

SPECIFICATION

UNIMAXCOMM LTD

C65R Antenna

Product approval sheet

Customer	Rhino Mobility LLC	Band	N/A
Project	2AUOUC65R	Colour	Black

Customer check:

Reach requirement of customer: ☒OK ☐NG

Shenzhen Sanhao Wireless Communication Co., Ltd.

Address: 1-8, 5th Floor, Jinfulai Building, No. 49-1, Dabao Road, Bao'an District, Shenzhen

Contact information: 0755-82824184

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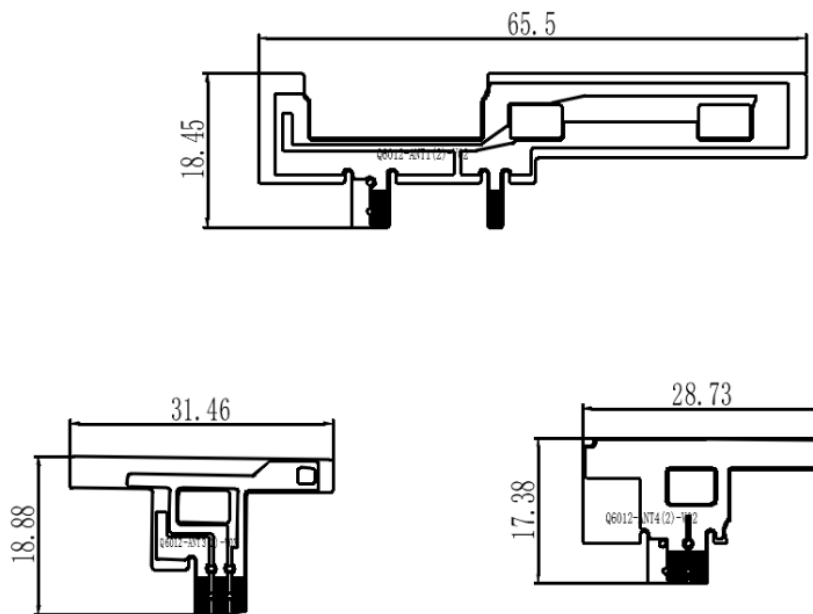
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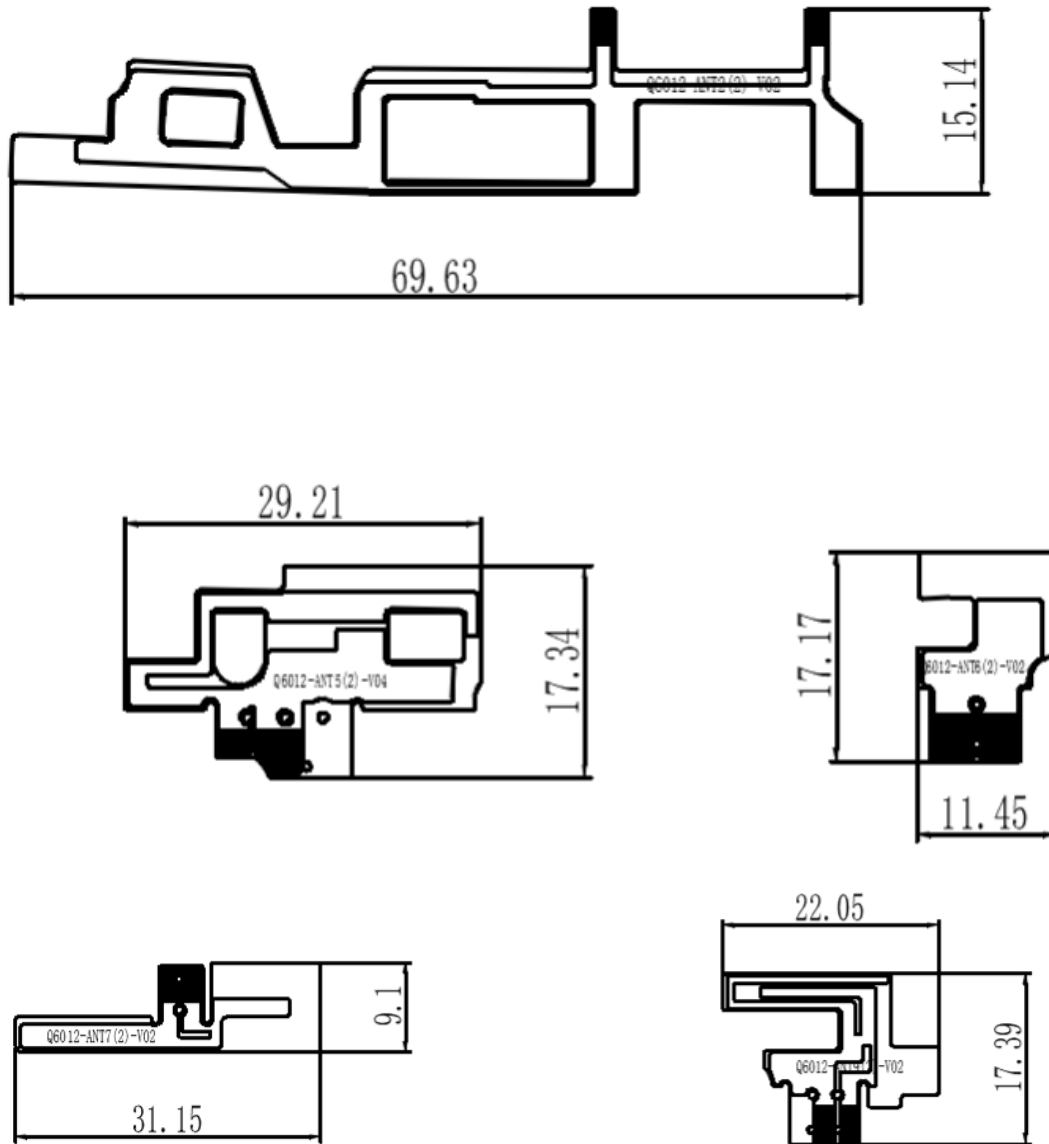
1 General description

1.1 information of DUT

Set Type	Smartphone
Dimension	
Band	WCDMA Band 2/4/5; LTE: Band B2/4/5/7/12/13/14/17/18/19/25/26/29/30/38/41/48/66/71 NR: n2/5/7/25/26/29/30/41/48/66/71/77/78, BT 5.1 2.4G&5G WIFI
Antenna Material	FPC

1.2 Antenna appearing diagram





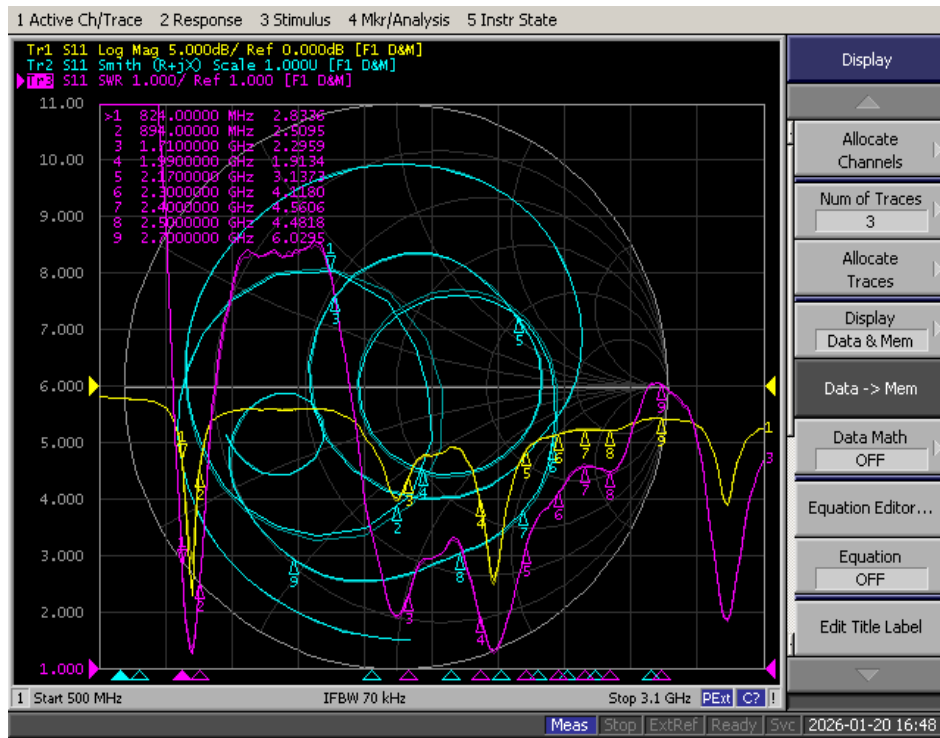
2 Electrical performance

2.1 Passive result

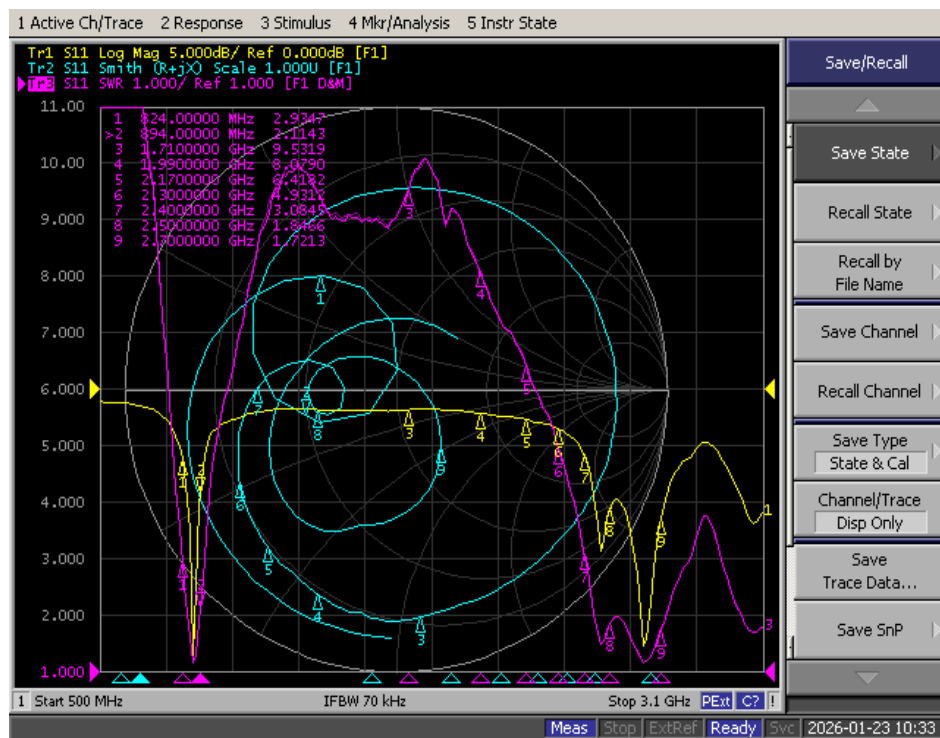
2.11 VSWR

ANT1

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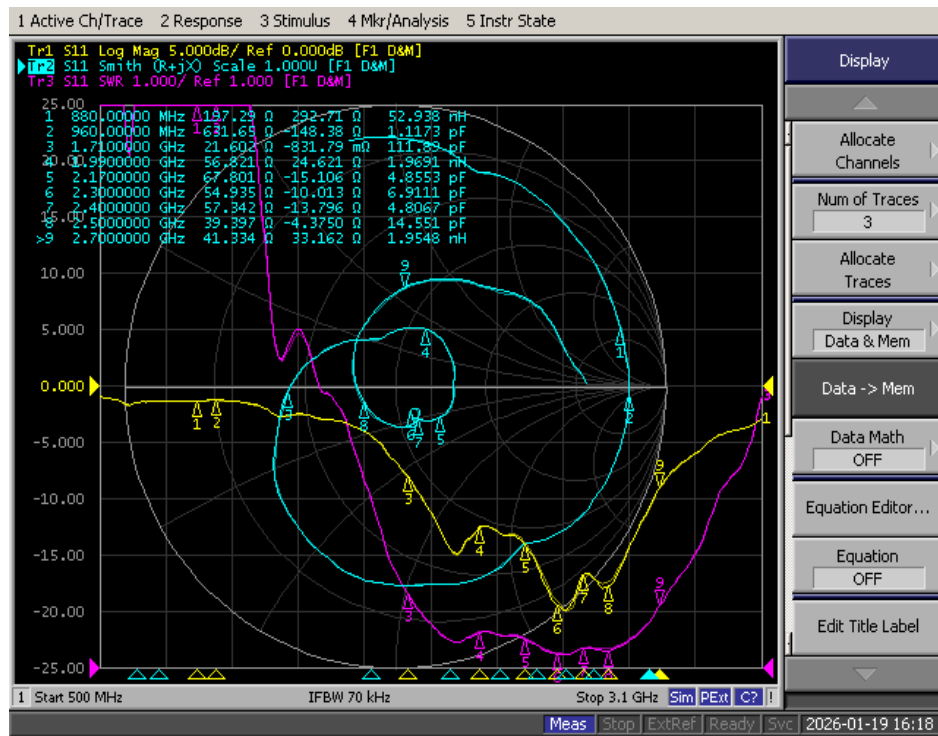


ANT2



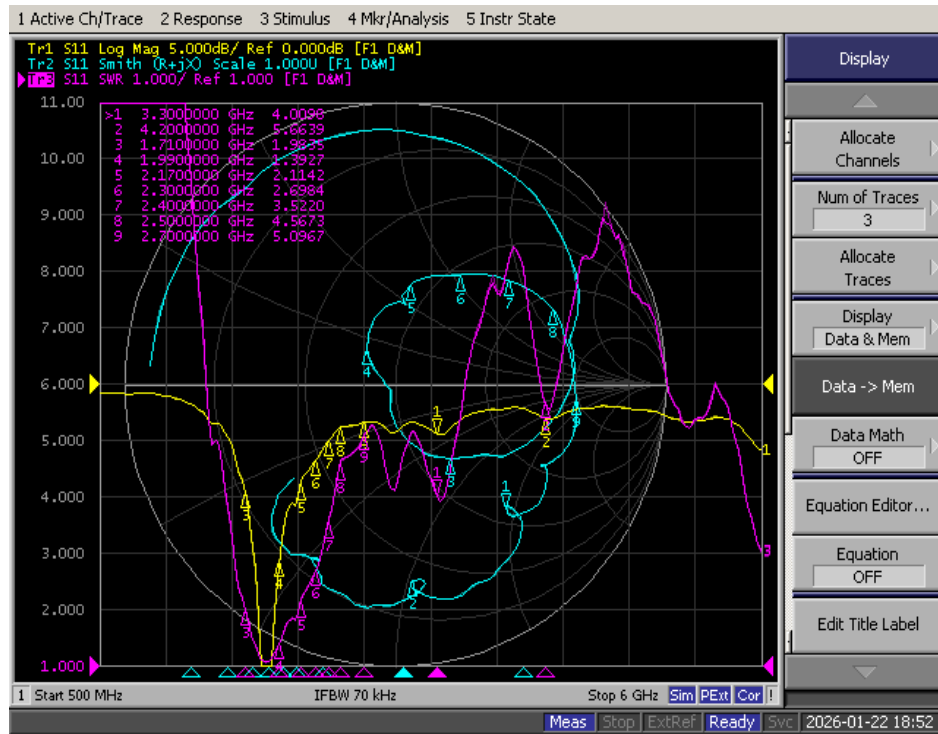
ANT3

Confidential Information

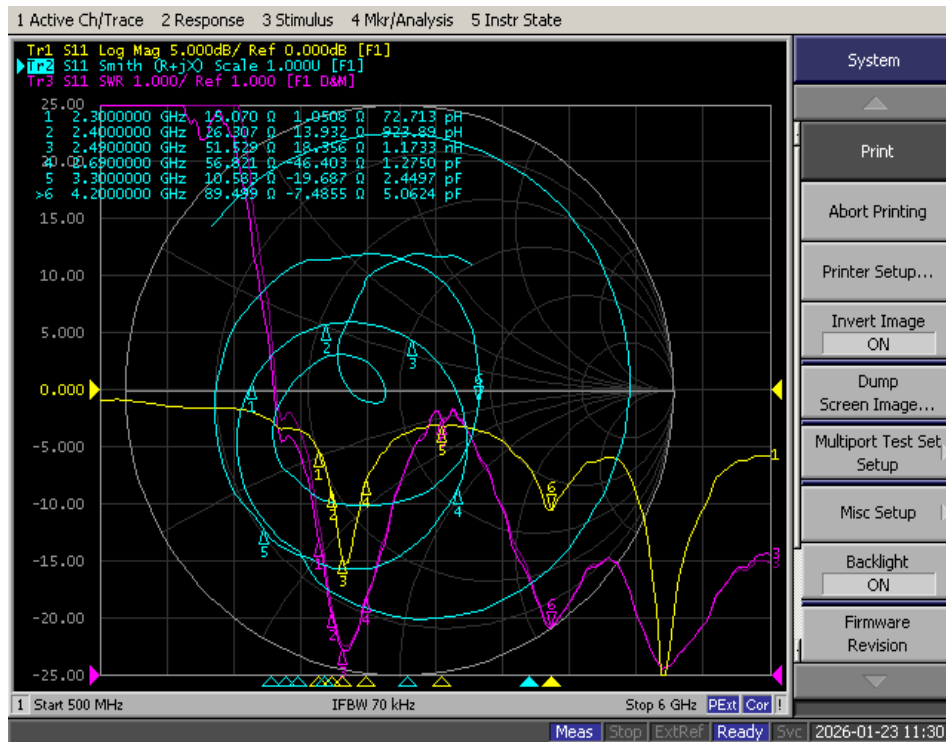


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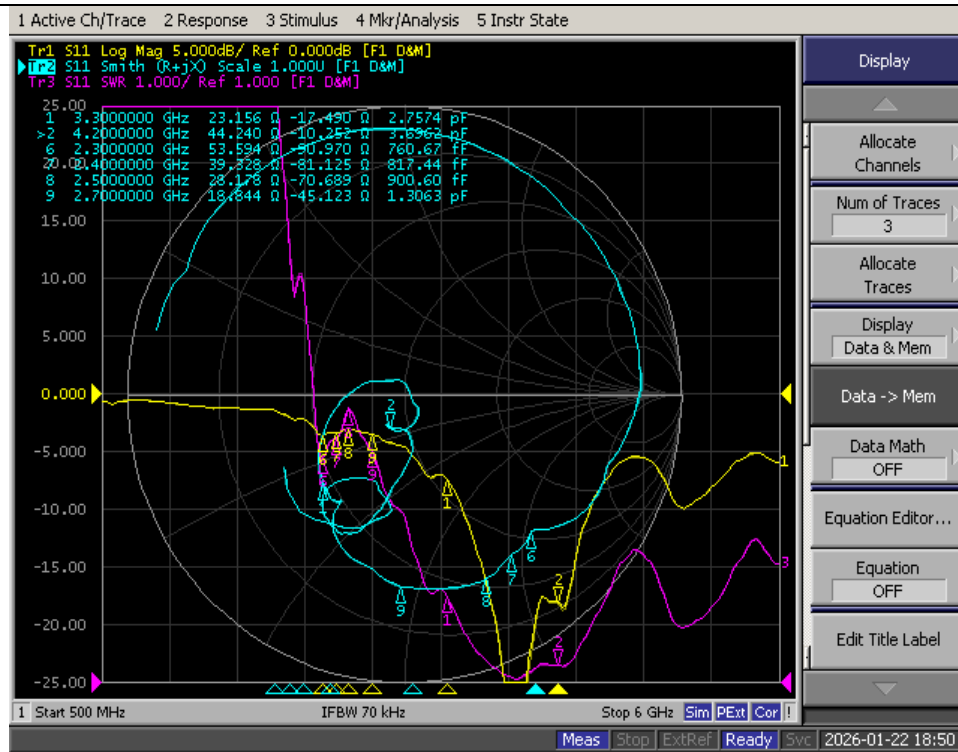


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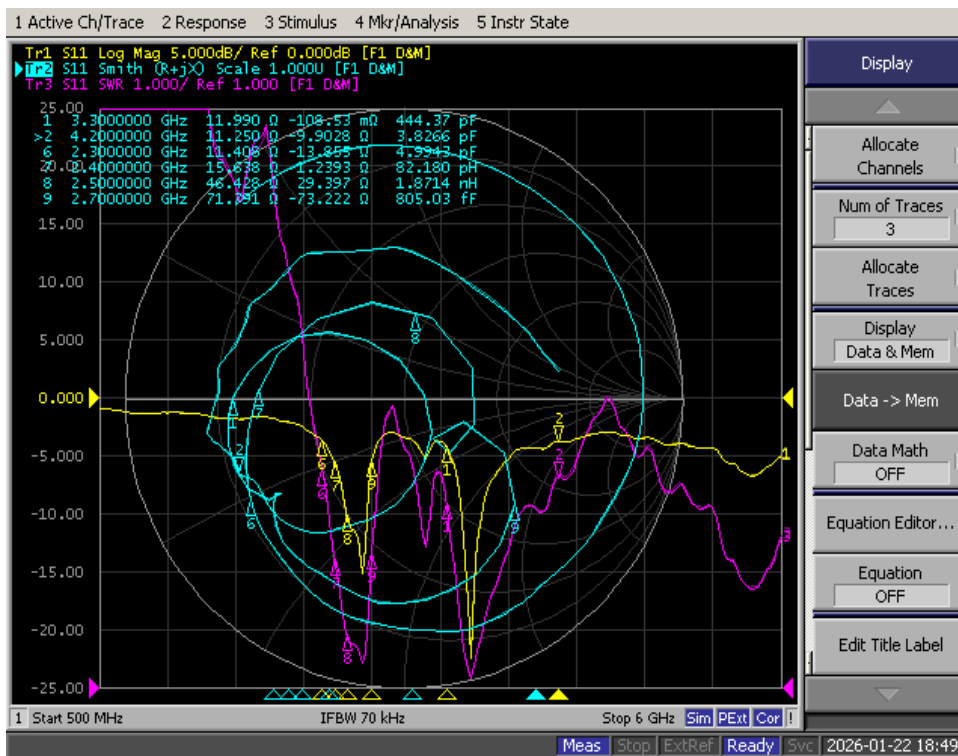


ANT6

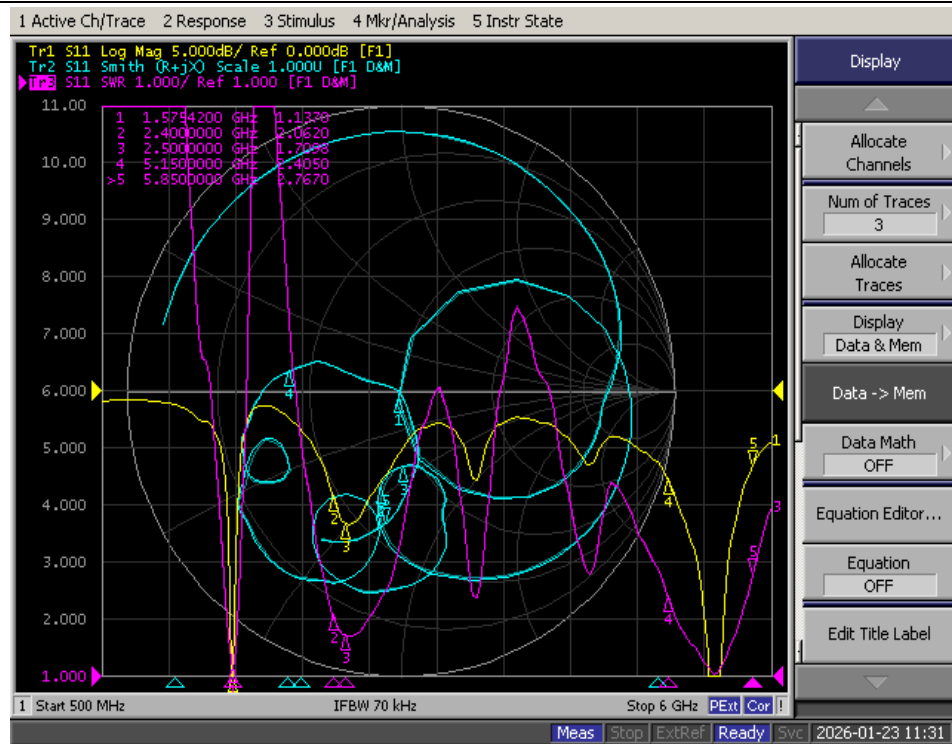
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ANT7



ANT9



2.12 Efficiency & Gain

ANT1

OF

RF4

RF1

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
610	5.43	-12.65	-9.34	880	10.59	-9.75	-6.1	820	9.82	-10.08	-7.59
620	10.05	-9.98	-6.84	890	13.27	-8.77	-5.06	830	12.47	-9.04	-6.87
630	14.45	-8.4	-4.71	900	16.18	-7.91	-4.23	840	14.29	-8.45	-6.39
640	17.5	-7.57	-3.23	910	18.54	-7.32	-3.77	850	15.38	-8.13	-5.8
650	18.62	-7.3	-1.76	920	20.09	-6.97	-3.15	860	16.63	-7.79	-5.11
660	17.95	-7.46	-1.22	930	19.68	-7.06	-3.26	870	19.1	-7.19	-4.34
670	14.45	-8.4	-2.18	940	18.2	-7.4	-3.5	880	21.23	-6.73	-3.51
680	11.12	-9.54	-3.6	950	16.71	-7.77	-3.8	890	20.99	-6.78	-3.21
690	7.05	-11.52	-4.57	960	14.79	-8.3	-4.06	900	18.92	-7.23	-3.58
700	4.47	-13.5	-6.17								

RF2

RF3

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
760	11.27	-9.48	-4.04	700	9.71	-10.13	-2.75
770	13.71	-8.63	-3.48	710	12.13	-9.16	-2.44
780	13.74	-8.62	-3.76	720	14.03	-8.53	-2.65
790	13.46	-8.71	-3.94	730	15.38	-8.13	-3.29
800	11.8	-9.28	-6.05	740	17.34	-7.61	-2.64
810	10.64	-9.73	-6.46	750	15.74	-8.03	-2.59

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820	9.62	-10.17	-7.27	760	13.43	-8.72	-3.03
				770	11.91	-9.24	-3.9
				780	9.57	-10.19	-5.05
				790	7.38	-11.32	-6.12
				800	5.37	-12.7	-9.15

RF1

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1700	5.35	-12.72	-7.89	1960	21.09	-6.76	-0.78
1710	5.89	-12.3	-7.68	1970	23.17	-6.35	-0.36
1720	6.35	-11.97	-7.56	1980	24.83	-6.05	-0.05
1730	6.31	-12	-7.46	1990	26.61	-5.75	0.38
1740	6.47	-11.89	-7.36	2000	28.18	-5.5	0.74
1750	6.53	-11.85	-7.42	2010	29.92	-5.24	0.34
1760	7.1	-11.49	-7.01	2020	31.41	-5.03	0.51
1770	7.24	-11.4	-6.9	2030	33.81	-4.71	0.84
1780	7.06	-11.51	-7.07	2040	36.39	-4.39	1.21
1790	6.62	-11.79	-7.35	2050	38.37	-4.16	1.55
1800	6.14	-12.12	-7.55	2060	38.99	-4.09	1.62
1810	6.04	-12.19	-7.4	2070	38.46	-4.15	1.48
1820	6.37	-11.96	-6.77	2080	34.91	-4.57	0.95
1830	6.24	-12.05	-6.71	2090	33.11	-4.8	0.69
1840	6.38	-11.95	-6.53	2100	31.19	-5.06	0.26
1850	6.78	-11.69	-6.26	2110	31.05	-5.08	0.26
1860	7.46	-11.27	-5.69	2120	29.58	-5.29	0.04
1870	7.8	-11.08	-5.31	2130	27.67	-5.58	-0.2
1880	8.59	-10.66	-4.74	2140	25.82	-5.88	-0.41
1890	9.18	-10.37	-4.43	2150	26.79	-5.72	-0.17
1900	10.86	-9.64	-3.71	2160	26.79	-5.72	-0.18
1910	13.84	-8.59	-2.74	2170	28.97	-5.38	0.21
1920	16.79	-7.75	-1.96	2180	28.84	-5.4	0.3
1930	18.24	-7.39	-1.61	2190	27.61	-5.59	0.3
1940	19.5	-7.1	-1.22	2200	23.71	-6.25	-0.28
1950	19.41	-7.12	-1.19				

ANT2

OF

RF1

RF2

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
610	19.36	-7.13	-3.39	820	26.68	-5.74	-2.63	760	31.74	-4.98	-2.08
620	16.73	-7.76	-4.36	830	29.43	-5.31	-2.25	770	32.12	-4.93	-1.8
630	17.4	-7.6	-4.66	840	35.39	-4.51	-1.14	780	33.26	-4.78	-1.81
640	23.12	-6.36	-3.98	850	41.13	-3.86	-0.4	790	35.84	-4.46	-1.21
650	23.65	-6.26	-4.2	860	42.7	-3.7	-0.13	800	49.08	-3.09	0.18
660	28.66	-5.43	-3.18	870	47.09	-3.27	0.22	810	46.39	-3.34	0

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670	22.63	-6.45	-3.76	880	40.73	-3.9	-0.5	820	47.43	-3.24	0.07
680	20.31	-6.92	-3.98	890	35.33	-4.52	-1.05				
690	18.32	-7.37	-4.65	900	28.14	-5.51	-2.02				
700	18.61	-7.3	-5.01								

RF3

RF4

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
700	9.71	-10.13	-2.75	880	14.94	-8.26	-5.04
710	12.13	-9.16	-2.44	890	16.42	-7.85	-4.63
720	14.03	-8.53	-2.65	900	18.02	-7.44	-4.28
730	15.38	-8.13	-3.29	910	18.87	-7.24	-4.06
740	17.34	-7.61	-2.64	920	20.25	-6.93	-3.85
750	15.74	-8.03	-2.59	930	19.43	-7.11	-4.01
760	13.43	-8.72	-3.03	940	18.76	-7.27	-4.17
770	11.91	-9.24	-3.9	950	16.55	-7.81	-4.58
780	9.57	-10.19	-5.05	960	13.98	-8.55	-5.36
790	7.38	-11.32	-6.12				
800	5.37	-12.7	-9.15				

RF1

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1700	5.42	-12.66	-8.04	1960	12.17	-9.15	-4.29
1710	5.26	-12.79	-7.9	1970	11.83	-9.27	-4.58
1720	5.46	-12.63	-7.51	1980	11.13	-9.54	-5.04
1730	6.06	-12.17	-7.24	1990	10.22	-9.9	-5.49
1740	5.7	-12.44	-7.77	2000	9.27	-10.33	-6.15
1750	5.37	-12.7	-8.04	2010	7.97	-10.99	-6.76
1760	5.92	-12.27	-7.48	2020	6.94	-11.58	-7.33
1770	6.38	-11.96	-7.17	2030	6.17	-12.1	-7.49
1780	7.57	-11.21	-6.64	2040	5.21	-12.83	-8.07
1790	7.22	-11.41	-7.1	2050	4.61	-13.36	-8.54
1800	6.62	-11.79	-7.16	2060	4.32	-13.64	-8.53
1810	6.98	-11.56	-6.56	2070	3.76	-14.25	-9.04
1820	7.43	-11.29	-6.24	2080	3.17	-15	-9.98
1830	7.73	-11.12	-6.34	2090	2.62	-15.82	-11.36
1840	8.07	-10.93	-6.22	2100	2.33	-16.33	-11.65
1850	8.28	-10.82	-6.35	2110	2.24	-16.5	-11.78
1860	8.08	-10.93	-6.56	2120	1.98	-17.02	-12.67
1870	8.46	-10.73	-6.48	2130	2	-16.98	-13.15
1880	9.2	-10.36	-5.64	2140	2.22	-16.54	-12.25
1890	9.97	-10.01	-5.09	2150	2.29	-16.4	-11.44
1900	10.38	-9.84	-4.97	2160	2.26	-16.45	-11.58
1910	10.17	-9.92	-4.93	2170	2.41	-16.19	-11.39
1920	10.62	-9.74	-4.74	2180	2.35	-16.3	-11.6
1930	11.73	-9.31	-4.17	2190	2.46	-16.1	-11.76

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1940	11.65	-9.34	-4.14	2200	2.6	-15.84	-12.15
1950	12.55	-9.01	-4.02				

ANT3

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1710	47.09	-3.27	1.63	2090	48.74	-3.12	2.83	2470	31.43	-5.03	0.61
1720	51.48	-2.88	1.94	2100	48.57	-3.14	2.85	2480	33.43	-4.76	1.21
1730	52.69	-2.78	2.17	2110	48.49	-3.14	2.73	2490	33	-4.81	1.27
1740	49.88	-3.02	2.16	2120	47.19	-3.26	2.42	2500	30.01	-5.23	1.06
1750	53.57	-2.71	2.51	2130	47.75	-3.21	2.28	2510	29.74	-5.27	0.9
1760	57.77	-2.38	2.84	2140	49.03	-3.1	2.56	2520	30.18	-5.2	0.84
1770	61.56	-2.11	3	2150	47.47	-3.24	2.61	2530	33.18	-4.79	1.16
1780	61.96	-2.08	3.24	2160	45.96	-3.38	2.69	2540	31.34	-5.04	0.67
1790	58.96	-2.29	3.22	2170	44.6	-3.51	2.57	2550	30.59	-5.14	0.32
1800	58.6	-2.32	3.35	2180	43.74	-3.59	2.55	2560	30.5	-5.16	-0.06
1810	61.16	-2.14	3.68	2190	46.97	-3.28	2.96	2570	33.97	-4.69	0.21
1820	55.9	-2.53	3.41	2200	46.76	-3.3	3.17	2580	31.9	-4.96	-0.09
1830	51.86	-2.85	3.31	2210	46.51	-3.32	3.26	2590	31.35	-5.04	0.11
1840	51.19	-2.91	3.37	2220	46.06	-3.37	3.29	2600	29.36	-5.32	-0.28
1850	52.75	-2.78	3.66	2230	46.27	-3.35	3.49	2610	32.33	-4.9	-0.04
1860	50.03	-3.01	3.58	2240	46.57	-3.32	3.63	2620	31.24	-5.05	-0.3
1870	46.6	-3.32	3.36	2250	47.61	-3.22	3.58	2630	30.19	-5.2	-0.42
1880	44.54	-3.51	3.25	2260	50.85	-2.94	3.57	2640	29.12	-5.36	-0.6
1890	43.27	-3.64	3.02	2270	46.52	-3.32	3.09	2650	30.53	-5.15	-0.58
1900	41.78	-3.79	2.78	2280	43.22	-3.64	2.73	2660	30.24	-5.19	-0.72
1910	39.01	-4.09	2.24	2290	38.94	-4.1	2.09	2670	33	-4.81	-0.17
1920	38.8	-4.11	2.03	2300	41.27	-3.84	1.71	2680	33.63	-4.73	-0.18
1930	38.06	-4.2	1.76	2310	41.08	-3.86	1.31	2690	29	-5.38	-0.87
1940	37.6	-4.25	1.52	2320	42.36	-3.73	1.31	2700	28.53	-5.45	-1.07
1950	39.59	-4.02	1.53	2330	43.71	-3.59	1.35				
1960	39.17	-4.07	1.54	2340	45.24	-3.44	1.41				
1970	39.56	-4.03	1.55	2350	42.3	-3.74	1.1				
1980	39.48	-4.04	1.62	2360	39.74	-4.01	0.68				
1990	39.87	-3.99	1.68	2370	36.44	-4.38	0.13				
2000	39.72	-4.01	1.83	2380	37.06	-4.31	0.32				
2010	39.52	-4.03	1.83	2390	37.65	-4.24	0.77				
2020	40.27	-3.95	1.97	2400	36.97	-4.32	0.82				
2030	41.78	-3.79	2.23	2410	35.85	-4.45	0.73				
2040	42.05	-3.76	2.31	2420	36.57	-4.37	0.74				
2050	44.76	-3.49	2.59	2430	35.42	-4.51	0.31				
2060	47.98	-3.19	2.89	2440	34.51	-4.62	0.07				
2070	48.5	-3.14	2.94	2450	33.75	-4.72	0.07				
2080	49.7	-3.04	2.97	2460	31.55	-5.01	0.19				

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Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1700	41.69	-3.42	1.12	2220	35.32	-4.52	1.18	3300	21.28	-6.72	-0.71
1720	45.6	-3.62	1.67	2240	35.56	-4.49	1.11	3320	19.77	-7.04	-0.91
1740	46.13	-3.58	1.93	2260	31.84	-4.97	0.66	3340	21.68	-6.64	-0.6
1760	44.16	-3.75	1.27	2280	36.9	-4.33	1.33	3360	23.66	-6.26	-0.45
1780	46.34	-3.83	0.61	2300	37.41	-4.27	1.53	3380	22.23	-6.53	-0.47
1800	47.86	-3.75	0.75	2320	32.96	-4.82	1.19	3400	21.23	-6.73	-0.25
1820	48.19	-3.88	0.96	2340	31.05	-5.08	1.15	3420	20.8	-6.82	-0.19
1840	48.98	-3.67	1.55	2360	30.13	-5.21	1.31	3440	20.37	-6.91	-0.2
1860	50	-3.73	2.01	2380	26.92	-5.7	1.07	3460	21.88	-6.6	0.28
1880	50.82	-3.59	2.57	2400	26.18	-5.82	0.99	3480	19.63	-7.07	0.31
1900	50.47	-3.53	2.67	2420	23.77	-6.24	0.72	3500	17.54	-7.56	0.21
1920	54.2	-3.64	3.01	2440	22.49	-6.48	0.14	3520	17.78	-7.5	0.16
1940	51.64	-3.67	2.7	2460	21.93	-6.59	-0.2	3540	17.02	-7.69	-0.55
1960	48.31	-3.63	2.87	2480	20.61	-6.86	0.03	3560	14.45	-8.4	-1.56
1980	45.5	-3.56	2.97	2500	17.7	-7.52	-0.62	3580	13.93	-8.56	-1.83
2000	46.88	-3.56	2.98	2520	17.06	-7.68	-0.9	3600	14.32	-8.44	-1.57
2020	47.97	-3.71	2.3	2540	18.28	-7.38	-0.63	3620	14.29	-8.45	-1.69
2040	48.31	-3.63	2.6	2560	18.2	-7.4	-0.57	3640	13	-8.86	-2.07
2060	48.19	-3.46	2.7	2580	18.11	-7.42	-0.22	3660	11.09	-9.55	-2.85
2080	42.76	-3.26	2.17	2600	15.92	-7.98	-0.79	3680	9.2	-10.36	-3.81
2100	39.26	-3.22	1.65	2620	14.83	-8.29	-1.74	3700	8.36	-10.78	-4.21
2120	39.81	-3.04	1.57	2640	13.27	-8.77	-2.45	3720	7.46	-11.27	-4.75
2140	38.82	-2.98	1.83	2660	13	-8.86	-2.51	3740	6.14	-12.12	-5.69
2160	40.46	-2.85	2.26	2680	12.27	-9.11	-2.63	3760	5.83	-12.34	-6.01
2180	44.57	-2.55	2.64	2700	12.88	-8.9	-2.31	3780	5.22	-12.82	-6.52
2200	38.99	-2.52	1.97					3800	4.58	-13.39	-6.97
								3820	3.55	-14.5	-7.91
								3840	3.01	-15.22	-8.47
								3860	2.4	-16.19	-9.3
								3880	2.05	-16.89	-10
								3900	1.65	-17.82	-10.93
								3920	1.47	-18.34	-11.25
								3940	1.27	-18.97	-11.67
								3960	1.07	-19.7	-12.45
								3980	1	-20.01	-12.91
								4000	0.93	-20.31	-13.27
								4020	0.98	-20.09	-12.85
								4040	1.02	-19.91	-12.63
								4060	1.12	-19.52	-12.19
								4080	1.18	-19.28	-11.82
								4100	1.32	-18.79	-11.26
								4120	1.44	-18.43	-10.99
								4140	1.52	-18.18	-10.63
								4160	1.64	-17.85	-10.12
								4180	1.69	-17.71	-9.88

Confidential Information

								4200	1.67	-17.76	-9.93
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ANT5

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2300	13.68	-8.64	-4.18	3300	14.01	-8.53	-5.07
2310	14.65	-8.34	-3.77	3320	10.65	-9.73	-6.57
2320	15.6	-8.07	-3.6	3340	11.65	-9.34	-6.25
2330	16.43	-7.84	-3.4	3360	10.67	-9.72	-6.64
2340	17.75	-7.51	-2.64	3380	10.18	-9.92	-5.95
2350	17.72	-7.52	-2.47	3400	11.19	-9.51	-6.06
2360	18.38	-7.36	-2.24	3420	10.46	-9.81	-6.37
2370	19.44	-7.11	-2.12	3440	10.78	-9.68	-6.61
2380	19.74	-7.05	-1.86	3460	10.76	-9.68	-6.76
2390	20.33	-6.92	-1.4	3480	10.69	-9.71	-6.94
2400	21.43	-6.69	-0.82	3500	11.39	-9.44	-6.03
2410	21.89	-6.6	-0.8	3520	11.94	-9.23	-5.72
2420	23.61	-6.27	-0.41	3540	11.65	-9.34	-5.69
2430	25.41	-5.95	-0.04	3560	13	-8.86	-4.82
2440	25.32	-5.97	0.17	3580	13.15	-8.81	-4.19
2450	26.78	-5.72	0.53	3600	14.51	-8.38	-3.65
2460	26.62	-5.75	0.55	3620	15.44	-8.11	-3.37
2470	27.55	-5.6	0.69	3640	15.81	-8.01	-3.15
2480	28.88	-5.39	1.04	3660	16.77	-7.75	-2.07
2490	30.57	-5.15	1.36	3680	17.41	-7.59	-1.81
2500	29.74	-5.27	1.23	3700	17.94	-7.46	-1.34
2510	30.93	-5.1	1.32	3720	19.88	-7.02	-0.97
2520	30.27	-5.19	1.3	3740	19.25	-7.15	-1.03
2530	31.78	-4.98	1.41	3760	22.65	-6.45	-0.61
2540	30.2	-5.2	1.24	3780	21.71	-6.63	-1
2550	30.49	-5.16	1.04	3800	21.05	-6.77	-1.85
2560	31.11	-5.07	1.12	3820	22.61	-6.46	-1.25
2570	32.94	-4.82	1.46	3840	22.27	-6.52	-1.53
2580	31.09	-5.07	1.38	3860	24.98	-6.02	-1.16
2590	30.19	-5.2	1.51	3880	26.21	-5.82	-1.19
2600	31.21	-5.06	1.75	3900	27.82	-5.56	-1.07
2610	32.11	-4.93	2.03	3920	30.28	-5.19	-0.82
2620	30.49	-5.16	1.92	3940	31.11	-5.07	-0.78
2630	29.16	-5.35	1.79	3960	31.67	-4.99	-0.67
2640	30.09	-5.22	1.83	3980	36.84	-4.34	0.03
2650	30.39	-5.17	1.89	4000	39.36	-4.05	0.6
2660	32.74	-4.85	2.16	4020	40.97	-3.88	1.09
2670	33.11	-4.8	2.27	4040	47.37	-3.24	1.79
2680	32.94	-4.82	2.17	4060	50.24	-2.99	2.3
2690	28.51	-5.45	1.59	4080	51.47	-2.88	2.45

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2700	28.23	-5.49	1.4	4100	50.79	-2.94	2.55
				4120	51.6	-2.87	2.55
				4140	49.46	-3.06	2.55
				4160	48.68	-3.13	2.3
				4180	49.76	-3.03	2.01
				4200	49.29	-3.07	2.11

ANT6

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
3300	40.9	-3.88	-1.5	3760	49.15	-3.08	-0.3
3320	39.54	-4.03	-1.6	3780	48.26	-3.16	0.69
3340	45.06	-3.46	-1.7	3800	48.21	-3.17	2.75
3360	44.47	-3.52	-1.01	3820	48.54	-3.14	1.18
3380	45.54	-3.42	-1.35	3840	47.1	-3.27	0.86
3400	47.25	-3.26	-1.66	3860	48.5	-3.14	0.82
3420	45.87	-3.38	-1.66	3880	48.05	-3.18	0.7
3440	46.97	-3.28	-1.85	3900	50.63	-2.96	1.1
3460	45.5	-3.42	-1.63	3920	48	-3.19	0.87
3480	44.53	-3.51	-1.22	3940	48.13	-3.18	1.05
3500	44.99	-3.47	-1.19	3960	46.31	-3.34	1.21
3520	44.99	-3.47	-1.43	3980	47.91	-3.2	1.43
3540	42.83	-3.68	-1.28	4000	48.62	-3.13	1.21
3560	45.27	-3.44	-1.44	4020	46.96	-3.28	0.64
3580	43.14	-3.65	-1.39	4040	50.77	-2.94	0.77
3600	43.68	-3.6	-1.36	4060	48.39	-3.15	0.67
3620	43.9	-3.57	-1.42	4080	49.17	-3.08	0.75
3640	41.96	-3.77	-0.6	4100	50.13	-3	0.86
3660	43.76	-3.59	-1.03	4120	48.11	-3.18	1.03
3680	42.53	-3.71	-0.87	4140	47.33	-3.25	1.21
3700	43.54	-3.61	-1.55	4160	44.89	-3.48	1.3
3720	45.64	-3.41	-1.35	4180	42.86	-3.68	0.89
3740	45.78	-3.39	-0.88	4200	41.13	-3.86	0.61

ANT7

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2300	5.89	-12.3	-8.45	3300	11.87	-9.26	-4.84	4120	11.18	-9.52	-5.92
2310	6.91	-11.6	-7.97	3320	13.67	-8.64	-3.61	4140	10.56	-9.76	-5.92
2320	7.58	-11.2	-7.36	3340	15.88	-7.99	-3.09	4160	9.65	-10.15	-5.9
2330	7.84	-11.06	-7.19	3360	19.1	-7.19	-1.9	4180	7.44	-11.29	-6.39
2340	8.61	-10.65	-6.88	3380	21.32	-6.71	-1.42	4200	8.32	-10.8	-5.75
2350	8.86	-10.52	-6.84	3400	26.56	-5.76	-0.03	4120	11.18	-9.52	-5.92
2360	9.68	-10.14	-6.09	3420	30.1	-5.21	0.51				

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2370	10.29	-9.87	-5.73	3440	34.3	-4.65	1.11				
2380	10.46	-9.8	-5.74	3460	36.81	-4.34	1.45				
2390	10.56	-9.76	-5.81	3480	37.56	-4.25	1.44				
2400	11.47	-9.4	-5.25	3500	36.26	-4.41	0.98				
2410	11.91	-9.24	-4.61	3520	35.36	-4.51	0.64				
2420	13.53	-8.69	-3.98	3540	33.76	-4.72	0.16				
2430	14.18	-8.48	-4.07	3560	32.04	-4.94	0.28				
2440	13.45	-8.71	-4.22	3580	33.82	-4.71	0.29				
2450	14.57	-8.36	-3.59	3600	33.24	-4.78	0.13				
2460	15.49	-8.1	-3.22	3620	31.59	-5	-0.2				
2470	16.71	-7.77	-2.82	3640	30.9	-5.1	-0.56				
2480	17.77	-7.5	-2.61	3660	28.89	-5.39	-0.69				
2490	19.12	-7.18	-2.21	3680	25.45	-5.94	-1.28				
2500	18.71	-7.28	-2.46	3700	23.63	-6.26	-1.32				
2510	20.64	-6.85	-2.04	3720	20.52	-6.88	-2.03				
2520	20.85	-6.81	-2.09	3740	20.76	-6.83	-1.92				
2530	21.65	-6.65	-2.11	3760	18.54	-7.32	-2.31				
2540	21.22	-6.73	-2.31	3780	18.17	-7.41	-2.31				
2550	22.03	-6.57	-2.24	3800	18.12	-7.42	-2.68				
2560	22.98	-6.39	-2.22	3820	17.1	-7.67	-2.65				
2570	22.62	-6.46	-2.48	3840	18.15	-7.41	-2.59				
2580	20.92	-6.79	-3.31	3860	16.73	-7.77	-3.05				
2590	20.21	-6.94	-3.4	3880	16.85	-7.73	-3.11				
2600	21.97	-6.58	-2.75	3900	18.49	-7.33	-2.74				
2610	22.25	-6.53	-2.46	3920	15.74	-8.03	-3.53				
2620	19.67	-7.06	-3.14	3940	16.84	-7.74	-3.33				
2630	19.11	-7.19	-3.01	3960	16.84	-7.74	-3.18				
2640	20.25	-6.94	-2.75	3980	15.76	-8.02	-3.75				
2650	19.57	-7.08	-2.81	4000	16.76	-7.76	-3.65				
2660	18.74	-7.27	-3.03	4020	16.48	-7.83	-3.96				
2670	16.77	-7.75	-3.65	4040	16.94	-7.71	-3.89				
2680	14.76	-8.31	-4.2	4060	16.6	-7.8	-3.99				
2690	14.41	-8.41	-4.5	4080	15.4	-8.13	-4.42				
2700	14.05	-8.52	-4.58	4100	14.36	-8.43	-4.76				

ANT9

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	30.9	-5.1	0.32	1550	41.98	-3.77	1.09
2410	29.72	-5.27	0.23	1555	38.73	-4.12	0.6
2420	31.12	-5.07	0.47	1560	42.85	-3.68	1
2430	31.92	-4.96	0.75	1565	38.11	-4.19	0.51
2440	33.27	-4.78	1	1570	41.5	-3.82	0.87
2450	34.36	-4.64	1.21	1575	37.24	-4.29	0.44
2460	34.12	-4.67	1.29	1580	39.99	-3.98	0.6

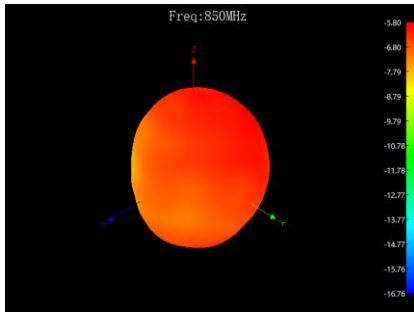
Confidential Information

2470	34.36	-4.64	1.46	1585	36.64	-4.36	0.29
2480	35.73	-4.47	1.73	1590	36.73	-4.35	0.27
2490	36.48	-4.38	1.92	1595	35.97	-4.44	0.23
2500	37.15	-4.3	2.03	1600	32.96	-4.82	-0.1
5150	23.75	-6.24	-2.11	5510	28.65	-5.43	-0.44
5160	23.31	-6.33	-2.12	5520	30.32	-5.18	-0.2
5170	23.2	-6.34	-1.89	5530	28.43	-5.46	-0.57
5180	22.37	-6.5	-2.7	5540	28.1	-5.51	-0.62
5190	22.75	-6.43	-2.72	5550	26.5	-5.77	-0.93
5200	22.88	-6.4	-2.9	5560	26.35	-5.79	-0.73
5210	24.22	-6.16	-2.55	5570	26.51	-5.77	-0.85
5220	24.06	-6.19	-2.84	5580	26.24	-5.81	-0.76
5230	24.36	-6.13	-2.77	5590	25.11	-6	-0.93
5240	22.81	-6.42	-3.01	5600	25.57	-5.92	-0.8
5250	24.58	-6.09	-2.53	5610	27.31	-5.64	-0.64
5260	25.45	-5.94	-2.38	5620	25.03	-6.02	-0.77
5270	25.55	-5.93	-2.32	5630	22.98	-6.39	-1.24
5280	27.17	-5.66	-2.07	5640	21.7	-6.64	-1.36
5290	27	-5.69	-2.13	5650	24.06	-6.19	-0.98
5300	26.54	-5.76	-2.24	5660	21.83	-6.61	-1.32
5310	27.66	-5.58	-1.94	5670	22.04	-6.57	-1.18
5320	28.97	-5.38	-1.98	5680	22.7	-6.44	-0.15
5330	28.09	-5.52	-1.77	5690	22.08	-6.56	-0.25
5340	30.12	-5.21	-1.54	5700	22.91	-6.4	-0.15
5350	30.82	-5.11	-1.25	5710	21.78	-6.62	-0.35
5360	30.84	-5.11	-1.46	5720	22.54	-6.47	-0.24
5370	31.57	-5.01	-1.13	5730	20.94	-6.79	-0.6
5380	31.08	-5.07	-1.09	5740	20.99	-6.78	-0.34
5390	28.85	-5.4	-1.45	5750	21.09	-6.76	-0.28
5400	33.31	-4.77	-0.61	5760	22.13	-6.55	-0.11
5410	32.41	-4.89	-0.74	5770	21.63	-6.65	-0.24
5420	34.34	-4.64	-0.58	5780	21.93	-6.59	-0.18
5430	33.2	-4.79	-0.62	5790	22.54	-6.47	-0.04
5440	31.93	-4.96	-0.5	5800	22.03	-6.57	-0.09
5450	30.54	-5.15	-0.77	5810	22.34	-6.51	0.03
5460	31.22	-5.06	-0.08	5820	21.13	-6.75	-0.18
5470	31.04	-5.08	-0.33	5830	20.75	-6.83	-0.34
5480	31.5	-5.02	-0.38	5840	21.33	-6.71	-0.26
5490	29.66	-5.28	-0.48	5850	21.78	-6.62	-0.08
5500	29.75	-5.27	-0.49				

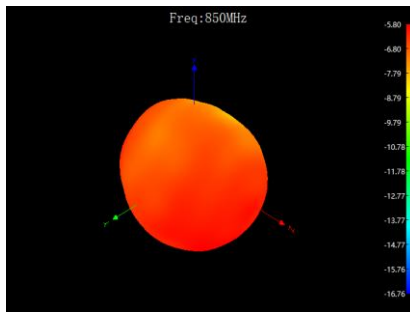
2.2 3D Pattern

ANT1

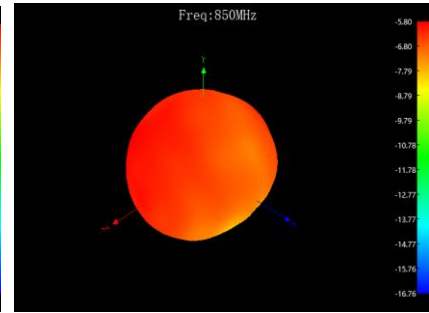
H plane



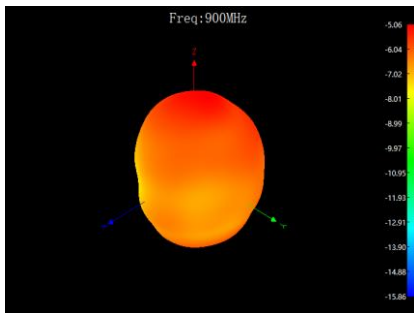
E1 plane



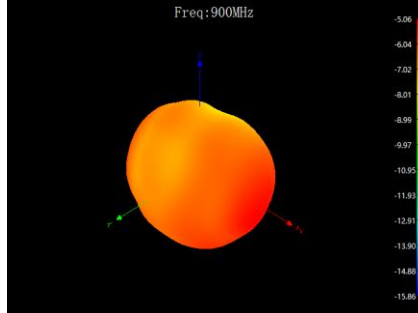
E2 plane



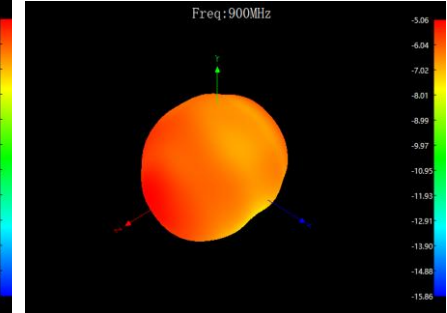
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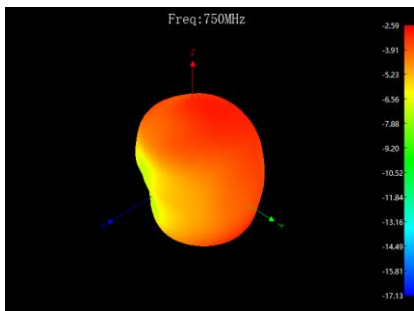
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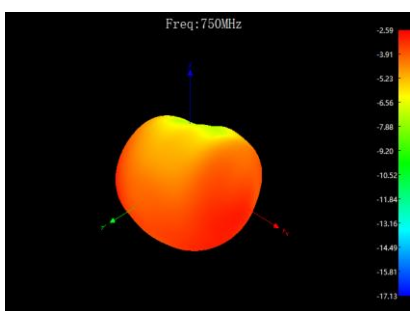
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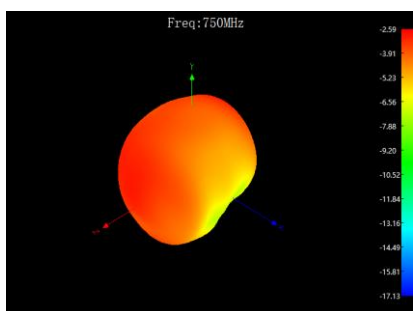
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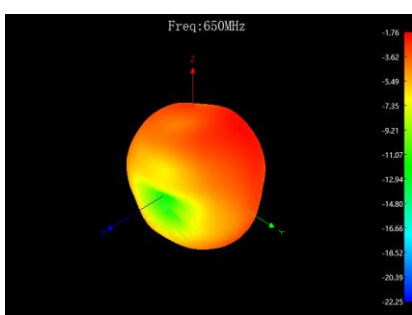
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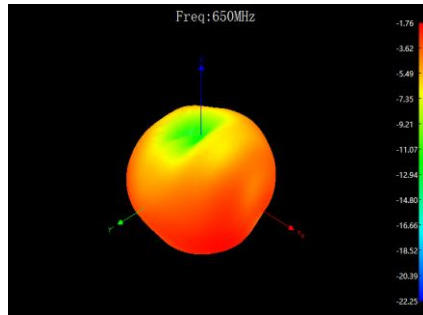
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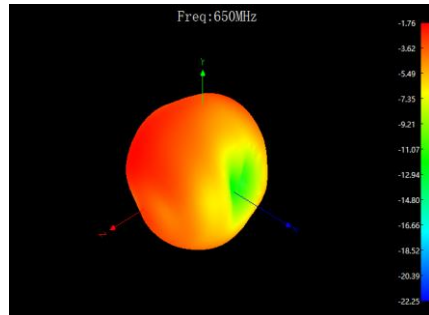
H plane



E1 plane



E2 plane

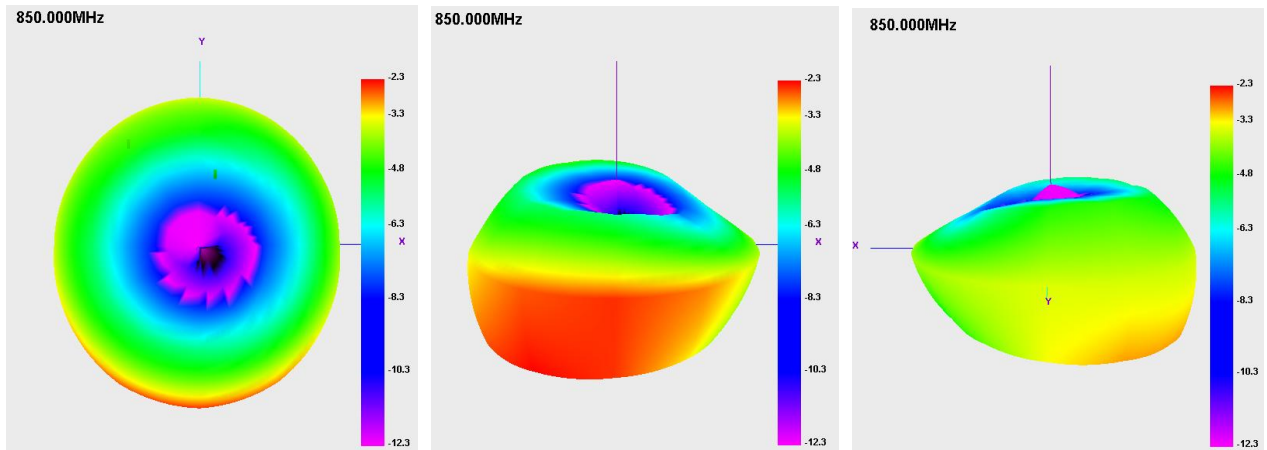


ANT2

H plane

E1 plane

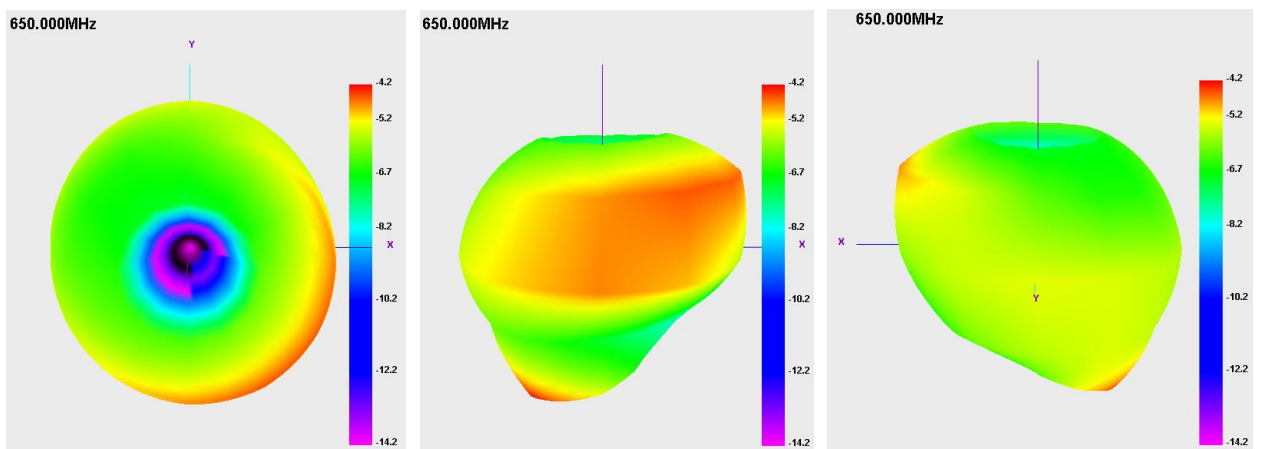
E2 plane



H plane

E1 plane

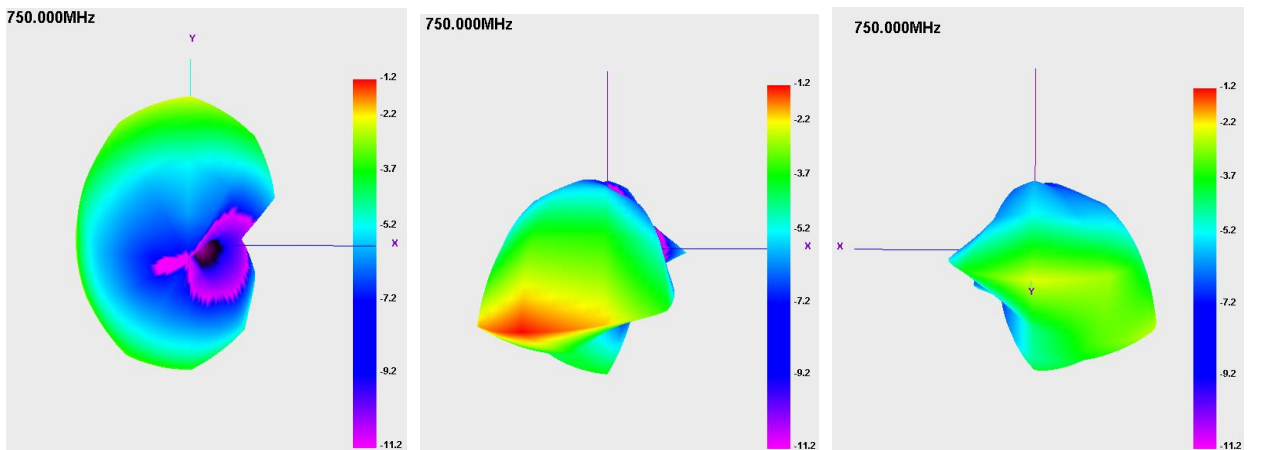
E2 plane



H plane

E1 plane

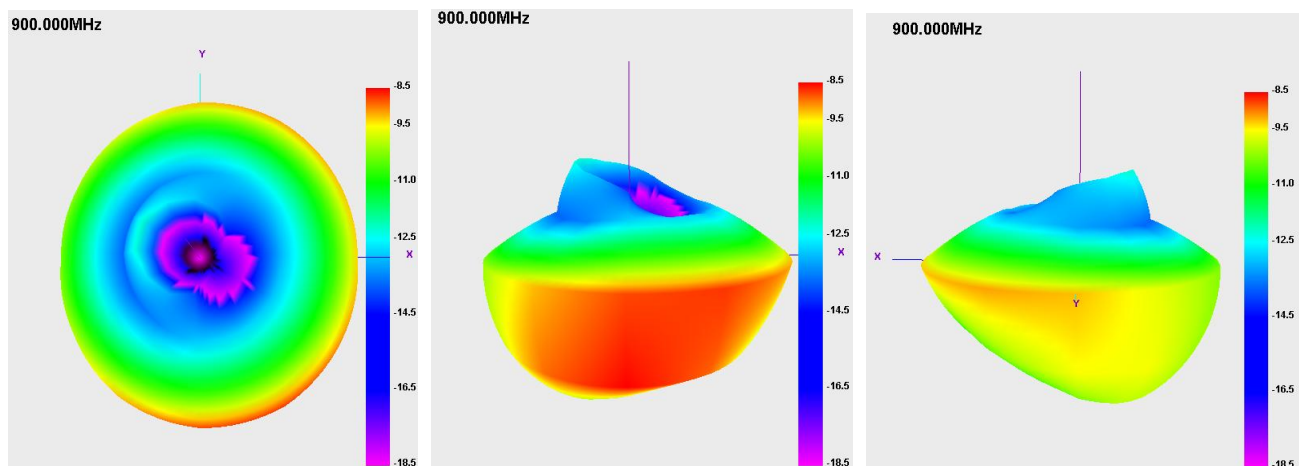
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H plane

E1 plane

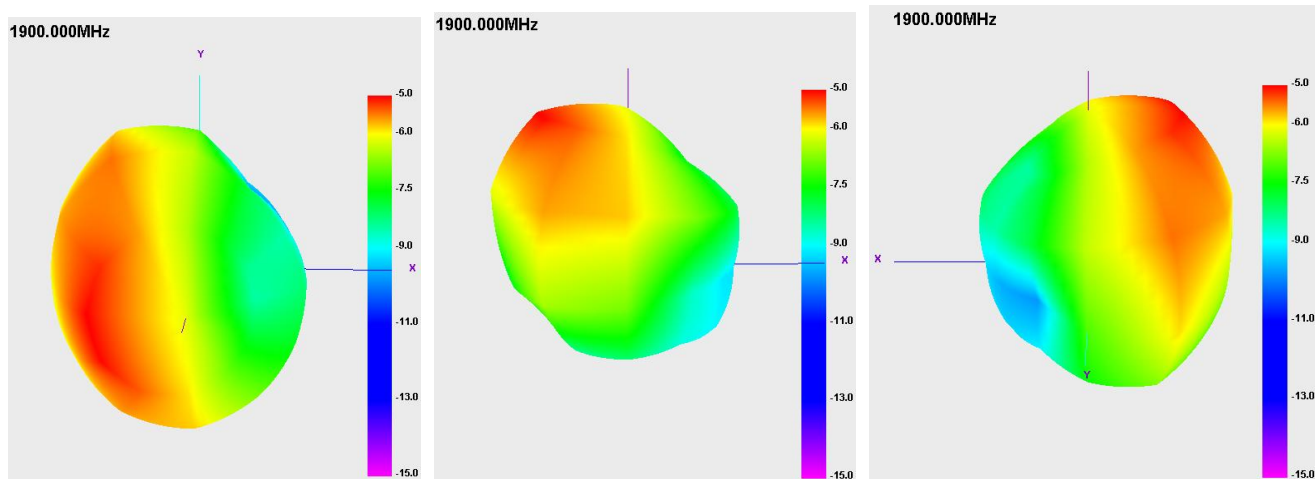
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H plane

E1 plane

E2 plane

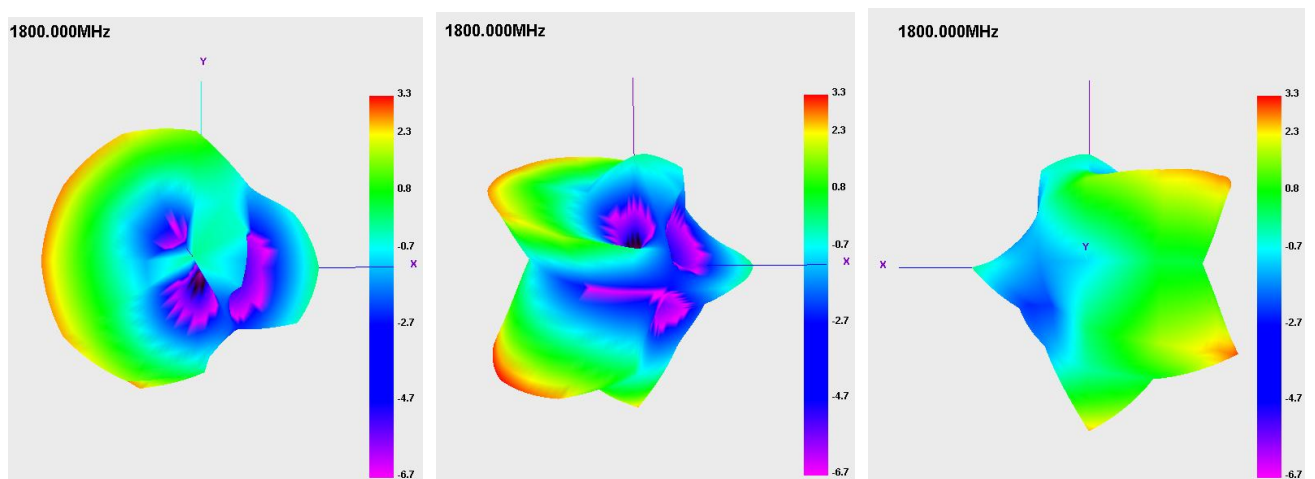


ANT3

H plane

E1 plane

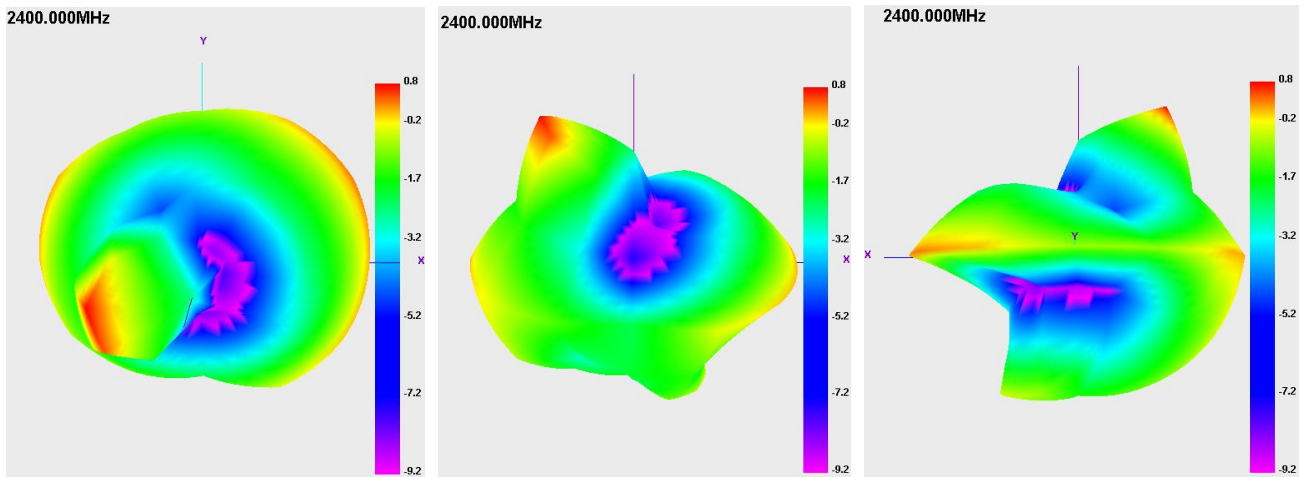
E2 plane



H plane

E1 plane

E2 plane

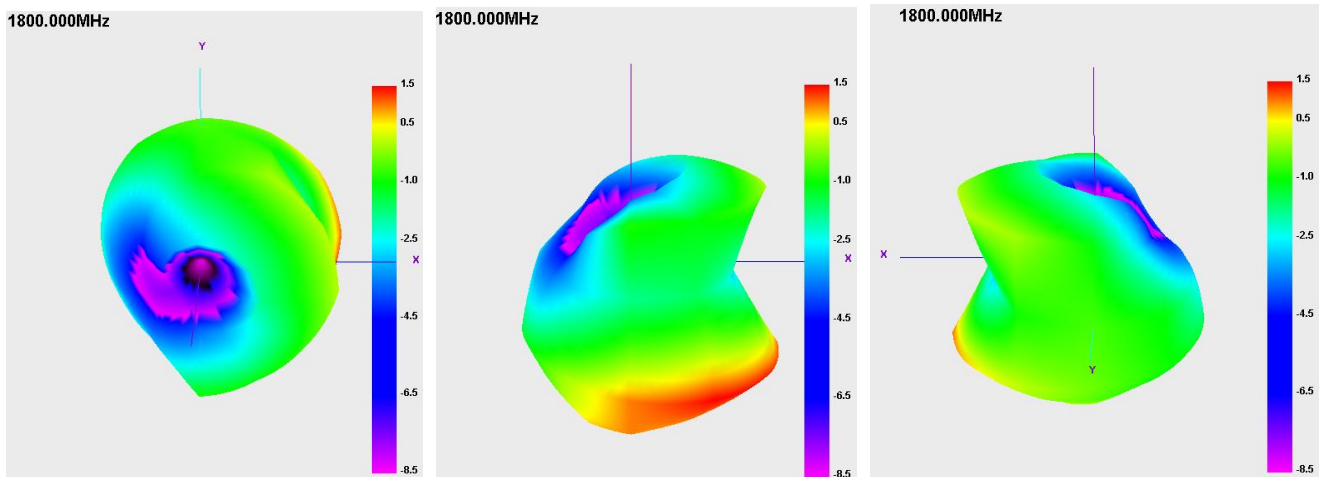


ANT4

H plane

E1 plane

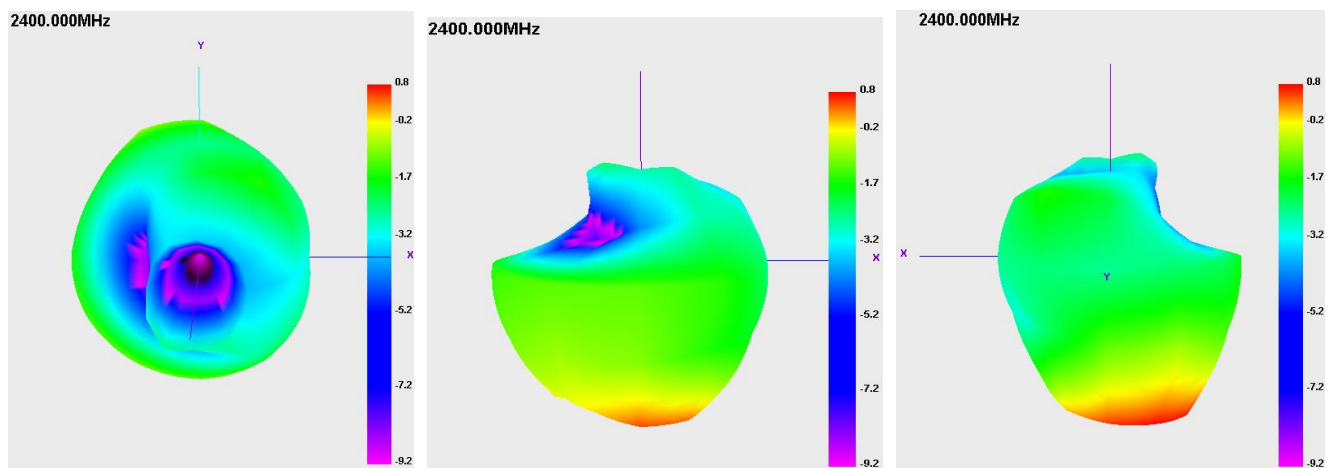
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H plane

E1 plane

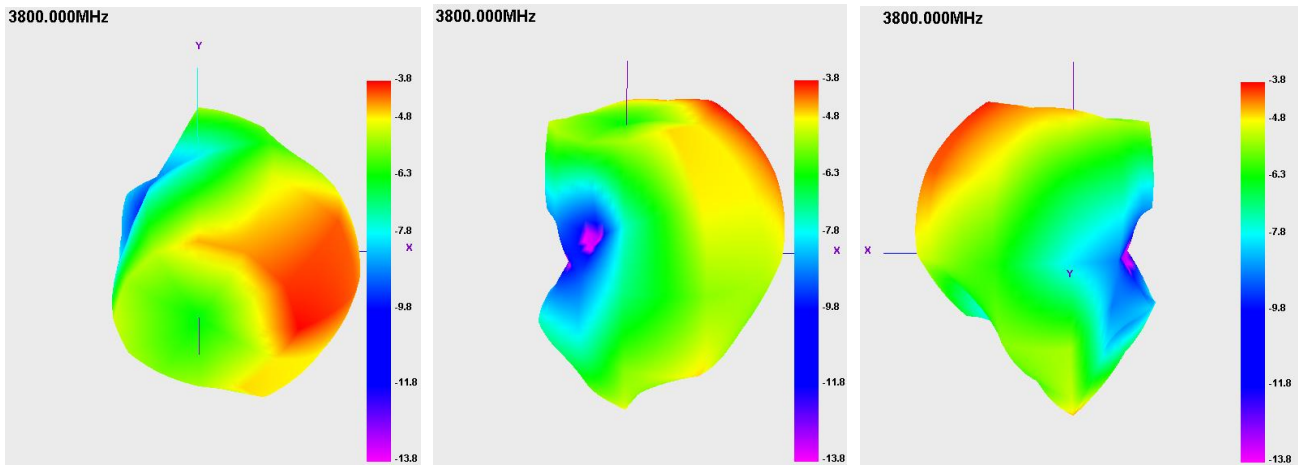
E2 plane



H plane

E1 plane

E2 plane

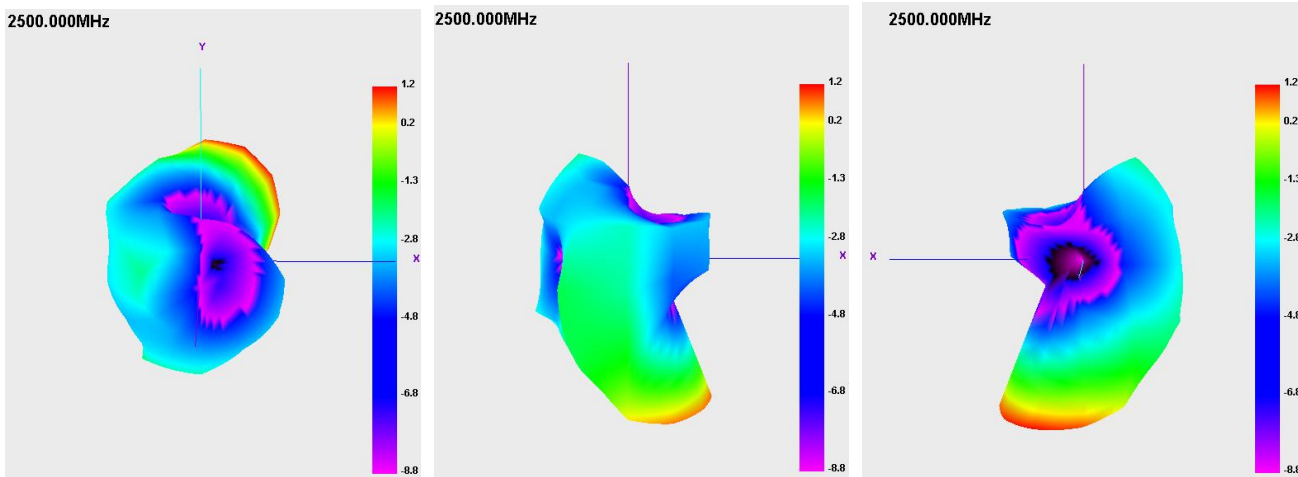


ANT5

H plane

E1 plane

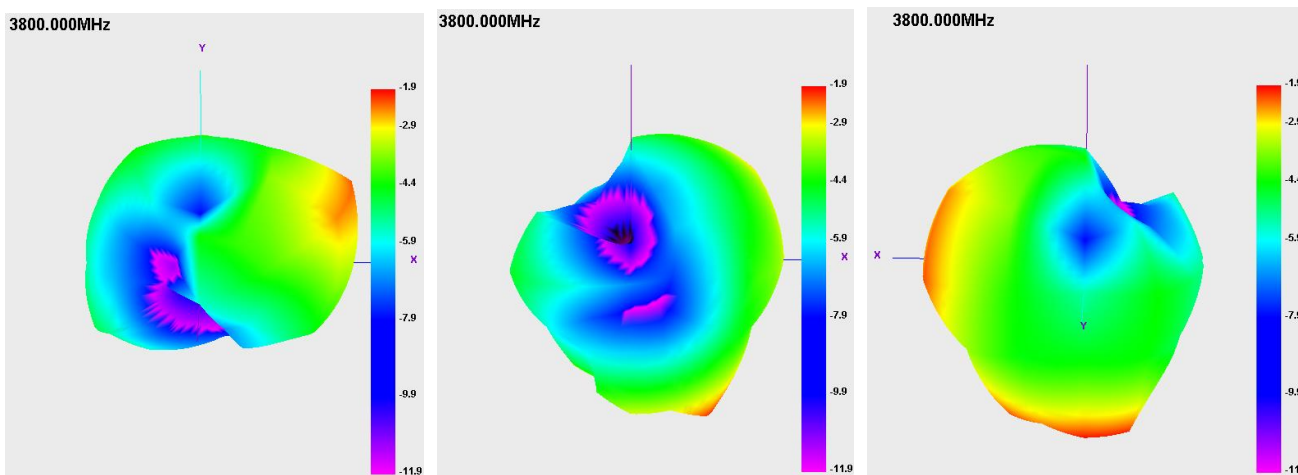
E2 plane



H plane

E1 plane

E2 plane

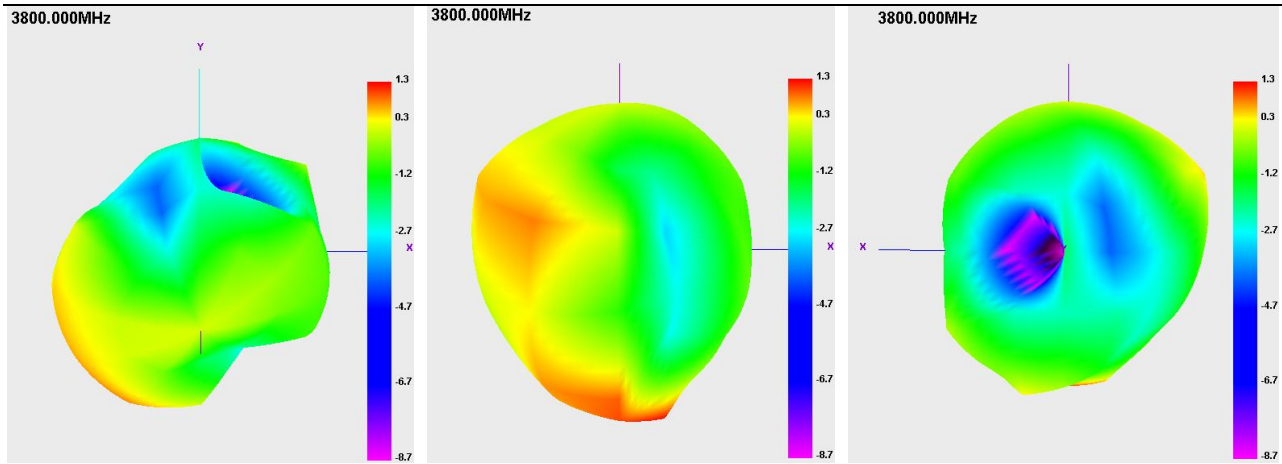


ANT6

H plane

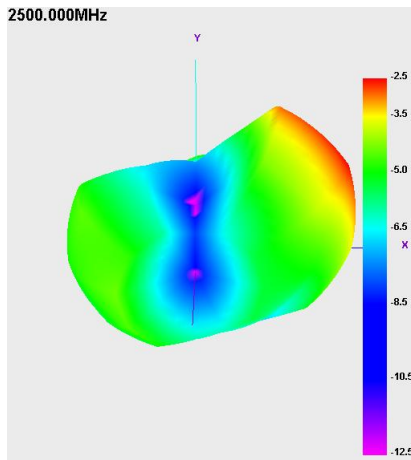
E1 plane

E2 plane

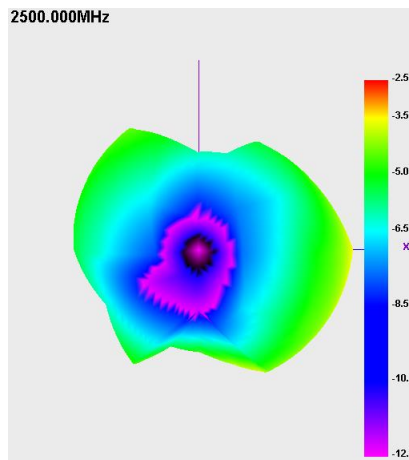


ANT7

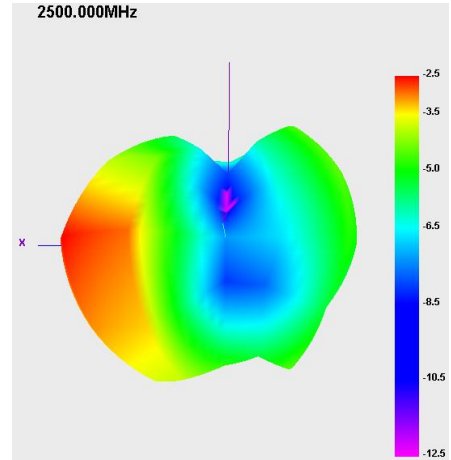
H plane



E1 plane



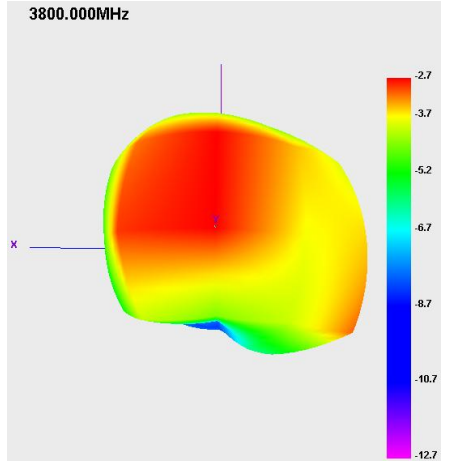
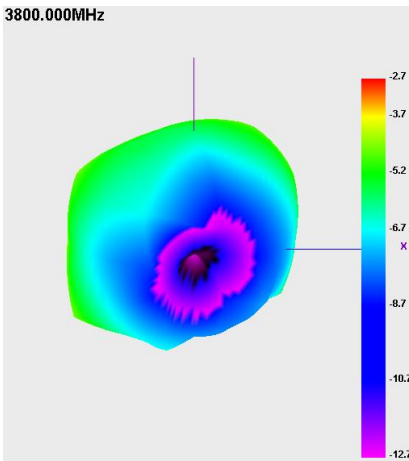
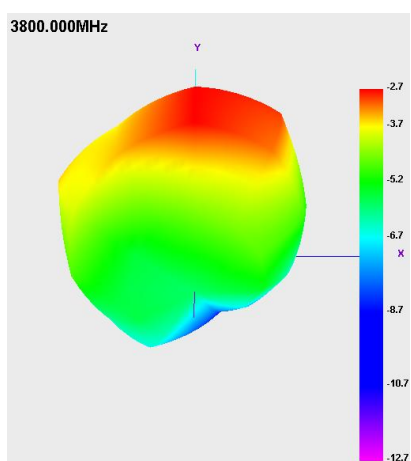
E2 plane



H plane

E1 plane

E2 plane



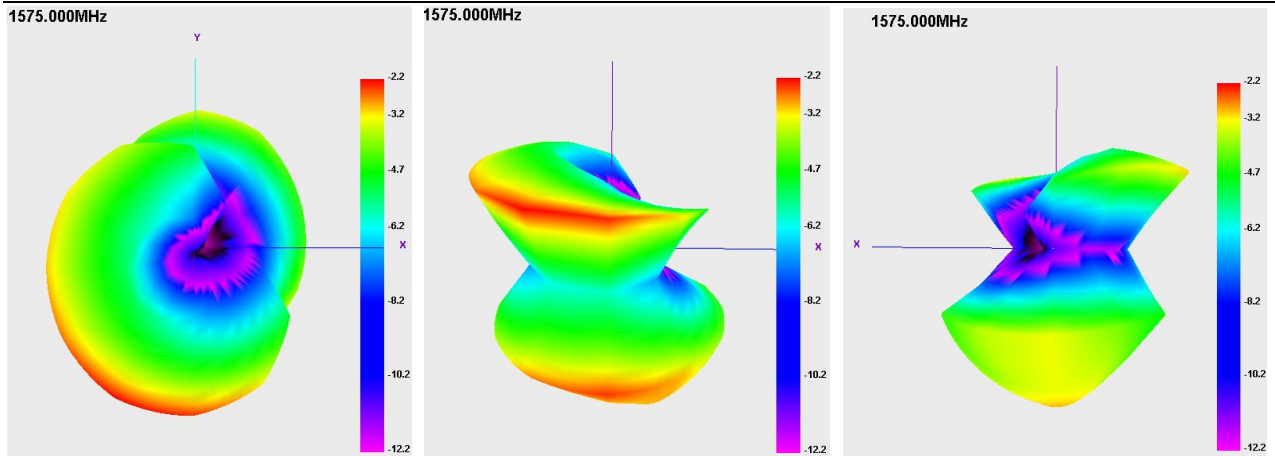
ANT9

H plane

E1 plane

E2 plane

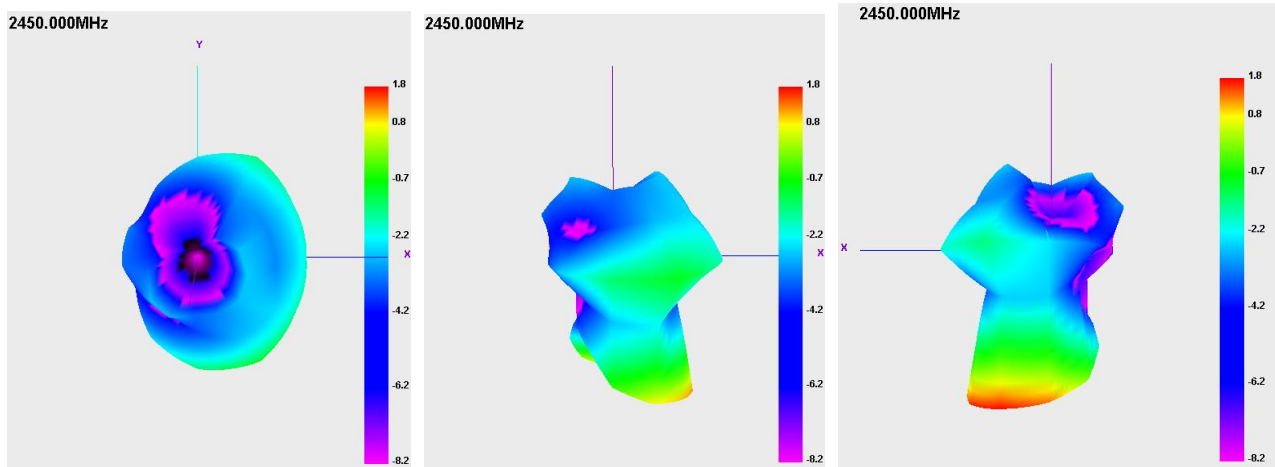
Confidential Information



H plane

E1 plane

E2 plane



H plane

E1 plane

E2 plane

