CTIA Report - CC1352 LP ant cut 5p6F LPseries 3n3H HPseries (RP_868.000_tot)

Test Information

Test Method:	Radiated Power Passive Antenna
Test Condition:	FS: Free Space
Frequency:	868.000 MHz
Test Time:	Start: 23.03.2017 13:02:48; Stop: 23.03.2017 13:47:13
Cal Data Hor:	37.66 dB (Range Calibration RadPower Hor Eval 100 to 12750MHz)
Cal Data Ver:	39.64 dB (Range Calibration RadPower Ver Eval 100 to 12750MHz)

OTA Evaluation Results

Total Radiated Power	0.28 dBm
Peak EIRP	3.87 dBm
Directivity	3.59 dBi
Efficiency	0.28 dB
Efficiency	106.71 %
Peak Gain	3.87 dBi
NHPRP 45°	-1.90 dBm
NHPRP 45° / TRP	-2.18 dB
NHPRP 45° / TRP	60.57 %
NHPRP 30°	-3.50 dBm
NHPRP 30° / TRP	-3.79 dB
NHPRP 30° / TRP	41.81 %
NHPRP 22.5°	-4.78 dBm
NHPRP 22.5° / TRP	-5.06 dB
NHPRP 22.5° / TRP	31.15 %
UHRP	-3.02 dBm
UHRP / TRP	-3.30 dB
UHRP / TRP	46.73 %
LHRP	-2.74 dBm
LHRP / TRP	-3.02 dB
LHRP / TRP	49.84 %
PGRP (0-120°)	-1.31 dBm
PGRP / TRP	-1.59 dB
PGRP / TRP	69.36 %
Front/Back Ratio	1.66
PhiBW	326.8 deg
PhiBW Up	93.8 deg
PhiBW Down	233.0 deg
ThetaBW	107.5 deg
ThetaBW Up	52.4 deg
ThetaBW Down	55.1 deg
Boresight Phi	45 deg
Boresight Theta	15 deg
Maximum Power	3.87 dBm
Minimum Power	-14.88 dBm
Average Power	0.95 dBm
Max/Min Ratio	18.75 dB
Max/Avg Ratio	2.92 dB
Min/Avg Ratio	-15.83 dB
Worst Single Value	-41.15 dBm
Worst Position	Azi = 0 deg; Elev = 135 deg; Pol = Hor
Best Single Value	3.53 dBm
Best Position	Azi = 180 deg; Elev = 105 deg; Pol = Ver

RP_868.000_tot

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 15 deg (dB)	Elevation 30 deg (dB)	Elevation 45 deg (dB)	Elevation 60 deg (dB)	Elevation 75 deg (dB)	Elevation 90 deg (dB)	Elevation 105 deg (dB)
0.00	2.81	2.63	1.89	1.24	1.69	1.35	1.89	3.11
15.00	3.04	3.18	2.50	1.92	2.12	1.69	1.78	2.89
30.00	3.24	3.64	2.83	2.35	2.02	1.48	1.01	2.00
45.00	3.36	3.87	2.87	2.34	1.32	0.42	-0.73	-0.02
60.00	3.29	3.83	2.66	1.95	0.12	-1.56	-3.46	-3.26
75.00	3.27	3.54	2.16	1.21	-1.52	-5.42	-8.24	-9.54
90.00	3.07	3.01	1.69	0.35	-2.99	-11.75	-12.34	-12.49
105.00	2.69	2.31	1.21	-0.50	-3.49	-10.90	-7.39	-5.15
120.00	2.27	1.51	0.98	-0.86	-2.56	-4.97	-3.28	-1.22
135.00	1.77	0.96	1.03	-0.66	-0.85	-1.24	-0.48	1.38
150.00	1.36	0.60	1.13	0.00	0.40	0.85	1.07	2.76
165.00	1.11	0.70	1.32	0.67	1.32	2.10	1.83	3.51
180.00	1.09	1.07	1.49	1.09	1.65	2.50	1.81	3.61
195.00	1.32	1.64	1.54	1.28	1.49	2.26	0.94	3.04
210.00	1.66	2.14	1.54	1.11	0.86	1.42	-0.65	2.00
225.00	2.12	2.54	1.34	0.65	-0.14	-0.12	-3.35	0.07
240.00	2.47	2.64	1.09	-0.06	-1.28	-2.03	-7.18	-2.47
255.00	2.80	2.62	0.69	-1.05	-2.61	-4.51	-13.61	-6.02
270.00	2.94	2.36	0.19	-2.17	-3.84	-6.89	-14.88	-8.87
285.00	2.90	1.81	-0.39	-3.57	-4.80	-8.13	-8.57	-7.09
300.00	2.77	1.27	-0.83	-4.64	-4.71	-6.99	-4.85	-3.62
315.00	2.73	0.91	-0.76	-4.70	-3.31	-4.48	-2.01	-0.65
330.00	2.72	1.09	-0.11	-3.16	-1.41	-2.23	-0.13	1.33
345.00	2.55	1.89	0.45	-0.94	-0.13	-0.30	1.19	2.64
360.00	2.81	2.63	1.89	1.24	1.69	1.35	1.89	3.11

(continuation of the "RP_868.000_tot" table from column 9 ...)

Azimuth (deg)	Elevation 120 deg (dB)	Elevation 135 deg (dB)	Elevation 150 deg (dB)	Elevation 165 deg (dB)	Elevation 170 deg (dB)
0.00	1.71	2.29	2.19	2.27	2.32
15.00	1.57	2.37	1.89	1.78	1.72
30.00	0.84	2.17	1.27	1.23	0.88
45.00	-0.55	1.59	0.49	0.67	0.14
60.00	-2.28	0.83	-0.09	0.41	-0.10
75.00	-3.90	-0.08	-0.13	0.44	0.32
90.00	-3.82	-0.75	0.36	0.80	1.03
105.00	-2.07	-1.01	1.22	1.38	1.88
120.00	-0.25	-0.79	1.98	1.91	2.53
135.00	1.22	-0.35	2.62	2.35	2.99
150.00	1.99	0.11	2.90	2.58	3.08
165.00	2.27	0.49	2.92	2.68	2.92
180.00	2.08	0.48	2.68	2.67	2.59
195.00	1.40	0.18	2.24	2.57	2.15
210.00	0.39	-0.38	1.74	2.43	1.72
225.00	-0.94	-1.23	1.08	2.21	1.43
240.00	-2.31	-2.13	0.66	2.00	1.49
255.00	-3.60	-3.06	0.31	1.95	1.68
270.00	-4.26	-3.61	0.15	2.02	2.08
285.00	-3.91	-3.51	0.26	2.09	2.55
300.00	-2.74	-2.75	0.62	2.24	2.86
315.00	-1.12	-1.38	1.24	2.40	3.07
330.00	0.22	0.02	1.74	2.52	3.16
345.00	0.97	1.41	1.91	2.67	2.80
360.00	1.71	2.29	2.19	2.27	2.32

RP_868.000_hor

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 15 deg (dB)	Elevation 30 deg (dB)	Elevation 45 deg (dB)	Elevation 60 deg (dB)	Elevation 75 deg (dB)	Elevation 90 deg (dB)	Elevation 105 deg (dB)
0.0	-22.65	-18.59	-17.31	-17.76	-21.52	-16.45	-16.23	-15.66
15.0	-9.06	-6.95	-8.78	-8.84	-15.48	-15.53	-14.90	-19.34
30.0	-3.53	-2.58	-4.22	-4.84	-9.98	-13.94	-13.47	-23.04
45.0	-0.41	0.06	-1.34	-2.35	-6.74	-12.69	-12.60	-20.57

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 15 deg (dB)	Elevation 30 deg (dB)	Elevation 45 deg (dB)	Elevation 60 deg (dB)	Elevation 75 deg (dB)	Elevation 90 deg (dB)	Elevation 105 deg (dB)
60.0	1.25	1.55	0.25	-1.03	-5.00	-12.23	-12.20	-17.17
75.0	2.44	2.44	1.08	-0.32	-3.88	-12.40	-12.17	-15.04
90.0	2.84	2.62	1.40	-0.20	-3.51	-13.18	-12.55	-13.87
105.0	2.68	2.26	1.14	-0.54	-3.61	-14.99	-13.35	-13.10
120.0	2.00	1.23	0.40	-1.36	-4.20	-17.95	-14.16	-12.75
135.0	0.49	-0.48	-1.03	-2.92	-5.33	-25.49	-15.22	-12.88
150.0	-1.88	-3.40	-3.38	-5.04	-7.12	-28.91	-15.90	-13.30
165.0	-6.38	-9.00	-7.75	-9.03	-9.93	-17.43	-16.00	-13.91
180.0	-15.04	-19.87	-15.78	-16.60	-12.42	-12.64	-15.59	-14.13
195.0	-10.84	-8.49	-14.14	-23.65	-11.54	-9.62	-15.18	-13.56
210.0	-4.30	-3.39	-7.17	-11.83	-8.74	-7.88	-15.17	-12.76
225.0	-0.62	-0.44	-3.86	-7.53	-6.48	-6.90	-15.50	-11.95
240.0	1.27	1.01	-2.09	-5.62	-5.21	-6.55	-15.95	-11.55
255.0	2.49	1.94	-0.96	-4.49	-4.56	-6.74	-16.55	-11.29
270.0	2.92	2.15	-0.56	-4.09	-4.48	-7.35	-17.27	-11.35
285.0	2.69	1.71	-0.69	-4.21	-4.87	-8.42	-18.80	-11.21
300.0	1.88	0.67	-1.43	-4.85	-5.61	-9.81	-21.42	-11.13
315.0	0.29	-1.33	-2.95	-6.54	-7.03	-11.75	-28.00	-11.29
330.0	-2.29	-4.38	-5.50	-9.58	-9.16	-13.46	-32.29	-11.79
345.0	-7.26	-8.75	-11.17	-14.75	-13.06	-14.93	-22.44	-12.86
360.0	-22.65	-18.59	-17.31	-17.76	-21.52	-16.45	-16.23	-15.66

(continuation of the "RP_868.000_hor" table from column 9 ...)

Azimuth (deg)	Elevation 120 deg (dB)	Elevation 135 deg (dB)	Elevation 150 deg (dB)	Elevation 165 deg (dB)	Elevation 170 deg (dB)
0.0	-13.28	-41.15	-10.37	-9.50	-10.49
15.0	-21.06	-13.62	-11.72	-18.34	-24.99
30.0	-22.21	-7.85	-8.09	-9.65	-11.04
45.0	-12.25	-4.46	-4.10	-4.17	-4.63
60.0	-8.36	-2.62	-1.83	-1.43	-1.63
75.0	-6.09	-1.42	-0.34	0.14	0.19
90.0	-5.10	-0.97	0.28	0.77	0.94
105.0	-4.81	-1.10	0.28	0.73	1.07
120.0	-5.27	-1.81	-0.32	0.02	0.57
135.0	-6.62	-3.49	-1.76	-1.73	-0.76
150.0	-8.95	-6.05	-4.24	-4.58	-3.13
165.0	-13.24	-10.89	-8.84	-10.75	-7.68
180.0	-18.18	-20.06	-16.11	-26.34	-19.63
195.0	-13.95	-14.32	-11.34	-9.27	-13.15
210.0	-9.72	-8.91	-5.92	-4.13	-5.81
225.0	-7.05	-5.99	-2.95	-1.08	-1.92
240.0	-5.61	-4.56	-1.25	0.50	0.18
255.0	-4.76	-3.86	-0.25	1.51	1.39
270.0	-4.38	-3.71	0.11	1.98	2.04
285.0	-4.27	-4.00	0.06	1.92	2.22
300.0	-4.40	-4.79	-0.34	1.48	1.85
315.0	-4.95	-6.27	-1.24	0.55	0.92
330.0	-5.92	-8.50	-2.60	-0.88	-0.40
345.0	-7.76	-11.45	-4.91	-2.86	-3.00
360.0	-13.28	-41.15	-10.37	-9.50	-10.49

RP_868.000_ver

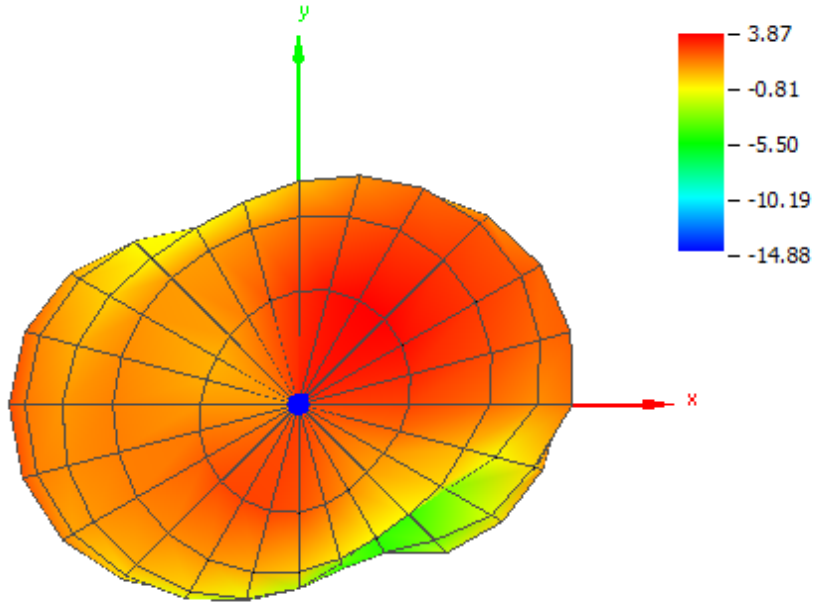
Azimuth (deg)	Elevation 0 deg (dB)	Elevation 15 deg (dB)	Elevation 30 deg (dB)	Elevation 45 deg (dB)	Elevation 60 deg (dB)	Elevation 75 deg (dB)	Elevation 90 deg (dB)	Elevation 105 deg (dB)
0.0	2.80	2.60	1.84	1.18	1.67	1.28	1.83	3.05
15.0	2.76	2.74	2.16	1.54	2.05	1.61	1.69	2.86
30.0	2.22	2.45	1.87	1.44	1.74	1.35	0.85	1.99
45.0	0.99	1.54	0.79	0.55	0.58	0.20	-1.02	-0.05
60.0	-0.97	-0.06	-1.05	-1.08	-1.48	-1.94	-4.09	-3.45
75.0	-4.30	-2.96	-4.40	-4.07	-5.30	-6.39	-10.49	-10.98
90.0	-9.95	-7.65	-10.15	-8.88	-12.40	-17.26	-25.57	-18.12
105.0	-25.15	-16.72	-16.63	-20.85	-19.46	-13.04	-8.66	-5.91
120.0	-9.85	-10.48	-8.05	-10.49	-7.59	-5.19	-3.65	-1.54
135.0	-4.13	-4.52	-3.20	-4.59	-2.76	-1.26	-0.63	1.22

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 15 deg (dB)	Elevation 30 deg (dB)	Elevation 45 deg (dB)	Elevation 60 deg (dB)	Elevation 75 deg (dB)	Elevation 90 deg (dB)	Elevation 105 deg (dB)
150.0	-1.43	-1.60	-0.77	-1.64	-0.44	0.84	0.98	2.66
165.0	0.25	0.21	0.74	0.17	0.98	2.05	1.76	3.43
180.0	0.98	1.03	1.40	1.02	1.47	2.37	1.73	3.53
195.0	1.05	1.20	1.42	1.27	1.27	1.97	0.83	2.95
210.0	0.40	0.72	0.92	0.88	0.36	0.88	-0.80	1.85
225.0	-1.17	-0.50	-0.22	-0.07	-1.29	-1.14	-3.62	-0.21
240.0	-3.71	-2.41	-1.75	-1.48	-3.52	-3.92	-7.80	-3.04
255.0	-8.81	-5.77	-4.31	-3.67	-7.04	-8.48	-16.70	-7.55
270.0	-20.28	-10.96	-7.85	-6.63	-12.45	-16.84	-18.61	-12.49
285.0	-10.35	-14.32	-12.13	-12.22	-23.11	-20.02	-9.00	-9.21
300.0	-4.54	-7.65	-9.77	-18.07	-11.95	-10.19	-4.94	-4.47
315.0	-0.94	-3.04	-4.78	-9.31	-5.72	-5.38	-2.02	-1.04
330.0	1.07	-0.35	-1.59	-4.29	-2.21	-2.58	-0.13	1.11
345.0	2.07	1.50	0.14	-1.12	-0.36	-0.45	1.17	2.51
360.0	2.80	2.60	1.84	1.18	1.67	1.28	1.83	3.05

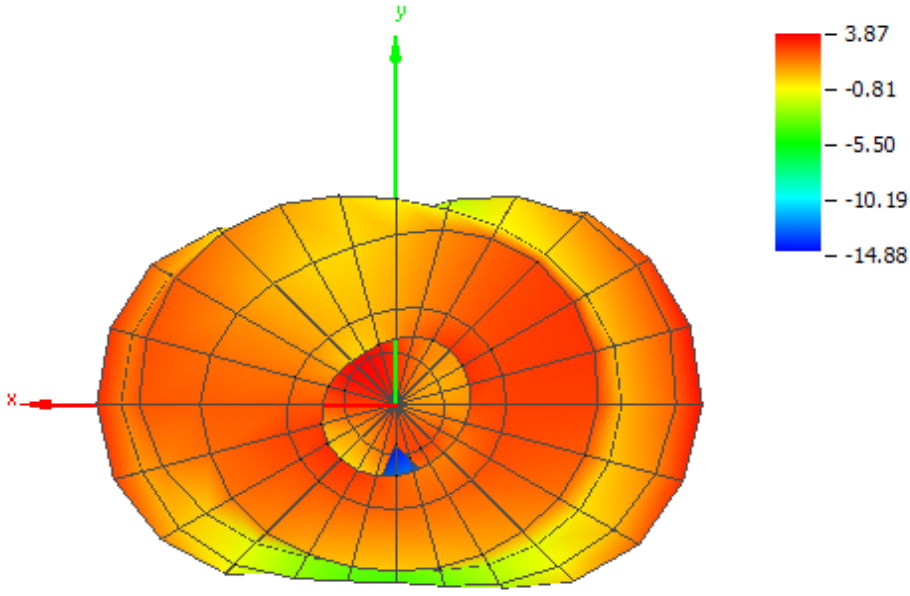
(continuation of the "RP_868.000_ver" table from column 9 ...)

Azimuth (deg)	Elevation 120 deg (dB)	Elevation 135 deg (dB)	Elevation 150 deg (dB)	Elevation 165 deg (dB)	Elevation 170 deg (dB)
0.0	1.57	2.29	1.94	1.97	2.09
15.0	1.55	2.26	1.70	1.74	1.71
30.0	0.82	1.71	0.73	0.86	0.59
45.0	-0.85	0.35	-1.36	-1.06	-1.63
60.0	-3.51	-1.78	-4.91	-4.19	-5.37
75.0	-7.91	-5.84	-13.43	-11.30	-14.92
90.0	-9.74	-13.80	-16.65	-21.07	-15.91
105.0	-5.36	-17.80	-5.92	-7.23	-5.78
120.0	-1.89	-7.57	-1.88	-2.61	-1.85
135.0	0.44	-3.23	0.65	0.19	0.61
150.0	1.62	-1.09	1.96	1.66	1.89
165.0	2.15	0.16	2.62	2.48	2.53
180.0	2.03	0.44	2.62	2.66	2.57
195.0	1.28	0.02	2.04	2.28	2.02
210.0	-0.05	-1.04	0.92	1.35	0.88
225.0	-2.16	-2.99	-1.11	-0.54	-1.27
240.0	-5.05	-5.80	-3.84	-3.34	-4.35
255.0	-9.90	-10.80	-8.83	-8.22	-10.22
270.0	-19.88	-19.98	-20.07	-17.98	-18.11
285.0	-14.92	-13.26	-13.23	-12.05	-8.81
300.0	-7.73	-7.01	-6.37	-5.69	-3.97
315.0	-3.44	-3.08	-2.37	-2.19	-1.01
330.0	-0.98	-0.64	-0.26	-0.14	0.64
345.0	0.34	1.18	0.90	1.24	1.48
360.0	1.57	2.29	1.94	1.97	2.09

Theta = 0, Phi = 0



Theta = 180, Phi = 0



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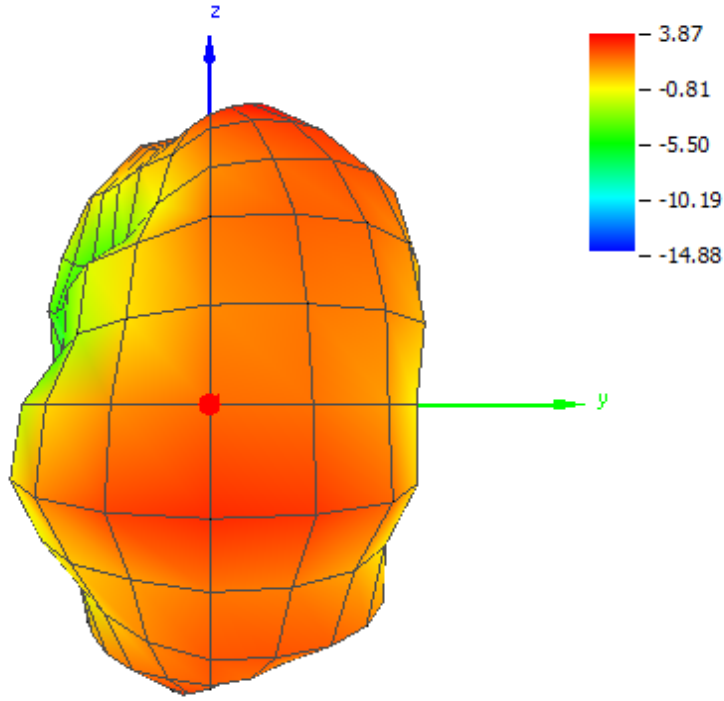

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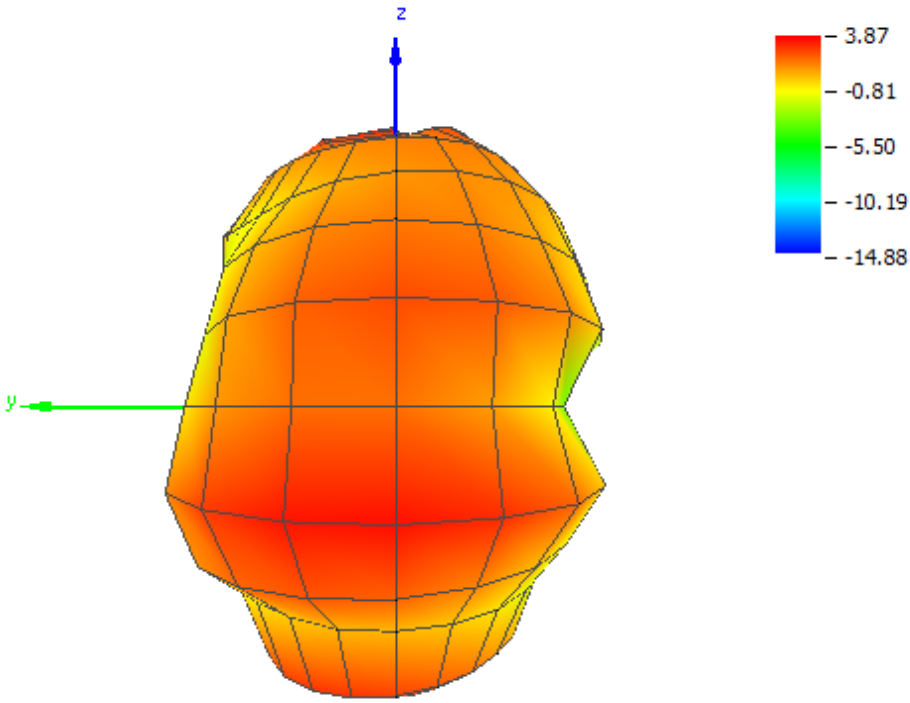

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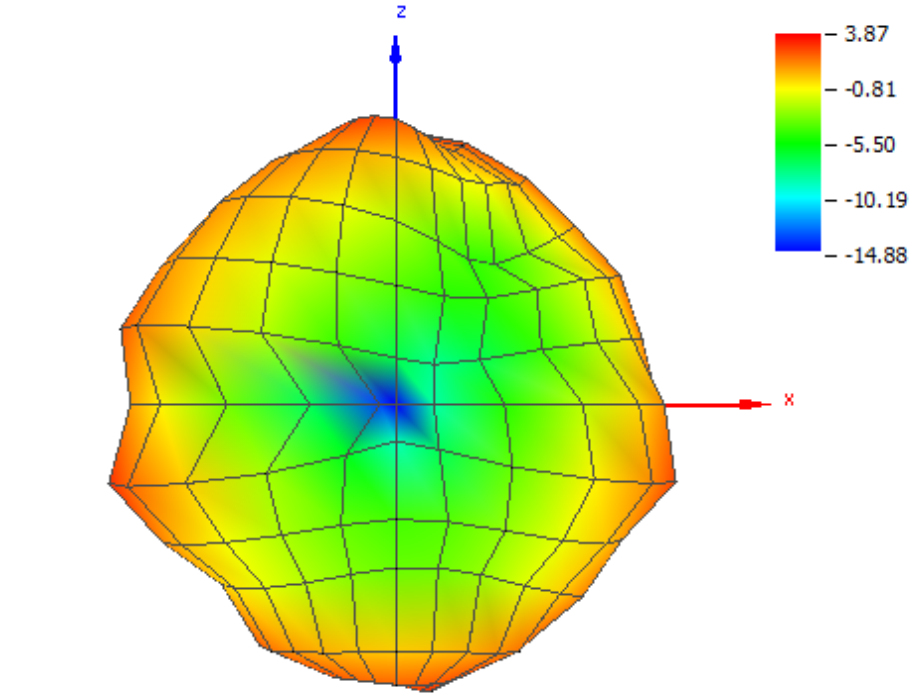

Theta = 90, Phi = 90