	0.8	0.84	1.13	1.18	1.12	1.2	0.79	0.57	1.08	1.5	1.69
Frequency (MHz)		5900	5920	5940	5960	5980	6000	6020	6040	6060	6080	6100	6120	6140	6160	6180	6200	6220	6240	6260	6280	6300	6320	6340	6360	6380	6400	6420	6440	6460	6480	6500
Efficiency (dB)	6G_1	-5.1	-4.8	-4.5	-4.1	-3.9	-3.8	-3.7	-3.7	-3.9	-3.7	-4	-3.8	-3.7	-3.8	-3.5	-3.5	-3.5	-3.3	-3.5	-3.5	-3.5	-3.6	-3.7	-3.8	-3.8	-3.8	-4.1	-4	-4	-4.3	-4.4
	6G_2	-4	-4	-3.9	-3.8	-3.8	-3.8	-3.6	-3.6	-3.7	-3.4	-3.6	-3.4	-3.3	-3.5	-3.4	-3.5	-3.7	-3.7	-4	-4.2	-4.2	-4.4	-4.4	-4.5	-4.5	-4.4	-4.5	-4.3	-4.2	-4.4	-4.4
	6G_3	-3.6	-3.7	-3.6	-3.6	-3.6	-3.6	-3.5	-3.5	-3.7	-3.4	-3.6	-3.4	-3.2	-3.2	-2.8	-2.8	-2.8	-2.7	-2.9	-3	-3.1	-3.2	-3.2	-3.3	-3.3	-3.2	-3.5	-3.5	-3.3	-3.5	-3.5
	6G_4	-4.2	-4.1	-4	-3.8	-3.8	-3.7	-3.6	-3.6	-3.7	-3.5	-3.7	-3.5	-3.4	-3.5	-3.3	-3.3	-3.4	-3.3	-3.5	-3.6	-3.6	-3.8	-3.8	-4	-4	-3.9	-4.1	-4	-3.8	-4.1	-4.2
Frequency (MHz)		6520	6540	6560	6580	6600	6620	6640	6660	6680	6700	6720	6740	6760	6780	6800	6820	6840	6860	6880	6900	6920	6940	6960	6980	7000	7020	7040	7060	7080	7100	7120
Efficiency (dB)	6G_1	-4.5	-4.6	-4.6	-4.6	-4.4	-4.3	-4.2	-4	-3.9	-4	-4.1	-4.2	-4.6	-4.8	-5.1	-5.4	-5.6	-5.8	-6	-6.5	-6.7	-6.7	-6.4	-6.3	-6	-5.5	-5.3	-5.1	-5	-4.9	-5
	6G_2	-4.3	-4.3	-4.2	-4.2	-4.1	-3.9	-3.9	-3.8	-3.9	-4	-4.2	-4.3	-4.5	-4.6	-4.7	-4.8	-4.8	-4.8	-4.8	-5.1	-5.2	-5.1	-4.9	-4.9	-4.8	-4.6	-4.8	-4.9	-5.1	-5.1	-5.3
	6G_3	-3.6	-3.7	-3.7	-3.8	-3.8	-3.7	-3.7	-3.5	-3.4	-3.4	-3.4	-3.3	-3.3	-3.3	-3.2	-3.2	-3.1	-3.1	-3.2	-3.7	-4.1	-4.3	-4.5	-4.7	-5	-5.1	-5.3	-5.5	-5.5	-5.4	-5.3
	6G_4	-4.2	-4.3	-4.3	-4.4	-4.2	-4.1	-4.1	-3.9	-3.8	-3.7	-3.7	-3.7	-3.8	-3.9	-4	-4.2	-4.3	-4.4	-4.5	-4.9	-5.2	-5.3	-5.2	-5.3	-5.3	-5.1	-5.2	-5.2	-5.2	-5.1	-5.2

Antenna Pattern – Test Setup



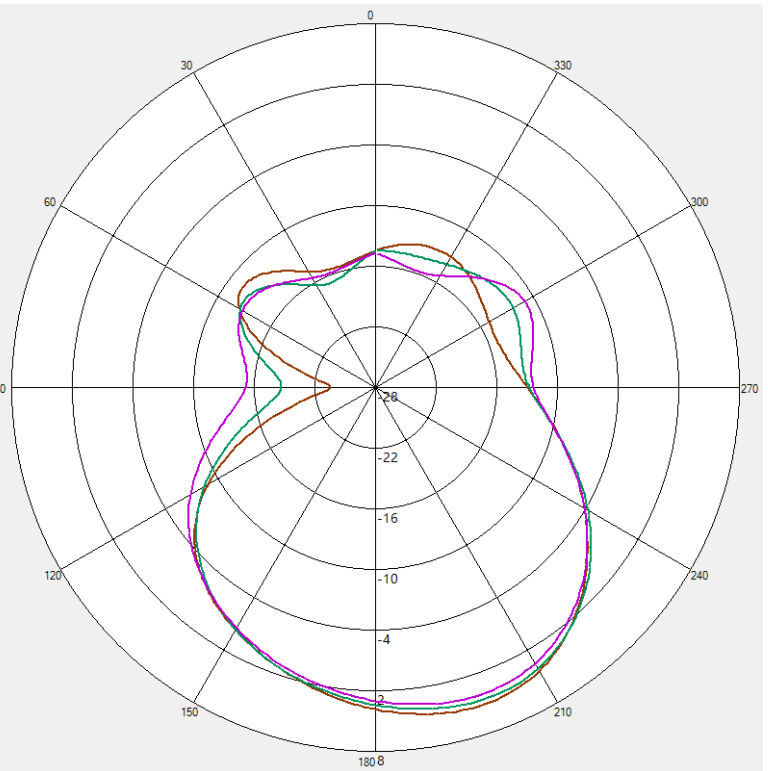
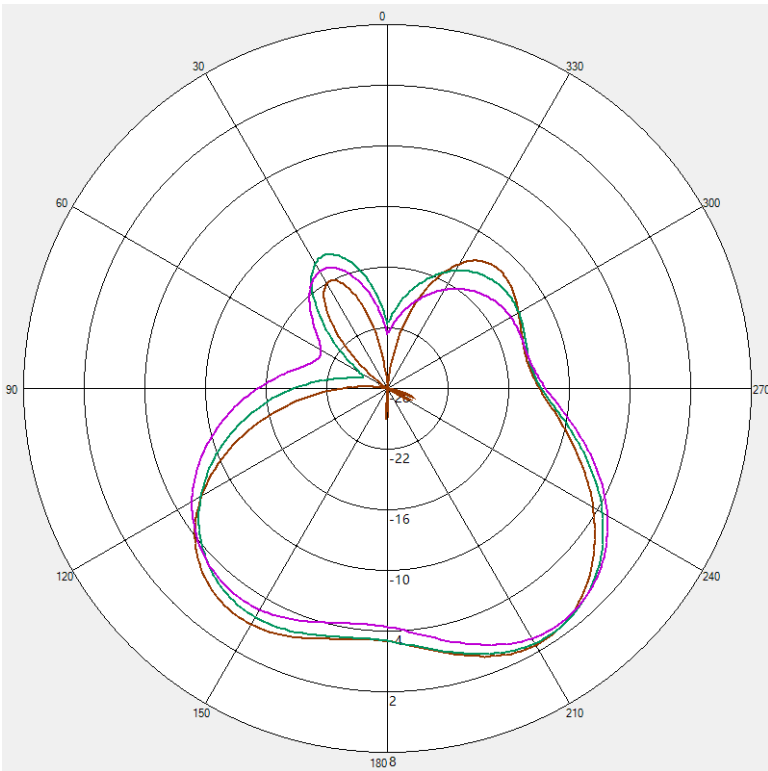
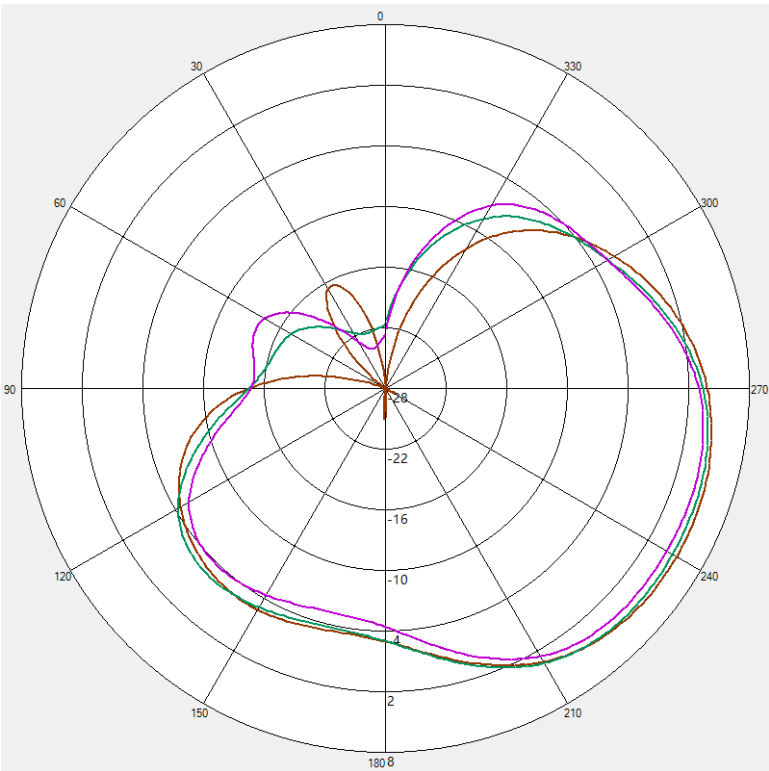
Antenna Pattern

2G_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 2400MHz
- 2440MHz
- 2480MHz

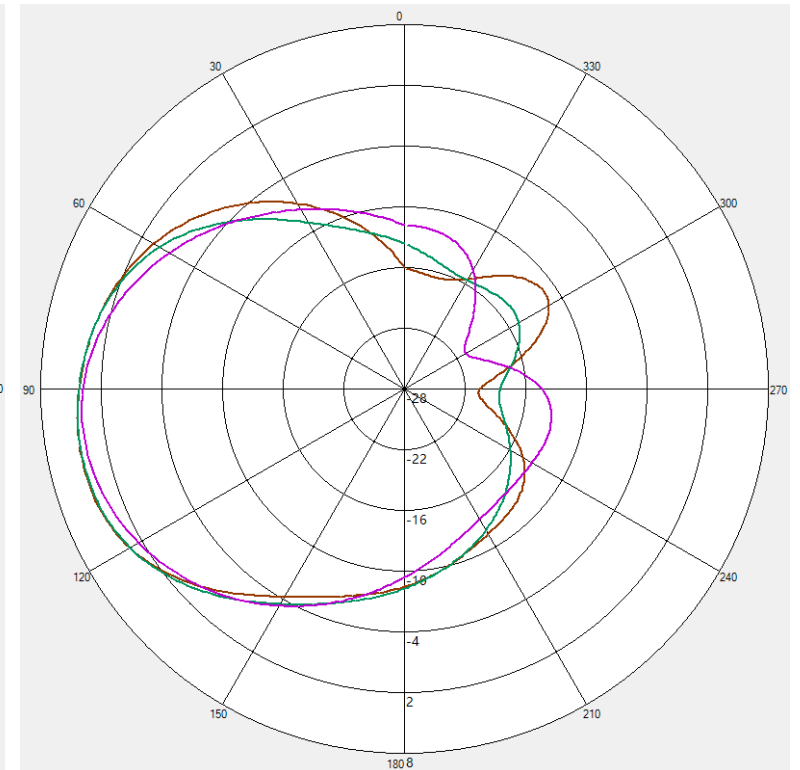
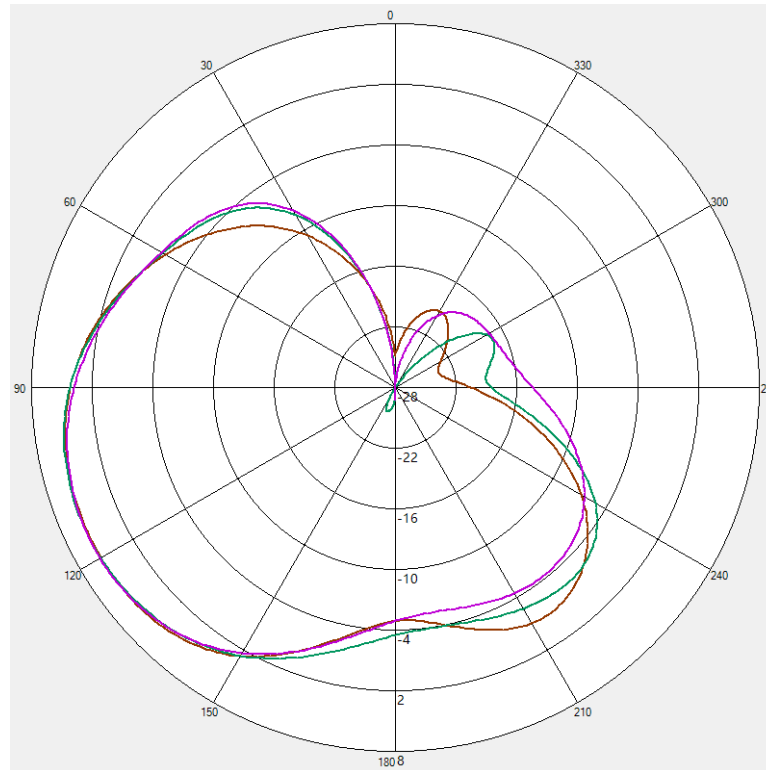
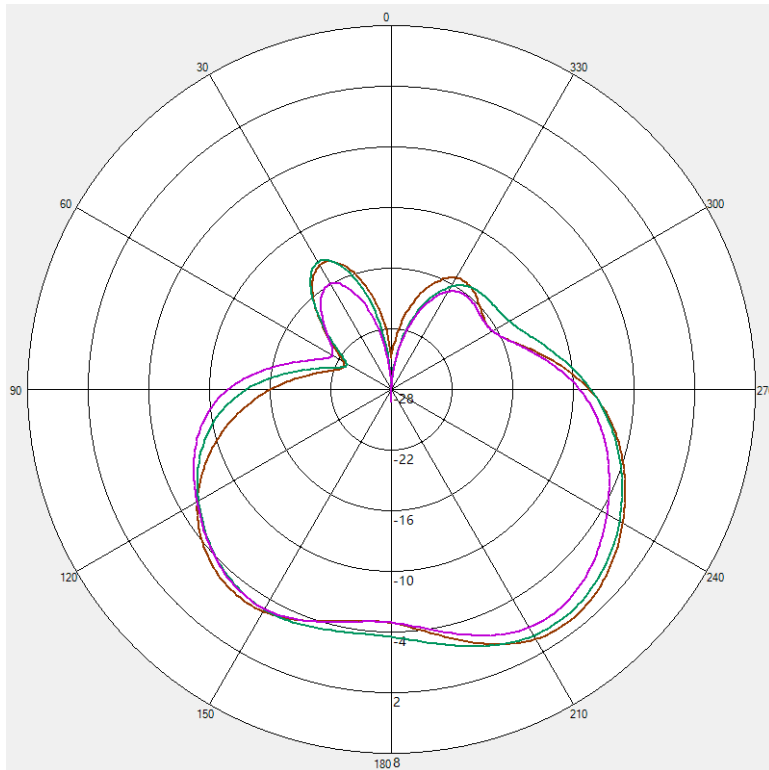
Antenna Pattern

2G_2

X-Z Plane

Y-Z Plane

X-Y Plane



- 2400MHz
- 2440MHz
- 2480MHz

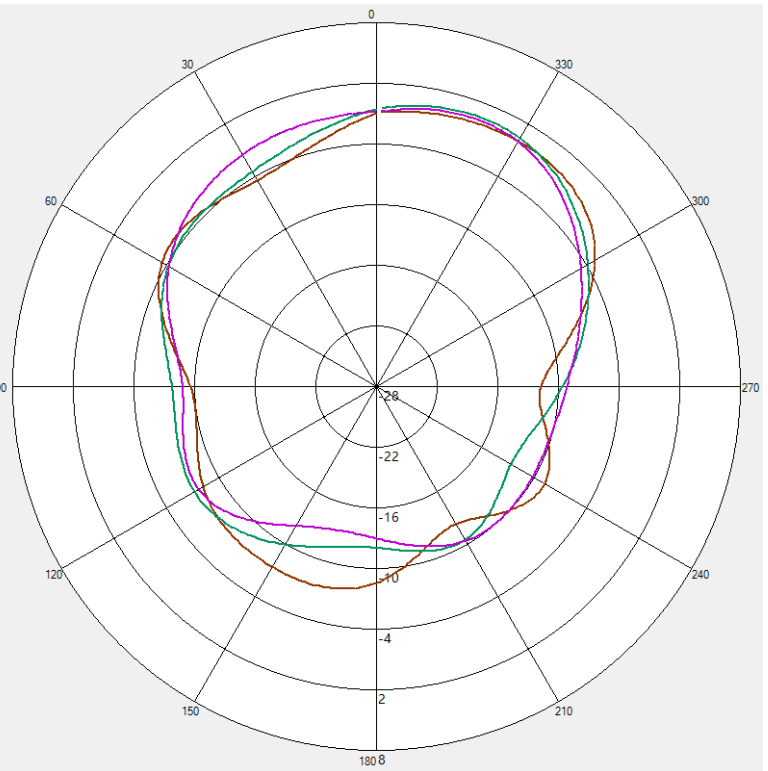
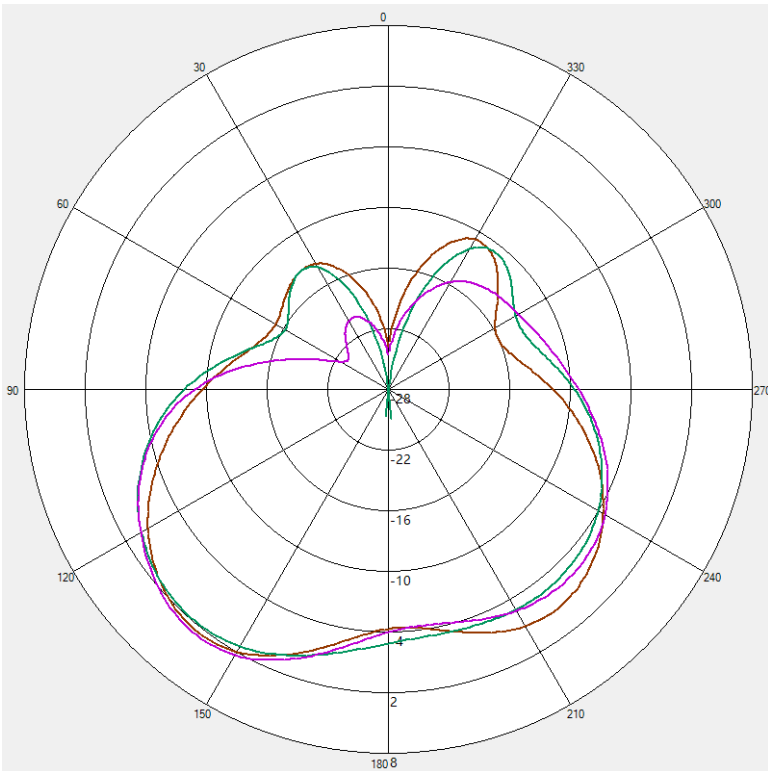
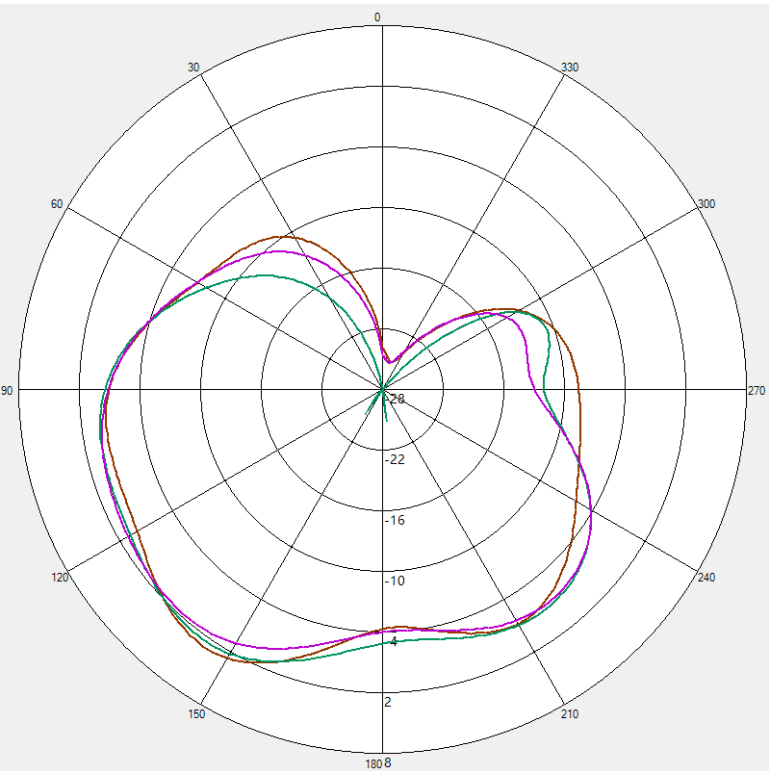
Antenna Pattern

2G_3

X-Z Plane

Y-Z Plane

X-Y Plane



- 2400MHz
- 2440MHz
- 2480MHz

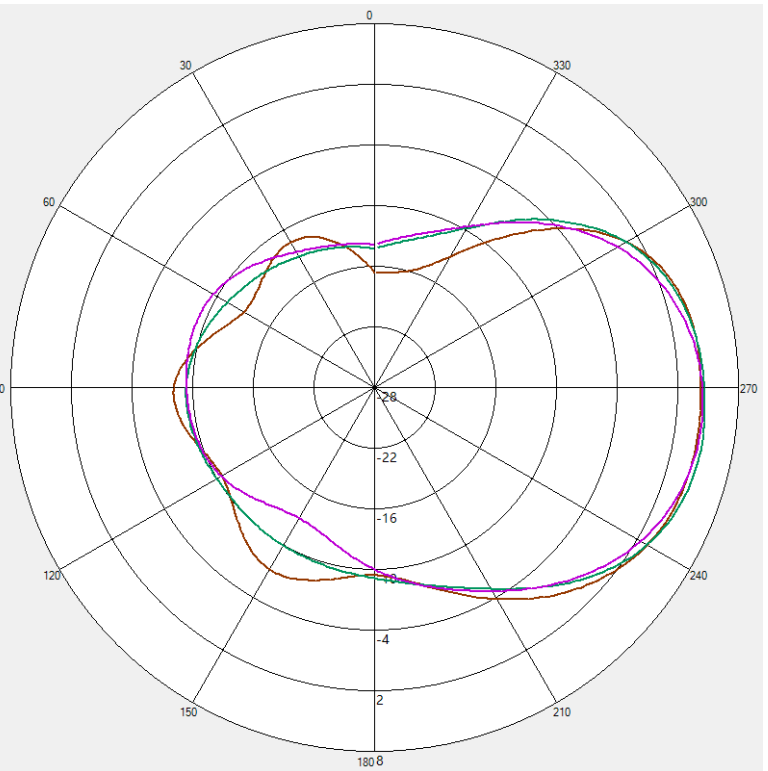
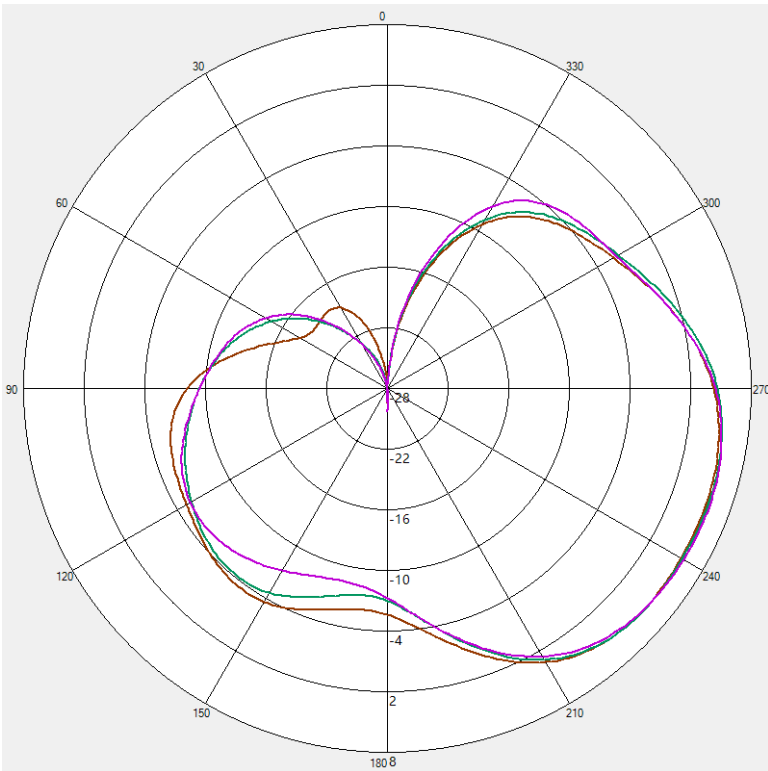
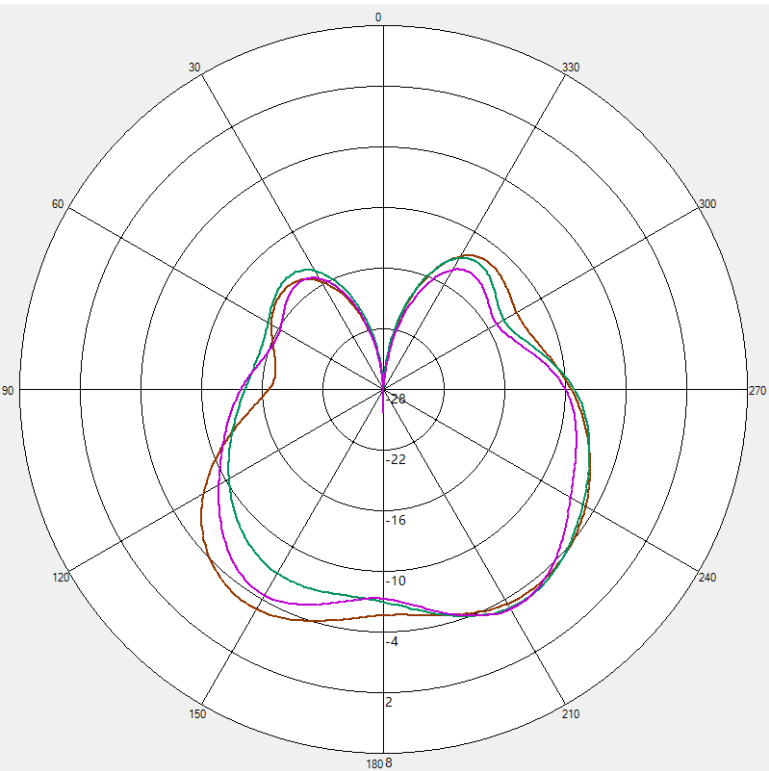
Antenna Pattern

2G_4

X-Z Plane

Y-Z Plane

X-Y Plane



- 2400MHz
- 2440MHz
- 2480MHz

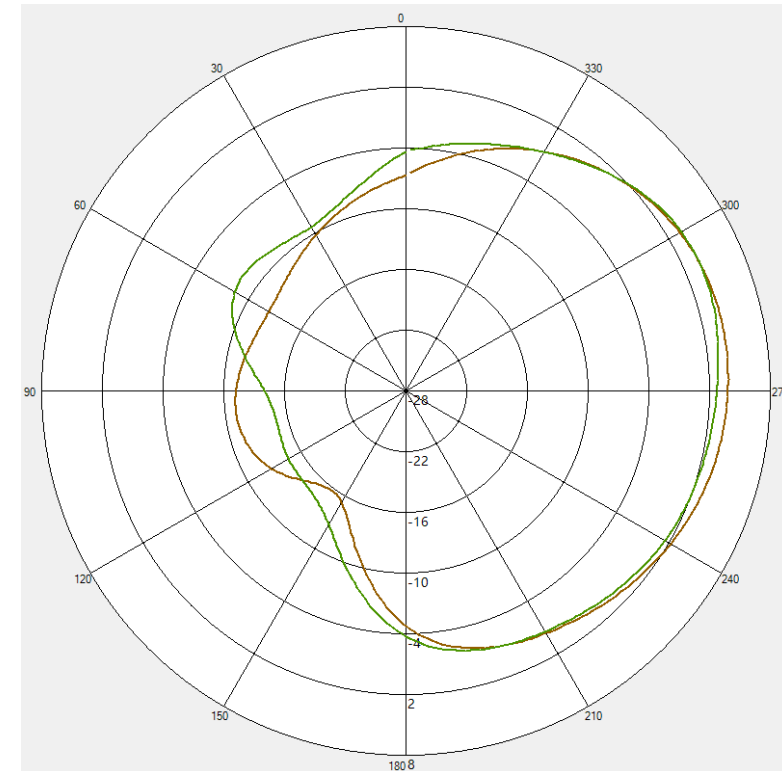
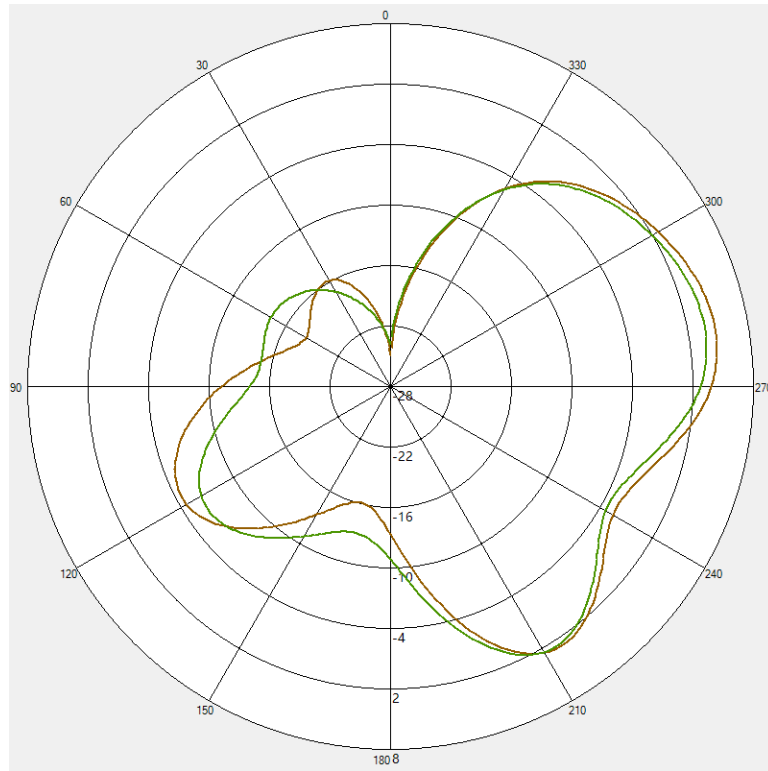
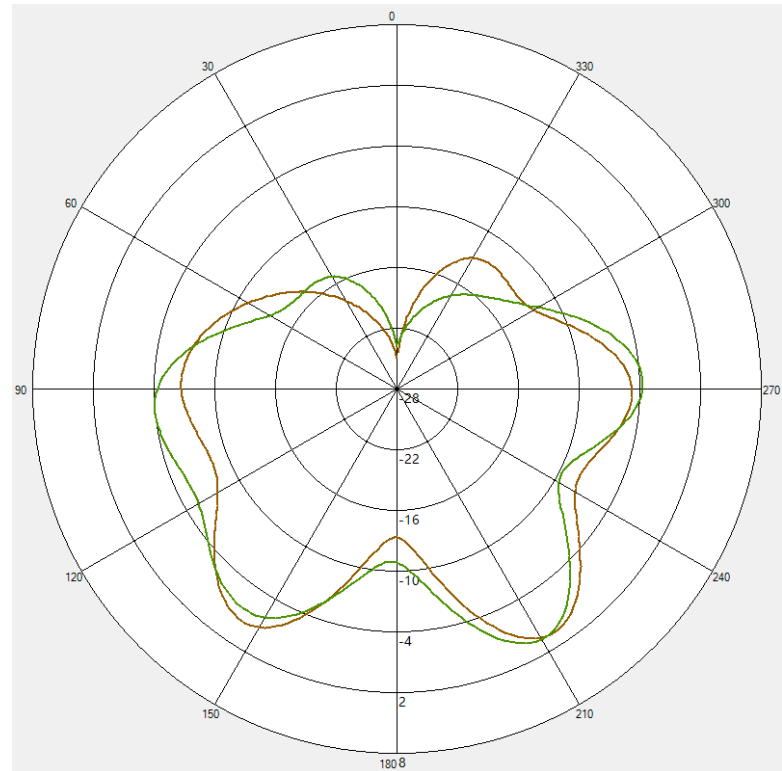
Antenna Pattern

5GL_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 5200MHz
- 5300MHz

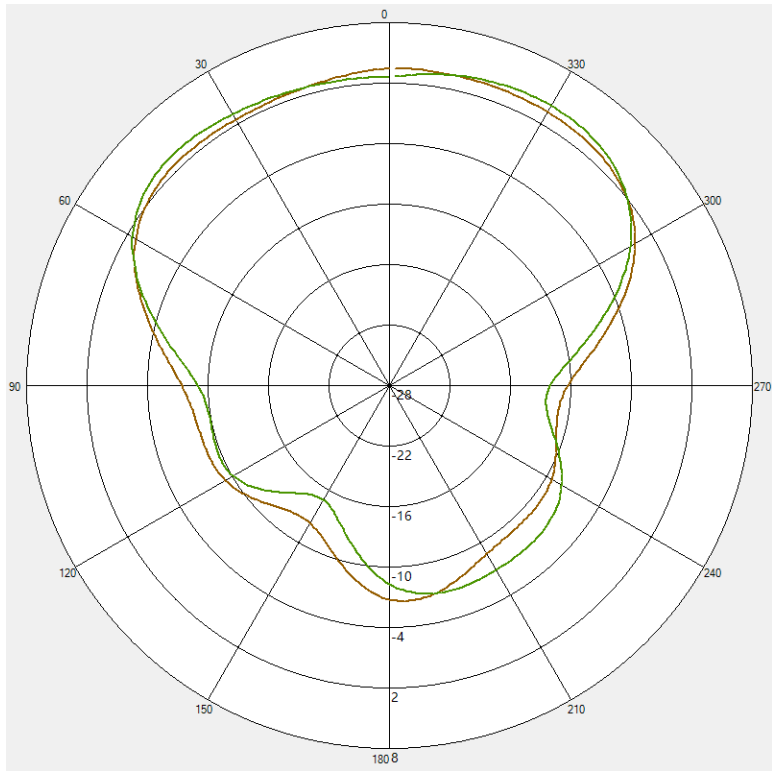
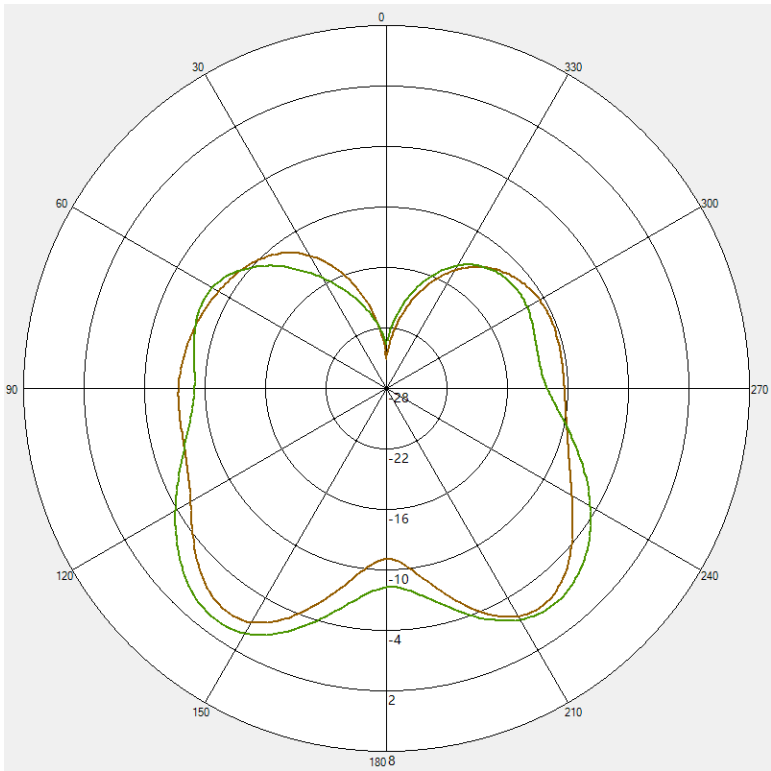
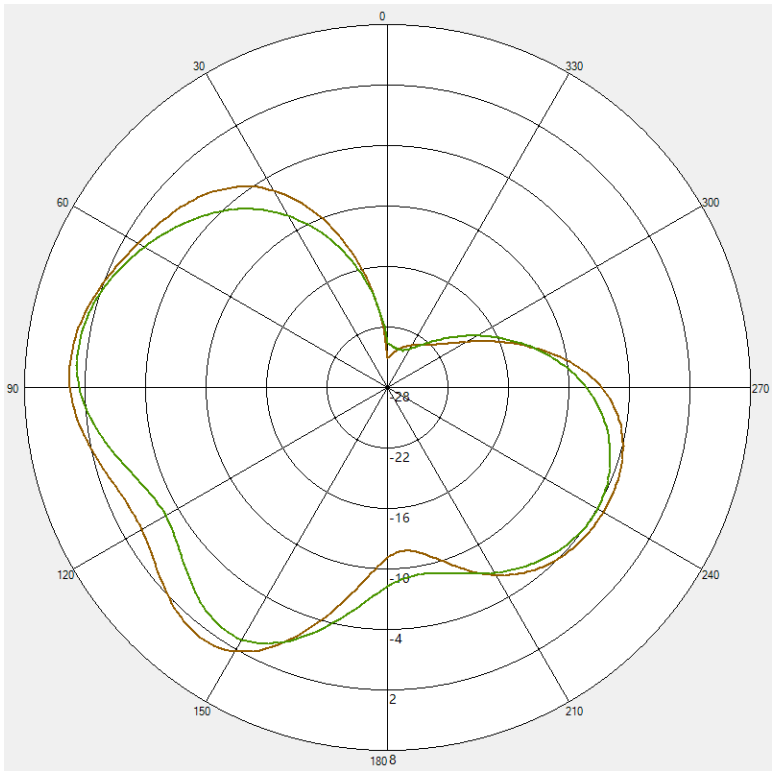
Antenna Pattern

5GL_2

X-Z Plane

Y-Z Plane

X-Y Plane



— 5200MHz
— 5300MHz

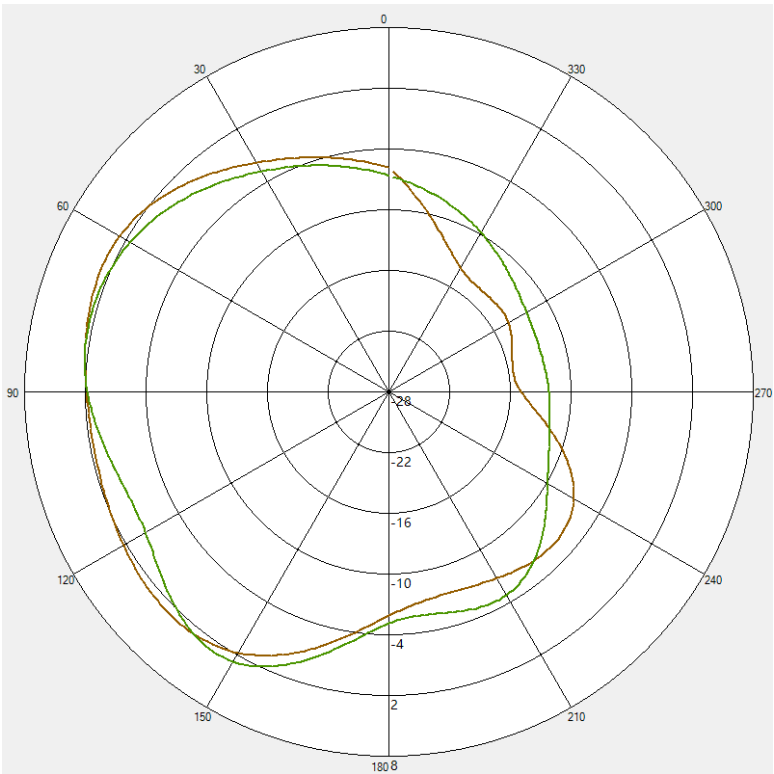
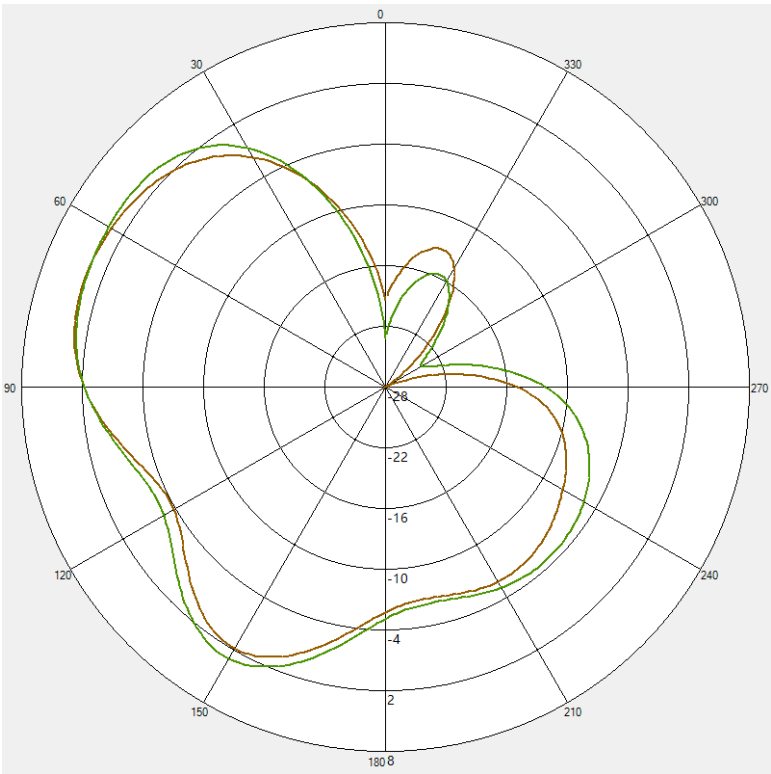
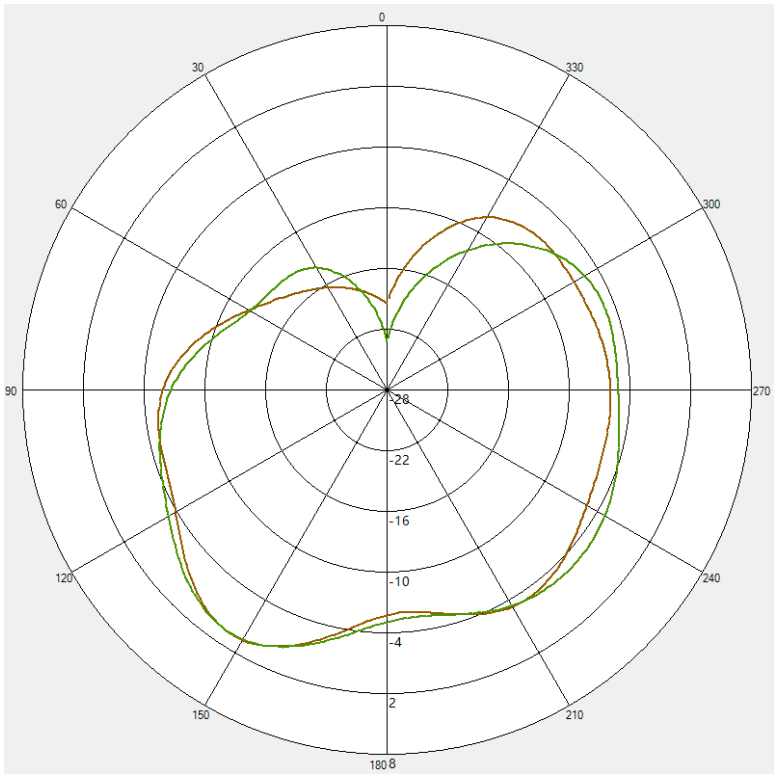
Antenna Pattern

5GL_3

X-Z Plane

Y-Z Plane

X-Y Plane



— 5200MHz
— 5300MHz

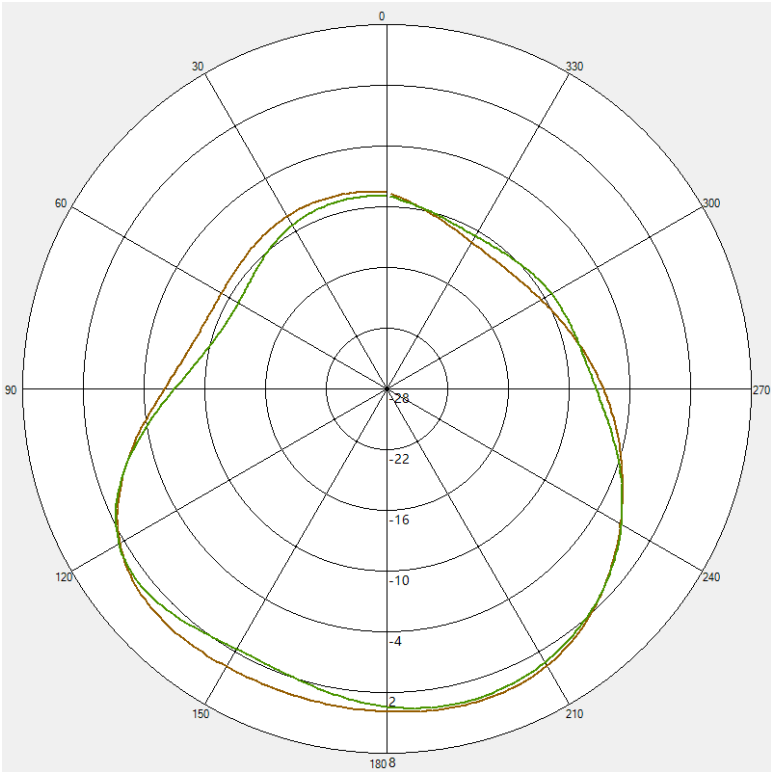
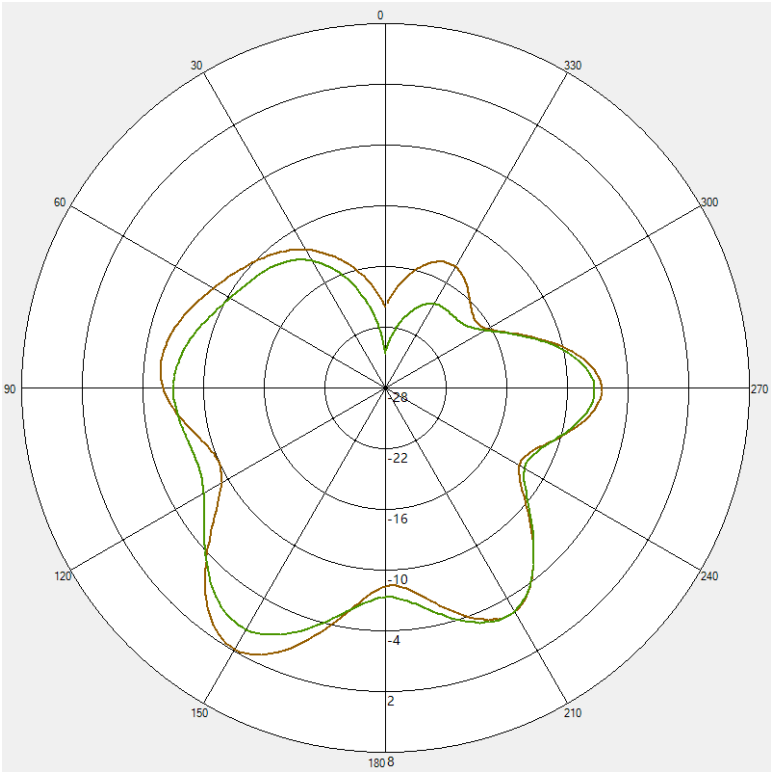
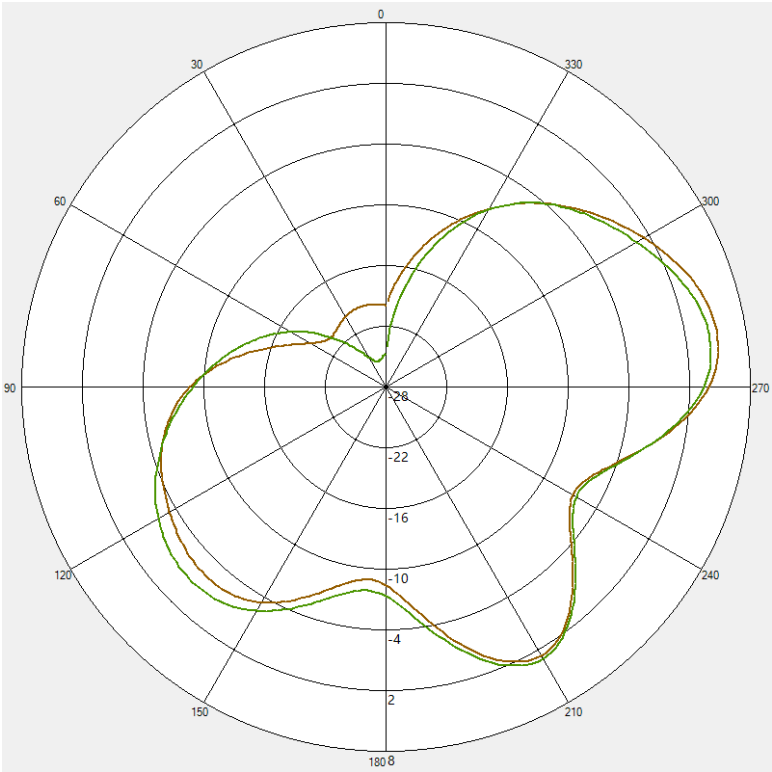
Antenna Pattern

5GL_4

X-Z Plane

Y-Z Plane

X-Y Plane



— 5200MHz
— 5300MHz

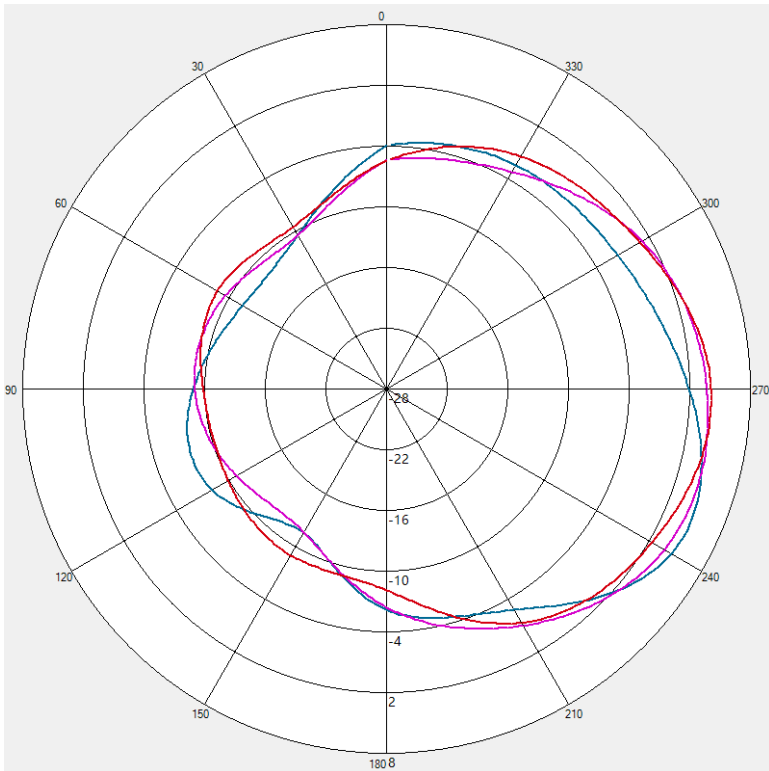
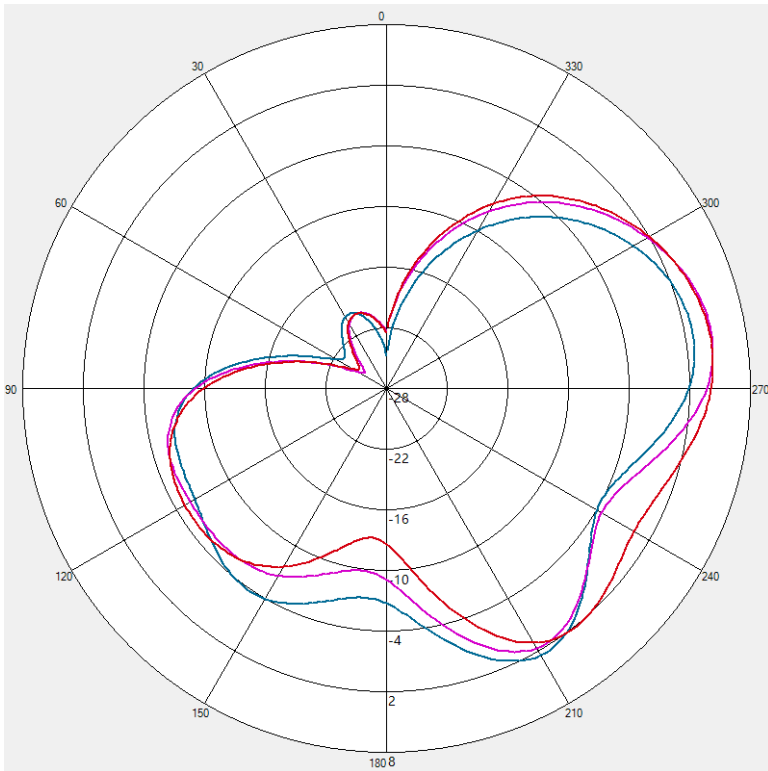
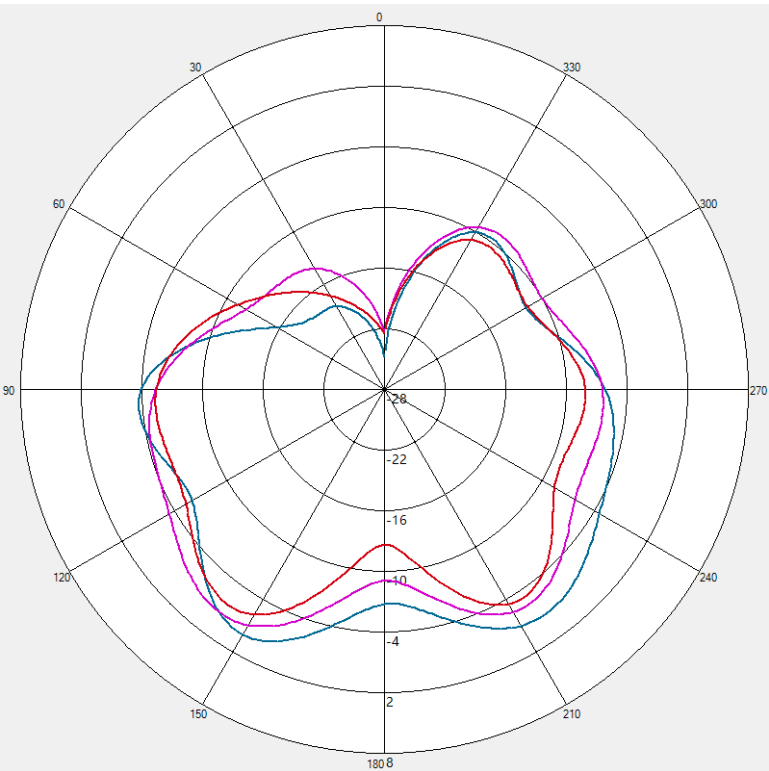
Antenna Pattern

5GH_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 5500MHz
- 5700MHz
- 5800MHz

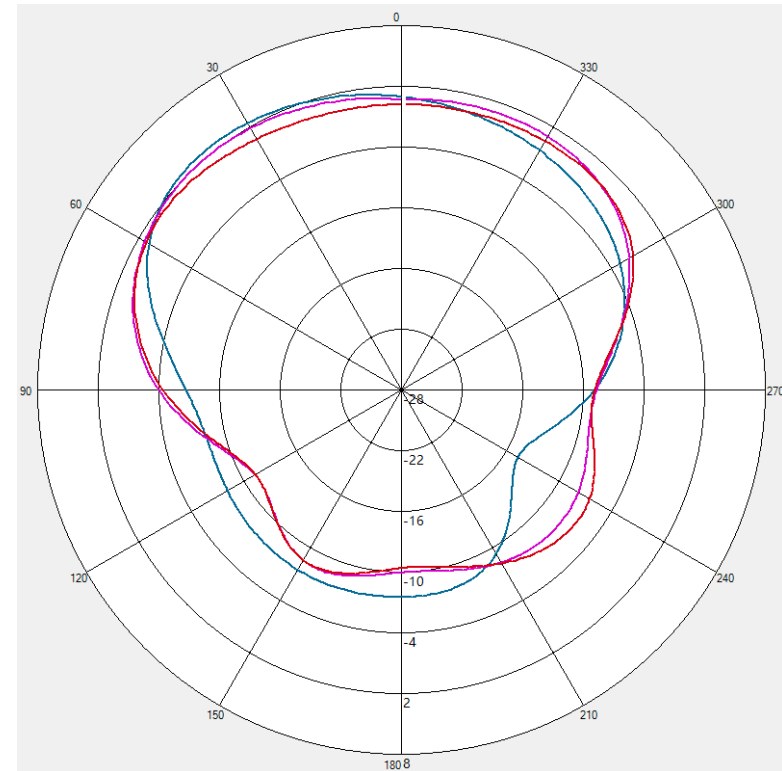
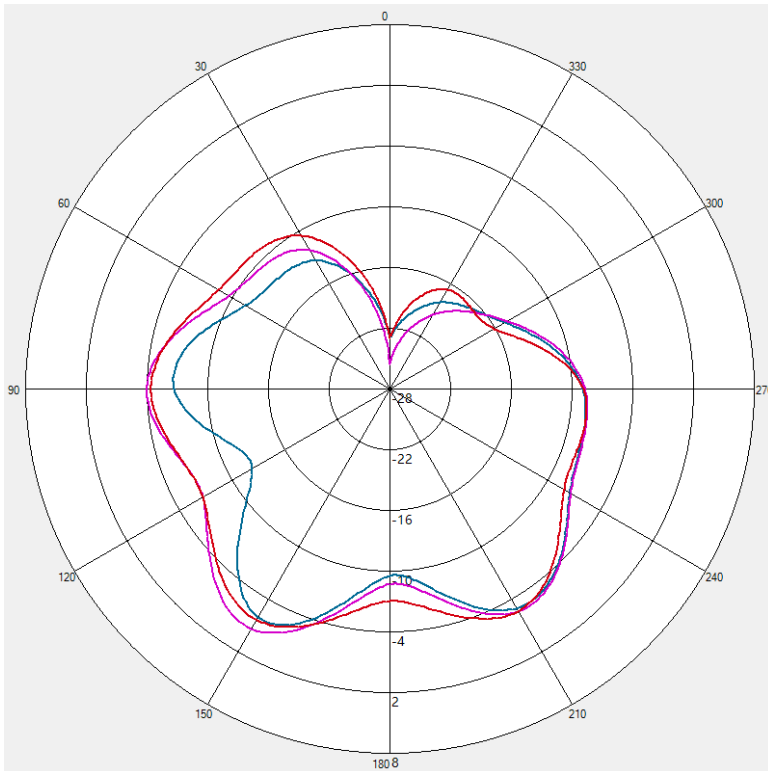
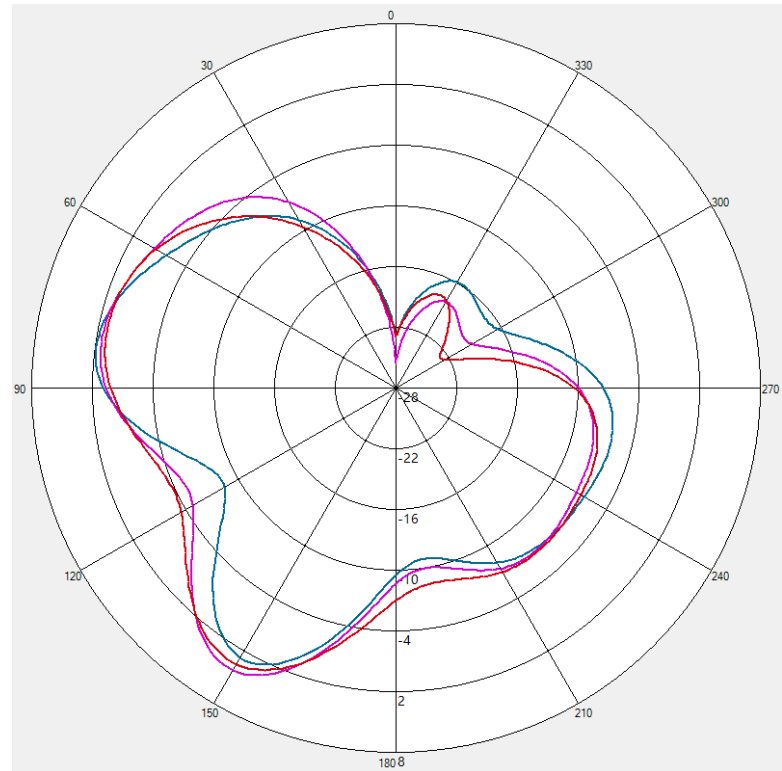
Antenna Pattern

5GH_2

X-Z Plane

Y-Z Plane

X-Y Plane



- 5500MHz
- 5700MHz
- 5800MHz

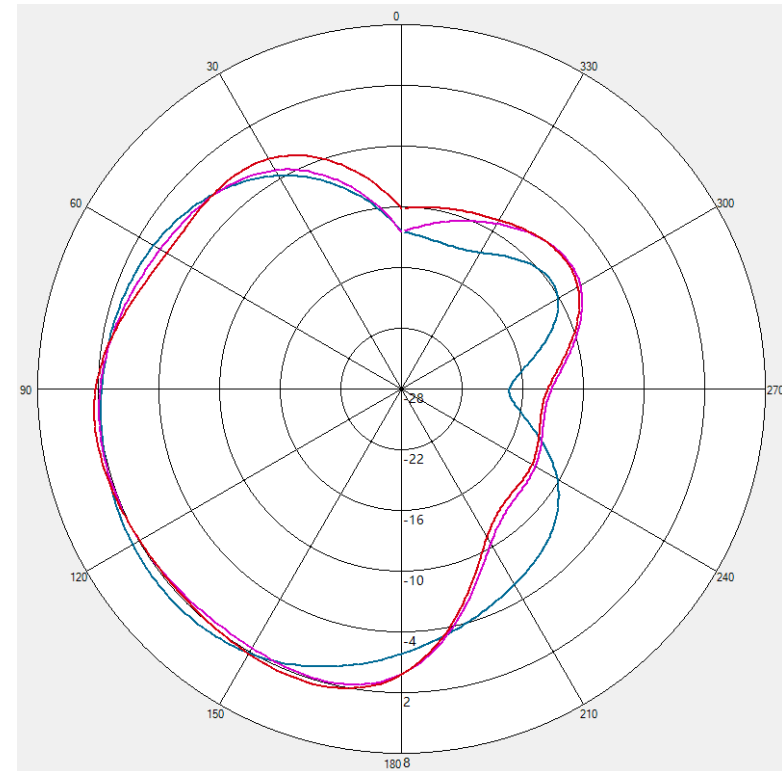
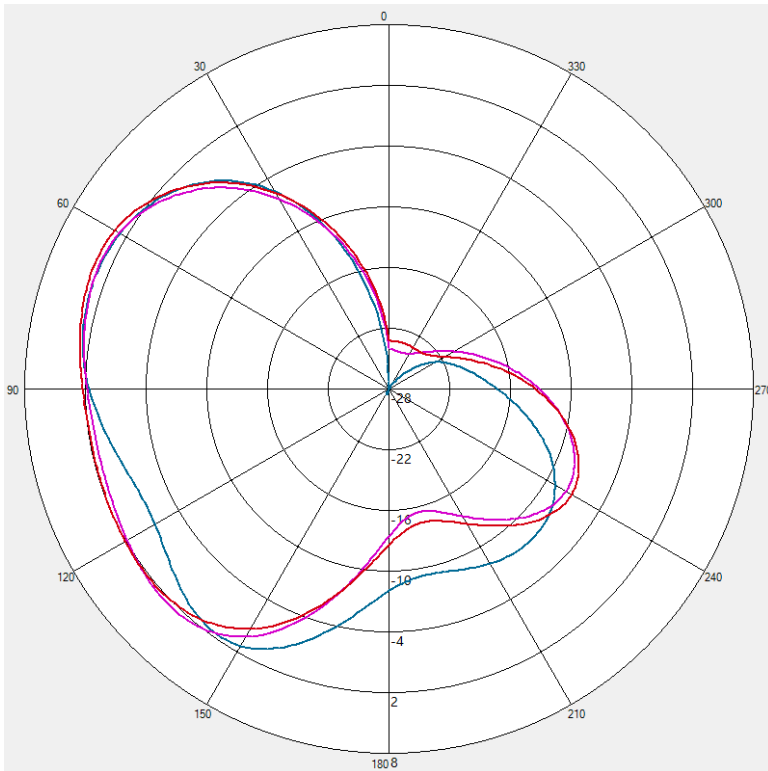
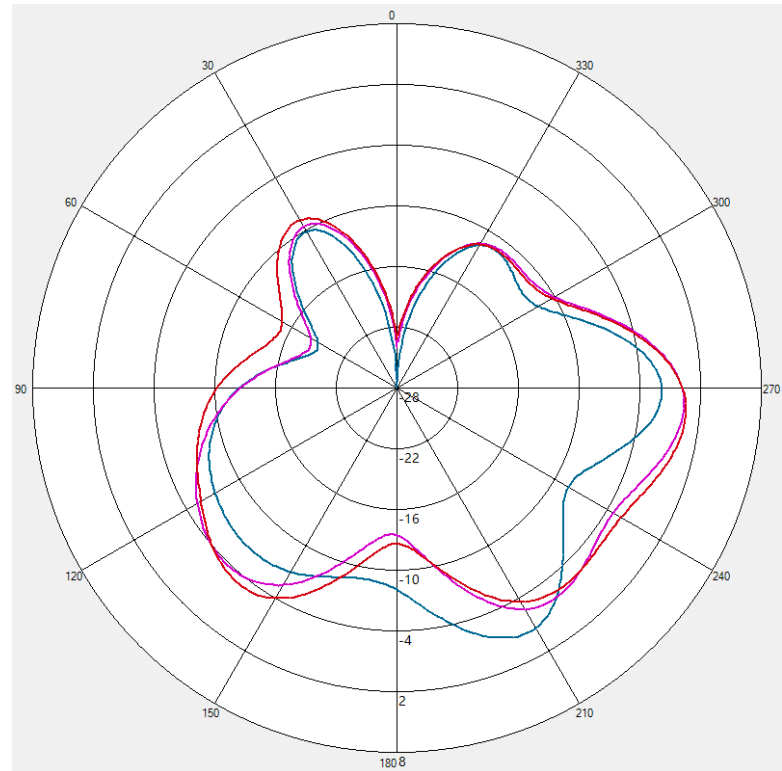
Antenna Pattern

5GH_3

X-Z Plane

Y-Z Plane

X-Y Plane



- 5500MHz
- 5700MHz
- 5800MHz

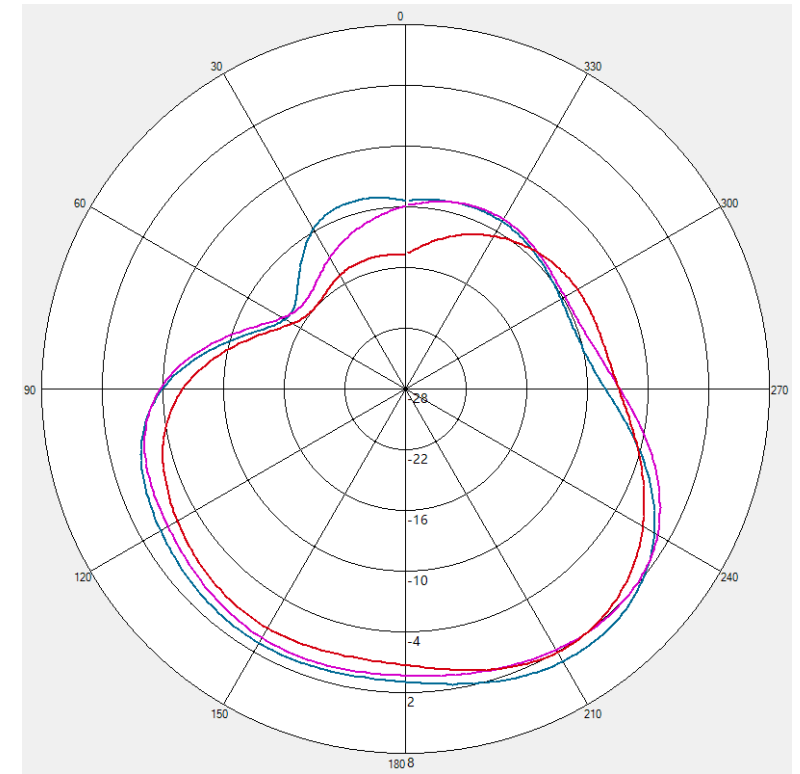
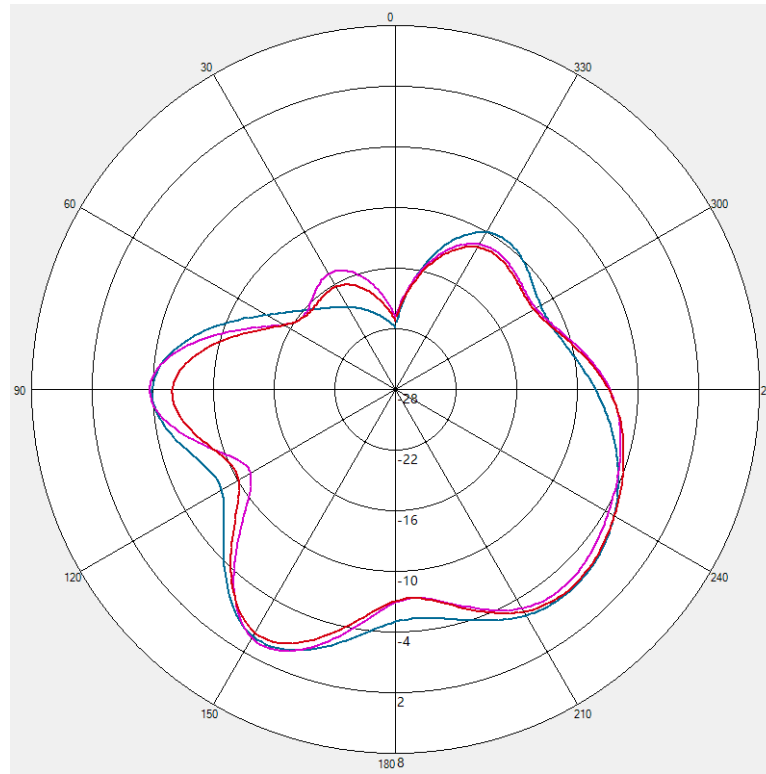
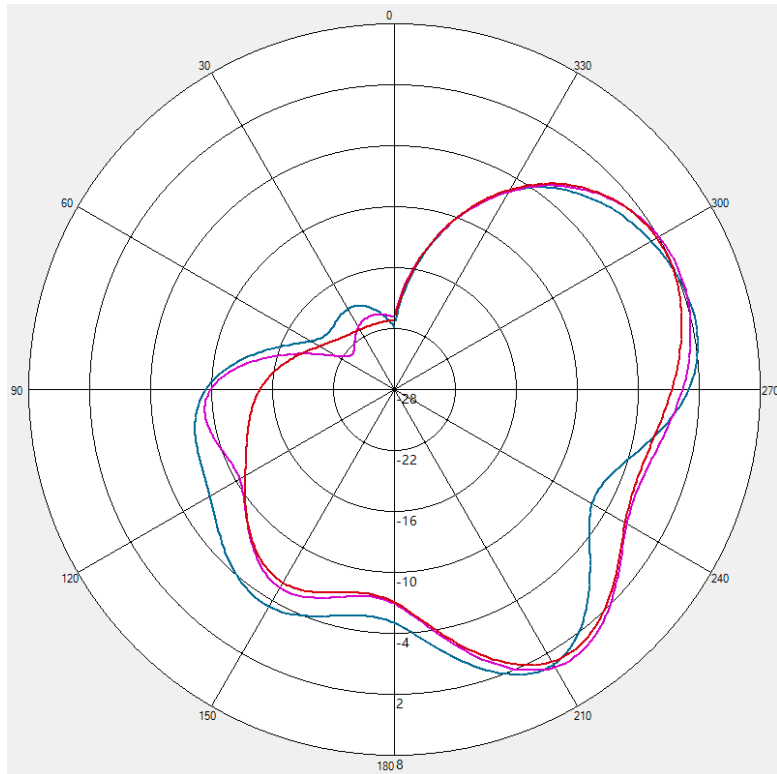
Antenna Pattern

5GH_4

X-Z Plane

Y-Z Plane

X-Y Plane



— 5500MHz
— 5700MHz
— 5800MHz

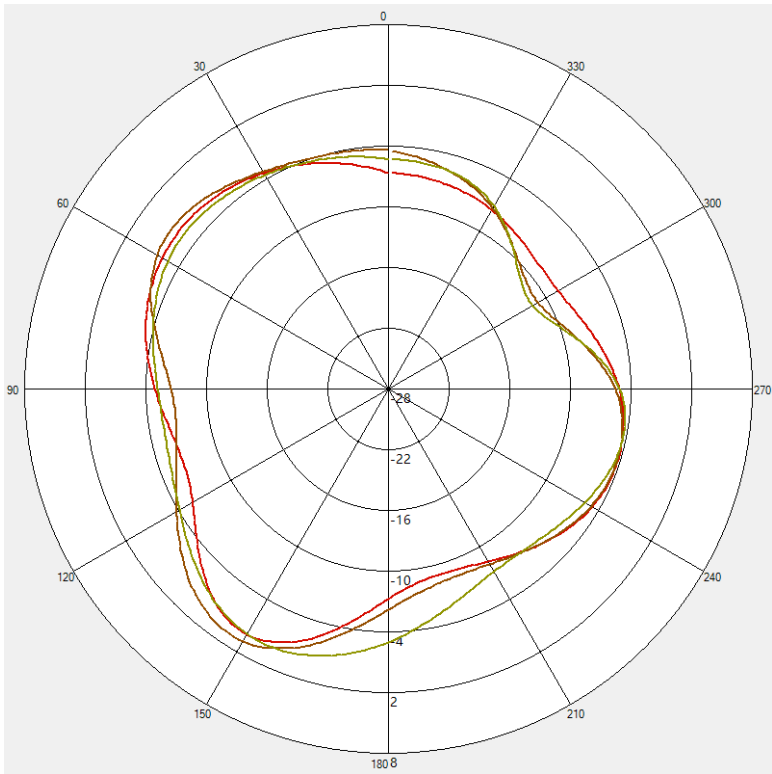
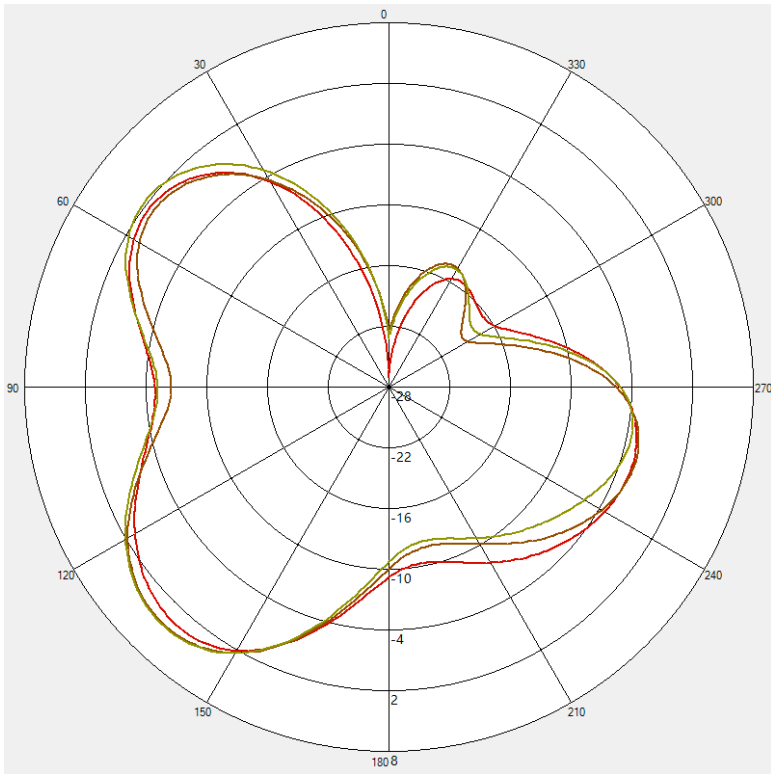
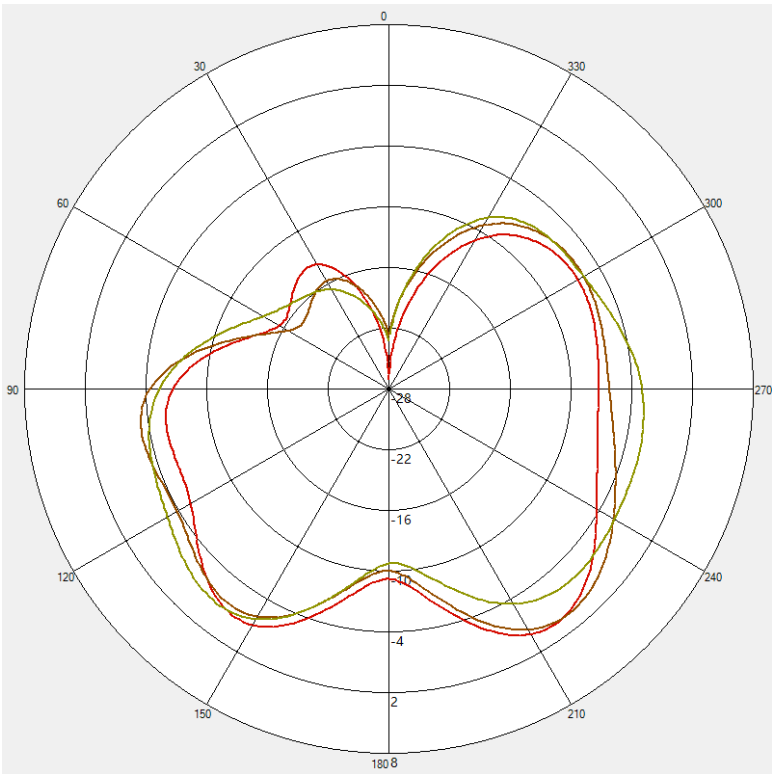
Antenna Pattern

6G_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 5900MHz
- 6000MHz
- 6100MHz

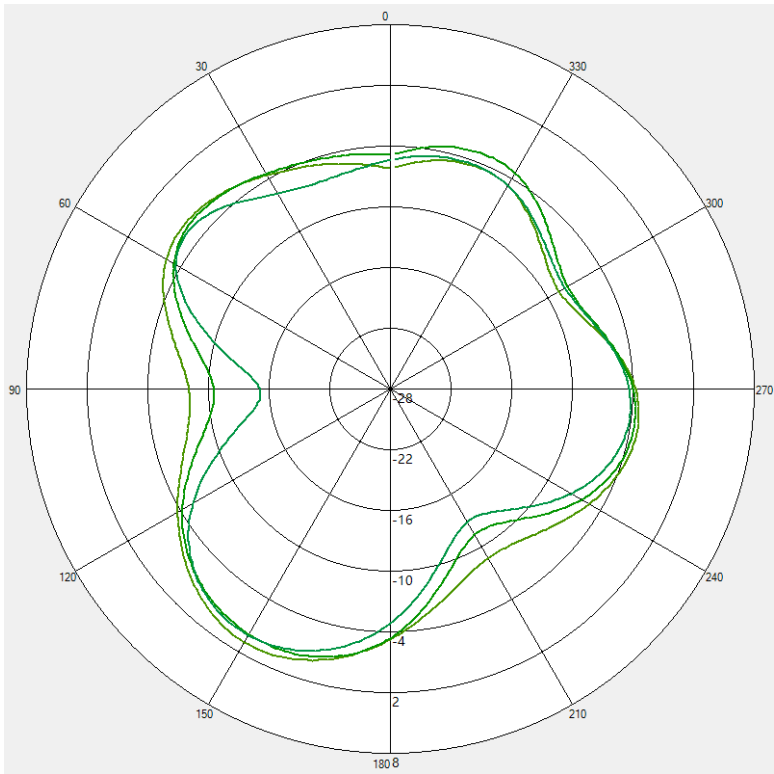
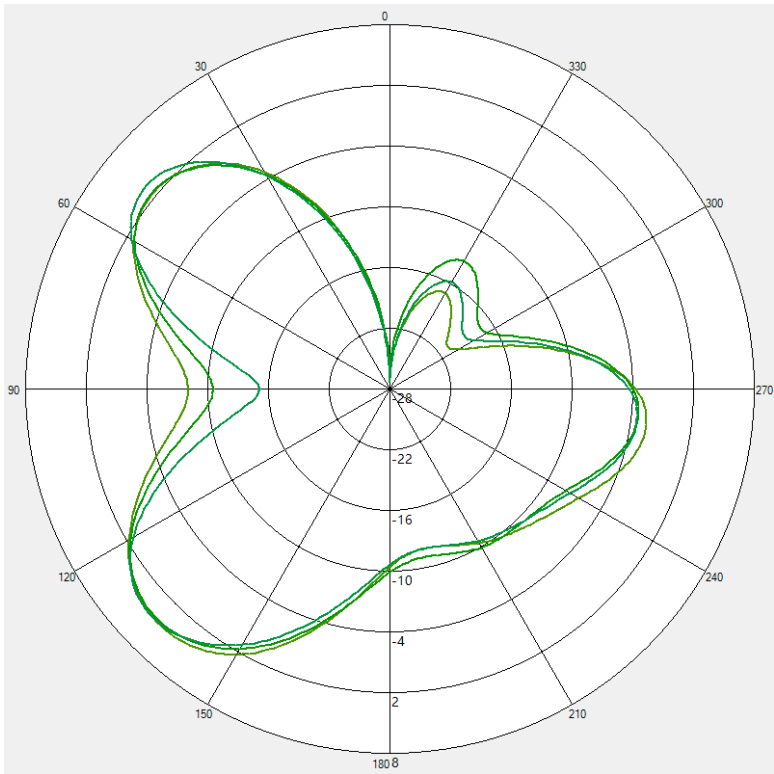
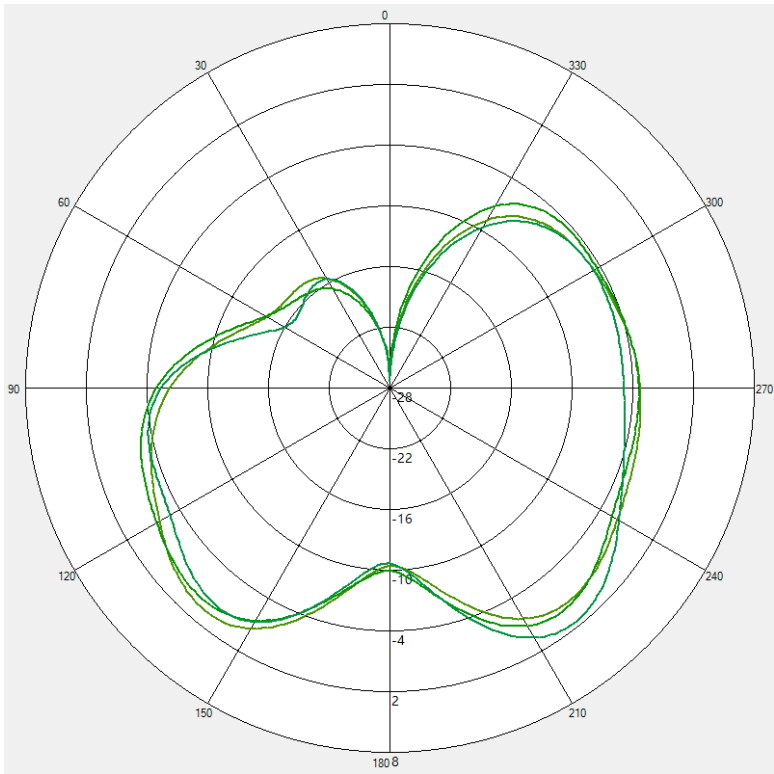
Antenna Pattern

6G_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 6200MHz
- 6300MHz
- 6400MHz

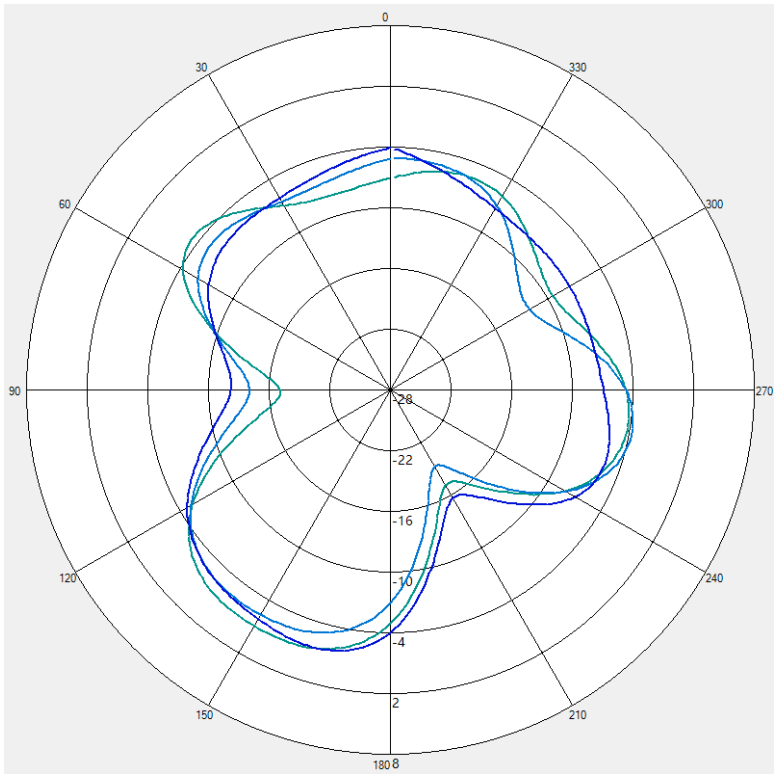
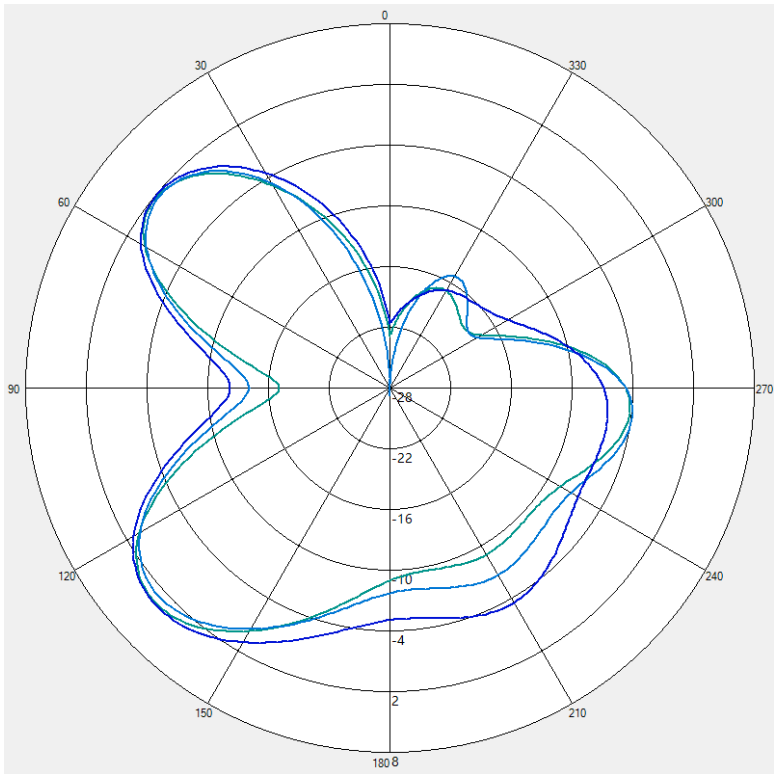
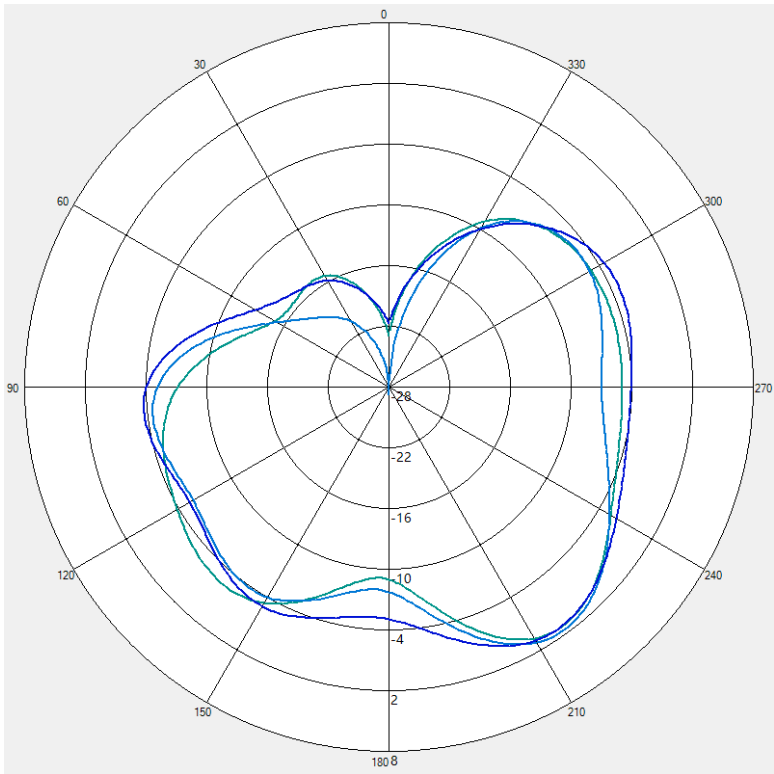
Antenna Pattern

6G_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 6500MHz
- 6600MHz
- 6700MHz

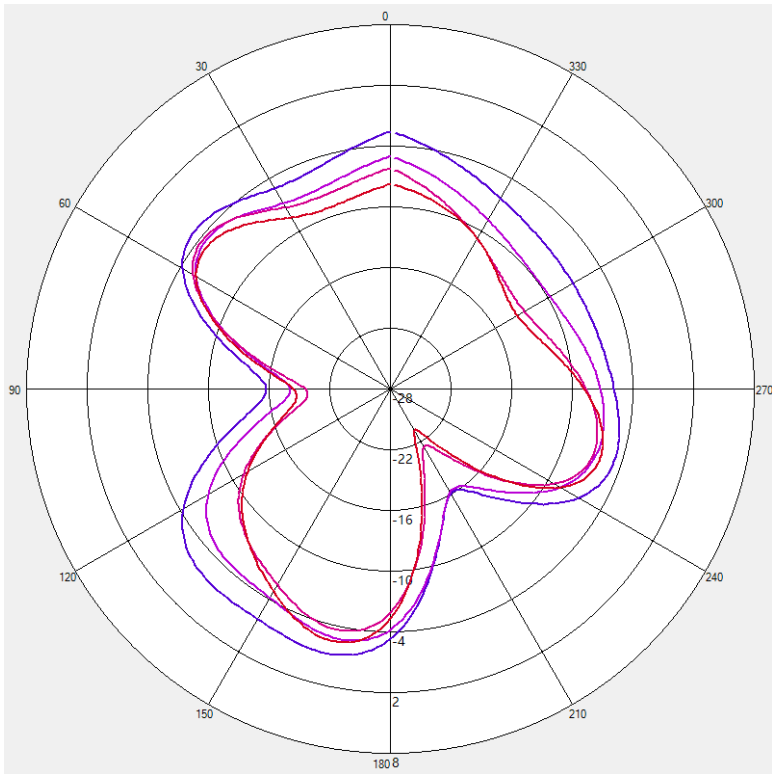
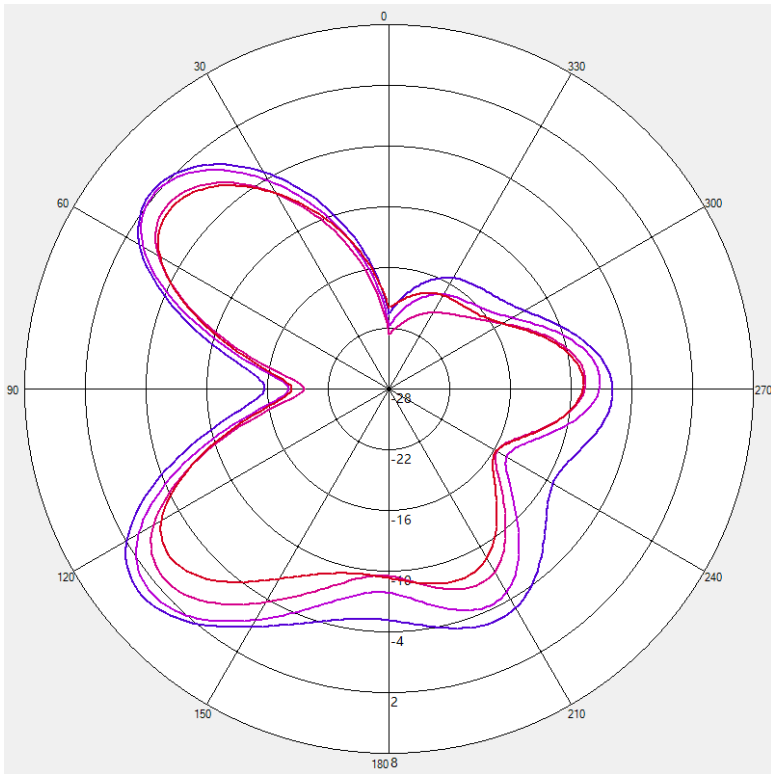
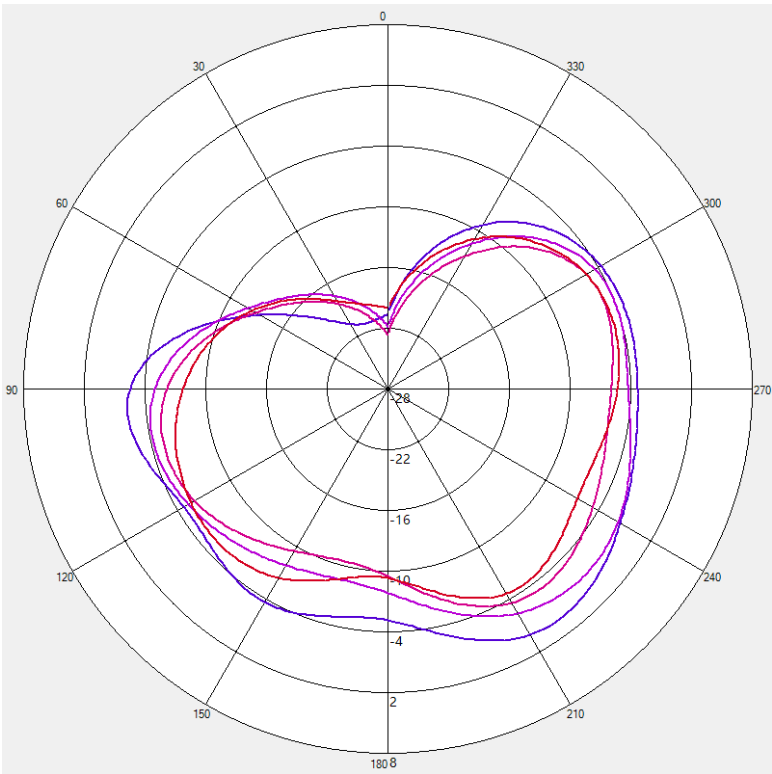
Antenna Pattern

6G_1

X-Z Plane

Y-Z Plane

X-Y Plane



- 6800MHz
- 6900MHz
- 7000MHz
- 7100MHz

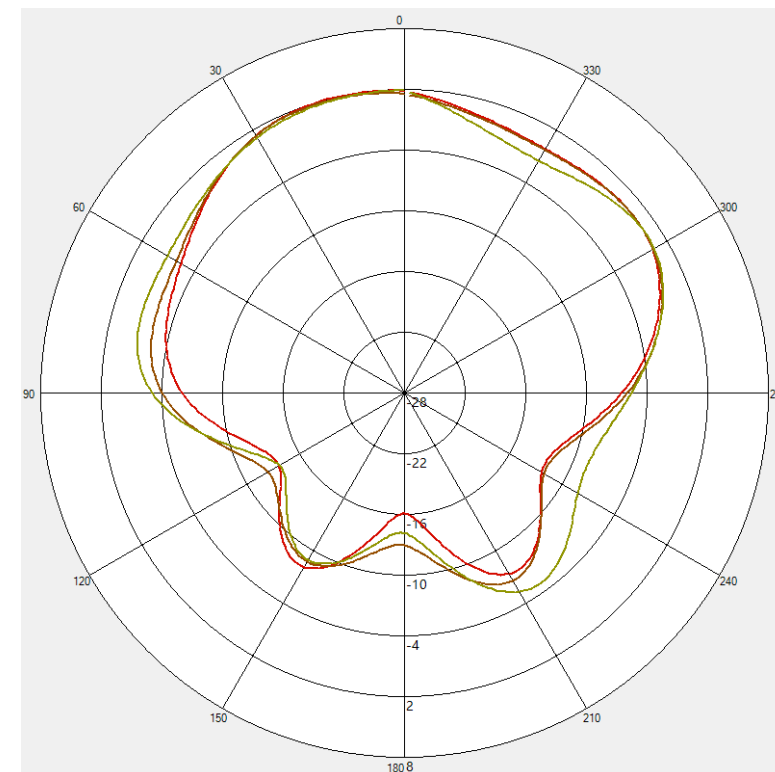
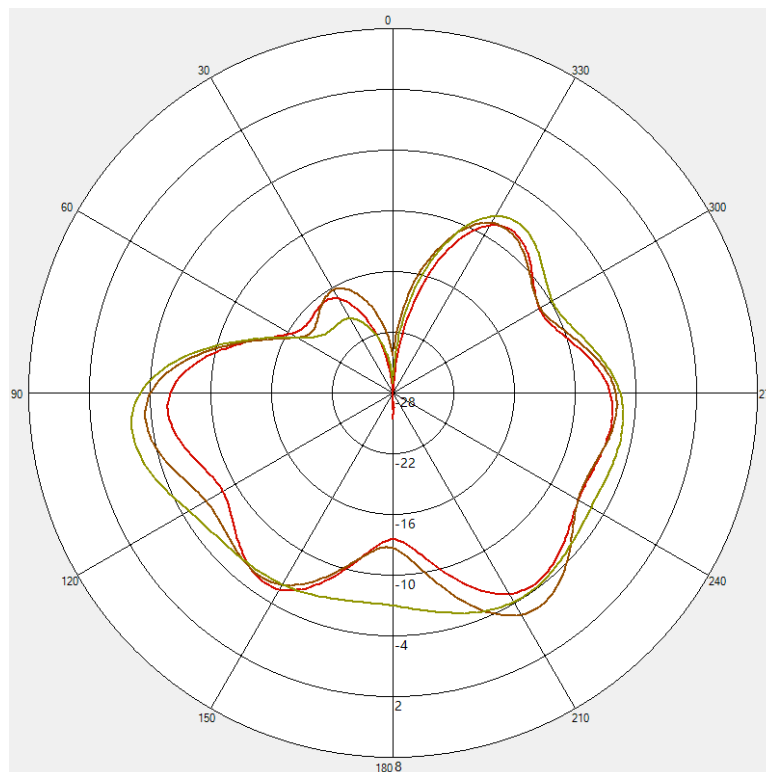
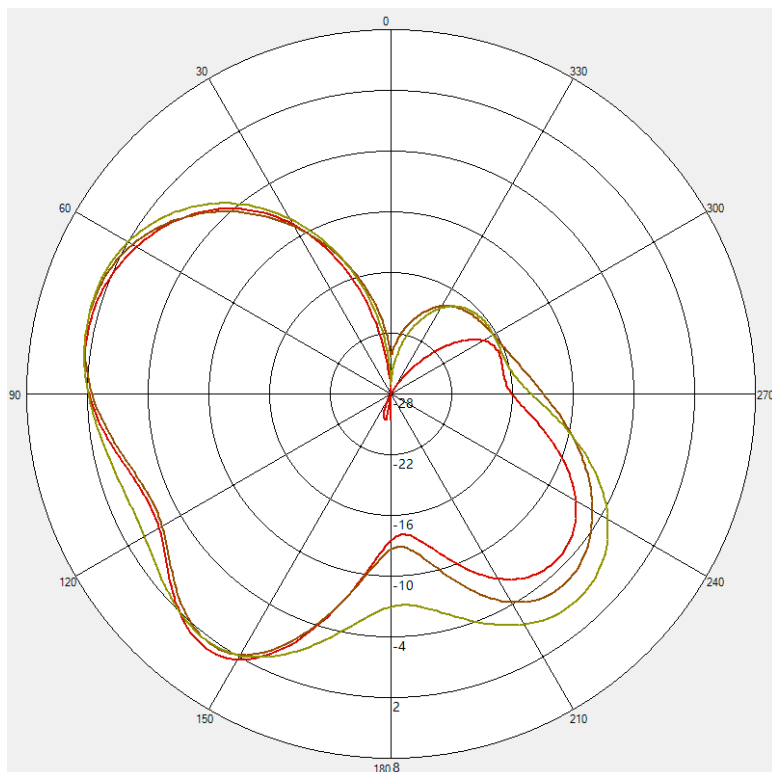
Antenna Pattern

6G_2

X-Z Plane

Y-Z Plane

X-Y Plane



— 5900MHz
— 6000MHz
— 6100MHz

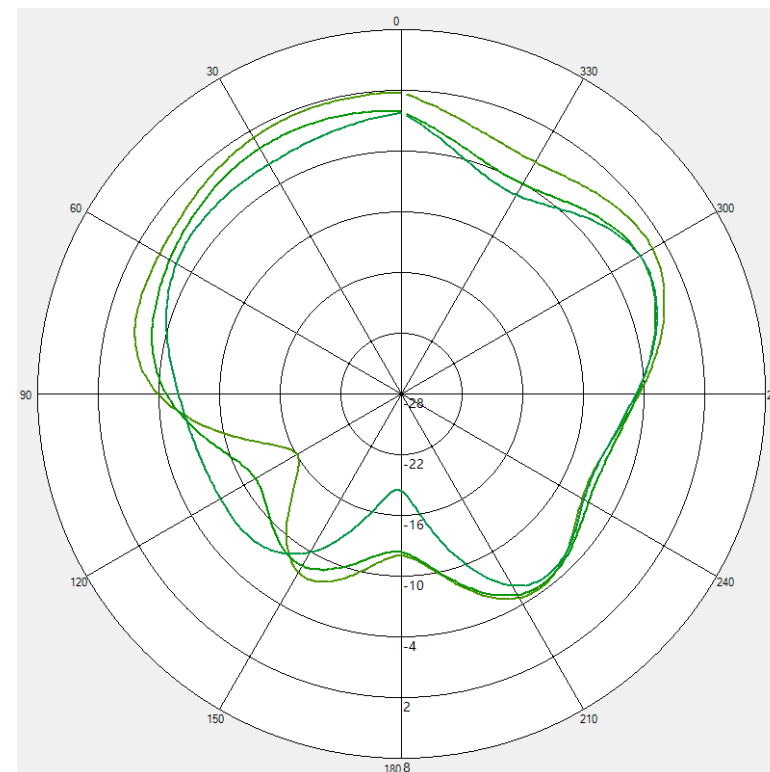
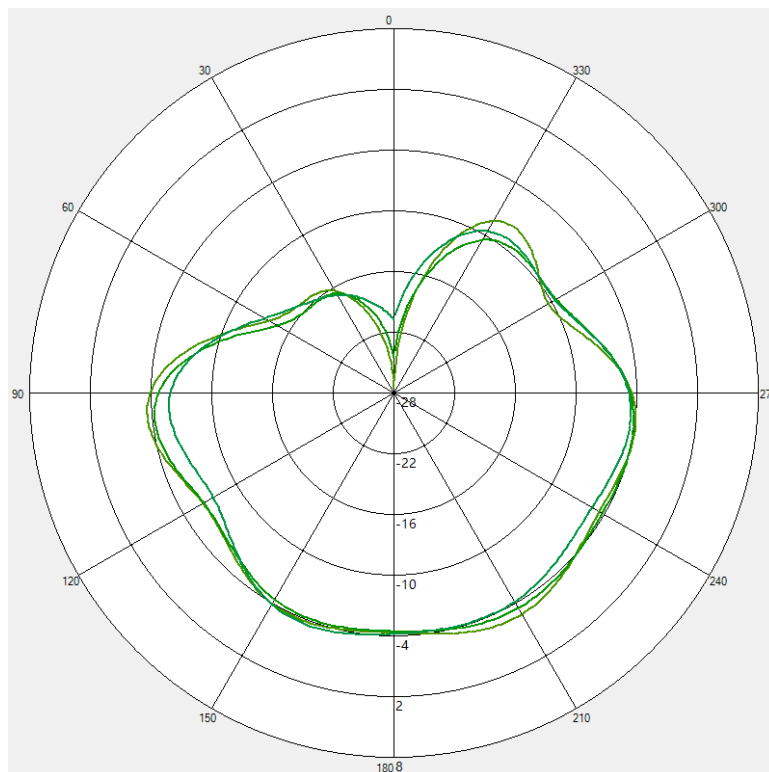
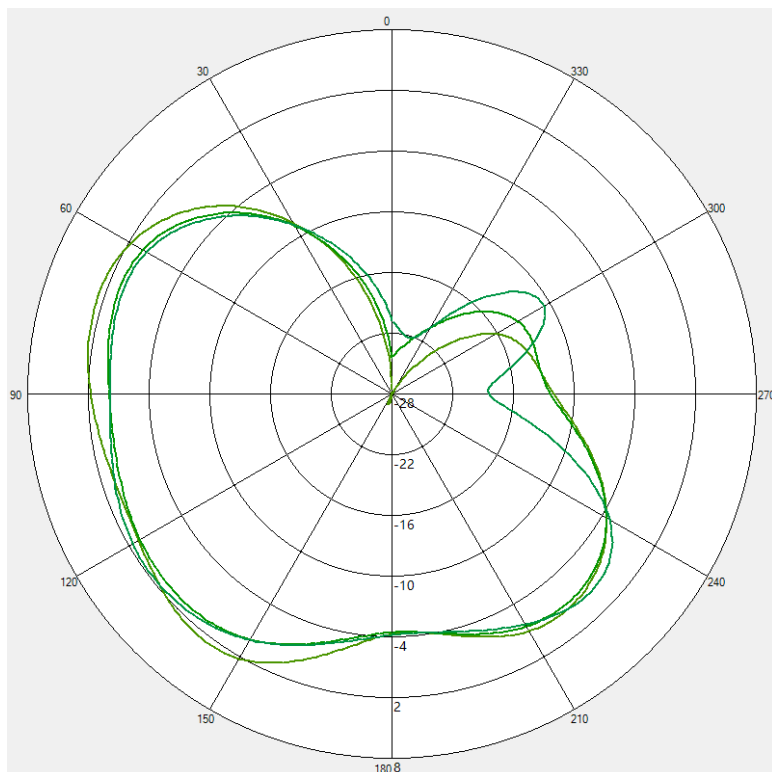
Antenna Pattern

6G_2

X-Z Plane

Y-Z Plane

X-Y Plane



— 6200MHz
— 6300MHz
— 6400MHz

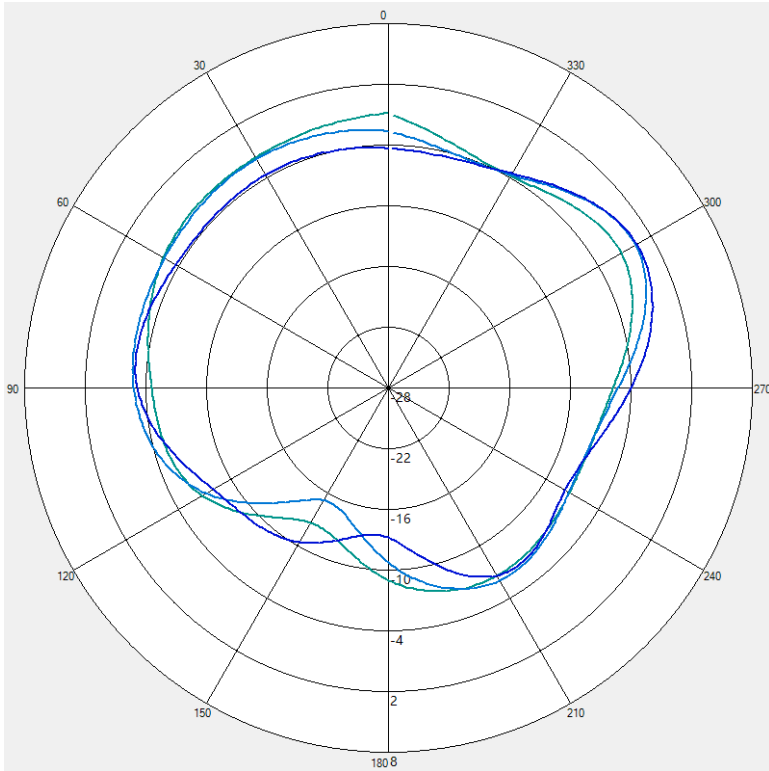
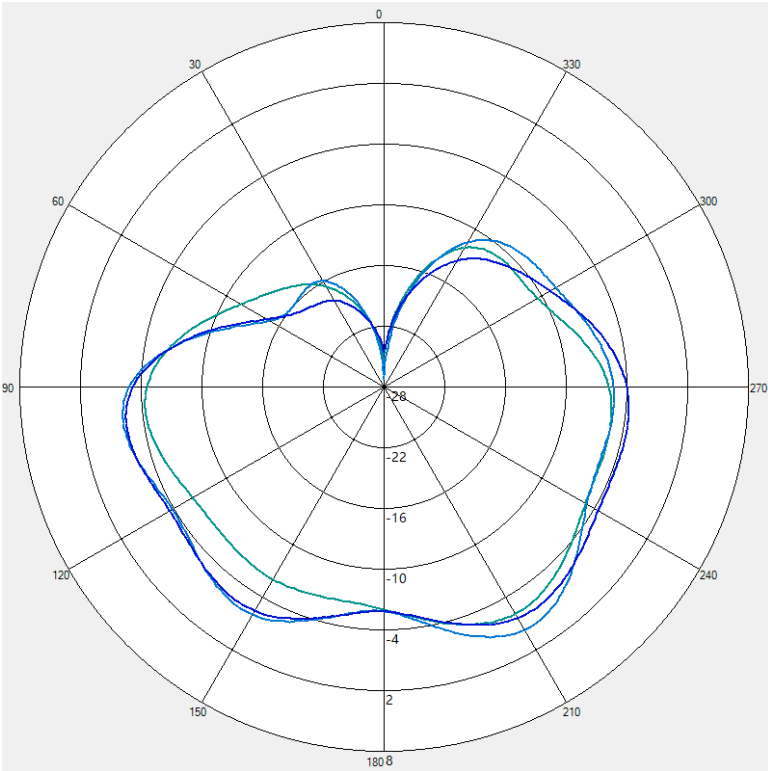
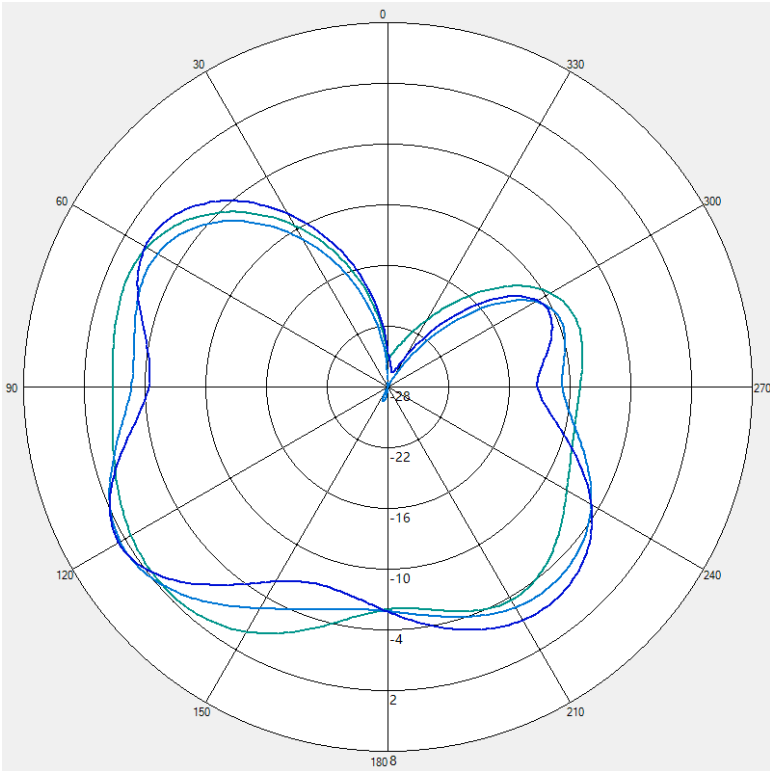
Antenna Pattern

6G_2

X-Z Plane

Y-Z Plane

X-Y Plane



- 6500MHz
- 6600MHz
- 6700MHz

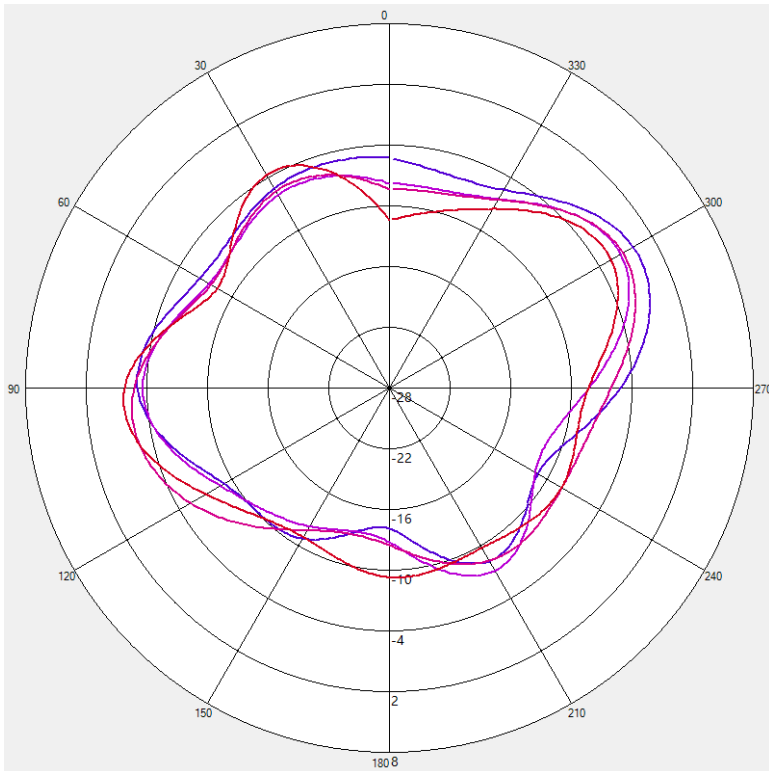
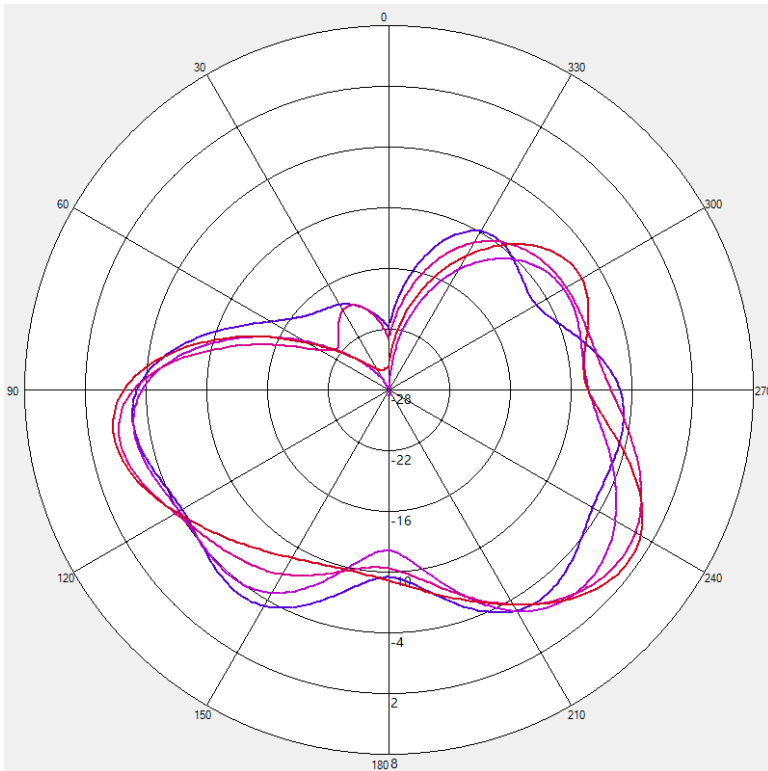
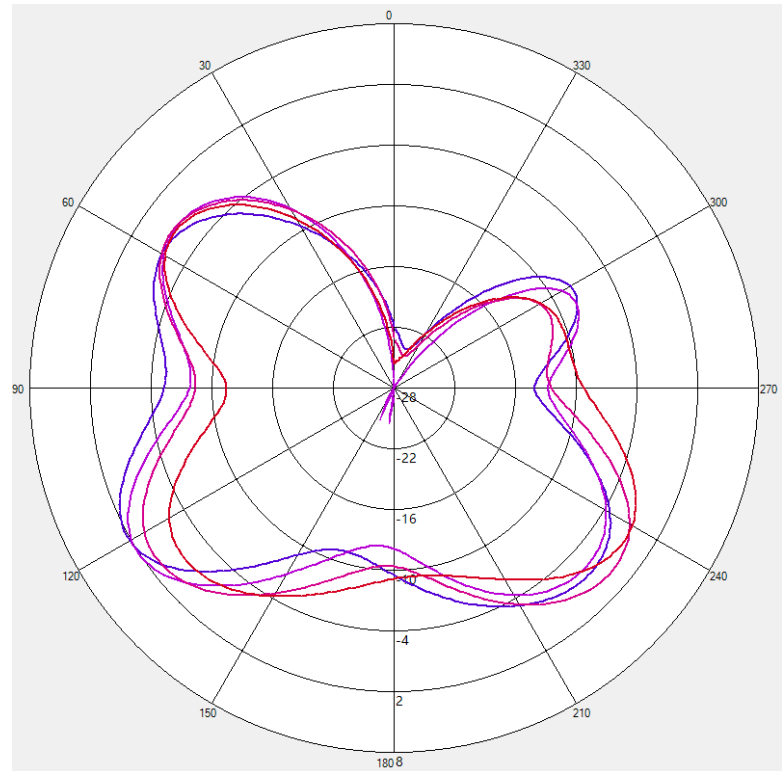
Antenna Pattern

6G_2

X-Z Plane

Y-Z Plane

X-Y Plane



- 6800MHz
- 6900MHz
- 7000MHz
- 7100MHz

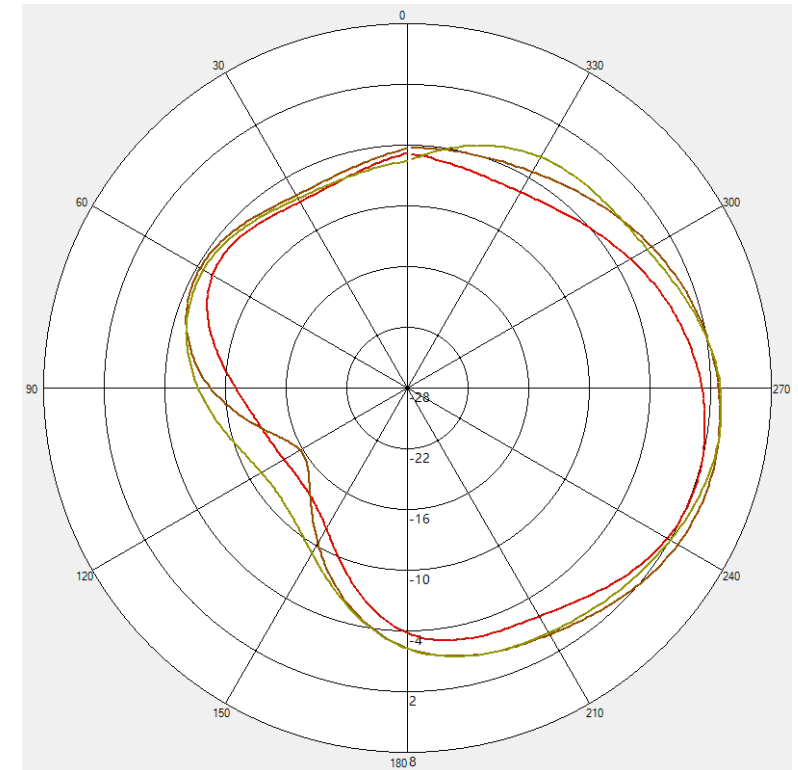
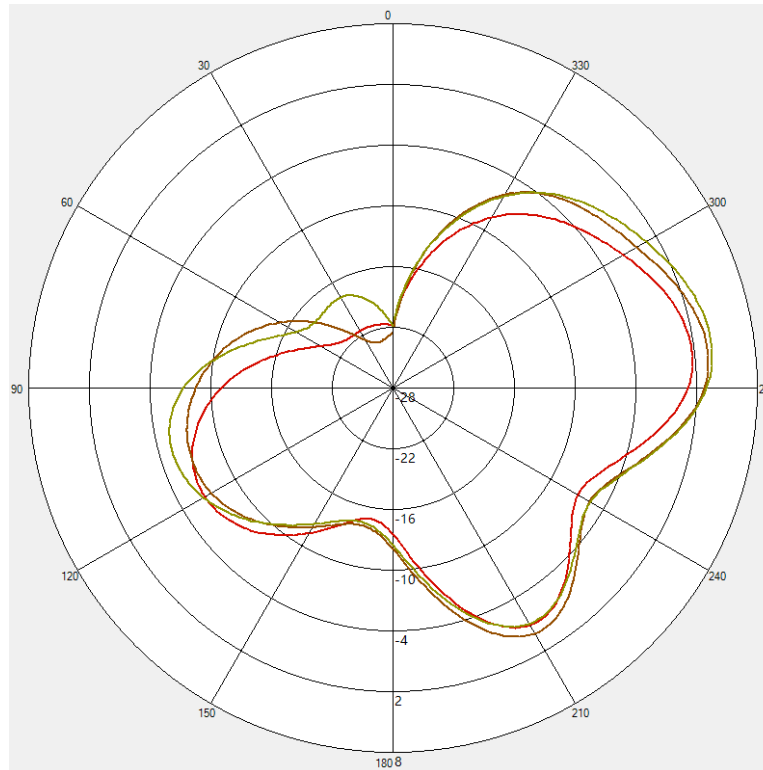
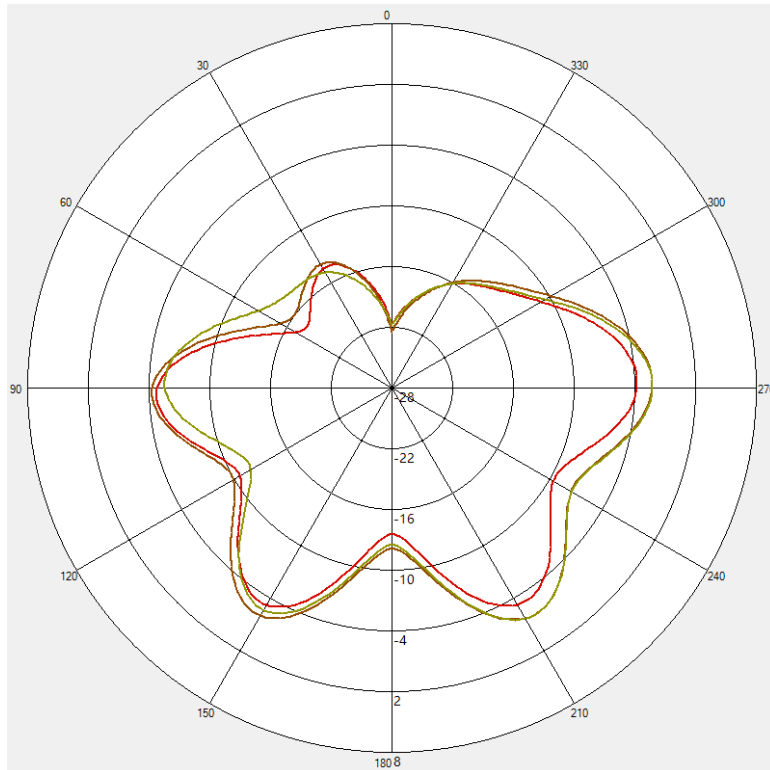
Antenna Pattern

6G_3

X-Z Plane

Y-Z Plane

X-Y Plane



— 5900MHz
— 6000MHz
— 6100MHz

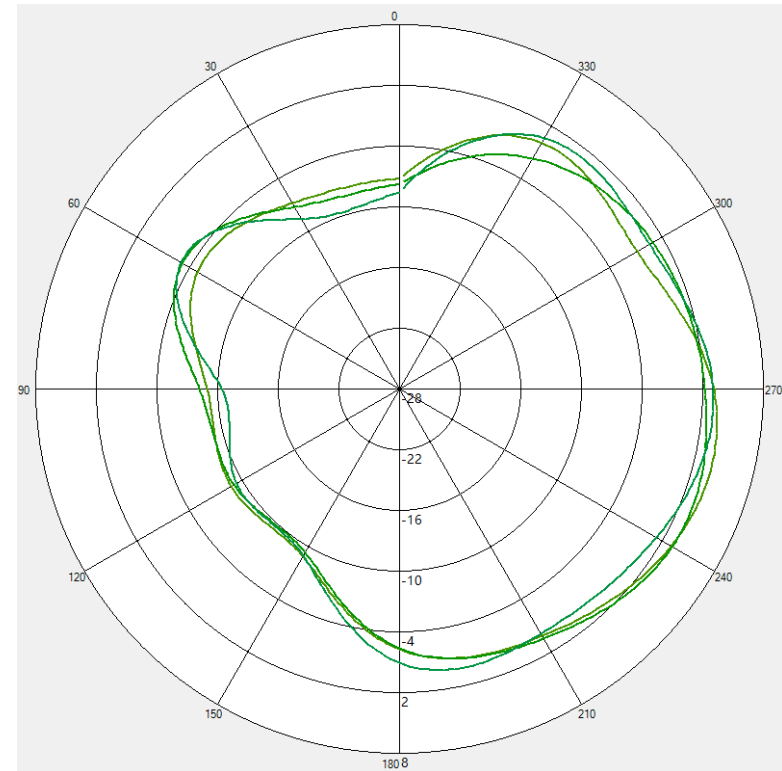
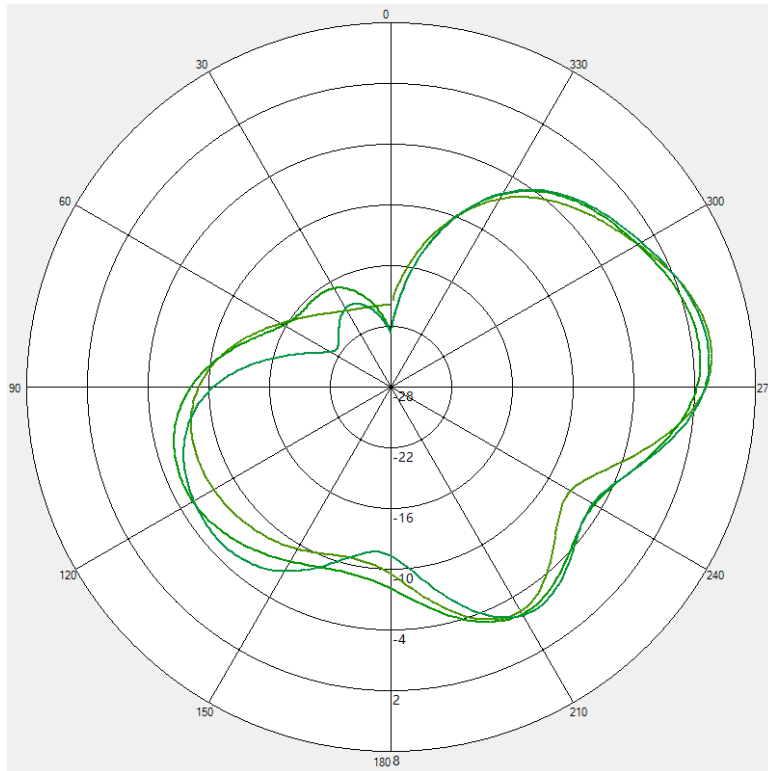
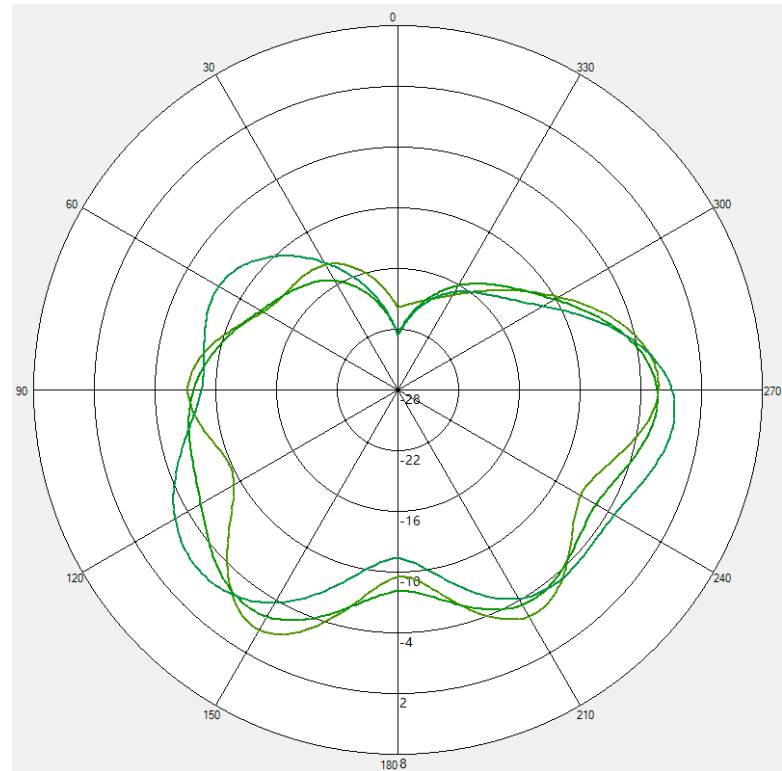
Antenna Pattern

6G_3

X-Z Plane

Y-Z Plane

X-Y Plane



- 6200MHz
- 6300MHz
- 6400MHz

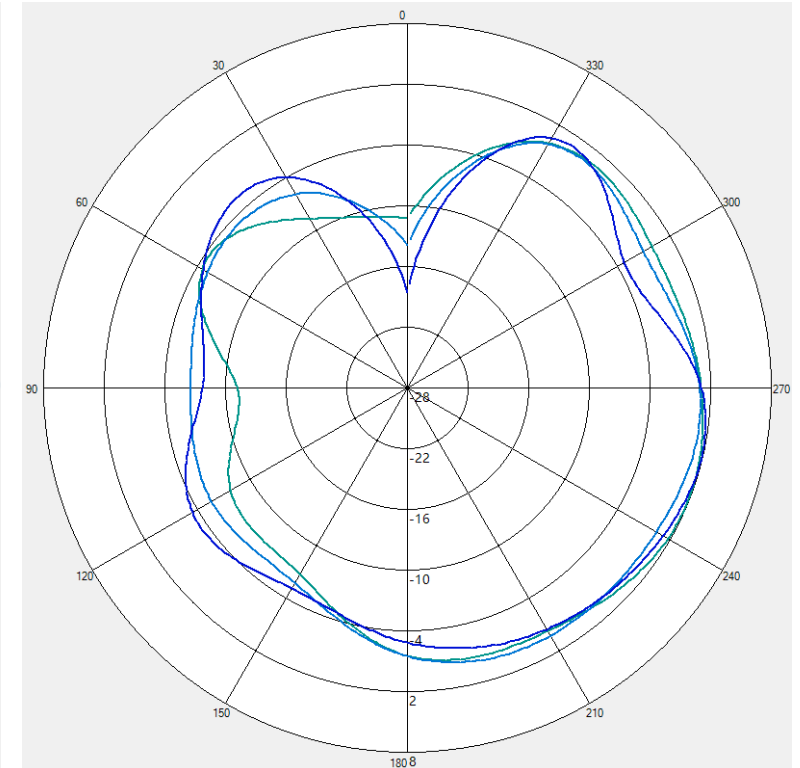
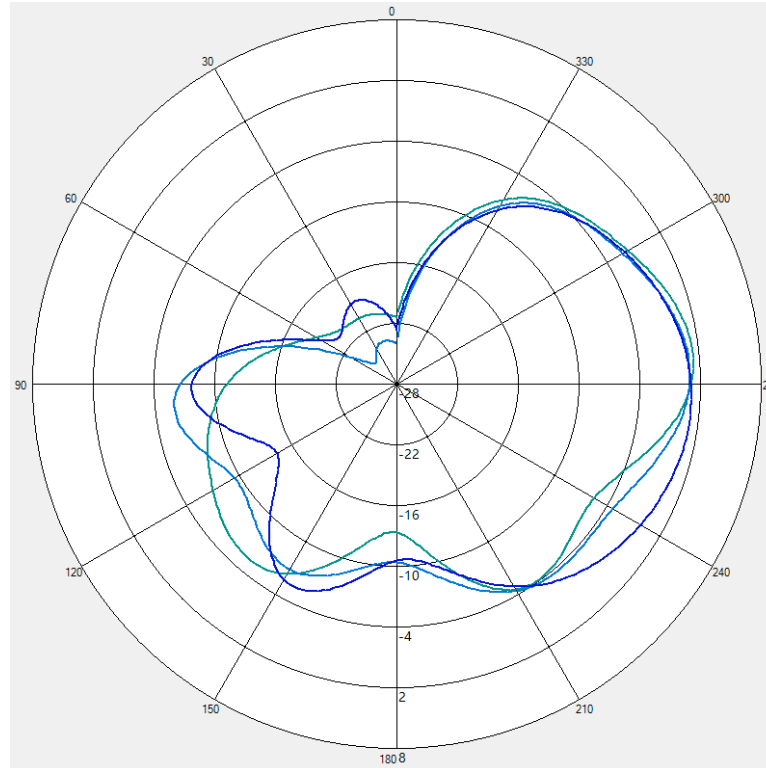
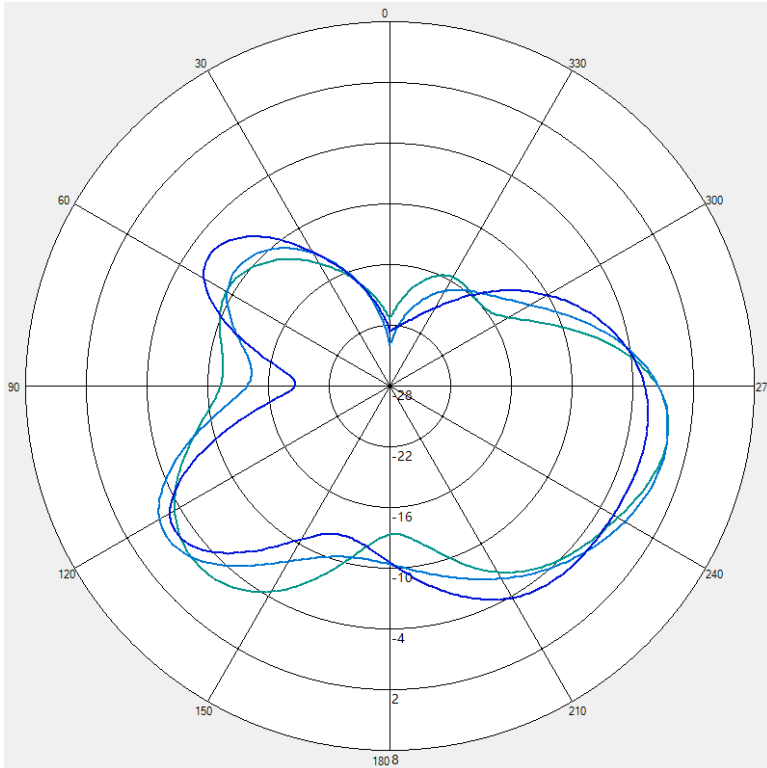
Antenna Pattern

6G_3

X-Z Plane

Y-Z Plane

X-Y Plane



— 6500MHz
— 6600MHz
— 6700MHz

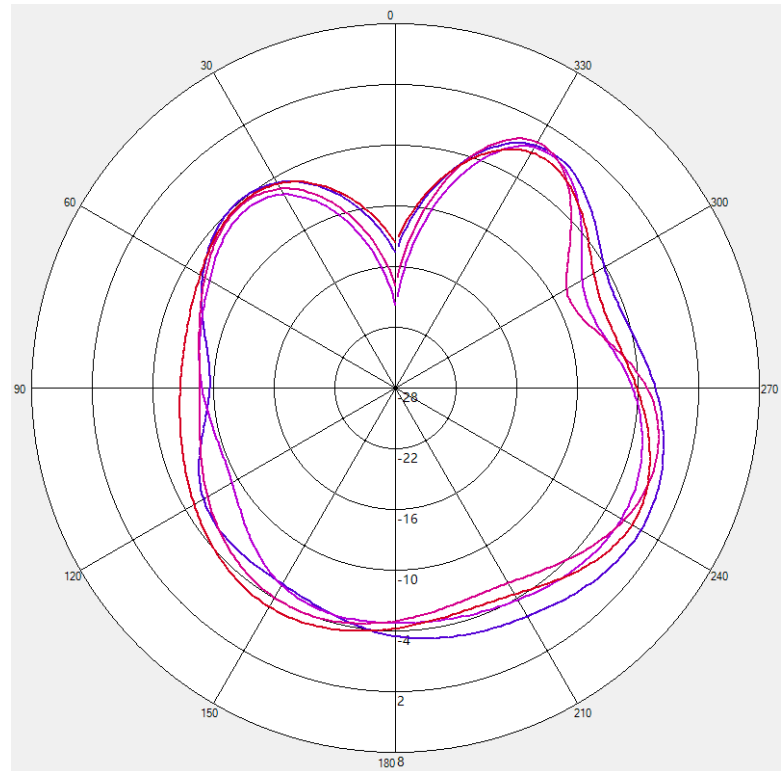
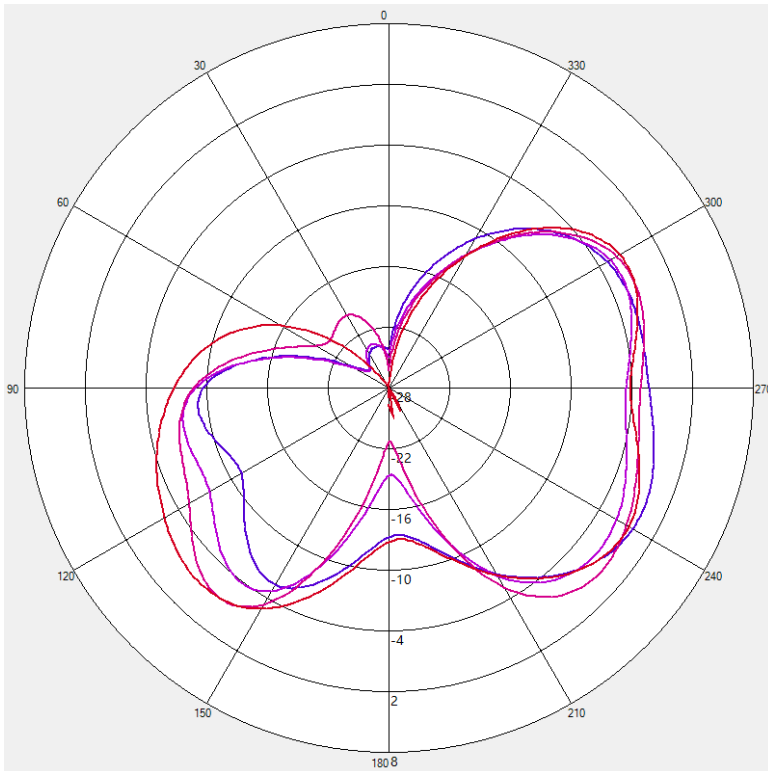
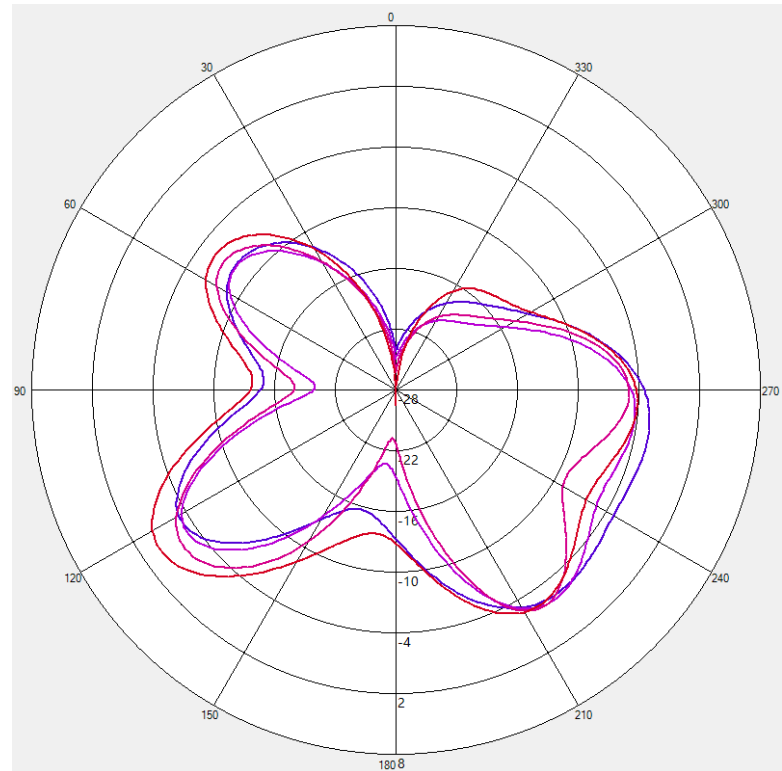
Antenna Pattern

6G_3

X-Z Plane

Y-Z Plane

X-Y Plane



- 6800MHz
- 6900MHz
- 7000MHz
- 7100MHz

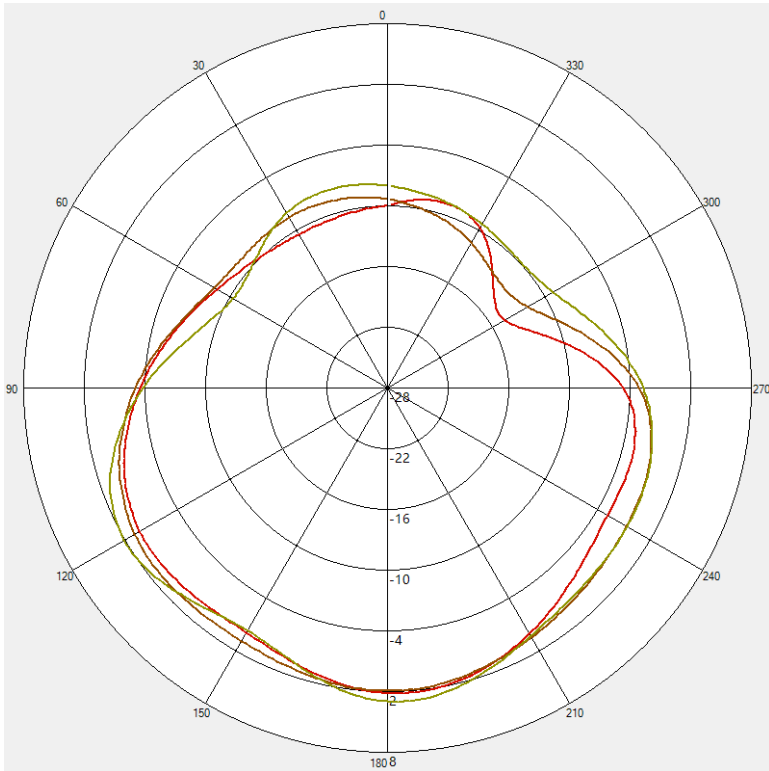
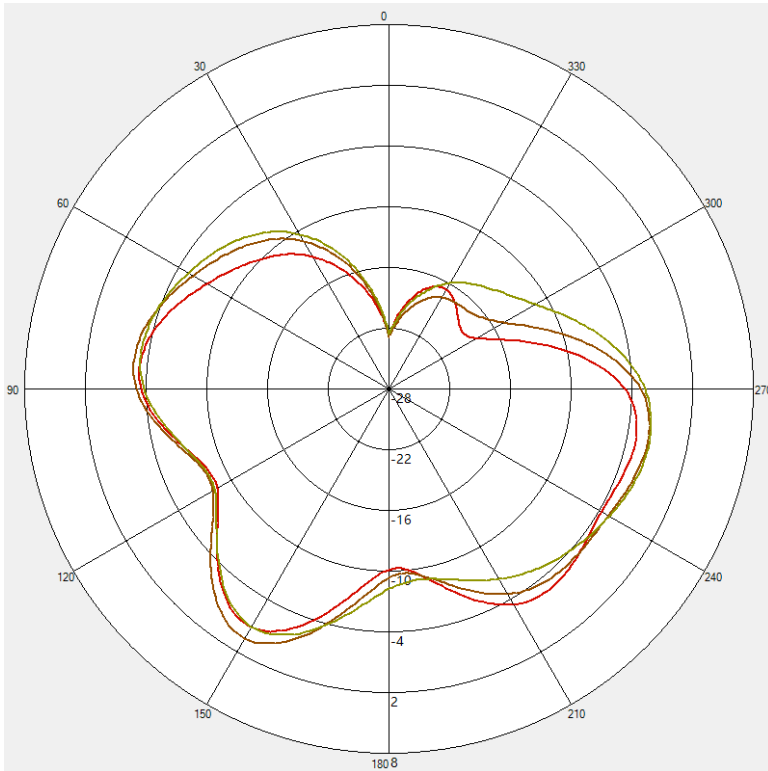
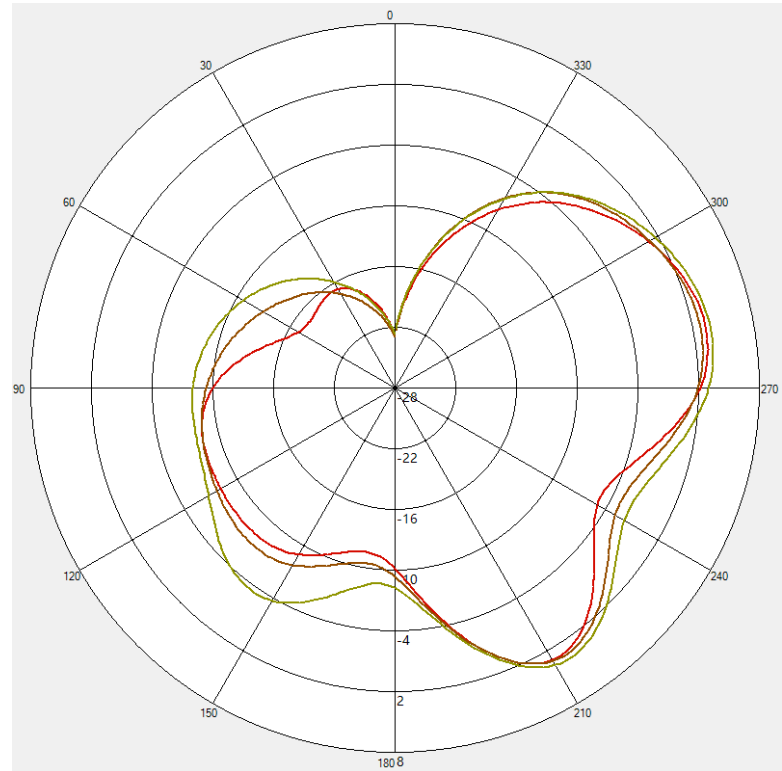
Antenna Pattern

6G_4

X-Z Plane

Y-Z Plane

X-Y Plane



- 5900MHz
- 6000MHz
- 6100MHz

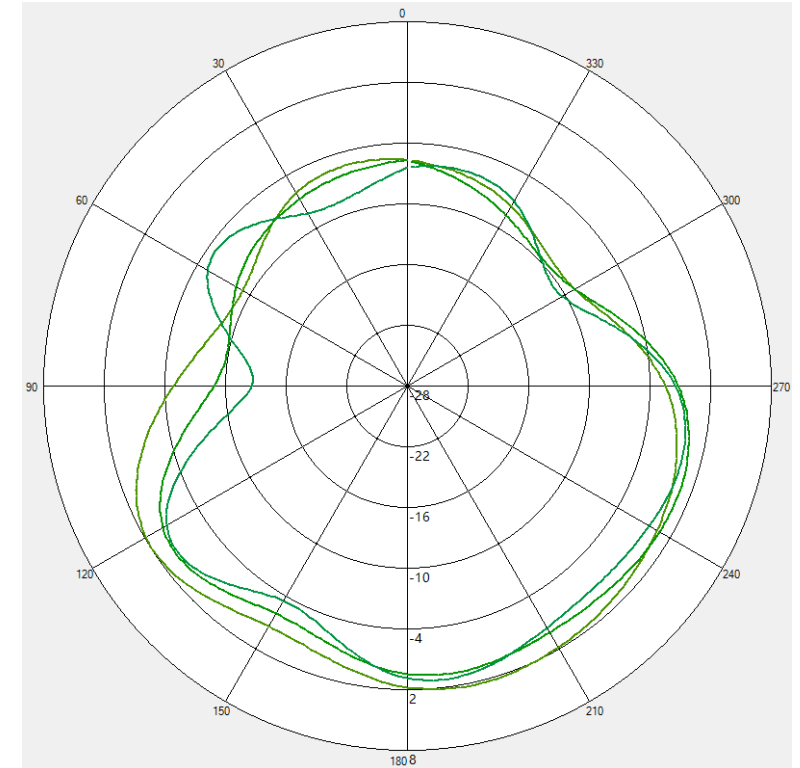
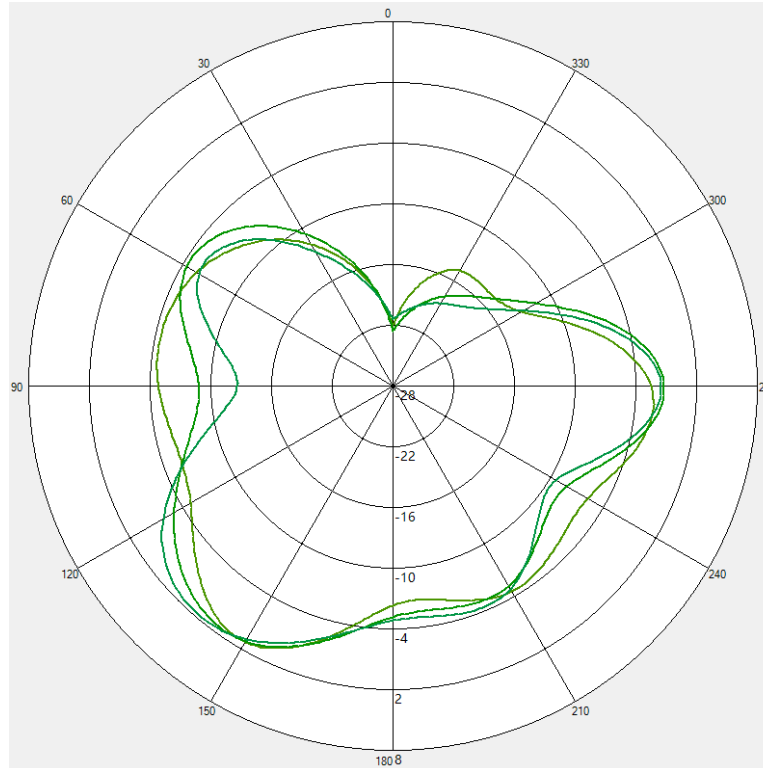
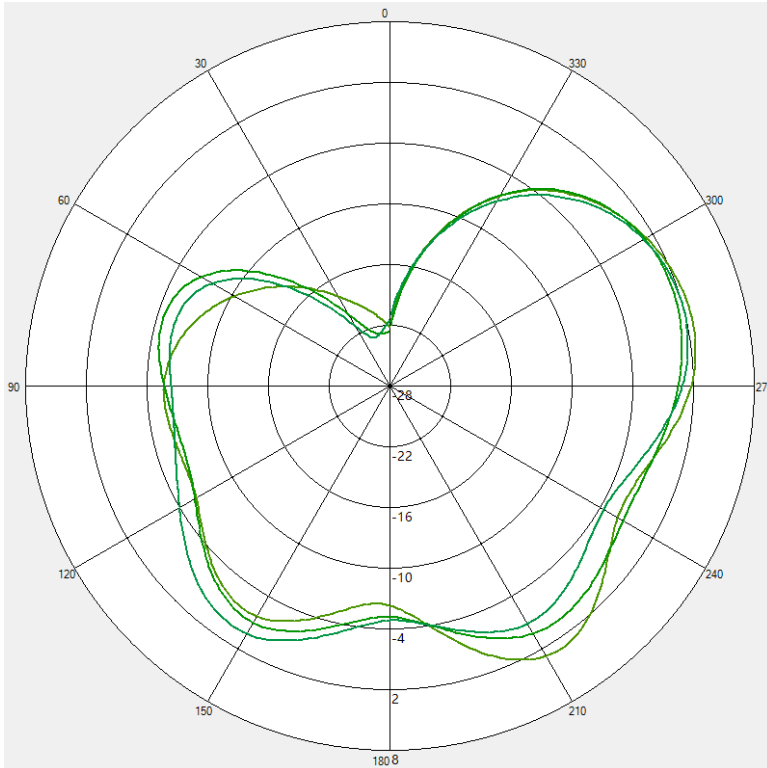
Antenna Pattern

6G_4

X-Z Plane

Y-Z Plane

X-Y Plane



— 6200MHz
— 6300MHz
— 6400MHz

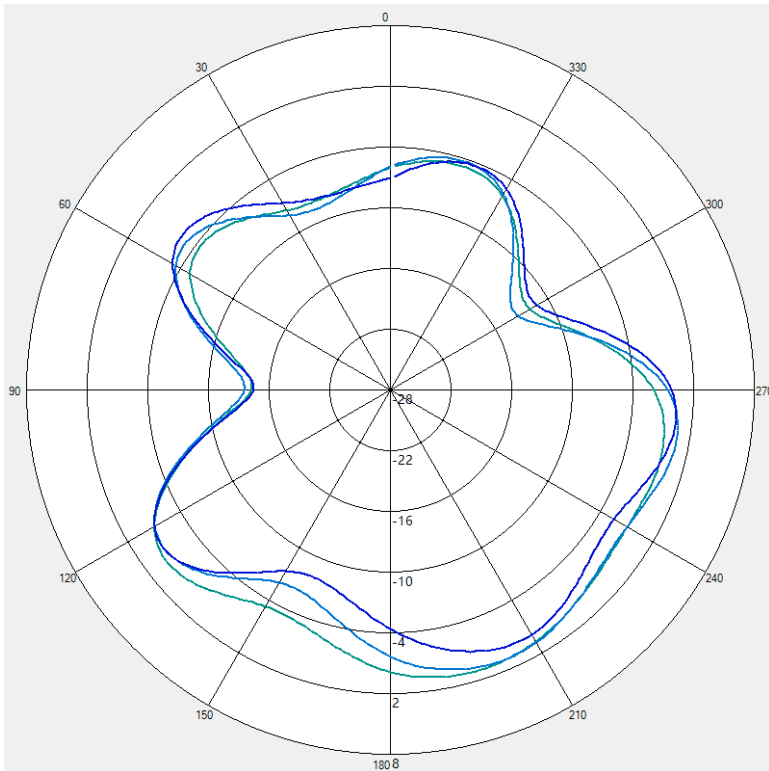
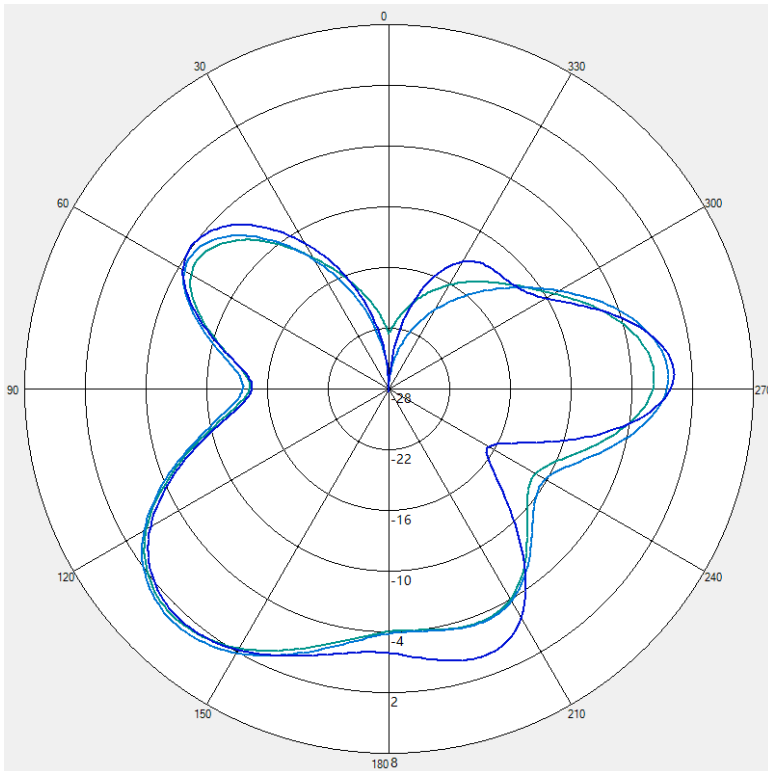
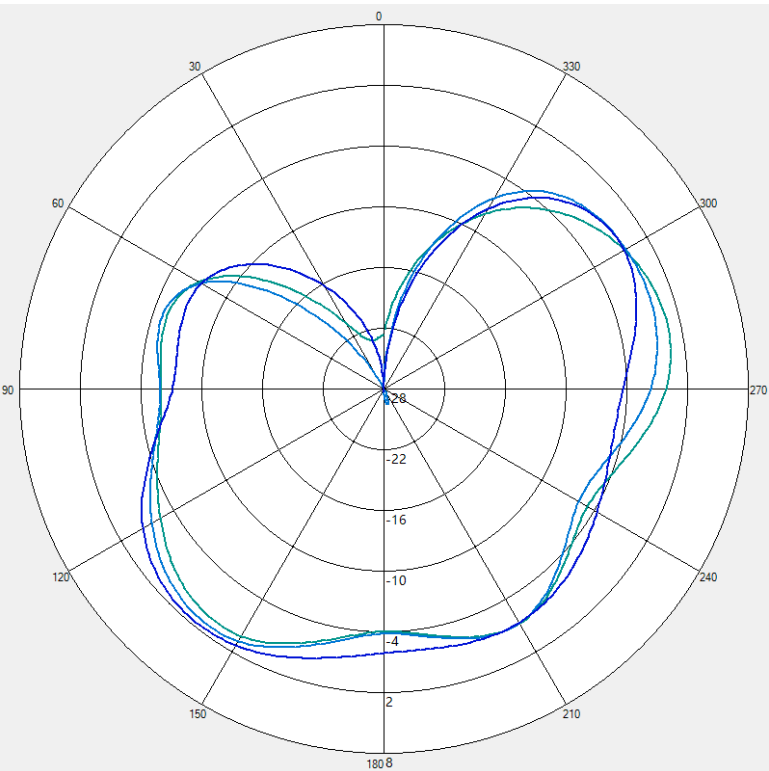
Antenna Pattern

6G_4

X-Z Plane

Y-Z Plane

X-Y Plane



- 6500MHz
- 6600MHz
- 6700MHz

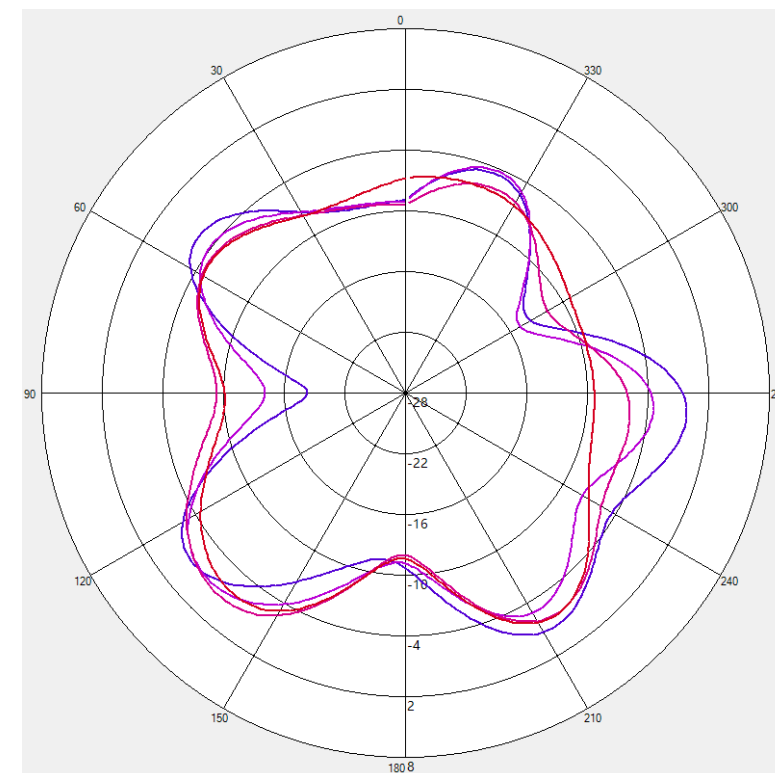
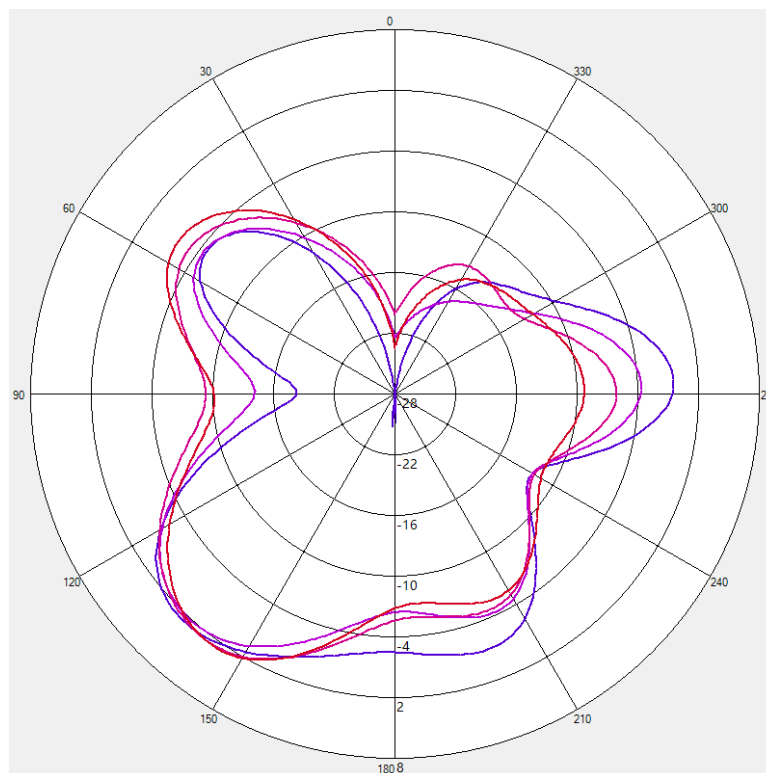
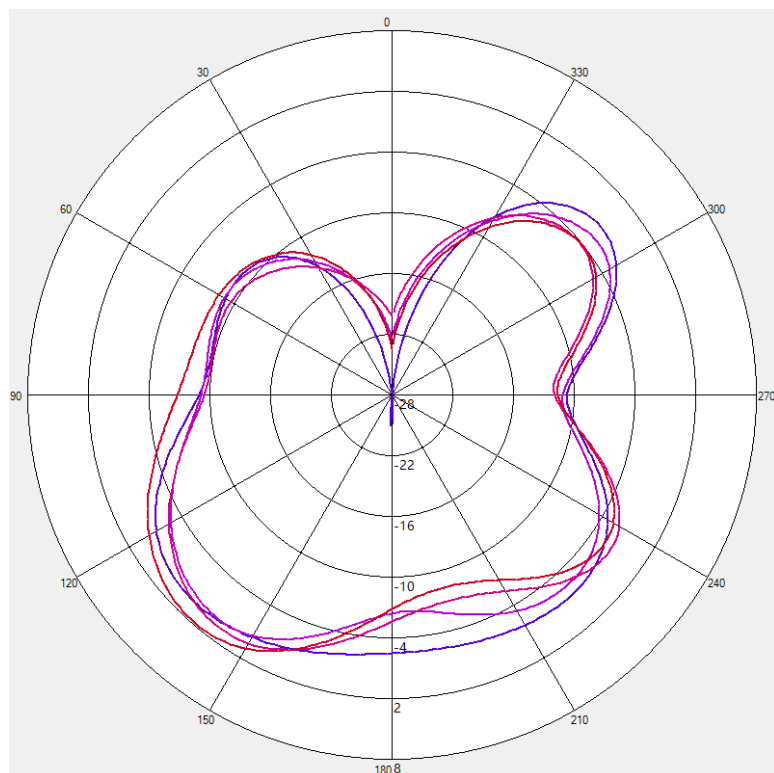
Antenna Pattern

6G_4

X-Z Plane

Y-Z Plane

X-Y Plane



- 6800MHz
- 6900MHz
- 7000MHz
- 7100MHz