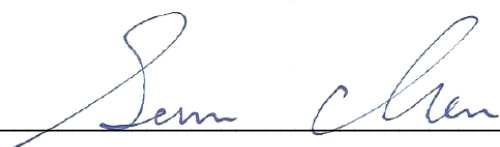


Antenna Composite Gain Test Report

FCC ID	O2U-FW7881
Equipment	CBN 5G NR Fixed Wireless Router
Brand Name	CBN
Model Name	FW7881
Applicant	Compal Broadband Networks, Inc. 13F-1, No.1 Taiyuan 1st ST. Zhubei City, Hsinchu County 30288, Taiwan
Manufacturer	Compal Broadband Networks, Inc. 13F-1, No.1 Taiyuan 1st ST. Zhubei City, Hsinchu County 30288, Taiwan
Sample Received	Sep. 12, 2022
Start Test Date	Sep. 22, 2022
Final Test Date	Sep. 22, 2022



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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History of this test report

[illegible]



1. Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant. Type	Connector	Modes of Operation
Ant1	2	Lynwave	ALX21P-221AA1-A	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~3
Ant2	1	Lynwave	ALX21P-221AA1-A	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~3
Ant3	3	Lynwave	ALX21P-221AA2-A	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~3
Ant4	4	Lynwave	ALX21P-221AA2-A	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~3

Note:

2.4GHz and 5GHz Operation Mode (4TX/4RX)

Ant1~4 can be used as transmitting/receiving antenna.

Ant1~4 could transmit/receive simultaneously.

2. Test Frequency

The listed frequency of each bands are selected to represent each frequency bands

Band [MHz]	Test Frequency [MHz]
2400-2483.5	2450
5150-5250	5200
5250-5350	5300
5470-5725	5600
5725-5850	5785

3. Testing Location

Testing Location		
Sporton International Inc. Hsinhua Laboratory		
☒	HWA YA	ADD : No.13-1 & 14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan R.O.C.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	Rex Liao	23.5-24.5 / 45-55	Sep. 22, 2022

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

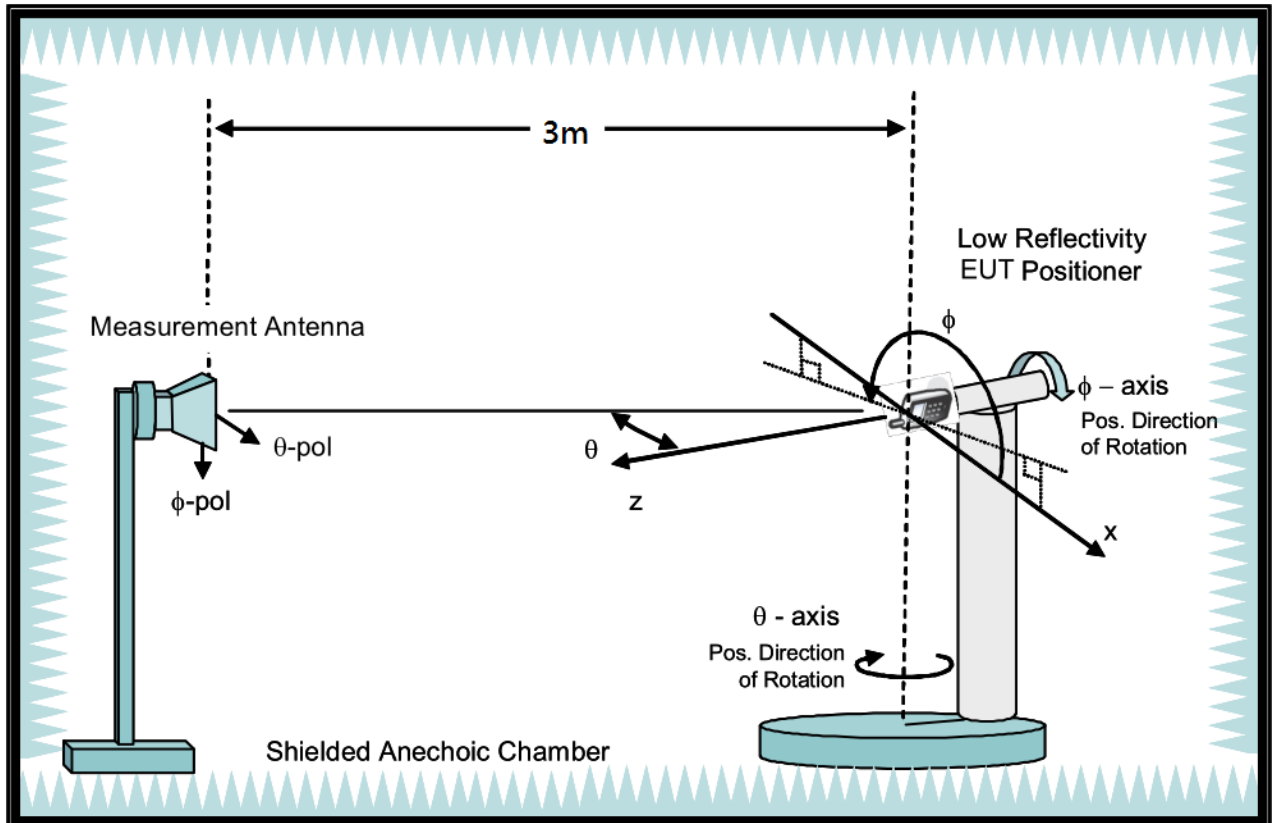
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Dual Polarization Horn antenna

Turntable: Multi-axis positioner (Theta and Phi angle).

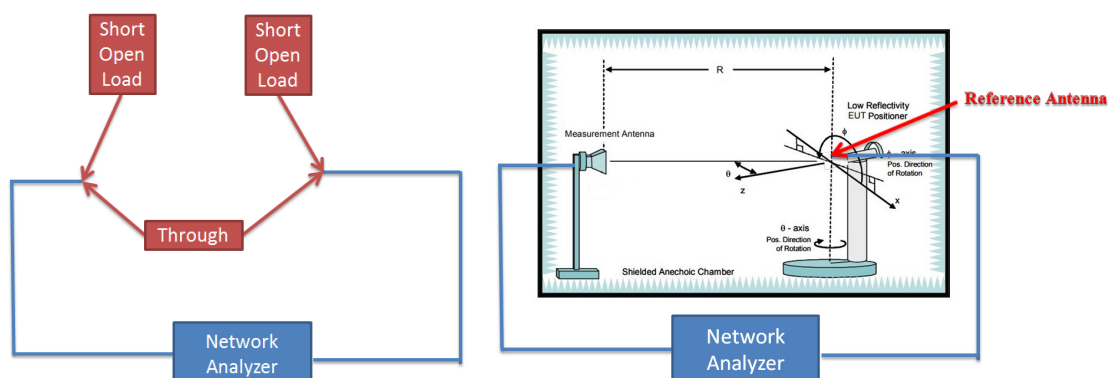
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



5. Reference Calibration

Connected cables to VNA calibration kit and use network analyzer internal function to do calibration. Do short, open and load to each side. Then connect through to both side and calibrate G values. The cable loss is calibrated and set inside the network analyzer.

Measurement Antenna is connected to port1 of Network analyzer and reference antenna connected to port 2 of Network Analyzer. Record G values and used with reference antenna gain to calculate gain factor.



Frequency (MHz)	2400	2450	2500	5150	5200	5300	5600	5750	5800	5900	6000	6500	7000	7200
G(theta) reading (dB)	-33.55	-33.27	-32.92	-32.91	-32.73	-32.02	-32.67	-32.82	-32.98	-33.18	-32.8	-33.92	-34.62	-35.57
G(phi) reading (dB)	-33.15	-32.7	-32.41	-32.61	-32.43	-31.72	-32.37	-32.51	-32.52	-32.66	-32.5	-33.62	-34.32	-35.48
Reference gain (dBi)	10.1	10.4	10.7	12.5	12.7	13.5	13.4	13.3	13.3	13.2	13.4	12.5	12.1	11.4
Factor(theta) (dB)	43.65	43.67	43.62	45.41	45.43	45.52	46.07	46.12	46.28	46.38	46.2	46.42	46.72	46.97
Factor(phi) (dB)	43.25	43.1	43.11	45.11	45.13	45.22	45.77	45.81	45.82	45.86	45.9	46.12	46.42	46.88

Note:

$$G \text{ reading (dB)} = 20 \cdot \log(V_2/V_1) = 10 \cdot \log(P_2/P_1)$$

V2 is the voltage of VNA port2 is measured, V1 is the voltage of VNA port1 is the reference source.

P2 is the power of VNA port2 is measured, P1 is the power of VNA port1 is the reference source.

$$\text{Factor} = \text{gain factor} + \text{power gain conversion} = (\text{Reference antenna gain}) - (G \text{ reading})$$

6. Test Method

EUT set on multi-axis positioner and adjust EUT's physical center to measurement reference center. Measurement antenna set at phi polarization and 1.5 meter height. Port 1 of Network analyzer connect to antenna 1 of EUT. Record G value every 7.5 degree from 0 to 352.5 degree on Phi angle and 0 to 180 on theta angle of multi-axis positioner. Then set measurement antenna to theta polarization and repeat process. Repeat process to each antenna of EUT.

DG steps:

1. Each Phi and Theta polarization antenna gain are measured for all test angles.
2. Composite Phi and Theta antenna gain are computed, using formula in KDB662911 D01 d) (i) and e) (ii), for all angles.
3. Composite antenna gain are examined for all angles to determine max gain and Phi/Theta position. Max gain and phi/theta position are listed in section 7 tables.

Note: Antenna gain = G reading + factor, The factor of chapter five includes reference antenna gain factor and power gain conversion.

7. Measured Values and Calculation of Maximum Gain Positions

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	3.18	-8.11	-4.37	-9.66	-3.64
Ant. 2 (dBi)	3.42	-4.97	1.37	4.99	4.79
Ant. 3 (dBi)	-5.85	0.35	3.01	-0.24	-7.59
Ant. 4 (dBi)	-0.54	5.27	-5.12	1.01	2.17
DG [1SS] (dBi)	6.8	5.65	5.45	6.45	6.22
Polarization	Theta	Phi	Theta	Theta	Theta
$\Theta(^{\circ})$	37.5	120	75	60	67.5
$\Phi(^{\circ})$	105	15	337.5	22.5	37.5

Note: The DG 1SS max value position is the maximum value of section 11 table DG 1SS Result.

DG_1SS max value position calculation

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(3.18/20)}$	$10^{(-8.11/20)}$	$10^{(-4.37/20)}$	$10^{(-9.66/20)}$	$10^{(-3.64/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(3.42/20)}$	$10^{(-4.97/20)}$	$10^{(1.37/20)}$	$10^{(4.99/20)}$	$10^{(4.79/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(-5.85/20)}$	$10^{(0.35/20)}$	$10^{(3.01/20)}$	$10^{(-0.24/20)}$	$10^{(-7.59/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-0.54/20)}$	$10^{(5.27/20)}$	$10^{(-5.12/20)}$	$10^{(1.01/20)}$	$10^{(2.17/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.442	0.393	0.605	0.329	0.658
Ant. 2 [$10^{(G/20)}$] value	1.483	0.564	1.171	1.776	1.736
Ant. 3 [$10^{(G/20)}$] value	0.51	1.041	1.414	0.973	0.417
Ant. 4 [$10^{(G/20)}$] value	0.94	1.834	0.555	1.123	1.284
Sum All Antenna [Amax]	4.374	3.833	3.744	4.201	4.095
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	6.8	5.65	5.45	6.45	6.22

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

Directional gain (1SS) = $10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$

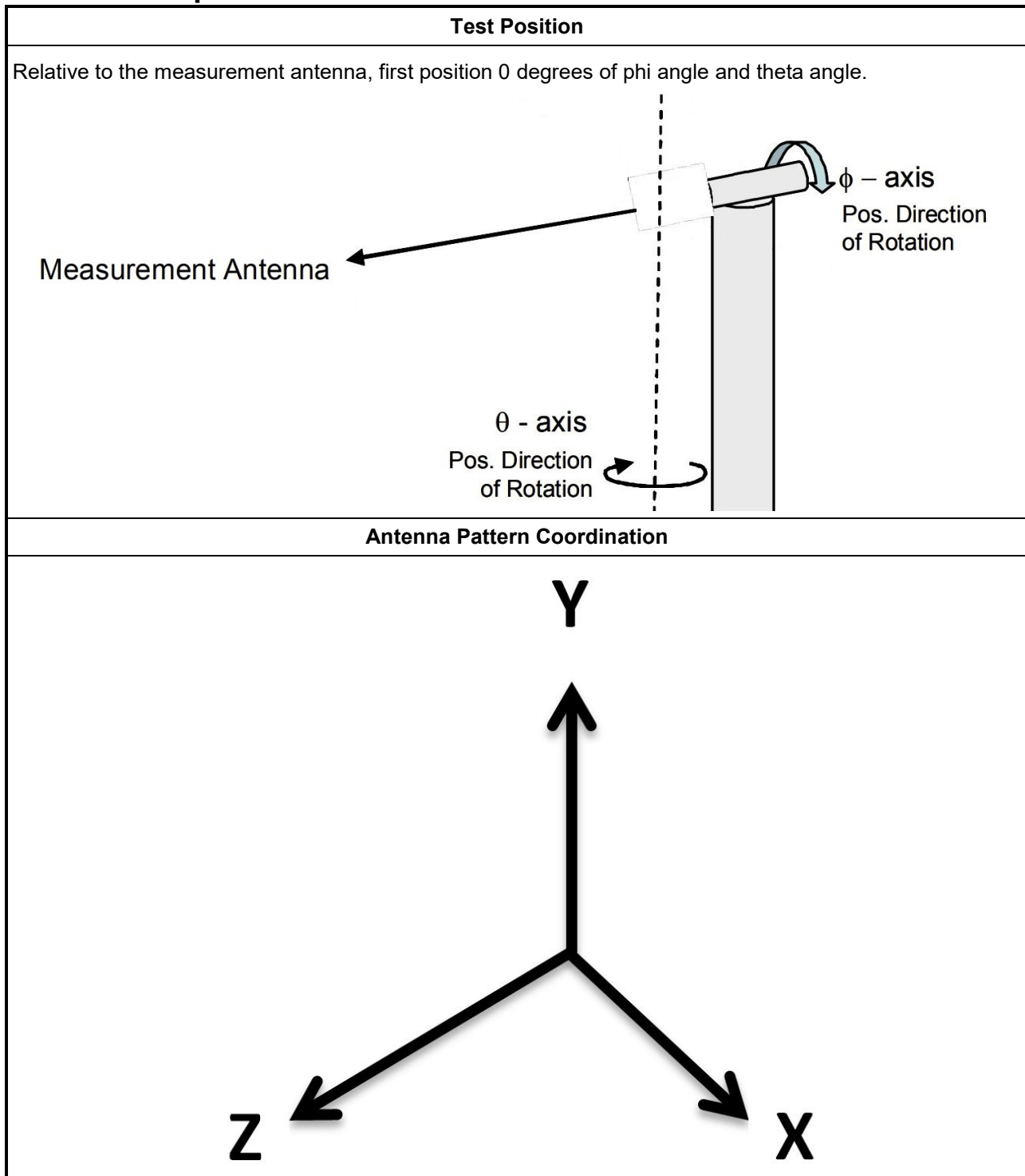
8. Summary of Test Result

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	3.78	3.44	2.93	3.89	4.93
Ant. 2 Max Gain (dBi)	3.54	4.09	4.35	4.99	5.82
Ant. 3 Max Gain (dBi)	2.96	4.48	3.51	2.81	3.46
Ant. 4 Max Gain (dBi)	3.55	5.29	4.52	4.63	5.75
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/45/120	Theta/60/150	Theta/52.5/150	Theta/112.5/52.5	Theta/112.5/45
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/112.5	Theta/112.5/135	Theta/112.5/135	Theta/60/22.5	Theta/112.5/135
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/270	Theta/75/330	Theta/82.5/337.5	Theta/60/0	Theta/82.5/285
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/37.5/52.5	Phi/120/7.5	Phi/120/15	Phi/112.5/15	Phi/127.5/7.5
Max Gain (dBi)	3.78	5.29	4.52	4.99	5.82
DG [1SS] (dBi)	6.8	5.65	5.45	6.45	6.22
DG [2SS] (dBi)	3.79	5.29	4.52	4.99	5.82
DG [4SS] (dBi)	3.78	5.29	4.52	4.99	5.82

Note:

1. Antenna max gain is the max value of each individual antenna through all measurement angles.
2. The max gain is the max value of all antennas.
3. Directional Gain (2SS) = Directional Gain (1SS) – 3.01dB. If directional gain is less than max gain, use max gain as directional gain.
4. Directional Gain (4SS) = Directional Gain (1SS) – 6.02dB. If directional gain is less than max gain, use max gain as directional gain.

9. Test Setup



Note:

Photos of Test Position: Please refer to the test photos in the appendix.

**10. Test Equipment and Calibration Data**

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1543	1GHz~18GHz	May 31, 2022	May 30, 2023
Dual Polarization Horn Antenna	Sporton	S0209DP	S0209DP-001	2GHz~9GHz	N.C.R.	N.C.R.
ENA Series Network Analyzer	AGILENT	E5071C	MY46419201	100kHz~8.5GHz	Feb. 21, 2022	Feb. 20, 2023
VNA Calibration Kit	TS RF	TS85033E-F	-	DC~9GHz	N.C.R.	N.C.R.
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	N.C.R.	N.C.R.
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	N.C.R.	N.C.R.

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.



11. Test Results

Please refer to the appendix.

Appendix A – Radiated Composite Gain of 2.4GHz, 5GHz U-NII 1~U-NII 3.....	Page 13
Appendix B – Antenna Pattern of 2.4GHz, 5GHz U-NII 1~U-NII 3.....	Page 27
Appendix C – Test Photos.....	Page 34



-

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	3.78	3.44	2.93	3.89	4.93
Ant. 2 Max Gain (dBi)	3.54	4.09	4.35	4.99	5.82
Ant. 3 Max Gain (dBi)	2.96	4.48	3.51	2.81	3.46
Ant. 4 Max Gain (dBi)	3.55	5.29	4.52	4.63	5.75
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/45/120	Theta/60/150	Theta/52.5/150	Theta/112.5/52.5	Theta/112.5/45
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/37.5/112.5	Theta/112.5/135	Theta/112.5/135	Theta/60/22.5	Theta/112.5/135
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/75/270	Theta/75/330	Theta/82.5/337.5	Theta/60/0	Theta/82.5/285
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/37.5/52.5	Phi/120/7.5	Phi/120/15	Phi/112.5/15	Phi/127.5/7.5
Max Gain (dBi)	3.78	5.29	4.52	4.99	5.82
DG [1SS] (dBi)	6.8	5.65	5.45	6.45	6.22
DG [2SS] (dBi)	3.79	5.29	4.52	4.99	5.82
DG [4SS] (dBi)	3.78	5.29	4.52	4.99	5.82



Radiated Composite Gain Data

Appendix A

DG 1SS Result

Freq(Hz)	2.45GPol.	PhiH-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	3.97/3.94	3.71/3.44	3.13/2.66	2.03/1.24	0.33/-0.59	-1.11/-0.96	-0.87/-0.25	0.18/0.36	0.48/0.15	1.82/2.61	3.24/3.76	4.13/4.38	4.48/4.45	4.28/4.05	3.66/3.12	1.82/0.36	-2.01/-3.86	-5.01/-3.76	-1.57/-0.91	-0.40/0.5	0.48/1.19	2.06/2.75	3.28/3.64	3.83/3.93
Θ(7.5°)	3.36/3.22	2.97/2.62	2.21/1.7	0.98/0.32	-0.67/-1.16	-0.97/-0.53	-0.13/0.34	0.71/0.81	1.09/1.82	2.71/3.5	4.13/4.56	4.84/4.95	4.96/4.85	4.59/4.18	3.62/2.89	1.97/0.85	-0.51/-1.53	-2.19/-2.33	-1.95/-1.41	-0.94/-0.49	0.48/0.55	1.28/1.94	2.52/2.91	3.19/3.35
Θ(15°)	2.63/2.52	2.23/1.81	1.31/0.86	0.4/-0.16	-0.78/-0.97	-0.75/-0.2	0.33/0.78	1.11/1.24	1.58/2.27	3.15/3.86	4.41/4.82	5.115/0.9	5.02/4.83	4.43/3.95	3.33/2.58	1.71/0.63	-0.54/-1.54	-2.13/-2.27	-2.06/-1.73	-1.48/-1.24	-0.96/-0.48	0.23/0.91	1.45/1.9	2.26/2.48
Θ(22.5°)	2.3/2.22	1.88/1.36	0.76/0.6	0.42/-0.13	-0.04/-0.04	0.14/0.55	1.1/1.38	1.66/1.61	1.74/2.31	3.01/3.65	4.12/4.49	4.66/4.69	4.59/4.36	3.97/3.47	2.84/2.15	1.37/0.56	-0.36/-1.07	-1.42/-1.44	-1.28/-1.16	-1.23/-1.41	-1.51/-1.33	-0.82/-0.2	0.48/1.14	1.72/0.3
Θ(30°)	2.37/2.23	1.78/0.99	0.88/0.92	1.11/1.27	1.38/1.47	1.72/2	2.33/2.59	2.69/2.58	2.33/2.24	2.75/3.22	3.57/3.82	3.93/7.8	3.65/3.33	2.92/4.44	1.99/1.56	1.04/0.46	-0.25/-0.08	-1.15/-1.34	-1.41/-2.13	-1.82/-2.18	-2.38/-2.12	-1.42/-0.57	0.23/1	1.69/2.11
Θ(37.5°)	2.33/1.86	0.84/0.09	-0.15/-0.1	0.41/1.09	1.55/2.02	2.77/3.2	2.43/3.53	3.53/3.23	1.73/1.29	2.85/3.31	3.39/3.34	3.27/3.11	2.79/2.31	1.65/1.03	0.65/0.55	0.35/0.07	-0.48/-1.21	-1.95/-2.63	-3.08/-3.73	-3.77/-3.6	-3.22/-1.75	-0.83/0.5	1.21/1.75	2.19/2.35
Θ(45°)	1.79/0.79	0.65/0.18	-0.30/-0.9	0.93/1.7	2.15/2.6	3.01/3.27	3.35/3.22	3.14/2.82	2.48/2.3	2.68/3.39	3.49/3.75	3.77/3.61	2.97/2.27	1.21/-0.03	-0.93/-0.71	-0.34/-0.26	-0.52/-1.07	-1.85/-2.78	-3.73/-4.5	-4.19/-3.39	-1.84/-0.42	0.77/1.53	1.93/2.22	2.41/2.19
Θ(52.5°)	1.91/1.41	0.78/0.86	0.59/0.79	1.65/2.15	2.65/2.92	3.3/3.24	2.96/2.47	2.13/1.39	1.06/0.72	1.18/1.59	2.23/2.78	3.19/3.36	3.16/2.56	1.65/0.35	-1.44/-1.89	-1.53/-1.52	-1.69/-2.12	-2.66/-3.26	-3.53/-3.97	-4.64/-3.32	-1.44/-0.13	0.74/1.35	1.56/1.8	2.12/1.03
Θ(60°)	1.92/1.78	1.45/1.1	0.75/0.86	1.84/2.76	3.23/3.43	3.61/3.55	3.06/2.62	1.86/1.43	0.77/-0.07	-0.47/0.32	1.27/2.18	2.93/1.4	3.22/2.99	2.58/1.58	0.61/-1.04	-2.09/-2.66	-3.7/-4.34	-4.18/-3.48	-2.83/-2.8	-2.99/-1.91	-0.64/0.33	0.99/1.27	1.28/1.41	1.55/1.68
Θ(67.5°)	0.69/0.72	0.57/0.46	0.37/0.67	1.43/2	2.24/2.44	2.52/2.36	2.11/1.48	1.14/-0.2	0.22/-0.98	-2.2/-1.35	0.13/1.32	2.34/2.76	2.69/2.49	2.04/1.38	0.37/-0.56	-1.28/-1.66	-1.86/-2.03	-2/-1.66	-1.44/-1.93	-2.23/-1.07	-0.51/-0.04	0.51/0.95	1.15/1.12	0.91/0.62
Θ(75°)	0.81/1.2	1.39/1.79	2.18/2.42	2.59/2.47	2.35/1.99	1.71/1.49	1.09/-0.27	-1.1/-2.22	-3.39/-1.49	4.68/-3.75	-1.9/0.34	1.28/1.94	1.81/1.69	1.02/0.2	-0.86/-1.36	-1.37/-1.35	-1.29/-1.76	-2.05/-2.72	-3.76/-4.99	-3.93/-1.69	-0.63/0.25	0.89/1.3	1.51/1.44	1.24/0.99
Θ(82.5°)	0.96/1.2	1.53/1.81	1.76/1.54	1.35/1.1	0.98/0.68	0.75/0.75	-0.04/-1.23	-1.78/-1.32	-1.13/-1.62	-1.84/-2.06	-1.54/-1.38	-0.76/-0.81	-0.72/-0.84	-1.49/-1.99	-2.05/-1.33	-0.52/-0.09	-0.5/-1.97	-3.05/-3.7	-3.94/-3.5	-1.94/-0.24	1.02/1.5	1.71/1.85	1.71/1.56	1.32/0.89
Θ(90°)	1.17/1.59	2.02/2.23	2.53/2.55	2.24/1.69	1.42/1.2	1.41/1.37	0.77/-0.41	-1.14/0.4	0.39/0.34	-0.29/-0.28	0.02/0.11	-0.17/-0.15	-0.14/-0.61	-1.44/-1.77	-1.78/-1.43	-0.51/-0.06	-0.52/-1.34	-2.85/-0.58	-5.91/-4.91	-3.07/-1.16	0.41/1.27	1.74/1.67	1.15/0.38	0.07/0.66
Θ(97.5°)	0.77/1.51	2.28/2.85	3.06/2.74	2.67/2.44	2.47/2.39	2.66/2.4	1.55/0.65	-0.09/-0.4	-0.18/-0.54	-1.1/-1.24	-0.41/0.09	0.72/0.86	0.52/-0.16	-0.83/-1.16	-1.57/-2.16	-2.3/-2.1	-2.26/-2.74	-3.91/-5.73	-5.92/-3.91	-2.15/-0.77	0.45/1	1.06/0.86	0.58/-0.11	-0.37/0.04
Θ(105°)	0.69/1.55	2.48/2.94	3.25/2.99	2.57/2.22	2.11/2.39	2.77/2.63	1.68/0.25	-1.2/-1.85	-1.47/-1.17	-0.84/-0.92	-0.47/0.27	0.93/0.68	-0.48/-1.47	-1.72/-1.95	-2.81/-3.77	-3.34/-2.96	-3.18/-3.56	-4.42/-5.61	-5.25/-3.95	-2.85/-1.84	-1.43/-1.47	-1.43/-1.41	-1.09/-0.6	-0.14/0.14
Θ(112.5°)	0.36/0.82	1.36/2.08	2.55/2.41	1.73/1.16	1.02/1.18	1.41/1.23	0.26/-1.4	-3.46/-3.27	-3.54/-2.68	-2.32/-2.44	-1.83/-0.17	0.9/0.12	-1.15/-2.54	-3.47/-3.42	-5.08/-4.44	-4.87/-6.29	-7.31/-7.89	-5.34/-2.56	-1.14/-1.32	-1.29/-1.63	-1.85/-2.3	-2.81/-2.24	-1.04/-0.01	
Θ(120°)	1.74/2.65	3.06/3.27	3.76/3.83	3.26/2.31	1.51/1.04	0.92/0.62	0.13/-0.97	-1.61/-2.92	-1.73/-2.12	-1.79/-1.79	-1.77/-1.14	-0.49/-1.13	-2/-2.85	-3.66/-5.18	-5.19/-3.95	-3.36/-3.76	-4.43/-5.17	-5.33/-5.21	-4.33/-3.8	-3.14/-2.56	-2.52/-2.26	-1.88/-1.86	-2.46/-3.1	-2.08/0.45
Θ(127.5°)	-0.25/0.68	0.91/1.11	1.68/2.14	2.07/1.61	0.97/0.37	0.2/0.03	-0.26/-0.58	-0.77/-0.28	-0.57/-1.24	-1.38/-1.09	-0.51/-0.21	-0.46/-1.83	-2.31/-2.27	-2.02/-1.71	-1.19/-1.06	-2.2/-3.54	-4.01/-4.79	-6.12/-6.71	-4.99/-2.82	-0.68/0.51	0.05/0.16	-0.63/-1.83	-3.13/-2.09	
Θ(135°)	-0.58/-0.32	-0.69/-1.57	-2.48/-1.92	-1.56/-1.64	-1.84/-2.39	-2.08/-1.4	-1.01/-0.61	-0.43/-0.05	-0.41/-0.48	-1.02/-1.86	-0.78/-0.06	-0.61/-0.93	-1.45/-1.43	-1.55/-1.35	-1.65/-3	-4.25/-4.36	-4.71/-5.3	-6.41/-6.31	-4.88/-2	0.31/1.5	1.79/1.71	1.44/1.45	1.41/1.06	0.2/-0.47
Θ(142.5°)	0.64/0.21	-0.6/-2.22	-4.41/-4.25	-2.72/-1.54	-0.74/-0.11	0.22/0.48	0.8/1	0.82/1.07	0.99/0.7	-0.23/-1.35	-1.72/-0.52	-0.46/-0.89	-0.82/-0.44	-0.31/-0.9	-2.33/-4.16	-3.99/-3.11	-2.58/-2.48	-3.08/-3.32	-3.79/-3.7	-2.63/-0.78	0.48/1.3	1.82/2.34	2.53/2.44	1.99/1.28
Θ(150°)	0.38/-0.44	-1.52/-2.94	-4.23/-4.45	-3.01/-2.52	-1.86/-0.8	-0.82/-0.76	-0.65/-0.43	-0.39/-0.31	-0.3/-0.65	-1.41/-2.29	-2.39/-1.99	-1.8/-1.31	-0.77/-0.33	-0.24/-0.73	-1.46/-1.67	-0.58/-0.41	-0.71/-1.29	-1.55/-1.19	-0.04/-1.9	2.23/2.76	3.08/3.15	2.96/2.31	1.72/0.96	
Θ(157.5°)	0.55/-0.49	-1.51/-2.43	-3.07/-3.78	-4.7/-5.77	-5.59/-5.82	-5.27/-4.4	-3.45/-2.2	-1.25/-0.6	-0.29/-0.57	-0.89/-1.73	-2.19/-2.27	-2.05/-1.05	-0.59/-0.3	-0.26/-0.33	-0.32/0.1	0.46/0.68	0.59/0.19	-0.36/-0.68	-0.30/-69	1.84/2.88	3.58/3.94	3.98/3.74	3.22/2.51	2.06/1.4
Θ(165°)	-0.82/-1.32	-1.63/-1.72	-1.92/-2.45	-3.48/-5.35	-7.65/-8.08	-8.05/-5.71	-3.61/-2.22	-1.24/-0.59	-0.1/0.02	-0.18/-0.29	-0.8/-0.9	-0.91/-1.15	-1.41/-1.78	-1.99/-1.96	-1.97/-2.01	-2.15/-2.1	-1.8/-1.42	-0.98/-0.43	0.12/0.73	1.19/1.38	1.34/1.14	0.76/0.26	-0.32/-0.82	
Θ(172.5°)	-4.51/-3.79	-2.99/-2.54	-3.37/-4.59	-5.81/-6.2	-5.64/-4.94	-5.61/-4.94	-3.71/-2.79	-2.21/-8.2	-1.56/-1.32	-1.23/-1.19	-1.28/-1.61	-2.11/-2.65	-3.43/-4.17	-4.9/-5.58	-6.23/-6.55	-6.46/-6.34	-5.46/-4.64	-3.94/-3.54	-3.34/-3.46	-4.11/-4.46	-4.91/-5.32	-5.57/-5.61	-5.95/-5.38	
Θ(180°)	-7.21/-6	-5.39/-5.03	-4.87/-5.08	-5.69/-6.22	-6.43/-6.22	-5.63/-5.11	-4.56/-4.16	-3.95/-3.94	-4.06/-4.07	-3.95/-3.89	-3.89/-4.05	-4.18/-4.35	-4.41/-4.7	-5.16/-5.45	-5.9/-5.84	-5.5/-5.2	-4.8/-4.67	-4.66/-4.85	-5.2/-5.8	-6.25/-6.95	-7.91/-8.64	-9.16/-8.71	-8.27/-8.42	-8.18/-8.28
Freq(Hz)	2.45GPol.	ThetaH-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-2.62/-2.18	-1.43/-1.12	-0.7/-0.25	0.44/1.23	1.95/3.63	3.06/3.28	3.33/3.24	3.02/2.57	1.87/1.03	0.06/-1.05	-2.28/-3.28	-3.68/-3.27	-3.12/-2.35	-1.77/-1.37	-0.81/-0.06	1.99/2.69	3.24/3.61	3.81/3.91	3.32/3.17	2.96/2.6	2.17/1.62	0.95/1.03	-0.84/-1.68	-2.26/-2.24
Θ(7.5°)	-2.51/-1.98	-1.39/-0.93	-0.18/0.43	1.38/2.19	2.89/3.44	3.84/4.06	4.14/4.15	4.3/6	3.11/2.44	1.61/0.71	-0.32/-1.46	-2.48/-2.7	-2.64/-2.15	-1.73/-1.32	-0.91/-0.4	0.2/0.76	1.27/1.63	1.86/1.89	1.82/1.64	1.36/0.92	0.31/-0.41	-1.24/-2.14	-2.6/-2.95	-2.81/-2.68
Θ(15°)	-0.25/0.68	-0.95/-0.59	0.09/0.7	1.67/2.55	3.28/3.89	4.34/4.66	4.85/4.91	4.84/4.61	4.21/3.65	2.97/2.23	1.42/0.48	-0.64/-1.42	-1.83/-1.68	-1.36/-1.09	-0.82/-0.58	-0.39/-0.16	0.11/0.32	0.35/0.26	0.19/-0.01	-0.35/-0.89	-1.65/-2.49	-3.29/-3.48	-3.56/-2.92	-2.31/-1.82
Θ(22.5°)	-1.06/-0.46	-0.11/0.29	0.69/1.32	2.25/2.99	3.74/3.4	4.83/5.25	5.55/5.73	5.66/5.58	5.31/4.88	4.33/3.63	2.87/2	1.07/0.07	-0.49/-0.54	-0.52/-0.43	-0.26/-0.06	0.08/0.09	-0.08/-0.39	-0.61/-0.92	-1.29/-1.62	-2.12/-2.85	-3.72/-4.69	-4.8/-4.82	-4.06/-3.05	-2.13/-1.39
Θ(30°)	-0.2/0.54	1.05/1.48	1.97/2.55	3.18/3.8	4.39/4.97	5.47/5.93	6.24/6.44	6.44/6.33	6.135/7.9	5.32/4.71	3.97/3.18	2.37/1.38	0.67/0.6	0.79/0.97	1.13/1.12	0.88/0.44	-0.11/-0.79	-1.67/-2.27	-2.71/-3.26	-3.96/-4.64	-5.51/-6.03	-6.31/-5.87	-4.49/-3.2	-1.79/-0.69
Θ(37.5°)	1.28/1.52	2.54/2.92	3.34/3.78	4.24/4.6	5.06/5.47	5.83/6.14	5.69/6.77	6.86/6.75	5.795/3.9	5.68/5.04	4.12/3.19	2.37/1.61	1.49/1.89	2.28/2.5	2.47/2.19	1.55/0.65	-0.55/-1.85	-3.14/-4.2	-4.34/-5.69	-4.59/-5	-6.25/-6.18	-6.68/-5.07	-3.61/-1.97	-0.34/0.88
Θ(45°)	2.72/3.2	3.22/3.21	3.27/3.34	3.43/3.56	3.85/4.25	4.68/5.07	5.6/6.06	6.23/6.25	6.04/5.71	5.134/3.55	3.23/2.12	1.27/1.07	1.19/1.75	2.28/2.63	2.73/2.6	2.17/1.49	0.58/-0.61	-1.94/-3.09	-4.01/-4.27	-4.3/-4.72	-4.83/-5.09	-		



Radiated Composite Gain Data

Appendix A

Θ(22.5°)	-1.52/-1.95	-2.55/-2.88	-3/-3.69	-3.98/-3.92	-3.47/-3.56	-2.89/-2.16	-1.63/-1.29	-0.250.1	0.761/69	1.89/1.82	1.390/59	-0.16/-1.02	-1.95/-3.14	-4.27/-4.96	-5.02/-4.77	-4.2/-3.59	-2.82/-2.57	-3.3/-4.9	-5.83/-6.22	-5.13/-3.75	-2.74/-1.65	-1.5/-16	-1.81/-1.29	-0.44/-0.55
Θ(30°)	-0.83/-0.43	-1.32/-3.52	-3.67/-3.75	-3.52/-3.75	-4.06/-5.04	-5.15/-4.75	-2.59/-1.01	0.0/5	0.571/0.3	1.55/1.7	1.71/1.38	0.57/-0.36	-1.59/-3.25	-5.13/-5.99	-5.7/-5.6	-5.48/-4.53	-3.86/-4.85	-5.83/-7.12	-8.57/-7.76	-4.58/-3.08	-2.66/-2.92	-2.58/-1.79	-1.1/-0.88	-0.31/-0.55
Θ(37.5°)	-2.53/-2.21	-4.62/-6.17	-5.91/-4.26	-3.18/-3.49	-3.34/-3.95	-3.58/-3.26	-2.28/-1.02	0.140.44	0.290.89	1.76/1.76	1.830.99	-0.58/-2.3	-3.81/-4.67	-7.72/-1.57	-7.72/-1.57	-5.21/-4.27	-3.13/-3.01	-4.27/-3.85	-3.33/-3.45	-2.94/-1.88	-2.76/-2.42	-3.06/-4.09	-3.33/-1.92	
Θ(45°)	-5.85/-5.02	-4.13/-5.04	-4.79/-2.92	-1.84/-1.91	-1.84/-1.41	-0.960.04	0.26/-0.37	-1.84/-2.76	-2.07/-0.37	1.060.64	0.47/-1.17	-2.95/-3.33	-3.13/-5.46	-7.85/-7.2	-5.42/-4.61	-6.68/-8.71	-10.74/-9.41	-8.57/-9.89	-7.43/-3.67	-1.040.18	0.36/-0.51	-1.54/-2.72	-2.99/-3.08	-4.43/-5.3
Θ(52.5°)	-2.76/-1.26	-1.65/-2.32	-2.38/-2.26	-2.42/-2.57	-2.23/-1.7	-0.33/-1.41	1.49/1.64	1.76/2.2	2.96/3.48	3.86/3.54	2.15/-2.04	-1.65/-1.7	-1.55/-1.9	-1.76/-0.7	0.18/-0.62	-1.49/-3.3	-5.3/-4.98	-4.71/-4	-2.67/-1.18	-0.39/-0.2	-0.47/-1.2	-1.38/-2.2	-3.58/-3.4	-4.1/-3.6
Θ(60°)	-1.47/-1.07	-1.29/-2.29	-1.74/-1	-1.47/-2.75	-3.95/-2.89	-2.39/-1.88	-1.11/-1.25	-1.53/-1.95	-1.44/-0.51	0.610.07	-1.54/-3.21	-2.27/-1.36	-1.09/-1.51	-2.65/-2.24	-0.74/-0.97	-4.15/-1.75	-6.67/-5.24	-4.49/-2.51	-1.51/-5	-1.69/-1.12	-1.6/-2.2	-1.77/-1.12		
Θ(67.5°)	-2.42/-1.54	-1.99/-1.86	-0.81/-0.26	-1.22/-3.13	-2.9/-1.91	-0.780.01	-0.15/-0.09	0.33/-1.04	0.160.23	0/-0.41	-2.04/-2.84	-1.570.3	0.58/-0.94	-1.220.75	1.240.47	-3.15/-4.59	-2.56/-2.65	-4.61/-7.01	-8.44/-5.7	-2.14/-1.36	-1.85/-2.44	-2.7/-2.55	-2.28/-3.76	-4.41/-3.3
Θ(75°)	-1.54/-1.59	-2.01/-0.74	0.080.09	-0.27/-0.85	-0.66/-0.35	0.52/-29	3.71/3.73	3.24/2.02	0.90/92	0.19/-1.69	-3.29/-3.51	-2.25/-2.27	-1.270.58	-1.3/-1.67	-0.340.52	-0.85/-6.9	-5.7/-3.75	-5.04/-6.75	-6.58/-4.89	-3.51/-1.45	-0.95/-1.52	-3.04/-2.1	-2.2/-1.85	-1.42/-1.44
Θ(82.5°)	-1.1/-1.78	-2.16/-1.23	-0.92/-2.55	-4.44/-4.53	-4.26/-2.48	-0.03/-1.05	0.68/1.1	0.720.13	-0.290.65	2.19/-47	-0.55/-0.83	-0.11/-1.24	-0.47/-1.26	-3.11/-2.01	0.41/93	1.36/-0.95	-4.82/-6.17	-3.36/-4.45	-2.65/-2.78	-1.67/-4.86	-3.73/-2.51	-2.4/-1.75	-0.820.23	1.06/-0.27
Θ(90°)	1.16/1.76	1.31/1.02	0.830.35	-0.26/-0.71	-1.27/-0.63	1.07/1.7	1.31/-0.09	-0.230.39	0.35/1.49	1.27/1.22	0.540.95	1.28/-1	-0.65/-0.29	-1.59/-1.59	0.06/1.09	0.82/-1.73	-5.56/-6.03	-3.59/-3.51	-3.45/-3.02	-5.3/-5.01	-3.56/-1.99	-2.170.16	0.18/-0.46	0.080.28
Θ(97.5°)	0.85/0.85	1.31/0.6	0.05/-0.49	-1.22/-2.25	-2.75/-2.06	-0.930.64	0.620.52	0.57/-1.18	0.97/-1.09	1.54/1.33	-0.47/-1.97	-1.4/-2.51	-5.6/-5.72	-1.74/-1.26	-1.28/-2.09	-2.19/-1.48	-4.09/-7.5	-4.11/-8.07	-9.32/-6.94	-3.45/-4.68	-3.52/-3.96	-1.8/-1.32	-1.12/-0.02	1.25/-51
Θ(105°)	0.24/-0.12	0.76/2.3	1.86/1.1	0.86/-0.24	-0.71/-43	-2.22/-1.33	-1.32/-1.29	-0.01/1.18	2.72/3.3	1.97/1.24	0.26/-0.61	-3.03/-4.31	-7.3/-8.13	-3.29/-5	-5.41/-3.66	-3.02/-3.77	-5.72/-6.48	-3.46/-6.13	-6.49/-5.57	-5.33/-5.5	-6.75/-4.23	-3.28/-2.8	-0.660.78	1.020.42
Θ(112.5°)	2.1/2.5	2.72/2.68	3.34/3.1	1.86/-0.01	-2.38/-1.02	-0.43/-1.38	-2.060.73	2.25/1.14	1.83/2.56	2.36/1.5	0.64/-1.4	-3.91/-5.15	-5.11/-5.92	-6.49/-4.83	-5.35/-5.64	-4.49/-3.05	-5.47/-8.35	-7.97/-8.61	-7.42/-7.83	-5.94/-6.08	-4.47/-3.43	-2.38/-2.26	-1.30/2.4	1.36/1.18
Θ(120°)	2.94/3.3	4.994.25	1.280.92	0.37/-1.12	-3.05/-3.99	-2.29/-1.04	-0.270.57	1.65/1.8	0.73/-0.31	-1.01/-2.25	-4.06/-2.9	-1.260.94	0.61/-2.85	-3.65/-4.18	-6.15/-7.01	-7.03/-6.66	-8.78/-8.18	-5.1/-3.27	-3.45/-3.56	-2.640.3	1.41/1.31	1.68/2.19		
Θ(127.5°)	1.32/1.07	2.093.17	2.76/1.75	-0.21/-1.7	-2.05/-1.3	-0.350.31	0.670.81	1.05/1.62	1.70/7.2	-0.68/-2.43	-1.94/-2.43	-1.35/-3.49	-2.88/-1.72	-3.74/-407	-5.45/-3.38	-2.66/-2.72	-3.03/-4.18	-5.98/-8.29	-8.83/-4.48	-1.74/-0.9	-0.61/-1.17	-0.5/-0.19	2.31/2.93	1.5/1.53
Θ(135°)	0.330.48	-0.230.31	0.70/85	0.88/-1.22	-4.86/-3.8	-1.740.24	1.18/1.76	1.96/1.45	0.21/-1.27	-3.93/-4.28	-2.98/-3.4	-4.4/-5.63	-5.77/-3.09	-2.5/-3.86	-0.59/1.26	-1.21/-4.81	-5.26/-4.45	-6.02/-5.4	-3.77/-4.17	-1.59/-1.1	0.36/-0.77	-3.12/-2.01	-0.15/-1.34	1.710.51
Θ(142.5°)	-0.85/0.85	-0.65/-2.33	-0.01/-0.35	-0.220.02	0.85/-187	2.54/1.81	0.770.72	1.28/-1.17	0.51/-0.41	-1.18/-3.12	-5.12/-3.52	-2.370.03	0.95/1.36	-0.1/-1.63	-1.28/-1.38	-3.66/-3.37	-1.76/-1.62	-1.72/-2.05	-3.39/-5.05	-4.54/-2.79	-2.34/-3.12	-5.4/-8.91	-4.3/-4.34	-4.31/-3.36
Θ(150°)	-1.17/-0.06	-0.74/-2.16	2.74/-2.46	-2.39/-2.09	-1.59/-1.97	-1.43/-1.06	-0.340.4	0.22/-0.21	-0.61/-0.44	-0.66/-1.86	-2.87/-2.67	-1.72/-0.5	0.880.92	0.620.11	-0.8/-1.6	1.22/2.25	1/-0.43	-0.97/-2.08	-3.55/-3.99	-4/-3.16	-4.2/-6.5	-7.4/-6.26	-5.46/-5.54	-5.22/-2.82
Θ(157.5°)	-0.750.26	1.22/1.65	1.440.93	0.14/-0.39	-0.78/-0.02	0.480.47	0.16/-0.31	-0.87/-1.38	-1.29/-0.52	0.1/-0.74	-1.55/-2.06	-1.290.47	1.02/1.27	1.43/1.58	2.05/2.53	3.05/2.48	1.01/-0.49	-2.33/-4.24	-6.2/-4.92	-3.5/-2.19	-1.23/-1	-0.70/1.11	-0.18/-0.26	-0.46/-0.71
Θ(165°)	0.32/-1.37	-3.38/-3.48	-2.43/-1.35	-0.360.64	1.21/-38	1.040/-47	0.02/-0.52	-1.36/-1.41	-2.01/-2.12	-2.81/-3.68	-4.26/-4.22	-4.01/-2.37	-1.15/-0.3	0.38/1.17	1.56/1.38	10/-42	-0.16/-1.34	-3.45/-7.7	-6.87/-6.27	-5.92/-5.01	-3.79/-2.39	-1/-0.34	0.010.49	0.350.48
Θ(172.5°)	0.35/-0.13	-0.71/-0.83	-0.62/-0.87	-1.29/-1.51	-1.55/-2.28	-3.19/-4.68	-5.66/-6.69	-7.53/-7.68	-6.71/-5.65	-4.19/-2.94	-2.81/-1.56	-1.09/-0.49	-0.24/-0.19	0.05/-0.02	-0.26/-0.42	-0.88/-1.6	-2.8/-3.89	-4.69/-6.33	-6.23/-5.49	-5.12/-4.36	-3.28/-2.51	-2.01/-1.75	-1.67/-1.06	-0.50/-0.5
Θ(180°)	-6.32/-5.33	-4.34/-3.92	-4.19/-4.55	-4.98/-5.02	-5.06/-5.25	-4.82/-4.74	-4.46/-4.35	-3.97/-3.28	-2.41/-1.7	-1.04/-0.63	-0.31/-0.21	-0.64/-1.29	-4.22/-3.89	-5.06/-5.98	-6.15/-6.96	-5.88/-4.96	-4.27/-3.99	-3.6/-3.14	-2.69/-2.16	-1.76/-1.64	-1.77/-2.11	-2.52/-3	-3.93/-4.96	-6.17/-6.63
Freq(Hz)	5.3GPol.	Theta-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-5.93/-6.3	-5.14/-6.5	-4.24/-4.2	-3.71/-3.31	-3.02/-3.58	-3.5/-3.75	-3.43/-2.82	-2.4/-2.07	-2.48/-3.19	-0.44/-0.45	-4.09/-3.99	-4.41/-4.98	-4.56/-4.41	-4.57/-4.26	-3.93/-3.76	-0.72/-0.61	-0.48/-0.35	-0.21/-0.22	-1.8/-1.71	-1.66/-1.86	-2.64/-3.1	-2.91/-2.92	-3.37/-3.67	-4.01/-4.33
Θ(7.5°)	-5.34/-4.86	-3.88/-3.05	-2.7/-2.49	-1.94/-1.86	-1.51/-1.6	-1.58/-2.06	-2.29/-2.4	-2.1/-1.82	-1.41/-1.68	-2.5/-3.55	-3.38/-2.82	-2.95/-3.08	-3.43/-3.72	-3.74/-3.83	-3.99/-4.14	-4.16/-4.16	-4.08/-3.76	-3.31/-2.73	-2.35/-2.33	-2.55/-3.03	-3.63/-4.05	-4.65/-4.83	-5.55/-5.8	-5.32/-5.01
Θ(15°)	-2.19/-1.18	-0.39/-0.03	0.310.38	0.930.88	0.590/-41	0.17/-0.05	0.480.87	1.060.91	0.71/-37	-0.43/-1.68	-3.98/-2.33	-3.98/-2.3	-4.27/-3.2	-3.32/-3.69	-4.51/-5.1	-5.76/-6.08	-5.02/-4	-2.78/-1.57	-0.78/-0.67	-0.65/-0.92	-1.11/-1.35	-1.96/-2.87	-3.28/-3.26	-2.97/-2.74
Θ(22.5°)	-2.52/-1.83	-0.520.23	1.67/1.9	2.69/3.08	2.65/2.31	1.64/-1.12	1.18/1.82	2.15/1.95	1.260.04	-0.61/-1.47	-2.26/-3.25	-4.25/-5.32	-5.84/-5.72	-5.09/-4.2	-4.09/-4.38	-4.91/-5.07	-5.04/-4.25	-2.3/-0.29	0.730.71	-0.02/-1.32	-2.34/-2.3	-1.85/-1.75	-1.68/-1.72	-2.05/-2.65
Θ(30°)	-0.52/-0.4	0.04/-1.31	2.06/2.29	2.67/2.91	2.67/2.08	1.180.95	1.62/3.3	2.75/3.07	2.81/2.45	1.260.46	0.270.46	-0.02/-2.37	-2.72/-4.24	-2.63/-3.46	-5.18/-7.12	-7.58/-6.16	-5.17/-3.78	-2.89/-1.47	-0.55/-1.01	-2.27/-3.43	-2.71/-1.57	-0.480.22	0.38/-0.12	-0.52/-0.82
Θ(37.5°)	0.64/-1.01	0.88/1.54	1.88/1.9	2.07/1.52	1.150.35	-0.170.19	1.42/2.4	2.74/2.48	2.17/1.24	0.370.56	1.02/1.54	1.170.17	-0.67/-0.8	-0.58/-0.85	-1.31/-3.33	-6.04/-7.04	-5.13/-3.89	-2.32/-1.29	-0.38/-0.58	-1.94/-3	-2.030.05	1.12/1.66	1.560.79	0.510.96
Θ(45°)	2.32/2.3	1.75/1.46	1.69/1.81	1.95/1.98	1.140.47	0.75/1.18	2.07/2.07	1.360.44	0.04/-0.33	-0.22/-0.78	-0.41/-11	1.71/1.05	0.940.81	0.570.61	0.6/-0.51	-2.6/-5.89	-7.54/-4.67	-2.03/-1.31	-1.72/-2.11	-0.410.77	0.49/1.26	2.25/2.65	2.27/2.32	2.72/2.67
Θ(52.5°)	3.77/3.74	3.58/3.52	3.42/3.46	3.44/3.37	2.460.99	0.390.92	1.38/1.13	1.01/1.3	1.58/2.26	2.65/2.16	2.14/1.8	1.92/1.35	1.53/1.72	2.05/2.21	2.230.83	-0.9/-2.13	-2.66/-1.29	-2.83/-2.27	-1.330.09	1.23/2.01	2.79/2.35	2.51/3.49	4.08/4.42	4.54/4.01
Θ(60°)	3.45/3.37	3.38/3.48	3.33/3.13	3.11/3.07	1.93/1.11	0.6/-0.12	-0.02/-0.66	-1.6/-0.76	-0.090.27	1.55/1.97	2.77/2.23	2.05/1.78	1.86/2.44	3.17/3.01	2.65/2.08	0.43/-2.23	-3.53/-2.93	-0.670.88	2.44/2.2	1.49/1.87	0.12/1.63	3/4.12	4.36/3.87	
Θ(67.5°)	3.57/3.39	2.72/3.37	1.81/1.14	1.23/1.68	1.64/-1.7	1.280.14	-1.26/-0.84	1.02/0.64	-1.350.11	2.1/1.2	1.68/-0.22	-0.75/-0.07	0.43/1.92	2.110.22	0.22/1	2.31/73	0.73/-1.12	-2.58/-1.63	0.70/23	-0.310.43	-0.33/-1.63	-0.890.71	2.12/3.1	4.65/4.17
Θ(75°)	3.37/2.53	1.81/2.2	1.91/1.37	-0.170.24	0.65/-0.33	1.040.02	-1.09/-1.35	-0.37/-0.54	-2.69/-3.15	-0.12/1.5	1.460.27	0.70/1.5	-0.330.78	0.71/-1.65	-1.360.4	0.96/-0.19	-0.860.08	-1.2/-0.95	-0.62/-2	-1.85/-0.94	-1.53/-1.67	-0.41/-4	4.27/5.45	5.23/4.54
Θ(82.5°)	1.31/-0.94	-0.83/-0.16	-0.94/-1.56	-1.270.14	0.69/-0.19	-0.88/-0.74	-0.45/-0.46	1.610.93	-1.53/-0.4	3.184.22	3.73/2.33	3.81/-77	-2.41/-2.66	-2.23/-1.86	-0.10/2.8	0.75/-1.45	-0.48/-0.25	-0.36/-2.21	-3.09/-3.62	-1.89/-2.24	-3.67/-2.54	0.22/2.1	4.04/3.32	3.38/1.89
Θ(90°)	1.03/-0.37	-1.740.98	1.91/2.78	3.37/3.22	2.290.53																			



Radiated Composite Gain Data

Appendix A

Θ(75°)	-1.55/-0.21	0.02/-0.19	-0.07/-0.03	-0.13/-1.01	-1.68/-0.97	-0.62/-1.5	-2.17/0.05	1.21/-3	1.46/0.21	-1.19/-1.51	-1.27/-1.22	-1.5/-1.58	-3.12/-4.16	-0.89/-0.14	-2.18/-5.87	-6.95/-5.87	-6.38/-6.27	-3.53/-5.32	-3.13/-2.69	-3.8/-6.46	-3.22/-1.5	-0.21/-0.33	0.09/-0.96	-1.55/-2.74
Θ(82.5°)	-0.88/-1.4	2.5/-2.87	2.64/-1.83	1.59/-1.43	-0.26/-1.98	-2.08/-0.4	1.79/-3.43	4.3/-3.38	-0.36/-3.37	-2.07/-1.58	-0.71/-0.4	-0.43/-2.47	-2.57/-1.1	-1.27/-1.89	-2.52/-3.41	-4.54/-5.95	-6.04/-5.54	-5.36/-4.54	-6.45/-6.33	-4.3/-3.44	-4.8/-3.15	-2.57/-5.15	-6.26/-5.05	-3.89/-2.87
Θ(90°)	0.4/-1.88	2.87/-3.32	2.18/-1.74	1.97/0.66	-1.1/-1.4	-1.03/0.54	1.83/-2.77	2.65/0.17	-3.37/-1.76	1.96/2.15	1.71/-5.2	1.11/-0.91	-2.17/-1.65	-1.23/-2.15	-2.26/-2.34	-2.54/-3.15	-9.04/-9.62	-4.63/-7.52	-5.53/-1.16	-2.26/-2.84	-2.77/-3.79	-3.89/-3.54	-2.59/-0.53	0.01/0.08
Θ(97.5°)	1.98/-1.98	2.66/-3.24	2.66/-1.91	0.72/-1.3	-1.05/-1.38	-1.34/0.99	3.25/-3.45	2.04/0.78	-2.19/-1.29	0.79/-1.79	2.31/-2.54	1.9/-2.93	-5.71/-2.01	-2.06/-3.12	-3.36/-1.14	-0.89/-3.22	-7.07/-6.2	-6.31/-6.85	-3.99/-3.59	-4.74/-0.79	-1.4/-3.51	-3.4/-2.19	0.06/-2.02	2.21/-1.04
Θ(105°)	2.23/-2.23	1.95/-1.47	0.68/0.79	0.26/-0.81	-4.49/-7.82	-3.63/-1.26	2.08/-1.34	-0.03/-3.24	-3.5/-0.5	1.25/0.92	0.63/-1.1	-4.34/-8.29	-11.78/-7.24	-2.97/-3.01	-3.97/-4.3	-1.1/-1.55	-6.1/-7.33	-0.75/-7.54	-3.89/-6.28	-7.37/-5.05	-2.88/-3.94	-4.57/-2.31	-0.09/-1.17	2.53/-2.35
Θ(112.5°)	1.3/-2.62	3.56/-3.61	2.71/-1.88	0.56/-0.31	-1.59/-2.22	-0.51/-1.54	1.25/0.32	0.65/-1.02	1.74/-1.04	0.86/-2.19	1.48/-1.12	-4.64/-4.69	-3.35/-4.76	-1.94/-2.61	-2.64/-3.55	-4.62/-2.96	-4.26/-5.41	-3.63/-6.47	-8.16/-5.73	-7.45/-10.41	-4.56/-2.78	-4.01/-4.89	-2.87/0.53	0.78/0.16
Θ(120°)	2.16/-3.19	3.75/-4.13	3.92/-3.56	3.86/-2.92	0.13/-2.59	-2.84/-2.25	-1.03/-1.51	-0.01/-2.55	1.44/-0.23	-0.04/-1.15	0.55/-2.56	-7.29/-5.18	-2.58/-2.25	-0.99/-1.13	-2.88/-2.82	-2.62/-1.36	-7.84/-4.12	0.75/-1.38	-4.83/-3.77	-1.86/-5.66	-6.56/-4.67	-4.83/-1.54	0.26/-0.05	-0.23/-1.22
Θ(127.5°)	4.69/4.89	4.54/-3.72	3.69/-3.46	3.26/-3.43	2.59/0.73	0.55/-1.1	-0.72/-4.01	-3.02/-0.26	1.14/-1.4	0.84/0.16	-0.36/-1.28	-1.39/-0.51	-1.47/-0.77	-0.48/-0.36	-2.47/-4.29	-6.36/-5.02	-4.79/-4.6	-3.92/-2.95	-2.25/-3.39	-5.64/-4.87	-3.91/-1.8	-1.34/-0.01	2.25/-2.86	3.78/4.06
Θ(135°)	2.68/-2.73	3.15/-2.41	1.5/-2.22	2.97/-2.33	1.38/-1.46	1.19/0.95	0.19/0.07	1.93/-2.68	2.34/-2.44	2.36/-2.79	2.08/0.47	-1.14/-3.53	-1.09/-1.77	-4.25/-4.66	-3.45/-3.59	-4.79/-5.79	-3.56/-2.42	-3.85/-3.95	-1.73/-1.97	-2.9/-2.75	0.87/-1.26	0.42/-1.53	0.92/-39	1.91/-2.49
Θ(142.5°)	-1.33/-0.9	-0.36/-1.19	1.69/-2.15	2.67/-2.06	0.27/-0.48	1.24/-1.67	0.79/0.23	0.56/0.37	-0.78/-2.09	-1.31/-0.81	-1.31/-4.54	-4.67/-2.87	-2.16/-2.96	-4.08/-4.01	-2.89/-1.44	-3.82/-6.02	-4.54/-4.66	-3.65/-2.72	-1.37/-3.15	-5.81/-5	-2.85/-4.13	-4.8/-3.04	-3.39/-1.85	-1.89/-1.85
Θ(150°)	-0.61/0.35	0.12/-0.51	-0.78/-1.31	-1.32/-0.92	-3.42/-4.06	-3.81/-3.06	-1.73/-0.17	0.68/0.33	0.06/0.38	-0.07/-1.92	-5.12/-7.51	-3.09/-1.07	3.05/-2.64	0.05/-3.6	-4.82/-2.17	0.53/-2.01	1.87/0.55	-1.2/-1.98	-2.36/-2.67	-3.05/-3.68	-6.43/-8.33	-7.64/-6.34	-5.05/-5.24	-2.75/-0.8
Θ(157.5°)	-0.46/0.03	-0.14/-0.71	-1.35/-1.86	-2.02/-2.14	-2.54/-3.19	-3.59/-3.77	-3.61/-2.48	-1.54/-1.46	-2.3/-3.34	-2.94/-3.08	-4.13/-4.58	-1.61/-1	1.15/-0.34	-2.09/-2.67	-0.72/-2.14	3.46/-2.99	1.12/-0.68	-2.2/-3.53	-4.83/-5.14	-4.27/-3.07	-2.92/-2.93	-3.31/-3.78	-4.67/-5.21	-3.79/-1.46
Θ(165°)	-2.4/-2.1	-1.86/-2.85	-4.56/-5.6	-4.69/-2.66	-1.27/-0.44	-0.05/-0	-0.17/-0.41	-0.78/-1.78	-2.97/-3.1	-2.97/-3.13	-3.86/-4.76	-5.48/-5.62	-3.41/-0.95	1.1/-2.42	3.13/-3.44	3/-1.69	-0.34/-2.16	-3.73/-5.19	-5.89/-5.08	-3.1/-1.66	-0.71/0.12	0.76/0.66	0.06/-0.7	-1.17/-2.12
Θ(172.5°)	-4.54/-5.94	-6.87/-5.37	-3.33/-1.97	-1.22/-0.92	-0.69/-0.49	-0.48/-1.01	-0.69/-0.78	-1.35/-2.09	-2.74/-2.34	-1.93/-1.9	-1.95/-1.86	-1.68/-1.53	-0.87/-0.37	0.12/0.05	-0.46/-1.22	-1.88/-2.26	-3.15/-3.89	-3.9/-3.56	-3.36/-3.14	-2.42/-1.38	-0.43/0.12	0.01/-0.61	-0.98/-1.2	-2.28/-3.46
Θ(180°)	-6.51/-6	-5.34/-5.05	-5.75/-6.19	-6.86/-7.48	-7.94/-7.59	-7.46/-7.2	-6.43/-6.66	-7.16/-7.36	-7.42/-6.96	-6.09/-5.5	-4.77/-4.05	-4.14/-4.77	-5.5/-6.06	-5.84/-6.32	-7.4/-8.01	-8.21/-8.18	-9.11/-9.35	-8.98/-8.63	-8.23/-8.04	-7.32/-6.67	-6.29/-5.94	-5.8/-5.51	-5.99/-7.19	-9.34/-8.4
Freq[Hz]	5.785GPol.	Theta	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG[db]	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(7°)	-3.3/-2.69	-2.05/-1.43	-1.17/-0.72	-0.35/-0.03	0.21/0.1	-0.2/-0.74	-1.46/-2.64	-4.26/-5.53	-6.49/-7.45	-8.18/-7.93	-6.66/-5.02	-3.44/-2.19	-1.3/-0.95	-1.08/-1.27	-1.28/-1.44	-2.4/-2.7	-3.06/-3.64	-4.19/-4.64	-3.61/-3.92	-5.25/-6.66	-7.85/-7.44	-7.13/-6.71	-6.18/-5.55	-5.11/-4.31
Θ(7.5°)	-1.47/-1.56	-1.53/-1.58	-1.59/-1.96	-2.3/-2.79	-3.33/-3.33	-3.24/-2.58	-2.56/-2.46	-2.78/-3.39	-4.43/-5.51	-5.65/-6.05	-5.86/-5.53	-4.71/-3.52	-2.51/-1.59	-0.59/0.3	0.89/-1.21	1.23/-1.13	1.02/0.7	0.24/-0.31	-0.98/-2.04	-3.41/-4.88	-5.76/-5.3	-4.15/-3.29	-2.94/-2.77	-2.3/-1.69
Θ(15°)	-0.43/-0.52	-0.75/-1.66	-2.32/-2.53	-2.17/-2.65	-3.45/-2.6	-1.52/-0.54	-0.04/0.51	0.79/0.57	-0.11/-1.14	-1.9/-2.18	-2.02/-2.17	-1.93/-1.33	-0.87/-0.7	-0.43/-0.2	0.23/0.8	1.16/-1.44	1.54/-1.48	1.13/0.5	-0.36/-1.15	-1.81/-2.53	-2.89/-2.68	-1.96/-1.65	-1.57/-1.3	-0.71/-0.44
Θ(22.5°)	-0.12/-0.22	-0.63/-0.72	-0.64/-0.38	-0.52/-1.67	-2.37/-1.44	-0.35/0.85	1.92/-2.77	2.98/-2.5	1.5/0.37	-0.79/-1.3	-1.32/-1.23	-1.03/-1.07	-1.48/-1.51	-1.4/-1.4	-0.93/-0.68	-0.51/-0.44	-0.18/0.52	0.76/0.43	-0.55/-2.19	-2.93/-2.77	-2.41/-2.14	-1.83/-1.14	-0.30/-38	0.57/0.23
Θ(30°)	2.15/-1.44	0.46/-0.17	0.44/0.53	0.62/0.35	0.62/-1.36	2.11/-3.21	4.09/4.51	4.58/4.11	2.66/0.55	-1.3/-1.71	-1.57/-1.26	-0.65/-0.23	0.02/0.46	0.97/0.91	-0.12/-0.59	-0.72/-1.19	-1.99/-2.71	-2.2/-1.8	-1.77/-2.64	-3.01/-3.04	-1.71/-0.08	0.92/-1.79	2.43/-2.71	2.56/-2.15
Θ(37.5°)	3.23/-3.73	3.21/-2.4	2.85/-2.77	1.76/0.63	0.46/0.82	2.03/-3.29	4.16/4.94	4.77/4.08	2.38/0.06	-1.52/-1.23	-0.41/-0.5	-0.64/-1.09	-1.85/-1.45	-1.14/-1.11	-0.71/-0.42	-1.06/-1.71	-1.75/-1.59	-1.34/-1.81	-3.12/-3.7	-3.73/-1.74	-1.37/0.1	1.18/-2.51	3/3.37	3.74/-3.58
Θ(45°)	4.34/-4.2	4.02/-3.35	3.05/-2.88	2.42/-1.51	0.96/-1.17	2.18/-3.05	3.63/-7.2	3.66/-3.09	1.33/-1.01	-2.61/-1.63	-0.17/-0.29	-0.08/0.47	0.42/-0.34	-0.67/0.56	1.29/-1.26	0.41/-0.26	0.16/0.21	0.52/-0.23	-1.85/-3.38	-4.73/-3.12	-2.29/-0.69	1.83/-2.82	2.86/-3.29	3.38/-3.9
Θ(52.5°)	2.78/-3.6	3.74/-4	3.72/-3.1	1.79/-1.24	0.58/-1.13	2.07/-2.43	2.68/-3.05	3.19/-2.14	0.14/-0.79	-0.86/-0.47	-0.27/-0.15	0.64/0.24	-0.98/-1.46	0.23/-1.65	2.59/-1.5	-1.15/-1.99	-1.16/-0.19	0.71/-0.2	0.53/-0.71	-2.75/-0.9	0.78/-1	1.58/-2.56	2.58/-2.26	2.17/-2.06
Θ(60°)	4.02/4.17	4.59/-5.13	5.14/-4.8	4.87/4.01	2.06/0.78	1.82/-2.79	2.98/-2.41	1.46/-1.26	0.57/-0.32	0.06/-1.54	1.78/0.85	0.2/-0.82	0.96/-2.37	3/-1.87	2.93/-2.72	1.08/-0.52	-0.73/-0.85	0.41/-1.36	0.38/-1.24	-0.25/0.49	1.18/-1.26	0.71/-26	2.25/-2.56	2.82/-3.56
Θ(67.5°)	5.01/4.87	5.33/-5.82	6.22/6.22	5.79/-5.28	4.16/-1.22	-1.78/0.81	2.36/-2.73	2.95/-3.01	2.36/0.5	0.67/-2.31	2.04/0.01	-1.61/-0.8	0.74/-2.17	2.24/0.97	1.94/-2.62	0.9/-1.22	-0.21/-0.63	-1.48/0.29	0.06/-1.35	-1.06/-0.37	-1.17/0.49	2.21/-2.98	2.11/-2.29	3.24/-46
Θ(75°)	5.6/-5.48	5.33/-5.87	5.75/-4.81	3.97/-3.1	2.33/-1.47	1.46/-1.42	2.68/-3.66	4.65/-4.79	3.26/-1.26	2.59/-3.23	1.17/-0.61	-1.28/-0.63	0.63/-2.75	2.74/0.11	1.01/-2.71	2.01/0.58	-2.74/-1.56	-1.37/0.03	0.58/0.58	1.15/-0.62	-2.29/-2.09	-0.42/-0.05	1.36/-2.82	4.45/-19
Θ(82.5°)	4.88/-5.34	5.14/-55	3.74/-2.8	2.37/0.15	-0.08/-1.16	2.55/-3.54	3.85/-4.74	4.98/-4.06	2.41/-0.18	1.3/-3.09	1.94/0.4	0.41/-1.13	-1.19/-2.41	1.84/-0.44	2.98/-4.44	3.88/0.32	-1.13/-0.84	-0.34/-0.63	1.65/-2.49	2.83/0.65	-1.48/-1.22	-0.23/-1.2	2.59/-3.15	4.56/-4.92
Θ(90°)	4.09/-4.54	3.76/-2.42	2.33/-1.92	1.99/-1.28	1.57/-1.39	2.71/-3.43	3.14/-2.51	2.93/-2.96	0.64/-1.6	1.23/-4	2.16/0.72	-0.92/-0.43	0.53/0.95	1.01/-1.79	1.67/-4.32	3.73/0.04	-2.46/0.04	0.89/-2.38	0.22/0.95	1.91/-1.33	-1.31/-1.16	0.9/0.2	-0.6/0.25	2.83/-85
Θ(97.5°)	1.49/-2.06	1.61/-1.69	1.66/-1.49	0.91/-2.6	1.14/-1.38	1.73/-2.73	2.52/0.87	0.3/-0.38	-1.69/-1.35	2.28/-3.54	1.27/-1.2	-3.34/-5.17	-1.82/0.34	-3.34/-2.95	-0.01/-2.51	3.12/-0.35	-4.29/0.32	-0.94/-2	0.63/-2.79	-3.35/-2.93	-5.47/-1.97	-1.24/-3.39	-3.09/-1.28	0.94/-1.57
Θ(105°)	2.77/-4.35	4.13/-96	4.49/-5.44	5.49/-4.65	4.56/-3.85	1.47/-1.82	2.74/-2.96	2.12/0.4	-0.96/-0.84	1.96/-2.94	1.79/0.75	-1.6/-2.2	-1.9/0.27	-2.93/-8.21	-6.06/-0.39	1.52/-1.04	-4.42/0.1	0.66/-2.9	-4.24/-3.94	-3.09/-3.12	-4.78/-1.89	0.19/-1.08	-3.07/-2.92	-0.71/-1.83
Θ(112.5°)	4.77/-4.79	3.77/-3.86	3.6/-3.03	4.94/-5.6	5.34/-5.28	4.12/-1.77	0.16/-0.87	0.13/0.77	0/-1.42	3.44/-3.62	3.29/-2.15	1.33/-0.57	-1.41/-1.17	-6.38/-6.72	-5.36/-1.56	-3.69/-4.37	-5.76/-5.42	-0.42/-1.4	-4.54/-5.92	-3.13/-3.33	-3.71/-5.46	-6.54/-2.2	-0.88/-2.68	4.39/-4.79
Θ(120°)	2.05/-2.67	1.38/-1.17	1.62/-2.39	2.83/-3.89	4.62/-4.42	3.36/-1.56	0.96/0.26	-0.61/-1.71	-0.66/-1.28	3.073.28	2.77/-2.21	0.8/-1.94	-3.73/-1.07	-1.67/-4.97	-3.79/-0.79	-1.55/-3.42	-6.98/-2.77	0.49/-2.74	-5/-1.14	-1.22/-2.06	-3.18/-4.51	-4.41/-2.28	-1.17/-1	1.03/-1.9
Θ(127.5°)	1.21/-43	1.19/-2.68	3.63/-66	2.81/-2.2	2.27/-1.76	-1.01/-3.98	-1.65/-0.21	-0.34/-1.12	0.49/-0.56	-1.26/0.93	1.47/-1.74	1.57/-0.96	-1.48/-1.28	0.62/-2.23	-1.6/-0.07	0.59/-3.65	-4.88/-2.85	-1.82/0.85	-0.54/-1.64	1.32/-4.48	-3.58/-4.13	-2.25/-1.89	1.05/0.89	3.06/-2.19
Θ(135°)	-1.97/0.46	2.65/-3.68	5.44/-5.2	4.68/-3.35	2.36/-1.91	0.38/-1.74	-2.16/-2.02	-0.43/-1.76	1.9/-0.92	-1.28/0.54	2.41/-2.4	1.16/0.23	0.81/-0.35	0.41/0.5	-0.2									

Gain Result

[illegible]



Radiated Composite Gain Data

Appendix A

Θ(22.5°)	-13.07/-11.88	-16.31/-18.13	-17.89/-19.23	-18.31/-15.08	-13.17/-9.67	-6.46/-4.48	-3.34/-4.1	-3.36/-4.4	-4.17/-3.81	-4.54/-5.24	-5.9/-6.64	-7.66/-9.24	-10.88/-13.3	-15.14/-15.37	-13.22/-12.49	-11.71/-10.29	-7.66/-6.29	-6.63/-8.59	-11.2/-14.04	-14.09/-11.16	-9.05/-7.66	-7.66/-9.4	-12.78/-14.95	-15.05/-12.95
Θ(30°)	-4.62/-4.9	-5.2/-10.48	-11.69/-16.4	-17.55/-18.46	-18.23/-14.11	-9.35/-7.4	-5.83/-5.29	-4.6/-4.65	-4.32/-3.6	-2.06/-1.75	-1.62/-2.05	-3.11/-4.66	-7.18/-10.4	-14.18/-17.57	-17.51/-15.71	-12.77/-9.4	-7.97/-9.29	-10.15/-12.98	-18.84/-17.16	-10.44/-8.46	-9.48/-11.14	-10.74/-9.49	-7.55/-6.8	-5/-4.86
Θ(37.5°)	-8.83/-6.72	-12.91/-17.65	-17.12/-15.8	-12.34/-16.55	-13.23/-16.55	-12.34/-8.13	-5.83/-7.01	-6.32/-6.21	-5.03/-3.15	-1.83/-1.57	-1.92/-3.05	-4.62/-6.78	-8.13/-9.47	-10.16/-10.45	-8.55/-10.53	-8.44/-8.96	-7.58/-7.87	-7.75/-11.31	-6.69/-9.73	-10.3/-13.19	-12.29/-10.02	-11.48/-14.12	-16.52/-16.45	-11.22/-7.46
Θ(45°)	-11.95/-11.71	-8.25/-12.54	-18.85/-16.05	-12.29/-9.04	-8.32/-8.54	-9.15/-5.86	-5.88/-6.91	-9.32/-9.95	-6.61/-3.26	-1.2/-1.68	-1.72/-4.94	-11.73/-17.5	-14.09/-15.69	-10.21/-6.62	-4.62/-5.49	-9.7/-13.55	-14.36/-9.44	-9.81/-18.43	-13.83/-10.18	-9.48/-8.53	-8.23/-11.45	-15.2/-19.26	-12.16/-9.57	-10.82/-11.38
Θ(52.5°)	-11.57/-9.9	-10.3/-11.4	-10.95/-14.47	-18.81/-14.84	-7.38/-3.92	-3.48/-1.52	-2.8/-3.55	-2.98/-1.09	0.771/1.5	1.972/1.7	0.24/-8.77	-7.9/-11.78	-10.01/-10.31	-7.65/-6.51	-3.51/-3.55	-3.48/-0.6	-8.04/-7	-9.49/-10.92	-8.77/-17.1	-7.51/-9.03	-12.97/-17.53	-18.56/-18.65	-15.98/-13.13	-12.97/-12.31
Θ(60°)	-11.09/-11.1	-7.88/-5.97	-4.16/-3.54	-4.1/-6.35	-12.8/-8.55	-6.62/-9.24	-3.4/-2.95	-2.38/-1.61	-0.39/-2.38	-7.59/-11.33	-11.53/-11.45	-12.0/-10.49	-13.8/-10.86	-6.7/-3.3	-3.01/-1.18	-1.44/-2.12	-7.2/-17.88	-10.59/-8.4	-12.26/-10.29	-10.44/-16.42	-16.8/-11.6	-10.76/-8.1	-8.77/-9.52	
Θ(67.5°)	-13.78/-13	-18.11/-17.15	-14.19/-11.66	-11.46/-13.62	-11.9/-11.51	-7.93/-5.33	-5.06/-4.49	-2.84/-5.29	-0.77/-0.79	-1.58/-2.38	-6.33/-9.48	-9.43/-7.22	-5.78/-6.6	-10.37/-9.49	-6.55/-3.58	-3.72/-6.25	-6.06/-6.81	-6.85/-11.73	-17.07/-14.03	-7.1/-7.34	-11.95/-17.46	-18.92/-13.37	-9.38/-8.9	-13.84/-16.96
Θ(75°)	-12.17/-11.79	-18.14/-15.29	-10.22/-7.56	-5.98/-7.73	-5.82/-6.02	-5.77/-2.08	1.06/1.22	1.21/-0.03	-0.72/-0.39	-1.86/-4.24	-6.87/-10.59	-8.88/-9.73	-7.95/-6.1	-9.53/-8.45	-6.24/-4.53	-5.67/-15.05	-7.61/-5.07	-5.03/-7.25	-17.03/-12.45	-9.57/-5.21	-6.29/-10.83	-18.03/-11.95	-15.09/-14.7	-10.2/-10.06
Θ(82.5°)	-18.62/-18.87	-18.04/-14.09	-12.42/-12.61	-12.65/-12.6	-12.24/-8.74	-4.15/-1.81	-1.26/-0.56	-1.85/-2.21	-1.93/-1.85	-1.1/-2.44	-5.91/-6.71	-10.21/-15.55	-16.31/-18.64	-18.32/-17.77	-12.79/-9.8	-10.15/-8.61	-9.74/-14.45	-6.51/-6.01	-6.03/-18.83	-8.06/-10.89	-8.56/-10.89	-13.22/-13.28	-15.97/-17.4	-17.71/-15.82
Θ(90°)	-7.93/-13.33	-17.38/-8.9	-6.61/-5.82	-4.4/-3.64	-2.87/-1.7	-1.19/-0.83	-1.18/-3.41	-6.29/-3.41	0.14/1.84	0.320/2.3	-2.1/-3.6	-6/-10.73	-10.68/-9.77	-9.98/-10.92	-8.1/-7.66	-10.36/-9.97	-13.98/-16.14	-11.68/-7.18	-6.82/-8.31	-16.57/-9.77	-6.76/-7.75	-18.79/-14.02	-11.23/-11.4	-6.93/-6.6
Θ(97.5°)	-13.34/-18.1	-12.03/-9.02	-7.84/-6.9	-6.72/-7.43	-8.9/-6.55	-2.34/-0.25	-2.5/-4.53	-3.34/-1.42	1.39/-0.46	-0.26/-2.05	-4.36/-6.66	-9.96/-16.61	-14.2/-15.42	-9.54/-9.54	-8.63/-11.57	-12.2/-10.89	-10.66/-10.66	-12.23/-17.92	-14.81/-16.79	-15.32/-13.37	-9.34/-18.96	-16.45/-13.69	-11.31/-7.4	-5.93/-7.36
Θ(105°)	-15.47/-19.34	-12.81/-6.69	-8/-7.71	-5.93/-3.71	-2.33/-2.7	-5.11/-4.8	-10.33/-13.04	-3.310/-3.4	1.29/1.59	0.64/-1.62	-4.62/-6.53	-11.57/-14.88	-16.32/-13.86	-11.21/-15.56	-17.87/-14.61	-15.17/-18.41	-18.48/-8.79	-7.71/-11.62	-18.06/-17.7	-17.44/-16.5	-18.86/-14.18	-12.63/-18.53	-12.79/-9.6	-9.68/-12.59
Θ(112.5°)	-15.25/-17.87	-18.5/-11.72	-8.01/-6.79	-7.43/-10.55	-14.84/-7.86	-5.05/-5.8	-9.4/-4.79	-0.080/6.7	2.18/1.62	0.37/-0.75	-3.17/-6.41	-9.28/-11.5	-15.47/-16.8	-18.55/-18.06	-18.85/-18.14	-14.38/-16.4	-15.43/-18.8	-12/-11.62	-17.05/-19.04	-16.22/-17.01	-18.76/-16.89	-14.24/-18.06	-15.59/-13.04	-8.56/-12.9
Θ(120°)	-8.62/-10.76	-9.4/-7.5	-5.76/-5.19	-4.31/-3.61	-4.88/-8.44	-14.43/-16.39	-8.85/-4.18	-1.13/-0.06	0.53/-0.08	-0.89/-2.32	-4.16/-6.14	-7.91/-10.2	-9.14/-9.95	-8.6/-10.02	-10.43/-10.48	-12.76/-17.2	-18.63/-16.49	-19.74/-18.12	-18.36/-17.86	-16.59/-13.54	-14.15/-9.7	-8.03/-7.2	-7.21/-6.21	
Θ(127.5°)	-13.98/-17.57	-12.25/-9.93	-4.33/-2.95	-4.53/-6.16	-8.46/-9.35	-10.23/-8.91	-4.81/-3.4	0.690/9.1	-10.1/-1.54	-4.15/-7.33	-8.42/-8.36	-8.26/-8.6	-9.65/-12.02	-14.09/-18.56	-17.54/-11.08	-17.67/-15.7	-14.54/-8.49	-7.94/-13.6	-17.86/-16.73	-16.33/-12.52	-8.74/-11.38	-9.76/-9.66	-5.15/-5.14	-8.42/-10.64
Θ(135°)	-12.75/-9.79	-9.03/-6.41	-5.42/-4.8	-4.96/-6.68	-17.02/-18.59	-16.19/-9.49	-4.48/-1.63	-0.41/-0.55	-2.63/-6.02	-10.26/-15.54	-15.94/-17.26	-18.83/-18.48	-16/-10.39	-11.09/-14.26	-13.19/-7.76	-8.63/-11.8	-8.95/-6.11	-7.09/-12.52	-13.08/-11.8	-18.11/-18.11	-5.11/-5	-9.3/-11.95	-12.64/-8.11	-9.19/-13.82
Θ(142.5°)	-6.11/-4.5	-6.41/-8.32	-3.81/-2.88	-6.59/-4.92	-3.51/-3.87	-3.71/-4.12	-2.33/-2.07	0.940/9.8	-0.21/-1.98	-4.67/-9.21	-18.09/-18.28	-10.86/-8.22	-9.38/-10.59	-11.11/-11.63	-10.51/-13.7	-19.16/-17.7	-16.8/-7.12	-7.65/-9.38	-9.47/-11.83	-17/-12.43	-9.42/-11.68	-16.98/-13.2	-10.78/-9.53	-7.74/-4.14
Θ(150°)	-8.65/-6.72	-4.39/-3.17	-2.77/-2.68	-3.43/-4.67	-3.53/-3.63	-3.25/-4.24	-5.27/-4.47	-3.94/-3.92	-4.41/-5.48	-8.52/-13.36	-18.9/-15.5	-18.16/-13.01	-10.31/-9.41	-7.2/-6.67	-3.14/-4.92	-9.5/-18.76	-15.24/-11.92	-10.97/-9.29	-8.64/-8.75	-13.15/-17.71	-15.73/-12.9	-12.27/-18.09	-18.5/-8.95	
Θ(157.5°)	-7.03/-6.26	-3.89/-2.91	-2.82/-2.97	-3.56/-3.47	-3.29/-2.73	-1.81/-2.01	-2.87/-4.12	-5.43/-6.39	-6.48/-6.52	-5.3/-6.53	-5.94/-4.95	-4.86/-4.45	-5.53/-5.16	-3.86/-2.85	-2.51/-2.83	-3.83/-5.71	-8.51/-11.89	-16.61/-17.56	-17.36/-10.63	-6.44/-4.19	-3.11/-2.77	-2.48/-2.69	-3.65/-5.3	-6.29/-7.1
Θ(165°)	-7.82/-10.44	-13.83/-11.59	-8.69/-7.17	-6.33/-6.04	-5.68/-4.7	-4.16/-3.44	-2.7/-2.71	-3.01/-2.39	-3.94/-6.63	-6.51/-8.41	-10.74/-11.22	-12.64/-8.58	-6.56/-4.54	-3.16/-2.41	-2.37/-3.27	-4.76/-7.12	-8.86/-10.71	-12.11/-17.8	-11.23/-10.09	-8.85/-7.26	-5.76/-4.73	-3.33/-2.99	-3.54/-3.7	-5.2/-5.98
Θ(172.5°)	-6.43/-4.77	-4.51/-4.64	-6.15/-5.15	-6.18/-7.09	-8.55/-8.97	-8.69/-7.98	-7.78/-7.74	-9.11/-13.38	-13.1/-14.69	-12.34/-9.15	-7.18/-6.73	-4.82/-3.53	-3.07/-3.03	-3.02/-3.29	-3.96/-5.25	-7.32/-9.58	-11.92/-11.64	-9.55/-7.78	-6.48/-5.74	-6.98/-9.18	-13.01/-18.9	-18.97/-13.79	-8.63/-6.14	
Θ(180°)	-17.42/-16.22	-13.82/-11.97	-10.32/-8.77	-7.67/-6.95	-6.92/-7.1	-7.39/-7.93	-8.41/-8.74	-8.62/-7.37	-6/-4.76	-3.46/-2.7	-2.51/-2.75	-3.81/-4.72	-6.84/-9.44	-13.48/-18.56	-19.3/-17.88	-17.02/-11.56	-9.38/-8.31	-7.85/-7.79	-7.98/-8.02	-8.22/-8.63	-9.35/-10.39	-11.54/-12.34	-13.08/-14.34	-16.15/-17
Freq(Hz)	5.3GPol.	Theta/Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-12.76/-12.46	-9.06/-17.2	-9.4/-10.11	-11.16/-12.7	-13.45/-18.02	-15.86/-15.06	-14.01/-12.92	-13.3/-13.79	-15.03/-15.44	-15.79/-18.54	-15.55/-13.36	-11.88/-11.06	-10.13/-9.91	-12.1/-12.69	-11.9/-12.3	-14/-14.9	-14.82/-14.36	-13.72/-13.47	-12.35/-11.44	-10.81/-10.69	-11.39/-11.24	-10.36/-9.69	-8.67/-8.45	-8.42/-8.37
Θ(7.5°)	-12.3/-10.59	-9.52/-9.23	-8.77/-13.3	-8.94/-10.18	-10.77/-12.18	-13.23/-12.52	-17.01/-17.74	-15.37/-15.62	-12.35/-10.61	-8.96/-8.98	-7.37/-5.24	-4.67/-1.4	-4.41/-5.35	-6.15/-6.77	-7.64/-8.99	-10.81/-13.09	-15.06/-15.93	-16.64/-15.85	-17.47/-12.05	-11.3/-11.74	-13.16/-15.81	-18.97/-13.81	-19.06/-19.17	-17.56/-13.54
Θ(15°)	-8.62/-6.16	-6.13/-6.51	-5.86/-7.05	-7.14/-7.57	-8.98/-10.28	-13.15/-17.94	-17.64/-15.24	-12.43/-9.57	-7.9/-5.83	-5/-4.4	-3.7/-4	-4.87/-2.09	-2.36/-3.6	-3.7/-4.6	-6.26/-7.99	-13.05/-14.66	-14.78/-13.59	-11.05/-8.89	-7.41/-7.04	-7.4/-8.2	-8.58/-6.88	-8.05/-9.71	-7.73/-5.51	
Θ(22.5°)	-11.03/-13.82	-11.5/-13.79	-7.88/-8.55	-6.17/-5.41	-7.94/-9.16	-12.09/-18.29	-18.11/-11.41	-8.34/-7.19	-7.45/-8.82	-6.91/-6.42	-5.66/-5.11	-4.51/-4.67	-4.91/-5.02	-5.17/-5.58	-6.3/-7.57	-8.39/-9.39	-11.57/-13.24	-11.92/-9.79	-8.19/-7.32	-7.16/-8.41	-11.01/-11.77	-9.69/-8.12	-7.96/-8.9	-9.45/-10.64
Θ(30°)	-10.45/-13.83	-19.07/-13.87	-12.5/-12.15	-9.42/-9.39	-7.7/-9.02	-1.31/-13.68	-10.63/-5.63	-3/-1.69	-2.21/-2.94	-6.11/-9.2	-9.68/-5.95	-3.26/-3.48	-2.55/-2.39	-3.25/-5.25	-7.87/-10.68	-11.92/-13.86	-18.03/-19.02	-18.92/-13.07	-9.94/-9.92	-12.73/-7.55	-16.11/-10.95	-8.23/-6.86	-6.25/-6.09	-6.56/-8.1
Θ(37.5°)	-18.74/-12.83	-13.63/-9.34	-7.62/-8.18	-7.68/-10.64	-10.36/-12.85	-12.69/-9.83	-6.84/-4.9	-2.54/-2.98	-4.09/-8.36	-15.86/-8.99	-4.25/-1.44	-0.520/-49	0.610/-22	-1.35/-2.09	-2.46/-4.51	-6.58/-9.9	-12.99/-17.97	-17.53/-12.59	-10.43/-10.55	-14.24/-18.64	-17.83/-18.69	-12.99/-9.43	-8.48/-10.34	-12.36/-12.4
Θ(45°)	-19.01/-17.13	-16.01/-12.67	-10.12/-10.96	-13.21/-10.51	-11.6/-15.74	-11.2/-7.96	-5.91/-7.66	-6.76/-8.81	-11.32/-12.59	-7.09/-3.11	-0.21/1.5	0.290/-2	1.261/-27	1.030/-92	-0.13/-1.88	-5.02/-11.4	-15.77/-18.84	-14.87/-10.78	-11.16/-11.31	-9.26/-9.4	-12.16/-5.78	-5.71/-7.8	-10.11/-10.96	-9.96/-12.5
Θ(52.5°)	-6.35/-8.74	-6.71/-4.7	-3.47/-1.81	-1.85/-1.84	-4.82/-11.66	-10.69/-7.86	-4.71/-4.71	-4.43/-4.37	-3.71/-1.24	0.572/1.6	2.932/8.9	2.41/1.95	10.75	1.632/-1	1.47/-0.3	-3.02/-4.31	-4.82/-5	-8.77/-14.8	-10.63/-6.77	-5.73/-5.49	-5.47/-6.45	-5.19/-7.9	-9.33/-6.63	-5.19/-5.54
Θ(60°)	-12.41/-11.35	-7.02/-3.44	-2.4/-1.21	-0.230/2.3	-1.69/-3.87	-8.02/-14.04	-11.02/-10.65	-8.93/-4.95	-2.81/-2.33	-0.47/-0.03	0.091/-56	2.21/1.86	1.150/-68	1.26/1.5	1.780/-17	-1.64/-0.93	-2.05/-6.43	-9.08/-10.37	-6.6/-2.9	-2.67/-4.76	-7.91/-9.39	-18.94/-11.7	-7.84/-6.08	-7.37/-10.33
Θ(67.5°)	-6.94/-6.18	-5.15/-3.27	-3.81/-3.84	-2.56/-1.05	-0.26/-1.14	-4.09/-10.56	-18.65/-15.59	-10.39/-2.87	-3.1/-1.01	-0.160/-39	1.05/1.27	0.69/-0.95	-3.22/-4.3	-2.82/-2.69	-2.44/-3.66	-1.93/-3.53	-4.68/-6.75	-9.85/-10.79	-5.97/-6.48	-9.62/-11.5	-9.62/-8.15	-7.77/-6.61	-14.36/-18.47	-6.95/-6.98
Θ(75°)	-8.03/-6.81	-7.57/-7.99	-14.06/-15.31	-13.54/-6.5																				



Radiated Composite Gain Data

Appendix A

Θ(75°)	-15.01/-13.45	-16.92/-17.7	-15.06/-11.98	-9.87/-7.31	-5.67/-2.96	-1.85/-2.83	-4/-0.38	1.46/2.01	1.74/0.62	-0.09/-1.07	-1.76/-2.57	-5.55/-8.91	-14.8/-16.51	-14.84/-16.15	-17.86/-17.84	-10.41/-9.34	-18.85/-12.24	-7.14/-19.16	-12.47/-8.29	-7.14/-10.49	-8.05/-6.19	-5.08/-8.67	-13/-18.16	-18.54/-17.75
Θ(82.5°)	-9.62/-13.03	-18.36/-18.95	-12.54/-11.68	-8.2/-3.4	-1.78/-1.45	-2.49/-1.87	0.87/2.56	2.86/1.67	-0.33/-2.51	-2.71/-2.45	-2.93/-1.54	-8.98/-14.48	-18.02/-18.43	-17.63/-17.69	-18.41/-17.65	-15.69/-11.2	-9.82/-8.09	-8.12/-17.18	-14.1/-18.45	-10.48/-5.52	-11.91/-14.48	-15.42/-15.53	-18.81/-8.35	-10.47/-9.32
Θ(90°)	-18.73/-18.52	-13.13/-11.23	-10.23/-6.18	-3.44/-4.93	-6.96/-4.4	-2.89/-0.44	2.07/2.63	1.71/-0.16	-2.36/-2.32	0.23/1.21	0.36/-1.44	-3.97/-6.47	-12.06/-17.1	-18.37/-16.37	-18.96/-19.04	-16.26/-12.89	-12.32/-6.34	-9.24/-6.76	-5.36/-8.92	-10.12/-12.47	-19.23/-18.22	-16.36/-8.84	-8.82/-13.21	
Θ(97.5°)	-15.02/-16.68	-9.94/-5.13	-3.86/-3.98	-7.53/-12.47	-7.17/-5.16	-3.39/0.46	2.77/2.82	-0.26/-4.56	-5.78/-3.14	-1.47/0.74	-1.3/-2.6	-5.43/-8.63	-16.05/-18.69	-17.69/-15.59	-17.95/-10.85	-14.69/-15.93	-10.06/-11.08	-10.92/-7.05	-8.9/-9.87	-7.57/2.86	-4.26/-8.61	-15.16/-14.93	-14.03/-13.76	-10.44/-13.72
Θ(105°)	-4.95/-9.14	-14.06/-14.72	-10.47/-5.65	-4.67/-5.43	-8.49/-15.88	-6.66/-0.05	1.27/-0.96	-5.13/-8.3	-5.52/-0.17	1.36/1.14	-1.19/-4.58	-8.68/-13.6	-16.99/-18.52	-18.6/-17.97	-18.01/-17.75	-7.68/-9.29	-18.56/-13.3	-4.76/-18.64	-10.58/-8.7	-8.74/-11.99	-6.07/-11.56	-13.23/-11.08	-11.28/-9.63	-8.77/-17.91
Θ(112.5°)	-8.61/-8.42	-6.58/-8.69	-9.3/-9.26	-10.52/-7.3	-3.39/0.03	1.47/2.5	1.86/-1.1	-5.26/-6.63	-2.74/-0.85	0.74/1.14	-0.09/-3.21	-7.43/-11.71	-17.8/-18.97	-17.02/-18.26	-19.08/-14.47	-14.29/-9.22	-13.35/-11.85	-10.51/-15.82	-15.9/-7.57	-18.17/-18.73	-11.07/-8.88	-12.09/-18.52	-16.36/-8.84	-8.82/-13.21
Θ(120°)	-10.95/-9.6	-8.7/-7.7	-6.31/-3.47	-2.27/-1.46	-3.63/-7.65	-5.61/-3.21	-3.01/-8.7	-12.1/-3.3	-1.42/-1.26	-1.63/-2.98	-5.72/-9.49	-13.84/-17.66	-18.18/-17.73	-18.16/-18.72	-19.37/-13.12	-16.86/-8.41	-14.1/-13.17	-3.42/-4.58	-8.15/-4.91	-4.66/-10.61	-14.81/-15.82	-19.13/-11.2	-12.65/-15.83	-10.85/-12.93
Θ(127.5°)	-7.08/-7.36	-6.54/-7.51	-4.54/-2.27	-1.96/-1.88	-1.21/-2.17	-3.47/-5.26	-8.62/-7.97	-4.13/-1.62	-0.85/-0.72	-1.13/-2.64	-4.19/-1.64	-8.79/-11.4	-11.79/-10.85	-8.74/-10.41	-18.87/-18.1	-17.57/-12.54	-12.19/-6.21	-4.48/-3.42	-4.49/-9.96	-13.69/-12.42	-10.34/-10.09	-14.24/-18.26	-14.01/-15.66	-10.03/-9.07
Θ(135°)	-13.53/-12.7	-11.97/-8.98	-5.55/-2.56	-1.41/-1.64	-2.11/-0.47	0.32/-0.34	-1.35/-1.13	0.38/-1.52	2.45/2.61	2.44/1.84	-0.43/-3	-6.09/-8.94	-10.34/-11.2	-11.61/-17.85	-18.12/-9.36	-12.53/-18.49	-3.6/-1.01	-4.35/-6.71	-5.51/-5.58	-10.06/-16.69	-8.37/-5.75	-9.73/-11.61	-11.56/-11.32	-13.9/-9.7
Θ(142.5°)	-3.23/-3.09	-4.32/-5.46	-4.5/-1.38	-0.01/-0.54	-3.83/-8.91	-8.7/-8.59	-7.54/-3.77	-0.88/0.26	-0.32/-2.76	-7.15/-12.19	-9.12/-9.53	-10.77/-10.66	-12.01/-15.65	-14.32/-11.16	-11.19/-7.05	-7.75/-9.92	-10.55/-8.3	-10.12/-8.36	-6.73/-10.97	-14.83/-9.03	-9.65/-15.19	-18.18/-19.25	-18.24/-12.31	-6.64/-3.24
Θ(150°)	-1.82/-1.27	-2.35/-4.5	-6.74/-6.33	-4.3/-3.9	-5.03/-7.5	-10.17/-8.95	-5.15/-2.39	-0.91/-0.71	-1.59/-3	-5.06/-8.06	-13.17/-15.62	-11.71/-10.15	-11.33/-10.73	-9.26/-10	-10.26/-2.27	-3.12/-2.51	-4.07/-8.04	-12.32/-10.39	-8.85/-7.34	-6.81/-7.76	-9.98/-9.69	-8.89/-9.69	-11.61/-10.15	-4.85/-2.77
Θ(157.5°)	-1.37/-0.42	-0.33/-0.97	-8.33/-8.86	-5.79/-7.2	-8.08/-9.19	-10.66/-12.36	-12.17/-8.97	-6.25/-0.02	-5/-0.68	-8.82/-13.87	-17.65/-17.42	-14.25/-9.06	-4.59/-11.11	-13.53/-10.43	-6.17/-2.79	-1.18/-2.12	-5.64/-10.94	-15.25/-17.63	-18.89/-13.65	-8.89/-6.8	-6.33/-6.39	-6.8/-9.24	-14.25/-10.69	-5.88/-2.8
Θ(165°)	-11.74/-9.98	-7.69/-6.75	-6.22/-5.66	-5.45/-4.92	-4.13/-3.13	-2.25/-1.73	-1.75/-2.07	-2.12/-2.16	-2.34/-2.62	-3.19/-4.26	-6.13/-8.86	-12.09/-16.29	-12.21/-6.85	-3.46/-1.89	-1.68/-2.48	-4.38/-7.54	-12.24/-17.24	-18.32/-14.32	-9.65/-6.64	-4.82/-3.85	-3.38/-3.09	-3.34/-4.56	-8.66/-10	-12.36/-11.89
Θ(172.5°)	-17.36/-16.67	-12.08/-9.7	-8.49/-8.23	-7.95/-7.43	-6.62/-5.18	-3.59/-2.58	-1.95/-1.5	-1.08/-0.82	-0.83/-1.19	-1.96/-3.22	-4.65/-6.89	-10.46/-17.63	-17.85/-16.55	-13.16/-12.07	-12.91/-15.75	-18.9/-18.6	-16.54/-11.87	-8.17/-5.58	-3.88/-2.91	-2.35/-1.94	-1.9/-2.04	-2.75/-4.1	-6.09/-9.01	-12.07/-16.38
Θ(180°)	-13.35/-12.74	-10.72/-9.63	-9.23/-8.86	-8.95/-9.19	-9.35/-8.09	-7.49/-7.84	-8.63/-10.48	-14.71/-17.81	-18.78/-15.14	-11.95/-10.24	-9.1/-8.39	-8.26/-8.64	-8.09/-9.14	-8.78/-8.72	-9.15/-9.5	-9.1/-8.68	-9.47/-10.16	-11.25/-11.82	-12.08/-12.32	-12.19/-11.85	-10.84/-10.15	-9.98/-10.29	-11/-11.63	-12.07/-13.32
Freq(Hz)	5.785GPol.	Theta/Ant. 1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-9.25/-8.97	-10.17/-10.05	-11.15/-11.01	-10.38/-10.15	-9.49/-9.67	-11.45/-13.56	-14.93/-15.81	-18.04/-17.63	-18.03/-17.6	-18.26/-13.79	-11.91/-9.88	-8.03/-6.58	-5.48/-2.59	-6.02/-6.96	-7.65/-8.31	-Φ(225°)/Φ(232.5°)	-12.29/-14.18	-12.97/-16.63	-19.36/-16.26	-19.19/-18.48	-16.02/-13.7	-12.52/-12.52	-12.19/-11.03	
Θ(7.5°)	-4.61/-4.81	-5.77/-6.66	-7.06/-7.89	-8.19/-9.44	-11.28/-15.4	-19.78/-18.28	-19.39/-17.9	-15.11/-11.29	-10.03/-9.26	-8.86/-8.94	-9.06/-9.54	-10.07/-10.78	-11.25/-10.79	-10.05/-9.65	-9.42/-9.11	-8.96/-8.73	-8.18/-7.95	-8.03/-8.58	-9.63/-10.99	-12.91/-13.88	-13.02/-10.7	-8.62/-7.24	-6.43/-5.66	-5.57/-4.75
Θ(15°)	-8.78/-8.11	-8/-8.02	-8.43/-10.27	-10.62/-10.63	-18.98/-19.28	-18.28/-17.78	-15.57/-11.27	-8.5/-8.71	-5.4/-4.23	-3.66/-3.26	-3.26/-3.91	-4.45/-4.96	-5.44/-6.21	-6.69/-8.23	-10.29/-11.79	-12.23/-10.5	-8.96/-7.2	-6.14/-5.89	-6.25/-6.9	-8.18/-9.98	-11.04/-10.45	-9.55/-9.23	-9.61/-9.89	-10.31/-9.71
Θ(22.5°)	-18.42/-18.83	-15.44/-9.44	-8.33/-8.95	-10.04/-13.72	-10.74/-19.41	-19.04/-16.19	-12.76/-6.59	-4.73/-3.64	-3/-2.35	-1.94/-2.04	-2.71/-3.15	-3.19/-3.6	-4.39/-4.76	-1.93/-3.71	-3.83/-5.19	-10.65/-9.11	-7.48/-6.95	-9.83/-8.14	-9.96/-12.84	-11.02/-17.3	-10.77/-15.12	-13.36/-12.45	-16.25/-19.32	
Θ(30°)	-16.92/-17.67	-13.89/-10.53	-8.12/-9.31	-10.33/-14.33	-17.04/-18.51	-18.41/-10.81	-7.04/-4.67	-3.24/-2.27	-2.31/-3.14	-4.28/-4.43	-4.39/-3.76	-2.36/-1.53	-1.51/-1.63	-1.2/-0.88	-0.86/-1.84	-2.88/-4.88	-9.19/-14.38	-12.72/-8.48	-6.94/-7.5	-9.8/-15.44	-16.94/-11.57	-9.51/-8.81	-8.57/-9.7	-13.56/-15.81
Θ(37.5°)	-5.04/-3.08	-2.71/-2.52	-3.06/-4.28	-5.81/-8.38	-10.79/-13.61	-11.22/-7.82	-3.92/-1.08	-0.06/-0.27	-1.27/-1.39	-6.01/-5.67	-4.6/-3.98	-3.21/-3.57	-5.02/-4.23	-3.88/-3.65	-3.07/-3.64	-5.01/-7.07	-11.1/-11.08	-18.42/-16.53	-16.23/-13.43	-18.94/-18.73	-14.59/-10.97	-12.75/-12.27	-15.91/-13.13	-8.77/-8.42
Θ(45°)	-5.22/-7.63	-7.75/-8.63	-9.67/-15	-9.54/-13.38	-15.39/-16.18	-10.26/-5.15	-3.13/-4.12	-4.41/-1.19	-3.03/-5.46	-8.46/-6.96	-3.44/-0.99	0.06/4	-4.07/0.61	1.03/0.79	0.17/-0.58	-6.88/-2.15	-3.88/-5.73	-6.25/-7.87	-12.28/-18.14	-19.03/-10.24	-16.61/-18.56	-10.38/-7.96	-17.64/-6.28	-6.21/-5.13
Θ(52.5°)	-13.69/-10.76	-10.76/-9.6	-14.59/-17.82	-19.31/-15.49	-19.18/-16.03	-8.48/-4.26	-1.41/-0.12	0.42/-0.52	-1.89/-2.85	-2.31/-1.93	0.12/0.79	1.22/0.95	0.72/0.38	0.09/-1.09	-1.95/-1.82	-3.05/-4.85	-5.47/-4.59	-5.97/-6.4	-6.66/-8.06	-18.3/-9.2	-5.29/-5.1	-5.77/-6.53	-8.48/-11.21	-17.56/-18.57
Θ(60°)	-5.75/-5.52	-6.57/-6.19	-4.75/-4.42	-3.39/-3.86	-6.64/-6.15	-8.89/-2.2	-0.57/-1.19	-3.37/-4.58	-5.1/-3.75	-1.98/-0.62	0.89/1.38	2.29/-1.53	1.59/1.19	1.56/0.26	-0.33/-0.15	-0.86/-2.77	-4.4/-4.59	-6.29/-13.64	-11.28/-6.26	-4.29/-6.21	-12.94/-17.43	-9.27/-7.67	-6.39/-4.79	
Θ(67.5°)	-5.66/-3.1	-8.73/-8.19	-5.15/-6.4	-1.52/-0.78	-1.14/-5.12	-13.72/-7.25	0.79/-1.26	0.34/-0.57	-0.63/-0.04	0.27/-0.26	0.37/0.67	1.06/0.06	-0.43/-2.06	-2.42/-4.07	-2.57/-2.15	-2.99/-3.27	-4.81/-4.06	-10.15/-12.12	-12.87/-11.86	-17.18/-11.54	-8.46/-7.28	-0.08/-9.74	-5.55/-6.65	
Θ(75°)	-2.31/-3.1	-4.13/-4.68	-4.49/-5.29	-5.03/-2.74	-1.93/-2.05	-2.77/-2.61	-1.12/-0.39	-0.02/0.25	0.78/1.12	1.47/0.2	-1.13/-0.84	0.13/0.67	-0.2/-1.19	-2.63/-2.82	-1.59/-0.66	-0.72/-2.73	-5.6/-6.09	-7.96/-4.9	-7.17/-17.99	-18.2/-11.72	-15.75/-18.52	-13.12/-10.53	-8.56/-7.12	-5.39/-3.25
Θ(82.5°)	-12.21/-12.27	-9.89/-10.36	-12.03/-18.15	-15.03/-9.84	-5.94/-1.62	0.69/-1.98	1.52/0.66	0.38/0.32	0.7/-0.32	-2.03/-2.56	-0.14/-1.42	1.74/0.79	-1.29/-3.17	-3.69/-6.26	-2.77/-2.75	-3.37/-4.88	-4.31/-3.42	-9.04/-7.1	-4.67/-3.7	-7.54/-18.38	-13.86/-8.49	-8.73/-7.52	-4.96/-6.66	-9.22/-11.41
Θ(90°)	-3.41/-2.96	-3.48/-5.11	-5.16/-4.82	-3.02/-3.97	-7.70/-10.46	-4.35/-1.29	0.21/7.4	2.86/-1.42	-0.47/-3.57	-4.54/-5.12	-2.54/-1.09	0.5/-0.08	-0.48/-1.88	-3.25/-6.27	-4.57/-2.71	-2.95/-6.07	-4.27/-3.14	-4.01/-12.45	-7.92/-6.57	-7.59/-6.7	-18.48/-14.02	-9.31/-14.19	-15.98/-11.31	-6.59/-6.2
Θ(97.5°)	-7.77/-4.82	-5/-4.79	-6.65/-8.62	-7.26/-6.52	-7.99/-6.77	-6.3/-4.02	-2.34/-2.85	-3.85/-4.67	-6.59/-8.66	-6.4/-3.13	-2.53/-3.87	-6.69/-10.41	-15.47/-18.66	-17.08/-12.82	-10.92/-9.61	-9.71/-18.91	-9.48/-2.59	-5.83/-10.59	-9.96/-13.65	-9.11/-9.4	-17.68/-7.91	-8.77/-17.99	-16.69/-17.76	-9.64/-8.01
Θ(105°)	-7.4/-3.88	-1.55/-0.02	1.95/2.63	2.78/1.94	-0.1/-4.81	-1.068/-3.77	-0.03/1.67	1.19/-1.72	-6.66/-12.33	-9.18/-6.83	-5.01/-4.75	-5.39/-5.87	-7.12/-7.05	-11.39/-18.55	-14.76/-11.28	-13.42/-18.08	-9.41/-5.46	-4.45/-2.75	-8.15/-10.02	-14.17/-14.39	-12.69/-6.33	-4.21/-9.74	-13.71/-18.01	-16.54/-6.68
Θ(112.5°)	-2.91/-1.61	-0.41/9.4	3.44/4.59	4.934.8	3.36/1.71	-0.83/-3.9	-3/-1.58	-1.12/-2.21	-8.41/-18.7	-13.9/-10.54	-10.97/-9.06	-8.78/-5.45	-6.91/-7.24	-12.98/-18.54	-18.07/-18.5	-18.3/-18.76	-12.64/-10.76	-12.56/-7.76	-10.59/-18.03	-8.11/-11.32	-16.66/-13.23	-12.06/-8.63	-6.03/-7.2	-4.52/-8.2
Θ(120°)	-8.49/-5.55	-4.96/-2	-0.66/0.64	1.32/15	1.84/0.02	-1.64/-2.24	-3.28/-4.79	-7.22/-17.86	-13.28/-7.51	-5/-4.2	-6.38/-8.47	-10.63/-10.16	-13.73/-12.94	-14.7/-12.4	-19.34/-13.01	-12.84/-15.12	-8.08/-11.3	-12.51/-15.36	-17.72/-17.97	-7.44/-6.61	-10.6/-14.37	-11.99/-12.78	-19.15/-9.71	
Θ(127.5°)	-3.81/-2.73	-3.13/-1.82	-0.40.39	0.33/-0.41	-1.11/-2.68	-6.43/-10.4																		



Radiated Composite Gain Data

Appendix A

Θ (120°)	-5.3/-4.89	-4.97/-7.35	-12.16/-11.94	-8.25/-6.39	-6.9/-7.97	-13.21/-19.3	-12.6/-13.37	-11.39/-7.98	-5.03/-3.71	-4.01/-5.43	-7.88/-9.21	-7.22/-5.95	-4.06/-4.56	-6.16/-6.33	-6.94/-13.06	-17.6/-16.47	-14.37/-18.42	-10.63/-6.21	-9.34/-14.79	-13.34/-12.88	-9.8/-13.23	-12.21/-17.27	-11.6/-11.99	-11.7/-11	
Θ (127.5°)	-8.59/-9.83	-9.82/-12.41	-14.57/-19.05	-18.08/-11.53	-9.96/-10.05	-7.32/-4.12	-2.58/-2.02	-1.7/-1.26	-1.76/-3.86	-6.18/-9.12	-7.72/-6.44	-5.33/-5.69	-7.16/-8.1	-5.14/-6.86	-5.73/-6.17	-14.94/-19.15	-15.94/-11.46	-13.23/-12.47	-17.66/-10.81	-7.68/-8.89	-19.85/-9.61	-15.12/-14.3	-12.38/-9.71	-11.29/-7.46	
Θ (135°)	-15.54/-15.88	-18.5/-18.28	-18.21/-15.89	-11.42/-9.37	-6.75/-3.58	-2.2/-1.79	-1.47/-1.14	-1.32/-2.62	-4.76/-6.3	-7.07/-1.7	-9.57/-7.5	-10.33/-13.74	-7.98/-4.28	-6.01/-9.64	-9.57/-16.77	-16.81/-15.23	-17.22/-13.24	-14.24/-14.21	-9.58/-6.78	-9.64/-18.23	-12.69/-11.93	-14.43/-17.68	-19.34/-18.59		
Θ (142.5°)	-17.81/-12.4	-12.44/-13.67	-11.82/-8.9	-6.04/-4.39	-3.47/-2.06	-0.520/12	-0.09/-0.99	-2.27/-3.24	-4.18/-5.2	-6.29/-7.65	-5.26/-3.42	-2/-1.04	-2.69/-3.72	-3.81/-6.39	-11.87/-11.1	-11.04/-19.45	-18.19/-103	-18.25/-18.12	-17.77/-18.63	-15.46/-10.41	-9.16/-11.1	-12.32/-13.92	-13.02/-11.8	-16.85/-18.12	
Θ (150°)	-8.32/-4.91	-3.73/-4.14	-4.6/-5.24	-5.7/-5.51	-4.89/-4.6	-4.26/-3.4	-3.13/-3.2	-3.58/-4.1	-4.88/-6.01	-7.39/-7.87	-6.69/-6.03	-3.77/-4.34	-7.07/-11.03	-14.51/-13.77	-15.46/-19.04	-11.08/-10.03	-17.63/-13.23	-9.54/-8.69	-7.25/-6.25	-6.83/-8.98	-12.67/-16.62	-15.36/-14.8	-15.7/-15.9	-16.42/-11.19	
Θ (157.5°)	-1.255/-8.91	-7.26/-6.43	-5.07/-3.7	-2.81/-2.39	-2.12/-2.17	-2.31/-2.35	-2.12/-1.85	-1.77/-1.91	-2.56/-3.84	-5.62/-6.54	-6.19/-5.53	-5.64/-6.73	-6.28/-9.85	-12.53/-13.66	-8.32/-5.31	-5.17/-8.12	-12.19/-9.14	-7.62/-8.33	-9.43/-9.77	-10.07/-11.43	-14.09/-16.99	-14.41/-8.9	-12.55/-14.77	-17.06/-15.87	
Θ (165°)	-13.75/-10.55	-8.77/-7.47	-6.19/-5.01	-4.32/-3.76	-3.07/-2.52	-2.47/-2.5	-2.45/-2.31	-2.47/-3.03	-4.22/-6.02	-7.98/-9.42	-9.96/-10.15	-10.53/-10.74	-11.67/-14.53	-18.35/-14.05	-10.87/-11.01	-13.15/-14.6	-11.31/-9.04	-9.01/-10.88	-13.59/-16.06	-18.84/-18.72	-18.21/-18.25	-18.69/-17.6	-18.87/-18.13	-18.73/-19	
Θ (172.5°)	-15.14/-15.39	-14.67/-13.24	-11.95/-11.31	-10.88/-10.85	-10.73/-10.4	-10.15/-12.8	-10.74/-10.9	-11.03/-12.01	-13.98/-16.63	-17.55/-15.14	-12.78/-11.26	-10.53/-10.22	-10.85/-12.12	-14.03/-16.08	-15.94/-12.41	-9.37/-7.57	-6.84/-9.67	-8.06/-9.85	-12.4/-14.31	-15.81/-16.6	-16.4/-15.61	-14.38/-12.73	-12.84/-14.18	-15.64/-16.6	
Θ (180°)	-13.46/-13.37	-12.12/-11.78	-12.3/-13.95	-15.92/-16.97	-16.34/-14.6	-12.75/-11.41	-10.21/-9.53	-8.99/-8.25	-7.76/-7.1	-6.81/-6.95	-7.33/-8.15	-9.43/-11.33	-13.78/-17.13	-18.47/-18.11	-18.08/-16.39	-14.54/-13.73	-13.38/-13.49	-13.21/-12.29	-10.48/-8.99	-8.08/-7.75	-7.73/-8.1	-8.27/-8.21	-8.53/-9.66	-11.07/-12.35	
Freq(Hz)	5.2GPol.	ThetaAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ (0°)	-9.75/-10.17	-9.78/-9.63	-9.96/-10.76	-11.36/-11.42	-10.74/-9.74	-8.43/-7.37	-6.3/-5.7	-5.37/-5.25	-5.09/-5	-4.94/-5.12	-5.3/-5.75	-6.25/-6.97	-7.78/-8.74	-9.48/-10.23	-10.85/-10.7	-2.95/-2.63	-2.38/-2.16	-2.17/-1.25	-7.19/-6.5	-6.14/-5.79	-6.07/-6.47	-6.89/-7.14	-7.72/-8.2	-8.54/-8.81	
Θ (7.5°)	-3.5/-3.74	-4.06/-4.72	-5.87/-10.18	-8.32/-8.26	-8.28/-7.74	-6.91/-6	-5.43/-5.24	-5.27/-5.37	-5.59/-5.97	-6.77/-7.79	-9.17/-11.15	-13.55/-16.68	-18.82/-17.56	-18.67/-18.24	-18.14/-14.13	-11.49/-9.62	-8.13/-6.75	-5.59/-4.56	-3.86/-3.32	-2.83/-2.57	-2.6/-2.51	-2.61/-2.93	-3.08/-3	-2.94/-3.06	
Θ (15°)	-1.34/-1.48	-1.52/-1.62	-2.26/-3.36	-4.48/-5.34	-6.81/-7.83	-7.74/-7.79	-7.81/-7.5	-6.78/-6.69	-6.94/-7.66	-8.81/-10.45	-12.44/-14.54	-17.47/-18.58	-18.81/-18.61	-18.45/-14.85	-12.24/-10.36	-8.89/-7.76	-6.4/-5.23	-3.84/-2.82	-2.07/-1.87	-1.84/-2.05	-2.28/-2.3	-2.17/-1.92	-1.61/-1.38	-1.34/-1.35	
Θ (22.5°)	0.350/-17	0.10/08	-0.12/-1.18	-2.41/-3.82	-5.96/-7.75	-9.1/-10.46	-10.9/-10.52	-10.08/-9.61	-9.16/-8.67	-8.79/-9.8	-10.86/-11.33	-11.37/-11.82	-13.25/-16.51	-18.85/-18.87	-16.09/-12.58	-10.74/-9.54	-7.63/-3.57	-3.66/-2.88	-3.06/-3.7	-4.3/-4.55	-4.12/-3.42	-2.36/-1.22	-0.26/-0.1	0.290/-38	
Θ (30°)	1.070/64	0.210/14	0.16/-0.41	-1.29/-2.4	-4.52/-7.51	-13.24/-14.64	-9.94/-7.18	-6.14/-5.56	-5.19/-4.85	-4.54/-4.7	-4.96/-4.89	-4.72/-4.83	-5.32/-6.15	-8.15/-12.22	-18.69/-18.03	-14.02/-11.46	-7.83/-5.64	-5.74/-6.9	-7.43/-8.47	-7.34/-6.6	-4.78/-3.68	-1.37/-0.46	0.51/14	1.38/-36	
Θ (37.5°)	1.52/1.06	0.560/45	0.41/-0.02	-0.39/-1.14	-2.82/-5.7	-9.97/-14.85	-13.19/-7.53	-5.52/-5.08	-6.07/-6.34	-4.59/-4.19	-4.04/-4.23	-4.82/-4.94	-4.39/-4.46	-6.37/-9.95	-14.81/-18.07	-17.95/-14.96	-9.51/-7.47	-6.36/-6.21	-7.26/-7.96	-7.78/-7.18	-8.88/-6.48	-4.08/-1.34	-0.610/18	0.81/44	
Θ (45°)	1.12/1.31	1.21/1.42	1.380/8	-0.02/-1.23	-2.35/-3.25	-4.45/-5.9	-7.37/-6.49	-4.32/-3.15	-3.16/-3.98	-4.92/-5.38	-5.44/-5.73	-6.47/-6.68	-5.92/-5.48	-6.29/-6.42	-11.53/-18.15	-17.2/-19.11	-13.57/-9.03	-5.97/-6.57	-6.24/-6.01	-5.47/-5.78	-5.64/-4.95	-5.79/-3.74	-1.310/12	0.750/75	
Θ (52.5°)	2.57/2.38	2.56/2.64	2.31/78	0.76/-0.69	-1.58/-2.18	-3.47/-5.98	-10.43/-17.61	-11.59/-7.61	-6.42/-6.24	-5.6/-4.14	-2.93/-2.69	-3.23/-3.26	-3.78/-4.39	-4.29/-4.33	-3.73/-5.07	-9.13/-18.74	-18/-11.27	-12.83/-10.88	-7.12/-6.64	-5.38/-3.43	-4.23/-2.4	0.26/172	2.172/52		
Θ (60°)	-1.78/-1.42	-0.630/24	0.16/-0.03	-1.06/-1.59	-1.41/-1.12	-1.33/-2.96	-5.45/-9.27	-13.19/-14.92	-15.13/-16.03	-14.91/-11.46	-7.83/-5.87	-4.43/-2.85	-2.04/-2.31	-3.33/-5	-5.3/-5.43	-6.11/-9.99	-17.25/-19.32	-17.69/-13.74	-13.49/-12.38	-7.14/-2.84	-2.38/-3.32	-5.02/-4.51	-1.92/-0.81	-1.27/-1.71	
Θ (67.5°)	0.731/25	1.121/44	0.81/-0.19	-2.1/-1.48	-5.68/-4.58	-4.63/-3.92	-3.95/-4.73	-6.08/-7.95	-9.65/-9.95	-6.06/-4.73	-4.14/-3.76	-2.79/-2.3	-2.47/-3.84	-6.26/-1.2	-5.4/-3.61	-4.79/-5.85	-8.99/-11.26	-17.36/-15.01	-11.19/-10.82	-6.67/-6.47	-6.81/-7.77	-11.44/-8.98	-4.87/-1.44	0.06/3	
Θ (75°)	-0.090/72	0/0.69	-2.3/-3.36	-3.68/-2.75	-3.42/-4.19	-5.81/-7.23	-8.02/-8.1	-8.09/-10.38	-13.9/-12.32	-8.17/-7.4	-7.23/-8.54	-8.37/-9.89	-8.79/-12.29	-17.63/-14.95	-9.71/-9.28	-7.49/-7.94	-10.15/-9.37	-6.21/-11.06	-11.66/-11.96	-18.55/-11.96	-5.02/-5.56	-5.78/-3.99	-2.54/-0.97	-0.78/-0.2	
Θ (82.5°)	-12.48/-9.07	-6.54/-3.61	-2.04/-1.85	-2.33/-1.96	-1.93/-2.26	-3.26/-4.74	-3.66/-9.8	-14.83/-18.63	-11.93/-7.06	-4.58/-4.79	-6.31/-8.22	-8.3/-7.57	-7.64/-7.11	-6.76/-7.98	-14.93/-18.71	-16.01/-11.76	-8.35/-5.14	-8.18/-15.88	-10.36/-7.66	-17.47/-10.38	-11.27/-6.6	-1.92/-1.69	-5.61/-6.94	-10.09/-10.72	
Θ (90°)	-5.49/-3.38	-2.59/-0.94	-0.450/71	1.54/227	1.74/-0.02	-2.64/-4.38	-4.84/-5.05	-6.57/-7.28	-4.93/-2.77	-1.72/-1.76	-3.15/-3.84	-4.32/-3.67	-3.89/-3.69	-4.52/-5.54	-7.36/-5.27	-6.73/-17.56	-12.97/-9.87	-9.54/-7.91	-7.27/-10.77	-9.81/-8.62	-10.49/-11.49	-15.58/-11.26	-7.92/-7.82	-7.41/-6.03	
Θ (97.5°)	-6.91/-9.49	-3.81/-2.83	-2.37/-0.69	1.22/1.88	1.57/-0.04	-3.34/-6.94	-10.1/-12.33	-14.27/-9.44	-3.95/-8.0	0.581/02	0.960/74	0.25/-1.1	-2.13/-3.87	-5.73/-8.94	-8.19/-9.74	-13.28/-18.43	-13.44/-7.17	-8.84/-9.25	-7.61/-6.69	-7.93/-8.18	-11.43/-18.07	-17.88/-12.28	-9.31/-8.4	-8.95/-6.5	
Θ (105°)	-18.42/-12.04	-9.5/-7.76	-7.97/-6.69	-3.67/-3.55	-2.74/-3.55	-5.67/-8.5	-10.8/-7	-4.76/-1.45	-0.852/31	2.792/91	2.31/59	0.21/-1.48	-3.42/-5.26	-6.68/-11.82	-17.63/-13.03	-10.58/-18.6	-11.64/-7.46	-5.12/-4.16	-4.14/-7.18	-12.3/-17.8	-11.24/-13.03	-14.71/-16.35	-7.34/-9.43	-15.67/-17.68	
Θ (112.5°)	-18.54/-18.24	-18.86/-18.07	-18.32/-19.13	-17.76/-19.17	-18.16/-13.72	-10.62/-9.1	-8.52/-5.31	-1.870/78	2.83/89	4.093/38	2.32/11	-0.83/-2.46	-3.39/-5.44	-9.42/-15.18	-11.41/-9.22	-9.9/-14.93	-14.3/-10.42	-8.9/-8.26	-6.49/-8.62	-16.41/-13.4	-18.46/-18.91	-12.82/-13.41	-13.14/-17.96	-18.58/-17.98	
Θ (120°)	-7.46/-6.31	-5.04/-5.18	-5.46/-6.49	-5.94/-7.15	-11.41/-19.25	-18.62/-18.27	-9.66/-3.56	0.34/2.04	2.66/2.71	2/1.33	0.1/-1.11	-3.68/-4.53	-5.25/-4.41	-7.38/-8.93	-7.76/-7.2	-7.59/-12.15	-13.57/-11.26	-12.22/-9.7	-5.87/-5.5	-6.97/-13	-15.83/-18.44	-18.61/-18.35	-17.43/-13.6	-8.85/-8.18	
Θ (127.5°)	-14.65/-10.26	-6.77/-5.17	-4.51/-5.84	-8.82/-14.2	-18.45/-19.25	-16.15/-12.59	-7.07/-2.76	-0.301/54	2.38/2.26	1.67/0.2	1.2/-3.3	-3.81/-3.36	-1.47/-2.53	-3.84/-8.83	-8.42/-3.89	-7.23/-9.8	-7.37/-9.65	-13.47/-9.87	-6.43/-8.62	-11.55/-11.46	-17.81/-13.52	-17.64/-18	-13.61/-12.79	-15.66/-18.18	
Θ (135°)	-5.32/-5.26	-4.69/-3.42	-4.67/-5.53	-8.28/-13.59	-17.48/-17.72	-18.49/-11.03	-6.2/-2.85	-0.410/96	1.330/97	-0.110/84	-1.77/-2.47	-2.46/-2.27	-1.65/-1.84	-3.12/-8.09	-18.28/-18.91	-18.64/-11.98	-4.4/-5.66	-1.92/-3.55	-4.89/-2.95	-5.98/-10.9	-7.75/-7.23	-16.06/-15.21	-11.71/-11.81	-13.13/-11.12	
Θ (142.5°)	-0.98/-1.78	-4.75/-6.38	-8.49/-13.7	-18.16/-16.78	-11.76/-10.9	-13.79/-16	-10.94/-7.11	4.35/-3.3	-3.49/-4.54	-5.95/-7.83	-10.27/-11.52	-12.78/-7.32	-4.46/-8.26	-7.25/-7.43	-7.56/-8.35	-10.75/-11.03	-8.95/-11.02	-12.61/-14.81	-18.14/-17.2	-16.14/-12.1	-8.96/-5.37	-3.13/-1.95	-1.09/-0.73	-0.33/-0.52	
Θ (150°)	-6.89/-7.17	-10.41/-11.91	-12.91/-12.88	-9.82/-8.01	-7.32/-7.22	-8.16/-11.26	-15.58/-9.38	-5.28/-3.42	-2.61/-2.62	-3.67/-4.71	-6.78/-7.83	-6.69/-5.35	-4.3/-2.81	-2.29/-2.17	-1.97/-3.35	-5.81/-4.18	-2.69/-4.25	-7.03/-7.66	-7.34/-7.65	-9.46/-11.43	-11.95/-12.84	-13.51/-11.63	-9.85/-9.18	-12.68/-12.58	
Θ (157.5°)	-10.68/-10.75	-13.85/-18.94	-17.85/-16.15	-11.47/-8.14	-6.36/-6.07	-6.94/-7.76	-8.02/-7.46	-6.75/-6.21	-5.65/-5.05	-4.61/-4.37	-4.04/-3.41	-2.8/-1.92	-0.540/81	1.51/27	-0.46/-4.33	-12/-19.17	-17.67/-11.88	-6.56/-5.48	-7.1/-9.29	-9.44/-7.06	-5.01/-3.57	-2.58/-2.14	-2.75/-4.07	-6.43/-9.16	
Θ (165°)	-16.04/-18.68	-18.19/-15.21	-12.24/-11.89	-13.15/-16.67	-17.66/-18.86	-17.82/-16.36	-13.18/-10.16	-7.98/-5.68	-3.81/-2.74	-2.12/-1.94	-2.15/-2.87	-4.2/-6.7	-9.71/-10.45	-9.06/-9.6	-13.32/-19.7	-11.37/-8.37	-7.43/-6.95	-6.83/-7.59	-9.87/-14.45	-19.05/-18.45	-18.75/-18.54	-18.14/-14.94	-17.3/-17.86	-19.18/-16.14	
Θ (172.5°)	-18.76/-18.85	-17.44/-18.57	-17.86/-16.41	-15.9/-17.17	-18.49/-19.05	-16.43/-17.23																			

ϕ(157.5)	-14.74/-15.56	-13.51/-11.99	-10.56/-8.73	-7.48/-6.7	-6/-5.9	-5.79/-6.38	-7.34/-8	-7.7/-6.48	-5.21/-4.47	-4.2/-4.38	-5.19/-7.41	-10.19/-11.26	-11.96/-15.8	-16.59/-9.36	-6.89/-7.18	-9.54/-13.28	-13.61/-13.68	-17.97/-18.51	-18.44/-15.88	-14.65/-17.07	-18.02/-14.14	-11.17/-11.29	-13.71/-14.9
ϕ(165°)	-12.44/-12.82	-12.68/-10.99	-7.85/-5.5	-4.03/-2.9	-2.35/-2.23	-2.34/-2.5	-2.8/-3.1	-3.66/-3.9	-5.1/-5.85	-6.41/-6.7	-6.89/-7.4	-8.7/-10.57	-11.97/-11.79	-12.13/-15.2	-19.74/-18.49	-17.62/-17	-10.33/-7.43	-7.26/-9.56	-15.94/-18.4	-17.42/-13.25	-12.44/-12.89	-19.44/-19.32	-17.44/-18.76
ϕ(172.5°)	-11.31/-10.54	-9.49/-8.56	-6.88/-6.05	-5.02/-4.92	-4.48/-6.4	-5.03/-7.09	-6.21/-7.35	-8.9/-11.35	-13.77/-15.37	-16.38/-14.93	-13.07/-11.47	-10.3/-9.55	-9.74/-10.85	-17.12/-13.17	-18.54/-18.26	-17.12/-12.34	-9.81/-9.94	-9.11/-9.76	-15.45/-8.82	-8.42/-9.11	-10.75/-14.29	-15.36/-18.52	-18.25/-17.97
ϕ(180°)	-13.36/-12.75	-12.06/-11.24	-10.57/-10.48	-10.71/-11.45	-13.3/-17.05	-18.9/-19.22	-16.79/-13.03	-10.51/-8.47	-7.2/-6.21	-5.87/-6.06	-6.47/-7.07	-7.95/-9.37	-10.67/-11.86	-13.04/-13.46	-12.35/-10.84	-10.01/-9.92	-9.97/-10.22	-10.43/-10.29	-8.76/-9.05	-8.21/-8.03	-8.37/-9.12	-9.94/-11.06	-12.15/-13.19
Freq(Hz)	5.66GPa	Theta(Ant)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gain	ϕ(0°)/ϕ(7.5°)	ϕ(15°)/ϕ(22.5°)	ϕ(30°)/ϕ(37.5°)	ϕ(45°)/ϕ(52.5°)	ϕ(60°)/ϕ(67.5°)	ϕ(75°)/ϕ(82.5°)	ϕ(90°)/ϕ(97.5°)	ϕ(105°)/ϕ(112.5°)	ϕ(120°)/ϕ(127.5°)	ϕ(135°)/ϕ(142.5°)	ϕ(150°)/ϕ(157.5°)	ϕ(165°)/ϕ(172.5°)	ϕ(180°)/ϕ(187.5°)	ϕ(195°)/ϕ(202.5°)	ϕ(210°)/ϕ(217.5°)	ϕ(225°)/ϕ(232.5°)	ϕ(240°)/ϕ(247.5°)	ϕ(255°)/ϕ(262.5°)	ϕ(270°)/ϕ(277.5°)	ϕ(285°)/ϕ(292.5°)	ϕ(300°)/ϕ(307.5°)	ϕ(315°)/ϕ(322.5°)	ϕ(330°)/ϕ(337.5°)
ϕ(0°)	-5.03/-4.02	-3.35/-2.83	-2.17/-1.9	-1.78/-1.7	-1.83/-2.15	-2.75/-3.37	-4.2/-5.22	-6.44/-7.95	-10.11/-13.1	-17.15/-17.3	-18.21/-15.2	-11.79/-9.07	-7.1/-5.41	-3.68/-2.31	-1.35/-0.7	-5.33/-5.19	-5.15/-5.55	-6.21/-7.44	-3.57/-5.08	-6.8/-6.6	-12.51/-19.22	-18.25/-16.84	-12.89/-9.86
ϕ(7.5°)	-11.56/-10.98	-10.14/-8.75	-7.34/-6.35	-5.55/-5.08	-4.95/-4.6	-4.6/-5.2	-6.27/-7.32	-8.96/-11.25	-14.62/-17.32	-16.62/-14.09	-12.38/-10.31	-8.41/-6.36	-4.64/-3.35	-2.41/-1.76	-1.23/-0.95	-0.91/-1.12	-1.62/-2.45	-3.56/-4.95	-6.37/-9.79	-9.96/-12.63	-15.83/-18.18	-18.61/-17.82	-15.93/-13.55
ϕ(15°)	-7.76/-10	-14.92/-17.42	-18.02/-15.21	-11.33/-8.53	-6.8/-4.56	-5.33/-6.17	-4.71/-4.91	-12.82/-18.51	-16.64/-18.11	-13.33/-13.24	-12.06/-10.58	-8.63/-6.4	-4.54/-3.51	-3.53/-4.5	-3.64/-4.93	-4.91/-4.28	-1.64/-4.68	-5.33/-6.35	-7.44/-8.23	-12.87/-16.6	-2.62/-6.07	-5.28/-6.57	-7.25/-8.71
ϕ(22.5°)	-3.62/-4.89	-6.98/-9.05	-10.76/-11.87	-11.25/-8.26	-5.78/-4.48	-4.98/-8.41	-8.4/-10.98	-14.58/-17.38	-14.27/-11.79	-10.94/-11.15	-11.97/-9.86	-6.8/-4.6	-3.43/-2.94	-2.77/-2.98	-3.58/-4.78	-5.98/-6.26	-6.08/-8.13	-6.48/-7.25	-7.76/-7.89	-6.84/-5.55	-4.53/-3.83	-3.16/-2.71	-2.58/-2.95
ϕ(30°)	-4.72/-4.25	-0.71/-17	-10.17/-14.77	-19.12/-16.05	-11.36/-10.98	-10.24/-10.17	-11.17/-10.77	-9.82/-8.12	-7.21/-7.35	-8.35/-8.78	-6.21/-4.33	-2.98/-2.45	-2.43/-2.48	-2.37/-2.71	-3.93/-6.35	-9.15/-11.42	-12.64/-12.89	-12.01/-15.58	-8.06/-9.78	-6.33/-6.54	-4.81/-4.01	-2.8/-5.48	
ϕ(37.5°)	0.68/-0.08	-4.07/-0.87	-0.18/-17.47	-2.45/-4.58	-9.01/-17.99	-18.88/-12.22	-9.06/-6.37	-4.91/-3.28	-3.23/-6.2	-7.22/-9.21	-12.43/-15.72	-1.77/-18.71	-4.71/-19.32	-6.57/-4.4	-1.26/-13.72	-10.12/-12.65	-14.62/-12.93	-10.87/-10.23	-8.62/-9.39	-11.51/-9.27	-5.99/-13.5	-1.30/-4	1.06/-1
ϕ(45°)	1.56/-1.49	2.01/-2.34	1.790/-89	1.34/-4.51	8.68/-10.55	-6.11/-3.39	-1.66/-0.93	-1.07/-2.07	-3.78/-6.22	-9.76/-12.96	-14.07/-13.22	-11.81/-11.22	-13.78/-14.57	-11.15/-7.5	4.92/-4.32	-5.16/-7.55	-8.31/-7.23	-5.77/-4.44	5.16/-7.53	-9.78/-8.41	-6.33/-5.97	4.95/-1.3	0.77/-1.48
ϕ(52.5°)	0.721/-34	2.16/-62	2.36/-49	-0.76/-3.86	-6.6/-5.88	-3.82/-32	-1.28/-12	-1.8/-35	-15.4/-5.23	-18.64/-13.3	-8.93/-673	-7.1/-8.42	-12.42/-13.5	-11.85/-8.78	-6.3/-4.61	-4.38/-6.46	-3.73/-3.36	-3.86/-6.36	-9.22/-9.28	-7.38/-7.08	-7.43/-7.19	-5.12/-8.22	-0.43/-0.18
ϕ(60°)	3.02/-409	4.694/99	4.63/-65	2.37/-45	5.87/-457	-3.82/-306	-3.33/-5.74	-10.58/-18.39	-10.29/-5.65	-1.71/-4.34	-4.31/-94	-15.21/-75.5	-19.14/-14.37	-6.45/-6.3	-4.98/-5.78	-6.08/-7.33	-9.02/-9.7	-6.13/-5.1	-5.77/-7.27	-7.26/-9.06	-6.39/-3.25	-1.03/-29	2.16/-62
ϕ(67.5°)	-0.37/-108	2.48/-921	2.832/-41	1.23/-0.77	2.63/-3.49	-3.73/-3.16	-2.6/-2.78	-3.82/-5.73	-8.29/-7.92	-6.85/-5.35	-6.04/-6.6	-9.29/-14.65	-17.89/-18.1	-18.42/-19.06	-10.43/-8	-5.89/-3.79	4.19/-9.59	-5.46/-6.72	-8.96/-12.53	-11.52/-7.74	-7.75/-6.09	-4.89/-2.78	-1.42/-0.4
ϕ(75°)	1.52/-198	2.48/-224	1.810/-73	-0.23/-2.15	-3.11/-3.3	-2.040/-23	1.752/-79	2.84/-67	-0.3/-67	-0.68/-11.32	-10.19/-37.2	-1.95/-13.8	-15.05/-15.82	-17.35/-18.33	-16.67/-13.3	-7.3/-5.92	-6.4/-6.07	-5.97/-4.41	-5.83/-7.06	-7.68/-13.46	-10.56/-9.35	-4.61/-4.27	-1.23/-1.04
ϕ(82.5°)	2.232/-35	1.43/-52	-1.68/-239	-1.62/-15	-0.9/-0.4	-0.07/-0.39	-0.040/-58	0.78/-81	-5.57/-15.61	-0.86/-31.4	-4.31/-4.81	-7.19/-13.4	-18.99/-18.5	-13.85/-13.04	-10.1/-10.25	-8.04/-8.34	-6.21/-5.45	-1.4/-4.48	-5.11/-4.48	-17.45/-6.04	-2.96/-2.57	-1.360/-73	0.63/-0.71
ϕ(90°)	-5.23/-33.5	-2.86/-4.09	-5.78/-5.73	-5.79/-6.67	-4.62/-1.56	0.230/-67	-0.16/-1.97	-3.32/-5.05	-7.11/-7.03	-4.36/-2.88	-2.69/-3.6	-4.95/-6.6	-8.9/-10.15	-9.31/-7.49	-6.14/-5.13	-5.38/-8.33	-3.51/-3.87	-5.53/-8.35	-5.48/-3.78	-6.42/-8.23	-7.1/-6	-9.25/-13.09	-10.3/-6.91
ϕ(97.5°)	-3.77/-298	-1.574/-1.69	-1.7/-21	-1.04/-7.01	-1.78/-3.01	-1.42/-0.01	0.36/-0.45	-2.35/-5.68	-9.02/-31.3	-0.59/-0.21	-1.34/-2.36	-6.99/-18.24	-18.04/-17.97	-17.87/-16.51	-16.09/-11.23	-9.9/-15.17	-11.04/-4.02	-1.55/-2.39	-5.38/-10.46	-10.14/-6.84	-6.41/-8.34	-6.83/-6.49	-8.79/-12.21
ϕ(105°)	-4.97/-5.15	-3.84/-8.45	-4.58/-3.73	-1.97/-0.65	-1.97/-0.65	-1.779/-8.03	-1.779/-8.03	-1.42/-19	3.53/-4.45	2.83/-2	-8.37/-13.72	-8.73/-13.72	-17.58/-18.16	-15.81/-12.34	-9.77/-1.97	-10.73/-18.6	-3.73/-2.6	-3.88/-5.37	-5.97/-8.63	-9.51/-16.3	-18.51/-18.11	-19.71/-14.84	-6.74/-5.22
ϕ(112.5°)	-8.86/-73	-5.49/-5.26	-4.62/-5.6	-5.58/-5.4	-2.94/-1.03	-0.15/-1.14	-4.27/-5.13	-1.42/-1.7	3.784/-86	4.473/-21	1.350/-07	-2.22/-5.73	-7.7/-6.19	-7.48/-11.44	-14.54/-12.09	-18.07/-14.59	-10.74/-7.21	-6.52/-10.21	-11.18/-18.83	-13.59/-7.51	-9.62/-12.72	-17.62/-14.7	-18.13/-18.79
ϕ(120°)	-7.15/-7.91	-7.4/-5.72	-5.24/-71	-6.29/-7.99	-9.98/-71.4	-5.27/-5.95	-9.39/-8.98	-3.030/-77	2.823/-12	2.560/-68	-1.55/-3.53	-5.16/-19	-9.04/-63	-13.03/-13.84	-13.39/-79	-8.53/-16.63	-14.46/-9.86	-17.87/-11.98	-7.34/-13.18	-12.32/-10.24	-17.84/-18.41	-16.68/-19.24	-5.1/-6.23
ϕ(127.5°)	-6.77/-5.94	-4.26/-3.77	-3.31/-4.95	-2.38/-5.92	-9.38/-9.61	-9.28/-10.14	-15.38/-13.69	-4.65/-0.26	1.822/-5	1.760/-05	-1.69/-3.23	-5.56/-69	-5.98/-4.81	-5.23/-62	-7.58/-9.98	-18.75/-13.3	-10.38/-18.47	-12.25/-12.16	-11.11/-14.33	-18.07/-17.67	-15.11/-13.59	-11.55/-67	-6.2/-96
ϕ(135°)	-5.29/-4.66	-2.16/-2.07	-2.56/-4.7	-9.54/-10.82	-5.93/-4.24	-4.76/-7.71	-9.67/-8.36	-5.42/-2.28	0.31/-25	1.180/-51	0.05/-1.12	-2.02/-4.33	-4.05/-4.72	-4.82/-5.09	-5.69/-4.56	-4.67/-10.95	-18.09/-12.37	-11.47/-18.94	-12.56/-11.2	-14.72/-19.06	-9.88/-8.44	-13.95/-11.66	-17.45/-15.85
ϕ(142.5°)	-1.97/-2.65	-4.27/-5.64	-10.27/-16.65	-11.43/-6.33	-4.03/-4.39	-6.87/-9.48	-7.85/-9.35	-1.020/-63	1.482/-14	2.452/-15	0.9/-1.66	-4.26/-87	-18.21/-13.99	-9.83/-73	-7.21/-6.14	-7.79/-8.47	-10.17/-10.33	-7.19/-5.5	-3.96/-5.42	-8.87/-13.2	-8.22/-6.32	-4.48/-2.27	-1.54/-1.51
ϕ(150°)	-6.89/-97	-11.64/-14.1	-19.12/-12.91	-8.38/-5.92	-2.24/-2.98	-3.09/-4.22	-5.13/-4.89	-3.83/-2.65	-1.59/-12.1	-1.52/-2.3	-3.45/-8.1	-6.16/-4.02	-1.67/-16.4	-1.81/-13.6	-18.41/-15.26	-16.59/-6.88	-3.62/-2.97	-4.55/-8.72	-10.41/-10.43	-10.92/-14.59	-17.66/-18.74	-14.32/-12.05	-11.01/-11.46
ϕ(157.5°)	-8.16/-7.09	-6.86/-6.72	-5.48/-3.72	-2.5/-2.2	-2.4/-2.68	-3.39/-4.69	-5.82/-6.5	-7.1/-7.97	-8.57/-8.71	-8.73/-8.6	-8.73/-7.61	-5.43/-3.93	-3.33/-2.52	-1.75/-1.23	-8.44/-1.71	-3.72/-5.01	-7.25/-12.43	-15.33/-12.62	-11.86/-11.81	-12.66/-12.74	-11.06/-9.99	-9.8/-9.43	-8.12/-6.79
ϕ(165°)	-5.96/-4.6	-3.25/-2.58	-2.85/-3.35	-3.67/-4.09	-4.93/-6.21	-7.03/-7.67	-7.65/-6.63	-4.99/-3.6	-2.57/-1.94	-1.65/-1.61	-1.67/-1.58	-1.4/-1.49	-2.19/-3.76	-5.63/-6.08	-6.32/-7.93	-11.86/-17.86	-19.02/-14.8	-10.09/-7.86	-7.89/-9.3	-12.74/-17.22	-15.99/-18.4	-15.89/-13.31	-12.39/-10.82
ϕ(172.5°)	-6.46/-5.25	-4.06/-3.76	-4.2/-4.75	-5.02/-5.58	-6.44/-8	-8.96/-10.78	-9.49/-8.63	-7.58/-6.73	-6.55/-6.9	-7.66/-8.89	-11.08/-14.84	-17.84/-17.17	-12.69/-9.35	-7.26/-6.11	-6.65/-8.3	-10.64/-13.74	-17.47/-17.86	-18.42/-18.18	-16.91/-18.67	-15.91/-16.05	-15.15/-13.25	-11.02/-11.52	-9.56/-7.58
ϕ(180°)	-13.88/-15.2	-18.34/-17.6	-16.38/-15.88	-13.75/-11.02	-9.65/-9.08	-8.81/-8.48	-8.69/-8.94	-9.46/-10.37	-11.86/-12.89	-12.23/-10.26	-8.52/-7.06	-5.78/-4.9	-4.62/-6.3	-4.92/-5.54	-6.24/-7.3	-8.57/-8.96	-8.62/-8.57	-9.25/-10.46	-11.21/-10.79	-9.98/-9.39	-8.79/-8.67	-8.54/-8.23	-7.58/-7.5
Freq(Hz)	5.785GPa	PhiAnt	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gain	ϕ(0°)/ϕ(7.5°)	ϕ(15°)/ϕ(22.5°)	ϕ(30°)/ϕ(37.5°)	ϕ(45°)/ϕ(52.5°)	ϕ(60°)/ϕ(67.5°)	ϕ(75°)/ϕ(82.5°)	ϕ(90°)/ϕ(97.5°)	ϕ(105°)/ϕ(112.5°)	ϕ(120°)/ϕ(127.5°)	ϕ(135°)/ϕ(142.5°)	ϕ(150°)/ϕ(157.5°)	ϕ(165°)/ϕ(172.5°)	ϕ(180°)/ϕ(187.5°)	ϕ(195°)/ϕ(202.5°)	ϕ(210°)/ϕ(217.5°)	ϕ(225°)/ϕ(232.5°)	ϕ(240°)/ϕ(247.5°)	ϕ(255°)/ϕ(262.5°)	ϕ(270°)/ϕ(277.5°)	ϕ(285°)/ϕ(292.5°)	ϕ(300°)/ϕ(307.5°)	ϕ(315°)/ϕ(322.5°)	ϕ(330°)/ϕ(337.5°)
ϕ(0°)	-5.17/-6.2	-7.98/-11	-14.92/-17.97	-18.61/-15.91	-12.55/-9.59	-7.64/-6.25	-5.25/-4.39	-3.86/-3.26	-2.72/-2.47	-2.39/-2.41	-2.63/-3.09	-3.61/-4.12	-4.46/-5.26	-6.86/-9.4	-12.96/-17.52	-13.76/-11.42	-10.11/-8.95	-8.45/-7.93	-5.93/-4.63	-3.42/-2.79	-2.42/-2.18	-2.13/-2.14	-2.35/-2.55
ϕ(7.5°)	-16.31/-15.27	-17.23/-19.4	-18.03/-18.71	-17.29/-15.56	-12.68/-9.52	-7.67/-6.05	-4.48/-3.43	-2.41/-1.68	-1.13/-0.67	-0.35/-0.3	-0.45/-0.87	-1.6/-2.59	-3.85/-4.3	-7.33/-9.69	-12.99/-17.71	-17.55/-13.87	-11.31/-9.63	-8.73/-8.16	-7.4/-6.77	-6.13/-6.17	-6.26/-6.7	-7.52/-8.51	-10.01/-11.01
ϕ(15°)	-10.40/-11.44	-14.17/-17.06	-17.46/-17.91	-16.62/-13.92	-12.22/-9.81	-7.36/-4.93	-4.51/-2.34	-1.4/-0.8	-0.40/-0.25	-0.30/-0.7	-1.37/-2.25	-3.34/-4.79	-6.37/-8.3	-9.02/-9.63	-10.69/-12.48	-15.01/-17.4	-18.12/-18.06	-17.19/-16.85	-14.46/-14.08	-12.78/-15.78	-17.62/-17.4	-17.79/-16.08	-14.46/-14.25
ϕ(22.5°)	-14.87/-14.7	-17.91/-18.91	-17.57/-18.17	-18.9/-19.44	-18.78/-12.65	-8.4/-5.83	-4.18/-2																



Radiated Composite Gain Data

Appendix A

Θ(7.5°)	-18.37/-16.68	-14.37/-12.42	-10.59/-9.08	-7.8/-6.74	-5.9/-5.21	-4.69/-4.36	-4.16/-3.9	-3.6/-3.45	-4.23/-4.91	-6.02/-7.54	-9.71/-13.02	-18.17/-17.82	-15.64/-11.18	-8.31/-6.25	-4.58/-3.31	-2.38/-1.7	-1.19/-0.94	-0.99/-1.34	-1.95/-2.83	-3.91/-5.1	-6.29/-7.31	-8.22/-9.25	-10.61/-12.36	-14.89/-17.71
Θ(15°)	-12.33/-13.7	-15.15/-15.91	-15.67/-14.6	-13.15/-11.61	-10.27/-9.15	-8.23/-7.39	-6.55/-5.78	-4.96/-4.49	-4.27/-3.49	-4.81/-5.57	-6.8/-8.84	-11.99/-16.33	-16.84/-12.31	-8.61/-6	-3.94/-2.45	-1.39/-0.68	-0.25/-0.14	-0.29/-0.76	-1.5/-2.42	-3.48/-4.6	-5.73/-6.58	-7.05/-7.42	-7.9/-8.69	-9.81/-11.22
Θ(22.5°)	-9.91/-11.68	-13.94/-16.23	-18.39/-19.93	-17.29/-18.76	-15.88/-12.94	-10.96/-9.36	-7.91/-6.72	-5.77/-5.02	-4.4/-4.19	-4.31/-4.8	-5.95/-8.06	-11.52/-17.36	-16.72/-13.0	-7.13/-4.58	-2.71/-1.45	-0.64/-0.09	0.19/0.2	-0.13/-0.78	-1.59/-2.46	-3.39/-4.4	-5.35/-5.92	-6.04/-5.91	-5.95/-6.45	-7.41/-8.72
Θ(30°)	-8.76/-10.34	-11.95/-12.69	-12.75/-12.24	-11.8/-11.45	-10.97/-9.93	-8.9/-7.99	-7.1/-6.33	-5.77/-5.26	-4.6/-4.13	-3.99/-4.11	-4.9/-6.53	-9.46/-15.57	-16.79/-12.25	-7.1/-4.23	-2.36/-1.19	-0.51/-0.11	0.08/0.02	-0.4/-1.11	-1.83/-2.52	-3.31/-4.24	-5.21/-5.82	-5.86/-5.63	-5.49/-5.73	-6.48/-7.65
Θ(37.5°)	-7.33/-8.46	-9.5/-10.1	-9.93/-9.41	-8.89/-8.62	-8.46/-8.13	-7.69/-7.14	-6.54/-6	-5.85/-5.83	-5.58/-5.41	-5.32/-5.65	-6.52/-8.37	-12.09/-18.38	-14.91/-8.45	-5.12/-3.15	-1.85/-1.05	-0.59/-0.3	-0.23/-0.45	-0.96/-1.68	-2.34/-3	-3.69/-4.52	-5.4/-6.04	-6.23/-6.06	-5.72/-5.65	-5.92/-6.59
Θ(45°)	-5.11/-5.91	-6.95/-7.7	-7.95/-7.98	-8.2/-8.69	-9.29/-9.77	-6.65/-8.88	-7.97/-7.11	-6.75/-6.69	-7.54/-8.47	-6.56/-11.35	-13.93/-15.78	-15.48/-13.25	-6.82/-6.64	-4.32/-2.81	-1.76/-0.98	-0.43/-0.04	0.15/0.02	-0.45/-1.2	-1.99/-2.75	-3.41/-4.01	-5.56/-4.97	-5.32/-5.4	-5.14/-4.82	-6.82/-7.41
Θ(52.5°)	-3.6/-4.36	-5.46/-6.33	-6.78/-7.28	-8.2/-9.62	-11.33/-13	-13.04/-11.26	-9.47/-7.9	-6.69/-6.06	-6.16/-6.75	-7.8/-8.98	-12.29/-18.79	-18.58/-11.16	-7.13/-4.56	-3.07/-2.22	-1.55/-0.85	-0.13/0.51	0.99/1.11	0.81/0.22	-0.46/-1.07	-1.62/-2.09	-2.48/-2.9	-3.52/-4.07	-4.26/-4.06	-3.67/-3.41
Θ(60°)	-3.34/-4.05	-5.03/-5.56	-5.57/-5.6	-6.22/-7.62	-9.63/-12.07	-14.34/-13.83	-12.2/-10.85	-9.75/-8.64	-8.28/-8.32	-8.57/-8.78	-9.68/-12.7	-19.07/-18.64	-11.35/-7.59	-5.37/-4.05	-2.99/-1.89	-0.79/0.15	0.93/1.38	0.69/0.34	-0.09/-0.71	-1.31/-1.94	-2.75/-3.56	-4/-3.97	-3.62/-3.23	
Θ(67.5°)	-4.2/-4.71	-4.78/-5.44	-4.44/-3.92	-4.21/-4.54	-7.23/-8.93	-10.23/-10.03	-8.77/-7.79	-7.68/-8.25	-9.72/-11.91	-15.01/-18.12	-19.27/-15.37	-11.74/-9.24	-7.62/-6.36	-5.33/-4.37	-3.28/-2.18	-1.18/-0.34	0.49/1.15	1.43/1.36	1.17/0.81	0.22/-0.6	-1.56/-2.55	-3.36/-3.88	-4.3/-4.49	-4.4/-4.14
Θ(75°)	-4.88/-5.08	-5.11/-4.66	-3.94/-3.43	-3.7/-5.18	7.3/-8.3	-8.72/-7.94	-6.47/-5.48	-5.14/-5.65	-7.18/-9.1	-10.53/-11.93	-16.99/-17.82	-10.56/-6.71	-4.88/-3.78	-2.91/-2.42	-2.25/-2.13	-1.73/-1.02	0.03/0.99	1.61/1.9	2.96/1.72	1.18/0.4	-0.74/-2.11	-3.31/-4.17	-4.93/-5.3	-5.3/-5.06
Θ(82.5°)	-3.55/-4.3	-5.19/-5.15	-4.48/-4.25	-5.18/-8.1	-12.95/-13.83	-14.54/-14.18	-11.11/-9.28	-8.71/-9.81	-13.43/-18.61	-18.36/-18.52	-17.85/-17.9	-12.74/-8.22	-5.9/-4.09	-2.63/-1.88	-1.87/-2.27	-2.64/-2.51	-1.69/-0.71	0.18/0.86	1.43/-1.6	1.38/0.9	-0.01/-1.25	-2.6/-3.89	-6.44/-6.65	-4.21/-3.78
Θ(90°)	-2.6/-3.25	-4.78/-5.65	-5.12/-4.77	-6.9/-41	-6.9/-41	-18.03/-17.18	-10.81/-7.84	-6.61/-6.9	-9.5/-13.25	-15.47/-18.42	-17.97/-11.9	-9.45/-9.28	-10.1/-10	-7.87/-5.36	-3.54/-2.32	-1.69/-1.63	-1.95/-2.08	-1.95/-1.53	-0.8/-0.36	-0.28/0.38	-0.57/-0.73	-1.71/-1.95	-2.55/-2.81	-2.79/-2.67
Θ(97.5°)	-0.64/-0.76	-1.91/-3.43	-3.78/-3.8	-5.29/-8.96	-14.07/-14.95	-16.25/-19.02	-17.88/-16.11	-12.3/-10.91	-14.69/-18.04	-18.42/-17.02	-10.56/-6.18	-4.19/-3.79	-4.32/-4.82	-5.17/-5.56	-5.39/-4.52	-3.63/-3.12	-2.98/-2.71	-2.43/-1.99	-1.41/-1.09	-0.93/-0.77	-0.43/-0.11	-0.26/-0.83	-1.36/-1.52	-1.35/-0.95
Θ(105°)	-0.27/-0.87	-2.34/-3.53	-4.23/-3.53	-3.42/-4.08	-4.89/-5.8	-7.37/-8.74	-10.32/-13.13	-15.72/-18.94	-16.71/-16.65	-15.21/-14.76	-11.28/-7.5	-5.08/-3.76	-3.26/-2.79	-2.23/-1.99	-2.23/-2.72	-3.41/-4.44	-5.68/-6.35	-6.18/-5.04	-3.66/-2.75	-2.12/-1.49	-0.86/-0.55	-0.64/-0.95	-1.15/-1.14	-0.86/-0.49
Θ(112.5°)	-0.93/-1.41	-2.64/-4	-3.72/-2.28	-1.53/-2.22	-4.13/-6.67	-8.95/-10.06	-10.65/-12.87	-15.47/-11.25	-8.35/-7.7	-9.86/-9.95	-8.44/-7.4	-7.64/-7.89	-7.65/-6.92	-5.86/-5.24	-5.25/-5.53	-0.09/-0.02	-8.64/-10.74	-11.8/-9.99	-7.31/-5.59	-4.68/-3.8	-2.71/-1.93	-1.79/-1.08	-2.28/-2.16	-1.88/-1.2
Θ(120°)	-2.47/-3.24	-5.41/-8.68	-9.71/-6.78	-5.08/-5.57	-7.53/-8.71	-8.56/-8.17	-7.69/-8.19	-9.84/-10.13	-9.21/-9.16	-11.37/-15.53	-13.04/-10.74	-10.88/-12.44	-13.39/-13.16	-12.5/-12.01	-11.35/-9.85	-8.53/-8.81	-10.54/-12.92	-15.93/-17.64	-12.38/-8.32	-6.27/-4.94	-3.29/-2.03	-1.81/-2.56	-3.46/-3.68	-3.31/-2.8
Θ(127.5°)	-3.32/-3.28	-4.15/-2.55	-10.79/-14.77	-11.81/-9.82	-8.71/-7.4	-7.7/-8.94	-10.82/-13.6	-18.16/-18.23	-17.36/-19.51	-12.33/-8.46	-7.21/-8.18	-10.61/-12.9	-13.08/-13.15	-14.01/-17.54	-17.71/-12.48	-7.81/-6.29	-6.41/-7.32	-8.67/-10.85	-1.73/-4.61	-7.38/-6.48	-5.21/-3.85	-3.23/-3.79	-5.07/-5.71	-5.45/-3.2
Θ(135°)	-2.32/-1.76	-1.86/-2.81	-4.72/-6.6	-10.52/-10.82	-9.27/-8.05	-7.81/-8.71	-10.21/-11.18	-11.74/-12.11	-11.79/-9.45	-6.69/-4.56	-3.47/-3.27	-3.62/-4.38	-5.31/-6.13	-6.68/-7.61	-10.16/-14.59	-12.95/-9.71	-8.57/-8.38	-8.29/-8.38	-1.01/-6.81	-5.89/-5.6	-5.21/-4	-3.63/-2.08	-2.63/-3.69	-4.13/-3.48
Θ(142.5°)	-1.6/-1.29	-1.22/-1.56	-2.45/-4.07	-6.04/-7.59	-8.01/-7.66	-7.22/-7.21	-7.81/-8.75	-10.22/-12.46	-13.8/-11.82	-9.43/-8.06	-7.39/-6.86	-6.58/-6.65	-7.12/-7.51	-7.54/-7.46	-7.89/-9.01	-10.39/-11.49	-12.48/-12.75	-12.16/-11	-8.73/-6.22	-4.48/-3.48	-2.68/-1.69	-0.66/-0.13	-0.39/-1.2	-1.99/-2.21
Θ(150°)	-4.05/-3.96	-3.72/-3.47	-3.52/-4	-4.79/-5.51	-5.85/-5.9	-5.87/-5.98	-6.67/-8.09	-10.17/-12.47	-13.94/-13.58	-12.74/-12.75	-13.72/-15.28	-17.95/-19.03	-16.8/-17.96	-15.57/-11.59	-9.1/-9.8	-8.07/-9.32	-11.41/-12.91	-13.9/-15.62	-15.86/-12.63	-9.76/-7.96	-6.45/-5.06	-3.64/-2.86	-2.89/-3.45	-4.17/-4.65
Θ(157.5°)	-11.05/-8.5	-6.33/-6.68	-3.72/-3.33	-3.47/-3.8	-4.15/-4.42	-4.69/-4.92	-5.26/-6.03	-7.3/-8.77	-10.42/-11.96	-13.38/-13.52	-12.42/-11.31	-10.9/-11.21	-12.21/-13.63	-14.41/-13.13	-10.81/-9.2	-8.77/-9.57	-11.06/-11.83	-11.72/-11.76	-12.27/-13.24	-14.83/-17.29	-19.26/-17.71	-18.47/-18.6	-17.34/-17.4	-15.72/-13.06
Θ(165°)	-6.57/-5.14	-3.94/-3.13	-2.71/-2.65	-3/-3.67	-4.28/-4.83	-5.24/-4.62	-5.4/-5.45	-6.12/-7.22	-8.67/-10.54	-12.93/-14.68	-14.03/-12.22	-10.88/-10.26	-10.31/-11.12	-12.37/-13.55	-13.89/-13.05	-12.06/-11.96	-11.73/-10.85	-9.89/-8.95	-8.44/-8.22	-8.14/-8.29	-9.12/-10.2	-10.81/-10.7	-8.79/-7.23	
Θ(172.5°)	-4.77/-4.1	-3.59/-3.31	-3.32/-3.58	-4.19/-5.12	-6.13/-6.95	-7.53/-7.83	-7.8/-7.71	-7.93/-8.62	-9.52/-10.52	-11.92/-13.36	-14.51/-15.24	-15.43/-15.24	-15.31/-15.9	-17/-18.77	-17.79/-19.12	-18.75/-18.24	-16.88/-15.54	-14.14/-13.17	-12.16/-10.95	-9.89/-9.19	-8.7/-8.31	-7.99/-7.78	-7.48/-6.85	-6.02/-5.2
Θ(180°)	-6.29/-5.93	-5.62/-5.48	-5.64/-6.05	-6.79/-7.85	-9.13/-10.45	-11.35/-11.99	-12.43/-12.61	-12.33/-11.84	-11.46/-11.16	-10.9/-11.23	-11.59/-12.08	-12.39/-12.4	-12.34/-12.27	-12.36/-12.66	-13.38/-14.83	-17.08/-17.84	-18.74/-17.7	-18.71/-18.05	-16.59/-13.99	-11.72/-10	-8.83/-8.02	-7.53/-7.2	-7.04/-6.93	-6.78/-6.53
Freq(Hz)	5.2GPol.	PhiAnt. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-11.19/-11.34	-11.05/-12.6	-13.49/-12.5	-12.31/-12.03	-10.9/-10.54	-9.16/-8.18	-8.6/-9.02	-8.43/-7.99	-7.81/-7.77	-7.9/-8.37	-8.89/-9.54	-10.35/-11.09	-11.77/-12.73	-13.53/-14.59	-15.28/-15.06	-14.31/-13.2	-11.38/-10.44	-9.61/-9.39	-8.91/-8.4	-7.94/-8.21	-9.29/-11.09	-11.34/-11.41	-11.26/-11.17	-12.29/-11.01
Θ(7.5°)	-7.04/-8.52	-9.96/-10.91	-10.88/-9.71	-8.51/-7.86	-8/-8.86	-9.22/-10.8	-15.1/-18.31	-16.13/-14.92	-14.44/-13.85	-13.47/-13.48	-13.23/-12.85	-12.46/-12.52	-11.91/-13.43	-13.64/-13.75	-13.67/-12.88	-12.14/-12.04	-11.91/-11.32	-10.3/-9.23	-7.84/-6.91	-5.91/-5.42	-5.3/-5.14	-5.17/-5.33	-5.71/-5.47	-6.3/-6.46
Θ(15°)	-5.32/-5.6	-5.96/-6.95	-6.83/-8.14	-7.98/-8.06	-8.06/-7.41	-8.2/-9.74	-10.34/-11.54	-11.82/-11.67	-13.54/-17.42	-16.65/-12.94	-10.64/-9.37	-9.09/-9.75	-10.91/-12.16	-13.29/-14.42	-14.43/-13.73	-12.10/-8.89	-10.12/-9.31	-8.52/-7.67	-6.34/-5.5	-4.64/-4.16	-4.4/-0.3	-3.88/-4.04	-3.88/-4.04	-4.83/-4.96
Θ(22.5°)	-8.31/-7.6	-8.57/-10.52	-11.61/-11.58	-12.18/-13.68	-10.33/-7.14	-6.22/-4.27	-3.67/-4.99	-6.79/-8.58	-12.14/-14.74	-13.07/-13.52	-16.29/-15.5	-11.77/-9.76	-8.87/-8.39	-7.95/-7.87	-8.24/-8.61	-9.45/-11.33	-14.52/-16.55	-15.57/-13.95	-12.02/-9.71	-8.33/-7.72	-7.29/-7.58	-8.7/-9.55	-9.41/-9.76	-10.2/-8.69
Θ(30°)	-12.97/-16.28	-18.46/-18.93	-18.97/-19.72	-18.2/-18.73	-14.35/-10.3	-9.33/-8.39	-9.2/-7.98	-6.55/-7.38	-10.38/-13.2	-12.35/-12.5	-14.79/-19.29	-16.82/-11.79	-10.34/-11.16	-12.33/-13.07	-12.39/-11.38	-12.18/-13.88	-14.15/-14.04	-17.73/-18.31	-18.79/-17.89	-16.72/-15.72	-11.23/-10.98	-11.75/-14.19	-18.56/-18.36	-17.44/-12.98
Θ(37.5°)	-17.28/-17.48	-16.48/-18.02	-16.34/-15.38	-18.55/-19.05	-17.88/-10.47	-7.39/-5.03	-6.14/-6.75	-8.69/-11.91	-11.78/-7.66	-6.47/-8.27	-11.47/-18.28	-12.98/-7.48	-13.84/-16.6	-18.62/-19.24	-16.66/-18.83	-16.38/-18.19	-17.74/-17.97	-18.72/-16.07	-13.61/-13.05	-11.9/-10.77	-15.15/-14.7	-15.15/-14.19	-17.07/-19.13	
Θ(45°)	-13.44/-16.62	-14.73/-17.49	-16.55/-12.13	-11.49/-15.73	-17.83/-12.68	-8.71/-5.82	-4.93/-5.07	-8.43/-13.68	-17.06/-13.79	-9.25/-8.22	-10.18/-15.7	-8.19/-3.85	-2.98/-3.39	-4.95/-8.13	-11.35/-12.7	-11.74/-9.41	-8/-7.23	-9.68/-13.8	-12.02/-9.62	-8.06/-6.94	-6.43/-6.63	-7.98/-10.68	-12.85/-14.18	-12.47/-13.61
Θ(52.5°)	-3.73/-5.66	-5.34/-7.89	-13.24/-14.91	-13.24/-14.99	-18.91/-14.71	-9.36/-6.04	-5.91/-5.98	-7.01/-8.13	-8.85/-9.47	-10.17/-11.14	-12.51/-15.12	-8.56/-4.44	-3.44/-3.59	-5.51/-6.96	-4.83/-4.27	-5.28/-5.88	-5.95/-3.57	-5.12/-5.24	-5.16/-6.07	-8.05/-9.31	-9.23/-8.85	-9.82/-10.51	-9.17/-8.24	-5.32/-3.53
Θ(60°)	-10.29/-12.22	-13.17/-19	-17.54/-13.86	-12.12/-12.08	-12.41/-16.48																			



Radiated Composite Gain Data

Appendix A

Θ(52.5°)	-1.45/-1.42	-1.95/-2.83	-5.3/-5.86	-10.52/-13.52	-19.16/-18.49	-15.92/-11.7	-9.69/-9.56	-10.79/-9.93	-8.68/-6.37	-4.14/-5.97	-7.38/-13.22	-17.85/-14.8	-9.31/-7.6	-5.62/-2.86	-1.39/-2.12	-3.34/-4.69	-7.34/-8.81	-7.67/-5.01	-2.64/-0.92	-0.15/-0.98	2.94/0.09	2.72/2.71	1.98/0.72	-0.24/-1.04
Θ(60°)	-0.2/-0.96	-2.56/-4.18	-6.31/-11.29	-17/-18.12	-18.42/-18.02	-18.47/-16.85	-10.41/-7.27	-6.81/-8.4	-8.96/-5.15	-4.65/-5.15	-4.67/-8.34	-16.74/-18.15	-17.94/-13.12	-10.3/-9.5	-5.41/-2.52	-1.53/-2.47	-4.41/-5.8	-8.2/-6.71	-3.37/-2.25	0.37/-1.42	1.62/43	-0.15/-1.47	-2.21/-1.35	0.45/0.54
Θ(172.5°)	1.04/0.29	-2.11/-4.95	-6.25/-8.02	-10.12/-14.01	-18.05/-15.97	-14.43/-15.86	-14.32/-9.86	-7.88/-4.9	-12.51/-8.21	-3.85/-4.84	-7.78/-16.72	-19.8/-18.49	-15.97/-5.37	-3.05/-3.84	-3.21/-0.87	0.51/0.55	-1.49/-5.35	-6.42/-4.91	-2.01/-1.23	-1.14/-0.14	-1.68/-3.31	-7.14/-6.48	-2.66/-0.45	1.56/-1.8
Θ(75°)	1.32/-0.81	-2.29/-2	-1.87/-3.48	-10.67/-18.21	-19.02/-18.87	-12.57/-13.26	-17.1/-18.73	-12.18/-12.65	-17.76/-19.21	-6.27/-2.53	-2.44/-4.42	-6.38/-8.74	-11.71/-6.57	-3.14/-3.57	-4.65/-2.43	-0.92/-0.7	-2.53/-6.31	-9.5/-5.2	-3.55/-4.21	-4.25/-3.72	-6.1/-4.94	-2.22/-0.98	2.46/3.01	2.91/7.6
Θ(82.5°)	0.86/-1.78	-1.97/-3.13	-6.82/-14.38	-15.08/-10.59	-11.47/-11.97	-18.81/-15.98	-9.7/-7.63	-9.31/-12.47	-18.53/-10.71	-3.74/-1.79	-0.84/-3.42	-8.66/-12.6	-14.06/-10.14	-3.68/-2.82	-1.88/-1.82	0.88/0.16	-2.53/-6.35	-10.18/-12.14	-7.32/-12.9	-9.34/-16.16	-9.58/-4.15	-0.11/-0.73	2.91/3.51	3.04/-3.6
Θ(90°)	-3.68/-6.86	-5.15/-1.46	-0.74/-1.1	-1.84/-2.9	-2.82/-3.91	-5.57/-6.39	-8.38/-10.65	-12.14/-16.75	-15.97/-9.16	-2.53/-6.57	-9.91/-7.97	-4.83/-5.19	-7.19/-6.57	-6.23/-4.23	-1.55/2.59	1.64/-6.23	-9.45/-6.94	-9.54/-8.68	-5.48/-3.25	-2.21/-1.19	-0.71/-1.02	1.76/-1.64	-0.25/-2.53	
Θ(97.5°)	0.14/-0.06	1.15/-1.96	1.94/1	-1.16/-2.6	-1.98/-2.26	-4.41/-5.92	-3.88/-3.09	-3.45/-5.79	-11.63/-8.69	-2.35/-5.36	-4.18/-8.72	-4.47/-8.74	-5.23/-5.99	-6.22/-6.1	-6.55/-5.32	-2.52/-1.64	-4.66/-10.19	-6.99/-9	-12.3/-5.16	-1.12/-0.05	-0.83/-2.94	-2.88/-2.15	-1.56/-2.29	-1.87/-0.48
Θ(105°)	0.09/-1.28	-2.35/-3.85	-1.97/-1.81	-3.7/-5.35	-4.18/-4.12	-5.83/-9.35	-11.61/-9.39	-6.92/-6.12	-9.68/-18.31	-5.52/-7.28	-7.95/-19.04	-11.51/-11.8	-11.63/-10.04	-10.58/-9.67	-16.11/-17.82	-7.12/-3.47	-10.16/-10.17	-8.02/-11	-9.26/-3.24	-4.11/-5.23	-8.6/-16.17	-13.87/-14.56	-7.24/-0.92	0/0.66
Θ(112.5°)	-2.74/-6.94	-3.22/0.31	1.01/-1.32	0.59/-1.09	1.48/0.24	-2.36/-2.58	-2.41/-4.2	-7.48/-13.37	-8.97/-5.9	-5.15/-3.73	-6.92/-6.51	-4.42/-7.47	-6.2/-3.43	-7.42/-11.64	-18.45/-11.81	-10.16/-13.21	-9.89/-6.79	-12.38/-13.4	-9.5/-10.65	-18/-11.39	-8.48/-9.22	-4.9/-0.75	0.76/-1.9	1.84/-0.8
Θ(120°)	-6.46/-5.61	-1.75/0.38	1.34/0.57	0.41/-1.33	1.53/-0.72	-4.58/-1.94	0/-0.55	-2.61/-5.39	-7.93/-12.15	-12.46/-9.01	-7.76/-7.22	-9.97/-13.14	-15.79/-11.14	-8.55/-8.81	-12.36/-7.22	-10.28/-12.97	-8.24/-8.06	-16.73/-10.81	-17.97/-17.71	-5.23/-3.05	-4.88/-5.47	-3.19/-1.42	1.63/-1.36	1.13/-2.02
Θ(127.5°)	-13.99/-9.83	-2.84/-1.44	-1.52/-0.81	-1.2/-3.36	-7.06/-8.9	-8.66/-5.04	-4.05/-5.03	-9.95/-11.82	-10.38/-14.32	-9.91/-8.15	-15.14/-8.86	-12.84/-18.54	-10.35/-14.54	-17.64/-13.89	-11.23/-8.08	-10.44/-11.44	-8.29/-18.3	-13.75/-10.28	-3.51/-2.84	-5/-5.59	-1.53/-1.03	0.77/-3.5	-6.51/-9.81	
Θ(135°)	-9.27/-9.74	-7.08/-3.96	-2.43/-3.85	-3.52/-3.07	-3.78/-4.62	-0.79/1.04	-0.48/-2.93	-3.45/-5.1	-6.27/-7.64	-10.29/-9.19	-5.71/-5.95	-15.42/-15.63	-10.91/-5.39	-6.49/-6.75	-8.91/-10.6	-7.3/-8.89	-9.3/-14.42	-6.96/-8.26	-8.64/-16.44	-2.77/-1.28	-2.35/-5.64	-11.86/-11.61		
Θ(142.5°)	-18.08/-10.85	-8.86/-8.19	-4.93/-2.61	-2.08/-2.91	-4.97/-5.8	-4.95/-4.82	-4.3/-3.53	-3.81/-2.96	-2.54/-5.11	-7.25/-6.48	-7.06/-8	-10.72/-16.68	-8.46/-5.04	-4.94/-5.59	-7.52/-10.31	-13.96/-17.41	-13.14/-13.35	-8.96/-9.3	-17.01/-19.83	-12.69/-14.93	-17.28/-18.24	-10.49/-9.13	-11.56/-14.99	-14.8/-15.45
Θ(150°)	-9.94/-7.1	-4.03/-3.02	-3.24/-3.42	-3.45/-3.87	-4.29/-3.96	-2.62/-1.21	-0.21/-0.29	-0.44/0.11	-0.1/-2.42	-6.36/-9.19	-12.23/-10.52	-11.18/-18.43	-11.59/-7.53	-7.38/-6.47	-4.8/-5.53	-8.63/-11.91	-14.26/-10.86	-8.08/-19.7	-9.7/-12.26	-17.91/-18.61	-17.85/-16.15	-16.24/-19.46	-17.69/-19.26	-12.62/-9.46
Θ(157.5°)	-1.06/-0.28	0.51/-1.22	1.54/-1.34	0.44/-1.08	-3.24/-4.67	-5.37/-7.02	-9.07/-10.23	-7.24/-3.64	-2.53/-4.13	-7.82/-11.02	-11.8/-10.7	-9.68/-12.9	-8.64/-9.1	-9.76/-11.24	-14.18/-19.11	-18.6/-19.43	-18.27/-16.03	-12.37/-10.99	-12.04/-15	-17.79/-16.55	-18.95/-17.66	-10.59/-6.44	-4.17/-2.27	
Θ(165°)	-0.78/-0.44	-0.09/0.11	-0.17/-1.02	-2.61/-4.57	-6.39/-8.17	-9.73/-10.98	-11.07/-10.28	-9.26/-7.38	-6.56/-7.47	-9.7/-13.6	-18.27/-19.12	-16.91/-12.94	-11.74/-11.19	-9.1/-6.96	-5.93/-6.09	-7.22/-9.27	-10.82/-10.66	-9.47/-9.47	-10.51/-11.35	-11.88/-11.52	-11.03/-10.82	-10.26/-8.72	-5.89/-3.21	-1.68/-1
Θ(172.5°)	-2.57/-6.09	-2.84/-2.95	-2.55/-2.15	-2.47/-3.73	-5.54/-7.34	-7.74/-7.23	-6.95/-7.46	-8.41/-9.44	-12.57/-17.97	-18.05/-11.56	-8.18/-6.28	-5.39/-5.29	-5.92/-7.72	-11.09/-16.24	-18.71/-17.72	-18.07/-13.64	-12.39/-13.11	-16.44/-18.93	-18.21/-18.09	-17.71/-14.6	-12.58/-11.04	-10.72/-9.33	-7.22/-5.1	-3.52/-2.9
Θ(180°)	-8.09/-8.09	-7.14/-5.38	-4.56/-4.38	-4.58/-5.49	-6.81/-8.67	-11.85/-16.23	-18.94/-19.72	-13.97/-11.76	-10.32/-9.35	-9.25/-8.66	-7.6/-6.44	-5.99/-6.16	-6.71/-7.27	-7.71/-7.96	-8.05/-8.12	-8.42/-8.88	-8.89/-8.68	-8.46/-8.88	-10.48/-12.96	-15.83/-18.61	-18.66/-11.84	-15.01/-13.37	-12.41/-12.65	-10.93/-9.02
Freq(Hz)	5.6GPol.	PhiAnt.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-5.32/-5.67	-6.26/-7.08	-8.04/-8.92	-8.76/-9.34	-10.22/-11.7	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94	-9.2/-8.2	-12.35/-10.94
Θ(7.5°)	-6.97/-7.26	-6.57/-6.6	-6.41/-6.03	-5.67/-6.3	-7.61/-9.06	-10.14/-12.37	-16.54/-17.91	-19.43/-14.85	-10.78/-8.43	-7.02/-6.08	-5.35/-4.75	-4.3/-4.56	-5.15/-5.78	-6.25/-6.53	-6.33/-6.26	-6.56/-6.91	-6.69/-6.39	-6.33/-5.94	-6.13/-6.32	-7.61/-8.22	-8.95/-9.41	-9.55/-10.33	-10.53/-10.08	-8.16/-6.73
Θ(15°)	-12.81/-11.38	-10.4/-10.99	-10.75/-10.46	-9.79/-10.32	-12.53/-13.29	-15.18/-12.74	-10.32/-11.06	-11.23/-11.67	-5.62/-3.88	-3.31/-3.47	-3.11/-2.64	-2.2/-2.19	-2.57/-3.1	-3.51/-3.88	-3.98/-4.11	-4.07/-6.06	-3.73/-3.77	-3.75/-7.77	-4.51/-5.23	-6.78/-8.39	-9.57/-11.63	-13.49/-15.62	-18.06/-18.34	-18.42/-14.52
Θ(22.5°)	-14.51/-16.22	-19.23/-19.16	-18.04/-17.66	-13.92/-13.47	-17.31/-17.83	-15.12/-16.12	-12.13/-9.13	-7.25/-5.47	-4.19/-3.38	-3.72/-4.77	-5.82/-6.37	-6.31/-6.27	-7.93/-9.42	-9.89/-8.46	-6.71/-5.34	-4.56/-4.26	-4.34/-4.25	-5.19/-6.87	-8.65/-10.6	-11.52/-13.56	-16.39/-15.62	-13.45/-11.87	-11.98/-13.65	
Θ(30°)	-6.74/-7.96	-8.35/-8.49	-9.88/-11.6	-11.61/-9.16	-9.43/-9.62	-11.91/-12.78	-15.65/-19.31	-13.81/-7.74	-4.56/-3.49	-3.7/-4.11	-3.99/-4.16	-4.84/-5.87	-7.07/-9.05	-12.35/-14.01	-11.34/-8.5	-6.92/-6.45	-6.65/-6.78	-7.51/-7.98	-9.71/-11.66	-13.74/-17.74	-17.67/-19.05	-14.57/-10.08	-8.46/-7.76	-7.62/-7.12
Θ(37.5°)	-6.65/-4.59	-4.82/-6.39	-9.12/-10.11	-8.29/-7.09	-8.61/-9.59	-13.69/-18.2	-18.31/-16.36	-13.51/-15.98	-9.13/-6.46	-7.01/-8.66	-7.5/-7.21	-8.21/-9.59	-13.35/-17.46	-10.54/-12.66	-12.97/-11.18	-9.03/-8.6	-10.65/-11.98	-12.76/-13.1	-14.17/-14.48	-15.21/-16.61	-15.55/-13.28	-10.51/-8.72	-7.41/-7.48	-7.76/-6.59
Θ(45°)	-7.57/-7.63	-10.25/-9.82	-8.10/-9.27	-10.05/-11.8	-12.79/-10.35	-8.76/-7.25	-19.31/-22.7	-17.72/-13.65	-11.36/-16.51	-9.47/-9.16	-8.94/-9.47	-14.1/-17.16	-13.05/-15.47	-6.71/-9.71	-12.36/-13.14	-18.32/-18.41	-18.84/-18.06	-18.32/-18.41	-18.08/-18.03	-13.32/-9.53	-6.33/-4.67	-3.61/-3.95	-4.57/-4.09	
Θ(52.5°)	-17.08/-18.06	-11.9/-7.64	-7.36/-8.49	-10.16/-15.67	-18.21/-16.25	-13.24/-9.79	-9.9/-11.38	-15.37/-19.24	-18.31/-14.1	-11.12/-16.43	-15.91/-8.95	-6.81/-6.78	-9.2/-13.74	-9.72/-5.76	-5.28/-10.5	-18.62/-15.02	-14.17/-12.82	-11.73/-10.49	-10.37/-13.37	-9.42/-8.37	-7.98/-7.15	-4.76/-3.71	-4.27/-5.96	-7.65/-12.39
Θ(60°)	-4.68/-3.56	-3.08/-3.14	-4.29/-3.35	-9.09/-10.5	-13.1/-17.04	-16.99/-10.39	-6.88/-5.27	-6.73/-9.41	-9.27/-7.29	-8.67/-12.24	-18.19/-9.19	-5.11/-4.59	-6.03/-6.09	-4.54/-2.99	-4.92/-9.91	-4.69/-11.46	-6.97/-11.07	-9.99/-11.12	-18.3/-13.3	-9.59/-9.24	-11.25/-8.76	-6.57/-4.45	-4.05/-4.31	-4.77/-5.53
Θ(67.5°)	-3/-2.26	-2.69/-3.95	-5.66/-6.39	-5.47/-5.86	-7.31/-8.69	-12.04/-16.65	-18.94/-18.43	-16.25/-14.58	-14.9/-10.25	-8.15/-9.47	-12.35/-3.78	0.27/0.01	-2.67/-5.86	-4.57/-3.63	-4.43/-7.73	-14.01/-19.07	-17.98/-18.24	-18.76/-16.5	-18.24/-11.91	-16.79/-19.15	-15.24/-15.76	-10.47/-7.1	-4.33/-3.89	-4.32/-9.7
Θ(75°)	-2.39/-4.99	-4.17/-1.67	-0.27/-0.97	-3.01/-4.75	-6.11/-6.95	-10.24/-16.33	-16.44/-18.49	-15.76/-12.08	-10.35/-10.25	-13.63/-15.62	-18.47/-11.1	-4.6/-2.58	-2.64/-4.1	-5.28/-1.86	-1.29/-3.26	-9.4/-14.56	-17.14/-19.2	-18.84/-18.38	-18.15/-19.34	-14.71/-13.49	-9.95/-8.15	-4.88/-5.22	-4.76/-2.85	-1.31/-1.76
Θ(82.5°)	-2.78/-1.51	-0.99/0.25	0.97/0.49	-1.27/-3.96	-6.1/-9.94	-16.53/-19.11	-18.32/-17.68	-13.73/-14.2	-15.02/-6.79	-6.01/-9.86	-10.27/-5.67	-3.08/-3.22	-4.06/-6.45	-4.41/-3.15	-3.45/-7	-16.57/-15.04	-18.71/-12.65	-6.58/-9.3	-19.96/-12.67	-7.36/-7.56	-9.33/-11.23	-10.85/-12.83	-0.96/-5.87	-3.39/-2.59
Θ(90°)	-2.38/-0.98	-0.37/-0.98	-1/-1.13	-3.09/-7.53	-8.85/-7.51	-9.71/-6.33	-11.48/-8.98	-7.57/-9.21	-11.08/-7.79	-8.02/-15.73	-7.86/-4.77	-2.89/-4.38	-8.79/-9.54	-3.72/-2.42	-2.12/-2.76	-6.81/-8.99	-8.76/-8.88	-13.41/-19.36	-12.13/-7.65	-7.72/-9.92	-11.55/-8.33	-7.11/-4.3	-2.49/-0.9	-0.84/-1.42
Θ(97.5°)	-3.95/-2.36	-1.73/-1.49	-1.72/-2.58	-2.81/-3.68	-4.63/-5.27	-4.37/-5.33	-10.11/-11.27	-5.76/-6.04	-10.25/-9.78	-8.31/-12.49	-8.78/-3.74	-1.76/-6.8	-14.85/-5.52	-3.44/-6.47	-6.08/-4.73	-2.94/-9.34	-9.99/-18.69	-14.52/-18.81	-16.9/-12.87	-10.51/-7.94	-9.59/-10.94	-9.25/-6.6	-4.14/-3.22	-3.17/-4.07
Θ(105°)	-2.93/-2.51	-3.52/-4.11	-2.25/-1.49	-3.03/-5.17	-4.77/-4.01	-3.17/-3.58	-6.66/-6.06	-7.91/-7.63	-10.88/-17.25	-17.78														



Radiated Composite Gain Data

Appendix A

Θ(97.5°)	-4.56/-1.41	-0.31/0.01	0.49/0.5	-0.54/-1.74	-2.01/-3.85	-4.72/-3.86	-5.53/-8.69	-6.43/-5.55	-6.62/-17.78	-8.8/-1.75	-6.06/-10.68	-18.15/-14.72	-3.76/-2.28	-5.81/-8.9	-6.27/-4.7	-2.54/-5.89	-16.01/-8.82	-11.75/-11.79	-5.49/-5.57	-9.91/-16.6	-12.08/-8.22	-7.06/-4.78	-8.95/-6.68	-5.88/-6.43
Θ(105°)	0.44/-0.09	0.62/-0.05	1.54/-1.43	0.22/-1.8	-0.93/-2.4	-9.12/-9.06	-7/-7.56	-6.37/-6.17	-8.92/-16.72	-11.96/-8.89	-15.56/-10.68	-17.99/-9.98	-8.46/-7.56	-12.27/-13.65	-13.03/-4.66	-3.06/-3.77	-17.52/-9.52	-4.49/-12.64	-12.43/-12.77	-5.65/-9.85	-11.72/-8.46	-9.42/-15.21	-18.43/-9.95	-3.36/-0.23
Θ(112.5°)	1.08/0.45	-1.56/-1.19	0.16/-0.54	0.25/0.08	-1.56/-3.71	-5.46/-6.2	-8.29/-5.62	-8.33/-5.58	-17.82/-15.45	-9.27/-15.63	-17.87/-12.18	-9.24/-10.22	-5.88/-8.59	-18.08/-12.67	-14.8/-9.26	-10.95/-3.77	-15.14/-12.43	-12.57/-12.58	-17.71/-10.94	-6.91/-7.48	-11.16/-33	-7.79/-10.4	0.78/-1.46	
Θ(120°)	-0.38/-0.74	-2.24/-2.16	0.55/-1.82	1.93/-1.89	1.77/-1.13	-1.29/-6.32	-4.47/-1.51	-2.31/-6.79	-13.14/-12.66	-14.99/-18.31	-13.3/-8.68	-7.17/-12.6	-9.49/-3.78	-4.14/-11.45	-5.35/-4.81	-4.1/-7.05	-13.56/-5.72	-2.07/-11.08	-17.99/-7.04	-3.95/-3.61	-9.5/-17.86	-11.43/-7.08	-7.4/-1.75	-0.73/-0.48
Θ(125°)	-7.19/-5.29	-2.48/-0.26	1.89/-2.3	1.98/-1.18	0.39/-0.92	-4.58/-7.32	-4.64/-4.14	-6.18/-8.88	-4.93/-8.75	-15.08/-7.14	-7.96/-9.19	-13.46/-14.86	-14.02/-5.82	-5.3/-6.75	-7.21/-4.1	-5.77/-16.57	-8.49/-5.88	-11.98/-10.84	-10.09/-15.27	-5.97/-6.85	-19.2/-9.19	-4.6/-8.49	-5.86/-3.61	-2.36/-6.61
Θ(137.5°)	-7.97/-4.77	-1.84/-0.33	2.27/-4.6	1.07/-0.49	-1.32/-1.6	-3.39/-5.15	-3.75/-2.16	-3.77/-6.98	-14.89/-10.88	-7.87/-9.15	-15.39/-12.16	-7.64/-10.81	-10.47/-7.72	-5.04/-3.83	-10.25/-11.22	-12.65/-8.17	-10.28/-11.11	-13.29/-11.97	-7.83/-14.99	-17.7/-7.63	-2.39/-6.2	-6.64/-7.47	-8.38/-8.58	
Θ(142.5°)	-11.37/-13.73	-8.17/-4.06	-1.29/0.09	-0.05/-0.74	-0.46/-1.08	-3.91/-5.43	-5.59/-6.93	-6.82/-5.89	-4.52/-5.3	-10.5/-9.66	-6.1/-6.97	-7.61/-9.09	-5.22/-1.53	-2.19/-3.3	-5.04/-7.94	-10.58/-17.53	-12.49/-14.29	-17.82/-15.15	-15.11/-16.44	-19.8/-13.29	-7.83/-7.54	-4.22/-3.63	-4.93/-4.65	-7.66/-11.81
Θ(150°)	-13.92/-17.29	-18.14/-17.8	-18.53/-16.19	-10.7/-9.48	-10.05/-10.14	-7.62/-4.87	-3.1/-3	-4.28/-5.51	-4.68/-4.43	-6.54/-9.35	-10.49/-17.33	-18.54/-9.95	-4.59/-3.82	-6.99/-15.42	-17.81/-18.69	-18.42/-17.64	-18.5/-17.7	-11.95/-10.74	-12.5/-19.16	-19.21/-11.26	-9.07/-10.43	-10.36/-10.43	-12.86/-14.36	-15.52/-16.8
Θ(157.5°)	-1.61/-1.22	-2.72/0.03	0.85/-1.25	0.91/0.31	-0.41/-1.34	-2.66/-4.01	-5.38/-8.37	-13.12/-9.92	-6.21/-4.73	-4.63/-6.44	-10.53/-16.24	-13.24/-9.1	-7.52/-8.07	-10.35/-13.67	-17.16/-18.62	-16.52/-18.91	-14.47/-7.93	-5.77/-6.31	-9.5/-15.46	-17.25/-13	-10.6/-11.22	-12.4/-10.52	-7.46/-5.11	-2.94/-1.63
Θ(165°)	0.99/2.05	2.75/2.89	2.63/-1.91	0.79/-0.75	-2.56/-4.71	-6.51/-7.45	9.14/-12.28	-16.65/-19.13	-17.95/-15.97	-14.64/-15.58	-14.41/-10.84	-8.13/-7.31	-8.39/-10.91	-12.96/-11.43	-9.23/-7.92	-8.74/-13.54	-18.24/-13.13	-8.33/-6.47	-6.07/-7.14	-10.1/-12.93	-13.11/-12.3	-10.97/-10.37	-8.24/-5.14	-2.76/-0.59
Θ(172.5°)	-0.79/-0.98	-1.49/-2.25	-2.84/-3.03	-2.99/-2.8	-2.8/-3.53	-4.84/-7.49	-12.82/-18.16	-16.71/-10.53	-12.4/-12.04	-11.2/-10.23	-9.3/-8.58	-8.03/-8.48	-9.81/-12.19	-14.7/-16.05	-15.49/-14.13	-11.66/-9.45	-4.64/-4.7	-5.59/-5.99	-6.37/-6.2	-5.75/-5.17	-4.66/-3.82	-3.26/-2.47	-1.52/-1.05	
Θ(180°)	-7.84/-8.31	-7.78/-6.96	-5.61/-4.73	-4.87/-6.04	-7.54/-10.32	-15.69/-17.33	-15/-11.93	-10.28/-10.07	-10.47/-11.71	-14.93/-17.59	-18.51/-18.79	-18.33/-18.11	-18.98/-18.45	-18.32/-16.86	-16.03/-15.9	-16.62/-17.44	-18.96/-19	-17.55/-17.51	-18.64/-17.43	-16.51/-13.82	-11.48/-9.97	-9.96/-9.8	-7.17/-9.29	
Freq(Hz)	2.45GPol.	PhiAnt. 4																						
Gain	Φ(0°)*Φ(7.5°)	Φ(15°)*Φ(22.5°)	Φ(30°)*Φ(37.5°)	Φ(45°)*Φ(52.5°)	Φ(60°)*Φ(67.5°)	Φ(75°)*Φ(82.5°)	Φ(90°)*Φ(97.5°)	Φ(105°)*Φ(112.5°)	Φ(120°)*Φ(127.5°)	Φ(135°)*Φ(142.5°)	Φ(150°)*Φ(157.5°)	Φ(165°)*Φ(172.5°)	Φ(180°)*Φ(187.5°)	Φ(195°)*Φ(202.5°)	Φ(210°)*Φ(217.5°)	Φ(225°)*Φ(232.5°)	Φ(240°)*Φ(247.5°)	Φ(255°)*Φ(262.5°)	Φ(270°)*Φ(277.5°)	Φ(285°)*Φ(292.5°)	Φ(300°)*Φ(307.5°)	Φ(315°)*Φ(322.5°)	Φ(330°)*Φ(337.5°)	Φ(345°)*Φ(352.5°)
Θ(0°)	-0.58/-1.18	-1.9/-2.68	-3.82/-5.51	-7.7/-10.59	-13.7/-16.65	-12/-8.83	-6.23/-4.62	-3.08/-2.13	-1.34/-0.64	-0.03/0.4	0.68/0.86	0.82/0.62	0.24/-0.33	-1.19/-2.29	-3.75/-5.54	-8.09/-11.92	-18.66/-19.27	-16.02/-10.48	-7.14/-9.1	-3.39/-2.09	-1.01/-0.3	0.09/0.29	0.35/0.24	-0.03/-0.31
Θ(7.5°)	0.23/-0.43	-1.18/-2.11	-3.46/-5.38	-7.95/-11.92	-18.93/-18.76	-14.5/-9.93	-6.91/-4.96	-3.52/-2.51	-1.66/-0.91	-0.35/0.04	0.27/0.32	0.15/-0.22	-0.73/-1.46	-2.47/-3.68	-5.22/-7.17	-9.9/-13.82	-18.72/-17.22	-12.41/-8.53	-5.75/-3.78	-2.28/-0.98	0.03/0.66	0.97/1.12	1.17/1.05	0.82/0.53
Θ(15°)	-0.07/-0.76	-1.58/-2.72	-4.32/-6.25	-8.49/-11.55	-16.07/-17.94	-16.01/-11.56	-8.9/-6.22	-4.52/-3.4	-2.35/-1.52	-0.9/-0.52	-0.29/-0.27	-0.49/-0.91	-1.52/-2.38	-3.54/-4.87	-6.4/-8.31	-10.75/-13.57	-15.63/-15.09	-12.05/-8.7	-5.89/-3.78	-2.1/-0.7	0.32/0.92	1.22/1.33	1.33/1.14	0.84/0.38
Θ(22.5°)	-0.01/-1.56	-2.36/-3.65	-5.27/-6.4	-9.41/-9.32	-11.56/-15.03	-17.41/-14.57	-10.85/-8.07	-5.84/-4.21	-2.95/-2.02	-1.35/-1	-0.91/-1.06	-1.51/-2.22	-3.13/-4.33	-5.61/-6.85	-8.2/-9.48	-10.72/-11.89	-13.32/-14.23	-13.17/-10.47	-7.41/-4.87	-2.93/-1.47	-0.47/0.1	0.42/0.59	0.6/0.39	0.01/-0.53
Θ(30°)	-1.11/-1.5	-2.43/-3.93	-5.54/-6.69	-7.55/-8.62	-10.74/-14.7	-18.35/-18.64	-14.41/-9.95	-7.01/-5.1	-3.79/-2.95	-2.35/-2.05	-2.06/-2.35	-2.96/-3.88	-5.12/-6.64	-8.27/-9.51	-10.19/-10.25	-10.06/-10.14	-10.9/-11.87	-12.69/-12.18	-9.78/-7.07	-4.92/-3.36	-2.37/-1.63	-0.99/-0.43	-0.14/-0.14	-0.35/-0.72
Θ(37.5°)	-0.05/-0.87	-2.39/-4.38	-6.42/-7.97	-9.12/-10.37	-12.82/-18.1	-18.69/-17.8	-13.89/-9.32	-6.5/-4.74	-3.65/-2.93	-2.37/-2	-1.91/-2.16	-2.83/-4.09	-5.96/-8.67	-12.25/-15.38	-14.42/-11.76	-10.05/-9.36	-10.01/-10.86	-11.52/-11.17	-9.58/-7.54	-5.66/-4.11	-2.85/-1.67	-0.54/0.32	0.89/1.03	0.86/0.44
Θ(45°)	0.65/-0.69	-2.76/-5.22	-7.89/-10.52	-12.31/-13.24	-14.83/-17.91	-18.43/-17.57	-12.19/-8.83	-6.44/-4.76	-3.52/-2.56	-1.7/-0.95	-0.32/0.08	0.09/-0.45	-0.66/-0.85	-6.85/-12.56	-18.61/-13.52	-9.66/-6.85	-11.91/-11.19	-9.29/-7.19	-5.11/-3.15	-1.36/0.11	1.23/-1.92	2.29/-4.1	2.15/-4.8	
Θ(52.5°)	0.74/-0.91	-2.93/-5.3	-8.72/-13.5	-15.66/-13.89	-13.64/-16.47	-17.35/-19.07	-14.86/-11.52	-8.94/-6.95	-5.2/-3.69	-2.41/-1.23	-0.11/0.83	1.28/1.03	0.11/-1.56	-4.28/-9.05	-18.34/-15.67	-9.49/-7.77	-7.99/-9.42	-11.15/-11.13	-9.06/-6.68	-4.59/-2.65	-0.81/0.85	1.64/2.17	2.46/2.57	2.41/6.8
Θ(60°)	0.89/-0.3	-2.16/-4.98	-8.87/-13.3	-15.83/-11.46	-10.48/-11.52	-15.66/-15.72	-19.2/-18.57	-14.97/-12.77	-9.22/-7.06	-5.71/-4.53	-1.17/-1.32	-0.69/-2.09	-0.4/-1.02	-2.45/-5.1	-9.99/-18.46	-17.14/-11.55	-10.03/-10.24	-10.71/-9.57	-7.16/-4.85	-3.22/-2.14	-1.17/-0.17	0.63/-1.1	1.31/-4.4	1.56/-1.3
Θ(67.5°)	0.25/-0.83	-3.14/-7.24	-13.73/-17.66	-12.89/-10.47	-10.1/-10.82	-11.36/-11.94	-12.98/-15.19	-16.98/-13.78	-9.89/-7.35	-5.71/-4.51	-3.71/-3.35	-3.41/-3.73	-4.04/-5.3	-5.61/-7.19	-10.03/-12.66	-13.82/-13.68	-14.05/-16.69	-16.59/-13.02	-8.82/-5.7	-3.62/-2.4	-1.79/-1.23	-0.42/0.15	0.26/0.14	0.13/0.14
Θ(75°)	-1.91/-3.54	-5.89/-8.55	-10.97/-13.31	-16.05/-18.9	-18.34/-18.29	-17.25/-15.48	-14.53/-13.35	-11.8/-10.47	-9.42/-8.24	-6.58/-5.05	-4.07/-3.67	-3.8/-4.37	-5.48/-7.23	-9.67/-12.16	-13.55/-12.71	-11.23/-10.5	-10.81/-11.82	-12.39/-11.83	-10.66/-8.91	-6.49/-4.32	-3.02/-2.11	-1.08/-0.06	0.57/0.58	-0.01/-1.01
Θ(82.5°)	-1.72/-3.93	-6.07/-8.46	-12.78/-12.52	-18.32/-15.21	-11.72/-9.63	-8.63/-9.4	-12.69/-16.16	-11.47/-7.63	-5.79/-5.07	-4.95/-5.55	-7/-8.9	-9.94/-10.2	-10.48/-11.87	-13.06/-12.5	-10.96/-9.44	-8.6/-9.09	-11.55/-17.17	-18.64/-17.92	-9.04/-6.78	-4.28/-6.69	-0.95/0.1	0.58/0.89	1.15/-1.18	0.73/-0.37
Θ(90°)	-2.29/-0.41	-6.7/-9.17	-10.24/-10.51	-11.5/-11.1	-9.3/-7.29	-5.85/-6.97	-7.29/-11.63	-9.49/-6.72	-8.59/-11.91	-16.89/-18.98	-16.13/-17.52	-8.95/-13.64	-9.46/-6.92	-5.39/-4.83	-5.42/-7.03	-10.15/-15.57	-6.13/-4.37	-1.23/-0.01	0.31/0.01	-0.57/-1.03	-1.47/-1.66			
Θ(97.5°)	-4.28/-4.93	-5.1/-4.98	-5.3/-6.5	-8.21/-9.6	-9.09/-6.97	-4.95/-3.95	-4.44/-6.41	-10.61/-18.26	-18.48/-18.59	-14.31/-12.81	-13.36/-13.18	-11.33/-9.98	-10.03/-11.68	-12.65/-11.37	-9.75/-7.89	-5.89/-4.81	-4.89/-5.9	-8.04/-10.78	-9.11/-6.35	-4.69/-2.89	-1.06/0	0.34/0.19	-0.58/-1.99	-3.53/-4.49
Θ(105°)	-3.88/-3.38	-2.59/-2.44	-3.24/-5.13	-8.04/-11.88	-16.49/-14.8	-9.41/-6.87	-6.69/-8.48	-12.45/-18.7	-18.9/-18.5	-14.08/-12.19	-14.13/-15.81	-13.54/-12.71	-12.81/-11.34	-9.33/-9.01	-11.02/-12.59	-9.87/-8.19	-7.79/-8.09	-9.48/-11.02	-6.88/-6.56	-6.16/-5.59	-4.16/-3.41	-3.58/-3.69	-3.37/-2.96	-2.87/-1.36
Θ(112.5°)	-4.12/-0.51	-5.25/-4.62	-4.41/-5.85	-9.44/-13.2	-10.80/-7.01	-4.46/-3.45	-3.98/-5.87	-8.78/-12.65	-18.13/-17.92	-11.96/-11.6	-18.39/-15.18	-15.04/-13.21	-11.29/-10.14	-10.46/-12.51	-17.79/-16.05	-13.26/-14.1	-17.43/-16.04	-9.58/-7.12	-6.99/-6.86	-8.27/-5.4	-7.52/-8.18	-7.34/-5.25	-4.19/-4.12	
Θ(120°)	-2.38/-1.76	-1.99/-1.83	-1.31/-1.45	-2.74/-4.69	-5.81/-5.33	-4.29/-3.91	-4.61/-5.53	-9.31/-12.34	-14.89/-12.37	-9.03/-8.83	-11.79/-14.23	-11.8/-9.66	-8.11/-7.79	-9/-11.03	-12.14/-13.79	-15.32/-10.73	-7.2/-5.83	-5.78/-7.41	-11.74/-19.04	-18.3/-13.45	-12.42/-11.21	-9.13/-8.17	-8.98/-10.67	-8.02/-3.87
Θ(125°)	-1.15/-1	-2.15/-3.31	-3.12/-2.95	-3.9/-5.95	-8.05/-9.26	-4.49/-9.28	-9.55/-10.62	-11.91/-12.15	-10.84/-9.77	-9.29/-9.45	-8.75/-5.74	-7.19/-7.31	-7.3/-7.33	-7.4/-7.35	-8.19/-15.57	-1.77/-15.01	-9/-7.15	-7.35/-7.7	-15.71/-14.26	-7.36/-4.18	-2.97/-2.57	-2.03/-1.41	-1.55/-2.89	-4/-2.8
Θ(137.5°)	-5.21/-5.42	-7.23/-10.91	-12.48/-10.3	-10.05/-11.6	-13.66/-14.66	-14.42/-13.2	-11.64/-10.45	-9.7/-8.91	-8.08/-8.75	-12.53/-18.59	-10.69/-6.84	-5.93/-6.02	-5.34/-3.97	-3.17/-3.73	-6.25/-12.12	-19.28/-12.01	-9.05/-8.66	-9.54/-11.95	-17.94/-13.97	-6.68/-3.31	-1.84/-1.06	-1.03/-1.09	-1.44/-2.51	-4.38/-5.95
Θ(142.5°)	-3.68/-4.62	-6.5/-10.83	-19.13/-17.99	-13.16/-12.21	-12.56/-12.98	-12.66/-11.75	-10.39/-9.25	-8.5/-8.02	-7.79/-8.89	-13.14/-13.13	-10.31/-8.6	-4.74/-6.96	-5.34/-3.66	-3.24/-4.67	-9.11/-18.83	-12.96/-7.82	-5.99/-5.51	-5.69/-6.9	-10.4/-18.08	-16.22/-18.8	-4.57/-2.79	-1.95/-1.61	-1.38/-1.33	-1.79/-2.7
Θ(150°)	-1.73/-2.8	-4.8/-8.05	-12.47/-14.54	-13.07/-12.15	-12.44/-13.3	-14.13/-14.82	-15.03/-15.32	-16/-16.35	-15.12/-13.87	-14.19/-15.07	-14.12/-12.1	-10.41/-8.41	-6.4/-5.15	-5										



Radiated Composite Gain Data

Appendix A

Θ(142.5°)	-10.14/-15.39	-18.06/-18.24	-11.23/-7.13	-6.18/-6.96	-8.47/-8.97	-9.8/-11.45	-11.13/-8.05	-8.37/-10.58	-8.19/-6.08	-7.05/-9.62	-11.67/-19.22	-11.3/-7.47	-17.57/-8.28	-3.53/-5.81	-1.76/-0.32	-6.28/-1.76	0.61/-1.35	1.22/-2.22	-2.05/-2.77	-2.38/-0.99	-5.95/-8.99	-11.68/-14.95	-7.02/-10.53	-18.08/-13.56
Θ(150°)	-11.45/-11.85	-8.23/-6.11	-6.04/-7.57	-9.48/-9.32	-8.53/-8.89	-11.13/-16.94	-18.08/-18.46	-17.84/-14.58	-11.37/-9.84	-10.5/-14.52	-18.5/-17.25	-13.48/-12.2	-9.02/-6.66	-5.54/-3.1	-2.67/-0.58	-5.32/-2.91	-0.950.53	-0.06/-3.39	-7.19/-8.93	-4.83/-0.98	-1.08/-3.32	-2.6/-1.7	-2.63/-3.61	-6.15/-10.55
Θ(157.5°)	-14.15/-12.82	-12.14/-12.91	-17.66/-1.38	-14.1/-13.45	-15.26/-18.82	-18.32/-13.15	-10.62/-15.92	-9.32/-8.82	-8.26/-9.09	-11.62/-15.65	-18.65/-18.24	-19.75/-15.33	-12.79/-8.51	-4.63/-2.57	-2.31/-3.05	-3.63/-2.84	-0.940	-0.23/-1.6	-3.12/-5.15	-6.17/-3.56	-2.26/-3.55	-5.98/-6.74	-6.47/-8.22	-11.15/-13.02
Θ(165°)	-14.47/-15.2	-12.48/-9.35	-7.3/-7.35	-8.94/-12.08	-15.21/-17.2	-14.83/-12.25	-11.82/-13.03	-15.28/-18.34	-19.32/-17.6	-18.09/-17.46	-15.64/-15.2	-16.22/-17.62	-15.76/-12.58	-9.8/-7.72	-6.48/-5.16	-3.65/-2.27	-0.98/-0.2	0.19/0.01	-0.85/-2.69	-5.33/-5.73	-5.33/-5.65	-6.96/-10.47	-13.81/-14.45	-14.05/-13.55
Θ(172.5°)	-11.17/-10.77	-10.23/-9.77	-9.17/-10.57	-12.65/-13.35	-13.49/-12.98	-14.46/-16.15	-15.7/-13.8	-9.94/-6.48	-4.44/-3.88	-4.53/-6.34	-7.94/-9.55	-11.09/-11.76	-10.11/-7.88	-5.92/-4.54	-3.59/-3.11	-2.71/-2.59	-2.87/-3.02	-3.21/-3.68	-4.45/-5.71	-6.61/-6.13	-5.91/-6.07	-6/-6.59	-7.43/-9.13	-9.68/-9.86
Θ(180°)	-14.66/-17.1	-11.34/-8.16	-6.23/-5.59	-5.41/-4.65	-4.35/-4.38	-5.38/-6.28	-7.25/-7.46	-6.22/-5.19	-4.5/-4.84	-5.72/-7.39	-8.72/-8.97	-8.47/-7.58	-6.81/-5.88	-4.69/-3.83	-3.16/-2.86	-2.85/-2.8	-2.8/-2.7	-2.84/-3.22	-3.36/-3.49	-4.34/-5.97	-9.28/-13.63	-14.26/-13.82	-12.55/-11.1	-11.8/-11.47
Freq(Hz)	5.30P/d	PhiAnt. 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-4.39/-4.86	-6.71/-7.15	-7.42/-7.35	-8.61/-10.28	-11.7/-13.32	-14.79/-16.28	-13.28/-11.26	-10.22/-9.55	-8.93/-7.66	-6.29/-5.04	-4.85/-5.45	-5.65/-5.81	-5.67/-5.58	-5.84/-6.01	-6.67/-7.66	-8.85/-10	-11.54/-13.55	-15.76/-14.84	-12.62/-10	-8.29/-7.51	-6.15/-4.99	-4.19/-4.1	-3.99/-4.18	-4.25/-4.65
Θ(7.5°)	-4.14/-4.51	-6.43/-6.77	-6.25/-6.29	-7.9/-9.47	-10.2/-12.38	-13.83/-12.17	-10.38/-7.4	-5.09/-3.56	-2.7/-2.11	-1.44/-0.84	-0.38/-0.6	-1.05/-1.51	-2.2/-2.73	-3.24/-4.2	-5.46/-6.93	-8.69/-9.78	-11.18/-12.36	-15.31/-17.15	-19.37/-17.78	-15.07/-13.79	-11.47/-10.47	-9.58/-8.41	-6.9/-5.81	-4.65/-4.52
Θ(15°)	-3.99/-5.19	-6.72/-5.94	-4.34/-4.69	-6.98/-9.2	-10.57/-14.18	-13.07/-11.04	-8.69/-5.38	-3.03/-1.33	-0.22/-0.56	0.97/1.15	1.02/0.56	-0.22/-1.18	-2.37/-3.85	-5.26/-6.2	-6.66/-7.19	-7.6/-7.93	-9.09/-10.75	-14.56/-18.33	-19.17/-18.07	-18.11/-19.17	-18.21/-13	-10.62/-9.31	-8.7/-6.71	-3.66/-3.48
Θ(22.5°)	-8.07/-8.43	-7.37/-6.87	-6.68/-7.68	-9.63/-10.53	-10.82/-14.4	-13.96/-12.91	-9.98/-4.37	-1.04/-0.67	0.11/0.4	0.49/0.65	0.43/-0.28	-1.07/-2.25	-3.82/-5.84	-8.11/-10.84	-14.37/-15.44	-12.19/-11.15	-11.8/-13.1	-15.17/-19.22	-17.28/-18.58	-18.52/-19.17	-18.21/-13.09	-12.51/-12.97	-12.66/-8.37	-5.45/-5.96
Θ(30°)	-10.78/-8.38	-9.99/-11.34	-9.21/-10.73	-6.81/-7.8	-9.68/-11.73	-11.23/-10.43	-7.73/-6.64	-5.39/-3.86	-2.79/-2.62	-3.05/-2.97	-2.41/-1.92	-1.82/-2.33	-3.46/-5.27	-7.81/-9.75	-10.4/-11.61	-15.51/-14.91	-18.57/-18.76	-18.89/-19.27	-19.02/-18.74	-17.86/-18.18	-17.84/-18.1	-18.9/-18.74	-18.95/-16.62	-14.65/-14.59
Θ(37.5°)	-8.48/-10.81	-15.5/-13.49	-10.82/-9.25	-9.43/-10.58	-9.42/-9.86	-10.96/-12.22	-10.27/-12.12	-4.74/-4.22	-4.81/-5.47	-4.52/-2.62	-1.48/-1.56	-2.99/-4.79	-5.44/-5.87	-8.42/-13.54	-16.95/-15.64	-14.75/-14.4	-14.96/-16.74	-18.78/-17.8	-15.71/-15.25	-16.85/-17.69	-13.53/-14.04	-17.56/-12.08	-11.13/-13.03	-10.24/-6.51
Θ(45°)	-14.69/-13.64	-15.3/-11.18	-7.63/-4.46	-3.9/-5.84	-6.67/-6.49	-5.92/-5.68	-5.43/-7.11	-9.73/-12.22	-11.7/-7.32	-4.4/-2.92	-2.28/-2.95	-5.39/-6.71	-5.68/-8.23	-16.53/-19.51	-15.31/-11.87	-12.44/-13.78	-16.14/-19.49	-16.29/-14.11	-14.55/-10.25	-16.85/-17.69	-14.33/-14.04	-9.25/-13.02	-16.49/-18.66	-17/-17.29
Θ(52.5°)	-14.66/-10.4	-8.9/-3.84	-2.38/-3.07	-4.57/-7.13	-10.63/-13.67	-11.41/-8.63	-6.77/-6.24	-7.14/-9.58	-9.26/-5.76	-2.44/-0.38	0.3/-2.56	-6.86/-7.45	-6.74/-8.93	-13.36/-14.13	-10.71/-9	-8.83/-10.4	-17.29/-18.13	-14.91/-11.89	-9.78/-9.08	-9.33/-9.86	-11.6/-14.81	-13.6/-13.33	-14.7/-10.32	-11.3/-11.9
Θ(60°)	-9.44/-8.85	-8.14/-10.23	-8.66/-7.31	-8.74/-10.2	-10.05/-11.0	-10.96/-13.45	-16.36/-15.61	-14.02/-13.66	-9.34/-5.46	-3.63/-3	-3.13/-6.66	-10.96/-13.63	-13.09/-10.89	-6.98/-7.3	-9.18/-14.11	-14.61/-13.61	-13.28/-14.14	-18.32/-18.99	-14.89/-18.35	-13.38/-14.77	-17.22/-15.48	-18.35/-17.2	-15.16/-16.23	-11.15/-10.18
Θ(67.5°)	-6.47/-2.92	-0.75/-1.42	-3.02/-4.55	-7.46/-12.81	-11.45/-9.07	-8.87/-8.48	-10.88/-13.29	-13.99/-11.48	-8.96/-7.5	-7.71/-6.58	-6.78/-9.03	-12.39/-10.62	-9.64/-6.92	-7.24/-8.88	-15.12/-17.16	-14.73/-14.09	-17.41/-17.74	-18.96/-15.97	-13.43/-12.68	-13.24/-13.49	-13.49/-12.06	-11.66/-18.23	-18.21/-10.71	
Θ(75°)	-2.79/-1.6	-0.78/-0.3	-2.49/-6.2	-9.31/-10.58	-10.82/-9.95	-9.73/-10.8	-11.9/-10.58	-8.49/-7.96	-8.79/-10.53	-13.69/-18.68	-18.43/-18.33	-12.6/-10.06	-11.27/-7.81	-5.22/-6.07	-8.55/-10.38	-8.83/-9.55	-19.63/-16.56	-13.88/-19.11	-15.44/-11.35	-9.91/-14.1	-14.17/-12.37	-12.49/-11.16	-8.94/-5	-4.76/-3.79
Θ(82.5°)	-0.55/-9.07	-0.97/-0.23	-1.06/-1.49	-7.52/-9.53	-14.53/-18.54	-18.27/-13.65	-12.41/-15.27	-14.33/-10.94	-8.23/-6.38	-6.31/-8.68	-10.4/-9.38	-6.85/-4.79	-4.78/-3.37	-4.29/-6.29	-5.43/-2.24	-0.72/-1.51	-8.33/-18.92	-7.77/-13.58	-16.45/-9.07	-7.34/-12.95	-11.84/-8.6	-8.87/-8.08	-4.36/-1.92	-0.43/-9.02
Θ(90°)	0.61/6.19	1.16/0.51	0.96/-0.24	-6.33/-13.02	-13.88/-12.95	-11.57/-17.69	-15.12/-11.33	-12.98/-12.7	-12.97/-12.76	-11.18/-11.07	-7.41/-3.37	-2.14/-4.71	-3.23/-2.72	-2.97/-2.6	-2.55/-3.08	-2.4/-3.69	-10.55/-12.4	-5.62/-10.56	-18.26/-9.72	-7.58/-11.77	-7.34/-19	-31/-39	-0.99/-0.48	0.09/-0.31
Θ(97.5°)	0.88/1.71	1.66/0.84	-1.04/-3.01	-6.18/-13.54	-12.92/-8.28	-11.1/-13.87	-10.37/-8.35	-11.07/-14.16	-13.43/-10.21	-13.32/-13.31	-12.96/-6.01	-6.09/-5.53	-8.46/-8.8	-5.25/-4.7	-5.93/-6.08	-3.84/-3.61	-8.18/-17.91	-6.84/-12.1	-18.01/-12.04	-6.74/-7.84	-2.55/-1.34	-1.62/-2.22	-0.820/-18	0.620/76
Θ(105°)	2.24/2.8	2.21/66	0.96/-0.63	-0.95/-12.93	-17.02/-12.21	-14.49/-13.92	-8.2/-7.02	-7.08/-7.47	-5.15/-6.68	-7.54/-8.09	-9.95/-8.04	-5.89/-6.41	-8.76/-9.48	-4.33/-7.1	-9.63/-5.64	-5.44/-5.55	-12.22/-18.32	-13.4/-9.36	-19.9/-9.17	-6.84/-4.38	-2.08/-1.14	0.38/1.86	1.08/1.16	
Θ(112.5°)	3.65/4.21	3.83/2.16	0.83/-0.6	-2.18/-3.54	-4/-7.7	-10.16/-82	-9.13/-4.66	-6.37/-7.61	-5.77/-6.56	-8.16/-7.75	-5.46/-6.08	-11.81/-14.81	-10.14/-15.18	-13.03/-10.8	-8.14/-10.8	-7.42/-5.23	-7.61/-13.43	-18.54/-18.82	-14.14/-12.06	-7.58/-11.67	-2.92/-2.56	-2.881/-336	0.880/31	0.881/66
Θ(120°)	2.22/4.4	4.52/2.92	1.65/-0.39	-3.24/-4.59	-5.07/-5.81	-6.6/-7.01	-6.31/-8.09	-11.45/-10.84	-8.42/-8.56	-10.88/-6.61	-4.05/-6.2	-18.21/-15.86	-11.24/-6.3	-7.04/-14.7	-11.97/-7.98	-11.98/-8.75	-5.98/-10.47	-18.06/-14.64	-14.33/-15.74	-14.88/-7.71	-6.95/-2.81	-1.250/35	-0.93/-0.88	1.25/1.56
Θ(127.5°)	0.26/-0.46	0.92/1.54	0.71/-0.17	-2.71/-4.57	-3.76/-3.62	-4.4/-5.55	-8.52/-12.36	-17.86/-18.54	-14.17/-13.62	-13.96/-10.82	-6.74/-7.27	-14.8/-9.06	-5.95/-3.15	-19.25/-9.92	-11.58/-15.33	-6.81/-3.67	-4.58/-9.67	-17.76/-16.42	-10.54/-7.03	-5.14/-8.51	-6.51/-7.64	-3.17/-2.82	1.52/2.92	0.77/0.08
Θ(135°)	0.78/-0.26	-2.67/-2.24	-2.21/-3.33	-4.47/-7.55	-10.19/-14.35	-19.67/-15.03	-14.96/-15.25	-13.41/-11.63	-6.53/-6.68	-13.56/-12.38	-16.14/-6.66	-11.66/-17.88	-12.09/-11.1	-10.84/-12.94	-9.04/-18.37	-18.32/-11.53	-16.04/-13.36	-8.8/-5.47	-7.94/-6.08	-17.17/-7.21	-16.63/-6.15	-1.64/1.67	3.02/1.28	
Θ(142.5°)	-3.53/-2.79	-3.05/-3.06	-4.09/-7.01	-8.63/-7.43	-7.75/-7.99	-8.32/-10.61	-13.18/-12.2	-11.41/-12.94	-13.27/-10.5	-9.34/-9.64	-14.36/-11.59	-14.28/-6.12	0.270/-9.7	-2.09/-3.4	-7.35/-5.94	-4.41/-5.41	-7.41/-6.63	-7.25/-8.21	-6.12/-4.08	-5.49/-6.25	-6.52/-17.92	-5.18/-4.42	-5.92/-4.64	
Θ(150°)	-3.45/-3.13	-7.95/-15.65	-18.41/-17.64	-13.84/-11.4	-13.7/-16.76	-14.84/-12.6	-10.9/-10.87	-14.6/-15.33	-10.82/-8.76	-7.77/-7.69	-9.19/-9.69	-5.62/-1.22	0.35/-1.02	-3.85/-3.4	-4.89/-3.61	-1.85/-8.66	-2.35/-5.04	-7.85/-8.91	-13.33/-18.02	-16.95/-7.72	-6.14/-9.18	-8.39/-5.69	-6.69/-5.76	-7.5/-8.22
Θ(157.5°)	-10.49/-8.78	-6.78/-5.96	-5.97/-5.98	-6.16/-7.55	-9.29/-9.13	-8.34/-6.48	-9.85/-11.85	-12.89/-10.24	-8.33/-7.5	-7.26/-7.71	-8.37/-7.51	-4.79/-2.38	-1.28/-1.18	-1.53/-1.65	-0.780/-53	1.48/1.52	0.38/-2.06	-5.74/-10.73	-18.53/-18.59	-18.14/-12.13	-7.32/-5.81	-5.97/-5.7	-5.67/-7.97	-9.01/-10.26
Θ(165°)	-3.21/-5.8	-8.5/-8.23	-6.61/-6.03	-8.45/-4.17	-3.97/-4.36	-5.13/-6.95	-9.43/-12.38	-16.96/-19.85	-18.36/-18.99	-16.84/-16.25	-11.87/-8.91	-6.44/-4.33	-2.83/-1.98	-1.3/-0.69	0.060/57	0.620/02	-1.47/-7.33	-6.95/-12.05	-17.99/-19.19	-18.15/-12.85	-8.14/-72	-3.55/-3.66	-3.01/-1.86	-2.58/-2.44
Θ(172.5°)	-0.78/-2.06	-3.97/-4.81	-4.84/-4.95	-5.44/-5.8	-6.45/-4.72	-9.21/-11.88	-16.19/-17.96	-17.48/-16.04	-12.28/-9.05	-6.43/-4.57	-3.39/-2.75	-2.57/-2.72	-3.02/-3.26	-3.57/-4.01	-4.83/-5.75	-6.72/-7.99	-10.42/-14.61	-17.87/-17.73	-17.1/-12.66	-10.85/-8.97	-7.01/-4.91	-3.11/-1.85	-1.63/-1.33	-1.83/-1.68
Θ(180°)	-14.22/-10.14	-7.32/-5.52	-5.04/-5.42	-6.51/-7.65	-8.89/-11.02	-12.58/-14.07	-12.94/-11.28	-9.07/-7.88	-7.16/-6.8	-6.46/-6.18	-5.73/-5.42	-5.38/-5.56	-5.84/-5.96	-6.13/-6.16	-6.26/-7.04	-8.19/-9.09	-9.54/-10.3	-10.65/-10.58	-10.29/-10.09	-9.85/-9.36	-8.43/-7.59	-6.82/-6	-6.98/-9.44	-12.62/-13.46
Freq(Hz)	5.30P/d	ThetaAnt. 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.											



Radiated Composite Gain Data

Appendix A

Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-12/-12.08	-14.11/-16.89	-18.28/-18.47	-17.93/-18.55	-17.93/-15.75	-12.99/-11.59	-10.06/-8.46	-7.14/-6.43	-5.97/-5.92	-6.51/-7.33	-7.63/-7.97	-8.39/-9.38	-10.71/-11.98	-13.92/-16.14	-17.54/-18.81	-17.59/-17.01	-13.77/-11.98	-10.75/-9.91	-9.05/-8.58	-8.7/-7.64	-6.94/-7.96	-9.69/-9.64	-9.55/-10.06	-10.41/-12.23
Θ(7.5°)	-12.96/-18.03	-17.8/-18.93	-18.05/-19.03	-17.32/-16.73	-14.55/-12.71	-11.96/-12.38	-14.35/-14.83	-15.09/-13.89	-12.92/-13.53	-15.66/-18.93	-18.99/-15.34	-11.88/-9.8	-8.85/-8.26	-7.47/-7.53	-8.67/-10.86	-13.74/-17.49	-18.31/-19.13	-14.25/-10.2	-7.58/-6.41	-5.61/-5.45	-5.29/-5.68	-6.44/-6.48	-7.41/-7.83	-8.23/-9.74
Θ(15°)	-18.9/-18.03	-18.82/-14.82	-13.55/-12.82	-12.82/-12.91	-14.48/-16.04	-18.42/-18.04	-18.96/-18.08	-13.71/-10.49	-8.55/-7.62	-7.24/-8.25	-10.65/-14.47	-15.16/-10.55	-7.28/-5.32	-3.9/-3.49	-3.81/-4.68	-6.13/-8.91	-13.59/-18.37	-17.59/-12.42	-9.11/-7.61	-6.76/-6.18	-5.57/-5.02	-5.52/-6.98	-7.79/-8.63	-9.3/-13.1
Θ(22.5°)	-10.64/-9.22	-9.04/-9.76	-9.78/-11.02	-14.47/-19.12	-19.29/-18.78	-18.43/-18.38	-17.65/-15.66	-10.15/-5.61	-2.49/-0.81	-0.22/-0.82	-2.58/-5.79	-11.14/-19.44	-17.76/-17.02	-17.71/-14.73	-12.51/-11.61	-11.99/-13.55	-17.46/-18.48	-18.49/-16.05	-12.1/-11.49	-10.35/-7.52	-5.46/-5.03	-5.84/-7.18	-7.65/-8.46	-8.08/-9.75
Θ(30°)	-18.99/-14.57	-17.75/-14.37	-11.21/-10.81	-10.87/-12.69	-16.19/-14.47	-10.78/-9.45	-12.21/-17.71	-10.31/-4.02	-1.020/-1.2	-0.06/-0.85	-2.4/-5.85	-12.87/-19.08	-13.21/-11.03	-12.1/-14.41	-15.9/-19.29	-18.54/-12.35	-10.71/-12.66	-16.21/-14.37	-12.45/-10	-6.78/-6.8	-9.23/-12.56	-15.75/-18.45	-18.35/-18.83	
Θ(37.5°)	-10.57/-13.03	-10.93/-8.51	-7.85/-5.93	-5.78/-6.44	-8.64/-9.88	-10.28/-9.35	-10.33/-12.86	-12.17/-6.98	-3.86/-2.69	-3.31/-6.01	-9.32/-9.37	-10.24/-10.05	-11.34/-14.98	-17.52/-18.25	-18.78/-15.9	-14.02/-16.42	-11.97/-10.99	-12.07/-12	-10.32/-7.76	-5.19/-5.58	-7.89/-8.3	-10.99/-15.83	-19.25/-18.58	-18.55/-14.29
Θ(45°)	-12.77/-14.59	-9.63/-9.3	-7.63/-5.63	-3.93/-3.51	-4.64/-6.22	-10/-12.15	-9.5/-6.56	-5.46/-5.19	-6.01/-8.24	-10.54/-11.12	-6.15/-3.67	-2.84/-1.75	-2.76/-6.15	-8.76/-7.44	-8.44/-15.23	-16.12/-15.52	-12.07/-13.62	-13.85/-8.66	-5.7/-4.74	-4.7/-5.6	-7.63/-12.4	-14.12/-15.98	-18.95/-19.15	-18.9/-13.58
Θ(52.5°)	-9.72/-10.07	-9.18/-6.76	-6.77/-9.49	-12.72/-11.93	-14.07/-14.63	-18.7/-18.89	-14.19/-10.31	-8.63/-7.1	-7.62/-8.66	-9.63/-9.45	-7.89/-8.88	-5.53/-6.1	-8.69/-13.26	-18.52/-18.19	-18.09/-14.73	-18.52/-18.75	-18.61/-18.16	-18.2/-17.86	-6.8/-3.43	-4.4/-8.46	-13.29/-13.86	-9.97/-6.53	-6.18/-10.48	-12.57/-11.56
Θ(60°)	-10.7/-7.28	-4.73/-2.83	-2.44/-3.27	-4.68/-9.02	-16.56/-17.95	-13.04/-13.81	-17.46/-13.04	-7.95/-6.18	-4.76/-3.18	-1.88/-1.64	-4.11/-10.97	-10.82/-5.85	-6.53/-13.85	-16.71/-12.35	-11.98/-13.5	-19.06/-13.41	-11.14/-15.39	-15.72/-9.38	-8.3/-6.48	-6.21/-8.09	-7.83/-7.61	-5.35/-5.95	-5.46/-6.76	-10.04/-13.2
Θ(67.5°)	-7.47/-2.66	0/0.31	-1/-3.94	-7.18/-9.9	-15.3/-18.79	-10.31/-7.41	-7.52/-6.67	-6.55/-9.39	-18.83/-13.91	-8.99/-6.47	-5.87/-8.25	-18.71/-17.76	-10.59/-10.17	-6.19/-5.46	-9.38/-17.95	-15.77/-12.16	-16.21/-18.46	-16.43/-18.02	-11.13/-8.8	-10.79/-18.04	-9.44/-5.57	-5.64/-5.57	-4.44/-5.19	-9.45/-13.18
Θ(75°)	-11.24/-5.84	-3.31/-2.39	-2.66/-4.01	-5.08/-7.89	-9.96/-12.41	-16.73/-18.94	-9.88/-6.06	-4.06/-4.7	-6.61/-9.64	-15.77/-12.85	-12.66/-9.11	-3.76/-7.93	-7.47/-2.44	-3.28/-3.81	-3.23/-1.9	-0.97/-3.37	-12.42/-7.38	-8.54/-18.29	-6.89/-7.45	-18.45/-8.16	-6.18/-6.79	-4.22/-2.57	-0.43/-1.15	0.49/-0.6
Θ(82.5°)	-3.030/-2.1	2.183/-2.1	2.740/-8.7	-1.61/-4.64	-9.95/-18.25	-17.45/-17.89	-16.54/-9.76	-5.53/-4.78	-8.87/-11.01	-12.95/-18.81	-18.57/-17.93	-13.06/-11.62	-9.59/-3.88	-2.96/-3.67	-5.56/-7.83	-4.9/-8.29	-17/-13.24	-18.81/-13.45	-10.56/-11.85	-16.02/-15.22	-11.14/-10.42	-12.18/-14.49	-11.25/-10.58	-9.56/-5.9
Θ(90°)	-1.27/-1.59	-0.260/-8.3	1.07/-0.01	-3.38/-8.39	-12.66/-16.75	-18.66/-17.82	-17.01/-11.11	-9.76/-12.97	-14.31/-10.05	-8.14/-7.79	-18.49/-15.07	-9.9/-10.68	-7.03/-4.68	-2.61/-3.62	-5.09/-3.55	-1.42/-1.13	-8.56/-12.2	-7.45/-12.86	-5.52/-6.05	-12.11/-9.53	-5.9/-6.67	-6.26/-7.32	-4.62/-0.97	0.12/-1.81
Θ(97.5°)	0.790/-0.2	-0.060/-0.9	-0.95/-2.56	-5.16/-8.16	-9.95/-12.41	-16.73/-18.94	-9.88/-6.06	-4.06/-4.7	-6.61/-9.64	-15.77/-12.85	-12.66/-9.11	-3.76/-7.93	-7.47/-2.44	-3.23/-1.9	-0.97/-3.37	-12.42/-7.38	-8.54/-18.29	-6.89/-7.45	-18.45/-8.16	-6.18/-6.79	-4.22/-2.57	-0.43/-1.15	0.49/-0.6	
Θ(105°)	-0.170/-0.89	1.86/-1.66	-0.41/-3.08	-7.93/-9.04	-18.2/-18.4	-13.48/-12.67	-17.29/-10.18	-6.33/-7.34	-7.25/-11.77	-10.62/-13.51	-9.16/-8.15	-10.03/-13.98	-16.81/-9.93	-4.46/-3.1	-4.46/-5.42	-2.31/-3.13	-9.32/-14.59	-4.01/-13.17	-7.35/-12.6	-15.12/-7.27	-6.59/-6.3	-5.6/-1.67	1.010/-0.52	1.850/-0.59
Θ(112.5°)	0.32/-5.6	3.734/-0.6	2.790/-2	-3.71/-7.92	-15.05/-17.23	-10.39/-10.66	-14.29/-6.69	-3.71/-2.85	-2.22/-2.99	-6.55/-3.4	-3.03/-6	-11.95/-9.82	-7.15/-14.54	-6.44/-10.39	-7.32/-6.17	-5.92/-2.64	-6.75/-12.16	-9.04/-17.9	-13.02/-10.98	-18.7/-12.56	-6.02/-3.23	-2.93/-2.23	-1.80/-86	-0.7/-0.67
Θ(120°)	2.833/-28	3.633/-71	3.04/-93	1.49/-2.16	-8.82/-9.27	-7.8/-10.48	-7.99/-4.37	-2.41/-1.49	-2.76/-6.18	-7.95/-4.16	-2.13/-8.4	-11.47/-17.73	-12.24/-17.03	-5.24/-4.46	-10.6/-17.85	-7.32/-5.43	-18.09/-14.58	-4.03/-7.87	-18.92/-19.13	-13.2/-11.55	-6.32/-4.24	-3.83/-3.26	0.51/-61	0.39/-68
Θ(127.5°)	5.56/-75	4.49/-2.47	1.880/-19	-0.56/-0.11	-2.11/-4.03	-3.09/-3.22	-5.86/-10.57	-15.24/-11.4	-7.1/-8.1	-10.5/-7.56	-4.69/-3.85	-7.66/-7.67	-18.53/-13.24	-12.8/-6.84	-13.28/-17.38	-12.12/-8.51	-7.49/-12.93	-7.1/-8.82	-6.41/-4.42	-9.45/-7.57	-5.48/-2.56	-2.25/-0.51	1.9/-2.43	4.28/-2.56
Θ(135°)	2.14/-25.4	3.762/-35	-0.27/-1.52	-2.41/-3.57	-2.73/-2.37	-3.53/-5.98	-11.07/-19.01	-11.24/-7.73	-7.3/-5.81	-6.84/-6.52	-4.76/-3.11	-3.96/-9.42	-4.82/-3.96	-7.15/-5.28	-6.66/-8.9	-10.53/-7.86	-18.73/-14.57	-14.54/-10.62	-6.19/-4.03	-5.82/-7.72	-3.06/-6.66	-1.08/-3.31	-0.41/-1.18	-0.940/-99
Θ(142.5°)	-5.04/-7.4	-6.22/-2.24	-1.15/-1.29	-0.87/-1.95	-4.27/-6.67	-5.54/-4.45	-4.93/-6.25	-8.05/-12.74	-18.28/-17.86	-9.39/-5.85	-4.84/-11.05	-11.81/-5.95	-3.22/-2.74	-5.17/-8.6	-6.81/-6.25	-9.83/-7.34	-7.43/-15.59	-17.8/-9.09	-4.75/-5.93	-9/-19.52	-11.71/-11.65	-9.98/-2.63	-2.16/-1.02	-1.89/-5.23
Θ(150°)	-1.78/-0.19	0.26/-0.07	-0.5/-2.12	-4.24/-8.32	-15.4/-17.59	-13.65/-11.83	-10.03/-8.43	-7.02/-6.6	-5.11/-3.14	-2.87/-4.85	-9.38/-17.9	-9.16/-2.09	1.69/-1.44	-3.54/-10.36	-6.4/-2.83	-4/-5.97	-7.85/-8.59	-10.66/-14.16	-14.02/-10.83	-15.84/-19.01	-13.71/-12.05	-6.99/-5.92	-4.36/-1.85	
Θ(157.5°)	-8.06/-6.19	-6.41/-7.66	-7.72/-6.12	-5.28/-6.38	-8.76/-12.25	-13.32/-11.76	-10.61/-9.99	-9.88/-9.08	-7.82/-6.83	-6.24/-6.69	-8.87/-8.46	-4.06/-4.3	-1.28/-3.19	-6.56/-7.47	-4.08/-2.08	-2.57/-4.72	-8.14/-9.77	-11.39/-14.1	-18.3/-19.21	-12.92/-6.61	-5.02/-4.93	-6.09/-6.76	-7.03/-10.21	-13.68/-10.05
Θ(165°)	-6.55/-5.46	-4.02/-5.28	-9.2/-14.22	-18.45/-13.7	-9.4/-7.52	-6.85/-6.68	-6.83/-7.42	-8.98/-11.92	-17.16/-18.48	-18.53/-19.05	-18.58/-13.31	-9.65/-7.01	0/0.2	-2.5/-1.05	0.61/-2.09	-4.56/-7.41	-10.74/-15.01	-18.69/-17.19	-10.98/-6.87	-3.79/-1.89	-1.22/-1.66	-2.13/-2.56	-3.18/-5.67	
Θ(172.5°)	-2.21/-5.17	-10.09/-11.25	-7.62/-5.28	-4.33/-3.86	-3.64/-3.92	-4.86/-6.21	-7.66/-9.93	-15.01/-17.39	-15.51/-10.64	-8.32/-6.9	-5.94/-5.59	-3.39/-2.52	-2.03/-1.74	-1.53/-1.67	-1.9/-2.56	-3.53/-4.92	-6.62/-7.99	-9.11/-10.22	-11.39/-11.97	-10.07/-6.17	-2.55/-0.91	-0.32/-0.44	-0.060/-89	0.29/-0.86
Θ(180°)	-10.12/-9.15	-9.06/-9.3	-9.83/-10.04	-10.59/-11.55	-12.89/-13.66	-17.24/-17.33	-17.96/-19.13	-17.72/-18.56	-18.72/-18.32	-17.7/-18.95	-17.99/-13.98	-12.06/-10.97	-10.28/-9.7	-9.24/-9.8	-11.2/-13.51	-17.03/-18.23	-18.81/-16.92	-13.24/-11.74	-10.8/-11.19	-10.04/-8.69	-8.29/-7.69	-7.04/-6.04	-6.44/-8.54	-18.02/-14.91
Freq(Hz)	5.785GPol.	Theta/Ant. 4	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-12.61/-11.86	-9.25/-8.16	-7.49/-7.35	-7.24/-7.04	-6.71/-6.85	-7.1/-7.87	-9/-11.06	-13.4/-14.68	-16.54/-18.19	-18.34/-19.03	-15.89/-13.25	-11.16/-9.37	-7.99/-7.2	-6.92/-6.92	-6.59/-6.86	-7.24/-7.47	-7.96/-8.9	-10.56/-11.85	-11.21/-11.71	-14.41/-18.57	-18.35/-17.77	-17.79/-17.59	-19.23/-15.23	-14.43/-13.85
Θ(7.5°)	-10.61/-10.31	-8.91/-8.66	-9.57/-12.03	-14.24/-14.92	-15.83/-16.08	-17.57/-17.95	-19.44/-14.81	-12.36/-13.77	-16.98/-17.78	-15.56/-14.75	-15.66/-16.3	-16.64/-16.25	-15.07/-13.45	-10.98/-8.81	-7.38/-6.17	-5.08/-4.59	-4.63/-5	-5.42/-5.87	-6.79/-9	-11.41/-14.18	-17.76/-18.84	-16.93/-13.9	-11.96/-11.48	-10.2/-10.78
Θ(15°)	-12.03/-13.96	-13.86/-17.42	-16.97/-11.71	-8.15/-6.02	-5.08/-4.5	-4.04/-3.6	-3.55/-3.56	-3.3/-3.46	-4.42/-6.55	-9.03/-12.02	-14.09/-15.1	-14.64/-13.67	-12.88/-12.62	-11.67/-10.93	-9.69/-7.64	-5.99/-4.86	-4.19/-4.68	-5.96/-8.03	-11.62/-16.13	-17.78/-18.08	-17.35/-15.19	-12.19/-10.68	-10.82/-9.59	-9.04/-10.68
Θ(22.5°)	-10.95/-10.19	-12.35/-14.56	-10.85/-7.07	-5/-3.3	-1.81/-0.76	0.150/-0.66	0.590/-0.2	-0.2/-1.29	-3.3/-6.42	-11.59/-18.41	-18.04/-13.15	-10.26/-8.45	-7.76/-7.1	-7.18/-8.61	-11.32/-12.79	-11.55/-9.81	-8.62/-8.03	-8.32/-8.85	-10.07/-13.14	-13.34/-12.51	-12.12/-13.23	-14.33/-15.02	-15.19/-14.03	-12.43/-11.18
Θ(30°)	-8.2/-7.49	-7.62/-7.7	-6.56/-4.75	-2.29/-0.02	1.56/-2.1	2.28/-2.14	2.17/-2.08	1.75/-1.05	-0.98/-5.2	-10.33/-11.92	-11.43/-11.07	-10.93/-9.9	-7.97/-6.5	-7.8/-10.36	-18.12/-15.05	-11.14/-10.28	-10.95/-14.01	-14.91/-17.62	-17.67/-18.96	-14.35/-9.39	-9.05/-12.35	-16.3/-18.94	-19.03/-18.76	-14.6/-11.38
Θ(37.5°)	-6.94/-3.79	-2.37/-2.11	-1.49/-1.08	-0.91/-0.49	0.340/-9.2	1.48/-1.85	2.46/-2.65	2.42/-7.3	-0.22/-4.06	-7.19/-7.91	-9.23/-10.9	-11.07/-10.04	-9.24/-10.9	-15.94/-18.0										



Appendix B

Freq(Hz)	245GPol.		TotalAnt. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)
Θ(0°)	-0.130-15	0.320-27	0.370-36	0.260-15	0.020-10	-0.220-44	-0.640-88	-1.150-140	-1.600-167	-1.860-180	-1.590-134	-1.060-75	-0.450-14	0.180-41	0.590-68	0.720-63	0.140-38	-0.690-09	-0.300-47	-0.510-58	-0.610-65	-0.680-64	-0.560-38	-0.160-00
Θ(7.5°)	-0.740-41	-0.110-18	0.420-49	0.290-55	0.570-57	0.630-61	0.560-45	0.210-13	-0.070-17	-0.270-19	-0.090-01	0.100-22	0.310-42	0.480-50	0.480-37	0.230-01	-0.340-68	-1.070-148	-1.880-218	-2.380-251	-2.640-273	-2.770-264	-2.370-195	-1.440-101
Θ(15°)	-2.000-144	-0.890-035	0.130-39	0.600-78	0.940-09	1.240-37	1.440-39	1.240-06	0.950-80	0.750-73	0.750-82	0.820-78	0.740-70	0.550-39	0.180-10	-0.430-86	-1.350-189	-2.490-314	-3.750-434	-4.820-532	-5.690-588	-5.820-551	-4.980-415	-3.290-251
Θ(22.5°)	-3.650-283	-2.090-127	-0.880-07	0.370-19	1.010-47	1.770-32	2.182-23	2.080-06	1.910-80	1.630-54	1.470-46	1.350-25	1.100-90	0.660-39	0.060-31	-0.730-122	-1.860-253	-3.250-403	-4.850-584	-6.810-800	-8.860-942	-9.610-927	-8.360-698	-5.610-442
Θ(30°)	-5.150-143	-3.130-284	-1.220-031	0.480-13	1.640-09	2.530-90	3.060-17	3.100-96	2.860-69	2.590-42	2.270-17	2.010-67	1.420-14	0.870-58	0.300-09	-0.570-116	-1.940-278	-3.760-483	-6.080-758	-9.120-1055	-11.500-1223	-12.750-1234	-11.320-979	-7.720-604
Θ(37.5°)	-5.980-476	-4.900-05	-2.610-34	-0.290-15	1.660-35	2.390-47	3.690-94	3.100-96	3.840-63	3.330-23	2.740-28	2.410-38	0.980-70	0.580-45	0.130-17	-0.850-150	-2.450-330	-5.170-707	-8.540-1129	-11.490-1166	-11.760-1219	-12.020-1178	-11.430-1017	-8.210-651
Θ(45°)	-6.770-632	-7.420-379	-3.240-154	0.100-14	1.720-35	2.770-09	3.730-58	3.750-91	3.880-69	3.260-91	2.110-69	1.850-81	-0.240-401	-0.370-29	-0.380-57	-1.030-178	-2.840-340	-6.320-860	-10.180-1029	-15.910-941	-9.290-967	-9.910-998	-9.800-876	-7.570-708
Θ(52.5°)	-8.290-192	-7.530-618	-5.750-437	-2.460-169	-0.410-58	1.480-93	2.100-28	2.400-77	2.660-59	2.410-34	0.620-09	-0.370-83	-0.880-086	-0.560-50	-1.030-123	-1.610-127	-3.250-508	-7.250-944	-9.210-820	-8.850-785	-8.400-1035	-10.110-953	-9.350-822	-8.500-836
Θ(60°)	-9.960-956	-9.600-896	-8.420-813	-6.670-476	-3.060-204	-0.780-01	0.170-23	0.330-72	1.250-59	1.730-25	0.770-84	0.900-36	0.220-10	0.160-27	0.410-91	-1.800-266	-4.490-661	-8.640-938	-8.300-733	-6.950-701	-7.930-894	-9.170-907	-9.210-858	-8.700-929
Θ(67.5°)	-9.340-881	-7.330-572	-5.160-564	-6.260-591	-5.050-380	-2.780-198	-1.270-70	-0.020-12	1.560-16	2.160-75	1.080-84	1.020-55	-0.600-947	-0.200-304	-0.500-97	-1.720-286	-2.480-535	-6.590-675	-6.470-637	-6.580-812	-9.660-895	-7.950-761	-7.550-726	-7.450-855
Θ(75°)	-11.600-182	-5.640-138	-2.140-07	-																				



Antenna Pattern

Appendix B

Θ (22.5°)	-12.77/-11.66	-11.22/-8.44	-7.94/-8.38	-7.44/-7.16	-6.34/-6.36	-8.11/-7.55	-5.16/-3.18	-2.40/-2.07	-1.57/-0.93	-0.82/-1.27	-2.10/-2.60	-2.64/-3.11	-3.95/-4.47	-4.04/-3.55	-3.28/-3.60	-4.39/-5.43	-6.38/-6.88	-6.54/-5.94	-5.41/-5.25	-5.37/-5.99	-7.05/-7.93	-8.98/-10.62	-12.29/-11.23	-10.79/-10.68
Θ (30°)	-7.36/-7.75	-8.30/-8.50	-7.67/-8.66	-7.61/-8.71	-9.98/-12.20	-12.67/-6.93	-4.38/-2.49	-1.33/-0.60	-0.67/-1.16	-1.66/-1.95	-2.47/-2.31	-1.28/-0.47	-0.64/-0.79	-0.64/-0.72	-0.79/-1.47	-2.00/-3.02	-5.03/-4.08	-7.79/-6.70	-6.35/-6.67	-7.86/-9.94	-8.40/-7.61	-6.63/-6.38	-7.81/-9.10	-9.07/-8.51
Θ (37.5°)	-2.31/-1.42	-1.84/-2.12	-2.95/-4.16	-5.38/-7.24	-6.39/-7.58	-6.03/-2.71	-0.26/-2.74	1.43/-1.19	0.31/-0.92	-1.25/-1.95	-1.92/-1.98	-1.39/-1.84	-3.15/-3.00	-3.09/-3.40	-2.93/-3.50	-4.64/-6.31	-8.71/-9.54	-9.55/-11.25	-12.65/-12.38	-12.42/-11.21	-10.15/-7.68	-9.81/-9.61	-10.38/-8.37	-5.57/-3.10
Θ (45°)	-5.01/-6.19	-7.43/-8.22	-8.33/-6.68	-4.80/-5.06	-4.95/-3.76	-1.90/-1.02	0.54/-1.26	1.44/-0.69	-0.53/-1.71	-3.03/-2.91	-1.69/-0.44	0.18/-0.72	0.55/-0.67	1.13/-0.87	0.23/-0.48	-0.59/-1.91	-3.20/-4.83	-4.91/-6.12	-10.37/-15.61	-15.01/-9.69	-14.23/-15.36	-9.78/-7.58	-7.33/-6.06	-5.93/-4.96
Θ (52.5°)	-12.36/-8.97	-9.26/-8.15	-11.85/-13.99	-14.25/-13.44	-15.52/-14.39	-8.86/-2.25	-0.14/-0.64	0.95/-0.74	0.08/-0.25	0.50/-0.40	1.28/-1.30	1.29/-1.00	0.76/-0.43	0.44/-0.33	-1.36/-1.71	-2.45/-4.34	-4.94/-3.92	-5.38/-5.90	-5.67/-7.01	-4.71/-3.99	-3.95/-4.66	-6.78/-9.63	-14.22/-15.60	
Θ (60°)	-5.23/-4.79	-5.06/-4.03	-2.43/-1.39	-0.99/-1.98	-2.11/-1.18	0.50/-2.51	1.82/-1.48	1.11/-0.87	1.04/-1.37	1.93/-2.27	2.79/-2.84	3.25/-2.25	2.14/-1.62	2.07/-0.93	0.01/-0.04	-0.65/-2.12	-4.26/-4.42	-2.87/-4.21	-5.51/-8.53	-6.07/-3.87	-2.76/-4.50	-7.24/-8.99	-7.87/-7.36	-6.20/-4.33
Θ (67.5°)	-5.57/-7.01	-6.48/-6.47	-3.86/-2.81	-1.07/-0.68	-0.99/-2.07	-0.45/-2.00	3.13/-0.06	2.30/-2.65	2.99/-3.14	3.07/-2.47	2.30/-2.11	1.89/-0.51	-0.23/-1.86	-1.78/-2.65	-1.97/-1.79	-1.38/-2.20	-1.69/-2.63	-4.18/-3.92	-8.09/-6.93	-8.40/-10.15	-13.42/-9.12	-7.56/-5.40	-5.27/-5.21	-5.53/-5.36
Θ (75°)	-2.08/-2.72	-3.91/-4.47	-4.12/-4.45	-3.80/-1.44	-0.40/-0.53	0.72/-0.29	0.68/-2.63	3.79/-4.23	4.30/-3.89	3.77/-2.62	1.58/-1.39	1.17/-1.12	-0.05/-1.06	-2.38/-2.62	-1.49/-0.58	-0.28/-1.87	-5.40/-5.15	-4.52/-4.74	-6.05/-7.85	-6.81/-8.05	-7.37/-6.54	-4.45/-6.49	-7.23/-6.79	-5.18/-3.10
Θ (82.5°)	-7.71/-9.62	-9.31/-9.80	-8.27/-10.80	-7.38/-2.51	-0.37/-1.48	2.40/-4.48	4.22/-4.72	4.68/-4.06	3.23/-1.73	0.65/-0.51	1.70/-2.29	2.09/-0.92	-1.20/-3.04	-3.52/-5.96	-2.65/-2.61	-3.12/-3.97	-3.23/-2.15	-5.55/-4.43	-4.20/-6.98	-5.76/-5.30	-9.77/-7.51	-7.89/-6.88	-4.78/-7.51	-6.79/-8.07
Θ (90°)	-3.28/-2.84	-3.03/-4.16	-3.98/-2.44	-0.21/-1.41	-3.98/-3.44	-0.55/-2.17	4.25/-5.22	5.11/-3.71	1.70/-0.11	1.48/-2.12	2.16/-1.75	1.83/-0.82	-0.19/-1.75	-3.12/-6.01	-4.41/-2.61	-2.75/-5.25	-4.14/-2.90	-2.37/-9.27	-6.57/-3.44	-5.33/-3.72	-5.15/-7.75	-6.69/-10.24	-14.30/-10.50	-6.24/-4.76
Θ (97.5°)	-7.02/-4.55	-3.79/-1.95	-2.02/-2.70	-4.38/-5.54	-4.55/-2.88	-1.60/-1.78	3.94/-3.86	1.32/-1.60	-3.16/-2.07	0.25/-1.24	1.15/-0.18	-3.00/-6.42	-12.74/-15.66	-14.36/-10.98	-10.13/-7.18	-8.51/-14.16	-6.75/-2.01	-4.66/-5.46	-6.39/-8.35	-5.26/-1.99	-4.07/-5.33	-7.87/-13.19	-12.75/-12.30	-7.01/-6.98
Θ (105°)	-4.16/-2.75	-1.31/-0.12	2.19/-2.23	3.50/-2.67	0.49/-4.48	-5.21/-1.49	3.68/-3.56	2.10/-0.86	-3.04/-0.09	1.73/-1.78	0.32/-1.66	-3.72/-5.13	-6.69/-6.75	-10.63/-15.38	-13.08/-10.40	-6.65/-8.75	-8.91/-4.80	-1.59/-6.80	-6.19/-6.30	-8.40/-10.02	-5.21/-5.19	-7.30/-6.22	-9.32/-9.04	-7.32/-5.25
Θ (112.5°)	-2.07/-0.79	0.54/-2.30	3.67/-4.77	5.05/-5.06	4.19/-3.96	3.48/-3.40	3.09/-1.68	0.30/-0.87	-1.70/-0.78	0.89/-1.43	0.25/-2.21	-5.04/-4.53	-6.57/-6.96	-11.54/-15.39	-15.54/-13.02	-12.84/-8.76	-9.97/-8.26	-8.40/-7.13	-9.47/-7.20	-5.13/-10.60	-10.01/-7.52	-9.06/-8.21	-5.65/-4.93	-3.15/-2.42
Θ (120°)	-6.54/-4.11	-3.43/-0.96	0.03/-2.06	2.88/-2.72	2.92/-0.71	-0.18/-0.31	-0.13/-3.31	-6.00/-3.15	-1.15/-0.34	0.01/-0.54	-3.03/-5.94	-8.93/-9.45	-12.40/-11.70	-15.25/-14.13	-13.43/-9.73	-14.92/-7.12	-12.70/-11.03	-2.14/-3.74	-6.79/-4.54	-4.45/-9.84	-6.68/-5.21	-10.03/-9.49	-9.30/-11.03	-10.26/-7.12
Θ (127.5°)	-2.13/-1.44	-1.50/-0.78	1.02/-1.94	2.34/-1.93	1.85/-0.59	-1.69/-4.11	-3.08/-1.12	0.19/-1.15	0.39/-0.56	-0.78/-1.27	-1.32/-2.18	-2.44/-4.63	-5.92/-6.46	-6.57/-7.52	-9.19/-10.37	-7.93/-10.94	-11.29/-4.06	-2.95/-2.58	-3.92/-9.28	-8.13/-9.85	-5.43/-6.76	-4.47/-4.54	-6.25/-12.90	-4.67/-1.87
Θ (135°)	-3.82/-0.59	1.09/-2.11	2.81/-3.04	3.20/-2.80	1.83/-1.84	1.48/-0.16	-0.83/-0.53	2.70/-3.49	3.81/-3.40	2.73/-2.13	0.75/-1.09	-3.68/-5.96	-8.26/-8.80	-8.14/-11.47	-11.14/-6.45	-6.72/-8.48	-2.62/-0.23	-4.20/-4.29	-4.65/-5.32	-4.79/-5.54	-1.48/-0.15	-6.06/-9.77	-8.80/-10.54	-7.10/-5.31
Θ (142.5°)	-2.34/-0.53	1.75/-2.90	3.91/-2.43	3.77/-2.85	1.26/-0.63	-1.81/-3.15	-4.46/-2.71	0.03/-1.35	1.53/-0.35	-2.08/-5.56	-6.65/-6.40	-6.11/-6.09	-6.06/-1.04	-7.39/-3.80	-1.13/-1.48	-2.29/-4.85	-8.34/-5.48	-8.92/-7.51	-6.38/-9.25	-11.61/-6.81	-9.10/-13.54	-12.30/-9.49	-8.73/-8.70	-5.53/-2.73
Θ (150°)	4.54/-3.12	1.21/-0.43	-1.76/-1.74	-1.52/-2.26	-4.19/-7.04	-9.35/-7.66	-3.90/-0.96	0.69/-1.90	2.11/-1.47	-0.17/-2.80	-6.93/-10.63	-8.54/-6.30	-2.64/-6.83	-7.29/-7.88	-6.53/-4.99	-2.97/-2.36	-3.29/-6.41	-8.04/-5.66	-6.64/-4.10	-4.53/-5.40	-5.33/-6.30	-3.43/-0.01	1.28/-2.36	
Θ (157.5°)	4.06/-3.75	3.08/-2.13	0.96/-0.41	-1.80/-3.32	-4.75/-5.65	-5.72/-6.88	-9.22/-8.52	-5.55/-3.80	-3.30/-3.54	-4.97/-8.41	-13.35/-14.65	-12.92/-8.64	-7.26/-7.52	-8.94/-7.38	4.05/-1.90	-9.93/-2.00	-5.37/-9.37	-10.72/-11.06	-12.47/-11.25	-7.49/-3.90	-1.51/-6.64	-0.82/-0.60	0.04/-1.53	3.19/-4.01
Θ (165°)	1.46/-1.43	1.15/-0.57	0.13/-0.06	-0.35/-0.74	-1.05/-1.25	-1.40/-1.30	-1.48/-1.94	-2.02/-1.93	-1.60/-1.13	-0.61/-0.04	0.46/-0.86	1.42/-1.95	2.39/-2.54	2.46/-1.99	1.13/-0.25	-2.29/-4.93	-7.90/-4.33	-9.84/-10.82	-9.07/-6.35	-4.66/-3.28	-2.32/-7.10	-1.04/-0.48	-0.03/-0.40	1.00/-1.58
Θ (172.5°)	-3.41/-3.82	-3.90/-3.94	-4.20/-4.53	-4.71/-4.67	-4.31/-3.60	-2.66/-1.96	-1.53/-1.27	-0.20/-0.44	-0.06/-0.02	-0.87/-0.78	-0.88/-1.02	-1.29/-2.08	-3.20/-4.73	-6.66/-8.14	-8.28/-7.08	-6.04/-5.13	-4.23/-5.33	-3.02/-2.64	-2.22/-1.86	-1.57/-1.30	-1.26/-1.44	-1.86/-2.66	-2.62/-2.69	
Θ (180°)	-5.47/-5.65	-5.70/-5.59	-6.07/-6.64	-7.32/-8.26	-8.94/-7.71	-7.19/-6.93	-6.46/-6.84	-8.28/-9.11	-9.57/-9.46	-8.76/-8.05	-7.49/-7.11	-6.94/-6.97	-6.86/-6.45	-5.85/-5.38	-5.33/-5.48	-5.33/-5.26	-5.69/-5.97	-6.41/-6.93	-6.47/-8.32	-8.46/-8.06	-7.32/-6.42	-5.48/-4.89	-4.84/-5.08	-5.24/-5.15
Freq(Hz)	2.45/GPol.	Total/Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-2.75/-2.95	-3.03/-2.99	-2.90/-2.79	-2.68/-2.55	-2.44/-2.34	-2.19/-2.00	-1.85/-1.80	-1.81/-1.83	-1.82/-1.79	-1.84/-1.88	-1.94/-1.98	-2.11/-2.22	-2.20/-2.39	-2.48/-2.47	-2.39/-2.30	-1.20/-1.59	-1.92/-2.13	-2.17/-2.19	-2.62/-2.46	-2.24/-2.07	-1.98/-1.91	-1.90/-2.00	-2.15/-2.29	-2.25/-2.47
Θ (7.5°)	-3.20/-3.11	-2.95/-2.66	-2.29/-1.89	-1.54/-1.23	-1.02/-0.79	-0.44/-0.05	0.24/-0.34	0.35/-0.34	0.34/-0.25	0.05/-0.15	-0.29/-0.58	-0.99/-1.48	-1.89/-2.23	-2.54/-2.86	-3.22/-3.63	-4.00/-4.44	-4.92/-5.34	-5.70/-5.93	-5.97/-5.72	-5.40/-5.06	-4.79/-4.55	-3.84/-2.46	-4.16/-3.89	-3.57/-3.44
Θ (15°)	-3.31/-3.00	-2.63/-2.18	-1.60/-0.99	-0.48/-0.07	0.28/-0.70	1.19/-1.69	2.07/-2.28	2.34/-2.40	2.33/-2.23	1.98/-1.70	1.35/-0.90	0.33/-0.37	-1.14/-1.97	-2.86/-3.70	-4.50/-5.06	-5.36/-5.77	-6.24/-6.78	-7.51/-8.28	-7.66/-7.14	-6.62/-6.16	-5.65/-4.99	-4.27/-3.67		
Θ (22.5°)	-2.38/-2.00	-1.66/-1.21	-0.59/-0.08	0.66/-1.12	1.53/-2.06	2.66/-3.19	3.62/-3.90	4.00/-4.02	3.97/-3.80	3.49/-3.07	2.57/-1.99	1.27/-0.42	-0.47/-1.42	-2.35/-3.18	-3.74/-4.03	-4.17/-4.29	-4.49/-4.89	-5.35/-5.99	-6.80/-7.64	-8.48/-9.15	-9.37/-9.08	-8.41/-7.56	-6.50/-5.30	-4.11/-3.22
Θ (30°)	-1.48/-1.18	-0.90/-0.48	0.15/-0.92	1.59/-2.11	2.60/-2.35	3.95/-4.52	5.00/-5.35	5.55/-6.09	5.54/-5.37	5.05/-4.59	4.01/-3.25	2.32/-1.20	-0.05/-1.36	-2.61/-3.34	-3.47/-3.18	-3.14/-3.15	-3.25/-3.53	-3.98/-4.42	-5.11/-8.31	-7.49/-8.56	-9.16/-8.99	-8.15/-6.97	-5.81/-5.43	-3.28/-2.32
Θ (37.5°)	-1.18/-0.94	-0.66/-0.31	0.29/-1.10	1.83/-2.45	3.06/-3.82	4.55/-5.16	3.16/-1.11	6.37/-6.48	4.14/-3.68	5.81/-5.23	4.43/-3.50	2.41/-1.15	-0.13/-1.35	-2.35/-2.95	-3.28/-3.39	-3.39/-3.37	-3.45/-3.76	-4.24/-5.05	-6.09/-7.42	-8.55/-9.45	-12.03/-8.97	-9.79/-6.23	-4.97/-3.81	-2.69/-1.89
Θ (45°)	-1.87/-1.64	-1.39/-1.11	-0.64/-0.08	0.87/-1.51	2.13/-2.90	3.62/-4.23	4.82/-5.37	5.80/-6.06	6.16/-6.04	5.68/-5.13	4.38/-4.25	2.34/-1.09	-0.27/-1.75	-3.23/-4.14	-4.32/-4.02	-3.69/-3.23	-2.91/-2.94	-3.42/-4.42	-5.81/-7.29	-8.31/-8.94	-9.04/-8.42	-7.71/-6.07	-4.96/-3.93	-2.98/-2.37
Θ (52.5°)	-2.78/-2.42	-1.83/-1.24	-0.56/-0.26	1.11/-1.76	2.26/-2.75	3.14/-3.35	3.62/-3.93	4.22/-4.39	4.42/-4.25	3.75/-2.98	2.02/-1.00	0.03/-0.95	-1.99/-3.07	-3.90/-4.38	-4.66/-4.49	-3.93/-3.37	-3.10/-3.20	-3.75/-4.85	-6.45/-8.18	-9.44/-9.77	-9.46/-8.74	-7.77/-6.87	-6.06/-5.15	-4.11/-3.43
Θ (60°)	-2.88/-2.22	-1.30/-0.31	0.72/-1.76	2.65/-3.31	3.73/-4.07	4.21/-4.11	3.93/-3.80	3.66/-3.47	3.19/-2.65	1.86/-0.79	-0.35/-1.27	-1.98/-2.76	-3.66/-4.44	-5.08/-5.88	-6.37/-6.86	-6.85/-6.61	-6.18/-6.59	-5.50/-5.71	-6.22/-6.89	-7.60/-8.23	-9.06/-9.68	-9.25/-8.42	-7.69/-6.73	-5.12/-3.80
Θ (67.5°)	-4.69/-4.42	-4.68/-3.05	-1.55/-0.04	1.12/-2.00	2.65/-3.16	3.40/-3.13	3.09/-2.84	2.51/-2.08	1.46/-0.53	-0.77/-2.25	-3.20/-3.72	-4.57/-5.50	-5.94/-5.94	-5.93/-6.42	-7.17/-7.06	-6.39/-5.51	-4.56/-3.97	-3.90/-4.18	-4.73/-5.57	-6.78/-8.39	-7.91/-10.77	-9.96/-8.48	-7.76/-7.57	-6.67/-5.71
Θ (75°)	-7.47/-6.15	-5.75/-5.43	-4.18/-2.38	-0.75/-0.58	1.69/-2.64	3.20/-3.29	3.02/-2.57	1.89/-1.10	0.22/-0.68	-1.61/-2.36	-2.67/-3.14	-4.09/-5.00	-5.85/-7.09	-8.13/-7.73	-7.23/-7.39	-7.00/-6.33	-5.94/-6.34	-7.68/-5.97	-11.98/-13.29	-15.77/-15.10	-15.37/-14.08	-13.45/-11.82	-10.76/-11.02	



Antenna Pattern

Appendix B

Θ(75°)	1.84/2.17	2.52/2.34	2.18/1.57	1.22/0.14	-1.20/-1.38	-0.08/2.12	3.69/4.49	4.08/2.52	-0.08/-3.00	-4.93/-5.31	-5.69/-6.37	-6.98/-7.32	-7.70/-10.08	-13.39/-15.46	-12.75/-9.74	-6.50/-5.62	-5.77/-4.93	-4.10/-3.22	-5.36/-6.73	-6.02/-6.73	-5.12/-4.59	-2.21/-1.24	-0.85/-0.97	0.19/1.09
Θ(82.5°)	2.45/2.45	1.47/-0.45	-1.32/-1.30	0.19/0.70	1.11/1.60	1.26/0.90	1.42/1.79	1.69/0.14	-4.29/-11.25	-8.76/-4.40	-3.71/-4.62	-7.15/-12.25	-15.38/-15.06	-12.68/-9.26	-8.88/-4.87	-7.27/-7.98	-6.49/-4.91	-1.22/-4.12	-4.85/-5.96	-5.32/-1.84	-0.91/-1.18	-0.68/0.91	0.69/-0.64	8.00/2.24
Θ(90°)	-4.71/-3.21	-2.56/-3.34	-4.29/-3.60	-2.61/-2.27	-1.39/0.38	1.77/2.17	-1.32/0.40	-1.60/-3.17	-4.59/-4.04	-2.63/-2.16	-2.37/-3.40	-4.75/-6.32	-8.46/-9.59	-8.84/-7.11	-5.86/-4.91	-1.17/-5.62	-3.15/-3.43	-4.52/-2.57	-6.72/-6.08	-4.52/-2.57	-6.72/-5.79	-8.76/-11.82	-8.50/-6.60	
Θ(97.5°)	-3.23/-2.62	-1.34/-1.52	-1.16/-0.97	-0.06/-0.16	-1.41/-2.24	-0.38/1.35	2.28/2.17	1.33/0.02	-1.83/-1.75	-0.46/-0.15	-1.25/-2.25	-6.58/-12.49	-10.34/-10.96	-12.55/-14.49	-13.56/-9.91	-8.84/-11.68	-10.36/-3.85	-1.34/-2.10	-5.17/-10.18	-7.26/-5.58	-5.35/-7.28	-6.02/-6.18	-8.32/-11.25	-6.93/-4.61
Θ(105°)	-4.80/-4.95	-3.65/-4.36	-3.61/-2.19	-0.80/-0.10	1.02/1.70	1.44/-0.16	-2.83/-6.13	-5.62/-3.79	-0.65/0.28	3.61/3.58	3.01/2.36	0.47/-2.27	-6.35/-8.81	-14.97/-15.04	-13.87/-11.39	-8.64/-8.66	-8.76/-5.91	-3.58/-2.50	-3.70/-4.97	-5.69/-6.51	-9.00/-13.66	-15.75/-14.03	-15.56/-13.34	-6.45/-5.15
Θ(112.5°)	-8.15/-6.39	-4.73/-4.34	-3.73/-4.34	-4.45/-4.70	-2.63/-0.89	-0.03/-0.74	-1.87/-0.26	1.83/3.25	4.23/4.91	4.56/3.44	1.64/0.21	-2.10/-5.17	-6.94/-5.84	-6.12/-6.24	-13.27/-10.06	-10.67/-10.48	-6.74/-6.55	-5.00/-9.58	-10.51/-14.41	-9.15/-6.72	-5.18/-1.67	-12.59/-12.82	-15.46/-15.73	-10.02/-9.64
Θ(120°)	-6.58/-6.89	-5.96/-4.74	-4.62/-4.32	-5.30/-5.60	-5.21/-4.03	-3.81/-5.51	-8.90/-7.62	-2.29/1.11	3.27/3.96	3.72/2.08	-0.25/-2.83	-4.83/-5.10	-5.90/-6.26	-7.82/-9.37	-8.00/-7.49	-8.08/-14.28	-11.89/-4.55	-5.55/-8.15	-6.59/-11.75	-6.73/-7.11	-10.91/-15.18	-13.67/-14.47	-11.44/-7.83	-4.88/-5.61
Θ(127.5°)	-6.50/-5.68	-4.11/-3.24	-2.96/-3.48	-3.95/-5.19	-7.25/-8.37	-6.09/-4.45	-5.15/-5.18	-1.25/-1.81	3.50/4.04	3.28/1.64	-0.20/-1.94	-2.83/-2.81	-2.82/-3.52	-4.84/-4.74	-6.18/-7.57	-10.37/-9.22	-9.21/-9.19	-8.17/-10.33	-11.06/-9.76	-7.38/-8.39	-14.94/-9.93	-13.90/-11.66	-9.06/-5.99	-5.24/-6.69
Θ(135°)	-5.06/-4.46	-1.88/-1.42	-1.50/-2.14	-3.48/-5.13	-5.14/-3.92	-3.64/-5.52	-6.85/-5.82	-3.69/-1.18	0.94/1.66	1.62/1.01	0.59/-0.43	-1.03/-3.11	-2.95/-3.93	-3.93/-4.18	-3.62/-3.62	-3.42/-7.05	-10.53/-7.96	-6.90/-15.30	-11.69/-9.17	-6.68/-5.13	-6.51/-7.72	-12.80/-10.84	-14.78/-10.05	-8.12/-9.71
Θ(142.5°)	-1.87/-2.34	-3.85/-4.93	-7.84/-10.14	-9.06/-6.09	-3.34/-1.58	-0.90/-1.14	-1.85/-1.12	0.48/1.63	2.37/3.13	3.50/3.00	1.38/-1.25	-3.37/-5.71	-6.42/-5.15	-4.84/-4.81	-5.90/-5.88	-7.34/-7.94	-9.60/-8.28	-5.48/-5.06	-3.73/-3.84	-6.59/-6.69	-6.01/-7.85	-6.78/-6.02	-4.29/-2.14	-1.46/-1.43
Θ(150°)	-6.52/-8.22	-9.44/-11.24	-11.55/-9.33	-6.46/-4.46	-3.05/-1.49	-0.79/-1.07	-1.90/-2.67	-2.54/-1.73	-0.92/-0.69	-0.87/-1.05	-1.17/-1.48	-1.68/-0.61	-0.20/-0.62	-1.49/-2.98	-7.14/-11.55	-8.83/-2.83	-1.23/-1.60	-2.79/-5.25	-7.52/-8.02	-8.79/-13.00	-14.99/-13.41	-12.67/-11.01	-10.14/-8.95	-8.86/-6.56
Θ(157.5°)	-7.16/-6.05	-6.20/-6.19	-4.84/-3.12	-1.87/-1.33	-1.23/-1.23	-1.49/-2.11	-2.79/-3.43	-4.21/-4.97	-5.10/-4.44	-3.61/-3.05	-2.89/-2.69	-2.30/-2.32	-0.52/-1.98	-1.35/-1.08	-0.73/-1.02	-2.01/-2.95	-4.59/-4.82	-11.38/-10.11	-10.91/-10.97	-11.64/-11.02	-9.48/-9.21	-9.19/-8.17	-6.37/-5.47	-5.76/-6.98
Θ(165°)	-5.06/-3.87	-2.78/-1.99	-1.66/-1.28	-0.84/-0.44	-0.44/-0.77	-1.07/-1.35	-1.57/-1.51	-1.26/-0.97	-0.64/-0.46	-0.40/-0.44	-0.53/-0.57	-0.66/-0.98	-1.76/-3.13	-4.75/-5.58	-6.13/-7.56	-10.84/-14.40	-9.78/-6.70	-5.44/-5.62	-7.26/-8.80	-11.47/-11.79	-11.67/-12.87	-14.30/-12.34	-11.21/-10.17	-9.00/-6.85
Θ(172.5°)	-5.23/-4.12	-2.97/-2.52	-2.33/-2.34	-2.25/-2.23	-2.34/-2.99	-3.55/-5.54	-4.54/-5.02	-5.18/-5.44	-5.80/-6.35	-7.11/-7.92	-8.95/-9.83	-9.60/-8.86	-7.93/-7.03	-6.26/-5.78	-5.27/-5.45	-6.28/-6.86	-7.19/-7.70	-8.55/-9.13	-8.93/-8.34	-8.04/-8.67	-9.81/-11.18	-12.24/-12.12	-10.91/-10.63	-10.23/-7.86
Θ(180°)	-10.60/-10.79	-11.14/-10.34	-9.56/-9.38	-8.96/-8.22	-8.09/-8.44	-8.40/-8.13	-8.06/-7.51	-6.94/-6.31	-5.92/-5.37	-4.97/-4.66	-4.36/-4.05	-3.72/-3.57	-3.66/-3.88	-4.30/-4.89	-5.29/-5.71	-6.22/-6.46	-6.23/-6.31	-6.79/-7.36	-7.41/-6.82	-6.00/-5.65	-5.56/-5.88	-6.17/-6.41	-6.28/-6.46	-7.29/-9.09
Freq(Hz)	5.785GPol.	TotalAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-1.37/-1.36	-1.40/-1.34	-1.32/-1.10	-0.84/-0.87	-1.09/-1.21	-1.39/-1.64	-1.96/-2.31	-2.50/-2.51	-2.36/-2.32	-2.28/-2.26	-2.20/-2.01	-1.65/-1.65	-1.97/-2.54	-3.06/-3.48	-4.42/-5.20	-5.31/-2.51	-2.59/-2.41	-2.32/-2.06	-2.01/-1.93	-1.80/-1.37	-1.77/-1.44			
Θ(7.5°)	-9.32/-9.22	-8.85/-8.00	-6.32/-5.28	-4.72/-4.44	-3.96/-3.08	-2.50/-1.96	-1.52/-1.28	-1.01/-0.86	-0.78/-0.58	-0.27/-0.19	-0.06/-0.00	0.04/0.16	0.22/0.16	0.09/0.05	-0.06/-0.20	-0.52/-0.98	-1.54/-2.07	-2.66/-3.22	-3.58/-3.95	-4.22/-4.80	-5.26/-5.80	-6.38/-7.08	-8.20/-8.77	-8.94/-9.40
Θ(15°)	-4.32/-4.21	-4.48/-5.64	-6.80/-8.70	-8.18/-8.29	-7.75/-5.72	-3.63/-1.89	-0.99/-0.36	0.03/0.11	0.10/-0.08	-0.23/-0.60	-0.91/-1.15	-1.33/-1.40	-1.51/-1.55	-1.49/-1.17	-0.85/-0.65	-0.71/-1.09	-1.69/-2.34	-2.96/-3.58	-4.14/-4.75	-5.53/-6.57	-7.18/-7.31	-6.97/-6.79	-6.10/-5.72	-5.12/-4.38
Θ(22.5°)	0.30/0.39	0.17/-0.56	-1.66/-2.85	-4.56/-7.51	-11.04/-8.49	-4.69/-2.21	-0.77/-0.08	0.03/-0.35	-0.64/-3.95	-4.56/-4.94	-5.40/-5.06	-4.96/-5.15	-5.30/-4.93	-4.31/-4.00	-3.84/-3.71	-3.46/-3.17	-3.43/-4.11	-5.32/-6.33	-6.44/-5.08	-3.63/-2.21	-0.09/-0.03	0.40/0.49	0.53/0.51	
Θ(30°)	3.09/2.63	1.91/1.24	0.26/-1.04	-3.16/-6.21	-7.23/-5.09	-3.02/-1.62	-0.88/-0.74	-1.19/-2.13	-3.40/-4.52	-4.95/-4.38	-3.34/-2.77	-2.42/-2.57	-3.40/-4.31	-4.91/-5.20	-5.57/-6.22	-7.24/-6.92	-5.91/-5.42	-5.43/-5.75	-5.86/-6.24	-4.83/-2.91	-0.58/-1.21	2.37/3.34	3.83/3.81	3.56/3.18
Θ(37.5°)	2.14/2.40	1.84/0.58	-0.49/-1.96	-5.21/-8.43	-7.73/-4.22	-1.91/-0.65	-0.84/-0.32	-1.17/-2.43	-4.15/-4.79	-2.99/-1.43	-0.62/-0.68	-0.99/-1.87	-3.68/-5.56	-6.13/-6.38	-6.34/-6.79	-7.24/-5.99	-4.58/-4.09	-4.73/-5.99	-7.22/-5.60	-2.85/-6.09	-0.25/-2.02	2.62/3.91	4.29/3.93	3.22/2.58
Θ(45°)	3.01/2.79	2.44/0.64	0.88/-0.60	-3.04/-6.43	-7.75/-4.01	-1.07/-2.20	-0.51/0.05	-0.76/-1.77	-2.80/-3.56	-3.28/-3.58	-4.03/-4.32	-4.58/-5.12	-5.86/-5.96	-5.32/-5.41	-6.63/-5.54	-4.66/-4.03	-4.32/-4.90	-4.19/-3.62	-4.57/-4.86	-2.20/-2.62	2.80/3.86	3.93/3.65	3.15/3.05	
Θ(52.5°)	1.33/1.65	1.42/1.31	1.48/1.38	0.81/0.08	-0.72/-0.72	-0.11/-0.04	-1.08/-2.95	-5.05/-7.18	-8.88/-10.38	-10.99/-11.18	-11.53/-12.78	-14.49/-14.21	-11.64/-10.79	-9.63/-8.91	-7.76/-5.92	-4.97/-4.28	-4.88/-5.35	-3.64/-2.43	-3.33/-5.03	-4.57/-2.14	-0.23/-1.11	2.29/2.92	2.40/2.08	1.97/1.42
Θ(60°)	0.11/0.93	1.87/2.61	2.97/2.97	2.13/0.01	-1.28/0.01	0.80/0.29	-1.37/-2.21	-1.67/-1.74	-3.15/-5.78	-9.08/-9.13	-8.41/-8.41	-9.95/-9.16	-7.09/-5.17	-4.86/-6.89	-8.22/-6.77	-6.21/-4.35	-4.31/-4.76	-4.33/-3.80	-5.23/-3.73	-1.46/-6.13	-2.36/-0.14	1.26/0.98	0.22/-1.45	-1.08/-0.62
Θ(67.5°)	1.67/2.27	2.82/3.73	4.62/4.81	4.21/2.66	1.05/0.19	0.13/0.11	0.24/0.68	1.02/0.35	-1.98/-6.19	-4.18/-5.83	-4.93/-4.43	-3.87/-3.11	-2.80/-2.58	-3.32/-5.00	-5.30/-4.28	-3.24/-2.33	-2.43/-4.82	-4.98/-3.76	-3.86/-6.10	-4.96/-2.74	-0.29/-2.32	-0.59/-1.92	-0.19/-1.00	
Θ(75°)	1.96/2.85	3.32/3.67	4.21/4.04	3.13/1.25	-0.60/-0.69	0.33/1.35	2.55/3.62	3.71/2.37	-0.47/-4.37	-5.89/-4.79	-4.08/-4.32	-5.01/-4.55	-3.92/-4.42	-5.16/-7.95	-10.69/-7.65	-6.98/-7.38	-4.96/-2.61	-3.69/-5.13	-4.79/-5.31	-5.25/-6.00	-6.70/-4.34	-2.07/-2.45	-2.01/-2.95	-0.46/-1.31
Θ(82.5°)	3.78/3.67	3.27/3.03	3.10/2.22	0.93/-2.53	-4.57/-3.00	0.34/-3.32	5.26/6.20	5.67/3.31	-0.90/-0.84	-4.85/-4.96	-3.63/-4.41	-4.88/-5.58	-5.15/-5.61	-9.11/-16.28	-8.33/-5.68	-5.24/-7.44	-5.74/-4.36	-3.82/-1.78	-3.53/-1.99	-3.26/-3.41	-5.30/-3.32	0.26/0.39	-1.66/-1.13	1.94/3.62
Θ(90°)	-1.46/-0.60	-1.23/-2.00	-3.05/-5.14	-4.37/-2.79	-1.01/2.24	3.02/2.92	2.31/2.39	1.68/-1.52	-9.41/-7.21	-1.06/2.24	0.18/-1.90	-4.63/-6.67	-6.10/-4.78	-5.25/-14.44	-9.63/-5.52	-5.01/-10.03	-0.88/-3.53	-3.28/-6.53	-5.49/-5.05	-1.38/-1.97	-6.28/-4.44	-0.79/-1.95	-6.64/-6.43	-1.71/-0.61
Θ(97.5°)	-6.94/-6.40	-6.36/-5.21	-5.94/-4.67	-3.78/-3.38	-2.46/0.32	2.64/3.62	3.61/2.41	0.40/-2.05	-3.14/-1.43	1.45/2.13	2.40/4.02	-2.26/-4.89	-4.40/-2.98	-4.69/-7.59	-5.87/-3.55	-2.31/-4.32	-11.33/-2.87	-0.90/-3.82	-5.05/-3.69	-2.86/-1.42	-6.61/-10.88	-4.28/-5.50	-8.18/-8.20	-6.44/-5.33
Θ(105°)	-8.78/-8.11	-7.25/-5.32	-6.50/-5.64	-4.05/-1.07	1.01/2.74	2.80/2.13	1.82/1.60	-0.44/-6.28	-5.16/1.18	3.93/3.94	3.13/0.80	-2.18/-3.68	-5.52/-6.40	-4.39/-4.80	-10.27/-8.86	-5.81/-7.73	-8.05/-4.22	-1.07/-1.42	-4.94/-6.60	-4.82/-5.89	-8.59/-9.79	-10.79/-15.36	-13.76/-8.76	-6.96/-6.88
Θ(112.5°)	-5.38/-5.05	-6.04/-7.86	-11.79/-11.74	-8.34/-3.32	0.22/2.69	2.98/1.06	-2.88/-4.56	-3.43/-2.11	1.82/4.40	6.12/6.17	5.63/5.51	2.31/-0.21	-3.41/-3.09	-4.54/-5.95	-7.77/-9.71	-8.80/-10.35	-9.13/-5.08	-2.69/-3.37	-5.34/-8.06	-9.57/-14.08	-10.44/-9.96	-13.46/-13.85	-12.51/-9.85	-6.61/-6.98
Θ(120°)	-9.12/-9.23	-9.57/-13.85	-15.66/-14.59	-11.19/-7.16	-3.76/-0.72	0.10/-1.09	-3.76/-5.27	-3.93/-1.97	0.82/3.52	4.51/4.50	3.75/2.75	0.96/-1.11	-2.16/-2.36	-2.41/-4.13	-7.03/-6.94	-6.60/-7.69	-13.56/-4.38	-1.93/-3.71	-4.19/-4.65	-4.19/-10.05	-12.61/-11.19	-15.39/-9.87	-9.13/-9.54	-9.86/-9.53
Θ(127.5°)	-3.36/-4.14	-5.80/-6.27	-7.16/-6.21	-5.93/-5.23	-5.33/-5.54	-4.82/-4.45	-6.84/-10.16	-6.66/-2.73	0.061/5.99	2.09/2.02	1.63/-1.25	0.19/-0.12	-0.84/-1.17	-2.42/-2.04	-2.95/-3.26	-7.21/-10.54	-10.44/-14.28	-15.51/-5.67	-3.63/-3.73	-2.98/-7.14	-14.79/-12.89	-12.98/-12.69	-5.97/-2.17	-1



Antenna Pattern

Appendix B

Θ (127.5°)	-0.38/0.38	1.47/1.77	0.92/0.43	0.06/-2.05	-5.43/-5.33	-2.77/-1.77	-2.05/-4.00	-8.78/-9.47	-7.93/-10.08	-7.64/-7.75	-7.45/-7.03	-13.18/-8.41	-10.94/-4.97	-3.07/-5.54	-8.12/-5.35	-3.93/-4.24	-4.74/-8.99	-5.59/-14.32	-12.22/-6.59	-1.14/0.79	0.63/-0.41	0.93/2.72	2.44/-0.13	-0.74/-0.56
Θ (135°)	-2.76/-1.98	-1.34/-0.23	-0.22/-1.06	-1.02/-1.35	-3.14/-3.09	0.65/2.11	0.67/-1.30	-1.58/-2.78	-4.58/-2.66	-9.16/-7.82	-4.62/-3.68	-8.16/-9.35	-9.67/-2.64	-1.75/-4.25	-4.28/-2.00	-1.72/-2.76	-5.57/-10.30	-9.05/-3.23	-4.25/-13.06	-4.12/-3.39	-2.06/-2.89	0.47/0.55	0.15/-1.96	-4.13/-3.29
Θ (142.5°)	-13.11/-9.02	-6.28/-4.39	-2.46/-0.91	-0.62/-2.04	-2.57/-0.85	-0.26/-1.73	-3.69/-3.38	-3.30/-2.32	-1.94/-4.56	-6.12/-5.64	-5.57/-6.60	-6.87/-9.16	-6.39/-4.45	-5.49/-3.05	-5.08/-4.85	-5.55/-3.38	-3.93/-3.33	-3.29/-10.89	-9.26/-13.05	-13.59/-9.82	-7.17/-7.42	-9.07/-10.15	-11.74/-13.18	
Θ (150°)	-6.41/-5.22	-3.49/-2.88	-3.11/-2.86	-2.61/-2.95	-3.46/-3.47	-2.40/-1.08	0.05/0.19	0.12/0.46	0.02/-1.91	-4.17/-6.10	-7.28/-5.99	-7.16/-12.95	-6.11/-1.31	0.29/0.10	-2.00/-5.30	-5.65/-3.62	-1.39/-0.84	-1.56/-3.34	-5.96/-4.71	-8.03/-8.19	-8.18/-8.91	-12.87/-16.12	-14.96/-14.78	-9.01/-6.26
Θ (157.5°)	0.98/-1.25	1.85/-2.44	2.56/-2.06	0.95/-0.59	-2.31/-3.44	-4.02/-2.54	-6.43/-7.05	-5.75/-3.43	-2.42/-2.35	-4.59/-6.11	-8.29/-9.49	-9.02/-7.17	-4.52/-2.23	-1.63/-2.87	-5.85/-8.84	-8.39/-7.23	-6.29/-6.80	-7.69/-7.66	-6.60/-5.66	-5.42/-6.21	-7.39/-7.74	-7.13/-5.82	-3.62/-1.41	-0.22/0.65
Θ (165°)	1.12/0.88	0.71/0.62	0.30/-0.26	-1.18/-2.17	-2.59/-4.14	-5.87/-7.94	-9.11/-9.11	-8.78/-7.06	-6.10/-6.09	-6.85/-8.59	-3.88/-10.87	-9.98/-3.11	-6.07/-5.97	-5.44/-4.96	-4.96/-5.39	-6.09/-7.23	-8.25/-8.85	-8.90/-9.00	-6.84/-7.26	-7.23/-8.01	-8.70/-8.53	-6.99/-5.09	-3.79/-0.82	0.33/0.83
Θ (172.5°)	-1.02/-1.20	-1.15/-1.09	-0.86/-0.80	-1.17/-2.07	-3.19/-4.39	-5.46/-5.98	-6.47/-7.10	-8.05/-8.22	-8.33/-8.13	-8.12/-7.84	-6.92/-5.71	-4.84/-4.34	-4.16/-4.32	-4.86/-4.79	-4.73/-4.86	-5.50/-6.08	-6.99/-6.08	-10.25/-12.56	-14.96/-14.82	-14.57/-10.94	-7.34/-5.49	-4.42/-3.67	-2.89/-1.88	-1.13/-0.82
Θ (180°)	-5.09/-5.40	-5.32/-4.58	-4.30/-4.22	-4.40/-5.17	-6.11/-7.21	-8.19/-9.34	-10.31/-11.73	-11.09/-10.10	-8.84/-7.94	-7.80/-7.37	-6.32/-5.18	-4.69/-4.80	-5.17/-5.65	-6.06/-6.32	-6.29/-6.21	-6.31/-6.67	-6.55/-6.30	-5.77/-5.53	-6.01/-6.33	-6.36/-6.61	-7.25/-7.83	-8.49/-9.30	-9.23/-8.56	-7.45/-6.29
Freq(Hz)	5.6G/Pol.	Total/Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-4.58/-4.87	-5.05/-5.37	-5.50/-5.19	-4.64/-4.49	-4.56/-4.13	-3.88/-3.89	-4.03/-4.81	-4.90/-4.70	-4.43/-4.41	-4.44/-4.97	-5.14/-4.89	-4.58/-4.44	-4.71/-5.05	-5.21/-5.28	-5.63/-5.91	-5.88/-5.91	-6.00/-6.53	-6.51/-5.83	-5.78/-6.14	-6.38/-5.72	-5.78/-5.71	-6.03/-5.86	-5.90/-5.75	-5.80/-4.95
Θ (7.5°)	-3.43/-4.30	-5.01/-6.02	-6.17/-5.75	-5.42/-5.84	-6.39/-6.49	-6.14/-5.65	-6.04/-5.99	-6.47/-6.53	-5.70/-4.91	-4.74/-4.92	-4.79/-4.23	-3.50/-3.12	-2.91/-2.78	-2.72/-2.58	-2.39/-2.29	-2.50/-2.77	-2.67/-2.57	-2.55/-2.45	-2.50/-2.46	-2.65/-2.59	-2.84/-2.98	-3.05/-3.56	-3.94/-3.92	-3.34/-2.81
Θ (15°)	-2.10/-3.02	-4.80/-6.86	-8.49/-9.32	-9.12/-9.68	-9.81/-8.16	-7.31/-5.38	-4.19/-3.79	-3.70/-3.06	-2.49/-1.84	-1.85/-2.44	-2.68/-2.27	-1.57/-1.17	-1.14/-1.23	-1.30/-1.42	-1.38/-1.25	-1.09/-0.94	-0.78/-0.70	-0.79/-0.70	-0.91/-0.98	-0.81/-0.20	0.02/0.07	-0.20/-0.47	-0.66/-0.87	-1.19/-1.76
Θ (22.5°)	-2.52/-4.87	-7.12/-9.23	-11.07/-13.83	-12.57/-11.70	-10.61/-8.16	-5.87/-3.89	-2.54/-2.12	-1.70/-1.38	-1.46/-1.62	-2.43/-3.91	-5.33/-6.02	-5.73/-5.37	-5.50/-6.05	-6.96/-7.24	-6.59/-5.22	-3.68/-2.57	-1.89/-1.57	-1.13/-0.88	-0.98/-1.56	-1.28/-0.36	0.69/1.33	1.44/1.39	1.39/1.12	-0.30/-1.47
Θ (30°)	-2.75/-5.45	-7.55/-8.01	-8.89/-9.15	-8.61/-7.68	-8.46/-7.99	-6.98/-5.59	-2.84/-2.71	-2.54/-2.85	-2.88/-2.70	-2.73/-2.82	-2.85/-3.48	-4.36/-5.44	-6.83/-8.56	-11.16/-11.41	-8.30/-5.32	-3.58/-2.98	-1.93/-2.22	-1.51/-2.21	-1.20/-0.22	1.41/2.07	2.07/2.20	2.07/2.20	0.02/-1.31	
Θ (37.5°)	-2.85/-4.53	-4.35/-5.19	-6.25/-6.29	-5.25/-4.83	-5.07/-4.41	-3.71/-3.25	-3.20/-2.92	-3.13/-4.44	-5.19/-4.31	-3.69/-3.37	-3.85/-5.45	-6.24/-6.72	-9.47/-13.14	-12.31/-10.29	-8.09/-5.82	-4.21/-3.07	-2.29/-2.16	-2.85/-3.67	-3.98/-2.68	-0.94/-0.35	0.94/1.91	1.88/2.03	1.70/0.47	-0.27/-0.96
Θ (45°)	-2.45/-3.73	-4.19/-3.66	-3.74/-4.20	-4.69/-6.33	-9.31/-9.35	-8.16/-4.69	-6.59/-5.99	-6.26/-8.08	-10.95/-9.78	-7.29/-6.63	-5.50/-6.08	-7.79/-8.12	-11.81/-14.42	-7.11/-6.34	-2.79/-3.21	-3.76/-3.17	-2.98/-3.59	-4.32/-4.68	-3.91/-3.71	-2.71/0.02	1.09/1.47	1.91/1.68	1.00/-0.06	-0.49/-0.73
Θ (52.5°)	-0.17/0.02	0.11/-0.43	-3.42/-6.37	-8.92/-13.49	-12.12/-9.46	-7.63/-5.91	-5.84/-4.76	-5.43/-7.00	-7.98/-7.93	-6.66/-7.97	-10.70/-8.49	-6.51/-6.46	-4.02/-1.11	1.27/1.44	0.19/-1.57	-2.52/-3.19	-3.49/-3.49	-0.02/-1.40	0.55/-1.11	1.49/2.04	1.00/-0.40	-0.67/-0.60		
Θ (60°)	3.52/3.08	2.17/1.56	-0.58/-3.32	-6.00/-9.96	-11.70/-11.46	-8.55/-5.94	-4.11/-3.15	-4.28/-6.21	-7.33/-5.95	-4.69/-4.47	-8.00/-6.91	-4.80/-3.70	-3.60/-1.93	-0.07/1.20	1.29/0.84	1.25/-3.86	-6.62/-6.60	-6.44/-6.08	-4.65/-3.94	-2.93/-1.40	-0.79/0.21	0.19/1.36	0.96/1.17	1.71/2.19
Θ (67.5°)	3.52/3.00	1.46/0.51	-1.82/-2.48	-4.37/-5.00	-6.66/-8.25	-11.01/-12.99	-8.49/-7.23	-7.95/-10.42	-12.14/-8.81	-6.54/-6.01	-8.61/-5.15	0.67/1.46	0.04/-0.01	0.15/0.18	0.88/0.39	1.48/-4.10	-10.12/-12.98	-10.80/-9.58	-6.28/-2.48	1.69/1.59	1.13/0.77	-1.19/-0.58	-0.09/-1.21	2.39/2.79
Θ (75°)	2.84/-1.78	1.69/-1.96	1.34/-0.21	-2.14/-4.20	-5.66/-5.87	-8.60/-14.18	-10.98/-11.67	-9.79/-4.88	-4.31/-8.24	-3.74/-9.26	-4.45/-2.23	-1.81/-0.27	1.30/0.75	1.06/1.23	1.66/1.27	-3.34/-10.53	-4.48/-4.51	-4.12/-1.15	2.32/2.57	0.07/-2.15	-3.24/-2.60	-0.61/2.44	3.85/3.53	
Θ (82.5°)	3.04/3.06	2.56/3.37	3.16/1.81	-0.58/-3.36	-5.81/-9.41	-14.86/-13.65	-12.24/-10.55	-9.22/-9.96	-12.55/-6.49	-4.27/-2.15	-3.39/-2.97	-2.80/-1.80	-2.66/0.29	0.85/-0.39	0.08/2.14	2.63/1.41	-2.13/-7.33	-3.60/-3.56	-3.04/-0.40	1.18/0.39	-3.86/-5.98	-5.32/-3.28	-1.21/1.43	2.74/3.05
Θ (90°)	2.08/3.18	3.00/2.25	1.08/0.10	-0.78/-2.92	-4.42/-5.54	-6.72/-6.83	-6.93/-7.00	-4.75/-3.52	-4.77/-7.08	-5.29/-3.77	-5.29/-3.21	-2.73/-3.15	-7.69/-1.89	-0.68/-1.41	0.17/2.20	2.49/1.09	-4.49/-5.89	-4.00/-4.97	-5.83/-1.17	-1.13/-3.15	-4.98/-5.52	-2.51/-0.76	-0.57/1.32	1.67/2.01
Θ (97.5°)	0.79/3.11	2.81/2.76	2.39/2.64	2.79/1.34	-0.13/-0.70	-0.44/-1.16	-4.41/-3.08	-1.81/-2.14	-8.26/-9.49	-4.31/-4.40	-6.69/-3.13	-1.47/-6.53	-4.52/-0.86	-1.57/-4.43	-1.45/0.68	-1.65/-1.76	-4.53/-3.47	-9.26/-10.66	-11.52/-8.08	-7.84/-6.81	-7.24/-6.41	-5.41/-6.41	-3.65/-2.34	-0.28/0.50
Θ (105°)	2.74/3.40	2.40/2.21	2.03/-1.78	1.06/0.08	-0.47/-2.66	-2.46/-1.84	-3.40/-3.46	-1.87/-1.47	-6.72/-14.76	-6.98/-12.83	-15.51/-9.36	-10.99/-9.02	-9.06/-5.35	-2.69/-1.39	-2.70/-0.87	-2.41/-2.41	-7.19/-11.67	-5.40/-8.37	-11.76/-13.47	-8.21/-4.38	-7.48/-10.83	-9.32/-8.39	-8.80/-2.90	-0.01/2.00
Θ (112.5°)	0.58/0.62	-0.68/-0.50	1.41/2.80	3.14/1.30	-1.08/-2.62	-2.54/-2.35	-2.90/-2.34	-4.13/-10.29	-14.69/-9.88	-7.68/-9.52	-8.76/-6.91	-10.98/-10.29	-4.60/-5.46	-3.42/-2.65	-3.74/-2.81	-2.19/-3.44	-7.33/-8.79	-10.82/-12.57	-8.23/-9.95	-10.89/-5.10	-14.33/-13.62	-3.90/-3.06	-3.17/-0.46	1.03/0.89
Θ (120°)	0.03/0.13	0.71/1.85	3.78/4.30	4.37/3.77	2.46/1.62	-0.06/-2.04	-1.06/-0.22	-1.06/-0.22	-3.52/-4.10	-10.44/-12.02	-9.30/-5.45	-5.50/-5.32	-2.80/-5.45	-1.16/-4.43	-2.45/-0.17	0.51/-1.48	-5.77/-4.73	-5.74/-11.57	-13.54/-8.39	-4.80/-5.41	-9.45/-9.71	-5.37/-1.30	-1.03/-0.10	0.23/0.06
Θ (127.5°)	-1.87/0.01	2.34/3.29	3.69/3.22	1.78/0.99	0.12/-2.68	-4.86/-3.13	-2.31/-3.11	-5.24/-5.79	-3.64/-6.61	-11.83/-7.75	-6.20/-5.94	-11.09/-6.52	-4.78/-0.88	-0.98/-4.23	-4.86/-1.84	-2.27/-9.07	-12.41/-5.14	-7.87/-13.65	-13.07/-15.47	-6.47/-6.99	-5.02/-4.29	-3.02/-2.60	-1.90/-2.00	-0.56/-1.35
Θ (135°)	-1.71/-1.49	-0.67/0.10	0.87/1.24	0.86/0.05	-0.48/-1.41	-4.00/-4.74	-3.10/-3.14	-2.32/-1.34	-2.75/-5.30	-9.00/-5.42	-3.92/-7.88	-15.06/-9.01	-2.11/-9.33	-6.46/-10.14	-5.69/-4.46	-7.24/-0.87	-10.33/-7.66	-10.35/-15.20	-11.23/-15.73	-6.76/-3.74	-5.49/-4.05	-1.93/-9.22	-3.12/-3.29	-3.35/-2.47
Θ (142.5°)	-6.36/-5.62	-5.03/-3.79	-3.00/-2.69	-1.98/-0.98	-1.09/-2.94	-4.85/-4.82	-6.17/-6.02	-4.59/-4.68	-5.41/-8.09	-7.12/-8.96	-9.22/-7.65	-2.91/-1.18	-1.46/-2.00	-2.79/-2.38	-3.70/-8.63	-6.52/-7.99	-8.27/-9.47	-4.53/-8.72	-14.87/-10.64	-8.81/-7.99	-4.68/-3.84	-5.65/-5.08	-5.67/-6.58	
Θ (150°)	-8.74/-8.02	-6.96/-7.12	-6.74/-7.77	-3.75/-5.07	-7.87/-8.34	-7.05/-5.24	-2.91/-1.17	-0.98/-1.17	-1.01/-1.42	-2.45/-3.63	-6.70/-10.35	-10.09/-5.82	-1.00/0.81	-0.28/-3.77	-10.60/-10.59	-5.52/-3.13	-2.10/-2.28	-2.73/-3.75	-5.67/-8.30	-8.85/-9.44	-8.48/-1.02	-6.42/-7.43	-9.32/-11.31	-9.97/-9.06
Θ (157.5°)	-0.97/-0.60	-0.22/0.45	1.01/1.27	1.08/0.24	-1.01/-2.55	-3.95/-4.91	-5.43/-5.77	-6.09/-5.59	-4.42/-3.94	-4.47/-6.62	-9.84/-15.45	-11.12/-5.70	-3.14/-2.21	-2.70/-4.25	-6.44/-6.11	-4.47/-3.55	-3.60/-3.32	-2.82/-3.10	-4.54/-4.53	-5.14/-4.90	-5.69/-5.86	-5.97/-5.51	-4.70/-3.52	-1.85/-1.04
Θ (165°)	0.85/1.64	2.07/2.23	1.86/0.82	-0.53/-2.17	-4.02/-5.90	-6.82/-8.36	-10.58/-10.94	-12.54/-12.92	-10.64/-10.02	-9.38/-8.56	-7.99/-8.08	-8.21/-7.73	-6.57/-5.66	-5.44/-5.49	-4.82/-3.89	-3.72/-3.81	-4.41/-4.83	-5.74/-6.14	-6.73/-6.53	-6.55/-6.71	-7.08/-7.36	-7.66/-7.11	-5.70/-4.10	-2.53/-0.92
Θ (172.5°)	-2.41/-2.36	-2.88/-3.29	-3.24/-2.92	-2.90/-3.35	-4.23/-5.51	-7.19/-9.30	-10.47/-10.57	-10.68/-10.46	-10.02/-10.00	-10.95/-11.04	-9.92/-8.50	-7.82/-7.54	-7.46/-7.76	-8.54/-9.49	-9.46/-9.58	-10.53/-11.13	-11.82/-11.75	-11.11/-10.47	-10.18/-10.03	-9.24/-8.45	-8.15/-7.62	-6.71/-5.83	-5.40/-4.71	-3.90/-3.32
Θ (180°)	-7.99/-7.23	-7.13/-6.70	-5.27/-4.38	-4.95/-6.71	-8.83/-12.41	-15.85/-15.13	-13.25/-10.77	-10.30/-10.48	-11.16/-11.29	-11.73/-11.87	-12.70/-13.82	-15.61/-15.38	-15.83/-15.37	-14.94/-14.37	-15.43/-14.65	-15.76/-15.51	-16.00/-15.67	-15.77/-16.01	-16.01/-14.71	-14.17/-12.63	-11.52/-11.60	-1		



Antenna Pattern

Appendix B

Θ (172.5°)	-1.65/-3.22	-5.11/-4.62	-3.88/-4.31	-5.17/-5.82	-6.69/-8.50	-11.50/-14.04	-13.64/-12.61	-9.43/-6.05	-3.70/-2.66	-2.44/-2.61	-2.22/-1.82	-1.55/-1.45	-1.28/-1.02	-0.72/-0.66	-0.78/-1.11	-1.39/-1.59	-2.20/-2.67	-3.05/-3.52	-4.28/-5.18	-5.39/-4.46	-3.58/-2.68	-1.66/-1.22	-1.36/-2.33	-2.50/-1.97
Θ (180°)	-10.50/-8.91	-4.96/-3.17	-2.56/-2.30	-2.85/-2.69	-2.65/-2.90	-3.90/-4.63	-5.26/-5.20	-4.25/-3.22	-2.30/-2.06	-2.42/-2.87	-3.22/-3.12	-2.91/-2.68	-2.49/-2.18	-1.72/-1.40	-1.26/-1.29	-1.44/-1.51	-1.66/-1.73	-1.97/-2.40	-2.49/-2.42	-2.71/-3.40	-4.58/-4.84	-4.38/-4.04	-4.58/-6.68	-8.29/-8.34
Freq(Hz)	5.3G/Pol.	TotalAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-3.57/-3.91	4.95/-4.90	-4.51/-4.05	-4.06/-3.94	-3.61/-3.72	-4.30/-5.45	-5.64/-5.07	-4.39/-3.61	-3.65/-4.03	-4.32/-3.85	-3.83/-4.46	-5.07/-5.61	-5.41/-5.25	-5.18/-4.78	-4.80/-4.96	-4.80/-4.53	-4.41/-4.58	-4.69/-4.72	-4.45/-4.09	-3.67/-3.61	-3.64/-3.32	-2.66/-2.57	-3.00/-3.38	-3.54/-3.91
Θ (7.5°)	-3.95/-4.24	-5.12/-4.17	-3.14/-2.55	-2.22/-1.76	-1.19/-1.26	-1.48/-1.94	-2.45/-2.50	-1.82/-0.79	-0.21/-0.22	-0.44/-0.37	-0.05/-0.27	-0.76/-1.25	-1.87/-2.16	-2.29/-2.75	-3.37/-3.88	-4.28/-4.54	-5.42/-6.10	-6.57/-6.49	-7.83/-7.79	-7.15/-6.63	-6.45/-6.30	-6.17/-5.54	-4.44/-4.33	
Θ (15°)	-3.46/-3.61	-3.01/-1.61	-0.26/-0.01	0.04/-0.02	-0.05/-0.02	0.63/-0.05	1.73/-2.34	2.58/-2.45	2.32/-2.26	2.10/-1.82	1.31/-0.69	-0.06/-0.97	-1.89/-3.17	-4.34/-5.12	-5.51/-6.09	-6.31/-6.44	-7.06/-7.70	-8.34/-7.87	-8.07/-9.06	-10.01/-9.95	-8.61/-7.08	-7.00/-7.90	-8.07/-6.43	-3.54/-3.27
Θ (22.5°)	-6.18/-4.76	-2.91/-1.28	-0.12/-0.22	0.63/-0.06	1.17/-1.51	2.15/-2.76	3.37/-3.69	3.78/-3.59	3.20/-2.63	2.08/-1.74	1.14/-0.09	-0.86/-2.06	-3.58/-5.30	-6.67/-7.42	-8.14/-9.34	-10.60/-10.46	-10.94/-11.42	-10.41/-7.59	-5.82/-6.56	-9.16/-11.74	-11.23/-9.06	-9.99/-11.74	-11.70/-7.86	-5.18/-5.42
Θ (30°)	-7.20/-5.71	-4.89/-3.45	-1.55/-0.41	0.16/-0.38	-0.23/-0.29	0.00/-0.62	1.06/-0.96	0.74/-1.00	1.14/-0.85	0.29/-0.37	0.68/-0.43	-0.49/-1.80	-3.03/-4.30	-5.99/-6.52	-7.11/-9.47	-13.81/-15.36	-15.93/-15.57	-13.71/-9.72	-6.70/-6.45	-8.17/-13.99	-14.83/-13.11	-11.56/-12.39	-14.29/-12.81	-10.24/-9.22
Θ (37.5°)	-6.77/-6.77	-8.20/-7.36	-5.41/-3.59	-2.60/-1.81	-0.71/-0.21	0.52/-0.31	0.01/-0.04	0.29/-0.06	-0.40/-1.06	-0.91/-0.31	0.02/-0.27	-1.28/-2.80	-4.37/-5.52	-6.40/-6.99	-7.17/-8.25	-9.27/-10.99	-13.57/-14.70	-13.86/-14.68	-12.19/-10.88	-11.52/-11.34	-9.67/-8.98	-8.38/-7.81	-9.02/-11.84	-9.61/-7.60
Θ (45°)	-6.61/-5.84	-6.48/-7.00	-4.23/-0.93	0.88/-1.24	1.41/-1.54	1.34/-1.37	1.58/-0.68	-1.32/-2.55	-2.59/-1.96	-1.34/-1.52	-1.56/-1.95	-3.53/-4.87	-4.63/-6.82	-11.64/-12.99	-11.54/-10.43	-9.94/-10.43	-14.11/-15.71	-13.08/-12.73	-12.98/-9.52	-5.75/-4.59	-5.04/-6.37	-7.11/-8.51	-11.15/-10.11	-6.79/-6.91
Θ (52.5°)	-3.51/-2.26	-2.18/-0.42	0.86/-1.17	1.29/-1.32	1.10/-0.79	0.65/-1.34	1.42/-0.50	-0.85/-1.52	-1.34/-0.71	-0.05/-0.34	0.49/-2.24	-4.31/-4.80	-3.80/-4.32	-6.89/-9.10	-8.16/-8.01	-8.09/-9.87	-14.50/-14.22	-13.18/-10.93	-8.43/-8.43	-7.50/-6.52	-5.91/-7.72	-8.70/-5.14	-3.61/-2.58	-2.62/-3.81
Θ (60°)	-2.61/-1.44	-2.25/-3.10	-2.41/-1.58	-1.12/-1.67	-3.54/-4.47	-2.83/-1.82	-2.03/-3.30	-5.03/-3.17	-1.34/-0.63	-0.69/-0.89	-1.03/-4.84	-6.56/-7.95	-5.96/-3.73	-2.35/-3.29	-4.72/-8.08	-10.67/-12.13	-12.16/-12.83	-14.62/-15.42	-15.31/-13.31	-7.22/-8.41	-11.53/-10.64	-9.38/-6.74	-4.27/-2.77	-2.43/-2.55
Θ (67.5°)	-3.69/-1.18	0.62/-0.16	-0.96/-2.30	-3.18/-3.59	-3.47/-2.42	-1.63/-1.45	-3.48/-4.36	-3.10/-3.57	-5.11/-4.82	-4.23/-3.85	-4.27/-1.94	-10.95/-5.71	-2.45/-1.45	-2.16/-4.39	-6.70/-8.44	-13.55/-13.57	-10.88/-10.89	-11.55/-9.77	-11.71/-13.41	-10.91/-9.10	-10.22/-11.22	-8.06/-6.45	-4.51/-3.45	-3.31/-4.45
Θ (75°)	-1.95/-1.08	-0.00/-1.03	0.44/-0.65	-2.27/-2.61	-2.52/-1.76	-1.15/-1.87	-3.17/-3.53	-3.75/-3.52	-4.69/-4.78	-4.68/-6.75	-11.27/-15.06	-9.46/-6.48	-5.80/-1.15	-1.39/-4.95	-6.69/-5.23	-5.83/-8.96	-7.23/-3.84	-4.29/-5.86	-5.42/-7.82	-7.34/-8.92	-10.04/-10.11	-8.91/-6.89	-4.51/-2.05	-2.48/-2.27
Θ (82.5°)	0.46/-0.57	-0.05/-1.16	0.45/-2.09	-5.23/-6.16	-5.53/-6.04	-6.87/-4.87	-4.87/-5.75	-3.52/-3.45	-4.59/-2.57	-0.41/-1.62	-3.70/-7.30	-3.91/-6.19	-3.17/-1.54	-3.16/-5.02	-2.55/-0.07	0.25/-1.44	-5.93/-6.19	-3.32/-5.47	-8.98/-7.55	-6.79/-10.64	-11.02/-8.16	-7.26/-6.16	-2.34/-0.20	0.79/-0.00
Θ (90°)	1.85/-2.37	1.51/-1.26	0.49/-1.16	-3.44/-5.44	-6.20/-6.95	-6.91/-10.51	-11.23/-8.16	-7.77/-9.17	-7.49/-3.05	0.05/-2.48	-4.05/-2.63	-0.35/-4.05	-3.61/-1.08	1.67/-0.90	-8.72/-9.99	-4.88/-0.90	-7.39/-5.58	-5.60/-8.15	-7.01/-2.35	-1.13/-0.24	0.50/-1.63	1.97/-1.09		
Θ (97.5°)	2.29/-2.91	2.25/-1.34	-0.17/-1.38	-3.13/-8.88	-9.45/-6.50	-9.07/-10.40	-8.81/-7.98	-9.55/-9.60	-7.51/-6.18	-4.06/-7.65	-6.35/-4.40	-3.63/-4.57	-5.71/-4.17	-1.45/-4.16	-5.24/-1.67	2.26/-0.96	-3.63/-5.90	-2.94/-6.74	-10.04/-5.91	-3.88/-3.89	-1.85/-2.84	1.83/-2.84	3.03/-3.11	2.86/-2.17
Θ (105°)	3.12/-3.44	2.67/-1.94	1.16/-0.47	-2.94/-9.83	-14.74/-10.85	-10.91/-11.00	-7.63/-6.74	-6.80/-6.98	-4.90/-4.74	-5.35/-6.09	-6.98/-7.58	-5.22/-6.10	-7.43/-5.65	-2.29/-5.34	-8.59/-2.01	-1.28/-1.93	-1.97/-3.79	-1.40/-0.64	-3.25/-2.91	-3.78/-3.61	-1.75/-0.16	1.49/-2.20	4.17/-4.82	3.93/-3.20
Θ (112.5°)	4.18/-4.38	3.89/-2.36	1.22/-0.47	-2.06/-2.05	-1.86/-3.49	-7.18/-8.69	-6.49/-5.52	-6.55/-7.14	-5.57/-6.03	-7.68/-7.06	-11.03/-10.93	-9.66/-12.55	-9.51/-6.69	-3.60/-5.98	-3.55/-3.30	-1.79/-0.59	-7.14/-6.84	-1.19/-3.30	-3.32/-0.61	-1.65/-1.82	-1.44/-0.37	-0.81/-0.83	1.57/-3.11	2.60/-2.79
Θ (120°)	2.45/-4.46	4.56/-2.95	1.70/-0.32	-3.11/-4.22	-3.97/-4.39	-4.35/-4.00	-4.77/-6.93	-8.47/-8.96	-7.91/-8.02	-12.85/-13.88	-3.81/-5.97	-12.85/-13.88	-6.34/-5.51	-3.22/-3.34	-6.64/-2.67	-3.28/-1.84	-2.76/-4.75	-3.81/-5.20	-2.98/-4.10	-2.67/-0.53	1.32/-2.42	1.79/-1.38	2.86/-2.44	
Θ (127.5°)	0.34/-0.39	0.96/-1.70	0.84/-0.08	-2.06/-3.40	-3.00/-2.81	-2.66/-2.74	-3.87/-6.61	-10.61/-11.76	-9.43/-9.75	-9.44/-6.31	-4.91/-5.88	-4.01/-6.14	-5.69/-3.04	-7.66/-8.82	-6.38/-10.39	-0.75/-0.92	-4.02/-2.51	-0.36/-1.51	-5.33/-1.23	2.68/-0.36	-1.98/-3.16	-0.77/-0.49	3.64/-0.09	1.02/-0.45
Θ (135°)	1.11/-0.14	-2.50/-1.88	-2.76/-5.66	-5.26/-5.51	-9.52/-12.72	-12.00/-9.80	-8.57/-9.20	-9.87/-8.83	-7.63/-8.29	-10.98/-10.42	-5.83/-8.88	-10.75/-11.94	-8.04/-7.26	-6.25/-7.44	-3.18/-2.66	1.21/-6.67	1.53/-0.94	-3.80/-1.61	3.24/-3.61	0.23/-0.94	-12.11/-10.16	1.59/-3.02	3.48/-3.13	
Θ (142.5°)	-2.62/-2.39	-2.74/-2.59	-3.81/-6.48	-7.52/-6.75	-7.17/-7.08	-6.09/-6.80	-8.99/-6.61	-7.35/-8.03	-7.08/-4.30	-3.95/-3.31	-7.05/-8.12	-13.02/-3.37	0.64/-1.93	2.13/-0.71	2.48/-2.88	-2.76/-0.85	1.32/-2.39	2.10/-1.07	-2.66/-3.52	-1.45/-0.64	-2.70/-3.61	-5.69/-8.65	-0.98/-1.18	-3.71/-3.94
Θ (150°)	-3.18/-2.79	-5.40/-6.73	-6.95/-8.29	-9.72/-8.11	-7.13/-6.61	-6.19/-6.08	-6.31/-7.63	-8.80/-6.60	-5.05/-4.58	-4.92/-6.10	-8.58/-9.08	-5.31/-1.08	0.62/-0.08	-1.52/-1.76	-1.50/-2.07	-0.85/-0.93	1.35/-1.61	0.52/-2.90	-6.92/-8.70	-4.07/-0.00	0.05/-3.13	-2.50/-1.30	-2.35/-2.86	-4.93/-7.13
Θ (157.5°)	-8.83/-6.91	-5.07/-4.59	-5.26/-5.51	-5.27/-5.75	-6.32/-7.02	-7.39/-7.91	-7.94/-6.80	-5.53/-4.80	-4.84/-5.47	-6.36/-7.14	-7.38/-6.56	-4.34/-2.22	-1.21/-0.58	0.40/-1.36	1.75/-1.91	2.26/-2.43	2.35/-1.86	0.53/-1.80	-4.75/-8.05	-7.08/-2.64	-0.53/-0.69	-3.44/-0.93	-1.71/-5.46	-8.49/-8.97
Θ (165°)	-2.89/-5.45	-7.40/-6.44	-4.93/-4.59	-4.71/-3.93	-3.80/-4.18	-4.90/-6.54	-8.78/-11.30	-13.48/-13.95	-14.28/-15.61	-14.52/-12.18	-9.88/-6.10	-5.34/-3.30	-3.71/-1.46	-0.63/-0.01	0.55/-1.02	1.42/-1.60	1.44/-1.18	0.81/-0.03	-1.27/-2.85	-4.10/-3.63	-2.21/-1.18	-1.59/-2.62	-2.61/-1.60	-2.31/-2.26
Θ (172.5°)	-0.46/-1.36	-2.71/-3.67	-3.73/-4.21	-5.02/-5.55	-6.21/-7.03	-8.67/-11.13	-14.56/-12.96	-10.29/-8.52	-6.73/-5.05	-6.52/-2.86	-2.49/-2.37	-2.45/-2.58	-2.81/-2.69	-2.50/-2.34	-2.40/-2.54	-2.61/-2.72	-2.96/-3.55	-3.89/-4.15	-4.43/-4.36	-4.43/-4.11	-3.16/-1.65	-0.49/-0.19	-0.15/-0.59	-1.30/-1.08
Θ (180°)	-13.00/-9.34	-6.45/-4.30	-3.30/-3.45	-4.10/-4.50	-4.39/-4.87	-4.86/-4.76	-4.48/-4.27	-4.05/-4.27	-4.91/-5.32	-5.13/-5.08	-4.81/-4.74	-4.83/-4.96	-5.02/-4.85	-4.38/-3.67	-3.01/-2.82	-3.09/-3.45	-3.62/-3.67	-3.48/-3.17	-3.34/-3.98	-4.58/-5.63	-6.46/-6.78	-6.47/-5.77	-6.69/-8.61	-11.42/-12.06
Freq(Hz)	5.6G/Pol.	TotalAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-5.86/-5.27	-5.20/-5.33	-5.20/-5.18	-5.71/-5.45	-5.79/-5.85	-5.77/-5.32	-5.04/-5.28	-6.41/-6.59	-6.26/-6.23	-6.05/-6.06	-6.07/-6.27	-6.66/-7.04	-6.94/-6.54	-6.07/-6.06	-5.95/-5.90	-6.16/-6.47	-6.49/-6.07	-5.99/-6.21	-6.28/-6.24	-5.97/-5.73	-5.46/-5.34	-5.62/-5.62	-5.67/-5.82	-6.30/-6.30
Θ (7.5°)	-6.39/-6.45	-5.67/-5.11	-4.73/-5.18	-5.17/-4.79	-4.44/-4.55	-4.21/-3.46	-2.95/-2.75	-3.07/-4.19	-4.72/-4.58	-4.10/-4.30	-5.05/-5.96	-6.41/-6.80	-6.49/-6.48	-6.65/-6.39	-6.54/-6.50	-6.73/-6.32	-6.35/-6.66	-6.91/-6.60	-6.94/-7.13	-7.37/-6.65	-6.94/-7.02	-7.76/-7.98	-7.75/-7.38	-7.46/-6.74
Θ (15°)	-8.92/-8.16	-6.70/-6.31	-5.31/-5.02	-3.87/-3.07	-2.22/-1.92	-1.74/-1.36	-1.64/-1.20	-1.11/-1.34	-1.76/-2.15	-2.31/-2.88	-3.74/-4.48	-5.05/-5.43	-5.93/-6.40	-6.90/-7.25	-7.17/-6.90	-6.73/-6.69	-7.07/-7.43	-7.73/-7.49	-7.29/-7.59	-8.61/-9.51	-9.27/-8.27	-8.50/-9.77	-10.28/-10.07	-9.98/-8.53
Θ (22.5°)	-4.86/-6.26	-3.71/-2.48	-1.53/-1.06	0.25/-0.80	1.21/-0.96	0.65/-0.36	0.89/-1.12	0.88/-0.72	0.68/-0.60	-0.07/-1.52	-3.54/-5.48	-6.81/-7.49	-7.46/-7.37	-7.45/-7.71	-7.73/-7.65	-8.00/-8.27	-9.07/-9.09	-7.05/-6.11	-7.03/-10.19	-12.69/-12.97	-12.32/-10.98	-10.32/-10.17	-12.61/-10.89	
Θ (30°)	-6.07/-4.48	-2.58/-1.93	-1.03/-0.40																					

E1(XY plane) – $\Theta(90)\Phi(0-360)$
E2(XZ plane) – $\Theta(0-180)\Phi(0)$ and $\Theta(0-180)\Phi(180)$
E3(YZ plane) – $\Theta(0-180)\Phi(90)$ and $\Theta(0-180)\Phi(270)$

