

SX4 Antenna Report

Item	Description
Model Name	SX4
Test Engineer	Peter Chou
Manufacturer	FIH Mobile Limited
Manufacturer Address	No. 4, Minsheng St., Tucheng Dist., New Taipei City , Taiwan (R.O.C.)
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement System
Test Equipment	Keysight E5071C
Test Software	ETS-Lindgren EMQuest Data Acquisition and Analysis Software V1.12 build 1470
Calibration date	Mar. 05 2024
Test date	Mar. 11 2024 ~ Mar. 15 2024

Outline

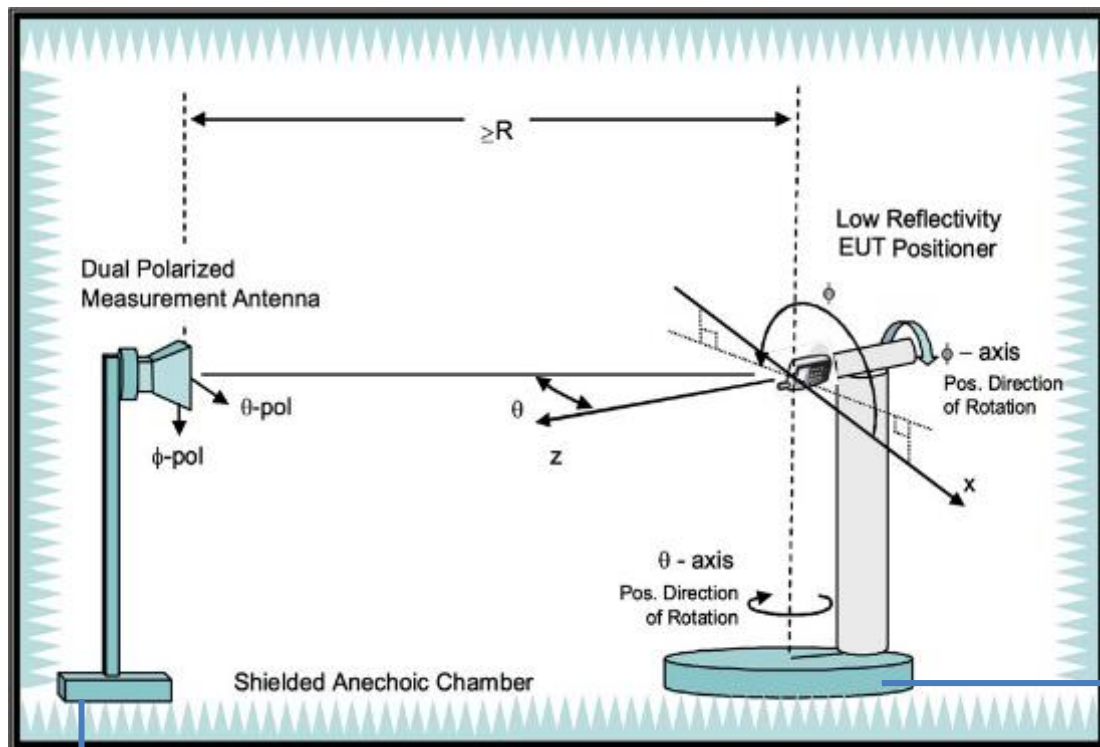
1. Test Method
2. Test Setup
3. Antenna Placement
4. Antenna Gain
5. Radiation pattern

1. Test Method

The antenna gains are obtained through measurements in a fully anechoic OTA chamber with a 3D positioner.

Measurements are taken in discreet steps in theta and phi direction, data is being recorded using the spectrum analyzer (active) or network analyzer (passive) for both theta and phi polarizations at each position resulting in a 3D gain pattern. Step size is <30deg along both axes.

Gain is either derived directly through spatial averaging of VNA S21 measurements (passive measurement) or by the ratio of spatial averaging of 3D EIRP/TRP measurements vs the conducted power (active measurement).



	RAT Support
ANT0	2/3/4G:LB TRx
ANT1	2/3G:MB TRx, 4G:MB/HB TRx,
ANT2	3G: LB/MB DRx 4G: LB/MB/HB DRx
ANT3	GPS L1
ANT4	WLAN 2.4G/5G chain0, BT
ANT6	NFC

ASDIV support bands (ANT0-ANT2)
WCDMA: 8
LTE: 8/18/19/28

4. Antenna Gain

Main ANT 0					
	Status 1	Status 2	Status 3	Status 4	Status 5
Frequency (MHz)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)
600					
620					
640					
660					
680					
703	-6.86				
710	-5.78				
720	-4.80				
730	-3.87	-4.89			
740	-3.32	-4.46			
750	-3.03	-3.56			
760	-3.93	-3.40			
770	-4.69	-3.69			
780	-6.21	-5.00			
790	-6.99	-5.86			
804	-7.78	-6.65	-5.03		
810	-7.72	-6.62	-4.97		
820			-5.26		
830			-5.33	-5.44	
840			-5.47	-4.76	
850			-5.93	-4.62	
860			-6.47	-4.76	
870			-6.98	-4.99	
880			-7.94	-6.02	-3.77
890			-9.10	-7.11	-3.62
900					-4.03
910					-4.50
920					-4.77
930					-5.81
940					-6.23
950					-6.76
960					-7.82
980					
1000					

3200	-4.32
3250	-3.84
3300	-2.47
3350	-2.36
3400	0.17
3450	-0.23
3500	0.53
3550	0.51
3600	0.25
3650	-0.73
3700	-0.26
3750	-1.20
3800	-1.58
3850	-1.32
3900	-1.19
4000	-0.38
4020	0.73
4040	0.65
4060	1.64
4080	2.00
4100	1.79
4120	1.67
4140	0.97
4160	1.09
4180	0.86
4200	0.93
4220	0.93
4240	0.61
4260	0.14
4280	0.95
4300	0.63
4320	1.23
4340	1.34
4360	1.19
4380	0.70
4400	0.12
4420	-0.38
4440	-0.68
4460	-0.66
4480	0.22
4500	-0.99
4520	-1.79
4540	-2.60
4560	-2.79
4580	-1.30
4600	-1.25
4620	-1.28
4640	-2.97
4660	-3.40
4680	-3.49
4700	-1.88
4720	-1.54
4740	-0.94
4760	-2.82
4780	-3.16
4800	-4.31
4820	-3.55
4840	-2.53
4860	-2.57
4880	-3.30
4900	-3.80
4920	-3.98
4940	-4.29
4960	-3.92
4980	-3.48
5000	-3.38
5020	-3.15
5040	-3.50
5060	-3.46
5080	-3.96
5100	-3.83

Main ANT 1	
Frequency (MHz)	peak gain (dBm)
1690	-0.32
1710	-0.35
1725	-0.30
1740	-0.14
1755	0.12
1770	0.24
1785	0.17
1800	0.05
1815	0.15
1830	-0.27
1845	-0.98
1860	-0.87
1875	-0.99
1890	-0.68
1905	-0.88
1920	-1.16
1935	-1.48
1950	-1.43
1965	-1.65
1980	-1.65
1990	-1.46
2010	-0.98
2030	-0.79
2050	-1.04
2070	-0.39
2090	-0.70
2110	-0.87
2120	-0.50
2130	-0.60
2140	-0.76
2150	-0.84
2160	-0.60
2170	-0.49
2200	0.49
2240	0.52
2280	0.88
2300	0.64
2320	0.87
2340	0.31
2360	-0.54
2380	-1.20
2400	-1.19
2420	-1.32
2440	-1.17
2460	-1.15
2480	-1.43
2500	-1.22
2520	-1.33
2540	-0.89
2560	0.14
2580	0.49
2600	0.81
2620	0.25
2640	-0.07
2660	0.05
2680	-0.52
2690	0.24
2720	0.27
2740	0.36
2760	-0.12
2780	-0.60
2800	-0.99

Main ANT 2

Frequency (MHz)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)	peak gain (dBm)
600					
620					
640					
660					
680					
703	-12.65	-12.37			
710	-11.33	-11.22			
720	-10.89	-11.07			
730	-9.48	-9.89			
740	-8.78	-9.32			
750	-7.50	-9.00			
760	-6.85	-8.94			
770	-7.02	-8.87			
780	-8.33	-9.97			
790	-9.45	-10.65			
804	-10.96	-11.47			
810			-9.59		
820			-8.77		
830			-8.44	-8.49	
840			-8.03	-7.97	
850			-7.66	-7.05	
860			-7.75	-6.55	
870			-7.69	-6.20	
880			-8.83	-6.70	-10.04
890				-7.33	-9.47
900					-8.75
910					-8.29
920					-7.63
930					-7.71
940					-7.52
950					-7.70
960					-8.15
980					

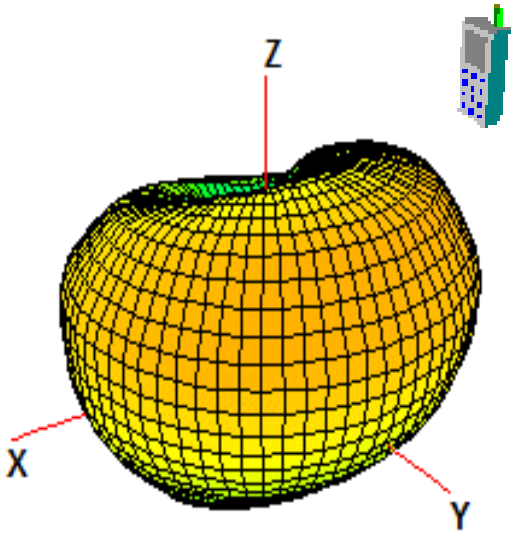
Main ANT 4

ANT4

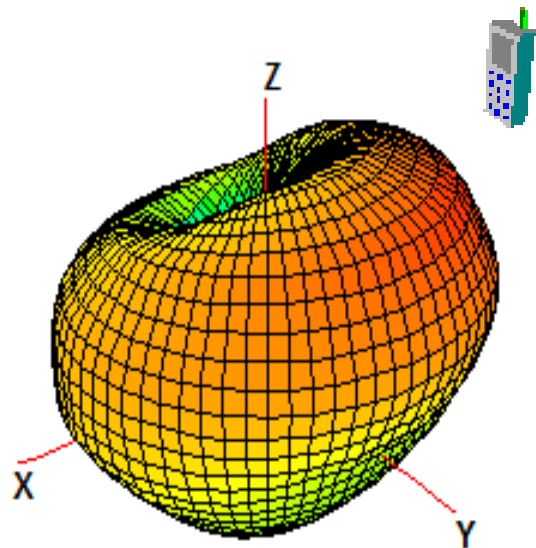
Frequency (MHz)	peak gain (dBm)
2300	
2320	
2340	
2360	
2380	
2400	-4.30
2410	-4.31
2420	-4.68
2430	-5.20
2440	-5.93
2450	-6.22
2460	-6.65
2470	-6.58
2480	-7.08
2490	-6.81
2500	-7.58
2520	
2540	
2560	
2580	
2600	
2620	
2640	
2660	
2680	
2700	
5000	
5025	
5050	
5075	
5100	
5125	
5150	-2.84
5175	-3.01
5200	-1.96
5225	-1.50
5250	-1.07
5275	-1.25
5300	-1.49
5325	-0.35
5350	0.07
5375	1.13
5400	0.89
5425	1.11
5450	0.51
5475	0.95
5500	1.53
5525	2.99
5550	2.46
5575	1.25
5600	0.93
5625	1.60
5650	2.44
5675	2.62
5700	2.51
5725	1.47
5750	0.99
5775	1.26
5800	1.79
5825	1.50
5850	2.06
5875	2.56
5900	1.77
5925	
5950	
5975	
6000	

5. Radiation pattern

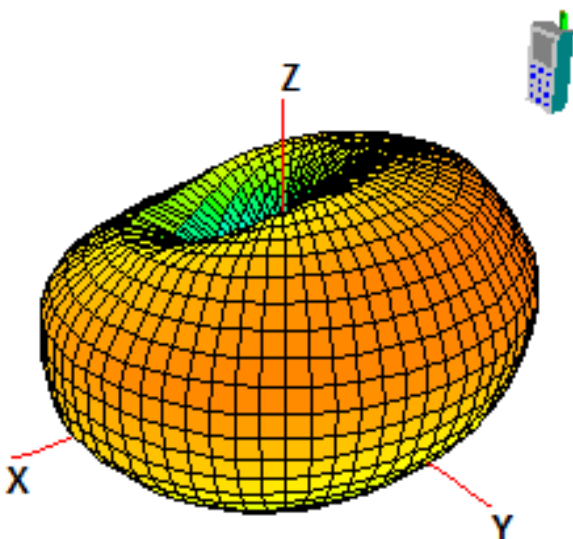
730MHz ANT0



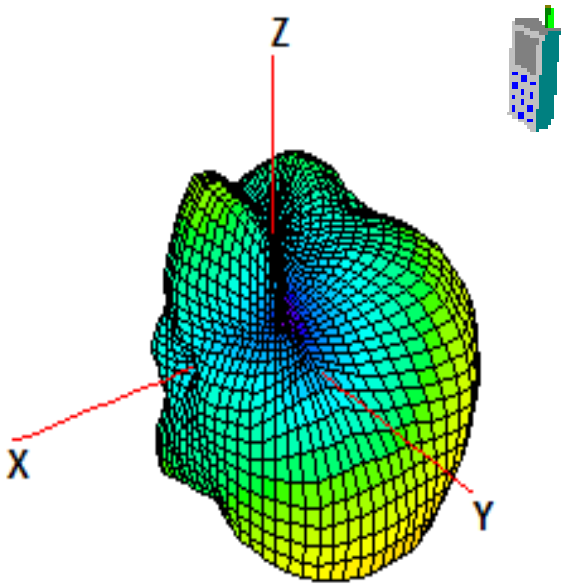
900MHz ANT0



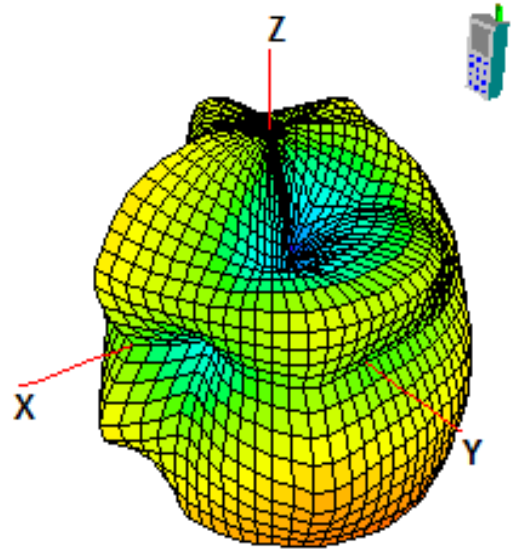
850MHz ANT0



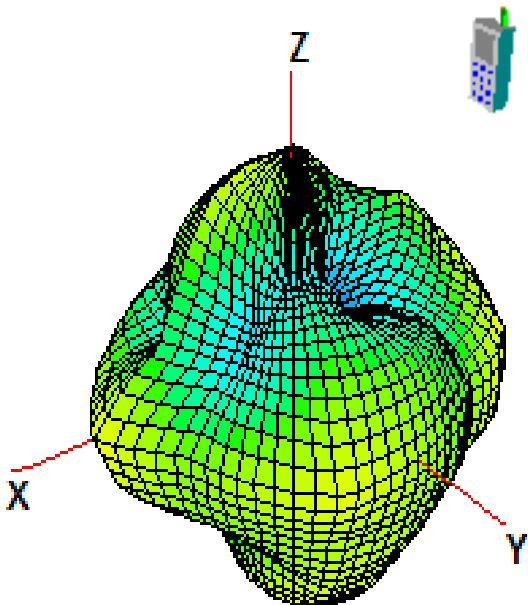
3500MHz ANT0



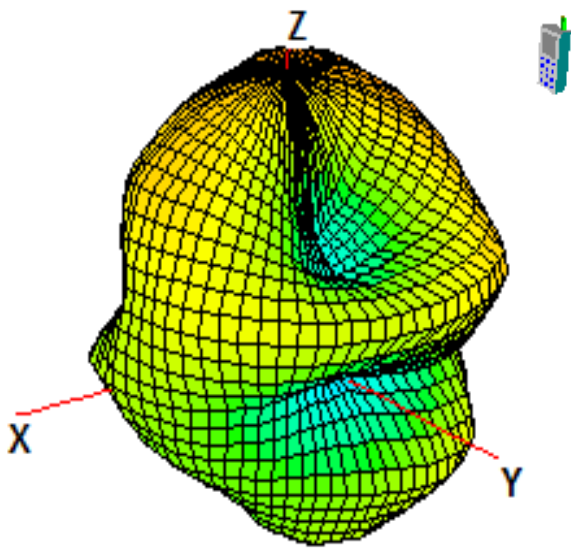
4500MHz ANT0



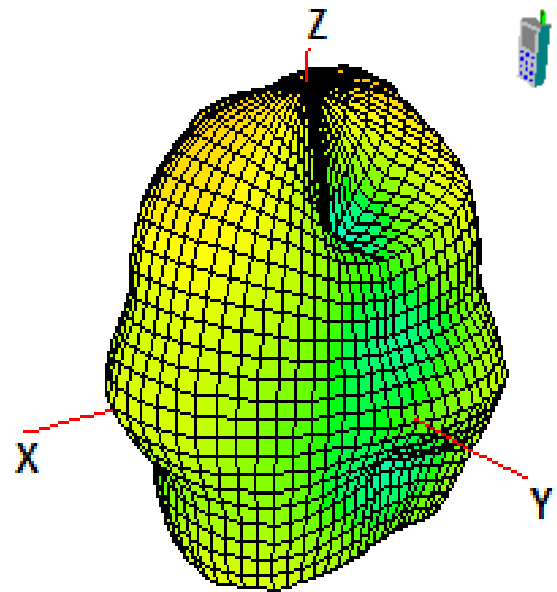
4000MHz ANT0



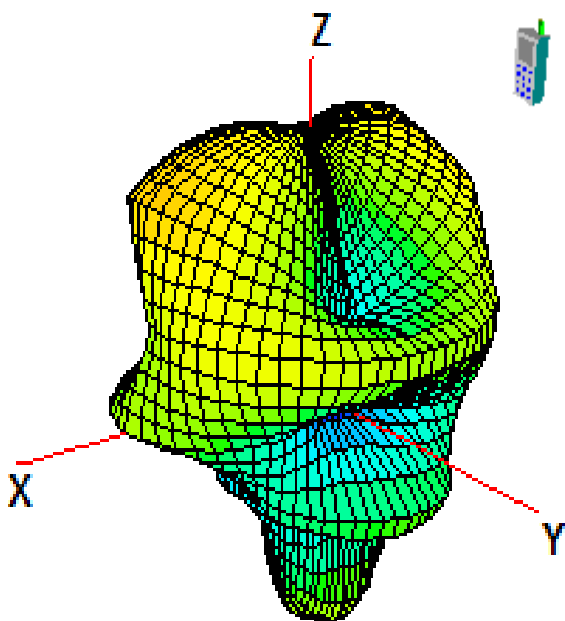
1755MHz ANT1



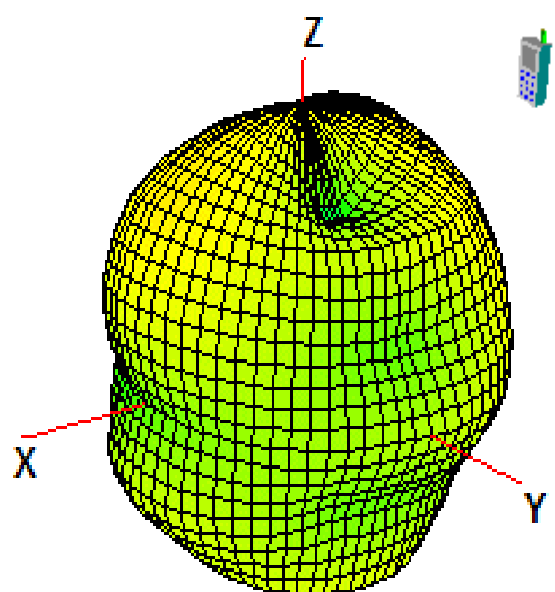
2350MHz ANT1



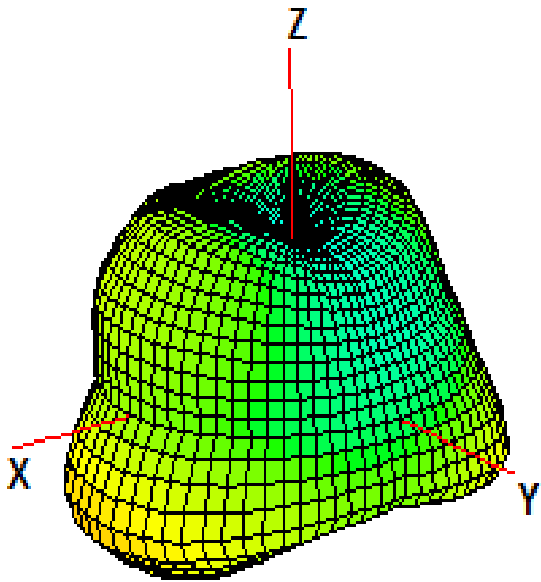
1950MHz ANT1



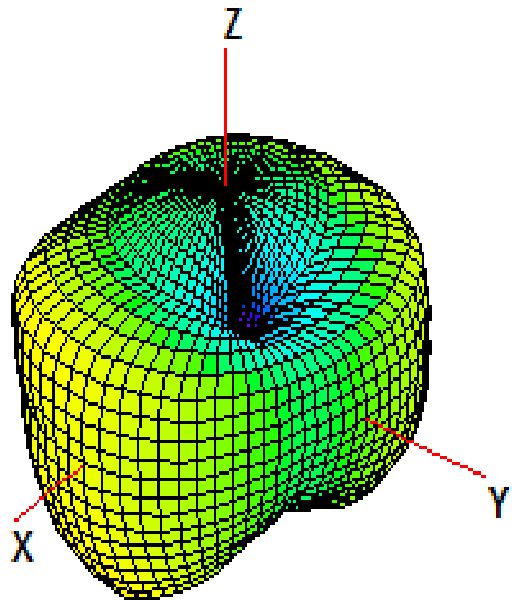
2600MHz ANT1



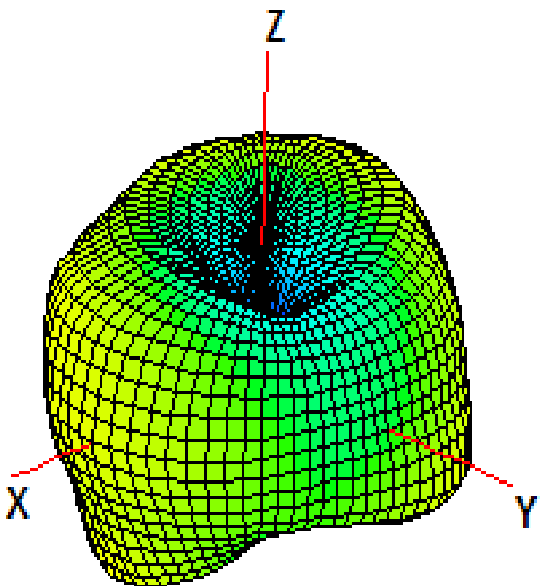
730MHz ANT2



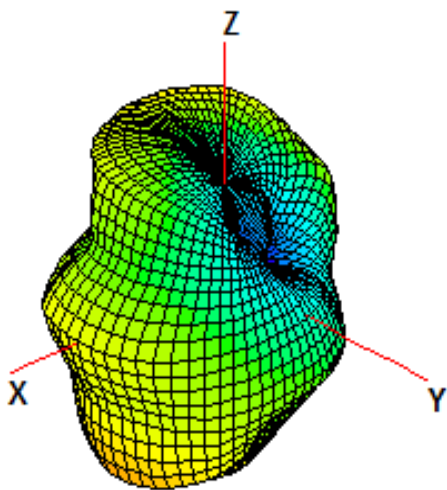
900MHz ANT2



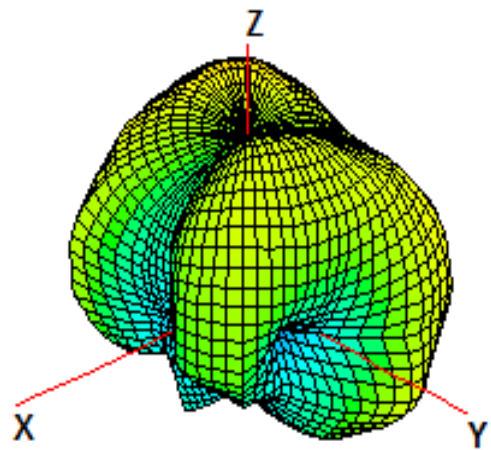
850MHz ANT2



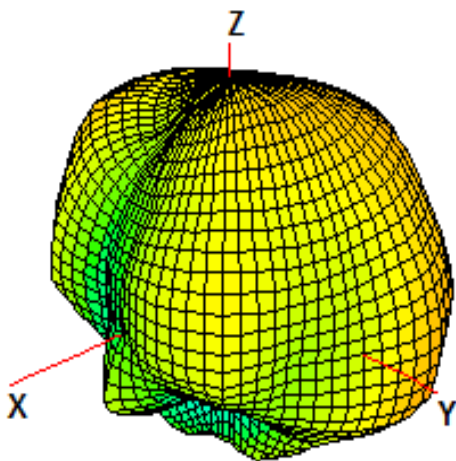
2450MHz ANT4



5500MHz ANT4



5150MHz ANT4



5850MHz ANT4

