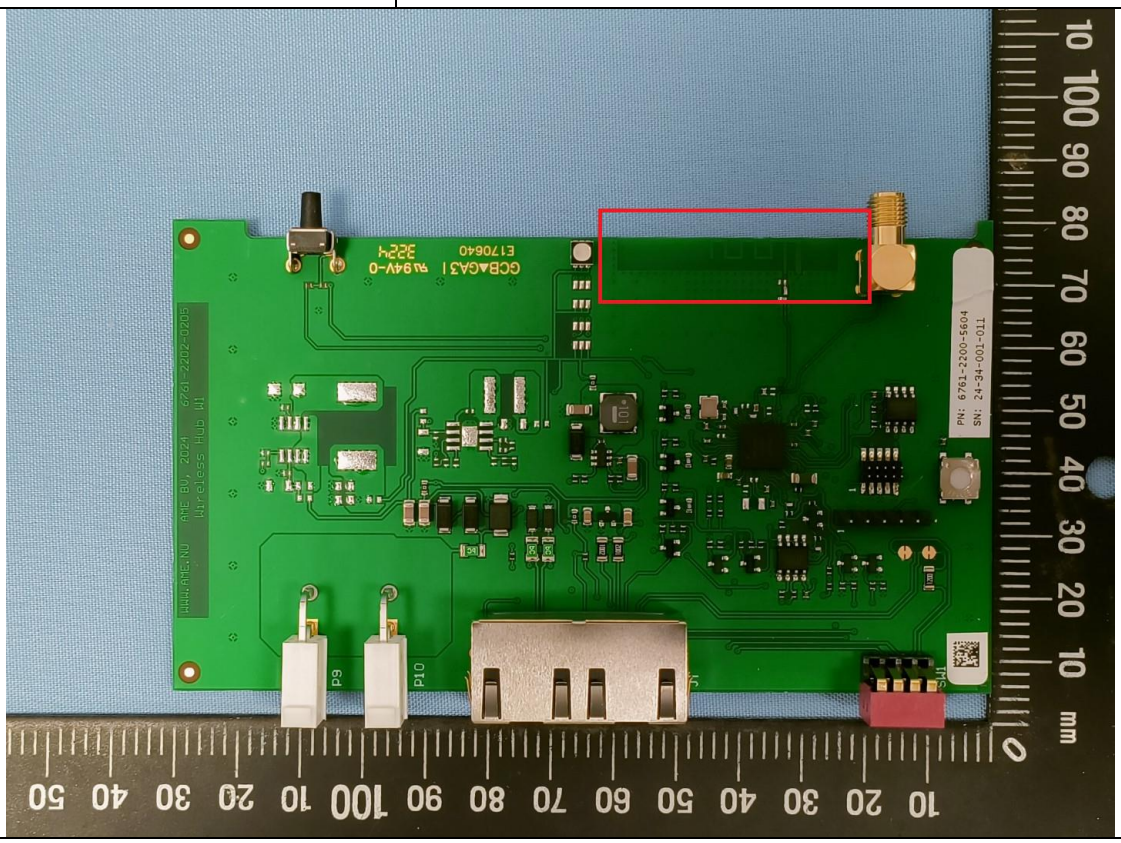
Antenna Report

1 PRODUCT INFORMATION

Brand	AME
Model name	W1 HUB PCB antenna
Operating frequency	2400MHz，2450MHz，2500MHz
Number / Type of Antenna(s)	PCB Antenna
Antenna Gain (peak, max.)	0 dBi



Antenna Report

2 TEST ENVIRONMENT

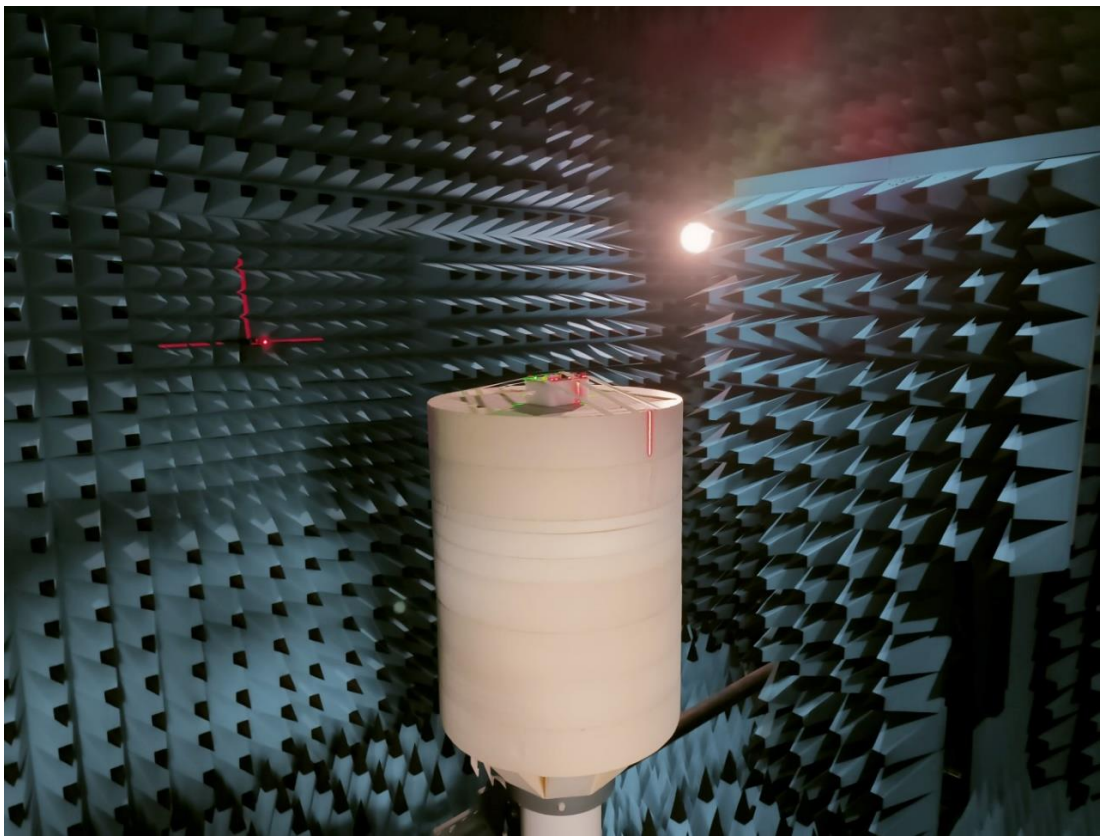
Date of testing:	2024/10/14
Ambient temperature:	22.4 °C
Relative humidity:	65 %
Reference standard:	ANS/IEEE Std 149, CTIA Test Plan for Wireless Device Over-the- Air Performance
Kind of test site:	OTA chamber WPTC-L

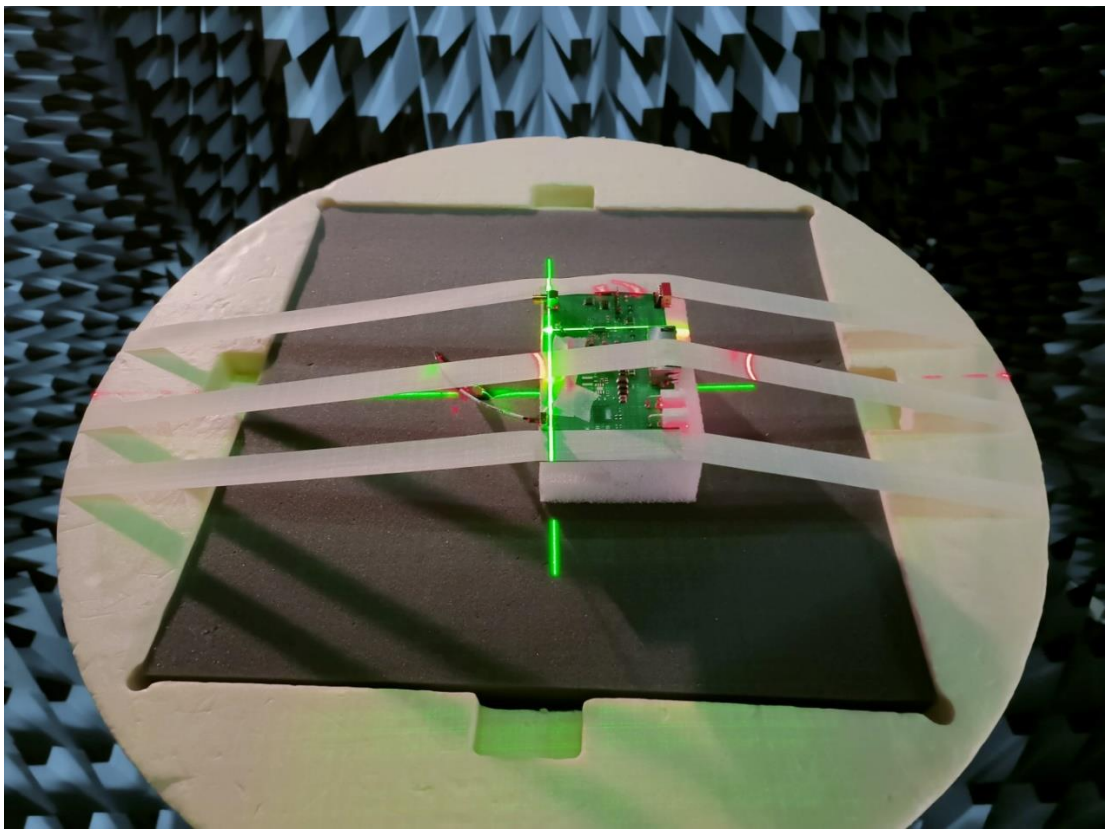
3 TEST RESULTS

Position	3D-FS		
Frequency (MHz)	2400	2440	2480
Peak Realized Gain (dBi)	0.0	-0.91	-1.11
Note			

Antenna Report

4 SETUP PHOTO





Antenna Report

5 TEST INFORMATION

Please refer to the next page.

Test Report

OTA Auto Test Template: Passive Measurement

OTA Test Method:	Antenna Measurement
Hardware Setup:	OTA Measurements\Passive_20221201

TX: IF Bandwidth = 1 kHz
Polarization = Theta,Phi; Azimuth = 0 - (10) - 360 deg; Elevation = 0 - (10) - 160 deg
Frequency: 2400.000 MHz - 2500.000 MHz

No measurements defined

Test Information

Test Method:	Antenna Measurement
Test Condition:	FS: Free Space
Frequency:	2400.000000 MHz
Test Time:	Start: 14/10/2024 6:52:10 PM; Stop: 14/10/2024 7:03:45 PM
Cal Data Phi:	54.23 dB (PL_Hor_Passive_1206)
Cal Data Theta:	55.31 dB (PL_Ver_Passive_1206)

OTA Test Results for Frequency 2400.000000 MHz

OTA Evaluation Results:

Total Radiated Power	-4.56 dBm
Directivity	4.55 dBi
Total Efficiency	-4.56 dB
Total Efficiency	35.01 %
Peak Realized Gain	0.00 dBi
NHPRP 45¢X	-7.14 dBm
NHPRP 45¢X / TRP	-2.58 dB
NHPRP 45¢X / TRP	55.15 %
NHPRP 30¢X	-9.21 dBm
NHPRP 30¢X / TRP	-4.66 dB
NHPRP 30¢X / TRP	34.23 %
NHPRP 22.5¢X	-10.60 dBm
NHPRP 22.5¢X / TRP	-6.04 dB
NHPRP 22.5¢X / TRP	24.88 %
UHRP	-7.53 dBm
UHRP / TRP	-2.97 dB
UHRP / TRP	50.46 %
LHRP	-8.07 dBm
LHRP / TRP	-3.51 dB
LHRP / TRP	44.59 %
PGRP (0-120¢X)	-6.24 dBm
PGRP / TRP	-1.69 dB
PGRP / TRP	67.82 %
Front/Back Ratio	3.20
PhiBW	249.6 deg
PhiBW Up	85.3 deg
PhiBW Down	164.4 deg
ThetaBW	77.7 deg
ThetaBW Up	33.5 deg
ThetaBW Down	44.2 deg
Boresight Phi	80 deg
Boresight Theta	160 deg
Maximum Power	0.00 dBm
Minimum Power	-14.50 dBm
Average Power	-3.75 dBm
Max/Min Ratio	14.50 dB
Max/Avg Ratio	3.74 dB
Min/Avg Ratio	-10.75 dB
Worst Single Value	-36.78 dBm
Worst Position	Azi = 230 deg; Elev = 90 deg; Pol = Theta
Best Single Value	-1.20 dBm
Best Position	Azi = 40 deg; Elev = 160 deg; Pol = Theta

RP_2400.000000_tot

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 10 deg (dB)	Elevation 20 deg (dB)	Elevation 30 deg (dB)	Elevation 40 deg (dB)	Elevation 50 deg (dB)	Elevation 60 deg (dB)	Elevation 70 deg (dB)
0.00	-0.47	-1.09	-2.92	-4.01	-6.75	-8.40	-10.53	-12.57
10.00	-0.47	-1.09	-2.95	-3.99	-6.76	-7.89	-8.93	-9.60
20.00	-0.47	-1.17	-2.70	-3.74	-6.30	-7.31	-7.85	-7.84
30.00	-0.47	-1.05	-2.43	-3.39	-5.93	-7.11	-7.68	-7.55
40.00	-0.47	-0.94	-2.13	-2.91	-5.05	-6.56	-8.16	-8.65
50.00	-0.47	-0.84	-1.75	-2.27	-4.12	-5.52	-7.65	-10.30
60.00	-0.47	-0.77	-1.45	-1.70	-3.07	-3.79	-6.00	-8.79
70.00	-0.47	-0.68	-1.27	-1.23	-2.31	-2.49	-4.00	-6.29
80.00	-0.47	-0.65	-1.12	-0.92	-1.87	-1.76	-3.40	-5.26
90.00	-0.47	-0.62	-1.04	-0.78	-1.86	-1.81	-3.60	-5.89
100.00	-0.47	-0.59	-1.12	-0.94	-2.15	-2.37	-4.51	-7.38
110.00	-0.47	-0.60	-1.28	-1.18	-2.55	-3.18	-5.81	-9.06
120.00	-0.47	-0.66	-1.47	-1.56	-2.94	-3.71	-6.17	-8.43
130.00	-0.47	-0.74	-1.79	-1.99	-3.17	-3.94	-5.83	-7.04
140.00	-0.47	-0.75	-1.96	-2.45	-3.23	-4.00	-5.52	-6.18
150.00	-0.47	-0.90	-2.24	-2.89	-3.31	-4.18	-5.26	-5.89
160.00	-0.47	-0.90	-2.21	-3.10	-3.29	-4.30	-5.25	-5.75
170.00	-0.47	-1.01	-2.43	-3.45	-3.42	-4.50	-5.52	-5.95
180.00	-0.47	-1.06	-2.60	-3.41	-3.41	-4.65	-5.65	-6.32
190.00	-0.47	-1.27	-2.89	-3.55	-3.47	-4.70	-5.60	-6.46
200.00	-0.47	-1.36	-2.94	-3.48	-3.48	-4.31	-5.15	-5.97
210.00	-0.47	-1.59	-3.19	-3.43	-3.35	-3.70	-4.33	-4.94
220.00	-0.47	-1.66	-3.36	-3.52	-3.46	-3.20	-3.49	-3.89
230.00	-0.47	-1.76	-3.51	-3.25	-3.47	-2.71	-2.96	-3.25
240.00	-0.47	-1.78	-3.64	-3.24	-3.44	-2.44	-2.92	-3.26
250.00	-0.47	-1.64	-3.38	-3.01	-3.35	-2.36	-3.04	-3.65
260.00	-0.47	-1.65	-3.21	-2.82	-3.27	-2.23	-3.05	-3.98
270.00	-0.47	-1.62	-2.93	-2.60	-3.19	-2.19	-3.04	-4.19
280.00	-0.47	-1.58	-2.65	-2.23	-2.80	-2.05	-2.99	-4.37
290.00	-0.47	-1.46	-2.64	-2.39	-2.69	-2.16	-3.15	-4.68
300.00	-0.47	-1.41	-2.45	-2.28	-2.72	-2.39	-3.50	-5.18
310.00	-0.47	-1.35	-2.53	-2.68	-3.03	-3.12	-4.54	-6.15
320.00	-0.47	-1.27	-2.52	-2.92	-3.62	-3.98	-5.90	-7.56
330.00	-0.47	-1.40	-2.68	-3.33	-4.60	-5.24	-7.80	-9.65
340.00	-0.47	-1.29	-2.77	-3.64	-5.49	-6.84	-9.78	-12.22
350.00	-0.47	-1.31	-2.81	-3.95	-6.23	-7.97	-10.96	-14.30
360.00	-0.47	-1.19	-2.92	-4.02	-6.75	-8.39	-10.53	-12.72

(continuation of the "RP_2400.000000_tot" table from column 9 ...)

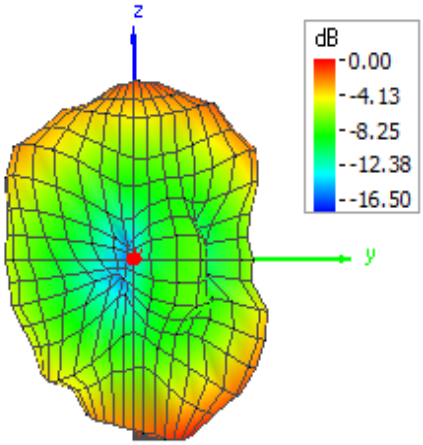
Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
0.00	-12.37	-12.69	-11.23	-10.64	-11.50	-10.85	-9.35	-6.86
10.00	-9.13	-9.60	-8.37	-8.42	-9.16	-9.00	-8.84	-6.88
20.00	-7.38	-7.47	-7.05	-7.21	-7.97	-8.06	-7.76	-6.17
30.00	-6.87	-6.63	-6.83	-6.70	-7.67	-7.88	-6.80	-4.87
40.00	-8.03	-7.84	-7.88	-7.16	-7.91	-7.76	-5.57	-3.68
50.00	-10.25	-10.66	-10.43	-7.89	-7.37	-6.93	-4.11	-2.62
60.00	-9.61	-10.13	-9.46	-6.67	-5.51	-4.77	-2.80	-1.85
70.00	-7.01	-6.84	-6.76	-4.41	-3.44	-2.66	-1.60	-1.13
80.00	-6.10	-5.73	-5.72	-3.52	-2.62	-1.78	-1.09	-1.02
90.00	-7.35	-6.31	-6.69	-3.90	-2.92	-1.87	-1.22	-1.37
100.00	-9.86	-8.53	-8.65	-4.90	-3.89	-2.62	-1.48	-1.63
110.00	-11.85	-11.11	-10.50	-6.32	-5.14	-3.51	-1.97	-1.80
120.00	-10.04	-10.38	-9.72	-6.93	-5.80	-4.08	-2.58	-2.23
130.00	-7.62	-7.97	-7.59	-6.36	-5.22	-4.15	-3.04	-2.68
140.00	-6.58	-6.55	-6.56	-5.59	-4.60	-3.69	-3.27	-2.83
150.00	-6.19	-6.11	-6.03	-5.19	-4.04	-3.23	-3.35	-2.82
160.00	-6.08	-5.87	-5.66	-4.89	-4.05	-2.96	-3.68	-2.90
170.00	-6.14	-5.85	-5.73	-4.94	-4.26	-3.14	-4.41	-3.72
180.00	-6.35	-6.21	-6.14	-5.30	-4.53	-3.36	-4.88	-3.84
190.00	-6.54	-6.87	-6.54	-5.73	-5.07	-3.80	-5.17	-3.83
200.00	-6.12	-6.57	-6.47	-5.53	-4.98	-3.98	-5.08	-3.73
210.00	-5.13	-5.01	-5.18	-4.53	-4.18	-3.63	-4.82	-3.71
220.00	-4.17	-3.76	-3.90	-3.65	-3.51	-3.33	-4.62	-3.82

Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
230.00	-3.47	-2.99	-3.23	-3.04	-2.89	-3.14	-4.16	-3.66
240.00	-3.54	-3.17	-3.36	-3.12	-3.03	-3.39	-4.07	-3.88
250.00	-4.08	-3.73	-3.94	-3.69	-3.64	-3.94	-4.09	-4.28
260.00	-4.59	-4.32	-4.62	-4.31	-4.30	-4.29	-3.92	-4.48
270.00	-4.75	-4.72	-4.92	-4.50	-4.57	-4.35	-3.48	-4.27
280.00	-4.89	-4.91	-5.13	-4.77	-4.82	-4.58	-3.36	-4.20
290.00	-5.53	-5.69	-6.14	-5.48	-5.71	-5.30	-3.61	-4.29
300.00	-6.41	-6.73	-7.22	-6.99	-6.66	-5.87	-3.57	-4.14
310.00	-7.37	-8.40	-9.12	-9.10	-7.91	-6.62	-4.03	-4.25
320.00	-8.55	-9.70	-10.89	-11.72	-9.75	-8.20	-4.90	-4.68
330.00	-10.04	-11.41	-12.38	-13.19	-12.18	-10.17	-6.18	-5.38
340.00	-12.00	-12.97	-13.14	-13.55	-14.50	-12.40	-7.72	-6.34
350.00	-13.79	-14.46	-13.33	-12.43	-14.39	-12.41	-8.90	-6.47
360.00	-12.37	-12.79	-11.23	-10.72	-11.50	-10.88	-9.35	-6.71

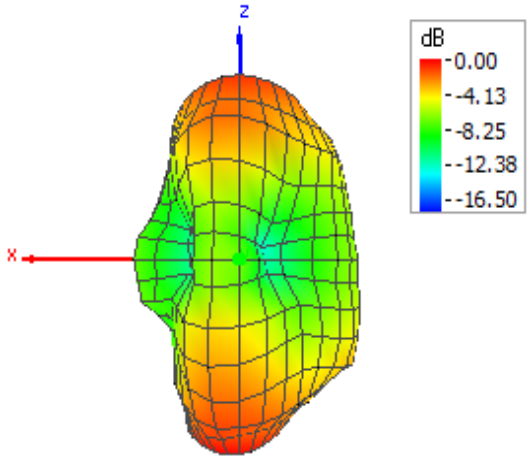
(continuation of the "RP_2400.000000_tot" table from column 17 ...)

Azimuth (deg)	Elevation 160 deg (dB)
0.00	-1.99
10.00	-1.76
20.00	-1.53
30.00	-1.00
40.00	-0.69
50.00	-0.46
60.00	-0.24
70.00	-0.05
80.00	0.00
90.00	-0.07
100.00	-0.28
110.00	-0.58
120.00	-0.94
130.00	-1.25
140.00	-1.66
150.00	-2.24
160.00	-2.76
170.00	-3.22
180.00	-3.36
190.00	-3.20
200.00	-3.32
210.00	-3.39
220.00	-3.81
230.00	-3.93
240.00	-4.12
250.00	-3.77
260.00	-3.59
270.00	-3.22
280.00	-2.84
290.00	-2.70
300.00	-2.40
310.00	-2.36
320.00	-2.24
330.00	-2.35
340.00	-2.30
350.00	-2.14
360.00	-1.99

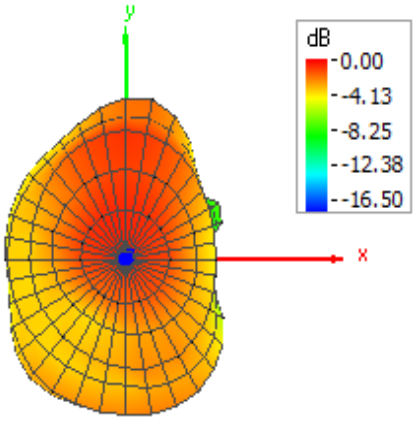
Theta = 90, Phi = 0



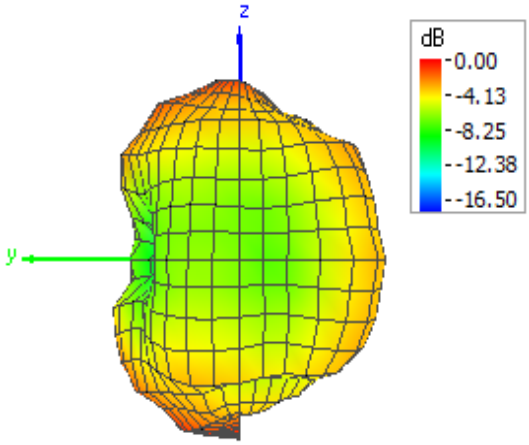
Theta = 90, Phi = 90



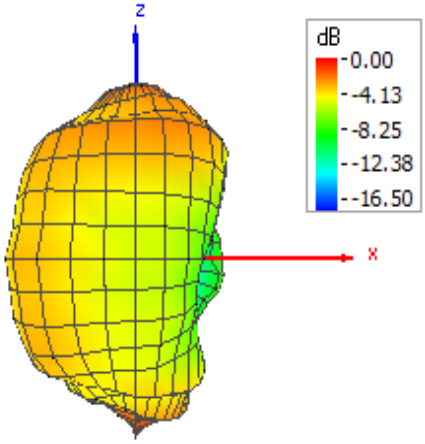
Theta = 0, Phi = 0



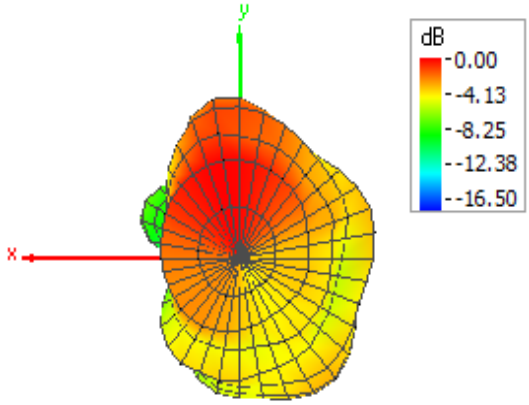
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 180, Phi = 0



Test Information

Test Method:	Antenna Measurement
Test Condition:	FS: Free Space
Frequency:	2450.000000 MHz
Test Time:	Start: 14/10/2024 6:52:10 PM; Stop: 14/10/2024 7:03:45 PM
Cal Data Phi:	54.33 dB (PL_Hor_Passive_1206)
Cal Data Theta:	55.54 dB (PL_Ver_Passive_1206)

OTA Test Results for Frequency 2450.000000 MHz

OTA Evaluation Results:

Total Radiated Power	-5.44 dBm
Directivity	4.53 dBi
Total Efficiency	-5.44 dB
Total Efficiency	28.56 %
Peak Realized Gain	-0.91 dBi
NHPRP 45¢X	-7.96 dBm
NHPRP 45¢X / TRP	-2.51 dB
NHPRP 45¢X / TRP	56.07 %
NHPRP 30¢X	-9.92 dBm
NHPRP 30¢X / TRP	-4.48 dB
NHPRP 30¢X / TRP	35.64 %
NHPRP 22.5¢X	-11.34 dBm
NHPRP 22.5¢X / TRP	-5.90 dB
NHPRP 22.5¢X / TRP	25.70 %
UHRP	-8.33 dBm
UHRP / TRP	-2.88 dB
UHRP / TRP	51.49 %
LHRP	-8.92 dBm
LHRP / TRP	-3.48 dB
LHRP / TRP	44.92 %
PGRP (0-120¢X)	-7.07 dBm
PGRP / TRP	-1.62 dB
PGRP / TRP	68.83 %
Front/Back Ratio	2.07
PhiBW	323.7 deg
PhiBW Up	142.1 deg
PhiBW Down	181.6 deg
ThetaBW	81.3 deg
ThetaBW Up	40.2 deg
ThetaBW Down	41.1 deg
Boresight Phi	90 deg
Boresight Theta	160 deg
Maximum Power	-0.91 dBm
Minimum Power	-16.04 dBm
Average Power	-4.83 dBm
Max/Min Ratio	15.13 dB
Max/Avg Ratio	3.92 dB
Min/Avg Ratio	-11.21 dB
Worst Single Value	-38.19 dBm
Worst Position	Azi = 220 deg; Elev = 90 deg; Pol = Theta
Best Single Value	-2.23 dBm
Best Position	Azi = 110 deg; Elev = 160 deg; Pol = Phi

RP_2450.000000_tot

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 10 deg (dB)	Elevation 20 deg (dB)	Elevation 30 deg (dB)	Elevation 40 deg (dB)	Elevation 50 deg (dB)	Elevation 60 deg (dB)	Elevation 70 deg (dB)
0.00	-3.40	-2.95	-3.16	-5.09	-7.95	-10.32	-12.56	-13.79
10.00	-3.40	-2.85	-3.14	-5.16	-7.96	-9.64	-10.77	-11.32
20.00	-3.40	-2.65	-3.07	-4.84	-7.69	-9.00	-9.27	-9.22
30.00	-3.40	-2.63	-2.71	-4.51	-7.34	-8.63	-8.99	-8.85
40.00	-3.40	-2.54	-2.53	-4.01	-6.37	-8.00	-9.57	-9.75
50.00	-3.40	-2.34	-2.13	-3.29	-5.25	-7.12	-9.46	-11.03
60.00	-3.40	-2.34	-1.77	-2.67	-4.12	-5.72	-7.64	-9.40
70.00	-3.40	-2.29	-1.47	-2.19	-3.01	-4.32	-5.74	-6.51
80.00	-3.40	-2.22	-1.32	-2.01	-2.59	-3.74	-4.82	-5.37
90.00	-3.40	-2.19	-1.20	-1.86	-2.50	-3.92	-5.10	-5.75
100.00	-3.40	-2.27	-1.20	-1.94	-2.71	-4.63	-5.94	-7.09
110.00	-3.40	-2.21	-1.24	-2.18	-3.25	-5.35	-6.67	-8.51
120.00	-3.40	-2.20	-1.44	-2.53	-3.66	-5.73	-6.83	-8.35
130.00	-3.40	-2.34	-1.60	-2.84	-3.96	-5.67	-6.45	-7.21
140.00	-3.40	-2.51	-1.86	-3.20	-4.27	-5.48	-6.09	-6.72
150.00	-3.40	-2.65	-2.07	-3.41	-4.47	-5.31	-5.95	-6.56
160.00	-3.40	-2.75	-2.27	-3.49	-4.59	-5.12	-6.07	-6.48
170.00	-3.40	-2.97	-2.43	-3.56	-4.70	-5.13	-6.07	-6.38
180.00	-3.40	-2.98	-2.49	-3.49	-4.57	-4.99	-5.86	-6.45
190.00	-3.40	-3.19	-2.63	-3.44	-4.44	-4.69	-5.55	-6.30
200.00	-3.40	-3.19	-2.54	-3.47	-4.30	-4.18	-4.85	-5.52
210.00	-3.40	-3.33	-2.65	-3.38	-4.00	-3.68	-4.03	-4.29
220.00	-3.40	-3.41	-2.77	-3.64	-3.88	-3.42	-3.34	-3.23
230.00	-3.40	-3.47	-2.82	-3.47	-3.75	-3.15	-2.90	-2.72
240.00	-3.40	-3.69	-3.02	-3.65	-3.82	-3.24	-2.94	-2.65
250.00	-3.40	-3.51	-2.98	-3.64	-3.73	-3.48	-3.39	-3.10
260.00	-3.40	-3.61	-2.96	-3.62	-3.84	-3.72	-3.77	-3.67
270.00	-3.40	-3.56	-2.98	-3.52	-3.90	-3.96	-4.10	-4.26
280.00	-3.40	-3.56	-2.94	-3.44	-3.86	-4.05	-4.38	-4.82
290.00	-3.40	-3.50	-3.04	-3.37	-3.81	-4.34	-4.82	-5.35
300.00	-3.40	-3.32	-2.88	-3.27	-4.08	-4.77	-5.27	-6.17
310.00	-3.40	-3.26	-3.02	-3.57	-4.63	-5.59	-6.21	-7.00
320.00	-3.40	-3.04	-3.10	-3.76	-5.22	-6.29	-7.33	-8.42
330.00	-3.40	-3.12	-3.20	-4.35	-6.19	-7.47	-8.82	-9.68
340.00	-3.40	-2.93	-3.13	-4.83	-7.04	-8.88	-10.51	-11.27
350.00	-3.40	-2.98	-3.15	-5.17	-7.75	-10.03	-12.12	-13.53
360.00	-3.40	-2.83	-3.16	-5.47	-7.95	-10.56	-12.56	-13.87

(continuation of the "RP_2450.000000_tot" table from column 9 ...)

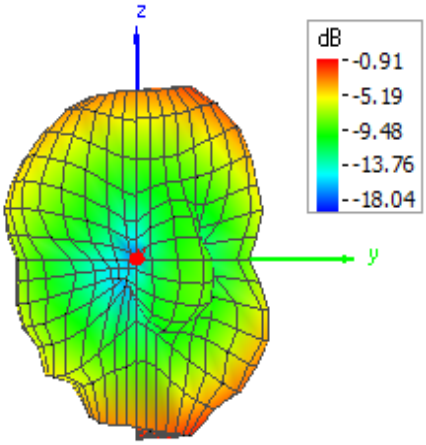
Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
0.00	-16.04	-15.03	-13.50	-11.99	-12.21	-12.87	-11.72	-8.41
10.00	-11.94	-11.49	-10.66	-10.04	-9.79	-10.74	-11.16	-8.53
20.00	-9.37	-8.97	-8.34	-8.62	-8.75	-9.46	-10.31	-7.89
30.00	-8.52	-7.90	-7.68	-7.90	-8.65	-9.25	-8.95	-6.78
40.00	-9.92	-8.82	-8.50	-8.36	-9.15	-8.83	-7.38	-5.32
50.00	-12.98	-11.51	-11.28	-9.36	-8.70	-8.03	-5.93	-4.35
60.00	-11.58	-11.36	-10.35	-7.71	-6.51	-6.09	-4.43	-3.48
70.00	-7.82	-8.61	-7.51	-5.46	-4.27	-4.00	-2.91	-2.64
80.00	-6.56	-7.51	-6.32	-4.73	-3.56	-3.05	-2.36	-2.43
90.00	-7.03	-8.12	-6.98	-5.23	-3.74	-3.13	-2.37	-2.58
100.00	-9.09	-10.65	-8.87	-6.59	-4.70	-3.67	-2.79	-2.69
110.00	-10.62	-13.28	-11.14	-8.55	-5.95	-4.38	-3.09	-2.73
120.00	-9.71	-11.00	-10.33	-8.91	-6.43	-4.98	-3.60	-3.03
130.00	-7.78	-8.69	-8.53	-7.54	-5.76	-4.86	-4.08	-3.39
140.00	-7.01	-7.71	-7.33	-6.58	-5.09	-4.61	-4.08	-3.48
150.00	-6.68	-7.25	-6.75	-6.06	-4.56	-4.19	-4.05	-3.55
160.00	-6.68	-7.03	-6.36	-5.82	-4.36	-3.98	-4.06	-3.60
170.00	-6.99	-7.22	-6.54	-5.95	-4.51	-4.33	-4.42	-3.84
180.00	-7.36	-7.59	-7.08	-6.42	-5.01	-4.47	-4.47	-3.62
190.00	-7.54	-7.91	-7.32	-6.73	-5.35	-4.60	-4.48	-3.61
200.00	-6.80	-7.21	-6.76	-6.26	-5.09	-4.29	-4.51	-3.69
210.00	-5.07	-5.84	-5.47	-5.05	-4.10	-3.75	-4.33	-3.73
220.00	-3.82	-4.57	-4.18	-3.99	-3.38	-3.47	-4.23	-3.95

Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
230.00	-3.09	-4.04	-3.42	-3.30	-2.95	-3.40	-3.98	-3.84
240.00	-3.13	-4.16	-3.73	-3.30	-3.16	-3.67	-4.08	-4.21
250.00	-3.64	-4.76	-4.35	-3.91	-3.82	-4.39	-4.39	-4.70
260.00	-4.43	-5.54	-5.34	-4.82	-4.57	-5.10	-4.57	-5.01
270.00	-5.27	-6.43	-6.22	-5.62	-5.20	-5.41	-4.41	-4.97
280.00	-5.99	-6.99	-6.89	-6.25	-5.80	-5.82	-4.40	-5.14
290.00	-6.66	-7.69	-7.76	-7.28	-6.62	-6.37	-4.86	-5.45
300.00	-7.34	-8.93	-9.07	-8.75	-7.57	-7.08	-5.08	-5.63
310.00	-8.79	-10.97	-11.48	-10.73	-9.22	-7.95	-5.62	-5.72
320.00	-9.63	-12.27	-12.88	-12.62	-11.42	-9.54	-6.72	-6.20
330.00	-10.98	-12.87	-13.93	-14.03	-14.06	-12.15	-8.35	-7.03
340.00	-12.52	-13.63	-14.08	-14.03	-15.68	-14.89	-9.88	-7.74
350.00	-15.59	-15.18	-14.56	-13.60	-14.50	-14.80	-10.93	-7.92
360.00	-16.04	-15.57	-13.50	-12.17	-12.21	-12.83	-11.72	-8.60

(continuation of the "RP_2450.000000_tot" table from column 17 ...)

Azimuth (deg)	Elevation 160 deg (dB)
0.00	-3.20
10.00	-2.98
20.00	-2.74
30.00	-2.47
40.00	-2.17
50.00	-1.80
60.00	-1.47
70.00	-1.13
80.00	-1.08
90.00	-0.91
100.00	-1.06
110.00	-1.31
120.00	-1.64
130.00	-1.95
140.00	-2.23
150.00	-2.65
160.00	-2.95
170.00	-3.17
180.00	-3.18
190.00	-3.18
200.00	-3.11
210.00	-3.18
220.00	-3.64
230.00	-3.88
240.00	-4.02
250.00	-4.04
260.00	-4.02
270.00	-3.89
280.00	-3.63
290.00	-3.47
300.00	-3.24
310.00	-3.23
320.00	-3.13
330.00	-3.20
340.00	-3.21
350.00	-3.34
360.00	-3.20

Theta = 90, Phi = 0



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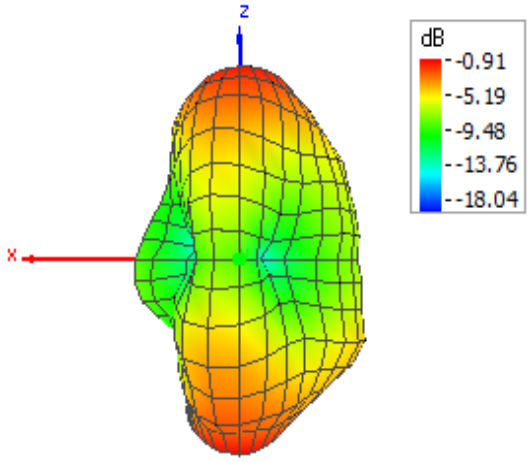

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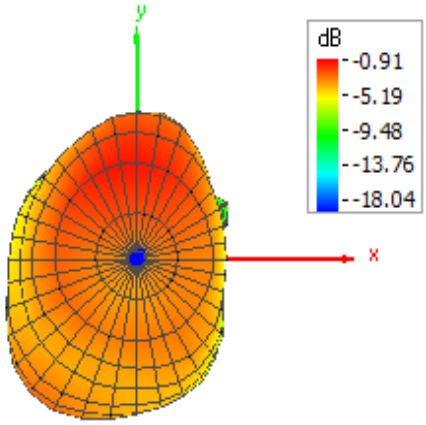

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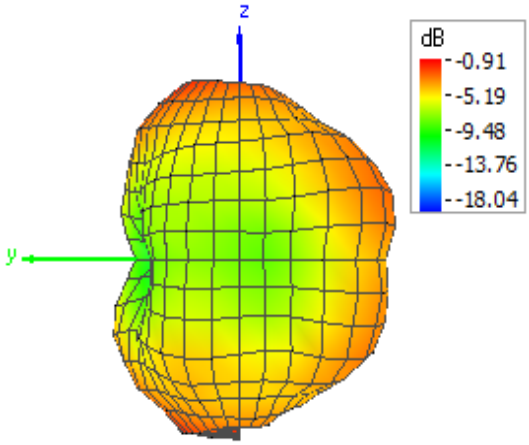

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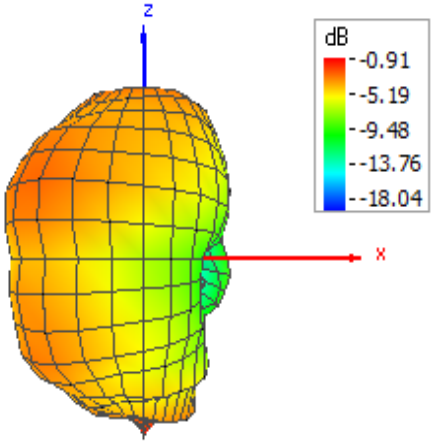
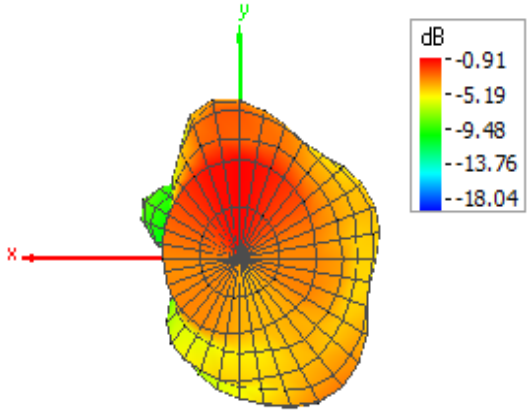


Theta = 180, Phi = 0



Test Information

Test Method:	Antenna Measurement
Test Condition:	FS: Free Space
Frequency:	2500.000000 MHz
Test Time:	Start: 14/10/2024 6:52:10 PM; Stop: 14/10/2024 7:03:45 PM
Cal Data Phi:	54.71 dB (PL_Hor_Passive_1206)
Cal Data Theta:	55.70 dB (PL_Ver_Passive_1206)

OTA Test Results for Frequency 2500.000000 MHz

OTA Evaluation Results:

Total Radiated Power	-5.77 dBm
Directivity	4.66 dBi
Total Efficiency	-5.77 dB
Total Efficiency	26.49 %
Peak Realized Gain	-1.11 dBi
NHPRP 45¢X	-8.27 dBm
NHPRP 45¢X / TRP	-2.50 dB
NHPRP 45¢X / TRP	56.20 %
NHPRP 30¢X	-10.34 dBm
NHPRP 30¢X / TRP	-4.57 dB
NHPRP 30¢X / TRP	34.90 %
NHPRP 22.5¢X	-11.74 dBm
NHPRP 22.5¢X / TRP	-5.97 dB
NHPRP 22.5¢X / TRP	25.30 %
UHRP	-8.71 dBm
UHRP / TRP	-2.94 dB
UHRP / TRP	50.78 %
LHRP	-9.21 dBm
LHRP / TRP	-3.44 dB
LHRP / TRP	45.31 %
PGRP (0-120¢X)	-7.44 dBm
PGRP / TRP	-1.67 dB
PGRP / TRP	68.04 %
Front/Back Ratio	3.16
PhiBW	360.0 deg
PhiBW Up	360.0 deg
PhiBW Down	360.0 deg
ThetaBW	83.6 deg
ThetaBW Up	43.2 deg
ThetaBW Down	40.4 deg
Boresight Phi	90 deg
Boresight Theta	160 deg
Maximum Power	-1.11 dBm
Minimum Power	-18.85 dBm
Average Power	-5.03 dBm
Max/Min Ratio	17.74 dB
Max/Avg Ratio	3.93 dB
Min/Avg Ratio	-13.81 dB
Worst Single Value	-45.54 dBm
Worst Position	Azi = 20 deg; Elev = 70 deg; Pol = Theta
Best Single Value	-2.54 dBm
Best Position	Azi = 120 deg; Elev = 160 deg; Pol = Phi

RP_2500.000000_tot

Azimuth (deg)	Elevation 0 deg (dB)	Elevation 10 deg (dB)	Elevation 20 deg (dB)	Elevation 30 deg (dB)	Elevation 40 deg (dB)	Elevation 50 deg (dB)	Elevation 60 deg (dB)	Elevation 70 deg (dB)
0.00	-2.28	-2.61	-4.40	-6.49	-8.67	-11.49	-15.00	-17.86
10.00	-2.28	-2.61	-4.25	-6.58	-8.82	-11.26	-12.78	-13.64
20.00	-2.28	-2.50	-4.14	-6.39	-8.54	-10.69	-10.86	-10.92
30.00	-2.28	-2.37	-3.87	-5.97	-7.79	-9.96	-10.22	-9.53
40.00	-2.28	-2.32	-3.51	-5.29	-6.79	-8.85	-10.31	-9.96
50.00	-2.28	-2.17	-3.06	-4.36	-5.56	-7.41	-9.85	-10.64
60.00	-2.28	-2.17	-2.87	-3.68	-4.37	-5.61	-7.84	-9.44
70.00	-2.28	-2.15	-2.59	-3.06	-3.30	-4.02	-5.70	-7.30
80.00	-2.28	-2.08	-2.42	-2.72	-2.89	-3.23	-4.80	-6.28
90.00	-2.28	-1.99	-2.31	-2.60	-2.89	-3.21	-4.84	-6.68
100.00	-2.28	-2.14	-2.28	-2.70	-3.05	-3.67	-5.52	-7.95
110.00	-2.28	-2.10	-2.45	-2.92	-3.57	-4.34	-6.57	-9.51
120.00	-2.28	-2.16	-2.69	-3.36	-3.89	-4.83	-6.90	-9.33
130.00	-2.28	-2.20	-3.00	-3.74	-4.14	-4.94	-6.59	-8.02
140.00	-2.28	-2.34	-3.16	-4.21	-4.29	-4.94	-6.20	-7.09
150.00	-2.28	-2.58	-3.50	-4.40	-4.62	-4.82	-6.30	-7.04
160.00	-2.28	-2.66	-3.68	-4.43	-4.60	-4.89	-6.26	-6.92
170.00	-2.28	-2.86	-3.98	-4.55	-4.81	-5.00	-6.50	-7.22
180.00	-2.28	-2.93	-4.21	-4.38	-4.50	-4.96	-6.45	-7.37
190.00	-2.28	-3.10	-4.45	-4.16	-4.34	-4.64	-5.94	-7.28
200.00	-2.28	-3.19	-4.45	-4.04	-3.96	-4.27	-5.28	-6.41
210.00	-2.28	-3.30	-4.62	-3.85	-3.62	-3.62	-4.21	-5.09
220.00	-2.28	-3.43	-4.51	-4.04	-3.48	-3.10	-3.41	-3.86
230.00	-2.28	-3.49	-4.66	-3.91	-3.23	-2.67	-2.88	-3.26
240.00	-2.28	-3.47	-4.59	-4.10	-3.30	-2.60	-2.88	-3.24
250.00	-2.28	-3.42	-4.58	-4.17	-3.41	-2.77	-3.22	-3.77
260.00	-2.28	-3.38	-4.40	-4.23	-3.62	-3.11	-3.76	-4.41
270.00	-2.28	-3.28	-4.26	-4.26	-3.88	-3.62	-4.34	-5.47
280.00	-2.28	-3.16	-4.17	-4.15	-3.87	-3.79	-4.88	-6.22
290.00	-2.28	-3.03	-4.07	-4.32	-4.20	-4.23	-5.41	-7.03
300.00	-2.28	-2.82	-3.96	-4.37	-4.28	-4.64	-6.09	-7.76
310.00	-2.28	-2.81	-3.97	-4.70	-4.81	-5.22	-6.80	-8.88
320.00	-2.28	-2.63	-3.94	-5.00	-5.18	-5.91	-8.00	-9.90
330.00	-2.28	-2.66	-4.20	-5.34	-5.98	-7.15	-9.34	-11.14
340.00	-2.28	-2.50	-4.17	-5.75	-6.94	-8.63	-11.25	-12.71
350.00	-2.28	-2.53	-4.33	-6.14	-7.84	-10.51	-13.91	-16.17
360.00	-2.28	-2.46	-4.40	-6.45	-8.67	-11.77	-15.00	-18.85

(continuation of the "RP_2500.000000_tot" table from column 9 ...)

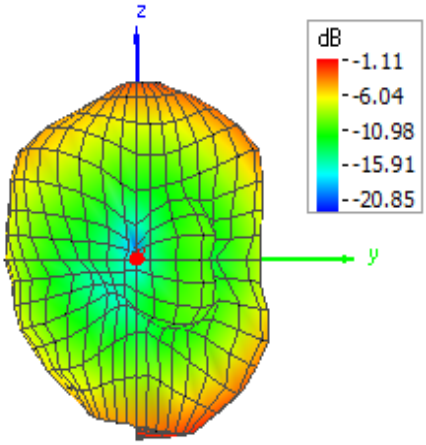
Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
0.00	-17.59	-16.03	-15.40	-12.88	-12.17	-13.61	-12.20	-8.12
10.00	-13.13	-13.75	-13.02	-10.89	-10.85	-12.37	-12.16	-8.36
20.00	-10.12	-10.74	-10.20	-9.59	-9.79	-11.18	-11.15	-7.71
30.00	-8.96	-9.58	-9.00	-8.79	-9.51	-11.19	-10.23	-6.70
40.00	-9.47	-10.38	-9.59	-9.18	-9.86	-10.79	-8.44	-5.81
50.00	-10.94	-12.81	-11.43	-9.92	-9.87	-9.37	-6.58	-4.72
60.00	-9.98	-11.87	-10.50	-8.39	-7.41	-6.74	-4.62	-3.68
70.00	-7.91	-8.93	-8.37	-6.48	-5.04	-4.57	-3.20	-2.62
80.00	-7.13	-7.46	-7.27	-5.62	-4.12	-3.49	-2.66	-2.21
90.00	-7.87	-7.82	-7.97	-6.03	-4.03	-3.47	-2.84	-2.28
100.00	-9.98	-9.66	-10.23	-7.16	-4.89	-3.94	-3.16	-2.37
110.00	-12.21	-11.48	-11.69	-8.85	-6.11	-4.84	-3.59	-2.49
120.00	-10.88	-10.15	-10.19	-8.97	-6.72	-5.57	-4.21	-2.94
130.00	-8.70	-8.51	-8.29	-7.68	-6.33	-5.49	-4.66	-3.40
140.00	-7.77	-7.30	-7.24	-6.68	-5.70	-5.07	-4.70	-3.61
150.00	-7.15	-6.76	-6.86	-6.06	-5.43	-4.67	-4.42	-3.61
160.00	-7.02	-6.79	-6.78	-5.87	-5.09	-4.46	-4.26	-3.61
170.00	-7.31	-7.08	-7.11	-6.12	-5.28	-4.56	-4.40	-3.78
180.00	-7.68	-7.69	-7.69	-6.54	-5.63	-4.48	-4.36	-3.59
190.00	-7.71	-7.84	-7.69	-6.90	-5.70	-4.49	-4.20	-3.55
200.00	-6.86	-7.22	-6.94	-6.27	-5.15	-4.09	-3.99	-3.51
210.00	-5.23	-5.54	-5.48	-5.00	-4.16	-3.77	-3.84	-3.40
220.00	-4.13	-4.08	-4.29	-3.85	-3.48	-3.44	-3.82	-3.59

Azimuth (deg)	Elevation 80 deg (dB)	Elevation 90 deg (dB)	Elevation 100 deg (dB)	Elevation 110 deg (dB)	Elevation 120 deg (dB)	Elevation 130 deg (dB)	Elevation 140 deg (dB)	Elevation 150 deg (dB)
230.00	-3.43	-3.34	-3.64	-3.15	-3.03	-3.21	-3.60	-3.46
240.00	-3.42	-3.31	-3.82	-3.27	-3.18	-3.38	-3.86	-3.72
250.00	-4.00	-3.94	-4.44	-3.98	-3.85	-4.02	-4.33	-4.09
260.00	-4.84	-4.88	-5.53	-5.08	-4.72	-4.87	-4.89	-4.53
270.00	-5.85	-6.33	-6.88	-6.28	-5.66	-5.60	-5.12	-4.67
280.00	-6.61	-7.54	-8.03	-7.29	-6.40	-6.50	-5.50	-4.98
290.00	-7.76	-8.66	-9.32	-8.44	-7.57	-7.50	-6.40	-5.63
300.00	-8.80	-9.87	-10.94	-9.90	-8.72	-8.51	-6.73	-5.94
310.00	-10.24	-11.45	-12.88	-12.12	-10.63	-9.47	-7.20	-6.14
320.00	-11.46	-12.47	-14.07	-14.17	-12.54	-11.20	-8.13	-6.40
330.00	-12.01	-12.12	-13.82	-14.51	-14.82	-13.04	-9.56	-7.16
340.00	-13.68	-12.82	-13.70	-14.47	-14.82	-14.36	-10.88	-7.74
350.00	-16.61	-14.75	-14.74	-14.36	-14.05	-14.61	-11.69	-7.98
360.00	-17.59	-16.16	-15.40	-12.82	-12.17	-13.64	-12.20	-8.37

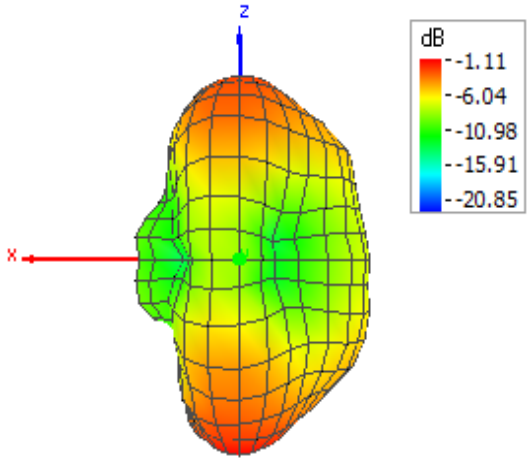
(continuation of the "RP_2500.000000_tot" table from column 17 ...)

Azimuth (deg)	Elevation 160 deg (dB)
0.00	-3.72
10.00	-3.63
20.00	-3.27
30.00	-2.96
40.00	-2.60
50.00	-2.25
60.00	-2.00
70.00	-1.47
80.00	-1.24
90.00	-1.11
100.00	-1.26
110.00	-1.59
120.00	-1.76
130.00	-2.08
140.00	-2.40
150.00	-2.84
160.00	-3.11
170.00	-3.54
180.00	-3.40
190.00	-3.29
200.00	-3.16
210.00	-3.20
220.00	-3.35
230.00	-3.53
240.00	-3.53
250.00	-3.71
260.00	-3.78
270.00	-3.84
280.00	-3.93
290.00	-3.98
300.00	-3.89
310.00	-3.97
320.00	-3.97
330.00	-4.07
340.00	-4.06
350.00	-4.07
360.00	-3.72

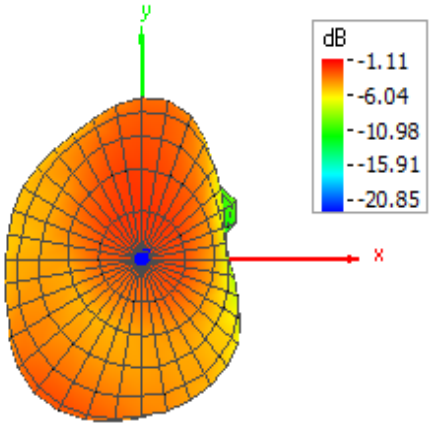
Theta = 90, Phi = 0



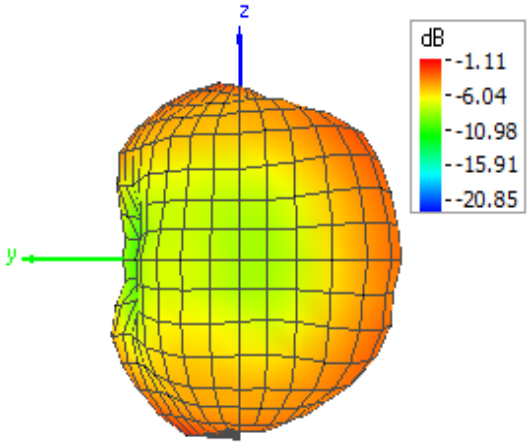
Theta = 90, Phi = 90



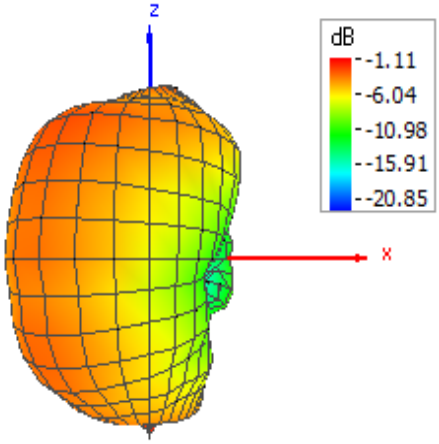
Theta = 0, Phi = 0



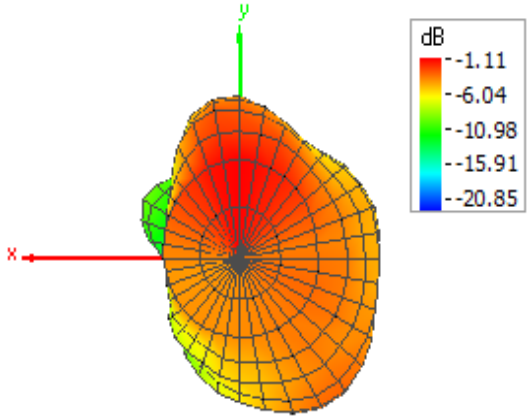
Theta = 90, Phi = 180



Theta = 90, Phi = 270

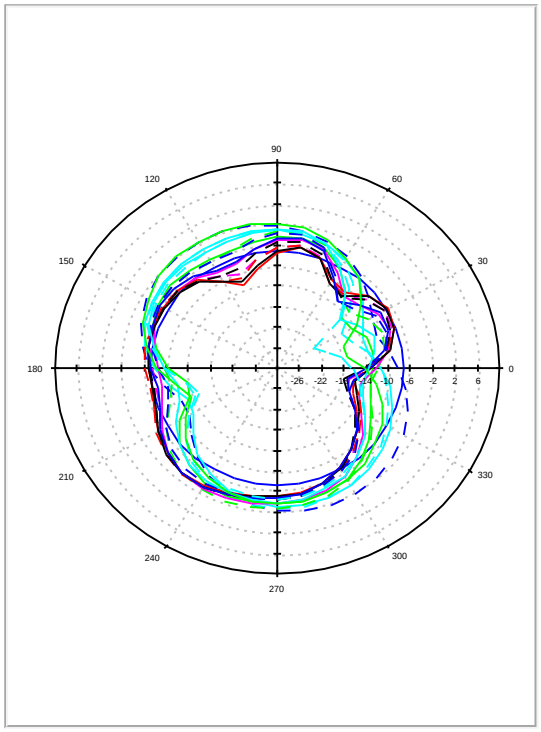


Theta = 180, Phi = 0



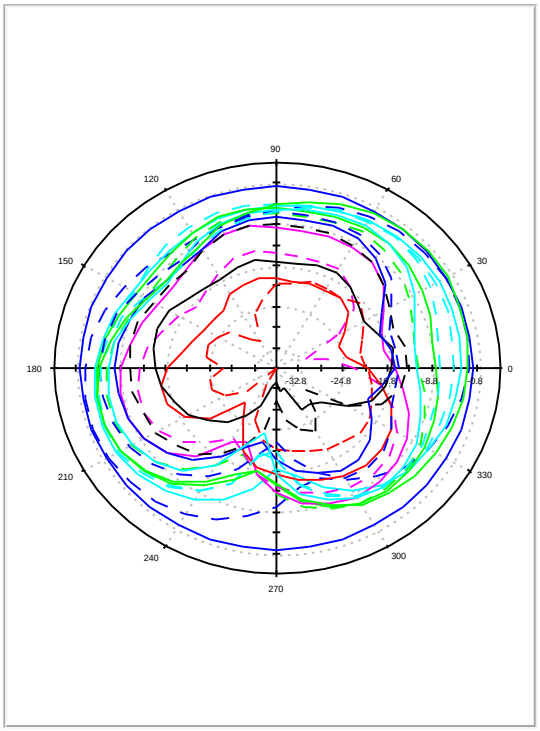
RP_2400.000000_phi

RP_2400.000000_phi



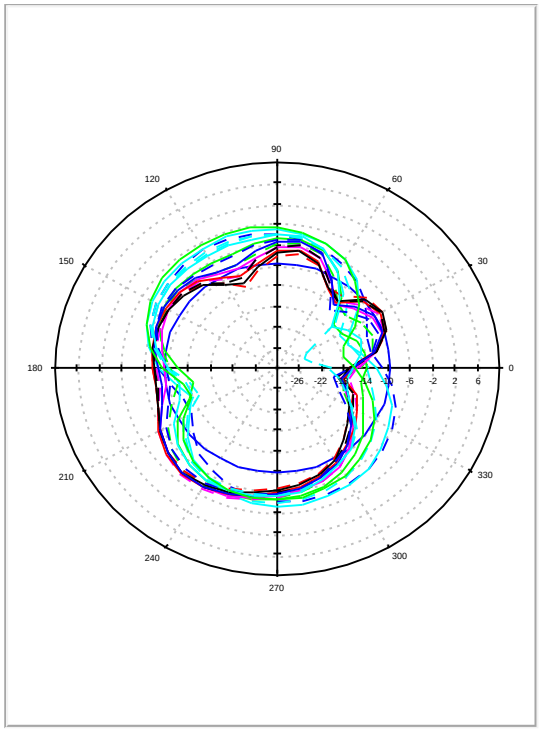
RP_2400.000000_theta

RP_2400.000000_theta



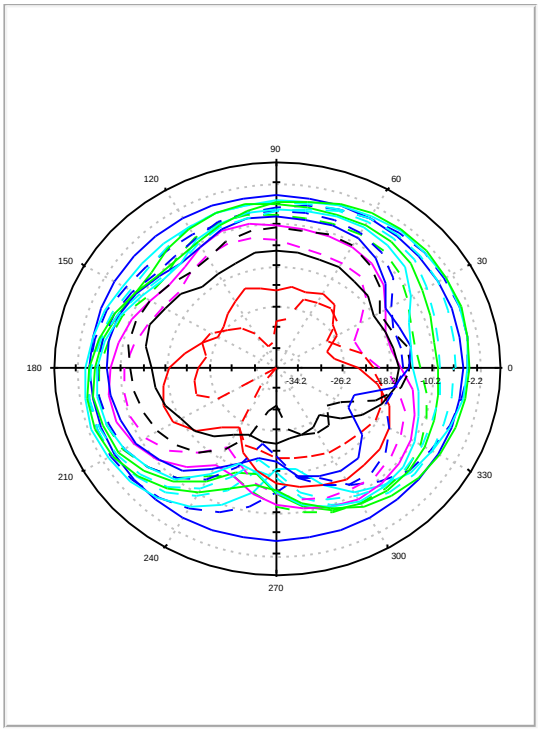
RP_2450.000000_phi

RP_2450.000000_phi



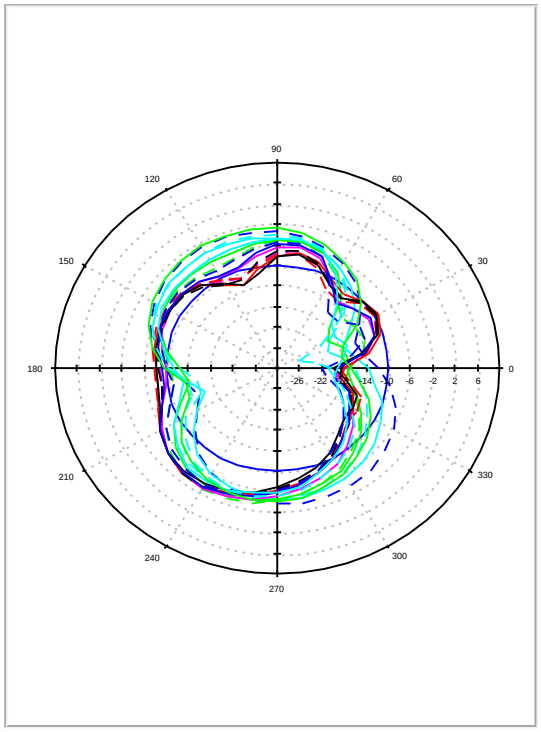
RP_2450.000000_theta

RP_2450.000000_theta



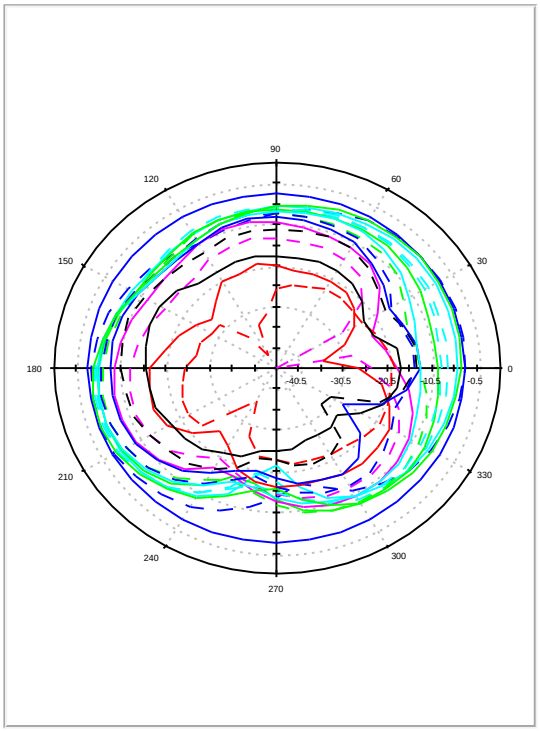
RP_2500.000000_phi

RP_2500.000000_phi



RP_2500.000000_theta

RP_2500.000000_theta



Efficiency_PeakGain

Efficiency_PeakGain