

SPECIFICATION

Shenzhen 3Good Wireless Communication Co., Ltd

501-508, Jinfulai Building, No. 49-1 Dabao Road, Bao 'an District, Shenzhen

Antenna Report

Product approval sheet

FCC ID	2AUOUT105	Band	WCDMA: B2/4/5/19; LTE: B2/4/5/7/12/13/14/17/18/19/25/26/29/30/38/41(P C2/3)/48/66/71, NR: n2/n5/n7/n25/n26/n29/n30/n41/n48/n66/n71/n77(PC2/3)/n78(PC2/3)
Project	T105	Colour	Black

Customer check:

Reach requirement of customer: ☒OK ☐NG

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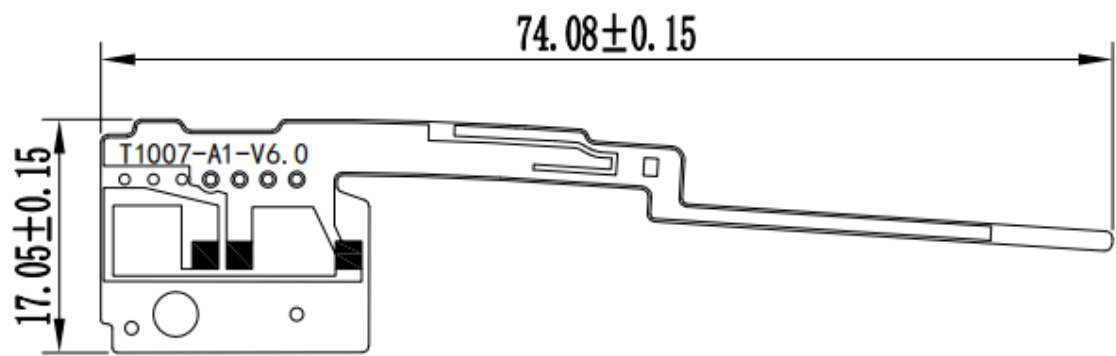
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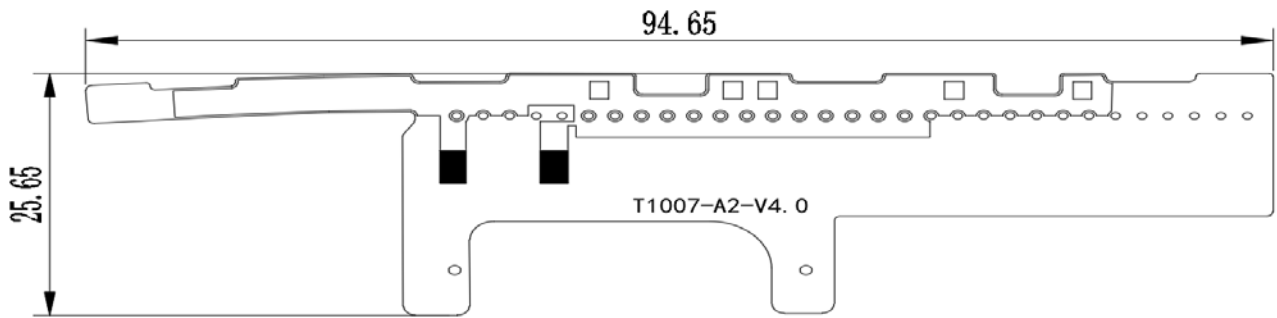
1 General description

1.1 Antenna appearing diagram

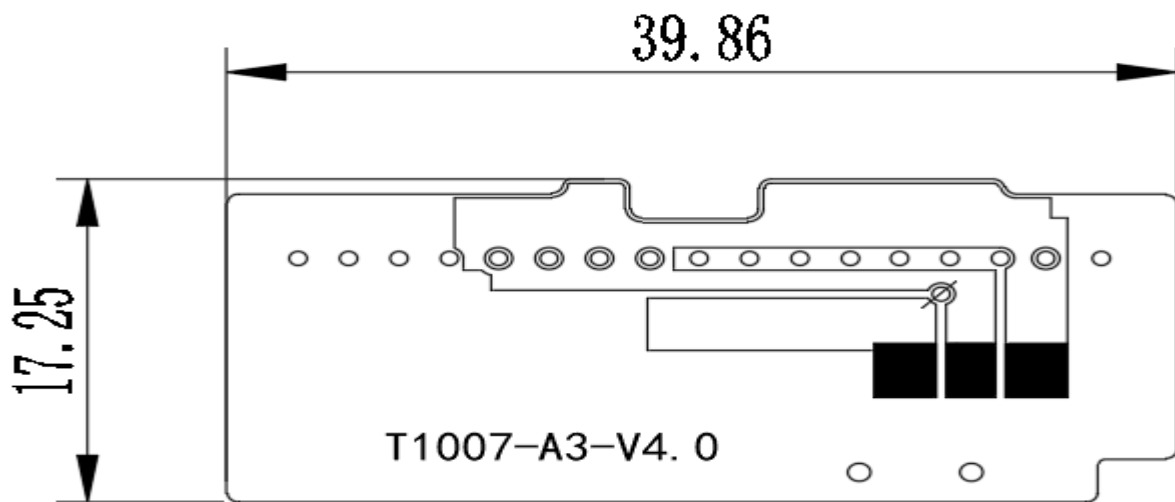
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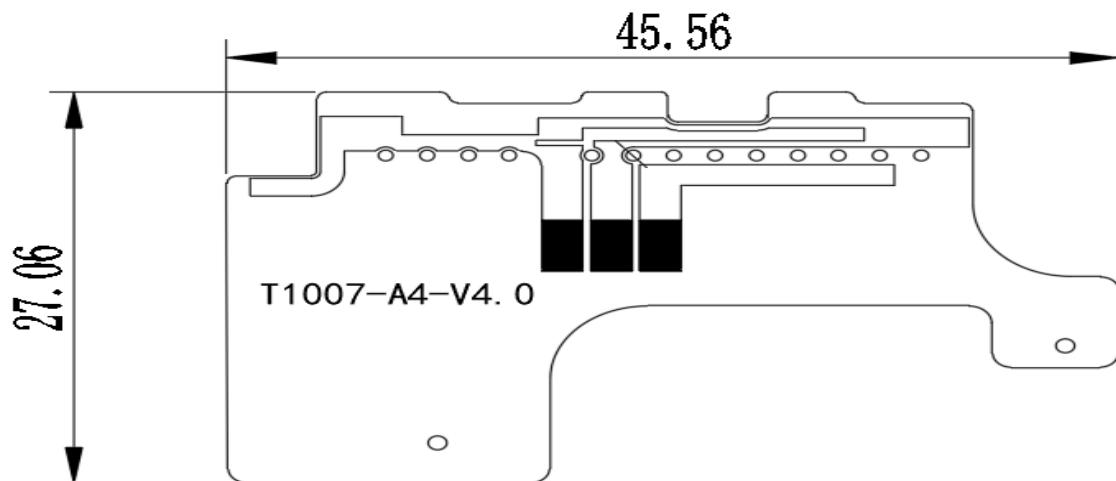
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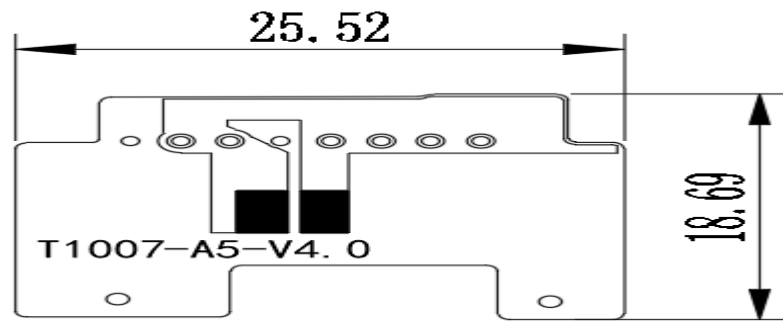
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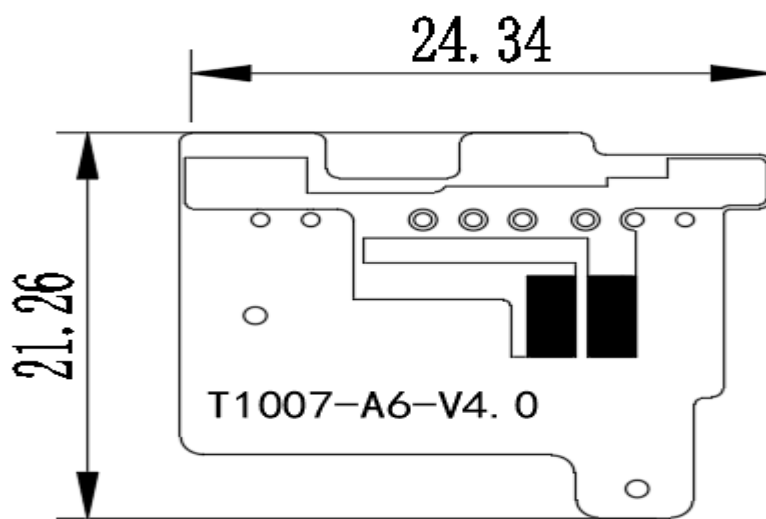
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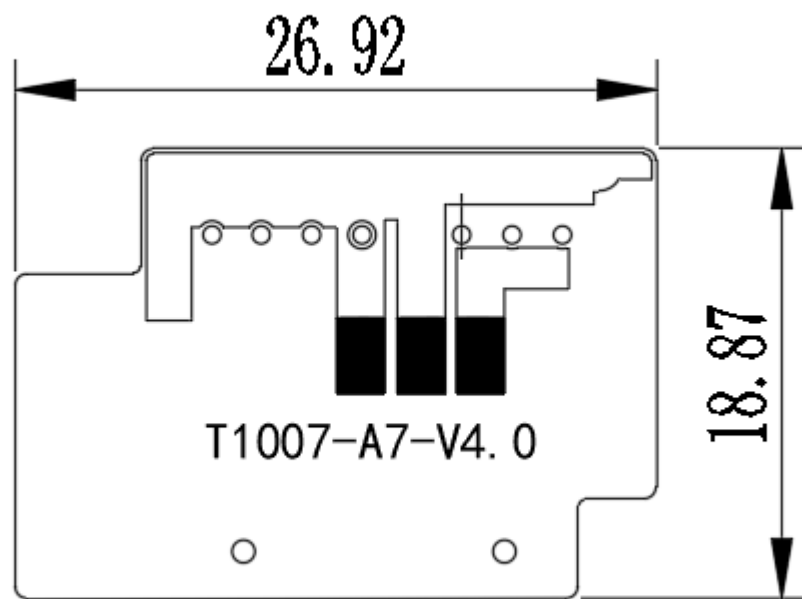
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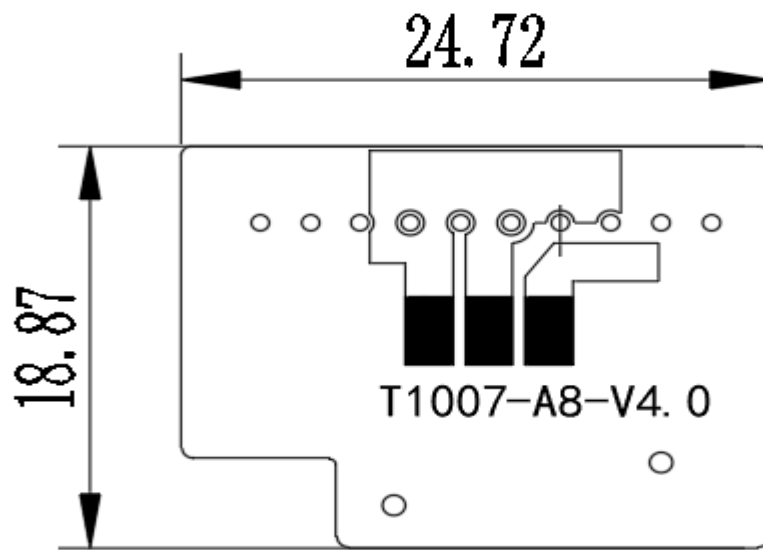
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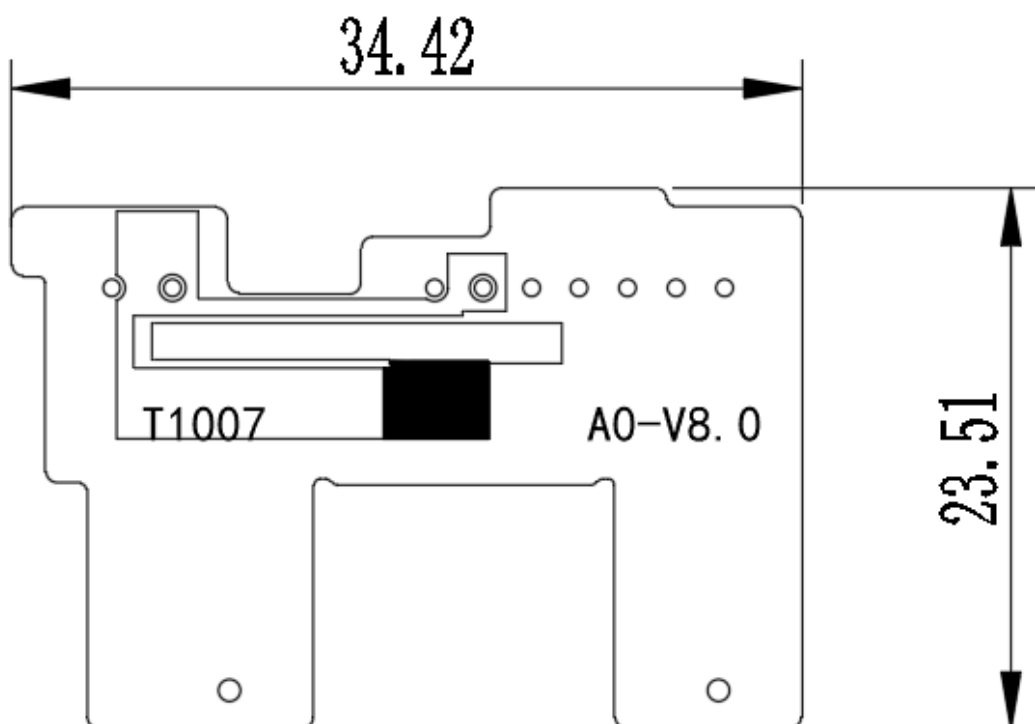
ANT7



ANT8



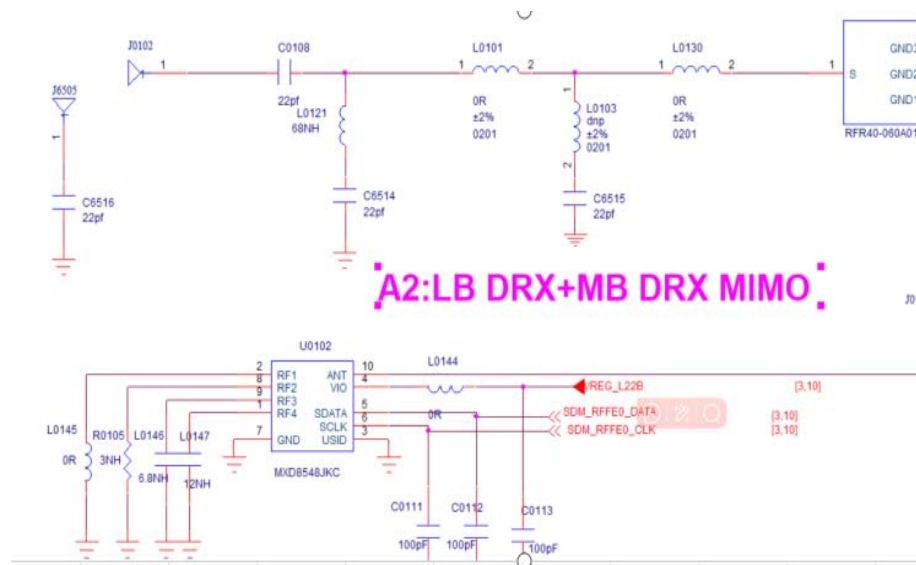
ANT9



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RF1 (L0107)	0Ω	LTE:B1/2/3/4/8/25/66	N2/25/66
RF2 (R0102)	3.9NH	LTE:B5/18/19/20/26	N5/26
RF3 (L0108)	12NH	LTE:B13/14	N14
RF4 (L0109)	27NH	LTE:B12/17/29	N12/N29
NA		LTE:B71 /N71	

ANT2 Antenna



ANT2	
Element	Value
L0121	0Ω
C6514	10NH

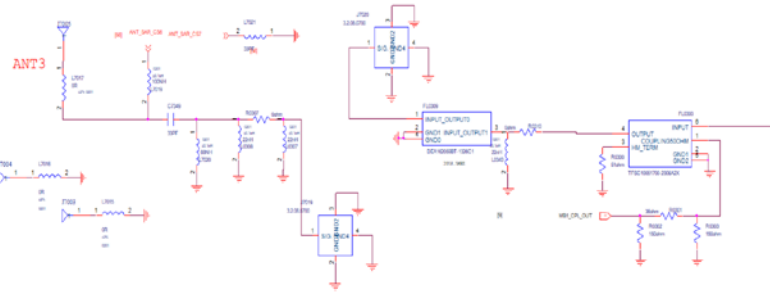
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L0101	4.3PF
L0103	NA
L0130	0Ω

RF1 (L0145)	0Ω	LTE:B1/2/3/4/8/25/66 N2/25/66 (RX)
RF2 (R0105)	2.7NH	LTE:B5/18/19/20/26 N5/26 (RX)
RF3 (L0146)	8.2NH	LTE:B12/13/14/17/29 N12/14/29 (RX)
RF4 (L0147)	22NH	LTE:B71/N71 (RX)

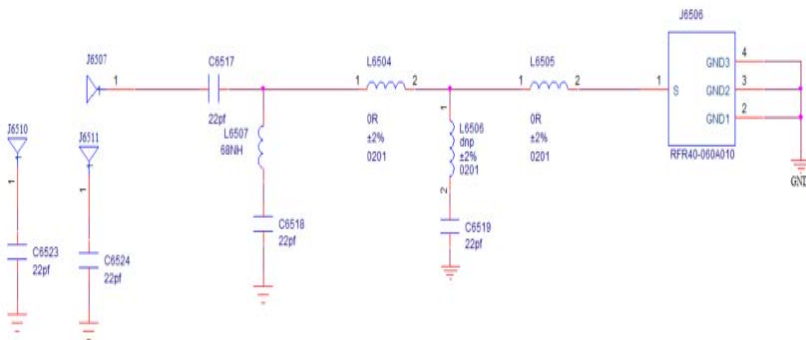
ANT3 Antenna

A3:MHB DRX MHB TX1



ANT4 Antenna

ANT4 MB TRX HB PRX MIMO



ANT5 Antenna

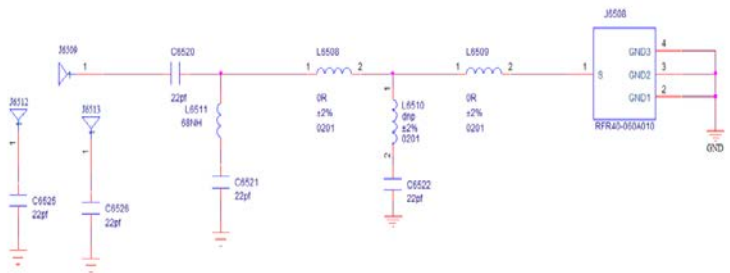
ANT3

Element	Value
L7017	0Ω
L0308	NA
R0307	2NH
L0307	NA
L7015	0Ω
L7016	0Ω

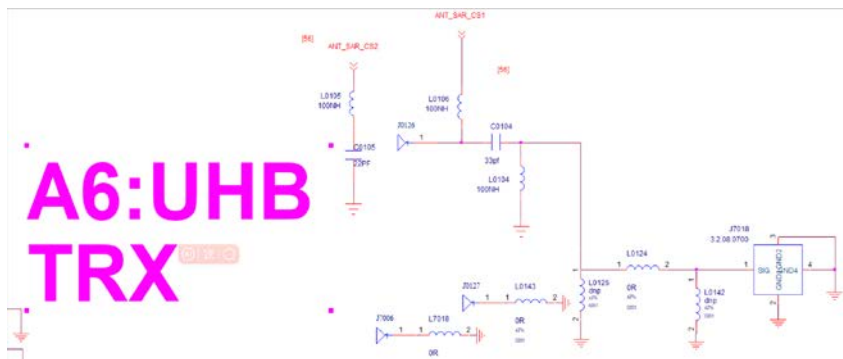
ANT4

Element	Value
C6517	0Ω
L6507	0Ω
C6518	0.5PF
L6504	3.6NH
L6506	NA
C6519	NA
L6505	0Ω
C6523	0Ω
C6524	0Ω

A5:HB TRX +UHB DRX



ANT6 Antenna



ANT5	
Element	Value
C6520	0Ω
L6511	NA
C6521	NA
L6508	0Ω
L6510	0.5PF
C6522	0Ω
L6509	0Ω
C6525	0Ω
C6526	0Ω

ANT6	
Element	Value
L0106	100NH
L0104	33PF
L0124	1NH
L0142	NA
L0143	NA
L7018	33PF

1.3 Antenna PORT

1.4 Antenna location

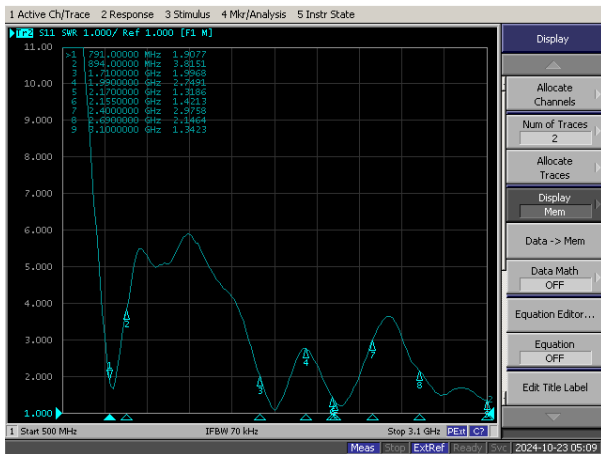
1.5 RF port

2 Electrical performance

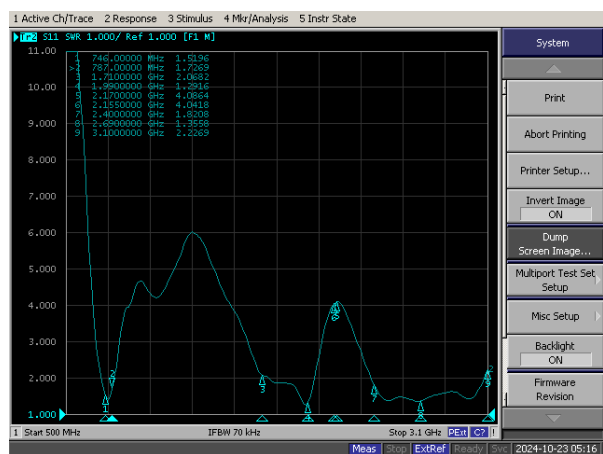
2.1 VSWR

ANT1 antenna

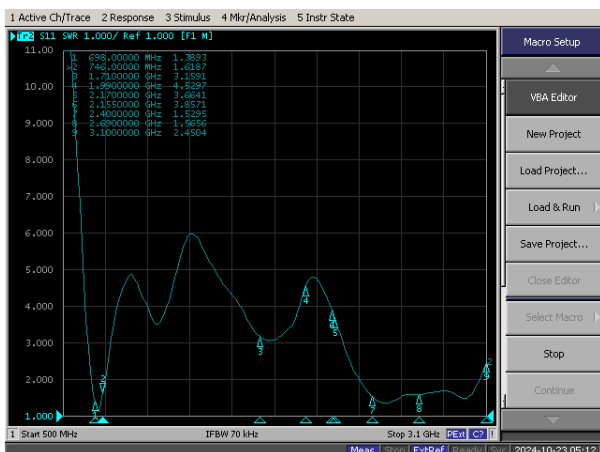
B5



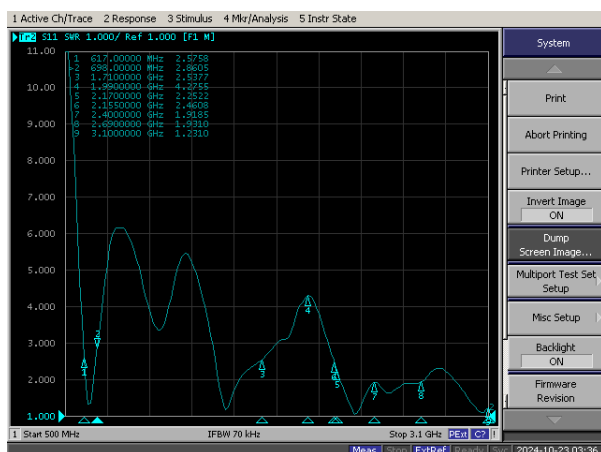
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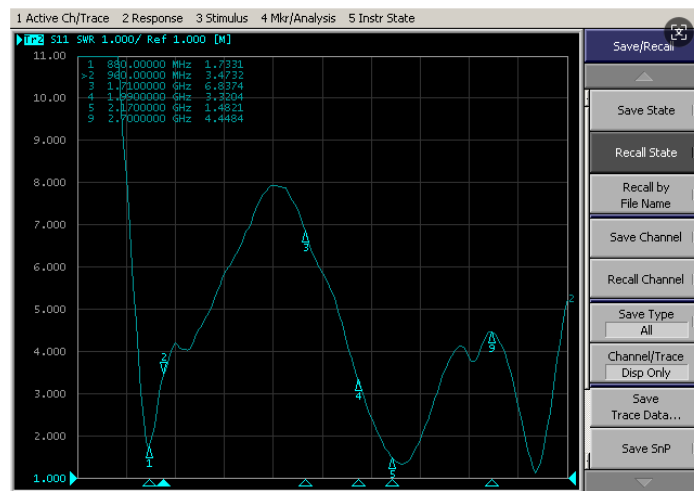
B12



B71



B8



2.2 Efficiency & Gain

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
880	17.91	-7.47	-3.82
890	18.43	-7.35	-3.97
900	18.91	-7.23	-3.9
910	18.09	-7.43	-4.14
920	15.63	-8.06	-4.59
930	13.99	-8.54	-5.35
940	12.71	-8.96	-5.8
950	11.86	-9.26	-5.92
960	10.71	-9.7	-6.31

820	28.35	-5.47	-2.41
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Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1710	12.38	-9.07	-4.11
1720	13.82	-8.6	-3.69
1730	14.32	-8.44	-3.39
1740	14.56	-8.37	-3.45
1750	14.01	-8.54	-3.67
1760	15.2	-8.18	-3.51
1770	16.03	-7.95	-3.5
1780	17.36	-7.6	-3.37
1790	17.46	-7.58	-3.35
1800	17.67	-7.53	-3.62
1810	16.87	-7.73	-4.06

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830	30.28	-5.19	-1.88
840	33.38	-4.77	-1.38
850	26.16	-5.82	-2.2
860	24.89	-6.04	-3.12
870	22.54	-6.47	-3.66
880	22.12	-6.55	-2.71
890	20.2	-6.95	-4.47

740	23.6	-6.27	-2.17
750	26.37	-5.79	-1.76
760	26.47	-5.77	-1.82
770	22.63	-6.45	-2.54
780	18.61	-7.3	-3.39
790	20.71	-6.84	-3.01

690	19.75	-7.04	-2.95
700	19.85	-7.02	-2.74
710	23.25	-6.34	-2.12
720	19.87	-7.02	-2.88
730	23.21	-6.34	-2.34
740	23.89	-6.22	-2.25
750	24.22	-6.16	-2.11

1820	17.05	-7.68	-4.27
1830	16.61	-7.8	-4.33
1840	16.89	-7.72	-4.49
1850	17.69	-7.52	-4.34
1860	15.84	-8	-4.39
1870	14.51	-8.38	-4.66
1880	14.23	-8.47	-4.44
1890	14.07	-8.52	-4.33
1900	14.54	-8.37	-4.26
1910	14.32	-8.44	-4.22
1920	13.46	-8.71	-4.17
1930	13.88	-8.58	-3.78
1940	13.9	-8.57	-3.53
1950	15.44	-8.11	-3.14
1960	16.42	-7.85	-2.89
1970	16.94	-7.71	-2.84
1980	17.58	-7.55	-2.7
1990	18.2	-7.4	-2.63
2000	18.76	-7.27	-2.63
2010	19.25	-7.16	-2.51
2020	18.39	-7.35	-2.7
2030	18.49	-7.33	-2.43

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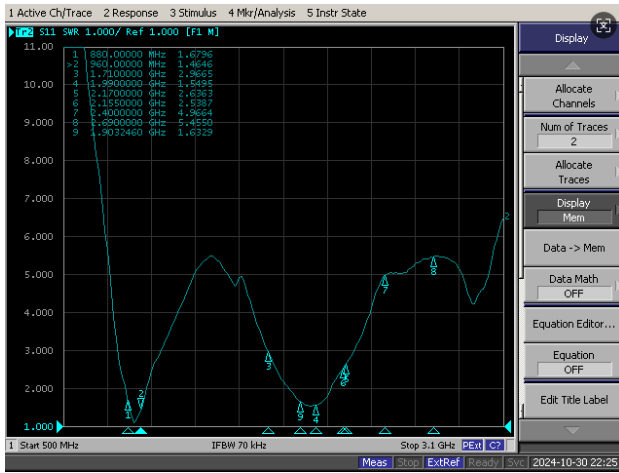
760	22.91	-6.4	-2.46		2040	18.99	-7.21	-2.15
770	18.62	-7.3	-3.35		2050	19.21	-7.16	-1.95
780	14.66	-8.34	-4.48		2060	18.56	-7.31	-2.12
					2070	17.26	-7.63	-2.44
610	17.29	-7.62	-2.85		2080	16.38	-7.86	-2.36
620	15.96	-7.97	-3.39		2090	16.12	-7.93	-2.26
630	15.88	-7.99	-3.82		2100	16.45	-7.84	-1.99
640	14.75	-8.31	-4.01		2110	13.67	-8.64	-2.77
650	18.23	-7.39	-2.93		2120	13.55	-8.68	-2.84
660	16.96	-7.71	-3.34		2130	14.29	-8.45	-2.74
670	17.22	-7.64	-2.81		2140	15.47	-8.1	-2.46
680	18.97	-7.22	-3.07		2150	15.5	-8.1	-2.63
690	18.65	-7.29	-3.23		2160	15.58	-8.08	-2.6
					2170	14.96	-8.25	-2.71

ANT2 antenna

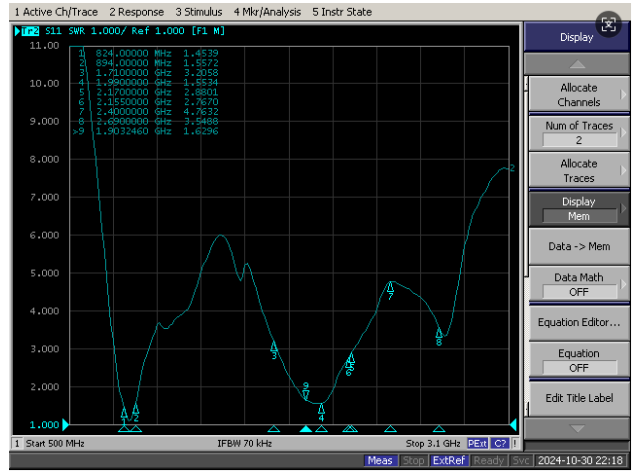
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B5

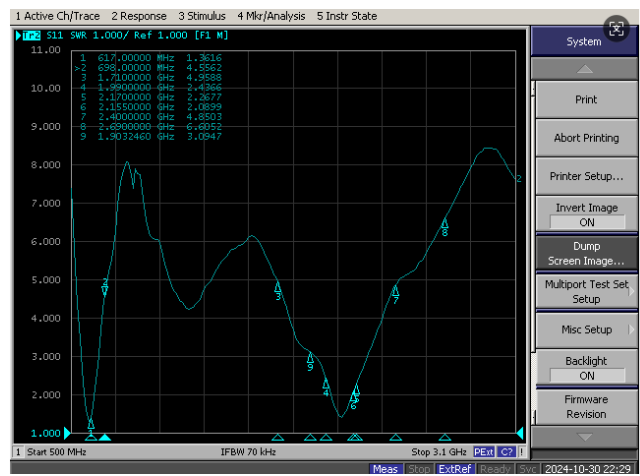
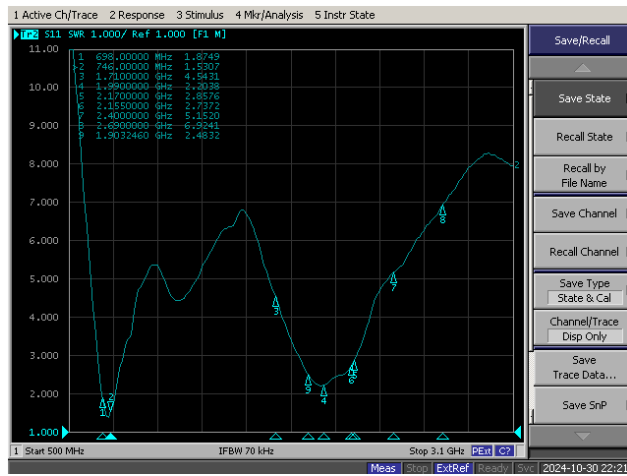
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B12



B71



Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
880	26.57	-5.76	-1.77
890	27.18	-5.66	-1.97
900	31.28	-5.05	-1.35
910	35.24	-4.53	-0.39

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1710	19.45	-7.11	-0.32
1720	21.93	-6.59	0.33
1730	22.47	-6.48	0.4
1740	22.79	-6.42	0.49

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920	38.63	-4.13	0.08
930	39.36	-4.05	0.44
940	38.46	-4.15	0.47
950	38.52	-4.14	0.56
960	37.86	-4.22	0.41

790	22.31	-6.52	-1.91
800	24.55	-6.1	-1.61
810	27.14	-5.66	-1.31
820	28.67	-5.43	-1.16
830	29.14	-5.36	-1.46
840	29.06	-5.37	-1.35
850	30.03	-5.22	-1.48
860	29.51	-5.3	-1.29
870	29.22	-5.34	-1.61
880	30.13	-5.21	-1.22
890	34.88	-4.57	-0.57
690	24.78	-6.06	-2.2
700	23.29	-6.33	-2.49
710	22.55	-6.47	-2.34
720	22.21	-6.53	-2.72

1750	22.12	-6.55	0.37
1760	22.87	-6.41	0.59
1770	24.46	-6.11	0.97
1780	25.68	-5.9	1.22
1790	25.38	-5.96	1.07
1800	25.65	-5.91	0.95
1810	23.82	-6.23	0.4
1820	23.43	-6.3	0.01
1830	24.01	-6.2	-0.39
1840	25.37	-5.96	-0.4
1850	27.5	-5.61	-0.15
1860	27.82	-5.56	-0.19
1870	28.43	-5.46	-0.06
1880	30.94	-5.1	0.24
1890	32.68	-4.86	0.44
1900	34.7	-4.6	0.68
1910	36.02	-4.43	0.9
1920	35.5	-4.5	1.03
1930	36.36	-4.39	1.12
1940	36.65	-4.36	1.35
1950	38	-4.2	1.56
1960	37.96	-4.21	1.8

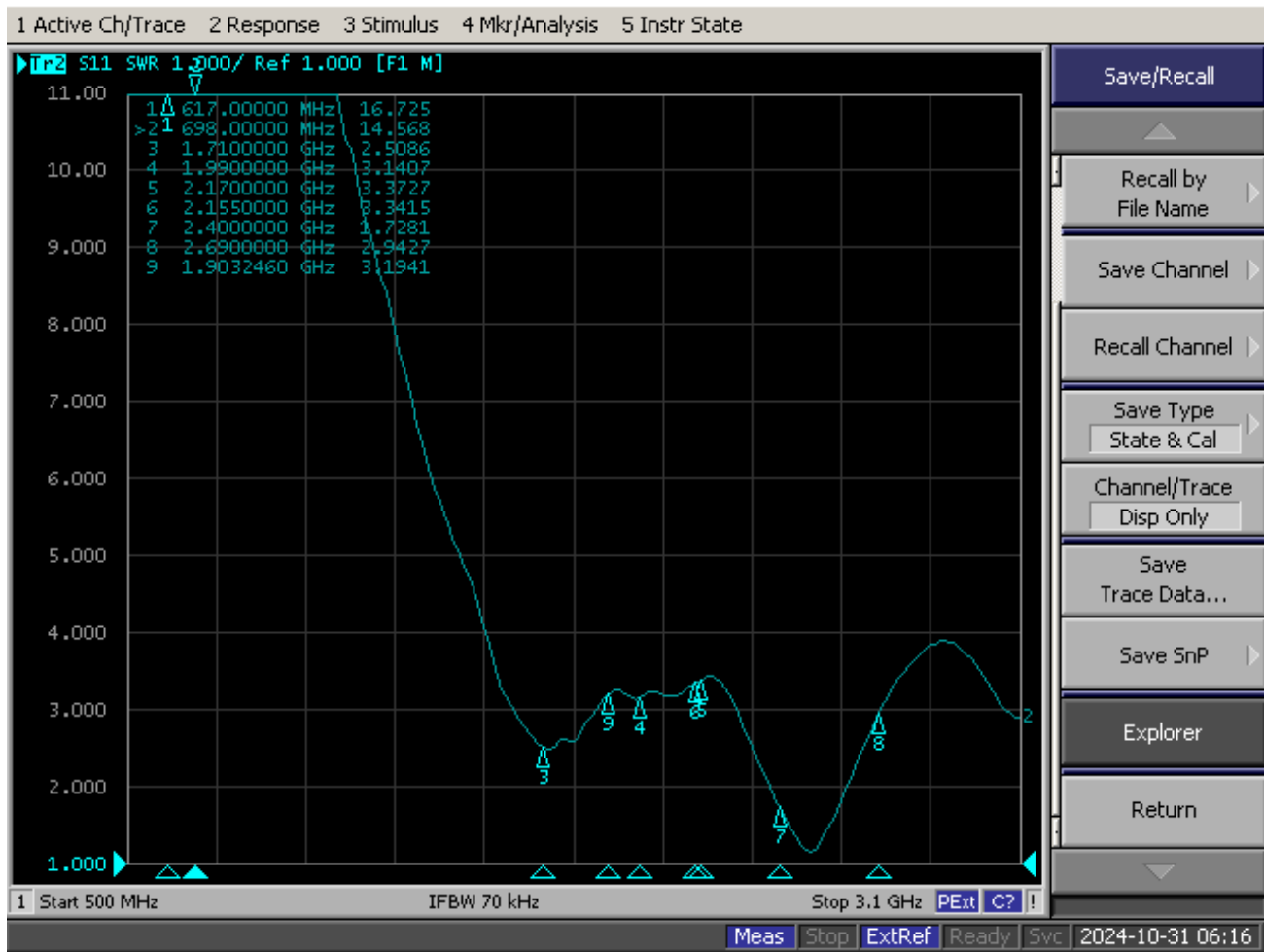
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730	24.72	-6.07	-2.06
740	27.29	-5.64	-1.18
750	24.14	-6.17	-1.84
760	23.96	-6.2	-1.77
770	27.01	-5.68	-1.37
780	32.74	-4.85	-0.42
790	28.26	-5.49	-1.14
800	26.4	-5.78	-1.44

610	14.39	-8.42	-4.93
620	14.97	-8.25	-4.65
630	15.7	-8.04	-3.89
640	15.81	-8.01	-3.49
650	14.43	-8.41	-3.76
660	14.33	-8.44	-4.45
670	13.61	-8.66	-5.07
680	17.21	-7.64	-3.8
690	16.13	-7.92	-4.57

1970	38.09	-4.19	1.82
1980	38.04	-4.2	1.9
1990	37.11	-4.31	1.84
2000	36.71	-4.35	1.91
2010	34.12	-4.67	1.61
2020	32.15	-4.93	1.33
2030	32.38	-4.9	1.18
2040	31.41	-5.03	0.89
2050	29.59	-5.29	0.67
2060	26.85	-5.71	0.41
2070	24.83	-6.05	0.33
2080	24.92	-6.03	0.31
2090	25.51	-5.93	0.55
2100	25.3	-5.97	0.48
2110	21.63	-6.65	0.03
2120	21.14	-6.75	-0.21
2130	22.81	-6.42	0.17
2140	24.9	-6.04	0.47
2150	24.89	-6.04	0.57
2160	24.63	-6.09	0.53
2170	24.51	-6.11	0.43

ANT3 antenna



Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
1710	32.46	-4.89	-1.62

Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2150	21.05	-6.77	-3.34

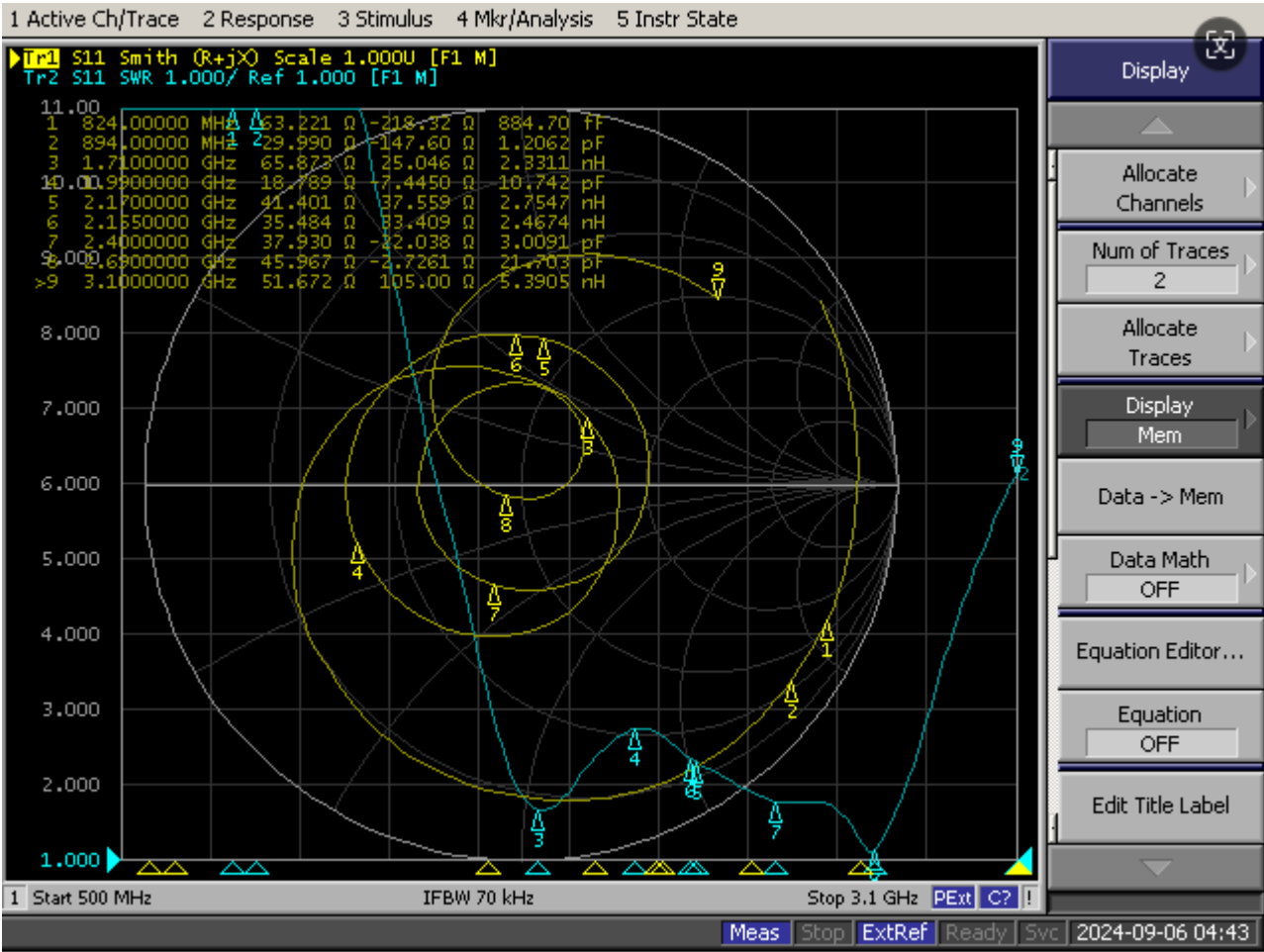
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1720	33.86	-4.7	-1.39		2160	19.88	-7.02	-3.95
1730	34.03	-4.68	-1.25		2170	20.26	-6.93	-4.14
1740	32.92	-4.82	-1.41		2300	22.85	-6.41	-2.66
1750	34.19	-4.66	-1.25		2310	23.67	-6.26	-2.44
1760	34.34	-4.64	-1.28		2320	26.18	-5.82	-1.86
1770	34.24	-4.66	-1.37		2330	27.8	-5.56	-1.49
1780	34.26	-4.65	-1.22		2340	29.1	-5.36	-1.1
1790	33.14	-4.8	-1.21		2350	28.3	-5.48	-1.08
1800	32.52	-4.88	-1.18		2360	28.18	-5.5	-0.93
1810	33.8	-4.71	-0.91		2370	27.8	-5.56	-0.77
1820	34.05	-4.68	-0.82		2380	27.41	-5.62	-0.81
1830	34.63	-4.61	-0.82		2390	25.82	-5.88	-1.04
1840	35.04	-4.55	-0.84		2400	25.86	-5.87	-0.99
1850	35.91	-4.45	-0.78		2410	25.44	-5.95	-1.03
1860	37.52	-4.26	-0.55		2420	26.8	-5.72	-0.67
1870	37.25	-4.29	-0.47		2430	26.98	-5.69	-0.56
1880	35.6	-4.48	-0.6		2440	25.87	-5.87	-0.73
1890	35.72	-4.47	-0.57		2450	26.22	-5.81	-0.59
1900	35.96	-4.44	-0.57		2460	25.97	-5.85	-0.55
1910	34.36	-4.64	-0.94		2470	26.81	-5.72	-0.38
1920	33.93	-4.69	-1.13		2480	28.12	-5.51	-0.03
1930	32.32	-4.91	-1.22		2490	29.67	-5.28	0.17

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1940	28.68	-5.42	-1.66		2500	29.44	-5.31	0.22
1950	28.6	-5.44	-1.57		2510	29.07	-5.37	0.04
1960	27.46	-5.61	-1.7		2520	28.79	-5.41	-0.02
1970	27.36	-5.63	-1.65		2530	29.73	-5.27	-0.14
1980	29.3	-5.33	-1.28		2540	28.74	-5.41	-0.45
1990	28.74	-5.41	-1.42		2550	28.58	-5.44	-0.76
2000	28.72	-5.42	-1.41		2560	28.38	-5.47	-1.01
2010	29.04	-5.37	-1.39		2570	28.49	-5.45	-1.21
2020	27.59	-5.59	-1.47		2580	25.98	-5.85	-1.83
2030	28.68	-5.42	-1.19		2590	24.68	-6.08	-2.13
2040	28.74	-5.42	-1.02		2600	24.52	-6.1	-2.33
2050	29.12	-5.36	-0.66		2610	23.82	-6.23	-2.44
2060	31.88	-4.97	-0.11		2620	21.69	-6.64	-2.87
2070	33.97	-4.69	0.48		2630	20.33	-6.92	-3.21
2080	33.24	-4.78	0.37		2640	20.25	-6.94	-3.31
2090	33.48	-4.75	0.5		2650	20.05	-6.98	-3.5
2100	32.3	-4.91	0.15		2660	20.69	-6.84	-3.24
2110	27.04	-5.68	-0.57		2670	20.83	-6.81	-3.01
2120	25.8	-5.88	-1.09		2680	21.37	-6.7	-2.8
2130	24.5	-6.11	-1.64		2690	20.47	-6.89	-2.85
2140	22.99	-6.38	-2.53		2700	20.18	-6.95	-2.81

ANT4 antenna



Freq	Effi	Effi	Gain
------	------	------	------

Freq	Effi	Effi	Gain
------	------	------	------

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(MHz)	(%)	(dB)	(dBi)		(MHz)	(%)	(dB)	(dBi)
1710	52.5	-2.8	0.65		2210	34.43	-4.63	0.64
1720	53.33	-2.73	0.81		2220	34.95	-4.57	0.58
1730	52.98	-2.76	0.95		2230	34.74	-4.59	0.54
1740	51	-2.92	0.91		2240	36.19	-4.41	0.75
1750	50.85	-2.94	0.99		2250	37.73	-4.23	0.98
1760	52.6	-2.79	1.13		2260	37.21	-4.29	0.98
1770	51.73	-2.86	1.14		2270	38.55	-4.14	1.2
1780	52.62	-2.79	1.41		2280	36.89	-4.33	1.03
1790	50.17	-3	1.42		2290	37.68	-4.24	1.1
1800	47.5	-3.23	1.44		2300	38.83	-4.11	1.21
1810	47.24	-3.26	1.54		2310	39.1	-4.08	1.16
1820	47.86	-3.2	1.68		2320	39.98	-3.98	1.2
1830	46.02	-3.37	1.56		2330	43.17	-3.65	1.48
1840	45.99	-3.37	1.57		2340	45.06	-3.46	1.52
1850	46.95	-3.28	1.64		2350	46.81	-3.3	1.52
1860	44.73	-3.49	1.35		2360	45.95	-3.38	1.29
1870	42.23	-3.74	1.05		2370	44.82	-3.48	1.18
1880	40.25	-3.95	0.71		2380	46.08	-3.36	1.27
1890	39.71	-4.01	0.74		2390	46.53	-3.32	1.31
1900	40.07	-3.97	0.9		2400	46.65	-3.31	1.24
1910	37.94	-4.21	0.72		2410	44.4	-3.53	0.9

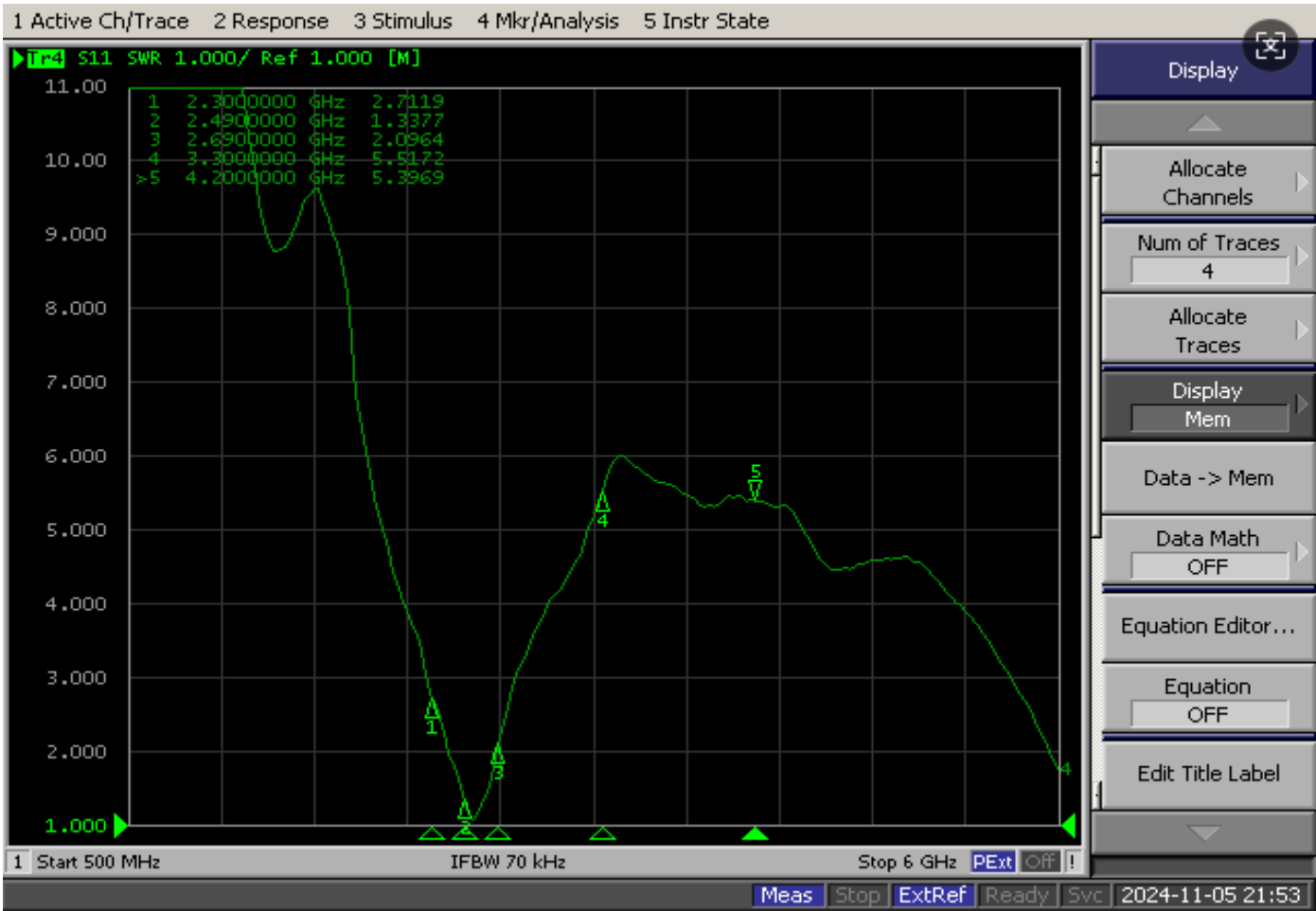
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1920	34.43	-4.63	0.45		2420	43.65	-3.6	0.67
1930	32.94	-4.82	0.23		2430	42.28	-3.74	0.38
1940	30.06	-5.22	-0.08		2440	41.28	-3.84	0.4
1950	30.9	-5.1	-0.03		2450	41.1	-3.86	0.36
1960	30.62	-5.14	0.1		2460	39.39	-4.05	0.14
1970	29.96	-5.23	-0.01		2470	38.48	-4.15	0.12
1980	29.7	-5.27	0.08		2480	38.52	-4.14	0.25
1990	29.53	-5.3	-0.06		2490	39.44	-4.04	0.34
2000	29.61	-5.29	-0.08		2500	38.26	-4.17	0.25
2010	30.29	-5.19	-0.13		2510	36.74	-4.35	0.11
2020	28.64	-5.43	-0.47		2520	35.72	-4.47	0.05
2030	28.14	-5.51	-0.66		2530	35.62	-4.48	0.13
2040	28.7	-5.42	-0.75		2540	33.92	-4.7	-0.02
2050	29.59	-5.29	-0.95		2550	33.29	-4.78	-0.21
2060	29.65	-5.28	-1.14		2560	32.56	-4.87	-0.34
2070	28.35	-5.48	-1.35		2570	32.3	-4.91	-0.45
2080	27.14	-5.66	-1.46		2580	29.12	-5.36	-1
2090	27.12	-5.67	-1.29		2590	27.34	-5.63	-1.52
2100	28.53	-5.45	-0.8		2600	27.36	-5.63	-1.68
2110	23.44	-6.3	-1.51		2610	26.84	-5.71	-1.86
2120	23.16	-6.35	-1.35		2620	24.66	-6.08	-2.15
2130	24.36	-6.13	-1		2630	23.67	-6.26	-2

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2140	26.96	-5.69	-0.39	2640	23.92	-6.21	-1.74
2150	27.93	-5.54	-0.1	2650	24.41	-6.13	-1.36
2160	28.83	-5.4	0.13	2660	25.56	-5.92	-0.98
2170	26.65	-5.74	-0.13	2670	26.25	-5.81	-0.66
2180	27.33	-5.63	0.07	2680	27.62	-5.59	-0.38
2190	29.53	-5.3	0.38	2690	27.2	-5.65	-0.31

ANT5 antenna



Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)

Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)

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2300	26.99	-5.69	-1.38		3550	10.96	-9.6	-4.78
2310	28.43	-5.46	-0.98		3560	11.04	-9.57	-4.69
2320	30.78	-5.12	-0.47		3570	10.62	-9.74	-4.87
2330	30.98	-5.09	-0.42		3580	9.26	-10.34	-5.55
2340	30.55	-5.15	-0.33		3590	9.97	-10.01	-5.23
2350	29.97	-5.23	-0.33		3600	10.21	-9.91	-5.01
2360	29.27	-5.34	-0.34		3610	9.93	-10.03	-5.22
2370	29.32	-5.33	-0.21		3620	8.87	-10.52	-5.78
2380	29.62	-5.28	-0.12		3630	8.85	-10.53	-5.71
2390	29.51	-5.3	-0.05		3640	9.74	-10.11	-5.58
2400	31.92	-4.96	0.16		3650	10.49	-9.79	-5.25
2410	32.9	-4.83	0.26		3660	10.16	-9.93	-5.57
2420	34.83	-4.58	0.35		3670	9.63	-10.16	-6.05
2430	35.38	-4.51	0.25		3680	9.5	-10.22	-6.3
2440	34.06	-4.68	-0.17		3690	9.3	-10.32	-6.59
2450	34.43	-4.63	-0.36		3700	9.74	-10.12	-6.43
2460	33.95	-4.69	-0.36		3710	10.74	-9.69	-6.3
2470	34.41	-4.63	-0.5		3720	12.16	-9.15	-5.83
2480	35.52	-4.5	-0.26		3730	11.68	-9.32	-6.24
2490	37.46	-4.26	0.04		3740	10.49	-9.79	-6.59
2500	37.42	-4.27	0.3		3750	10.7	-9.71	-6.12
2510	36.98	-4.32	0.27		3760	11.97	-9.22	-5.44

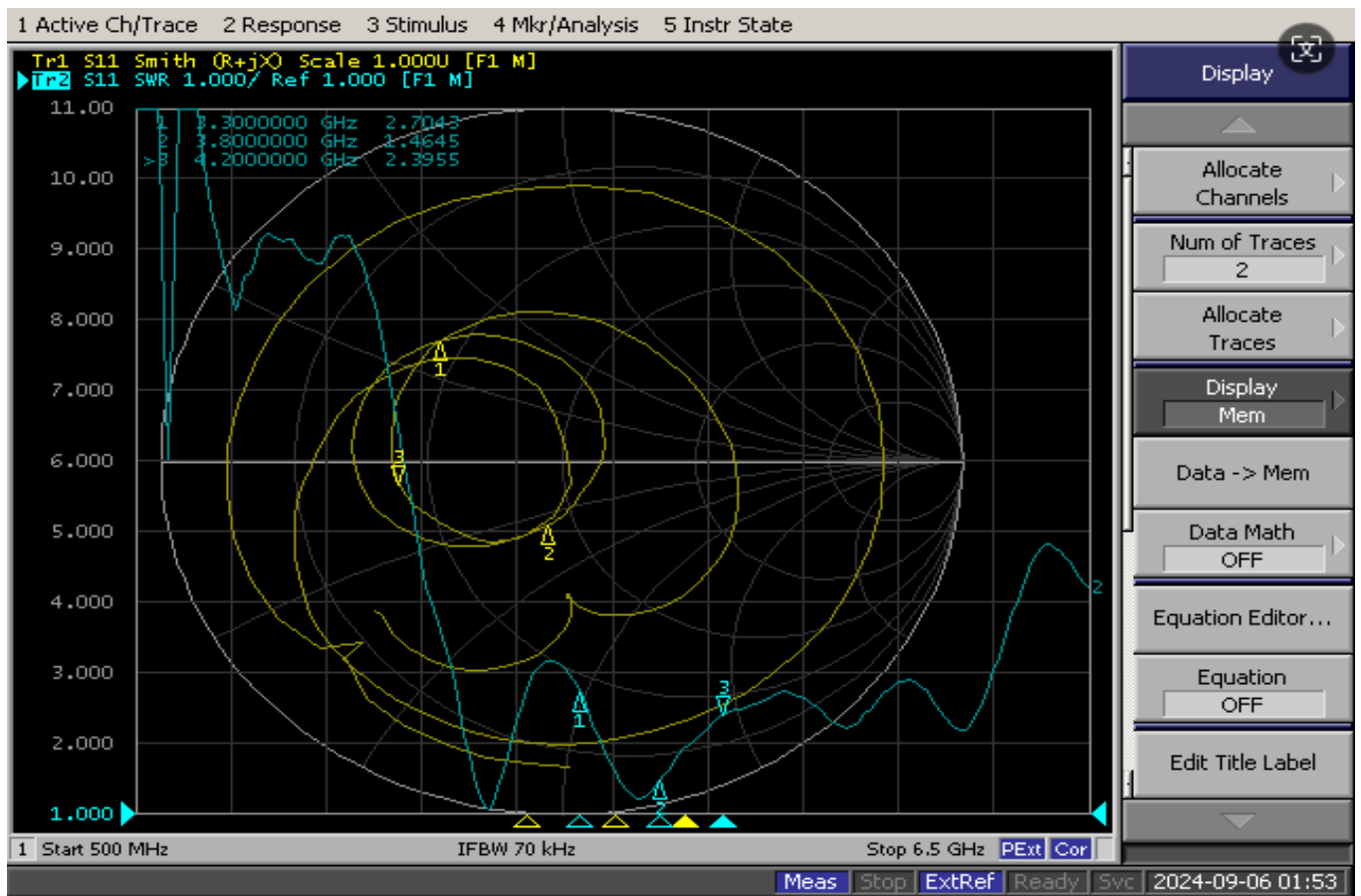
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2520	36.81	-4.34	0.47		3770	12.51	-9.03	-5.2
2530	37.24	-4.29	0.41		3780	11.81	-9.28	-5.21
2540	36.57	-4.37	0.2		3790	11.74	-9.3	-5.36
2550	37.2	-4.29	0.17		3800	11.94	-9.23	-4.88
2560	38.26	-4.17	0.22		3810	13.97	-8.55	-4.09
2570	39.05	-4.08	0.34		3820	14.08	-8.51	-3.84
2580	37.87	-4.22	0.24		3830	13.22	-8.79	-3.89
2590	37.34	-4.28	0.25		3840	12.86	-8.91	-3.52
2600	38.45	-4.15	0.45		3850	12.45	-9.05	-3.55
2610	38.48	-4.15	0.51		3860	12.06	-9.19	-3.44
2620	35.76	-4.47	0.33		3870	12.37	-9.08	-2.98
2630	35	-4.56	0.37		3880	12.6	-9	-2.74
2640	35.65	-4.48	0.71		3890	11.75	-9.3	-2.96
2650	35.83	-4.46	0.87		3900	10.28	-9.88	-3.42
2660	36.77	-4.34	1.24		3910	9.37	-10.28	-3.81
2670	37.07	-4.31	1.26		3920	10.36	-9.84	-3.05
2680	37.51	-4.26	1.44		3930	11.1	-9.55	-2.76
2690	35.78	-4.46	1.31		3940	10.47	-9.8	-2.86
					3950	8.42	-10.75	-4.07
					3960	7.89	-11.03	-4.15
					3970	8.85	-10.53	-3.76
					3980	9.7	-10.13	-3.33
3300	9.84	-10.07	-5.15					
3310	9.78	-10.1	-5.48					
3320	9.73	-10.12	-5.59					

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3330	9.04	-10.44	-5.77		3990	9.1	-10.41	-3.7
3340	8.17	-10.88	-6.1		4000	7.69	-11.14	-4.57
3350	7.92	-11.01	-6.09		4010	6.95	-11.58	-5.21
3360	7.59	-11.2	-6.31		4020	7.14	-11.46	-5.27
3370	6.82	-11.66	-6.46		4030	7.98	-10.98	-4.88
3380	6.88	-11.63	-6.62		4040	8.63	-10.64	-4.71
3390	7.73	-11.12	-6.14		4050	9.48	-10.23	-4.48
3400	8.94	-10.49	-5.64		4060	8.65	-10.63	-5.16
3410	7.42	-11.3	-6.41		4070	8.58	-10.67	-5.53
3420	7.47	-11.27	-6.46		4080	9.34	-10.3	-5.15
3430	7.96	-10.99	-5.98		4090	11.01	-9.58	-4.51
3440	8.43	-10.74	-5.8		4100	10.95	-9.61	-4.87
3450	8.14	-10.89	-5.91		4110	9.73	-10.12	-5.69
3460	7.8	-11.08	-6.13		4120	8.79	-10.56	-6.05
3470	7.73	-11.12	-6.2		4130	9.85	-10.06	-5.67
3480	8.12	-10.9	-6.15		4140	10.27	-9.88	-5.64
3490	7.88	-11.03	-6.26		4150	10.92	-9.62	-5.34
3500	8.18	-10.87	-6.22		4160	9.22	-10.35	-6.02
3510	9.3	-10.31	-5.73		4170	8.27	-10.82	-6.62
3520	9.79	-10.09	-5.72		4180	7.16	-11.45	-7.06
3530	9.68	-10.14	-5.58		4190	7.56	-11.21	-6.64
3540	9.51	-10.22	-5.53		4200	7.33	-11.35	-6.62

ANT6 antenna



Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
3300	32.65	-7.86	-3.53
3310	34.83	-7.58	-3.44
3320	37.31	-7.28	-3.34
3330	36.87	-7.33	-3.12
3340	35.32	-7.52	-3.58

Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
3760	50.63	-5.13	-2.07
3770	48.6	-5.54	-2.15
3780	44.23	-5.62	-2.45
3790	45.99	-5.58	-2.33
3800	46.22	-5.5	-2.13

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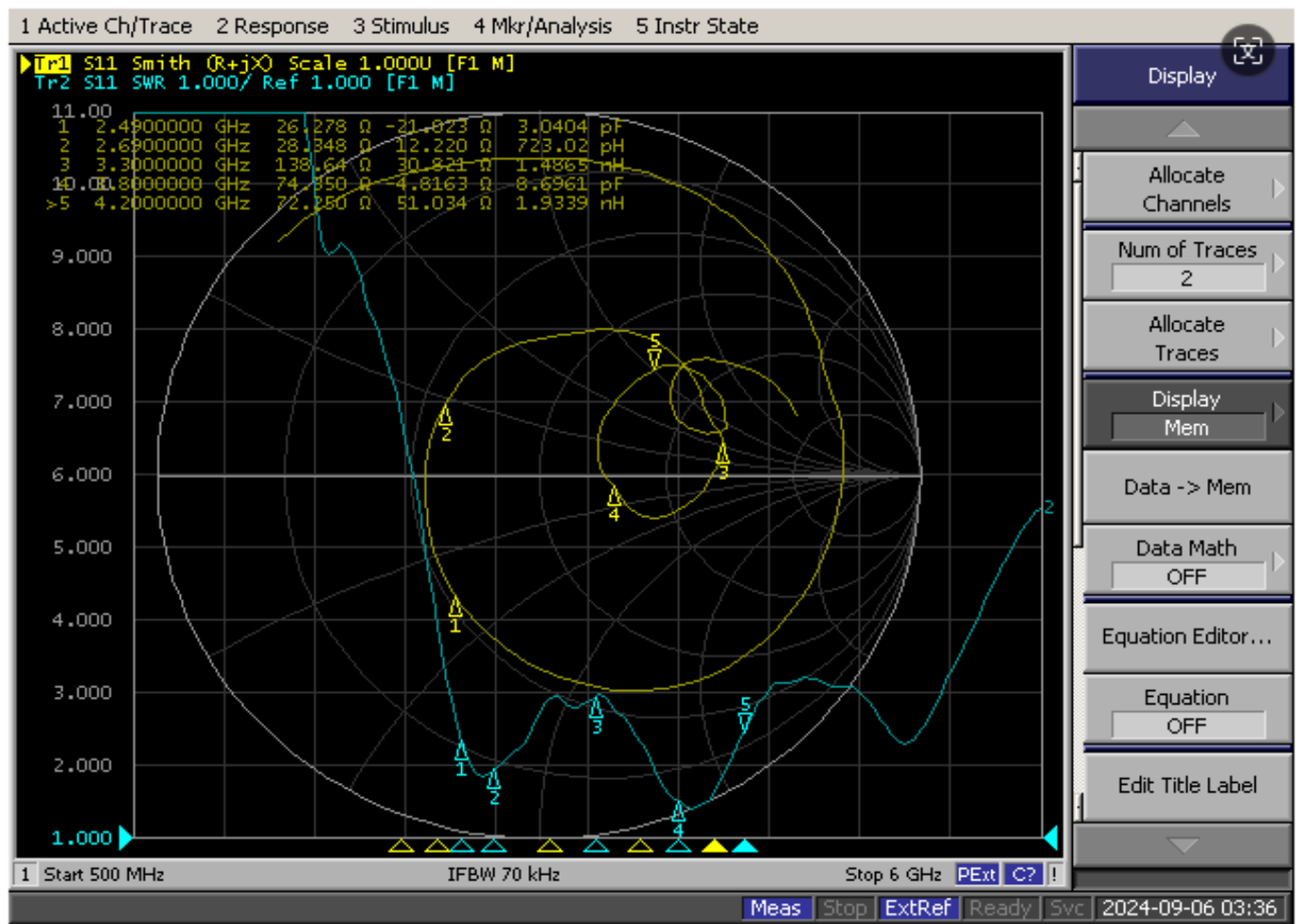
3350	37.61	-7.25	-3.36		3810	47.82	-5.41	-2.17
3360	38.99	-7.09	-3.02		3820	45.79	-5.51	-2.22
3370	37.84	-6.22	-3.08		3830	44.08	-5.53	-2.13
3380	39.93	-6.19	-2.32		3840	46.52	-5.34	-1.95
3390	44.61	-5.51	-1.89		3850	48.07	-5.37	-1.88
3400	49.18	-5.08	-1.78		3860	46.25	-5.45	-1.93
3410	43.76	-5.33	-1.93		3870	46.24	-5.38	-1.9
3420	46.11	-5.26	-1.86		3880	48.64	-5.22	-1.85
3430	51.45	-4.89	-1.71		3890	48.41	-5.31	-1.82
3440	52.01	-4.84	-1.65		3900	47.98	-5.44	-1.89
3450	48.28	-5.16	-1.93		3910	46.65	-5.47	-1.91
3460	45.31	-5.44	-2.08		3920	49.58	-5.33	-1.84
3470	46.39	-5.34	-1.96		3930	52.84	-5.15	-1.72
3480	48.8	-5.12	-1.81		3940	54.14	-5.03	-1.65
3490	46.79	-5.3	-1.94		3950	47.41	-5.66	-1.91
3500	44.4	-5.53	-2.03		3960	47.27	-5.81	-1.85
3510	46.08	-5.36	-2.01		3970	49.24	-5.63	-1.82
3520	46.8	-5.3	-1.97		3980	50.53	-5.89	-1.98
3530	45.31	-5.44	-1.96		3990	48.05	-5.84	-1.73
3540	46.06	-5.37	-1.93		4000	43.07	-6.22	-2.11
3550	50.43	-4.97	-1.77		4010	41.18	-6.35	-2.33
3560	47.43	-5.89	-1.89		4020	41.05	-6.41	-2.4

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3570	47.25	-5.94	-1.97		4030	41.69	-6.23	-2.34
3580	43.64	-6.17	-2.35		4040	41.48	-6.23	-2.48
3590	47.74	-5.95	-1.94		4050	44.21	-6.01	-1.88
3600	50.17	-5.43	-1.69		4060	41.51	-6.31	-2.37
3610	47.29	-6.04	-1.94		4070	40.29	-6.56	-2.41
3620	45.09	-6.32	-2.21		4080	41.21	-6.5	-2.27
3630	47.45	-5.95	-1.95		4090	44.17	-5.91	-1.82
3640	51.4	-4.83	-1.59		4100	43.03	-6.15	-2.08
3650	52.68	-4.79	-1.52		4110	39.49	-6.5	-3.05
3660	50.84	-5.26	-1.61		4120	38	-6.91	-3.72
3670	48.96	-5.88	-1.84		4130	39.75	-6.94	-3.65
3680	50.15	-5.48	-1.65		4140	40.17	-6.33	-2.24
3690	49.56	-5.69	-1.72		4150	42.37	-6.35	-2.17
3700	49.7	-5.54	-1.61		4160	38.99	-6.95	-3.85
3710	51.57	-5.12	-1.88		4170	38.55	-7.37	-3.72
3720	53.59	-4.83	-1.68		4180	35.98	-7.42	-3.4
3730	51.37	-5.08	-1.98		4190	36.58	-7.67	-3.54
3740	48.23	-5.38	-2.33		4200	36.52	-7.79	-3.3
3750	48.51	-5.42	-2.31					

ANT7 antenna

Confidential Information



Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2300	12.58	-9	-4.81
2310	12.97	-8.87	-4.55
2320	14.35	-8.43	-3.91
2330	16.69	-7.78	-3.2
2340	19.32	-7.14	-2.34
2350	19.55	-7.09	-2.3
2360	20.8	-6.82	-1.83

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
3550	32.1	-4.94	2.58
3560	33.57	-4.74	2.8
3570	33.19	-4.79	2.69
3580	31.06	-5.08	2.52
3590	29.5	-5.3	2.15
3600	29.97	-5.23	2.26
3610	30.61	-5.14	2.31

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2370	21.07	-6.76	-1.69		3620	27.18	-5.66	1.71
2380	23.1	-6.36	-1.17		3630	25.86	-5.87	1.52
2390	23.96	-6.21	-0.92		3640	27.47	-5.61	1.56
2400	25.13	-6	-0.71		3650	30.63	-5.14	1.93
2410	25.06	-6.01	-0.67		3660	26.54	-5.76	1.06
2420	27.28	-5.64	-0.29		3670	26.68	-5.74	0.9
2430	28.38	-5.47	-0.06		3680	26.58	-5.75	0.68
2440	29.93	-5.24	0.13		3690	27	-5.69	0.49
2450	31.01	-5.09	0.37		3700	26.21	-5.82	0.19
2460	30.3	-5.19	0.47		3710	25.87	-5.87	0.01
2470	31.26	-5.05	0.7		3720	25.94	-5.86	-0.08
2480	32.88	-4.83	0.95		3730	25.8	-5.88	-0.23
2490	34.67	-4.6	1.26		3740	24.06	-6.19	-0.75
2500	35.91	-4.45	1.6		3750	24.23	-6.16	-0.86
2510	35.38	-4.51	1.5		3760	26.84	-5.71	-0.71
2520	35.82	-4.46	1.75		3770	29.3	-5.33	-0.3
2530	37.92	-4.21	1.94		3780	29.33	-5.33	-0.35
2540	37.75	-4.23	1.97		3790	28.62	-5.43	-0.37
2550	39.01	-4.09	2.11		3800	32.52	-4.88	0.09
2560	40.06	-3.97	2.34		3810	34.61	-4.61	0.66
2570	41.81	-3.79	2.61		3820	36.03	-4.43	0.81
2580	40.92	-3.88	2.58		3830	33.77	-4.72	0.76

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2590	41.12	-3.86	2.7
2600	41.04	-3.87	2.79
2610	41.41	-3.83	2.92
2620	38.6	-4.13	2.65
2630	37	-4.32	2.52
2640	36.69	-4.35	2.55
2650	36.37	-4.39	2.58
2660	36	-4.44	2.59
2670	36.48	-4.38	2.73
2680	37.87	-4.22	2.91
2690	36.55	-4.37	2.72

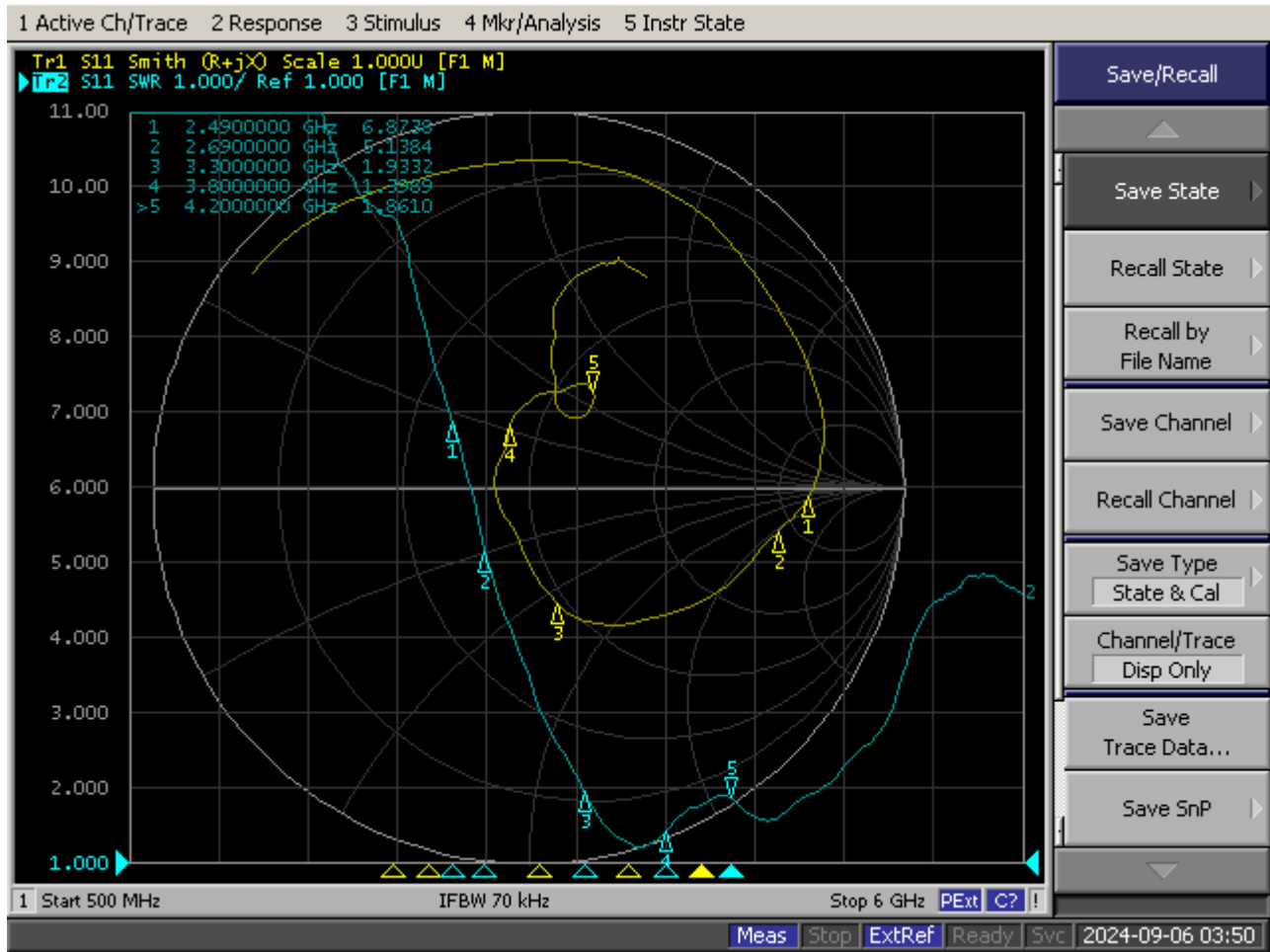
3300	32.1	-4.94	2.58
3310	33.57	-4.74	2.8
3320	33.19	-4.79	2.69
3330	31.06	-5.08	2.52
3340	29.5	-5.3	2.15
3350	29.97	-5.23	2.26
3360	30.61	-5.14	2.31
3370	27.18	-5.66	1.71
3380	25.86	-5.87	1.52
3390	27.47	-5.61	1.56

3840	34.65	-4.6	0.93
3850	35.83	-4.46	1.11
3860	35.31	-4.52	1.11
3870	34.57	-4.61	1.07
3880	35.36	-4.51	1.19
3890	37.08	-4.31	1.51
3900	36.51	-4.38	1.5
3910	35.92	-4.45	1.65
3920	35.32	-4.52	1.56
3930	36.48	-4.38	1.91
3940	48.02	-3.19	2.01
3950	43.67	-3.6	1.9
3960	45.31	-3.44	1.97
3970	47.69	-3.22	2.44
3980	48.05	-3.18	2.49
3990	45.52	-3.42	2.41
4000	41.69	-3.8	1.98
4010	41.17	-3.85	1.96
4020	41.1	-3.86	1.96
4030	40.13	-3.97	1.71
4040	38.37	-4.16	1.59
4050	39.18	-4.07	1.49

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3400	30.63	-5.14	1.93		4060	37.22	-4.29	1.18
3410	26.54	-5.76	1.06		4070	36.62	-4.36	0.99
3420	26.68	-5.74	0.9		4080	35.95	-4.44	0.75
3430	26.58	-5.75	0.68		4090	36.8	-4.34	0.9
3440	27	-5.69	0.49		4100	34.66	-4.6	0.44
3450	26.21	-5.82	0.19		4110	31.61	-5	0.04
3460	25.87	-5.87	0.01		4120	31.46	-5.02	-0.25
3470	25.94	-5.86	-0.08		4130	32.44	-4.89	-0.03
3480	25.8	-5.88	-0.23		4140	31.49	-5.02	-0.27
3490	24.06	-6.19	-0.75		4150	31.99	-4.95	-0.22
3500	24.23	-6.16	-0.86		4160	30.14	-5.21	-0.52
3510	26.84	-5.71	-0.71		4170	31.43	-5.03	-0.31
3520	29.3	-5.33	-0.3		4180	30.61	-5.14	-0.26
3530	29.33	-5.33	-0.35		4190	29.79	-5.26	-0.16
3540	28.62	-5.43	-0.37		4200	29.01	-5.38	-0.23

ANT8 antenna



Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
3300	39.12	-4.08	2.13
3310	41.78	-3.79	2.37
3320	44.18	-3.55	2.73
3330	43.64	-3.6	2.53

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
3760	39.7	-4.01	2.33
3770	38.33	-4.16	2.36
3780	34.63	-4.61	1.9
3790	36.26	-4.41	2.34

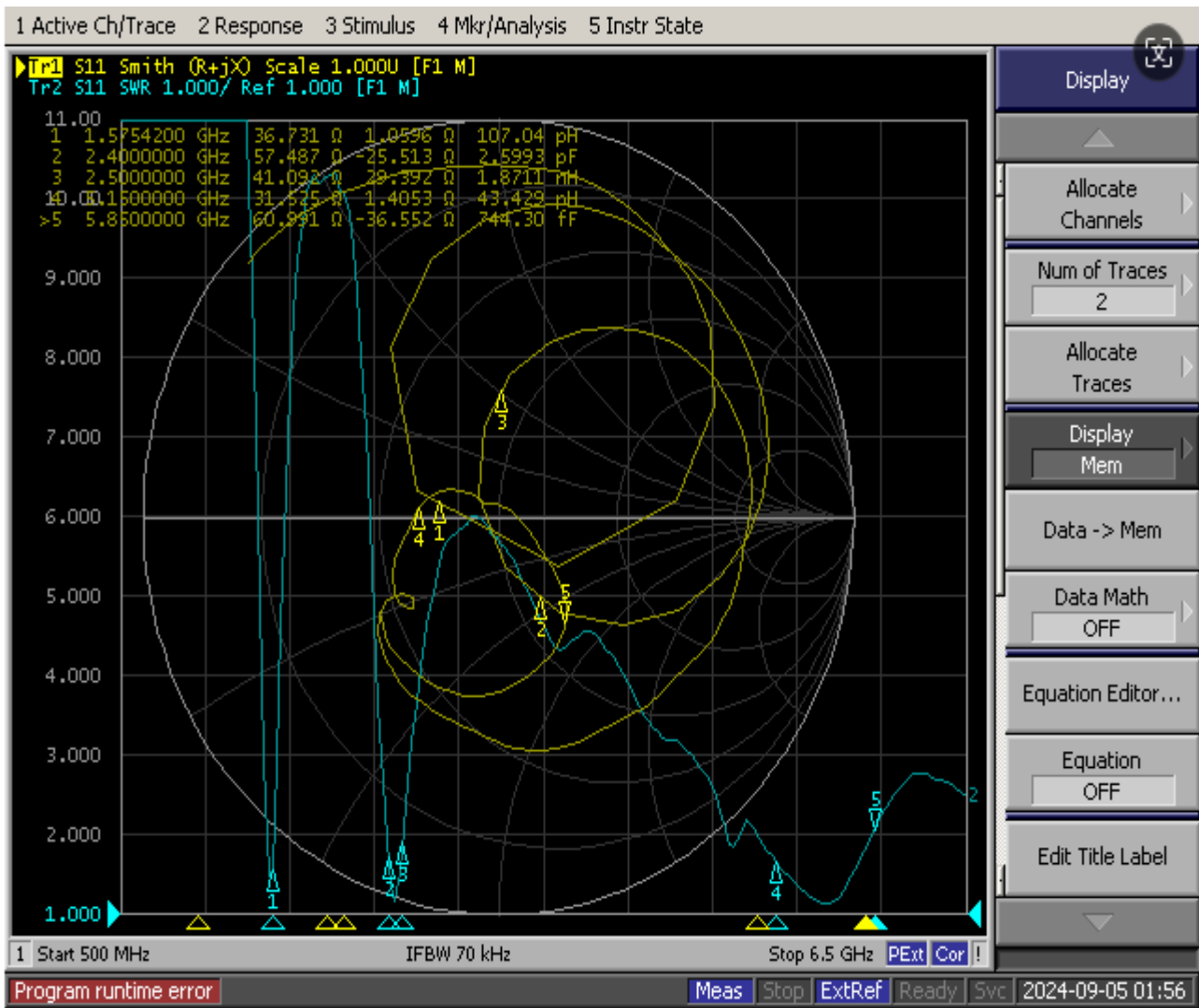
Confidential Information

3340	41.88	-3.78	2.3		3800	36.51	-4.38	2.24
3350	44.2	-3.55	2.36		3810	37.73	-4.23	2.55
3360	45.66	-3.4	2.45		3820	35.84	-4.46	2.23
3370	42.95	-3.67	2.16		3830	33.86	-4.7	1.97
3380	43.59	-3.61	1.98		3840	35.9	-4.45	2.14
3390	47.4	-3.24	2.33		3850	37.51	-4.26	2.41
3400	52.09	-2.83	2.54		3860	36.21	-4.41	2.27
3410	45.75	-3.4	1.91		3870	36.26	-4.41	2.2
3420	47	-3.28	1.99		3880	38.07	-4.19	2.23
3430	50.55	-2.96	2.1		3890	38.15	-4.18	2.21
3440	50.32	-2.98	2.02		3900	39.45	-4.04	2.3
3450	46.96	-3.28	1.52		3910	38.96	-4.09	2.26
3460	44.68	-3.5	1.18		3920	41.67	-3.8	2.52
3470	44.99	-3.47	1.09		3930	43.66	-3.6	2.94
3480	45.96	-3.38	1.02		3940	45.15	-3.45	3.15
3490	43.17	-3.65	0.58		3950	41.82	-3.79	2.97
3500	41.55	-3.81	0.51		3960	44.17	-3.55	3.22
3510	43.58	-3.61	0.79		3970	46.91	-3.29	3.62
3520	44.89	-3.48	0.85		3980	47.04	-3.28	3.63
3530	43.05	-3.66	0.79		3990	44.65	-3.5	3.63
3540	42.44	-3.72	0.74		4000	41.37	-3.83	3.32
3550	46.25	-3.35	1.22		4010	41.57	-3.81	3.45

Confidential Information

3560	44.4	-3.53	0.9		4020	41.82	-3.79	3.5
3570	43.85	-3.58	0.75		4030	41	-3.87	3.52
3580	39.83	-4	0.38		4040	39.1	-4.08	3.43
3590	42.04	-3.76	0.8		4050	39.96	-3.98	3.47
3600	43.42	-3.62	1.11		4060	38.3	-4.17	3.35
3610	40.71	-3.9	1.01		4070	37.79	-4.23	3.4
3620	38.41	-4.16	0.87		4080	37.3	-4.28	3.26
3630	40.02	-3.98	1.13		4090	38.55	-4.14	3.44
3640	42.26	-3.74	1.49		4100	36.28	-4.4	3.22
3650	41.84	-3.78	1.39		4110	33.44	-4.76	2.93
3660	40.29	-3.95	1.43		4120	33.68	-4.73	2.76
3670	38.6	-4.13	1.21		4130	35.26	-4.53	3.1
3680	39.73	-4.01	1.3		4140	34.51	-4.62	2.91
3690	38.91	-4.1	1.29		4150	35.34	-4.52	2.93
3700	38.34	-4.16	1.27		4160	33.33	-4.77	2.74
3710	39.91	-3.99	1.59		4170	35.02	-4.56	3.03
3720	41.28	-3.84	1.99		4180	34.61	-4.61	2.97
3730	39.72	-4.01	1.87		4190	34.41	-4.63	2.94
3740	38.03	-4.2	2		4200	34.22	-4.66	3.05
3750	38.39	-4.16	2.07					

ANT9 antenna



Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)

Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)

Confidential Information

1565	25.32	-5.97	-1.83
1570	26.18	-5.82	-1.68
1575	26.42	-5.78	-1.73
1580	26.51	-5.77	-1.77
1585	25.83	-5.88	-1.8

2400	32.4	-4.89	-0.42
2410	31.94	-4.96	-0.57
2420	32.96	-4.82	-0.3
2430	34.19	-4.66	0.01
2440	34.97	-4.56	0.22
2450	36.53	-4.37	0.5
2460	37.08	-4.31	0.66
2470	37.65	-4.24	0.66
2480	39.26	-4.06	0.79
2490	41.62	-3.81	0.98
2500	41.04	-3.87	0.85

5150	26.25	-5.81	-0.99
5160	26.15	-5.83	-0.98
5170	25.92	-5.86	-1.2
5180	26.12	-5.83	-1.1

5420	36.51	-4.38	0.98
5430	36.32	-4.4	0.68
5440	37.15	-4.3	0.88
5450	37.41	-4.27	0.74
5460	38.45	-4.15	0.78
5470	37.99	-4.2	0.65
5480	36.47	-4.38	0.43
5490	37.25	-4.29	0.58
5500	36.6	-4.36	0.44
5510	36.53	-4.37	0.33
5520	37.51	-4.26	0.66
5530	39.46	-4.04	0.81
5540	40.81	-3.89	0.97
5550	38.94	-4.1	0.94
5560	37.8	-4.23	0.88
5570	37.99	-4.2	0.82
5580	38.8	-4.11	1.06
5590	37.96	-4.21	1.06
5600	37.23	-4.29	0.77
5610	36.15	-4.42	0.75
5620	35.96	-4.44	0.65
5630	36.11	-4.42	0.5

Confidential Information

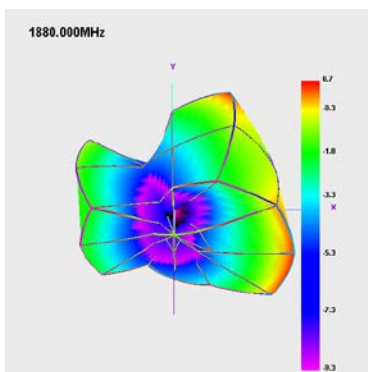
5190	26.66	-5.74	-1.15		5640	35.47	-4.5	0.37
5200	27.1	-5.67	-0.93		5650	35.65	-4.48	0.12
5210	29.05	-5.37	-0.92		5660	36.73	-4.35	0.41
5220	29.28	-5.33	-0.88		5670	35.26	-4.53	-0.01
5230	30.91	-5.1	-0.61		5680	35.44	-4.5	0.11
5240	29.68	-5.28	-0.74		5690	34.58	-4.61	0.15
5250	30.2	-5.2	-0.39		5700	35.6	-4.49	0.47
5260	31.17	-5.06	-0.07		5710	34.9	-4.57	0.43
5270	27.17	-5.66	-0.89		5720	33.36	-4.77	0.33
5280	28.31	-5.48	-0.44		5730	34.11	-4.67	0.3
5290	29.49	-5.3	-0.3		5740	35.55	-4.49	0.45
5300	28.38	-5.47	-0.28		5750	37.41	-4.27	0.71
5310	28.1	-5.51	-0.23		5760	35.2	-4.53	0.44
5320	30.14	-5.21	0.03		5770	34.42	-4.63	0.23
5330	29.25	-5.34	0.09		5780	32.45	-4.89	-0.1
5340	30.63	-5.14	0.05		5790	30.77	-5.12	-0.23
5350	31.8	-4.98	0.47		5800	30.05	-5.22	-0.07
5360	30.44	-5.17	0.24		5810	29.32	-5.33	-0.25
5370	30.75	-5.12	0.38		5820	30.34	-5.18	0.02
5380	31.59	-5	0.55		5830	28.91	-5.39	-0.08
5390	29.46	-5.31	0.15		5840	26.47	-5.77	-0.29
5400	35.51	-4.5	1.02		5850	27.67	-5.58	-0.23

5410	35.37	-4.51	0.88
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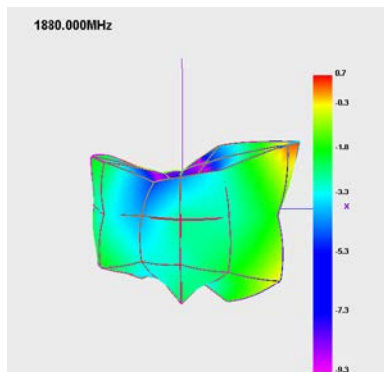
2.3 3D Pattern

LTE B2

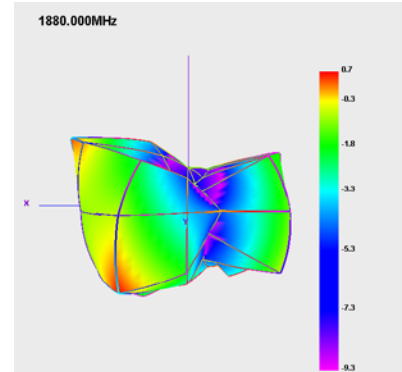
H plane



E1 plane

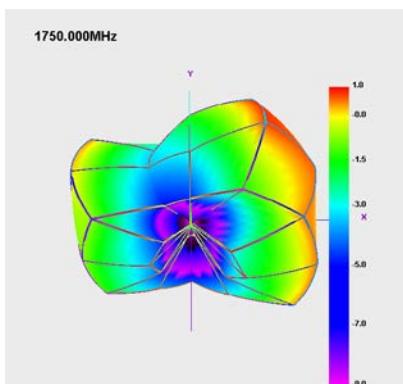


E2 plane

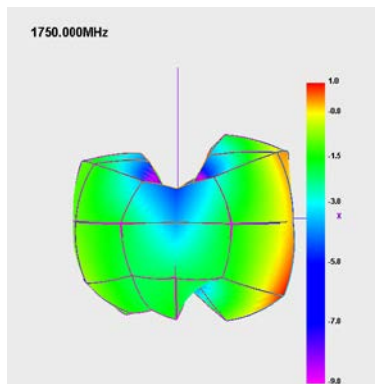


LTE B4

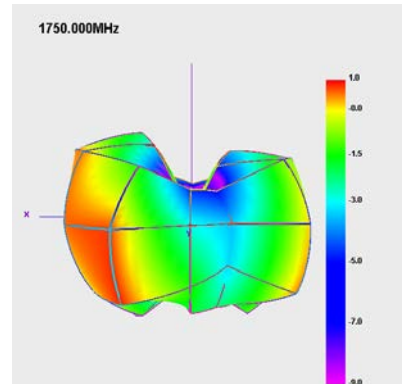
H plane



E1 plane



E2 plane

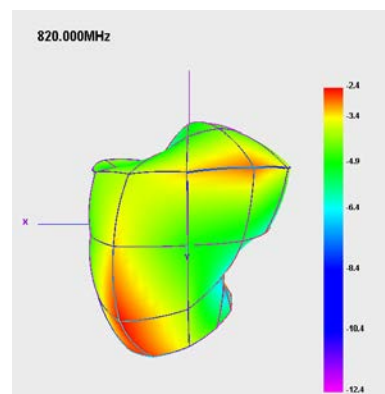
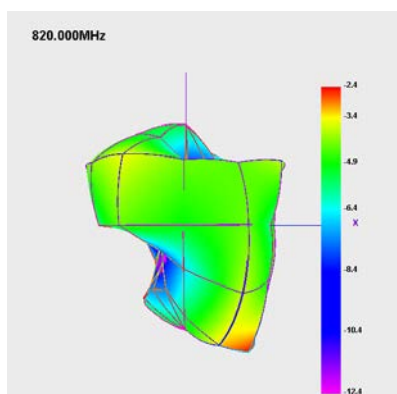
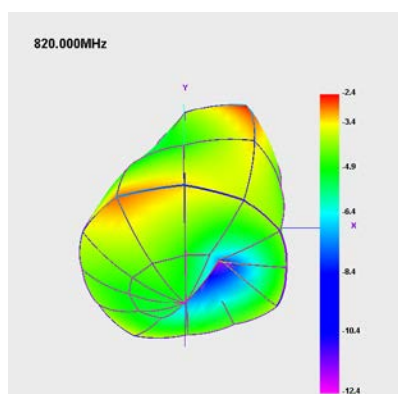


LTE B5

H plane

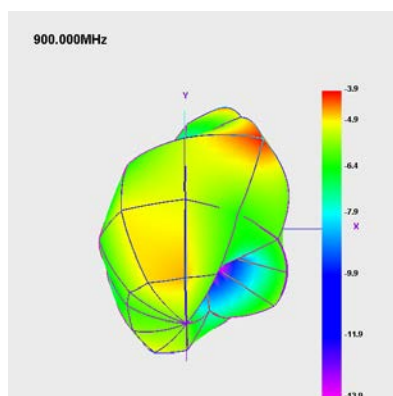
E1 plane

E2 plane

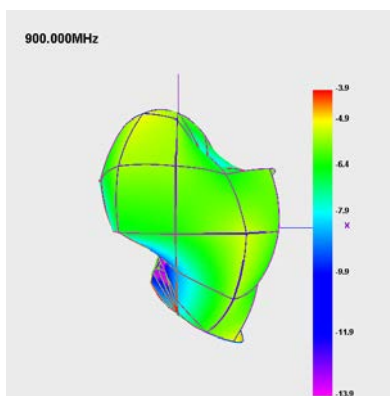


LTE B8

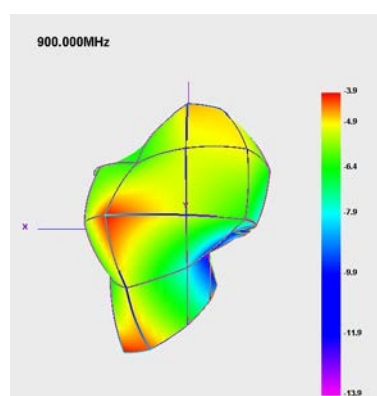
H plane



E1 plane

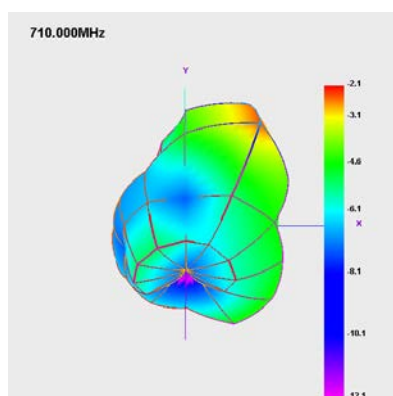


E2 plane

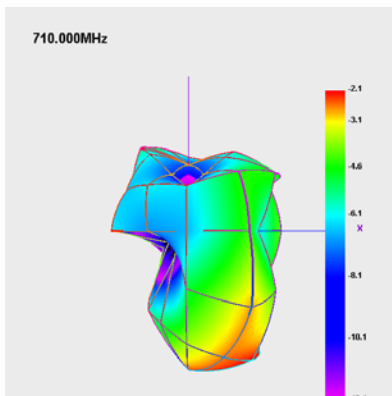


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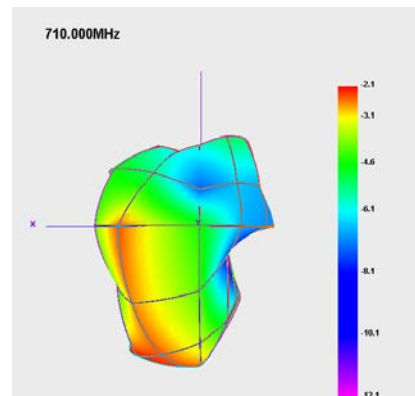
H plane



E1 plane

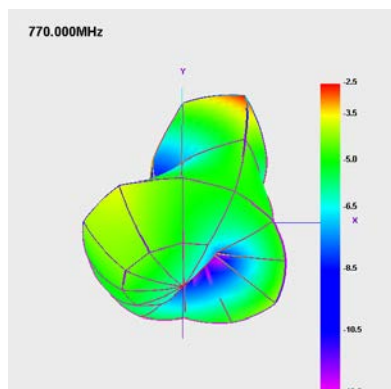


E2 plane

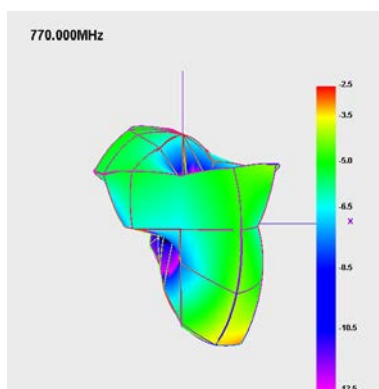


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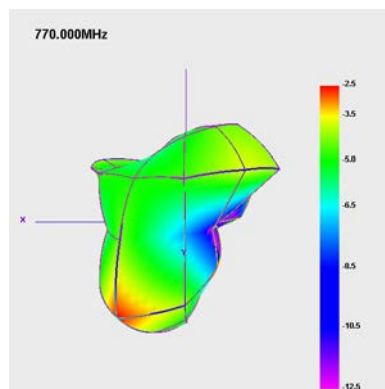
H plane



E1 plane

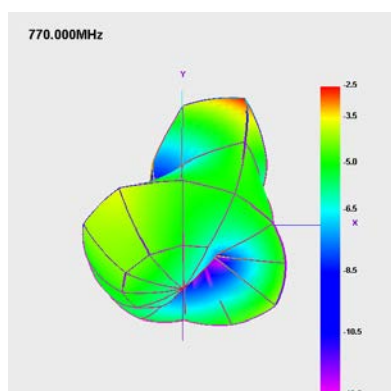


E2 plane

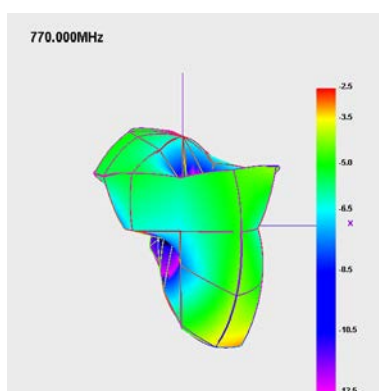


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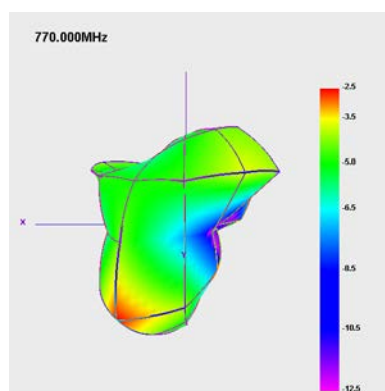
H plane



E1 plane



E2 plane

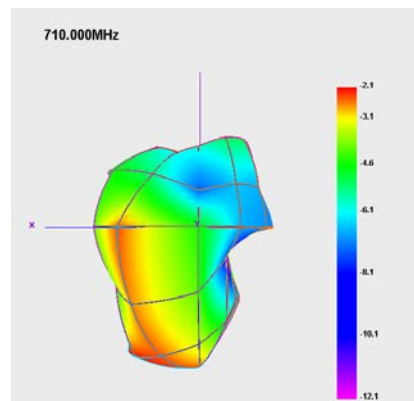
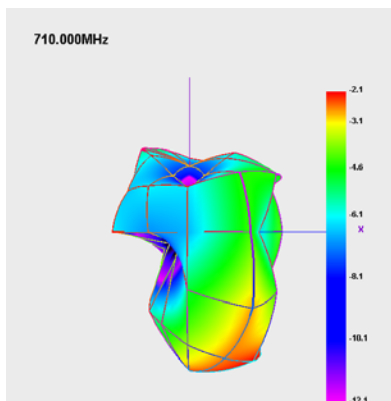
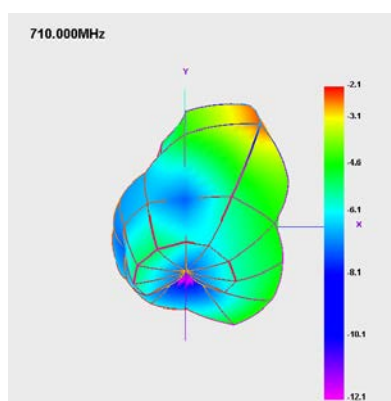


LTE B17

H plane

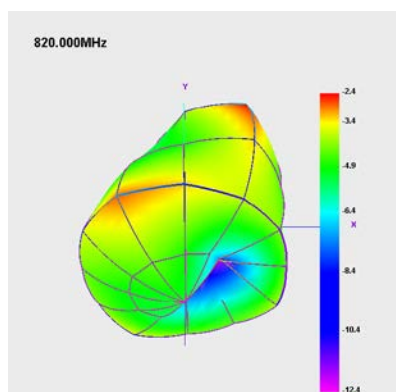
E1 plane

E2 plane

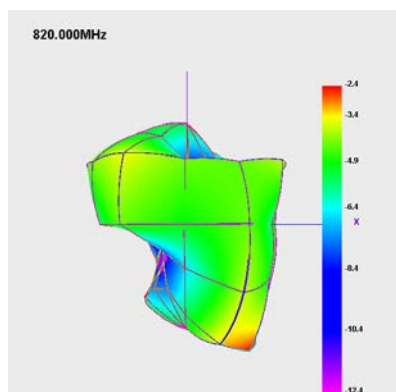


LTE B18

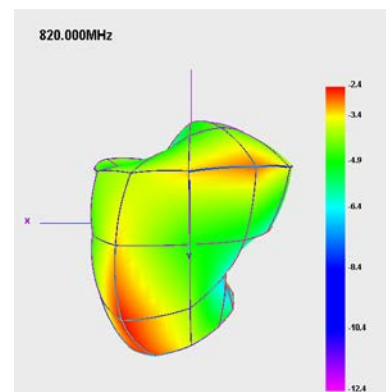
H plane



E1 plane

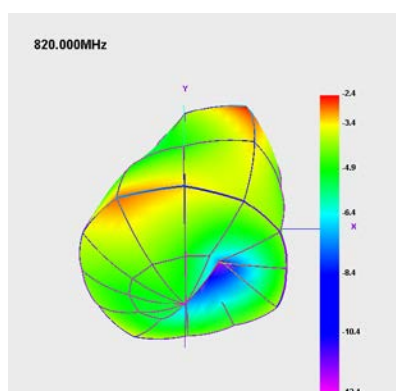


E2 plane

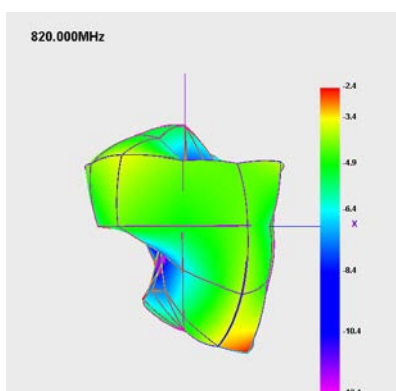


LTE B19

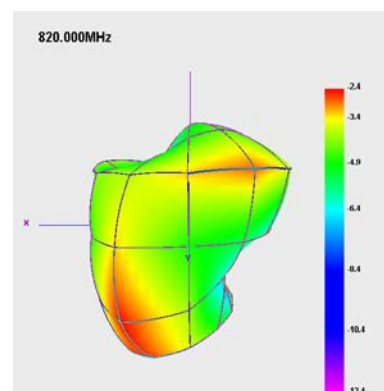
H plane



E1 plane



E2 plane



LTE B20

H plane

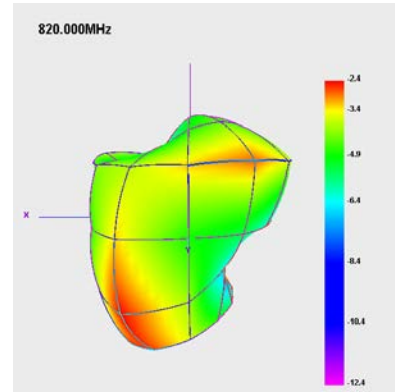
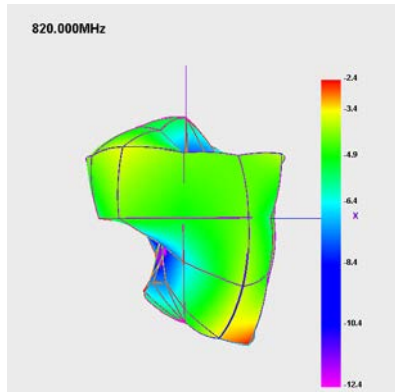
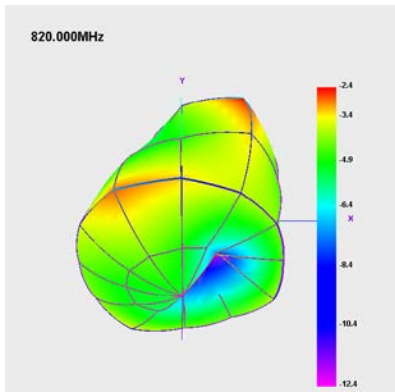


E1 plane



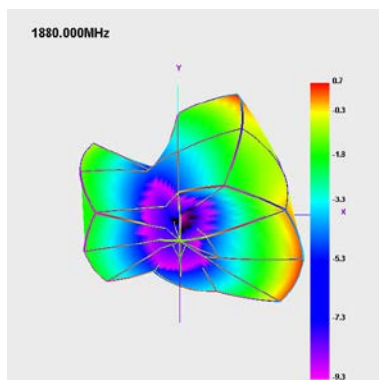
E2 plane



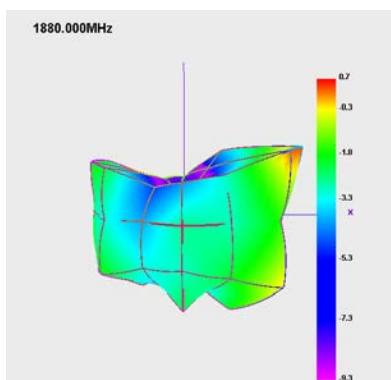


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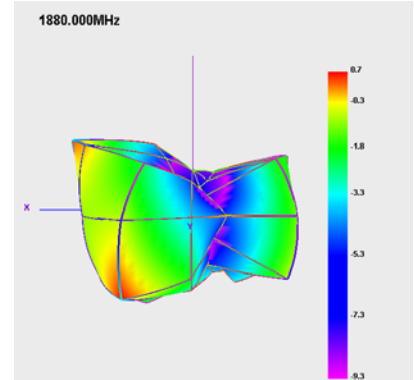
H plane



E1 plane

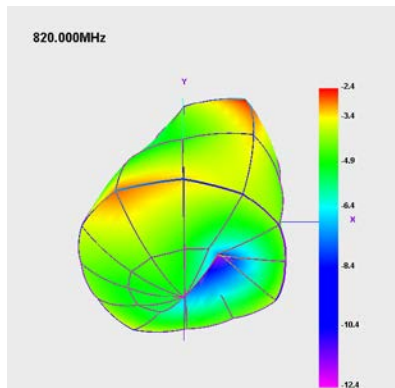


E2 plane

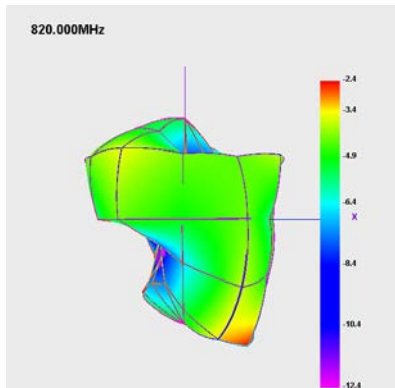


LTE B26

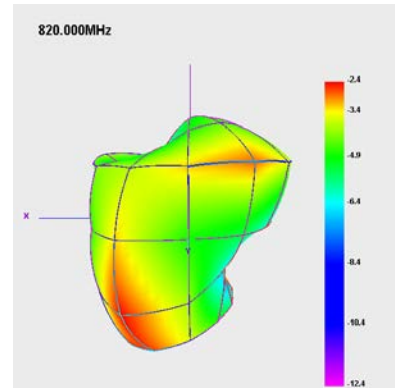
H plane



E1 plane

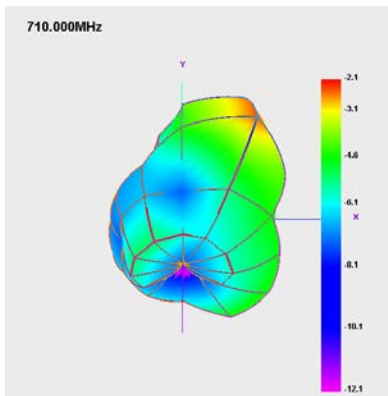


E2 plane

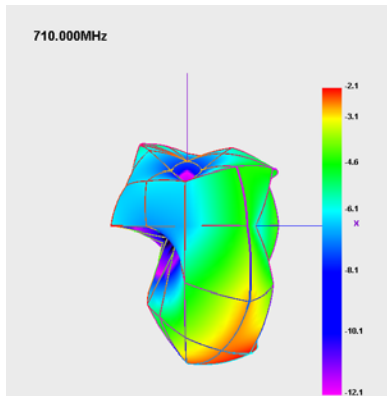


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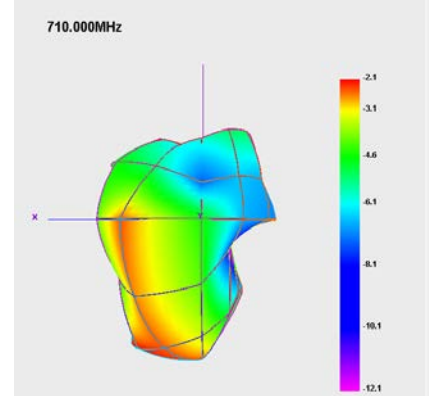
H plane



E1 plane

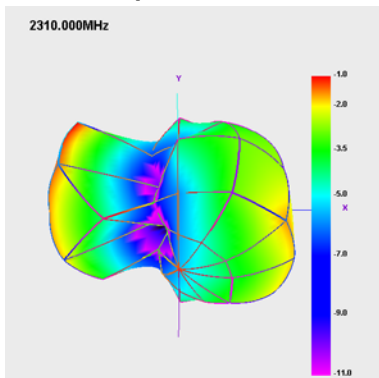


E2 plane

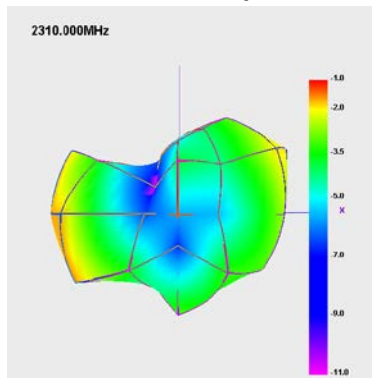


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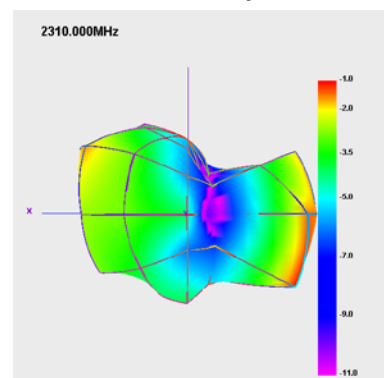
H plane



E1 plane

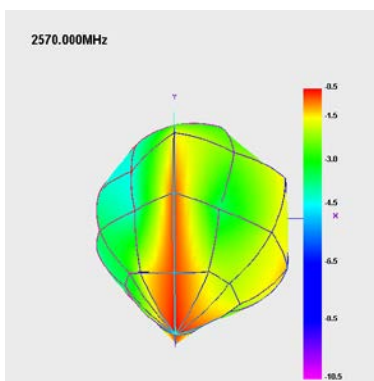


E2 plane

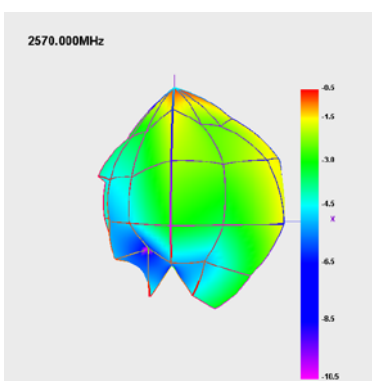


LTE B38

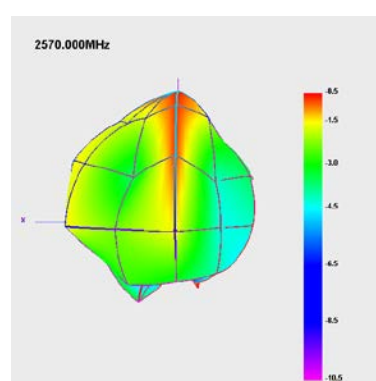
H plane



E1 plane

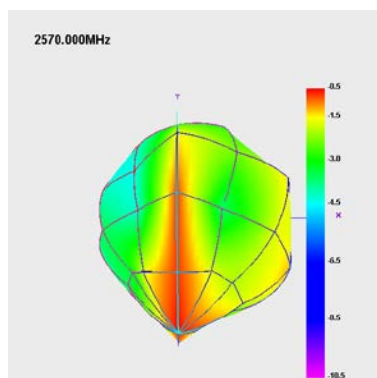


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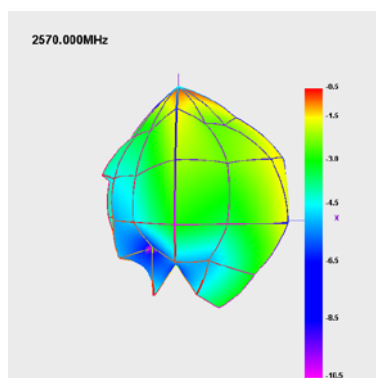


LTE B41

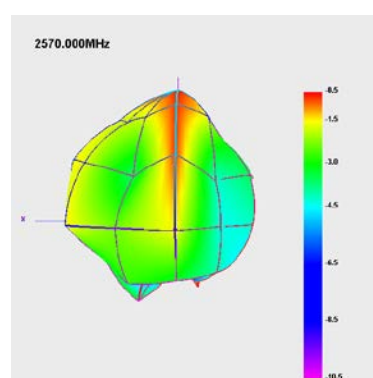
H plane



E1 plane

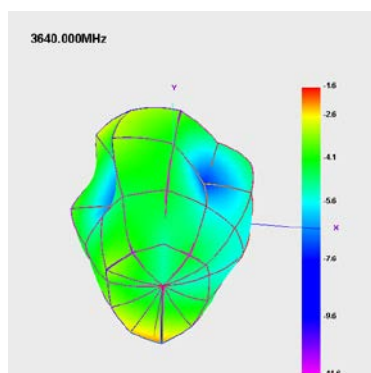


E2 plane

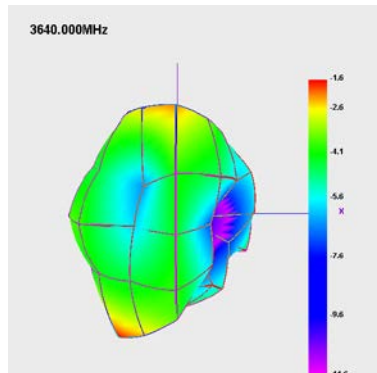


LTE B48

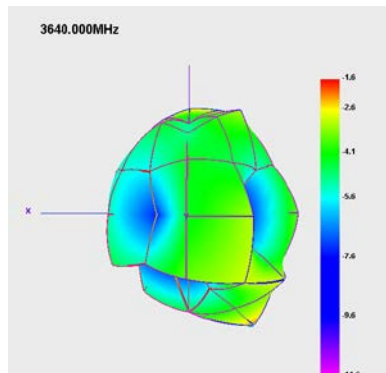
H plane



E1 plane

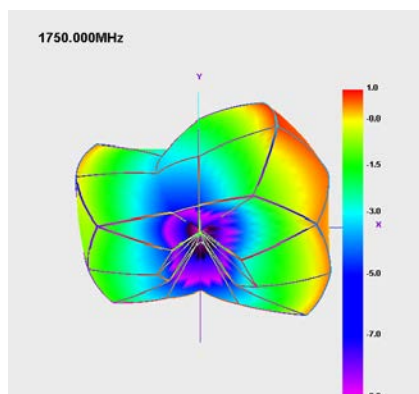


E2 plane

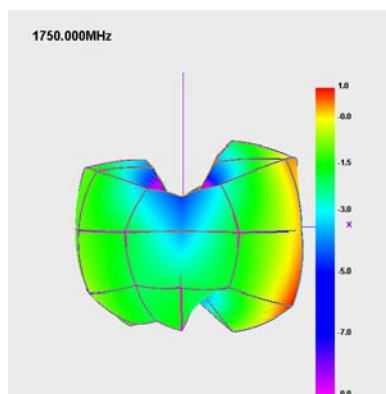


LTE B66

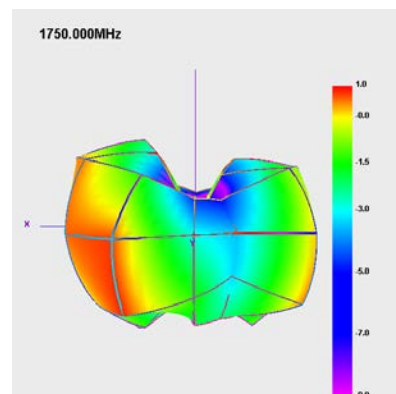
H plane



E1 plane

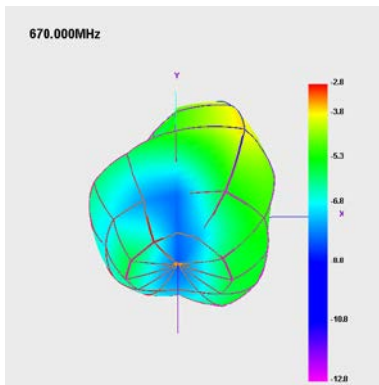


E2 plane

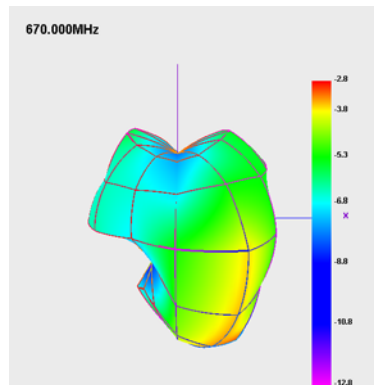


LTE B71

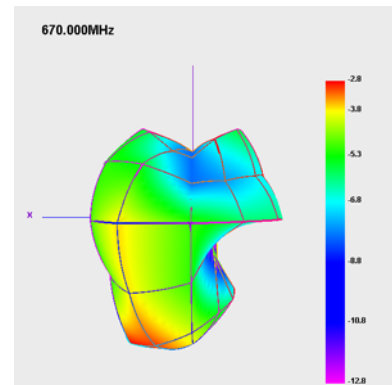
H plane



E1 plane

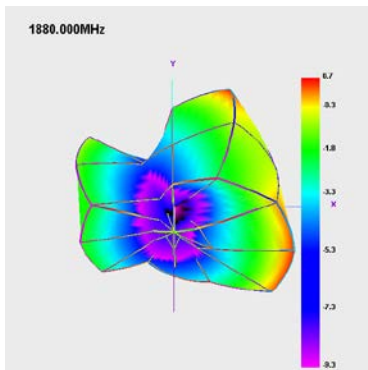


E2 plane

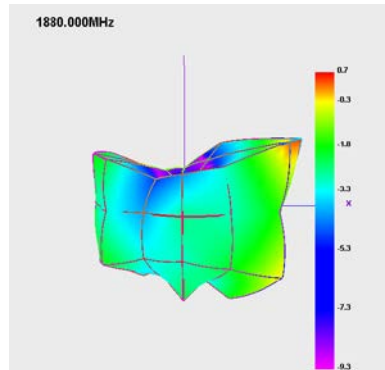


NR N2

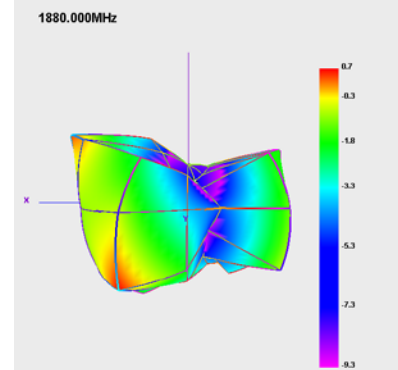
H plane



E1 plane

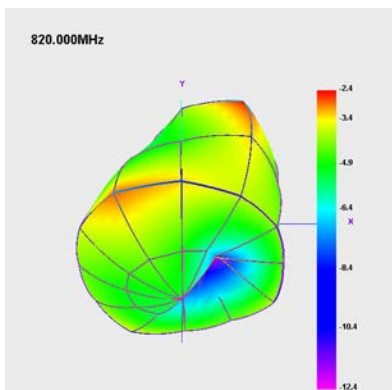


E2 plane

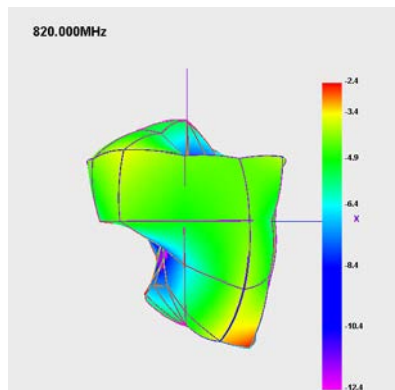


NR N5

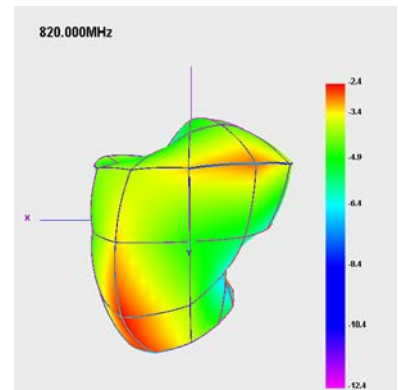
H plane



E1 plane

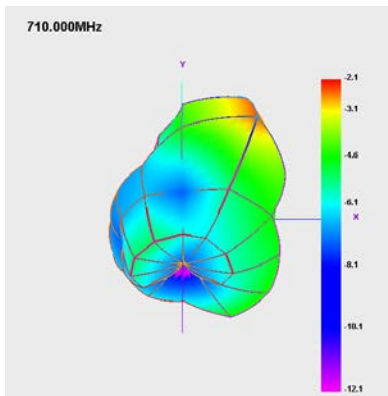


E2 plane

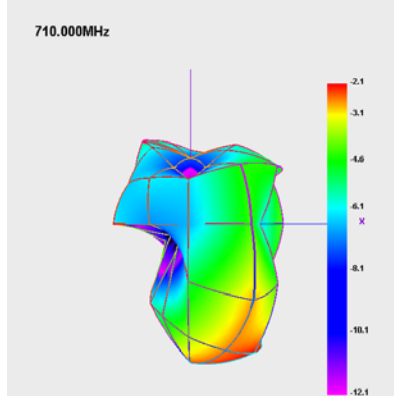


NR N12

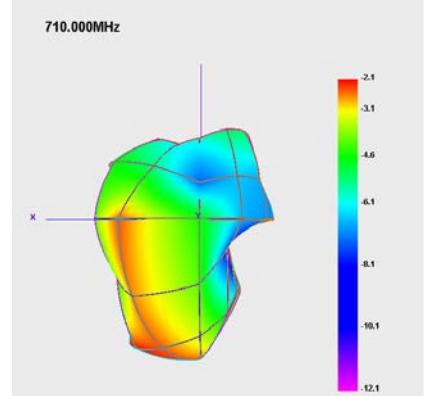
H plane



E1 plane

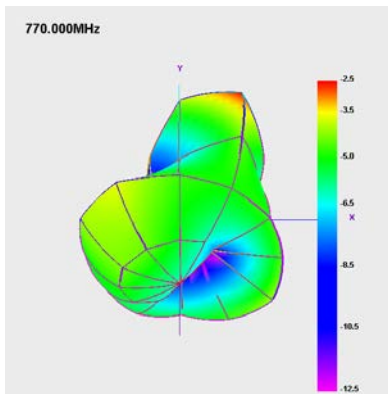


E2 plane

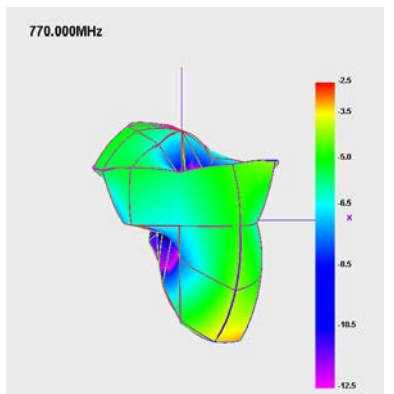


NR N14

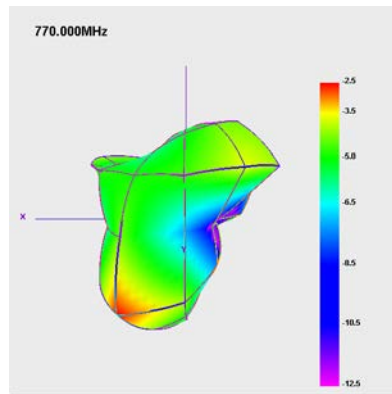
H plane



E1 plane

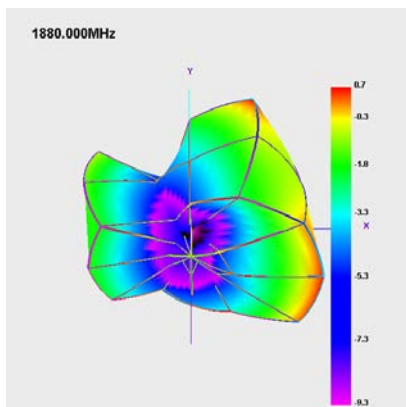


E2 plane

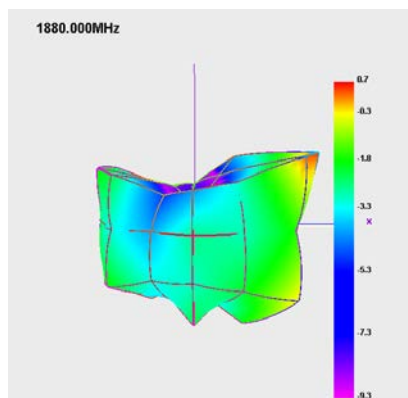


NR N25

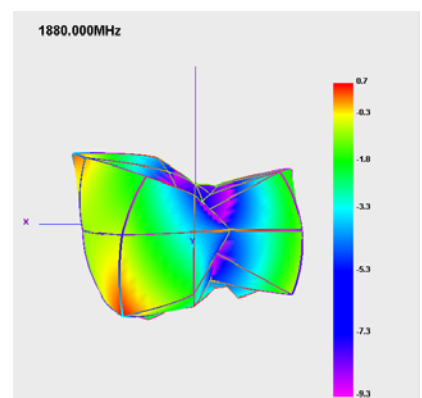
H plane



E1 plane

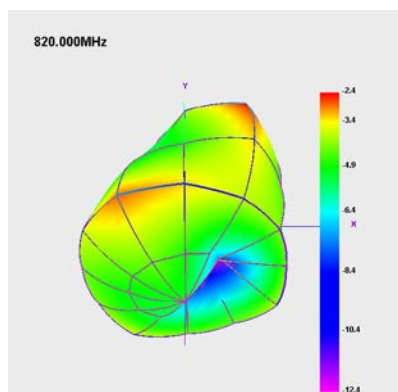


E2 plane

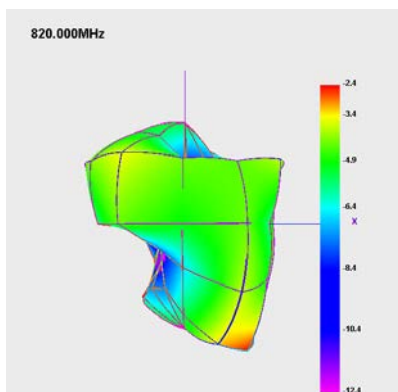


NR N26

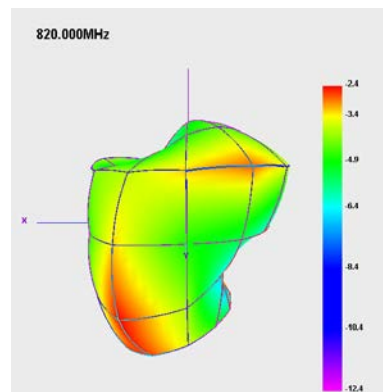
H plane



E1 plane

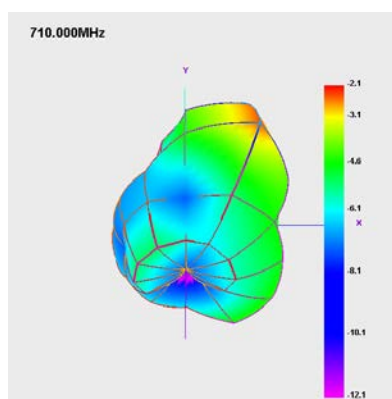


E2 plane

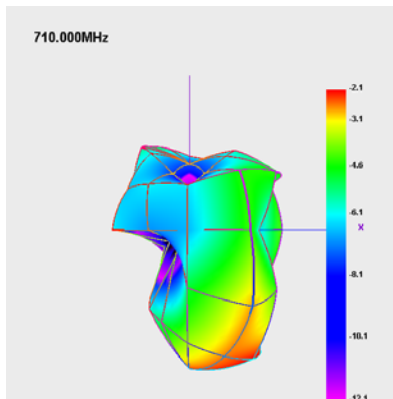


NR N29

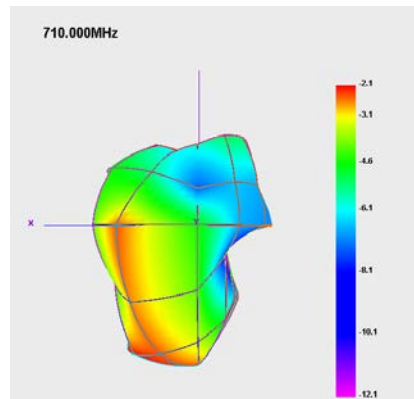
H plane



E1 plane

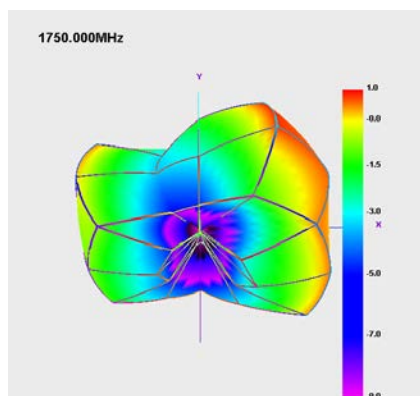


E2 plane

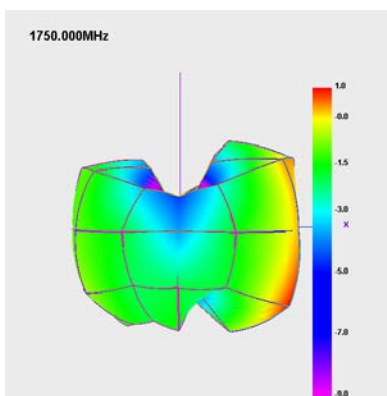


NR N66

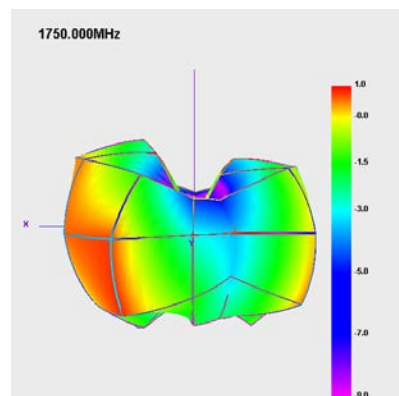
H plane



E1 plane

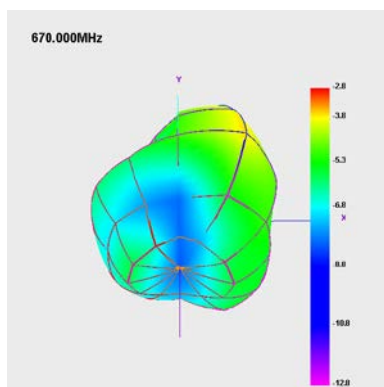


E2 plane

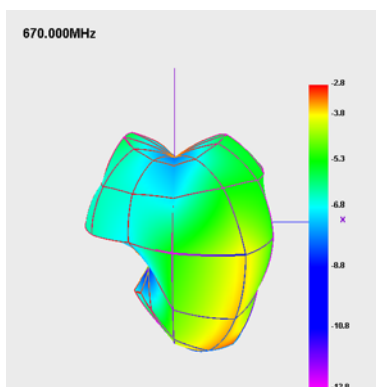


NR N71

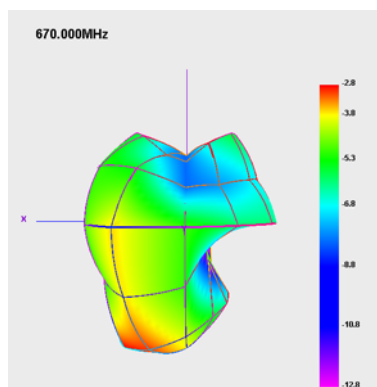
H plane



E1 plane

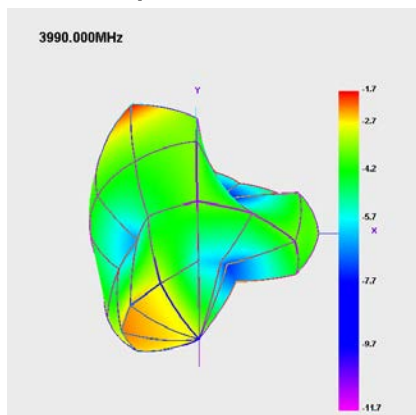


E2 plane

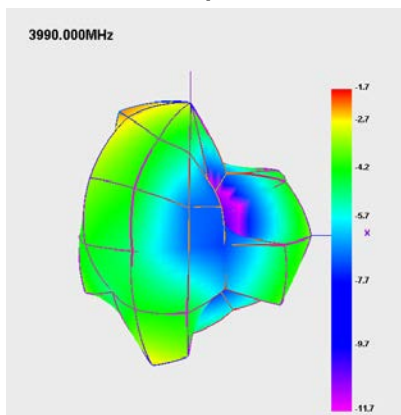


NR N77

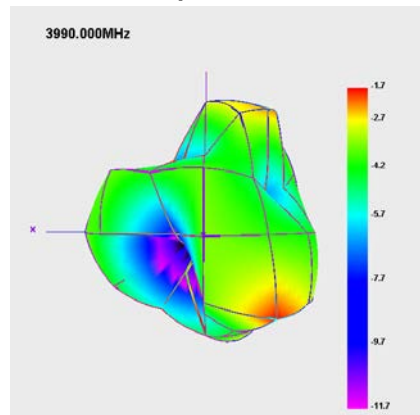
H plane



E1 plane

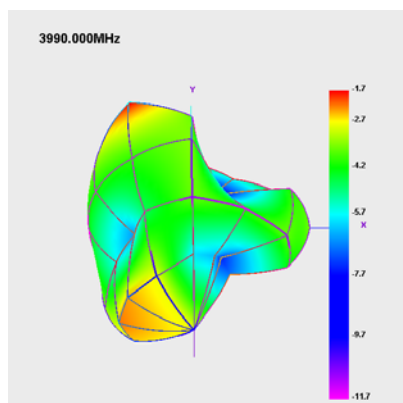


E2 plane

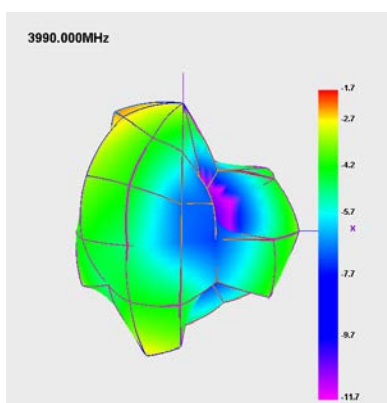


NR N78

H plane



E1 plane



E2 plane

