Antenna Test Data Sheet

검토	확인	승인
11/28		11/28

	TELLESTAR.COM	11/28			11/28
Enterprise	ATTOWAVE Co., Ltd	REV.	IR	Page	1 of 2
Model name	PCB Antenna	Date		2023.11.28	
System	2.4G	Written by		S.H.BACK	

Electrical Specification	Frequency Range	
	2400~2485(MHz)	
Band Width	85(MHz)	
V.S.W.R (Min)	2.5:1	
Gain (Max)	1.19 dBi	
Input Impedance	50 (Ω)	
Directivity	Onmi-Directivity	
Polarization	Linear	

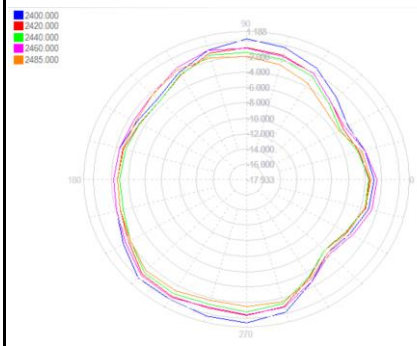
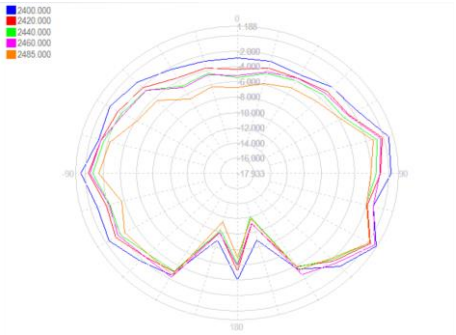
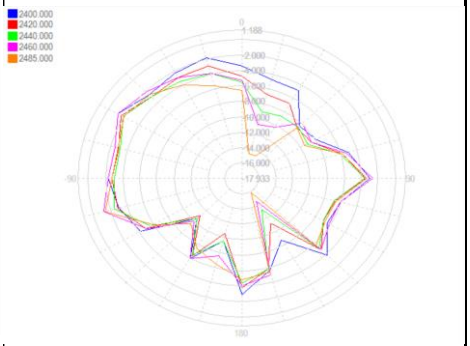
Mechanical Specification	
Antenna Size	TBD
Weight	TBD
Radiator Material	CU
Connection Type	PCB Pattern Type
Operation Temperature	-30 ~ 80 (˚C)
Operation Humidity	10 ~ 80 (%)

Option	
	Tellestar Co., Ltd

3D Radiation Pattern Measurement Results

1. Informations

Date	23.11.28
Customer	ATTOWAVE CO., LTD
Address	1005, 10F Leader's Tower, 286, Beotkkot-ro, Geumcheon-gu, South Korea 08511
Model / Revision	ATW-IF01
Test laboratory	Tellestar

H Plane Result	E1 Plane Result	E2 Plane Result
		

2. Test Results

Horizontal + Vertical								
Frequency	Max Value			Min Value			Avg. Gain	Efficiency
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
2400.000	75	105	1.19	135	165	-17.93	-2.36	58.13
2420.000	75	105	0.42	135	165	-17.27	-3.12	48.70
2440.000	120	90	0.12	135	165	-16.75	-3.53	44.39
2460.000	120	90	0.88	135	165	-15.52	-2.99	50.23
2485.000	120	90	0.12	135	165	-15.97	-3.85	41.16

Vertical

Frequency	Max Value			Min Value			Avg. Gain	Efficiency
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
2400.000	75	255	0.13	165	165	-39.30	-5.04	31.34
2420.000	75	255	-0.59	135	165	-38.36	-5.83	26.12
2440.000	75	255	-1.11	135	345	-39.07	-6.27	23.61
2460.000	75	105	-0.61	135	345	-58.57	-5.79	26.36
2485.000	75	90	-1.53	45	345	-48.30	-6.77	21.01

Horizontal

Frequency	Max Value			Min Value			Avg. Gain	Efficiency
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
2400.000	105	240	-0.80	180	240	-27.02	-5.72	26.79
2420.000	60	165	-1.62	120	45	-27.31	-6.46	22.58
2440.000	60	165	-1.74	0	255	-29.38	-6.82	20.78
2460.000	60	165	-1.02	0	255	-33.77	-6.22	23.87
2485.000	105	165	-1.66	0	255	-40.03	-6.96	20.15

RHCP

Frequency	Max Value			Min Value			Avg. Gain	Efficiency
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
2400.000	120	90	0.96	150	315	-24.96	-5.49	28.25
2420.000	120	90	0.26	150	330	-29.28	-6.24	23.78
2440.000	120	90	0.06	150	330	-30.02	-6.60	21.87
2460.000	120	90	0.81	150	285	-26.91	-6.02	25.01
2485.000	120	90	0.05	30	15	-28.90	-6.84	20.70

LHCP

Frequency	Max Value			Min Value			Avg. Gain	Efficiency
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
2400.000	105	240	0.35	90	120	-28.63	-5.25	29.89
2420.000	105	240	-0.33	150	60	-35.14	-6.03	24.92
2440.000	105	240	-0.69	150	60	-35.73	-6.47	22.52
2460.000	105	240	-0.16	60	300	-28.22	-5.98	25.22
2485.000	105	240	-0.87	150	45	-28.82	-6.89	20.46

AR								
Frequency	Max Value			Min Value				
[MHz]	Θ[Deg]	Φ[Deg]	Value[dBi]	Θ[Deg]	Φ[Deg]	Value[dBi]		
2400.000	60	255	55.64	90	120	0.82		
2420.000	165	150	56.53	120	120	0.61		
2440.000	165	30	71.40	150	60	0.62		
2460.000	135	345	71.98	105	120	1.11		
2485.000	45	345	63.79	105	300	0.93		

H Plane (Vertical + Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	270	0.59	90	315	-4.55	-1.60	69.11
2	2420	90	270	-0.33	90	315	-4.98	-2.26	59.39
3	2440	90	240	-0.76	90	30	-5.21	-2.56	55.42
4	2460	90	240	-0.30	90	30	-4.55	-1.92	64.29
5	2485	90	240	-1.21	90	30	-5.41	-2.64	54.44
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H Plane (Vertical)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	270	-0.08	90	165	-20.85	-4.72	33.72
2	2420	90	270	-1.09	90	165	-24.26	-5.51	28.12
3	2440	90	270	-1.70	90	165	-26.43	-5.91	25.63
4	2460	90	270	-1.42	90	165	-27.80	-5.45	28.49
5	2485	90	270	-2.42	90	165	-36.48	-6.39	22.95
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H Plane (Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	225	-1.82	90	75	-13.36	-4.51	35.39
2	2420	90	225	-2.85	90	75	-13.63	-5.05	31.27
3	2440	90	165	-3.22	90	75	-13.25	-5.26	29.79
4	2460	90	165	-2.44	90	75	-11.77	-4.46	35.79
5	2485	90	165	-2.87	90	75	-11.13	-5.02	31.48
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H Plane (RHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	90	-0.28	90	240	-22.75	-4.68	34.06
2	2420	90	105	-1.12	90	240	-20.63	-5.36	29.13
3	2440	90	105	-1.40	90	225	-20.83	-5.61	27.47
4	2460	90	105	-0.75	90	225	-20.79	-4.91	32.30
5	2485	90	105	-1.72	90	225	-22.83	-5.56	27.82
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H Plane (LHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	240	0.04	90	120	-28.63	-4.55	35.04
2	2420	90	240	-0.44	90	120	-22.52	-5.19	30.27
3	2440	90	240	-0.83	90	120	-20.05	-5.54	27.95
4	2460	90	240	-0.40	90	120	-17.58	-4.95	31.99
5	2485	90	225	-1.30	90	120	-18.56	-5.75	26.62
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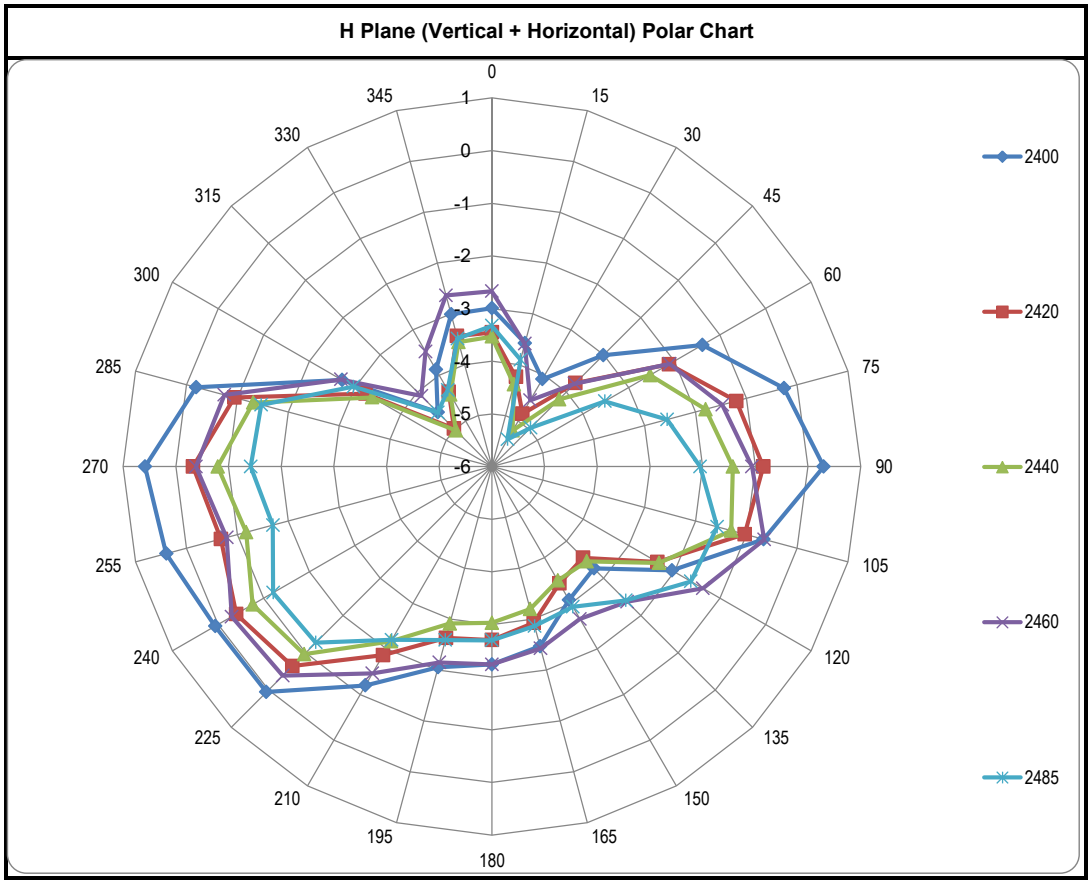
H Plane (Vertical + Horizontal) Polar Chart
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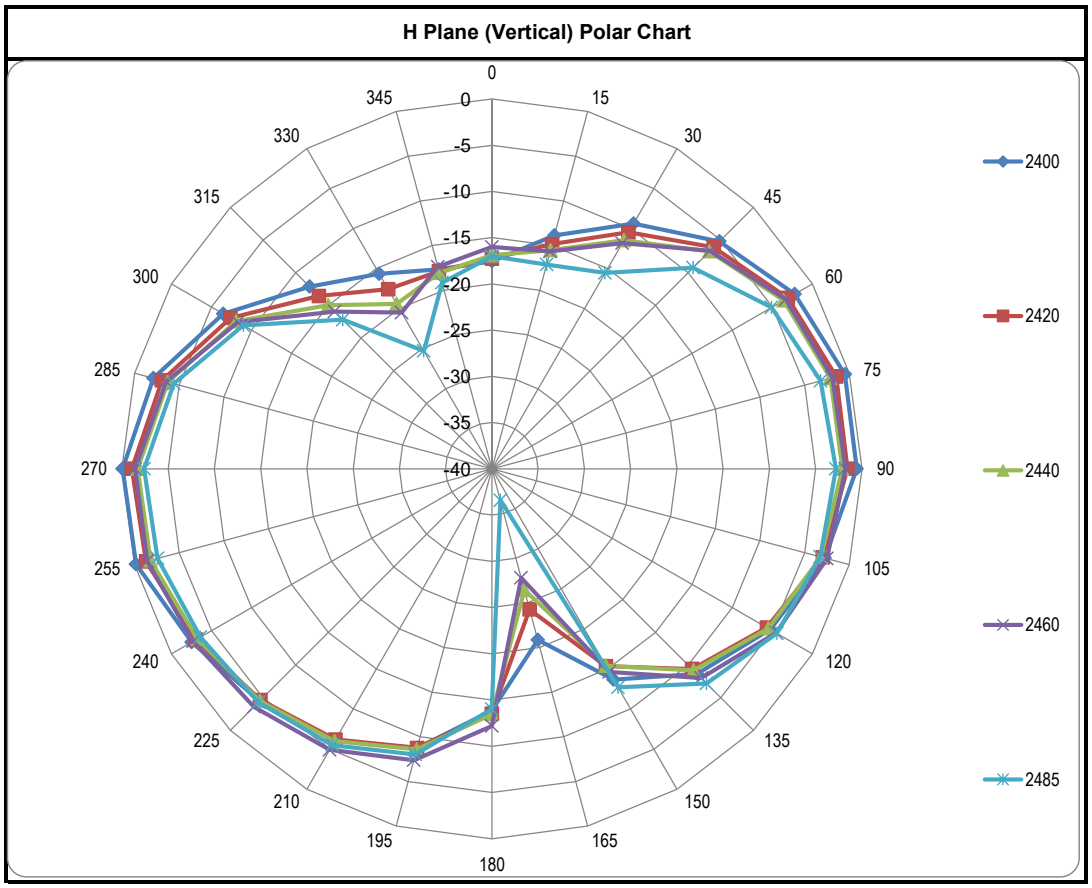
H Plane (Vertical) Polar Chart
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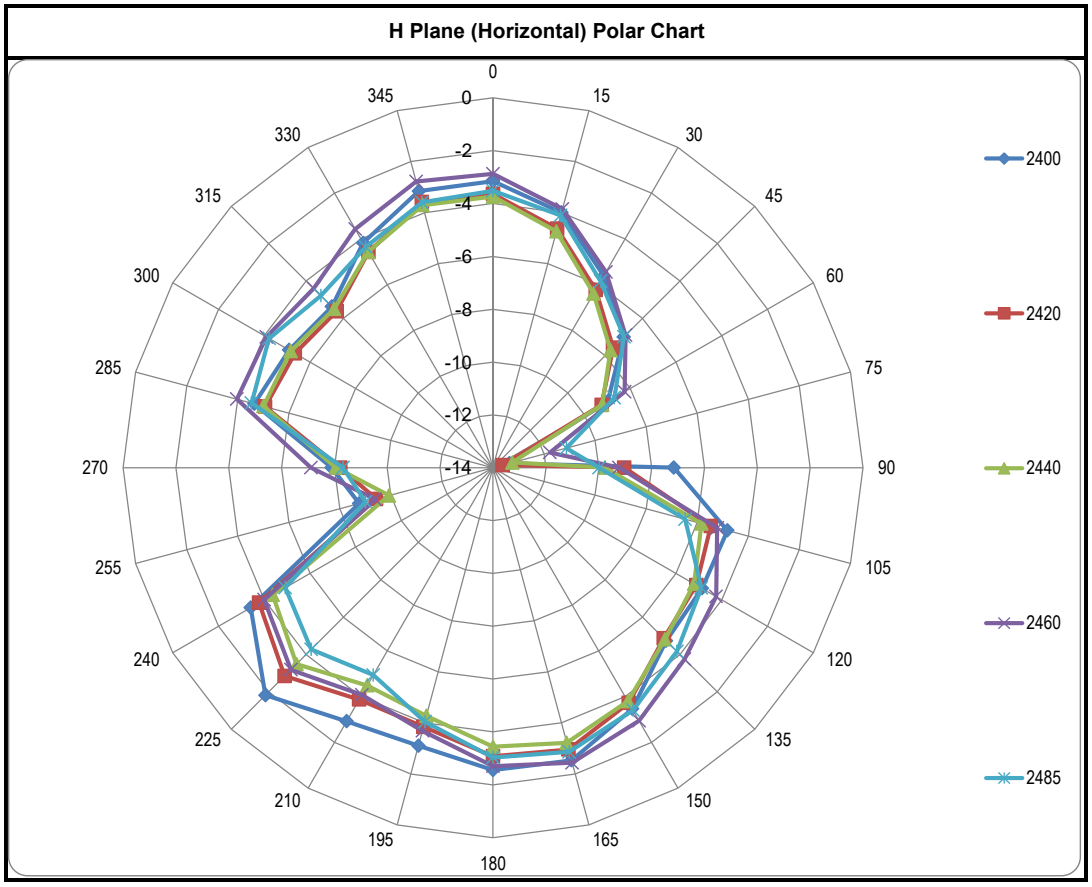
H Plane (Horizontal) Polar Chart
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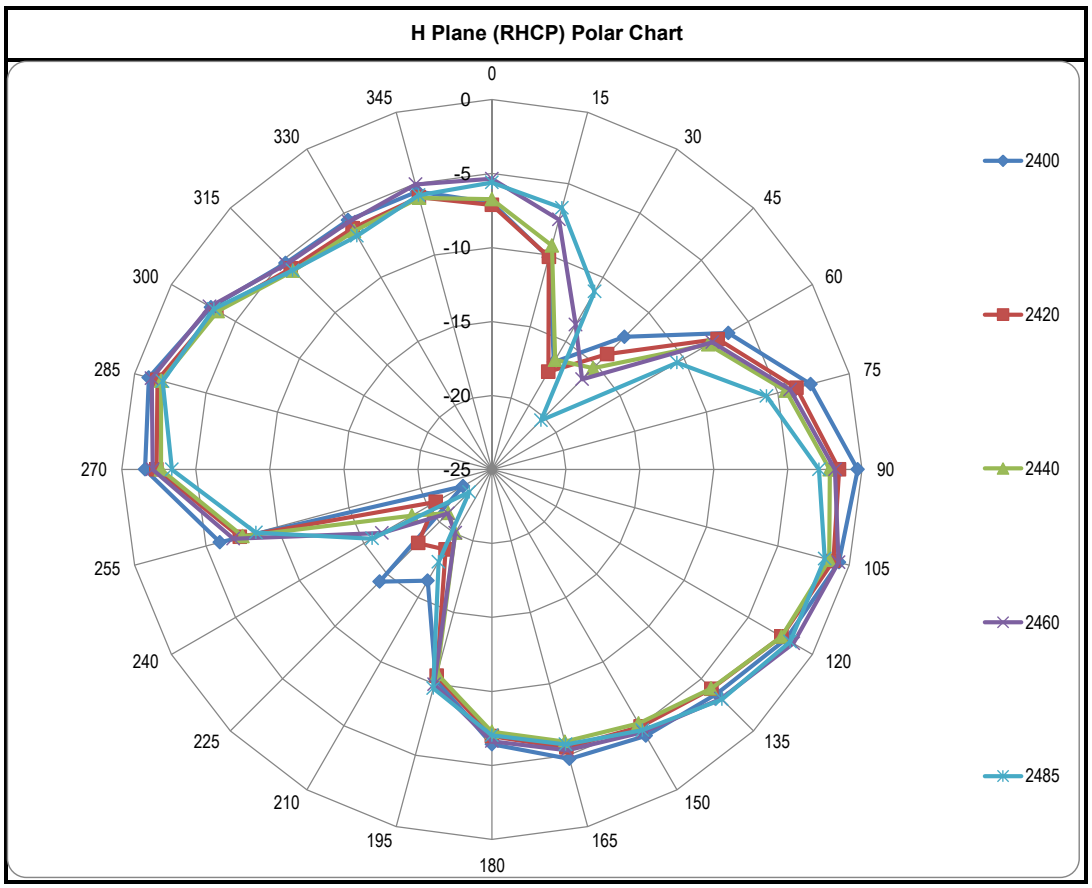
H Plane (RHCP) Polar Chart
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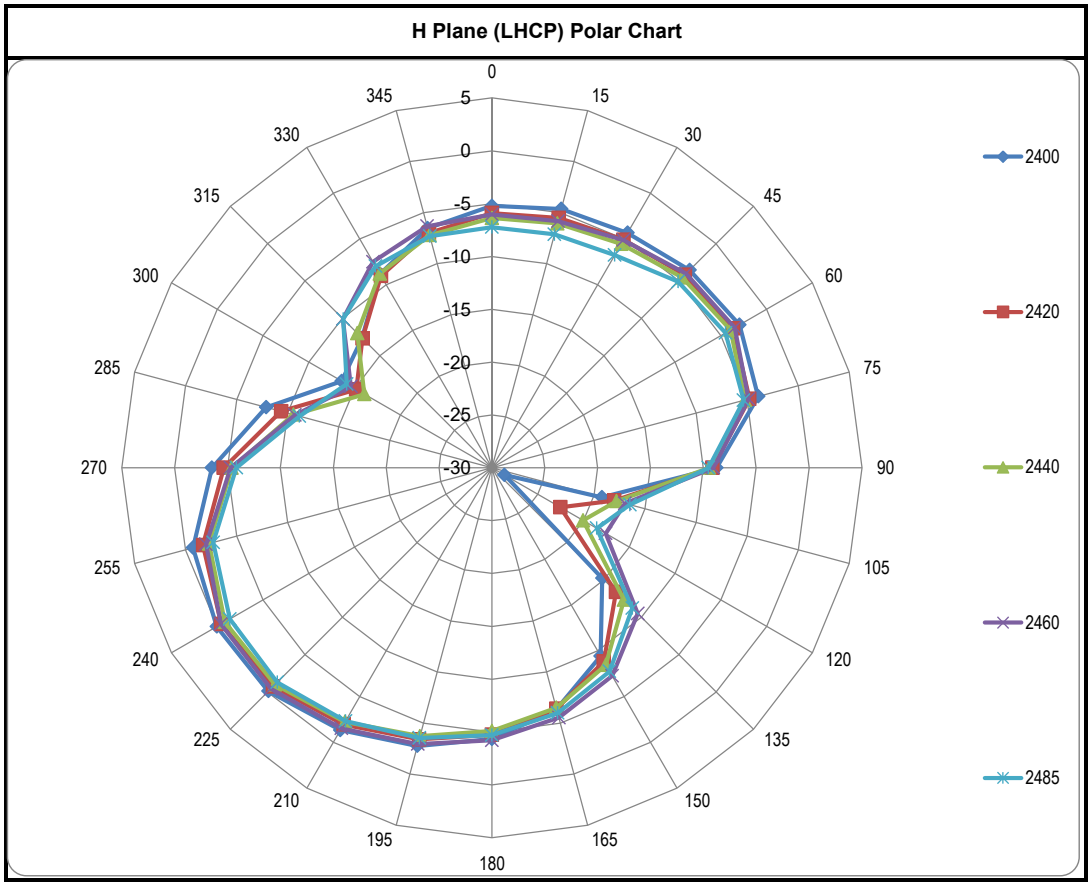
H Plane (LHCP) Polar Chart
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E1 Plane (Vertical + Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	120	1.03	90	165	-8.91	-1.56	69.75
2	2420	90	120	0.33	90	165	-11.06	-2.46	56.81
3	2440	90	120	0.12	90	165	-12.06	-2.96	50.62
4	2460	90	120	0.88	90	165	-11.26	-2.54	55.73
5	2485	90	120	0.12	90	165	-11.80	-3.59	43.75
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E1 Plane (Vertical)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	75	0.06	90	165	-11.13	-2.91	51.13
2	2420	90	75	-0.70	90	165	-13.05	-3.74	42.24
3	2440	90	75	-1.18	90	165	-13.72	-4.22	37.82
4	2460	90	75	-0.63	90	165	-12.46	-3.79	41.80
5	2485	90	75	-1.53	90	165	-12.53	-4.83	32.89
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E1 Plane (Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	120	-1.37	90	-165	-21.00	-7.30	18.63
2	2420	90	120	-2.22	90	30	-22.35	-8.37	14.57
3	2440	90	120	-2.60	90	30	-24.95	-8.93	12.80
4	2460	90	120	-1.98	90	30	-23.70	-8.56	13.93
5	2485	90	120	-2.89	90	30	-23.44	-9.64	10.85
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E1 Plane (RHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	120	0.96	90	-150	-21.14	-3.84	41.28
2	2420	90	120	0.26	90	-150	-28.57	-4.69	33.93
3	2440	90	120	0.06	90	-150	-26.25	-5.16	30.48
4	2460	90	120	0.81	90	-150	-21.47	-4.65	34.26
5	2485	90	120	0.05	90	-120	-19.11	-5.71	26.87
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E1 Plane (LHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	-120	-0.40	90	120	-16.68	-5.46	28.48
2	2420	90	-120	-1.35	90	120	-17.60	-6.41	22.87
3	2440	90	-120	-1.92	90	120	-18.20	-6.96	20.14
4	2460	90	-120	-1.66	90	120	-17.38	-6.68	21.47
5	2485	90	-120	-2.59	90	-165	-18.23	-7.73	16.88
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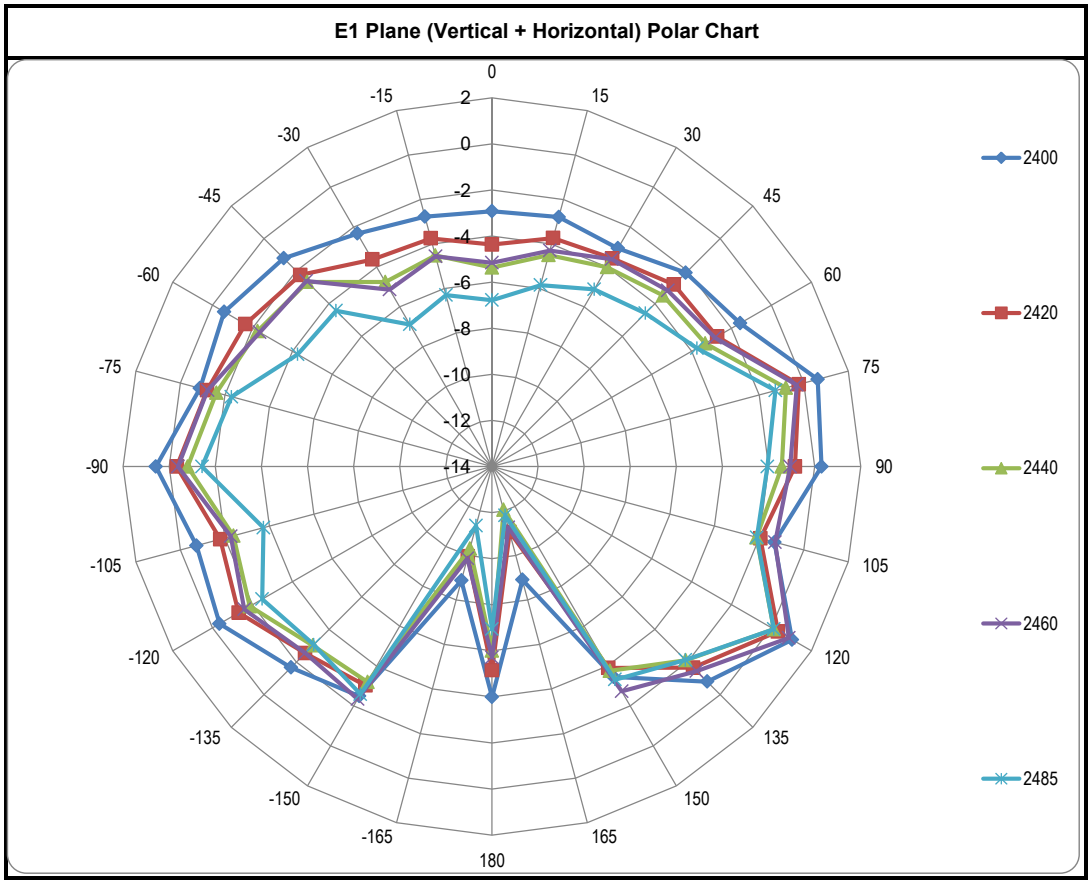
E1 Plane (Vertical + Horizontal) Polar Chart
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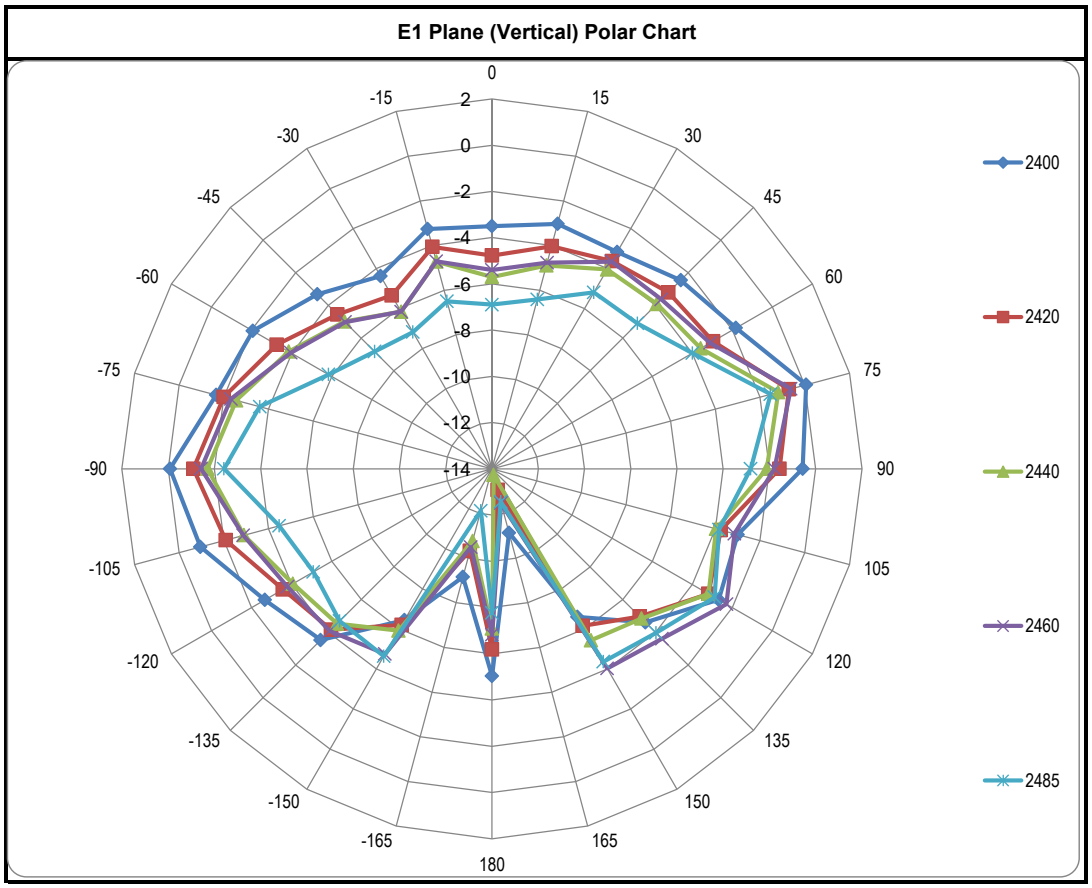
E1 Plane (Vertical) Polar Chart
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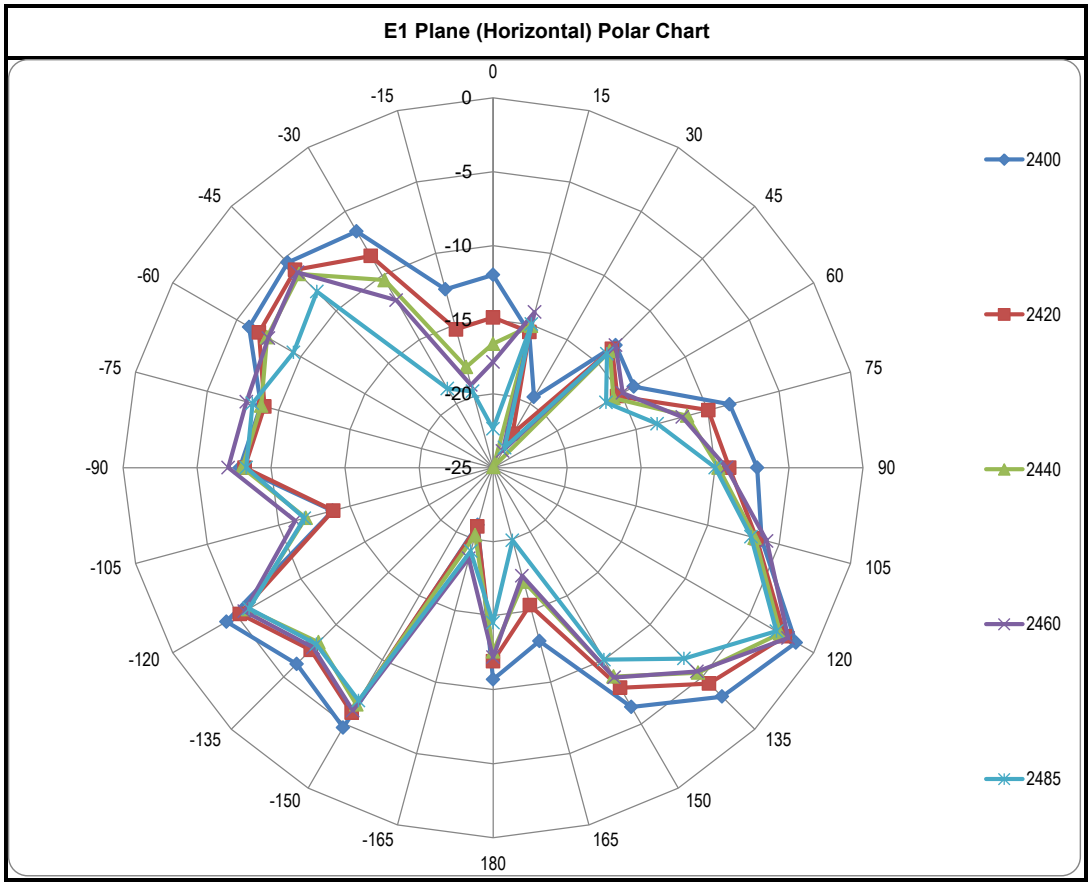
E1 Plane (Horizontal) Polar Chart
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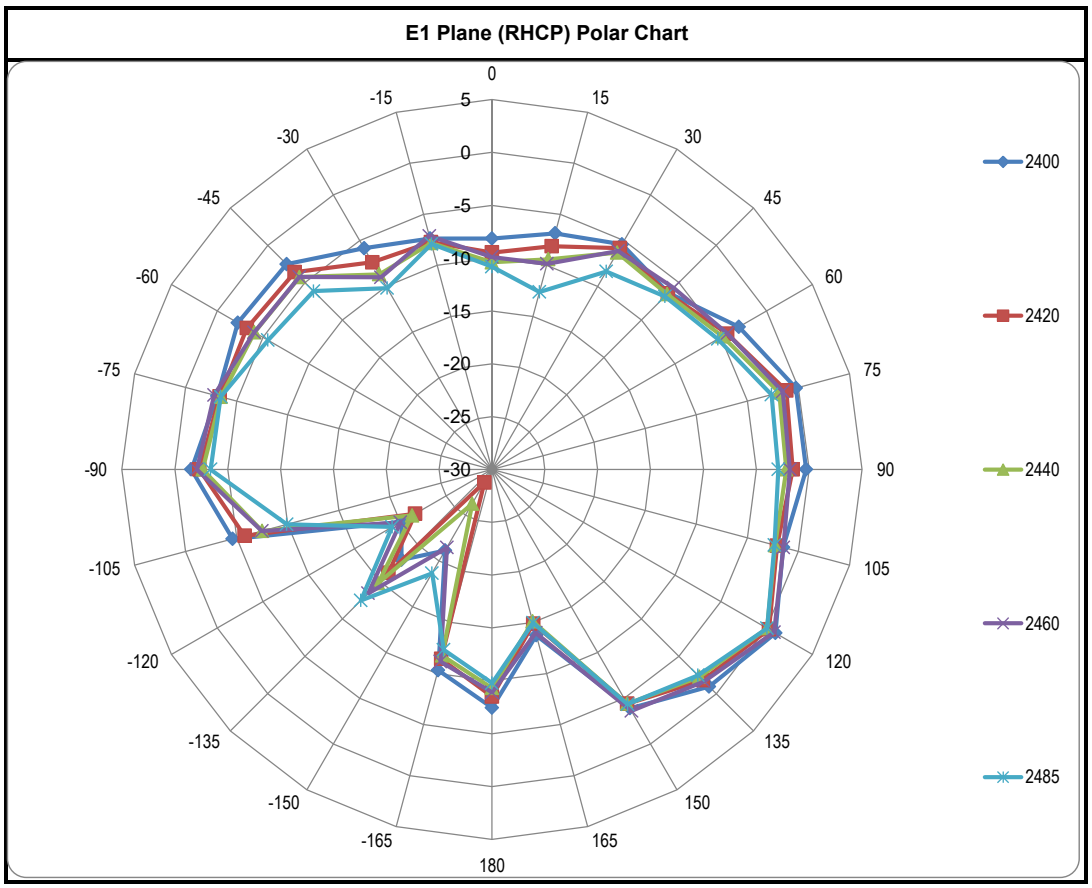
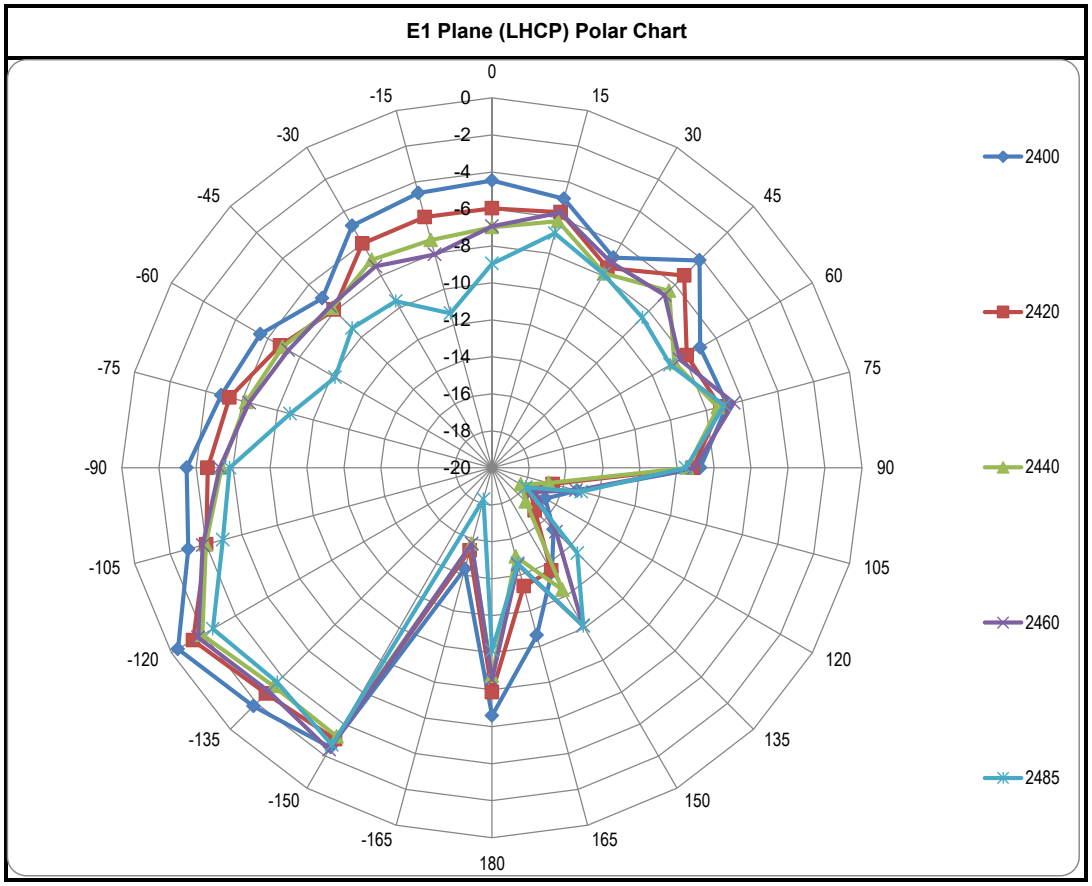
2460
2485


E1 Plane (RHCP) Polar Chart
0
15
30
45
60
75
90
105
120
135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
5
0
-5
-10
-15
-20
-25
-30
2400
2420
2440
2460
2485


E1 Plane (LHCP) Polar Chart
0
15
30
45
60
75
90
105
120
135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
2400
2420
2440
2460
2485

E2 Plane (Vertical + Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	-60	-1.14	90	-135	-10.59	-4.23	37.80
2	2420	90	-60	-1.67	90	150	-11.24	-4.93	32.13
3	2440	90	-60	-1.91	90	150	-13.29	-5.27	29.74
4	2460	90	-60	-1.25	90	150	-14.45	-4.67	34.15
5	2485	90	-105	-1.42	90	150	-15.79	-5.36	29.14
6									
7									
8									
9									
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25									
26									
27									
28									
29									
30									

E2 Plane (Vertical)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	180	-9.67	90	75	-21.61	-13.58	4.38
2	2420	90	-150	-10.51	90	75	-24.07	-14.46	3.58
3	2440	90	-150	-10.33	90	75	-25.16	-14.91	3.23
4	2460	90	-150	-9.49	90	75	-24.80	-14.36	3.67
5	2485	90	-135	-10.42	90	150	-27.71	-15.54	2.80
6									
7									
8									
9									
10									
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25									
26									
27									
28									
29									
30									

E2 Plane (Horizontal)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	-60	-1.24	90	-135	-17.90	-4.76	33.42
2	2420	90	-60	-1.79	90	-135	-17.67	-5.44	28.55
3	2440	90	-60	-2.04	90	-135	-17.51	-5.76	26.52
4	2460	90	-60	-1.41	90	-135	-16.47	-5.16	30.49
5	2485	90	-105	-1.66	90	-135	-16.81	-5.79	26.34
6									
7									
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9									
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27									
28									
29									
30									

E2 Plane (RHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	-60	-5.56	90	120	-16.57	-8.83	13.08
2	2420	90	-60	-6.15	90	150	-18.06	-9.42	11.42
3	2440	90	-60	-6.30	90	150	-19.75	-9.62	10.91
4	2460	90	-105	-5.22	90	150	-20.19	-8.84	13.06
5	2485	90	-105	-4.68	90	30	-25.73	-9.17	12.12
6									
7									
8									
9									
10									
11									
12									
13									
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26									
27									
28									
29									
30									

E2 Plane (LHCP)									
No	Frequency	Maximum Value			Minimum Value			Avg. Gain	Efficiency
	[MHz]	Θ [Deg]	Φ[Deg]	Value[dBi]	Θ [Deg]	Φ[Deg]	Value[dBi]	[dBi]	[%]
1	2400	90	-60	-3.09	90	-135	-14.14	-6.07	24.72
2	2420	90	-60	-3.58	90	-135	-15.90	-6.84	20.72
3	2440	90	-60	-3.88	90	-135	-16.78	-7.25	18.83
4	2460	90	-60	-3.26	90	-135	-17.67	-6.76	21.09
5	2485	90	-105	-4.19	90	-135	-17.69	-7.69	17.02
6									
7									
8									
9									
10									
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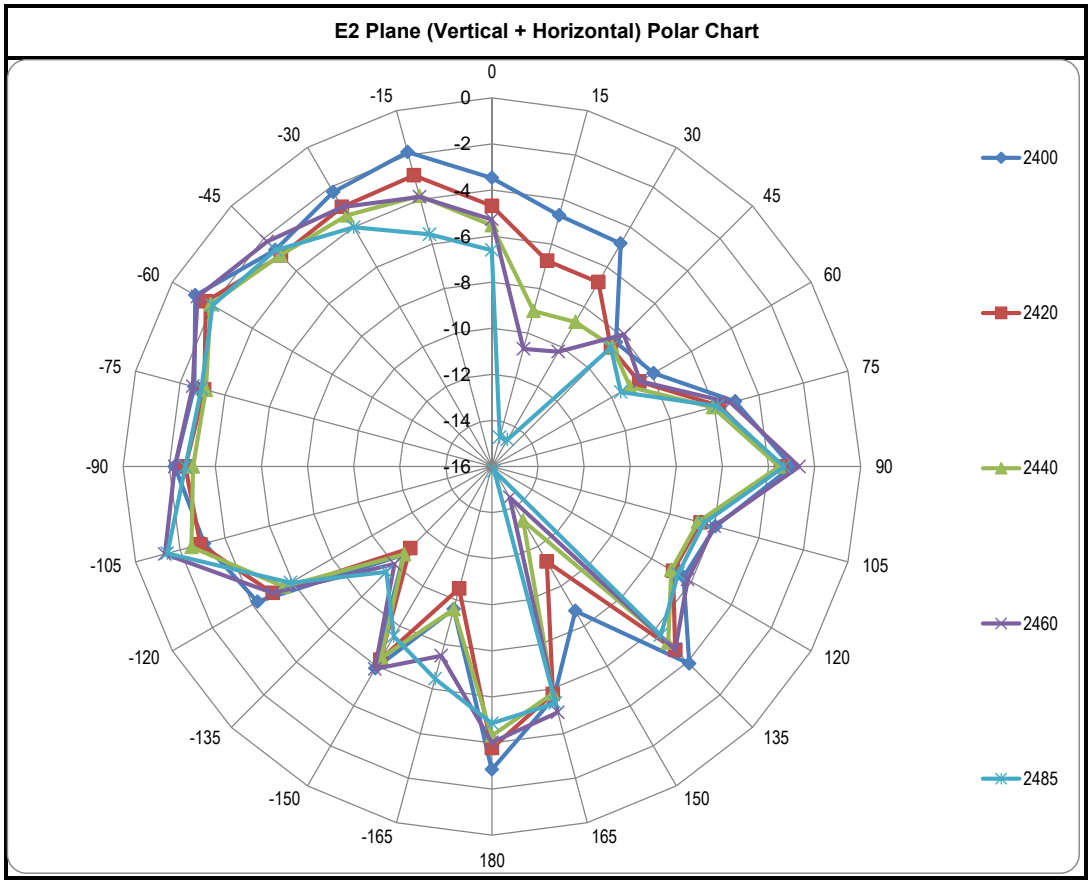
E2 Plane (Vertical + Horizontal) Polar Chart
0
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60
75
90
105
120
135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
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-16
2400
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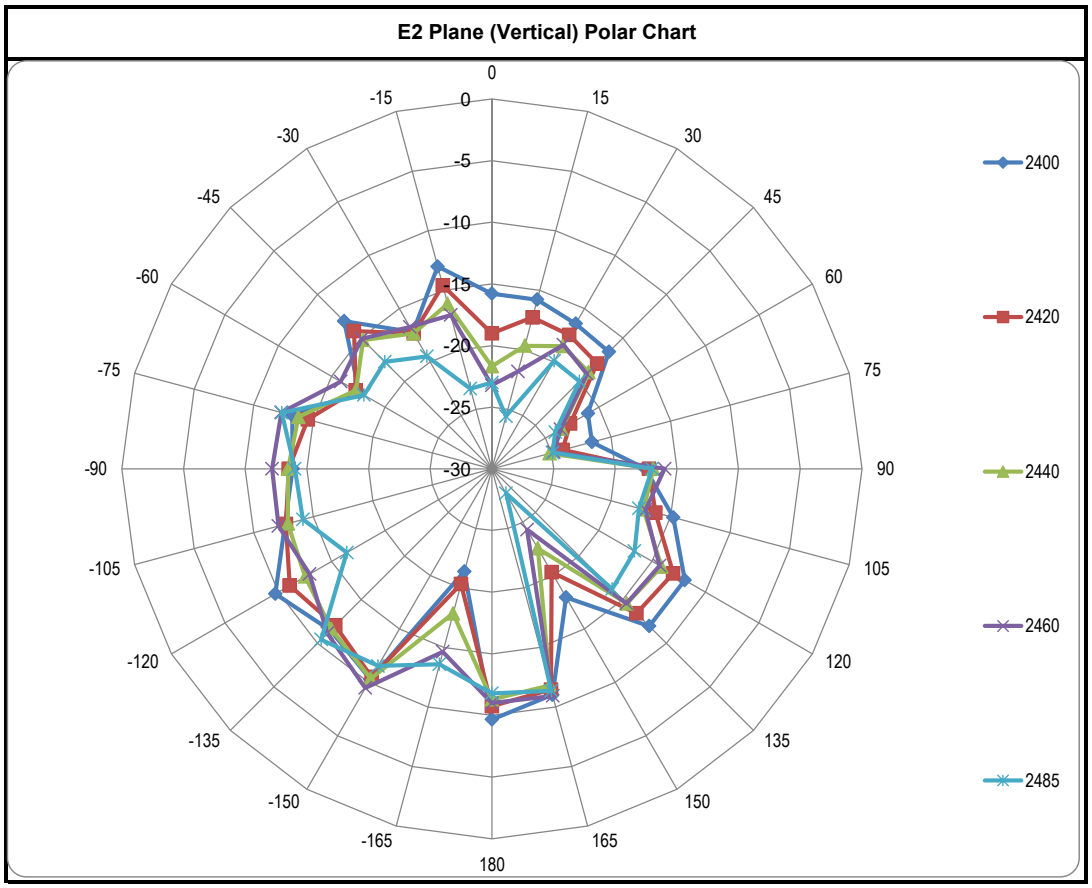
2485


E2 Plane (Vertical) Polar Chart
0
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90
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135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
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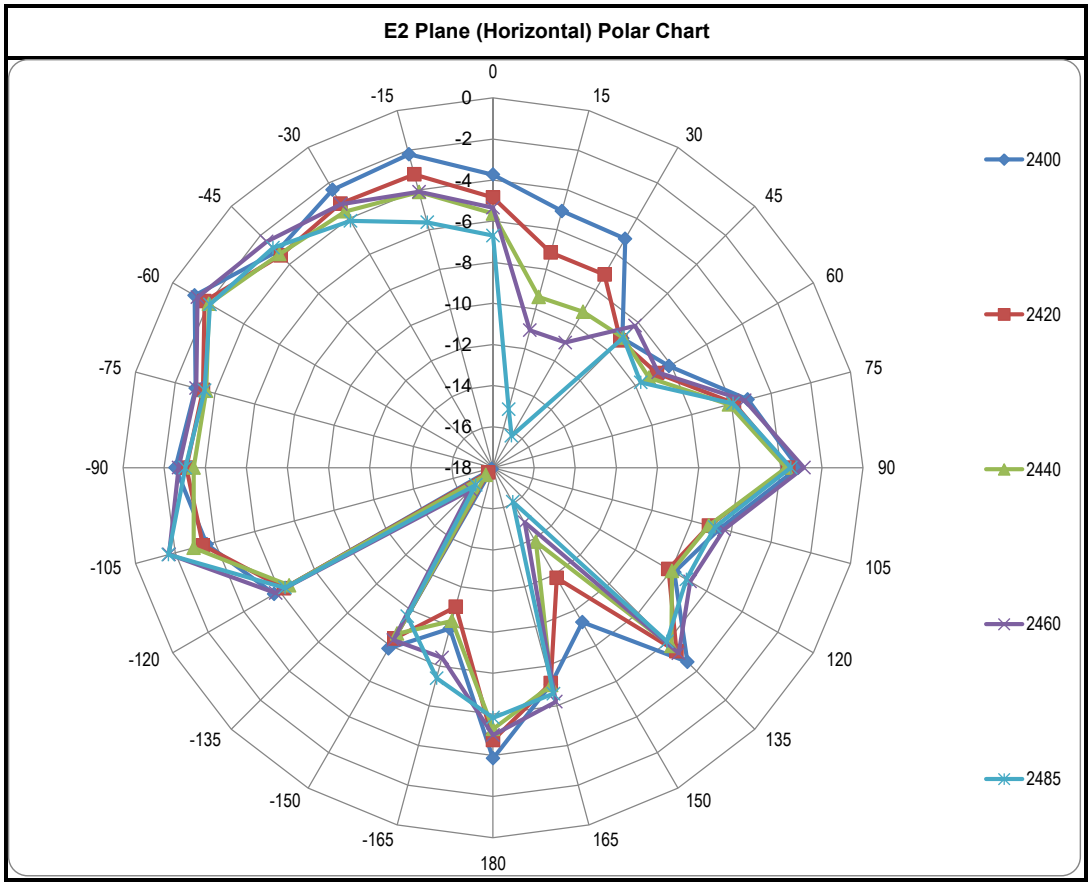
-5
-10
-15
-20
-25
-30
2400
2420
2440
2460
2485


E2 Plane (Horizontal) Polar Chart
0
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75
90
105
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150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
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-2
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-14
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2420
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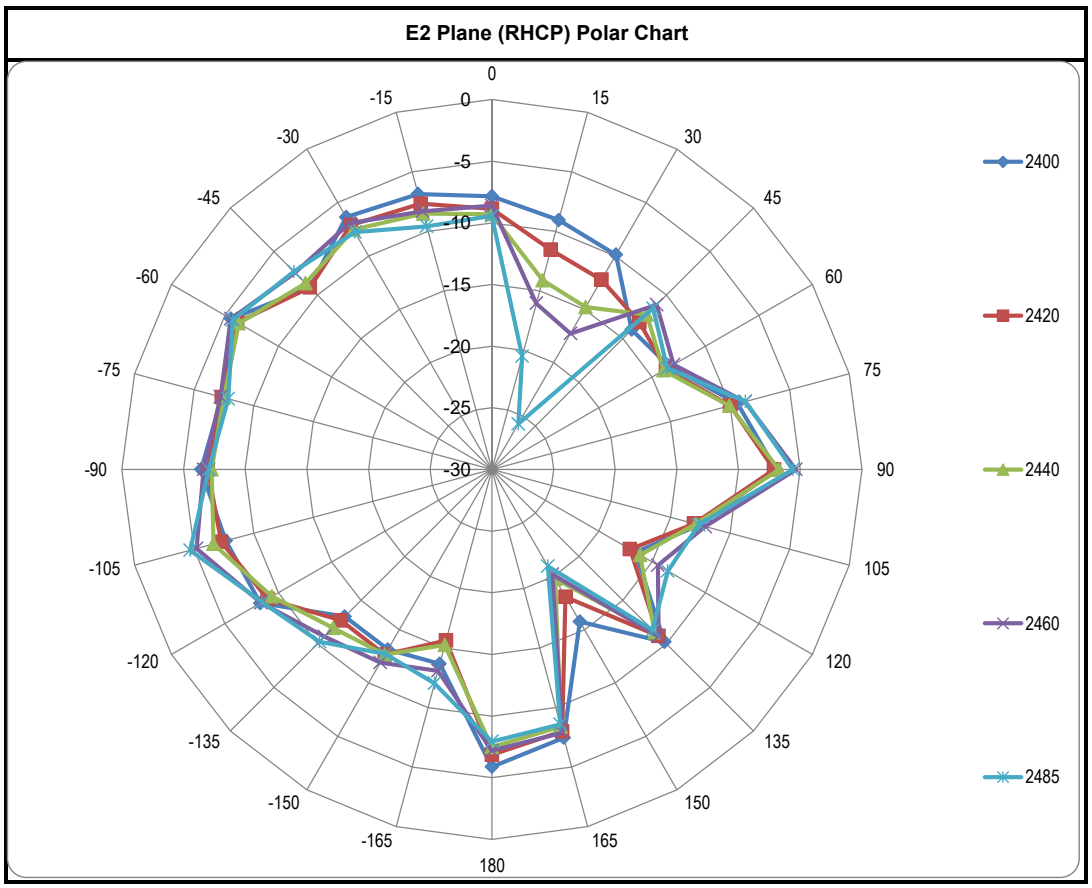
2485


E2 Plane (RHCP) Polar Chart
0
15
30
45
60
75
90
105
120
135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
0
-5
-10
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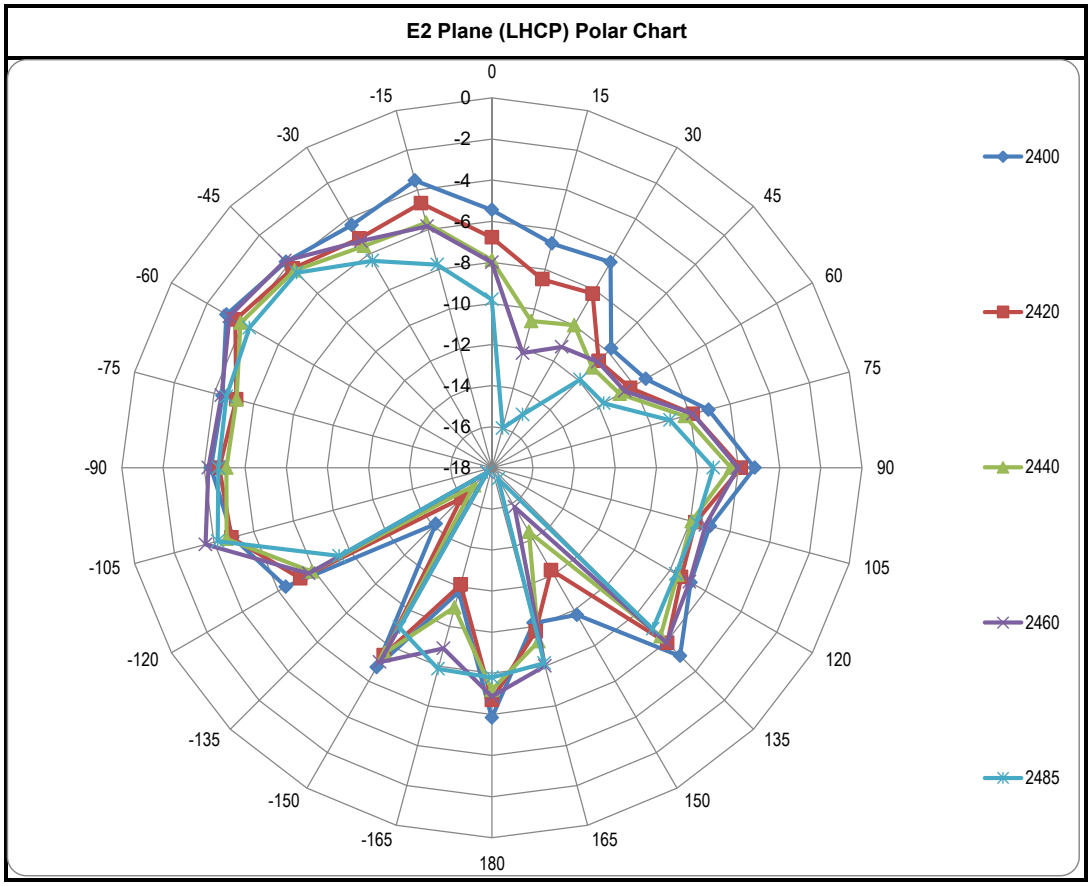
2485


E2 Plane (LHCP) Polar Chart
0
15
30
45
60
75
90
105
120
135
150
165
180
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
-15
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2460
2485

Test = 2.400GHz

Horizontal + Vertical													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.47	-4.71	-4.83	-8.38	-7.90	-5.07	-2.99	-5.96	-6.40	-3.89	-8.76	-5.61	-2.84
15	-3.64	-4.53	-4.40	-7.25	-6.17	-4.95	-3.58	-5.01	-4.07	-2.86	-9.43	-5.01	-2.58
30	-3.87	-4.32	-3.87	-5.92	-4.17	-3.74	-4.09	-3.41	-1.88	-2.41	-9.34	-5.03	-2.71
45	-3.55	-3.80	-3.27	-4.06	-2.64	-2.68	-3.01	-1.67	-0.53	-2.23	-7.62	-5.86	-3.42
60	-3.42	-3.40	-2.83	-2.53	-1.82	-1.57	-1.39	-1.31	0.52	-1.67	-5.79	-6.75	-3.86
75	-3.19	-3.02	-2.65	-1.90	-1.68	-0.57	-0.26	-1.45	0.69	-0.89	-4.42	-7.78	-3.99
90	-2.92	-2.79	-3.07	-2.11	-1.56	0.63	0.30	-1.31	1.03	-0.79	-3.45	-8.91	-3.99
105	-2.87	-2.41	-3.29	-2.69	-0.73	1.19	-0.66	-1.24	0.18	-2.34	-3.03	-10.57	-3.48
120	-2.85	-2.32	-3.48	-3.05	-0.12	0.79	-2.05	-1.89	-1.59	-4.63	-3.32	-11.29	-3.16
135	-2.67	-2.18	-3.29	-3.00	-0.03	-0.61	-3.26	-2.65	-3.89	-7.98	-4.23	-11.52	-2.78
150	-2.53	-2.00	-2.86	-3.09	-0.44	-2.00	-3.07	-3.06	-5.61	-12.78	-6.08	-10.96	-2.71
165	-2.39	-1.89	-2.45	-2.82	-1.03	-2.73	-2.47	-3.18	-5.65	-17.93	-6.93	-10.14	-2.99
180	-2.44	-1.87	-2.24	-2.71	-1.14	-2.63	-2.24	-3.08	-4.26	-10.59	-5.88	-9.59	-3.10
195	-2.33	-1.96	-2.36	-2.71	-0.63	-2.18	-2.06	-2.39	-2.69	-7.19	-4.20	-9.60	-3.38
210	-2.51	-2.11	-2.67	-2.69	-0.16	-0.96	-1.20	-1.33	-1.57	-4.29	-2.77	-9.92	-3.56
225	-2.69	-2.31	-2.72	-2.41	-0.13	0.20	0.06	0.27	-0.77	-2.29	-1.91	-10.18	-3.43
240	-2.93	-2.51	-2.79	-1.51	-0.64	0.66	0.06	0.88	0.21	-1.10	-1.58	-10.43	-2.97
255	-2.80	-2.65	-2.36	-1.10	-0.56	0.32	0.40	-0.40	0.33	-1.01	-1.64	-9.77	-2.52
270	-2.79	-2.77	-2.32	-1.22	-0.58	-0.88	0.59	-0.73	-0.35	-1.66	-2.49	-8.88	-2.81
285	-2.74	-2.97	-2.54	-2.37	-1.48	-2.36	-0.19	-0.06	-0.84	-2.42	-3.78	-8.60	-3.16
300	-2.67	-3.29	-2.99	-3.72	-2.71	-4.36	-2.72	-0.66	-1.04	-2.81	-5.55	-8.17	-3.58
315	-2.64	-3.92	-3.80	-5.46	-4.23	-5.07	-4.55	-2.60	-2.07	-3.75	-7.15	-7.48	-3.64
330	-2.93	-4.23	-4.72	-7.40	-6.18	-4.97	-3.87	-4.64	-4.34	-4.19	-8.18	-6.49	-3.58
345	-3.30	-4.60	-5.16	-8.74	-7.93	-4.86	-3.01	-5.86	-6.98	-4.33	-8.59	-6.20	-3.40
360	-3.47	-4.71	-4.83	-8.38	-7.90	-5.07	-2.99	-5.96	-6.40	-3.89	-8.76	-5.61	-2.84
Avg.	-3.08	-3.11	-3.31	-3.42	-1.92	-1.72	-1.78	-2.03	-1.75	-3.43	-4.77	-8.23	-3.39

Peak Value	1.188	Minimum Value	-17.933

Horizontal													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.74	-5.07	-5.14	-9.09	-8.11	-5.17	-3.15	-6.57	-7.82	-4.63	-9.32	-7.08	-3.86
15	-4.64	-5.89	-5.13	-8.42	-7.34	-5.88	-4.00	-7.20	-8.64	-5.81	-10.24	-8.15	-4.58
30	-6.46	-7.55	-5.35	-7.54	-6.56	-6.84	-5.61	-7.89	-11.65	-8.46	-10.99	-10.65	-6.46
45	-9.34	-10.03	-5.96	-6.58	-6.35	-7.73	-7.00	-9.23	-26.27	-11.01	-9.66	-17.05	-10.52
60	-13.73	-14.43	-7.46	-6.43	-7.12	-9.23	-9.00	-15.07	-8.43	-7.05	-8.00	-23.00	-19.33
75	-17.17	-22.18	-10.86	-7.95	-10.17	-12.20	-13.36	-15.31	-3.72	-3.70	-7.00	-15.99	-19.54
90	-11.96	-15.55	-19.49	-13.28	-14.01	-8.46	-7.16	-6.22	-1.37	-3.12	-6.33	-12.87	-10.69
105	-8.48	-8.78	-13.58	-20.87	-7.95	-3.79	-4.82	-4.12	-2.04	-5.60	-6.09	-12.63	-6.27
120	-5.97	-5.98	-8.28	-10.20	-4.06	-2.93	-4.87	-4.67	-4.08	-9.81	-6.03	-12.51	-4.34
135	-4.23	-3.96	-5.11	-5.91	-2.26	-2.98	-4.74	-4.73	-6.17	-16.44	-5.96	-12.22	-3.10
150	-3.25	-2.69	-3.34	-3.74	-1.43	-2.86	-3.47	-3.84	-6.39	-19.90	-6.38	-11.20	-2.73
165	-2.72	-2.08	-2.49	-2.87	-1.19	-2.77	-2.53	-3.32	-5.71	-18.06	-7.11	-10.14	-3.12
180	-2.92	-2.22	-2.38	-3.13	-1.24	-3.03	-2.55	-3.59	-5.71	-17.90	-7.84	-9.89	-4.07
195	-3.59	-3.04	-3.21	-4.49	-1.54	-3.57	-3.11	-4.13	-6.72	-20.03	-8.10	-10.38	-5.71
210	-5.03	-4.67	-5.28	-7.35	-2.45	-3.62	-2.92	-3.49	-7.16	-16.13	-8.00	-11.40	-8.58
225	-7.55	-7.51	-8.94	-13.54	-4.75	-3.90	-1.82	-1.53	-4.65	-9.84	-7.26	-12.50	-13.69
240	-12.87	-12.48	-12.79	-12.77	-10.87	-6.80	-3.41	-0.80	-1.91	-6.32	-5.89	-14.98	-27.02
255	-20.67	-17.58	-9.17	-7.64	-9.15	-13.46	-8.76	-4.36	-1.62	-5.16	-4.72	-18.70	-13.91
270	-15.97	-12.52	-6.56	-5.37	-5.97	-8.77	-7.89	-13.77	-4.19	-6.24	-4.72	-21.00	-10.30
285	-9.71	-8.61	-4.91	-5.00	-5.40	-7.23	-4.65	-8.43	-11.74	-8.99	-5.59	-15.68	-7.16
300	-6.31	-6.53	-4.13	-5.48	-5.89	-8.05	-5.09	-5.34	-18.82	-9.37	-7.39	-10.95	-5.26
315	-4.38	-5.37	-4.16	-6.43	-6.28	-7.25	-5.38	-5.43	-10.63	-7.14	-9.29	-8.07	-4.08
330	-3.53	-4.80	-4.75	-7.78	-7.22	-5.78	-4.17	-5.84	-8.38	-5.17	-10.15	-6.59	-3.59
345	-3.35	-4.71	-5.21	-8.88	-8.11	-5.05	-3.16	-6.00	-7.81	-4.33	-9.63	-6.45	-3.58
360	-3.74	-5.07	-5.14	-9.09	-8.11	-5.17	-3.15	-6.57	-7.82	-4.63	-9.32	-7.08	-3.86
Avg.	-6.09	-6.25	-5.81	-6.90	-5.12	-5.52	-4.69	-5.30	-5.76	-7.54	-7.41	-11.05	-6.18

Peak Value	-0.798	Minimum Value	-27.021

Vertical

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-15.78	-15.79	-16.41	-16.57	-21.01	-21.61	-17.55	-14.77	-11.95	-11.96	-17.96	-11.03	-9.67
15	-10.55	-10.23	-12.52	-13.49	-12.44	-12.10	-13.88	-9.03	-5.93	-5.93	-17.17	-7.90	-6.91
30	-7.33	-7.11	-9.26	-10.98	-7.91	-6.67	-9.37	-5.32	-2.36	-3.65	-14.34	-6.42	-5.09
45	-4.88	-4.98	-6.63	-7.63	-5.05	-4.30	-5.22	-2.51	-0.54	-2.85	-11.87	-6.20	-4.36
60	-3.85	-3.76	-4.67	-4.81	-3.33	-2.38	-2.22	-1.50	-0.07	-3.16	-9.79	-6.86	-3.98
75	-3.37	-3.07	-3.36	-3.14	-2.34	-0.88	-0.48	-1.63	-1.27	-4.12	-7.91	-8.49	-4.11
90	-3.50	-3.03	-3.17	-2.45	-1.82	0.06	-0.56	-3.00	-2.68	-4.61	-6.60	-11.13	-5.04
105	-4.27	-3.54	-3.71	-2.75	-1.64	-0.47	-2.77	-4.38	-3.79	-5.11	-5.99	-14.81	-6.72
120	-5.75	-4.77	-5.22	-3.98	-2.37	-1.61	-5.26	-5.15	-5.19	-6.19	-6.66	-17.42	-9.37
135	-7.86	-6.91	-7.95	-6.12	-4.00	-4.37	-8.66	-6.85	-7.78	-8.64	-9.07	-19.83	-14.21
150	-10.73	-10.36	-12.69	-11.64	-7.34	-9.46	-13.68	-10.92	-13.42	-13.72	-17.86	-23.71	-27.10
165	-13.71	-15.53	-23.28	-21.81	-15.46	-22.88	-20.85	-18.20	-24.33	-33.20	-20.94	-39.30	-18.43
180	-12.30	-13.02	-17.19	-13.07	-17.59	-13.25	-13.85	-12.62	-9.72	-11.48	-10.29	-21.38	-10.10
195	-8.33	-8.54	-9.84	-7.46	-7.90	-7.82	-8.73	-7.21	-4.88	-7.42	-6.48	-17.40	-7.20
210	-6.07	-5.62	-6.12	-4.50	-4.04	-4.35	-6.05	-5.39	-2.97	-4.58	-4.32	-15.33	-5.20
225	-4.40	-3.88	-3.90	-2.76	-1.97	-1.94	-4.49	-4.42	-3.06	-3.13	-3.40	-14.01	-3.86
240	-3.40	-2.97	-3.24	-1.85	-1.07	-0.19	-2.52	-4.05	-3.92	-2.65	-3.59	-12.31	-2.99
255	-2.87	-2.80	-3.37	-2.19	-1.21	0.13	-0.16	-2.63	-4.09	-3.12	-4.58	-10.37	-2.84
270	-3.01	-3.26	-4.37	-3.32	-2.06	-1.66	-0.08	-0.95	-2.66	-3.53	-6.44	-9.15	-3.66
285	-3.71	-4.35	-6.31	-5.81	-3.74	-4.08	-2.11	-0.75	-1.21	-3.50	-8.46	-9.54	-5.36
300	-5.12	-6.08	-9.35	-8.50	-5.54	-6.79	-6.47	-2.46	-1.11	-3.90	-10.17	-11.42	-8.51
315	-7.45	-9.39	-14.86	-12.42	-8.47	-9.11	-12.13	-5.80	-2.73	-6.41	-11.24	-16.43	-13.80
330	-11.81	-13.27	-26.58	-18.20	-12.88	-12.64	-15.64	-10.83	-6.52	-11.16	-12.57	-23.03	-28.58
345	-22.54	-20.75	-24.99	-23.54	-21.99	-18.58	-17.68	-21.00	-14.57	-31.19	-15.30	-18.64	-17.39
360	-15.78	-15.79	-16.41	-16.57	-21.01	-21.61	-17.55	-14.77	-11.95	-11.96	-17.96	-11.03	-9.67
Avg.	-6.09	-5.98	-6.90	-6.01	-4.74	-4.06	-4.90	-4.80	-3.95	-5.57	-8.19	-11.45	-6.64

Peak Value	0.132	Minimum Value	-39.300

RHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.84	-9.06	-9.89	-13.96	-13.34	-9.37	-6.97	-12.60	-16.57	-10.21	-15.74	-7.48	-5.87
15	-8.26	-8.80	-10.20	-15.42	-17.40	-13.86	-10.16	-14.68	-17.56	-11.03	-14.35	-6.77	-5.39
30	-8.63	-8.42	-9.70	-19.79	-20.42	-13.80	-16.61	-16.11	-8.56	-7.57	-11.33	-7.27	-5.60
45	-8.50	-7.70	-8.49	-18.65	-12.55	-8.63	-12.33	-10.89	-3.69	-4.32	-8.14	-9.15	-6.72
60	-8.55	-7.37	-7.08	-11.42	-7.75	-5.03	-6.56	-6.39	-0.27	-1.98	-5.86	-11.33	-7.39
75	-8.36	-7.04	-5.68	-8.11	-5.21	-2.40	-2.71	-3.07	0.60	-0.90	-4.51	-13.03	-7.52
90	-8.15	-6.88	-5.40	-6.39	-3.03	-0.23	-0.28	-1.49	0.96	-0.95	-3.90	-13.76	-7.44
105	-8.31	-6.59	-5.07	-4.88	-1.38	0.74	-0.72	-1.42	-0.05	-2.58	-4.18	-14.12	-6.96
120	-8.59	-6.92	-5.30	-4.17	-0.64	0.39	-2.06	-2.01	-1.62	-4.87	-4.90	-13.82	-6.75
135	-8.59	-7.21	-5.46	-3.82	-0.71	-1.27	-3.55	-2.72	-4.17	-8.76	-6.28	-13.55	-6.38
150	-8.61	-7.25	-5.57	-4.73	-1.61	-3.30	-4.21	-3.68	-7.49	-15.18	-8.92	-13.30	-6.09
165	-8.49	-7.16	-5.77	-6.10	-3.31	-5.14	-4.75	-5.18	-9.36	-22.09	-11.51	-13.46	-5.92
180	-8.66	-6.86	-6.37	-9.13	-5.56	-7.33	-6.42	-7.65	-8.31	-13.12	-13.13	-13.66	-5.67
195	-7.95	-6.72	-7.86	-13.81	-8.60	-10.15	-10.30	-13.29	-7.91	-11.07	-12.55	-13.78	-5.92
210	-7.83	-6.78	-9.80	-14.39	-12.36	-13.70	-16.31	-19.41	-10.27	-10.26	-11.80	-13.63	-6.07
225	-7.70	-7.23	-10.96	-8.73	-12.96	-12.81	-14.27	-9.51	-21.33	-10.26	-12.47	-13.36	-6.22
240	-7.61	-7.45	-9.62	-4.47	-7.15	-8.02	-22.75	-8.47	-15.32	-10.36	-16.04	-12.34	-6.33
255	-7.00	-7.40	-7.16	-2.84	-3.58	-4.07	-5.97	-14.53	-16.55	-14.28	-24.46	-10.99	-6.44
270	-6.59	-7.38	-5.83	-2.54	-2.25	-3.11	-1.56	-4.61	-20.12	-17.90	-21.14	-10.33	-7.01
285	-6.26	-7.51	-5.20	-3.27	-2.33	-3.69	-1.00	-0.99	-6.92	-10.31	-19.54	-10.75	-7.63
300	-6.05	-7.95	-5.13	-4.47	-3.09	-4.87	-3.08	-0.78	-3.34	-6.13	-21.63	-10.78	-8.09
315	-6.12	-8.65	-5.89	-6.27	-4.37	-5.15	-5.28	-2.81	-2.88	-5.25	-24.96	-9.74	-7.54
330	-6.58	-8.91	-7.40	-8.76	-6.59	-5.58	-5.55	-6.04	-4.54	-5.37	-23.67	-8.53	-7.05
345	-7.26	-9.07	-8.94	-11.66	-9.58	-6.52	-5.56	-9.88	-8.23	-7.04	-18.93	-8.23	-6.84
360	-7.84	-9.06	-9.89	-13.96	-13.34	-9.37	-6.97	-12.60	-16.57	-10.21	-15.74	-7.48	-5.87
Avg.	-7.86	-7.71	-7.03	-6.75	-4.83	-4.46	-4.85	-5.16	-4.71	-6.50	-9.58	-10.86	-6.74

Peak Value	0.960	Minimum Value	-24.961

LHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.45	-6.70	-6.45	-9.79	-9.35	-7.09	-5.22	-7.02	-6.84	-5.05	-9.73	-10.18	-5.84
15	-5.49	-6.57	-5.73	-7.96	-6.51	-5.55	-4.65	-5.50	-4.27	-3.58	-11.13	-9.80	-5.80
30	-5.63	-6.46	-5.18	-6.10	-4.28	-4.19	-4.34	-3.65	-2.93	-3.99	-13.69	-8.99	-5.85
45	-5.23	-6.06	-4.82	-4.22	-3.11	-3.95	-3.55	-2.22	-3.40	-6.41	-17.08	-8.60	-6.15
60	-5.02	-5.63	-4.88	-3.13	-3.10	-4.17	-2.96	-2.92	-7.26	-13.30	-23.89	-8.61	-6.40
75	-4.77	-5.21	-5.64	-3.09	-4.22	-5.20	-3.91	-6.51	-16.33	-26.77	-21.39	-9.32	-6.53
90	-4.47	-4.94	-6.87	-4.14	-7.00	-6.82	-8.75	-15.24	-16.68	-15.28	-13.51	-10.63	-6.60
105	-4.33	-4.49	-8.01	-6.69	-9.28	-8.91	-19.23	-15.19	-12.59	-14.99	-9.34	-13.11	-6.06
120	-4.20	-4.17	-8.12	-9.51	-9.63	-9.79	-28.63	-17.66	-22.41	-17.23	-8.47	-14.84	-5.65
135	-3.95	-3.81	-7.34	-10.68	-8.44	-9.10	-15.23	-21.02	-15.96	-15.78	-8.47	-15.80	-5.27
150	-3.76	-3.54	-6.20	-8.10	-6.70	-7.90	-9.43	-11.88	-10.14	-16.50	-9.27	-14.77	-5.39
165	-3.61	-3.42	-5.17	-5.57	-4.90	-6.43	-6.36	-7.52	-8.06	-20.04	-8.79	-12.86	-6.09
180	-3.63	-3.52	-4.36	-3.83	-3.09	-4.43	-4.33	-4.94	-6.42	-14.14	-6.79	-11.75	-6.62
195	-3.72	-3.73	-3.79	-3.06	-1.39	-2.94	-2.76	-2.76	-4.24	-9.48	-4.89	-11.69	-6.91
210	-4.02	-3.92	-3.61	-2.99	-0.43	-1.20	-1.33	-1.39	-2.20	-5.56	-3.35	-12.34	-7.13
225	-4.33	-4.00	-3.42	-3.56	-0.37	-0.02	-0.11	-0.21	-0.81	-3.04	-2.31	-13.02	-6.68
240	-4.74	-4.19	-3.80	-4.57	-1.74	0.03	0.04	0.35	0.09	-1.64	-1.74	-14.91	-5.66
255	-4.87	-4.43	-4.10	-5.92	-3.55	-1.65	-0.74	-0.57	0.24	-1.22	-1.66	-15.89	-4.77
270	-5.14	-4.62	-4.88	-7.03	-5.54	-4.85	-3.51	-3.01	-0.40	-1.77	-2.55	-14.34	-4.89
285	-5.29	-4.85	-5.94	-9.67	-8.99	-8.18	-7.89	-7.20	-2.08	-3.19	-3.90	-12.67	-5.08
300	-5.34	-5.10	-7.09	-11.70	-13.39	-13.92	-13.60	-16.32	-4.90	-5.54	-5.66	-11.63	-5.47
315	-5.22	-5.70	-7.99	-13.13	-19.15	-22.37	-12.64	-15.83	-9.80	-9.09	-7.22	-11.41	-5.92
330	-5.38	-6.03	-8.08	-13.12	-16.63	-13.79	-8.83	-10.25	-17.84	-10.44	-8.31	-10.75	-6.17
345	-5.52	-6.52	-7.52	-11.84	-12.95	-9.85	-6.54	-8.05	-13.02	-7.66	-9.01	-10.46	-6.03
360	-5.45	-6.70	-6.45	-9.79	-9.35	-7.09	-5.22	-7.02	-6.84	-5.05	-9.73	-10.18	-5.84
Avg.	-4.84	-4.95	-5.71	-6.14	-5.02	-5.01	-4.73	-4.92	-4.81	-6.39	-6.51	-11.66	-6.09

Peak Value	0.346	Minimum Value	-28.626

AR

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	17.26	17.39	14.18	12.54	12.93	17.70	19.96	10.16	5.88	10.79	9.56	16.23	54.40
15	16.02	17.85	11.97	7.86	5.10	7.03	10.26	6.30	3.82	7.86	14.73	15.27	32.43
30	15.36	18.98	11.89	3.65	2.73	5.97	4.31	4.22	10.09	13.84	17.38	20.10	37.04
45	14.61	20.54	13.63	3.34	6.10	11.61	6.63	6.73	35.37	18.42	6.50	30.08	29.63
60	13.95	20.01	18.01	7.05	11.64	26.11	13.80	14.10	8.36	4.85	2.19	16.17	24.96
75	13.81	19.61	52.23	11.02	24.91	15.91	23.20	14.19	2.49	0.89	2.50	13.52	24.93
90	13.60	19.09	21.50	17.79	12.96	8.82	6.89	3.62	2.29	3.38	5.97	14.98	26.29
105	12.95	18.37	15.50	19.67	7.42	5.94	2.07	3.61	4.18	4.24	10.80	24.70	25.81
120	12.13	16.08	15.88	10.51	6.45	5.56	0.82	2.89	1.59	4.27	13.87	24.62	23.99
135	11.66	14.27	19.35	8.50	7.58	7.49	4.63	2.12	4.57	8.33	18.05	17.80	23.83
150	11.31	13.53	28.72	14.34	10.91	11.73	10.71	7.13	16.40	22.35	33.83	21.43	27.84
165	11.25	13.46	29.23	30.34	20.79	22.61	20.69	17.44	22.55	18.59	16.19	29.16	40.33
180	11.01	14.42	18.80	10.59	16.97	15.64	18.44	16.21	19.30	24.65	9.12	19.21	25.24
195	12.44	15.35	12.76	5.19	8.11	8.12	7.77	5.33	13.64	20.82	7.65	18.42	24.88
210	13.32	15.73	9.32	4.79	4.49	4.20	3.13	2.20	7.25	11.55	6.91	22.59	24.27
225	14.36	14.71	7.78	10.79	4.15	4.05	3.44	6.21	1.64	8.12	5.57	34.05	31.54
240	15.72	14.61	9.81	44.54	10.40	7.27	1.26	6.59	2.98	6.68	3.39	16.67	28.27
255	18.29	15.42	15.18	15.12	55.64	17.18	10.67	3.53	2.53	3.93	1.26	11.22	20.35
270	21.55	16.04	25.32	11.94	14.56	19.99	19.05	20.71	1.80	2.73	2.05	12.88	18.30
285	25.06	16.38	27.38	9.05	8.73	11.93	8.47	9.30	11.32	8.22	2.90	19.17	16.73
300	27.77	15.78	18.99	8.09	5.49	6.40	5.34	2.93	20.93	29.26	2.79	26.22	16.49
315	25.72	15.47	18.40	8.51	3.20	2.41	7.96	3.95	8.43	13.24	2.27	20.34	20.60
330	23.22	15.68	28.11	12.18	5.66	7.12	14.59	12.46	3.82	10.94	2.99	17.95	25.92
345	20.02	16.74	21.80	39.66	14.36	14.45	24.98	19.62	11.40	28.94	5.75	17.87	26.66
360	17.26	17.39	14.18	12.54	12.93	17.70	19.96	10.16	5.88	10.79	9.56	16.23	54.40
Avg.	19.51	16.79	38.36	31.94	41.67	16.06	16.12	12.46	22.02	19.97	20.33	24.21	40.80

Peak Value	55.637	Minimum Value	0.817

Test = 2.420GHz

Horizontal + Vertical													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-4.69	-6.75	-6.76	-8.69	-8.62	-5.80	-3.45	-6.62	-6.93	-4.74	-11.24	-5.78	-3.77
15	-4.97	-6.55	-6.25	-7.84	-6.93	-6.04	-4.24	-5.70	-4.84	-4.24	-11.81	-5.32	-3.56
30	-5.26	-6.12	-5.65	-6.54	-5.16	-5.55	-4.84	-4.10	-2.95	-3.78	-11.15	-5.58	-3.94
45	-5.13	-5.39	-4.77	-4.79	-3.82	-4.11	-3.76	-2.62	-1.65	-3.60	-8.70	-6.61	-4.50
60	-4.75	-4.66	-4.10	-3.30	-3.06	-2.59	-2.12	-2.35	-0.58	-2.77	-6.57	-7.92	-4.98
75	-4.52	-4.21	-3.71	-2.63	-2.90	-1.41	-1.20	-2.47	0.02	-1.70	-4.94	-9.41	-5.14
90	-4.36	-3.73	-3.57	-2.84	-2.72	-0.22	-0.85	-1.94	0.33	-1.65	-3.91	-11.06	-5.16
105	-4.18	-3.37	-3.70	-3.70	-1.83	0.42	-1.03	-1.68	-0.39	-2.92	-3.43	-12.41	-4.86
120	-4.11	-3.03	-3.65	-4.08	-0.93	0.28	-2.37	-2.43	-2.27	-5.19	-3.70	-12.58	-4.25
135	-4.06	-2.91	-3.64	-3.96	-0.75	-0.96	-3.55	-3.14	-4.17	-8.43	-4.90	-12.51	-3.71
150	-3.97	-2.87	-3.38	-3.63	-0.96	-2.23	-3.44	-3.21	-5.76	-12.62	-6.58	-12.22	-3.51
165	-3.83	-2.83	-3.16	-3.14	-1.51	-3.00	-2.93	-3.12	-6.20	-17.27	-7.43	-11.31	-3.76
180	-3.89	-2.91	-2.99	-3.05	-1.67	-3.08	-2.71	-2.91	-5.02	-10.99	-6.32	-10.51	-4.13
195	-3.79	-2.97	-3.00	-3.19	-1.33	-2.47	-2.63	-2.59	-3.45	-7.84	-4.39	-10.92	-4.26
210	-3.90	-3.04	-3.21	-3.55	-0.97	-1.34	-1.86	-1.81	-2.14	-4.93	-2.87	-11.55	-4.40
225	-3.96	-3.15	-3.41	-3.35	-1.16	-0.44	-0.64	-0.50	-1.30	-2.95	-2.08	-12.48	-4.16
240	-3.94	-3.34	-3.54	-2.53	-1.62	-0.15	-0.40	0.15	-0.53	-1.74	-1.82	-12.83	-3.62
255	-3.81	-3.61	-3.52	-1.86	-1.50	-0.43	-0.68	-1.20	-0.33	-1.65	-2.09	-11.59	-3.22
270	-3.67	-3.75	-3.62	-2.24	-1.64	-1.21	-0.33	-1.80	-1.31	-2.54	-3.03	-9.96	-3.44
285	-3.58	-4.08	-4.08	-3.21	-2.44	-3.21	-0.94	-1.19	-2.09	-3.67	-4.56	-9.15	-3.78
300	-3.46	-4.56	-4.82	-4.79	-4.02	-5.44	-3.23	-1.43	-2.36	-4.42	-6.47	-8.50	-4.31
315	-3.55	-5.23	-5.70	-6.35	-5.50	-6.11	-4.98	-3.01	-3.25	-4.77	-8.50	-7.62	-4.43
330	-3.94	-6.04	-6.70	-7.99	-7.26	-5.78	-4.36	-4.81	-5.23	-5.12	-9.95	-6.89	-4.40
345	-4.34	-6.61	-7.10	-9.04	-8.86	-5.52	-3.43	-6.09	-7.42	-5.09	-10.69	-6.46	-4.20
360	-4.69	-6.75	-6.76	-8.69	-8.62	-5.80	-3.45	-6.62	-6.93	-4.74	-11.24	-5.78	-3.77
Avg.	-4.30	-4.23	-4.34	-4.19	-2.82	-2.41	-2.44	-2.66	-2.55	-4.34	-5.34	-9.07	-4.29

Peak Value	0.421	Minimum Value	-17.269

Horizontal													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-4.85	-7.16	-7.15	-9.24	-8.80	-5.86	-3.64	-7.12	-8.15	-5.37	-11.81	-7.15	-4.74
15	-5.79	-8.13	-7.14	-8.85	-8.11	-6.82	-4.63	-7.85	-9.17	-6.72	-12.62	-8.16	-5.54
30	-7.57	-9.98	-7.48	-7.97	-7.69	-8.20	-6.23	-8.54	-12.60	-9.90	-12.77	-10.86	-7.60
45	-10.01	-12.39	-7.94	-7.04	-7.93	-9.35	-7.57	-10.21	-27.31	-13.21	-10.94	-16.62	-11.60
60	-13.93	-16.54	-9.64	-7.09	-8.73	-10.49	-9.25	-16.53	-8.74	-8.02	-9.31	-23.46	-20.63
75	-18.17	-21.01	-13.46	-8.71	-11.46	-13.14	-13.63	-15.35	-4.30	-4.71	-8.37	-18.01	-20.81
90	-14.85	-15.51	-22.35	-13.63	-15.32	-9.95	-9.04	-6.57	-2.22	-4.37	-7.83	-15.39	-11.92
105	-10.18	-10.23	-14.38	-21.21	-8.93	-5.47	-5.47	-4.60	-2.78	-6.71	-7.41	-14.88	-7.89
120	-7.54	-6.83	-8.27	-10.62	-4.92	-3.74	-5.11	-5.01	-5.15	-12.07	-6.99	-14.50	-5.37
135	-5.80	-4.91	-5.51	-6.44	-2.84	-3.39	-4.86	-4.79	-6.68	-18.34	-6.92	-13.83	-4.01
150	-4.75	-3.66	-3.91	-4.18	-1.86	-3.08	-3.73	-3.72	-6.70	-18.48	-7.11	-12.69	-3.53
165	-4.14	-3.05	-3.20	-3.19	-1.62	-3.04	-2.96	-3.21	-6.23	-17.30	-7.61	-11.39	-3.89
180	-4.25	-3.22	-3.15	-3.40	-1.79	-3.40	-3.08	-3.39	-6.26	-17.67	-8.40	-10.99	-4.90
195	-4.90	-4.02	-3.90	-4.63	-2.32	-4.06	-3.84	-4.10	-7.24	-20.19	-8.76	-11.72	-6.58
210	-6.29	-5.62	-5.87	-7.63	-3.47	-4.38	-3.87	-4.06	-8.09	-17.47	-8.76	-13.13	-9.52
225	-8.71	-8.40	-9.44	-12.62	-6.19	-5.07	-2.85	-2.47	-6.03	-11.27	-8.39	-14.85	-14.62
240	-13.15	-13.67	-13.91	-12.67	-11.25	-8.62	-3.78	-1.67	-3.27	-7.42	-7.21	-17.08	-27.02
255	-24.30	-22.84	-11.85	-7.77	-9.47	-14.83	-9.42	-5.10	-2.56	-6.24	-6.10	-21.44	-16.08
270	-16.75	-15.33	-8.48	-6.08	-6.73	-9.01	-8.22	-13.82	-5.24	-7.58	-5.88	-20.89	-11.11
285	-10.56	-10.75	-6.69	-5.88	-6.50	-7.93	-5.07	-9.15	-12.84	-10.91	-6.69	-15.66	-7.86
300	-7.14	-8.32	-6.00	-6.35	-7.19	-8.88	-5.34	-5.80	-19.27	-11.58	-8.56	-11.15	-6.04
315	-5.35	-7.26	-6.05	-7.12	-7.68	-7.87	-5.63	-5.66	-10.78	-8.23	-10.76	-8.34	-4.90
330	-4.60	-6.81	-6.72	-8.25	-8.36	-6.34	-4.57	-6.03	-8.49	-5.93	-12.13	-6.94	-4.43
345	-4.44	-6.75	-7.17	-9.13	-9.08	-5.62	-3.59	-6.34	-7.99	-5.10	-11.89	-6.69	-4.38
360	-4.85	-7.16	-7.15	-9.24	-8.80	-5.86	-3.64	-7.12	-8.15	-5.37	-11.81	-7.15	-4.74
Avg.	-7.32	-7.62	-7.11	-7.34	-5.95	-6.26	-5.23	-5.70	-6.54	-8.65	-8.61	-11.77	-7.08

Peak Value	-1.622	Minimum Value	-27.314

Vertical

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-19.02	-17.28	-17.46	-17.92	-22.67	-24.07	-17.26	-16.27	-13.03	-13.42	-20.31	-11.46	-10.75
15	-12.62	-11.70	-13.57	-14.66	-13.17	-13.92	-14.85	-9.78	-6.84	-7.86	-19.50	-8.51	-7.92
30	-9.11	-8.42	-10.29	-12.06	-8.71	-8.96	-10.47	-6.04	-3.45	-5.00	-16.22	-7.11	-6.38
45	-6.84	-6.35	-7.62	-8.73	-5.95	-5.65	-6.09	-3.45	-1.66	-4.11	-12.64	-7.06	-5.45
60	-5.31	-4.95	-5.52	-5.64	-4.43	-3.36	-3.05	-2.51	-1.30	-4.31	-9.87	-8.04	-5.10
75	-4.71	-4.30	-4.20	-3.86	-3.55	-1.71	-1.45	-2.70	-1.99	-4.72	-7.56	-10.06	-5.26
90	-4.77	-4.03	-3.63	-3.21	-2.96	-0.70	-1.56	-3.77	-3.19	-4.96	-6.16	-13.05	-6.19
105	-5.44	-4.38	-4.08	-3.77	-2.78	-0.87	-2.97	-4.77	-4.12	-5.28	-5.65	-16.03	-7.86
120	-6.74	-5.38	-5.49	-5.16	-3.15	-1.92	-5.67	-5.93	-5.41	-6.19	-6.44	-17.05	-10.68
135	-8.87	-7.24	-8.19	-7.59	-4.93	-4.63	-9.39	-8.16	-7.74	-8.89	-9.21	-18.33	-15.38
150	-11.78	-10.61	-12.80	-12.92	-8.24	-9.75	-15.34	-12.81	-12.85	-13.92	-15.99	-22.06	-28.17
165	-15.40	-15.75	-23.35	-22.29	-17.28	-23.15	-24.26	-20.14	-27.83	-38.36	-21.46	-28.57	-19.21
180	-14.96	-14.60	-17.32	-14.19	-17.26	-14.55	-13.52	-12.71	-11.07	-12.04	-10.51	-20.34	-11.99
195	-10.25	-9.64	-10.30	-8.70	-8.23	-7.59	-8.75	-7.91	-5.79	-8.10	-6.36	-18.64	-8.09
210	-7.63	-6.54	-6.59	-5.70	-4.55	-4.31	-6.18	-5.74	-3.42	-5.18	-4.16	-16.70	-6.00
225	-5.74	-4.69	-4.65	-3.89	-2.80	-2.27	-4.64	-4.87	-3.08	-3.64	-3.24	-16.24	-4.56
240	-4.49	-3.76	-3.96	-2.97	-2.12	-0.82	-3.06	-4.49	-3.83	-3.11	-3.30	-14.87	-3.64
255	-3.85	-3.66	-4.21	-3.15	-2.25	-0.59	-1.30	-3.46	-4.30	-3.51	-4.29	-12.06	-3.45
270	-3.89	-4.06	-5.34	-4.56	-3.26	-1.99	-1.09	-2.08	-3.56	-4.17	-6.20	-10.33	-4.26
285	-4.55	-5.13	-7.53	-6.59	-4.61	-5.00	-3.06	-1.95	-2.48	-4.58	-8.67	-10.25	-5.94
300	-5.90	-6.93	-11.04	-10.01	-6.87	-8.07	-7.38	-3.41	-2.45	-5.35	-10.65	-11.89	-9.15
315	-8.25	-9.52	-16.83	-14.25	-9.54	-10.89	-13.57	-6.40	-4.09	-7.38	-12.42	-15.78	-14.35
330	-12.50	-13.94	-29.77	-20.33	-13.75	-14.97	-17.58	-10.91	-8.01	-12.76	-13.99	-26.55	-25.26
345	-20.99	-21.59	-25.02	-25.71	-21.98	-22.02	-17.89	-18.68	-16.54	-34.78	-16.85	-19.35	-18.11
360	-19.02	-17.28	-17.46	-17.92	-22.67	-24.07	-17.26	-16.27	-13.03	-13.42	-20.31	-11.46	-10.75
Avg.	-7.31	-6.88	-7.61	-7.06	-5.72	-4.71	-5.69	-5.65	-4.76	-6.35	-8.10	-12.42	-7.53

Peak Value	-0.594	Minimum Value	-38.357

RHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-8.86	-11.55	-12.23	-13.09	-13.71	-10.00	-7.12	-13.03	-17.07	-10.89	-18.06	-7.99	-6.86
15	-9.54	-11.36	-12.49	-14.43	-17.82	-14.86	-10.12	-15.94	-19.64	-12.52	-15.87	-7.50	-6.39
30	-10.12	-10.95	-11.85	-17.99	-27.57	-20.12	-17.38	-17.63	-9.76	-9.19	-12.59	-8.22	-6.87
45	-10.32	-10.11	-10.09	-20.33	-14.86	-10.79	-13.98	-11.75	-4.68	-5.44	-8.97	-10.13	-7.85
60	-10.05	-9.23	-8.30	-12.59	-9.13	-6.00	-7.39	-7.22	-1.24	-2.98	-6.57	-12.66	-8.47
75	-9.78	-8.68	-6.82	-8.40	-6.22	-3.31	-3.69	-3.97	-0.06	-1.75	-5.05	-14.29	-8.54
90	-9.47	-8.14	-5.81	-6.47	-4.31	-1.18	-1.55	-2.09	0.26	-1.78	-4.40	-14.89	-8.51
105	-9.30	-7.87	-5.63	-5.71	-2.45	-0.12	-1.12	-1.76	-0.49	-3.06	-4.41	-14.91	-8.31
120	-9.60	-7.69	-5.67	-4.97	-1.42	-0.13	-2.41	-2.47	-2.27	-5.64	-5.23	-14.57	-7.83
135	-9.74	-7.99	-6.08	-4.77	-1.47	-1.55	-4.03	-3.33	-4.70	-9.79	-6.74	-14.53	-7.25
150	-9.75	-8.12	-6.44	-5.47	-2.16	-3.40	-4.92	-4.16	-7.93	-16.09	-8.85	-15.21	-6.85
165	-9.67	-8.08	-6.68	-6.49	-3.79	-5.29	-5.54	-5.39	-9.97	-20.24	-11.53	-15.64	-6.69
180	-9.61	-7.69	-7.13	-9.12	-6.15	-7.33	-6.97	-7.28	-9.00	-12.68	-12.65	-15.63	-6.74
195	-8.91	-7.34	-8.02	-13.51	-9.35	-10.60	-10.56	-10.84	-8.41	-11.12	-11.87	-15.91	-6.74
210	-8.71	-7.18	-9.33	-17.03	-13.25	-14.45	-18.75	-21.94	-10.01	-10.49	-10.94	-16.38	-6.91
225	-8.46	-7.27	-10.45	-10.84	-13.30	-13.50	-17.96	-11.81	-16.68	-10.71	-11.26	-16.00	-7.01
240	-8.13	-7.51	-10.28	-6.26	-8.62	-8.17	-20.63	-9.61	-17.90	-10.77	-13.72	-14.55	-7.05
255	-7.66	-7.67	-8.81	-4.05	-4.70	-4.60	-7.37	-14.41	-16.75	-12.28	-19.40	-12.78	-7.13
270	-7.20	-7.72	-7.37	-3.61	-3.24	-3.34	-2.34	-5.79	-21.61	-16.16	-28.57	-11.44	-7.61
285	-6.89	-8.14	-6.82	-4.10	-3.29	-4.23	-1.62	-2.05	-8.39	-11.86	-23.34	-11.39	-8.19
300	-6.76	-8.72	-6.97	-5.42	-4.22	-5.72	-3.52	-1.52	-4.51	-7.70	-24.98	-11.34	-8.75
315	-6.97	-9.60	-7.85	-7.16	-5.55	-6.24	-5.79	-3.24	-3.88	-6.07	-28.97	-10.34	-8.41
330	-7.38	-10.52	-9.59	-9.42	-7.70	-6.76	-6.17	-6.10	-5.39	-6.32	-29.28	-9.37	-7.96
345	-8.06	-11.16	-11.19	-11.83	-10.51	-7.54	-5.95	-9.28	-8.91	-7.87	-22.13	-8.89	-7.63
360	-8.86	-11.55	-12.23	-13.09	-13.71	-10.00	-7.12	-13.03	-17.07	-10.89	-18.06	-7.99	-6.86
Avg.	-8.82	-8.74	-8.12	-7.60	-5.76	-5.12	-5.53	-5.75	-5.45	-7.32	-9.93	-11.91	-7.64

Peak Value	0.260	Minimum Value	-29.284

LHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-6.78	-8.50	-8.21	-10.65	-10.23	-7.87	-5.89	-7.75	-7.37	-5.95	-12.25	-9.76	-6.71
15	-6.83	-8.29	-7.42	-8.92	-7.30	-6.65	-5.53	-6.13	-4.99	-4.94	-13.97	-9.37	-6.75
30	-6.98	-7.85	-6.84	-6.86	-5.19	-5.71	-5.09	-4.30	-3.97	-5.25	-16.65	-9.01	-7.03
45	-6.70	-7.17	-6.28	-4.92	-4.17	-5.16	-4.19	-3.19	-4.63	-8.23	-20.81	-9.16	-7.20
60	-6.27	-6.52	-6.18	-3.84	-4.29	-5.23	-3.65	-4.05	-9.11	-16.05	-35.14	-9.69	-7.56
75	-6.06	-6.13	-6.63	-3.97	-5.62	-5.92	-4.79	-7.82	-17.39	-21.80	-20.90	-11.12	-7.80
90	-5.97	-5.68	-7.52	-5.30	-7.83	-7.22	-9.14	-16.61	-17.60	-16.74	-13.59	-13.37	-7.86
105	-5.78	-5.28	-8.15	-8.00	-10.61	-8.88	-18.02	-18.95	-16.65	-18.11	-10.38	-15.99	-7.47
120	-5.55	-4.85	-7.95	-11.37	-10.69	-10.22	-22.52	-22.90	-31.37	-15.33	-8.97	-16.93	-6.75
135	-5.42	-4.53	-7.31	-11.68	-8.92	-9.86	-13.38	-16.99	-13.55	-14.11	-9.54	-16.82	-6.24
150	-5.30	-4.40	-6.35	-8.25	-7.12	-8.49	-8.83	-10.30	-9.81	-15.21	-10.47	-15.24	-6.22
165	-5.14	-4.36	-5.71	-5.84	-5.38	-6.87	-6.38	-7.02	-8.56	-20.32	-9.58	-13.31	-6.85
180	-5.25	-4.67	-5.11	-4.28	-3.58	-5.12	-4.75	-4.88	-7.24	-15.90	-7.47	-12.11	-7.58
195	-5.39	-4.94	-4.64	-3.62	-2.08	-3.19	-3.39	-3.29	-5.11	-10.59	-5.24	-12.57	-7.87
210	-5.64	-5.16	-4.42	-3.75	-1.23	-1.55	-1.95	-1.86	-2.92	-6.34	-3.60	-13.28	-7.98
225	-5.87	-5.28	-4.36	-4.20	-1.44	-0.66	-0.72	-0.83	-1.43	-3.74	-2.64	-15.03	-7.33
240	-6.02	-5.44	-4.57	-4.91	-2.59	-0.90	-0.44	-0.33	-0.61	-2.32	-2.11	-17.69	-6.24
255	-6.12	-5.77	-5.04	-5.89	-4.32	-2.53	-1.72	-1.41	-0.43	-2.05	-2.17	-17.77	-5.48
270	-6.22	-5.97	-5.99	-7.91	-6.77	-5.31	-4.63	-4.01	-1.35	-2.73	-3.04	-15.37	-5.54
285	-6.31	-6.24	-7.37	-10.54	-9.97	-10.04	-9.36	-8.65	-3.26	-4.39	-4.62	-13.10	-5.74
300	-6.20	-6.66	-8.90	-13.54	-17.43	-17.61	-15.19	-18.78	-6.46	-7.17	-6.53	-11.67	-6.25
315	-6.19	-7.21	-9.79	-14.06	-24.65	-21.50	-12.69	-15.77	-11.93	-10.66	-8.54	-10.95	-6.65
330	-6.57	-7.95	-9.83	-13.51	-17.44	-12.73	-9.03	-10.71	-19.73	-11.26	-10.00	-10.52	-6.92
345	-6.75	-8.49	-9.25	-12.28	-13.86	-9.81	-7.00	-8.94	-12.81	-8.35	-11.01	-10.14	-6.82
360	-6.78	-8.50	-8.21	-10.65	-10.23	-7.87	-5.89	-7.75	-7.37	-5.95	-12.25	-9.76	-6.71
Avg.	-6.20	-6.13	-6.70	-6.83	-5.91	-5.74	-5.37	-5.60	-5.67	-7.38	-7.19	-12.27	-6.99

Peak Value	-0.333	Minimum Value	-35.136

AR

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	18.50	15.20	12.88	17.09	14.10	18.29	23.02	10.60	5.90	11.15	9.83	19.87	41.26
15	16.19	15.13	10.95	10.26	5.33	7.13	11.76	5.82	3.25	7.73	19.27	19.40	33.56
30	14.98	15.08	11.04	4.95	1.32	3.35	4.31	3.80	9.85	13.03	12.78	26.84	40.49
45	13.77	15.52	13.31	2.97	5.23	10.07	5.84	6.81	50.63	15.94	4.55	25.02	28.58
60	13.37	16.22	18.28	6.65	11.33	27.13	13.48	14.88	7.45	3.92	0.65	15.45	25.67
75	13.50	16.70	39.34	12.05	29.16	16.51	24.02	13.24	2.38	1.73	2.82	14.88	27.39
90	14.02	17.05	20.16	23.43	13.98	9.52	7.72	3.30	2.23	3.14	6.29	21.15	28.57
105	13.99	16.62	16.83	17.65	7.17	6.64	2.50	2.41	2.72	3.10	9.60	24.09	26.32
120	12.81	15.80	17.65	9.06	6.23	5.62	1.72	1.66	0.61	5.91	13.45	17.38	24.11
135	12.27	14.11	23.02	8.45	7.87	7.04	6.16	3.65	6.57	12.27	15.92	17.63	24.76
150	12.01	13.51	46.42	15.99	11.12	10.91	13.11	9.39	19.34	25.86	20.66	56.53	28.86
165	11.86	13.52	25.13	28.57	20.79	20.84	26.22	20.56	21.84	46.27	19.01	17.51	40.93
180	12.17	15.30	18.73	11.32	16.64	17.94	17.92	17.23	19.92	14.73	10.75	14.00	26.34
195	13.98	17.25	14.34	5.76	8.05	7.90	8.16	7.76	14.53	30.44	8.78	14.43	23.82
210	15.14	18.74	11.21	3.82	4.45	4.00	2.53	1.73	8.24	12.60	7.99	15.05	24.19
225	16.60	18.87	9.45	8.77	4.53	4.03	2.40	5.04	3.03	8.39	6.76	25.04	34.74
240	18.37	18.52	9.96	22.22	9.53	8.05	1.71	6.23	2.39	6.91	4.67	14.95	26.70
255	21.02	19.25	13.39	19.53	33.08	18.50	10.05	3.95	2.68	5.53	2.41	11.08	20.45
270	24.94	19.92	22.03	12.32	13.95	18.95	17.63	19.85	1.69	3.76	0.92	13.06	18.52
285	29.50	19.26	30.12	9.00	8.72	9.82	7.57	8.82	10.84	7.84	2.02	20.20	17.05
300	29.86	18.54	19.12	7.20	3.86	4.52	4.64	2.40	19.03	30.33	2.09	34.41	16.89
315	26.94	17.27	19.12	8.46	1.94	3.03	8.45	4.19	7.27	11.76	1.66	29.18	19.94
330	26.60	16.69	36.97	12.71	5.87	9.61	15.76	11.73	3.38	11.16	1.89	23.63	24.42
345	22.46	16.35	19.11	31.85	14.41	17.76	24.41	34.14	13.12	31.18	4.96	22.88	26.61
360	18.50	15.20	12.88	17.09	14.10	18.29	23.02	10.60	5.90	11.15	9.83	19.87	41.26
Avg.	21.98	16.88	33.79	20.81	21.09	16.49	17.55	20.79	36.67	32.69	12.41	42.61	32.91

Peak Value	56.534	Minimum Value	0.610

Test = 2.440GHz

Horizontal + Vertical													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.53	-9.01	-8.75	-8.63	-9.08	-6.07	-3.53	-6.73	-7.01	-5.19	-13.29	-5.79	-4.32
15	-6.01	-8.77	-8.13	-7.77	-7.40	-6.56	-4.39	-5.92	-5.26	-5.04	-13.87	-5.34	-4.24
30	-6.32	-8.03	-7.20	-6.64	-5.90	-6.51	-5.21	-4.53	-3.59	-4.84	-12.23	-5.75	-4.63
45	-6.17	-6.98	-6.11	-5.25	-4.90	-5.13	-4.20	-3.40	-2.39	-4.70	-9.31	-6.98	-5.17
60	-5.89	-6.01	-5.15	-3.95	-4.18	-3.22	-2.53	-3.11	-1.13	-3.50	-6.81	-8.52	-5.68
75	-5.66	-5.21	-4.48	-3.30	-3.73	-1.89	-1.80	-3.07	-0.34	-2.21	-4.94	-10.32	-5.91
90	-5.36	-4.50	-4.00	-3.50	-3.31	-0.79	-1.43	-2.11	0.12	-2.11	-3.76	-12.06	-6.01
105	-5.12	-3.91	-3.85	-4.20	-2.40	-0.05	-1.30	-1.68	-0.64	-3.19	-3.43	-12.78	-5.69
120	-5.10	-3.43	-3.58	-4.54	-1.37	-0.10	-2.34	-2.44	-2.46	-5.25	-3.83	-12.75	-4.90
135	-5.12	-3.35	-3.53	-4.17	-0.88	-1.10	-3.45	-3.12	-4.22	-8.22	-5.28	-12.56	-4.34
150	-5.14	-3.50	-3.56	-3.56	-1.20	-2.36	-3.50	-3.05	-5.69	-12.44	-7.12	-11.81	-4.05
165	-5.16	-3.59	-3.50	-3.19	-1.64	-3.13	-3.20	-2.71	-6.39	-16.75	-7.98	-10.70	-4.23
180	-5.26	-3.84	-3.42	-3.03	-1.91	-3.16	-3.03	-2.51	-5.57	-10.61	-6.42	-9.59	-4.66
195	-5.38	-3.89	-3.39	-3.36	-1.75	-2.50	-2.91	-2.39	-4.01	-8.48	-4.28	-9.87	-4.90
210	-5.31	-3.87	-3.46	-3.84	-1.57	-1.49	-2.17	-1.91	-2.57	-5.39	-2.71	-10.88	-4.92
225	-5.14	-3.84	-3.61	-3.78	-1.84	-0.78	-0.96	-0.84	-1.57	-3.04	-1.90	-12.68	-4.51
240	-5.00	-4.01	-3.81	-3.07	-2.23	-0.68	-0.76	-0.19	-0.90	-1.92	-1.65	-13.95	-3.91
255	-4.77	-4.25	-4.26	-2.40	-2.15	-0.92	-1.17	-1.61	-0.82	-1.91	-2.09	-12.47	-3.50
270	-4.44	-4.52	-4.75	-2.66	-2.25	-1.62	-0.80	-2.39	-1.87	-3.01	-3.20	-10.31	-3.67
285	-4.22	-5.02	-5.46	-3.91	-3.47	-3.37	-1.31	-1.84	-2.89	-4.68	-4.79	-9.20	-4.13
300	-4.16	-5.63	-6.42	-5.37	-5.08	-6.26	-3.37	-1.88	-3.26	-5.77	-7.00	-8.43	-4.73
315	-4.33	-6.56	-7.53	-6.78	-6.49	-6.83	-5.03	-3.12	-3.97	-5.98	-9.54	-7.61	-5.03
330	-4.79	-7.80	-8.63	-8.11	-8.05	-6.01	-4.42	-4.73	-5.70	-5.76	-11.45	-6.87	-4.95
345	-5.26	-8.67	-9.03	-8.85	-9.44	-5.71	-3.55	-6.11	-7.46	-5.43	-12.71	-6.25	-4.78
360	-5.53	-9.01	-8.75	-8.63	-9.08	-6.07	-3.53	-6.73	-7.01	-5.19	-13.29	-5.79	-4.32
Avg.	-5.33	-5.16	-5.04	-4.55	-3.39	-2.80	-2.74	-2.89	-2.98	-4.86	-5.49	-9.14	-4.83

Peak Value	0.124	Minimum Value	-16.752

Horizontal													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.63	-9.40	-9.23	-9.05	-9.24	-6.12	-3.74	-7.14	-7.95	-5.72	-13.84	-7.04	-5.29
15	-6.67	-10.66	-9.32	-8.53	-8.57	-7.18	-4.73	-7.93	-9.17	-7.41	-14.59	-8.15	-6.26
30	-8.30	-12.26	-9.46	-7.78	-8.59	-8.78	-6.39	-8.78	-12.88	-11.28	-13.86	-10.80	-8.38
45	-10.63	-14.29	-10.04	-7.25	-9.30	-10.35	-7.71	-10.44	-26.54	-14.69	-11.69	-16.06	-12.36
60	-14.45	-16.92	-11.75	-7.52	-10.29	-11.39	-9.22	-16.61	-8.70	-8.57	-10.06	-23.12	-21.68
75	-19.60	-19.06	-16.55	-9.32	-12.60	-13.75	-13.25	-15.00	-4.47	-5.40	-9.18	-19.20	-21.71
90	-16.62	-15.07	-24.95	-13.85	-15.61	-11.43	-9.77	-6.69	-2.60	-5.41	-8.71	-17.03	-12.58
105	-11.57	-10.72	-13.74	-17.69	-9.62	-6.46	-5.83	-4.70	-3.42	-8.10	-8.26	-16.30	-8.55
120	-8.91	-7.38	-8.07	-10.18	-5.36	-4.34	-5.21	-5.03	-5.83	-13.84	-7.69	-15.86	-5.92
135	-7.15	-5.55	-5.47	-6.26	-3.13	-3.55	-4.81	-4.61	-6.99	-19.19	-7.62	-14.37	-4.59
150	-6.02	-4.43	-4.14	-4.17	-2.05	-3.19	-3.79	-3.42	-6.80	-17.82	-7.76	-12.42	-4.06
165	-5.47	-3.85	-3.56	-3.24	-1.74	-3.17	-3.22	-2.75	-6.41	-16.82	-8.17	-10.88	-4.35
180	-5.54	-4.11	-3.60	-3.30	-2.04	-3.55	-3.44	-2.93	-6.55	-17.51	-8.68	-10.29	-5.43
195	-6.29	-4.95	-4.39	-4.54	-2.80	-4.34	-4.28	-3.76	-7.70	-20.24	-8.90	-11.03	-7.21
210	-7.70	-6.51	-6.26	-7.26	-4.27	-4.87	-4.49	-4.15	-8.93	-18.75	-8.98	-12.84	-10.16
225	-10.06	-9.24	-9.66	-11.48	-7.20	-5.88	-3.49	-2.94	-7.11	-11.95	-8.75	-15.21	-15.21
240	-14.84	-14.45	-14.89	-11.70	-12.14	-9.94	-4.37	-2.09	-4.21	-8.08	-7.74	-17.77	-26.90
255	-29.38	-28.81	-14.11	-7.94	-9.68	-14.58	-9.93	-5.26	-3.34	-6.81	-6.76	-21.49	-16.65
270	-17.13	-17.96	-10.36	-6.48	-7.36	-8.78	-8.05	-11.90	-5.88	-8.32	-6.53	-20.29	-11.68
285	-11.04	-12.68	-8.40	-6.34	-7.67	-8.23	-5.00	-9.31	-13.61	-12.35	-7.26	-15.06	-8.39
300	-7.92	-10.18	-7.68	-6.67	-8.47	-9.25	-5.16	-5.89	-19.44	-13.50	-9.10	-10.87	-6.61
315	-6.20	-9.17	-7.85	-7.39	-8.80	-8.08	-5.50	-5.61	-10.70	-9.12	-11.71	-8.30	-5.57
330	-5.48	-8.83	-8.64	-8.30	-9.23	-6.42	-4.56	-5.96	-8.40	-6.43	-13.73	-6.89	-5.00
345	-5.33	-8.85	-9.14	-8.91	-9.64	-5.76	-3.71	-6.39	-7.83	-5.43	-14.05	-6.47	-4.98
360	-5.63	-9.40	-9.23	-9.05	-9.24	-6.12	-3.74	-7.14	-7.95	-5.72	-13.84	-7.04	-5.29
Avg.	-8.40	-8.77	-8.07	-7.35	-6.49	-6.64	-5.44	-5.68	-6.99	-9.40	-9.30	-11.68	-7.67

Peak Value	-1.739	Minimum Value	-29.385

Vertical

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-21.69	-19.66	-18.50	-18.91	-23.49	-25.16	-16.91	-17.26	-14.13	-14.54	-22.56	-11.82	-11.31
15	-14.57	-13.28	-14.36	-15.73	-13.65	-15.28	-15.51	-10.23	-7.53	-8.81	-22.05	-8.57	-8.53
30	-10.69	-10.08	-11.12	-13.00	-9.26	-10.41	-11.44	-6.58	-4.14	-5.96	-17.30	-7.39	-7.00
45	-8.09	-7.88	-8.36	-9.59	-6.85	-6.68	-6.75	-4.36	-2.41	-5.16	-13.05	-7.55	-6.09
60	-6.54	-6.38	-6.22	-6.46	-5.40	-3.94	-3.58	-3.31	-1.96	-5.11	-9.59	-8.68	-5.79
75	-5.84	-5.39	-4.76	-4.55	-4.34	-2.18	-2.12	-3.36	-2.47	-5.05	-7.00	-10.92	-6.02
90	-5.70	-4.89	-4.04	-3.92	-3.58	-1.18	-2.11	-3.97	-3.19	-4.85	-5.44	-13.72	-7.09
105	-6.23	-4.92	-4.32	-4.40	-3.31	-1.18	-3.18	-4.68	-3.89	-4.88	-5.16	-15.34	-8.85
120	-7.43	-5.67	-5.49	-5.93	-3.59	-2.15	-5.49	-5.91	-5.13	-5.89	-6.13	-15.67	-11.67
135	-9.39	-7.37	-7.96	-8.35	-4.81	-4.75	-9.18	-8.49	-7.50	-8.58	-9.07	-17.22	-16.89
150	-12.50	-10.65	-12.59	-12.40	-8.70	-9.92	-15.40	-13.85	-12.15	-13.93	-15.76	-20.64	-29.99
165	-16.83	-15.86	-22.09	-22.12	-18.12	-23.85	-26.43	-22.37	-29.40	-35.06	-21.70	-24.53	-19.80
180	-17.21	-16.15	-17.31	-15.23	-17.29	-13.76	-13.47	-12.88	-12.52	-11.61	-10.33	-17.85	-12.53
195	-12.66	-10.53	-10.24	-9.58	-8.41	-7.11	-8.60	-8.07	-6.43	-8.78	-6.12	-16.18	-8.73
210	-9.05	-7.29	-6.70	-6.47	-4.92	-4.17	-6.00	-5.86	-3.72	-5.60	-3.88	-15.28	-6.47
225	-6.84	-5.32	-4.85	-4.59	-3.33	-2.39	-4.51	-5.02	-2.99	-3.64	-2.90	-16.23	-4.90
240	-5.48	-4.42	-4.16	-3.71	-2.69	-1.23	-3.23	-4.71	-3.64	-3.12	-2.88	-16.27	-3.94
255	-4.78	-4.27	-4.73	-3.82	-2.99	-1.11	-1.79	-4.07	-4.38	-3.61	-3.90	-13.05	-3.72
270	-4.68	-4.72	-6.15	-4.99	-3.86	-2.55	-1.70	-2.90	-4.06	-4.53	-5.92	-10.77	-4.42
285	-5.24	-5.83	-8.54	-7.59	-5.54	-5.09	-3.73	-2.70	-3.27	-5.50	-8.42	-10.51	-6.18
300	-6.54	-7.50	-12.42	-11.23	-7.75	-9.29	-8.09	-4.07	-3.36	-6.58	-11.15	-12.09	-9.27
315	-8.90	-10.01	-18.98	-15.55	-10.34	-12.84	-14.96	-6.73	-5.01	-8.86	-13.59	-15.89	-14.32
330	-13.16	-14.54	-33.96	-22.01	-14.30	-16.38	-19.40	-10.80	-9.04	-14.24	-15.35	-29.73	-24.40
345	-22.87	-22.77	-25.11	-27.27	-23.00	-25.16	-18.06	-18.30	-18.36	-39.07	-18.48	-19.46	-18.18
360	-21.69	-19.66	-18.50	-18.91	-23.49	-25.16	-16.91	-17.26	-14.13	-14.54	-22.56	-11.82	-11.31
Avg.	-8.29	-7.65	-8.02	-7.78	-6.32	-5.11	-6.09	-6.14	-5.17	-6.74	-7.82	-12.68	-8.02

Peak Value	-1.106	Minimum Value	-39.066

RHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-9.31	-14.12	-14.80	-12.25	-13.93	-10.06	-6.73	-12.89	-16.12	-11.31	-19.75	-8.40	-7.48
15	-10.10	-14.53	-15.11	-12.84	-16.90	-14.27	-9.33	-15.99	-22.08	-13.83	-16.94	-7.88	-7.16
30	-10.81	-14.02	-14.10	-15.76	-28.38	-25.47	-16.46	-18.21	-10.67	-10.24	-13.13	-8.76	-7.73
45	-11.17	-12.93	-11.92	-21.42	-18.36	-12.76	-15.33	-13.34	-5.32	-6.29	-9.45	-10.93	-8.61
60	-11.03	-11.72	-9.54	-13.98	-10.47	-6.71	-8.11	-8.11	-1.69	-3.66	-6.81	-13.49	-9.26
75	-10.73	-10.39	-7.58	-8.80	-6.82	-3.88	-4.44	-4.45	-0.41	-2.29	-5.15	-15.05	-9.32
90	-10.40	-9.40	-6.30	-6.55	-4.83	-1.88	-2.17	-2.26	0.06	-2.24	-4.40	-15.12	-9.32
105	-10.15	-8.75	-5.91	-5.73	-3.06	-0.68	-1.40	-1.73	-0.68	-3.39	-4.51	-14.73	-9.08
120	-10.28	-8.28	-5.79	-5.29	-1.92	-0.52	-2.41	-2.45	-2.51	-5.99	-5.33	-14.74	-8.28
135	-10.59	-8.52	-6.18	-5.14	-1.52	-1.65	-4.06	-3.44	-4.95	-10.28	-6.88	-15.34	-7.79
150	-10.68	-8.83	-6.76	-5.40	-2.37	-3.46	-5.17	-4.27	-7.87	-17.20	-9.05	-15.91	-7.29
165	-10.67	-8.91	-7.21	-6.64	-3.88	-5.42	-5.94	-5.19	-9.89	-20.55	-11.69	-15.84	-7.10
180	-10.68	-8.53	-7.54	-8.64	-6.30	-7.51	-7.27	-6.62	-9.40	-11.82	-12.66	-15.25	-7.17
195	-10.34	-7.91	-8.06	-12.32	-9.82	-10.86	-10.70	-9.60	-8.75	-11.06	-11.71	-15.45	-7.30
210	-9.64	-7.44	-8.83	-17.95	-13.78	-15.10	-20.05	-19.37	-9.87	-10.39	-10.42	-16.13	-7.36
225	-9.19	-7.28	-9.71	-12.77	-13.53	-13.66	-20.83	-13.46	-14.37	-10.53	-10.35	-16.56	-7.33
240	-8.75	-7.46	-9.94	-7.49	-8.86	-8.19	-18.76	-9.86	-17.02	-10.59	-12.18	-15.50	-7.37
255	-8.30	-7.65	-9.55	-4.91	-5.32	-4.62	-7.56	-14.28	-16.25	-11.57	-16.71	-13.40	-7.44
270	-7.66	-7.83	-8.67	-4.26	-4.06	-3.45	-2.65	-7.49	-21.28	-14.77	-26.25	-11.78	-7.78
285	-7.38	-8.40	-8.18	-4.72	-4.15	-4.34	-1.86	-2.62	-9.26	-13.22	-26.82	-11.39	-8.47
300	-7.23	-9.17	-8.58	-5.91	-5.14	-6.34	-3.61	-1.92	-5.29	-8.94	-25.25	-11.35	-9.13
315	-7.39	-10.35	-9.69	-7.58	-6.58	-7.17	-6.01	-3.40	-4.45	-7.03	-27.41	-10.57	-9.06
330	-7.84	-11.89	-11.63	-9.68	-8.66	-7.22	-6.40	-6.03	-5.83	-7.00	-30.02	-9.69	-8.65
345	-8.53	-13.05	-13.49	-11.51	-11.42	-7.96	-6.00	-9.19	-9.09	-8.30	-24.44	-9.05	-8.38
360	-9.31	-14.12	-14.80	-12.25	-13.93	-10.06	-6.73	-12.89	-16.12	-11.31	-19.75	-8.40	-7.48
Avg.	-9.51	-9.54	-8.82	-7.96	-6.27	-5.50	-5.79	-5.96	-5.78	-7.82	-9.98	-12.26	-8.18

Peak Value	0.060	Minimum Value	-30.018

LHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.89	-10.61	-9.99	-11.10	-10.81	-8.28	-6.36	-7.94	-7.58	-6.40	-14.40	-9.25	-7.19
15	-8.16	-10.11	-9.11	-9.39	-7.91	-7.36	-6.06	-6.37	-5.35	-5.66	-16.82	-8.88	-7.34
30	-8.23	-9.29	-8.19	-7.21	-5.93	-6.56	-5.55	-4.72	-4.54	-6.32	-19.53	-8.77	-7.55
45	-7.81	-8.26	-7.43	-5.36	-5.10	-5.95	-4.54	-3.87	-5.48	-9.83	-24.21	-9.22	-7.78
60	-7.48	-7.37	-7.12	-4.40	-5.35	-5.80	-3.94	-4.76	-10.28	-17.79	-35.73	-10.19	-8.19
75	-7.28	-6.77	-7.40	-4.74	-6.67	-6.22	-5.21	-8.71	-18.53	-19.95	-18.25	-12.10	-8.55
90	-6.99	-6.19	-7.86	-6.47	-8.62	-7.35	-9.45	-16.82	-18.20	-17.41	-12.39	-15.02	-8.74
105	-6.75	-5.64	-8.07	-9.49	-10.91	-8.78	-17.80	-20.96	-21.21	-16.69	-10.01	-17.21	-8.36
120	-6.66	-5.15	-7.58	-12.55	-10.61	-10.43	-20.05	-28.27	-21.73	-13.31	-9.19	-17.10	-7.56
135	-6.57	-4.93	-6.93	-11.17	-9.54	-10.30	-12.34	-14.59	-12.36	-12.46	-10.37	-15.80	-6.95
150	-6.56	-5.00	-6.38	-8.20	-7.49	-8.86	-8.45	-9.13	-9.72	-14.21	-11.58	-13.95	-6.84
165	-6.60	-5.10	-5.91	-5.80	-5.60	-7.00	-6.49	-6.32	-8.96	-19.10	-10.39	-12.29	-7.38
180	-6.72	-5.65	-5.54	-4.43	-3.88	-5.15	-5.09	-4.64	-7.89	-16.78	-7.59	-10.96	-8.24
195	-7.06	-6.08	-5.20	-3.95	-2.48	-3.18	-3.70	-3.31	-5.78	-11.96	-5.15	-11.28	-8.61
210	-7.31	-6.39	-4.95	-4.01	-1.84	-1.69	-2.24	-1.99	-3.47	-7.04	-3.52	-12.42	-8.59
225	-7.32	-6.46	-4.83	-4.36	-2.15	-1.01	-1.00	-1.09	-1.80	-3.89	-2.57	-14.97	-7.73
240	-7.38	-6.62	-5.02	-5.02	-3.29	-1.52	-0.83	-0.69	-1.01	-2.55	-2.05	-19.17	-6.52
255	-7.31	-6.91	-5.78	-5.97	-5.00	-3.32	-2.31	-1.85	-0.94	-2.41	-2.24	-19.62	-5.75
270	-7.25	-7.25	-7.01	-7.78	-6.94	-6.26	-5.39	-3.99	-1.92	-3.31	-3.22	-15.74	-5.81
285	-7.09	-7.68	-8.78	-11.62	-11.84	-10.37	-10.56	-9.70	-4.03	-5.34	-4.82	-13.23	-6.13
300	-7.11	-8.17	-10.50	-14.67	-23.81	-23.61	-16.06	-21.52	-7.54	-8.64	-7.06	-11.53	-6.69
315	-7.29	-8.90	-11.59	-14.49	-23.44	-18.01	-12.00	-15.16	-13.76	-12.65	-9.61	-10.66	-7.21
330	-7.77	-9.94	-11.64	-13.30	-16.85	-12.13	-8.80	-10.58	-20.77	-11.81	-11.52	-10.08	-7.36
345	-8.03	-10.65	-10.96	-12.24	-13.81	-9.64	-7.21	-9.06	-12.52	-8.59	-13.01	-9.49	-7.27
360	-7.89	-10.61	-9.99	-11.10	-10.81	-8.28	-6.36	-7.94	-7.58	-6.40	-14.40	-9.25	-7.19
Avg.	-7.43	-7.14	-7.39	-7.20	-6.54	-6.14	-5.71	-5.84	-6.21	-7.92	-7.40	-12.04	-7.52

Peak Value	-0.689	Minimum Value	-35.735

AR

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	21.77	14.02	11.36	23.61	15.00	19.83	33.43	11.15	6.83	11.20	10.49	26.18	35.53
15	19.05	12.07	9.56	14.15	6.46	8.45	14.60	5.96	2.55	7.16	43.19	24.85	39.57
30	16.61	11.51	9.69	6.82	1.31	1.98	5.09	3.73	9.41	13.08	9.05	71.40	39.78
45	14.37	11.61	11.94	2.76	3.83	8.56	5.17	6.08	41.16	13.95	3.21	20.14	26.42
60	13.90	12.21	17.18	6.00	10.86	25.68	12.55	14.41	6.78	3.46	0.62	14.52	24.28
75	14.15	13.75	39.50	12.80	41.81	17.45	27.03	12.38	2.17	2.29	3.91	15.49	27.01
90	14.25	14.76	20.96	46.91	13.35	10.31	8.04	3.29	2.13	3.06	7.33	45.42	29.64
105	14.28	15.03	18.16	13.43	7.46	7.23	2.65	1.91	1.64	3.82	10.27	16.97	27.65
120	13.74	15.00	19.76	8.07	6.71	5.75	2.29	0.89	1.91	7.99	13.20	17.37	27.74
135	12.86	13.83	27.26	9.53	7.30	6.74	7.06	4.94	7.91	18.08	14.05	31.58	26.26
150	12.66	13.27	33.29	15.93	10.84	10.43	14.60	11.29	19.51	15.36	16.80	19.01	31.57
165	12.77	13.31	22.52	26.25	20.11	20.89	30.05	23.72	25.37	21.58	22.50	13.90	35.67
180	13.00	15.70	18.81	12.48	17.20	17.38	18.06	18.88	21.25	11.11	10.95	12.32	24.23
195	14.58	19.55	15.76	6.97	7.98	7.64	8.36	9.19	15.42	25.69	8.86	12.57	22.50
210	17.47	24.35	13.16	3.54	4.49	3.77	2.25	2.36	9.05	14.41	8.46	13.53	23.04
225	19.39	26.46	11.26	6.95	4.80	4.13	1.78	4.26	4.17	8.77	7.53	20.79	32.75
240	22.06	26.29	11.18	16.99	10.17	8.73	2.22	6.31	2.77	7.29	5.60	13.61	26.17
255	24.93	27.37	13.39	24.35	34.80	22.55	10.64	4.24	3.01	6.31	3.32	9.27	20.31
270	32.57	29.50	20.41	13.97	15.69	15.92	16.10	14.02	1.88	4.76	1.23	13.00	18.95
285	35.51	27.76	29.25	8.46	7.62	9.54	6.69	8.27	10.68	7.43	1.38	19.56	17.45
300	43.28	24.82	19.14	6.64	2.03	2.39	4.23	1.83	17.81	35.31	2.15	39.72	17.12
315	44.97	21.58	19.25	8.45	2.51	5.13	9.57	4.59	6.20	10.09	2.25	45.50	19.47
330	47.97	19.04	68.90	13.74	7.15	11.19	17.25	11.84	3.15	11.38	2.07	33.05	22.60
345	30.82	17.26	16.80	27.54	17.27	20.33	23.12	42.38	14.21	35.38	4.78	32.12	23.95
360	21.77	14.02	11.36	23.61	15.00	19.83	33.43	11.15	6.83	11.20	10.49	26.18	35.53
Avg.	36.92	22.21	54.93	33.09	28.71	16.52	22.27	28.51	27.42	24.85	29.29	57.44	31.43

Peak Value	71.396	Minimum Value	0.622

Test = 2.460GHz

Horizontal + Vertical													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.27	-10.72	-10.24	-7.89	-8.58	-5.28	-2.67	-6.02	-6.20	-4.76	-14.45	-4.95	-4.02
15	-5.78	-10.26	-9.47	-7.05	-7.05	-6.05	-3.58	-5.12	-4.70	-4.88	-14.39	-4.56	-3.98
30	-6.05	-9.11	-8.25	-5.97	-5.82	-6.51	-4.55	-3.83	-3.37	-4.96	-11.91	-5.08	-4.34
45	-5.99	-7.73	-6.81	-4.87	-5.24	-5.19	-3.78	-2.87	-2.17	-4.71	-8.59	-6.36	-4.90
60	-5.73	-6.47	-5.59	-3.83	-4.65	-2.82	-2.10	-2.78	-0.71	-3.10	-5.90	-8.02	-5.37
75	-5.46	-5.33	-4.60	-3.24	-3.68	-1.21	-1.47	-2.68	0.31	-1.60	-3.98	-9.79	-5.69
90	-5.16	-4.29	-3.60	-3.20	-2.82	-0.30	-1.06	-1.28	0.88	-1.44	-2.74	-11.26	-5.71
105	-4.99	-3.47	-3.07	-3.60	-1.88	0.34	-0.65	-0.79	0.01	-2.42	-2.38	-11.88	-5.48
120	-4.99	-2.97	-2.71	-3.63	-0.91	0.37	-1.37	-1.58	-1.73	-4.33	-3.01	-11.53	-4.66
135	-5.15	-2.85	-2.60	-3.26	-0.36	-0.52	-2.37	-2.13	-3.37	-7.16	-4.62	-10.73	-4.07
150	-5.44	-3.16	-2.82	-2.67	-0.55	-1.66	-2.66	-1.93	-4.76	-11.32	-6.80	-9.98	-3.73
165	-5.65	-3.59	-2.98	-2.28	-0.95	-2.42	-2.42	-1.48	-5.51	-15.52	-7.78	-8.67	-3.87
180	-5.89	-3.88	-3.00	-2.20	-1.25	-2.56	-2.24	-1.31	-5.02	-10.01	-5.85	-7.50	-4.24
195	-6.05	-4.07	-2.93	-2.55	-1.30	-1.84	-2.14	-1.27	-3.53	-6.88	-3.41	-7.57	-4.53
210	-5.89	-3.92	-2.85	-3.13	-1.29	-0.86	-1.46	-1.02	-2.02	-4.19	-1.69	-8.63	-4.56
225	-5.60	-3.76	-2.89	-3.26	-1.57	-0.29	-0.39	-0.20	-1.06	-2.08	-0.78	-10.82	-4.14
240	-5.28	-3.80	-3.29	-2.64	-1.96	-0.24	-0.30	0.34	-0.39	-1.14	-0.62	-13.27	-3.35
255	-4.88	-4.09	-4.08	-2.18	-1.93	-0.48	-0.79	-1.21	-0.41	-1.22	-1.13	-12.48	-2.88
270	-4.45	-4.56	-5.13	-2.61	-2.36	-1.22	-0.38	-2.27	-1.60	-2.55	-2.34	-9.87	-3.01
285	-4.23	-5.22	-6.31	-3.93	-3.82	-3.21	-0.74	-1.63	-2.81	-4.64	-4.16	-8.37	-3.54
300	-4.17	-6.09	-7.54	-5.11	-5.33	-6.16	-2.69	-1.32	-3.21	-6.16	-6.47	-7.63	-4.19
315	-4.36	-7.21	-8.95	-6.26	-6.56	-6.30	-4.11	-2.22	-3.76	-6.13	-9.25	-6.78	-4.62
330	-4.79	-8.89	-10.25	-7.35	-7.91	-5.17	-3.48	-3.74	-5.16	-5.46	-11.66	-6.04	-4.66
345	-5.07	-10.21	-10.55	-8.05	-9.14	-4.90	-2.64	-5.13	-6.56	-4.86	-13.29	-5.43	-4.38
360	-5.27	-10.72	-10.24	-7.89	-8.58	-5.28	-2.67	-6.02	-6.20	-4.76	-14.45	-4.95	-4.02
Avg.	-5.40	-5.23	-4.86	-4.03	-3.10	-2.29	-2.10	-2.16	-2.46	-4.30	-4.66	-8.13	-4.44

Peak Value	0.877	Minimum Value	-15.517

Horizontal													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.34	-11.07	-10.97	-8.23	-8.72	-5.33	-2.88	-6.37	-6.93	-5.23	-14.92	-6.21	-4.99
15	-6.36	-12.35	-11.18	-7.72	-8.27	-6.51	-3.86	-7.00	-8.14	-7.18	-14.91	-7.41	-6.02
30	-7.85	-13.43	-11.31	-6.89	-8.52	-8.33	-5.45	-7.81	-12.08	-11.76	-13.33	-10.01	-8.08
45	-9.98	-14.29	-11.70	-6.64	-9.81	-10.25	-6.91	-9.34	-23.75	-14.71	-11.10	-15.19	-12.44
60	-13.70	-15.49	-13.64	-7.21	-11.31	-11.28	-8.25	-15.19	-7.46	-8.06	-9.72	-21.68	-22.18
75	-19.20	-16.56	-19.88	-9.22	-13.24	-13.02	-11.77	-13.93	-3.59	-5.13	-9.02	-19.32	-20.66
90	-17.86	-14.11	-23.70	-13.30	-14.89	-11.76	-9.23	-5.87	-1.98	-5.51	-8.64	-17.44	-12.19
105	-12.12	-10.29	-12.12	-14.56	-9.49	-6.72	-5.22	-3.95	-3.10	-8.78	-8.08	-17.16	-8.25
120	-9.19	-7.15	-7.10	-8.63	-5.00	-4.07	-4.26	-4.19	-5.43	-15.48	-7.51	-15.67	-5.64
135	-7.44	-5.27	-4.67	-5.17	-2.57	-2.98	-3.75	-3.49	-6.09	-19.18	-7.47	-12.80	-4.32
150	-6.48	-4.22	-3.49	-3.26	-1.31	-2.45	-2.94	-2.21	-5.86	-16.27	-7.66	-10.53	-3.74
165	-5.98	-3.87	-3.05	-2.34	-1.02	-2.45	-2.44	-1.51	-5.53	-15.53	-7.98	-8.91	-3.99
180	-6.09	-4.10	-3.19	-2.43	-1.41	-3.05	-2.70	-1.69	-5.79	-16.47	-8.32	-8.44	-5.02
195	-6.85	-5.12	-4.01	-3.61	-2.40	-3.89	-3.69	-2.59	-7.01	-19.24	-8.41	-8.93	-6.83
210	-8.31	-6.68	-5.88	-6.09	-4.17	-4.59	-4.07	-3.37	-8.55	-19.11	-8.28	-10.82	-9.83
225	-10.74	-9.41	-9.23	-9.67	-7.37	-5.86	-3.19	-2.41	-7.17	-12.11	-8.02	-13.50	-15.02
240	-15.90	-14.40	-15.07	-10.41	-12.04	-10.17	-4.00	-1.51	-4.13	-7.76	-7.30	-16.46	-25.67
255	-33.77	-27.21	-16.45	-7.48	-9.24	-13.18	-9.38	-4.60	-3.16	-6.32	-6.32	-20.08	-16.07
270	-16.27	-19.21	-11.93	-6.32	-7.47	-7.76	-7.11	-11.16	-5.61	-7.81	-6.05	-18.66	-11.28
285	-10.66	-13.83	-9.78	-6.14	-8.16	-7.58	-3.96	-8.60	-13.20	-12.36	-6.86	-13.83	-8.16
300	-7.76	-11.39	-8.89	-6.21	-8.85	-8.39	-4.10	-5.00	-18.08	-14.31	-8.65	-10.01	-6.19
315	-6.19	-10.46	-9.27	-6.73	-8.98	-7.06	-4.40	-4.48	-9.71	-8.95	-11.32	-7.41	-5.22
330	-5.41	-10.24	-10.25	-7.47	-9.12	-5.39	-3.57	-4.98	-7.34	-5.96	-13.65	-6.05	-4.72
345	-5.13	-10.40	-10.73	-8.09	-9.37	-4.93	-2.78	-5.46	-6.80	-4.86	-14.47	-5.67	-4.60
360	-5.34	-11.07	-10.97	-8.23	-8.72	-5.33	-2.88	-6.37	-6.93	-5.23	-14.92	-6.21	-4.99
Avg.	-8.51	-9.00	-8.18	-6.56	-6.15	-6.10	-4.64	-4.74	-6.39	-9.15	-8.98	-10.57	-7.35

Peak Value	-1.018	Minimum Value	-33.775

Vertical

Φ [deg]	Θ [deg] 0	15	30	45	60	75	90	105	120	135	150	165	180
0	-23.23	-21.83	-18.38	-19.11	-23.57	-24.80	-16.00	-17.11	-14.29	-14.57	-24.30	-10.94	-11.01
15	-14.79	-14.44	-14.35	-15.46	-13.16	-16.05	-15.67	-9.66	-7.33	-8.75	-23.91	-7.73	-8.25
30	-10.73	-11.12	-11.21	-13.13	-9.16	-11.15	-11.83	-6.04	-4.00	-5.97	-17.46	-6.77	-6.72
45	-8.20	-8.82	-8.51	-9.64	-7.10	-6.82	-6.66	-3.99	-2.20	-5.16	-12.18	-6.97	-5.75
60	-6.49	-7.05	-6.34	-6.50	-5.70	-3.49	-3.31	-3.03	-1.74	-4.77	-8.22	-8.21	-5.46
75	-5.64	-5.67	-4.73	-4.50	-4.19	-1.51	-1.89	-3.02	-1.97	-4.15	-5.61	-10.30	-5.83
90	-5.40	-4.77	-3.65	-3.64	-3.10	-0.63	-1.78	-3.14	-2.29	-3.60	-4.03	-12.46	-6.82
105	-5.93	-4.49	-3.65	-3.96	-2.71	-0.61	-2.52	-3.66	-2.90	-3.56	-3.75	-13.40	-8.75
120	-7.06	-5.06	-4.67	-5.28	-3.05	-1.56	-4.52	-5.03	-4.15	-4.68	-4.91	-13.65	-11.60
135	-9.02	-6.54	-6.83	-7.75	-4.36	-4.17	-8.00	-7.85	-6.69	-7.44	-7.81	-14.96	-16.70
150	-12.16	-9.81	-11.30	-11.64	-8.54	-9.41	-14.63	-13.90	-11.28	-12.99	-14.24	-19.28	-31.03
165	-17.01	-15.62	-21.42	-20.68	-19.08	-23.66	-27.80	-22.85	-28.20	-40.85	-21.28	-21.35	-19.47
180	-19.43	-17.08	-16.71	-15.10	-15.85	-12.32	-12.18	-12.09	-12.94	-11.13	-9.49	-14.64	-12.09
195	-13.81	-10.77	-9.49	-9.20	-7.81	-6.08	-7.39	-7.09	-6.12	-7.14	-5.06	-13.27	-8.38
210	-9.60	-7.19	-5.83	-6.20	-4.43	-3.25	-4.91	-4.80	-3.12	-4.33	-2.76	-12.67	-6.10
225	-7.18	-5.14	-4.04	-4.39	-2.90	-1.70	-3.62	-4.19	-2.27	-2.54	-1.69	-14.19	-4.52
240	-5.67	-4.20	-3.59	-3.43	-2.41	-0.71	-2.70	-4.27	-2.78	-2.21	-1.66	-16.10	-3.38
255	-4.88	-4.12	-4.34	-3.69	-2.83	-0.72	-1.44	-3.88	-3.70	-2.82	-2.70	-13.31	-3.09
270	-4.75	-4.71	-6.15	-5.02	-3.96	-2.31	-1.42	-2.86	-3.79	-4.09	-4.75	-10.49	-3.71
285	-5.36	-5.86	-8.90	-7.91	-5.82	-5.19	-3.55	-2.61	-3.23	-5.44	-7.49	-9.83	-5.38
300	-6.67	-7.62	-13.28	-11.62	-7.88	-10.11	-8.27	-3.75	-3.36	-6.88	-10.50	-11.39	-8.51
315	-9.01	-10.00	-20.45	-16.19	-10.25	-14.24	-15.95	-6.13	-5.04	-9.34	-13.46	-15.51	-13.51
330	-13.55	-14.63	-42.29	-22.81	-14.06	-18.24	-20.50	-9.81	-9.18	-15.06	-16.03	-31.58	-23.10
345	-24.00	-24.04	-24.59	-29.09	-21.95	-26.96	-17.38	-16.49	-19.30	-58.57	-19.54	-18.22	-17.40
360	-23.23	-21.83	-18.38	-19.11	-23.57	-24.80	-16.00	-17.11	-14.29	-14.57	-24.30	-10.94	-11.01
Avg.	-8.32	-7.59	-7.59	-7.58	-6.06	-4.64	-5.63	-5.64	-4.72	-6.03	-6.66	-11.79	-7.57

Peak Value	-0.612	Minimum Value	-58.573

RHCP

Φ [deg]	Θ [deg] 0	15	30	45	60	75	90	105	120	135	150	165	180
0	-8.59	-16.05	-17.26	-11.10	-13.00	-8.75	-5.36	-12.10	-14.46	-10.88	-20.19	-7.90	-7.20
15	-9.31	-17.83	-17.99	-11.25	-14.80	-12.02	-7.51	-14.98	-23.48	-14.26	-16.71	-7.46	-6.93
30	-9.93	-17.82	-16.79	-13.34	-19.64	-21.88	-13.70	-17.70	-10.72	-10.37	-12.50	-8.45	-7.46
45	-10.37	-15.96	-13.63	-20.26	-21.22	-14.27	-16.37	-13.74	-4.91	-6.07	-8.64	-10.78	-8.33
60	-10.45	-13.73	-10.47	-14.70	-11.45	-6.49	-7.80	-7.93	-1.15	-3.26	-5.95	-13.28	-8.81
75	-10.36	-11.54	-7.95	-8.42	-6.69	-3.27	-4.13	-4.04	0.25	-1.72	-4.35	-14.24	-8.99
90	-9.89	-9.86	-6.14	-5.69	-4.28	-1.51	-1.81	-1.46	0.81	-1.63	-3.60	-13.99	-8.90
105	-9.68	-8.70	-5.38	-4.72	-2.64	-0.35	-0.75	-0.83	-0.01	-2.82	-3.67	-14.01	-8.56
120	-9.82	-7.87	-5.10	-4.37	-1.50	-0.02	-1.48	-1.60	-1.86	-5.53	-4.59	-14.12	-7.73
135	-10.21	-7.80	-5.43	-4.46	-0.99	-0.98	-3.10	-2.61	-4.29	-9.98	-6.16	-14.46	-7.29
150	-10.55	-8.24	-6.12	-4.71	-1.71	-2.67	-4.50	-3.42	-7.05	-17.75	-8.37	-14.86	-6.90
165	-10.85	-8.65	-6.66	-5.73	-3.16	-4.74	-5.35	-4.07	-8.66	-18.58	-10.95	-14.27	-6.71
180	-10.98	-8.31	-6.92	-7.42	-5.57	-7.22	-6.63	-5.22	-8.38	-10.83	-11.92	-13.10	-6.72
195	-10.78	-7.84	-7.25	-10.41	-9.23	-10.88	-9.96	-7.71	-8.01	-9.10	-10.58	-13.11	-6.83
210	-9.92	-7.08	-7.52	-15.76	-13.40	-15.30	-20.05	-16.32	-8.92	-8.59	-9.19	-13.72	-6.91
225	-9.31	-6.66	-7.93	-14.22	-12.52	-12.73	-20.79	-14.43	-12.54	-8.93	-8.80	-15.11	-7.00
240	-8.80	-6.63	-8.63	-7.99	-8.31	-7.25	-16.42	-9.35	-13.95	-9.54	-10.10	-14.86	-6.88
255	-8.21	-6.82	-9.02	-5.04	-5.06	-3.78	-6.91	-13.70	-14.20	-10.25	-13.99	-13.09	-6.93
270	-7.47	-7.13	-9.00	-4.25	-4.04	-2.79	-2.08	-7.48	-20.00	-13.43	-21.47	-11.17	-7.27
285	-7.10	-7.79	-9.01	-4.62	-4.25	-3.87	-1.20	-2.31	-9.40	-13.50	-26.91	-10.61	-7.99
300	-6.98	-8.83	-9.56	-5.62	-5.35	-6.20	-2.98	-1.35	-5.08	-9.16	-23.94	-10.58	-8.85
315	-6.99	-10.04	-11.07	-7.22	-6.94	-7.10	-5.37	-2.61	-4.11	-6.97	-24.17	-9.91	-8.91
330	-7.40	-11.87	-13.37	-9.18	-9.09	-6.84	-5.68	-5.17	-5.30	-6.73	-25.51	-9.04	-8.52
345	-7.91	-13.78	-15.46	-10.83	-11.52	-7.31	-5.05	-8.33	-8.34	-7.87	-22.89	-8.50	-8.01
360	-8.59	-16.05	-17.26	-11.10	-13.00	-8.75	-5.36	-12.10	-14.46	-10.88	-20.19	-7.90	-7.20
Avg.	-9.22	-9.36	-8.61	-7.43	-5.93	-4.97	-5.09	-5.22	-5.13	-7.27	-9.08	-11.55	-7.80

Peak Value	0.812	Minimum Value	-26.911

LHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-8.00	-12.22	-11.21	-10.71	-10.53	-7.88	-6.03	-7.24	-6.90	-5.97	-15.80	-8.02	-6.88
15	-8.33	-11.09	-10.13	-9.12	-7.85	-7.32	-5.84	-5.59	-4.76	-5.41	-18.23	-7.68	-7.05
30	-8.33	-9.74	-8.90	-6.84	-6.00	-6.64	-5.11	-4.01	-4.25	-6.43	-20.86	-7.77	-7.24
45	-7.96	-8.44	-7.82	-5.00	-5.35	-5.77	-4.02	-3.24	-5.47	-10.41	-27.98	-8.31	-7.53
60	-7.52	-7.37	-7.31	-4.21	-5.66	-5.27	-3.46	-4.36	-10.93	-17.65	-25.24	-9.56	-7.98
75	-7.15	-6.52	-7.29	-4.81	-6.68	-5.46	-4.86	-8.40	-18.39	-17.23	-14.79	-11.72	-8.42
90	-6.94	-5.70	-7.15	-6.80	-8.28	-6.46	-9.06	-15.29	-17.38	-15.10	-10.15	-14.58	-8.56
105	-6.80	-5.03	-6.93	-10.01	-9.85	-7.98	-16.97	-21.14	-23.29	-12.91	-8.27	-15.99	-8.42
120	-6.72	-4.67	-6.44	-11.69	-9.87	-10.26	-17.58	-25.50	-17.11	-10.53	-8.15	-15.01	-7.60
135	-6.77	-4.53	-5.80	-9.43	-9.01	-10.48	-10.48	-11.99	-10.56	-10.36	-9.88	-13.13	-6.89
150	-7.05	-4.77	-5.57	-6.94	-6.88	-8.46	-7.27	-7.30	-8.64	-12.44	-11.98	-11.69	-6.59
165	-7.21	-5.21	-5.42	-4.89	-4.94	-6.25	-5.52	-4.95	-8.38	-18.47	-10.63	-10.07	-7.06
180	-7.50	-5.83	-5.26	-3.75	-3.26	-4.38	-4.21	-3.58	-7.71	-17.67	-7.09	-8.90	-7.85
195	-7.84	-6.44	-4.93	-3.32	-2.06	-2.42	-2.93	-2.39	-5.45	-10.86	-4.33	-8.99	-8.37
210	-8.08	-6.78	-4.65	-3.37	-1.56	-1.02	-1.52	-1.15	-3.02	-6.15	-2.53	-10.24	-8.36
225	-8.00	-6.88	-4.53	-3.62	-1.94	-0.54	-0.43	-0.36	-1.38	-3.09	-1.52	-12.84	-7.32
240	-7.83	-7.00	-4.79	-4.13	-3.11	-1.21	-0.40	-0.16	-0.59	-1.82	-1.13	-18.39	-5.89
255	-7.59	-7.41	-5.76	-5.34	-4.83	-3.21	-2.01	-1.47	-0.60	-1.79	-1.37	-21.30	-5.06
270	-7.45	-8.05	-7.42	-7.64	-7.29	-6.41	-5.28	-3.82	-1.66	-2.92	-2.40	-15.76	-5.05
285	-7.39	-8.72	-9.66	-12.23	-14.15	-11.73	-10.70	-10.04	-3.89	-5.25	-4.18	-12.33	-5.47
300	-7.39	-9.39	-11.84	-14.70	-28.22	-26.12	-14.62	-23.32	-7.78	-9.18	-6.55	-10.70	-6.01
315	-7.79	-10.42	-13.09	-13.30	-17.35	-14.07	-10.08	-12.94	-14.92	-13.68	-9.39	-9.67	-6.65
330	-8.24	-11.94	-13.14	-11.98	-14.15	-10.13	-7.49	-9.27	-19.97	-11.40	-11.85	-9.06	-6.96
345	-8.26	-12.73	-12.25	-11.31	-12.88	-8.61	-6.34	-7.95	-11.31	-7.87	-13.80	-8.38	-6.84
360	-8.00	-12.22	-11.21	-10.71	-10.53	-7.88	-6.03	-7.24	-6.90	-5.97	-15.80	-8.02	-6.88
Avg.	-7.74	-7.35	-7.25	-6.68	-6.29	-5.67	-5.13	-5.12	-5.85	-7.36	-6.60	-10.76	-7.14

Peak Value	-0.157	Minimum Value	-28.224

AR

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	29.35	13.27	9.50	32.98	16.99	26.03	28.22	11.28	7.75	11.21	12.12	43.02	34.70
15	25.00	8.65	7.45	18.30	8.40	11.56	20.37	6.13	2.02	6.57	21.21	37.74	43.81
30	20.73	7.25	7.43	8.94	3.66	3.03	6.79	3.64	8.97	13.03	6.99	28.17	38.18
45	17.21	7.79	9.83	3.03	2.82	6.86	4.27	5.35	29.90	12.23	1.88	17.02	26.71
60	15.53	9.11	14.89	5.35	9.85	23.05	12.22	13.85	5.84	3.35	1.89	13.51	26.42
75	14.78	11.01	28.44	13.77	65.04	18.03	27.57	12.19	2.04	2.94	5.39	16.85	29.54
90	15.48	12.58	24.70	23.89	12.92	11.14	8.07	3.59	2.15	3.74	8.88	29.42	34.10
105	15.69	13.63	21.01	10.60	8.11	7.69	2.71	1.68	1.19	5.63	11.74	18.92	41.86
120	15.05	14.79	22.29	8.00	6.98	5.52	2.74	1.11	3.03	11.04	13.90	25.83	42.62
135	14.16	14.61	33.49	11.10	7.30	6.06	7.93	6.14	9.21	33.14	13.53	22.30	32.64
150	14.02	14.12	29.98	17.88	10.77	9.87	16.02	13.16	20.79	10.56	13.78	14.86	35.01
165	13.71	14.20	22.98	26.31	19.83	21.22	40.14	25.96	35.64	44.03	34.58	12.51	33.69
180	14.09	16.94	20.43	13.64	17.57	15.80	17.18	20.51	28.32	8.53	11.33	12.51	23.77
195	15.50	21.91	17.56	8.25	8.16	6.90	8.32	10.54	16.68	19.94	9.25	12.66	21.07
210	19.56	35.28	15.72	4.25	4.55	3.40	2.07	3.06	9.70	17.11	8.74	14.08	21.57
225	22.51	38.14	14.26	5.29	5.29	4.36	1.67	3.49	4.93	9.79	8.04	17.73	34.80
240	25.14	33.53	13.26	13.21	10.73	9.51	2.77	6.29	3.79	7.59	6.47	13.96	24.91
255	28.89	29.32	14.65	35.45	37.38	29.59	11.21	4.33	3.68	6.90	4.13	7.12	19.39
270	58.03	25.53	20.86	14.31	14.66	13.74	14.79	13.64	2.11	5.35	1.94	11.77	17.94
285	35.42	25.40	28.46	7.70	5.76	7.46	6.05	7.58	10.26	7.09	1.27	20.09	16.84
300	32.65	29.89	17.69	6.38	1.25	1.76	4.66	1.39	16.24	59.03	2.36	42.93	15.81
315	26.71	33.08	18.71	9.47	5.41	8.38	11.55	5.46	5.15	8.68	3.21	37.17	17.73
330	26.25	48.82	37.43	15.94	10.96	14.57	19.66	12.69	3.25	11.61	3.66	57.34	20.97
345	34.03	24.37	14.74	31.17	22.18	22.50	22.58	33.20	15.40	71.98	6.37	42.66	23.42
360	29.35	13.27	9.50	32.98	16.99	26.03	28.22	11.28	7.75	11.21	12.12	43.02	34.70
Avg.	44.13	35.73	26.66	24.95	51.07	19.17	26.87	20.44	23.53	58.22	21.05	43.90	35.23

Peak Value	71.976	Minimum Value	1.110

Test = 2.485GHz

Horizontal + Vertical													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-6.61	-14.69	-14.65	-8.70	-9.54	-5.86	-3.33	-6.48	-6.67	-5.64	-15.79	-5.36	-4.85
15	-6.93	-13.90	-13.59	-7.84	-8.35	-6.64	-3.90	-5.90	-5.95	-5.85	-15.49	-5.15	-4.77
30	-7.17	-12.14	-11.73	-6.97	-7.32	-7.43	-5.41	-4.83	-4.94	-6.50	-13.16	-5.48	-5.38
45	-6.93	-10.42	-9.93	-6.38	-7.20	-7.24	-4.96	-3.71	-3.49	-6.45	-9.62	-6.71	-5.87
60	-7.07	-8.60	-8.36	-5.84	-6.78	-4.69	-3.52	-3.89	-2.01	-4.48	-6.66	-8.28	-6.40
75	-7.07	-7.34	-6.42	-5.23	-5.42	-2.36	-2.56	-3.66	-0.44	-2.63	-4.69	-10.07	-6.75
90	-6.78	-5.84	-5.13	-4.59	-3.73	-1.27	-2.05	-2.11	0.12	-2.13	-3.32	-11.80	-6.94
105	-6.50	-4.65	-3.86	-4.08	-2.84	-0.90	-1.57	-1.14	-0.79	-2.94	-2.81	-11.96	-6.49
120	-6.49	-4.09	-3.32	-3.81	-2.26	-0.93	-1.64	-1.78	-2.30	-4.38	-3.41	-11.08	-6.12
135	-6.81	-3.95	-3.09	-3.43	-1.65	-1.22	-2.40	-2.45	-3.81	-6.84	-4.88	-9.94	-5.45
150	-7.24	-4.29	-3.36	-3.23	-1.43	-2.19	-2.93	-2.18	-5.38	-10.69	-7.58	-8.94	-4.94
165	-7.73	-5.02	-3.69	-2.86	-1.62	-2.93	-2.86	-1.64	-5.98	-15.97	-9.07	-7.86	-4.90
180	-8.23	-5.56	-4.01	-2.72	-2.00	-2.95	-2.70	-1.42	-5.91	-9.52	-7.49	-6.46	-5.09
195	-8.57	-5.79	-4.23	-2.88	-2.30	-2.64	-2.59	-1.38	-4.75	-6.51	-4.55	-6.22	-5.45
210	-8.61	-5.86	-3.72	-3.29	-2.46	-1.85	-2.20	-1.57	-3.28	-4.13	-2.41	-7.00	-5.75
225	-8.23	-5.51	-3.41	-3.63	-2.76	-1.36	-1.27	-0.92	-2.10	-2.59	-1.21	-9.04	-5.31
240	-7.49	-5.46	-3.94	-3.59	-3.04	-1.34	-1.21	-0.44	-1.42	-1.71	-0.90	-12.65	-4.40
255	-7.12	-5.77	-5.19	-3.74	-3.42	-1.34	-1.70	-1.75	-1.36	-1.96	-1.38	-13.94	-3.70
270	-6.64	-6.29	-6.88	-4.43	-4.26	-2.30	-1.42	-3.74	-2.49	-3.06	-2.58	-11.34	-3.64
285	-6.23	-7.06	-8.90	-5.79	-6.05	-4.33	-1.47	-3.16	-4.07	-5.56	-4.36	-9.11	-4.19
300	-6.10	-8.26	-11.12	-6.45	-7.08	-6.91	-2.96	-2.33	-4.56	-7.67	-6.81	-8.41	-4.97
315	-6.28	-10.09	-13.43	-7.15	-7.66	-6.97	-4.55	-2.71	-4.85	-8.00	-9.45	-7.82	-5.54
330	-6.63	-11.76	-15.18	-8.14	-8.75	-5.78	-4.32	-4.02	-5.79	-6.76	-12.38	-6.70	-5.67
345	-6.57	-13.64	-15.69	-8.94	-9.87	-5.44	-3.49	-5.62	-6.93	-5.79	-14.34	-6.00	-5.30
360	-6.61	-14.69	-14.65	-8.70	-9.54	-5.86	-3.33	-6.48	-6.67	-5.64	-15.79	-5.36	-4.85
Avg.	-7.21	-6.94	-6.15	-4.93	-4.31	-3.25	-2.82	-2.77	-3.41	-5.03	-5.19	-8.19	-5.42

Peak Value	0.120	Minimum Value	-15.973

Horizontal													
Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-6.71	-15.05	-16.20	-9.04	-9.70	-5.91	-3.52	-6.83	-7.13	-6.04	-16.08	-6.62	-5.83
15	-7.41	-15.63	-16.63	-8.41	-9.28	-6.87	-4.11	-7.27	-8.13	-7.81	-15.62	-7.70	-6.58
30	-8.67	-15.07	-16.39	-7.71	-9.48	-8.43	-5.85	-8.02	-11.71	-12.29	-13.94	-9.75	-9.00
45	-10.55	-14.67	-15.71	-7.53	-10.80	-10.82	-6.99	-9.15	-23.23	-17.57	-11.81	-14.07	-12.38
60	-13.83	-14.92	-16.67	-8.35	-12.97	-12.66	-8.70	-13.58	-9.02	-9.84	-10.52	-20.78	-20.56
75	-20.03	-15.71	-21.81	-10.50	-15.12	-13.50	-11.13	-15.34	-4.11	-6.52	-10.28	-21.52	-25.44
90	-22.37	-14.94	-23.44	-14.11	-16.18	-13.51	-9.98	-6.96	-2.89	-6.76	-10.01	-19.92	-14.54
105	-15.23	-11.60	-12.18	-13.04	-11.92	-8.66	-6.48	-4.33	-4.39	-11.01	-9.40	-19.41	-9.44
120	-11.68	-8.95	-8.15	-8.99	-6.90	-5.72	-4.90	-4.52	-6.36	-17.48	-8.97	-16.23	-7.32
135	-9.81	-6.92	-5.55	-5.73	-3.80	-3.80	-4.16	-3.89	-6.82	-21.12	-8.74	-12.18	-5.78
150	-8.69	-5.77	-4.28	-3.89	-2.22	-3.13	-3.41	-2.52	-6.47	-16.87	-8.80	-9.52	-4.96
165	-8.19	-5.30	-3.81	-2.96	-1.71	-3.00	-2.87	-1.66	-6.13	-15.98	-9.16	-8.11	-4.97
180	-8.31	-5.64	-4.13	-2.86	-2.11	-3.47	-3.03	-1.66	-6.32	-16.81	-9.66	-7.39	-5.83
195	-9.15	-6.76	-5.33	-3.74	-3.22	-4.53	-4.05	-2.58	-7.31	-19.28	-9.63	-7.65	-7.46
210	-10.73	-8.43	-6.74	-5.70	-5.19	-5.47	-4.94	-3.90	-9.46	-22.33	-9.29	-9.13	-10.44
225	-13.29	-10.75	-9.71	-8.74	-8.45	-6.70	-4.27	-3.32	-9.45	-15.22	-8.77	-11.90	-15.11
240	-19.20	-14.54	-15.25	-10.91	-13.39	-10.44	-4.92	-2.32	-6.07	-9.71	-8.23	-15.90	-24.36
255	-40.03	-20.83	-26.43	-9.34	-11.10	-12.21	-9.01	-4.27	-4.35	-7.26	-7.17	-18.85	-16.36
270	-18.64	-19.65	-18.83	-8.17	-9.42	-8.17	-8.32	-11.81	-5.97	-8.12	-6.82	-19.17	-11.98
285	-12.92	-16.64	-14.39	-7.64	-10.27	-7.73	-4.54	-10.78	-12.24	-12.41	-7.33	-14.18	-9.30
300	-9.77	-15.11	-13.31	-7.37	-10.77	-8.60	-4.21	-5.81	-21.11	-17.66	-8.70	-11.21	-7.49
315	-8.04	-14.38	-13.89	-7.54	-10.24	-7.41	-4.79	-4.85	-11.07	-10.99	-11.21	-8.48	-6.39
330	-7.21	-14.08	-15.18	-8.27	-10.23	-5.85	-4.36	-5.31	-8.05	-7.21	-14.29	-6.74	-5.74
345	-6.60	-14.11	-16.11	-8.94	-10.28	-5.47	-3.60	-5.98	-7.26	-5.80	-15.47	-6.16	-5.46
360	-6.71	-15.05	-16.20	-9.04	-9.70	-5.91	-3.52	-6.83	-7.13	-6.04	-16.08	-6.62	-5.83
Avg.	-10.34	-10.74	-9.78	-7.21	-7.24	-6.76	-5.20	-5.13	-7.24	-10.35	-9.92	-10.51	-8.37

Peak Value	-1.656	Minimum Value	-40.035

Vertical

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-23.01	-25.59	-19.88	-19.97	-24.06	-24.90	-17.02	-17.66	-16.65	-16.22	-27.71	-11.37	-11.80
15	-16.77	-18.74	-16.57	-16.94	-15.49	-19.40	-17.12	-11.60	-9.97	-10.24	-30.86	-8.67	-9.44
30	-12.49	-15.24	-13.55	-15.04	-11.39	-14.29	-15.55	-7.66	-5.97	-7.83	-20.99	-7.52	-7.85
45	-9.41	-12.46	-11.26	-12.69	-9.69	-9.76	-9.24	-5.17	-3.54	-6.80	-13.64	-7.59	-6.97
60	-8.10	-9.75	-9.06	-9.42	-7.97	-5.44	-5.09	-4.39	-2.97	-5.97	-8.96	-8.53	-6.57
75	-7.29	-8.02	-6.55	-6.76	-5.91	-2.71	-3.20	-3.97	-2.89	-4.91	-6.09	-10.39	-6.81
90	-6.90	-6.41	-5.19	-5.10	-3.99	-1.53	-2.81	-3.83	-2.89	-3.96	-4.37	-12.53	-7.77
105	-7.13	-5.63	-4.55	-4.67	-3.41	-1.69	-3.27	-3.97	-3.28	-3.68	-3.89	-12.82	-9.56
120	-8.06	-5.81	-5.05	-5.38	-4.09	-2.69	-4.41	-5.08	-4.47	-4.60	-4.83	-12.66	-12.27
135	-9.83	-7.00	-6.73	-7.29	-5.74	-4.72	-7.18	-7.95	-6.83	-7.00	-7.19	-13.88	-16.78
150	-12.72	-9.70	-10.55	-11.78	-9.19	-9.29	-12.72	-13.44	-11.92	-11.89	-13.69	-17.97	-28.85
165	-17.69	-16.97	-19.22	-19.17	-18.37	-20.78	-36.48	-25.91	-20.57	-43.06	-26.38	-20.32	-23.09
180	-25.50	-23.27	-19.47	-17.71	-18.02	-12.37	-14.01	-14.14	-16.42	-10.42	-11.54	-13.59	-13.14
195	-17.60	-12.76	-10.72	-10.36	-9.49	-7.16	-8.03	-7.54	-8.26	-6.74	-6.16	-11.74	-9.77
210	-12.75	-9.35	-6.71	-7.01	-5.76	-4.32	-5.50	-5.38	-4.48	-4.20	-3.41	-11.10	-7.54
225	-9.85	-7.05	-4.57	-5.23	-4.13	-2.87	-4.30	-4.63	-2.98	-2.84	-2.05	-12.20	-5.80
240	-7.79	-6.03	-4.27	-4.48	-3.46	-1.91	-3.61	-4.98	-3.24	-2.45	-1.79	-15.43	-4.44
255	-7.12	-5.91	-5.22	-5.13	-4.23	-1.71	-2.59	-5.32	-4.39	-3.47	-2.71	-15.64	-3.94
270	-6.93	-6.50	-7.17	-6.83	-5.84	-3.61	-2.42	-4.47	-5.08	-4.69	-4.64	-12.12	-4.32
285	-7.28	-7.57	-10.34	-10.37	-8.11	-6.98	-4.42	-3.98	-4.78	-6.56	-7.42	-10.73	-5.79
300	-8.53	-9.26	-15.13	-13.64	-9.50	-11.83	-8.99	-4.91	-4.65	-8.13	-11.33	-11.66	-8.53
315	-11.06	-12.11	-23.39	-17.74	-11.15	-17.13	-17.20	-6.81	-6.04	-11.04	-14.23	-16.33	-13.00
330	-15.60	-15.59	-44.65	-23.43	-14.15	-23.45	-25.27	-9.93	-9.70	-16.87	-16.87	-26.19	-23.50
345	-28.03	-23.46	-26.04	-48.30	-20.39	-26.90	-19.17	-16.56	-18.28	-31.94	-20.77	-20.45	-19.57
360	-23.01	-25.59	-19.88	-19.97	-24.06	-24.90	-17.02	-17.66	-16.65	-16.22	-27.71	-11.37	-11.80
Avg.	-10.10	-9.29	-8.63	-8.82	-7.41	-5.82	-6.57	-6.55	-5.73	-6.54	-6.97	-12.01	-8.50

Peak Value	-1.532	Minimum Value	-48.300

RHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-9.43	-20.49	-25.73	-11.51	-13.59	-8.72	-5.60	-12.64	-13.54	-11.58	-20.94	-8.60	-7.93
15	-9.86	-24.67	-28.90	-10.95	-13.43	-10.39	-6.70	-14.50	-22.82	-16.02	-18.15	-8.29	-7.62
30	-10.23	-27.38	-25.13	-11.97	-14.44	-16.18	-11.12	-17.60	-14.16	-13.26	-13.95	-9.11	-8.47
45	-10.41	-24.44	-20.85	-16.40	-19.52	-23.87	-20.31	-16.86	-6.57	-8.08	-9.67	-11.42	-9.22
60	-10.92	-18.48	-15.58	-20.55	-16.12	-9.47	-10.56	-10.25	-2.48	-4.70	-6.74	-13.74	-9.81
75	-11.12	-15.65	-10.91	-11.13	-9.27	-4.76	-5.80	-5.34	-0.50	-2.83	-5.16	-14.69	-9.88
90	-10.81	-12.62	-8.37	-6.85	-5.32	-2.61	-2.90	-2.34	0.05	-2.46	-4.34	-14.98	-9.78
105	-10.49	-10.36	-6.46	-4.88	-3.80	-1.63	-1.72	-1.21	-0.84	-3.71	-4.51	-14.78	-9.17
120	-10.52	-9.16	-5.96	-4.58	-2.96	-1.35	-1.73	-1.80	-2.47	-5.85	-5.16	-14.80	-8.80
135	-10.78	-8.57	-6.01	-4.76	-2.33	-1.52	-3.01	-3.01	-4.82	-10.08	-6.54	-14.54	-8.29
150	-11.33	-8.88	-6.60	-5.55	-2.49	-3.00	-4.65	-3.81	-7.73	-18.10	-8.91	-13.92	-7.90
165	-11.83	-9.46	-7.22	-6.10	-3.64	-4.98	-5.76	-4.16	-8.63	-18.63	-11.24	-13.32	-7.69
180	-12.59	-9.57	-7.78	-7.31	-5.74	-7.87	-7.03	-4.68	-8.47	-10.24	-12.73	-12.04	-7.47
195	-12.73	-9.06	-8.21	-9.37	-9.30	-11.54	-9.70	-6.79	-8.20	-8.32	-11.34	-11.43	-7.75
210	-12.37	-8.52	-7.72	-12.48	-14.18	-17.05	-17.78	-12.08	-9.02	-7.59	-9.73	-11.82	-8.04
225	-11.73	-7.70	-7.46	-16.04	-13.90	-14.76	-22.83	-21.23	-11.53	-8.23	-8.88	-13.57	-8.09
240	-10.80	-7.47	-7.96	-10.76	-9.04	-8.79	-15.66	-10.68	-13.05	-9.13	-9.52	-15.36	-7.92
255	-10.33	-7.59	-8.98	-7.26	-6.32	-4.46	-8.50	-13.79	-14.19	-10.25	-13.13	-14.29	-8.03
270	-9.50	-7.92	-10.19	-6.14	-5.53	-3.43	-3.38	-9.90	-19.11	-12.45	-18.67	-12.34	-8.12
285	-8.83	-8.61	-11.23	-6.36	-6.17	-4.65	-1.96	-4.08	-12.46	-15.53	-24.04	-11.17	-9.17
300	-8.47	-9.77	-12.85	-6.99	-7.36	-7.06	-3.31	-2.34	-6.82	-11.34	-20.48	-11.27	-10.17
315	-8.48	-11.46	-15.25	-8.28	-8.93	-8.27	-5.96	-3.09	-5.22	-8.70	-21.83	-11.21	-10.39
330	-8.79	-13.13	-18.47	-10.34	-11.04	-8.03	-6.77	-5.46	-5.86	-7.94	-24.08	-9.91	-9.75
345	-9.12	-15.57	-21.99	-11.95	-12.99	-7.78	-5.81	-9.13	-8.23	-8.39	-22.91	-9.42	-8.99
360	-9.43	-20.49	-25.73	-11.51	-13.59	-8.72	-5.60	-12.64	-13.54	-11.58	-20.94	-8.60	-7.93
Avg.	-10.48	-10.64	-9.77	-8.30	-7.11	-5.89	-5.73	-5.83	-5.94	-8.05	-9.66	-11.97	-8.77

Peak Value	0.051	Minimum Value	-28.902

LHCP

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-9.81	-16.01	-15.01	-11.93	-11.72	-9.02	-7.23	-7.69	-7.67	-6.92	-17.38	-8.15	-7.79
15	-10.02	-14.28	-13.72	-10.76	-9.96	-9.02	-7.14	-6.55	-6.04	-6.28	-18.89	-8.04	-7.95
30	-10.12	-12.27	-11.94	-8.62	-8.26	-8.05	-6.76	-5.06	-5.49	-7.53	-20.96	-7.95	-8.31
45	-9.52	-10.59	-10.30	-6.83	-7.46	-7.34	-5.09	-3.92	-6.44	-11.50	-28.82	-8.50	-8.57
60	-9.38	-9.07	-9.28	-5.99	-7.32	-6.44	-4.48	-5.04	-11.84	-17.54	-23.91	-9.73	-9.04
75	-9.24	-8.03	-8.33	-6.52	-7.73	-6.08	-5.35	-8.61	-19.32	-16.16	-14.58	-11.91	-9.64
90	-8.96	-6.87	-7.92	-8.50	-8.87	-7.00	-9.52	-15.00	-17.88	-13.47	-10.12	-14.64	-10.13
105	-8.71	-6.01	-7.31	-11.81	-9.86	-8.98	-16.49	-18.85	-20.19	-10.84	-7.71	-15.16	-9.87
120	-8.68	-5.71	-6.72	-11.68	-10.54	-11.30	-18.56	-25.25	-16.58	-9.80	-8.21	-13.48	-9.48
135	-9.03	-5.78	-6.19	-9.24	-10.00	-13.05	-11.22	-11.65	-10.64	-9.62	-9.87	-11.79	-8.63
150	-9.38	-6.15	-6.14	-7.07	-8.05	-9.87	-7.76	-7.23	-9.17	-11.56	-13.39	-10.60	-8.00
165	-9.87	-6.95	-6.23	-5.65	-5.91	-7.18	-5.99	-5.21	-9.39	-19.37	-13.14	-9.31	-8.15
180	-10.21	-7.76	-6.36	-4.57	-4.38	-4.63	-4.70	-4.19	-9.43	-17.69	-9.03	-7.87	-8.83
195	-10.67	-8.55	-6.45	-3.98	-3.27	-3.23	-3.53	-2.85	-7.36	-11.18	-5.57	-7.78	-9.32
210	-10.98	-9.24	-5.92	-3.85	-2.76	-1.98	-2.32	-1.97	-4.62	-6.73	-3.30	-8.73	-9.62
225	-10.79	-9.52	-5.58	-3.89	-3.11	-1.57	-1.30	-0.96	-2.62	-3.98	-2.03	-10.92	-8.58
240	-10.22	-9.77	-6.13	-4.52	-4.30	-2.20	-1.37	-0.87	-1.72	-2.57	-1.55	-15.98	-6.95
255	-9.94	-10.43	-7.54	-6.29	-6.54	-4.24	-2.71	-2.03	-1.59	-2.65	-1.68	-25.07	-5.70
270	-9.82	-11.34	-9.60	-9.32	-10.22	-8.70	-5.82	-4.94	-2.59	-3.60	-2.69	-18.23	-5.55
285	-9.70	-12.28	-12.70	-14.89	-21.74	-15.76	-11.16	-10.34	-4.75	-6.02	-4.41	-13.34	-5.85
300	-9.85	-13.56	-15.95	-15.79	-19.02	-21.67	-14.15	-27.80	-8.48	-10.12	-7.00	-11.59	-6.53
315	-10.30	-15.76	-18.08	-13.53	-13.62	-12.86	-10.11	-13.50	-15.76	-16.27	-9.71	-10.49	-7.26
330	-10.70	-17.41	-17.93	-12.14	-12.63	-9.71	-7.98	-9.51	-23.31	-13.00	-12.68	-9.52	-7.82
345	-10.10	-18.08	-16.85	-11.96	-12.78	-9.25	-7.31	-8.17	-12.79	-9.25	-15.00	-8.63	-7.71
360	-9.81	-16.01	-15.01	-11.93	-11.72	-9.02	-7.23	-7.69	-7.67	-6.92	-17.38	-8.15	-7.79
Avg.	-9.97	-9.36	-8.63	-7.61	-7.55	-6.67	-5.93	-5.74	-6.95	-8.04	-7.11	-10.54	-8.11

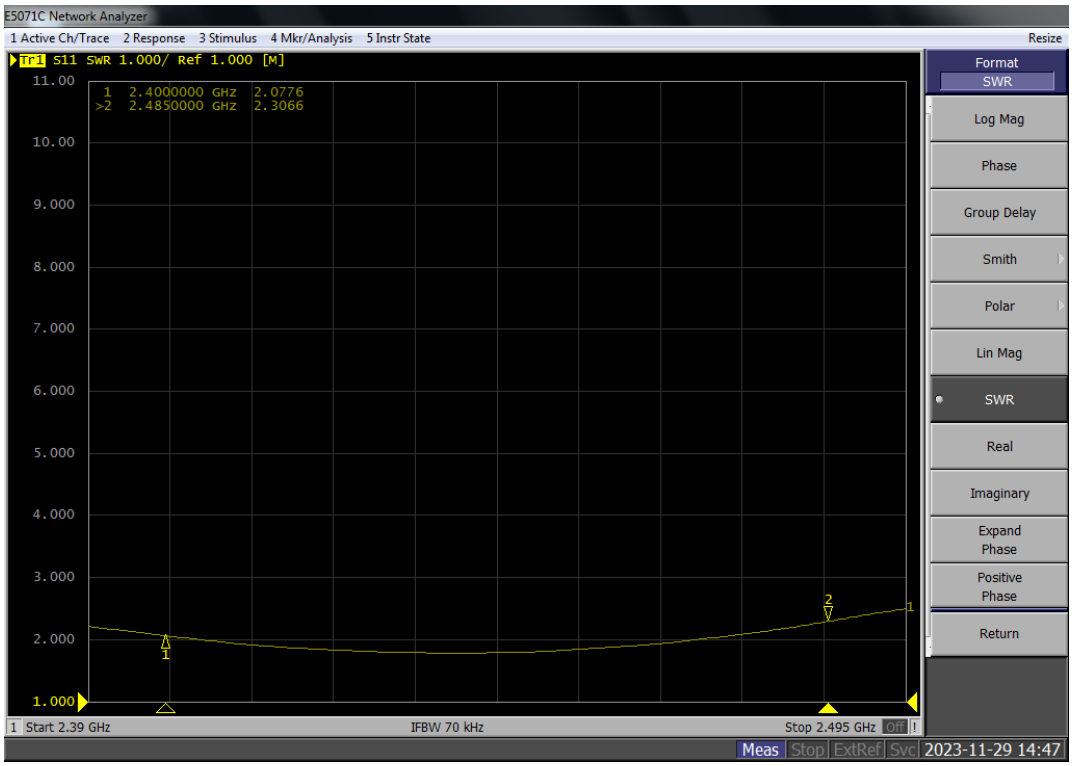
Peak Value	-0.872	Minimum Value	-28.822

AR

Φ [deg]	Θ [deg]												
	0	15	30	45	60	75	90	105	120	135	150	165	180
0	33.33	11.95	5.20	32.18	19.40	35.09	20.58	11.13	9.75	11.63	13.88	31.79	41.79
15	41.05	5.42	3.06	39.01	14.10	22.11	32.06	7.37	2.53	5.88	27.36	36.71	34.37
30	44.39	3.08	3.86	14.42	9.33	7.20	12.20	4.18	6.72	9.94	8.34	23.47	40.41
45	25.80	3.58	5.32	6.00	4.43	2.61	3.04	3.98	42.41	14.25	1.92	15.59	28.44
60	21.10	6.12	9.17	3.29	6.61	15.25	9.47	10.71	6.16	4.03	2.42	12.89	27.13
75	19.36	7.69	16.63	11.71	21.09	22.40	31.74	14.60	2.00	3.80	6.11	15.98	37.04
90	19.46	9.91	31.68	20.46	13.91	12.13	8.79	4.12	2.22	5.02	9.87	34.20	33.96
105	19.85	12.21	26.20	8.44	9.49	7.97	3.21	2.29	1.88	8.21	14.79	33.36	27.85
120	19.55	14.15	27.19	8.25	7.74	5.73	2.52	1.17	3.47	13.01	15.20	22.40	28.13
135	19.95	15.97	39.78	11.96	7.64	4.72	7.13	6.74	9.83	31.46	14.46	16.06	34.14
150	19.04	16.15	31.61	21.15	10.19	8.50	15.03	14.22	21.69	8.87	11.97	14.48	45.38
165	18.97	16.87	24.92	31.68	17.74	17.99	37.69	24.38	27.23	27.46	19.24	12.89	31.65
180	17.32	19.67	21.77	16.13	22.13	14.69	17.48	30.99	25.21	7.87	13.55	12.55	22.14
195	18.58	30.72	19.92	10.45	9.54	7.04	9.35	13.03	26.34	15.75	9.89	13.67	20.93
210	21.99	27.64	19.74	6.76	4.78	3.10	2.96	5.61	12.12	26.16	9.02	15.11	20.86
225	25.35	19.62	19.32	4.38	5.16	3.86	1.46	1.69	6.52	12.39	8.51	16.40	31.00
240	29.63	17.63	19.57	9.26	11.48	8.82	3.39	5.82	4.84	8.86	7.35	28.95	25.01
255	33.17	15.79	21.63	25.02	37.69	37.64	9.87	4.59	4.15	7.72	4.76	5.17	17.51
270	34.54	14.22	29.39	14.86	11.59	10.63	17.10	11.12	2.61	6.56	2.79	9.71	16.65
285	25.97	13.62	21.48	6.84	2.92	4.96	6.29	9.23	7.60	6.04	1.82	18.14	14.48
300	22.04	13.36	15.06	6.61	4.65	3.27	5.13	0.93	20.41	23.09	3.74	34.57	13.70
315	19.66	12.30	15.82	10.65	11.59	11.75	12.60	5.41	5.32	7.74	4.40	27.65	14.98
330	19.21	12.34	30.16	19.75	20.77	20.35	23.13	12.80	2.34	10.96	4.80	32.96	19.16
345	25.03	16.88	10.84	63.79	38.19	21.44	21.32	25.15	11.82	26.16	7.41	26.82	22.66
360	33.33	11.95	5.20	32.18	19.40	35.09	20.58	11.13	9.75	11.63	13.88	31.79	41.79
Avg.	33.10	19.84	28.20	49.83	27.22	25.95	25.87	19.11	28.83	21.05	15.35	28.68	35.04

Peak Value	63.785	Minimum Value	0.928

VSWR


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 2.4000000 GHz 2.0776
>2 2.4850000 GHz 2.3066
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 2.39 GHz
IFBW 70 kHz
Stop 2.495 GHz
Format
SWR
Log Mag
Phase
Group Delay
Smith
Polar
Lin Mag
SWR
Real
Imaginary
Expand Phase
Positive Phase
Return
Meas
Stop
ExtRef
Svc
2023-11-29 14:47

Antenna Gain

Normal Veiw

- Data -

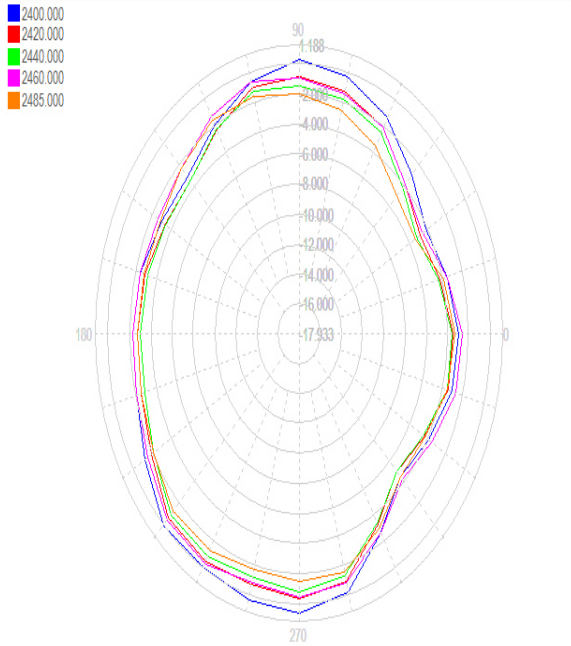
Capture

Frequency	Sum					H(θ=90)				E1(Φ=90)				E2(Φ=0)			
	θ[Deg]	Φ[Deg]	Max[dBi]	Avg[dBi]	Eff[%]	Φ[Deg]	Max[dBi]	Avg[dBi]	BW[Deg]	θ[Deg]	Max[dBi]	Avg[dBi]	BW[Deg]	θ[Deg]	Max[dBi]	Avg[dBi]	BW[Deg]
2.400.000	75.0	105.0	1.188	-2.356	58.133	270.0	0.586	-1.605	129.73	120.0	1.034	-1.564	92.67	-60.0	-1.140	-4.225	126.58
2.420.000	75.0	105.0	0.421	-3.125	48.699	270.0	-0.325	-2.263	147.47	120.0	0.331	-2.456	81.51	-60.0	-1.668	-4.930	117.36
2.440.000	120.0	90.0	0.124	-3.527	44.393	240.0	-0.757	-2.563	0.00	120.0	0.124	-2.957	79.37	-60.0	-1.915	-5.266	111.32
2.460.000	120.0	90.0	0.877	-2.991	50.228	240.0	-0.295	-1.919	0.00	120.0	0.877	-2.539	78.72	-60.0	-1.252	-4.666	105.85
2.485.000	120.0	90.0	0.120	-3.855	41.163	240.0	-1.206	-2.641	0.00	120.0	0.120	-3.590	79.28	-105.0	-1.418	-5.356	88.98

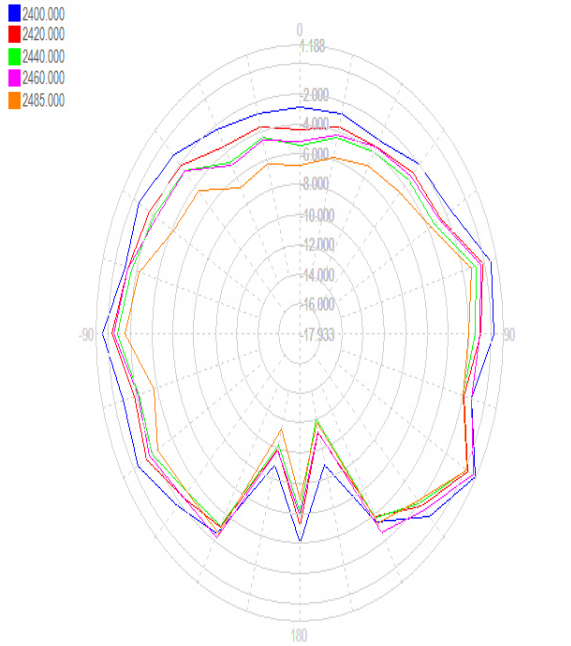
Multiple Cut

H / E1 / E2 Plane

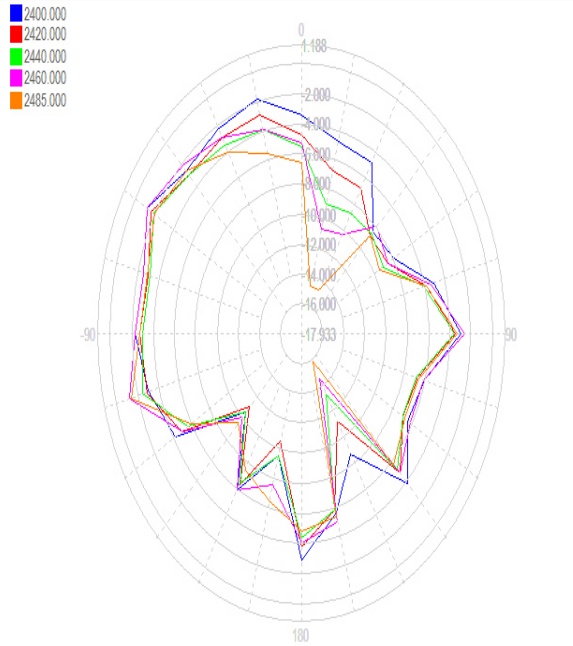
- H Plane Polar/Line Chart -



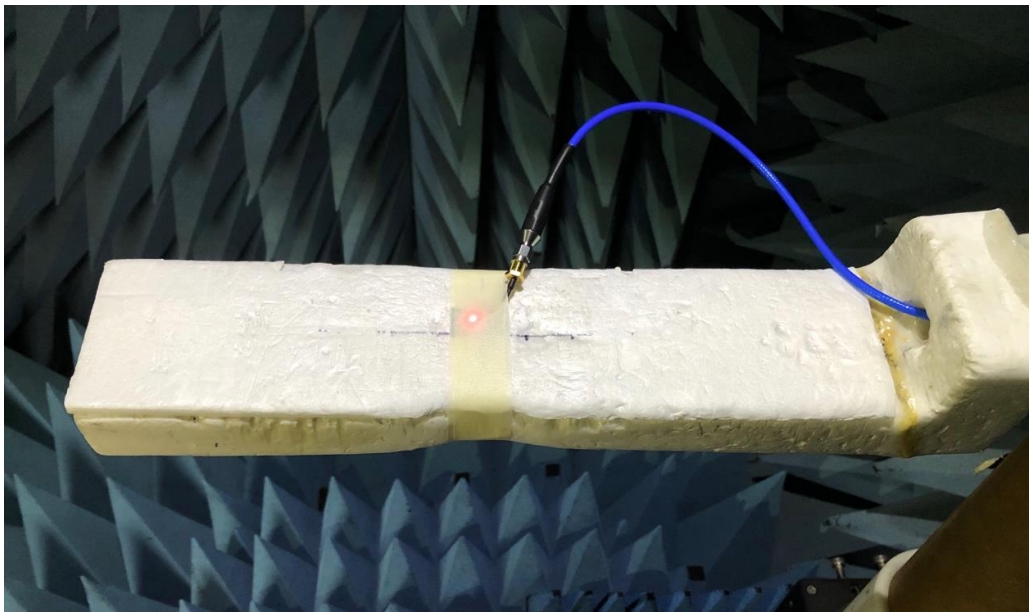
- E1 Plane Polar/Line Chart -



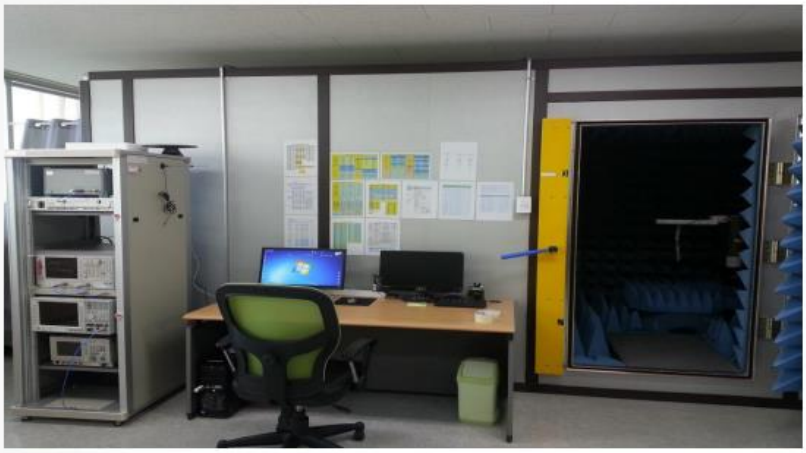
- E2 Plane Polar/Line Chart -

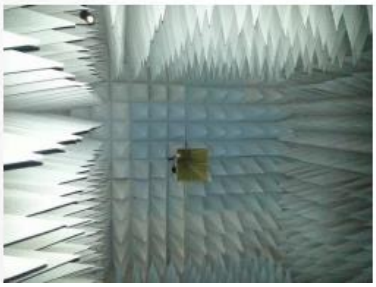


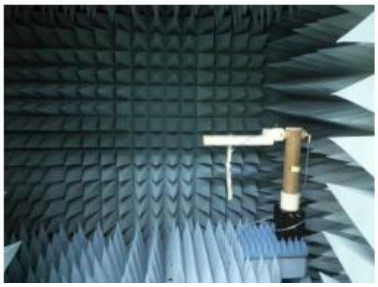
KTM Technology Co., Ltd



Radiation Pattern Measurement System(3D)- KTM







①Chamber Type : Rectangular
②Chamber Size
* 2.5m x 2.5m x 5m
③Frequency Range :
* 400MHz~6GHz
④Quiet Zone : 3M @ 800MHz
⑤Absorber
Broadband Pyramidal / NRL Fire Rated F. Chamber Performance

Active Test SW

- Antenna Passive
- E5515C Active
- LTE 8820C
- BT T3000A
- Wi-Max
- Wi-Fi 8860C a,b,g
- 400MHz TRP
- LORA TRP
- NB-IOT TRP