# **Test Report**

### **OTA Test Results for Frequency 2400.000 MHz**

**OTA Evaluation Results:** 

**Total Radiated Power** -1.70 dBm Peak EIRP 4.33 dBm Directivity 6.03 dBi Efficiency -1.70 dB Efficiency 67.59 % Gain 4.33 dBi NHPRP 45° -3.56 dBm -1.85 dB NHPRP 45° / TRP NHPRP 45° / TRP 65.24 % NHPRP 30° -5.29 dBm NHPRP 30° / TRP -3.59 dB 43.77 % -6.55 dBm NHPRP 30° / TRP NHPRP 22.5° -4.85 dB NHPRP 22.5° / TRP NHPRP 22.5° / TRP 32.71 % UHRP -3.24 dBm UHRP / TRP -1.54 dB UHRP / TRP 70.18 % LHRP -6.96 dBm LHRP / TRP -5.26 dB LHRP / TRP 29.82 % Front/Back Ratio 9.89 PhiBW 171.4 deg PhiBW Up 129.7 deg PhiBW Down 41.7 deg 80.0 deg ThetaBW ThetaBW Up 39.9 deg ThetaBW Down 40.1 deg 45 deg Boresight Phi **Boresight Theta** 45 deg Maximum Power 4.33 dBm Minimum Power -11.30 dBm Average Power -1.41 dBm Max/Min Ratio 15.63 dB Max/Avg Ratio 5.74 dB Min/Avg Ratio -9.89 dB Best Single Value 3.68 dBm

Best Position Phi = 30 deg; Theta = 60 deg; Pol = Ver

## RP\_2400.000\_tot

Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
, ,,	(dB)												
0.00	0.13	0.26	1.32	0.96	1.59	1.57	1.73	1.17	0.33	-1.68	-4.21	-9.33	-5.84
15.00	0.43	1.11	2.42	2.64	3.36	2.94	2.86	1.67	-0.17	-2.17	-4.56	-9.45	-5.35
30.00	0.67	1.97	3.22	3.98	3.83	3.26	2.18	0.71	-1.52	-3.14	-4.71	-9.77	-5.14
45.00	0.66	2.70	3.76	4.33	3.47	2.59	0.67	-1.20	-2.42	-3.43	-4.16	-9.68	-5.47
60.00	0.76	3.17	3.83	3.98	2.31	1.08	-1.62	-3.13	-3.08	-3.70	-3.90	-9.03	-5.43
75.00	0.87	3.28	3.75	3.02	0.55	-1.47	-4.65	-4.98	-4.34	-3.97	-3.35	-7.83	-5.39
90.00	0.88	3.17	3.64	2.20	-0.63	-3.66	-6.12	-6.83	-5.86	-4.32	-3.20	-6.94	-5.14
105.00	0.85	2.80	3.79	1.73	-0.52	-4.50	-7.87	-8.69	-7.50	-5.42	-3.27	-6.01	-4.56
120.00	0.78	2.42	3.97	2.05	0.13	-4.88	-8.61	-7.31	-7.60	-7.25	-3.52	-5.40	-4.03
135.00	1.02	2.35	4.04	2.54	0.95	-4.46	-8.26	-6.25	-7.57	-8.44	-4.76	-4.96	-3.79
150.00	1.41	2.44	3.66	2.95	1.29	-3.41	-7.24	-6.49	-6.94	-7.98	-6.76	-4.94	-3.79
165.00	1.61	2.42	2.83	2.44	0.28	-3.07	-6.43	-6.46	-5.10	-8.61	-9.15	-5.42	-3.76
180.00	1.68	1.93	1.51	0.71	-1.78	-5.03	-7.76	-6.75	-4.36	-8.83	-11.30	-6.04	-3.87
195.00	1.63	1.12	-0.26	-2.43	-4.28	-7.10	-6.65	-7.14	-5.39	-7.02	-11.13	-6.83	-4.49
210.00	1.35	0.03	-2.08	-4.69	-4.97	-4.66	-3.28	-3.82	-4.33	-5.39	-8.33	-7.02	-4.99
225.00	1.15	-0.89	-3.23	-4.14	-3.73	-2.97	-2.37	-2.28	-3.49	-5.57	-6.00	-6.91	-5.00
240.00	0.90	-1.44	-3.34	-3.63	-3.00	-2.31	-2.63	-2.71	-5.00	-6.83	-4.99	-6.37	-4.99
255.00	0.83	-1.63	-3.56	-4.26	-3.63	-2.75	-3.37	-3.53	-7.50	-7.32	-4.36	-6.30	-5.17
270.00	0.79	-1.78	-3.72	-5.54	-4.84	-3.87	-4.64	-4.85	-8.30	-6.19	-3.95	-6.91	-5.93
285.00	0.43	-2.22	-3.75	-6.52	-5.24	-4.34	-4.79	-5.46	-7.19	-5.00	-3.37	-7.91	-6.42
300.00	-0.02	-2.65	-3.61	-7.01	-5.70	-4.01	-4.57	-4.88	-5.86	-4.45	-2.87	-9.01	-7.11
315.00	-0.34	-2.74	-3.14	-7.02	-5.95	-4.10	-4.75	-5.05	-4.73	-4.30	-2.92	-10.03	-7.23
330.00	-0.44	-2.33	-1.90	-5.66	-5.01	-4.58	-4.37	-5.00	-3.02	-3.89	-3.01	-10.41	-6.92
345.00	-0.31	-1.25	-0.33	-2.81	-1.78	-2.30	-1.25	-2.33	-0.72	-2.42	-3.27	-9.84	-6.14
360.00	0.02	-0.14	0.89	0.03	0.64	0.80	1.00	0.55	0.14	-1.40	-3.55	-9.29	-5.84

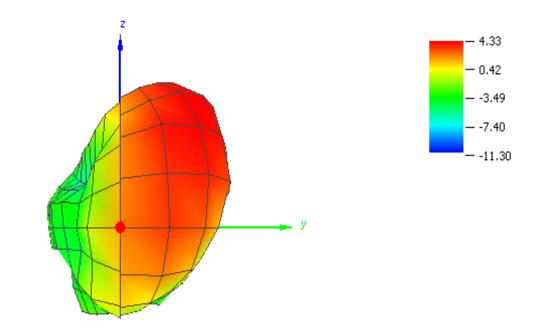
### RP\_2400.000\_hor

Azimuth	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation						
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 dea	180 deg
(ucg)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)						
0.0	-6.33	-7.74	-10.01	-17.39	-18.10	-12.82	-9.34	-6.18	-5.64	-8.61	-8.98	-13.83	-6.86
15.0	-5.78	-6.23	-9.06	-17.35	-17.09	-12.83	- <del>7.88</del>	-5.80	-6.66	-10.18	-9.26	-13.84	-6.78
30.0	-4.69	-3.80	-5.26	-6.10	-10.78	-11.94	-7.96	-7.04	-8.80	-10.18	-9.20	-14.00	-0.76 -7.77
45.0	-3.46	-1.25	-1.80	-3.20	-7.19	-10.61	-8.36	-9.51	-9.78	-11.37	-8.30	-15.22	-9.66
60.0	-2.21	0.57	0.21	-1.61	-5.46	-9.41	-9.18	-10.61	-9.62	-10.50	-8.47	-16.15	-12.00
75.0	-1.11	1.80	1.74	-0.32	-4.00	-8.00	-9.66	-11.07	-10.43	-10.20	-8.62	-14.68	-13.20
90.0	-0.57	2.32	2.49	0.52	-2.98	-7.67	-9.57	-12.99	-12.19	-9.33	-7.65	-11.89	-11.17
105.0	-0.53	2.07	2.70	0.51	-2.91	-8.19	-10.31	-14.14	-14.25	-8.94	-5.78	-9.02	-8.44
120.0	-1.02	1.09	2.08	-0.32	-3.68	-8.79	-10.97	-12.85	-20.34	-10.80	-5.13	-7.40	-6.43
135.0	-1.59	-0.39	0.77	-2.24	-4.65	-9.04	-11.26	-10.13	-13.53	-12.70	-5.91	-6.01	-5.36
150.0	-2.20	-1.77	-1.06	-3.61	-5.27	-8.23	-10.73	-8.19	-8.15	-9.55	-7.53	-5.52	-4.77
165.0	-3.32	-2.83	-2.62	-3.55	-4.91	-7.28	-9.86	-8.17	-6.67	-9.03	-9.63	-5.70	-4.39
180.0	-4.21	-3.39	-3.66	-3.68	-4.54	-7.18	-8.83	-9.72	-7.87	-11.40	-12.25	-6.32	-4.65
195.0	-4.82	-4.21	-4.78	-5.47	-5.71	-8.46	-9.40	-11.36	-11.19	-13.20	-12.00	-7.42	-5.95
210.0	-4.88	-5.40	-6.86	-8.32	-9.07	-10.73	-10.93	-11.28	-14.42	-13.44	-10.37	-8.41	-7.78
225.0	-4.11	-6.92	-8.89	-9.65	-9.16	-10.21	-11.14	-11.44	-16.60	-19.66	-10.22	-8.89	-9.86
240.0	-3.21	-7.39	-9.95	-9.51	-7.72	-9.07	-9.77	-13.16	-16.57	-18.74	-11.10	-8.71	-11.58
255.0	-2.21	-6.93	-11.26	-10.37	-8.05	-8.43	-9.17	-14.60	-15.85	-17.66	-11.90	-8.86	-14.19
270.0	-1.49	-6.03	-11.76	-11.22	-8.74	-8.25	-8.92	-12.32	-16.63	-19.56	-10.47	-9.28	-16.22
285.0	-1.43	-5.44	-10.88	-11.81	-9.88	-8.61	-8.62	-9.74	-15.49	-13.62	-8.12	-9.75	-13.92
300.0	-2.02	-5.36	-9.07	-12.42	-11.65	-9.79	-8.54	-8.56	-11.52	-9.35	-6.83	-10.39	-11.83
315.0	-3.07	-5.74	-7.96	-12.49	-14.33	-10.84	-8.45	-8.14	-7.82	-7.41	-6.44	-11.33	-9.98
330.0	-4.38	-6.35	-7.45	-12.13	-15.36	-12.22	-8.84	-7.92	-6.02	-7.26	-6.62	-12.39	-8.49
345.0	-5.72	-7.27	-8.13	-12.93	-15.37	-12.41	-9.03	-7.55	-5.23	-7.78	-7.31	-13.06	-7.18
360.0	-6.22	-7.77	-10.03	-15.51	-16.55	-12.39	-9.11	-6.65	-5.50	-8.31	-8.25	-13.40	-6.75
								2.00					

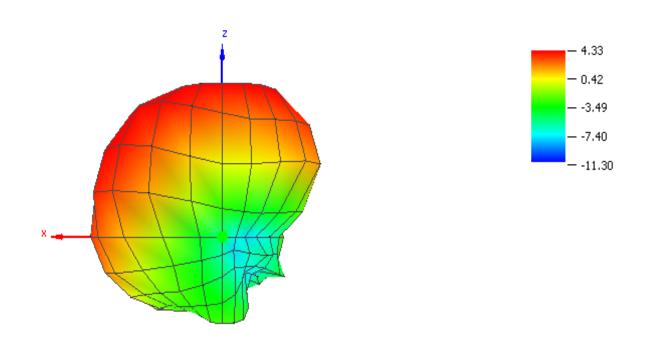
### RP\_2400.000\_ver

·	<u> </u>												
Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)												
0.0	-0.98	-0.49	0.99	0.89	1.54	1.41	1.37	0.29	-0.93	-2.66	-5.96	-11.24	-12.66
15.0	-0.75	0.22	2.10	2.50	3.32	2.83	2.48	0.81	-1.27	-2.91	-6.36	-11.41	-10.85
30.0	-0.82	0.64	2.56	3.53	3.68	3.12	1.74	-0.09	-2.42	-3.83	-6.55	-11.84	-8.57
45.0	-1.46	0.45	2.34	3.48	3.07	2.38	0.09	-1.89	-3.31	-4.20	-6.27	-11.10	-7.55
60.0	-2.29	-0.28	1.35	2.57	1.52	0.68	-2.46	-3.99	-4.17	-4.72	-5.76	-9.96	-6.51
75.0	-3.48	-2.11	-0.57	0.32	-1.33	-2.56	-6.30	-6.21	-5.56	-5.15	-4.88	-8.83	-6.17
90.0	-4.57	-4.34	-2.69	-2.75	-4.42	-5.85	-8.72	-8.03	-7.01	-5.96	-5.13	-8.61	-6.39
105.0	-4.81	-5.31	-2.76	-4.40	-4.26	-6.93	-11.53	-10.15	-8.53	-7.98	-6.84	-9.03	-6.85
120.0	-3.93	-3.38	-0.55	-1.72	-2.20	-7.14	-12.38	-8.74	-7.84	-9.78	-8.63	-9.73	-7.74
135.0	-2.42	-0.95	1.28	0.79	-0.45	-6.31	-11.28	-8.53	-8.83	-10.48	-11.10	-11.65	-8.97
150.0	-1.07	0.37	1.87	1.86	0.20	-5.14	-9.83	-11.38	-13.09	-13.19	-14.69	-13.97	-10.73
165.0	-0.07	0.88	1.37	1.18	-1.28	-5.15	-9.07	-11.34	-10.29	-19.02	-19.02	-17.45	-12.47
180.0	0.38	0.42	-0.06	-1.25	-5.06	-9.11	-14.37	-9.79	-6.91	-12.33	-18.37	-18.09	-11.71
195.0	0.51	-0.38	-2.15	-5.41	-9.81	-12.79	-9.93	-9.20	-6.71	-8.22	-18.53	-15.78	-9.92
210.0	0.17	-1.44	-3.84	-7.15	-7.12	-5.89	-4.10	-4.68	-4.78	-6.13	-12.59	-12.65	-8.23
225.0	-0.38	-2.13	-4.60	-5.58	-5.19	-3.88	-2.99	-2.84	-3.71	-5.74	-8.06	-11.29	-6.71
240.0	-1.23	-2.71	-4.41	-4.92	-4.78	-3.34	-3.57	-3.12	-5.31	-7.12	-6.21	-10.16	-6.06
255.0	-2.16	-3.15	-4.36	-5.48	-5.57	-4.12	-4.69	-3.88	-8.18	-7.74	-5.20	-9.82	-5.75
270.0	-3.10	-3.83	-4.46	-6.90	-7.12	-5.84	-6.66	-5.70	-8.99	-6.40	-5.05	-10.69	-6.36
285.0	-4.15	-5.02	-4.68	-8.04	-7.07	-6.37	-7.11	-7.49	-7.88	-5.64	-5.14	-12.51	-7.28
300.0	-4.35	-5.98	-5.07	-8.48	-6.98	-5.35	-6.79	-7.32	-7.24	-6.14	-5.10	-14.68	-8.89
315.0	-3.64	-5.76	-4.88	-8.48	-6.63	-5.13	-7.17	-7.99	-7.65	-7.21	-5.48	-15.88	-10.52
330.0	-2.69	-4.53	-3.31	-6.77	-5.43	-5.40	-6.29	-8.10	-6.03	-6.56	-5.49	-14.77	-12.10
345.0	-1.78	-2.49	-1.12	-3.25	-1.98	-2.75	-2.05	-3.89	-2.61	-3.91	-5.45	-12.65	-12.85
360.0	-1.16	-0.96	0.53	-0.09	0.55	0.59	0.55	-0.37	-1.25	-2.39	-5.35	-11.42	-13.11

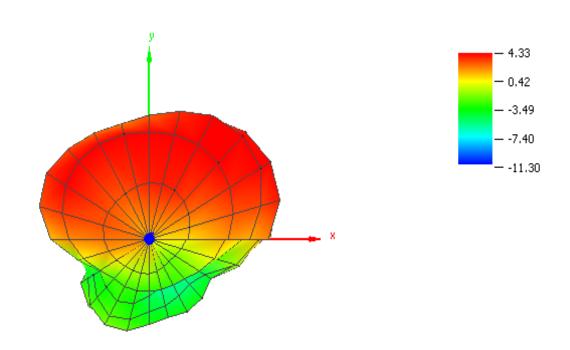
Theta = 90, Phi = 0



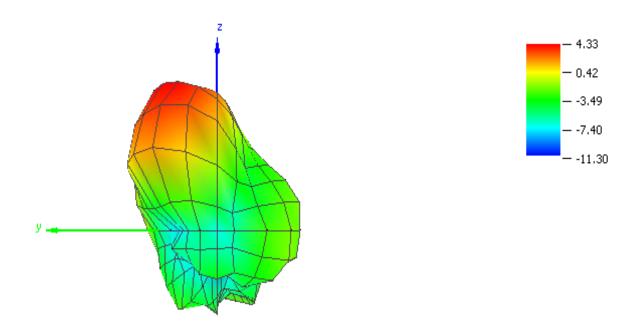
Theta = 90, Phi = 90



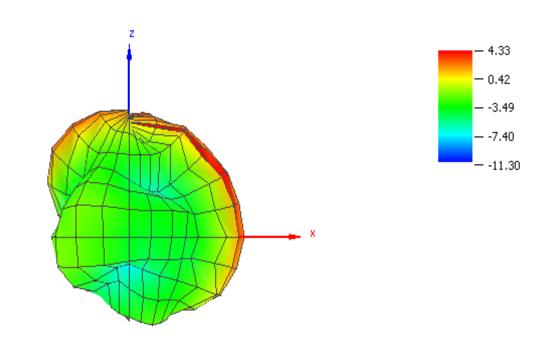
Theta = 0, Phi = 0



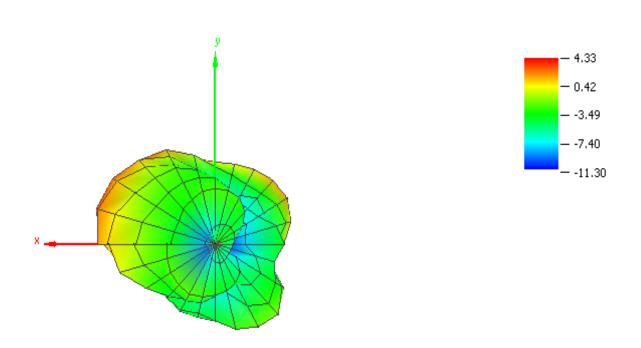
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 180, Phi = 0



### **OTA Test Results for Frequency 2440.000 MHz**

OTA Evaluation Results:

**Total Radiated Power** -1.71 dBm 4.09 dBm Peak EIRP Directivity 5.81 dBi -1.71 dB Efficiency Efficiency 67.42 % Gain 4.09 dBi NHPRP 45° -3.61 dBm NHPRP 45° / TRP -1.90 dB NHPRP 45° / TRP 64.55 % NHPRP 30° -5.36 dBm NHPRP 30° / TRP -3.65 dB NHPRP 30° / TRP 43.15 % NHPRP 22.5° -6.61 dBm -4.90 dB NHPRP 22.5° / TRP NHPRP 22.5° / TRP 32.37 % UHRP -3.20 dBm UHRP / TRP -1.48 dB UHRP / TRP 71.04 % LHRP -7.09 dBm LHRP / TRP -5.38 dB LHRP / TRP 28.96 % Front/Back Ratio 8.60 PhiBW 188.0 deg PhiBW Up 75.9 deg PhiBW Down 112.1 deg 45.9 deg ThetaBW 24.9 deg ThetaBW Up ThetaBW Down 21.0 deg Boresight Phi 120 deg 30 deg **Boresight Theta** Maximum Power 4.09 dBm Minimum Power -11.41 dBm Average Power -1.53 dBm Max/Min Ratio 15.50 dB Max/Avg Ratio 5.62 dB Min/Avg Ratio -9.88 dB

Best Single Value 2.88 dBm
Best Position Phi = 90 deg; Theta = 30 deg; Pol = Hor

## RP\_2440.000\_tot

Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)												
0.00	0.18	0.15	0.44	0.57	0.68	0.70	1.13	0.43	-0.88	-2.63	-5.16	-10.36	-6.30
15.00	0.22	1.01	1.68	2.11	2.60	2.27	2.36	1.27	-0.77	-2.43	-4.63	-9.66	-6.57
30.00	0.33	1.93	2.64	3.28	3.08	2.71	2.10	0.90	-1.53	-2.45	-4.50	-8.77	-6.83
45.00	0.61	2.63	3.35	3.58	2.75	2.10	0.71	-0.67	-2.66	-2.84	-4.64	-8.87	-7.06
60.00	0.72	3.05	3.70	3.55	1.87	0.44	-2.07	-2.97	-3.88	-3.72	-4.50	-9.94	-7.24
75.00	0.70	3.09	3.80	3.04	0.50	-2.24	-4.63	-5.38	-5.32	-4.65	-4.00	-11.02	-7.10
90.00	0.29	2.86	3.77	2.33	-0.58	-3.66	-5.39	-7.13	-6.18	-4.58	-3.80	-11.36	-7.41
105.00	-0.09	2.47	3.84	1.84	-0.29	-3.23	-5.83	-7.99	-6.65	-5.29	-4.18	-10.90	-7.63
120.00	-0.41	2.10	4.09	2.05	0.60	-2.61	-6.49	-7.47	-6.45	-6.33	-5.11	-9.50	-7.47
135.00	-0.20	1.80	4.09	2.48	1.39	-1.81	-6.35	-6.26	-5.91	-6.22	-5.81	-8.22	-7.89
150.00	0.11	1.75	3.81	2.90	2.03	-0.79	-5.18	-5.63	-5.94	-5.96	-6.17	-6.59	-7.93
165.00	0.57	1.76	3.06	2.82	1.67	-0.35	-4.07	-5.40	-6.28	-6.95	-6.95	-5.71	-7.46
180.00	0.75	1.66	2.16	1.86	-0.09	-1.78	-5.11	-5.91	-6.97	-9.17	-8.14	-5.33	-6.45
195.00	0.46	1.11	1.15	-0.05	-2.88	-6.00	-8.35	-9.14	-9.91	-8.74	-7.63	-5.64	-5.47
210.00	-0.02	0.40	0.21	-1.97	-4.33	-6.37	-5.56	-9.27	-11.41	-7.43	-5.64	-6.22	-4.80
225.00	-0.44	-0.37	-0.32	-2.20	-3.22	-3.88	-3.78	-6.84	-8.77	-7.49	-4.22	-6.54	-4.81
240.00	-0.43	-0.80	-0.60	-2.11	-2.40	-2.80	-2.64	-5.44	-7.03	-7.00	-3.44	-6.47	-5.00
255.00	0.00	-0.99	-1.08	-2.36	-3.16	-2.60	-1.97	-3.46	-4.56	-5.00	-2.92	-6.64	-5.22
270.00	0.77	-0.98	-1.67	-3.28	-4.98	-3.69	-2.36	-2.79	-2.86	-3.47	-2.79	-7.74	-5.28
285.00	1.41	-1.00	-2.57	-4.57	-7.08	-4.84	-3.01	-2.71	-2.45	-3.48	-3.46	-9.64	-5.76
300.00	1.46	-1.27	-2.93	-5.53	-8.15	-5.99	-3.90	-3.04	-2.71	-4.61	-4.50	-10.79	-6.23
315.00	1.35	-1.57	-3.11	-6.07	-9.03	-6.88	-5.18	-3.71	-3.20	-6.57	-5.09	-10.83	-6.43
330.00	1.12	-1.43	-2.26	-5.30	-6.79	-6.80	-5.23	-4.61	-3.22	-6.49	-5.23	-11.31	-6.55
345.00	0.63	-0.92	-0.93	-3.11	-3.32	-4.30	-2.23	-2.91	-2.02	-4.66	-5.21	-11.06	-6.55
360.00	0.27	-0.14	-0.04	-0.28	-0.40	-0.37	0.39	-0.15	-1.09	-3.13	-5.22	-10.81	-6.20

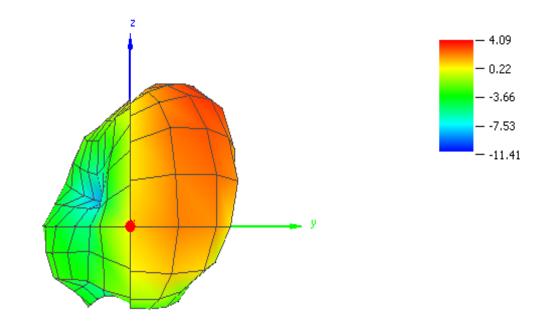
### RP 2440.000 hor

	-U.UUU_	_1101	Floredian	Elevertica.	Florestion	Floredian	Floredian	<b>Flance</b> (:	FI	Floredian	<b>-</b> 1	El	Floredian
Azimuth	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
0.0	-5.94	-7.79	-10.66	-18.15	-16.37	-11.29	-8.87	-7.65	-7.54	-7.39	-8.79	-13.71	-6.86
15.0	-5.79	-6.11	-8.46	-10.59	-13.82	-10.84	-7.83	-6.13	-7.48	-7.42	-8.64	-13.56	-6.99
30.0	-4.19	-3.24	-3.70	-4.57	-7.82	-9.42	-7.35	-6.11	-8.01	-8.29	-9.16	-12.29	-7.58
45.0	-2.59	-0.86	-0.50	-1.74	-5.14	-8.61	-7.51	-8.17	-9.51	-8.52	-8.57	-11.67	-8.77
60.0	-1.39	0.88	1.34	-0.14	-3.94	-7.74	-8.67	-9.19	-8.83	-7.89	-7.60	-13.11	-10.26
75.0	-0.80	1.70	2.42	0.67	-3.08	-7.02	-8.59	-9.80	-8.82	-7.93	-7.47	-15.17	-12.17
90.0	-0.94	1.91	2.88	0.94	-2.92	-6.87	-9.05	-11.74	-10.65	-8.13	-7.48	-18.20	-16.43
105.0	-1.46	1.57	2.71	0.47	-3.53	-7.80	-9.80	-14.74	-12.70	-8.95	-7.18	-16.09	-20.67
120.0	-2.22	0.73	1.96	-0.58	-4.43	-8.16	-10.28	-14.28	-18.07	-10.28	-6.83	-11.79	-15.17
135.0	-3.08	-0.86	0.49	-2.06	-5.01	-7.24	-10.13	-11.10	-15.00	-10.31	-6.97	-9.74	-11.91
150.0	-4.44	-2.60	-1.15	-3.40	-4.38	-6.09	-9.43	-8.82	-9.50	-8.60	-7.28	-7.93	-9.53
165.0	-5.63	-4.04	-2.14	-3.44	-3.42	-4.98	-8.32	-8.61	-7.98	-8.46	-8.16	-7.28	-7.92
180.0	-6.23	-4.44	-2.49	-3.10	-3.06	-5.09	-7.99	-10.52	-9.18	-10.43	-9.85	-7.65	-7.21
195.0	-5.81	-4.47	-3.13	-4.18	-4.39	-6.83	-8.79	-13.69	-11.89	-9.49	-10.72	-9.33	-6.89
210.0	-4.68	-4.57	-4.58	-6.41	-7.61	-9.79	-10.49	-13.77	-14.03	-8.93	-10.80	-12.52	-6.92
225.0	-3.70	-5.11	-6.17	-8.10	-8.25	-9.92	-10.93	-14.66	-17.21	-11.65	-12.95	-18.03	-7.78
240.0	-2.71	-5.48	-7.89	-10.13	-8.48	-9.91	-10.06	-15.78	-18.63	-13.84	-15.99	-18.15	-9.05
255.0	-1.52	-5.18	-8.92	-13.05	-10.48	-10.33	-10.49	-17.87	-16.16	-11.57	-11.90	-14.69	-10.47
270.0	-0.47	-4.35	-8.54	-13.15	-13.24	-10.93	-11.04	-15.58	-13.92	-10.05	-9.45	-15.48	-11.57
285.0	0.14	-3.65	-7.59	-11.41	-13.95	-11.05	-10.45	-12.13	-10.62	-9.49	-9.25	-17.57	-14.26
300.0	-0.10	-3.62	-6.80	-9.82	-13.57	-10.94	-9.62	-9.90	-8.76	-9.75	-10.05	-16.80	-14.98
315.0	-0.81	-4.00	-6.52	-8.96	-12.94	-10.66	-9.38	-8.87	-7.11	-10.37	-10.86	-15.21	-11.68
330.0	-2.02	-4.83	-6.79	-8.80	-11.90	-10.54	-9.65	-8.70	-7.04	-9.73	-10.36	-14.36	-9.24
345.0	-3.89	-6.43	-7.89	-10.41	-12.26	-11.05	-9.28	-8.56	-7.33	-8.65	-9.28	-13.87	-7.75
360.0	-5.45	-7.66	-10.19	-14.61	-15.02	-11.33	-8.77	-7.90	-7.64	-8.06	-8.78	-14.09	-6.93
000.0	0.10	7.00			10102	11100	0.77	1.00		0.00	0		0.00

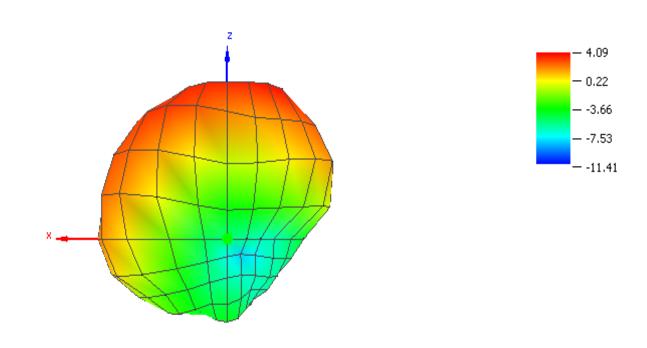
### RP\_2440.000\_ver

Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
` "	(dB)												
0.0	-1.04	-0.61	0.09	0.51	0.59	0.42	0.67	-0.30	-1.94	-4.40	-7.62	-13.06	-15.53
15.0	-1.03	0.07	1.24	1.87	2.50	2.06	1.92	0.40	-1.82	-4.08	-6.83	-11.93	-16.94
30.0	-1.56	0.36	1.49	2.50	2.71	2.44	1.58	-0.07	-2.64	-3.76	-6.32	-11.32	-14.85
45.0	-2.22	0.05	1.04	2.06	1.98	1.71	0.00	-1.52	-3.66	-4.21	-6.89	-12.09	-11.93
60.0	-3.42	-1.01	-0.07	1.14	0.55	-0.27	-3.14	-4.15	-5.55	-5.81	-7.42	-12.81	-10.25
75.0	-4.63	-2.53	-1.86	-0.72	-2.01	-4.00	-6.86	-7.33	-7.89	-7.41	-6.59	-13.12	-8.72
90.0	-5.80	-4.20	-3.56	-3.29	-4.37	-6.48	-7.84	-8.97	-8.10	-7.11	-6.23	-12.37	-7.99
105.0	-5.78	-4.81	-2.56	-3.86	-3.09	-5.10	-8.06	-9.02	-7.88	-7.74	-7.21	-12.46	-7.85
120.0	-5.08	-3.59	-0.02	-1.38	-1.04	-4.03	-8.83	-8.49	-6.76	-8.56	-9.98	-13.36	-8.27
135.0	-3.35	-1.59	1.60	0.61	0.26	-3.28	-8.70	-7.98	-6.48	-8.37	-12.09	-13.52	-10.08
150.0	-1.77	-0.24	2.14	1.74	0.90	-2.30	-7.22	-8.47	-8.47	-9.36	-12.60	-12.34	-13.04
165.0	-0.62	0.43	1.50	1.64	0.06	-2.18	-6.11	-8.22	-11.17	-12.25	-13.11	-10.90	-17.45
180.0	-0.22	0.43	0.34	0.19	-3.15	-4.51	-8.25	-7.76	-10.97	-15.17	-13.00	-9.16	-14.40
195.0	-0.71	-0.30	-0.88	-2.16	-8.20	-13.60	-18.51	-11.01	-14.27	-16.72	-10.57	-8.07	-11.00
210.0	-1.83	-1.27	-1.55	-3.91	-7.08	-9.01	-7.24	-11.18	-14.85	-12.76	-7.21	-7.37	-8.95
225.0	-3.21	-2.15	-1.63	-3.49	-4.85	-5.12	-4.71	-7.62	-9.44	-9.60	-4.84	-6.85	-7.87
240.0	-4.31	-2.60	-1.50	-2.86	-3.63	-3.74	-3.51	-5.86	-7.34	-8.01	-3.69	-6.77	-7.18
255.0	-5.32	-3.07	-1.85	-2.75	-4.04	-3.40	-2.63	-3.62	-4.88	-6.08	-3.51	-7.37	-6.75
270.0	-5.28	-3.66	-2.67	-3.75	-5.68	-4.60	-2.99	-3.03	-3.22	-4.54	-3.85	-8.54	-6.45
285.0	-4.56	-4.40	-4.21	-5.58	-8.08	-6.03	-3.88	-3.24	-3.17	-4.73	-4.79	-10.41	-6.42
300.0	-3.74	-5.07	-5.22	-7.55	-9.62	-7.67	-5.25	-4.04	-3.95	-6.19	-5.92	-12.04	-6.85
315.0	-2.73	-5.27	-5.76	-9.21	-11.29	-9.24	-7.26	-5.29	-5.47	-8.91	-6.43	-12.80	-7.98
330.0	-1.77	-4.09	-4.15	-7.87	-8.38	-9.18	-7.17	-6.76	-5.55	-9.29	-6.82	-14.28	-9.90
345.0	-1.26	-2.36	-1.91	-4.01	-3.92	-5.32	-3.18	-4.29	-3.53	-6.87	-7.37	-14.29	-12.75
360.0	-1.09	-0.99	-0.48	-0.45	-0.55	-0.73	-0.17	-0.94	-2.18	-4.82	-7.73	-13.56	-14.32

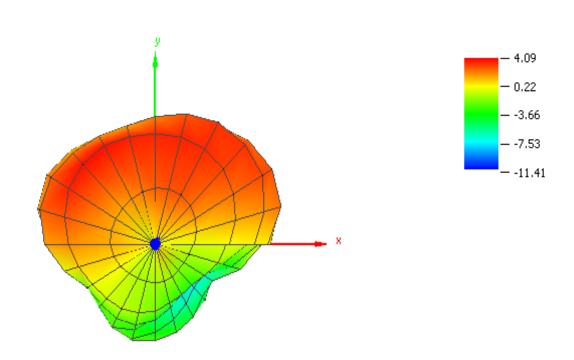
Theta = 90, Phi = 0



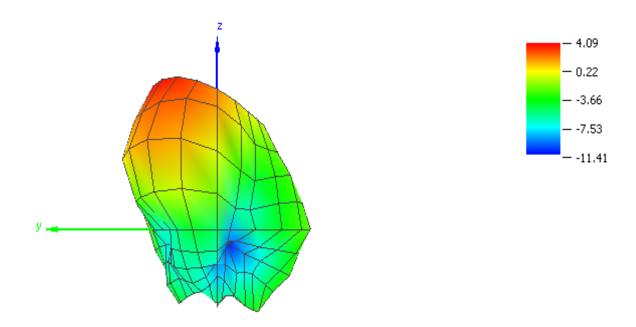
Theta = 90, Phi = 90



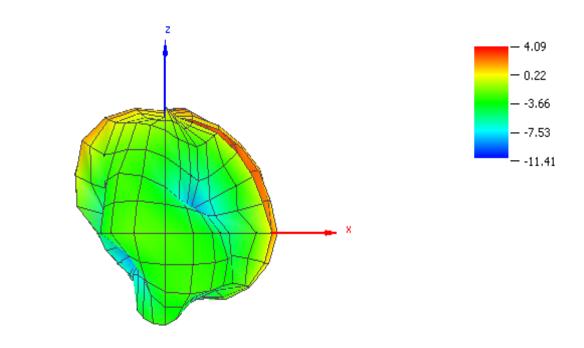
Theta = 0, Phi = 0



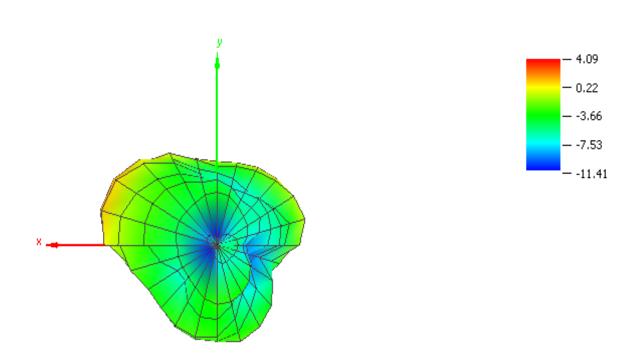
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 180, Phi = 0



### **OTA Test Results for Frequency 2480.000 MHz**

OTA Evaluation Results:

**Total Radiated Power** -1.97 dBm 3.66 dBm Peak EIRP Directivity 5.63 dBi -1.97 dB Efficiency Efficiency 63.57 % Gain 3.66 dBi NHPRP 45° -3.69 dBm NHPRP 45° / TRP -1.72 dB NHPRP 45° / TRP 67.33 % NHPRP 30° -5.41 dBm NHPRP 30° / TRP -3.44 dB NHPRP 30° / TRP 45.30 % NHPRP 22.5° -6.65 dBm -4.68 dB NHPRP 22.5° / TRP NHPRP 22.5° / TRP 34.00 % UHRP -3.58 dBm UHRP / TRP -1.62 dB UHRP / TRP 68.93 % LHRP -7.04 dBm LHRP / TRP -5.08 dB LHRP / TRP 31.07 % 10.41 Front/Back Ratio 183.2 deg PhiBW PhiBW Up 50.8 deg PhiBW Down 132.4 deg 55.8 deg ThetaBW ThetaBW Up 27.6 deg ThetaBW Down 28.2 deg Boresight Phi 135 deg **Boresight Theta** 30 deg 3.66 dBm Maximum Power Minimum Power -12.11 dBm Average Power -1.85 dBm Max/Min Ratio 15.77 dB 5.52 dB Max/Avg Ratio

Min/Avg Ratio -10.25 dB Best Single Value 3.23 dBm

Best Position Phi = 30 deg; Theta = 60 deg; Pol = Ver

## RP\_2480.000\_tot

Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)												
0.00	-0.55	-0.10	0.46	0.97	1.44	1.24	0.72	-0.42	-1.52	-2.04	-3.31	-7.07	-4.83
15.00	-0.90	0.47	1.64	2.29	3.13	2.84	2.61	1.13	-0.69	-1.88	-3.41	-6.74	-5.09
30.00	-1.38	0.98	2.31	3.18	3.41	3.36	2.67	0.99	-0.89	-2.12	-2.84	-6.53	-5.20
45.00	-1.59	1.45	2.59	3.19	2.53	2.46	1.33	-0.16	-1.31	-2.10	-3.32	-6.85	-5.05
60.00	-1.59	1.81	2.55	2.68	0.97	0.77	-1.33	-1.97	-2.63	-3.11	-3.77	-6.98	-4.72
75.00	-1.56	1.99	2.52	2.09	-0.81	-1.98	-4.78	-4.65	-5.02	-4.45	-3.66	-6.86	-4.66
90.00	-1.03	2.05	2.60	1.42	-1.86	-5.21	-7.07	-8.49	-7.15	-4.77	-3.72	-7.17	-5.37
105.00	-0.36	2.06	3.04	1.57	-1.02	-5.41	-7.40	-9.69	-8.95	-5.97	-4.27	-8.32	-6.56
120.00	0.22	1.95	3.48	2.20	-0.18	-4.77	-7.18	-7.47	-9.57	-8.85	-5.72	-9.68	-7.80
135.00	0.50	1.83	3.66	2.67	0.28	-4.22	-6.72	-5.78	-8.11	-8.46	-7.72	-10.52	-8.21
150.00	0.68	1.65	3.40	2.62	0.49	-3.11	-6.44	-5.80	-6.47	-6.14	-8.44	-10.16	-7.43
165.00	0.77	1.50	2.72	2.07	0.67	-1.96	-5.89	-7.05	-5.73	-5.62	-7.34	-8.39	-6.35
180.00	0.84	1.01	1.33	0.68	-0.30	-2.28	-6.26	-8.21	-6.31	-5.25	-6.66	-6.64	-5.44
195.00	0.74	0.23	-0.39	-1.25	-2.53	-4.74	-8.01	-8.04	-5.68	-4.36	-6.43	-5.86	-4.77
210.00	0.62	-1.00	-1.61	-2.60	-3.59	-6.02	-5.95	-6.48	-4.09	-3.42	-5.82	-5.65	-4.52
225.00	0.44	-2.28	-2.26	-2.47	-2.28	-3.25	-3.38	-4.40	-3.07	-3.36	-5.10	-6.42	-4.75
240.00	0.18	-3.50	-2.86	-2.16	-1.57	-1.68	-1.56	-2.71	-2.59	-3.60	-5.12	-8.34	-5.48
255.00	-0.07	-3.99	-4.03	-2.40	-2.34	-1.53	-1.19	-1.70	-2.26	-3.76	-6.25	-11.07	-5.80
270.00	-0.12	-3.96	-5.53	-3.26	-4.11	-2.83	-2.19	-2.00	-2.51	-4.81	-8.49	-12.11	-5.46
285.00	0.26	-3.44	-6.11	-4.60	-6.05	-4.76	-4.10	-3.40	-3.97	-6.79	-9.68	-10.57	-5.26
300.00	0.61	-2.71	-5.80	-5.78	-7.57	-6.75	-5.74	-4.99	-6.21	-8.75	-8.97	-8.99	-5.34
315.00	0.60	-2.33	-4.86	-5.99	-8.02	-7.76	-6.60	-5.98	-7.18	-7.97	-6.74	-8.53	-5.31
330.00	0.44	-1.74	-3.09	-5.17	-6.56	-6.95	-6.09	-6.27	-6.28	-6.54	-4.76	-8.07	-5.05
345.00	0.14	-1.02	-1.25	-2.55	-2.33	-3.86	-3.12	-4.54	-4.21	-4.32	-3.77	-7.99	-4.78
360.00	-0.37	-0.20	-0.14	0.28	0.36	0.30	-0.34	-1.31	-2.26	-2.52	-3.55	-6.98	-4.80

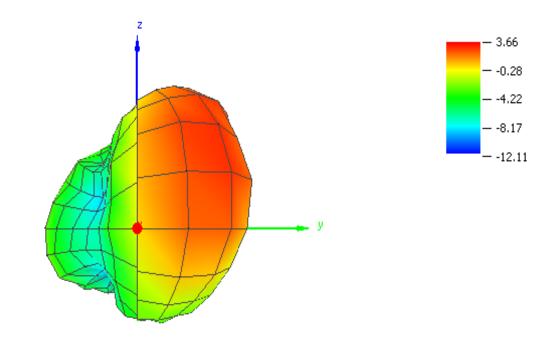
#### RP 2480.000 hor

<u> </u>	00.000_	_1101											
Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)												
0.0	-6.66	-8.68	-11.01	-17.92	-17.00	-12.42	-9.65	-7.41	-6.72	-7.02	-6.54	-11.10	-5.82
15.0	-7.56	-8.38	-11.04	-15.54	-15.40	-11.38	-8.90	-6.50	-6.76	-7.53	-7.56	-10.77	-5.88
30.0	-7.15	-5.30	-6.36	-7.24	-10.60	-10.63	-8.45	-7.32	-8.01	-9.18	-7.56	-10.50	-6.47
45.0	-6.00	-2.72	-2.85	-3.50	-7.58	-10.08	-9.56	-10.30	-10.23	-10.39	-8.27	-11.15	-7.48
60.0	-4.81	-0.66	-0.42	-1.51	-5.95	-9.08	-11.40	-11.30	-10.81	-10.18	-8.08	-12.04	-8.30
75.0	-4.08	0.37	1.00	-0.37	-4.71	-8.39	-11.42	-11.62	-11.39	-9.71	-8.09	-12.76	-9.24
90.0	-3.26	0.90	1.80	0.21	-3.98	-8.86	-11.55	-15.24	-12.52	-9.23	-7.65	-12.34	-10.71
105.0	-2.57	0.83	1.85	-0.04	-4.36	-10.36	-12.42	-17.97	-13.29	-9.19	-6.93	-11.75	-12.21
120.0	-2.53	-0.08	0.94	-1.24	-5.26	-12.19	-13.53	-15.46	-17.73	-12.09	-7.11	-11.58	-13.10
135.0	-3.09	-1.66	-0.78	-2.94	-6.86	-11.92	-13.19	-12.43	-15.28	-11.53	-8.26	-12.29	-12.51
150.0	-4.41	-4.13	-3.40	-4.92	-7.74	-9.74	-11.85	-10.62	-8.91	-7.84	-9.42	-13.22	-10.51
165.0	-6.06	-6.17	-4.98	-5.71	-6.86	-8.12	-10.86	-10.97	-7.46	-7.66	-10.79	-13.07	-8.45
180.0	-7.66	-6.84	-4.82	-5.79	-5.61	-7.69	-10.92	-12.86	-9.03	-9.54	-13.85	-12.69	-6.77
195.0	-7.68	-6.65	-5.17	-6.92	-6.16	-8.63	-12.33	-13.22	-11.18	-11.23	-15.67	-12.63	-5.56
210.0	-5.83	-6.39	-6.26	-9.20	-8.24	-10.25	-13.90	-12.83	-13.50	-13.36	-14.34	-12.34	-4.86
225.0	-4.06	-6.71	-8.48	-11.89	-9.00	-9.52	-12.71	-14.78	-14.92	-15.07	-13.71	-12.43	-5.00
240.0	-2.66	-7.48	-11.70	-15.50	-9.84	-9.50	-11.44	-18.29	-14.53	-12.01	-13.26	-13.39	-6.09
255.0	-1.76	-7.81	-16.21	-17.59	-12.76	-9.56	-11.70	-18.96	-12.27	-10.20	-12.91	-16.35	-7.57
270.0	-1.18	-7.43	-14.91	-15.62	-15.05	-9.39	-11.33	-16.17	-10.97	-11.13	-14.43	-15.59	-8.42
285.0	-0.64	-6.20	-11.84	-15.48	-16.91	-9.93	-10.89	-13.00	-10.47	-13.82	-19.42	-12.92	-9.29
300.0	-0.50	-5.09	-9.44	-14.76	-18.25	-11.20	-10.27	-10.57	-10.06	-13.53	-15.67	-11.91	-9.98
315.0	-1.02	-4.96	-7.68	-12.79	-17.06	-12.01	-9.78	-9.43	-8.94	-9.93	-10.80	-10.99	-8.73
330.0	-2.08	-5.37	-6.67	-11.34	-14.43	-12.24	-9.54	-8.59	-8.08	-7.82	-7.99	-10.28	-7.35
345.0	-3.57	-6.43	-7.28	-11.68	-13.54	-12.93	-9.64	-8.04	-7.35	-6.88	-6.81	-10.73	-6.34
360.0	-5.85	-7.69	-9.91	-14.38	-16.29	-13.06	-9.89	-7.96	-6.80	-6.97	-6.37	-10.35	-5.88

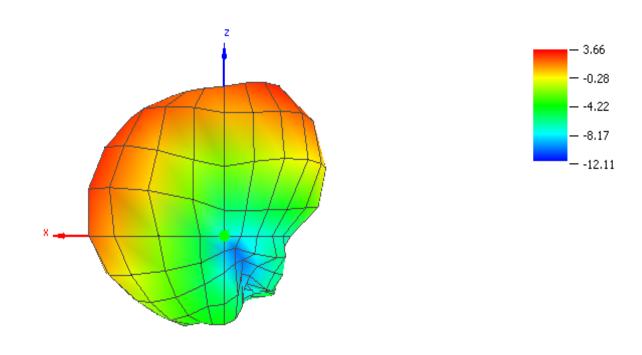
#### RP 2480.000 ver

111	00.000_	_											
Azimuth	Elevation												
(deg)	0 deg	15 deg	30 deg	45 deg	60 deg	75 deg	90 deg	105 deg	120 deg	135 deg	150 deg	165 deg	180 deg
	(dB)												
0.0	-1.77	-0.75	0.14	0.91	1.38	1.04	0.31	-1.39	-3.08	-3.70	-6.12	-9.26	-11.74
15.0	-1.95	-0.14	1.39	2.22	3.06	2.68	2.29	0.31	-1.92	-3.26	-5.52	-8.92	-12.87
30.0	-2.71	-0.19	1.68	2.76	3.23	3.18	2.32	0.30	-1.83	-3.08	-4.63	-8.75	-11.17
45.0	-3.55	-0.65	1.13	2.14	2.08	2.21	0.96	-0.60	-1.90	-2.79	-5.00	-8.87	-8.73
60.0	-4.40	-1.81	-0.50	0.60	-0.02	0.30	-1.78	-2.51	-3.34	-4.06	-5.78	-8.61	-7.22
75.0	-5.11	-3.07	-2.76	-1.55	-3.08	-3.11	-5.84	-5.63	-6.16	-5.99	-5.61	-8.16	-6.52
90.0	-5.01	-4.27	-5.13	-4.71	-6.00	-7.66	-8.99	-9.53	-8.64	-6.69	-5.97	-8.74	-6.87
105.0	-4.36	-4.02	-3.15	-3.52	-3.73	-7.08	-9.04	-10.39	-10.95	-8.79	-7.66	-10.94	-7.94
120.0	-3.06	-2.34	-0.06	-0.41	-1.80	-5.64	-8.33	-8.22	-10.29	-11.63	-11.35	-14.20	-9.32
135.0	-2.00	-0.74	1.73	1.28	-0.65	-5.03	-7.84	-6.83	-9.04	-11.41	-17.03	-15.27	-10.22
150.0	-0.93	0.32	2.38	1.78	-0.22	-4.17	-7.92	-7.54	-10.14	-11.02	-15.39	-13.12	-10.37
165.0	-0.24	0.68	1.91	1.28	-0.17	-3.16	-7.55	-9.30	-10.57	-9.87	-9.94	-10.19	-10.50
180.0	0.18	0.24	0.12	-0.43	-1.82	-3.76	-8.08	-10.03	-9.62	-7.28	-7.58	-7.88	-11.23
195.0	0.07	-0.77	-2.15	-2.62	-4.99	-7.02	-10.01	-9.61	-7.13	-5.36	-6.98	-6.89	-12.59
210.0	-0.49	-2.49	-3.42	-3.67	-5.41	-8.08	-6.71	-7.63	-4.62	-3.88	-6.48	-6.70	-15.77
225.0	-1.47	-4.23	-3.44	-3.00	-3.32	-4.42	-3.92	-4.81	-3.36	-3.66	-5.75	-7.68	-17.32
240.0	-3.00	-5.71	-3.47	-2.37	-2.27	-2.46	-2.03	-2.83	-2.88	-4.28	-5.85	-9.97	-14.31
255.0	-4.97	-6.33	-4.31	-2.54	-2.76	-2.28	-1.60	-1.78	-2.72	-4.88	-7.31	-12.60	-10.57
270.0	-6.78	-6.55	-6.06	-3.52	-4.48	-3.92	-2.76	-2.17	-3.18	-5.97	-9.77	-14.70	-8.53
285.0	-7.04	-6.71	-7.46	-4.97	-6.42	-6.33	-5.12	-3.90	-5.08	-7.76	-10.17	-14.36	-7.44
300.0	-5.85	-6.46	-8.27	-6.37	-7.96	-8.69	-7.63	-6.40	-8.52	-10.50	-10.01	-12.10	-7.16
315.0	-4.45	-5.77	-8.06	-7.01	-8.60	-9.80	-9.44	-8.59	-11.95	-12.37	-8.91	-12.17	-7.94
330.0	-3.13	-4.22	-5.60	-6.37	-7.34	-8.48	-8.71	-10.11	-10.97	-12.48	-7.57	-12.06	-8.92
345.0	-2.27	-2.49	-2.49	-3.12	-2.68	-4.43	-4.21	-7.12	-7.09	-7.84	-6.76	-11.28	-9.99
360.0	-1.82	-1.05	-0.63	0.13	0.27	0.09	-0.85	-2.37	-4.14	-4.45	-6.76	-9.66	-11.38

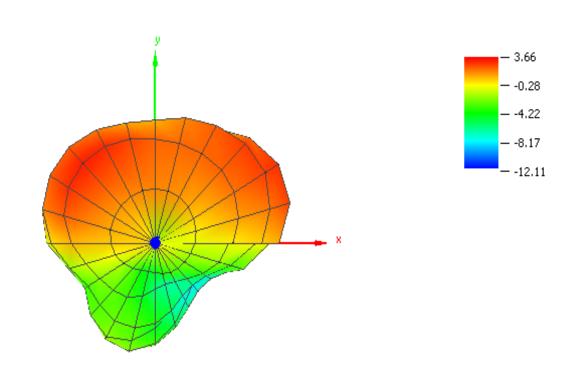
Theta = 90, Phi = 0



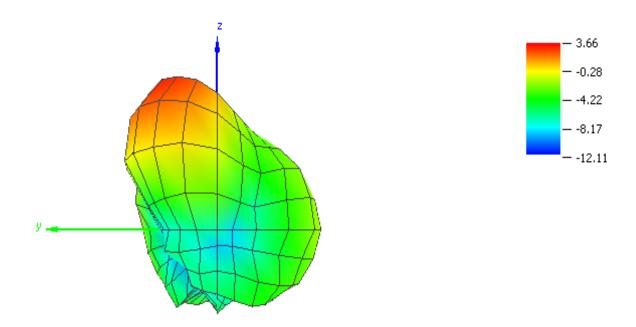
Theta = 90, Phi = 90



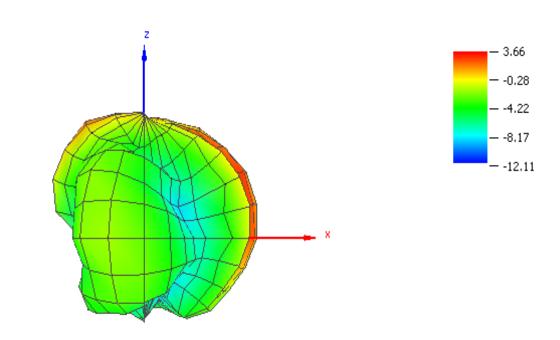
Theta = 0, Phi = 0



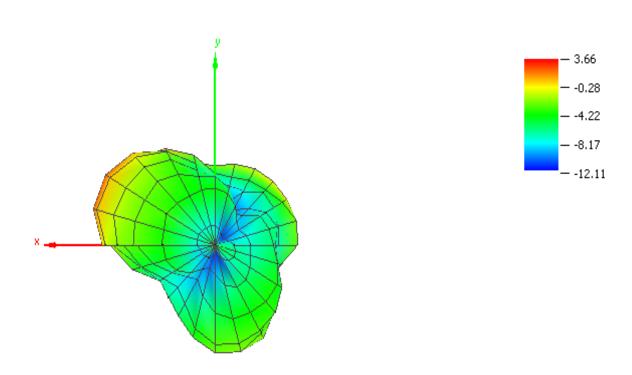
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 180, Phi = 0



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