

CPE(Omni + Directional) 5 in 1 Combo Antenna

4G (LB/MB/HB) & B42/43/48 x4 / GPS&GNSS x1

Updated on 02232024 Rev 4.0

P/N: ANT-SX-5048

RF Specification

Port	ANT0 / ANT2				
Frequency Range	617MHz~960MHz	1427MHz~1559MHz	1710MHz~2170MHz	2300MHz~2690MHz	3400MHz~3800MHz
Polarization	Linear, Vertical				-45deg / +45deg
Horizontal / Vertical	360° / 45°				57°-73° / 31°-44°
Peak Gain	1.4 dBi typ.	2.3 dBi typ.	4.1 dBi typ.	4.7 dBi typ.	9.0 dBi typ.
Efficiency	30%-53%	30%-44%	53%-59%	53%-57%	51~56%
VSWR	4.0max.:1	2.5max.:1			2.0max.:1
Power Handling	2W (cw)				
Impedance	50 ohms				
Port	ANT1 / ANT3				
Frequency Range	1427MHz~1559MHz	1710MHz~2170MHz	2300MHz~2690MHz	3400MHz~3800MHz	
Polarization	Linear, Vertical				-45deg / +45deg
Horizontal / Vertical	360° / 45°				57°-73° / 31°-44°
Peak Gain	2.9 dBi typ.	3.4 dBi typ.	3.8 dBi typ.	9.0 dBi typ.	
Efficiency	44%-48%	42%-50%	42%-51%	50~56%	
VSWR	2.5max.:1				2.0max.:1
Power Handling	2W (cw)				
Impedance	50 ohms				
Port	GPS/GNSS Passive				
Frequency Range	1575MHz-1602MHz				
Polarization	R.H.C.P				
Zenith Gain (0°) 1575 / 1602	2.5 dBi / 1.8 dBi				
VSWR	2.0:1 typ.				
Power Handling	2W (cw)				
Impedance	50 ohms				

Environmental & Mechanical Characteristics

- **Temperature:** -30°C to +70°C
- **Humidity:** 95% @55°C
- **Weight:** 1200g (W/I Cable 1ft)
- **Antenna Housing Material:** PC
- **Dimensions:** 216(L)x141(W)x215(H) mm
- **Cable :** SMA Jack onto LMR-100A 1ft

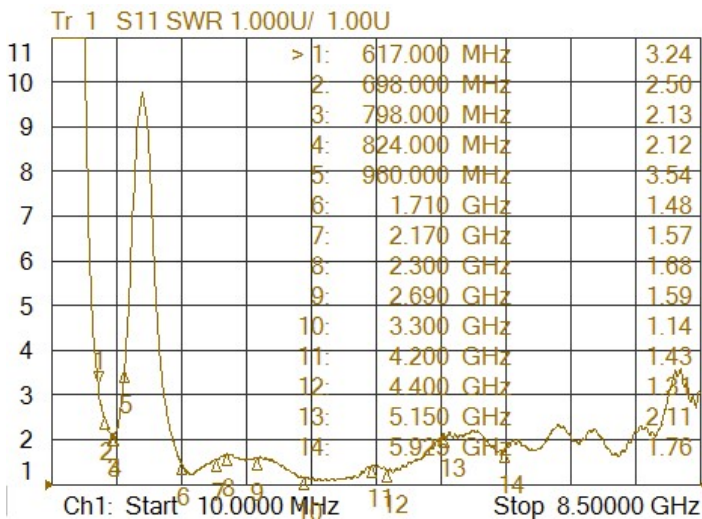
Performance Summary

Updated on 02232024 Rev 4.0

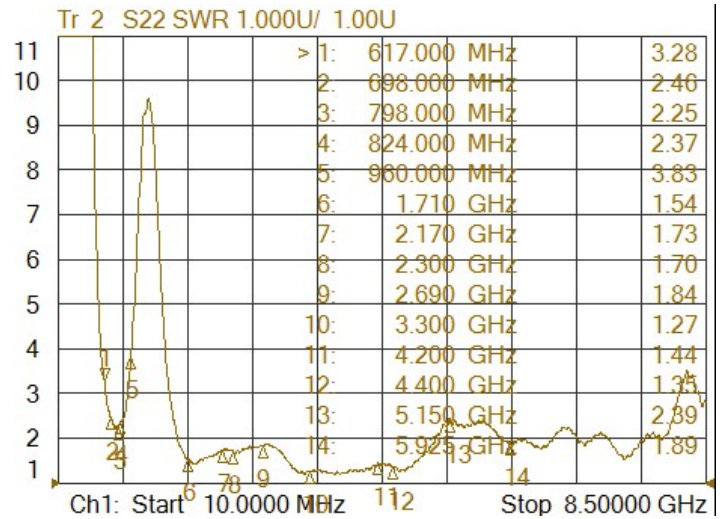
VSWR

Frequency(MHz)	617MHz~960MHz	1427MHz~1559MHz	1710MHz~2170MHz	2300MHz~2690MHz	3400MHz~3800MHz
VSWR	4.0max.:1	2.5max.:1			2.0max.:1

ANT0



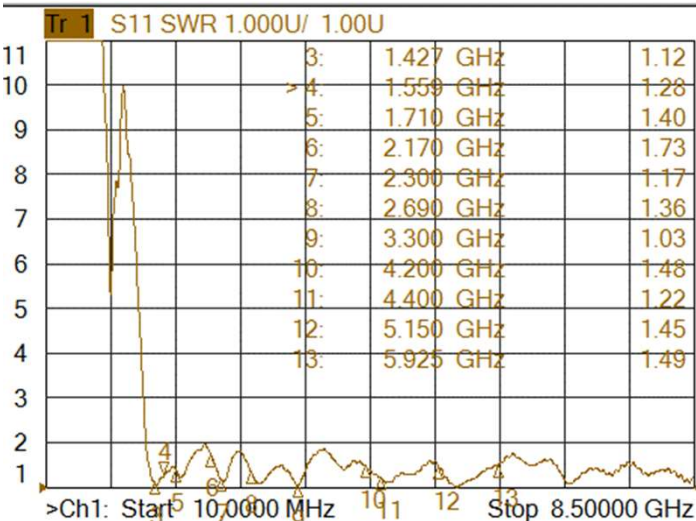
ANT2



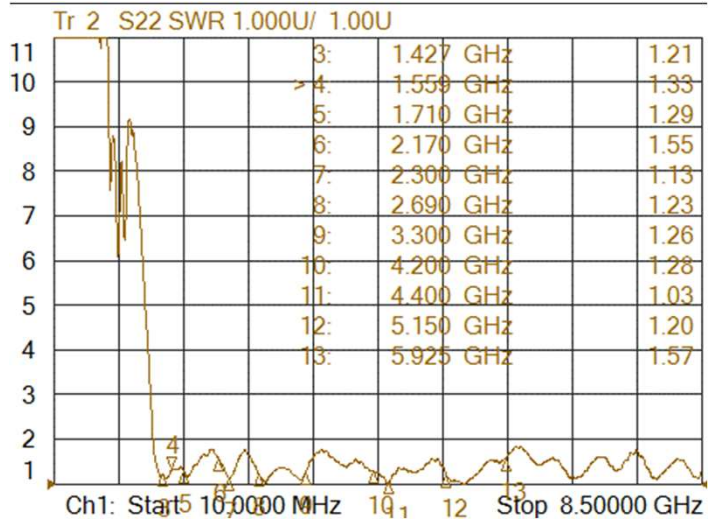
VSWR

Frequency(MHz)	1427MHz~1559MHz	1710MHz~2170MHz	2300MHz~2690MHz	3400MHz~3800MHz
VSWR	2.5max.:1			2.0max.:1

ANT1



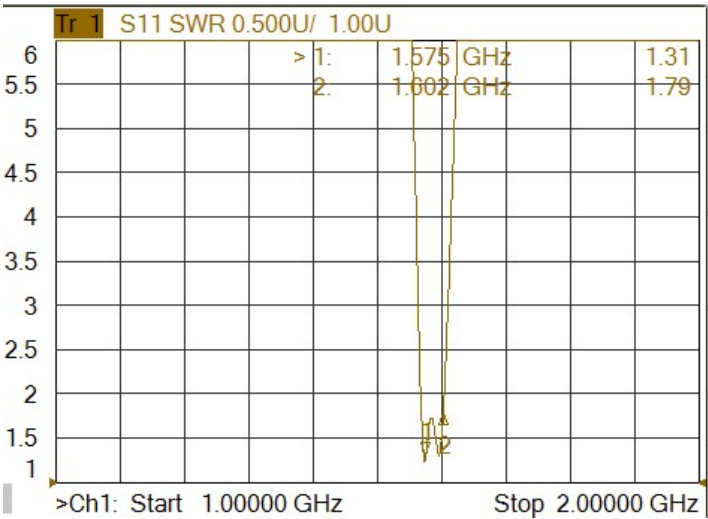
ANT3



VSWR

Frequency(MHz)	1575MHz~1602MHz
VSWR	2.0max.:1

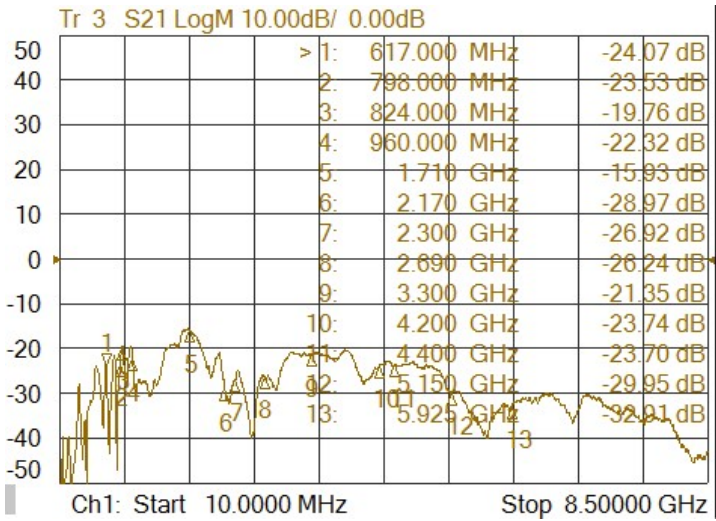
GPS/GNSS



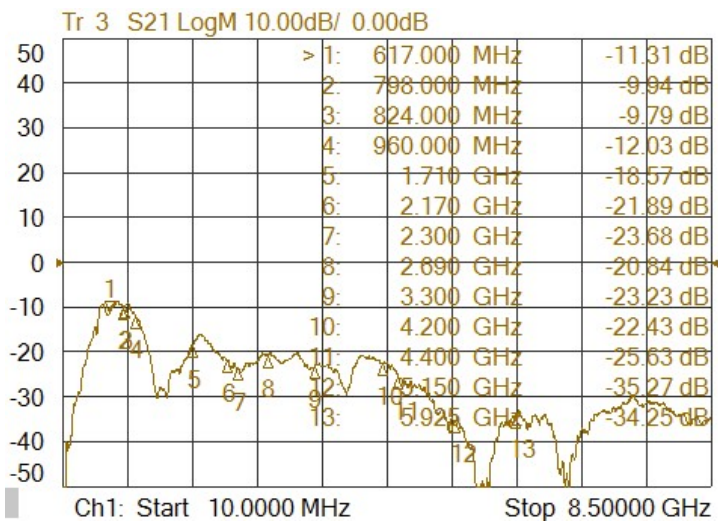
Isolation * is Antennas frequency 617-3800MHz, other antennas frequency is 1400MHz~3800MHz

Isolation	ANT0*	ANT1	ANT2*	ANT3
ANT0*		LB (-18dB) MB (-14dB) HB (-20dB)	LB (-9dB) MB (-15dB) HB (-20dB)	LB (-18dB) MB (-14dB) HB (-20dB)
ANT1	LB (-18dB) MB (-14dB) HB (-20dB)		LB (-18dB) MB (-14dB) HB (-20dB)	MB (-15dB) HB (-22dB)
ANT2*	LB (-9dB) MB (-15dB) HB (-20dB)	LB (-18dB) MB (-14dB) HB (-20dB)		LB (-18dB) MB (-14dB) HB (-20dB)
ANT3	LB (-18dB) MB (-14dB) HB (-20dB)	MB (-15dB) HB (-22dB)	LB (-18dB) MB (-14dB) HB (-20dB)	

ANT0 vs ANT1

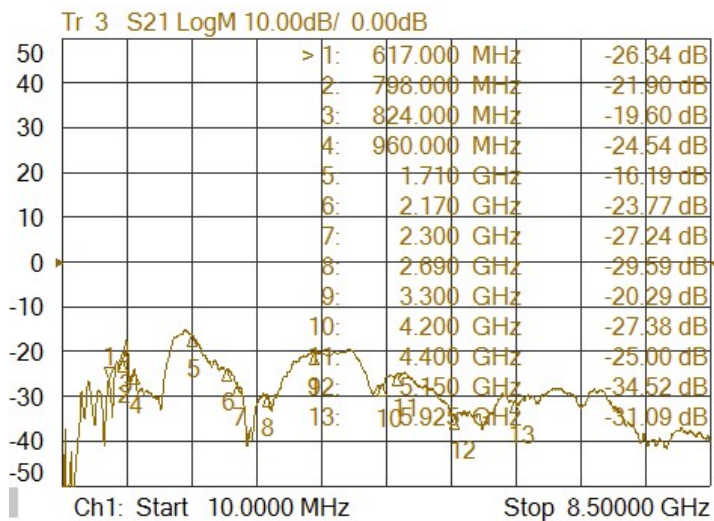


ANT0 vs ANT2

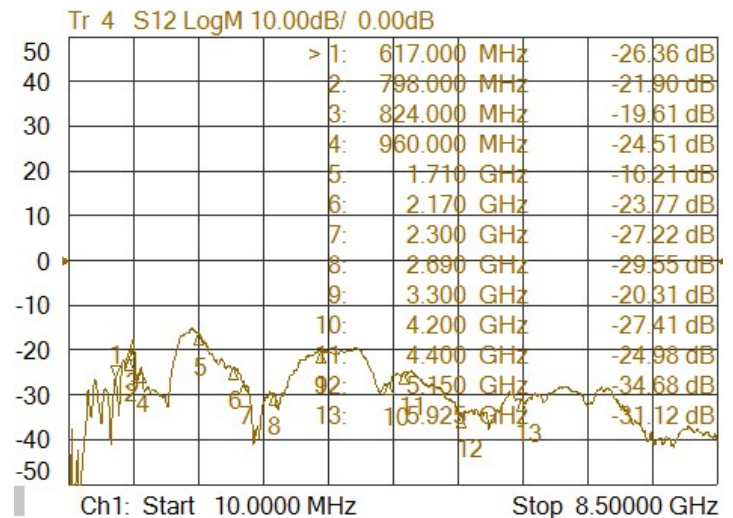


Isolation

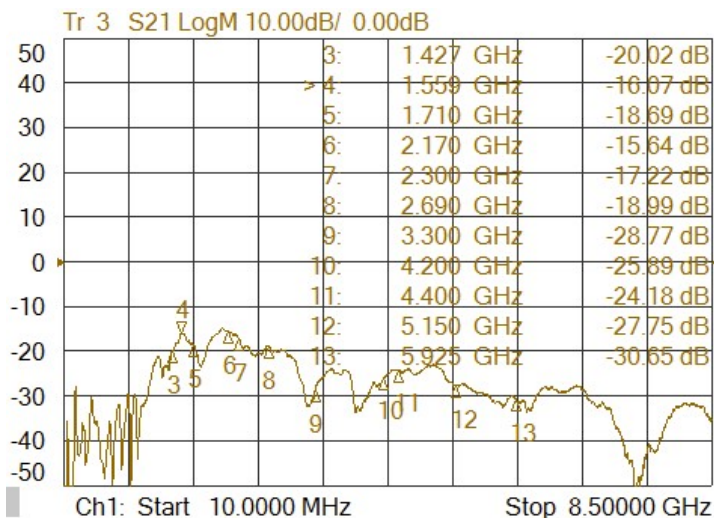
ANT0 vs ANT3



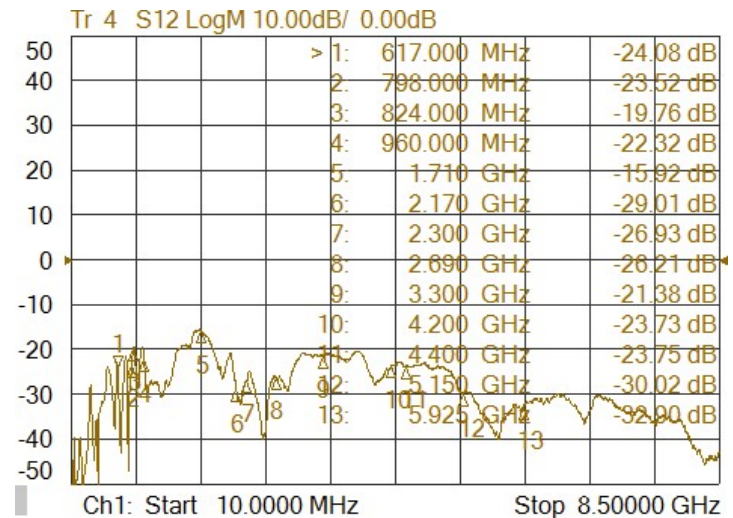
ANT1 vs ANT2



ANT1 vs ANT3



ANT2 vs ANT3



Gain Table

ANT0

Frequency (MHz)	3D	
	Efficiency (%)	Peak Gain (dBi)
617	37%	-1.0
652	35%	-1.3
663	36%	-1.2
698	33%	-1.1
710	32%	-1.0
734	30%	-1.1
751	30%	-0.7
768	30%	-0.3
798	33%	0.2
824	35%	-0.1
849	36%	-0.1
869	38%	1.1
894	40%	0.6
900	41%	0.6
925	36%	-0.2
960	41%	0.7
1427	30%	-1.7
1447	31%	-1.8
1475	33%	-1.3
1496	36%	-0.7
1517	38%	-0.4
1559	44%	0.2
1710	53%	1.8
1805	54%	2.7
1880	58%	3.1
1900	58%	3.1
1920	59%	3.2
2110	56%	3.9
2170	57%	3.8
2200	56%	3.8
2300	56%	3.9
2305	56%	3.9
2315	55%	4.0
2350	54%	3.7
2360	53%	3.6
2400	53%	3.5
2500	53%	3.8
2595	57%	3.7
2690	55%	3.8

ANT2

Frequency (MHz)	3D	
	Efficiency (%)	Peak Gain (dBi)
617	30%	-1.3
652	31%	-1.3
663	30%	-1.2
698	31%	-0.7
710	32%	-0.7
734	32%	-0.9
751	33%	-0.8
768	34%	-0.5
798	35%	0.5
824	38%	0.5
849	45%	1.2
869	50%	1.4
894	52%	0.6
900	53%	0.4
925	44%	-0.8
960	38%	-0.9
1427	30%	-1.0
1447	30%	-1.7
1475	31%	-1.4
1496	35%	-0.4
1517	36%	-0.3
1559	42%	0.8
1710	54%	1.8
1805	55%	2.1
1880	57%	2.7
1900	57%	2.8
1920	57%	2.9
2110	56%	3.9
2170	57%	4.1
2200	57%	4.1
2300	57%	4.1
2305	57%	4.1
2315	56%	4.1
2350	54%	4.2
2360	53%	4.1
2400	53%	4.1
2500	53%	4.3
2595	56%	4.1
2690	55%	4.2

ANT0 (-45deg) / ANT2 (+45deg)

Frequency (MHz)	3D		HPBW	
	Efficiency (%)	Peak Gain (dBi)	H-plane (deg)	V-plane (deg)
3400	52%	8.1	76	40
3500	52%	8.0	76	44
3550	51%	8.0	75	45
3600	53%	8.1	73	43
3700	55%	8.8	71	40
3800	55%	8.5	72	40

Gain Table

ANT1

Frequency (MHz)	3D	
	Efficiency (%)	Peak Gain (dBi)
1427	46%	2.5
1447	46%	2.6
1475	45%	2.6
1496	47%	2.8
1517	47%	2.7
1559	48%	2.9
1710	50%	3.4
1805	45%	3.1
1880	44%	3.0
1900	44%	2.7
1920	43%	2.5
2110	47%	2.1
2170	48%	2.3
2300	48%	2.1
2305	48%	2.2
2315	48%	2.2
2350	45%	2.3
2360	45%	2.3
2400	43%	2.2
2690	51%	3.8

ANT3

Frequency (MHz)	3D	
	Efficiency (%)	Peak Gain (dBi)
1427	45%	2.5
1447	45%	2.0
1475	44%	2.3
1496	45%	2.0
1517	45%	2.0
1559	46%	2.0
1710	47%	3.4
1805	42%	3.3
1880	45%	3.1
1900	43%	2.7
1920	43%	2.4
2110	42%	2.2
2170	43%	2.0
2300	47%	2.0
2305	47%	2.0
2315	44%	2.0
2350	44%	2.0
2360	44%	2.1
2400	44%	1.9
2690	45%	3.4

ANT1 (-45deg) / ANT3 (+45deg)

Frequency (MHz)	3D		HPBW	
	Efficiency (%)	Peak Gain (dBi)	H-plane (deg)	V-plane (deg)
3400	51%	8.1	68	37
3500	51%	8.0	68	38
3550	50%	8.0	67	39
3600	53%	8.3	65	36
3700	55%	8.9	66	31
3800	54%	8.7	67	36

Gain Table

GPS/GNSS

Frequency (MHz)	3D		HPBW	
	Efficiency (%)	Peak Gain (dBi)	H-plane (deg)	V-plane (deg)
1575	62%	2.5	62.9	44.1
1602	65%	1.8	59.9	43.6

ANT0

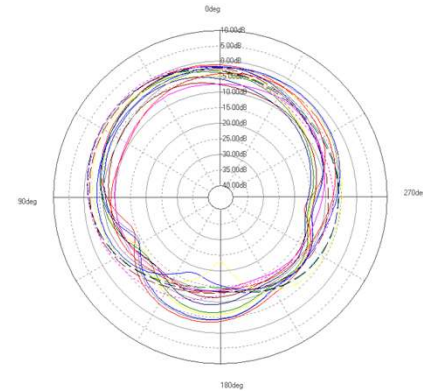
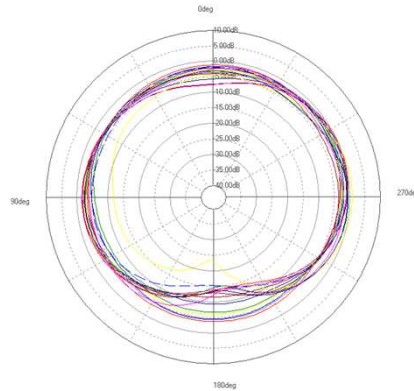
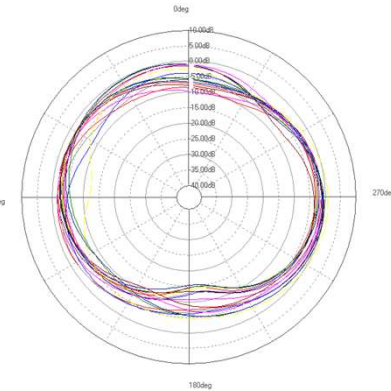
XY-plane

YZ-plane

ZX-plane

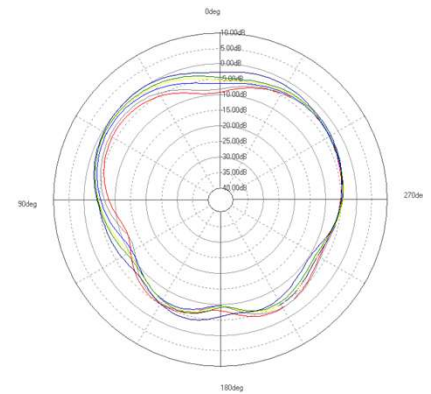
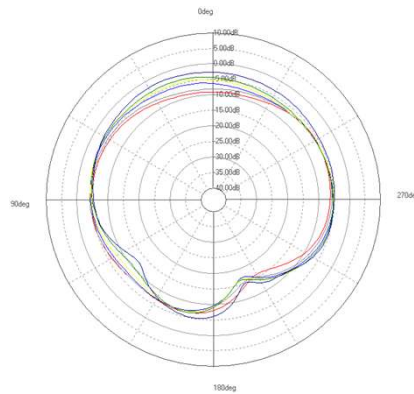
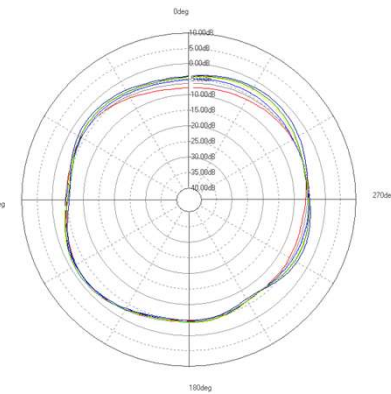
Legend

- 617.00(MHz)
- 652.00(MHz)
- 663.00(MHz)
- 698.00(MHz)
- 710.00(MHz)
- 734.00(MHz)
- 751.00(MHz)
- 768.00(MHz)
- 798.00(MHz)
- 824.00(MHz)
- 849.00(MHz)
- 863.00(MHz)
- 894.00(MHz)
- 925.00(MHz)
- 960.00(MHz)



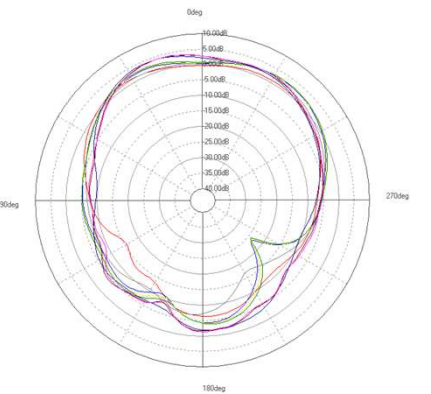
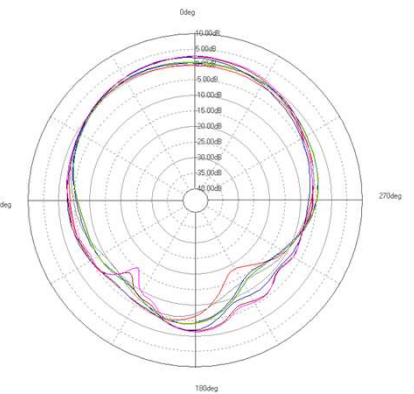
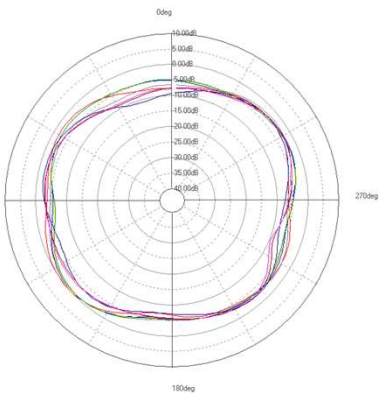
Legend

- 1427.00(MHz)
- 1447.00(MHz)
- 1475.00(MHz)
- 1496.00(MHz)
- 1517.00(MHz)
- 1559.00(MHz)



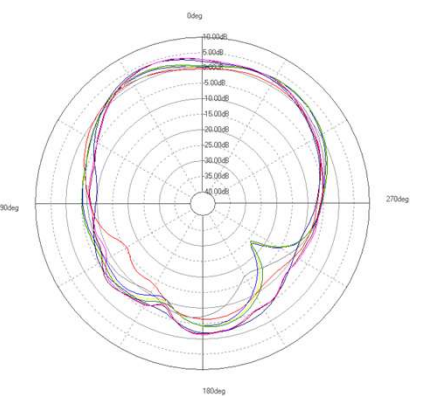
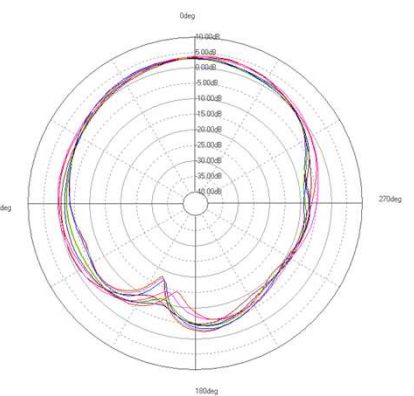
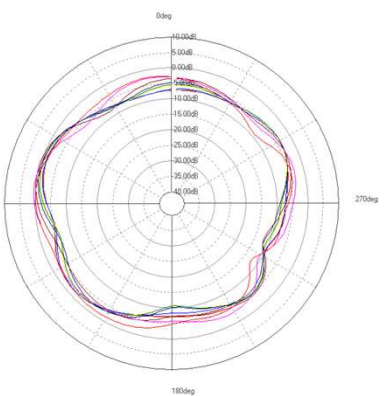
Legend

- 1710.00(MHz)
- 1805.00(MHz)
- 1880.00(MHz)
- 1929.00(MHz)
- 2110.00(MHz)
- 2170.00(MHz)
- 2200.00(MHz)



Legend

- 2300.00(MHz)
- 2305.00(MHz)
- 2315.00(MHz)
- 2350.00(MHz)
- 2360.00(MHz)
- 2400.00(MHz)
- 2500.00(MHz)
- 2595.00(MHz)
- 2690.00(MHz)



ANT1

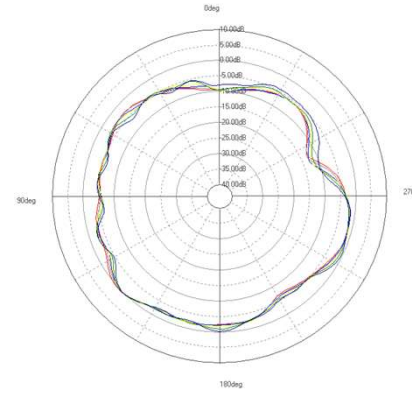
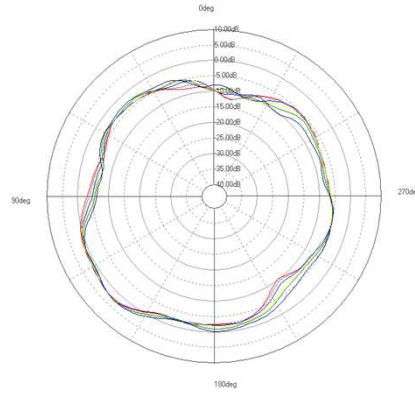
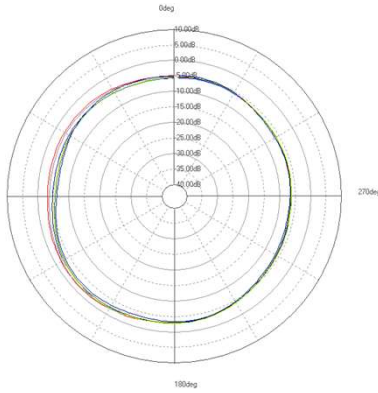
XY-plane

YZ-plane

ZX-plane

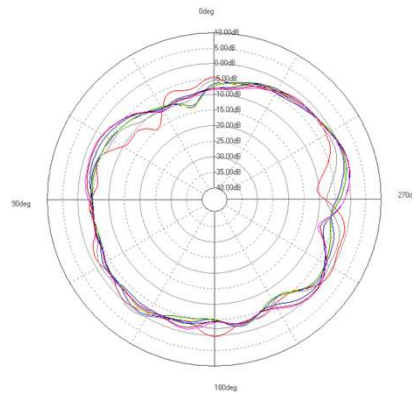
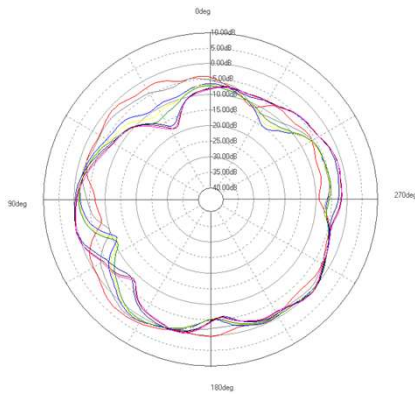
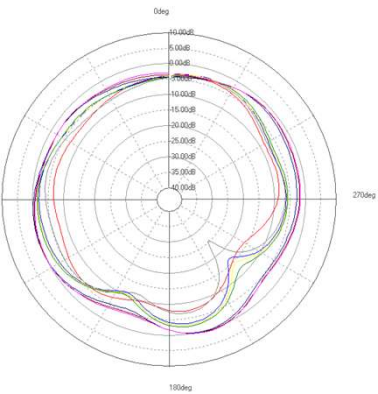
Legend

1427.00(MHz)
 1447.00(MHz)
 1475.00(MHz)
 1496.00(MHz)
 1517.00(MHz)
 1559.00(MHz)



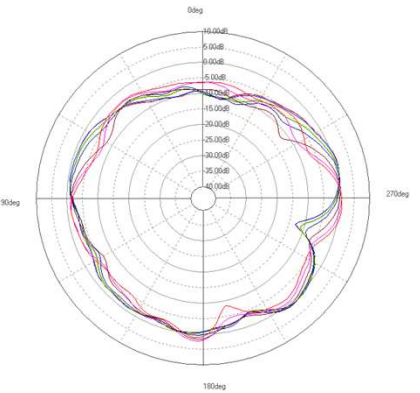
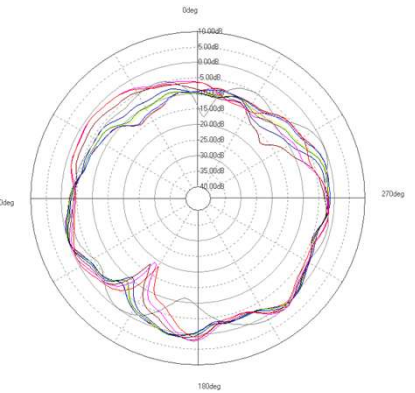
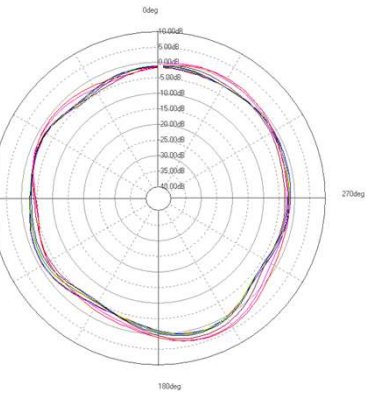
Legend

1710.00(MHz)
 1805.00(MHz)
 1880.00(MHz)
 1930.00(MHz)
 2110.00(MHz)
 2170.00(MHz)
 2200.00(MHz)



Legend

2300.00(MHz)
 2305.00(MHz)
 2315.00(MHz)
 2350.00(MHz)
 2360.00(MHz)
 2400.00(MHz)
 2500.00(MHz)
 2595.00(MHz)
 2690.00(MHz)



ANT2

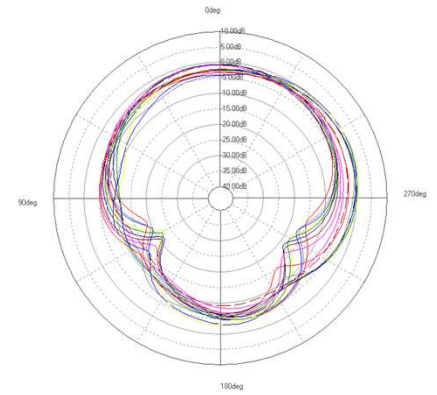
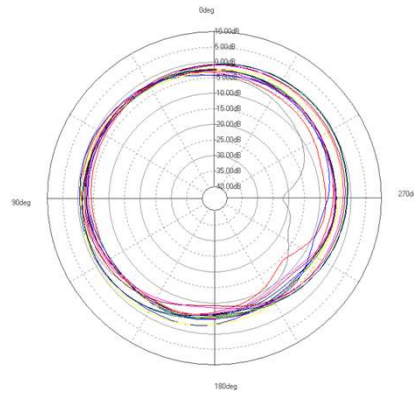
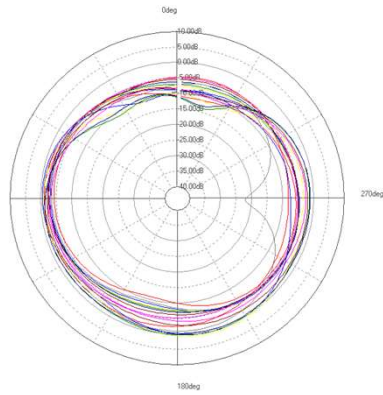
XY-plane

YZ-plane

ZX-plane

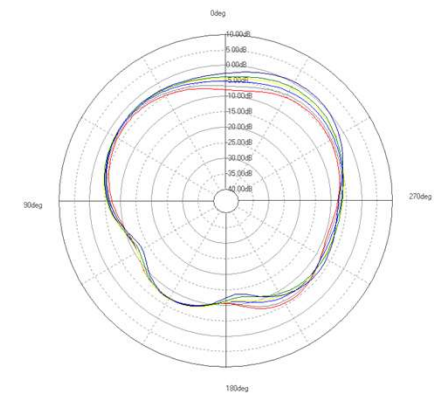
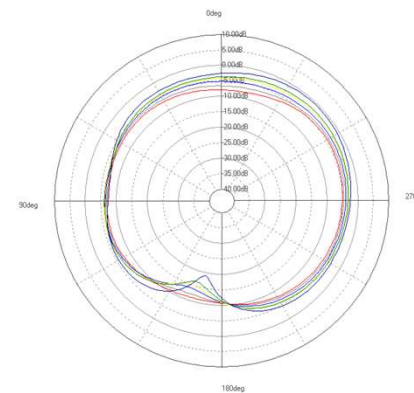
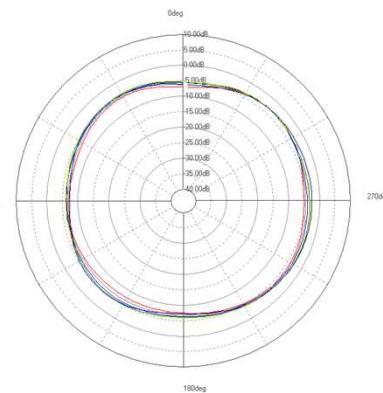
Legend

617.00(MHz)
652.00(MHz)
663.00(MHz)
698.00(MHz)
710.00(MHz)
734.00(MHz)
751.00(MHz)
768.00(MHz)
798.00(MHz)
824.00(MHz)
849.00(MHz)
869.00(MHz)
894.00(MHz)
925.00(MHz)
960.00(MHz)



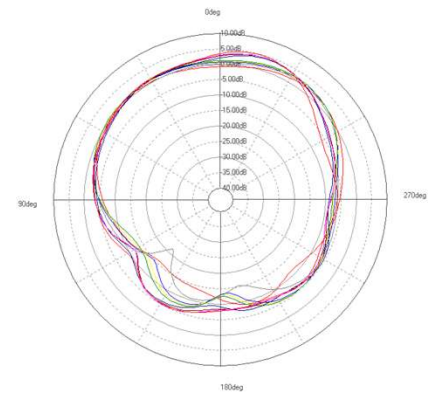
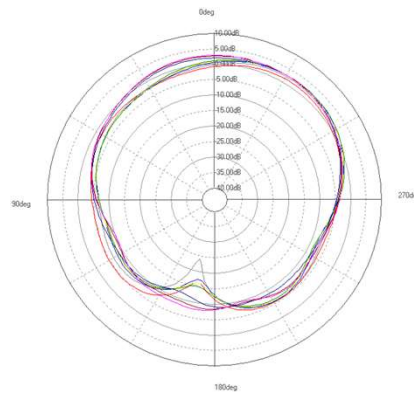
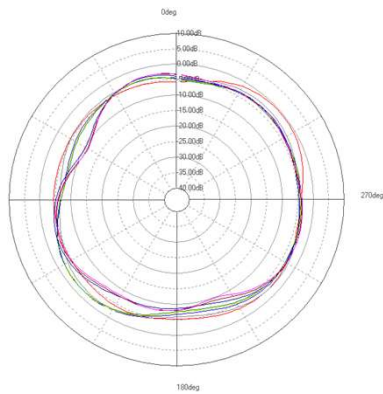
Legend

1427.00(MHz)
1447.00(MHz)
1475.00(MHz)
1496.00(MHz)
1517.00(MHz)
1559.00(MHz)



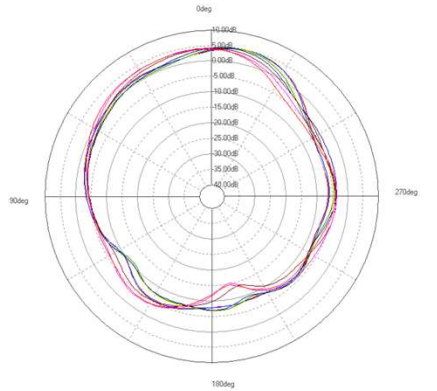
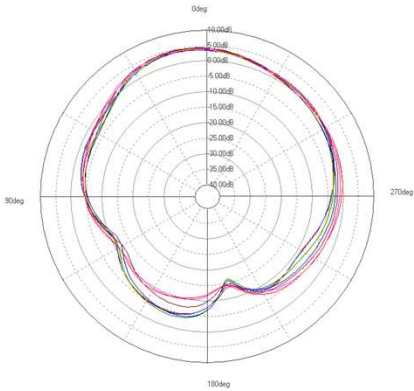
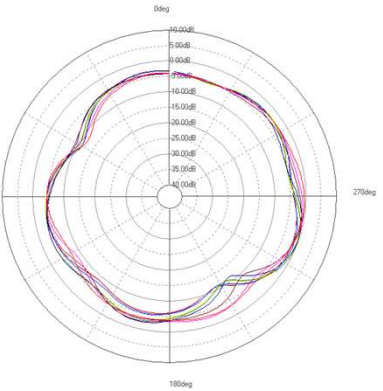
Legend

1710.00(MHz)
1805.00(MHz)
1880.00(MHz)
1920.00(MHz)
2110.00(MHz)
2170.00(MHz)
2200.00(MHz)



Legend

2300.00(MHz)
2305.00(MHz)
2315.00(MHz)
2350.00(MHz)
2360.00(MHz)
2400.00(MHz)
2500.00(MHz)
2595.00(MHz)
2690.00(MHz)



ANT3

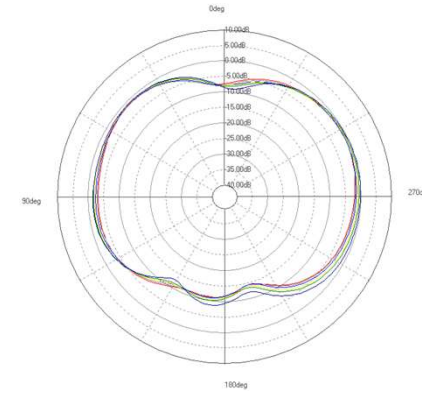
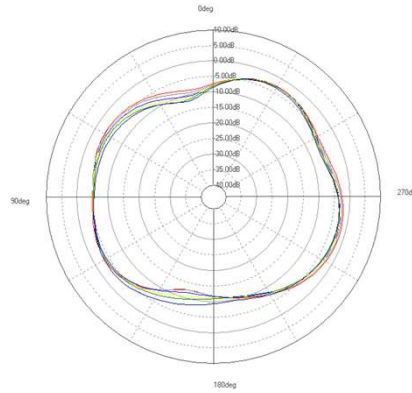
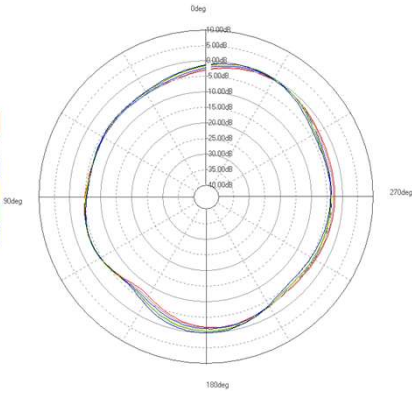
XY-plane

YZ-plane

ZX-plane

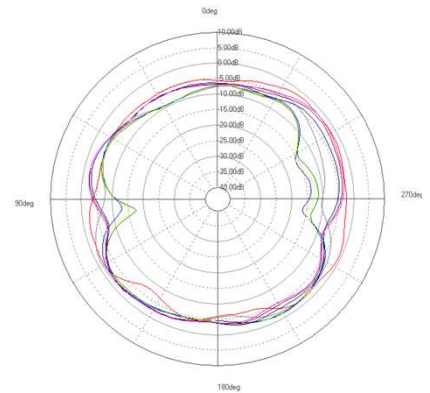
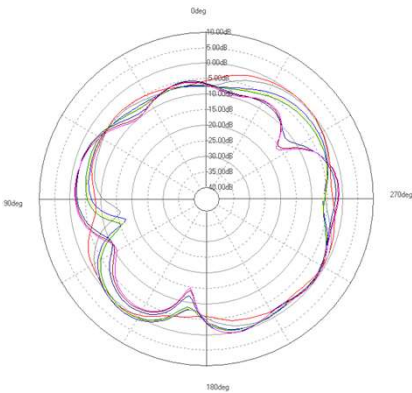
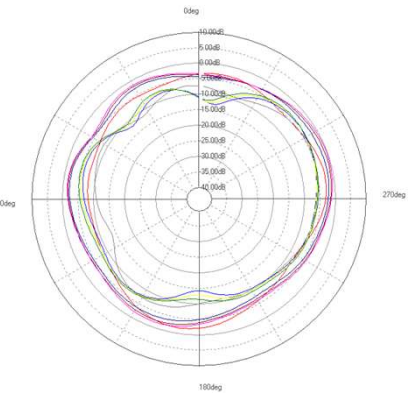
Legend

1427.00(MHz)
 1447.00(MHz)
 1475.00(MHz)
 1496.00(MHz)
 1517.00(MHz)
 1559.00(MHz)



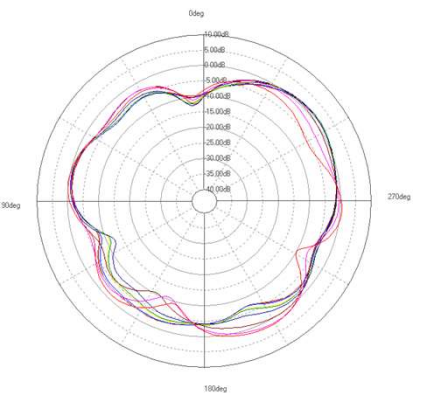
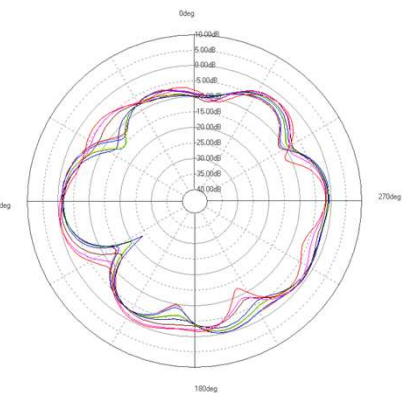
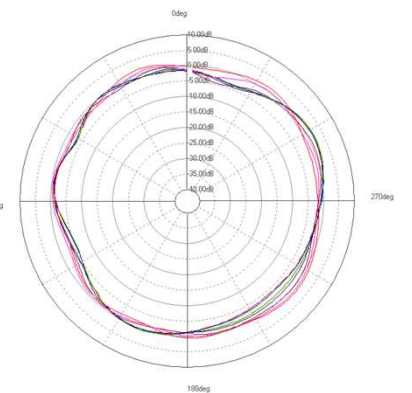
Legend

1710.00(MHz)
 1805.00(MHz)
 1880.00(MHz)
 1930.00(MHz)
 2110.00(MHz)
 2170.00(MHz)
 2200.00(MHz)



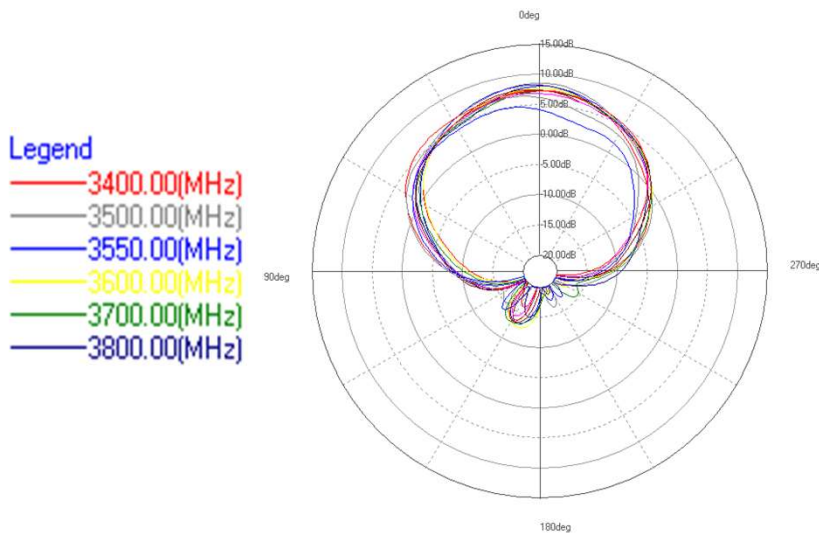
Legend

2300.00(MHz)
 2305.00(MHz)
 2315.00(MHz)
 2350.00(MHz)
 2360.00(MHz)
 2400.00(MHz)
 2500.00(MHz)
 2595.00(MHz)
 2690.00(MHz)

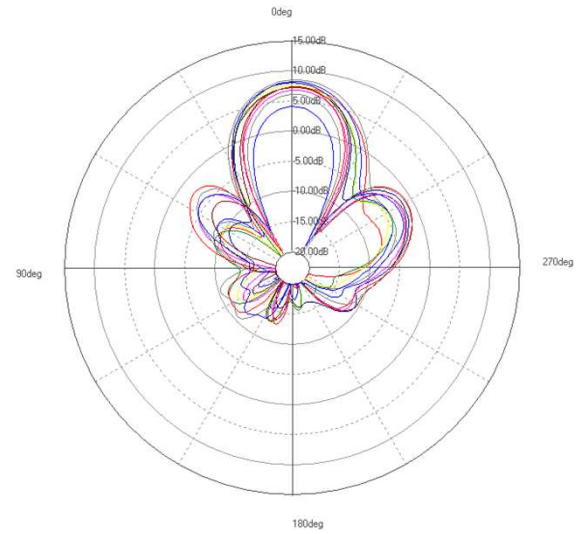


ANT0 & ANT3 (-45deg)

H-plane

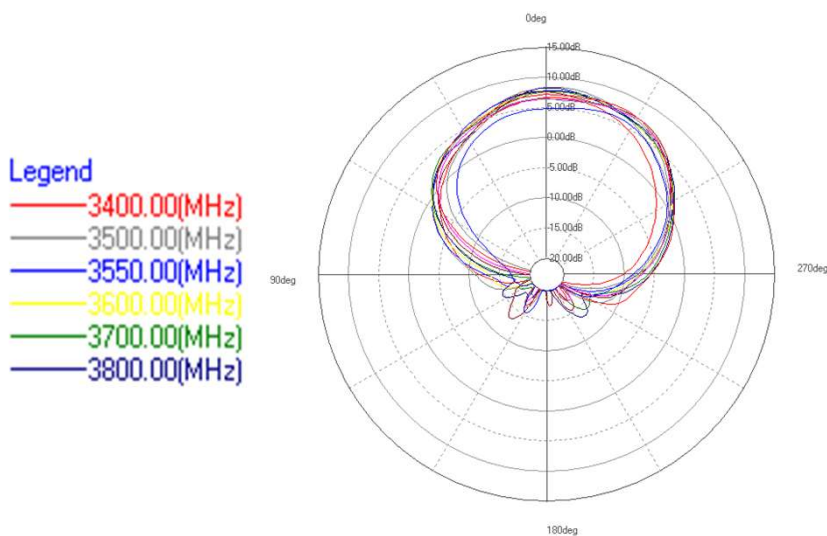


V-plane

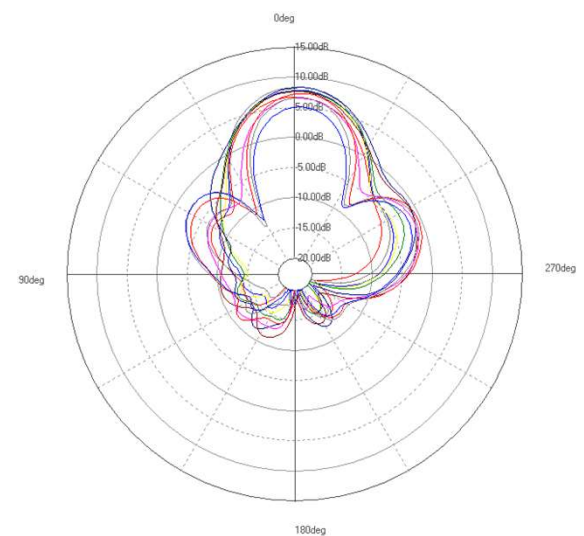


ANT1 & ANT2 (+45deg)

H-plane

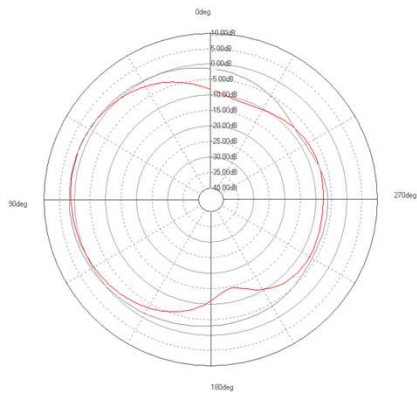


V-plane

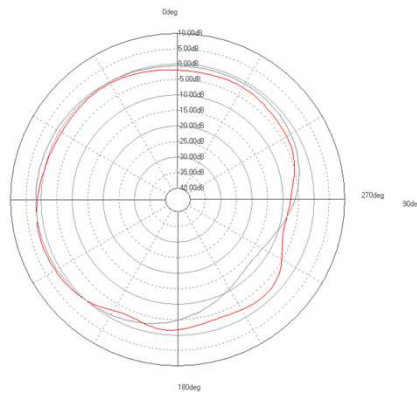


GPS/GNSS

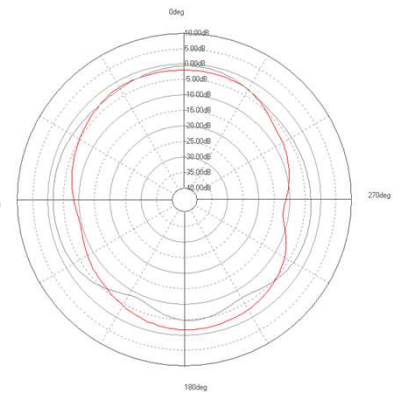
XY-plane



YZ-plane



ZX-plane



Legend

— 1575.00(MHz)
— 1602.00(MHz)