

Antenna OTA 3D Antenna Pattern

Infomation	
Date	2010/10/11
Start Time	下午 05:18
Finish Time	下午 05:22
Lab Name	Max860
Operator	Kevin
Project	Nur test
Manufactur	1011
Model	Nar Zigbee
Hardware	\ 2.2.2
Software	V 2.2.2.3
Test Condit	Free Space
Tempuratur	N/A
Humidity	N/A
Note	N/A

Test List
2.375GHz
2.4GHz
2.425GHz
2.45GHz
2.483GHz
2.5GHz

2.4GHz

3D Passive	
Total Rad. Pwr.	-1.62 dBi
Total Rad. Pwr.0	-1.96 dBi
Total Rad. Pwr.90	-0.63 dBi
Ant. Port Imp. Pwr	0 dBi
Peak EIRP	2.42 dBi
Directivity	4.04 dBi
Efficiency	-1.62 dB
Efficiency	68.87 %
Gain	2.42 dBi
NHPRP +/-30	-8.14 dBi
NHPRP +/-45	-6.23 dBi

Maximum H Value	2.31 dBi
Maximum H @ T	120 deg.
Maximum H @ P	330 deg.
Minimum H Value	-140.71 dBi
Minimum H @ T	0 deg.
Minimum H @ P	0 deg.
Maximum V Value	-4.02 dBi
Maximum V @ T	0 deg.
Maximum V @ P	0 deg.
Minimum V Value	-32.54 dBi
Minimum V @ T	120 deg.
Minimum V @ P	270 deg.
Maximum H+V Value	2.42 dBi
Maximum H+V @	120 deg.
Maximum H+V @	330 deg.
Minimum H+V Value	-15.16 dBi
Minimum H+V @	180 deg.
Minimum H+V @	30 deg.

Test Data

Theta

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-140.71	-14.82	-7.44	-5.29	-6.32	-8.02	-15.82	-14.76	-7.46	-5.68	-6.1	-10.19	-19.21
30	-8.21	-9.87	-6.18	-4.13	-6.15	-10.1	-24.2	-12.2	-5.37	-4.6	-5.63	-8.93	-12.91
60	-8.27	-10.38	-8.98	-6.98	-9	-11.49	-6.98	-5.73	-5.45	-6.17	-6.91	-8.6	-12
90	-0.23	-4.42	-4.37	-3.08	-1.61	-0.51	-0.61	-0.56	-0.27	-0.09	-0.07	0.1	-0.04
120	1.12	-0.19	-1.28	-2.35	-2.08	-1.15	0.17	1.4	1.58	1.14	2.08	2.31	1.73
150	-6.11	-8.15	-10.2	-11.13	-9.47	-7.22	-5.7	-3.65	-2.81	-2.7	-3.37	-4.73	-5.55
180	-20.61	-16.61	-12.88	-11.65	-12.44	-13.37	-16.08	-16.14	-11.71	-10.15	-9.98	-11.46	-18.67

Phi

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-4.02	-4.32	-6.65	-13.53	-10	-4.84	-4.45	-5.38	-8.59	-22.25	-12.79	-5.97	-5.31
30	-5.93	-5.27	-6.6	-16.15	-15.45	-7.85	-5.41	-6.29	-9.24	-13.7	-19.06	-12.29	-7.09
60	-10.02	-7.15	-12.62	-13.35	-6.99	-7.08	-8.92	-10.28	-15.26	-21.9	-15.1	-12.42	-13.77
90	-14.06	-14.76	-15.57	-17.27	-17.8	-15.56	-17	-15.99	-14.79	-20.15	-30.91	-18	-14.22
120	-11.38	-11.19	-19.12	-21.52	-12.44	-8.05	-9.79	-12.84	-20.12	-32.54	-18.57	-13.72	-12.1
150	-12.31	-11.74	-14.02	-28.53	-22.7	-11.94	-10.22	-11.06	-12.43	-14.98	-13.55	-11.08	-9.12
180	-16.41	-20.61	-20.96	-18.1	-15.57	-13.78	-14.49	-17.76	-24.44	-18.96	-15.39	-12.17	-11.49

Total

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-4.02	-3.95	-4.02	-4.69	-4.77	-3.14	-4.15	-4.9	-4.98	-5.58	-5.26	-4.58	-5.14
30	-3.91	-3.98	-3.38	-3.86	-5.66	-5.82	-5.35	-5.3	-3.88	-4.1	-5.44	-7.28	-6.08
60	-6.05	-5.46	-7.42	-6.08	-4.87	-5.73	-4.83	-4.42	-5.02	-6.06	-6.3	-7.09	-9.78
90	-0.06	-4.03	-4.05	-2.92	-1.5	-0.38	-0.51	-0.44	-0.12	-0.05	-0.07	0.17	0.13
120	1.36	0.15	-1.21	-2.3	-1.69	-0.34	0.59	1.56	1.61	1.14	2.12	2.42	1.9
150	-5.18	-6.57	-8.69	-11.06	-9.27	-5.96	-4.38	-2.93	-2.36	-2.45	-2.97	-3.83	-3.96
180	-15.01	-15.16	-12.26	-10.76	-10.72	-10.56	-12.2	-13.86	-11.48	-9.61	-8.88	-8.79	-10.73

2.4GHzUp View

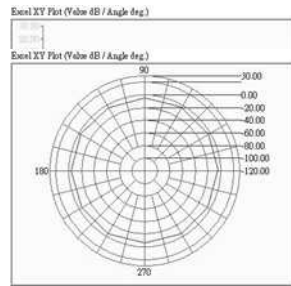
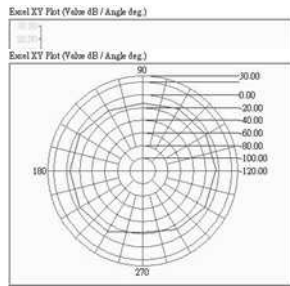
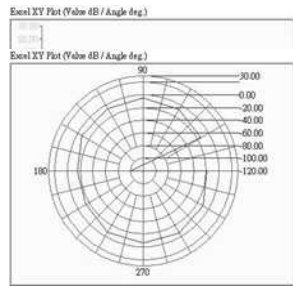
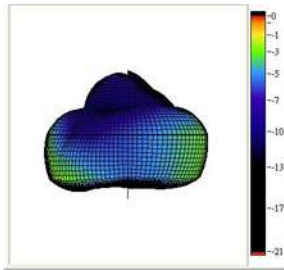
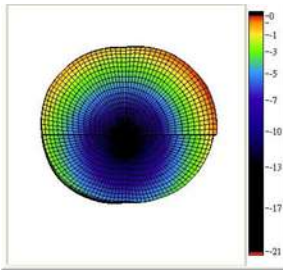
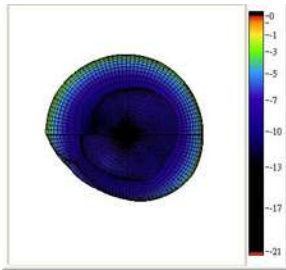


2.4GHzDown View



2.4GHzFront View

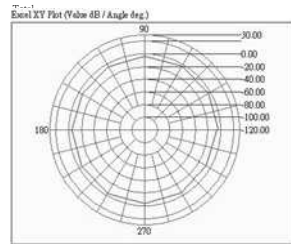
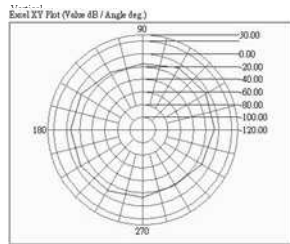
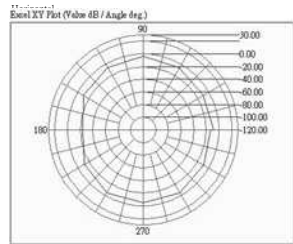




Elevation
30.0

Elevation
30.0

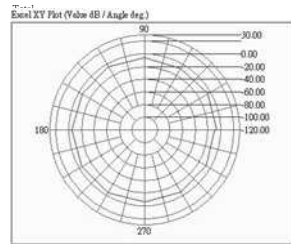
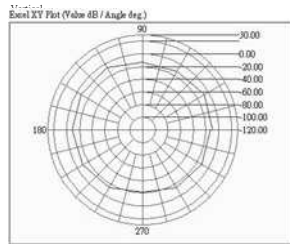
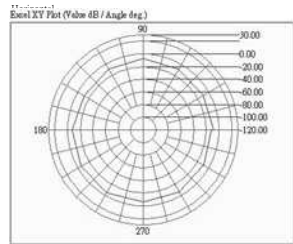
Elevation
30.0



Elevation
60.0

Elevation
60.0

Elevation
60.0

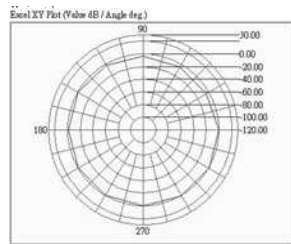


Elevation
90.0

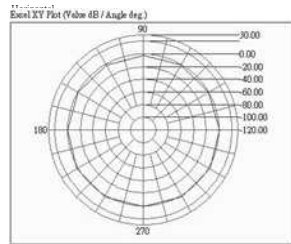
Elevation
90.0

Elevation
90.0

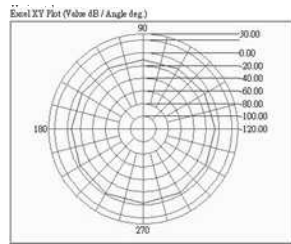
$\angle A_{\text{util}} \text{ deg}$ 1 data
90.0



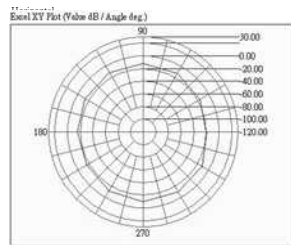
$\angle A_{\text{util}} \text{ deg}$ 1 data
120.0



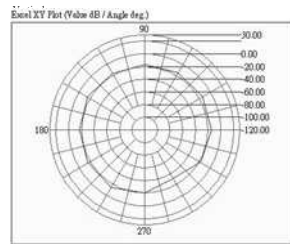
$\angle A_{\text{util}} \text{ deg}$ 1 data
150.0



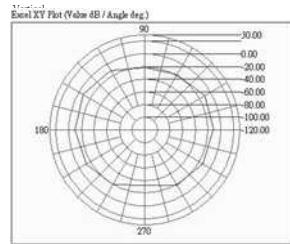
$\angle A_{\text{util}} \text{ deg}$ 1 data
180.0



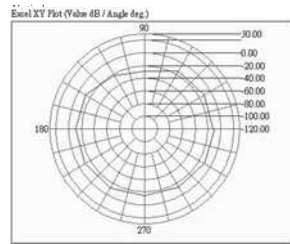
$\angle A_{\text{util}} \text{ deg}$ 1 data
90.0



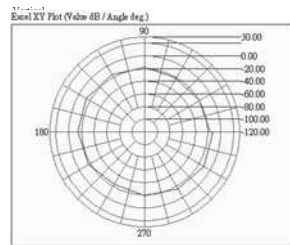
$\angle A_{\text{util}} \text{ deg}$ 1 data
120.0



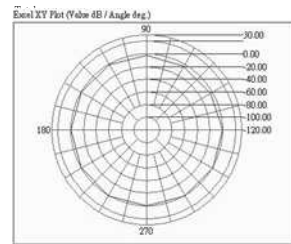
$\angle A_{\text{util}} \text{ deg}$ 1 data
150.0



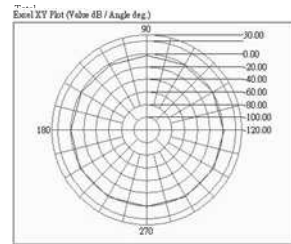
$\angle A_{\text{util}} \text{ deg}$ 1 data
180.0



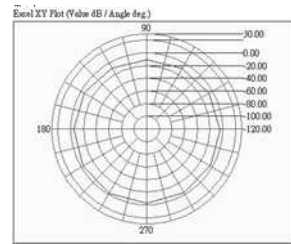
$\angle A_{\text{util}} \text{ deg}$ 1 data
90.0



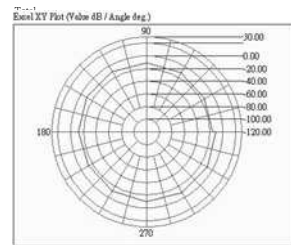
$\angle A_{\text{util}} \text{ deg}$ 1 data
120.0



$\angle A_{\text{util}} \text{ deg}$ 1 data
150.0



$\angle A_{\text{util}} \text{ deg}$ 1 data
180.0



2.425GHz

3D Passive	
Total Rad. Pwr.	-1.54 dBi
Total Rad. Pwr.0	-2.05 dBi
Total Rad. Pwr.90	-0.51 dBi
Ant. Port Imp. Pwr	0 dBi
Peak EIRP	2.79 dBi
Directivity	4.33 dBi
Efficiency	-1.54 dB
Efficiency	70.15 %
Gain	2.79 dBi
NHPRP +/-30	-8.25 dBi
NHPRP +/-45	-6.23 dBi

Maximum H Value	2.66 dBi
Maximum H @ T	120 deg.
Maximum H @ P	330 deg.
Minimum H Value	-140.75 dBi
Minimum H @ T	0 deg.
Minimum H @ P	0 deg.
Maximum V Value	-3.08 dBi
Maximum V @ T	0 deg.
Maximum V @ P	0 deg.
Minimum V Value	-33.8 dBi
Minimum V @ T	90 deg.
Minimum V @ P	300 deg.
Maximum H+V Value	2.79 dBi
Maximum H+V @ T	120 deg.
Maximum H+V @ P	330 deg.
Minimum H+V Value	-13.85 dBi
Minimum H+V @ T	180 deg.
Minimum H+V @ P	30 deg.

Test Data

Theta

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-140.75	-15.1	-7.2	-5.3	-6.64	-9.09	-17.55	-12.71	-6.25	-5.06	-5.46	-8.29	-22.64
30	-12.54	-8.17	-3.82	-2.5	-3.67	-8.82	-18.31	-12.84	-6.56	-5.8	-7.23	-12.35	-19.08
60	-10.75	-14.59	-11.72	-6.54	-8.26	-21.09	-13.7	-8.26	-7.6	-7.12	-8.58	-11.16	-15.65
90	-0.68	-5.16	-6.88	-4.08	-1.56	-0.31	-0.4	-0.39	-0.16	-0.05	-0.14	-0.12	-0.17
120	1.28	-0.12	-1.25	-2.63	-2.56	-0.91	0.46	1.56	1.91	1.58	2.44	2.66	2.05
150	-6.11	-8.05	-10.1	-12.27	-10.41	-7.88	-6.15	-3.44	-2.28	-1.84	-2.4	-4.64	-5.58
180	-25.09	-17.88	-10.84	-9.74	-10.46	-11.89	-16.61	-17.76	-10.87	-9.21	-9.05	-10.94	-21.62

Phi

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-3.08	-3.64	-8.76	-17.08	-11.65	-4.72	-4.11	-4.87	-10.5	-22.26	-9.9	-5.48	-4.6
30	-5.07	-4.94	-6.85	-19.16	-13.98	-6.77	-5.25	-6.15	-8.29	-15.59	-16.83	-10.47	-6.77
60	-6.89	-5.6	-11.28	-13.79	-6.46	-6.09	-7.95	-8.74	-13.14	-20.72	-13.98	-10.25	-10.76
90	-14.02	-14.81	-15.75	-18.85	-17.63	-12.69	-12.45	-14.68	-13.23	-20.96	-33.8	-15.47	-13.37
120	-11.29	-10.28	-16.63	-20.26	-10.86	-8.27	-9.39	-11.52	-17.6	-25.12	-17.02	-12.61	-11.48
150	-10.72	-10.35	-13.64	-18.62	-20.61	-13.15	-9.75	-10	-11.54	-14.96	-13.46	-9.91	-7.83
180	-13.89	-16.04	-19.54	-19.32	-15.25	-11.96	-11.37	-13.18	-25.82	-23.36	-13.86	-10.81	-9.7

Total

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-3.08	-3.34	-4.9	-5.02	-5.45	-3.37	-3.91	-4.21	-4.87	-4.97	-4.13	-3.65	-4.53
30	-4.36	-3.25	-2.06	-2.41	-3.29	-4.66	-5.04	-5.31	-4.33	-5.36	-6.78	-8.3	-6.52
60	-5.39	-5.08	-8.48	-5.79	-4.26	-5.95	-6.93	-5.49	-6.53	-6.93	-7.48	-7.68	-9.54
90	-0.48	-4.72	-6.35	-3.94	-1.45	-0.06	-0.14	-0.23	0.04	-0.01	-0.14	0.01	0.04
120	1.51	0.28	-1.13	-2.55	-1.96	-0.18	0.89	1.77	1.96	1.59	2.49	2.79	2.24
150	-4.82	-6.04	-8.51	-11.37	-10.01	-6.75	-4.57	-2.57	-1.79	-1.63	-2.08	-3.51	-3.55
180	-13.57	-13.85	-10.29	-9.28	-9.21	-8.91	-10.23	-11.88	-10.74	-9.05	-7.81	-7.87	-9.43

2.425GHzUp
View

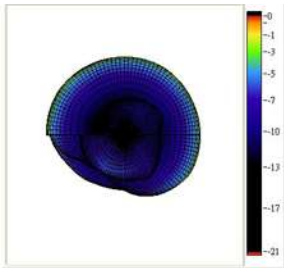


2.425GHzDown
View

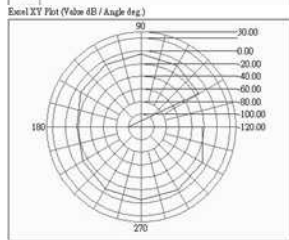


2.425GHzFront
View

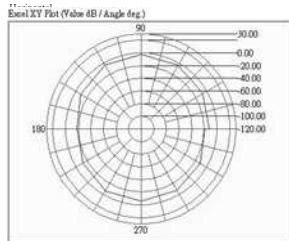




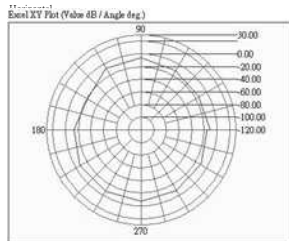
Excel XY Plot (Value dB / Angle deg.)



Excel XY Plot (Value dB / Angle deg.)

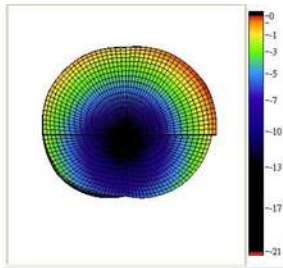


Excel XY Plot (Value dB / Angle deg.)

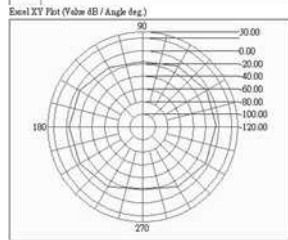


Excel XY Plot (Value dB / Angle deg.)

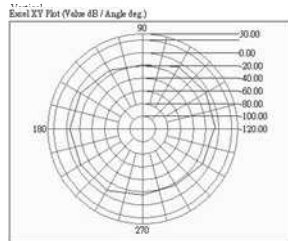
Excel XY Plot (Value dB / Angle deg.)



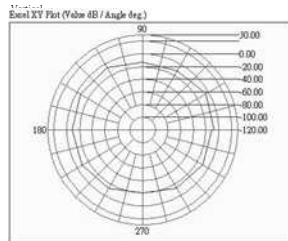
Excel XY Plot (Value dB / Angle deg.)



Excel XY Plot (Value dB / Angle deg.)

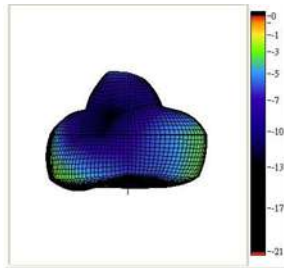


Excel XY Plot (Value dB / Angle deg.)

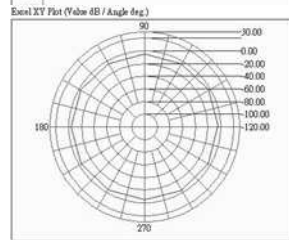


Excel XY Plot (Value dB / Angle deg.)

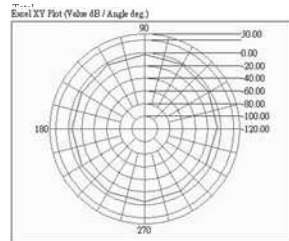
Excel XY Plot (Value dB / Angle deg.)



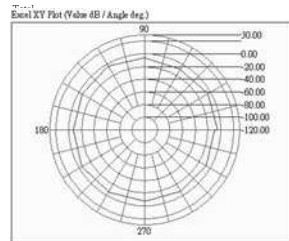
Excel XY Plot (Value dB / Angle deg.)



Excel XY Plot (Value dB / Angle deg.)

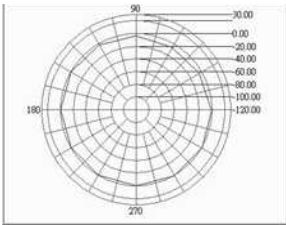


Excel XY Plot (Value dB / Angle deg.)

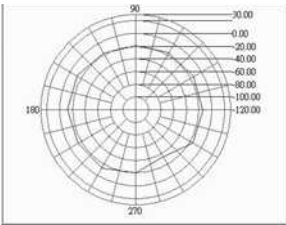


Excel XY Plot (Value dB / Angle deg.)

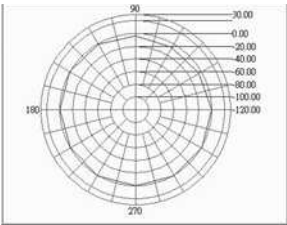
Excel XY Plot (Value dB / Angle deg.)



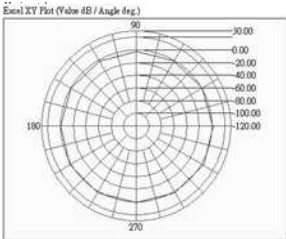
ZAZONITZ@ 1net
a 120.0



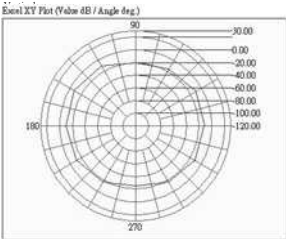
ZAZONITZ@ 1net
a 120.0



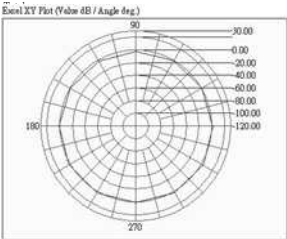
ZAZONITZ@ 1net
a 120.0



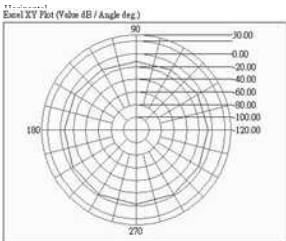
ZAZONITZ@ 1net
a 150.0



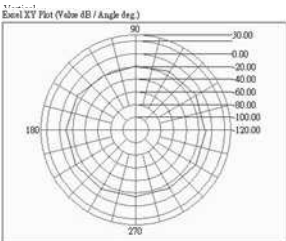
ZAZONITZ@ 1net
a 150.0



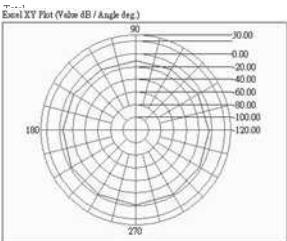
ZAZONITZ@ 1net
a 150.0



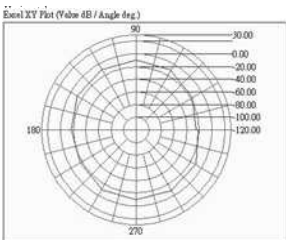
ZAZONITZ@ 1net
a 180.0



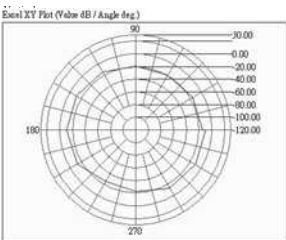
ZAZONITZ@ 1net
a 180.0



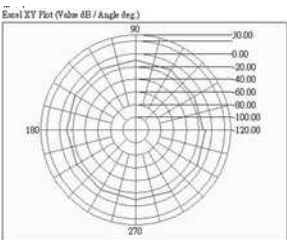
ZAZONITZ@ 1net
a 180.0



ZAZONITZ@ 1net
a 180.0



ZAZONITZ@ 1net
a 180.0



ZAZONITZ@ 1net
a 180.0

2.45GHz

3D Passive	
Total Rad. Pwr.	-0.76 dBi
Total Rad. Pwr.0	-1.5 dBi
Total Rad. Pwr.90	0.24 dBi
Ant. Port Imp. Pwr	0 dBi
Peak EIRP	3.74 dBi
Directivity	4.5 dBi
Efficiency	-0.76 dB
Efficiency	83.95 %
Gain	3.74 dBi
NHPRP +/-30	-7.7 dBi
NHPRP +/-45	-5.57 dBi

Maximum H Value	3.59 dBi
Maximum H @ T	120 deg.
Maximum H @ P	330 deg.
Minimum H Value	-140.12 dBi
Minimum H @ T	0 deg.
Minimum H @ P	0 deg.
Maximum V Value	-2.49 dBi
Maximum V @ T	0 deg.
Maximum V @ P	0 deg.
Minimum V Value	-34.61 dBi
Minimum V @ T	90 deg.
Minimum V @ P	300 deg.
Maximum H+V V	3.74 dBi
Maximum H+V @	120 deg.
Maximum H+V @	330 deg.
Minimum H+V V	-12.19 dBi
Minimum H+V @	180 deg.
Minimum H+V @	0 deg.

Test Data

Theta (deg.) \ Phi (deg.)													
	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-140.12	-15.23	-6.43	-4.46	-5.55	-7.83	-15.1	-12.88	-5.63	-4.22	-5.7	-8.36	-25.94
30	-12.12	-4.37	-1.01	-1.11	-1.96	-6.41	-13.68	-12.51	-7.01	-5.87	-7.44	-12.55	-13.29
60	-15.27	-14.29	-8.39	-3.97	-4.85	-14.07	-22.66	-10.87	-8.81	-7.89	-9.09	-16.34	-21.67
90	-0.11	-4.67	-6.55	-4.97	-1.35	0.23	-0.09	-0.35	-0.03	0.23	0.41	0.52	0.52
120	2.08	0.49	-0.59	-2.09	-1.8	-0.41	1.45	2.5	2.84	3.26	3.48	3.59	2.93
150	-5.09	-6.44	-9.63	-10.88	-9.06	-6.77	-4.7	-2.26	-0.8	-0.44	-1.52	-3.21	-4.51
180	-27.68	-15.6	-10.21	-7.94	-9.19	-11.61	-18.22	-18.52	-9.85	-8.26	-7.76	-10.33	-22

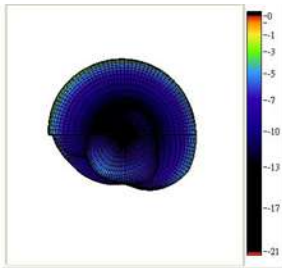
Phi Theta (deg.) \ Phi (deg.)													
	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.49	-2.92	-8.82	-19.3	-7.13	-3.96	-3.3	-4.22	-10.7	-21.24	-10.03	-5.27	-4.22
30	-4.48	-4.29	-7.56	-16.22	-11.47	-6.57	-4.8	-5.82	-7.89	-17.77	-21.16	-8.76	-6.32
60	-5.52	-5.04	-9.91	-11.74	-5.98	-5.4	-7.01	-7.6	-12.46	-18.45	-12.11	-9.12	-8.93
90	-14.51	-14.31	-14.61	-18.64	-17.86	-11	-11.48	-14.74	-13.35	-19.82	-34.61	-15.94	-13.03
120	-10.84	-10.85	-17.05	-16.13	-10.42	-7.72	-8.91	-10.15	-16.76	-21.1	-13.7	-10.9	-10.46
150	-9.53	-9.57	-12.3	-19.73	-17.12	-11.65	-8.83	-8.98	-10.94	-15.97	-12.82	-9.2	-6.72
180	-12.31	-13.51	-18.35	-19.01	-12.12	-10.45	-9.71	-10.94	-19.54	-23.96	-13.64	-9.95	-8.44

Total Theta (deg.) \ Phi (deg.)													
	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.49	-2.67	-4.45	-4.32	-3.26	-2.47	-3.03	-3.66	-4.45	-4.13	-4.33	-3.54	-4.19
30	-3.79	-1.32	-0.14	-0.98	-1.49	-3.48	-4.28	-4.98	-4.41	-5.6	-7.26	-7.24	-5.53
60	-5.09	-4.55	-6.08	-3.3	-2.36	-4.85	-6.89	-5.92	-7.25	-7.53	-7.33	-8.37	-8.7
90	0.05	-4.22	-5.92	-4.79	-1.25	0.54	0.22	-0.19	0.16	0.27	0.41	0.62	0.71
120	2.3	0.8	-0.49	-1.93	-1.24	0.33	1.83	2.73	2.89	3.28	3.56	3.74	3.13
150	-3.76	-4.72	-7.75	-10.35	-8.43	-5.55	-3.28	-1.42	-0.4	-0.32	-1.21	-2.24	-2.46
180	-12.19	-11.42	-9.59	-7.61	-7.4	-7.98	-9.13	-10.24	-9.4	-8.14	-6.76	-7.13	-8.25

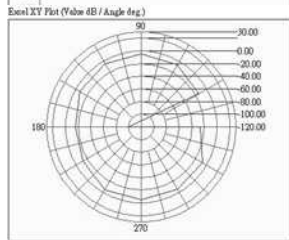
2.45GHzUp
View

2.45GHzDown
View

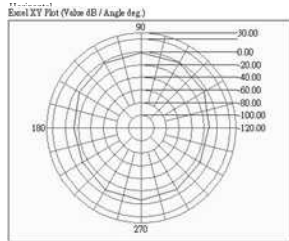
2.45GHzFront
View



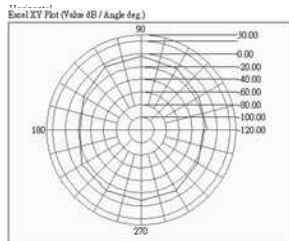
Excel XY Plot (Value dB / Angle deg.)



∠Azimuth@1 mcta
30.0

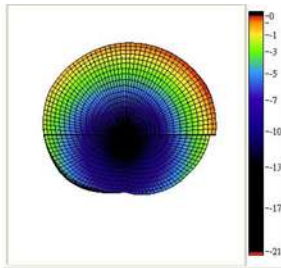


∠Azimuth@1 mcta
60.0

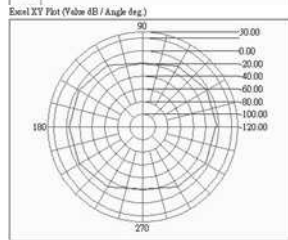


∠Azimuth@1 mcta
90.0

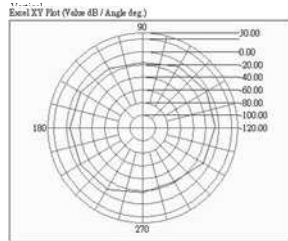
Excel XY Plot (Value dB / Angle deg.)



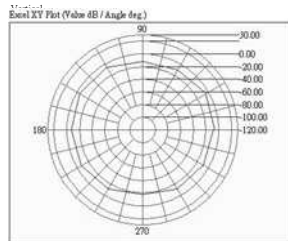
Excel XY Plot (Value dB / Angle deg.)



∠Azimuth@1 mcta
30.0

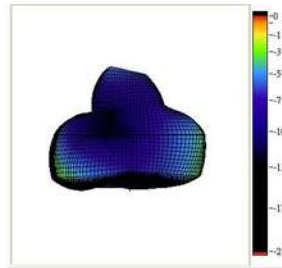


∠Azimuth@1 mcta
60.0

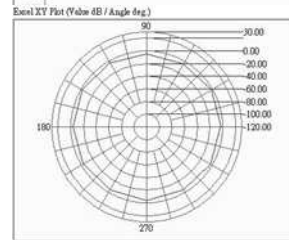


∠Azimuth@1 mcta
90.0

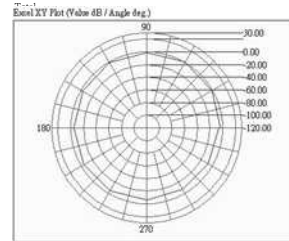
Excel XY Plot (Value dB / Angle deg.)



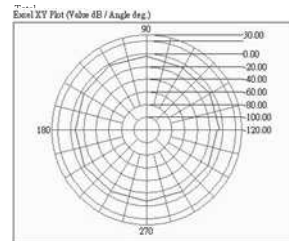
Excel XY Plot (Value dB / Angle deg.)



∠Azimuth@1 mcta
30.0

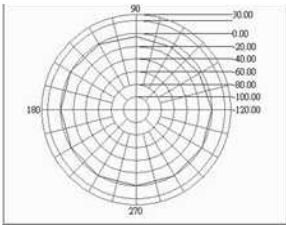


∠Azimuth@1 mcta
60.0



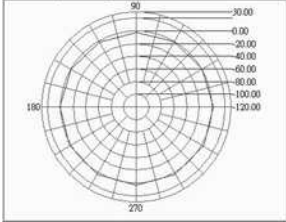
∠Azimuth@1 mcta
90.0

Excel XY Plot (Value dB / Angle deg.)



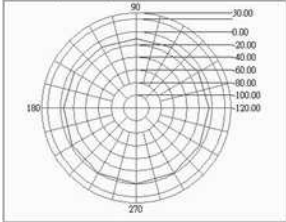
$\angle A \angle \mu H Z \theta$ in db
120.0

Excel XY Plot (Value dB / Angle deg.)



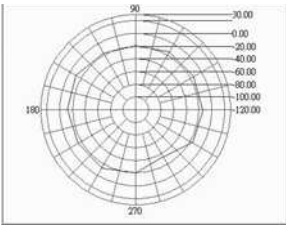
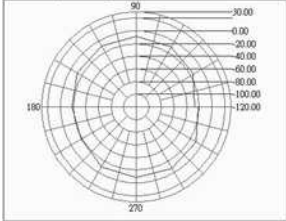
$\angle A \angle \mu H Z \theta$ in db
150.0

Excel XY Plot (Value dB / Angle deg.)



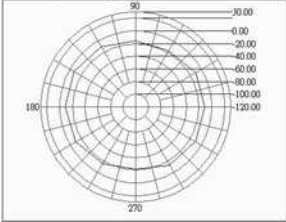
$\angle A \angle \mu H Z \theta$ in db
180.0

Excel XY Plot (Value dB / Angle deg.)



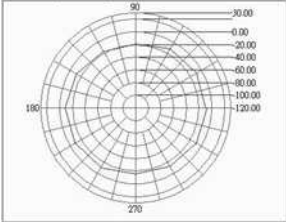
$\angle A \angle \mu H Z \theta$ in db
120.0

Excel XY Plot (Value dB / Angle deg.)



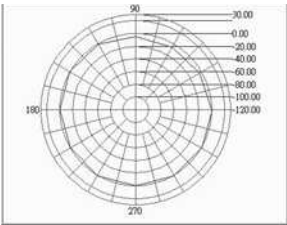
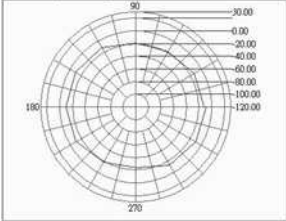
$\angle A \angle \mu H Z \theta$ in db
150.0

Excel XY Plot (Value dB / Angle deg.)



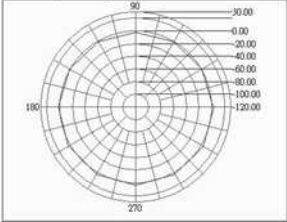
$\angle A \angle \mu H Z \theta$ in db
180.0

Excel XY Plot (Value dB / Angle deg.)



$\angle A \angle \mu H Z \theta$ in db
120.0

Excel XY Plot (Value dB / Angle deg.)



2.483GHz

3D Passive	
Total Rad. Pwr.	-1.14 dBi
Total Rad. Pwr.0	-2.28 dBi
Total Rad. Pwr.90	-0.23 dBi
Ant. Port Imp. Pwr	0 dBi
Peak EIRP	3.44 dBi
Directivity	4.58 dBi
Efficiency	-1.14 dB
Efficiency	76.91 %
Gain	3.44 dBi
NHPRP +/-30	-8.51 dBi
NHPRP +/-45	-6.13 dBi

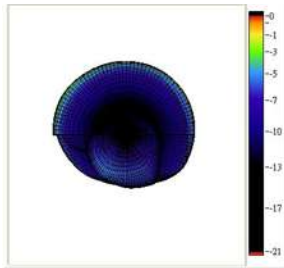
Maximum H Value	3.26 dBi
Maximum H @ T	120 deg.
Maximum H @ P	330 deg.
Minimum H Value	-139.7 dBi
Minimum H @ T	0 deg.
Minimum H @ P	0 deg.
Maximum V Value	-2.68 dBi
Maximum V @ T	0 deg.
Maximum V @ P	0 deg.
Minimum V Value	-29.54 dBi
Minimum V @ T	90 deg.
Minimum V @ P	300 deg.
Maximum H+V V	3.44 dBi
Maximum H+V @	120 deg.
Maximum H+V @	330 deg.
Minimum H+V V	-11.64 dBi
Minimum H+V @	180 deg.
Minimum H+V @	30 deg.

Test Data

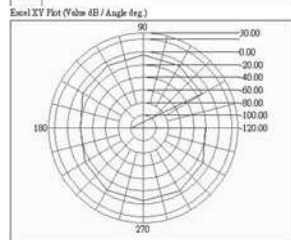
Theta													
Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-139.7	-11.6	-6.83	-4.62	-6.1	-8.67	-20.02	-12.98	-5.96	-4.49	-5.53	-10.31	-21.68
30	-10.06	-3.93	-0.93	-0.92	-1.7	-5.05	-10.03	-10.52	-7.63	-6.29	-7.62	-10.57	-10.31
60	-16.3	-11.22	-5.47	-3.04	-3.84	-12.29	-24.17	-14.49	-12.55	-10.47	-11.68	-23.44	-23.2
90	-1.05	-6.81	-8.75	-5.77	-3.29	-1.52	-2	-1.71	-1.02	-0.69	-0.93	-0.84	-0.8
120	1.79	0.56	-0.86	-1.64	-1.39	0.13	1.75	2.53	2.82	2.81	2.98	3.26	2.77
150	-5.25	-6.62	-9.37	-10.89	-8.26	-6.99	-4.82	-2.2	-0.69	-0.22	-1.3	-3.03	-4.93
180	-36.51	-16.92	-10.93	-9.06	-10	-13.61	-22.08	-16.31	-10.27	-7.64	-7.57	-10.51	-22.25

Phi													
Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.68	-4.39	-9.6	-21.76	-7.94	-4.69	-3.6	-4.55	-10.98	-20.4	-8.5	-5.21	-4.15
30	-4.41	-4.79	-9.41	-21.31	-10.37	-6.49	-4.83	-6.24	-9.51	-22.38	-14.69	-7.69	-5.94
60	-5.38	-5.39	-9.52	-12.61	-7.1	-5.96	-6.32	-8.28	-12.05	-18.2	-13.42	-9.76	-9.23
90	-16.62	-14.73	-15.19	-20.88	-17.2	-9.93	-11.65	-15.25	-14.12	-21.4	-29.54	-16.69	-14.28
120	-10.57	-10.71	-17.36	-17.54	-10.35	-7.98	-8.76	-9.71	-15.61	-19.43	-12.99	-10.38	-10.23
150	-9.07	-9.47	-13.22	-20.29	-16.81	-10.11	-8.15	-8.11	-11.27	-18.18	-11.61	-8.18	-6.66
180	-10.95	-13.16	-17.43	-21.79	-12.83	-10.4	-9.18	-9.98	-16.67	-20.94	-12.55	-9.65	-8.27

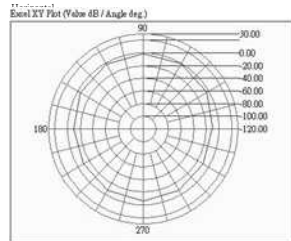
Total													
Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.68	-3.64	-4.99	-4.54	-3.91	-3.23	-3.3	-3.96	-4.77	-4.38	-3.76	-4.04	-4.08
30	-3.36	-1.33	-0.35	-0.88	-1.15	-2.7	-3.68	-4.87	-5.46	-6.18	-6.84	-5.88	-4.59
60	-5.04	-4.39	-4.03	-2.59	-2.16	-5.05	-6.25	-7.35	-9.28	-9.79	-9.45	-9.58	-9.06
90	-0.93	-6.16	-7.86	-5.64	-3.12	-0.93	-1.56	-1.52	-0.81	-0.66	-0.92	-0.73	-0.61
120	2.04	0.88	-0.76	-1.53	-0.87	0.75	2.12	2.78	2.88	2.84	3.08	3.44	2.98
150	-3.74	-4.81	-7.87	-10.42	-7.69	-5.27	-3.17	-1.21	-0.32	-0.15	-0.91	-1.87	-2.7
180	-10.94	-11.64	-10.05	-8.83	-8.18	-8.71	-8.99	-9.07	-9.37	-7.44	-6.37	-7.05	-8.1



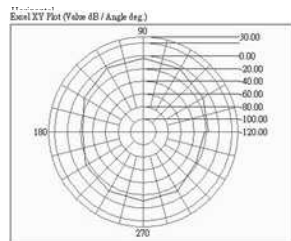
Excel XY Plot (Value dB / Angle deg.)



∠ASUMIZ@ 1Inet
a 30.0

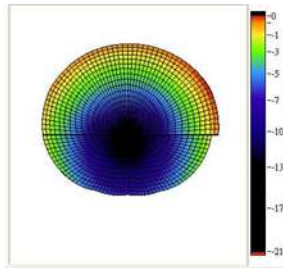


∠ASUMIZ@ 1Inet
a 30.0

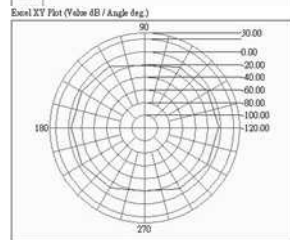


∠ASUMIZ@ 1Inet
a 90.0

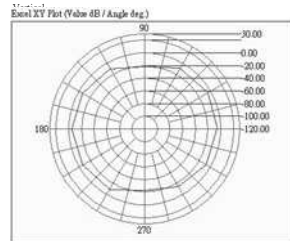
Excel XY Plot (Value dB / Angle deg.)



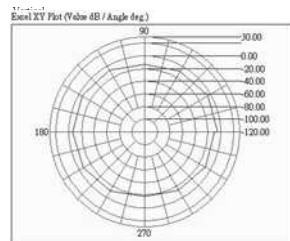
Excel XY Plot (Value dB / Angle deg.)



∠ASUMIZ@ 1Inet
a 30.0

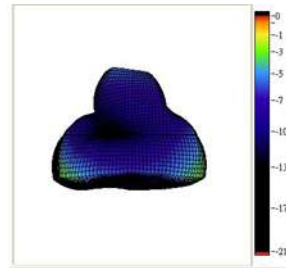


∠ASUMIZ@ 1Inet
a 60.0

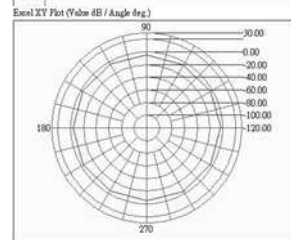


∠ASUMIZ@ 1Inet
a 90.0

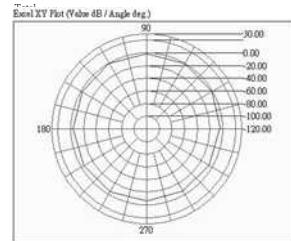
Excel XY Plot (Value dB / Angle deg.)



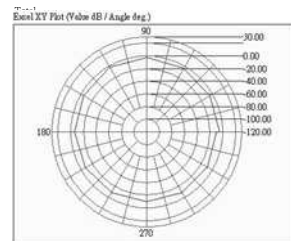
Excel XY Plot (Value dB / Angle deg.)



∠ASUMIZ@ 1Inet
a 30.0

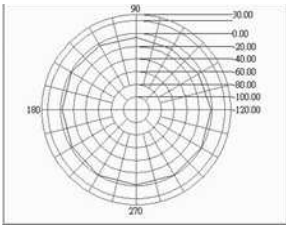


∠ASUMIZ@ 1Inet
a 30.0

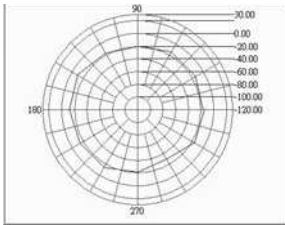


∠ASUMIZ@ 1Inet
a 90.0

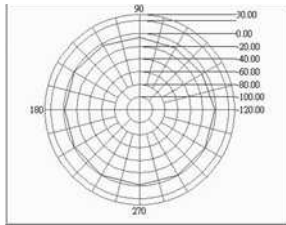
Excel XY Plot (Value dB / Angle deg.)



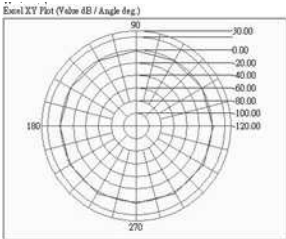
ZAS3UH2@ 1Inet
a 120.0



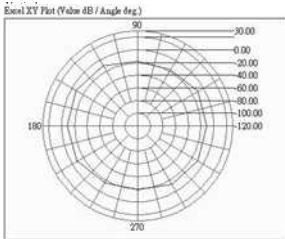
ZAS3UH2@ 1Inet
a 120.0



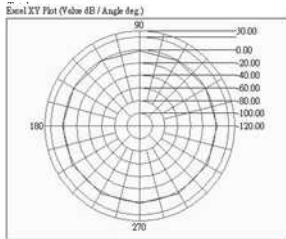
ZAS3UH2@ 1Inet
a 120.0



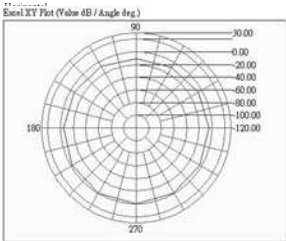
ZAS3UH2@ 1Inet
a 120.0



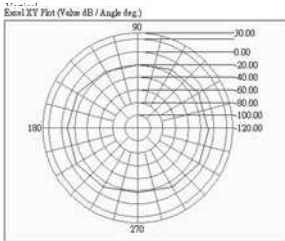
ZAS3UH2@ 1Inet
a 120.0



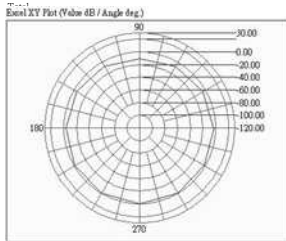
ZAS3UH2@ 1Inet
a 120.0



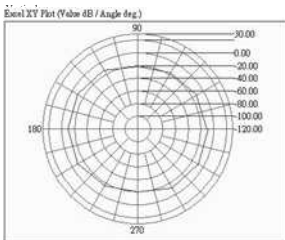
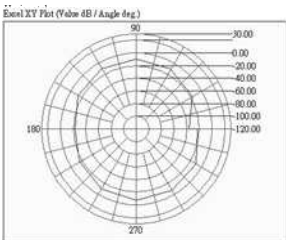
ZAS3UH2@ 1Inet
a 150.0



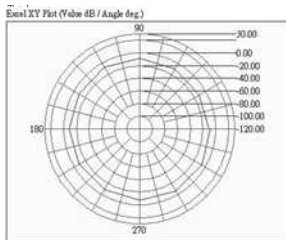
ZAS3UH2@ 1Inet
a 150.0



ZAS3UH2@ 1Inet
a 150.0



ZAS3UH2@ 1Inet
a 180.0



ZAS3UH2@ 1Inet
a 180.0

2.5GHz

3D Passive	
Total Rad. Pwr.	-1.84 dBi
Total Rad. Pwr.0	-2.96 dBi
Total Rad. Pwr.90	-1.06 dBi
Ant. Port Imp. Pwr	0 dBi
Peak EIRP	2.61 dBi
Directivity	4.45 dBi
Efficiency	-1.84 dB
Efficiency	65.46 %
Gain	2.61 dBi
NHPRP +/-30	-9.33 dBi
NHPRP +/-45	-6.9 dBi

Maximum H Value	2.34 dBi
Maximum H @ T	120 deg.
Maximum H @ P	330 deg.
Minimum H Value	-140.25 dBi
Minimum H @ T	0 deg.
Minimum H @ P	0 deg.
Maximum V Value	-2.65 dBi
Maximum V @ T	0 deg.
Maximum V @ P	0 deg.
Minimum V Value	-26.5 dBi
Minimum V @ T	90 deg.
Minimum V @ P	300 deg.
Maximum H+V Value	2.61 dBi
Maximum H+V @	120 deg.
Maximum H+V @	330 deg.
Minimum H+V Value	-12.6 dBi
Minimum H+V @	60 deg.
Minimum H+V @	270 deg.

Test Data

Theta

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-140.25	-11.47	-7.26	-5.56	-6.55	-10.41	-20.96	-12	-7.66	-4.56	-5.95	-10.96	-21.49
30	-9.87	-4.24	-1.5	-1.32	-2.02	-5.69	-9.53	-10.31	-8.03	-6.82	-9.02	-10.33	-9.82
60	-17.16	-10.88	-5.69	-3.39	-4.5	-12.06	-21.53	-18.32	-15.78	-13.01	-14.29	-20.57	-20.37
90	-2.31	-8.71	-10.94	-7.24	-5.07	-2.9	-3.26	-2.55	-1.74	-1.37	-1.8	-2.18	-2.18
120	0.95	-0.36	-1.74	-2.53	-1.87	-0.74	1.17	1.78	2.11	1.52	1.98	2.34	1.85
150	-5.86	-7.82	-10.46	-11.55	-9.02	-7.52	-4.5	-2.74	-0.94	-0.82	-1.82	-3.42	-5.51
180	-30.05	-17.22	-12.02	-10.26	-10.92	-15.14	-21.38	-15.7	-10.46	-8.1	-8.27	-11.62	-24.95

Phi

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.65	-4.44	-9.9	-15.45	-7.97	-4.57	-3.79	-5.99	-10.54	-18.54	-8.57	-4.99	-4.07
30	-3.96	-4.36	-6.57	-20.32	-14.96	-6.62	-4.72	-5.94	-9.46	-18.77	-13.13	-6.96	-5.32
60	-5.54	-5.56	-9.43	-14.3	-7.63	-5.76	-5.92	-7.91	-11.66	-23	-14.12	-9.28	-9.33
90	-17.21	-14.75	-15	-18.75	-16.16	-10.6	-11.56	-15.51	-14.27	-18.68	-26.5	-17.45	-14.6
120	-10.35	-10.73	-16.23	-16.56	-10.41	-7.84	-8.67	-10.99	-15.31	-17.4	-12.68	-9.62	-10.15
150	-8.98	-9.65	-12.87	-19.44	-16.45	-9.64	-7.53	-7.64	-9.13	-18.84	-14.7	-7.65	-6.52
180	-10.78	-13.04	-17.47	-20.87	-13.11	-9.8	-8.89	-10.68	-15.14	-19.78	-12.76	-9.47	-8.3

Total

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300	330	360
0	-2.65	-3.65	-5.37	-5.13	-4.19	-3.56	-3.71	-5.02	-5.85	-4.39	-4.06	-4.01	-3.99
30	-2.97	-1.29	-0.33	-1.26	-1.8	-3.12	-3.48	-4.59	-5.67	-6.55	-7.6	-5.32	-4
60	-5.25	-4.44	-4.16	-3.05	-2.78	-4.84	-5.8	-7.53	-10.24	-12.6	-11.19	-8.95	-9
90	-2.17	-7.74	-9.51	-6.95	-4.74	-2.22	-2.66	-2.34	-1.51	-1.29	-1.79	-2.06	-1.94
120	1.26	0.02	-1.59	-2.36	-1.3	0.03	1.6	2.01	2.19	1.58	2.13	2.61	2.11
150	-4.13	-5.63	-8.49	-10.9	-8.3	-5.44	-2.75	-1.52	-0.33	-0.75	-1.6	-2.03	-2.98
180	-10.73	-11.64	-10.93	-9.9	-8.87	-8.69	-8.65	-9.49	-9.18	-7.82	-6.95	-7.41	-8.21

2.5GHzUp View

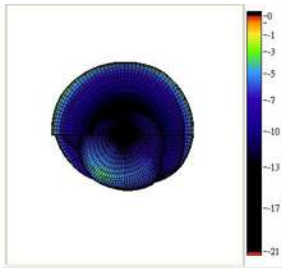


2.5GHzDown View

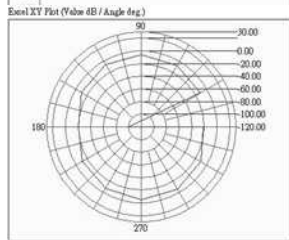


2.5GHzFront View

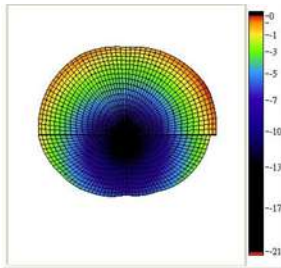




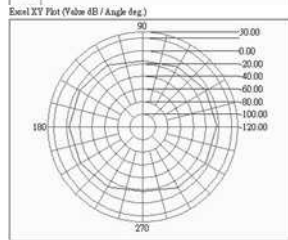
Excel XY Plot (Value dB / Angle deg.)



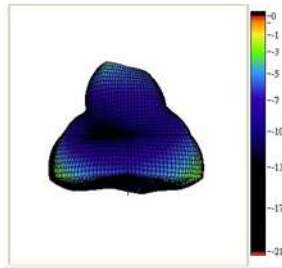
$\angle_{\text{cut}} = 30.0$



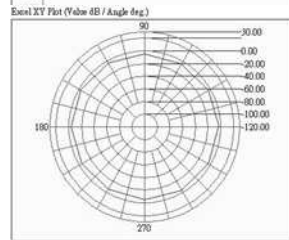
Excel XY Plot (Value dB / Angle deg.)



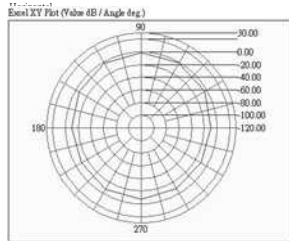
$\angle_{\text{cut}} = 30.0$



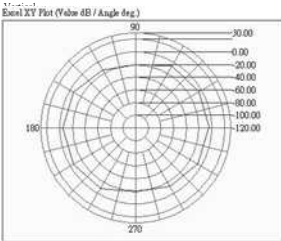
Excel XY Plot (Value dB / Angle deg.)



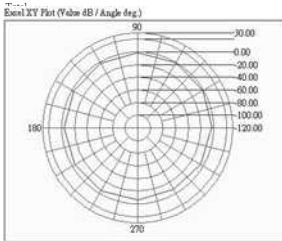
$\angle_{\text{cut}} = 30.0$



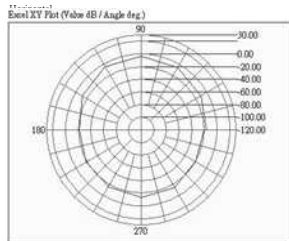
$\angle_{\text{cut}} = 60.0$



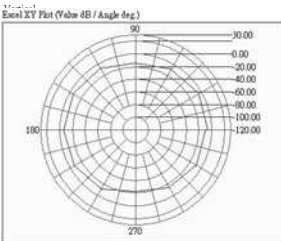
$\angle_{\text{cut}} = 60.0$



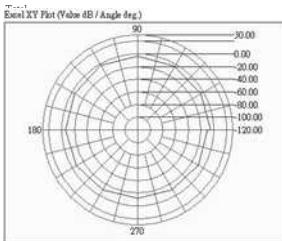
$\angle_{\text{cut}} = 60.0$



$\angle_{\text{cut}} = 90.0$



$\angle_{\text{cut}} = 90.0$

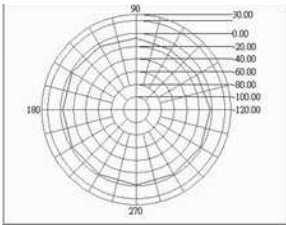


$\angle_{\text{cut}} = 90.0$

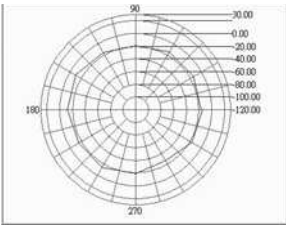
Excel XY Plot (Value dB / Angle deg.)

Excel XY Plot (Value dB / Angle deg.)

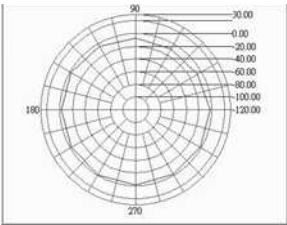
Excel XY Plot (Value dB / Angle deg.)



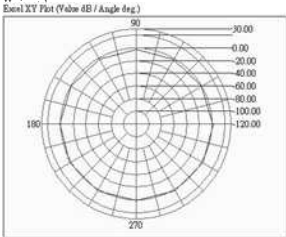
120.0 Hz @ 120.0
120.0



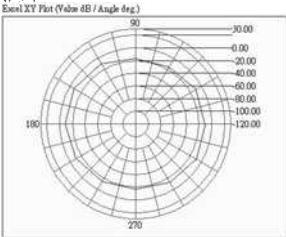
120.0 Hz @ 120.0
120.0



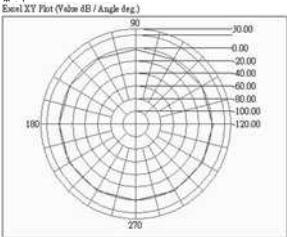
120.0 Hz @ 120.0
120.0



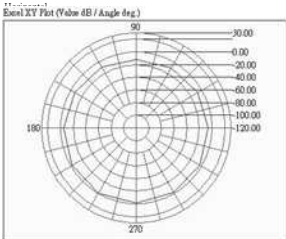
120.0 Hz @ 120.0
120.0



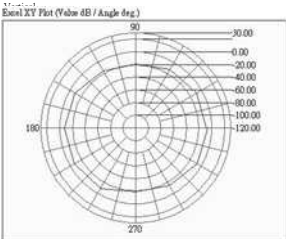
120.0 Hz @ 120.0
120.0



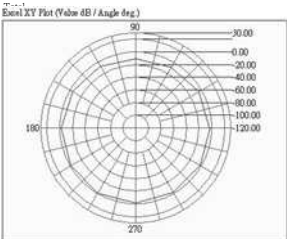
120.0 Hz @ 120.0
120.0



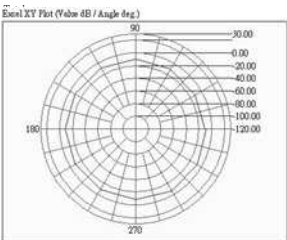
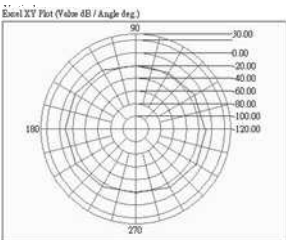
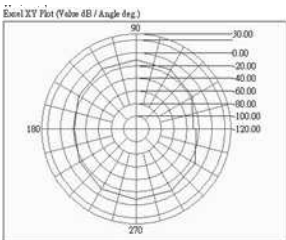
120.0 Hz @ 120.0
120.0



120.0 Hz @ 120.0
120.0



120.0 Hz @ 120.0
120.0



Frequency	2.375GHz	2.4GHz	2.425GHz	2.45GHz	2.483GHz
Total Rad. Pow. (dBi)	-1.99	-1.62	-1.54	-0.76	-1.14
Total Rad. Pow.0-90 (dBi)	-2.37	-1.96	-2.05	-1.5	-2.28
Total Rad. Pow.90-180 (dBi)	-1.1	-0.63	-0.51	0.24	-0.23
Ant. Port Inp. Pow. (dBi)	0	0	0	0	0
Peak EIRP (dBi)	1.66	2.42	2.79	3.74	3.44
Directivity (dBi)	3.65	4.04	4.33	4.5	4.58
Efficiency (dB)	-1.99	-1.62	-1.54	-0.76	-1.14
Efficiency (%)	63.24	68.87	70.15	83.95	76.91
Gain (dBi)	1.66	2.42	2.79	3.74	3.44
NHPRP +/-30 (dBi)	-8.56	-8.14	-8.25	-7.7	-8.51
NHPRP +/-45 (dBi)	-6.61	-6.23	-6.23	-5.57	-6.13
Maximum H Value (dBi)	1.6	2.31	2.66	3.59	3.26
Maximum H @ Theta (deg.)	120	120	120	120	120
Maximum H @ Phi (deg.)	330	330	330	330	330
Minimum H Value (dBi)	-140.73	-140.71	-140.75	-140.12	-139.7
Minimum H @ Theta (deg.)	0	0	0	0	0
Minimum H @ Phi (deg.)	0	0	0	0	0
Maximum V Value (dBi)	-4.7	-4.02	-3.08	-2.49	-2.68
Maximum V @ Theta (deg.)	0	0	0	0	0
Maximum V @ Phi (deg.)	180	0	0	0	0
Minimum V Value (dBi)	-42.75	-32.54	-33.8	-34.61	-29.54
Minimum V @ Theta (deg.)	120	120	90	90	90
Minimum V @ Phi (deg.)	270	270	300	300	300
Maximum H+V Value (dBi)	1.66	2.42	2.79	3.74	3.44
Maximum H+V @ Theta (deg.)	120	120	120	120	120
Maximum H+V @ Phi (deg.)	330	330	330	330	330
Minimum H+V Value (dBi)	-16.01	-15.16	-13.85	-12.19	-11.64
Minimum H+V @ Theta (deg.)	180	180	180	180	180
Minimum H+V @ Phi (deg.)	30	30	30	0	30

2.5GHz
-1.84
-2.96
-1.06
0
2.61
4.45
-1.84
65.46
2.61
-9.33
-6.9
2.34
120
330
-140.25
0
0
-2.65
0
0
-26.5
90
300
2.61
120
330
-12.6
60
270