



Antenna Composite Gain Test Report

FCC ID	QXO-AP4000NB
Equipment	Access Point
Brand Name	Extreme Networks
Model Name	AP4000
Applicant	Extreme Networks, Inc. 2121 RDU Center Drive Morrisville North Carolina United States 27560
Manufacturer	Extreme Networks, Inc. 2121 RDU Center Drive Morrisville North Carolina United States 27560
Sample Received	Jul. 12, 2022
Start Test Date	Jul. 19, 2022
Final Test Date	Jul. 19, 2022

Approved by: **Sam Chen**

Sporton International Inc. Hsinchu Laboratory

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History of this test report

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1. Operation Mode and Antenna Information

Antenna Position	Radio	RF Port	Model Name	Ant. Type	Connector	Modes of Operation
Ant1	1, 2	2	N/A	PIFA	I-PEX	2.4GHz, 5GHz UNII 1~3
Ant2	1, 2	1	N/A	PIFA	I-PEX	2.4GHz, 5GHz UNII 1~3

Note:

2.4GHz and 5GHz Operation Mode (1TX, 2TX/2RX)

For 1TX

The EUT supports the antenna with TX diversity functions.

Both Ant 1, 2 support transmit and receive functions, but only one of them will be used at one time.

For 2TX

Ant 1, 2 can be used as transmitting/receiving antenna.

Ant 1, 2 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	23-24 / 40-50	Jul. 19, 2022

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

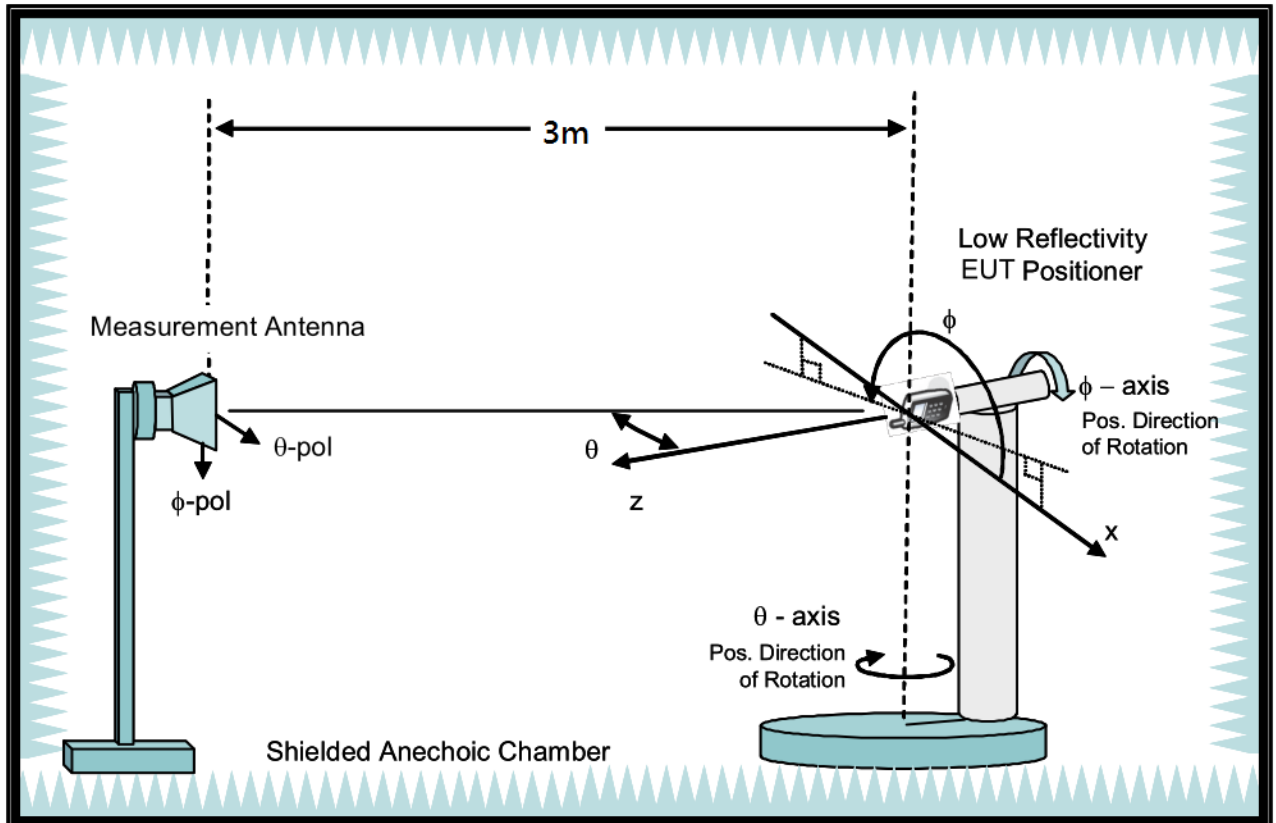
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Dual Polarization Horn antenna

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

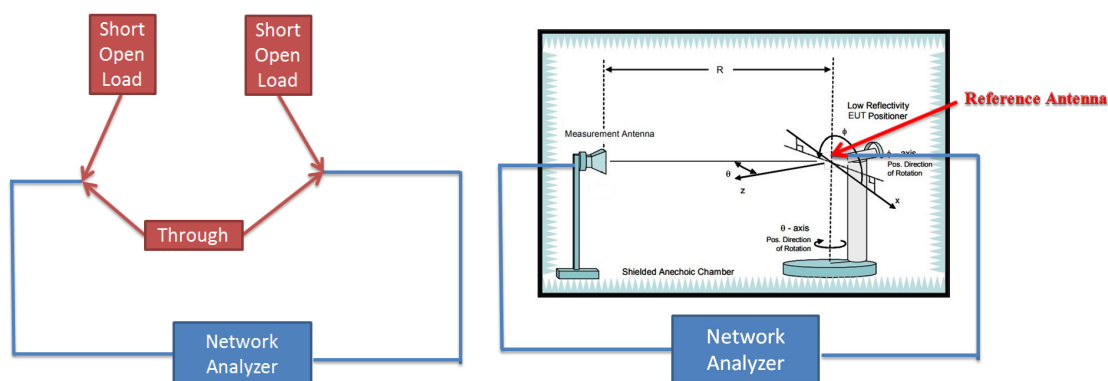
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



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	7500
G reading (dB)	-31.4	-31.4	-31.3	-31.3	-31	-30.7	-30.1	-30.5	-30.5	-30.8	-31.3	-32.8	-34.4	-35.4
Reference gain (dBi)	10.2	10.4	10.6	12.4	12.8	13.4	13.4	13.3	13.3	13.1	13.2	12.3	11.7	11.1
Factor (dB)	41.34	41.55	41.68	43.24	43.56	43.68	43.79	43.91	43.99	44.43	44.49	45.24	46.12	46.31

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 10 degree from 0 to 350 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)	2.55	2.31	1.53	0.29	1.12
Ant. 2 (dBi)	0.78	1.38	1.05	0.47	0.21
DG [1SS] (dBi)	4.72	4.87	4.3	3.39	3.69
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	70	80	80	80	80
$\Phi(^{\circ})$	240	270	280	270	190

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 [$10^{(G/20)}$]	$10^{(2.55/20)}$	$10^{(2.31/20)}$	$10^{(1.53/20)}$	$10^{(0.29/20)}$	$10^{(1.12/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(0.78/20)}$	$10^{(1.38/20)}$	$10^{(1.05/20)}$	$10^{(0.47/20)}$	$10^{(0.21/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.341	1.305	1.193	1.034	1.138
Ant. 2 [$10^{(G/20)}$] value	1.094	1.172	1.128	1.056	1.024
Sum All Antenna [Amax]	2.435	2.477	2.321	2.09	2.162
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	4.72	4.87	4.3	3.39	3.69

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

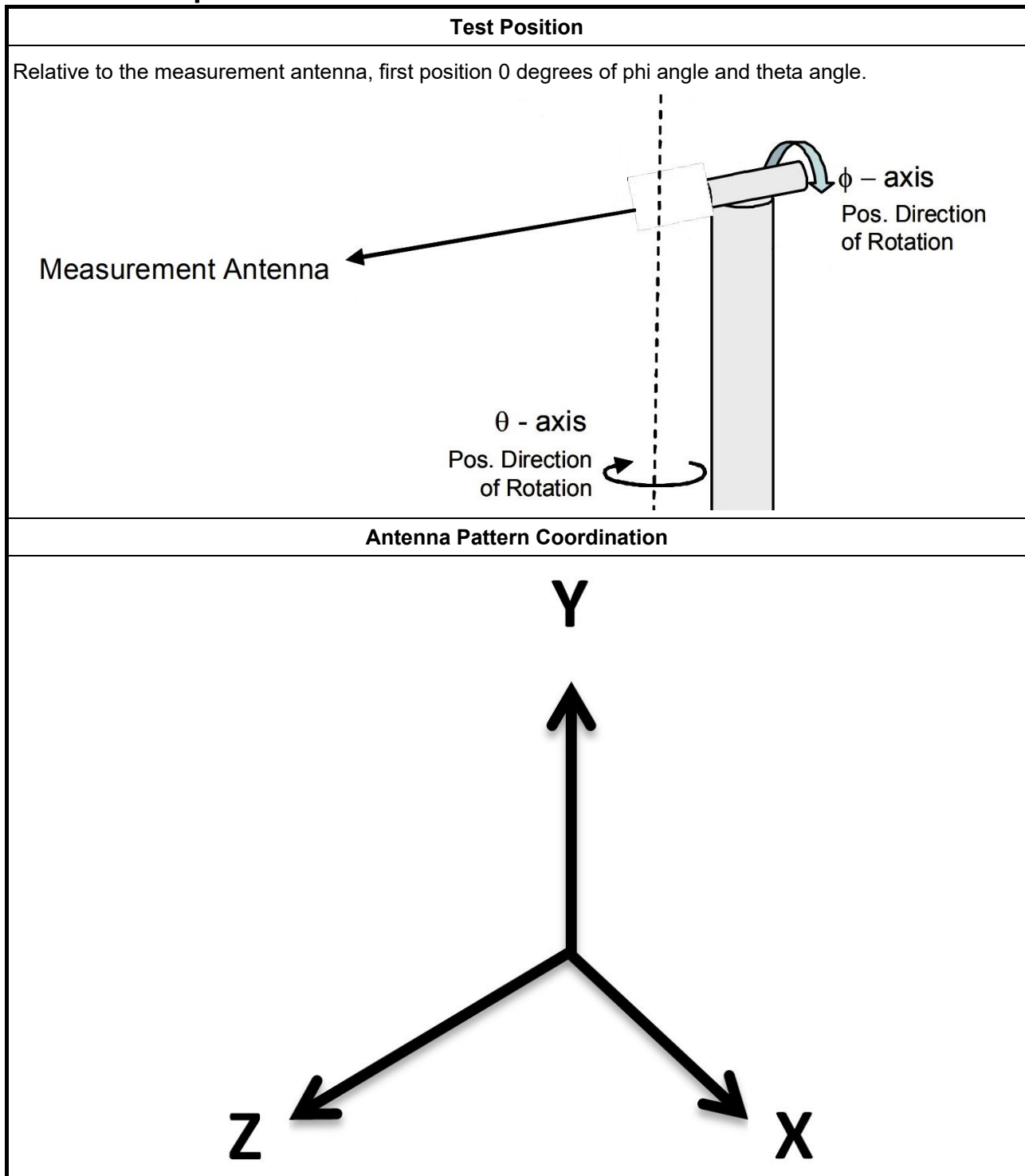
8. Summary of Test Result

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.62	2.31	2.37	2.15	1.81
Ant. 2 Max Gain (dBi)	2.61	1.71	1.64	1.27	1.75
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/70/230	Theta/80/270	Theta/80/290	Theta/80/260	Theta/80/260
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/70/50	Theta/70/210	Theta/70/200	Theta/70/80	Theta/70/100
Max Gain (dBi)	2.62	2.31	2.37	2.15	1.81
DG [1SS] (dBi)	4.72	4.87	4.3	3.39	3.69
DG [2SS] (dBi)	2.62	2.31	2.37	2.15	1.81

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) – 3dB. 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-1292	1GHz~18GHz	Aug. 04, 2021	Aug. 03, 2022
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	V1.0.6	-	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.

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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.62	2.31	2.37	2.15	1.81
Ant. 2 Max Gain (dBi)	2.61	1.71	1.64	1.27	1.75
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/70/230	Theta/80/270	Theta/80/290	Theta/80/260	Theta/80/260
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/70/50	Theta/70/210	Theta/70/200	Theta/70/80	Theta/70/100
Max Gain (dBi)	2.62	2.31	2.37	2.15	1.81
DG [1SS] (dBi)	4.72	4.87	4.3	3.39	3.69
DG [2SS] (dBi)	2.62	2.31	2.37	2.15	1.81



Radiated Composite Gain Data

Appendix A

DG 1SS Result

Freq(Hz)	2.45GPol.	PhiL	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)
DG(dB)	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-1.38/-8.06	-4.75/-2.35	-0.72/1.08	0.72/1.08	1.090.76	-0.75/0.2	-1.08/-3.7	-0.93/-7.73	-10.69/-14.51	-12.25/-7.22	-0.93/-2.06	-0.92/-0.13	0.41/0.53	0.26/0.41	-0.4/-1.36	-2.62/-4.61	-7.36/-11.22	-14.23/-14.76
Θ(10°)	-8.89/-7.9	-6.13/-3.79	-1.95/-0.65	0.05/0.43	0.42/0.14	-0.56/-1.38	-2.48/-3.93	-5.39/-6.96	-8.83/-10.41	-9.27/-5.73	-3.13/-1.66	-0.72/-0.1	0.26/0.41	0.45/0.32	-0.22/-1.04	-2.09/-4.06	-6.98/-9.95	-11.89/-11.14
Θ(20°)	-5.63/-5.29	-5.24/-4.78	-3.41/-1.87	-0.59/0.01	0.19/-0.04	-0.75/-1.6	-2.68/-4.13	-5.31/-6.32	-7.74/-7.86	-7.08/-5.14	-3.2/-1.7	-0.87/-0.58	-0.47/-0.48	-0.42/-0.24	-0.53/-1	-2.11/-4.04	-6.98/-8.61	-8.73/-6.8
Θ(30°)	-4.75/-3.87	-3.72/-3.75	-3.13/-1.86	-0.53/0.32	-0.53/0.32	-1.09/-1.78	-2.67/-4.18	-5.86/-7.29	-7.94/-7.12	-5.19/-4.38	-3.33/-2.15	-0.90/0.7	0.43/-0.04	-0.69/-1.05	-1.26/-1.79	-2.74/-0.03	-5.87/-7.34	-7.04/-5.79
Θ(40°)	-6.44/-5.31	-4.81/-4.37	-3.68/-2.29	-0.48/0.33	-0.02/-1.42	-2.78/-3.06	-3.07/-4.35	-7.84/-12.89	-10.63/-6.54	-4.59/-4.02	-4.24/-4.18	-3.01/-1.37	-0.03/0.16	-0.74/-2.3	-2.94/-2.91	-3.27/-4	-5.93/-8.45	-9.16/-8.04
Θ(50°)	-6.01/-6.4	-6.51/-5.84	-5.3/-3.82	-1.41/-0.04	-0.3/-2.17	-4.54/-5.06	-4.09/-5.12	-7.71/-12.87	-10.69/-6.57	-4.38/-4.41	-4.93/-5.48	-5.55/-3.56	-1.36/-0.14	-0.25/-2.01	-4.11/-4.14	-4.27/-6	-9.14/-12.16	-11.45/-8.13
Θ(60°)	-7.02/-6.58	-7.38/-8.71	-8.58/-6.28	-2.88/-0.87	-0.36/-1.64	-4.23/-5.53	-6.13/-7.22	-7.57/-8.96	-8.85/-6.53	-4.15/-4.75	-6/-7.72	-2.89/-0.23	0.21/-1.1	-3.86/-5.45	-6.61/-8.99	-12.19/-11.93	-10.43/-9.55	
Θ(70°)	-9.85/-8.73	-10.32/-11.27	-7.36/-6.18	-3.84/-1.67	-1.48/-3.29	-4.99/-4.76	-4.84/-5.85	-7.59/-9.14	-8.86/-8.03	-6.32/-6.88	-7.86/-9.57	-8.14/-7.03	-4.55/-1.91	-1.32/-3.02	-5.74/-5.22	-5.07/-7.3	-10.69/-12.32	-12.41/-10.21
Θ(80°)	-11.22/-9.17	-11.51/-12.87	-7.51/-6.27	-5.46/-3.22	-2.5/-2.45	-6.74/-4.71	-3.31/-3.91	-5.57/-7.18	-8.96/-9.19	-8.21/-8.22	-9.17/-10.34	-7.7/-8.42	-9.09/-3.78	-1.6/-2.98	-6.08/-5.8	-5.53/-6.9	-8.66/-10.44	-13.88/-12.11
Θ(90°)	-13.15/-9.16	-12.18/-13.4	-7.81/-6.7	-7.43/-5.65	-5.44/-5.73	-8.61/-5.73	-5.85/-3.84	-3.23/-3.74	-5.51/-7.01	-8.58/-9.65	-8.67/-8.98	-10.42/-13.51	-8.48/-7.92	-9.91/-5.72	-7.74/-9.86	-5.42/-6.05	-13.11/-15.61	
Θ(100°)	-15.69/-10.69	-10.85/-13.19	-8.36/-7.37	-7.39/-5.58	-4.15/-6.31	-6.27/-3.66	-3.07/-4.23	-6.24/-6.86	-7.84/-12.44	-12.74/-11.46	-12.41/-14.88	-7.73/-6.62	-9.81/-7.2	-4.01/-5.12	-7.61/-6.66	-6.41/-7.85	-7.91/-8.42	-12.91/-15.06
Θ(110°)	-15.48/-11.32	-9.54/-14.28	-9.27/-8.76	-8.18/-5.17	-3.89/-6.14	-7.69/-4.36	-3/-3.31	-4.35/-5.44	-8.37/-15.48	-14.95/-11.19	-11.87/-15.34	-8.23/-8.91	-12.84/-8.33	-5.04/-6.21	-7.45/-4.25	-4.32/-5.53	-6.65/-7.53	-14.62/-14.59
Θ(120°)	-13.8/-9.96	-8.04/-13.07	-9.82/-9.19	-9.24/-6.95	-5.17/-5.87	-7.68/-5.38	-3.34/-4.8	-7.16/-5.67	-7.68/-10.49	-11.2/-10.66	-10.88/-15.2	-10.08/-9.89	-8.12/-5.54	-6.43/-5.86	-7.9/-10.08	-8.12/-5.97	-12.9/-12.53	
Θ(130°)	-9.68/-8.92	-7.49/-10.8	-12.63/-9.51	-7.47/-5.53	-5.07/-6.66	-8.09/-6.25	-4.43/-4.48	-3.94/-4.53	-7.7/-9.43	-11.6/-10.44	-10.42/-13.83	-11.7/-13.17	-13.84/-8.29	-5.62/-6.14	-8.04/-5.16	-4.26/-5.38	-5.86/-5.9	-7.7/-9.44
Θ(140°)	-9.28/-7.55	-7.29/-8.9	-12.48/-11.92	-7.45/-5.05	-5.13/-6.71	-6.11/-4.09	-3.85/-4.08	-6.63/-8.26	-10.98/-13.01	-12.78/-10.39	-10.51/-10.36	-11.14/-15.28	-15.68/-10.36	-6.29/-6.27	-6.37/-4.56	-4.11/-5.22	-6.6/-8.06	-11.96/-14.22
Θ(150°)	-9.95/-8.61	-9.04/-10.81	-14.11/-14.95	-12.38/-9.98	-7.62/-5.78	-4.47/-3.38	-3.65/-4.79	-6.15/-8.46	-11.77/-12.27	-11.13/-11.15	-12.21/-13.32	-13.74/-15.67	-13.71/-9.6	-7.49/-7.1	-6.25/-4.99	-5.54/-7.7	-9.59/-9.76	-10.52/-10.46
Θ(160°)	-7.28/-7.76	-9.49/-13.04	-15.8/-15.7	-13.65/-9.82	-8.62/-8.35	-7.72/-6.7	-5.98/-5.33	-3.85/-8.47	-9.93/-8.68	-8.79/-8.68	-11.2/-13.41	-15.24/-12.99	-8/-7.94	-9.93/-8.68	-8.11/-7.39	-8.1/-8.43	-8.7/-8.5	-7.27/-9.11
Θ(170°)	-8.33/-9.29	-11.46/-15.57	-15.12/-14.72	-12.71/-11.48	-10.49/-9.11	-8.22/-7.62	-7.41/-8.01	-8.91/-9.49	-8.92/-9.06	-9.95/-11.45	-14.47/-15.37	-13.89/-12.83	-11.98/-12.69	-12.63/-11.8	-10.38/-10.31	-9.59/-8.76	-8.79/-8.55	-8.48/-8.14
Θ(180°)	-12.13/-13.7	-14.94/-15.86	-15.48/-15.88	-15.46/-15.31	-14.53/-13.32	-13.25/-12.92	-11.7/-11.2	-11.31/-11.34	-11.79/-12.7	-13.64/-15.75	-15.32/-15.5	-15.46/-15.15	-15.88/-14.85	-13.41/-12.53	-11.3/-10.64	-9.95/-9.19	-9.26/-10.05	-10.47/-11.07
Freq(Hz)	2.45GPol.	ThetaL	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)
DG(dB)	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-0.68/-1.17	-1.65/-2.49	-3.89/-6.11	-9.18/-12.93	-12.3/-9.81	-0.51/0.33	-2.27/-0.96	-0.08/0.34	0.16/0.33	-0.31/-1.27	-2.48/-3.52	-4.88/-6.94	-10.37/-13.84	-2.34/-9.2	-6.19/-3.78	-2.07/-0.83	-0.05/0.29	0.14/-0.1
Θ(10°)	-0.45/-0.93	-1.12/-1.86	-3.17/-5.52	-7.51/-9.04	-8.73/-8.11	-6.89/-4.91	-3.04/-1.49	-0.45/0.18	0.46/0.43	-0/-1.01	-2.11/-3.31	-4.01/-5.1	-8.86/-8.57	-9.49/-8.01	-5.93/-4.09	-2.22/-0.68	0.26/0.54	0.58/0.13
Θ(20°)	0.04/-0.44	-0.48/-0.42	-0.89/-1.58	-2.82/-4.02	-4.51/-4.32	-3.81/-3.21	-2.17/-1.19	-0.38/0.19	0.40/0.33	0.16/-0.39	-1.2/-2.09	-2.59/-2.92	-2.94/-3.33	-3.91/-4.32	-4.26/-3.86	-2.55/-0.78	0.67/1.24	1.26/0.73
Θ(30°)	0.33/-0.13	0.06/0.68	1.26/-1.25	0.77/-0.11	-0.53/-0.66	-0.7/-0.62	-0.36/0.1	0.34/0.31	0.09/-0.49	-0.96/-1.3	-1.41/-1.44	-1.28/-0.98	-0.92/-0.69	-0.56/-0.78	-1.14/-1.82	-1.49/-4.05	0.68/1.42	1.42/1.13
Θ(40°)	0.56/0.03	0.19/-1.21	2.02/-2.23	1.68/0.75	0.02/0.09	0.1/-0.71	-1.69/-2.68	-0.28/0.54	0.1/-0.71	-3.4/-2.99	-1.98/-0.89	0.62/-0.51	-1.1/-4.03	0.07/-0.08	0.31/0.82	-1.1/-4.03	0.24/0.69	1.07/0.67
Θ(50°)	0.32/0.33	1.31/-2.89	3.65/-5.52	2.83/-1.69	0.58/0.41	0.72/0.58	1.11/-1.67	-1.63/-2.94	-4.01/-3.25	-1.52/-0.29	1.71/-2.34	2.06/-1.43	1.31/-1.66	1.41/-1.36	-0.32/0.05	0.1/-0.77	-0.3/-0.38	
Θ(60°)	-0.81/-0.87	0.81/-2.55	2.88/-3.52	3.26/-3.04	1.62/0.48	0.55/0.31	0.72/2.01	2.24/-1.02	-0.17/-1.37	-2.81/-3.02	-1.53/0.92	2.94/4.08	4.42/3.92	3.24/-2.45	2.68/-1.86	1.21/-1.65	1.55/0.76	0.30/-0.1
Θ(70°)	-0.73/-1.52	0.19/-2.14	2.74/-8.38	3.29/-4.13	2.81/-1.14	0.93/-1.43	1.81/-1.11	0.82/-0.08	0.92/1.04	-1.28/-1.51	0.66/-1.21	3.41/-3.33	4.72/-4.13	3.24/-2.77	2.67/-1.94	1.59/-1.79	0.7/-0.6	-0.68/-0.45
Θ(80°)	-0.6/-1.41	-0.79/-1.29	2.09/-3.4	3.05/-3.55	2.33/0.43	0.49/-0.15	0.1/-0.22	0.6/0.5	0.52/-0.4	-1.76/-2.17	-1.7/-0.05	2.04/-0.43	4.66/-3.66	2.35/-1.89	1.58/-1.15	1.06/-1.4	0.31/-1.58	-1.37/-1.01
Θ(90°)	-2.7/-3.22	-2.59/-1.01	2.59/-2.9	1.86/-2.01	0.47/-0.91	-1.08/-0.54	-0.79/-3.46	-2.31/-0.86	-0.03/-0.74	-2.34/-2.4	-2.23/-1.19	1.15/-3.19	3.77/-3.06	1.85/0.94	0.47/0.15	0.36/-0.1	-1.42/-4.12	-3.04/-3.08
Θ(100°)	-2.62/-2.06	-1.73/-1.43	3.44/-3.73	1.96/0.74	-0.93/-2.68	-2.51/-1.82	-1.22/0.01	-2.93/-5.15	-1.28/-0.64	-2.51/-1.82	-1.93/-1.67	0.02/0.21	3.29/-3.27	1.98/0.3	-1.71/-3.34	-1.86/-1.17	-1.08/-2.71	-3.24/-2.47
Θ(110°)	-1.96/-2.45	-2.02/0.06	1.38/-1.45	0.23/-0.52	-0.81/-2.22	-4.84/-5.88	-6.38/-9.55	-1.9/-1.2	-0.91/-2.69	-4.23/-2.13	-1.58/-1.62	-0.74/-1.15	1.95/-1.43	0.61/-0.54	-2.49/-4.23	-4.56/-3.16	-1.73/-1.88	-3.76/-2.5
Θ(120°)	-1.06/-1.55	-1.6/-0.2	-0.13/-0.66	-0.66/-1.33	-2.1/-3.39	-4.24/-4.71	-6.53/-7.1	-5.14/-3.7	-2.79/-4.45	-5.66/-3.49	-2.13/-2.61	-1.9/-0.18	-0.31/-0.81	-1.3/-2.23	-3.28/-5.65	-7.43/-7.35	-4.67/-2.89	-4.08/-2.38
Θ(130°)	-3.79/-4.25	-4.8/-4.11	-4.19/-4.1	-3.46/-3.53	-3.72/-3.74	-8.57/-7.3	-6.44/-7.29	-5.8/-5.13	-4.64/-7.29	-3.56/-3.39	-7.05/-7.05	-10.69/-9.24	-6.9/-5.97	-1.75/-2.19	-3.66/-3.92	-5.08/-8.58	-10.94/-9.24	-7.55/-5.47
Θ(140°)	-6.57/-5.75	-5.31/-4.77	-4/-2.17	-1.5/-2.73	-4.8/-5.57	-6.95/-8.66	-10.16/-12.07	-13.84/-11.84	-9.15/-6.93	-6.41/-6.64	-7.33/-6.06	-3.99/-3.68	-3.99/-4.03	-4.85/-1.15	-9.64/-14.57	-12.8/-9.64	-8.24/-7.42	-7.72/-7.34
Θ(150°)	-9.94/-8.3	-6.3/-4.94	-5.05/-5.32	-5.41/-6.32	-8.88/-10.7	-11.37/-12.01	-12.62/-12.84	-13.71/-12.13	-10.39/-8.54	-7.61/-6.42	-5.4/-4.7	-4.52/-4.95	-4.95/-3.97	-4.58/-7.27	-9.27/-10.41	-9.2/-8.24	-8.2/-8.07	-8.3/-8.5
Θ(160°)	-6.5/-4.9	-8.3/-9.37	-2.36/-2.61	-3.2/-3.94	-4.44/-5.11	-5.28/-3.94	-9.14/-7.61	-4.41/-5.12	-5.28/-3.94	-5.04/-6.39	-2.12/-1.71	-10.66/-9.22	-10.13/-9.73	-10.66/-9.22	-10.13/-9.73	-10.66/-9.22	-10.13/-9.73	-8.29/-7.32
Θ(170°)	-7.47/-5.98	-4.78/-3.9	-3.9/-4.15	-4.38/-4.75	-5.26/-6.13	-7.38/-9.5	-11.88/-14.38	-14.58/-13.66	-13.26/-10.87	-8.45/-6.66	-5.45/-5.34	-6.28/-7.96	-9.03/-8.77	-8.59/-10.15	-12.12/-12.67	-12.9/-13.1	-13.05/-12.14	-10.84/-8.86
Θ(180°)	-12.02/-11.46	-11.1/-11.54	-12.46/-13.38	-14.25/-14.36	-14.75/-15.55	-15.34/-15.36	-15.96/-15.71	-15.56/-15.66	-15.92/-15.75	-14.92/-15.71	-15.61/-15.15	-14.12/-13.64	-12.29/-12.21	-12.12/-9.6	-13/-15.22	-15.73/-15.59	-15.03/-15.54	-13.96/-13.11
Freq(Hz)	5.2GPol.	PhiL	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)	Φ(-)
DG(dB)	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-8.31/-7.41	-6.06/-6.66	-5.69/-4.22	-4.58/-5.34	-5.38/-5.01	-4.61/-5.13	-5.35/-5.72	-6.54/-6.54	-7.36/-8.05	-7.02/-7.56	-7.05/-5.95	-5.17/-5.74	-5.41/-4.92	-5.16/-4.84	-4.8/-5.57	-6.32/-7.07	-7.32/-8.57	-9.6/-8.19
Θ(10°)	-6.08/-6.15	-4.36/-3.25	-3.72/-3.06	-2.34/-3.31	-3.97/-4.83	-5.83/-5.84	-5.55/-4.77	-4.85/-5.02	-6.76/-6.17	-4.85/-5.68	-6.77/-6.78	-6.47/-6.66	-6.18/-6.15	-5.71/-6.66	-5.31/-5.51	-6.18/-6.15	-5.83/-5.84	-6.38/-6.38
Θ(20°)	-8.48/-7.03	-6.87/-6.16	-5.17/-4.1	-2.84/-2.53	-2.58/-3.15	-5.49/-5.72	-4.4/-3.8											



Radiated Composite Gain Data

Appendix A

Θ (60°)	-0.5/-0.4	1.05/1.86	1.830/4.3	-1.860/2.7	1.091/1.75	1.26/2.47	1.38/1.93	1.72/-0.02	-0.16/-1.4	-0.24/0.95	1.22/1.57	0.48/-1.05	-1.31/-1.73	0.49/1.61	0.93/2.04	-0.030/0.82	-0.28/-0.66	0.190/1.1
Θ (70°)	0.59/1.34	3.01/2.64	2.380/3.4	-0.39/0.61	2.09/2.05	2.37/2.68	2.83/2.6	1.24/0.85	0.69/-0.41	0.97/2.08	3.01/3.82	2.63/-0.09	0.36/0.26	0.91/2.73	2.28/2.54	1.45/0.84	-1.56/-1.28	0.12/1.09
Θ (80°)	0.54/1.89	2.94/2.06	2.25/-1.31	-1.26/0.64	2.12/2.1	1.87/2.03	3.21/1.93	0.16/1.25	0.49/-1.26	-0.51/2.43	1.87/3.98	3.01/0.13	0.68/2.17	1.87/3.98	4.33/89	3.1/1.66	0.88/-0.1	0.69/0.61
Θ (90°)	-1.13/-0.32	0.91/0.93	1.64/-1.32	-1.25/0.41	1.83/1.35	1.21/0.79	1.42/1.17	-0.36/0.37	-0.84/-3.42	-3.16/1.26	1.05/2.83	1.09/-2.02	0.71/2.25	1.83/3.7	2.36/2.36	-1.09/1.25	0/-1.37	-1.93/-0.42
Θ (100°)	-1.59/-2.22	-1.96/-0.15	1.07/-0.52	-1.31/0.04	0.13/0.3	-0.58/-0.54	-1.15/-0.26	-1.31/-1.12	-1.4/-2.39	-3.39/-1.89	-1.43/0.68	-0.53/-1.85	-0.34/0.63	0.08/1.69	-1.22/0.41	-3.92/-0.22	-1.29/-2.37	-1.41/0.18
Θ (110°)	0.05/-0.79	-0.17/0.23	0.3/-2.04	-3.47/-2.04	-1.31/-2.73	-2.4/-2.52	-4.7/-2.14	-2.35/-1.34	-0.16/-1.08	0.42/0.6	-0.7/-3.14	-1.51/-3.53	-2.15/-0.8	-5.89/-2.52	-2.76/-2.59	-3.44/-1.8	-1.62/-0.57	
Θ (120°)	-0.71/-2.75	-1.04/-1.76	-2.74/-4.92	-6.03/-4.01	-3.43/-4.47	-5.61/-7.35	-6.6/-5.28	-4.73/-4.5	-2.61/-4.71	-0.83/-0.92	0.84/-0.7	-1.56/-6.71	-6.99/-3.75	-4.97/-3.78	-6.99/-6.38	-3.51/-5.95	-6.96/-1.44	-4.59/-3.04
Θ (130°)	-5.57/-5.35	-5.76/-3.69	-2.51/-2.74	-3.38/-3.71	-4.16/-5.78	-7.98/-7.64	-10.57/-7.96	-5.87/-5.49	-9.15/-5.88	-7.1/-2.95	-4.35/-2.71	-1/-6.84	-6.75/-5.96	-3.56/-6.86	-10.66/-7.58	-4.51/-9.73	-7.81/-5.47	-4.47/-5.74
Θ (140°)	-3.93/-4.1	-4.53/-4.89	-4.21/-4.16	-5.56/-3.69	-4.48/-5.82	-4.28/-7.95	-13.45/-9.11	-5.48/-6.14	-5.88/-4.04	-4.28/-2.89	-2.46/-2.47	-3.16/-8.65	-9.91/-8.55	-5.66/-8.34	-11.73/-13.85	-8.35/-8.64	-8/-6.21	-7.38/-4.24
Θ (150°)	-6.36/-6.43	-5.4/-5.67	-4.82/-6.59	-8.39/-9.78	-8.07/-6.02	-7.86/-12.38	-14.84/-15.5	-13.08/-12	-13.47/-10.91	-8.55/-6.11	-9.26/-7.99	-4.82/-5.14	-7.43/-11.98	-10.67/-15.6	-15.23/-14.81	-10.31/-7.26	-7.9/-7.04	-8.21/-7.37
Θ (160°)	-10.18/-9.05	-8.26/-7.67	-9.33/-8.68	-10.53/-8.59	-8.36/-10.57	-11.93/-14.65	-15.69/-12.47	-11.69/-10.27	-8.55/-9.31	-8.79/-8.95	-8.82/-5.85	-5.69/-8.85	-14.03/-11.66	-8.8/-11.54	-15.35/-12.99	-10.29/-9.46	-9.86/-9.7	-11.69/-10.52
Θ (170°)	-12.67/-10.8	-9.21/-10.26	-8.56/-8.4	-9.27/-9.65	-10.99/-14.21	-15.38/-13.82	-13.62/-12.84	-10.88/-11.94	-9.79/-8.36	-8.76/-11.04	-10.09/-8.74	-8.98/-8.45	-8.05/-10.42	-13.43/-15.7	-15.61/-15.35	-13.79/-12.03	-11.3/-8.76	-10.23/-13.11
Θ (180°)	-9.66/-7.46	-8.33/-9.11	-8.67/-9.08	-11.18/-13.68	-14.66/-15.83	-15.8/-15.27	-14.56/-12.72	-9.65/-9.24	-10.21/-10.76	-9.35/-8.78	-8.01/-7.61	-8.8/-11.6	-13/-14.03	-16.01/-15.88	-14.16/-15.77	-14.88/-14.08	-14.02/-12.99	-11.54/-10.94
Freq(Hz)	5.6GPol.	Phi-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG(dB)	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ (0°)	-5.66/-3.71	-2.87/-1.64	-0.64/-0.18	-0.14/0.1	0.49/0.3	-1.01/-3.3	-5.13/-6.42	-8.94/-11.99	-12.08/-10.12	-4.93/-3.89	-3.17/-1.24	-0.97/-0.83	-0.04/0.16	0.54/-0.27	-1.39/-2.44	-3.86/-5.67	-6.8/-9.9	-9.92/-7.77
Θ (10°)	-3/-3.1	-1.95/-0.82	-0.33/0.56	0.32/-0.04	-0.28/-1.12	-1.99/-2.92	-3.77/-3.96	-5.3/-6.79	-7.71/-7.68	-4.68/-2.27	-0.94/-0.9	-0.37/-0.4	-0.27/0.09	-0.63/-1.94	-2.71/-3.58	-4.55/-5.99	-6.79/-6.01	-5.24/-0.05
Θ (20°)	-11.99/-8.35	-5.99/-3.67	-2.17/-1.65	-0.3/-0.36	-0.42/-0.99	-2.05/-2.16	-2.76/-2.93	-4.84/-7.06	-7.26/-7.43	-1.18/-2.3	-5.79/-4.81	-2.44/-1.62	-1.13/-0.45	-3.03/-3.24	-3.07/-4.54	-6.76/-7.54	-9.06/-15.54	
Θ (30°)	-7.26/-3.42	-2.61/-4.12	-3.15/-1.91	-1.58/-0.92	-0.62/-1.28	-0.83/-0.76	-2.9/-4.34	-5.19/-6.37	-6.56/-8.52	-7.09/-5.88	-3.58/-2.92	-2.32/-2.09	-1.76/-1.01	-1.13/-1.54	-1.85/-1.82	-3.73/-5.63	-7.79/-9.49	-8.19/-9.87
Θ (40°)	-7.51/-8.38	-9.92/-8.5	-5.22/-3.1	-1.91/-1.88	-1.59/-1.99	-3.04/-3.34	-3.64/-5.87	-6.43/-8.52	-6.05/-7.11	-5.58/-5.24	-8.44/-7.62	-4.2/-1.68	-2.21/-3.71	-2.47/-2.25	-2.64/-2.33	-3.18/-5.01	-3.76/-6.34	-6.12/-7.47
Θ (50°)	-4.77/-5.5	-4.69/-7.06	-6.67/-3.34	-1.8/-2.21	-4.01/-3.01	-5.73/-4.93	-6.35/-8.44	-6.78/-8.07	-5.23/-6.1	-4.83/-5.6	-4.27/-3.61	-5.02/-6.15	-3.47/-3.56	-5.07/-4.35	-5.02/-6.02	-7.3/-7.55	-7.19/-3.62	
Θ (60°)	-4.99/-5.61	-4.95/-10.5	-9.8/-4.61	-3.82/-2.1	-4.3/-2.92	-3.73/-4.95	-6.84/-8.18	-8.73/-7.24	-6.61/-4.17	-5.91/-4.31	-5.62/-8.08	-6.84/-4.86	-4.58/-4.4	-4.23/-3.57	-2.69/-3.82	-5.45/-6.48	-9.22/-8.11	-6.55/-3.93
Θ (70°)	-7.38/-9.44	-7.14/-12.38	-9.21/-5.06	-5.74/-4.5	-4.47/-3.94	-4.46/-5.81	-6.61/-7.21	-11.08/-9.1	-7.1/-7.55	-7.91/-6.78	-9.12/-12	-10.35/-8.08	-6.29/-3.99	-3.72/-1.67	-5.59/-5.67	-8.17/-6.66	-8.49/-7.68	
Θ (80°)	-9.91/-15.32	-9.7/-14.55	-10.9/-6.05	-7.68/-6.16	-6.57/-6.06	-5.37/-6.31	-7.49/-10.38	-11.62/-13.35	-12.55/-7.85	-10.43/-9.78	-2.07/-1.35	-3.35/-4.91	-4.83/-5.3	-7.45/-8.31	-10.38/-12.08			
Θ (90°)	-9.3/-12.08	-16.17/-14.57	-10.6/-9.82	-8.52/-4.73	-7.58/-6.74	-6.57/-5.37	-5/-6.37	-7.28/-9.64	-9.9/-11.66	-8.67/-11.53	-14.67/-15.49	-12.1/-9.42	-11.36/-5.29	-3.31/-3.32	-6.15/-5.49	-5.7/-7.23	-6.84/-10.35	-9.99/-9.91
Θ (100°)	-10.66/-10.1	-15.16/-12.99	-11.79/-10	-6.99/-6.74	-8.01/-8.31	-7.49/-5.62	-4.95/-5.18	-7.71/-10.01	-8.96/-10.97	-9.46/-10.95	-12.7/-14.31	-10.19/-14.57	-8.22/-7.54	-5.91/-4.36	-7.92/-6.14	-6.45/-6.87	-6.29/-10.71	-11.89/-8.02
Θ (110°)	-8.93/-10.79	-15.9/-10.34	-13.51/-10.53	-6.68/-7.12	-6.7/-6.22	-5.6/-4.79	-4.93/-4.86	-6.45/-8.27	-7.76/-12.4	-13.29/-14.35	-14.78/-11	-15.65/-9.87	-8.34/-6.31	-4.37/-2.5	-7.06/-5.68	-4.48/-7.01	-7.7/-9.17	-12.51/-9.17
Θ (120°)	-14.39/-12.2	-14.81/-15.11	-13.6/-9.97	-9.13/-5.26	-6.22/-6.36	-6.72/-5.49	-4.86/-5.54	-5.4/-7.79	-7.04/-8.65	-9.93/-11.81	-13.28/-10.26	-5.79/-11.62	-9.67/-11.62	-5.65/-3.3	-6.02/-7.24	-4.89/-4.42	-6.74/-6.06	-13.76/-10.99
Θ (130°)	-10.64/-15.08	-14.13/-13.89	-13.31/-12.63	-10.89/-8.15	-7.43/-6.43	-5.27/-2.84	-6.74/-5.05	-4.96/-5.01	-6.68/-9.4	-9.37/-10.56	-13.83/-14.46	-12.7/-11.71	-14.45/-11.14	-7.23/-2.89	-7.14/-8.5	-3.3/-3.7	-7.8/-6.17	-7.52/-13.81
Θ (140°)	-9.2/-12.05	-15.76/-9.79	-9.53/-12.21	-11.6/-10.64	-6.88/-7.7	-8.26/-5.23	-6.18/-6.3	-6.33/-5.68	-6.56/-6.19	-11.21/-11.83	-12.63/-9.89	-11.71/-15.83	-12.6/-12.91	-11.17/-6.6	-8.44/-10.08	-10.01/-7.27	-7.28/-9.56	-8.05/-9.35
Θ (150°)	-15.35/-11.73	-15.73/-13.03	-10.79/-8.77	-9.76/-11.29	-6.33/-9.84	-8.27/-5.68	-7.11/-7.12	-7.06/-7.67	-6.33/-9.67	-15.76/-15.71	-15.12/-13.74	-9.24/-11.74	-9.95/-7.44	-6.63/-5.69	-6.35/-8.05	-9.82/-8		
Θ (160°)	-14.64/-14.84	-15.21/-15.13	-12.74/-9.83	-8.38/-8.12	-6.68/-6.66	-5.87/-5.33	-5.43/-6.65	-7.59/-10.05	-10.52/-10.46	-11.6/-11.85	-12.12/-15.36	-13.78/-12.65	-12.35/-7.91	-5.74/-6.37	-7.96/-6.75	-8.44/-9.29	-10.07/-11.64	-11.28/-15.24
Θ (170°)	-13.82/-15.59	-14.88/-14.16	-12.89/-11.41	-9.73/-8.7	-6.95/-5.46	-5.45/-6.26	-8.81/-9.45	-10.28/-11.56	-11.69/-14.05	-14.77/-15.21	-15.72/-13.4	-11.64/-8.76	-6.05/-6.39	-6.79/-8.26	-9.64/-10.54	-12.09/-11.86	-11.97/-14.93	-14.43/-15.49
Θ (180°)	-14.32/-16.22	-13.87/-14.88	-12.28/-9.6	-10.4/-8.13	-8.38/-8.87	-8.65/-7.06	-6.96/-7.29	-11.41/-12.84	-14.52/-15.74	-15.64/-15.12	-14.61/-13	-11.74/-12.64	-11.47/-10.21	-9.63/-12.06	-9.63/-12.06	-12.71/-13.11	-13.66/-15.66	
Freq(Hz)	5.6GPol.	Theta-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG(dB)	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ (0°)	-0.95/-1.29	-1.62/-3.55	-5.37/-7.15	-8.9/-9.24	-9.07/-6.1	-3.93/-2.67	-1.83/-1.07	-0.25/-0.13	-0.05/-0.44	-0.66/-1.45	-2.69/-4.62	-7.43/-8.57	-10/-8.97	-4.43/-2.98	-1.92/-0.89	-0.13/0.14	0.2/-0.4	
Θ (10°)	-0.64/-1.9	-3.11/-4.97	-7.97/-8.51	-9.34/-7.32	-4.72/-3.92	-3.24/-2.12	-1.77/-1.41	-0.63/0.18	-0.2/-0.54	-0.38/-1.26	-3.13/-4.74	-5.89/-7.62	-8.79/-8.02	-8.4/-6.75	-5.02/-3.92	-2.78/-1.45	-0.94/-0.33	-0.49/-0.3
Θ (20°)	-1.74/-2.52	-5.03/-5.56	-6.58/-6.32	-6.6/-6.06	-4.83/-4.55	-3.97/-2.04	-1.66/-1.61	-1.76/-0.63	-1.07/-0.85	-1.39/-2.71	-3.79/-5.99	-6.55/-7.41	-8.53/-7.84	-6.92/-4.6	-2.47/-1.82	-1.31/-1.83	-2.29/-2.89	-2.28/-1.88
Θ (30°)	-1.87/-2.89	-4.24/-4.53	-5.15/-5.97	-5.56/-2.48	-1.65/-2.29	-2.73/-2.84	-0.01/-1.96	-3.44/-1.04	-0.55/-2.29	-3.62/-2.74	-3.43/-4.24	-5.65/-6.9	-5.02/-4.11	-2.56/-0.18	-0.33/-2.54	-2.39/-1.77	-2.4/-3.8	
Θ (40°)	-2.26/-1.97	-1.1/-1.79	-1.81/-2.26	-2.69/-2.59	-1.07/-1.07	-0.87/-0.65	0.13/-1.16	0.03	-2.11/-2.16	-1.61/-0.98	-0.96/-1.22	-1.75/-2.14	-3.02/-3.21	-2.22/-2.33	-1.51/-1.24	-1.7/-1.93	-0.14/-0.51	-3.18/-4.87
Θ (50°)	-1.59/-1.94	-0.67/-2.28	-3.18/-2.1	-1.63/-1.47	-1.07/-0.74	0.06/0.01	0.76/0.02	1.45/0.33	-0.86/0.04	-0.94/-1.16	0.0	-1.86/-1.85	-2.34/-3.33	-2.29/-2.21	-1.39/-1.75	-1.52/-1.19	0.34/-1.31	-1.85/-3.03
Θ (60°)	-1.96/-0.87	0.70/0.98	1.09/-0.48	0.12/-0.72	-0.09/-0.21	1.31/0.81	1.66/1.79	0.72/-0.75	0.6/-0.07	-0.38/-0.11	1.66/1.79	0.72/-1.84	-0.61/-2.34	-0.81/-0.84	-0.37/0.21	-0.46/-1.25	0.12/-2.48	
Θ (70°)	-0.15/0.93	2.92/1.85	2.38/0.33	-0.42/-0.57	1.73/2.28	2.54/2.28	2.81/0.5	0.27/-0.55	0.68/-0.34	1.83/2.48	2.78/3.28	2.34/-0.41	-0.38/-0.85	0.62/1.22	1.04/0.6	1.11/0.79	-1.1/-0.86	0.32/-0.97
Θ (80°)	0.67/2.13	2.5/0.9	1.85/-0.1	-1.73/-0.12	1.71/2.57	2.63/1.87	1.84/1.16	0.03/-0.35	0.22/-0.67	1.57/1.79	1.43/0.4	2.64/-0.53	0.46/1.5	3.04/3.39	2.65/1.81	1.73/0.34	-1.38/-0.93	-1.84/-2.08
Θ (90°)	-0.96/0.3	0.90/2.2	0.96/-0.49	-0.78/-0.32	1.19/1.73	2.24/1.18	0.72/1.06	0.25/-0.2	-1.51/-1.19	1.81/3.02	1.71/1.35	1.66/-1.35	-1.59/1.52	0.41/-0.07	-2.51/-0.76	-2.51/-0.76	-2.51/-0.76	
Θ (100°)	-2.9/-2.4	-2.75/-0.86	-0.06/-1.36	-0.82/-1.87	-0.2/-0.23	-0.07/-0.82	-0/-0.68	-0.77/-0.62	-1.38/-1.28	-0.3/-1.17	-4.2/-0.02	0.66/-0.2	-2.53/0.16	-0.31/0.67	-1.6/-0.03			



Radiated Composite Gain Data

Appendix A

Gain Result

Freq(Hz)	2.45GPol.	Phi/Ant. 1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-11.99/-8.7	-6.5/-4.81	-3.77/-3.15	-2.84/-2.54	-2.51/-3.09	-1.61/-2.5	-1.01/-9.2	-11.04/-13.2	-3.95/-5.15	-11.61/-7.86	-5.21/-4.04	-3.54/-3.21	-13.52/-15.23	-3.34/-3.81	-4.96/-6.24	-7.65/-10.02	-13.52/-15.23	-19.25/-16.79
Θ(10°)	-9.52/-7.68	-6.15/-4.68	-3.83/-3.33	-3.04/-3.04	-3.19/-3.99	-5/-6.27	-7.89/-9.71	-10.7/-10.64	-9.87/-10.51	-9.87/-7.37	-4.81/-3.46	-2.62/-2.3	-2.29/-2.57	-3.05/-3.32	-4.13/-5.3	-6.79/-9.53	-14.22/-18.26	-18.61/-13.41
Θ(20°)	-7.26/-5.86	-4.96/-4.47	-4.12/-3.94	-3.79/-3.77	-3.73/-4.07	-5.18/-6.1	-7.3/-9.21	-9.84/-8.7	-7.34/-7.09	-7.58/-6.96	-5.09/-3.49	-2.5/-2.23	-2.52/-3.23	-3.76/-4.16	-4.9/-6.01	-7.94/-11.51	-18.34/-18.79	-15.3/-9.73
Θ(30°)	-6.54/-4.57	-3.97/-4.17	-4.23/-4.32	-4/-3.55	-7.09/-3.74	-3.73/-4.07	-6.51/-8.42	-10.09/-9.34	-7.09/-5.93	-6.12/-6.68	-6.28/-5.29	-4.15/-3.47	-3.24/-4.01	-4.65/-5.41	-6.63/-8.46	-10.49/-12.58	-16.06/-17.51	-13.93/-9.77
Θ(40°)	-7.97/-5.53	-5.16/-6.01	-6.71/-5.7	-3.77/-2.84	-3.08/-4.23	-5.09/-5.74	-6.31/-7.7	-11.47/-17.78	-10.68/-6.51	-5.71/-6.68	-8.29/-8.92	-7.72/-6.21	-4.93/-4.59	-4.97/-6.07	-7.32/-8.28	-9.05/-10.12	-12.96/-18.26	-19.09/-13.41
Θ(50°)	-6.58/-5.96	-6.53/-8.34	-9.93/-8.41	-4.68/-2.75	-3.17/-5.29	-7.59/-8.36	-7.26/-7.64	-10.12/-18.96	-10.75/-6.44	-5.92/-8.71	-10.5/-10.85	-10.88/-8.64	-6.21/-4.78	-4.22/-4.81	-6.19/-6.79	-7.62/-9.7	-14.24/-18.15	-17.96/-11.21
Θ(60°)	-7.56/-5.32	-7.27/-13.74	-16.91/-11.45	-5.45/-3.03	-2.76/-4.72	-8.14/-8.81	-8.76/-9.3	-9.45/-11.97	-8.85/-5.71	-5.89/-8.65	-10.69/-11.3	-12.25/-9.39	-5.93/-3.84	-3.19/-3.83	-5.99/-8.17	-9.64/-11.54	-13.33/-12.64	-13.73/-14.11
Θ(70°)	-12.41/-7.95	-10.94/-18.47	-10.48/-9.16	-6.75/-4.4	-4.37/-6.82	-7.5/-5.66	-6.17/-7.35	-8.57/-11.73	-10.14/-6.94	-8.41/-11.53	-11.81/-11.42	-10.82/-8.6	-6.76/-6.04	-5.61/-5.77	-7.63/-8.18	-7.62/-9.37	-12.77/-13.27	-19.31/-17.9
Θ(80°)	-11.97/-8.88	-13.15/-17.13	-9.09/-8.5	-8.27/-4.98	-3.71/-5.68	-7.81/-5.94	-5.8/-5.96	-5.69/-7.78	-10.39/-9.06	-10.08/-13.99	-14.63/-12.7	-11.9/-11.9	-11.43/-8.45	-6.08/-5.67	-7.16/-8.29	-8.05/-9.99	-11.84/-10.32	-15.3/-17.74
Θ(90°)	-14.81/-8.81	-13.25/-18.99	-8.66/-7.25	-5.19/-7.33	-9.8/-8.11	-6.17/-7.03	-12.05/-16.39	-5.24/-5.4	-5.19/-7.33	-10.2/-9.52	-12.05/-16.39	-16.19/-16.41	-16.48/-14.49	-11.7/-9.57	-7.56/-6.56	-7.71/-8.12	-11.05/-11.06	-14.01/-19.07
Θ(100°)	-18.65/-10.43	-12.31/-15.1	-7.81/-7.34	-9.53/-8.05	-5.75/-8.2	-7.17/-4.55	-5.13/-5.95	-5.83/-7.73	-11.58/-13.81	-16.69/-18.01	-19.02/-17.3	-19.17/-16.25	-14.61/-11.59	-7.86/-6.64	-8.71/-11.33	-9.63/-11.2	-11.37/-9.56	-13.91/-18.15
Θ(110°)	-18.28/-11.1	-10.24/-16.7	-8.86/-7.93	-9.36/-6.79	-5.09/-7.24	-7.6/-5.63	-6.07/-6.56	-6.15/-7.06	-12.77/-18.13	-17.86/-18.4	-18.69/-19.22	-18.21/-18.26	-17.86/-15.65	-11.67/-9.03	-8.42/-7.01	-6.63/-7.58	-8.63/-9.23	-17.02/-16.99
Θ(120°)	-15.34/-9.93	-8.74/-15.91	-9.46/-8.9	-11.37/-8.82	-6.43/-7.49	-7.83/-6.44	-7.18/-7.6	-5.95/-6.74	-17.95/-18.45	-17.27/-18.59	-18.14/-18.06	-18.14/-18.06	-18.69/-15.58	-9.98/-7.79	-7.89/-10.05	-13.69/-14.08	-9.16/-5.94	-8.34/-13.5
Θ(130°)	-11.09/-8.64	-7.85/-13.64	-15.2/-10.53	-9.6/-7.74	-7.57/-10.01	-11.01/-7.96	-6.56/-6.86	-7.28/-10.49	-18.61/-18.41	-17.61/-18.09	-17.75/-16.57	-14.3/-18.87	-18.76/-13.93	-10.79/-8.8	-8.5/-8.05	-6.83/-5.98	-4.79/-4.31	-6.47/-10.61
Θ(140°)	-12.44/-9.54	-9.27/-12.63	-19.02/-15.14	-9.88/-6.6	-6.02/-7.98	-8.57/-7.69	-9.1/-12.85	-17.53/-18.96	-17.63/-17.74	-18.25/-17.22	-12.43/-17.37	-18.38/-18.33	-11.18/-9.78	-6.6/-6.88	-5.9/-6.73	-7.6/-8.39	-12.1/-17.9	
Θ(150°)	-12.09/-9.83	-10.10/-12.88	-17.86/-17.63	-13.69/-10.98	-10.52/-10.51	-10.25/-9.09	-9.69/-11.54	-11.82/-11.84	-12.39/-14.75	-13.96/-14.6	-15.47/-19.16	-17.15/-12.99	-8.71/-6.78	-6.06/-6.78	-9.4/-14.33	-18.95/-18.27	-17.91/-14.27	
Θ(160°)	-11.45/-10.55	-11.5/-14.63	-18.97/-19.32	-19.28/-17.14	-17.07/-17.68	-15.67/-12.81	-10.42/-9.21	-8.18/-7.89	-7.84/-8.66	-9.51/-10.7	-12.61/-14.8	-17.68/-16.63	-12.8/-10.56	-9.66/-8.57	-8.97/-10.71	-15.54/-18.95	-17.45/-16.91	-13.93/-12.01
Θ(170°)	-14.26/-14.27	-15.75/-19.14	-18.53/-18.9	-19.03/-18.73	-18.48/-15.67	-13.88/-12.51	-11.32/-10.59	-9.8/-8.8	-8.28/-8.25	-9.51/-11.92	-16.84/-17.78	-15.22/-13.48	-12.51/-13.65	-13.6/-13.54	-13.95/-17.67	-18.9/-17.87	-19.45/-18.16	-17.28/-15.23
Θ(180°)	-18.51/-19.44	-17.15/-19.08	-18.13/-18.84	-18.46/-19.24	-16.75/-15.1	-13.95/-14.15	-13.9/-14.27	-14.13/-13.66	-13.49/-13.47	-15.14/-18.66	-18.6/-18.51	-19.16/-18.43	-18.28/-18.49	-18.44/-18.77	-18.27/-18.92	-18.12/-16.83	-16.99/-18.52	-19.17/-18.93
Freq(Hz)	2.45GPol.	Theta/Ant. 1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-1.16/-4.61	-4.89/-4.45	-8.85/-9.2	-12.87/-15.68	-12.79/-9.65	-7.33/-5.4	-2.41/-3.06	-2.36/-2.34	-2.41/-3.06	-12.83/-9.76	-8.75/-11.27	-14.7/-15.86	-4.2/-3.38	-2.82/-2.65				
Θ(10°)	-4.98/-5.93	-6.27/-7.25	-9.2/-13.51	-17.24/-18.58	-13.4/-8.65	-7.07/-5.24	-4.01/-2.7	-2.24/-1.97	-1.73/-1.65	-1.58/-2.21	-3.01/-4.06	-4.62/-5.49	-6.37/-7.83	-9.02/-9.04	-8.02/-6.54	-5.19/-3.9	-3.15/-3.06	-3.2/-3.87
Θ(20°)	-4.3/-5.15	-5.42/-5.59	-6.12/-6.48	-8.55/-10.38	-6.12/-6.48	-1.6/-1.38	-2.06/-1.67	-1.6/-1.38	-0.93/-0.87	-1.2/-2.13	-2.87/-3.59	-3.74/-3.98	-4.4/-5.06	-5.97/-5.02	-3.61/-2.97	-2.87/-4.77		
Θ(30°)	-3.84/-4.12	-3.52/-2.43	-1.88/-1.84	-2.31/-2.84	-3.26/-3.36	-2.34/-1.99	-1.36/-1.67	-2.14/-2.49	-2.34/-1.99	-1.99/-2.48	-3.83/-3.56	-4.19/-4.18	-3.27/-3.86	-4.59/-5.11	-4.63/-3.85	-3.38/-3.15		
Θ(40°)	-2.54/-2.71	-2.51/-1.58	-1.12/-0.99	-1.04/-0.98	-0.72/-0.83	-1.44/-2.2	-2.42/-2.19	-2.68/-3.79	-5.36/-6.71	-7.11/-6.32	-5.35/-4.2	-3.51/-3.49	-4.93/-6.88	-6.63/-4.87	-3.48/-3.3	-4.16/-5.2	-6.17/-6.2	-5.39/-4.06
Θ(50°)	-3.1/-2.62	-2.19/-1.16	-0.73/-0.87	-0.73/-0.49	-0.09/-0.1	-0.54/-1.11	-0.51/-4.05	-1.66/-3.74	-6.04/-8.14	-9.38/-8.4	-6.15/-3.79	-2.04/-1.56	-2.3/-4.08	-5.6/-4.98	-3.95/-3.64	-3.8/-4.86	-6.08/-6.53	-5.74/-4.59
Θ(60°)	-5.07/-4.88	-3.91/-2.39	-1.71/-1.36	-1.03/-0.34	-4.01/-0.36	-1.02/-1.84	-0.74/-2.16	-0.70/-0.8	-4.03/-6.38	-7.89/-7.15	-4.78/-1.65	0.51/-1.27	1.27/-0.11	-2.11/-4.41	-3.87/-2.14	-1.75/-2.22	-3.38/-6.41	-4.5/-4.21
Θ(70°)	-4.53/-7.11	-6.55/-4.2	-2.76/-1.32	-0.53/-1.03	1.40/-84	-0.07/-0.89	-0.64/-0.48	-1.28/-1.39	-1.83/-3.88	-4.72/-3.3	3.48/-1.83	2.55/-1.56	-0.73/-3.5	-0.84/-1.04	-3.09/-5.19	-4.62/-4.01		
Θ(80°)	-4.11/-7.15	-11.24/-14.7	-3.96/-2.48	-2.4/-0.23	0.24/-0.34	-1.61/-2.22	-1.96/-2.55	-2.95/-1.7	-1.57/-3.84	-4.66/-3.35	-2.07/-0.34	1.14/-2.23	2.57/-1.64	-0.28/-3.01	-4.46/-2.19	-0.41/-0.28	-2.39/-5.37	-5.34/-4.2
Θ(90°)	-6.63/-8.98	-12.18/-7.24	-2.9/-2.82	-4.98/-2.89	-2.37/-2.32	-2.76/-3.39	-4/-6.08	-6.33/-3	-2.49/-4.79	-5.16/-3.33	-2.44/-1.36	-0.01/-1.1	1.75/-1.32	0.18/-2.1	-4.53/-3.14	-1.46/-1.47	-4.05/-7.24	-7.44/-6.65
Θ(100°)	-6.01/-8.03	-10.91/-5.86	-1.62/-1.77	-4.93/-5.1	-2.55/-7.32	-7.89/-6.67	-5.29/-6.26	-6.23/-3.08	-2.05/-3.94	-4.42/-3.1	-2.76/-2.69	-0.43/-1.65	-6.2/-6.48	-4.02/-7.54	-1.74/-0.2	-4.02/-5.79	-7.26/-6.21	
Θ(110°)	-5.92/-7.39	-10.59/-7.7	-3.83/-3.52	-6.82/-7.66	-6.09/-7.66	-10.14/-12.54	-11.15/-10.53	-7.82/-3.35	-2.67/-5.51	-6.14/-4.08	-3.96/-4.29	-3.4/-0.42	1.07/-0.7	-0.22/-3.01	-8.16/-6.94	-5.19/-3.81	-4.01/-5.43	-9.59/-7.7
Θ(120°)	-5.51/-5.43	-6.58/-7	-7.1/-7.97	-9.03/-11.22	-10.17/-9.22	-9.85/-11.97	-10.49/-9.26	-9.88/-4.18	-3.63/-6.3	-5.71/-3.84	-4.19/-5.35	-3.92/-0.88	-0.03/-0.29	-0.66/-2.99	-7.5/-10.42	-10.63/-8.7	-5.81/-6.13	-9.98/-7.82
Θ(130°)	-11.24/-11.79	-10.88/-10.83	-15.22/-14.72	-11.56/-11.47	-10.65/-9.01	-7.04/-7.57	-7.88/-8.39	-7.78/-7.6	-6.17/-6	-1.81/-3.93	-7.83/-11.92	-10.14/-1.53	-1.13/-11.36	-15.11/-15.36	-11.13/-11.75	-18.43/-13.17		
Θ(140°)	-19.06/-19.02	-15.57/-15.31	-19/-13.96	-10.22/-11.31	-13.31/-11.19	-10.59/-11.57	-11.7/-13.22	-15.78/-12.26	-10.48/-7.92	-6.07/-5.67	-6.03/-4.63	-2.33/-1.83	-2.62/-2.98	-3.32/-9.95	-10.58/-16.42	-14.89/-14.73	-14.69/-15.56	-18.42/-18.53
Θ(150°)	-19.38/-14.83	-11.8/-10.97	-13.74/-15.93	-14.78/-14.64	-17.98/-18.46	-18.28/-17.11	-17.22/-17.42	-15.76/-14.05	-11.89/-9.96	-9.08/-9.14	-9.04/-7.36	-5.86/-5.54	-5.51/-4.11	-4.11/-6.26	-8.52/-11.12	-12.66/-13.71	-15.24/-15.41	-16.02/-18.02
Θ(160°)	-10.25/-8.79	-8.12/-7.84	-8.9/-9.53	-10.41/-11.46	-12.27/-13.23	-14.82/-15.53	-13.56/-11.88	-10.25/-14.28	-7.16/-6.04	-6.02/-5.66	-10.03/-8.79	-5.07/-4.86	-18.39/-18	-13.39/-18	-13.39/-18	-13.39/-18	-13.51/-15.64	
Θ(170°)	-12.09/-11.36	-10.81/-10.7	-10.75/-10.78	-10.19/-10.41	-10.62/-11.33	-12.62/-14.55	-16.04/-16.25	-16.53/-15.66	-14.24/-12.17	-10.11/-8.64	-7.76/-7.73	-8.66/-10	-11.25/-11.38	-11.6/-13.36	-16.99/-18.17	-17.52/-18.2	-18.71/-18.2	-16.21/-2.83
Θ(180°)	-18.12/-19	-18.7/-19.43	-18.08/-17.31	-16.7/-16.07	-17.22/-18.86	-18.04/-18.24	-18.89/-18.64	-18.96/-18.55	-18.42/-18.95	-17.8/-17.83	-18.88/-18.2	-17.89/-18.59	-17.57/-18.96	-18.39/-19.07	-17.37/-18.77	-18.28/-18.59	-19.01/-18.8	-18.03/-18.7
Freq(Hz)	5.2GPol.	Phi/Ant. 1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-13.61/-11.33	-8.95/-8.62	-7.6/-5.98	-6.1/-4.64	-6.35/-6.58	-6.37/-7.28	-8.13/-9.18	-10.69/-10.19	-11.58/-11.96	-10.03/-10.55	-8.63/-8.04	-7.36/-7.2	-7.06/-6.83	-6.64/-6.78	-6.88/-7.59	-8.92/-10.42	-11.34/-13.76	-14.79/-13.49
Θ(10°)	-13.33/-13	-8.84/-7.81	-8.12/-7.3	-6.33/-6.81	-7.13/-8.94	-12.98/-14.47	-10.66/-9.75	-10.56/-13.04	-12.98/-14.47	-11.58/-9.3	-7.51/-6.32	-6.93/-7.99	-8.61/-8.53	-7.31/-7.49	-6.71/-7.67	-7.55/-7.85	-11.13/-11.75	-18.43/-13.17
Θ(20°)	-15.4/-10.67	-11.28/-13.93	-11.27/-9.33	-7.79/-6.37														



Radiated Composite Gain Data

Appendix A

Θ (60°)	-5.16/-3.86	-2.12/-1.4	-1.78/-3.57	-6.59/-4.14	-3.36/-2.36	-2.49/-0.31	-1.73/-0.9	-1.17/-1.55	-1.3/-1.08	-1.68/-3.02	-2.87/-1.95	-2.85/-4.09	-2.14/-3.51	-2.68/-1.18	-2.35/-1.6	-3.15/-1.29	-4.77/-6.07	-3.14/-6.06
Θ (70°)	-2.8/-0.47	0.75/-1.03	-0.37/-4.58	-6.58/-2.75	-1.16/-0.79	-0.40/4	0.470/2.5	-1.35/-1.37	-0.48/-0.61	-1.42/-3.36	-2.03/0.1	-1.79/-5.75	-0.78/-1.28	-1.99/-0.2	-1.50/2.5	-1.54/-2.2	-6.57/-6.39	-5.73/-4.79
Θ (80°)	-6.83/-1.03	0/-2.7	-1.49/-9.17	-3.99/-3.72	-0.88/-1.59	-1.12/-0.47	0.23/-0.1	-1.24/-1.22	-1.13/-1.49	-0.54/0.84	-1.35/0.69	-1.52/-4.62	-2.19/-4.37	-0.88/0.51	1.53/-2.37	1.57/-0.37	-2.19/-4.79	-5.21/-6.79
Θ (90°)	-13.36/-7.14	-4.96/-5.03	-3.02/-12.28	-8.81/-4.56	-2/-3.3	-2.91/-2.71	-1.76/-1.47	-3.53/-2.03	-1.94/-1.94	-3.3/-0.83	-0.95/0.89	-1.93/-4.99	-1.03/-0.06	-1.18/0.49	-0.74/0.91	-5.09/-1.88	-4.23/-8	-11.81/-8.27
Θ (100°)	-14.01/-12.36	-15.94/-7.97	-4.11/-7.82	-7.83/-5.15	-5.26/-5.85	-5.16/-5.17	-5.12/-3.28	-4.89/-3.06	-3.01/-2.15	-3.17/-1.6	-0.54/-0.41	-1.56/-3.46	-2.95/-1.59	-1.99/-0.54	-3.6/-1.35	-7.6/-3.63	-6.63/-10.49	-8.48/-6.55
Θ (110°)	-4.95/-6.1	-5.27/-5.69	-5.65/-10.48	-12.49/-9.18	-9.08/-10.34	-10.62/-8.69	-10.58/-6.77	-6.77/-3.96	-5.71/-3.96	-2.47/-2.42	-0.71/-1.95	-1.64/-4.14	-3.51/-2.4	-2.72/-2.05	-8.9/-4.59	-6.64/-10.27	-8.53/-4.32	
Θ (120°)	-5.01/-12.26	-6.96/-10.81	-13.76/-18.98	-16.76/-18.02	-11.03/-12.16	-16.72/-16.54	-12.16/-9.91	-7.82/-5.98	-4.38/-6.26	-2.25/-4.4	-1.13/-2.59	-1.35/-8.83	-5.91/-2.94	-3.4/-4.27	-7.81/-6.64	-5.02/-9.4	-12.22/-6.59	-13.96/-7.95
Θ (130°)	-17.95/-17.19	-19.37/-16.61	-12.18/-9.83	-10.46/-9	-9.95/-15.16	-18.76/-17.34	-15.42/-11.29	-9.25/-4.2	-8.85/-4.51	-5.95/-2.6	-2.64/-2.36	-0.32/-15.21	-11.55/-6.88	-3.28/-7	-10.36/-8.41	-4.87/-13.81	-17.81/-16.95	-16.34/-16.38
Θ (140°)	-11.4/-12.48	-10.34/-11.67	-11.71/-14.13	-17.06/-9.61	-11.98/-16.32	-17.07/-18.54	-15.6/-14.52	-10.46/-9.44	-9.09/-5.08	-5.78/-3.85	-5.11/-5.12	-5.78/-11.06	-9.31/-8.69	-6.8/-8.77	-15.93/-15.84	-10.69/-9.7	-15.77/-11.13	-14.03/-9.79
Θ (150°)	-18.91/-18.4	-15.77/-15.44	-11.87/-14.36	-18.95/-18.69	-18.22/-17.4	-19.08/-17.97	-17.79/-17.75	-14.79/-14.4	-16.78/-10.89	-8.09/-6.41	-8.71/-9.77	-5.96/-6.17	-8.01/-12.24	-10.48/-18.84	-18.15/-17.85	-15.64/-10.55	-14.67/-13.4	-17.72/-18.25
Θ (160°)	-18.05/-17.97	-16.56/-13.41	-19.07/-19.27	-17.39/-11.99	-12.45/-16.98	-17.51/-18.36	-18.15/-13.94	-12.44/-11.71	-10.35/-8.88	-8.51/-8.35	-10.61/-8.27	-7.49/-9.34	-15.71/-13.15	-9.6/-12.11	-19.3/-17.63	-18.73/-18.76	-19.02/-17.9	-18.71/-18.33
Θ (170°)	-17.91/-18.32	-15.68/-15.55	-12.45/-11.04	-11.56/-14.2	-16.57/-15.67	-18.42/-15.73	-15.32/-13.94	-11.34/-12.5	-10.07/-7.71	-8.34/-10.97	-9.73/-9.02	-10.4/-11.11	-10.31/-10.92	-14.35/-18.67	-18.73/-19.25	-16.3/-15.39	-17.71/-14.61	-14.92/-16.45
Θ (180°)	-11.78/-8.91	-10.09/-11.91	-10.75/-10.67	-13.18/-15.81	-17.72/-19.12	-18.92/-18.42	-16.44/-13.63	-11.98/-10.81	-10.58/-11.23	-9.1/-8.13	-9.37/-10.07	-11.99/-14.96	-19.94/-19.1	-19.3/-19.04	-17.8/-18.75	-17.73/-15.79	-15.51/-13.65	-13.98/-14.27
Freq(Hz)	5.6GPol.	PhiAnt. 1	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ (0°)	-11.94/-7.15	-5.92/-4.35	-2.9/-2.17	-2.31/-1.61	-1.88/-2.82	-3.64/-5.33	-7.97/-9.19	-13.86/-18.84	-17.84/-18.02	-9.32/-6.72	-6.15/-3.82	-2.94/-3.49	-2.59/-1.9	-1.51/-2.28	-3.58/-5.17	-7.07/-8.73	-10.28/-17.31	-19.11/-17.19
Θ (10°)	-6.04/-6.3	-5.46/-4.01	-3.51/-0.73	-3.05/-3.63	-4.6/-5.19	-5.06/-5.79	-6.25/-6.64	-9.21/-14.43	-18.03/-18.51	-10.97/-7.93	-4.69/-2.98	-2.65/-2.76	-2.09/-1.43	-2.54/-3.74	-5.19/-6.95	-8.59/-9.73	-10.42/-9.16	-7.76/-6.78
Θ (20°)	-13.73/-10.53	-8.4/-7.62	-6.55/-3.89	-2.82/-3.02	-4.09/-5.54	-6.9/-6.1	-11.7/-14.96	-16.01/-19.03	-2.55/-2.11	-4.49/-3.3	-2.55/-2.11	-2.76/-3.33	-4.8/-5.94	-5.97/-6.22	-7.76/-7.43	-8.4/-11.69		
Θ (30°)	-6.77/-4.24	-5.06/-8.22	-8.8/-6.7	-5.82/-5.13	-3.48/-4.03	-5.43/-5.43	-7.98/-11.82	-17.49/-17.47	-18.93/-17.74	-15.29/-12.88	-9.11/-5.53	-3.13/-1.98	-1.98/-2.93	-3.88/-3.29	-3.86/-5.11	-6.75/-7.51	-8.83/-9.76	-9.04/-10.3
Θ (40°)	-6.43/-8.95	-14.55/-12.84	-7.14/-5.34	-4.21/-5.3	-6.15/-0.68	-8.27/-8.07	-9.11/-14.22	-18.32/-16.67	-11.82/-9.44	-9.37/-9.36	-11.1/-10.46	-6.32/-3.24	-3.73/-5.91	-4.24/-3.7	-5.62/-4.75	-6.43/-4.68	-5.3/-5.57	-4.87/-6.25
Θ (50°)	-3.11/-4.44	-4.98/-11.84	-10.63/-7.3	-5.73/-6.66	-10.18/-7.47	-9.28/-13.77	-16.26/-18.22	-9.39/-7.76	-9.17/-8.41	-6.74/-8.26	-8.97/-5.87	-4.67/-6.34	-4.33/-4.37	-8.3/-10.43	-6.52/-6.31	-5.92/-1.93		
Θ (60°)	-3.46/-4.26	-3.8/-11.53	-12.88/-6.4	-8.57/-5.33	-5.67/-5.74	-6.79/-9.65	-15.39/-13.65	-14.4/-12.5	-10.91/-7.3	-8.31/-8.73	-8.23/-10.49	-9.14/-7.73	-5.46/-6.62	-8.75/-6.64	-5.91/-7.8	-8.99/-7.96	-9.03/-8.71	-5.35/-2.93
Θ (70°)	-6.11/-9.26	-6.14/-12.75	-11.42/-6.22	-12.9/-6.3	-4.81/-4.61	-7.83/-9.67	-13.29/-12.8	-16.36/-18.01	-10.35/-8.55	-10.05/-9.5	-12.93/-11.44	-11.1/-13.95	-6.76/-6.2	-7.54/-4.67	-6.55/-6.6	-6.32/-8.87	-9.51/-8.07	-7.67/-6.92
Θ (80°)	-10.18/-46	-9.54/-16.32	-12.89/-9.03	-15.39/-7.45	-6.05/-6.98	-8.96/-10.81	-12.45/-10.74	-9.1/-10.69	-13.9/-16.45	-15.12/-15.74	-7.38/-6.17	-7.22/-5.77	-13.04/-6.42	-7.68/-11.04				
Θ (90°)	-12.14/-12.95	-19.09/-17.44	-10.95/-16.16	-12.71/-6.16	-6.89/-7.61	-7.57/-9.14	-7.15/-8.51	-9.7/-13.25	-11.6/-12.64	-10.5/-12.03	-17.11/-18.99	-17.15/-14.78	-18.76/-9.12	-10.44/-8.53	-9.69/-7.18	-7.33/-9.75	-8.85/-18.43	-12.88/-14.52
Θ (100°)	-1.54/-9.91	-17.64/-13.58	-14.39/-17.29	-8.97/-7.93	-8.57/-8.81	-9.42/-8.77	-5.09/-7.91	-9.59/-12.33	-10.77/-11.46	-10.74/-11.99	-18.84/-18.89	-18.57/-19.39	-18.72/-10.64	-11.36/-6.89	-13.42/-7.17	-10.3/-16	-8.53/-17.69	-16.38/-10.67
Θ (110°)	-11.19/-11.07	-18.55/-10.19	-18.28/-14.94	-8.29/-8.57	-7.69/-7.44	-9.5/-13.21	-14.19/-16.46	-8.9/-9.3	-9.5/-13.21	-8.98/-7.71	-12.5/-7.94	-19.05/-15.2	-10.76/-12.29	-11.77/-12.69				
Θ (120°)	-18.68/-13.1	-18.38/-17.93	-15.73/-13.05	-11.4/-8.96	-9.45/-7.44	-7.87/-8.82	-7.29/-8.48	-7.89/-12.76	-10.54/-13.13	-15.52/-18.66	-14.44/-17.9	-18.42/-14.03	-19.29/-14.35	-8.81/-5.47	-11.63/-8.06	-8.14/-10.04	-8.38/-7.02	-18.82/-13.84
Θ (130°)	-10.93/-19.09	-19.17/-16.53	-14.28/-17.71	-19.14/-13.39	-12.92/-8.58	-7.65/-6.62	-9.61/-7.47	-9.19/-10.91	-8.96/-13.89	-12.99/-18.65	-18.58/-17.89	-15.02/-14.43	-16.92/-11.53	-6.21/-4.14	-12.35/-10.71	-4.21/-4.53	-11.64/-10.25	-10.09/-16.35
Θ (140°)	-9.82/-12.52	-18.7/-10.43	-11.01/-17.06	-13.62/-16.82	-12.13/-12.48	-14.48/-9.83	-10.8/-10.21	-9.49/-9.74	-14.51/-10.8	-18/-13.74	-17.92/-16.47	-18.67/-18.78	-17.96/-13.8	-11.51/-7.94	-13.57/-5.99	-8.04/-12.73	-9.06/-11.37	
Θ (150°)	-17.9/-12.4	-18.57/-17.98	-18.81/-11.84	-14.69/-18.54	-13.59/-16.24	-18.09/-11.78	-11.97/-15.78	-13.45/-14.2	-13.22/-14.79	-17.96/-14.97	-11.64/-12.85	-11.63/-8.33	-8.44/-8.52	-9.5/-9.1	-8.84/-7.98	-10.34/-9.71	-9.17/-13.84	
Θ (160°)	-17.5/-17.3	-17.92/-19.21	-18.12/-18.69	-17.93/-11.87	-12.25/-10.78	-11.45/-7.28	-7.71/-10.75	-13.5/-13.4	-12.25/-10.78	-11.77/-17.4	-17.56/-18.24	-16.83/-13.49	-13.54/-10.18	-9.62/-9.06	-11.21/-10.85	-13.27/-12.73	-14.31/-15.29	-13.02/-17.63
Θ (170°)	-16.05/-18.74	-17.83/-17.89	-14.21/-14.2	-16.14/-18.26	-15.98/-12.45	-10.2/-6.83	-9.24/-9.58	-10.46/-11.84	-12.44/-16.2	-17.72/-18.08	-18.98/-18.43	-14.72/-14.66	-11.55/-10.33	-10.59/-13.58	-18.39/-18.07	-18.42/-18.8	-17.79/-19.13	
Θ (180°)	-15.82/-19.16	-18.94/-18.52	-18.39/-15.16	-13.6/-12.2	-11.65/-9.43	-7.9/-7.93	-9.38/-9.43	-9.24/-10.23	-11.96/-13.74	-18.91/-18.5	-19.21/-17.68	-16.59/-14.94	-18.37/-16.69	-17.83/-18.91	-14.89/-14.36	-15.39/-17.12	-18.37/-17.56	-14.92/-18.32
Freq(Hz)	5.6GPol.	ThetaAnt. 1	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ (0°)	-2.76/-3.05	-3.49/-5.72	-8.94/-11.01	-15.27/-18.4	-15.18/-10.49	-7.76/-5.81	-4.63/-3.73	-2.74/-2.37	-2.03/-1.98	-2.7/-3.7	-4.47/-6.49	-8.86/-13.02	-17.41/-17.23	-13.8/-9.81	-7.63/-5.55	-4.2/-3.21	-2.12/-1.61	-1.62/-2.11
Θ (10°)	-4.94/-7.02	-8.84/-12.13	-18.83/-19.12	-15.87/-11.44	-9.09/-7.02	-6.53/-5.16	-4.17/-3.27	-2.2/-1.19	-1.88/-2.09	-1.12/-2.03	-4.14/-4.95	-6.12/-10.02	-11.89/-10.8	-12.04/-10.01	-7.19/-5.81	-4.81/-3.51	-3.72/-3.15	-3.89/-3.97
Θ (20°)	-7.59/-9.53	-18.34/-17.25	-18.43/-18.62	-17.15/-13.4	-9.94/-9.24	-9.05/-5.51	-2.4/-2.28	-1.66/-0.43	0/-0.72	-2/-4.09	-6.22/-8.18	-10.17/-10.99	-10.18/-6.89	-5.04/-5.75	-6.35/-6.86	-7.08/-7.7	-8.8/-8.87	
Θ (30°)	-10.43/-14.9	-18.73/-18.16	-17.91/-17.96	-15.89/-8.62	-5.39/-6.56	-7.2/-3.88	-2.26/-2.98	-3.2/-0.8	-0.4/-0.78	-0.79/-1.16	-2/-2.39	-4.13/-6.59	-6.49/-7.96	-4.1/-3.2	-8.89/-6.95	-7.02/-7.88	-13.09/-17.28	
Θ (40°)	-11.04/-9.33	-7.34/-8.88	-9.53/-8.62	-8.37/-9.55	-6.11/-5.95	-5.14/-3.91	-2.92/-4.35	-1.38/-0.08	-1.38/-1.87	-0.88/-0.96	-1.66/-2.35	-2.73/-3.91	-4.65/-5.09	-3.72/-4.56	-3.56/-2.9	-4.84/-5.23	-5.39/-6.84	-12.72/-15.51
Θ (50°)	-10.61/-9.06	-6.06/-10.61	-13.89/-10.57	-6.21/-6.9	-6.35/-6.42	-5.17/-2.81	-2.55/-2.35	-0.54/-1.26	-1.87/-0.43	-1.05/-2.58	-2.51/-1.55	-1.86/-3.32	-4.48/-5.59	-4.87/-4.87	-5.68/-4.2	-6.55/-4.11	-4.9/-7.25	-7.87/-13.94
Θ (60°)	-7.89/-4.64	-2.9/-3.15	-2.57/-6.81	-4.09/-7.52	-6.87/-4.48	-3.68/-0.95	-1.08/-2.2	-2.07/-1.89	-1.92/-4.14	-0.73/-0.48	-2.77/-3.06	-3.24/-3.44	-4.71/-3.17	-4.71/-2.27	-4.38/-3.05	-5.4/-7.34	-6.09/-14.68	
Θ (70°)	-3.52/-1.98	0.37/-1.39	-0.28/-5.29	-6.65/-6.67	-4.92/-2.04	-2.06/-0.34	-0.16/-1.39	-2.84/-1.25	-0.92/-1.68	-0.18/-2.4	-1.5/0.07	0.16/-3.18	-2.61/-2.15	-1.52/-1.39	-2.71/-0.51	-2.25/-3.04	-5.2/-9.23	-5.58/-6.46
Θ (80°)	-4.33/-1.29	-0.84/-2.85	-1.28/-6.67	-11.44/-5.79	-4.97/-1.35	-2.13/-1.35	-1.9/-1.89	-3.24/-1.2	-1.5/-1.69	0.06/-1.54	-2.83/0.17	-0.31/-1.84	-0.96/1.35	2.15/0.29	-1.2/-0.36	-0.45/-3.22	-5.57/-11.88	-9.98/-5.56
Θ (90°)	-9.51/-6.58	-4.05/-5.44	-4.27/-8.66	-12.94/-5.03	-2.94/-2.69	-2.28/-3.78	-2.87/-1.81	-2.99/-1.22	-2.04/-0.39	-2.74/-0.07	-1.88/-2.45	-1.31/-0.65	-1.88/-2.83	-6.39/-11.16	-9.5			



Appendix A

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Radiated Composite Gain Data

Appendix A

Θ(50°)	-17.48/-16.43	-11.76/-8.6	-8.82/-5.49	-3.98/-3.98	-4.71/-4.72	-4.29/-5.67	-5.56/-7.69	-7.99/-9.39	-8.43/-8.7	-8.33/-7.5	-9.79/-9.84	-5.87/-7.45	-8.59/-6.81	-6.36/-3.75	-4.76/-5.52	-5.71/-9.36	-9.98/-17.24	-18.98/-17.6
Θ(60°)	-18.07/-17.81	-16.26/-16.08	-12.76/-9.04	-5.39/-4.9	-9.33/-6.12	-6.69/-6.55	-6.5/-9.27	-9.7/-8.46	-8.49/-7.06	-9.57/-6.11	-9.06/-11.74	-10.63/-8.02	-10.43/-8.29	-5.95/-6.52	-5.5/-5.96	-7.96/-11.35	-17.34/-14.46	-18.04/-14.62
Θ(70°)	-19.18/-17.53	-17.82/-19.19	-13.1/-10.43	-5.96/-8.91	-11.37/-7.52	-7.12/-8.05	-7.08/-8.23	-12.3/-8.63	-9.88/-13.17	-11.88/-10.09	-11.39/-12.89	-16.42/-8.95	-12.9/-7.44	-5.99/-3.96	-5.4/-8.77	-11.7/-10.35	-13.25/-11.64	-18.53/-17.49
Θ(80°)	-13.36/-18.21	-17.76/-19.01	-15.07/-9.1	-7.66/-11.33	-15.64/-11.82	-7.84/-8.05	-10.26/-8.49	-13.7/-11.64	-12.03/-16.56	-12.18/-17.33	-15.42/-15.4	-16.03/-7.75	-13.86/-7.81	-3.27/-3.19	-5.58/-10.78	-10.68/-8.25	-14.58/-11.6	-14.26/-13.46
Θ(90°)	-12.48/-17.95	-19.27/-17.73	-17.48/-10.43	-10.5/-9.68	-17.19/-12.59	-12.19/-7.69	-8.96/-10.34	-10.93/-12.09	-14.45/-17.32	-15.59/-18.1	-18.28/-18.03	-13.46/-10.58	-11.47/-7.55	-3.54/-4.57	-8.66/-10.06	-10.36/-10.76	-10.99/-10.18	-13.12/-11.57
Θ(100°)	-12.88/-18.22	-18.73/-19.37	-15.24/-10.16	-11.18/-12.05	-14.44/-14.86	-11.73/-8.5	-12.18/-8.47	-12.01/-13.76	-13.36/-17.55	-14.64/-16.5	-13.41/-15.99	-9.91/-16.09	-7.27/-10.47	-7.01/-6.23	-9/-11.72	-8.69/-6.33	-10.14/-11	-13.63/-11.4
Θ(110°)	-12.76/-17.8	-19.28/-18.37	-15.06/-12.33	-11.37/-12.03	-12.35/-10.48	-9.64/-8.17	-11.5/-8.47	-10.05/-13.85	-12.27/-18.37	-19.08/-18.36	-16.95/-11.01	-18.29/-11.05	-7.8/-8.61	-6.03/-3.76	-8.17/-9.51	-6.7/-7.23	-10.68/-11.58	-14.07/-11.69
Θ(120°)	-16.29/-18	-17.29/-18.32	-17.6/-12.91	-12.96/-7.63	-9.02/-11.85	-12.1/-8.2	-8.5/-8.62	-8.96/-9.2	-9.58/-10.41	-10.96/-12.16	-18.65/-10.26	-19.02/-11.13	-8.97/-14.93	-8.51/-7.23	-7.04/-13.18	-7.67/-5.42	-11.38/-11.75	-15.11/-14.17
Θ(130°)	-17.64/-17.2	-15.5/-17.29	-18.99/-13.97	-10.66/-9.39	-8.51/-10.39	-8.96/-5.14	-9.89/-8.69	-6.9/-5.86	-10.48/-11.14	-11.81/-10.39	-15.4/-17.07	-16.47/-15.03	-18.04/-17.91	-17.98/-8.1	-8.4/-12.4	-9.08/-8.21	-10.06/-8.22	-11/-17.31
Θ(140°)	-15.32/-18.68	-18.85/-16.07	-14.41/-13.71	-15.72/-11.34	-8.11/-9.24	-8.93/-6.89	-7.84/-8.5	-9.2/-7.75	-6.44/-7.85	-11.59/-16.11	-13.84/-10.38	-12.01/-18.9	-13.77/-18.74	-18.88/-11.69	-11.05/-11.56	-12.5/-19.1	-13.28/-12.41	-13.67/-13.48
Θ(150°)	-18.85/-17.95	-18.91/-14.45	-10.64/-11.73	-11.2/-11.47	-12.28/-10.42	-7.51/-6.42	-8.59/-6.74	-7.64/-8.19	-6.67/-10.98	-18.75/-19.07	-18.31/-19	-12.91/-17.19	-14.54/-13.27	-11.34/-8.38	-9.79/-8.41	-9.91/-15.87	-16.33/-12.53	-15.52/-19.18
Θ(160°)	-17.81/-18.43	-18.53/-17.18	-13.89/-9.37	-7.7/-10.45	-9.4/-7.03	-18.85/-12.73	-9.23/-6.98	-8.43/-12.74	-15.03/-17.38	-18.5/-12.73	-13.24/-18.5	-16.76/-18.55	-17.67/-11.73	-7.96/-9.72	-10.74/-8.8	-9.94/-11.9	-12.01/-14.05	-15.77/-18.91
Θ(170°)	-17.69/-18.47	-17.95/-16.51	-18.23/-14.64	-10.3/-8.02	-6.58/-5.75	-7.01/-9.96	-15.52/-16.81	-17.51/-18.59	-17.75/-18.02	-17.85/-18.36	-18.49/-14.78	-14.58/-9.61	-7.13/-8.56	-9.07/-9.45	-10.11/-10.32	-12.45/-12.53	-12.53/-17.15	-17.1/-17.92
Θ(180°)	-19.17/-19.31	-15.21/-17.3	-13.01/-10.64	-13.23/-10.2	-11.14/-15.32	-18.44/-12.92	-12/-11.26	-13.54/-18.77	-17.88/-18.65	-16.34/-19.01	-18.12/-18.6	-18.8/-17.23	-15.77/-14.55	-12.07/-9.81	-9.5/-10.71	-10.58/-13.41	-13.69/-14.88	-18.37/-19.04
Freq(Hz)	5.66/Pol.	Theta/Ant. 2	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-5.39/-5.77	-5.89/-7.48	-7.85/-9.38	-9.49/-8.69	-9.8/-7.92	-6.19/-5.56	-5.06/-4.44	-3.82/-3.99	-4.24/-5.22	-4.76/-5.29	-7.14/-8.95	-8.63/-10.34	-10.1/-8.73	-8.75/-8.09	-7.26/-6.46	-5.72/-4.65	-4.3/-4.34	-4.18/-4.94
Θ(10°)	-12.53/-3.22	-4.56/-5.19	-6.93/-7.53	-9.86/-9.35	-6.55/-6.85	-5.97/-5.11	-8.74/-11.91	-5.38/-4.86	-4.77/-5.3	-13.03/-11.28	-11.72/-11.26	-10.83/-9.52	-4.18/-3.54	-9.6/-5.52	-8.96/-8.22	-6.9/-5.52	-4.18/-3.54	-3.13/-2.7
Θ(20°)	-2.62/-2.8	-3.46/-4.32	-5.3/-4.94	-5.64/-6.19	-6.15/-6.15	-5.31/-4.61	-6/-10.55	-8.04/-5.26	-7.45/-9.61	-13.77/-18.8	-18.45/-18.49	-15.05/-13.46	-13.18/-10.72	-9.68/-8.4	-5.94/-4	-2.67/-3.2	-3.83/-4.34	-2.8/-2.17
Θ(30°)	-1.52/-1.57	-2.47/-2.9	-3.68/-4.66	-4.66/-3.19	-2.72/-0.57	-5.37/-3.84	-3.82/-7.56	-11.71/-9.32	-13.37/-15.29	-18.47/-16.13	-15.99/-19.25	-18.71/-15.36	-9.9/-6.35	-6.26/-6.48	-7.35/-3.18	-2.02/-3.84	-4.04/-2.5	-1.4/-2.2
Θ(40°)	-1.84/-2.09	-1.76/-2.04	-1.78/-2.86	-3.66/-2.89	-2.44/-2.55	-2.78/-3.42	-5.01/-6.49	-11.32/-8.55	-7.12/-6.63	-7.07/-6.2	-13.24/-18.5	-16.76/-18.55	-17.67/-11.73	-7.96/-9.72	-10.74/-8.8	-9.94/-11.9	-12.01/-14.05	-15.77/-18.91
Θ(50°)	-1.08/-2.17	-1.81/-2.02	-2.17/-1.79	-3.31/-2.61	-2.29/-1.71	-1.19/-1.63	-1.96/-3.68	-2.72/-4.39	-6.48/-6.59	-8.35/-6.11	-3.54/-4.76	-9.53/-6.73	-6.31/-7.16	-5.76/-5.59	-3.28/-5.36	-2.9/-4.3	-0.89/-2.13	-2.63/-1.86
Θ(60°)	-2.79/-3.19	-1.45/-1.03	-1.31/-1.09	-1.83/-1.1	-0.48/-1.4	-0.56/-1.45	-2.52/-6.15	-4.58/-5.06	-5.17/-2.2	-1.08/-2.02	-4.24/-7.1	-6.26/-7.79	-5.02/-4.59	-2.48/-2.56	-1.9/-1.99	-2.48/-2.56	-1.9/-1.99	-0.55/-1.13
Θ(70°)	-2.81/-2.18	-0.57/-0.93	-0.99/-0.67	-1.09/-1.3	1.270/-4.1	-0.87/-1.14	-0.27/-2.58	-2.65/-6.71	-2.32/-0.1	0.870/-46	-1.58/-3.66	-4.25/-5.99	-3.36/-2.22	-1.29/-4.57	-1.59/-14.7	-3.15/-0.58	-0.53/-2.06	
Θ(80°)	-0.72/-0.49	-0.19/-1.42	-1.04/-0.59	-1/-1.1	1.270/-3.9	1.08/-0.93	-0.5/-1.81	-2.72/-6.25	-4.31/-6.26	-3.26/-0.91	-0.54/-0.11	-0.44/-5.65	-4.51/-5.8	-2.780/-47	0.41/-2.14	-2.2/-2.15	-3.350/-14	-1.65/-1.5
Θ(90°)	-0.61/-0.04	-0.53/-0.76	-0.28/-0.28	-0.19/-1.91	0.68/-0.06	0.96/-1.08	-1.32/-1.2	-2.66/-4.87	-6.38/-8.78	-6.73/-3.96	-4.82/-3.61	-1.91/-6.81	-7.47/-2.7	-2.840/-09	-0.94/-4.36	-3.38/-3.34	-4.730/-14	-1.44/-0.66
Θ(100°)	-0.92/-1.23	-1.37/-1.21	-1.07/-0.92	-1.09/-2.51	-6.75/-7.87	-0.61/-1.84	-1.82/-2.45	-3.97/-6.63	-6.4/-8.67	-14.22/-7.52	-4.28/-3.41	-8.07/-4.16	-6.3/-2.68	-4.84/-5.76	-5.54/-5.06	-6.3/-0.8	-1.96/-1.04	
Θ(110°)	-2.51/-3.82	-2/-1.26	-2.26/-2.47	-1.13/-4.08	-1.07/-1.75	-1.16/-2.53	-2.98/-3.01	-5.04/-9.04	-7.3/-5.76	-3.92/-4.69	-5.18/-6.14	-9.18/-8.04	-7.06/-12.99	-9.08/-9.28	-8.41/-8.97	-4.19/-4.76	-8.53/-3.94	-3.6/-1.39
Θ(120°)	-3.87/-5.75	-2.33/-1	-3.26/-2.45	-3.27/-4.31	-2.96/-3.35	-3.44/-3.8	-5.93/-8.78	-9.79/-9.86	-7.48/-5.72	-3.84/-3.76	-3.2/-5.78	-10.44/-14.75	-18.06/-16.45	-13.51/-15.04	-15.73/-14.64	-8.25/-7.44	-6.58/-6.41	-4.94/-2.64
Θ(130°)	-2.97/-4.09	-4.47/-4.84	-4.2/-4.25	-4.48/-5.01	-6.09/-4.9	-6.81/-6.28	-6.53/-11.82	-12.03/-15.8	-12.19/-18.77	-11.83/-10.61	-14.9/-9.26	-8.2/-7.99	-9.05/-12.17	-13.94/-15.83	-13.87/-14.88	-16.99/-10.11	-4.5/-9.93	-4.33/-4.57
Θ(140°)	-4.77/-6.92	-8.39/-6.78	-5.39/-5.78	-6.23/-6.28	-4.47/-4.79	-8.65/-9.53	-9.69/-12.96	-12.67/-13.58	-13.97/-10.58	-11.95/-7.06	-4.47/-5.04	-7.18/-5.92	-18.25/-16.28	-11.59/-18.4	-16.32/-17.86	-11.67/-13.13	-14.5/-8.42	-2.66/-2.56
Θ(150°)	-6.66/-5.98	-7.55/-7.95	-8.8/-9.79	-7.98/-6.47	-7.17/-6.97	-10/-13.7	-14.22/-13.89	-19.27/-14.86	-11.5/-13.32	-17.38/-19.16	-17.82/-10.56	-11.29/-10.97	-15.41/-18.81	-18.96/-18.66	-18.01/-11.55	-10.6/-12.52	-15.94/-8.61	-8.4/-6.46
Θ(160°)	-13.35/-19.31	-16.31/-12.14	-11.42/-8.81	-9.28/-9.98	-12.3/-16.38	-15.67/-15.39	-18.63/-17.62	-16.96/-18.52	-11.93/-14.41	-19.89/-13.24	-11.24/-10.29	-12.23/-18.4	-18.31/-18.34	-17.49/-19.04	-18.59/-13.37	-9.63/-8.74	-10.17/-10.39	-12.04/-11.49
Θ(170°)	-9.98/-10.54	-14.13/-14.46	-16.19/-16.3	-17.23/-16.84	-16.18/-18.05	-14.94/-12.35	-12.95/-15.77	-18.71/-18.63	-17.54/-18.05	-18.37/-18.47	-14.41/-12.92	-17.67/-17.48	-12.62/-16.14	-17.67/-17.48	-17.66/-16.58	-13.35/-11	-13.76/-16.21	-12.53/-19.58
Θ(180°)	-14.87/-12.98	-10.94/-12.5	-13.9/-14.05	-17.23/-17.82	-18.21/-19.03	-18.86/-18.31	-17.56/-15.99	-14.43/-13.35	-16.61/-18.06	-14.81/-11.68	-11.32/-9.88	-13.09/-15.78	-17.99/-18.11	-18.77/-18.4	-17.41/-18.33	-16.13/-14.7	-13.32/-15.31	-16.27/-13.68
Freq(Hz)	5.785G/Pol.	Phi/Ant. 2	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-7.42/-5.53	-5.06/-4.19	-3.74/-2.83	-2.82/-3.77	-2.87/-2.92	-4.5/-5.33	-6.89/-8.71	-8.81/-9.53	-10.6/-9.81	-6.2/-4.99	-4.57/-3.75	-2.89/-2.94	-2.44/-2.58	-2.48/-3.15	-4.79/-6.33	-6.34/-7.52	-10.17/-10.17	-8.77/-9.93
Θ(10°)	-6.55/-4.63	-3.15/-1.73	-1.31/-1.15	-0.7/-0.67	-1.56/-2.03	-2.84/-4.12	-5.51/-8.75	-8.73/-7.64	-7.53/-6.1	-5.51/-3.89	-2.59/-2.98	-2.33/-2.4	-2.85/-3.2	-3.81/-4.11	-4.92/-5.56	-5.74/-7.44	-9.88/-10.87	-9.77/-7.92
Θ(20°)	-16.56/-9.7	-7.14/-3.01	-2.3/-2.38	-0.94/-1.18	-1.64/-0.91	-1.08/-1.49	-5.65/-4.87	-5.81/-6.36	-5.65/-4.87	-5.75/-6.67	-4.99/-6.69	-5.31/-4.56	-4.04/-4.28	-4.95/-6.67	-5.99/-5.22	-5.39/-8.5	-14.88/-10.81	-17.46/-18.26
Θ(30°)	-13.53/-8.69	-7.69/-6.1	-3.63/-2.58	-1.73/-1.6	-2.43/-2.79	-2.7/-3.19	-3.49/-3.3	-3.07/-4.49	-5.36/-6.47	-3.43/-3.95	-5.96/-6.19	-6.55/-4.28	-3.31/-4.61	-4.81/-3.74	-5.19/-10.33	-14.2/-10.94	-11.89/-16.89	
Θ(40°)	-18.99/-16.85	-11.6/-6.65	-6.56/-4	-2.8/-3.8	-2.05/-2.92	-4.01/-3.55	-3.63/-5.3	-4.71/-5.48	-7.17/-8.57	-9.32/-7.58	-10.72/-13.1	-7.66/-5.62	-6.38/-7.55	-4.02/-2.94	-4.63/-4.01	-6.62/-7.76	-8.55/-14.07	-17.67/-15.33
Θ(50°)	-17.86/-18.83	-11.77/-10.5	-7.68/-4.82	-2.68/-3.02	-5.13/-4.24	-4.06/-4.76	-5.46/-5.51	-8.28/-13.28	-6.75/-7.18	-4.88/-5.59	-6.28/-13.28	-6.7/-5.31	-6.52/-5.94	-4.88/-2.66	-3.18/-4.19	-6.99/-8.89	-11.51/-18.31	-17.83/-16.4
Θ(60°)	-15.32/-16.98	-18.46/-19.01	-12.09/-7.97	-4.85/-4.28	-7.25/-6.53	-6.76/-6.24	-6.51/-7.26	-8.53/-8.85	-6.97/-7.44	-8.73/-4.46	-6.62/-10.01	-10.12/-8.72	-8.83/-9.09	-7.03/-4.51	-5.27/-5.83	-9.32/-11.44	-13.94/-15.72	-13.39/-16.56
Θ(70°)	-11.97/-18.38	-18.31/-18.38	-13.04/-7.67	-6.72/-7.09	-8.95/-11.87	-8.02/-7.72	-10.33/-6.62	-12.15/-11.35	-9.81/-10.91	-10.61/-8.29	-10.09/-10.92	-13.97/-7.5	-10.45/-6.45	-5.85/-4.32	-5.78/-8.7	-14.86/-10.82	-10.18/-12.58	-15.38/-13.51
Θ(80°)	-11.1/-17.84	-18.92/-18.53	-13															



Total Gain Data

Freq(Hz)	2.45G/Pol.	Total/Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)Φ(10°)	Φ(20°)Φ(30°)	Φ(40°)Φ(50°)	Φ(60°)Φ(70°)	Φ(80°)Φ(90°)	Φ(100°)Φ(110°)	Φ(120°)Φ(130°)	Φ(140°)Φ(150°)	Φ(160°)Φ(170°)	Φ(180°)Φ(190°)	Φ(200°)Φ(210°)	Φ(220°)Φ(230°)	Φ(240°)Φ(250°)	Φ(260°)Φ(270°)	Φ(280°)Φ(290°)	Φ(300°)Φ(310°)	Φ(320°)Φ(330°)	Φ(340°)Φ(350°)
Θ(0°)	-3.50/-3.18	-2.60/-2.11	-2.03/-2.19	-2.43/-2.33	-2.12/-2.22	-2.34/-2.26	-2.24/-2.11	-1.81/-2.00	-2.26/-2.53	-2.74/-2.72	-2.58/-2.24	-2.40/-2.58	-2.51/-2.88	-2.46/-2.83	-2.58/-2.73	-2.58/-2.53	-2.46/-2.48	-2.75/-15.13
Θ(10°)	-3.67/-3.71	-3.20/-2.77	-2.72/-2.93	-2.88/-2.92	-2.79/-2.95	-2.90/-2.71	-2.52/-1.91	-1.66/-1.42	-1.11/-1.12	-0.98/-1.05	-0.81/-0.74	-0.50/-0.60	-0.86/-1.44	-2.07/-2.29	-2.64/-2.87	-2.91/-2.85	-2.82/-2.93	-3.08/-3.41
Θ(20°)	-2.52/-2.48	-2.17/-1.98	-2.00/-2.18	-2.54/-2.19	-2.89/-2.89	-3.01/-2.84	-2.35/-1.87	-1.39/-0.88	-0.57/-0.35	-0.08/-0.09	0.29/0.25	0.33/0.15	-0.08/-0.58	-1.06/-1.58	-2.24/-3.08	-3.83/-4.14	-3.47/-2.86	-2.63/-2.56
Θ(30°)	-1.97/-1.33	-0.73/-0.20	0.11/0.10	-0.06/-0.17	-0.93/-0.89	-0.82/-1.10	-1.18/-0.94	-0.81/-0.98	-0.93/-0.87	-0.82/-0.72	-0.62/-0.65	-0.51/-0.47	-0.68/-1.08	-1.19/-1.38	-1.62/-2.57	-3.60/-4.39	-4.33/-3.67	-3.01/-2.29
Θ(40°)	-1.45/-0.88	-0.63/-0.24	-0.06/-0.27	0.82/1.20	1.27/0.80	0.12/0.61	-0.93/-1.11	-2.14/-3.62	-4.24/-3.60	-3.34/-3.49	-3.57/-2.94	-2.11/-1.63	-1.92/-2.58	-2.71/-2.42	-1.98/-2.10	-2.94/-3.99	-5.34/-5.94	-5.21/-3.58
Θ(50°)	-1.49/-0.97	-0.83/-0.40	-0.24/-0.17	0.74/1.54	1.65/1.13	0.24/-0.36	0.32/0.31	-1.08/-3.61	-4.78/-4.20	-4.30/-5.54	-4.79/-3.01	-1.51/-0.78	-0.82/-1.41	-1.85/-1.88	-1.92/-1.72	-2.29/-3.63	-5.46/-6.24	-5.49/-3.73
Θ(60°)	-3.13/-2.08	-2.26/-2.08	-1.58/-0.95	0.31/1.53	1.77/1.00	-0.25/-1.04	-0.07/0.55	-0.19/-1.73	-2.79/-3.02	-3.77/-4.83	-3.79/-1.20	0.73/1.63	2.03/1.58	0.39/-1.10	-1.79/-1.17	-1.10/-1.74	-2.94/-3.98	-4.01/-3.79
Θ(70°)	-3.87/-4.50	-5.20/-4.04	-2.08/-0.66	0.40/2.12	2.42/1.53	0.65/0.36	0.43/0.33	-0.54/-1.01	-1.25/-2.14	-3.17/-2.69	-1.06/0.97	2.34/2.94	3.03/2.26	0.49/-1.48	-2.07/-0.92	-0.01/-0.44	-2.65/-4.56	-4.47/-3.84
Θ(80°)	-3.45/-4.92	-9.08/-7.02	-2.80/-1.51	-1.40/-1.02	1.71/0.77	-0.68/-0.68	-0.46/-0.92	-1.10/-0.74	-1.03/-2.70	-3.56/-2.99	-1.84/-0.09	1.35/2.39	2.74/2.05	0.73/-1.13	-2.59/-1.36	0.28/0.16	-1.92/-4.16	-4.92/-4.01
Θ(90°)	-6.02/-5.88	-9.67/-6.91	-1.88/-1.48	-3.74/-1.75	-0.86/-1.06	-1.06/-0.89	-1.57/-2.72	-2.71/-1.64	-1.81/-3.53	-4.35/-3.12	-2.26/-1.23	0.09/1.23	1.94/1.66	0.86/-0.77	-2.82/-1.98	-0.52/-0.71	-3.26/-5.77	-6.58/-6.41
Θ(100°)	-5.78/-6.06	-8.54/-5.37	-0.68/-0.71	-3.64/-3.32	-2.48/-4.73	-4.50/-2.47	-2.20/-3.09	-3.02/-1.80	-1.59/-3.51	-4.17/-2.96	-2.66/-2.54	-1.66/-0.09	1.50/1.52	1.03/-0.45	4.27/-5.25	-2.97/-2.20	-3.29/-4.23	-6.41/-5.94
Θ(110°)	-5.67/-5.85	-7.40/-7.28	-2.64/-2.18	-4.90/-4.19	-2.55/-4.15	-5.68/-4.82	-4.90/-4.95	-3.89/-1.81	-2.27/-5.28	-5.86/-3.92	-3.82/-4.15	-3.26/-0.35	1.13/0.80	0.08/-2.04	-5.28/-3.96	-2.84/-2.29	-2.72/-3.92	-8.87/-7.22
Θ(120°)	-5.08/-4.11	-4.52/-6.47	-5.11/-5.40	-7.03/-6.85	-4.90/-5.26	-5.46/-5.37	-5.52/-5.34	4.47/-2.26	-3.07/-6.01	-5.46/-3.69	-3.98/-5.15	-0.73/-0.80	0.03/-0.16	-0.18/-1.75	-4.68/-7.42	-8.89/-7.59	-4.16/-3.02	-6.07/-6.78
Θ(130°)	-8.15/-6.93	-6.10/-9.00	-12.20/-9.13	-7.46/-6.21	-5.83/-6.47	-6.17/-5.16	-3.78/-4.19	-5.66/-6.02	-7.44/-7.25	-5.87/-5.74	-7.45/-7.51	-3.19/-1.30	-0.97/-1.29	-1.29/-2.71	-5.20/-6.56	-6.23/-5.51	-3.88/-3.59	-6.20/-8.69
Θ(140°)	-11.58/-9.08	-8.36/-10.76	-16.00/-11.50	-6.88/-5.43	-5.28/-6.01	-6.38/-6.20	-5.28/-6.12	-13.56/-11.42	-9.71/-7.49	-5.81/-5.38	-5.71/-3.96	-1.93/-1.71	-2.51/-2.86	-2.66/-3.86	-5.14/-5.51	-6.82/-6.09	-6.82/-7.63	-11.19/-15.19
Θ(150°)	-11.38/-8.64	-7.70/-8.81	-12.32/-13.69	-11.18/-9.43	-9.80/-10.21	-9.62/-8.45	-8.98/-9.85	-10.35/-9.80	-9.12/-8.72	-8.56/-8.69	-8.44/-6.61	-5.41/-5.42	-2.82/-3.50	-4.11/-5.36	-7.72/-11.00	-13.70/-13.58	-13.85/-12.74	
Θ(160°)	-7.80/-6.57	-6.48/-7.01	-8.49/-9.10	-9.88/-10.42	-11.03/-11.90	-12.21/-10.95	-9.19/-6.03	-7.07/-6.43	-5.90/-5.71	-5.17/-4.76	-4.37/-4.44	-4.70/-5.33	-5.19/-4.17	-4.32/-4.90	-6.46/-9.08	-13.72/-15.44	-14.83/-13.79	-10.70/-8.76
Θ(170°)	-10.03/-9.57	-9.60/-10.12	-10.08/-10.16	-9.66/-9.81	-9.96/-9.67	-10.19/-10.40	-10.06/-9.55	-8.96/-7.99	-7.30/-6.77	-6.79/-6.97	-7.25/-7.32	-7.79/-8.39	-8.82/-9.36	-9.48/-10.44	-12.20/-14.90	-15.15/-15.02	-16.05/-15.17	-13.70/-10.86
Θ(180°)	-15.30/-16.20	-14.85/-16.24	-15.09/-15.00	-14.48/-14.36	-13.97/-13.57	-12.52/-12.72	-12.70/-12.92	-12.90/-12.44	-12.28/-12.39	-13.26/-15.21	-15.73/-15.34	-15.47/-15.50	-14.90/-15.71	-15.40/-15.91	-14.79/-15.83	-15.19/-14.61	-14.87/-15.65	-15.55/-15.80
Freq(Hz)	5.2G/Pol.	Total/Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(10°)	Φ(20°)Φ(30°)	Φ(40°)Φ(50°)	Φ(60°)Φ(70°)	Φ(80°)Φ(90°)	Φ(100°)Φ(110°)	Φ(120°)Φ(130°)	Φ(140°)Φ(150°)	Φ(160°)Φ(170°)	Φ(180°)Φ(190°)	Φ(200°)Φ(210°)	Φ(220°)Φ(230°)	Φ(240°)Φ(250°)	Φ(260°)Φ(270°)	Φ(280°)Φ(290°)	Φ(300°)Φ(310°)	Φ(320°)Φ(330°)	Φ(340°)Φ(350°)
Θ(0°)	-5.34/-5.36	-5.13/-5.84	-5.25/-4.59	-5.14/-5.84	-5.77/-5.57	-5.02/-5.65	-5.59/-4.83	-5.77/-5.57	-5.87/-5.78	-5.55/-4.74	-5.66/-6.37	-5.08/-5.67	-5.34/-5.31	-5.08/-5.07	-5.08/-5.07	-5.08/-5.07	-5.08/-5.07	-5.08/-5.07
Θ(10°)	-6.44/-5.96	-4.89/-5.92	-6.89/-6.58	-6.06/-6.29	-6.19/-7.33	-7.22/-6.81	-5.64/-4.51	-3.75/-2.91	-2.69/-3.15	-1.97/-2.37	-4.34/-3.89	-3.06/-4.67	-4.95/-4.21	-4.58/-4.59	-5.30/-5.08	-4.37/-4.12	-4.07/-4.20	-4.65/-5.88
Θ(20°)	-13.64/-9.98	-10.40/-12.29	-10.48/-8.82	-7.43/-6.03	-5.47/-10.50	-7.32/-6.66	-4.36/-3.22	-1.78/-2.43	-3.51/-4.62	-3.38/-2.20	-3.71/-2.95	-2.31/-2.83	-3.49/-2.71	-2.81/-3.13	-5.11/-5.49	-4.85/-6.43	-4.90/-6.75	-8.23/-10.79
Θ(30°)	-5.01/-5.63	-9.39/-13.09	-11.90/-10.48	-8.89/-6.62	-4.24/-2.85	-3.21/-4.19	-3.46/-2.25	-2.99/-5.81	-1.29/-3.29	-2.14/-4.09	-3.34/-1.89	-0.52/-0.15	0.86/-0.22	-2.61/-4.17	-3.46/-5.41	-4.36/-4.51	-7.39/-8.20	
Θ(40°)	-5.71/-5.92	-4.66/-6.01	-6.33/-4.65	-4.23/-4.46	-4.19/-3.79	-2.65/-3.14	-3.23/-2.98	-4.30/-2.71	-1.53/-2.26	-2.38/-2.41	-3.28/-2.33	-2.60/-3.25	-0.80/-1.74	-2.34/-4.08	-1.65/-0.29	-0.80/-0.81	-0.32/-1.11	-5.13/-6.30
Θ(50°)	-4.50/-7.11	-5.93/-7.75	-7.09/-4.40	-5.02/-5.38	-3.84/-5.19	-3.31/-3.11	-2.41/-2.83	-2.67/-1.37	-2.90/-4.82	-2.96/-1.59	-2.89/-2.02	-1.02/-3.15	-2.78/-1.18	-2.26/-3.60	-0.48/-1.04	-2.98/-1.28	-0.99/-1.67	-3.03/-2.84
Θ(60°)	-2.72/-2.82	-1.87/-2.78	-2.00/-1.73	-4.92/-4.60	-1.61/-1.24	-0.95/-1.30	-0.79/-1.79	-1.44/-1.83	-2.73/-2.56	-2.53/-2.13	-0.23/-2.21	2.27/-1.68	-0.59/-1.20	-0.47/-0.51	-2.18/-0.33	2.05/-2.38	-1.77/-1.53	
Θ(70°)	-3.31/-0.95	0.22/-0.89	0.58/-3.47	-5.44/-3.26	0.04/0.10	0.61/-0.13	0.87/-0.31	-0.72/-2.29	-1.91/-1.26	-1.82/-1.06	-2.05/-1.90	-1.67/-4.09	-1.88/-0.64	-0.14/-2.03	0.68/0.74	-0.44/-0.57	-3.09/-2.40	-2.47/-2.21
Θ(80°)	-7.14/-2.42	-1.08/-1.29	-0.55/-2.87	-6.39/-2.96	-0.07/-0.21	0.06/-0.05	0.57/0.10	-1.07/-1.29	-1.46/-0.36	-2.76/-0.83	-2.54/0.14	-2.28/-4.92	-0.36/0.18	2.13/3.09	2.07/1.23	0.36/0.40	-1.03/-2.96	-6.52/-6.36
Θ(90°)	-12.62/-6.27	-6.07/-3.68	-2.22/-6.77	-4.70/-3.83	-0.83/-1.43	-1.20/-1.35	-0.63/-1.26	-2.13/-1.52	-2.59/-0.66	-3.92/-0.25	-1.56/0.80	-2.40/-5.49	-0.74/-0.70	-0.79/-1.51	0.16/1.44	-0.87/-0.35	-1.97/-6.18	-11.35/-8.36
Θ(100°)	-14.36/-11.23	-11.09/-7.16	-4.35/-4.30	-3.83/-3.71	-2.81/-2.67	-3.82/-2.47	-2.65/-2.20	-3.48/-2.49	-3.82/-1.12	-3.57/-0.46	-0.91/-0.65	-1.50/-4.63	-3.22/-2.27	-1.80/-0.13	-3.04/0.32	-4.07/-3.50	-3.66/-6.36	-9.89/-8.80
Θ(110°)	-7.87/-6.15	-4.44/-5.92	-5.29/-5.63	-7.36/-5.76	-4.01/-3.74	-4.58/-3.70	-3.44/-3.48	-5.70/-4.07	-5.24/-2.62	-3.83/-1.49	-1.07/-2.35	-1.63/-3.63	-5.50/-1.43	-1.67/-1.63	-4.46/-1.04	-6.57/-5.83	-5.16/-9.21	-12.90/-3.18
Θ(120°)	-6.40/-7.58	-5.20/-9.66	-8.59/-16.16	-7.21/-6.67	-6.10/-6.44	-6.44/-6.47	-7.30/-6.23	-5.69/-5.73	-3.97/-5.44	-2.68/-2.80	-1.67/-3.04	-1.13/-8.43	-8.18/-1.78	-2.00/-2.32	-3.49/-2.38	-3.76/-2.80	-5.54/-4.38	-9.86/-5.60
Θ(130°)	-12.94/-12.67	-14.78/-12.22	-8.39/-8.55	-6.36/-8.51	-6.46/-9.09	-6.36/-7.90	-6.51/-3.19	-5.23/-2.13	-6.51/-3.19	-5.23/-2.13	-6.51/-3.19	-6.22/-5.192	-0.69/-10.71	-1.03/-4.40	-3.40/-2.32	-3.25/-4.06	-5.70/-9.12	-8.30/-11.48
Θ(140°)	-9.16/-12.07	-8.83/-9.39	-10.38/-13.04	-15.43/-10.68	-9.98/-12.43	-9.74/-13.48	-10.97/-9.31	-6.80/-8.27	-8.43/-5.57	-4.74/-4.03	-6.14/-4.50	-4.64/-11.37	-9.36/-8.45	-3.79/-4.47	-9.08/-8.74	-7.87/-4.24	-8.02/-11.11	-9.93/-7.81
Θ(150°)	-15.73/-11.70	-10.72/-12.96	-11.85/-8.76	-12.28/-15.99	-15.17/-10.99	-11.23/-12.47	-8.72/-9.26	-11.25/-9.27	-9.21/-9.55	-7.26/-6.51	-8.88/-7.92	-6.22/-6.11	-6.19/-6.59	-9.14/-10.09	-10.55/-8.78	-8.01/-8.42	-11.02/-11.12	-9.98/-15.95
Θ(160°)	-13.51/-13.71	-14.74/-11.08	-11.64/-14.53	-11.95/-11.05	-7.86/-8.38	-6.94/-7.10	-7.72/-7.98	-7.85/-6.75	-7.40/-8.23	-6.20/-6.48	-7.39/-9.41	-7.77/-7.81	-10.96/-8.94	-7.39/-9.41	-12.95/-15.84	-12.96/-10.21	-9.62/-13.59	
Θ(170°)	-15.53/-15.59	-15.74/-13.31	-11.49/-9.35	-8.42/-9.17	-11.30/-11.66	-10.25/-7.75	-6.61/-6.71	-6.47/-7.04	-7.59/-10.25	-10.23/-9.71	-10.98/-11.47	-9.90/-10.22	-9.37/-8.51	-9.05/-11.97	-13.92/-15.10	-15.38/-13.82	-12.80/-12.06	-11.96/-12.48
Θ(180°)	-9.38/-9.65	-9.77/-10.04	-10.75/-10.77	-11.08/-10.03	-10.28/-9.85	-10.10/-9.34	-8.66/-9.35	-9.58/-9.42	-8.59/-8.78	-9.61/-9.82	-9.12/-9.32	-10.76/-11.07	-12.05/-14.28	-15.57/-15.61	-13.75/-13.36	-13.30/-14.08	-13.96/-12.24	-11.63/-11.79
Freq(Hz)	5.3G/Pol.	Total/Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(10°)	Φ(20°)Φ(30°)	Φ(40°)Φ(50°)	Φ(60°)Φ(70°)	Φ(80°)Φ(90°)	Φ(100°)Φ(110°)	Φ(120°)Φ(130°)	Φ(140°)Φ(150°)	Φ(160°)Φ(170°)	Φ(180°)Φ(190°)	Φ(200°)Φ(210°)	Φ(220°)Φ(230°)	Φ(240°)Φ(250°)	Φ(260°)Φ(270°)	Φ(280°)Φ(290°)	Φ(300°)Φ(310°)	Φ(320°)Φ(330°)	Φ(340°)Φ(350°)
Θ(0°)	-4.73/-4.48	-4.60/-4.16	-4.50/-4.80	-4.82/-4.71	-4.75/-4.69	-4.97/-4.92	-5.07/-5.06	-4.35/-4.73	-4.46/-4.47	-4.94/-4.61	-4.87/-5.63	-5.00/-4.72	-4.82/-4.76	-5.13/-5.53	-5.61/-5.34	-5.04/-4.67	-4.28/-4.54	-5.13/-4.68
Θ(10°)	-4.26/-4.65	-5.22/-4.90	-5.43/-5.85	-6.54/-6.37	-6.08/-5.87	-6.20/-3.92	-6.70/-3.92	-5.29/-3.04	-6.08/-5.29	-5.51/-5.25	-2.69/-3.96	-5.40/-4.38	-4.81/-6.18	-6.02/-5.68	-5.51/-5.55	-5.38/-4.07	-3.78/-4.26	-4.08/-3.48
Θ(20°)	-10.64/-10.99	-11.08/-10.45	-9.34/-8.71	-7.12/-4.52	-3.69/-3.95	-4.72/-5.18	-3											



Antenna Pattern

Appendix B

Θ(70°)	-2.63/-2.43	-0.12/-1.74	1.93/2.89	1.66/2.15	-0.21/-2.81	-3.21/-2.47	-2.85/-2.17	-0.87/-2.05	-2.25/-2.27	-3.00/-4.03	-5.04/-4.78	-2.27/0.09	1.27/1.95	2.46/2.71	2.15/0.28	-1.17/-0.99	-1.38/-2.16	-2.43/-2.20
Θ(80°)	-2.98/-2.21	0.25/-1.81	1.51/2.77	2.31/-1.77	-0.74/-0.43	-5.00/-3.19	-2.18/-2.53	-1.58/-3.00	-3.14/-2.85	-4.19/-5.23	-6.29/-6.25	-2.77/-0.02	0.81/0.74	0.95/-1.26	1.05/-0.78	-2.69/-2.32	-2.44/-3.73	-3.38/-3.35
Θ(90°)	-4.65/-3.95	-1.79/-1.35	1.63/2.08	1.73/0.98	-1.86/-4.69	-4.97/-2.83	-2.08/-4.55	-3.97/-4.34	-3.18/-2.69	-4.52/-5.58	-7.25/-7.83	-2.79/-0.16	-0.19/-0.57	-1.14/-1.30	-0.68/-1.64	-2.91/-3.79	-3.78/-6.37	-4.68/-5.33
Θ(100°)	-4.43/-2.76	-1.02/-1.34	2.14/2.15	1.83/0.37	-1.84/-3.40	-3.83/-3.34	-3.88/-6.56	-2.36/-2.50	-2.62/-3.20	-6.17/-5.79	-6.68/-6.95	-2.35/-0.44	-0.62/-0.29	-1.17/-2.94	-3.01/-4.12	-4.16/-4.51	-3.25/-5.08	-5.15/-4.61
Θ(110°)	-3.97/-3.76	-1.50/0.18	0.20/0.09	0.16/-0.24	-1.27/-3.06	-5.58/-4.64	-3.82/-3.93	-1.76/-3.95	-4.15/-5.68	-8.05/-5.16	-4.48/-4.75	-2.46/-2.32	-3.51/-3.16	-2.40/-2.99	-3.02/-4.53	-6.25/-6.51	-4.41/-3.71	-4.46/-3.61
Θ(120°)	-2.72/-3.60	-2.68/-0.46	-0.36/-0.72	-0.16/-0.20	-1.36/-3.35	-3.76/-2.54	-3.87/-6.27	-6.44/-7.71	-6.03/-6.61	-9.32/-7.47	-5.07/-5.63	-4.54/-4.69	-7.95/-7.51	-5.30/-5.79	-4.27/-4.36	-6.46/-9.61	-8.49/-5.05	-4.56/-3.63
Θ(130°)	-3.52/-4.09	-5.00/-4.06	-2.89/-2.85	-2.87/-2.45	-2.74/-3.61	-4.74/-6.10	-7.59/-7.22	-5.64/-4.74	-5.63/-7.21	-10.41/-9.90	-8.60/-11.29	-10.70/-10.32	-9.92/-7.31	-6.58/-7.40	-7.37/-6.52	-6.48/-7.75	-8.20/-6.65	-6.28/-4.97
Θ(140°)	-4.36/-3.48	-3.64/-3.09	-1.82/-0.72	-0.72/-1.65	-3.59/-5.59	-6.59/-5.41	-4.65/-4.79	-5.33/-6.95	-9.61/-10.46	-11.37/-9.87	-10.35/-13.01	-13.98/-16.00	-14.40/-8.96	-7.36/-10.13	-11.32/-9.19	-7.95/-7.48	-7.17/-6.55	-6.49/-5.83
Θ(150°)	-8.01/-7.64	-6.64/-5.21	-4.38/-4.17	-4.56/-5.85	-6.37/-5.51	-4.47/-3.82	-3.99/-4.93	-6.77/-10.27	-13.37/-11.50	-8.94/-7.38	-6.79/-7.70	-9.04/-10.52	-10.09/-13.61	-13.12/-8.65	-6.32/-5.70	-5.70/-5.77	-6.28/-7.58	
Θ(160°)	-6.01/-5.62	-4.57/-3.31	-2.76/-2.80	-3.08/-3.02	-2.52/-2.25	-2.52/-3.31	-4.56/-6.53	-9.70/-14.69	-14.28/-10.94	-7.83/-5.80	-4.87/-4.41	-5.07/-6.28	-7.17/-7.87	-9.40/-11.65	-10.45/-7.75	-6.23/-5.40	-5.44/-5.48	-5.53/-5.71
Θ(170°)	-6.13/-5.54	-4.89/-4.10	-4.06/-4.35	-4.64/-4.74	-4.95/-5.36	-5.89/-6.88	-8.23/-10.72	-13.30/-15.39	-15.62/-14.26	-12.03/-10.10	-8.70/-8.61	-9.45/-11.28	-11.84/-11.26	-10.76/-11.32	-10.21/-8.78	-7.93/-7.29	-6.87/-6.68	-6.58/-6.49
Θ(180°)	-9.73/-9.79	-10.45/-10.69	-12.36/-13.92	-15.15/-15.13	-15.36/-15.00	-16.03/-15.33	-13.98/-12.87	-12.97/-13.55	-14.62/-15.65	-15.26/-16.26	-15.20/-15.31	-14.07/-13.24	-12.54/-11.34	-10.53/-10.42	-9.91/-9.65	-9.29/-8.73	-8.58/-9.17	-9.09/-9.27
Freq(Hz)	5.2GPol.	Total/Ant. 2	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-7.34/-6.72	-5.70/-7.44	-6.73/-5.80	-7.37/-7.03	-6.45/-6.70	-6.92/-6.81	-6.74/-6.66	-6.36/-6.41	-6.95/-7.25	-7.21/-6.61	-7.87/-6.57	-6.64/-7.63	-6.54/-6.72	-6.84/-7.61	-6.84/-7.61	-7.16/-6.44	-6.53/-6.99	-6.46/-5.73
Θ(10°)	-3.29/-3.93	-2.89/-2.02	-2.69/-1.89	-1.64/-2.56	-2.41/-3.06	-3.61/-3.27	-3.14/-3.00	-2.79/-3.00	-3.71/-4.62	-4.92/-6.62	-8.98/-9.83	-10.13/-10.47	-10.48/-9.83	-8.98/-7.86	-7.17/-7.04	-7.48/-6.69	-6.57/-6.35	-5.82/-4.43
Θ(20°)	-2.85/-4.27	-3.54/-1.92	-2.18/-1.81	-1.31/-2.00	-2.17/-2.35	-3.30/-3.13	-3.16/-3.18	-3.44/-3.26	-3.15/-5.39	-7.38/-10.69	-11.13/-10.13	-10.17/-10.30	-8.20/-8.28	-8.08/-8.30	-7.97/-5.96	-4.02/-2.77	-2.89/-3.34	-4.17/-3.94
Θ(30°)	-2.59/-1.68	-1.70/-2.02	-1.85/-2.07	-1.86/-1.20	-1.55/-1.38	-0.57/-0.91	-3.81/-4.47	-7.92/-7.40	-7.46/-11.86	-6.18/-4.78	-14.15/-13.51	-14.15/-13.51	-9.08/-7.18	-6.18/-4.78	-0.08/-0.78	-4.62/-2.29	-2.68/-4.02	-6.28/-7.28
Θ(40°)	-4.30/-2.66	-1.79/-1.74	-1.35/-1.29	-1.64/-0.52	0.48/-0.21	0.21/-0.14	-1.06/-0.88	-2.38/-5.24	-5.85/-5.02	-5.32/-6.73	-5.33/-4.47	-5.25/-6.10	-6.71/-7.66	-7.64/-4.36	-1.22/-3.06	-2.04/-1.42	-3.97/-4.23	-1.61/-1.12
Θ(50°)	-2.50/-1.61	-1.49/-0.15	-0.40/-0.83	-0.66/-0.70	1.35/-1.41	-0.44/-0.66	-1.23/-1.08	-1.69/-3.43	-3.58/-5.54	-4.96/-4.78	-4.36/-5.11	-5.87/-6.82	-6.36/-6.07	-4.22/-3.44	-1.31/-1.70	-1.77/-2.50	-4.90/-1.35	-1.41/-1.53
Θ(60°)	-1.95/-1.46	-0.92/-0.41	-0.36/-0.07	-0.16/-0.31	-2.23/-1.62	1.71/-1.81	-0.24/-1.12	-1.45/-0.45	-0.61/-2.05	-0.24/-1.39	-2.97/-2.02	-0.42/-3.51	-5.94/-4.74	-2.98/-1.29	-1.47/-0.41	-1.37/-1.72	-2.98/-4.21	-2.86/-2.40
Θ(70°)	-0.37/-2.73	-1.80/0.40	0.11/-0.29	0.88/0.63	0.67/-1.51	-0.16/-1.04	-1.03/-0.30	-3.42/-4.95	-0.29/-1.10	0.58/-1.75	1.17/-1.49	-4.81/-3.76	-1.97/-0.04	0.09/0.07	-1.44/-1.89	-3.27/-2.58	-2.46/-0.48	
Θ(80°)	-0.90/-2.46	-0.80/0.70	-0.35/-0.02	0.82/0.44	-4.88/-8.80	-0.31/-0.39	-0.57/-0.12	-1.15/-0.74	-8.88/-8.56	-3.28/-0.68	0.52/-1.11	0.38/-2.00	-3.53/-1.95	-0.302.00	1.61/0.51	-2.14/-1.80	-2.35/-2.85	-2.96/-4.04
Θ(90°)	-0.20/-1.36	-0.60/0.58	0.49/0.21	0.23/-0.11	0.40/-0.04	-0.60/-0.05	-1.75/-0.45	-2.70/-2.41	-6.14/-10.32	-0.30/-4.12	-4.31/-1.48	-1.73/-4.06	0.62/-1.47	-2.51/-2.09	-1.84/-3.51	-3.41/-1.03		
Θ(100°)	-1.05/-2.18	-1.30/0.15	0.13/-0.16	-0.44/-0.19	-0.29/-0.59	-1.14/-1.21	-1.84/-2.35	-4.18/-2.58	-4.54/-7.37	-9.74/-9.82	-9.15/-5.21	-6.98/-3.47	-3.44/-3.09	-2.11/-2.16	-2.14/-3.86	-4.42/-2.22	-2.29/-1.87	-2.84/-1.07
Θ(110°)	-2.19/-2.49	-1.62/-0.13	-0.11/-1.35	-1.44/-0.50	-1.53/-1.20	-1.66/-1.92	-1.36/-3.07	-6.32/-3.44	-3.56/-4.76	-3.73/-4.55	-3.48/-7.70	-6.77/-4.26	-5.31/-7.96	-5.44/-2.85	-4.19/-6.19	-3.25/-2.38	-5.57/-1.19	-1.13/-1.97
Θ(120°)	-3.41/-3.47	-3.01/-1.36	-1.27/-2.72	-2.53/-2.04	-2.74/-2.16	-2.17/-5.66	-4.85/-3.31	-4.20/-3.97	-7.92/-9.06	-4.98/-3.65	-6.55/-7.23	-7.54/-10.01	-7.34/-3.44					
Θ(130°)	-6.93/-4.01	-3.56/-2.82	-1.93/-1.18	-2.44/-3.12	-3.91/-4.14	-4.51/-4.60	-6.76/-5.09	-3.54/-5.63	-5.85/-6.73	-9.81/-7.44	-11.92/-9.86	-10.20/-6.87	-8.62/-11.17	-7.37/-8.78	-7.51/-7.87	-7.79/-7.12	-5.92/-4.32	-2.61/-4.59
Θ(140°)	-4.28/-4.52	-4.16/-5.40	-4.42/-3.21	-3.08/-2.69	-2.91/-3.85	-3.28/-5.03	-6.74/-4.53	-3.71/-3.61	-4.35/-6.01	-7.37/-7.96	-5.57/-7.18	-7.94/-11.99	-13.99/-12.16	-9.37/-10.21	-9.31/-10.68	-8.05/-10.68	-7.94/-6.26	-6.45/-6.88
Θ(150°)	-5.81/-5.79	-4.88/-5.13	-4.88/-5.68	-7.97/-6.92	-3.94/-3.90	-4.78/-5.96	-5.53/-4.48	-5.45/-4.91	-7.38/-11.92	-11.31/-11.62	-14.58/-10.88	-11.31/-11.49	-11.33/-14.74	-11.94/-6.47	-7.17/-11.62	-9.04/-9.13	-6.65/-8.66	
Θ(160°)	-8.83/-8.71	-6.80/-6.90	-5.51/-5.71	-5.82/-6.58	-7.14/-5.48	-5.64/-6.95	-6.82/-6.66	-9.41/-10.19	-10.09/-13.29	-15.51/-11.16	-9.92/-10.30	-9.21/-10.29	-12.72/-14.13	-7.14/-6.44	-9.37/-9.97	-6.56/-6.16	-7.75/-7.94	-9.12/-10.08
Θ(170°)	-10.09/-12.95	-10.89/-9.94	-11.30/-9.70	-8.08/-7.74	-7.12/-7.36	-8.11/-11.31	-14.19/-14.37	-14.35/-14.24	-13.63/-13.32	-13.41/-14.99	-15.39/-15.20	-13.15/-8.93	-8.41/-8.23	-8.32/-9.06	-10.34/-9.15	-7.76/-8.04	-7.66/-7.55	-7.48/-9.11
Θ(180°)	-11.29/-11.79	-11.86/-9.50	-11.51/-13.17	-11.81/-12.79	-15.31/-16.02	-15.74/-12.25	-9.76/-9.09	-9.11/-8.69	-10.05/-11.22	-13.08/-12.79	-11.39/-10.74	-9.97/-11.19	-13.60/-13.70	-14.76/-13.87	-12.48/-10.36	-9.52/-9.81	-11.07/-12.00	-12.76/-12.90
Freq(Hz)	5.3GPol.	Total/Ant. 2	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(10°)	Φ(20°)/Φ(30°)	Φ(40°)/Φ(50°)	Φ(60°)/Φ(70°)	Φ(80°)/Φ(90°)	Φ(100°)/Φ(110°)	Φ(120°)/Φ(130°)	Φ(140°)/Φ(150°)	Φ(160°)/Φ(170°)	Φ(180°)/Φ(190°)	Φ(200°)/Φ(210°)	Φ(220°)/Φ(230°)	Φ(240°)/Φ(250°)	Φ(260°)/Φ(270°)	Φ(280°)/Φ(290°)	Φ(300°)/Φ(310°)	Φ(320°)/Φ(330°)	Φ(340°)/Φ(350°)
Θ(0°)	-4.80/-5.07	-5.62/-4.97	-5.46/-5.38	-4.75/-4.51	-5.08/-5.01	-5.67/-5.02	-4.82/-4.78	-5.42/-5.00	-5.18/-5.65	-5.22/-5.68	-5.23/-5.14	-5.05/-4.84	-5.25/-5.16	-5.25/-5.38	-5.07/-5.16	-5.25/-5.52	-5.24/-5.04	-5.20/-4.50
Θ(10°)	-3.41/-2.09	-2.20/-1.93	-1.47/-2.35	-2.40/-1.91	-2.89/-3.25	-3.49/-3.60	-3.70/-4.08	-3.89/-3.49	-3.57/-4.10	-4.90/-5.91	-6.03/-6.85	-8.92/-8.36	-7.04/-7.12	-6.23/-5.77	-5.77/-6.25	-6.50/-6.49	-5.50/-5.43	-4.76/-4.71
Θ(20°)	-4.38/-3.24	-2.66/-2.94	-2.47/-2.58	-2.42/-1.63	-2.05/-1.88	-2.16/-3.30	-4.07/-3.48	-4.62/-4.48	-4.70/-6.23	-7.00/-7.58	-7.79/-11.01	-10.38/-8.59	-8.42/-8.08	-6.24/-5.27	-5.23/-5.35	-3.48/-3.16	-3.12/-4.34	-5.29/-4.99
Θ(30°)	-3.59/-2.63	-2.51/-2.17	-2.51/-1.35	-1.19/-1.38	-0.74/-0.78	-0.82/-2.14	-3.58/-4.21	-5.43/-7.10	-6.91/-5.88	-6.26/-11.69	-15.17/-9.49	-6.44/-4.96	-3.00/-3.48	-4.95/-5.68	-2.84/-1.86	-3.10/-4.74	-4.07/-3.91	
Θ(40°)	-3.38/-2.57	-2.56/-2.23	-2.09/-1.97	-1.25/-0.28	0.02/-0.21	-0.68/-0.61	-6.11/-5.74	-4.49/-4.15	-4.75/-4.94	-4.14/-4.15	-6.44/-8.04	-4.14/-4.15	-4.64/-8.04	-6.74/-2.82	-2.80/-3.57	-4.06/-2.41	-1.38/-3.41	
Θ(50°)	-3.00/-2.02	-1.61/-1.52	-1.21/-1.15	-1.51/-0.39	1.04/0.71	0.24/-0.24	-1.43/-1.75	-4.21/-4.74	-3.48/-3.90	-3.56/-6.66	-5.46/-6.85	-7.47/-4.13	-2.66/-2.39	-0.74/-1.28	-2.83/-3.97	-2.43/-0.22	-2.81/-3.57	
Θ(60°)	-2.03/-2.73	-1.33/-0.39	-0.22/-0.67	-0.89/-0.25	0.09/0.59	-0.29/-0.48	-0.74/-0.86	-1.09/-2.78	-2.81/-5.36	-3.42/-0.26	-0.55/-0.85	-2.02/-3.66	-6.90/-5.20	-1.15/-0.71	-0.65/-0.67	-1.66/-2.06	-1.61/-1.58	-2.40/-0.53
Θ(70°)	-1.95/-2.94	-0.74/0.34	-0.60/-0.46	-0.04/-0.02	-0.33/-0.56	-0.42/-0.86	-0.44/-0.94	-1.61/-2.00	-4.58/-6.80	-2.01/-1.23	1.72/-1.66	0.89/-1.01	-2.58/-3.28	0.98/-0.48	-0.88/-1.62	-2.59/-2.13	-0.59/0.32	
Θ(80°)	-0.46/-1.14	-0.07/0.57	0.04/-0.43	-0.23/-0.34	-0.27/0.17	-1.04/-1.25	0.26/-1.70	-3.29/-8.05	-3.74/0.91	0.61/0.79	1.34/-1.32	-4.21/-1.97	0.562.47	2.16/-0.44	-0.97/-1.49	-1.46/-1.17	0.07/0.68	
Θ(90°)	0.40/-0.60	0.14/0.17	0.11/0.29	-0.54/-0.39	0.03/0.30	-0.34/-1.37	-0.97/-1.68	-2.90/-2.88	-4.98/-14.25	-9.95/-2.68	-2.95/-1.33	-1.74/-4.71	-3.38/-0.35	0.53/-1.95	0.63/-1.59	-2.33/-0.65	-1.09/-1.38	-0.80/-0.08
Θ(100°)	-0.02/-1.28	-0.20/-0.01	-0.03/-0.20	-0.83/-0.45	-5.35/-10.44	-1.74/-1.80	-2.37/-2.37	-4.44/-4.75	-3.17/-1.89	-10.76/-9.56	-8.85/-4.13	-4.75/-5.83	-2.30/-3.10	-4.60/-0.90	-1.12/-1.57	-1.24/-0.00		
Θ(110°)	-1.22/-1.89	-1.40/-0.53	-0.35/-1.50	-1.63/-1.09	-0.85/-1.97	-1.65/-2.56	-4.55/-2.69	-5.59/-6.60	-5.33/-5.77	-3.53/-5.42	-4.22/-2.15	-6						

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 $\Theta(0-180)\Phi(270)$

