

Antenna Composite Gain Test Report

Equipment	Access Point
Brand Name	Extreme Networks
Model Name	AP4060
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
Standard	KDB 662911 D03 v02
Sample Received	Feb. 20, 2025
Start Test Date	Mar. 07, 2025
Final Test Date	Mar. 07, 2025

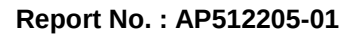

Approved by: Jackson Tsai**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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Issued Date : Jul. 09, 2025
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1. Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant. Type	Connector	Modes of Operation	Radio
2G5GAnt1	1	Sercomm	6172008GWA-1	PIFA	I-Pex	2.4G+5G	Radio 1_2.4G Radio 2_5G
2G5GAnt2	2	Sercomm	6172008GWA-2	PIFA	I-Pex	2.4G+5G	Radio 1_2.4G Radio 2_5G
5G6GAnt1	1	Sercomm	6172008GWA-3	Dipole	I-Pex	5G+6G	Radio 3_5GL/6G
5G6GAnt2	2	Sercomm	6172008GWA-4	Dipole	I-Pex	5G+6G	Radio 3_5GL/6G
ScanAnt1	1	Sercomm	6172008GWA-8	PIFA	I-Pex	2.4G+5G+6G	Radio 1_Scan
BLEAnt2	1	Sercomm	6172008GWA-5	PIFA	I-Pex	BT+802.15.4	BLE_chain 1_H
BLEAnt3	2	Sercomm	6172008GWA-6	PIFA	I-Pex	BT+802.15.4	BLE_chain 1_V
BLEAnt4	1	Sercomm	6172008GWA-7	PIFA	I-Pex	BT+802.15.4	BLE_chain 0

Note:

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

2G5GAnt1~2G5GAnt2 can be used as transmitting/receiving antenna.

5GHz and 6GHz Operation Mode (2TX/2RX)

5G6GAnt1~5G6GAnt2 can be used as transmitting/receiving antenna.

2.4GHz and 5GHz and 6GHz Operation Mode (1TX/1RX)

ScanAnt1 can be used as transmitting/receiving antenna.

BT+ IEEE802.15.4 Operation Mode (1TX/1RX)

BLEAnt2~ BLEAnt4 can be used as transmitting/receiving antenna.

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
5850-5895	5885
5925-6425	6175
6425-6525	6475
6525-6875	6695
6875-7125	6995



3. Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Wen 33rd.St.	ADD:	No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
	TEL: 886-3-318-0787	FAX: 886-3-318-0287		
Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	Rofy Chen	23.5~24.5°C / 45~55%	07/Mar/2025

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

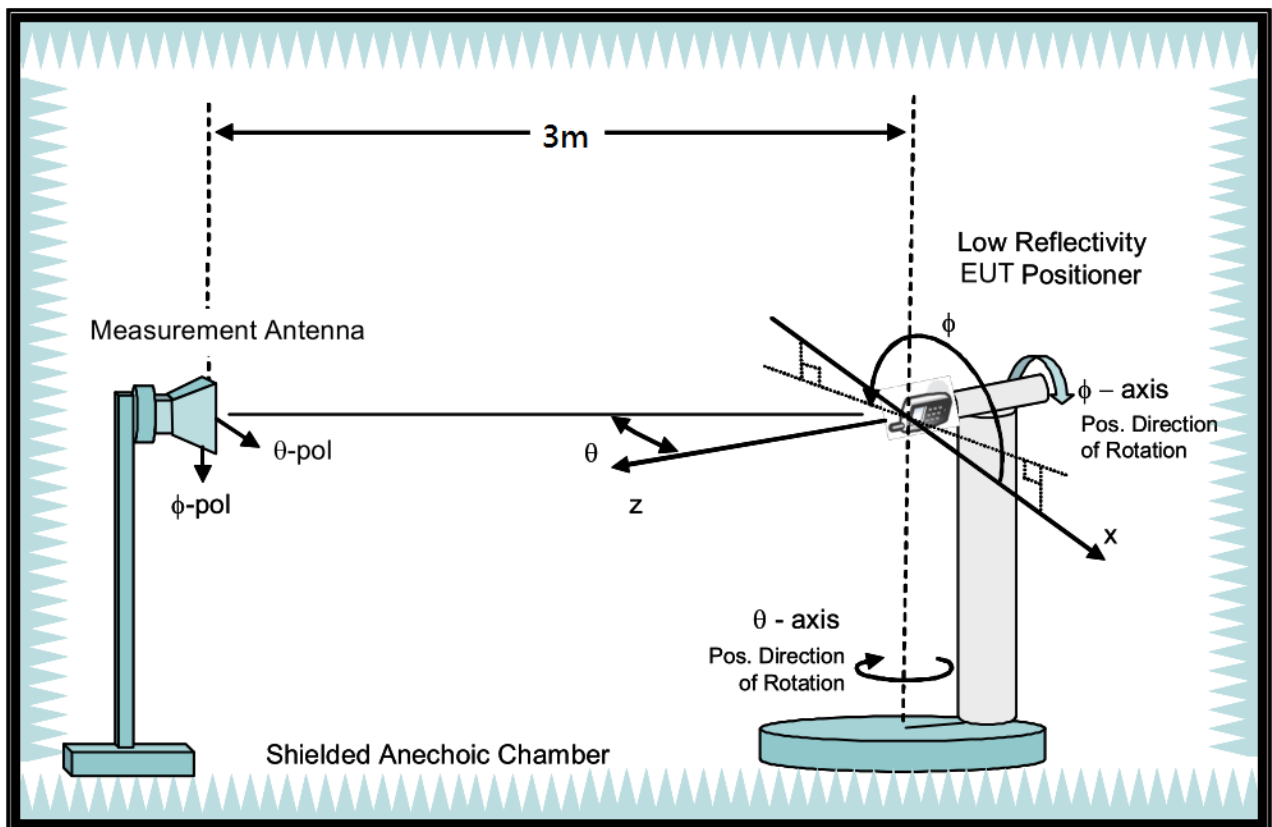
Characteristic: Fully Anechoic Chamber

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).

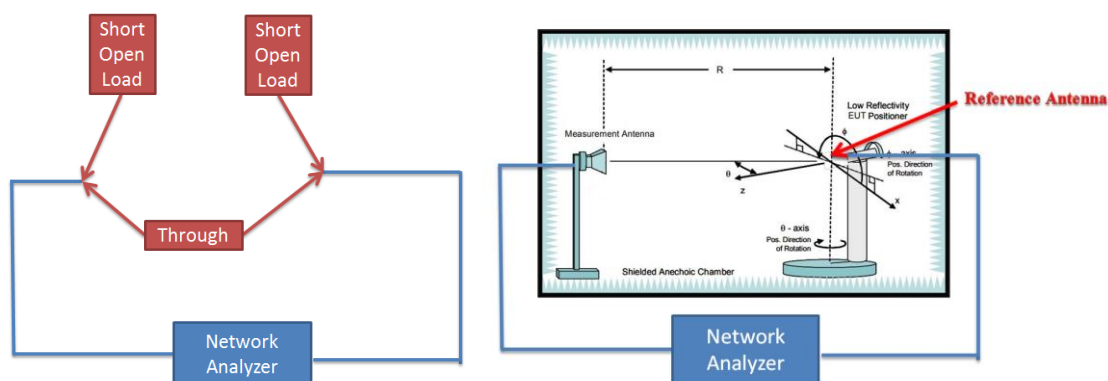
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



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	2400	2450	2500	5150	5200	5300	5600	5750	5800	5900	6000	6500	7000	7200
G(theta) reading (dB)	-33.48	-33.18	-32.45	-32.78	-32.43	-32.85	-32.74	-32.13	-32.46	-33.46	-32.73	-33.41	-34.78	-35.31
G(phi) reading (dB)	-33.45	-32.13	-32.74	-32.43	-32.87	-31.78	-32.46	-32.37	-32.73	-32.87	-32.46	-33.68	-34.74	-35.08
Reference gain (dBi)	10.4	10.5	10.2	11.4	11.5	11.9	12.5	11.8	11.7	11.6	11.8	11.5	11.4	10.8
Factor(theta) (dB)	43.88	43.68	42.65	44.18	43.93	44.75	45.24	43.93	44.16	45.06	44.53	44.91	46.18	46.11
Factor(phi) (dB)	43.85	42.63	42.94	43.83	44.37	43.68	44.96	44.17	44.43	44.47	44.26	45.18	46.14	45.88

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

2G5GAnt1~2G5GAnt2

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	2.12	3.2	3.34	5.51	5.28
Ant. 2 (dBi)	3.08	-0.65	1.93	1.94	1.01
DG [1SS] (dBi)	5.62	4.5	5.67	6.92	6.42
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	60	75	75	75	75
$\Phi(^{\circ})$	22.5	37.5	37.5	30	30

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 $[10^{(G/20)}]$	$10^{(2.12/20)}$	$10^{(3.2/20)}$	$10^{(3.34/20)}$	$10^{(5.51/20)}$	$10^{(5.28/20)}$
Ant. 2 $[10^{(G/20)}]$	$10^{(3.08/20)}$	$10^{(-0.65/20)}$	$10^{(1.93/20)}$	$10^{(1.94/20)}$	$10^{(1.01/20)}$
Ant. 1 $[10^{(G/20)}]$ value	1.276	1.445	1.469	1.886	1.837
Ant. 2 $[10^{(G/20)}]$ value	1.426	0.928	1.249	1.25	1.123
Sum All Antenna [Amax]	2.702	2.373	2.718	3.136	2.96
DG $[10^{\log(A_{max}^2/N_{ant})}]$	5.62	4.5	5.67	6.92	6.42

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

5G6GAnt1~5G6GAnt2

DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	10.46	9.54	9.64	9.64	11.33	11.2	10.45	11.39
Ant. 2 (dBi)	9.34	9.58	9.47	9.82	10.19	10.75	10.62	10.47
DG [1SS] (dBi)	12.93	12.57	12.57	12.74	13.79	13.99	13.55	13.95
Polarization	Phi	Phi	Phi	Theta	Theta	Phi	Phi	Phi
$\Theta(^{\circ})$	7.5	7.5	0	7.5	7.5	0	7.5	0
$\Phi(^{\circ})$	135	135	307.5	52.5	45	315	315	135

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)	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 [$10^{(G/20)}$]	$10^{(10.46/20)}$	$10^{(9.54/20)}$	$10^{(9.64/20)}$	$10^{(9.64/20)}$	$10^{(11.33/20)}$	$10^{(11.2/20)}$	$10^{(10.45/20)}$	$10^{(11.39/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(9.34/20)}$	$10^{(9.58/20)}$	$10^{(9.47/20)}$	$10^{(9.82/20)}$	$10^{(10.19/20)}$	$10^{(10.75/20)}$	$10^{(10.62/20)}$	$10^{(10.47/20)}$
Ant. 1 [$10^{(G/20)}$] value	3.334	2.999	3.034	3.034	3.686	3.631	3.33	3.711
Ant. 2 [$10^{(G/20)}$] value	2.931	3.013	2.975	3.097	3.232	3.447	3.396	3.338
Sum All Antenna [Amax]	6.265	6.012	6.009	6.131	6.918	7.078	6.727	7.049
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	12.93	12.57	12.57	12.74	13.79	13.99	13.55	13.95

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

2G5GAnt1~2G5GAnt2

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.97	3.2	3.51	5.51	5.28
Ant. 2 Max Gain (dBi)	3.08	3.51	3.3	4.19	5.82
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/90	Theta/75/37.5	Phi/7.5/60	Theta/75/30	Theta/75/30
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/22.5	Theta/75/135	Theta/75/135	Theta/75/157.5	Theta/75/157.5
Max Gain (dBi)	4.97	3.51	3.51	5.51	5.82
DG [1SS] (dBi)	5.62	4.5	5.67	6.92	6.42
DG [2SS] (dBi)	4.97	3.51	3.51	5.51	5.82

5G6GAnt1~5G6GAnt2

Freq(Hz)	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	10.46	9.56	9.72	9.66	11.33	11.31	10.51	11.39
Ant. 2 Max Gain (dBi)	9.34	9.87	9.49	9.82	10.61	10.75	10.62	10.52
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/7.5/135	Phi/7.5/127.5	Phi/0/135	Theta/7.5/45	Theta/7.5/45	Phi/7.5/135	Theta/7.5/52.5	Phi/0/135
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/7.5/135	Phi/0/315	Phi/0/315	Theta/7.5/52.5	Theta/0/52.5	Phi/0/315	Phi/7.5/315	Phi/0/307.5
Max Gain (dBi)	10.46	9.87	9.72	9.82	11.33	11.31	10.62	11.39
DG [1SS] (dBi)	12.93	12.57	12.57	12.74	13.79	13.99	13.55	13.95
DG [2SS] (dBi)	10.46	9.87	9.72	9.82	11.33	11.31	10.62	11.39

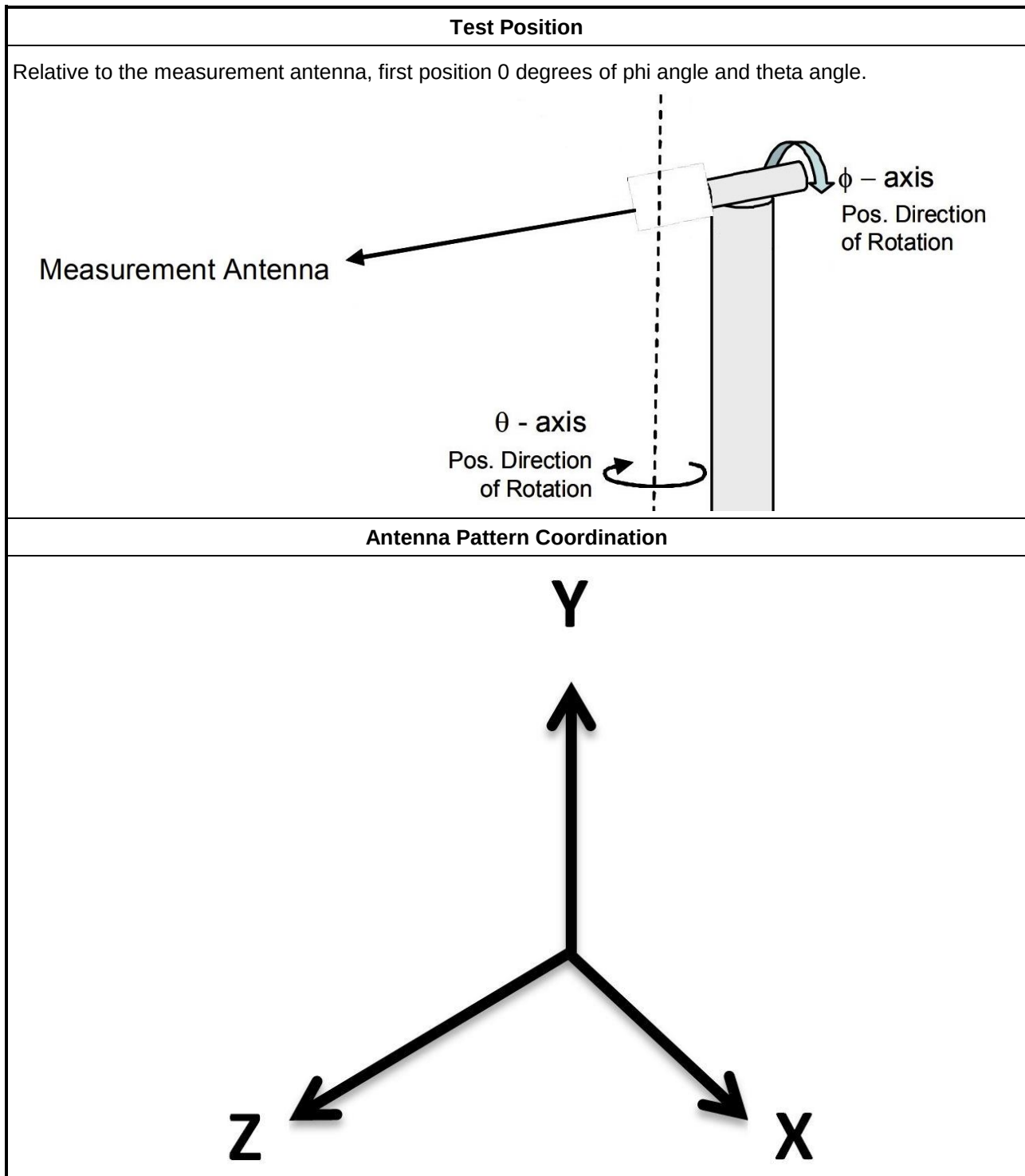
ScanAnt1, BLEAnt2~ BLEAnt4

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	5.33	2.89	3.35	4.93	3.56	4.96	3.88	3.55	4.32
Ant. 2 Max Gain (dBi)	3.15	-	-	-	-	-	-	-	-
Ant. 3 Max Gain (dBi)	4.25	-	-	-	-	-	-	-	-
Ant. 4 Max Gain (dBi)	3.77	-	-	-	-	-	-	-	-
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/285	Theta/75/112.5	Theta/75/112.5	Theta/75/120	Theta/60/180	Theta/82.5/247.5	Theta/75/105	Theta/75/112.5	Theta/82.5/105
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/157.5	-	-	-	-	-	-	-	-
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/157.5	-	-	-	-	-	-	-	-
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/270	-	-	-	-	-	-	-	-

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. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii).
4. Directional Gain (2SS) = Directional Gain (1SS) – 3dB

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-1531	1GHz~18GHz	Dec. 20, 2024	Dec. 19, 2025
ENA Series Network Analyzer	AGILENT	E5071C	MY46419477	100kHz~8.5GHz	Jul. 30, 2024	Jul. 29, 2025
VNA Calibration Kit	TS RF	TS85033E-F	-	DC~9GHz	NCR	NCR
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	NCR	NCR
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	NCR	NCR

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/6GHz/BT.....Page 15

Appendix B – Antenna Pattern of 2.4GHz/5GHz/6GHz/BT.....Page 44

Appendix C – Test Photos..... Page 58

————THE END————



Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.97	3.2	3.51	5.51	5.28
Ant. 2 Max Gain (dBi)	3.08	3.51	3.3	4.19	5.82
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/60/90	Theta/75/37.5	Phi/7.5/60	Theta/75/30	Theta/75/30
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/60/22.5	Theta/75/135	Theta/75/135	Theta/75/157.5	Theta/75/157.5
Max Gain (dBi)	4.97	3.51	3.51	5.51	5.82
DG [1SS] (dBi)	5.62	4.5	5.67	6.92	6.42
DG [2SS] (dBi)	4.97	3.51	3.51	5.51	5.82



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

DG 1SS Result

Freq(Hz)	2.45G/Pol.	Phi-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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°)	-8.1-9.35	-9.94-8.86	-9.77-9.47	-8.92-8.29	-7.59-6.74	-5.88-5.02	-4.37-4.05	-4.1-4.2	-4.27-4.43	-4.61-4.97	-5.4-5.84	-6.44-7.21	-8.37-9	-8.58-7.58	-6.94-6.68	-6.64-6.72	-6.95-7.2	-7.16-6.81	-6.27-5.76	-5.26-4.85	-4.43-4.09	-3.93-4.06	-4.48-5.15	-5.94-6.86
Θ(7.5°)	-8.31-9.03	-8.11-7.76	-7.65-7.37	-7.44-7.83	-6.71-7.59	-5.36-5	-3.79-2.93	-2.48-2.34	-3.28-3.91	-4.63-5.47	-6.25-7.33	-8.79-12.69	-9.71-10.26	-9.77-8.77	-8.7-8.65	-7.51-7.54	-7.82-7.9	-7.3-6.41	-5.76-5.49	-5.64-5.95	-6.01-6.61	-6.41-7.04	-7.04-7.25	-7.53-7.77
Θ(15°)	-9.13-8.63	-7.06-6.24	-5.99-5.82	-5.92-6.91	-8.7-9.75	-8.28-5.67	-3.67-2.28	-1.62-1.53	-1.91-2.52	-3.39-4.44	-5.51-6.52	-7.39-8.33	-9.89-10.63	-10.44-8.7	-7.28-6.4	-6.13-6.36	-7.16-7.14	-7.2-6.3	-5.04-4.1	-3.54-3.31	-3.36-3.71	-4.27-4.88	-5.59-6.75	-8.17-9.1
Θ(22.5°)	-9.44-8.52	-6.79-5.5	-5.07-4.46	-4.19-5.04	-7.04-10.33	-9.89-6.75	-4.15-2.48	-1.71-1.73	-2.34-3.41	-4.69-6.08	-7.34-8.26	-8.56-8.57	-9.07-9.82	-8.81-6.82	-5.22-4.27	-3.97-4.2	-5.03-6.07	-6-5.66	-4.24-3.26	-2.66-2.35	-2.53-3.01	-3.83-5.18	-7.17-8.92	-11.77-9.2
Θ(30°)	-8.5-8.16	-6.89-5.91	-4.93-3.57	-3.01-3.62	-5.27-7.9	-10.75-9.67	-6.08-3.59	-2.35-2.17	-2.82-0.41	-5.3-6.55	-8.06-9.95	-9.71-8.08	-7.26-6.99	-6.61-5.68	-4.41-3.43	-2.96-2.92	-3.26-3.99	-4.98-4.86	-3.35-2.46	-2.27-2.54	-2.58-2.07	-1.9-2.28	-3.1-4.26	-6.03-9.13
Θ(37.5°)	-7.82-6.84	-6.23-6.04	-5.15-3.29	-2.6-3.04	-4.44-7.03	-10.63-11.98	-6.56-3.47	-2.36-2.48	-3.46-4.59	-4.97-4.92	-5.83-8.79	-9.74-6.89	-5.36-4.61	-4.54-4.4	-3.91-3.48	-3.13-2.95	-3.02-3.35	-3.82-3.97	-2.75-2.05	-2.47-3.66	-3.41-2.43	-2.27-2.64	-3.32-4.35	-5.89-7.5
Θ(45°)	-7.53-5.63	-5.33-5.93	-5.66-3.5	-2.83-3.21	-4.11-6.47	-9.74-12.13	-5.13-2.57	-1.99-2.71	-3.95-4.36	-3.5-2.69	-2.95-5.05	-9.3-6.63	-4.02-3.02	-3.41-4.16	-3.99-3.65	-3.38-3.3	-3.45-3.69	-3.92-4.05	-2.81-2.06	-3.1-5.17	-4.59-3.73	-3.56-3.37	-3.39-4.25	-6.26-8.3
Θ(52.5°)	-7.46-5.53	-5.47-6.97	-5.8-3.48	-3.61-4.7	-5.4-6.03	-7.76-9.08	-3.68-1.48	-1.94-3.84	-5.25-4.57	-3.16-2.43	-2.69-4.52	-7.7-5.33	-2.92-2.34	-3.33-4.21	-3.58-2.92	-2.75-2.84	-3.17-3.98	-4.99-5.83	-4.26-3.17	-4.59-6.23	-4.9-4.15	-3.72-2.95	-2.28-2.62	-4.55-7.55
Θ(60°)	-7.37-5.69	-5.64-7.39	-5.68-2.99	-5.34-5.04	-6.03-5.02	-9.03-6.1	-2.64-1.03	-1.99-4.53	-5.56-5.27	-4.63-4.03	-3.88-4.73	-6.93-6.18	-3.33-2.31	-3.08-4.18	-3.32-2.38	-2.19-2.16	-2.25-3.32	-6.36-8.77	-6.69-4.77	-5.93-6.85	-5.08-3.86	-3.56-2.98	-1.83-1.44	-2.67-10.51
Θ(67.5°)	-8.03-6.96	-6.07-7.82	-6.57-3.75	-3.79-4.46	-5.88-5.05	-4.85-5.92	-3.48-1.75	-1.89-2.82	-3.41-3.94	-4.43-4.56	-4.75-5.26	-6.39-4.97	-2.67-1.89	-3.11-4.92	-4.19-3.25	-2.91-2.52	-2.32-3.36	-7.25-10.14	-6.79-5.33	-6.61-6.96	-5.02-4.7	-4.95-4.17	-2.21-3.77	-2.53-5.27
Θ(75°)	-7.3-7.01	-6.91-7.56	-6.19-4.74	-4.7-5.84	-6.98-5.58	-4.62-5.74	-5.1-2.62	-2.06-3.05	-3.97-4.53	-5.35-5.81	-5.52-5.09	-5.38-4.66	-2.71-1.89	-3.17-5.9	-6.29-4.92	-3.91-2.96	-2.22-2.66	-5.63-9.98	-7.7-5.8	-6.85-7.14	-5.26-4.82	-5.66-4.66	-2.53-1.65	-2.98-5.88
Θ(82.5°)	-7.99-6.51	-6.96-7.73	-6.01-5.68	-5.98-6.87	-7.54-7.44	-7.02-7.61	-5.33-2.19	-2.14-9	-6.39-7.58	-9.41-9.45	-7.55-6.04	-5.28-4.52	-3.71-3.61	-4.66-6.24	-5.75-4.31	-3.06-2.05	-1.53-2.24	-5.64-10.77	-7.1-5.2	-6.63-6.92	-5.53-5.75	-6.53-5.67	-3.64-2.42	-3.49-6.56
Θ(90°)	-9.81-7.56	-7.51-7.46	-5.4-6.48	-8.24-9.36	-10.16-8.75	-8.24-10.17	-7.83-1.33	-2.43-4.97	-6.8-7.81	-10.1-11.63	-9.42-6.66	-4.66-3.77	-4.26-4.56	-4.76-5.92	-6.4-5.25	-3.95-3.05	-2.57-3.16	-6.17-9.98	-5.7-5.19	-9.03-8.18	-5.75-5.67	-6.34-7.05	-4.98-3.09	-3.81-8.08
Θ(97.5°)	-10.97-8.91	-8.47-9.23	-6.89-7.61	-8.32-9.73	-13.94-7.89	-5.3-8.98	-8.84-4.71	-4.27-7.63	-7.66-7.44	-11.22-11.94	-9.06-4.69	-4.38-3.95	-4.89-5.26	-5.88-7.5	-8.06-6.22	-4.55-3.5	-2.96-3.65	-6.3-8	-6.42-8.09	-9.9-8.52	-4.47-5.72	-6.82-7.18	-4.74-2.48	-3.77-9.07
Θ(105°)	-9.74-10.18	-10.27-11.07	-9.24-9.38	-8.95-8.14	-13.53-10.13	-5.83-7.05	-7.36-5.38	-6.1-9.82	-8.15-6.88	-10.13-11.13	-7.97-6.35	-5.03-4.47	-4.97-5.59	-6.65-7.87	-8.39-8.23	-6.96-5.16	-4.18-4.95	-7.03-7.33	-6.62-8.04	-7.71-5.77	-6.52-6.89	-5.16-5.91	-5.15-2.5	-3.43-9.43
Θ(112.5°)	-9.72-9.54	-9.31-10.73	-11.81-10.9	-8.7-6.41	-9.09-14.24	-12.02-9.29	-4.88-2.58	-4.29-8.45	-7.13-7.18	-13.31-12.41	-8.13-6.35	-5.62-5.05	-4.98-7.01	-8.37-7.65	-7.81-7.47	-5.28-3.65	-3.76-5.28	-7.06-7.32	-7.3-7.4	-6.72-6.9	-7.9-5.82	-4.1-5.21	-7.03-4.1	-4.33-10.05
Θ(120°)	-12.63-9.59	-7.53-7.67	-9.73-10.55	-12.15-11.02	-10.23-10.87	-11.6-13.47	-10.14-6.59	-7.17-9.26	-6.36-6	-9-8.36	-6.82-6.49	-5.24-3.34	-3.21-5.59	-9.28-13.03	-10.67-10.95	-8.19-6.54	-7.68-9.96	-8.58-6.32	-5.6-6.14	-7.11-8.8	-8.84-5.27	-3.44-4.02	-5.68-5.76	-5.26-9.21
Θ(127.5°)	-13.67-11.48	-8.75-9.08	-11.83-10.78	-11.42-14.69	-15.85-14.45	-12.46-11.65	-12.22-13.85	-16.19-12.53	-10.29-11.54	-11.92-7.23	-5.93-7.07	-8.47-7.35	-8.01-9.74	-10.21-9.42	-8.31-8.32	-8.2-8.35	-8.72-6.71	-7.08-9.86	-8.86-6.98	-5.7-3.44	-2.56-3.56	-6.13-7.48	-8.17-10.51	-11.55-10.33
Θ(135°)	-13.57-11.89	-8.24-7.94	-11.41-11.97	-9.89-11.32	-12.44-12.49	-13.13-11.98	-11.94-12.03	-13.27-11.07	-9.62-11.25	-10.62-7.52	-7.25-8.64	-10.86-10.35	-7.79-7.4	-9.36-10.38	-8.61-8.02	-8.34-9.31	-9.92-8.41	-7.24-7.15	-8.57-7.74	-5.54-5.14	-6.29-6.27	-5.98-7.81	-10.05-10.46	-10.87-12.18
Θ(142.5°)	-9.99-9.07	-7.54-7.32	-9.84-12.29	-11.64-10.63	-10.74-11.45	-12.31-13.61	-14.56-14.76	-15.41-14.34	-11.56-10.49	-9.57-8.45	-8.69-10.2	-11.39-9.59	-7.66-7.92	-9.93-11.38	-12.77-14.98	-15.44-15.18	-12.42-8.87	-7.32-7.58	-7.09-7.14	-7.37-9.03	-11.06-11.68	-11.51-11.56	-10.45-9.66	-10.51-10.49
Θ(150°)	-9.24-9.03	-9.02-9.57	-11.84-12.62	-11.74-7.83	-7.75-8.43	-10.48-12.54	-12.11-10.9	-12.71-10.24	-6.03-8.15	-10.56-11.56	-13.59-13.89	-13.23-11.71	-11.01-10.73	-11.01-12.45	-11.71-11.16	-9.44-8.41	-8.52-9.67	-11.04-13.32	-15.46-13.58	-11.91-10.46	-10.41-11.27	-11.11-11.79	-11.55-10.33	
Θ(157.5°)	-10.56-10.21	-10.69-11.94	-12.01-11.76	-10.3-8.65	-8.13-8.81	-10.58-11.52	-11.03-9.02	-7.7-7.2	-7.29-7.93	-9.17-10.42	-11.65-12.88	-14.29-14.97	-15-15.09	-15.4-15.18	-14.69-14.02	-13.38-12.5	-12.5-12.48	-13.63-15.27	-14.84-15.19	-13.66-12.24	-10.88-10.36	-10.81-12.22	-12.51-12.85	-13.23-12.13
Θ(165°)	-13.27-12.67	-12.68-13.17	-13.18-13.5	-12.23-11.55	-12.16-13.93	-13.63-14.4	-13.07-10.97	-9.31-8.53	-8.34-8.6	-9.44-10.82	-11.51-12.47	-13.5-14.84	-14.99-16	-14.57-15.36	-14.38-14.73	-13.69-13.61	-13.53-13.1	-12.87-12.99	-13.42-13.76	-13.59-13.6	-13.42-13.76	-13.59-13.6	-14.04-14.04	
Θ(172.5°)	-14.98-14.43	-13.19-13.31	-13.51-13.05	-11.89-11.56	-12.38-14.04	-14.15-15.91	-15.82-14.92	-14.13-14.26	-14.46-14.93	-13.67-14.44	-14.4-14.94	-14.91-15.06	-13.67-13.44	-13.69-13.91	-14.14-14.65	-14.68-12.86	-13.21-11.64	-11.31-11.12	-11.37-12.02	-13.07-14.15	-14.59-15.33	-14.39-14.16	-14.4-14.18	
Θ(180°)	-15.64-14.37	-14.15-13.13	-12.03-11.19	-10.62-10.39	-10.51-10.96	-10.8-11.22	-11.52-11.95	-12.06-12.82	-13.93-15.63	-15.5-15.63	-15.42-15.21	-15.34-15.26	-15.41-15.85	-15.4-15.88	-15.48-14.35	-13.56-12.32	-11.14-10.3	-9.97-9.71	-9.55-9.73	-10.49-11.98	-14.1-15.82	-15.56-15.4	-15.61-14.82	-14.86-15.25
Freq(Hz)	2.45G/Pol.	Theta-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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°)	-6.33-5.58	-4.87-4.5	-4.5-4.72	-4.99-5.26	-5.47-5.59	-6.66-7.72	-8.94-9.97	-10.76-10.95	-11.03-10.94	-10.27-9.27	-8.4-7.76	-7.42-7.24	-7.15-7.19	-6.77-6.84	-6.33-6.36	-6.74-7.22	-7.61-7.95	-8.51-9.48	-10.49-10.55	-10.44-9.99	-9.41-8.91	-8.63-8.38	-8.21-7.96	-7.46-6.93
Θ(7.5°)	-6-6.74	-7.19-7.63	-7.6-6.95	-6.32-5.83	-5.61-5.84	-6.57-7.83	-9.59-10.91	-12.97-14.55	-14.72-12.65	-10.05-8.07	-6.62-5.67	-5.06-4.77	-4.78-4.91	-4.95-4.89	-4.92-5.18	-5.73-6.32	-6.87-7.09	-7.3-7.76	-8.34-8.57	-8.28-7.8	-7.27-6.69	-6.07-5.56	-5.21-5.1	-5.18-5.44
Θ(15°)	-3.02-3.23	-3.57-4.14	-4.78-5.32	-5.58-5.41	-5.17-5.15	-5.66-6.82	-8.73-11.91	-14.27-13.15	-11.02-8.81	-6.6-5.03	-4.05-3.45	-3.1-2.86	-3.83-3.02	-3.33-3.69	-4.09-4.48	-4.84-5.03	-4.89-4.48	-4.1-3.97	-4	-3.92-3.85	-3.87-3.89	-3.68-3.76	-3.5-3.2	-2.98-2.92
Θ(22.5°)	-2.09-1.71	-1.34-1.08	-0.98-1.07	-1.47-2.19	-2.98-3.57	-4.12-4.89	-5.97-7.01	-7.67-7.68	-6.65-5.67	-4.21-3.14	-2.49-2.15	-1.96-1.79	-1.57-1.46	-1.51-1.71	-2.17-2.69	-3.13-3.2	-2.98-2.5	-1.99-1.51	-1.04-0.65	-0.42-0.51	-0.87-1.44	-2.05-2.55	-2.85-2.91	-2.74-2.47
Θ(30°)	-2.35-1.34	-0.19-0.63	1.13-1.28	1.08-0.58	0.02-0.41	-0.7-0.94	-1.23-1.62	-2.11-2.53	-2.95-3.34	-3.33-2.66	-1.97-1.44	-1.12-0.86	-0.56-0.21	0.14-0.3	0.22-0.11	-0.47-0.67	-0.84-1	-0.95-0.54	0.17-0.93	1.47-1.55	1.16-0.46	-3.31-1.06	-1.78-2.46	-2.88-2.93
Θ(37.5°)	-1.31-0.15	1.27-0.3	2.81-2.9	2.11-2.7	2.11-2.97	1.98-1.96	1.93-1.73	1.23-0.52	-0.54-1.72	-2.75-2.77	-1.65-0.53	0.14-0.74	0.26-0.74	1.21-1.51	1.57-1.49	1.34-1.11	0.79-0.32	2.04-1.24	2.03-2.28	2.0				



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ (15°)	-1.75/-0.38	0.841/1.22	1.722/0.05	2.432/44	2.141/2	1.10/86	0.63/-0.04	-0.77/-1.4	-1.57/-2	-3.06/-4.67	-5.59/-3.96	-2.31/-1.26	-0.54/-0.21	-0.150/-0.1	-0.62/-1.79	-2.35/-2.69	-2/-2.17	-2.96/-4.49	-5.45/-4.9	-3.11/-1.55	-0.8/-0.5	-0.88/-1.62	-2.4/-2.85	-3/-2.68
Θ (22.5°)	1.492/0.1	2.62/69	2.241/7	1.351/36	0.91/-0.02	-0.82/-0.76	0.10/37	-0.28/-0.84	-1.08/-1.83	-3.69/-4.72	-1.50/-8	2.172/55	1.770/19	-0.99/-1.05	-0.95/-1.28	-1.85/-2.28	-3.37/-3.25	-4.04/-5.09	-5.63/-4.98	-2.92/-1.75	-1.71/-2.65	-4.51/-6.75	-6.01/-4.77	-2.89/-0.24
Θ (35°)	1.31/18	1.491/29	1.36/198	2.522/39	2.031/51	-0.11/-1.29	0.31/85	1.830/61	-0.30/-0.72	-0.58/-0.43	0.050/08	0.491/48	1.761/57	0.74/-0.96	-1.77/-0.82	-0.01/-1	-2.92/-2.79	-3.16/-4.05	-3.74/-2.71	-2.23/-2.77	-4.38/-7.12	-9.26/-8.42	-7.33/-4.97	-2.14/-0.27
Θ (37.5°)	-1.54/-0.92	-0.11/0.84	1.28/1.3	2.04/24	2.362/5	1.220/67	1.01/2	2.390/87	-2.05/-1.73	-0.010/9	2.012/33	1.750/94	0.941/9	2.351/38	-0.36/-0.37	1.010/41	-2.21/-3.32	-2.2/-3.78	-4.33/-3.32	-3.04/-3.16	-3.95/-5.34	-5.38/-6.36	-5.34/-4.33	-4.81/-3.22
Θ (45°)	-2.73/-2.49	-2.11/-1.44	-1.64/-0.71	1.33/108	1.292/06	1.51/116	0.611/9	1.79/-0.6	-2.15/-4.8	-1.96/-0.2	1.372/64	3.573/44	1.73/-0.09	0.421/28	0.870/67	1.171/3	-0.49/-2.84	-3.43/-6.63	-7.32/-4.57	-4.05/-1.92	-2.06/-3.96	-3.17/-5.3	-3.57/-1.43	-6.28/-3.83
Θ (52.5°)	-0.480/57	-0.471/52	-2.53/-0.04	1.02/-1.38	-0.90/52	0.640/92	-0.74/-0.31	-1.59/-2.1	-1.53/-4.32	-0.45/-0.5	-0.550/21	1.72/71	1.950/56	0.440/09	-1.52/-1.26	-0.380/5	-0.68/-2.62	-4.84/-8.38	-6.24/-5.96	-4.18/-0.96	-0.64/-2.89	-2.19/-1.31	-0.43/-2.19	-3.21/-1.64
Θ (60°)	-0.180/76	-1.65/-2.15	0.010/38	0.59/-2.6	-2.28/-2.72	-3.41/-1.98	-2.25/-2.29	-3.02/-3.03	-2.79/-6.66	-0.77/-0.34	-2.76/-2.59	-0.80/84	1.231/14	-0.21/-1.27	-2.65/-2.33	-1.54/-0.63	0.04/-2.39	-5.35/-6.57	-8.39/-5.36	-3.23/-3.54	-2.81/-3	-1.29/-0.67	-0.98/-1.86	-4.07/-2.69
Θ (67.5°)	-3.01/-0.9	-0.4/-0.1	0.07/-0.88	-0.21/-1.1	-1.43/-3.73	-6.71/-9.42	-4.93/-3.75	-6.51/-9.8	-4.72/-5.9	-0.25/-0.36	-1.33/-1.1	-0.40/5	0.60/35	-0.15/-0.99	-3.96/-3.88	-3.7/-2.25	-1.46/-2.72	-4.47/-5.78	-5.77/-2.29	-3.31/-5.05	-5.18/-2.75	-2.53/-3.58	-0.8/-0.36	-0.55/-1.99
Θ (75°)	-4.07/-1.97	1.130/19	-1.5/-2.55	-0.940/38	0.56/-0.9	-4.21/-7.66	-8.74/-4.78	-7.84/-5.51	-5.02/-3.98	-1.10/07	-2.03/-2.38	-1.83/-1.41	-0.77/-0.58	-0.87/-1.23	-2.15/-3	-2.39/-4.84	-4.46/-3.67	-2.6/-4.75	-7.37/-1.55	-4.44/-7.39	-5.17/-2.96	0.110/46	1.260/17	
Θ (82.5°)	-5.4/-2.75	0.96/-0.52	-3.54/-3.49	-2/-0.53	-0.87/-0.51	-4.42/-5.08	-4.24/-4.49	-3.93/-1.36	-4.68/-4.22	-0.58/-1.26	-5.14/-5.73	-3.51/-3.34	-3.34/-1.97	-2.3/-1.73	-1.84/-3.8	-3.04/-4.66	7.24/-6.01	-2.58/-4.1	-8.36/-2.78	-5.28/-4.94	-10.99/-4.94	-5.15/-3.24	-1.91/-1.54	0.84/-0.4
Θ (90°)	-6.73/-5.41	-1.31/-2.08	-5.08/-5.02	-3.31/-2.3	-1.04/-0.37	-4.95/-4.79	-1.87/-7.39	-3.74/-0.1	-6.19/-8.81	-1.31/-2.25	-6.99/-9.45	-4.84/-2.71	-4.79/-5.54	-3.18/-4.11	-1.52/-4.84	-3.4/-4.16	-12.06/-10.37	-5.05/-7.76	-8.24/-5.05	-5.04/-4.29	-9.32/-6.09	-6.32/-5.5	-4.07/-4	-0.88/-2.81
Θ (97.5°)	-4.56/-5.12	-5.47/-3.49	-4.43/-5.27	-3.12/-3.26	-1.38/-2.02	-10.7/-9.43	-1.58/-9.1	-3.32/-1.78	-5.81/-7.92	-3.07/-5.43	-8.2/-2.4	-4.38/-7.7	-4.63/-4.44	-2.26/-6.63	-4.29/-5.62	-11.79/-11.62	-9.12/-10.12	-8.87/-7.84	-5.96/-4.85	-7.32/-7.48	-8.91/-7.83	-6.12/-6.47	-1.77/-4.94	
Θ (105°)	-5.72/-5.22	-10.08/-3.14	-2.86/-6.96	-2.81/-4.67	-2.38/-5.82	-11.73/-9.01	-1.47/-5.66	-3.55/-5.63	-8.48/-6.69	-8.07/-5.5	-10.44/-6.47	-4.51/-3.09	-3.09/-8.81	-5.96/-4.63	-4.93/-8.84	-8.17/-7.91	-8.71/-12.9	-11.67/-10.01	-9.16/-12.63	-8.25/-4.78	-4.48/-6.16	-7.11/-7.23	-5.81/-6.88	-3.56/-6.22
Θ (112.5°)	-8.27/-3.39	-6.17/-2.04	-3.4/-4.85	-2.44/-5.3	-5.06/-6.82	-10.13/-6.27	-2.14/-4.8	-3.56/-9.02	-10.13/-9.06	-9.52/-12.15	-13.3/-6.82	-3.21/-3.58	-4.72/-10.72	-9.27/-4.79	-5.88/-7.98	-8.69/-7.82	-11.85/-15.39	-11.89/-10.06	-8.76/-15.07	-8.74/-3.42	-4.77/-5.79	-7.83/-5.72	-6.67/-8.5	-5.64/-10.29
Θ (120°)	-7.19/-6.23	-5.79/-6.63	-2.58/-2.85	-5.18/-7.87	-8.45/-5.84	-8.24/-6.17	-7.38/-7.06	-6.72/-9.53	-7.81/-11.02	-12.09/-1.98	-14.55/-7.55	-4.36/-4.58	-4.8/-8.1	-12.13/-6.13	-8.2/-7.79	-13.91/-7.42	-9.22/-15.58	-12.95/-14.7	-13.86/-11.76	-7.99/-3.84	-7.44/-5.64	-8.3/-5.72	-9.2/-5.02	-5.71/-9.95
Θ (127.5°)	-7.42/-6.85	-10.64/-7.62	-2.16/-2.22	-5.74/-8.37	-7.38/-9.92	-9.9/-9.15	-10.19/-12	-13.7/-7.23	-7.92/-11.78	-8.91/-12.38	-13.53/-4.89	-5.31/-5.76	-5.4/-10.99	-12.89/-7.15	-9.26/-8.44	-8.81/-6.38	-12.14/-11.06	-14.49/-12.53	-13.21/-12.79	-8.43/-5.3	-5.99/-5.21	-3.98/-13.72	-9.81/-6.99	-5.11/-9.16
Θ (135°)	-12.24/-14.59	-7.66/-5.94	-7/-7.3	-11.01/-11.71	-9.43/-13.43	-10.16/-12.57	-12.08/-10.43	-9.05/-10.35	-13.14/-14.18	-8.52/-10.57	-12.06/-6.7	-6.1/-4.9	-9.3/-13.4	-14.84/-8.54	-6.47/-8.86	-8.5/-8.98	-12.6/-9.69	-15.8/-9.76	-10.76/-6.96	-11.91/-6.72	-6.78/-6.2	-4.06/-6.69	-7.69/-8.19	-10.32/-13.83
Θ (142.5°)	-9.57/-6.82	-5.99/-7.11	-8.5/-6.85	-7.98/-12.12	-8.77/-9.72	-10.76/-8.68	-6.37/-11.62	-11.83/-9.13	-8.04/-12.03	-14.81/-7.89	-4.7/-4.99	-10.52/-12.93	-14.69/-12.45	-9.55/-9.92	-9.49/-12.29	-12.11/-9.39	-9.87/-8.01	-8.57/-6.21	-8.64/-9.77	-9.03/-7.71	-10.47/-9.47	-7.61/-10.72	-8.67/-7.51	
Θ (150°)	-14.82/-8.95	-7.76/-9.27	-8.32/-10.39	-11.93/-12.34	-9.97/-8.89	-8.75/-7.34	-9.44/-12.36	-13.39/-14.79	-9.53/-8.44	-11.07/-12.98	-14.73/-11.15	-9.58/-10.65	-11.64/-14.56	-9.45/-7.78	-10.69/-12.78	-10.53/-10.06	-9.31/-8.11	-8.6/-8.99	-8.72/-7.09	-5.96/-7.33	-12.1/-12.95	-11.56/-11.98	-12.77/-10.13	-12.08/-11.51
Θ (157.5°)	-11.66/-10.85	-8.67/-9.57	-13.16/-13.04	-12.24/-12.66	-12.98/-10.35	-11.45/-15.27	-15.36/-15.52	-15.06/-15.42	-14.89/-14.41	-14.73/-15.35	-9.59/-6.91	-6.05/-6.88	-9.6/-15.45	-12.32/-10.29	-12.17/-16.19	-13.65/-10.49	-10.36/-9.7	-7.19/-7.47	-9.4/-12.05	-8.39/-7.02	-9.78/-13.55	-14.43/-11.24	-9.66/-11.09	-14.25/-12.07
Θ (165°)	-15.79/-15.71	-15.64/-13.65	-11.37/-9.81	-9.14/-8.62	-9.66/-11.2	-12.9/-15.56	-15.93/-15.42	-15.29/-15.11	-13.41/-11.78	-13.73/-15.44	-14.4/-10.5	-9.61/-10.99	-16.02/-15.35	-13.22/-11.78	-12.54/-15.28	-14.63/-12.54	-12.71/-10.11	-7.98/-7.41	-8.53/-12.37	-14.18/-11.17	-9.05/-8.73	-9.77/-12.07	-13.58/-13.34	-13.05/-13.29
Θ (172.5°)	-10.39/-9.31	-8.42/-8.62	-7.88/-7.58	-8.33/-9.87	-12.37/-14.04	-13.43/-10.91	-10.54/-10.89	-10.97/-11.69	-12.59/-11.98	-12.53/-13.73	-14.86/-15.5	-13.1/-10.87	-10.17/-10.38	-11.41/-12.66	-14.07/-14.99	-14.93/-14.73	-14.33/-12.46	-11.81/-11.73	-10.33/-12.44	-15.16/-15.04	-12.85/-11.52	-10.83/-11.4	-9.89/-9.26	-8.54/-8.55
Θ (180°)	-13.11/-13.48	-13.84/-14.03	-13.07/-12.84	-12.85/-13.22	-13.11/-12.68	-11.56/-10.57	-10.5/-10.8	-11.77/-12.53	-12.94/-12.22	-12.09/-12.43	-13.21/-15	-15.11/-13.83	-13.08/-11.85	-12.05/-12.55	-11.86/-12.36	-12.24/-13.52	-11.86/-10.72	-9.71/-10.29	-11.19/-11.67	-12.26/-13.35	-13.44/-13.79	-13.29/-12.69	-13.06/-14.15	-14.11/-13.91
Freq(Hz)	5.630Pol	ThetA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Φ(15°)/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°)	-1.62/-1.92	-3.01/-3.57	-4.03/-4.24	-4.79/-5.79	-6.56/-6.29	-4.82/-3.31	-1.82/-1.1	-0.17/0.1	0.580/58	0.510/54	0.06/-0.3	-1.46/-2.37	-2.49/-2.91	-3.7/-4.08	-4.34/-4.79	-5.52/-6.35	-5.93/-5.28	-4.33/-3	-1.62/-0.76	-0.180/14	0.60/95	1.050/86	0.50/23	-0.21/-0.08
Θ (7.5°)	-0.7/-0.98	-1.45/-1.1	-0.76/-0.49	-0.58/-1.07	-1.49/-2.22	-2.55/-1.72	-0.75/-0.07	0.340/44	0.680/41	0.510/34	-0.15/-0.45	-1.29/-1.75	-2.25/-3.16	-3.6/-4.17	-4.93/-4.97	-5.36/-5.03	-3.23/-1.85	-1.39/-1.06	-0.91/-1.18	-1.49/-1.79	-1.78/-1.88	-1.73/-1.49	-1.17/-0.86	-0.51/-0.62
Θ (15°)	-1.16/-2.04	-2.93/-2.93	-2.25/-1.47	-0.590/2	1.061/26	1.010/67	-0.16/-0.23	0.240/76	1.321/6	1.640/78	-0.64/-2.44	-3.71/-5.54	-7.75/-10.05	-9.28/-7.02	-4.81/-3.14	-2.91/-2.68	-2.17/-1.47	-0.490/84	1.491/37	0.45/-1	-2.48/-2.62	-1.79/-0.93	-0.31/-0.43	-0.87/-0.84
Θ (22.5°)	-0.98/-1.11	-2.19/-2.74	-3.4/-3.65	-3.43/-2.75	-1.320/28	1.421/58	1.160/54	-0.190/05	0.691/33	1.841/55	0.41/-1.47	-4.07/-6.98	-8.23/-8.62	-7.71/-6.01	-5.61/-5.49	-5.44/-5.27	-6.19/-5.92	-2.63/-0.1	1.131/22	0.22/-1.65	-1.680/12	1.291/21	0.26/-1.32	-2.29/-1.84
Θ (30°)	-2.63/-2.86	-4.7/-5.38	-3.91/-2.57	-1.63/-1.53	-2.23/-3.58	-2.56/-0.43	0.361/54	2.212/89	3.292/84	1.790/8	-0.1/-1.27	-2.92/-4.98	-5.25/-3.66	-1.46/-0.89	-2.39/-5.67	-8.65/-9.32	-7/-5.22	-4.41/-4.08	-3.39/-2.18	-1.03/-1.13	-1.48/-0.09	0.23/-1.39	-2.97/-2.72	-2.03/-2.86
Θ (37.5°)	-8.91/-8.84	-7.12/-4.51	-1.84/-1.59	-3.05/-4.63	-7.01/-9.86	-5.49/-3.18	-0.911/38	2.223/58	4.313/57	2.120/29	-1.13/-3.07	-1.66/-3.75	-2.31/-2.58	-1.45/-0.57	-1.66/-4.19	-4.11/-3.75	-5.46/-4.89	-4.16/-4.12	-4.13/-6.3	-2.26/-1.63	-2.22/-2.28	-5.78/-5.67	-2.83/-3.21	-5.04/-7.13
Θ (45°)	-3.4/-4.35	-3.08/-1.58	-0.040/12	-1.16/-3.94	-7.67/-3.29	-3.17/-4.19	-1.690/39	0.933/18	5.014/43	3.211/7	-0.79/-2.49	-3.97/-3.17	-1.85/-2.33	-4.42/-3.21	-1.87/-4.09	-2.02/-0.62	-3.74/-4.12	-1.91/-1.35	-1.14/-0.98	-1.17/-2.41	-1.49/-2.77	-9.1/-4.46	-0.67/-3.84	-3.31/-2.4
Θ (52.5°)	-3.04/-4.42	-5.16/-0.69	1.61/1.72	0.67/-0.18	-1.880/34	-1.89/-2.8	-0.89/-0.11	-0.092/72	4.723/93	3.422/3	0.070/-1.1	-0.83/-1.9	-3.55/-2.05	-0.85/-1.19	-0.01/-3.57	-4.78/-0.98	-3.05/-1.5	0.34/-0.09	0.85/-0.94	-2.37/-2.3	-0.54/-1.26	-7.82/-1.38	-1.16/-0.21	-0.13/-2.52
Θ (60°)	-0.390/15	-1.150/45	1.852/75	1.31/2	0.221/98	0.81/-0.4	-1.041/16	1.591/27	2.232/27	3.432/51	0.530/88	-1.05/-0.52	1.38/-3.2	1.360/09	-0.30/-1.1	-4.67/-2.98	-1.740/48	1.04/-0.05	1.39/-0.82	-0.73/-1.73	-1.84/-2.45	-4.1/-0.66	0.611/99	0.99/-1.95
Θ (67.5°)	1.172/82	2.913/73	3.715/35	3.854/01	1.462/5	2.390/95	-0.221/8	3.012/15	1.362/67	3.511/71	0.030/53	0.830/52	-1.41/-1.68	1.6/-3.4	-0.640/06	-3.21/-3.17	-4.65/-1.6	2.320/93	2.34/-0.76	1.01/-1.21	-1.95/-2.14	-2.6/-1.45	0.792/39	2.590/65
Θ (75°)	1.414/1	3.794/29	3.915/67	4.624/95	2.822/53	3.031/97	0.320/67	2.452/45																



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(67.5°)	-4.26/-6.59	-11.37/-10.48	-7.96/-3.42	-3.82/-6.66	-9.11/-10.18	-8.57/-3.71	-6.67/-4.36	-6.61/-4.45	-9.83/-11.06	-5.69/-4.72	-3.16/-1.94	-0.51/-1.59	-1.91/-2.11	-4.15/-3.43	-3.21/-5.42	-3.97/-4.06	-6.22/-8.3	-13.26/-9.26	-13.55/-5.94	-8.53/-6.18	-4.7/-3.31	-5.1/-6.9	-3.58/-1.89	-6.4/-4.54
Θ(75°)	-3.2/-7.14	-7.46/-9.3	-6.04/-5.95	-7.65/-2.98	-3.89/-8.02	-8.04/-13.28	-10.67/-4.42	-6.13/-11.38	-8.65/-8.62	-6.49/-2.58	-4.05/-3.43	-3.05/-1.6	-2.61/-2.66	-4/-5.47	-4.57/-7.2	-5.36/-5.35	-5.22/-8.01	-11.41/-6.82	-8.62/-10.12	-9.88/-5.74	-3.61/-4.45	-4.69/-7.15	-2.31/-1.15	-3.52/-2.88
Θ(82.5°)	-5.35/-5.82	-4.83/-9.2	-6.59/-5.84	-10.55/-1.45	-2.6/-4.25	-3.54/-11.07	-7.44/-2.67	-5.16/-8.58	-9.02/-7.98	-6.48/-2.14	-6.12/-5.91	-4.43/-2.72	-2.62/-3.27	-5.72/-7.04	-7.2/-7.18	-3.92/-8.21	-6.08/-7.82	-9.24/-6.88	-5.24/-12.83	-12.48/-4.98	-5.75/-5.63	-7.48/-6.01	-2.63/-0.59	-2.51/-3.43
Θ(90°)	-7.66/-5.65	-3.69/-8.01	-8.99/-5.91	-10.13/-1.44	-2.99/-3.9	-4/-5.27	-5.67/-4.14	-3.69/-5.68	-7.28/-7.12	-6.91/-2.89	-7.22/-7.81	-8.07/-4.65	-5.15/-4.38	-8.74/-8.18	-8.32/-8.69	-2.98/-6.02	-7.57/-8.16	-7.1/-6.43	-7.28/-12.95	-12.6/-7.07	-8.75/-8.08	-13.07/-6.33	-5.4/-2.75	-4.03/-4.09
Θ(97.5°)	-11.68/-12.01	-7.78/-7.24	-11.95/-7.8	-7.88/-2.43	-5.26/-3.7	-5.87/-5.47	-6.81/-5.69	-3.83/-3.62	-6.13/-5.99	-5.42/-3.23	-9.75/-6.46	-7.68/-6.85	-9.71/-7.58	-9.36/-6.31	-10.89/-9.55	-3.18/-6.63	-8.29/-7.89	-6.5/-7.98	-6.27/-11.51	-10.92/-9.83	-9.17/-9.66	-10.13/-6.04	-11.34/-4.77	-8.17/-4.66
Θ(105°)	-12.49/-13.66	-10.71/-6.5	-10.8/-8.11	-4.53/-3.6	-5.8/-6.72	-13.54/-8.28	-6.37/-6.82	-6.9/-5.13	-6.58/-3.93	-5.4/-3.9	-7.29/-7.95	-4.92/-9.08	-13.8/-10.8	-11.46/-7.78	-9.91/-11.92	-6.85/-5.4	-7.41/-11.35	-7.41/-8.93	-7.95/-11.5	-11.55/-12.9	-6.69/-11.89	-9.17/-11.27	-11.67/-7.52	-12.01/-6.27
Θ(112.5°)	-8.84/-12.61	-12.11/-8.77	-8.1/-11	-5.01/-5.21	-9.16/-9.65	-14.87/-11.33	-5.42/-8.45	-3.58/-5.59	-6.35/-3.49	-6.17/-7.68	-7.1/-8.42	-5.71/-10.38	-12.8/-11.73	-13.14/-12.62	-12.95/-9.71	-8.88/-6.72	-8.04/-10.99	-5.94/-10.1	-8.6/-9.52	-11.52/-12.67	-6.14/-10.52	-9.8/-13.33	-11.1/-12.34	-12.2/-10.02
Θ(120°)	-14.29/-12.23	-13.91/-12.59	-8.84/-8.96	-5.74/-8.43	-12.61/-8.7	-8.85/-8.77	-8.69/-9.6	-4.44/-5.57	-6.17/-7.13	-7.83/-13.55	-8.76/-8.23	-9.52/-9.85	-13.25/-11.98	-15.37/-13.86	-11.46/-10.95	-11.5/-9.09	-10.61/-15.19	-6.5/-8.54	-13.54/-7.46	-12.87/-11.57	-6.44/-9.59	-11.3/-9.6	-7.5/-11.11	-9.24/-9.29
Θ(127.5°)	-12.94/-12	-10.43/-12.99	-6.05/-5.57	-7.46/-8.5	-13.17/-9.52	-9.38/-10.84	-13.63/-11.24	-6.76/-6.99	-8.18/-9.31	-15.14/-9.99	-9.34/-10.2	-9.73/-8.84	-10.29/-11.49	-15.41/-12.8	-10.71/-13.61	-9.05/-6.55	-10.03/-14.3	-8.98/-8.27	-11.95/-12.21	-13.77/-8.84	-9.26/-7.61	-10.05/-9.79	-11.87/-11.61	-8.8/-14.19
Θ(135°)	-9.23/-14.24	-15.32/-12.11	-8.13/-11.75	-13.86/-12.16	-16.08/-15.66	-14.77/-15.16	-12.37/-10.72	-11.83/-13.46	-13.5/-6.62	-9.66/-15.21	-11.35/-8.58	-10.35/-11.01	-9.76/-13.1	-12.57/-11.35	-10.02/-6.84	-5.49/-6.57	-9.97/-15.01	-10.25/-9.08	-8.48/-10.36	-9.7/-9.41	-12.06/-8.88	-8.55/-10.48	-10.43/-9.92	-14.27/-12.62
Θ(142.5°)	-11.51/-13.65	-12.29/-13.73	-8.5/-9.07	-10.1/-5.07	-6.39/-11.11	-9.09/-8.76	-10.02/-7.72	-8.55/-8.57	-8.05/-7.45	-9.61/-12.67	-7.67/-8.27	-10.47/-10.79	-10.82/-11.7	-13.28/-12.47	-9.94/-9.42	-5.82/-6.54	-12.48/-12.44	-10.99/-11.94	-13.1/-8.37	-9.02/-15.36	-14.49/-12.88	-8.71/-13.51	-8.93/-10.93	-12.61/-8.61
Θ(150°)	-13.13/-11.89	-10.84/-11.08	-11.15/-15.8	-14.53/-10.56	-12.55/-9.77	-9.56/-10.78	-9.14/-12.1	-12.21/-10.9	-9.42/-8.74	-10.07/-15.56	-10.83/-8.51	-8.79/-10.51	-13.41/-10.7	-9.28/-11.95	-11.31/-10.3	-8.96/-10.47	-10.7/-12.21	-12.61/-10.55	-7.42/-10.79	-13.94/-9.91	-11.73/-15.59	-13.04/-14.65	-13.14/-9.58	-8.4/-8.28
Θ(157.5°)	-13/-12.24	-11.14/-12.48	-13.84/-12.47	-11.68/-12.57	-14.5/-10.52	-9.85/-10.06	-9.83/-12.03	-15/-10.71	-8.61/-10.26	-12.45/-11.92	-10.73/-8.83	-10.01/-14.41	-15.61/-11.77	-10.5/-11.76	-12.88/-10.94	-12.07/-13.18	-12.5/-12.56	-12.22/-11.58	-10.86/-13.85	-15.75/-14.76	-15.48/-15.48	-14.48/-12.69	-11.69/-12.5	-14.52/-16.12
Θ(165°)	-12.9/-15.62	-15.5/-13.08	-10.2/-10.53	-12.15/-12.42	-12.14/-10.69	-10.51/-10.45	-10.56/-11.77	-12.11/-11.93	-11.49/-11.63	-14.14/-15.16	-13.31/-11.18	-11.21/-13.03	-14.56/-12.39	-13.33/-13.98	-13.95/-13.26	-10.11/-8.61	-8.15/-9.34	-12.37/-15.32	-14.81/-13	-12.31/-12.47	-13.56/-13.41	-13.06/-15.57	-15.83/-13.27	-10.26/-10.2
Θ(172.5°)	-11.79/-12.39	-12.05/-13.04	-13.77/-13.12	-13.3/-11.99	-11.54/-11.69	-13.07/-14.6	-14.42/-12.47	-10.78/-9.46	-7.78/-8.05	-9.66/-12.88	-14.56/-14.2	-12.75/-12.2	-11.92/-12.42	-13.8/-13.56	-12.75/-12.29	-11.95/-12.21	-12.52/-13.04	-14.49/-13.55	-12.35/-11.55	-11.24/-11.39	-11.79/-12.48	-11.36/-10.79	-10.11/-10.42	-11.63/-11.86
Θ(180°)	-9.62/-10.95	-12.36/-13.3	-13.17/-13.64	-14.69/-14.09	-12.15/-12.04	-12.32/-13.31	-13.91/-13.01	-11.66/-11.03	-11.35/-10.73	-10.84/-10.75	-10.22/-11.23	-10.44/-10.03	-9.46/-9.16	-10/-12.49	-13.63/-14.58	-15.66/-14.01	-12.52/-12.42	-12.51/-12.44	-12.37/-13.11	-13.71/-15.06	-14.17/-12.9	-14.24/-12.74	-11.43/-12.02	-12.72/-9.7
Freq(Hz)	5.785GHz	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°)	-2.84/-2.66	-2.09/-1.99	-2.13/-1.94	-1.44/-0.72	-0.10/5.4	0.64/0.98	1.25/1.53	1.61/1.42	1.23/0.74	0.16/-0.56	-1.21/-2.57	-2.82/-2.44	-1.59/-1.26	-1.43/-1.29	-1.15/-1.4	-1.83/-1.87	-2.1/-1.73	-1.02/-0.52	-0.34/-0.05	0.29/0.64	0.81/0.6	0.2/-0.35	-1.24/-2	-2.83/-2.98
Θ(7.5°)	-3.7/-3.75	-3.45/-3.69	-3.92/-3.47	-2.63/-1.69	-0.57/-0.2	0.86/-1.4	1.81/-2.4	2.62/-2.8	2.78/2.61	1.88/0.59	-0.79/-2.9	-6.14/-8.88	-8.18/-7.21	-6.37/-3.14	-0.95/0.12	0.82/-1.25	1.31/-1.25	0.97/0.28	-0.71/-1.28	-1.27/-1.02	-0.59/-0.25	-0.38/-0.98	-1.78/-2.37	-3.23/-3.45
Θ(15°)	-3.57/-5.05	-4.43/-2.86	-1.69/-1.01	-1.15/-1.15	-0.92/-0.37	0.91/9.1	2.62/9.1	3.04/3.03	2.83/2.86	2.58/1.81	0.68/-0.9	-6.62/-5.4	-4.01/-2.96	-2.25/-1.62	-0.86/-0.46	-0.43/-0.48	-1.07/-1.25	-3.52/-3.91	-3.22/-1.69	-0.19/0.73	0.93/0.57	0.04/-0.98	-1.82/-2.68	
Θ(22.5°)	-3/-3.44	-6.03/-6.26	-6.23/-5.71	-5.05/-4.54	-4.81/-5.66	-4.13/-1.26	1.06/1.74	2.05/2.11	2.11/2.11	1.70/4.2	-1.53/-2.92	-3.53/-3.75	-4.17/-4.06	-3.75/-3.88	-3.45/-2.14	-1.85/-2.77	-3.97/-4.32	-4.95/-5.9	-6.66/-5.48	-3.91/-2.39	-1.39/-1.37	-1.49/-0.98	-0.41/-1.2	-2.94/-3.35
Θ(30°)	-3.06/-4.62	-6.02/-5.13	-4.8/-4.91	-4.69/-3.73	-3.84/-4.59	-3.54/-1.2	-0.28/-0.2	-1.01/-2.53	0.79/-0.09	-2.66/-4.18	-2.63/-2.16	-2.97/-2.51	-1.45/-1.35	-2.08/-3.58	-5.86/-7.4	-7.91/-8.23	-8.73/-6.89	-5.41/-3.98	-3.38/-2.87	-2.86/-4.01	-4.45/-3.61	-3.93/-6.09	-6.53/-4.04	
Θ(37.5°)	-9.65/-8.65	-4.72/-1.77	-0.67/-0.2	0.53/0.2	-2.03/-4.3	-4.85/-2	0.37/0.97	0.87/0.16	-0.31/-0.01	0.16/-0.71	-2.76/-2.4	0.18/0.51	-0.48/-0.35	0.15/-0.86	-2.15/-2	-5.46/-2.73	-2.85/-3.99	-1.66/-1.88	-3.6/-4.44	-2.71/-0.7	-0.5/-3.11	-8.01/-5.31	-4.05/-6.23	
Θ(45°)	-1.18/-0.29	1.32/2.85	4/3.9	2.93/1.43	0.87/-2.11	-3.73/0.66	1.84/2	3.34/3.59	2.01/1.41	-0.01/-1.82	-6.11/-3.94	0.84/1.59	0.35/-0.01	1.11/1.77	0.75/0.68	-0.17/-2.8	-5.77/-1.72	-0.01/-1.78	-2.59/-1.97	-3.02/-4.11	-3.25/-0.17	-1.18/-4.99	-1.71/-1.03	-1.18/-0.44
Θ(52.5°)	0.41/1.37	3.36/4.17	5.47/4.97	4.27/2.69	2.48/-1	-1.96/1.35	1.84/2.24	4.2/4.68	1.74/1.47	0.92/-0.49	-2.11/1.81	3.07/1.72	0.26/1.12	2.72/4.4	0.52/0.87	-1.06/-4.66	-6.89/-1.8	0.86/-2.13	-2.78/-1.77	-4.64/-4.82	-3.20/0.64	-0.96/-2.5	0.88/0.62	1.65/1.68
Θ(60°)	1.63/1.54	2.79/3.52	5.2/4.4	4.76/4.69	4.16/2.05	-0.72/0.43	2.29/3.37	4.67/5.09	1.84/1.73	1.52/2.21	0.69/3.61	4.01/2.15	0.51/1.59	3.65/3.04	1.44/0.62	-0.66/-2.89	-3.82/-3.42	0.07/0.72	1.16/0.6	-5.24/-2.97	-4.26/-0.03	-0.52/-1.09	1.31/2.25	3.43/3.04
Θ(67.5°)	4.23/2.99	4.09/4.86	6.24/5.56	5.81/5.85	5.19/3.49	0.61/0.1	2.81/3.74	4.86/4.05	0.45/2.29	1.86/2.8	2.34/4.62	3.41/1.25	0.42/2.09	4.24/2.27	1.93/0.63	0.49/0.29	-1.51/-1.99	1.52/2.44	4.11/2.28	-2.5/0.48	-5.42/-1.24	0.53/-0.05	2.67/3.34	4.16/4.63
Θ(75°)	4.54/4.32	5.12/5.85	6.42/5.45	6.08/5.95	5.62/3.66	2.55/2.72	1.16/2.09	4.93/4.02	-0.40/7.9	2.55/3.3	2.42/4.26	2.99/0.78	-0.19/0.46	3.57/1.1	1.15/0.77	1.44/1.78	0.65/0.26	2.63/4.46	5.87/3.75	-0.76/1.56	-4.41/-0.62	-0.3/-0.86	2.55/3.89	4.75/1.52
Θ(82.5°)	4.16/5.38	4.23/4.96	5.97/4.35	5.13/5.55	5.43/3.55	3.03/2.65	-0.58/1.1	3.66/2.68	-2.5/0.32	2.71/2.47	1.64/3.82	1.48/-1.27	-1.11/0.35	2.19/-1.1	-0.66/-0.02	1.41/1.9	1.51/1.03	3.76/4.46	6.1/3.89	1.07/0.76	-1.93/-0.16	-2.87/0.28	2.79/4.02	4.17/3.85
Θ(90°)	3.35/5.13	2.5/2.93	5.02/3.01	3.79/3.77	4.09/3.38	1.36/0.76	-1.11/-0.21	0.49/0.52	-5.47/-2.24	0.57/0.54	-1.32/2.26	0.49/-1.75	-3.26/-1.16	-0.31/-0.75	-5.77/-1.56	-0.68/-0.74	-1.09/-0.1	2.82/2.62	5.34/3.14	0.63/-0.69	-1.77/-1.92	-6.62/1	2.43/2.75	2.87/1.92
Θ(97.5°)	1.41/3.63	0.61/2.01	4.15/1.46	2.48/2.37	2.46/1.45	-2.06/-1.7	-2.84/-1.63	-2.85/-2.41	-7.35/-3.86	-0.24/-1.11	-2.64/0.77	-0.41/-4.28	-2.51/-1.53	-2.98/-4.06	-8.38/-3.15	-1.76/-4.12	-6.49/-2.36	1.03/-0.1	3.13/0.4	-0.89/-2.65	-2.15/-3.87	-9.55/0.47	1.28/1.2	1.79/-0.33
Θ(105°)	-1.43/0.88	0.51/1.5	1.87/-0.13	-0.88/-0.23	0.25/-1.01	-1.97/-2.68	-4.94/-2.44	-6.37/-6.64	-11.84/-3.38	-2.04/-3.12	-5.03/-1.74	-1.5/-4.33	-2.88/-3.15	-3.11/-7.21	-7.92/-7.68	-4.16/-6.51	-15.6/-6.93	-1.01/-2.48	0.92/-1.54	-4.82/-5.58	-5.33/-6.47	-12.07/-3.1	0.27/-0.43	1.14/-2.55
Θ(112.5°)	-3.93/-0.86	-0.04/-0.69	-0.97/-0.41	-3.75/-1.72	-2.07/-0.96	1.54/-1.89	-6.06/-3.57	-5.8/-5.27	-12.23/-6.33	-4.07/-5.36	-3.35/-4.78	-2.09/-6.11	-1.22/-3.55	-3.92/-7.1	-13.33/-8.41	-5.42/-8.61	-10.32/-8.44	-3.75/-2.26	-0.14/-3.49	-7.58/-4.76	-8.27/-8.01	-10.69/-5.7	-1.7/-2.17	0.23/-2.67
Θ(120°)	-5.44/-3.15	-1.51/-1.05	-1.43/-1	-2.89/-2.8	-2.83/-1.69	1.23/-1.7	-5.37/-9	-7.06/-7.18	-6.01/-5.49	-6.64/-10.67	-5.82/-4.99	-3.32/-5.14	-3.2/-6.14	-5.71/-11.03	-12.08/-9.22	-5.4								



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Gain Result

Freq(Hz)	2.450/Pol.	Phi/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°)	-13.83/-16.93	-17.03/-16.46	-15.29/-13.51	-11.35/-9.56	-6.29/-7.28	-6.52/-5.93	-5.48/-5.11	-5/-4.93	-4.92/-5.06	-5.45/-6.42	-7.53/-8.67	-10.24/-12.38	-16.02/-18.94	-17.55/-13.72	-11.35/-9.95	-9.02/-8.24	-7.64/-7.27	-6.87/-6.43	-6/-5.76	-5.73/-5.99	-6.31/-6.54	-6.81/-7.26	-7.89/-8.66	-9.65/-11.2		
Θ(7.5°)	-14.1/-19.54	-18.37/-18.05	-16.82/-13.74	-11.37/-9.88	-9.12/-8.41	-7.78/-7.32	-6.85/-6.48	-6.41/-6.59	-7.06/-7.45	-8.11/-9.28	-10.54/-11.84	-12.77/-14.14	-17.33/-19.27	-15.48/-11.96	-9.71/-8.66	-8.09/-7.74	-7.47/-7.19	-6.71/-5.91	-5.13/-4.59	-4.42/-4.53	-4.75/-5.22	-5.88/-6.45	-7.23/-8.16	-9.33/-10.95		
Θ(15°)	-15.14/-18.95	-18.55/-18.68	-18.21/-15.21	-12.06/-10.65	-10.16/-9.7	-9.06/-8.39	-7.79/-7.28	-7.46/-8.17	-9.22/-10.07	-11.01/-12.36	-13.69/-14.85	-15.43/-15.93	-18.33/-18.54	-16.37/-11.66	-8.78/-7.17	-6.51/-6.12	-6.08/-6.22	-6.18/-5.69	-4.9/-4.33	-4.09/-4.1	-4.36/-5.03	-5.93/-6.86	-7.85/-9.26	-10.93/-12.69		
Θ(22.5°)	-17.57/-17.89	-17.67/-17.57	-18.38/-14.47	-10.82/-9.6	-9.65/-9.89	-8.99/-9.55	-8.84/-8.22	-8.38/-9.25	-10.5/-11.5	-12.13/-12.4	-12.62/-13.27	-14/-14.47	-16.22/-18.92	-15.38/-10.63	-7.54/-5.74	-4.79/-4.37	-4.34/-4.55	-4.68/-4.53	-4.3/-4.38	-4.85/-5.53	-7.48/-8.22	-9.45/-11.53	-14.84/-17.15			
Θ(30°)	-17.9/-17	-16.73/-18.52	-18.3/-12.46	-9.09/-8.39	-9.47/-11.42	-12.72/-12.07	-10.16/-8.45	-7.63/-7.88	-8.91/-10.02	-10.48/-10.46	-10.44/-10.97	-11.95/-12.99	-13.79/-13.52	-11.84/-9.75	-7.58/-5.69	-4.49/-3.86	-3.62/-3.56	-3.39/-3.11	-3.06/-3.79	-5.61/-8.33	-9.79/-8.37	-7.19/-7.21	-8.17/-9.99	-13.57/-19.09		
Θ(37.5°)	-17.26/-14.48	-13.74/-16.3	-17.15/-10.72	-7.65/-7.46	-8.9/-13.43	-17.21/-12.38	-8.36/-6.07	-5.1/-5.21	-6.13/-6.97	-7.39/-7.7	-8.27/-9.2	-10.46/-12.02	-11.89/-9.47	-7.78/-7.21	-6.86/-6.13	-5.22/-6.43	-4.34/-3.99	-3.26/-2.46	-2.24/-3.23	-6.11/-11.07	-10.61/-7	-5.6/-5.55	-6.26/-7.63	-10.41/-15		
Θ(45°)	-17.05/-13.25	-12.2/-14.94	-19.34/-11.29	-7.69/-7.49	-10.39/-17.49	-18.46/-13.05	-7.33/-4.5	-3.53/-3.57	-4.12/-4.74	-5.37/-6.19	-7.29/-8.37	-9.22/-10.07	-9.7/-7.75	-6.51/-6.59	-6.97/-6.86	-6.24/-5.88	-5.84/-5.52	-4.29/-2.66	-1.92/-2.85	-6.25/-12.04	-9.15/-5.77	-4.96/-5.19	-5.83/-7.1	-9.82/-14.94		
Θ(52.5°)	-18.62/-15.27	-13.54/-18.41	-18.98/-10.5	-7.85/-8.86	-14.15/-16.17	-11.58/-8.58	-5.15/-3.09	-2.96/-3.82	-4.63/-5.31	-6.34/-8.04	-9.87/-10.09	-9.47/-8.87	-8.34/-7.36	-7.15/-7.52	-7.43/-6.88	-6.35/-6.23	-6.58/-7.34	-6.77/-4.46	-3.08/-3.77	-7.31/-10.09	-5.99/-3.91	-3.88/-4.48	-4.9/-5.79	-8.28/-13.9		
Θ(60°)	-18.98/-15.92	-13.95/-17.88	-15.42/-7.75	-5.73/-7.54	-16.97/-13.5	-7.04/-4.7	-2.67/-1.74	-1.44/-2.97	-4.76/-6.12	-8.02/-11.28	-14.73/-14.61	-12.24/-10.03	-8.96/-7.99	-7.5/-7.54	-7.14/-6.65	-6.32/-6.15	-6.15/-6.71	-1.1129/-3.7	-5.33/-4.47	-6.57/-6.54	-3.5/-2.43	-3.31/-4.65	-5.07/-5.33	-7/-11.2		
Θ(67.5°)	-18.1/-18.22	-14.03/-18.13	-18.79/-9.57	-6.06/-7.01	-15.84/-11.97	-6.21/-4.37	-2.5/-1.01	-1.03/-2.12	-3.45/-4.82	-7.34/-11.59	-15.97/-14.74	-11.49/-9.15	-7.87/-6.95	-7.16/-7.8	-7.72/-7.42	-7.21/-6.74	-6.25/-7.46	-13.28/-12.46	-5.77/-4.53	-6.15/-5.63	-3.4/-2.94	-4.33/-5.75	-5.87/-6.44	-8.71/-11.92		
Θ(75°)	-14.2/-18.78	-19.05/-17.38	-16.7/-13.57	-8.92/-8.67	-15.07/-10.68	-5.91/-4.66	-3.56/-2.27	-2.24/-3.11	-3.65/-4.33	-4.46/-10.26	-13.59/-12.91	-10.65/-8.31	-7.22/-7.33	-9.11/-10.99	-10.56/-9.33	-8.21/-7.03	-6.04/-6.62	-11.04/-13.8	-6.88/-5.6	-7.11/-5.96	-3.65/-3.22	-4.18/-4.89	-5.41/-7.17	-11.7/-15.17		
Θ(82.5°)	-16.24/-16.34	-18.84/-16.96	-14.38/-15	-10.77/-9.71	-12.25/-10.55	-7.87/-6.59	-4.29/-2.33	-2.26/-3.68	-5.02/-6.47	-10.22/-15.97	-16.5/-13.9	-10.72/-8.43	-8.24/-9.56	-10.89/-10.8	-9.29/-8.11	-7.17/-6.53	-6.1/-6.76	-10.75/-12.61	-6.57/-6.56	-6.51/-5.54	-4.19/-4.49	-5.17/-5.65	-6.68/-8.39	-12.82/-17.39		
Θ(90°)	-18.56/-16.28	-18.66/-15.55	-10.51/-13.17	-13.79/-13.51	-12.04/-7.95	-7.35/-9.93	-9.77/-5.93	-4.4/-4.5	-5.44/-6.83	-9.98/-15.97	-17.19/-13.03	-9.62/-7.98	-8.48/-8.81	-8.77/-9.61	-10.02/-9.54	-8.71/-8.27	-7.37/-7.01	-9.17/-9.14	-5.45/-5.55	-9.12/-7.66	-4.73/-6.66	-7.36/-7.51	-10.14/-16.31			
Θ(97.5°)	-17.47/-16.64	-17.66/-17.81	-11.08/-12.52	-12.29/-12.57	-15.45/-8.75	-6.62/-8.25	-11.6/-9.7	-7.41/-7.04	-7.11/-7.91	-11.2/-16.27	-15.35/-11.39	-9.18/-9.18	-9.86/-8.99	-10.3/-13.63	-14.09/-11.26	-9.62/-8.5	-7.03/-6.76	-8.5/-8.61	-6.79/-8.5	-9.81/-5.08	-3.89/-5.1	-5.89/-6.18	-5.81/-5.17	-8.29/-17.82		
Θ(105°)	-14.98/-18.29	-17.05/-18.43	-13.4/-13.45	-13.86/-11.78	-16.14/-11.7	-7.47/-6.96	-8.43/-9.63	-9.71/-9.92	-9.37/-7.97	-10.28/-13.51	-13.26/-10.31	-8.92/-9.73	-10.03/-10.89	-13.06/-10.81	-15.55/-12.89	-12.17/-10.19	-7.98/-7.49	-8.82/-8.73	-7.08/-7.93	-7.91/-5.64	-5.93/-6.48	-4.94/-4.59	-4.55/-4	-6.79/-18.18		
Θ(112.5°)	-13.59/-13.39	-13.59/-14.42	-18.7/-18.1	-16.92/-10.96	-12/-15.91	-8.42/-11.9	-8.42/-11.9	-6.83/-7.7	-9.21/-10.95	-14.71/-19.19	-16.28/-12.14	-10.27/-12.65	-10.07/-10.46	-12.96/-12.96	-12.68/-12.36	-9.83/-7.51	-6.81/-7.83	-9.92/-8.72	-6.91/-7.1	-7.08/-6.82	-7.63/-6.81	-5.63/-6.16	-6.01/-4.33	-6.45/-13.92		
Θ(120°)	-18.94/-15.1	-12.97/-12.53	-13.96/-13.12	-17.65/-15	-10.91/-11.9	-12.94/-14.49	-16.49/-12.54	-10.04/-8.74	-7.78/-7.92	-9.21/-11.23	-12.4/-11.25	-10.36/-9.04	-8.45/-10.43	-13.76/-15.16	-16.6/-17.03	-13.37/-11.33	-11.93/-12.61	-9.53/-6.39	-5.34/-6.19	-8.2/-9.55	-8.41/-5.97	-5.07/-6.18	-6.3/-4.32	-5.02/-11.97		
Θ(127.5°)	-18.31/-16.97	-15.48/-15.46	-14.57/-11.13	-12.72/-19.01	-18.88/-17.59	-16.66/-14	-14.28/-16.29	-19.3/-18.08	-18.54/-14.87	-13.7/-14.13	-12.79/-11.39	-12/-13.51	-15.9/-17.7	-16.94/-18.24	-16.2/-13.85	-12.14/-11.15	-10.01/-8.49	-7.41/-7.08	-7.83/-9.4	-9.06/-6.36	-4.31/-3.27	-3.83/-4.62	-10.15/-8.65	-8.17/-13.15		
Θ(135°)	-15.58/-15.53	-14.53/-14.41	-17.79/-16.48	-14.74/-18.26	-17.25/-14.99	-17.93/-18.49	-19.46/-16.15	-14.41/-12.96	-12.03/-11.14	-11.29/-13.63	-17.92/-19.01	-18.18/-16.15	-12.11/-11.25	-13.41/-16.34	-13.84/-11.89	-11.69/-12.52	-13.44/-14.1	-13.38/-10.19	-7.79/-6.47	-5.64/-5.08	-4.94/-5.44	-7.6/-13.28	-18.69/-13.39	-10.68/-12.61		
Θ(142.5°)	-13.97/-15.6	-14.65/-13.59	-15.77/-18.47	-18.45/-15.29	-13.12/-12.54	-13.43/-16.09	-17.81/-17.88	-17.85/-16.2	-11.98/-10.37	-10.65/-12.46	-15.31/-17.44	-16.05/-13.14	-12.2/-14.6	-18.94/-18.42	-17.44/-17.69	-18.94/-17.86	-13.86/-10.78	-8.24/-6.53	-6.02/-6.7	-8.38/-10.33	-11.71/-6.64	-15.2/-19.08	-16.07/-11.84	-10.89/-12.02		
Θ(150°)	-15.34/-16.28	-16.31/-16.18	-18.8/-18.67	-18.98/-12.98	-10.73/-10.57	-11.73/-13.74	-16.28/-18.97	-18.78/-17.76	-15.38/-13.33	-12.83/-13.31	-14.88/-16.58	-16.81/-16.61	-16.95/-19	-18.45/-15.58	-13.95/-13.36	-12.53/-11	-9.64/-8.87	-8.83/-9.48	-11.32/-14.84	-18.27/-15	-12.22/-17.19	-14.02/-18.28	-17.98/-18.39	-16.67/-15.54		
Θ(157.5°)	-15.21/-14.86	-16.05/-19.19	-18.36/-17.78	-15.31/-12.32	-10.71/-10.16	-10.66/-11.9	-13.17/-13.78	-13.54/-12.93	-11.98/-11.19	-11.04/-11.68	-13.46/-15.3	-16.2/-17.23	-18.71/-18.2	-18.92/-17.87	-17.79/-16.24	-14.59/-13.35	-12.84/-13.47	-15.38/-18.5	-17.6/-16.26	-14.74/-12.66	-11.97/-12.5	-14.63/-18.37	-16.03/-17.6	-19/-18.1		
Θ(165°)	-14.59/-14.54	-16.28/-18.45	-18.36/-19.24	-16.68/-15.11	-14.87/-14.95	-16.28/-16.34	-17.49/-17.09	-15.09/-13.44	-12.1/-11.1	-10.62/-10.79	-11.94/-13.66	-15.13/-16.67	-18.72/-19.07	-19.38/-19.1	-17.63/-19.09	-18.87/-17.85	-17.11/-17.03	-17.16/-12	-15.36/-14.91	-14.64/-14.98	-15.55/-16.49	-15.63/-18.37	-17.56/-16.86	-16.83/-16.05		
Θ(172.5°)	-16.97/-18.15	-17.51/-18.19	-18.24/-17.49	-15.34/-14.37	-14.42/-15.57	-17.07/-18.93	-18.57/-18.6	-19.1/-18.43	-17.7/-16.78	-15.76/-15.58	-16.53/-18.16	-18.22/-17.4	-16.39/-15.26	-14.92/-15.7	-16.59/-16.42	-15.44/-14.38	-13.37/-12.56	-11.83/-11.34	-11.26/-11.58	-12.46/-13.9	-15.82/-17.63	-18.51/-18.19	-17.07/-16.42	-16.46/-16.7		
Θ(180°)	-18.48/-17.86	-18.89/-16.53	-14.14/-12.82	-12.1/-11.75	-11.52/-11.31	-11.28/-11.43	-11.71/-12.11	-12.77/-14.12	-16.58/-18.56	-18.44/-18.64	-17.94/-18.6	-17.94/-18.3	-19.2/-18.8	-19.23/-18.93	-18.07/-16.55	-14.86/-13.35	-12.06/-10.88	-10.09/-9.75	-9.9/-10.45	-11.66/-13.53	-16.08/-18.65	-18.81/-17.84	-18.95/-17.51	-18.73/-18.12		
Freq(Hz)	2.450/Pol.	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°)	-7.48/-6.93	-6.58/-6.43	-7.16/-7.85	-8.38/-8.73	-8.97/-9.56	-10.71/-12.49	-14.82/-16.6	-17.17/-16.06	-15.04/-13.89	-12.02/-10.01	-8.55/-7.66	-7.24/-6.86	-6.41/-6.07	-5.61/-5.23	-5.38/-6.05	-7.06/-6.28	-9.59/-11.01	-12.75/-14.86	-17.76/-18.57	-18.8/-16.76	-14.26/-12.38	-11.22/-10.32	-9.62/-9.16	-8.65/-8.03		
Θ(7.5°)	-6.95/-6.55	-6.31/-6.45	-6.91/-7.37	-7.7/-8	-8.49/-9.56	-11.4/-14.1	-17.96/-17.69	-19.4/-18.93	-17.41/-14.86	-12.15/-10.08	-8.78/-8.15	-7.83/-7.49	-7.2/-6.92	-6.48/-6.06	-5.91/-6.61	-6.37/-6.83	-7.32/-7.66	-7.99/-8.51	-9.32/-10.15	-10.55/-10.79	-10.68/-10.44	-10.08/-9.53	-8.92/-8.33	-7.85/-7.32		
Θ(15°)	-7.08/-6.48	-5.79/-5.37	-5.07/-4.84	-6.41/-4.97	-5.44/-6.17	-7.42/-9.2	-11.55/-15.37	-18.34/-18.5	-18.43/-16.88	-13.28/-10.72	-9.2/-8.51	-8.61/-7.59	-7.04/-6.7	-6.51/-6.47	-6.61/-6.67	-6.33/-6.58	-5.39/-5.02	-4.81/-4.63	-4.51/-4.69	-6.75/-7.42	-7.83/-7.92	-7.85/-7.52				
Θ(22.5°)	-8.4/-7.28	-5.88/-4.74	-3.83/-3.19	-2.94/-3.04	-3.36/-3.69	-4.21/-5.08	-6.5/-8.71	-12.14/-16.38	-18.42/-18.48	-13.68/-10.31	-8.34/-7.33	-6.72/-5.98	-5.1/-4.33	-3.84/-3.76	-4.25/-5.06	-5.86/-6.38	-6.62/-6.33	-5.51/-4.42	-3.31/-2.35	-1.67/-1.47	-1.82/-2.7	-3.93/-5.34	-6.82/-8.1	-8.95/-9.09		
Θ(30°)	-11.84/-9.3	-6.44/-4.49	-3.12/-3.21	-1.96/-1.87	-1.72/-1.33	-0.95/-0.92	-1.44/-2.7	-4.76/-7.3	-10.48/-13.88	-14.39/-11.07	-8.3/-6.62	-5.58/-4.64	-3.61/-2.53	-1.53/-0.93	-0.93/-1.64	-2.6/-3.67	-4.93/-6.14	-6.53/-5.46	-3.58/-1.74</							



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(15°)	-11.13/-6.97	-4.29/-3.16	-1.66/-0.38	1.36/2.48	3.23/3.39	3.33/2.65	1.67/0.19	-1.52/-0.07	-3.99/-0.52	-7.59/-13.47	-18.48/-10.18	-4.65/-1.89	-0.89/-0.97	-1.17/-1.04	-1.45/-2.12	-2.51/-2.32	-2/-1.79	-2.19/-3.29	-4.77/-5.06	-4.07/-2.93	-2.51/-2.59	-3.86/-5.5	-8.73/-11.64	-14.68/-14.89
Θ(22.5°)	-4.72/-3.14	-0.68/0.51	0.09/-1.39	-2.14/-1.58	-0.57/0.15	0.70/7.8	0.54/-0.48	-2.42/-3.96	-4.57/-6.58	-12.02/-16.97	-7.66/-3.3	-0.98/0.03	0.01/-0.97	-1.4/-1.16	-0.52/-0.57	-1.43/-2.8	-3.52/-2.54	-2.16/-3.48	-5.64/-6.83	-5.19/-3.86	-3.93/-5.38	-9.31/-18.02	-19.02/-19.31	-16.11/-8.68
Θ(35°)	-3.63/-3.24	-2.99/-2.12	-1.63/-1.58	-1.77/-2.09	-0.75/0.59	0.86/0.76	0.08/0.89	0.33/-2.61	-1.77/-12.6	-11.87/-7.51	-2.83/-0.96	-0.94/-1.02	-1.23/-0.62	0.23/-0.17	-0.67/-0.26	0.42/-0.8	-2.52/-1.4	-2.52/-2.79	-4.55/-5.87	-6.57/-6.77	-16.91/-11.04	-16.05/-16.68	-19.12/-12.53	-6.83/-0.51
Θ(37.5°)	-4.32/-4.75	-4.71/-3.9	-2.24/-1.22	-0.91/-0.57	0.42/1.61	1.73/1.29	0.73/1.56	1.77/-1.66	-10.38/-10.09	-5.49/-4.42	-1.91/-0.57	-0.67/-1.49	-2.02/-0.74	0.44/-0.06	-1.5/-1.64	-0.24/-0.84	-2.14/-1.52	-1.38/-3.12	-5.87/-7.55	-8.37/-7.86	-9.18/-10.86	-8.52/-10.8	-10.48/-7.25	-6.94/-5.46
Θ(45°)	-4.52/-5.8	-5.24/-4.27	-3.83/-2.24	-0.97/-1.31	-0.7/0.32	0.62/0.15	0.47/1.92	1.59/-1.47	-5.54/-18.24	-6.77/-3.98	-3.1/-1.02	0.55/0.67	-0.54/-2.32	-2.78/-2.27	-1.97/-1.69	-0.68/-0.1	-1.49/-1.98	-2.52/-5.52	-7.61/-8.95	-8.72/-6.59	-9/-18.12	-11.21/-18.86	-9.09/-6.81	-6.47/-4.06
Θ(52.5°)	-2.86/-1.65	-1.22/-3.64	-3.54/-1.63	-0.42/-1.81	-2.57/-1.29	-0.94/-0.41	-0.26/0.72	0.43/-2.87	-3.17/-13.6	-3.95/-2.45	-2.37/-0.97	1.07/1.89	0.28/-2.32	-2.78/-4.58	-5.43/-4.91	-2.94/-1.01	-3.02/-3.5	-4.07/-7.71	-7.64/-8.88	-8.48/-5.63	-5.88/-18.87	-18.94/-12.18	-7.48/-8.1	-5.37/-3.39
Θ(60°)	-4.56/-2.3	-1.53/-3.9	-5.1/-3.98	-2.87/-4.37	-5.19/-2.56	-3.47/-2.85	-2.02/-2.4	-1.83/-5.57	-5.79/-16.88	-5.87/-6.53	-6/-3.37	-0.45/0.71	-0.62/-3.12	-3.89/-6.36	-7.06/-4.94	-2.95/-1.85	-3.24/-4.94	-4.98/-5.16	-10.07/-7.73	-6.79/-10.96	-8.67/-15.65	-14.52/-11.44	-13.77/-12.23	-11.75/-8.59
Θ(67.5°)	-8.42/-5.18	-2.52/-4.02	-6.16/-5.85	-6.86/-5.38	-5.8/-3.78	-5.69/-8.86	-7.45/-10.13	-5.23/-9.21	-11.32/-16.92	-4.76/-11.63	-7.62/-4.38	-3/-2.93	-3.25/-4.56	-2.71/-3.53	-7.14/-7.01	-6.02/-2.76	-5.45/-5.21	-5.34/-4.34	-9.14/-4.29	-7.67/-11.17	-9.86/-11.81	-15.37/-17.95	-6.92/-5.62	-5.11/-5.94
Θ(75°)	-6.9/-5.11	-1.5/-3.2	-6.56/-5.45	-6.95/-2.34	-1.49/-1.21	-5.41/-9.8	-15.77/-15.91	-17.95/-19.22	-10.61/-10.39	-4.42/-9.5	-11.38/-6.63	-6.31/-9.57	-8.41/-6.05	-3.03/-1.58	-3.11/-3.77	-4.45/-3.81	-8.57/-6.9	-3.61/-4.42	-10.76/-4.1	-11.62/-14.57	-18.71/-11.85	-17.18/-6.59	-2.14/-1.74	-1.2/-1.41
Θ(82.5°)	-6.24/-5.1	-2.16/-2.78	-5.72/-5.41	-6.59/-3.18	-0.56/-0.95	-4.85/-6.82	-8.4/-10.29	-10.57/-9.98	-7.41/-7.94	-3.94/-8.93	-12.09/-9.72	-8.5/-13.8	-11.67/-6.25	-2.67/-1.13	-2.51/-4.62	-7.12/-5.54	-10.38/-9.02	-4.79/-5.13	-11.79/-5.95	-12.97/-8.02	-18.58/-12.03	-10.83/-3.95	-2.71/-1.56	-0.15/-0.98
Θ(90°)	-7.26/-7.32	-5.29/-2.37	-4.49/-6.75	-4.94/-5.25	-0.38/-1.86	-5.49/-10.18	-8.72/-11.36	-6.87/-5.6	-5.23/-8.25	-10.5/-8.08	-13.7/-9.63	-8.18/-8.47	-13.04/-11.2	-4.27/-2.45	-1.93/-3.92	-7.68/-6.68	-12.84/-14.03	-6.47/-10.21	-9.68/-9.71	-12.02/-6.67	-16.37/-12.3	-8.78/-5.22	-4.98/-3.24	-1.64/-3.41
Θ(97.5°)	-4.17/-5.8	-10.44/-1.82	-3.31/-8.36	-3.7/-6.34	-2.13/-5.23	-10.69/-18.51	-6.07/-11.05	-5.01/-5.23	-6.19/-9.66	-7.05/-10.5	-4.95/-7.75	-7.9/-5.81	-11.27/-14.15	-5.46/-3.42	-2.65/-6.76	-9.96/-12.71	-12.74/-14.62	-10.28/-11.22	-10.15/-11.85	-10.02/-6.38	-15.28/-13.66	-9.74/-8.81	-6.68/-7.64	-2.43/-5.27
Θ(105°)	-5.81/-7.74	-15.88/-3.1	-2.68/-14.47	-4.1/-7.77	-4.09/-11.24	-17.75/-10.22	-4.79/-7.19	-6.16/-7.64	-9.97/-16.52	-8.93/-9.46	-10.48/-7.61	-6.88/-5.82	-6.17/-14.84	-7.83/-3.84	-3.83/-9.59	-13.6/-19.34	-17.41/-13.98	-12/-12.45	-8.54/-16.08	-12.19/-6.06	-10.2/-14.03	-10.54/-11.89	-7.75/-11.14	-5.08/-10.57
Θ(112.5°)	-7.72/-3.99	-8.55/-3.28	-3.59/-7.53	-4.55/-7.91	-9.25/-17.62	-12.63/-5.86	-4.19/-8.05	-9.04/-10.59	-14.91/-18.31	-8.85/-14.22	-15.46/-10.46	-4.92/-5	-5.32/-13.19	-9.93/-4.55	-4.84/-7.14	-18.82/-18.52	-18.04/-19.18	-12.31/-11	-10.79/-6.36	-12.37/-12.44	-17.44/-9.47	-8.47/-13.36	-7.95/-16.5	
Θ(120°)	-7.65/-6.28	-7.06/-10.83	-4.45/-3.04	-7.83/-7.72	-19/-9.77	-8.91/-5.48	-6.5/-11.65	-14.33/-14.16	-13.1/-16.34	-12.7/-13.02	-16.82/-10.44	-6.31/-12.5	-4.95/-11.2	-17.31/-6.61	-7.49/-8.57	-18.71/-18.7	-18.34/-18.65	-14.41/-16.92	-16.22/-16.2	-11/-11.85	-17.07/-12.97	-18.11/-8.16	-9.6/-8.84	-7.2/-12.57
Θ(127.5°)	-9.31/-7.32	-10.63/-8.68	-2.55/-2.45	-11.62/-7.46	-15.48/-15.34	-11.78/-12.71	-10.23/-14.2	-18.74/-12.61	-16.62/-18.94	-11.54/-13.6	-17.64/-5.69	-7.7/-7.51	-7.77/-13.12	-14.07/-8.43	-8.66/-7.89	-7.98/-14.47	-18.47/-11.22	-19.46/-13.44	-18.28/-16	-9.8/-7.28	-10.81/-10.24	-5.52/-18.39	-18.16/-13.74	-6.9/-12.19
Θ(135°)	-14.6/-18.13	-7.24/-5.68	-6.46/-1.18	-18.83/-12.4	-11.46/-15.55	-14.76/-15.81	-13.7/-10.3	-12.77/-16.08	-15.62/-16.7	-14.36/-14.65	-12.88/-8.08	-6.32/-5.12	-12.33/-15.42	-16.82/-8.08	-7.91/-8	-7.64/-16.41	-18.68/-11.91	-18.22/-10.26	-11.16/-6.5	-18.71/-7.34	-12.37/-11.22	-5.21/-7.34	-10.5/-16.84	-15.53/-16.45
Θ(142.5°)	-10.52/-5.59	-5.06/-6.33	-10.01/-10.11	-10.93/-18.91	-8.74/-9.21	-10.12/-7.83	-10.8/-10.98	-13.81/-17.81	-14.53/-17.54	-18.23/-11.68	-5.41/-7.96	-13.09/-15.49	-19.01/-13.29	-9.37/-5.92	-9.05/-13.27	-12.94/-9.57	-12.94/-9.42	-8.66/-7.36	-13.46/-13.4	-12.71/-9.65	-16.22/-12.2	-10.21/-15.38	-11.23/-19.7	
Θ(150°)	-19.03/-8.66	-6.89/-8.78	-11.29/-15.55	-10.75/-15.03	-10.08/-8.04	-9.67/-10.4	-14.21/-14.09	-14.61/-16.64	-17.42/-18.39	-15.11/-13.97	-18.57/-14.86	-11.19/-11.1	-12.05/-17.61	-12.44/-9.24	-11.41/-15.28	-11.97/-9.88	-8.58/-7.31	-7.62/-7.98	-9.51/-9.96	-7.07/-7.2	-14.42/-18.76	-16.99/-17.76	-19.35/-14.66	-18.98/-14.06
Θ(157.5°)	-12.52/-11.09	-9.34/-11.54	-16.4/-16.29	-15.2/-17.25	-17.89/-13.23	-13.26/-17.65	-18.08/-17.74	-17.73/-18.63	-18.08/-17.73	-17.08/-19.16	-14.02/-10.82	-9.53/-8.93	-12.08/-18.11	-18.11/-15.38	-16.58/-19.05	-15.06/-10.28	-10.15/-9.47	-6.72/-6.5	-9.15/-13.39	-8.98/-7.72	-12.28/-17.43	-17.81/-13.16	-10.74/-12.18	-18.95/-13.92
Θ(165°)	-19.12/-19.15	-17.92/-19.18	-18.13/-15.99	-15.88/-15.45	-16.24/-16.93	-17.18/-18.1	-18.85/-18.7	-17.96/-18.96	-19.17/-16.7	-18.08/-18.59	-16.76/-18.1	-12.09/-14.98	-19.11/-19	-18.28/-18.29	-18.11/-18.84	-16.36/-15.68	-18.85/-13.02	-8.67/-6.89	-8.2/-13.93	-19.1/-15.13	-11.41/-10.85	-11.36/-13.55	-16.19/-16.21	-15.25/-15.56
Θ(172.5°)	-12.12/-8.58	-7.73/-9.1	-9.5/-9.26	-9.99/-11.22	-12.94/-15.62	-16.16/-15.55	-17.41/-19.3	-17.98/-17.58	-18.04/-15.27	-15.37/-15.71	-17.67/-18.92	-17.78/-15.81	-15.53/-15.71	-16.42/-17.33	-17.55/-17.58	-16.6/-13.41	-11.98/-11.95	-13.91/-18.2	-17.67/-19.01	-17.27/-18.19	-17.29/-18.62	-14.92/-13.4	-11.36/-10.34	
Θ(180°)	-17.08/-18.84	-19.21/-18.72	-16.13/-14.55	-14.25/-14.6	-14.4/-13.31	-12.36/-10.9	-10.47/-10.76	-11.91/-13.25	-14.56/-15.71	-17.19/-17.65	-16.64/-17.5	-18.77/-17.79	-16.89/-14.39	-12.97/-13.25	-12.61/-13.02	-14.34/-14.25	-12.99/-11.72	-10.79/-11.6	-12.78/-13.26	-13.64/-14.5	-15.61/-15.25	-15.23/-16.19	-17.07/-17.99	-17.35/-18.11
Freq(Hz)	5.3GPol	ThetaAnt.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°)	0.47/0	-1.32/-2.63	-4.24/-5.61	-7.76/-12.18	-17.16/-18.93	-13.59/-3.31	-5.87/-4.1	-2.49/-1.9	-1.1/-0.6	-0.09/0.3	0.27/0.3	-0.29/-0.71	-0.63/-1.03	-1.96/-2.9	-4.4/-6.3	-8.77/-12.29	-15.8/-16.06	-12.59/-9.02	-6.04/-3.47	-3.13/-1.94	-0.8/0.05	0.6/0.78	0.83/1	1.14/0.79
Θ(7.5°)	1.46/1.2	0.6/0.09	-0.71/-1.59	-3.04/-5.59	-9.01/-14.3	-17.22/-12.79	-8.09/-5.22	-3.22/-2.17	-1.13/-0.51	0.40/7.5	0.48/0.29	-0.12/-0.8	-1.37/-2.24	-3.93/-5.76	-8.26/-11.26	-15.47/-14.31	-9.01/-6.04	-4.62/-3.59	-3.12/-3.69	-4.24/-4.2	-3.66/-2.92	-1.84/-0.94	-0.31/0.21	0.95/1.3
Θ(15°)	0.9/-0.05	-1.13/-2.3	-3.32/-3.99	-4.48/-5.29	-5.02/-5.71	-6.9/-7.89	-8.84/-7.01	-4.05/-2.02	-0.54/0.43	1.05/1.16	0.65/-0.4	-1.9/-4.19	-7.02/-10.16	-14.52/-15.11	-13.05/-11.34	-11.6/-10.58	-8.41/-5.95	-3.54/-1.69	-1.16/-2	-4/-6.96	-9.26/-6.84	-3.41/-1.09	0.39/0.79	0.79/1.17
Θ(22.5°)	0.21/0.15	-1.15/-2.59	-5.2/-8	-12.04/-17.89	-15.98/-10.42	-6.78/-5.6	-4.81/-3.85	-3.16/-1.35	0.16/0.59	0.78/0.6	-0.2/-1.62	-4.05/-7.88	-10.74/-12.27	-11.45/-10.62	-10.84/-11.05	-11.21/-14.9	-15.61/-16.59	-8.47/-4.75	-3.52/-3.48	-4.67/-6.68	-5.17/-7.19	-0.07/-0.09	-1.28/-2.79	-3.14/-1.56
Θ(30°)	-3.82/-3.28	-4.7/-6.73	-6.94/-5.92	-5.22/-6.56	-9.8/-17.52	-16.04/-8.73	-5.91/-2.64	-1.23/-2.44	1.09/1.19	0.38/-0.02	0.15/-0.2	-1.67/-3.61	-3.82/-2.95	-2.42/-2.95	-5.19/-9.69	-14.4/-19.32	-18.74/-18.1	-18.98/-17.96	-13.7/-8.27	-5.42/-5.78	-7.26/-4.01	-2.21/-3.4	-4.31/-3.12	-2.75/-4.45
Θ(37.5°)	-9.75/-8.14	-5.99/-4.64	-6.36/-4.17	-6.59/-9.2	-9.66/-18.12	-16.55/-12.59	-6.99/-2.83	-1.88/0.65	-2.59/2.34	0.98/-0.42	-1.09/-2.54	-4.74/-4.8	-2.40/-6.9	-0.25/-0.61	-2.44/-6.85	-9.03/-9.74	-14.42/-17.09	-18.19/-14.38	-10.52/-8.16	-7.06/-7.79	-4.29/-4.94	-5.3/-5.75	-3.12/-3.03	-4.97/-7.97
Θ(45°)	-1.58/-3.83	-3.06/-2.1	-0.94/-0.11	-1.9/-6.21	-8.5/-9.9	-12.28/-13.9	-7.4/-3.81	-3.04/0.33	2.37/1.39	-0.17/-1.26	-2.09/-2.63	-4.39/-3.72	-3.62/-4.86	-5.96/-4.23	-2.97/-5.95	-6.19/-6.23	-9.2/-10.87	-12.32/-8.78	-6.23/-5.78	-6.14/-7.81	-3.93/-3.09	-8.94/-1.54	-0.44/-2.82	-1.45/-0.41
Θ(52.5°)	-2.74/-5.97	-8.74/-3.61	-0.3/0.63	-1.44/-3.52	-5.91/-8.1	-14.53/-18.1	-8.34/-2.8	-1.56/0.11	0.53/-1.15	-0.31/-0.61	-0.55/-4.4	-1.62/-1.88	-2.48/-3.59	-4.34/-3.2	-3.04/-7	-14.48/-9.57	-6.12/-3.35	-5.23/-6.28	-2.85/-4.17	-7.8/-5.04	-0.32/-0.96	-6.92/0.71	0.26/0.34	0.39/-1.92
Θ(60°)	-2.88/-1.38	-3.62/-4.44	-2.17/-0.76	-2.46/-3.2	-5.32/-6.14	-8.48/-15.6	-12.79/-2.14	0.07/0.9	-1.85/-3.51	-0.19/-0.41	-0.46/-0.63	-3.83/-1.95	-2.57/-1.89	-1.06/-2.89	-3.63/-3.39	-9.86/-1.06	-5.32/0.03	-1.25/-3.84	0.84/-7.9	-4.86/-3.46	-1.38/-3.1	-4.87/-0.04	-1.07/-1.1	-1.94/-5.47
Θ(67.5°)	-1.86/1.68	2.28/1.88	0.96/2.12	1.28/0.38	-2.7/-3.97	-2.81/-5																		



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(60°)	-10.59/-10.03	-8.73/-10.54	-8.19/-5.75	-5.14/-6.46	-7.5/-6.72	-2.62/-0.22	-4.69/-1.73	-7.93/-7.14	-10.8/-14.85	-9.45/-13	-10.02/-3.28	-0.9/-1.71	-3.03/-4.05	-4.99/-4.3	-4.46/-7.12	-5.37/-5.98	-12.84/-8.66	-19.33/-18.56	-14.72/-9.65	-11.56/-8.92	-17.14/-12.46	-17.81/-17.11	-14.86/-9.25	-7.85/-10.45
Θ(67.5°)	-11.98/-11.11	-17.52/-10.58	-16.9/-8.05	-7.77/-11.53	-11.89/-9.79	-7.84/-2.77	-6.69/-3.86	-9.22/-9.1	-15.88/-13.59	-13.76/-18.94	-10.93/-5.04	-2.2/-2.4	-2.49/-3.49	-5.33/-6.05	-6.15/-6.75	-5.84/-7.53	-7.27/-10.35	-19.08/-16.15	-14.57/-8.25	-11.67/-10.16	-18.37/-11.13	-17.19/-15.6	-14.15/-8.92	-13.64/-15.86
Θ(75°)	-9.55/-10.67	-9.05/-18.36	-13.73/-14.55	-11.65/-7.51	-3.21/-8.95	-8.72/-15.05	-10.68/-13.99	-13.47/-11.76	-14.52/-18.94	-17.79/-14.59	-17.72/-8.91	-5.9/-4.1	-3.61/-3.35	-5.34/-6.57	-7.68/-9.09	-5.39/-6.45	-6.39/-10.46	-13.92/-10.31	-9.41/-12.05	-14.64/-6.48	-9.48/-13.02	-1.66/-18.03	-9.32/-7.99	-7.87/-11.91
Θ(82.5°)	-11.88/-8.06	-6.09/-18.12	-11.53/-10.62	-12.91/-3.88	-0.62/-5.49	-4.42/-12.51	-11.46/-10.34	-10.9/-15.76	-13.64/-13.47	-16.79/-9.43	-18.47/-12.17	-8/-5.4	-3.82/-3.81	-7.65/-6.84	-9.58/-9.84	-4.7/-7.45	-5.96/-8.09	-9.5/-8.26	-5.37/-18.22	-17.97/-4.99	-11.47/-12.34	-17.39/-9	-8.27/-4.25	-4.81/-5.6
Θ(90°)	-13.94/-3.55	-4.25/-11.55	-11.33/-6.15	-9.64/-1.84	-1.17/-4.41	-3.74/-6.04	-10.22/-9.15	-6.42/-15	-8.68/-7.02	-13.04/-9.36	-14.27/-10.38	-12.62/-7.19	-7.84/-6.8	-10.56/-8.3	-9.55/-14.26	-6/-6.94	-6.47/-7.47	-5.75/-7	-7.15/-17.65	-16.63/-7.86	-13.22/-12.13	-18.17/-6.22	-11.61/-6.57	-6.37/-6.44
Θ(97.5°)	-18.51/-13.71	-7.2/-15.6	-19.33/-6.81	-7.04/-2.18	-4.03/-4.72	-4.77/-7.09	-14.24/-9.13	-4.05/-10.14	-5.82/-5.53	-14.31/-8.08	-13.58/-7.77	-13.53/-11.36	-10.94/-11.06	-11.78/-7.23	-10.65/-13.29	-7.16/-8.68	-7.63/-7.8	-5.32/-7.89	-5.98/-17.53	-15.68/-13.63	-13.82/-10.64	-13.09/-5.77	-18.89/-5.55	-9.29/-4.81
Θ(105°)	-13.49/-17.95	-10.37/-5.4	-19.8/0.7	-3.34/-4.21	-5.21/-9.35	-15.28/-12.56	-14.44/-14.62	-5.88/-11.47	-5.65/-6.01	-8.58/-9.99	-9.42/-8.78	-9.33/-13.38	-18.06/-18.74	-14.2/-9.61	-9.78/-14.74	-10.78/-7.92	-6.68/-11.5	-6.55/-9.01	-7/-12.42	-17.69/-18.64	-8.55/-19.31	-16.15/-13.96	-11.72/-8.98	-14.34/-6.62
Θ(112.5°)	-8.91/-16.54	-17.06/-7.92	-11.17/-14.91	-3.81/-8.1	-11.42/-17.67	-16.88/-11.61	-10.56/-16.43	-5.71/-8.4	-4.96/-5.79	-9.32/-11.04	-10.73/-9.74	-11.76/-13.59	-17.13/-15.72	-14.28/-13.89	-14.79/-10.41	-12.49/-8.54	-7.37/-11.56	-5.8/-11.13	-7.67/-9.92	-17.68/-13.89	-8.89/-17.82	-17.47/-19.01	-12.63/-13.8	-12.82/-12.67
Θ(120°)	-17.84/-18.35	-16.78/-13.37	-9.61/-12.55	-4.29/-13.17	-12.91/-11.99	-9.94/-7.92	-8.55/-10.95	-5.85/-6.91	-5.3/-8.29	-11.29/-18.16	-11.77/-13.36	-10.78/-14.32	-14.62/-15.54	-17.94/-16.57	-11.88/-10.86	-15.92/-10.9	-10.4/-18.24	-6.34/-7.92	-14.44/-9.28	-17.14/-11.74	-10.08/-19.33	-18.73/-14	-10.4/-10.99	-8.87/-8.83
Θ(127.5°)	-19.01/-16.9	-12.65/-13.84	-5.93/-7.87	-6.08/-10.81	-14.35/-10.48	-8.67/-10.93	-15.55/-11.75	-7.3/-8.28	-10.38/-16.65	-18.34/-12.91	-9.22/-13.53	-12.61/-9.8	-10.93/-18.24	-18.56/-13.76	-11.52/-15.55	-10.94/-7.8	-9.85/-17.52	-8.06/-9.09	-12.56/-13.43	-16.02/-12.07	-13.57/-12.44	-10.5/-13.4	-17.9/-18.08	-8.55/-15.26
Θ(135°)	-10.37/-16.06	-18.51/-12.82	-9.46/-18.67	-19.03/-17.9	-19.2/-18.67	-18/-17.6	-14.16/-10.79	-15.86/-15.03	-14.62/-10.16	-14.71/-17.92	-14.64/-7.83	-11.88/-17.09	-10.48/-18.23	-15.61/-14.53	-12.94/-14.7	-14.12/-13.43	-12.73/-11.99	-11.16/-15.19	-13.92/-18.26	-18.75/-18.72	-17.11/-15.77	-18.47/-14.58	-17.87/-14.79	
Θ(142.5°)	-14.93/-14.65	-12.86/-14.94	-8.86/-9.13	-4.73/-5.73	-7.46/-11.34	-9.29/-10.01	-8.69/-10.22	-18.08/-7.71	-10.8/-10.35	-14.34/-13.89	-11.58/-15.12	-12.72/-11.34	-12.53/-12.28	-15.12/-13.31	-8.83/-8.84	-5.84/-6.22	-13.61/-13.7	-10.8/-13.14	-14.42/-9.1	-10.89/-17.98	-17.23/-15.07	-10.42/-18.39	-10.66/-16.83	-17.16/-9.51
Θ(150°)	-17.06/-12.42	-11.24/-12.37	-14.19/-19.44	-17.69/-12.15	-14.29/-9.53	-8.93/-16.34	-13.77/-12.56	-12.58/-10.88	-15.49/-12.06	-10.03/-18.31	-11.48/-8.14	-8.06/-10.44	-15.19/-16.76	-15.03/-13.56	-11.86/-11.32	-9.92/-10.37	-11.18/-12.82	-13.57/-10.7	-9.38/-12.34	-18.75/-13.05	-12.81/-18.2	-15.33/-18.07	-16.82/-11.77	-11.9/-10.63
Θ(157.5°)	-13.95/-13.1	-11.32/-12.96	-17.79/-19.06	-18.73/-17.55	-17.96/-13.82	-13.43/-11.89	-10.71/-14.43	-18.85/-14.69	-13.21/-13.04	-13.1/-14.6	-14.05/-11.66	-12.97/-18.01	-18.15/-16.84	-15.61/-14.53	-13.73/-12.42	-12.94/-14.7	-14.12/-13.43	-12.73/-11.99	-11.16/-15.19	-13.92/-18.26	-18.75/-18.72	-17.11/-15.77	-16.16/-16.98	
Θ(165°)	-18.79/-18.16	-17.80/-19.25	-15.35/-15.75	-17.61/-17.96	-19.19/-14.82	-11.95/-9.91	-11.38/-13.35	-13.07/-12.61	-11.85/-13.16	-15.78/-13.46	-16.76/-13.78	-11.73/-14.1	-18.96/-17.75	-18.31/-15.13	-15.61/-16.8	-13.55/-10.99	-10.89/-12.28	-16.69/-18.04	-16.66/-14.56	-14.45/-15.73	-17.8/-17.88	-17.28/-18.59	-19.78/-19.33	-15.76/-15.06
Θ(172.5°)	-14.9/-13.06	-12.44/-16.02	-19.05/-18.05	-19.08/-15.04	-13.56/-12.84	-14.28/-17.45	-17.37/-14.03	-11.47/-10.01	-9.27/-11.03	-13.26/-15.78	-16.76/-17.78	-19.12/-18.87	-19.12/-18.03	-18.63/-18.19	-18.2/-19.05	-17.97/-18.14	-18.61/-18.13	-19.24/-16.72	-15.71/-14.14	-13.75/-14.14	-15.16/-17.96	-18.38/-18.67	-18.12/-18.29	-18.12/-16.86
Θ(180°)	-11.58/-13.27	-14.03/-14.31	-14.38/-14.86	-17.73/-18.98	-17.39/-18.38	-19.21/-17.38	-15.68/-13.95	-12.61/-11.78	-12.58/-13.22	-14.29/-13.53	-11.65/-11.41	-10.35/-9.7	-9.03/-8.32	-9.77/-13.01	-14.93/-17.38	-18.86/-17.75	-17.44/-17.91	-17.98/-18.11	-18.43/-18.15	-18.53/-18.24	-16.49/-14.82	-15.6/-14.24	-11.95/-12.62	-13.66/-11.34
Freq(Hz)	5.785GPol.	ThetaAnt.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°)	-2.31/-3.51	-4.09/-4.54	-7.34/-8.99	-9.73/-9.1	-8.18/-6.8	-6.07/-4.63	-3.47/-2.4	-1.77/-1.47	-1.13/-1	-0.68/-0.45	-0.31/-1.15	-1.23/-1.33	-1.27/-1.85	-3.34/-4.53	-5.62/-6.95	-9.33/-9.13	-13.58/-12.02	-9.46/-7.1	-5.65/-4.46	-3.14/-1.82	-0.91/-0.44	-0.26/-0.31	-0.56/-0.65	-1.03/-1.61
Θ(7.5°)	-4.47/-6.07	-7.78/-10.85	-14.7/-14.74	-13.63/-11.07	-8.7/-8.67	-5.25/-4.06	-3.32/-2.04	-1.25/-0.5	-0.06/-29	0.17/-0.41	-0.10/-21.1	-0.43/-8.33	-11.71/-15.41	-18.38/-10.29	-6.81/-4.27	-1.51/-2.86	-2.75/-2.7	-2.97/-3.57	-4.41/-4.42	-3.21/-1.89	-0.74/-0.08	0.5/0.5	0.23/-0.39	-1.37/-2.57
Θ(15°)	-2.53/-3.37	-4.85/-5.61	-6.56/-7.33	-9.1/-10	-9.56/-7.06	-4.1/-2.17	-1.27/-1.15	-0.87/-0.34	0/0.65	1.01/-0.92	0.26/-0.95	-2.51/-4.19	-5.84/-6.94	-7.3/-6.97	-5.95/-5.57	-4.91/-4.9	-5.56/-5.87	-6.19/-6.61	-6.86/-6.09	-4.92/-3.32	-1.83/-0.95	-0.98/-1.44	-1.63/-2.49	-2.36/-2.42
Θ(22.5°)	-2.68/-3.44	-5.17/-8.05	-14.53/-18.93	-16.39/-14.38	-14.53/-17.65	-14.94/-8.6	-5.47/-3.39	-0.67/-0.56	1.18/-0.82	-0.56/-2.24	-2.62/-2.34	-2.5/-2.92	-4.49/-6.9	-2.67/-2.27	-1.02/-1.44	-4.49/-6.9	-10.38/-13.07	-8.4/-7.14	-5.97/-5.07	-5.28/-5.06	-4.74/-4.72	-4.3/-2.68	-0.81/-0.55	-1/-2.06
Θ(30°)	-3.55/-4.77	-6.82/-7.92	-10.46/-12.39	-13.02/-12.2	-12.65/-15.37	-17.45/-12.47	-10.28/-7	-4.64/-9.55	-2.93/-1.38	-0.34/-0.73	-2.75/-3.67	-1.67/-2.66	-2.62/-1.81	-0.93/-1.81	-5.09/-10.22	-16.38/-18.86	-16.34/-13.77	-9.83/-7.03	-6.24/-5.91	-5.36/-4.57	-2.81/-4.74	-2.81/-5.65	-6.23/-4.29	
Θ(37.5°)	-17.29/-15.28	-8.98/-5.85	-5.04/-5.18	-4.53/-3.97	-6.23/-9.41	-9.36/-7.25	-5.69/-3.85	-2.27/-2.89	-3.56/-2.69	-1.39/-1.46	-3.02/-3.43	-0.96/-0.4	-1.78/-2.22	-1.32/-2.2	-3.91/-5.22	-7.85/-10.25	-8.71/-5.65	-7.42/-14.92	-7.57/-6.68	-9.04/-8.19	-4.73/-1.43	0.01/-3.39	-7.46/-4.31	-5.09/-10.64
Θ(45°)	-4.1/-4.51	-0.81/-0.87	1.8/-1.24	-0.71/-1.5	-2.21/-5.08	-5.93/-2.91	-2.73/-2.52	0.16/-0.27	-1.29/-1	-1.94/-3.5	-7.77/-7	-2.45/-1.54	-2.07/-1.88	-0.50/-0.68	-1.01/-1.62	-3.42/-3.85	-6.74/-3.99	-2.41/-7.7	-7.56/-6.28	-6.59/-8.34	-6.08/-0.03	1.01/-4.57	-2.42/-3.27	-5.05/-3.17
Θ(52.5°)	-1.05/-2.54	0.65/-2.14	3.28/-2.55	1.77/-0.25	-1.13/-2.3	3.28/-2.54	0.01/-0.46	2.152/-0.08	-0.67/-0.82	-1.64/-5.41	-9.64/-1.11	-0.22/-1.36	-1.57/-1.15	1.32/-7.6	0.64/-0.2	-2.22/-3.39	-7.18/-3.97	-1.39/-5.71	-6.67/-6.78	-12.65/-10.51	-5.98/-1.33	1.19/-1.28	0.90/-1	0.54/-0.02
Θ(60°)	-0.89/-2.85	-1.97/-0.68	3.23/-1.65	1.77/-0.82	0.62/-0.17	-5.58/-4.41	-0.53/-1.61	3.13/-1	-1.38/-0.05	-0.55/-2.2	-9.4/-2.93	-0.96/-3.79	-0.61/-3.08	2.08/-2.64	1.23/-0.48	-2.2/-2.54	-4.88/-6.08	-2.77/-0.46	-2.81/-4.47	-18.39/-8.76	-8.96/-0.51	0.38/-1.03	0.46/-1.17	2.21/-1
Θ(67.5°)	0.87/-0.23	0.35/-2.27	5.06/-6.68	2.67/-3.97	1.82/-0.75	-3.77/-6.51	-1.43/-1.28	2.44/-2.17	-2.72/-0.76	-0.84/-2.3	-10.43/-5.26	-3.78/-6.02	-0.69/-0	2.69/-2.5	1.2/-0.8	-2.88/-1.91	-3.48/-3.88	-1.66/-6.86	0.03/-1.64	-8.75/-3.02	-13.97/-12.9	0.43/-1.4	1.46/-1.33	2.94/-2
Θ(75°)	1.052/-6.1	2.53/-4.99	5.283/8.4	3.28/-4.5	2.59/-9.6	0.29/-2.06	-3.18/-1.01	1.25/-1.68	-2.45/-3.15	-0.01/-0.98	-7.32/-8.98	-6.53/-6.84	-3.8/-1.28	1.1/-1.8	-0.17/-2.09	-2.16/-3.76	-2.62/-9.91	-0.532/-56	3.07/-0.59	-4.55/-1.43	-10.0/-86	0.27/-2.02	0.84/-1.4	3.482/-3.1
Θ(82.5°)	0.993/-9.9	1.772/-0.4	4.412/-6.7	2.214/-19	3.181/-53	1.31/-0.6	-3.48/-2.08	-0.20/-1.16	-6.16/-3.81	0.07/-2.46	-9.46/-6.92	-6.29/-8.42	-5.17/-2.06	0.27/-1.11	-3.82/-4.64	-3.89/-6.91	-1.69/-0.28	1.372/-87	3.762/-0.8	-1.08/-1.77	-0.390/-57	-1.610/-28	1.010/-21	2.790/-52
Θ(90°)	0.143/-7.2	0.3/-1.01	3.22/-1.82	0.68/-2.43	2.611/-94	0.63/-2.24	-4.42/-3.26	-2.71/-1.99	-12.41/-8.38	-2.92/-8.43	-12.6/-6.39	-5.99/-7.92	-5.92/-3.7	-2.37/-2.5	-7.07/-5.82	-5.94/-10.96	-5.11/-1.08	1.120/-21	3.262/-0.9	-1.26/-1.33	-3.61/-1.22	-5.920/-67	0.590/-68	1.371/-99
Θ(97.5°)	-2.011/-6.4	-1.03/-1.12	2.74/-2.27	-0.650/-5.5	0.33/-1.17	-2.38/-5.76	6.04/-5.75	-5.37/-3.92	-17.97/-12.92	-4.58/-7.58	-12.41/-4.9	-5.16/-7.76	-5.12/-4.14	-4.74/-5.9	-10.26/-7.61	-6.62/-14.94	-8.78/-2.93	0.32/-2.65	1.05/-0.38	-1.89/-2.23	-3.2/-3.74	-9.05/-0.52	-1.04/-0.72	-0.4/-5.42
Θ(105°)	-5.65/-1.93	-0.61/-1.23	1.09/-0.07	-5.26/-4.02	-4.03/-8.17	-4.84/-6.06	-6.2/-6.46	-11.34/-6.13	-19.22/-9.71	-6.71/-9.59	-14.57/-5.93	-4.42/-9.02	-5.46/-3.98	-6.78/-11.61	-9.61/-11.09	-7.65/-12.94	-17.99/-7.14	-13.2/-6.93	-2.29/-3.5	-5.95/-5.02	-6.86/-8.45	-14.18/-5.28	-3.56/-2.01	-0.2



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ (112.5°)	-11.31/-6.92	-9.77/-10.34	-10.25/-8.53	-6.43/-10.44	-5.4/-8.14	-9.04/-18.31	-9.93/-8.5	-6.33/-15.08	-9.53/-7	-18.76/-17.75	-19.12/-10.57	-6.82/-6.78	-7.44/-9.42	-13.22/-13.82	-13.65/-10.84	-15.33/-7.72	-9.18/-17.63	-18.47/-17.76	-17.46/-18.57	-13.79/-9.44	-8.25/-6.71	-7.62/-11.45	-9.29/-7.31	-9.2/-14.93
Θ (120°)	-10.47/-9.45	-10.51/-11.67	-9.43/-12	-7.98/-13.54	-6.85/-8.1	-9.4/-18.65	-18.82/-8.18	-7.57/-10.51	-7.16/-11.41	-19.08/-16.66	-15.93/-10.82	-8.36/-9.45	-9.51/-8.99	-11.36/-12.62	-19.16/-11.18	-19.16/-6.77	-6.86/-17.28	-17.38/-17.66	-18.21/-18.43	-13.44/-7.6	-8.46/-7.48	-8.16/-9.03	-10.03/-8.28	-10.1/-18.06
Θ (127.5°)	-15.33/-13.44	-13.46/-13.5	-13.75/-9.54	-17.78/-18.53	-7.02/-9.43	-14.73/-13.36	-14.95/-12.85	-15.57/-8.09	-7.68/-12.58	-11.74/-10.57	-11.69/-11.44	-10.77/-10.15	-10.45/-11.49	-17.8/-13.01	-19.23/-12.45	-16.21/-11.28	-13.65/-18.31	-18.66/-18.42	-15.88/-16.28	-16.06/-11.5	-9.92/-9.97	-9.81/-11.93	-6.89/-8.69	-11.26/-15.87
Θ (135°)	-13.76/-17.05	-18.96/-17.83	-17.61/-9.12	-11.32/-18.91	-11.81/-18.95	-17.87/-16.18	-18.81/-18.18	-13.84/-10.84	-14.44/-15.29	-9.78/-14.15	-19.51/-10.52	-14.5/-12.95	-9.83/-14.27	-18.84/-18.68	-14.34/-17.88	-12.19/-15.56	-14.66/-12.56	-17.72/-15.8	-18.02/-12.57	-10.58/-14.18	-11.72/-11.84	-12.77/-12.19	-10.14/-8.69	-13.03/-15.19
Θ (142.5°)	-17.41/-18.19	-18.91/-18.91	-15.52/-12.55	-16.28/-16.11	-18.57/-16.22	-14.3/-17.42	-17.73/-11.21	-8.77/-13.01	-15.14/-9.29	-9.31/-16.58	-14.75/-9.12	-8.16/-14.41	-15.37/-14.59	-17.37/-16.41	-17.31/-13.67	-11.97/-17.79	-18.62/-18.32	-18.83/-13.24	-18.15/-15.62	-11.25/-11.76	-13.88/-15.08	-16.94/-15.55	-12.14/-13.05	-13.27/-12.37
Θ (150°)	-18.2/-17.9	-17.17/-18.07	-15.72/-17.05	-18.57/-17.51	-18.36/-17.27	-14.93/-10.56	-10.37/-14.14	-17.91/-17.81	-12.67/-9.74	-13.28/-18.5	-18.3/-13.94	-16.71/-18.91	-18.79/-14.34	-18.49/-19.25	-17.93/-17.65	-18.96/-17.89	-17.92/-19.46	-18.72/-18.02	-16.57/-11.56	-12.94/-17.26	-16.52/-15.6	-14.83/-14.08	-13.79/-12.72	-14.49/-18.83
Θ (157.5°)	-18.15/-18.08	-18.76/-18.28	-18.13/-17.13	-17.38/-17.87	-15.82/-14.8	-18.54/-17.99	-19.19/-18	-18.96/-17.74	-19.23/-19.14	-18.56/-17.57	-13.29/-11.44	-10.31/-10.14	-12.82/-17.88	-17.35/-16.2	-17.9/-17.48	-19.27/-19.15	-18.21/-15.03	-13.56/-18.15	-17.36/-16.91	-14.5/-14.33	-14.67/-17.23	-18.86/-19.28	-17.38/-15.96	-15.89/-18.62
Θ (165°)	-18.8/-17.51	-18.29/-15.62	-12.48/-11.91	-12.77/-13.69	-14.26/-16.32	-19.03/-19.03	-17.52/-18.32	-18.48/-17.86	-18.86/-17.05	-17.63/-17.72	-18/-14.12	-11.6/-12.28	-14.98/-14.44	-18.13/-14.47	-14.69/-17.41	-18.23/-18.93	-16.75/-15.15	-15.43/-18.36	-19.02/-18.36	-16.62/-14.54	-13.34/-13.6	-12.93/-13.05	-14.02/-13.35	-17.78/-19.35
Θ (172.5°)	-16.08/-16.72	-18.35/-16.43	-14.79/-15.66	-17.61/-18.43	-17.36/-18.09	-13.88/-12.25	-12.43/-13.07	-12.84/-12.12	-13.01/-15.19	-19.12/-17.83	-18.37/-17.86	-19.38/-16.85	-15.28/-14.22	-13.83/-15.8	-17.81/-18.58	-17.81/-15.23	-13.3/-13.54	-14.26/-16.59	-19.21/-19.09	-17.2/-13.85	-12.1/-12.12	-13.71/-15.54	-15.41/-16.11	
Θ (180°)	-17.83/-18.23	-19.13/-18.31	-17.38/-19.35	-18.38/-19.11	-17.96/-19.02	-18.77/-18.55	-18.41/-17.24	-18.01/-19.48	-17.85/-17.64	-18.22/-18.71	-19.2/-19.54	-18.48/-18.45	-19.22/-19.22	-17.25/-19.15	-18.82/-18.62	-18.63/-17.7	-18.02/-19.18	-18.9/-18.55	-18.02/-18.38	-18.43/-18.56	-17.74/-17.91	-19.31/-18.36	-16.6/-15.77	-16.24/-17.8
Freq(Hz)	5.2G/Pol	Theta/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°)	-18.52/-18.58	-14.78/-11.64	-9.47/-7.81	-6.29/-5.15	-4.4/-3.98	-3.64/-3.56	-3.24/-3.35	-3.59/-3.89	-4.42/-4.89	-5.37/-6.46	-8.94/-12.04	-13.56/-18.49	-18.79/-17.33	-12.97/-9.88	-8.95/-7.36	-5.66/-4.71	-3.89/-3.13	-2.46/-2.21	-2.12/-2.43	-2.65/-2.79	-3.21/-4.04	-5.16/-6.46	-8.59/-11.49	-14.87/-18.24
Θ (7.5°)	-18.42/-17.46	-11.5/-8.55	-6.72/-5.29	-4.11/-3.1	-2.5/-2.22	-2.2/-2.38	-2.65/-3.23	-3.93/-4.94	-6.3/-7.43	-8.62/-10.37	-14.91/-19.09	-18.92/-17.27	-18.64/-19.33	-17.04/-12.53	-10.53/-8.35	-6.11/-4.98	-4.47/-4.3	-3.87/-3.89	-4.52/-5.65	-6.34/-6.63	-7.4/-8.21	-8.58/-9.52	-12.16/-15.94	-18.65/-18.09
Θ (15°)	-18.16/-16.6	-11.94/-9.38	-7.3/-3.59	-3.94/-6.2	-1.81/-1.24	-1.24/-1.41	-2.01/-2.99	-4.13/-5.69	-7.09/-8.44	-8.99/-9.24	-12.39/-13.3	-16.59/-17.93	-14.78/-11.1	-7.59/-5.18	-3.71/-3.39	-3.77/-3.42	-4.44/-4.74	-4.82/-4.78	-4.21/-4.11	-4.71/-5.25	-5.97/-6.86	-10.31/-13.93	-17.2/-18.87	
Θ (22.5°)	-12.56/-14.67	-15.39/-12.52	-8.95/-6.33	-4.31/-2.34	-0.9/-0.03	0.11/-0.51	-1.95/-3.83	-5.79/-6.7	-7.26/-7.78	-7.75/-7.12	-9.32/-10.44	-11.32/-10.95	-10.49/-10.17	-7.72/-5.7	-5.09/-5.5	-6.42/-6.82	-6.14/-7.9	-3.41/-2.2	-1.71/-2.23	-3.13/-4.43	-5.84/-6.81	-7.75/-8.55	-9.28/-10.44	
Θ (30°)	-8.46/-10.74	-12.72/-11.41	-8.62/-7.08	-6.58/-5.55	-4.66/-3.85	-3.42/-3.58	-3.47/-3.06	-2.41/-2.02	-2.39/-4	-6.93/-9.43	-10.47/-11.47	-13.06/-16.62	-18.42/-12.8	-7.65/-6.94	-4.81/-9.26	-8.29/-7.72	-7.64/-6.39	-4.84/-3.65	-3.12/-2.93	-3.21/-3.52	-3.85/-4.76	-5.77/-6.96	-8.29/-7.94	-6.08/-6.98
Θ (37.5°)	-10.23/-14.8	-18.33/-14.8	-10.48/-9.41	-9.2/-10.37	-13.75/-9.1	-5.56/-4.71	-3.72/-2.88	-2.54/-3.22	-2.73/-8.99	-5.27/-7.29	-8.74/-10.58	-15.88/-16.27	-12.97/-18.1	-15.07/-9.72	-9.88/-6.65	-6.44/-5.07	-5.28/-4.39	-3.12/-3.42	-5.06/-6.01	-5.07/-3.8	-3.96/-6.28	-10.14/-13.73	-15.28/-13.68	-11.17/-9.07
Θ (45°)	-18.68/-18.9	-18.21/-15.97	-12.24/-12.17	-7.03/-9.96	-9.03/-3.15	-3.58/-4.19	-3.84/-6.47	-4.84/-2.14	-0.27/-0.59	-1.93/-3.84	-8.25/-11.81	-13.53/-12.26	-11.08/-11.2	-14.54/-10.53	-6.48/-7.1	-4.93/-2.13	-3.72/-6.27	-2.97/-3.04	-5.87/-5.59	-3.89/-3.98	-5.95/-10.15	-18.24/-12.28	-12.93/-17.18	-18.61/-15.75
Θ (52.5°)	-14.2/-11.08	-8.45/-6.41	-6.01/-7.98	-2.97/-4.7	-4.16/-0.25	-1.06/-0.89	-1.36/-4.08	-5.57/-2.89	-0.52/-0.73	-1.48/-2.09	-7.2/-14.46	-11.52/-14.55	-18.49/-11.97	-7.05/-6.57	-3.98/-4.13	-4.34/-1.64	-4.3/-8.29	-2.43/-3	-3.73/-3.15	-3.1/-5.24	-8.6/-10.19	-18.37/-19.4	-18.75/-18.95	-17.41/-19.36
Θ (60°)	-5.99/-9.36	-6.21/-3.01	-2.12/-1.42	-2.65/-2.02	-1.790/-1	0.03/-0.17	-0.91/-1.5	-2.17/-2.97	-2.32/-0.92	0.02/-0.88	-4.68/-1.02	-8.42/-9.61	-7.33/-14.65	-6.5/-4.32	-5.69/-3.7	-6.73/-3.56	-4.23/-5.85	-2.43/-2.75	-3.44/-1.92	-3.19/-7.6	-11.85/-10.36	-14.13/-15.68	-12.69/-13.77	-12.87/-7.51
Θ (67.5°)	-4.26/-6.75	-4.61/-2.02	-0.83/-1.43	-2.81/-0.95	-0.410/-0.59	-0.11/-0.2	-1.34/-0.43	-1.43/-1.76	-2.49/-0.22	1.19/-0.43	-4.37/-6.17	-3.25/-4.66	-3.63/-0.87	-4.47/-2.91	-8.67/-4.4	-6.5/-4.59	-5.06/-6.47	-2.24/-4.42	-4.06/-1.82	-3.31/-8.08	-11.98/-11.7	-10.12/-9.86	-8.03/-7.98	-6/-3.58
Θ (75°)	-3.9/-4.86	-5.3/-3.09	-2.25/-0.65	-2.64/-1.64	-1.5/-1.73	-1.59/-2.87	-2.42/-0.63	-2.81/-1.97	-1.49/-0.36	3.51/-0.04	-3.14/-5.02	-1.46/-2.52	-3.36/-0.78	-7.12/-13	-5.88/-6.74	-7.02/-8.45	-6.82/-8.15	-4.15/-6.83	-1.41/-2.58	-3.7/-9.42	-13.57/-11.41	-10.92/-11.8	-8.99/-7.83	-4.9/-2.84
Θ (82.5°)	-4.56/-3.56	-6.15/-4.54	-4.71/-1.06	-2.22/-2.66	-2/-4.68	-2.72/-6.37	-2.51/-1.41	-6.42/-2.79	-1.09/-0.86	0.47/-1.48	-4.77/-4.34	-2.32/-0.47	-3.73/-9.04	-6.25/-2.82	-5.62/-7.61	-9.08/-12.41	-8.51/-7.83	-5.83/-9.1	-4.6/-3.71	-5.34/-11.76	-15.37/-11.7	-8.69/-11.04	-9.97/-7.57	-4.76/-3.54
Θ (90°)	-5.27/-3.26	-6.84/-9.5	-6.73/-1.84	-2.58/-3.61	-1.92/-5.74	-2.79/-9.32	-3.38/-1.52	-9.99/-4.44	-2.51/-3.58	-2.22/-2.49	-5.62/-6.73	-4.05/-6.5	-3.66/-6.38	-10.19/-5.49	-5.03/-8.42	-9.93/-18.91	-11.01/-9.94	-6.38/-12.14	-7.65/-6.84	-7.49/-14.35	-17.94/-12.67	-9.88/-12.33	-12.5/-7.83	-5.53/-4.72
Θ (97.5°)	-5.89/-4.03	-7.39/-5.82	-6.74/-2.72	-3.21/-4.15	-2.13/-4.24	-2.94/-16.45	-4.07/-3.39	-11.59/-8.79	-5.83/-4.59	-5.67/-4.68	-8.17/-9.33	-6.91/-9.75	-4.78/-6.56	-10.68/-7.51	-6.65/-10.32	-15.36/-19.27	-11.68/-10.79	-6.28/-17.74	-17.28/-10.43	-12.28/-16.04	-17.64/-15.62	-11.75/-12.61	-15.03/-8.38	-7.17/-17.14
Θ (105°)	-7.94/-6.15	-7.95/-8.01	-7.37/-3.54	-3.18/-5.44	-4.11/-3.8	-3.05/-12.38	-6.46/-627	-11.49/-9.22	-11.34/-8.12	-5.94/-9.22	-8.64/-14.58	-9.45/-9.83	-7.46/-6.47	-18.66/-10.7	-8.33/-10.78	-19.11/-19.11	-13.06/-13.67	-10.84/-17.78	-13.62/-15.35	-14.47/-17.19	-14.29/-14.54	-11.78/-13.37	-11.25/-7.41	-7.33/-6.68
Θ (112.5°)	-7.5/-8.01	-8.87/-10.63	-6.67/-4.84	-3.97/-5.94	-4.19/-4.46	-4.75/-7.86	-9.47/-14.54	-10.36/-14.99	-18.52/-8.94	-5.35/-14.57	-12.3/-13.4	-15.38/-9.1	-8.87/-9.1	-16.08/-13.98	-12.74/-16.12	-19.12/-16.07	-13.74/-13.68	-10.79/-16.48	-18.42/-12.81	-16.43/-15.58	-14.32/-14.16	-14.28/-12.38	-9.31/-6.36	-8.38/-9.78
Θ (120°)	-8.84/-10.11	-7.55/-7.97	-9.31/-5.58	-6.82/-8.04	-5.03/-7.06	-4.74/-6.61	-10.27/-14.37	-12.93/-13.44	-12.58/-8.43	-8.65/-13.78	-17.66/-19.18	-16.28/-10.43	-7.09/-13.76	-18.2/-16.78	-14.73/-12.5	-19.34/-15.66	-12.76/-12.93	-13.59/-16.68	-17.72/-13.5	-14.82/-17.89	-15.03/-13.53	-14.82/-19.09	-8.74/-6.66	-9.38/-10.96
Θ (127.5°)	-10.63/-8.22	-7.18/-9.46	-10.84/-6.6	-7.38/-9.43	-8.69/-10.57	-4.46/-8.81	-6.68/-8.25	-18.99/-17.75	-10.91/-6.68	-12.68/-18.23	-17.14/-19.32	-14.97/-9.19	-12.29/-17.54	-18.03/-17.86	-14.97/-16.15	-19.08/-16.46	-15.76/-11.89	-18.3/-18.54	-17.89/-18.48	-16.05/-17.06	-16.01/-11.22	-16.3/-19.03	-9.93/-6.84	-9.73/-12.86
Θ (135°)	-14.79/-10.41	-7.21/-8.86	-8.91/-7.68	-11.18/-11.86	-13.16/-9.5	-5.91/-11.05	-5.98/-8.39	-13.61/-10.75	-17.21/-11.93	-9.56/-10.8	-17.79/-18.13	-13.53/-9.13	-11.91/-16.1	-18.8/-14.4	-18.99/-17.53	-19.05/-14.25	-15.12/-18.2	-17.28/-17.38	-17.98/-19.12	-16.71/-17.18	-17.29/-14.05	-11.19/-13.58	-10.26/-10.74	-11.92/-11.98
Θ (142.5°)	-12.51/-12.77	-12.97/-10.43	-12.18/-11.03	-10.67/-9.46	-10.22/-18.96	-10.61/-9.67	-10.68/-10.97	-15.06/-11.23	-9.93/-10.44	-14.78/-14.23	-17.94/-9.03	-10.95/-19.16	-12.23/-16.1	-18.16/-18.24	-17.79/-18.51	-18.92/-13.79	-18.95/-16.45	-15.41/-17.55	-17.92/-18.28	-12.74/-13.1	-11.8/-10.95	-10.1/-7.94	-9.6/-14.6	
Θ (150°)	-10.14/-11.81	-14.48/-15.63	-13.43/-15.27	-18.95/-12.18	-12.61/-19.02	-17.83/-17.94	-18.86/-12.86	-14.96/-18.79	-13.03/-12.23	-18.81/-14.6	-13.13/-16.34	-14.82/-11.26	-9.85/-14.87	-18.05/-18.29	-19.09/-18.39	-18.62/-18.03	-17.22/-19.09	-18.89/-17.65	-18.59/-17.32	-17.57/-18.58	-17.66/-16.68	-16.74/-15.15	-13.45/-12.52	-11.47/-10.13
Θ (157.5°)	-10.43/-12.56	-15.91/-16.14	-16.55/-19.17	-16.97/-13.92	-15.32/-17.4	-1																		



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(157.5°)	-17.35/-18.24	-18.58/-15.33	-14.09/-14.16	-15.36/-16.71	-14.54/-12.96	-13.56/-19.18	-18.27/-17.87	-16.77/-16.5	-16.97/-17.53	-16.9/-13.95	-14.73/-15.16	-12.85/-13.43	-18.15/-14.19	-9.17/-11.28	-15.65/-14.35	-13.84/-16.08	-17.64/-16.88	-15.69/-19.21	-18.72/-18.51	-15.06/-14.52	-14.13/-13.44	-12.75/-12.19	-13.06/-15.2	-16.3/-17.65
Θ(165°)	-19.24/-18.14	-18.47/-18.09	-19.01/-19	-17.23/-14.19	-13.38/-12.71	-12.67/-13.44	-17.53/-18.36	-18.34/-18.15	-19.22/-18.68	-17.97/-17.45	-15.48/-15.09	-16.52/-18.38	-17.68/-16.92	-12.81/-14.19	-18.36/-18.71	-14.39/-11.63	-9.74/-9.01	-9.94/-13.27	-17.04/-17.29	-14.52/-13.68	-14.77/-17.44	-16.81/-14.57	-12.19/-11.05	-12.48/-17.69
Θ(172.5°)	-14.06/-14.53	-17.65/-18.89	-18.32/-17.91	-16.36/-15.27	-14.76/-15.83	-18.51/-18.12	-17.72/-19.12	-18.17/-18.3	-15.7/-12.27	-10.71/-12.65	-16.06/-18.91	-18.05/-18.48	-17.42/-18.97	-18.6/-17.35	-16.94/-14.68	-13.58/-13.37	-12.99/-12.7	-14.25/-17.16	-17.36/-15.66	-13.22/-12.07	-11.81/-10.88	-10.01/-9.56	-10.05/-11.8	-14.43/-16.17
Θ(180°)	-18.13/-16.09	-16.25/-16.25	-14.06/-13.2	-12.57/-11.29	-11.24/-11.19	-11.79/-12.21	-12.76/-14.93	-15.99/-13.59	-11.74/-10.85	-12.09/-15.16	-19.25/-18.26	-18.38/-17.14	-16.64/-17.68	-14.52/-14.81	-14.92/-12.08	-11.88/-11.96	-12.7/-12.41	-12.18/-11.9	-11.26/-10.62	-10.54/-11.77	-13.34/-14.02	-15.86/-18.91	-17.38/-18.38	-17.72/-18.04
Freq(Hz)	5.6GPol.	Theta/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°)	-16.41/-12	-9.27/-7.51	-5.94/-8.81	-3.79/-2.61	-1.98/-1.75	-1.77/-1.84	-1.71/-1.49	-1.63/-2.1	-2.81/-4.31	-5.86/-7.65	-9.25/-11.44	-13.69/-15.25	-15/-11.75	-8.96/-6.52	-5.4/-4.75	-4.01/-3.29	-2.86/-2.86	-2.49/-2.07	-2.24/-2.49	-2.57/-2.69	-3.47/-4.74	-6/-7.16	-8.05/-9.61	-12.66/-17.08
Θ(7.5°)	-14.34/-10.37	-7.75/-6.28	-5.17/-3.91	-2.68/-1.65	-0.9/-0.25	0.30/58	0.590.73	0.540.18	-0.2/-0.89	-2.28/-3.84	-5.19/-7.51	-10.23/-15.26	-16.96/-11.49	-8.2/-5.76	-4.27/-3.48	-3.11/-2.62	-2.55/-2.52	-2.29/-2.19	-2.64/-3.27	-3.6/-4.01	-5.1/-6.52	-8.06/-10.49	-13.65/-18.12	-17.68/-18.31
Θ(15°)	-12.92/-12.38	-9.45/-7.17	-5.78/-5.13	-4.41/-3.49	-2.53/-0.92	0.39/1.19	1.63/1.8	1.460.59	-0.73/-2.63	-5.05/-7.32	-8.87/-9.64	-11.19/-18.07	-18.58/-11.35	-6.78/-5	-4.91/-5.53	-6.01/-5.49	-4.43/-4.01	-3.84/-4.89	-6.25/-7.82	-8.24/-8.21	-6.62/-4.84	-3.85/-3.84	-4.54/-6	-7.69/-9.91
Θ(22.5°)	-13.37/-18.61	-13.61/-8.86	-6.14/-5.15	-5.85/-7.78	-5.29/-1.21	0.92/1.66	1.40.4	-0.78/-2.21	-3.05/-2.69	-3.08/-4.73	-7.98/-12.87	-16.71/-13.46	-13.74/-18.66	-13.95/-10.04	-9.52/-10.52	-8.66/-6.45	-6.04/-6.51	-9.25/-14.22	-17.86/-18.24	-13.15/-8.45	-5.3/-3.63	-3.26/-3.55	-4.74/-6.66	-7.58/-9.33
Θ(30°)	-12.77/-16.53	-15.45/-11.77	-6.45/-2.98	-2.96/-4.96	-3.75/-0.51	1.23/1.79	0.9/-0.54	-1.92/-2.63	-2.21/-1.68	-2.4/-3.86	-5.43/-7.47	-9.38/-11.18	-10.42/-9.16	-6.94/-7.16	-10.91/-18.7	-17.07/-9.54	-5.13/-4.41	-7.43/-13	-9.32/-5.53	-3.93/-3.56	-4.03/-5.86	-9.04/-17.01	-18.66/-14.99	-13.24/-11.55
Θ(37.5°)	-11.39/-8.81	-6.17/-5.39	-2.8/-1.01	-2.55/-4.33	-4.08/-4.9	-3.64/-1.75	-1.47/-0.9	0.68/1.36	0.65/-0.62	-2.47/-5.18	-8.12/-10.29	-10/-10.91	-12/-7.3	-4.61/-3.83	-4.8/-5.83	-8.19/-11.09	-4.3/-1.79	-3.25/-4.22	-1.78/-0.65	-1.21/-3.21	-5.56/-8.01	-13.61/-11.21	-7.46/-7.31	-9.98/-13.14
Θ(45°)	-5.63/-4.92	-2.37/-1.11	0.730.55	-2.67/-1.8	-2.73/-8.4	-2.48/-1.28	-2.26/-0.11	2.24/2.15	-0.1/-2.89	-4.04/-4.43	-6.7/-7.06	-4.34/-3.08	-6.58/-9.32	-6.63/-3.8	-3.1/-2.93	-2.32/-7.61	-10.2/-0.74	-1.13/-3.45	-0.72/-0.85	-3.33/-5.1	-6.12/-7.33	-12.25/-18.86	-11.28/-8.72	-7.89/-5.19
Θ(52.5°)	-2.35/-2.69	-1.16/-0.24	0.86/0.72	-0.52/-0.25	-3.5/-3.69	0/-1.34	-1.80/-27	1.26/0.93	0.26/-0.34	-0.97/-1.7	-5.14/-1.64	0.08/-0.79	-4.31/-2.5	-2.18/-2.53	-3.81/-5.59	-3.86/-5.9	-15.53/-1.64	-1.45/-3.5	-1.85/-3.31	-6.54/-10.78	-11.96/-11.23	-11.63/-9.78	-3.8/-1.86	-1.25/-0.77
Θ(60°)	-1.85/-0.99	0.490.46	0.21/1.31	2.39/1.72	0.820.18	1.39/-0.54	-1.3/-0.41	-1.89/-2.25	0.1/35	0.66/1.12	-1.430.54	1.42/0.1	-4.18/-1.46	0.92/-2.74	-2.15/-6.71	-6.33/-7.73	-18.81/-2.27	-1.36/-3.4	-3.48/-3.19	-3.88/-5.89	-9.27/-12.23	-11.58/-13.09	-5.23/-3.91	-3.35/-1.54
Θ(67.5°)	-2.33/-1.04	0.54/1.33	1.24/1.64	2.92/3.18	3.170.87	1.78/-0.27	-1.39/-1.07	0.37/1.91	-0.82/2	2.022.09	1.53/3.18	1.550.45	-3.34/-0.72	1.13/-5.34	-3.2/-6.18	-6.48/-7.23	-8.67/-1.97	-1.75/-1.97	-2.950.03	-1.44/-2.67	-5.65/-8.91	-9.42/-8.25	-4.12/-3.03	-3.09/-1.5
Θ(75°)	-0.01/-0.96	0.17/2.26	1.94/1.38	2.01/3.58	2.82/-0.99	1.32/-0.9	-2.46/-0.92	1.26/-1.3	-0.75/-1.67	3.322.02	1.594.19	2.54/-0.43	-2.8/-3.38	1.1/-5.08	-4.04/-4.57	-5.27/-2.64	-3.16/-2.3	-1.21/-0.31	-2.960.78	-0.48/-1.77	-3.68/-7.07	-6.15/-4.43	-1.71/-0.52	-0.26/-1.8
Θ(82.5°)	0.45/-0.25	0.052.51	0.94/-0.5	-0.42/3.21	0.56/-1.62	-1.11/-2.64	-3.45/-0.28	-0.35/-2.24	0.38/1.37	3.040.89	1.19/0.09	1.39/-2.38	-3.12/-3.32	-1.28/-5.33	-4.09/-5.88	-4.41/-0.08	-1.96/-2.59	-1.99/-0.43	-2.990.66	-1.98/-3.04	-3.25/-4.64	-6.28/-4.04	-2.21/-0.61	0.43/2.63
Θ(90°)	-0.53/-0.34	-1.04/1.32	-0.94/-2.6	-2.94/1.19	-1.89/-1.54	-4.14/-2.7	-7.56/-2.37	-3.66/-5.38	0.230.06	1.05/-0.59	-0.480.6	-0.61/-2.9	-4.56/-4.92	-3.56/-5.27	-5.38/-6.88	-5.68/-1.52	-3.05/-4.78	-3.01/-3.03	-1.91/-1.28	-3.64/-5.84	-3.96/-6.54	-7.09/-4.11	-2.53/-2.14	0.21/52
Θ(97.5°)	-1.89/-0.96	-2.25/-0.64	-3.79/-3.25	-4.52/-0.5	-2.15/-0.76	-3.48/-3.67	-12.28/-1.66	-7.11/-10.21	-0.73/-2.73	-1.15/-5	-2.78/-3	-3.11/-7.51	-3.06/-6.85	-5.79/-9.34	-16.18/-6.62	-7.41/-2.84	-6.72/-8.42	-3.49/-4.73	-3.08/-4.69	-9.41/-8.26	-7.01/-6.28	-6.66/-5.05	-3.48/-3.82	-0.080.66
Θ(105°)	-3.66/-1.65	-3.65/-1.75	-7.74/-4.48	-1.81/-1.57	-4.16/-2.06	-2.07/-8.92	-17.55/-1.41	-8.51/-14.12	-3.34/-3.81	-2.43/-7.99	-5.38/-5.65	-7.9/-9.24	-4.85/-6.04	-6.95/-9.19	-10.58/-1.15	-8.43/-8.15	-4.92/-8.5	-6.28/-4.28	-3.66/-9.13	-1.94/-8.65	-12.42/-8.67	-7.22/-7.06	-5.56/-4	-1.56/-1.3
Θ(112.5°)	-3.36/-2.15	-4.73/-1.23	-10.25/-4.51	-6.79/-3.91	-2.38/-1.12	0.52/-7.04	-7.49/-8.22	-14.06/-6.17	-8.11/-8.92	-4.48/-8.1	-8.12/-9.08	-6.08/-11.87	-3.44/-8.19	-9.04/-9.65	-9.49/-16.14	-10.55/-10.7	-10.97/-11.21	-4.86/-4.51	-4.95/-10.97	-17.77/-11.98	-12.55/-7.19	-5.81/-7.07	-7.64/-6.96	-1.92/-2.89
Θ(120°)	-3.69/-3.2	-5.59/-3.5	-5.95/-3.69	-8.12/-6.68	-5.24/-2.33	-1.68/-4.74	-7.21/-18.95	-17.18/-1.73	-9.05/-9.31	-5.28/-13.33	-14.3/-12.28	-7.53/-10.93	-4.52/-9.91	-8.76/-15.08	-13.81/-18.73	-8.89/-9.94	-9.92/-8.04	-6.63/-6.52	-8.09/-8.08	-11.98/-14.63	-8.46/-6.87	-8.45/-8.36	-9.84/-6.77	-3.65/-9.95
Θ(127.5°)	-5.78/-4.22	-5.86/-5.52	-9.18/-5.86	-9.61/-7.91	-4.52/-5.57	-4.91/-9.1	8.02/-9.27	-16.99/-11.38	-9.82/-5.64	-11.03/-17.42	-18.34/-8.39	-10.11/-9.53	-6.71/-17.86	-11.82/-14.85	-17.94/-13.33	-7.98/-10.17	-9.7/-8.95	-7.92/-8	-15.72/-8.41	-8.91/-16.67	-8.17/-12.51	-9.41/-8.17	-6.95/-2.96	-3.37/-7.8
Θ(135°)	-4.64/-5.31	-7.92/-6.06	-10.76/-6.16	-7.16/-9.83	-7.27/-14.78	-5.49/-4.51	-6.21/-4.5	-9.61/-19.15	-15.03/-9.36	-8.07/-12.43	-17.81/-9.47	-9.56/-10.95	-18.85/-19.18	-12.1/-13.57	-15.1/-12.78	-9.52/-10.61	-15.77/-9.1	-7.57/-7.61	-13.39/-11.07	-9.95/-11.22	-12.31/-7.58	-16.56/-9.68	-7.75/-2.39	-2.95/-8.25
Θ(142.5°)	-5.77/-7.8	-5.97/-8.1	-9.74/-8.36	-9.43/-13.07	-9.8/-12.55	-10.86/-12.75	-11.55/-1.5	-7.03/-13.42	-16.3/-12.89	-9.99/-15.77	-10.91/-7.62	-14.31/-18	-18.45/-11.31	-18.16/-18.93	-12.06/-8.65	-11.73/-17.27	-11.4/-10.19	-9.57/-10.11	-15.8/-13.05	-12.92/-14.69	-16.23/-10.89	-9.63/-12.15	-8.3/-6.21	-7.44/-6.97
Θ(150°)	-12.42/-12.3	-7.97/-9.01	-15.27/-10.4	-11.31/-17.88	-10.03/-9.94	-17.83/-17.46	-18.33/-14.91	-12.96/-17.44	-18.49/-16.45	-14.25/-13.43	-19.18/-14.73	-18.58/-15.67	-17.88/-17.23	-13.05/-16.16	-12.85/-13.52	-16.85/-18.72	-12.8/-12.92	-15.88/-12.69	-12.26/-16.79	-18.23/-15.01	-12.53/-13.15	-13.96/-10.45	-6.26/-4.95	-5.7/-8.57
Θ(157.5°)	-9.77/-10.22	-11.91/-14.89	-16.91/-13.92	-17.44/-18.45	-13.27/-13.61	-15.54/-13.43	-11.93/-13.48	-18.08/-17.47	-11.32/-11.25	-17.71/-19.28	-17.35/-17.61	-18.83/-19.65	-18.85/-17.98	-18.49/-17.42	-19.41/-18.75	-18.09/-17.66	-16.28/-19.1	-13.31/-17.55	-17.62/-17.93	-19.1/-18.51	-18.61/-16.41	-11.85/-9.66	-7.72/-7.05	-8.74/-10.11
Θ(165°)	-11.08/-11.89	-16.12/-18.48	-14.87/-12.37	-11.61/-15.42	-17.45/-17.56	-19.06/-15.18	-13.6/-13.08	-12.38/-9.91	-9.25/-11.61	-19.02/-19.35	-18.33/-18.92	-17.76/-18.61	-18.73/-17.58	-19.07/-18.39	-19.19/-16.15	-12.98/-12.5	-12.83/-16.86	-16.67/-17.33	-19.11/-17.8	-19.14/-17.64	-17.21/-15.21	-11.27/-9.23	-10.03/-11.92	-11.91/-15.7
Θ(172.5°)	-10.73/-9.88	-9.41/-9.75	-10.84/-12.32	-14.66/-18.63	-18.22/-19.19	-17.92/-17.73	-18.38/-18.32	-17.97/-14.82	-14.45/-15.17	-18.23/-18.36	-16.08/-16.21	-15.89/-16.01	-17.87/-19.35	-19.31/-18.06	-17.83/-18.58	-19.16/-18.92	-18.93/-18.93	-19/-18.79	-18.35/-18.32	-18.91/-18.44	-17.59/-16.04	-13.63/-12.71	-11.99/-11.51	-11.82/-11.99
Θ(180°)	-13.07/-14.65	-14.79/-13.91	-14.73/-16.4	-17.55/-18.36	-19.43/-17.56	-16.84/-15.73	-14.96/-15.73	-18.41/-18.43	-14.74/-12.18	-11.61/-10.33	-10.83/-10.76	-11.36/-12.38	-11.48/-11.25	-11.15/-11.23	-12.36/-14.41	-16.6/-18.87	-18.35/-18.95	-18.31/-18.87	-16.36/-14.09	-12.44/-12.16	-12.77/-12.36	-12.73/-12.75	-12.26/-11.24	
Freq(Hz)	5.785GPol.	Phi/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°)	-0.29/-0.7	-1.13/-1.86	-2.78/-4	-5.55/-7.57	-1.15/-17.91	-18.69/-15.82	-12.17/-8.78	-6.37/-4.5	-3.09/-2.41	-1.96/-1.36	-0.99/-0.85	-0.64/-1	-1.45/-2.06	-3.41/-4.27	-5.28/-7.02	-9.52/-12.57	-17.23/-17.13	-14.18/-12.73	-10.53/-7.56	-5.84/-4.03	-2.81/-1.92	-1.14/-0.83	-0.68/-0.2	0.15/-0.11
Θ(7.5°)	-4.98/-4.88	-5.34/-6.68	-7.75/-8.43	-8.74/-9.17																				



Freq(Hz)	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	10.46	9.56	9.72	9.66	11.33	11.31	10.51	11.39
Ant. 2 Max Gain (dBi)	9.34	9.87	9.49	9.82	10.61	10.75	10.62	10.52
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/7.5/135	Phi/7.5/127.5	Phi/0/135	Theta/7.5/45	Theta/7.5/45	Phi/7.5/135	Theta/7.5/52.5	Phi/0/135
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/7.5/135	Phi/0/315	Phi/0/315	Theta/7.5/52.5	Theta/0/52.5	Phi/0/315	Phi/7.5/315	Phi/0/307.5
Max Gain (dBi)	10.46	9.87	9.72	9.82	11.33	11.31	10.62	11.39
DG [1SS] (dBi)	12.93	12.57	12.57	12.74	13.79	13.99	13.55	13.95
DG [2SS] (dBi)	10.46	9.87	9.72	9.82	11.33	11.31	10.62	11.39





Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(22.5°)	8.15/6.74	4.78/2.69	-0.39/-5.08	-11.74/-8.39	-1.92/2	4.34/6.01	7.63/9.08	10.2/10.94	11.41/11.57	11.52/11.25	10.74/10.66	9.27/8.22	7.01/5.5	3.44/0.73	-3.56/-10.64	-15.27/-7.77	-2.28/1.25	3.58/5.36	6.82/8.1	9.12/9.83	10.22/10.35	10.53/10.83	10.91/10.69	10.22/9.35
Θ(30°)	5.78/4.54	2.59/0.08	-3.28/-8.03	-12.85/-10.85	-3.86/0.89	3.22/4.92	6.53/7.91	8.63/8.69	9.14/9.32	9.21/8.83	8.38/7.83	7.12/5.94	4.48/2.47	-0.22/-3.73	-7.16/-10.75	-12.23/-7.78	-5.18/-8.17	1.17/3.07	4.53/5.86	6.89/7.16	7.17/7.26	7.66/7.92	8.03/7.97	7.33/6.63
Θ(37.5°)	2.08/1.65	0.95/-1.01	-4.09/-8.61	-15.74/-12.11	-7.29/-2.67	1.04/2.96	4.77/6.04	6.07/5.78	6.10/5.66	6.66/6.37	5.68/4.57	3.52/2.18	0.78/-1.48	-4.09/-6.32	-7.58/-10.65	-11.9/-11.9	-10.26/-6.69	2.38/-0.06	1.84/3.42	3.8/3.6	3.99/4.84	5.48/5.59	5.41/4.8	3.83/2.61
Θ(45°)	-1.17/-2.06	-2.38/-3.22	-4.83/-7.3	-14.75/-14.04	-11.36/-8.11	-2.98/-0.86	1.25/2.88	2.6/2.65	4.05/5.24	5.5/4.84	3.33/1.72	0.37/-1.89	-2.82/-3.77	-7.17/-11.98	-14.38/-15.46	-14.78/-15.36	-12.61/-8.99	-7.04/-4.79	-1.78/0.6	0.31/1.7	3.15/3.31	3.03/3.17	3.32/2.76	1.35/0.16
Θ(52.5°)	-1.75/-4.91	-8.16/-9.83	-9.67/-10.29	-16.04/-16.04	-11.61/-11.91	-6.48/-3.91	-0.47/0.87	-0.68/0.08	1.54/2.95	2.83/1.03	-1.23/-0.41	-1.04/-4.05	-9.87/-12.13	-14.21/-14.55	-15.22/-15.56	-15.11/-14.19	-15.28/-12.98	-12.09/-12.3	-7.49/-2.88	-4.27/-0.53	0.75/-0.85	-0.82/-0.14	0.52/0.41	-0.45/-8.05
Θ(60°)	-2.38/-5.27	-9.05/-9.68	-11.85/-13.69	-14.78/-15.17	-10.34/-7.53	-8.34/-5.01	-2.72/0.05	-2.97/-1.54	-0.82/-0.85	-1.11/-4.89	-7.82/-4.3	-2.73/-3.92	-7.9/-12.75	-13.38/-12.47	-14.89/-14.81	-15.29/-11.34	-13.41/-11.06	-11.15/-10.35	-1.41/-6.49	-8.52/-4.37	-6.3/-3.19	-6.9/-4.8	-2.81/-2.13	-1.43/-1.42
Θ(67.5°)	-3.85/-6.17	-8.22/-7.38	-9.04/-10.54	-15.89/-14.85	-5.68/-4.32	-10.25/-5.51	-4.01/-0.27	-4.64/-3.06	-5.35/-5.9	-4.22/-4.98	-10.18/-6.59	-4.79/-6.44	-9.07/-10.95	-13.01/-14.9	-11.1/-11.29	-14.97/-7.66	-8.89/-11.51	-8.53/-13.64	-9.81/-8.15	-8.48/-9.33	-6.95/-7	-8.73/-6.01	-4.92/-4.11	-3.67/-3.82
Θ(75°)	-5.22/-6.98	-7.5/-7.72	-9.74/-10.23	-13.24/-10.22	-5.46/-3.96	-9.98/-9.29	-7.18/-1.54	-6.73/-4.72	-8.16/-8.71	-5.72/-4.09	-7.3/-10.09	-8.76/-9.07	-10.87/-10.17	-9.36/-8.21	-7.84/-7.73	-15.08/-9.5	-6.04/-13.09	-6.3/-11.68	-8.9/-9	-8.97/-8.39	-6.13/-6.59	-6.39/-5.83	-6.48/-7.45	-5.35/-6.03
Θ(82.5°)	-6.17/-7.54	-9.59/-8.82	-10.61/-11.55	-11.3/-9.73	-7.58/-4.09	-8.86/-9.73	-5.71/-2.88	-7.56/-5.09	-7.56/-6.02	-3.96/-3.74	-9.96/-11.98	-12.73/-12.24	-11.79/-10.78	-6.13/-4.62	-5.55/-7.36	-15.32/-10.85	-5.49/-10.11	-5.24/-8.82	-8.34/-9.03	-11.15/-6.36	-5.58/-7.67	-6.63/-7.57	-7.29/-10.17	-7.97/-8.5
Θ(90°)	-7.35/-6.98	-7.83/-8.86	-12.25/-12.77	-12.78/-9.55	-9.63/-5.25	-9.15/-13.54	-5.54/-4.96	-8.28/-7.25	-7.73/-5.87	-6.09/-4.46	-8.67/-14.14	-15.12/-15.39	-11.77/-7.27	-4.88/-3.48	-5.82/-6.99	-14.76/-15.79	-7.04/-10.7	-6.61/-9.06	-7.93/-9.78	-12.14/-6.11	-6.65/-7.69	-5.04/-9.11	-9.04/-11.24	-8.31/-8.51
Θ(97.5°)	-7.03/-6.38	-9.11/-12.02	-10.99/-11.71	-12.54/-9.23	-8.17/-4.07	-10.36/-12.3	-5.34/-8.81	-10.45/-10.25	-7.35/-6.54	-7.97/-6.31	-9.88/-9.78	-14.59/-14.77	-10.89/-6.56	-4.55/-4.74	-8.62/-8.88	-15.91/-12.42	-9.19/-11.78	-10.44/-12.07	-6.48/-7.17	-11.91/-6.09	-6.41/-9.86	-7.39/-9.51	-9.61/-9.86	-9.39/-9.99
Θ(105°)	-6.34/-5.1	-8.57/-11.77	-10.66/-10.66	-11.33/-9.69	-6.68/-5.43	-10.84/-9.38	-5.23/-11.05	-9.94/-9.66	-6.2/-5.8	-7.99/-8.44	-8.93/-9.38	-12.53/-15.4	-4.58/-5.07	-11.06/-8.81	-15.18/-10.61	-12.87/-12.5	-11.46/-15.43	-15.88/-11.46	-8.79/-8.95	-11.3/-12.96	-7.82/-9.7	-7.73/-9.19	-9.75/-10.58	-11.71/-8.37
Θ(112.5°)	-6.04/-7.68	-11.19/-9.87	-11.76/-10.22	-12.22/-10.64	-8.17/-7.33	-9.68/-6.46	-5.71/-12.57	-9.41/-9.17	-7.86/-7.76	-7.03/-9.1	-9.39/-8.56	-13.65/-14.93	-11.43/-9.82	-4.71/-6.1	-12.28/-8.1	-14.65/-11.4	-14.9/-13.08	-15.03/-13.77	-11.36/-9.88	-14.55/-8.39	-8.51/-11.14	-7.18/-6.72	-11.73/-14.69	-10.05/-7.42
Θ(120°)	-7.68/-9.42	-10.81/-9.36	-12.85/-9.58	-13.32/-10.92	-8.62/-7.19	-8.87/-6.56	-7.78/-10.16	-7.94/-9.18	-9.58/-10.17	-8.68/-7.1	-8.32/-8.17	-13.13/-14.09	-12.22/-12.48	-7.77/-6.62	-10.41/-8.98	-13.66/-9.37	-15.12/-10.45	-12.76/-10.74	-10.64/-10.48	-14.31/-11.08	-9.25/-8.18	-13.28/-6.89	-10.91/-14.21	-11.07/-8.49
Θ(127.5°)	-7.64/-8.79	-13.59/-14.88	-9.84/-9.33	-11.31/-9.69	-6.83/-6.25	-10.3/-12.61	-10.95/-9.19	-7.24/-8.71	-12.09/-12.69	-8.92/-7.94	-7.15/-14.11	-11.94/-13	-14.22/-14.89	-14.4/-11.24	-11.39/-10.03	-10.64/-10.56	-11.46/-15.43	-15.88/-11.46	-8.79/-8.95	-11.3/-12.96	-7.57/-10.17	-14.15/-12.77	-6.79/-7.73	
Θ(135°)	-10.29/-11.61	-11.24/-11.57	-9.73/-9.36	-8.71/-7.38	-9.81/-11.79	-15.12/-14.53	-9.52/-7.59	-10.96/-10.19	-15.17/-10.99	-9.91/-10.3	-8.57/-9.55	-8.94/-12.58	-15.47/-15.22	-14.5/-12.33	-12.19/-11.04	-10.94/-13.8	-13.77/-12.31	-14.27/-10.94	-14.3/-10.7	-11.72/-9.59	-12.94/-15.37	-13.18/-12.37	-11.78/-15.41	-8.43/-10.21
Θ(142.5°)	-12.93/-11.21	-11.03/-9.27	-9.43/-13.14	-12.14/-10.28	-12.55/-15.23	-14.95/-12.57	-10.72/-12.77	-14.68/-12.78	-14.22/-13.68	-10.77/-10.93	-9.07/-10.19	-8.84/-10.9	-13.3/-15.1	-14.9/-15.72	-13.62/-12.86	-11.91/-11.82	-14.34/-12.42	-13.95/-15	-10.03/-14.67	-13.1/-15.16	-12.91/-10.4	-8.88/-13	-15.44/-12.91	-12.24/-12.53
Θ(150°)	-12.36/-11.56	-11.07/-9.25	-13.61/-11.68	-8.15/-6.27	-7.8/-5.58	-16.09/-15.48	-15.47/-12.77	-14.62/-12.78	-14.22/-13.68	-12.71/-13.8	-6.58/-8.08	-11.41/-14.12	-15.66/-15.71	-13.95/-15.02	-14.18/-15.1	-9/-12.107	-12.12/-10.7	-11.08/-11.9	-9.64/-13.02	-14.82/-14.11	-15.18/-15.41	-14.03/-12.88		
Θ(157.5°)	-13.15/-14.17	-15.32/-15.59	-15.27/-14.02	-12.73/-12.77	-12.19/-10.9	-10.02/-11.63	-14.75/-14.93	-14.5/-14.34	-13.7/-14.3	-15.37/-15.57	-12.87/-12.75	-13.96/-14.47	-13.97/-13.6	-13.71/-14.83	-15.43/-14.94	-14.77/-15.1	-14.74/-12.39	-13.02/-14.57	-15.38/-15.4	-14.9/-13.26	-11.89/-12.22	-12.57/-13.48	-14.5/-14.83	-14.54/-13.56
Θ(165°)	-13.96/-15.49	-15.27/-15.49	-15.19/-15.4	-15.98/-15.16	-15.02/-14.14	-12.61/-11.48	-11.52/-10.23	-14.07/-15.06	-14.68/-15.14	-14.19/-12.39	-11.44/-10.07	-9.26/-11.19	-14.2/-15.69	-15.56/-15.35	-15.28/-15.31	-15.41/-13.68	-13.2/-13.49	-14.41/-15.41	-15.24/-15.41	-15.75/-15.87	-13.47/-12.48	-13.1/-13.72	-15.09/-14.63	-13.77/-13.99
Θ(172.5°)	-11.87/-12.91	-13.59/-14.79	-15.42/-15.9	-15.2/-16.12	-15.78/-15.31	-14.87/-15.47	-15.52/-15.66	-14.61/-14.78	-14.08/-14.41	-14.65/-14.77	-15.64/-15.46	-15.44/-15.8	-13.32/-11.59	-10.94/-11.55	-12.36/-13.4	-13.9/-14.72	-15.46/-15.84	-15.44/-14.99	-13.42/-13.63	-14.13/-15.35	-15.56/-15.41	-15.42/-15.33	-15.09/-12.95	-12.14/-11.94
Θ(180°)	-15.42/-15.14	-15.62/-15.67	-14.71/-14.31	-14.15/-13.41	-12.96/-12.3	-12.32/-12.61	-12.96/-12.2	-12.9/-13.41	-12.98/-13.01	-12.27/-12.74	-12.83/-12.68	-12.37/-13.32	-14.23/-13.94	-15.19/-15.35	-14.84/-15.33	-15.52/-14.74	-15.41/-15.29	-15.06/-14.46	-15.04/-15.4	-15.71/-14.99	-14.35/-13.06	-12.85/-13.2	-14.21/-15.58	-15.26/-15.69
Freq(Hz)	5.65GPol.	ThetaL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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°)	9.59/10.54	11.26/11.78	12.16/12.39	12.48/12.38	12.13/11.75	11.23/10.48	9.54/8.28	6.53/4.25	0.99/-4.23	-13.21/-5.17	0.47/3.89	6.14/7.91	9.25/10.28	11.06/11.68	12.13/12.41	12.48/12.39	12.12/11.72	11.11/10.34	9.32/7.96	6.16/3.74	0.23/-6.01	-12.21/-3.53	1.64/4.59	6.87/8.87
Θ(7.5°)	9.21/10.26	11.08/11.66	12.09/12.36	12.47/12.37	12.13/11.78	11.26/10.5	9.49/8.16	6.54/4.34	1.22/-3.7	-8.98/8.64	1.62/7.42	8.79/9.84	10.59/11.22	11.67/11.93	12.31/11.93	12.40/11.91	11.64/11.19	10.55/9.7	8.67/2.1	5.38/2.94	-0.7/-7.15	-11.47/-4.12	1.11/4.02	6.24/7.87
Θ(15°)	8.63/9.65	10.42/11.08	11.57/11.95	12.21/12.21	12.11/15.9	11.03/10.24	9.25/8	6.47/4.54	1.92/-2.01	-7.58/-1.64	-2.94/0.95	3.55/3.8	6.65/7.55	8.188/7.6	9.269/8.3	9.91/10.04	9.96/8.68	9.15/8.41	7.51/6.37	4.68/2.51	-0.73/-6.79	-15.13/-5.63	0.41/3.61	5.81/7.49
Θ(22.5°)	7.38/1.4	8.77/9.19	9.56/9.96	10.31/10.52	10.53/10.43	10.08/9.38	8.45/7.26	5.67/3.62	0.62/-3.87	-9.93/-8.64	-4.4/-1.3	0.98/2.71	3.89/4.85	5.44/5.92	6.05/6.14	6.4/6.71	6.96/7.15	7.6/7	6.26/5.19	3.2/0.49	-3.21/-8.68	-13.3/-7.43	-1.82/-1.96	4.44/6.17
Θ(30°)	2.92/4.23	5.14/5.39	5.96/6.2	6.92/6.81	6.85/7.29	7.61/7.62	8.65/7.29	4.71/2.39	-0.952/-4.09	-6.95/-3.71	-8/-9.53	-8.06/5.8	-2.91/-1	0.19/0.22	0.39/1.32	1.59/1.56	2.31/3.24	3.09/2.54	1.98/1.19	-0.67/-3.72	-6.61/-10.41	-15.1/-10.12	-5.7/-2.25	-0.21/4.9
Θ(37.5°)	-1.07/1.19	2.02/1.7	1.61/2.36	3.48/3.42	2.06/1.67	3.58/4.64	4.68/4.08	2.55/-0.14	-3.24/-5.07	-6.62/-7.88	-11.11/-12.74	-7.8/-5.51	-4.65/-4.68	-6.95/-11.49	-12.33/-8.89	-7.26/-8.16	-5.59/-3.37	-2.76/-3.31	-3.54/-4.76	7.6/-9.33	-11.01/-14.95	-12.39/-7.73	-5.23/-4.02	-3.58/-3.45
Θ(45°)	-5.13/-2.82	-0.99/-0.21	-0.37/-0.87	-0.57/0.08	-0.75/-3.29	-1.05/0.2	-1.12/-0.22	0.59/-1.39	-4.35/-7.23	-7.35/-8.54	-9.06/-11.16	-9.76/-8.54	-8.82/-11.96	-14.29/-8.53	-6.2/-6.92	-6.57/-6.51	-9.49/-11.47	-13.33/-15.02	-14/-13.08	-14.77/-13.68	-12.36/-13.88	-6.91/-6.37	-9.47/-15.72	-12.87/-9.7
Θ(52.5°)	-4.83/-7.8	-7.35/-4.88	-2.77/-1.28	-1.14/-1.98	-1.51/-2.26	-2.06/-1.65	-8.96/-4.47	-2.23/-4.08	-0.05/-10.53	-9.87/-7.98	-6.41/-6.41	-7.47/-4.44	-6.83/-6.08	-7.49/-7.34	-2.64/-1.79	-2.54/-2.47	-3.88/-8.05	-8.18/-13.11	-13.1/-10.32	-11.26/-13.94	-15.48/-10.48	-7.33/-10.19	-13.94/-9	-4.88/-3.41
Θ(60°)	-5.31/-8.11	-6.21/-3.63	-2.43/-2.24	-0.91/-1.35	-1.71/-1.43	-3.83/-1.26	-7.56/-5.96	-5.44/-7.67	-5.93/-9.1	-14.09/-8.15	-5.92/-6.15	-8.9/-8.16	-4.96/-2.52	-3.26/-6.66	-4.18/-2.45	-2.39/-2.43	-2.88/-7.57	-7.86/-11.56	-11.32/-9.9	-12.78/-16.2	-15.38/-11.79	-10.99/-14.25	-10.89/-5.93	-2.45/-2.69
Θ(67.5°)	-7.13/-7.45	-4.91/-3.22	-1.24/-2.87	-2.31/-1.42	-2.63/-2.97	-7.6/-2.5	-6.16/-6.5	-8.84/-9.37	-6.2/-8.54	-11.16/-8.08	-6.92/-9.41	-15.81/-10.8	-5.92/-3.12	-4.36/-4.41	-4.91/-9.76	-10.29/-11.5	-9.61/-12.52	-12.64/-15.63	-13.56/-13.55	-15				



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(67.5°)	-6.53/-6.96	-6.42/-7.71	-11.44/-11.76	-15.34/-14.85	-12.75/-11.6	-10.01/-12.56	-5.25/-3.6	-5.38/-6.16	-8.31/-7.33	-6.53/-8.47	-8.65/-6.53	-8.5/-9.7	-10.65/-14.65	-13.17/-11.69	-11.66/-11.16	-11.93/-11.82	-14.8/-9.78	-13.72/-13.96	-7.96/-9.23	-10.53/-6.09	-3.42/-5.02	-3.76/-4.65	-4.34/-3.26	-5.91/-6.6	
Θ(75°)	-5.54/-8.13	-7.28/-8.34	-10.49/-13.21	-13.48/-15.3	-10.5/-8.8	-8.56/-12.51	-6.26/-4.66	-4.14/-9.49	-4.6/-5.67	-4.97/-6.11	-9.78/-11.35	-11.54/-10.26	-15.33/-9.72	-9.48/-12.22	-11.88/-8.83	-11.89/-9.85	-9.56/-10.11	-10.98/-16.04	-7.96/-9.04	-10.57/-9.23	-4.67/-3.22	-0.94/-2.24	-4.07/-3.52	-4.66/-4.28	
Θ(82.5°)	-5.46/-10.05	-7.36/-9.01	-9.98/-11.16	-11.8/-14.6	-11.48/-7.51	-8.11/-11.15	-9.66/-5.97	-5.07/-4.36	-3.08/-3.89	-2.53/-4.23	-9.76/-12.53	-12.86/-11.29	-10.69/-9.88	-7.63/-14.02	-10.99/-9.45	-7.79/-7.78	-8.94/-15.05	-7.19/-11.65	-8.94/-15.05	-8.13/-10.27	-2.87/-1.05	-0.07/-0.54	-4.15/-4.53	-5.56/-3.4	
Θ(90°)	-5.45/-11.27	-8.45/-8.18	-8.9/-12.81	-13.59/-13.59	-11.62/-9.17	-9.18/-12.53	-12.35/-7.2	-6.65/-5.28	-3.97/-4.04	-2/-2.66	-8.44/-13.33	-13.23/-14.29	-11.71/-9.09	-7.27/-7.29	-11.34/-8.424	-15.21/-11.69	-9.6/-6.33	-9.07/-15.5	-8.72/-10.67	-8.77/-10.1	-3.78/-1.36	-1.04/-0.54	-5.06/-6.46	-4.71/-0.7	
Θ(97.5°)	-7.21/-10.92	-10.8/-10.18	-8.54/-11.18	-13.25/-13.11	-11.22/-12.124	-11.62/-11.3	-10.94/-8.3	-7.68/-5.6	-5.8/-5.66	-2.05/-3.72	-11.32/-11.36	-12.47/-15.36	-10.56/-8.82	-7.03/-7.24	-10.93/-9.46	-15.53/-13.1	-8.51/-7.42	-11.49/-14.82	-8.09/-9.58	-12.68/-9.91	-4.04/-2.29	-2.06/-2.28	-7.32/-8.67	-6.59/-5.28	
Θ(105°)	-6.11/-8.66	-13.89/-8.1	-8.2/-8.7	-14.15/-13.02	-14.13/-12.74	-12.33/-9.94	-8.98/-7.83	-7.35/-6.56	-3.26/-3.49	-8.12/-10.73	-12.83/-15.11	-11.32/-10.8	-7.6/-7.1	-10.68/-12.99	-15.16/-11.4	-11.96/-11.03	-13.71/-14.79	-9.76/-12.11	-12.68/-10.44	-6.31/-2.62	-2.92/-4.3	-9.7/-10.38	-8.46/-6.35		
Θ(112.5°)	-6.59/-7.83	-12.97/-9.73	-9.99/-7.04	-14.05/-14.92	-14.3/-11.77	-11.92/-10.74	-7.12/-9.44	-5.62/-9.15	-12.25/-5.06	-4.39/-4.49	-7.3/-10.51	-12.27/-13.66	-11.19/-12.81	-8.52/-9.32	-10.97/-12.82	-15.14/-12.11	-14.57/-12.79	-11.73/-13.68	-10.75/-10.88	-12.56/-10.6	-6.82/-3.07	-3.6/-6.82	-10.4/-12.84	-12.82/-7.66	
Θ(120°)	-6.85/-9.9	-15.75/-13.82	-10.52/-6.55	-14.04/-15.51	-12.6/-14.3	-11.29/-12.42	-6.72/-12.82	-6.4/-12.37	-12.08/-5.21	-5.62/-6.65	-8.26/-9	-10.1/-14.11	-11.46/-12.98	-12.65/-12.72	-10.54/-14.27	-12.83/-10.64	-13.62/-14.94	-13.71/-11.26	-9.31/-11.37	-12.89/-8.93	-5.8/-4.14	-5.93/-8.4	-10.21/-14.49	-12.03/-8.13	
Θ(127.5°)	-7.94/-12.9	-12.57/-10.88	-10.55/-12.18	-11.94/-11.52	-14.23/-14.72	-11.92/-11.43	-5.2/-12.28	-8.26/-7.23	-8.1/-7.6	-7.18/-6.73	-8.13/-7.84	-10.57/-12.27	-14.32/-11.92	-14.14/-14.93	-9.68/-14.43	-14.53/-14.43	-13.72/-7.6	-8.63/-9.58	-12.91/-9.99	-5.56/-5.15	-6.63/-9.37	-13.18/-13.07	-10.83/-4.74		
Θ(135°)	-11.14/-10.23	-13.91/-13.6	-11.45/-10.85	-9.89/-10.4	-14.51/-15.23	-14.91/-13.41	-10.34/-10.21	-9.59/-8.27	-8.35/-13.35	-12.29/-9.14	-8.47/-7.8	-10.54/-14.92	-15.14/-11.02	-12.23/-13.71	-13.18/-14.8	-11.51/-13.78	-15.18/-15.51	-13.44/-8.88	-9.54/-11.67	-12.71/-11.03	-9.74/-9.67	-6.72/-8.39	-11.07/-15.54	-8.8/-7.8	
Θ(142.5°)	-15.87/-15.28	-15.1/-13.82	-15.4/-15.45	-14.85/-15.3	-14.54/-14	-14.9/-79	-9.6/-10.21	-10.92/-9.63	-8/-8.5	-10.32/-12.17	-11.39/-9.3	-10.6/-12.99	-15.43/-12.98	-9.24/-13	-13.17/-15.32	-15.32/-12.72	-13.32/-13.02	-14.92/-12.59	-14.31/-12.05	-15.35/-15.08	-15.35/-15.42	-15.17/-14.14	-15.81/-15.47	-15.32/-15.6	-10.59/-11.72
Θ(150°)	-15.01/-14.77	-12.32/-11.05	-9.71/-11.11	-12.38/-12.24	-13.69/-14.77	-13.01/-11.57	-11.4/-10.2	-9.79/-9.5	-5.5/-3.97	-9.52/-11.83	-10.33/-10	-10.76/-11.18	-13.24/-14.68	-11.48/-11.87	-14.06/-15.01	-15.46/-15.15	-15.49/-15	-15.61/-12.46	-11.9/-15.1	-12.38/-12.07	-14.99/-14.59	-15.14/-13.47	-13.26/-12.8	-9.21/-10.92	
Θ(157.5°)	-15.4/-15.62	-15.45/-14.56	-14.71/-13.44	-12.89/-14.53	-14.75/-14.78	-15.65/-14.95	-11.26/-8.93	-9.54/-10.83	-11.35/-13.71	-15.66/-14.12	-10.64/-9.22	-8.98/-10.52	-13.3/-15.11	-14.42/-11.96	-11.91/-14.24	-15.38/-15.26	-15.12/-15.52	-13.33/-12.37	-13.8/-14.98	-15.3/-15.05	-15.35/-15.82	-14.81/-12.32	-12.97/-14.49	-15.09/-14.8	
Θ(165°)	-15.35/-14.89	-14.16/-15.04	-15.52/-15.63	-14.31/-13.83	-13.48/-13.62	-12.8/-12.96	-12.66/-11.75	-12.95/-14.26	-14.41/-14.41	-14.69/-14.95	-15.02/-13.82	-12.71/-13.13	-15.97/-14.57	-14.88/-14.92	-15.87/-14.3	-13.66/-13.63	-12.91/-12.78	-14.81/-14.9	-15.29/-15.08	-15.35/-15.42	-15.17/-14.14	-15.81/-15.47	-15.32/-15.6	-15.74/-14.62	
Θ(172.5°)	-15.16/-10.77	-14.42/-15.26	-14.9/-15.98	-15.33/-14.9	-14.7/-13.31	-12.49/-12.85	-14.5/-15.22	-14.62/-14.88	-15.11/-15.16	-14.86/-14.54	-14.05/-14.22	-14.62/-15.52	-15.22/-15.2	-15.44/-15.12	-14.26/-13.55	-13.15/-13.64	-12.61/-12.26	-12.85/-11.87	-11.71/-11.93	-13.28/-14.23	-14.91/-15.43	-14.03/-13.34	-14.08/-15.52		
Θ(180°)	-15.59/-15.04	-15.42/-15.22	-15.88/-15.26	-15.82/-15.5	-14.67/-14.01	-13.83/-12.81	-13.25/-13.1	-12.6/-12.52	-12.52/-12.17	-11.82/-12.65	-12.97/-12.77	-13.94/-15.25	-15.18/-15.21	-15.56/-14.98	-13.79/-12.77	-12.76/-13.48	-14.28/-15.68	-15.29/-13.93	-14.15/-13.58	-12.86/-11.73	-10.82/-10.69	-10.89/-11.5	-12.18/-12.49	-13.62/-14.16	
Freq(Hz)	6.175GPol.	ThetaL	ThetaR	ThetaT	ThetaB	ThetaC	ThetaD	ThetaE	ThetaF	ThetaG	ThetaH	ThetaI	ThetaJ	ThetaK	ThetaL	ThetaM	ThetaN	ThetaO	ThetaP	ThetaQ	ThetaR	ThetaS	ThetaT	ThetaU	
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°)	10.36/11.45	12.24/12.87	13.35/13.65	13.78/13.76	13.63/13.29	12.78/12.09	11.18/10.05	8.58/6.62	3.73/-0.39	-7.88/-8.37	-10.24/0.4	6.69/6.6	10.02/11.11	11.99/12.73	13.24/13.52	13.65/13.6	13.45/13.16	12.71/12.04	11.08/9.82	8.21/6.03	3.03/-1.72	-10.12/-5.73	14/57	7.19/0.3	
Θ(7.5°)	10.64/11.66	12.47/12.8	13.27/13.62	13.73/13.73	13.63/13.32	13.41/12.51	11.71/10.66	9.19/7.39	4.94/1.33	-5.3/-8.1	-8.053/47	6.077/88	9.24/10.38	11.19/11.86	12.29/12.49	12.53/12.37	12.13/11.76	11.28/10.57	9.638/39	6.784/61	1.18/-4.72	-12.47/-3.42	2.075/2.22	7.569/2.8	
Θ(15°)	9.57/10.45	11.13/11.69	12.29/12.79	13.13/13.03	12.93/12.62	12.21/11.65	10.91/8.81	8.276/19	3.13/-1.03	-7.84/-11.61	-4.190/53	3.21/1.11	6.437/63	8.689/47	10.34/10.31	9.949/32	8.427/3	6.094/88	3.361/46	-1.45/-5.41	-7.73/-2.58	1.84/61	6.738/43		
Θ(22.5°)	7.58/8.27	8.6/8.73	9.1/9.63	10.23/10.59	10.54/10.22	9.95/9.6	9.7/99	6.614/94	2.48/-1.04	-6.42/-11.45	-8.82/-4.24	-0.13/2.32	4.035/06	5.57/6.1	6.476/49	6.356/16	5.945/66	4.923/7	2.31/12	-0.46/-3.24	-6.72/-7.82	-3.85/-0.68	1.863/68	5.03/6.4	
Θ(30°)	4.334/7	4.965/07	4.945/01	6.026/61	6.816/45	6.035/92	6.246/29	5.94/62	1.82/2.36	-6.17/-9.2	-12.57/-15.45	-12.32/-5.62	-2.35/-0.9	-0.96/-1.65	-1.03/-0.7	-0.71/-0.8	-0.92/-0.73	-0.76/-1.06	-2.38/-3.1	-4.19/-6.94	-9.31/-5.23	-3.21/-2.09	-6.04/6.62	1.81/3.41	
Θ(37.5°)	0.770/95	0.330/56	0.660/27	1.362/79	3.156/73	1.572/34	3.723/82	3.061/94	1.08/-5.32	-7.4/-5.83	-5.36/-8.62	-12.67/-11.99	-10.55/-8.96	-10.24/-13.82	-13.58/-14.67	-14.71/-14.6	-14.75/-14.97	-10.24/-9.56	-10.71/-3.7	-8.83/-12.26	-6.28/-5.53	-7.63/-7.44	-6.43/-5.78	-3.45/-0.72	
Θ(45°)	-4.29/-3.26	-5.21/-5.35	-5.37/-4.62	-3.84/-1.88	0.280/67	-1.9/-1.03	0.07/-0.99	-1.07/-1.36	-3.51/-6.39	-8.11/-6.67	-6.73/-8.87	-10.49/-8.56	-10.41/-11.69	-9.78/-7.86	-3.92/-3	-2.4/-2.86	-6.71/-8.71	-12.38/-12.8	-11.61/-9.32	-13.05/-9.07	-5.02/-5.22	-5.96/-6.08	-7.64/-10.89	-8.07/-6.88	
Θ(52.5°)	-5.61/-2.81	-3.16/-4.22	-3.86/-2.25	-2.22/-3.52	-2.26/-0.57	-3.3/-3.72	-2.84/-5.2	-5.37/-7.79	-7.77/-7.82	-8.91/-6.84	-3.99/-5.98	-10.37/-9.53	-8.48/-3.7	-3.93/-3.97	-0.230/13	0.250/53	-1.71/-3.76	-7.55/-8.16	-7.41/-12.52	-9.58/-4.7	-3.06/-3.64	-5.54/-10.65	-15.35/-8.2	-4.78/-6.61	
Θ(60°)	-6.78/-3.11	-2.37/-3.51	-3.43/-1.66	-2.35/-3.88	-3.54/-1.49	-2.27/-3.96	-4.49/-8.62	-5.78/-9.22	-9.41/-7	-10.12/-0.3	-5.3/-4.81	-8.07/-11.07	-12.45/-5.35	-3.27/-3.71	-1.77/-0.27	0.340/51	-0.41/-2.19	-6.63/-9.18	-8.34/-13.12	-8.42/-5.35	-3.3/-4.66	-10.04/-15.85	-8.76/-6.05	-5.9/-8.38	
Θ(67.5°)	-8.65/-5.84	-7.23/-2.97	-4.29/-2.18	-3.24/-5.88	-4.9/-0.96	-1.16/-2.71	-5.21/-1.17	-6.25/-4.72	-12.92/-9.22	-10.61/-11.77	-9.62/-9.16	-12.47/-12.46	-10.42/-7.79	-4.31/-5.49	-4.29/-2.61	-1.64/-1.39	-2.21/-4.41	-8.9/-2.2	-9.3/-12.65	-8.8/-7.66	-7.39/-9.36	-14.61/-12.59	-9.08/-9.32	-10.98/-10.29	
Θ(75°)	-6.04/-7.16	-4.74/-3.3	-4.34/-5.05	-5.88/-9.4	-6.04/-2.42	-2.75/-2.66	-5.94/-9.58	-6.79/-7.28	-7.95/-8.47	-9.84/-11.19	-11.19/-12.74	-14.3/-12.38	-10.03/-1.06	-6.81/-8.22	-10.61/-6.75	-5.79/-5.7	-5.45/-7.1	-8.82/-8.45	-12.1/-12.11	-8.62/-9.78	-12.62/-11.86	-14.53/-13.59	-11.68/-13.65	-10.1/-7.53	
Θ(82.5°)	-5.22/-8.18	-8.03/-4.73	-6.56/-8.12	-6.82/-10.03	-7.52/-6.02	-7.47/-3.85	-8.14/-9.38	-8.75/-8.14	-9.10/-58	-10.82/-9.85	-12.07/-14.43	-14.63/-15.26	-11.62/-12.33	-7.73/-12.89	-15.56/-9.53	-9.56/-11.08	-8.53/-10.71	-11.94/-6.63	-14.28/-12.22	-8.36/-8.98	-13.99/-15.35	-10.77/-11.77	-13.8/-15.17	-10.24/-6.88	
Θ(90°)	-6.52/-8.26	-10.53/-7.02	-8.88/-12.41	-9.12/-12.26	-10.12/-12.26	-10.2/-7.8	-8.95/-10.49	-11.34/-8.2	-8.23/-11.42	-11.73/-9.45	-12.71/-14.59	-15.18/-15.08	-14.03/-15.36	-9.43/-14.66	-15.02/-14.22	-13.52/-14.56	-9.64/-11.32	-14.72/-7.23	-12.39/-12.64	-8.89/-8.2	-11.84/-15.9	-10.33/-13.98	-15.15/-15	-11.68/-7.39	
Θ(97.5°)	-7.96/-9.55	-10.05/-7.12	-10.84/-11.61	-10.68/-12.47	-13.15/-9.89	-8.67/-10.15	-12.5/-10.85	-13.54/-7.34	-8.79/-13.52	-11.2/-9.75	-14.05/-14.91	-13.44/-14.56	-15.73/-14.9	-10.42/-15.07	-15.21/-12.92	-14.49/-12.54	-10.12/-10.68	-14.69/-10.05	-12.26/-14.1	-12.06/-9.38	-9.78/-12.02	-11.66/-15.35	-15.36/-14.95	-12.97/-8.12	
Θ(105°)	-9.97/-12.01	-9.13/-7.8	-10.84/-9.69	-10.86/-13.08	-12.33/-9.03	-8.23/-10.59	-13.08/-11.73	-12.06/-9.73	-10.86/-14.53	-13.06/-12.52	-14.12/-14.93	-13.11/-12.35	-14.61/-15.3	-12.91/-14	-14.92/-9.82	-11.55/-14.91	-11.74/-12.66	-12.71/-14.24	-12.84/-14.11	-14.28/-11.59	-12.96/-11.25	-15.36/-15.65	-15.85/-15.02	-12.18/-8.73	
Θ(112.5°)	-14.03/-8.85	-8.26/-9.81	-9.23/-11.35	-12.57/-12.17	-13.64/-10.86	-10.11/-11.73	-15.29/-14.08	-12.23/-9.19	-13.21/-15.52	-10.31/-10.92	-13.62/-15.15	-14.98/-15													



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(120°)	-8.42/-11.69	-15.07/-14.85	-13.47/-10.67	-10.78/-12.56	-15.04/-13.59	-13.11/-13.73	-12.22/-9.4	-6.91/-6.96	-5.23/-2.92	-3.1/-3.01	-8.42/-12.9	-14.78/-14.88	-9.14/-9.35	-11.09/-15.44	-14.18/-15.5	-15.64/-11.7	-13.64/-15.14	-12.23/-8.38	-11.11/-11.44	-9.1/-6.07	-2.48/-3.2	-3.73/-5.4	-6.91/-14.08	-11.14/-6.62
Θ(127.5°)	-9.24/-11.81	-12.46/-12.8	-15.25/-10.47	-14.72/-14.95	-15.92/-15.34	-12.78/-15.41	-12.35/-9.49	-6.39/-7.47	-7.66/-6.51	-4.38/-5.16	-6.77/-9.74	-12.32/-14.63	-8.93/-9.04	-12.19/-12.37	-15.17/-15.57	-13.05/-9.47	-11.99/-13.11	-10.43/-8.59	-11.61/-12.09	-9.1/-7.83	-2.57/-3.4	-5.91/-9.05	-8.63/-14.31	-11.29/-8.27
Θ(135°)	-10.74/-11.42	-13.55/-15.33	-14.77/-16.02	-13.16/-13.16	-15.32/-14.91	-14.12/-13.41	-13.02/-9.16	-7.78/-8.33	-7.34/-8.63	-5.88/-3.94	-5.56/-11.06	-11.86/-12.27	-13.27/-10.97	-8.73/-13.11	-12.95/-15.42	-13.7/-15.08	-14.64/-13.32	-9.5/-7.88	-12.54/-9.33	-11.06/-12.74	-5.56/-4.81	-4.39/-6.18	-11.75/-15.39	-9.91/-9.28
Θ(142.5°)	-10.06/-11.62	-12.54/-15.45	-15.56/-13.88	-14.67/-15.21	-14.11/-14.56	-13.24/-13.93	-9.18/-6.42	-7.31/-8.68	-12.23/-10.46	-6.55/-5.16	-8.19/-13.33	-11.97/-13.55	-14.81/-11.14	-9.85/-11.21	-12.58/-12.1	-14.93/-15.71	-16.08/-14.88	-13.17/-15.16	-15.14/-8.67	-7.97/-13.89	-11.64/-9.48	-11.13/-12.12	-11.31/-15.02	-12.55/-9.78
Θ(150°)	-14.46/-14.96	-15.73/-14.75	-13.16/-14.6	-14.1/-14.36	-14.93/-12.55	-14.52/-13.17	-10.09/-11.81	-11.21/-10.71	-13.79/-11.62	-9.44/-10.12	-12.27/-15.53	-13.75/-9.35	-11.17/-15.05	-12.26/-11.85	-14.14/-14.61	-15.17/-15.76	-14.64/-14.74	-14.09/-14.7	-13.93/-15.29	-12.78/-10.32	-13.03/-14.58	-12.02/-10.77	-10.68/-14.1	-8.64/-10.33
Θ(157.5°)	-14.91/-15.38	-15.26/-14.78	-15.21/-14.86	-15.5/-15.12	-15.6/-15.45	-14.17/-14.62	-15.48/-15.4	-12.2/-11.26	-10.69/-9.43	-9.04/-10.32	-13.51/-14.74	-14.12/-13.62	-15.67/-15.19	-14.41/-15.12	-14.07/-14.29	-15.97/-15.96	-15.23/-15.73	-15.47/-15.18	-14.87/-12.88	-15.17/-15.35	-12.95/-15.74	-13.83/-13.94	-15.43/-15.26	-14/-13.58
Θ(165°)	-15.46/-14.65	-15.42/-14.91	-14.43/-15.61	-15.3/-15.47	-15.1/-15.66	-14.96/-14.81	-12.18/-10.61	-9.92/-10.39	-11.9/-12.86	-15.26/-15.7	-15.59/-15.3	-14.82/-13.13	-14.51/-15.28	-14.67/-14.84	-15.41/-14	-15.3/-14.34	-15.47/-15.22	-15.79/-15.58	-15.66/-14.09	-14.01/-13.79	-14.58/-14.91	-14.68/-15.14	-14.99/-15.38	-14.73/-15.55
Θ(172.5°)	-14.72/-15.32	-15.18/-15.47	-15.58/-14.73	-14.75/-14.4	-13.92/-13.51	-13.7/-14.37	-14.17/-14.4	-15.29/-15.07	-14.84/-14.18	-13.68/-13.45	-13.8/-15.76	-14.95/-15.3	-15.91/-15.05	-14.82/-15.26	-14.95/-15.21	-15.22/-15.28	-15.76/-15.06	-14.82/-15.47	-15.74/-14.52	-13.45/-12.6	-11.97/-12.01	-10.64/-11.27	-12.46/-12.32	-14.87/-14.57
Θ(180°)	-14.69/-14.15	-14.36/-14.21	-14.06/-14.71	-14.5/-15.21	-15.81/-15.27	-15.65/-15.91	-15.39/-15.57	-15.62/-15.62	-15.01/-14.75	-14.84/-14.71	-14.11/-14.86	-14.05/-13.51	-14.22/-15.76	-15.62/-15.49	-14.24/-15.47	-15.09/-15.47	-15.43/-15.55	-15.52/-15.16	-14.66/-15.36	-15.14/-15.72	-14.36/-12.7	-12.27/-12.09	-12.81/-13.63	-12.9/-13.57
Freq(Hz)	6.995GPol.	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°)	9.21/10.34	11.16/11.79	12.18/12.48	12.74/12.85	12.71/12.34	11.84/11.16	10.24/9.13	7.69/5.73	2.91/-1.21	-9.19/-9.74	-1.35/2.92	5.63/7.67	9.11/10.25	11.16/11.94	12.53/12.84	12.93/12.92	12.77/12.49	12.05/11.35	10.42/9.25	7.76/5.68	2.96/-1.51	-10.97/-9.81	-1.05/2.99	5.78/7.8
Θ(7.5°)	10.27/11.12	11.81/12.24	12.53/12.82	13.02/13.04	12.88/12.63	12.25/11.7	10.96/10.04	8.75/6.97	4.6/1.46	-4.97/-13.38	-3.91/1.5	4.66/6.71	8.09/9.24	10.04/10.7	11.09/11.29	11.37/11.32	11.22/11.05	10.77/10.28	9.51/8.45	6.91/4.83	1.71/4.06	-13.93/-4.11	1.71/4.96	7.39/9.02
Θ(15°)	8.59/9.42	10.13/10.67	11/11.27	11.41/11.48	11.43/11.26	10.91/10.44	10.03/9.46	8.5/7.16	5.14/2.4	-2.1/-11.78	-11.1/-2.27	1.67/4.32	5.98/7.01	7.55/7.73	7.82/7.78	7.79/7.66	7.41/7.16	7.03/6.95	6.58/5.72	4.09/1.22	-3.83/-11.58	-5.53/-4.45	2.34/4.13	5.76/7.35
Θ(22.5°)	5.25/4.07	6.96/7.87	8.39/8.31	8.19/8.76	8.26/9.14	8.43/7.82	7.45/6.83	5.74/15	1.71/-1.87	-6.75/-15.07	-12.82/-6.77	-3.02/-0.42	1.14/2.26	3.25/3.7	3.38/3.08	2.63/2.02	1.37/0.86	0.64/1.08	1.18/0.45	-1.25/-3.95	-7.15/-9.5	-6.64/-2.71	-0.12/1.64	3.08/4.33
Θ(30°)	2.32/2.47	2.81/3.79	4.78/5.04	4.78/5.23	6.05/6.45	5.84/4.06	2.51/1.83	1.83/2.01	1.45/-0.56	-3.84/-7.86	-8.03/-6.66	-6.96/-5.53	-5.84/-7.94	-5.66/-1.99	-1.27/-2.43	-3.82/-5.59	-6.2/-5.71	-7.8/-8.64	-7.51/-8.86	-7.88/-5.6	-7.49/-6.95	-5.41/-4.97	-5.8/-3.92	-0.59/1.33
Θ(37.5°)	-0.81/-2.36	-3.19/-4.69	-4.23/-0.42	-4.08/-1.28	0.91/2.62	2.95/-0.08	-2.28/-1.5	-0.04/-0.25	-2.25/-6.15	-10.48/-7.9	-4.97/-5.57	-9.43/-10.82	-10.25/-11.27	-6.86/-4.35	-3.2/-3.04	-3.7/-5.61	-7.85/-9.84	-10.58/-14.92	-14.67/-13.82	-6.95/-5.82	-4.5/-2.89	-4.41/-6.17	-7.95/-6.5	-2.49/-0.3
Θ(45°)	-3.61/-1.81	-1.68/-2.18	-1.7/-1.07	-0.96/-3.08	-3.47/-2.16	-0.79/-1.63	-2.59/-3.84	-4.63/-4.74	-8.59/-9.86	-14.37/-13.4	-6.62/-6.33	-8.87/-8.04	-7.32/-8.41	-3.2/0.76	0.67/1.69	2.23/0.72	-0.51/-3.14	-5.8/5.3	-14.77/-11.21	-6.58/-4.7	-2.9/-4.05	-10.55/-8.4	-8.62/-7.99	-6.95/-6.88
Θ(52.5°)	-1.64/0.62	1.57/2.15	1.81/1.19	1.92/1.29	0.11/-1	-1.36/-0.42	-1.23/-2.32	-8.34/-10.55	-7.8/-12.8	-12.49/-10.07	-8.15/-10.82	-10.82/-9.93	-9.35/-9.07	-1.04/2.76	2.71/2.07	2.33/1.18	-0.89/-2.37	-2.36/-5.05	-10.36/-11.05	-10.79/-4.62	-3.28/-6.7	-6.32/-7.05	-12.49/-9.96	9.03/-5.42
Θ(60°)	-2.87/-0.35	0.67/0.66	1.11/1.09	2.34/1.82	0.71/-1.4	-1.92/0.03	-0.78/-1.65	-6.38/-9.77	-7.61/-14.51	-11.82/-12.39	-9.99/-10.18	-11.73/-10.37	-8.24/-14.78	-2.79/-0.02	2.63/1.55	0.07/0.34	-2.21/-4.89	-2.35/-4.97	-9.25/-11.68	-1.96/-5.81	-4.12/-4.44	-4.49/-8.2	-13.68/-11.2	-6.3/-3.84
Θ(67.5°)	-3.96/-2.22	-0.40/-0.57	-0.74/0.25	1.03/-0.43	-0.59/-1.81	-1.87/-1.82	-1.86/-4.82	-8.13/-11.09	-12.74/-13.99	-10.45/-8.34	-10.86/-13.19	-8.12/-4.15	-3.2/-3.45	-0.1/-0.65	-1.81/-4.5	-2.68/-7.79	-3.36/-6.23	-8.87/-11.49	-10.31/-14.41	-10.53/-7.79	-6.11/-6.36	-17.78/-10.91	-10.21/-8.58	-5.39/-3.63
Θ(75°)	-6.44/-4.24	-1.07/-0.78	-3.59/-1.7	-1.29/-3.65	-2.76/-3.14	-2.17/-2.94	-3.39/-6.54	-8.61/-12.69	-7.33/-9.81	-13.18/-12.63	-9.61/-8.6	-11.57/-15.41	-11.79/-6.38	-5.84/-5.6	-5.17/-4.19	-3.76/-5.43	-4.4/-13.48	-5.69/-7.04	-7.33/-9.97	-10.77/-11.48	-9.02/-9.95	-10.76/-8.48	-8.98/-9.08	-7.57/-7.39
Θ(82.5°)	-12.29/-5.71	-6.23/-3.41	-6.78/-3.48	-4.51/-7.96	-13.36/-6.33	-5.77/-9.04	-13.8/-11.57	-15.06/-10.64	-8.54/-10.63	-11.44/-12.97	-8.15/-6.69	-10.05/-7.14	-7.09/-8.59	-9.05/-14.89	-8.55/-9.11	-8.97/-10.61	-11.38/-10.98	-10.58/-10.56	-9.64/-7.26	-10.49/-12.07	-15.52/-15.47	-15.88/-13.94	-10.79/-7.2	
Θ(90°)	-13.81/-8	-6.97/-7.81	-10.1/-5.63	-6.82/-11.42	-7.63/-8.07	-6.43/-11.05	-9.61/-12.06	-15.74/-14.66	-8.87/-7.42	-13.08/-13.74	-9.12/-9.77	-12.95/-13.05	-12.85/-10.18	-11.03/-7.98	-12.49/-8.36	-8.16/-9.63	-9.88/-15.29	-12.23/-10.41	-10.31/-14.41	-10/-10.2	-10.88/-11.33	-8.83/-8.43	-11.92/-13.63	-13.69/-14.85
Θ(97.5°)	-13.36/-10.04	-7.94/-7.98	-11.06/-7.38	-7.75/-13.46	-10.28/-7.17	-9.72/-13.11	-12.02/-15.17	-15.51/-14.5	-9.1/-7.79	-14.56/-11.99	-8.52/-11.21	-14.16/-12.42	-14.31/-13.16	-12.78/-10.08	-11.65/-9.06	-8.75/-11.18	-9.2/-12.53	-13.63/-11.3	-12.95/-14.18	-10.98/-9.59	-9.46/-14.23	-10.08/-11.07	-14.35/-14.99	-15.14/-14.99
Θ(105°)	-14.29/-10.86	-8.62/-9.61	-12.07/-11.88	-11.35/-9.31	-12.04/-14.43	-15.62/-15.28	-15.2/-14.68	-10.74/-9.14	-12.1/-14.4	-8.43/-10.67	-15.19/-12.85	-15.43/-15.08	-15.53/-13.33	-14.09/-10.8	-11.12/-10.14	-9.98/-11.01	-12.69/-14.4	-14.61/-15.03	-14.54/-11.22	-11.06/-14.66	-12.15/-12.57	-13.79/-15.29	-15.09/-14.5	
Θ(112.5°)	-14.98/-11.02	-10.28/-10.31	-13.11/-11	-13.1/-9.34	-12.29/-14.68	-15.3/-14.96	-15.54/-12.8	-11.97/-10.65	-14.81/-13.32	-9.77/-13.7	-12.74/-13.99	-15.83/-15.59	-15.09/-14.89	-14.78/-14.58	-11.46/-9.99	-13.5/-12.62	-11.88/-15.12	-15.26/-15.61	-15/-15.86	-13.58/-15	-15.38/-15.15	-15.38/-15.29	-14.36/-15.34	
Θ(120°)	-13.72/-12.42	-7.59/-6.6	-12.78/-12.68	-11.32/-12.28	-11.75/-10.09	-10.87/-15.14	-15.88/-15.05	-15.12/-10.6	-11.22/-13.95	-14.42/-14.23	-9.54/-11.38	-15.41/-14.32	-15.21/-13.72	-15.82/-14.92	-15.69/-14.69	-11.62/-12.25	-15.1/-10.44	-15.27/-14.4	-12.24/-14.84	-14.92/-15.34	-14.45/-15.8	-15.08/-15.48	-14.85/-15.16	-15.73/-14.41
Θ(127.5°)	-13.78/-13.66	-9.82/-12.29	-12.4/-15.2	-14.96/-14.07	-10.04/-11.06	-12.81/-14.72	-15.09/-15.01	-12.85/-11.16	-10.32/-11.74	-15.23/-14.88	-10.95/-13.6	-15.11/-12.3	-12.38/-13.42	-16.04/-15.23	-15.36/-11.71	-11.18/-15.39	-13.18/-13.92	-14.67/-12.72	-13.22/-15.36	-14.87/-15.5	-15.56/-14.8	-12.96/-12.45	-15.16/-14.94	-14.96/-14.87
Θ(135°)	-15.82/-10.95	-9.8/-11.94	-11.03/-11.14	-6.96/-13.32	-11.85/-11.49	-14.49/-11.34	-12.39/-9.47	-12.53/-12.61	-11.97/-9.07	-10.87/-13.2	-11.97/-15.39	-15.96/-15.61	-15.5/-15.69	-13.76/-14.09	-11.95/-10.18	-12.36/-13.1	-9.96/-14.31	-12.71/-15.55	-14.85/-14.89	-15.31/-15.58	-14.63/-14.09	-11.79/-13.59	-13.4/-14.77	-14.51/-15
Θ(142.5°)	-12.12/-11.22	-9.7/-12.37	-15.61/-15.92	-13.45/-13.99	-13.24/-15.44	-11.11/-10.55	-10.1/-12.1	-12.02/-14.26	-10.79/-9.68	-11.03/-13.38	-13.2/-13.9	-15.58/-15.72	-14.79/-15.33	-15.03/-12.21	-15.74/-14.03	-8.66/-12.39	-10.93/-15.02	-13.32/-15.04	-15.11/-14.65	-15.36/-15.06	-15.12/-14.88	-14.61/-14.24	-15.52/-15.47	-15.04/-13.94
Θ(150°)	-12.61/-10.41	-12.67/-14.91	-15.07/-14.32	-13.43/-12.25	-13.7/-13.99	-11.32/-12.31	-11.44/-13.49	-15.34/-15.55	-12.17/-8.8	-9.98/-11.37	-11.83/-14.27	-13.95/-15.18	-14.86/-16	-10.5/-11.97	-13.35/-12.24	-14.03/-15.31	-14.76/-14.96	-16.04/-15.83	-14.73/-15.53	-15.33/-14.31	-13.86/-12.99	-14.64/-15.44	-14.95/-13.76	
Θ(157.5°)	-14.64/-14.77	-13.66/-14.95	-12.78/-14.5	-14.82/-15.08	-15.21/-14.8	-13.1/-12.23	-13.45/-12.32	-12.68/-13.23	-12.4/-11	-11.75/-14.47	-14.51/-13.62	-13.89/-14.45	-13.65/-14.25	-15.08/-15.07	-13.72/-12.59	-11.18/-10.98	-15.59/-15.63	-14.33/-16.09	-14.41/-13.77	-14.79/-14.74	-15.41/-15.38	-15.01/-14.94	-14.18/-11.83	9.38/-10.73
Θ(165°)	-13.69/-15.02	-14																						



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(22.5°)	5.784/5.4	2.560/4.1	-3.56/-10.97	-18.94/-8.32	-3.8/-0.4	1.773/3.5	4.776/2.2	7.518/4.9	9.229/5.1	9.589/4.3	8.948/1.7	7.326/0.3	4.492/7.3	0.48/-2.3	-6.55/-13.39	-18.4/-9.93	-4.58/-1.4	0.882/7.7	4.41/5.58	6.29/6.76	7.04/7.1	7.28/7.68	7.93/7.86	7.66/6.88
Θ(30°)	2.33/1.05	-0.78/-3.44	-7.49/-15.68	-19.08/-11.17	-5.31/-1.79	0.262/3.2	3.945/1.9	6.056/7.5	7.48/7.8	7.67/7.3	6.77/6.13	5.413/8.7	2.09/-0.35	-3.86/-8.88	-14.16/-17.28	-13.99/-8.72	-5.34/-3.08	-0.83/-1.3	2.67/3.45	3.91/7.39	3.43/3.54	4/4.25	4.35/4.05	3.72/3.09
Θ(37.5°)	-1.37/-1.5	-1.49/-4.23	-8.22/-12.5	-18.62/-10.8	-9.59/-5.41	-1.74/-1.11	2.843/3.3	3.02/2.9	3.794/7.7	5.07/4.58	3.642/6.6	2.050/3.9	-1.64/-3.64	-7.41/-10.62	-13.46/-17.66	-18.46/-14.76	-9.88/-6.6	-3.93/-1.7	0.420/0.4	1.41/1.35	1.81/7.4	1.43/0.63	-0.22/-1.38	
Θ(45°)	-4.11/-4.15	-4.21/-6.21	-10.24/-13.23	-17.68/-18.61	-15.06/-10.49	-5.98/-2	0.05/-0.04	-0.78/-1.37	0.272/9.3	3.963/1.6	1.390/0.7	-0.69/-2.21	-3.93/-6.46	-11.14/-17.13	-17.4/-18.13	-18.56/-18.64	-13.99/-9.31	-6.99/-5.12	-2.18/-1.7	-2.44/-1.96	-0.51/-0.28	-0.75/-0.6	-0.17/-1.23	-2.67/-3.01
Θ(52.5°)	-4.95/-8.24	-9.79/-11.91	-14.43/-10.2	-19.05/-19.08	-15.74/-12.95	-8.73/-4.33	-2.14/-1.97	-2.57/-4.06	-2.66/-1.0	1.920/3.7	-2.11/-1.57	-2.3/-5.5	-9.8/-13.24	-18.43/-17.64	-19.04/-18.71	-18.97/-18.84	-17.66/-17.89	-13.11/-15.55	-9.26/-5.72	-6.29/-5.16	-3.26/-3.99	-4.39/-4.33	-3.33/-3.62	-4.57/-4.3
Θ(60°)	-5.3/-3.18	-13.02/-11.9	-14.08/-15.83	-18.22/-18.08	-12.1/-10.16	-1.72/-7.49	-3.82/-2.7	-3.82/-6.49	-8.89/-2.76	-1.49/-3.85	-7.65/-5.77	-4.83/-7.89	-13.13/-18.51	-15.14/-13.17	-18.85/-17.38	-18.79/-15.63	-11.86/-12.96	-12.43/-10.61	-13.58/-10.26	-6.97/-7.13	-11.01/-8.72	-7.56/-7.82	-5.75/-4.59	
Θ(67.5°)	-5.74/-8.24	-10.88/-9.67	-16.35/-18.54	-18.99/-16.75	-8.24/-7.51	-12.62/-10.37	-4.65/-2.98	-5.29/-10.72	-13.37/-9.36	-5.26/-6.49	-18.02/-9.63	-7.62/-11.75	-17.51/-14.76	-18.92/-18.47	-15.06/-15.69	-17.92/-17.88	-18.41/-14.89	-12.36/-16	-12.78/-11.98	-9.94/-8.86	-9.95/-12.41	-16.26/-10.5	-12.73/-10.65	-6.85/-6.08
Θ(75°)	-6.66/-8.87	-10.04/-10	-16.74/-18.44	-17.73/-9.91	-8.11/-7.82	-12.11/-16.79	-6.28/-3.69	-7.6/-16.07	-17.74/-11.01	-6.38/-5.01	-10.82/-18.4	-12.29/-12.06	-17.83/-16.05	-18.7/-10.23	-7.99/-12.94	-18.07/-18.53	-17.81/-14.1	-11.45/-11.65	-10.65/-12.67	-8.31/-8.59	-19.14/-12.72	-11.51/-9.54	-12.44/-13.71	-6.07/-6.47
Θ(82.5°)	-6.89/-7.75	-13.62/-10.78	-15.12/-17.1	-13.73/-9.28	-8.32/-6	-8.68/-12.69	-6.1/-3.97	-8.87/-15.31	-1.19/-6.9	-3.76/-4.01	-14.32/-15.18	-18.02/-16.04	-15.27/-19.41	-12.15/-6.63	-5.8/-11.89	-18.24/-18.02	-14.92/-12.4	-10.68/-8.27	-10.14/-12.68	-11.19/-8.2	-12.95/-13.09	-11.35/-12.28	-11.77/-16.46	-8.49/-7.88
Θ(90°)	-8.9/-6.55	-11.23/-10.52	-17.87/-18.93	-15.31/-9.64	-9.25/-7.69	-9.68/-17.33	-7.44/-4.5	-8.99/-16.41	-9.16/-6.67	-5.66/-4.96	-11.85/-15.98	-17.85/-18.36	-13.57/-11.52	-9.44/-6.15	-5.97/-11.48	-18.42/-19.03	-16.74/-17.79	-10.8/-8.43	-8.07/-14.61	-12.79/-8.31	-18.72/-11.08	-7.79/-16.69	-14.72/-18.94	-8.72/-7.75
Θ(97.5°)	-7.52/-11.55	-11.35/-12.71	-18.72/-14.89	-17.43/-9.87	-8/-6.78	-12.5/-15.87	-8.35/-8.35	-15.71/-18.55	-8.77/-7.95	-7.7/-8.02	-10.81/-17.86	-13.54/-9.29	-6.78/-6.36	-8.8/-14.24	-19.17/-18.77	-17.12/-18.28	-15.82/-13.71	-6.65/-10.29	-13.12/-9.89	-13.77/-13.51	-10.5/-18.89	-17.64/-17.61	-10.79/-12.75	
Θ(105°)	-7.48/-5.14	-8.53/-13.09	-18.02/-18.62	-18.04/-9.99	-7.64/-9.46	-16.95/-11.84	-7.84/-11.04	-18.49/-13.23	-7.52/-6.95	-7.5/-9.12	-12.45/-9.14	-16.22/-9.18	-6.26/-7.25	-12.31/-13.66	-18.48/-16.6	-17.49/-17.62	-18.25/-17.86	-10.36/-10.82	-14.16/-12.26	-13.69/-14.07	-10.75/-14.88	-18.03/-17.73	-12.24/-19.4	
Θ(112.5°)	-6.2/-8.51	-11.48/-11.77	-18.19/-18.69	-18.13/-10.51	-9.88/-13.23	-15.75/-8.73	-8.3/-17.05	-17.07/-10.03	-9.47/-8.95	-7.85/-10.26	-9.89/-8.63	-14.77/-17.91	-14.56/-9.89	-6.83/-9.89	-12.78/-9.52	-17.61/-18.17	-17.5/-15.95	-18.88/-17.88	-15.58/-16.21	-17.93/-15.9	-14.7/-15.1	-9.85/-9.86	-18.13/-18.93	-9.58/-6.72
Θ(120°)	-8.71/-10.53	-11.32/-10.53	-17.95/-17.6	-15.53/-11.31	-9.95/-12.57	-10.5/-8.14	-11.2/-18.1	-14.86/-10.43	-9.47/-11.58	-10.38/-9.17	-7.79/-8.06	-14.04/-16.7	-14.11/-13.02	-9.49/-9.61	-15.29/-14.3	-18.57/-17.31	-14.12/-15.06	-15.26/-18.55	-18.76/-18.47	-17.17/-13.16	-18.51/-10.24	-14.5/-17.18	-12.02/-14.57	
Θ(127.5°)	-8.99/-8.76	-18.34/-18.24	-14.09/-14.18	-14.53/-8.51	-7.28/-8.3	-10.53/-15.43	-19.21/-10.88	-11.21/-11.82	-12.4/-13.56	-9.74/-8.37	-8.81/-11.59	-12.2/-13.91	-18.59/-16.17	-17.57/-13.78	-11.7/-9.97	-11.17/-13.79	-13.87/-17.99	-18.97/-18.36	-12.43/-12.97	-11.45/-17.87	-17.96/-16.11	-13.63/-16.04	-15.99/-13.44	-6.41/-8.36
Θ(135°)	-14.65/-18.87	-18.46/-18.45	-12.52/-13.16	-11.7/-9.51	-9.93/-12.26	-17.29/-17.79	-13.31/-9.3	-12.46/-15.05	-18/-15.22	-10.7/-9.9	-9.94/-8.89	-8.6/-13.15	-17.95/-19.27	-17.53/-13.13	-12.66/-14.78	-10.9/-15.56	-16.08/-12.87	-16.82/-16.83	-18.27/-16.31	-12.92/-10.84	-15.8/-18.58	-17.73/-16.93	-12.65/-18.76	-8.39/-9.81
Θ(142.5°)	-14.37/-11.55	-11.39/-12.13	-13.15/-18.09	-17.14/-15.11	-17.46/-18.96	-17.04/-13.54	-10.47/-12.48	-17.86/-16.35	-13.54/-10.43	-9.42/-10.12	-11.01/-12.24	-14.54/-18.09	-17.11/-18.9	-17.98/-19.97	-17.78/-13.9	-12.39/-12.56	-16.2/-13.01	-15.53/-11.07	-11.09/-16.89	-17.48/-18.37	-13.47/-10.38	-8.8/-13.65	-18.99/-14	-14.24/-13.8
Θ(150°)	-13.05/-11.66	-10.95/-12.31	-15.08/-15.9	-12.9/-9.68	-9.97/-13.46	-19.38/-17.83	-18.13/-12.82	-15.02/-15.1	-16.22/-15.05	-16.95/-18.11	-13.61/-9.53	-7.66/-8.4	-12.95/-18.46	-18.64/-18.88	-17.84/-17.98	-17.87/-18.27	-18.91/-12.89	-13.14/-10.93	-9.99/-12.5	-11.03/-10.35	-11.12/-13.84	-16.89/-15.99	-18.89/-18.4	-16.12/-13.85
Θ(157.5°)	-14.14/-16.5	-18.05/-18.99	-18.39/-17.61	-17.95/-18.13	-18/-18.93	-17.91/-18.49	-19.1/-18.37	-16.26/-16.58	-17.16/-18.16	-18.76/-17.97	-14.73/-14.79	-16.9/-18.79	-18.75/-19.1	-17.73/-17.5	-17.84/-17.28	-17.46/-18.41	-17.81/-14.12	-14.23/-16.58	-17.69/-18.36	-17.2/-14.32	-12.48/-12.72	-13.61/-15.02	-17.35/-17.56	-17.87/-14.69
Θ(165°)	-16.09/-18.47	-18.61/-18.24	-18.41/-19.08	-19.06/-18.26	-18.79/-15.8	-13.12/-11.83	-11.72/-12.76	-15.78/-18.37	-17.34/-17.47	-16.17/-13.6	-12.06/-10.02	-10.14/-12.73	-15.83/-18.52	-18.95/-18.22	-18.28/-18.28	-17.99/-15.51	-14.22/-14.86	-17.27/-18.52	-18.29/-18.06	-18.92/-18.82	-15.44/-13.62	-14.16/-15.54	-17.19/-16.65	-16.14/-16.25
Θ(172.5°)	-12.77/-14.45	-15.3/-16.87	-17.87/-18.47	-18.25/-19.28	-18.67/-18.04	-17.52/-18.68	-18.15/-18.6	-17.28/-17.12	-16.37/-16.36	-16.59/-16.84	-18.84/-18.43	-18.01/-18.66	-15.42/-13.35	-12.33/-12.62	-13.5/-14.94	-15.88/-17.64	-18.8/-19.24	-18.55/-17.77	-14.91/-14.81	-16.74/-18	-18.19/-18.67	-18.75/-17.89	-17.47/-18.37	-12.7/-12.14
Θ(180°)	-18.61/-18.36	-18.57/-18.47	-16.8/-16.32	-16.11/-14.86	-13.8/-13.17	-13.3/-13.48	-13.78/-13.45	-13.44/-14.68	-14.08/-13.92	-13.52/-13.8	-14.11/-13.4	-13.09/-14.96	-15.84/-16.09	-18.02/-18.42	-17.45/-17.86	-18.87/-18.62	-18.68/-17.82	-18.21/-18.74	-18.91/-17.64	-16.48/-14.2	-13.91/-14.01	-15.65/-18.35	-17.84/-18.69	
Freq(Hz)	5.65GPol	ThetaAnt. 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°)	6.967/9	8.629/0.6	9.419/8.3	9.719/57	9.298/8.7	8.317/5.4	6.585/2.4	3.290/6.9	-2.93/-9.06	-16.25/-6.53	-1.29/-17.5	3.84/5.45	6.717/6.5	8.399/0.2	9.399/5.7	9.539/3.5	9.028/5.7	7.957/1.6	6.064/6.7	2.80/3.6	-3.28/-10.02	-13.1/-4.95	-0.57/-2.08	4.02/5.72
Θ(7.5°)	6.62/7.67	8.49/0.4	9.399/5.9	9.689/5.3	9.278/8.6	8.277/4.9	6.204/6.9	2.94/-9.72	-18.1/-7.2	-2.15/-1.15	2.394/9.2	6.32/3.35	8.126/8.2	9.229/4.1	9.439/2.2	8.98/3.7	7.686/7.4	5.554/0.5	2.03/-0.66	-4.78/-12.59	-12.1/-4.9	-0.77/-1.7	3.67/2.23	
Θ(15°)	6.127/2.9	8.218/7.9	9.229/5	9.629/5.2	9.228/7.3	8.097/3.3	6.34/8.9	3.20/9.1	-2.5/-4.6	-17.12/-9.26	-4.11/-10.87	1.222/9.4	4.16/5.12	5.876/5.1	7.027/3.1	7.447/4.5	7.286/9.7	6.395/5.6	4.653/4.5	1.57/-0.77	-4.32/-11.87	-18.14/-6.74	-1.36/-1.45	3.354/9.95
Θ(22.5°)	5.135/8.6	6.54/7.01	7.477/9.3	8.228/2.2	8.037/8.6	7.546/9.1	6.024/8.8	3.150/5.5	-3.48/-9.6	-18.05/-12.41	-7.3/-4.12	-1.740/1.3	1.071/1.5	2.152/7.7	3.133/4.1	3.673/7.6	3.693/3.74	3.723/6.8	3.432/4.3	0.3/-2.51	-6.2/-13.21	-18.31/-9.6	-3.420/-2.6	2.634/2.4
Θ(30°)	0.91/9.7	2.823/0.1	3.3/-5.1	3.513/5.9	4.234/9.7	5.155/5.24	5.614/6.4	2.910/1.5	-3.84/-8.85	-11.8/-12.12	-10.94/-9.27	-7.38/-4.77	-2.73/-2.31	-1.95/-2.75	-3.41/-2.23	-1.71/-2.19	-0.84/-0.78	-1.17/-1.45	-1.83/-2.49	-3.84/-6.06	-8.83/-14.73	-16.2/-9.81	-5.68/-3.74	-2.19/-5.02
Θ(37.5°)	-6.62/-2.84	-0.74/-0.68	-0.63/-0.93	-0.61/-0.53	-0.72/-0.55	0.64/0.24	2.792/4.4	0.75/-2.58	-7.25/-10.11	-9.87/-8.72	-11.26/-18.52	-11.5/-6.6	-5.43/-8.29	-9.24/-17.3	-17.97/-17.3	-17.59/-15.34	-10.38/-7.6	-7.08/-7.59	-8.48/-8.44	-9.24/-10.45	-11.29/-17.74	-13.49/-7.13	-5.75/-7.46	-10.17/-12.31
Θ(45°)	-8.1/-5.07	-3.16/-3.27	-4.01/-3.31	-2.02/-2.34	-3.87/-4.73	-3.76/-3.27	-2.88/-2.42	-2.25/-3.91	-8.14/-12.5	-8.98/-7.95	-9.85/-18.52	-15.22/-11.28	-12.36/-18.56	-18.5/-10.46	-6.6/-6.41	-5.26/-6.56	-9.06/-12.49	-18.94/-18.5	-17.93/-14.27	-16.9/-14.87	-12.61/-18.75	-8.11/-17.9	-9.66/-18.7	-17.82/-10.62
Θ(52.5°)	-17.19/-9.41	-3.83/-1.47	-7.5/-6.1	-3.98/-3.54	-5.18/-4.53	-3.57/-5.01	-8.97/-5.01	-8.52/-5.23	-8.97/-16.03	-9.44/-7.57	-8.31/-11.98	-17.56/-17.35	-18.83/-12.29	-9.51/-6.05	-6.33/-3.09	-2.56/-2.42	-3.95/-7.09	-8.92/-14.9	-14.66/-11.28	-14.9/-16.44	-18.32/-12.22	-6.97/-10.16	-17.92/-10.71	-5.05/-4.45
Θ(60°)	-10.88/-17.3	-10/-6.12	-4.65/-5.53	-3.69/-3.62	-5.21/-4.96	-4.07/-3.85	-6.71/-11.77	-8.7/-6.71	-9.84/-15.43	-16.19/-9.58	-8.07/-10.44	-18.29/-15.98	-9.36/-6.38	-6.66/-6.8	-4.8/-4.4	-3.81/-3.33	-4.84/-6.87	-9.58/-12.85	-11.81/-10.38	-14.94/-19.29	-18.28/-13.38	-12.05/-15.96	-12.51/-7.16	-3.16/-4.53
Θ(67.5°)	-18.96/-18.37	-8.7/-5.07	-2.98/-4.41	-3.67/-3.48	-5.97/-8.15	-4.87/-5.79	-5.98/-9.6	-10.45/-8.86	-9.96/-11.87	-16.86/-11.83	-10.43/-14.29	-18.88/-11.87	-7.8/-6.34	-7.64/-10.1	-7.4/-6.47	-6.66/-6.17	-9.1/-8.3							



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(67.5°)	-9.88/-7.98	-6.9/-11.32	-17.24/-19.26	-18.99/-17.41	-13.93/-15.39	-13.77/-18.73	-7.39/-4.94	-6.31/-8.13	-12.06/-7.48	-5.31/-8.05	-8.97/-9.01	-14.43/-11.31	-10.83/-16.53	-14.74/-12.89	-18.41/-12.98	-12.14/-12.54	-17.7/-18.51	-18.82/-16.14	-12.99/-11.81	-16.5/-11.55	-8.87/-17.58	-13.33/-15.71	-12.3/-8.35	-12.34/-11.24
Θ(75°)	-8/-0.5	-8.24/-11.27	-12.91/-17.66	-15.44/-17.47	-15.08/-10.95	-13.86/-17.7	-9.22/-6.07	-5.71/-8.5	-7.42/-6.43	-4.25/-5.44	-11.92/-16.43	-14.85/-12.21	-18.71/-16.64	-17.31/-13.28	-19.26/-17.93	-12.94/-9.44	-13.14/-14.26	-15.4/-18.96	-12.63/-10.85	-15.6/-18.99	-10.31/-12.72	-6.26/-9.39	-11.12/-8.26	-11.37/-8.83
Θ(82.5°)	-6.79/-9.62	-11.03/-12.7	-9.49/-14.06	-11.61/-17.9	-17.73/-9.57	-11.75/-17.5	-11.23/-7.37	-7.18/-8.68	-6.07/-5.54	-2.95/-4.53	-13.03/-18.09	-13.63/-14.62	-15.45/-18.66	-16.97/-18.48	-11.96/-15.14	-14.13/-9.96	-11.97/-18.19	-8.67/-13.85	-6.3/-6.85	-5.02/-5.51	-8.66/-9.43	-5.02/-5.51	-8.66/-9.43	-11.97/-8.08
Θ(90°)	-6.17/-11.57	-14.96/-12.31	-8.34/-15.88	-15.3/-17.97	-17.45/-11.93	-13.6/-18.54	-15.59/-9.64	-8.09/-9.41	-7.13/-4.81	-2.85/-3.34	-11.5/-18.61	-14.38/-18.77	-12.56/-14.96	-18.23/-13.6	-11.75/-11.45	-18.88/-13.58	-16.99/-8.9	-12.64/-18.21	-8.09/-13.73	-12.69/-14.15	-7.38/-5.93	-5.49/-4.96	-8.83/-12.54	-9.2/-6.13
Θ(97.5°)	-7.77/-11.4	-16.85/-13.84	-8.88/-11.79	-14.61/-18.96	-17.46/-17.17	-15.84/-18.01	-17.38/-12.9	-8.35/-9	-9.02/-6.23	-2.84/-4.98	-17.26/-13.44	-12.86/-18.22	-10.55/-12.97	-12.2/-10.37	-10.94/-14.89	-18.05/-18.27	-13.23/-9.91	-14.67/-18.38	-9.03/-13.67	-17.84/-13.87	-8.92/-6.46	-7.36/-6.08	-11.71/-14.66	-8.53/-7.19
Θ(105°)	-7.51/-9.42	-17.67/-10.52	-8.84/-9.39	-15.67/-16.95	-19.04/-16.96	-14.6/-16.4	-17.64/-15.2	-8.87/-9.21	-12.04/-9.24	-4.13/-5.2	-12.45/-10.61	-14/-18.09	-11.39/-11.96	-11.55/-10.92	-13.41/-16.76	-17.31/-16.02	-17.14/-11.45	-15.64/-18.13	-12.25/-16.56	-19.18/-15.75	-13.95/-9.98	-9.02/-7.96	-15.89/-16.3	-10.51/-8
Θ(112.5°)	-9.15/-8.67	-14.41/-11.86	-14.54/-10.11	-15.6/-17.83	-18.16/-17.77	-15.66/-17.78	-13.57/-12.95	-8.62/-12.61	-14.77/-8.74	-4.22/-6.32	-9.4/-10.45	-13.58/-16	-11.66/-13.74	-11.87/-11.96	-12.77/-15.02	-18.25/-17.73	-18.88/-16.03	-12.62/-17.93	-18.82/-18.48	-18.48/-18.59	-13.32/-7.31	-9.63/-11.1	-13.92/-18.71	-16.37/-9.14
Θ(120°)	-7.57/-10.79	-18.89/-14	-15.32/-10.62	-16.52/-18.16	-16.43/-17.68	-18.49/-17.1	-13.02/-15.6	-10.78/-14.38	-15.39/-8.42	-7.23/-9.27	-9.1/-8.1	-9.99/-15.96	-11.81/-13.15	-18.55/-16.12	-12.85/-16.06	-17.84/-17.91	-18.81/-18.1	-13.82/-18.59	-18.35/-18.12	-18.97/-17.11	-11.42/-11	-9.03/-12.04	-14.8/-18.65	-12.25/-8.45
Θ(127.5°)	-9.26/-17.62	-14.14/-11.08	-13.99/-17.85	-18.36/-17.97	-17.94/-17.51	-18.47/-12.4	-9.04/-16.54	-16.73/-7.77	-9.29/-9.01	-8.51/-9.76	-9.58/-8.49	-12/-15.34	-12.36/-13.51	-17.3/-15.42	-16.02/-18.35	-18.07/-16.35	-17.56/-16.6	-15.73/-15.16	-14.92/-17.7	-17.9/-19.31	-11.62/-10.23	-10.46/-11.99	-17.51/-14.16	-11.42/-8.34
Θ(135°)	-15.47/-13.07	-15.76/-18.18	-17.99/-18.21	-18.13/-17.84	-18.01/-18.23	-17.71/-15.28	-12.8/-13.48	-16.24/-10.46	-9.94/-14.84	-12.93/-10.4	-10.99/-10.38	-10.5/-16.88	-18.4/-10.95	-12.67/-17.93	-15.11/-17.52	-15.87/-17.15	-18.16/-18.63	-18.28/-13.08	-16.1/-18.35	-17.77/-13.51	-16.05/-13.2	-9.79/-11.88	-11.59/-18.01	-8.08/-7.97
Θ(142.5°)	-19.11/-18.16	-18.11/-17.14	-18.11/-19.06	-18.19/-18.77	-18.91/-18.6	-15.86/-12.66	-11.21/-11.08	-12.55/-9.61	-6.86/-8.42	-4.13/-5.2	-10.71/-13.22	-14.88/-10.52	-10.29/-13.79	-18.5/-13.98	-11.93/-15.82	-18.49/-18.02	-18.02/-12.97	-15.11/-13.81	-18.26/-14.89	-18.73/-13.27	-16.71/-17.82	-13.28/-12.53	-17.66/-19.21	-14.12/-12.73
Θ(150°)	-18.35/-16.99	-13.32/-12.35	-12.06/-10.17	-18.44/-17.76	-18.48/-17.25	-15.34/-13.36	-12.78/-10.79	-10.31/-9.05	-6.24/-8.83	-9.34/-14	-14.95/-13.63	-12.80/-11.42	-14.65/-10.07	-14.45/-14.02	-16.37/-18.24	-18.99/-18.78	-19.14/-18.29	-18.27/-13.54	-13.08/-18.04	-13.5/-12.57	-16.88/-17.97	-18.11/-14.8	-14.93/-15.07	-11.02/-12.48
Θ(157.5°)	-18.5/-18.6	-19.1/-17.26	-17.55/-17.68	-16.97/-18.13	-17.97/-18.71	-19.14/-17.91	-12.05/-8.98	-9.12/-12.2	-17.06/-18.66	-18.08/-16.18	-12.4/-10.1	-9.86/-11.42	-15.14/-18.92	-17.9/-13.23	-12.48/-16.24	-18.24/-18.89	-18.83/-18.27	-14.83/-13.17	-15.94/-18.48	-17.83/-17.68	-17.48/-18.67	-17.36/-15.39	-17.65/-18.63	-18.81/-17.72
Θ(165°)	-17.61/-18.7	-16.65/-17.92	-18.92/-18.13	-16.83/-18.51	-15.41/-14.91	-14.02/-14.27	-14.22/-16.28	-18.6/-18.66	-18.02/-18.37	-17.84/-15.61	-14.04/-14.5	-18.83/-17.48	-17.66/-18.31	-19.29/-16.74	-15.52/-15.36	-14.13/-14.28	-17.2/-18.24	-17.86/-18.28	-18.82/-17.75	-15.88/-17.5	-18.82/-18.14	-17.99/-18.23	-18.33/-18	
Θ(172.5°)	-17.93/-17.75	-17.47/-18.06	-18.01/-18.97	-18.16/-16.8	-15.52/-14.4	-13.26/-14.1	-17.26/-18.69	-17.52/-18.13	-18.53/-18.88	-19/-17.62	-16.99/-16.99	-15.94/-16.74	-17.35/-18.43	-17.94/-18.24	-18.71/-18.08	-18.43/-16.69	-15.22/-14.73	-13.75/-13.38	-13.67/-13.04	-12.64/-14.1	-16.87/-18.28	-16.88/-18.53	-16.08/-14.19	-16.69/-18.32
Θ(180°)	-18.21/-17.8	-18.07/-17.63	-19.09/-18.97	-19.27/-18.83	-16.71/-15.42	-15.24/-14.2	-14.28/-14.77	-13.18/-13.45	-13.82/-12.73	-12.45/-13.24	-14.01/-14.25	-16.03/-17.82	-17.9/-17.72	-18.13/-17.8	-15.71/-13.84	-13.6/-14.76	-17.24/-18.8	-17.86/-16.79	-16/-15.02	-13.88/-11.79	-10.59/-10.82	-10.98/-11.53	-13/-13.89	-15.1/-16.48
Freq(GHz)	6.175GPol.	ThetaAnt.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°)	7.978/97	9.710/29	10.65/10.86	10.94/10.89	10.71/10.3	9.739	8.046/8.1	5.273/2	0.02/4.42	-11.66/-7.97	-1.62/-1.99	4.366/18	7.59/6.68	9.510/22	10.74/11.03	11.14/11.08	10.95/10.7	10.26/9.61	8.627/3	5.613/3	0.19/-4.88	-11.55/-6.04	-0.492/6.1	4.936/7.2
Θ(7.5°)	8.478/53	10.39/10.51	10.94/12.3	11.33/-11.4	11.01/10.57	10.44/6.89	8.777/48	5.723/62	0.73/-3.53	-9.92/-3.73	-1.92/-1.5	3.554/97	6.187/18	7.98/58	9/9.2	9.269/16	9.8/71	8.347/7.4	6.836/57	3.891/71	-1.87/-8	-14.21/-6.46	0.313/2.4	5.527/17
Θ(15°)	6.937/77	8.549/26	9.88/10.39	10.68/10.24	10.68/10.24	9.71/9.04	8.777/17	5.693/74	0.66/-1.45	-12.49/-12.1	-4.27/-0.74	1.212/41	3.44/-32	5.46/-23	6.89/-23	7.267/0.5	6.595/9	4.923/69	6.66/-2.51	-1.47/-3.96	-5.72/-9.99	-6.66/-2.51	0.527/2	4.415/93
Θ(22.5°)	4.54/94	5.215/41	5.886/47	7.177/59	7.447/22	7.157/0.3	6.545/45	3.871/86	-1.3/-5.9	-15.43/-18.49	-8.12/-4	-1.350/08	1.342/14	2.22/63	3.293/81	4.13/96	3.422/54	1.470/4	-0.95/-2.96	-6.24/-10.56	-11.48/-6.85	-3.97/-2.13	-0.21/1.18	2.233/53
Θ(30°)	1.98/182	1.040/62	0.731/43	3.153/77	3.2/75	2.883/3	3.473/16	2.551/14	-1.7/-5.33	-7.79/-10.13	-14.92/-18.24	-12.69/-5.7	-2.59/-3.17	-2.76/-5.44	-5.14/-4.19	-3.5/-3.43	-3.48/-4.55	-6.1/-5.76	-5.53/-7.19	-10.22/-10.43	-8.96/-7.47	-6.53/-5.54	-4.24/-2.93	-1.510/77
Θ(37.5°)	-1.08/-1.34	-3.05/-3.73	-4.19/-3.99	-0.260/71	0.21/-0.56	-1.54/-1.37	-0.50/-3.6	0.69/-0.05	-3.21/-6.18	-10.04/-7.27	-6.76/-11.47	-13.83/-12.48	-10.58/-10.5	-13.99/-18.62	-15.75/-17.82	-17.76/-18.17	-17.45/-17.14	-15.84/-17.07	-13.29/-12.6	-15.44/-12.9	-8.43/-9.57	-11.79/-12.18	-7.86/-3.14	
Θ(45°)	-5.68/-4.43	-6.87/-8.22	-10.41/-7.52	-3.75/-2.42	-1.49/-1.15	-2.59/-4.31	-5.04/-3.8	-2.03/-2.25	-4.9/-8.93	-10.31/-6.75	-6.03/-9.25	-19.07/-12.37	-18.11/-13.6	-9.16/-9.28	-5.68/-6.46	-6.31/-5.65	-9.88/-16.31	-16.99/-14.24	-13.53/-13.52	-14.56/-13.4	-7.34/-6.66	-10.06/-11.31	-15.26/-18.34	-10.8/-8.92
Θ(52.5°)	-12.78/-5.96	-5.6/-6.25	-7.08/-6.48	-3.98/-4.72	-1.88/-1.61	-3.48/-6.66	-7.64/-5.97	-6/-9.11	-10.54/-11.97	-14.11/-8.93	-8.33/-12.82	-17.23/-14.38	-19.17/-7.62	-5.14/-6.2	-2.45/-3.21	-2.06/-0.67	-3.71/-8.08	-11.03/-9.42	-9.58/-13.46	-14.08/-8.44	-4.68/-6.34	-9.75/-16.59	-18.41/-8.67	-7.87/-14.25
Θ(60°)	-13.55/-6.26	-5.1/-5.05	-5.71/-3.76	-4.72/-7.38	-4.57/-2.16	-2.59/-8.32	-9.59/-8.32	-7.54/-12.13	-10.88/-10.2	-14.6/-12.61	-9.68/-13.76	-18.04/-17.56	-17.92/-10.07	-6.17/-6.58	-3.82/-3.54	-1.97/0.07	-1.62/-4.99	-10.24/-12.34	-9.94/-14.69	-13.34/-7.09	-3.38/-6.4	-11.61/-15.68	-8.99/-6.9	-8.21/-15.8
Θ(67.5°)	-11.5/-9.18	-5.17/-4.21	-5.8/-5.33	-6.44/-9.75	-7.8/-2.14	-1.8/-3.77	-8.31/-11.75	-9.82/-11.86	-10.79/-9.32	-11.56/-12.31	-13.68/-17.28	-17.94/-13.9	-12.66/-12.45	-8.46/-8.94	-6.1/-5.86	-4.7/-2.48	-3.6/-7.2	-10.18/-13.19	-11.17/-15.77	-10.65/-7.78	-7.43/-10.24	-17.76/-13.14	-9/-9.43	-10.33/-9.92
Θ(75°)	-6.02/-8.28	-6.57/-3.97	-4.91/-3.62	-9.92/-14.5	-10.4/-3.8	-4.29/-3.97	-8.25/-13.26	-10.91/-15.09	-10.44/-8.16	-8.57/-11.96	-13.75/-18.97	-17.36/-12.69	-11.84/-14.81	-11.57/-14.16	-14.49/-9.18	-9.2/-7.44	-7.74/-10.94	-10.8/-12.3	-14.91/-17.09	-8.02/-9.24	-13.12/-12.43	-16.59/-14.82	-11.97/-14.69	-9.74/-6.66
Θ(82.5°)	-5.18/-7.9	-10.53/-6.06	-7.81/-10.69	-11.86/-16.76	-13.88/-8.21	-9.97/-5.39	-9.99/-17.81	-12.03/-9.15	-10.03/-10.27	-11.49/-11.72	-13.98/-17.53	-17.7/-17.7	-15.6/-13.33	-11.47/-18.41	-18.69/-11.41	-12.55/-13.4	-11.78/-14.69	-15.86/-9.42	-18.74/-18.18	-7.78/-9.17	-18.57/-18.7	-10.4/-14.5	-15.12/-17.69	-9.78/-5.58
Θ(90°)	-6.02/-7.59	-16.47/-11.41	-11.37/-16.51	-13.88/-17.27	-17.95/-12.85	-12.52/-9.1	-10.28/-16.4	-14.02/-8.13	-8.9/-12.22	-12.51/-12	-14.22/-17.36	-17.9/-17.64	-18.03/-18.55	-11.48/-17.11	-17.63/-16.92	-14.64/-17.65	-11.89/-12.22	-19.4/-9.56	-13.82/-17.87	-9.04/-7.77	-12.74/-16.16	-10.26/-18.38	-18.12/-18.35	-12.48/-6.19
Θ(97.5°)	-7.25/-9.04	-16.56/-11.93	-14.52/-13.68	-14.35/-13.68	-18.74/-13.18	-8.65/-12.88	-13.42/-18.86	-15.36/-13.1	-9.29/-14.77	-13.08/-11.66	-15.95/-18.37	-15.23/-16.81	-18.34/-18.21	-11.64/-18.28	-18.58/-16.5	-16.23/-17.3	-11.51/-10.86	-17.12/-11.82	-13.27/-17.53	-14.64/-8.65	-10.89/-12.89	-12.3/-18.47	-17.86/-17.47	-14.55/-14
Θ(105°)	-9.51/-12.83	-15.96/-10.47	-13.69/-11.27	-15.37/-15.06	-15.2/-11.05	-7.78/-14.44	-14.87/-15.8	-12.85/-9.16	-11.25/-16.07	-16.09/-17.61	-14.48/-13.92	-16.92/-19.2	-14.14/-16.16	-17.99/-12.59	-13.97/-17.02	-13.31/-13.66	-13.69/-16.56	-13.79/-15.74	-19.1/-12.28	-14.83/-11.27	-17.84/-18.42	-18.77/-17.17	-13.04/-8.05	
Θ(112.5°)	-16.13/-12.07	-11.97/-11.43	-11.12/-14.56	-17.89/-18.76	-16.13/-18.85	-11.																		



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(120°)	-12.58/-12.21	-18.23/-17.68	-14.85/-11.37	-12.54/-13.86	-18.63/-14.92	-18.12/-17.79	-18.43/-13.24	-11.31/-7.26	-4.46/-4.58	-4.83/-5.43	-14.18/-14.29	-18.09/-17.29	-9.25/-9.09	-11.91/-18.49	-18.64/-18.28	-18.83/-19.13	-15.98/-17.16	-18.59/-12.32	-14.83/-13.78	-13.93/-13.57	-6.61/-5.33	-6/-11.25	-11.73/-19.1	-12.66/-6.83	
Θ(127.5°)	-13.77/-15.54	-13.33/-13.61	-17.75/-13.44	-18.15/-17.54	-18.82/-18.45	-15.46/-17.8	-17.48/-14.22	-12.93/-8.66	-7.56/-6.4	-7.05/-12.11	-11.21/-10.07	-15.37/-17.89	-8.4/-8.53	-12.6/-18.56	-17.84/-19	-18.31/-15.28	-17.58/-14.47	-15.82/-13.21	-18.18/-18.81	-14.05/-14.02	-4.89/-5.4	-10.47/-11.71	-10.54/-18.41	-11.11/-6.91	
Θ(135°)	-14.87/-11.7	-15.88/-18.94	-17.44/-18.77	-19.17/-18.23	-18.18/-17.96	-19.11/-19.21	-16.37/-10.93	-9.66/-2.16	-7.42/-9.8	-10.11/-8.07	-8.78/-11.93	-15.62/-17.39	-14.69/-12.94	-17.56/-15.03	-18.79/-18.47	-17.41/-14.65	-17.86/-18.41	-15.61/-11.23	-17.37/-18.41	-7.86/-7.36	-18.8/-8.72	-12.82/-18.43	-9.57/-12.36		
Θ(142.5°)	-13.47/-12.83	-14.01/-16.51	-18.38/-15.81	-17.5/-18.43	-18.53/-17.23	-18.05/-15.75	-9.81/-6.97	-7.53/-10.51	-12.83/-12.63	-10.12/-9.19	-10.69/-15.28	-14.82/-18.32	-18.83/-11.12	-9.88/-11.58	-14.21/-13.13	-17.73/-18.54	-18.98/-18.08	-13.92/-18	-18.24/-11.74	-11.97/-17.94	-12.24/-9.73	-12.86/-16.4	-12.41/-17.77	-14.76/-11.34	
Θ(150°)	-18.66/-18.24	-19.29/-17.13	-14.15/-19.37	-18.23/-18.18	-17.63/-13.18	-16.29/-14.84	-10.18/-12.24	-16.93/-18.11	-18.23/-13.82	-10.58/-9.83	-12.83/-17.99	-18.48/-13.03	-14.2/-18.28	-14.49/-11.9	-15.9/-16.49	-18.08/-19.19	-17.83/-14.75	-16.1/-17.99	-15.15/-18.85	-13.75/-13.43	-17.62/-17.47	-13.06/-13.03	-10.72/-18.5	-11.33/-11.79	
Θ(157.5°)	-17.93/-18.88	-18.05/-18.11	-18.29/-18.32	-17.8/-18.16	-18.72/-18.51	-16.51/-16.48	-17.95/-16.48	-12.81/-11.4	-10.8/-9.16	-8.28/-10.56	-16.02/-18.23	-18.48/-15.36	-18.48/-18.04	-17.37/-17.78	-17.86/-16.62	-18.92/-16.68	-18.84/-18.73	-17.86/-16.68	-17.29/-15.94	-18.46/-18.23	-14.01/-16.66	-15.21/-16.07	-18.74/-17.93	-15.92/-15.06	
Θ(165°)	-18.56/-16.92	-18.26/-17.53	-17.08/-18.33	-18.87/-17.99	-18.51/-18.94	-17.54/-17.54	-13.15/-10.63	-9.7/-10.33	-12.19/-14.5	-18.3/-18.82	-18.74/-17.8	-17.69/-15.37	-16.68/-18.8	-18.12/-17.82	-18.13/-15.73	-18.05/-17.43	-18.29/-18.7	-18.87/-18.54	-18.27/-16.04	-15.75/-15.61	-16.4/-18.04	-17.4/-18.58	-17.88/-18.3	-17.43/-18.04	
Θ(172.5°)	-17.18/-19	-17.88/-19	-18.43/-17.46	-16.86/-16.2	-15.79/-14.76	-15.52/-16.08	-16.21/-17.57	-17.89/-17.63	-18.76/-17.95	-18.19/-18.42	-17.91/-18.56	-17.96/-17.9	-18.91/-17.59	-18.15/-18.37	-17.45/-18.72	-18.4/-17.86	-18.71/-17.74	-17.92/-18.45	-18.53/-16.99	-14.56/-13.82	-12.74/-12.39	-10.82/-11.7	-13.1/-13.62	-16.72/-16.34	
Θ(180°)	-16.71/-15.87	-15.96/-16.53	-16.15/-16.94	-17.79/-18.15	-18.9/-18.76	-18.78/-18.69	-19.11/-18.55	-18.66/-18.61	-18.63/-17.27	-16.71/-17.32	-16.79/-15.08	-18.17/-18.53	-18.47/-18.14	-17.15/-18.09	-17.94/-17.86	-18.12/-17.94	-18.39/-18.25	-17.78/-18.69	-17.56/-18.42	-16.73/-14.8	-14.04/-13.5	-13.93/-14.78	-14.04/-13.5	-13.93/-14.78	
Freq(Hz)	6.895GPdL	ThetaAnt. 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°)	6.237/4.4	8.348/9.9	9.359/6.2	8.829/5.1	9.251/6.4	9.068/4	7.496/4.8	5.173/3.5	8.0/2.61	-8.63/-17.21	-6.32/-1.21	1.844/1.2	5.716/9.5	7.936/7.7	9.429/7.4	9.99/9.1	9.248/6.1	7.736/6.3	5.183/2.4	6.05/-3.51	-11.9/-16.17	-4.91/-4.05	2.64/8.1		
Θ(7.5°)	7.128/16	8.899/42	9.75/10.1	10.39/10.51	10.46/10.35	10.039/5.3	8.888/0.3	6.795/0.8	2.880/0.8	-5.24/-16.79	-8.6/-20.8	1.333/5.3	4.916/0.4	6.777/3.8	7.597/7.3	7.947/9.6	7.987/9.2	7.777/3.9	6.695/6.2	4.132/26	-0.61/-5.79	-16.1/-8.59	-2.25/1.26	3.935/7	
Θ(15°)	5.646/15	6.596/97	7.257/56	7.798/1.8	8.388/5.8	8.457/9.4	7.386/56	5.273/7.3	1.66/-0.98	-4.83/-12.76	-17.79/-6.08	-1.61/3.4	3.224/3.3	4.754/6.5	4.1/3.5	3.2/2.96	2.98/3.35	3.78/4	3.8/3.18	1.79/-0.72	-4.92/-12.27	-7.56/-2.59	0.33/1.85	3.24/4.59	
Θ(22.5°)	1.52/33	3.264/42	4.924/81	4.856/45	5.925/8.5	5.064/26	3.542/7	1.53/0.4	-1.5/-4.25	-8.66/-18.39	-13.97/-7.02	-3.75/-1.73	-1.28/-0.81	0.120/7.9	0.21/-0.31	-1.35/-2.16	-2.85/-2.59	-1.57/-0.6	-0.3/-0.53	-1.59/-4.27	-9.3/-14.71	-9.57/-5.27	-3.76/-3	-1.63/0.14	
Θ(30°)	-0.8/-0.31	-0.23/0.81	2.28/2.89	2.753/5.6	4.153/5.8	1.97/-0.1	-2/-2.14	-0.78/0.13	-0.2/-2.16	-5.89/-11.01	-9.99/-7.73	-8.43/-7.45	-7.94/-9.43	-6.19/-2.37	-2.64/-4.33	-5.71/-7.09	-8.47/-7.28	-6.9/-8.73	-10.45/-9.33	-6.78/-5.91	-7.89/-7.06	-6.18/-7.62	-15.09/-14.21	-6.41/-2.9	
Θ(37.5°)	-4.81/-6.55	-7.09/-15.04	-6.05/-5.6	-5.79/-30.9	-7.60/0.14	-0.8/-2.93	-4.97/-4.88	-2.69/-2.23	-3.88/-7.59	-13.76/-11.69	-10.37/-13.12	-18.48/-14.3	-10.73/-12.02	-10.04/-5.66	-1.92/-0.01	-4.52/-6.22	-8.62/-13.24	-18.07/-18.7	-17.68/-15.73	-8.86/-6.69	-6.51/-5.63	-5.25/-7.26	-11.6/-10.8	-6.26/-4.31	
Θ(45°)	-7.91/-3.57	-1.71/-1.7	-0.22/-0.33	-2.31/-4.2	-6.24/-5.34	-3.75/-2.59	-1.28/-2.18	-10.47/-8.82	-11.28/-14.33	-16.13/-16.92	-10.58/-15.2	-17.68/-11.7	-9.99/-14.11	-10.4/-3.01	-6.8/-6.06	0.79/-1.39	-3.6/-3.8	-10.23/-13.61	-17.37/-15.63	-8.58/-5.91	-6.19/-8.3	-12.44/-13.77	-18.06/-14.22	-10.64/-10.01	
Θ(52.5°)	-1.56/0.26	1.41/1.62	1.74/1.73	1.41/0.38	-1.11/-4	-3.8/-2.21	-2.35/-6.56	-17.72/-14.12	-10.31/-16.86	-13.74/-10.86	-9.79/-15.45	-16.5/-14.29	-13.35/-15.7	-4.13/-0.31	0.52/0.39	0.33/-2.41	-4.06/-5.66	-5.04/-7.73	-12.79/-13.74	-10.47/-6.61	-5.98/-7.66	-7.36/-6.96	-13.83/-11.85	-11.55/-5.73	
Θ(60°)	-1.65/0.19	0.38/0.1	0.23/0.74	1.78/0.57	-0.06/-2.91	-4.03/-2.04	-0.99/-3.21	-9.3/-14.57	-8.79/-17.5	-14.82/-13.08	-13.97/-16.68	-15.62/-16.13	-17.45/-16.3	-3.89/-3.09	-0.51/-0.29	-0.52/-2.2	-6.73/-9.1	-6.52/-8.06	-11.16/-13.04	-12.32/-8.4	-5.69/-7.22	-6.36/-7.59	-18.62/-18.41	-8.02/-3.28	
Θ(67.5°)	-4.22/-2.54	-1.08/-1.14	-1.43/-0.6	-1.51/-1.91	-1.12/-3.1	-5.12/-3.14	-2.52/-5.36	-11.96/-14.66	-9.54/-15.73	-13.7/-13.05	-11.57/-12.21	-13.75/-15.91	-17.37/-6.52	-3.73/-5.07	-6.23/-6.85	-1.38/-3.46	-6.33/-13.91	-9.73/-14.8	-13.5/-10.31	-7.44/-10	-9.85/-10.66	-12.13/-12.95	-8.04/-5.01		
Θ(75°)	-8.47/-5.04	-2.69/-1.25	-3.75/-2.63	-2.32/-4.92	-3.36/-3.98	-6.67/-4.1	-5.01/-5.23	-10.52/-18.99	-11.85/-14.94	-14.72/-17.29	-9.32/-9.47	-13.97/-18.49	-15.71/-8.57	-6.05/-6.47	-5.37/-5.37	-3.52/-6.26	-7.11/-19.06	-9.77/-1.74	-9.59/-9.8	-14.56/-11.93	-10.55/-13.35	-11.38/-7.9	-9.57/-13.38	-12.21/-10.52	
Θ(82.5°)	-17.06/-6.55	-5.56/-3.37	-6.75/-5.02	-5.97/-10.39	-6.46/-6.35	-8.54/-7.15	-10.57/-8.31	-15.71/-16.41	-10.61/-10.98	-18.26/-12.65	-7.87/-10.56	-18.96/-18.52	-11.07/-9.77	-8.39/-7.16	-10.61/-8.45	-6.9/-8.74	-10.18/-17.91	-9.86/-9.03	-13.42/-14.09	-12.31/-11.3	-13.68/-10.89	-9.22/-6.2	-10.42/-16.24	-18.28/-13.55	
Θ(90°)	-18.43/-8.14	-8.26/-6.65	-11.51/-7.09	-9.28/-17.3	-8.93/-8.01	-12.17/-11.12	-12.17/-13.12	-18.73/-12.86	-18.83/-16.99	-13.25/-8.87	-14.32/-15.3	-8.34/-8.45	-18.48/-18.21	-13.97/-11.7	-11.55/-9.33	-13.28/-9.21	-7.44/-9.03	-10.02/-10.87	-13.73/-10.36	-12.69/-18.17	-11.16/-10.65	-15.61/-11.33	-9.09/-7.46	-12.16/-15	-15.43/-18.2
Θ(97.5°)	-18.76/-9.83	-9.52/-8.29	-12.9/-8.2	-11.86/-19.1	-10.34/-7.88	-16.87/-14.44	-18.42/-18.4	-18.48/-16.26	-10.9/-8.71	-16.66/-13.23	-7.81/-10.96	-18.43/-17.73	-16.59/-15.93	-13.37/-11.45	-17.7/-10.89	-8.25/-11.76	-9.87/-13.73	-15.58/-11.99	-14.34/-18.58	-12.25/-10.01	-13.1/-16.4	-12.4/-11.07	-16.41/-17.18	-18.05/-17.75	
Θ(105°)	-19.18/-12.14	-11.64/-11.89	-15.81/-11.24	-15.2/-16.7	-11.81/-12.09	-18.59/-17.3	-18.57/-18.32	-18.51/-17.04	-10.82/-9.65	-13.23/-16.16	-7.83/-10.66	-19.04/-18.54	-19.41/-17.52	-18.41/-14.74	-17.03/-13.71	-11.06/-11.34	-9.85/-11.27	-14.19/-19.43	-17.47/-18.03	-16.85/-14.21	-15.41/-17.95	-14.33/-13.66	-15.64/-18.05	-18.04/-17.65	
Θ(112.5°)	-18.47/-12.04	-16.12/-12.08	-15.88/-16.08	-15.44/-14.46	-15.96/-14.33	-18.92/-17.64	-18.68/-17.75	-19.15/-14.02	-13.93/-10.92	-17.01/-14.57	-9.4/-15.11	-17.16/-16.25	-18.28/-18.49	-18.81/-17.41	-11.93/-17.92	-11.68/-10.83	-15.55/-18.97	-13.23/-18.06	-17.76/-18.05	-16.49/-18.8	-16.31/-18.14	-18.23/-17.98	-18.27/-17.88		
Θ(120°)	-18.97/-18.3	-11.61/-9.36	-13.82/-14.79	-11.87/-13.17	-14.8/-12.74	-18.71/-18.55	-18.62/-18.16	-17.22/-11.71	-11.57/-15.21	-16.55/-15.97	-9.93/-11.68	-17.95/-16.2	-17.96/-16.83	-19.17/-17.68	-18.82/-17.49	-12.4/-18.3	-18.52/-10.42	-19.17/-9.1	-12.74/-18.06	-17.47/-18.67	-18.31/-18.47	-17.86/-18.22	-18.27/-18.65	-18.47/-17.5	
Θ(127.5°)	-15.3/-16.77	-11.33/-13.03	-13.52/-18.76	-17.67/-18.02	-13.93/-15.37	-18.37/-18.77	-18.07/-17.98	-14.21/-12.83	-10.24/-12.75	-17.98/-17.47	-12.92/-15.47	-18.08/-13.38	-12.61/-17.62	-19.26/-19.06	-18.81/-12.26	-16.6/-18.61	-14.32/-15.48	-18.39/-18.42	-15.02/-18.29	-17.98/-18.63	-19.31/-18.43	-17.55/-17.7	-17.84/-17.46	-18/-18.19	
Θ(135°)	-18.55/-16.29	-16.53/-14.66	-11.34/-11.35	-9.12/-18.67	-11.98/-14.31	-16.18/-17.05	-13.29/-11.54	-13.3/-15.72	-12.75/-10.75	-12.06/-14.8	-14.19/-17.93	-18.6/-19	-17.97/-13.3	-15.41/-16.54	-12.51/-14.22	-13.86/-13.46	-9.78/-15.83	-18.58/-18.71	-17.26/-18.53	-18.06/-18.29	-17.58/-18.73	-18.19/-18.44	-17.91/-16.69	-17.25/-18.42	
Θ(142.5°)	-13.64/-13.17	-14.51/-17.89	-18.88/-19.26	-15.05/-16.37	-14.55/-18.2	-14.97/-12.07	-9.73/-12.25	-12.24/-15.91	-12.46/-14.29	-13.24/-14.87	-16.04/-16.05	-19.32/-18.76	-18.79/-18.61	-17.63/-13.05	-19.11/-15.72	-11.57/-13.14	-11.07/-18.23	-17.47/-17.72	-18.06/-17.68	-18.03/-18.06	-16.84/-18.27	-17.12/-18.07	-18.83/-18.23	-18.13/-15.35	
Θ(150°)	-16.59/-13.71	-17.7/-18.33	-17.75/-18.79	-17.87/-19.08	-18.12/-16.47	-11.39/-12.98	-11.89/-14.52	-17.91/-18.08	-18.11/-14.18	-11.85/-11.63	-13.07/-11.99	-17.22/-17.84	-17.44/-11.93	-17.41/-11.99	-11.07/-12.64	-14.56/-13.43	-16.45/-18.98	-16.61/-18.13	-19.26/-18.83	-18.23/-18.59	-19.18/-18.28	-18.97/-18.25	-17.77/-18.89	-17.68/-18.06	
Θ(157.5°)	-16.49/-18.37	-17.33/-19.06	-17.57/-18.52	-16.65/-17.32	-18.61/-17.23	-14.59/-13.02	-14.48/-15.91	-16.35/-14.64	-14.72/-16.12	-16.12/-19.22	-17.23/-17.74	-18.59/-16.63	-16.07/-16.08	-18.3/-19.32	-15.38/-12.96	-11.79/-11.88	-18.31/-19.36	-17.07/-19.04	-15.93/-15.84	-17.23/-18.45	-18.8/-18.48	-17.			



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(165°)	-18.81/-18.31	-17.91/-18.04	-19.03/-18.13	-18.18/-18.03	-18.33/-17.22	-15.73/-15.92	-17.47/-18.48	-18.08/-18.37	-19.1/-18.23	-18.26/-17.7	-19.21/-18.01	-17.37/-17.62	-17.59/-17.5	-18.86/-18.47	-17.56/-18.17	-16.2/-15.68	-17.56/-18.23	-18.67/-17.3	-15.98/-16.69	-18.54/-18.5	-18.21/-17.65	-19.08/-18.23	-19.1/-18.71	-17.58/-18.16
Θ(172.5°)	-16.54/-17.1	-18.39/-18.45	-18.79/-18.68	-17.94/-17.55	-18.09/-18.44	-19.75/-18.7	-17.64/-18.69	-18.15/-18.95	-18.59/-18.78	-18.42/-18.42	-19.25/-18.8	-19.1/-18.76	-17.95/-17.22	-18.82/-17.2	-16.3/-15.16	-15.69/-16.44	-17.83/-18.46	-15.92/-14.74	-14.16/-14.44	-15.03/-16.55	-18.23/-19.05	-17.25/-18.32	-18.07/-17.95	-17.76/-17.39
Θ(180°)	-17.8/-18.22	-17.42/-19.62	-18.6/-18.05	-18.34/-17.32	-18.99/-17.78	-18.48/-17.54	-18.36/-18.67	-17.12/-17.78	-19.33/-17.3	-18.55/-17.89	-17.06/-17.59	-18.84/-18.17	-17.51/-18.47	-17.12/-18.72	-18.74/-17.68	-19.17/-17.62	-18.51/-18.73	-18.22/-19	-18.33/-18.72	-18.46/-18.17	-18.23/-17.3	-16.59/-16.9	-16.65/-17.45	-17.23/-18.75
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(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°)	4.24/5.34	6.2/6.86	7.58/0.1	8.28/8.38	8.38/8.21	7.89/9.49	6.77/5.83	4.62/3	0.96/-1.8	-5.83/-11.1	-10.2/-4.7	-1.71/1.92	3.6/4.96	6.03/6.95	7.77/8.32	8.55/8.5	8.37/8.19	7.82/7.33	6.7/5.75	4.42/2.79	0.78/-2.09	-6.39/-11.13	-7.83/-3.16	0.09/2.51
Θ(7.5°)	4.25/44	6.37/6.97	7.46/7.86	8.07/8.11	8.07/7.84	7.49/7.06	6.28/5.25	3.87/1.97	-0.41/-4.01	-10.49/-14.09	-6.24/-1.76	1.44/3.34	4.55/5.64	6.45/7.19	7.8/8.19	8.28/8.14	7.92/7.67	7.26/6.68	5.94/4.8	3.32/1.46	-0.84/-4.36	-10.93/-18.22	-8.74/-3.06	0.29/2.57
Θ(15°)	3.23/4.37	5.2/6.03	6.65/6.98	6.93/6.66	6.35/7.3	5.26/4.87	4.39/3.82	2.84/1.62	-0.11/-2.71	-7.18/-14.1	-11.14/-5.28	-1.54/0.64	2.43/7.7	4.91/5.74	6.42/6.81	7.07/7.12	6.97/6.69	6.13/5.26	4.07/2.44	0.33/-1.94	-4.95/-9.3	-11.83/-8.95	-4.6/-1.7	0.17/1.79
Θ(22.5°)	-0.83/-5.05	0.17/1.37	2.63/4.9	3.94/4.01	3.68/2.93	2.28/1.75	1.4/1.2	0.41/-0.87	-2.87/-4.34	-6.96/-9.49	-13.63/-10.27	-6.67/-4.19	-1.82/0.16	4.35/4.34	4.29/4.27	4.11/3.57	2.46/0.98	-0.55/-1.92	-3.39/-5.24	-4.45/-9.81	-8.43/-4.74	-6.96/-4.3	-2.95/-1.71	
Θ(30°)	-0.07/-0.03	-0.82/-2.52	-4.73/-5.7	-4.6/-2.44	-0.82/-0.24	-1.08/-2.98	-3.94/-3.24	-3.57/-5.57	-8.96/-9.84	-8.37/8.88	-15.23/-13.93	-3.64/-3.56	-3.59/-2.9	-1.33/-0.11	0.48/0.05	-1.06/-0.95	0.23/0.57	-0.16/-1.28	-2.03/-3.15	-4.93/-6.51	-8.45/-4.34	-4.76/-3.1	-1.94/-0.59	
Θ(37.5°)	-4.25/-3.74	-4.46/-6.71	-10.59/-17.05	-14.11/-10.32	-7.87/-5.65	-5.34/-9.26	-13.33/-8.4	-8.45/-14.16	-14.4/-10.2	-9.21/-9.51	-10.29/-8.65	-6.62/-5.55	-5.92/-7.17	-7.01/-6.1	-6/-5.92	-4.04/-4.26	-7.52/-7.57	-5.5/-5.53	-7.54/-7.63	-6.49/-8.17	-8.63/-6.48	-5.47/-4.67	-4.64/-5.68	-6.5/-5.64
Θ(45°)	-7.61/-7.99	-6.87/-6.14	-7.71/-13.48	-7.35/-3.98	-5.28/-16.84	-10.28/-8.25	-18.13/-12.84	-11.01/-18.01	-14.62/-12.38	-10.17/-17.11	-6.74/-6.43	-5.29/-6.07	-5.89/-4.85	-3.9/-4.24	-4.86/-10.9	-4.23/-3.31	-7.41/-6.76	-9.23/-12.76	-18.71/-16.84	-14.96/-15.78	-13.75/-6.92	-8.03/-6.86	-6.81/-8.4	-8.66/-7.84
Θ(52.5°)	-8.45/-7.58	-4.67/-2.35	-2.09/-5.08	-5.86/-2.83	-1.65/-4.5	-11.27/-7.96	-12.86/-10.82	-13.34/-18.86	-9.93/-16.53	-8.6/-4.46	-5.08/-5.92	-6.89/-6.09	-4.78/-1.93	-0.74/-1.65	-4.81/-8.25	-2.75/-2.21	-5.55/-6.65	-8.16/-16.94	-15.93/-11.97	-16.56/-16.25	-12.84/-13.89	-15.45/-12.16	-9.72/-9.69	-9.85/-8.9
Θ(60°)	-14.76/-12.34	-8.18/-4.39	-2.63/-3.78	-4.3/-4.15	-1.28/-5.35	-13.55/-9.64	-11.33/-6.03	-13.27/-11.58	-6.29/-11.73	-9.76/-4.17	-5.75/-8.27	-6.86/-6.23	-6.46/-3.64	-0.96/-1.23	-3.81/-8.51	-5.03/-2.23	-4.64/-7.97	-7.47/-11.8	-11.41/-5.82	-9.42/-14	-10.89/-14.86	-18.57/-17.67	-11.35/-11.21	-11.33/-12.65
Θ(67.5°)	-18.24/-19.03	-10.74/-7.12	-5.53/-5.93	-3.86/-6.2	-3.16/-7.12	-13.04/-10.94	-10.46/-4.69	-11.49/-7.77	-5.36/-11.16	-0.89/-5.6	-8.98/-11.63	-7.85/-7.8	-11.06/-7.9	-3.91/-3.62	-5.6/-10.92	-7.97/-5.13	-7.54/-9.34	-7.66/-13.75	-9.01/-4.74	-13.09/-13.62	-13.39/-18.82	-18.55/-14.22	-12.9/-14.59	-12.47/-14.68
Θ(75°)	-18.81/-19.27	-12.23/-8.69	-7.45/-11.07	-6.12/-8.08	-5.7/-10.47	-9.81/-4.67	-8.52/-8.41	-5.77/-8.54	-9.16/-7.53	-11.27/-15.42	-11.59/-9.32	-13.12/-16.8	-9.56/-7	-8.85/-12.2	-17.74/-9.49	-10.21/-13.63	-9.13/-15.82	-9.36/-5.23	-17.83/-13.95	-17.85/-18.46	-15.45/-12.16	-14.03/-17.94	-14.03/-15.05	
Θ(82.5°)	-18.16/-18.5	-10.85/-9.49	-9.84/-16.92	-7.59/-8.88	-8.09/-17.72	-10.38/-8.82	-7.7/-5.47	-8.48/-9.4	-6.36/-8.74	-8.32/-9.79	-12.89/-14.6	-11.04/-10.11	-16.49/-18.72	-18.39/-11.25	-11.16/-12.08	-18.71/-14.22	-14.67/-18.23	-14.04/-14.43	-9.35/-6.21	-18.71/-14.92	-10.65/-9.75	-16.84/-17.73	-12.76/-14.96	
Θ(90°)	-18.29/-18.32	-11.42/-10.36	-13.04/-17.19	-8.65/-9.41	-9.04/-19.21	-10.36/-9.58	-9.82/-7.53	-9.89/-12.44	-8.07/-9.08	-8.15/-9.78	-14.79/-18.26	-14.22/-10.5	-18.22/-17.46	-18.24/-16.71	-14.52/-11.24	-12.39/-19.03	-17.95/-19.06	-17.44/-11.56	-11.24/-7.02	-18.37/-18.04	-14.15/-12.49	-10.13/-17.47	-18.39/-18.66	-15.88/-17.3
Θ(97.5°)	-18.28/-17.39	-13.74/-14.02	-15.29/-12.91	-8.73/-8.82	-9.52/-18.15	-8.99/-10.09	-11.15/-9.52	-12.14/-12.12	-9.22/-11.52	-9.48/-10.36	-18.59/-18.63	-17.05/-13.13	-16.37/-17.1	-17.69/-15.04	-19.25/-12.4	-12.95/-17.96	-19.17/-16.26	-18.61/-13	-11.25/-10.03	-15.36/-18.26	-13.21/-11.65	-10.13/-10.54	-17.57/-17.37	-17.21/-17.22
Θ(105°)	-18.31/-15.65	-18.04/-17.87	-18.74/-12.87	-8.18/-8.66	-10.94/-15.71	-8.32/-10.57	-11.81/-11.08	-14.74/-14.49	-10.65/-13.62	-13.28/-9.99	-16.02/-18.52	-17.83/-15.68	-17.82/-16.09	-13.64/-16.16	-15.14/-14.84	-15.35/-18.14	-18.81/-18.94	-18.6/-18	-13.28/-13.85	-14.08/-18.38	-17.34/-11.18	-12.16/-11.88	-17.37/-18.23	-17.44/-17.64
Θ(112.5°)	-17.79/-13.13	-16.88/-14.43	-17.36/-11.93	-6.16/-7.09	-10.41/-12.99	-9.54/-11.15	-11.62/-10.73	-15.91/-17.88	-13.36/-17.94	-12.56/-11.79	-16.92/-19.27	-18.85/-18.5	-17.05/-18.44	-13.8/-16.46	-18.7/-15.88	-15.96/-18.46	-17.87/-15.01	-18.77/-18.89	-12.59/-15.91	-17.52/-13.79	-18.77/-11.41	-13.26/-12.7	-17.68/-18.89	-17.99/-17.74
Θ(120°)	-16.61/-12.77	-16.55/-12.88	-13.13/-10.63	-7.82/-9.33	-10.49/-13.31	-8.92/-10.77	-12.41/-10.76	-18.75/-19.5	-17.21/-18.94	-14.74/-12.03	-13.79/-18.61	-18/-17.75	-17.96/-18.44	-14.32/-17.88	-17.64/-15.71	-18.17/-19.12	-18.46/-17.24	-17.84/-18.49	-13.12/-14.47	-18.92/-16.57	-18.71/-8.25	-13.9/-18.99	-18/-19.12	-18.16/-17.26
Θ(127.5°)	-17.23/-18.96	-16.99/-14.38	-17.52/-13.25	-12.25/-9.69	-9.51/-12.87	-8.31/-11.36	-11.15/-10.34	-16.86/-17.41	-18.33/-17.44	-18.29/-14.79	-16.18/-35	-15.73/-18.29	-17.98/-17.74	-17.62/-18.48	-18.07/-18.92	-15.73/-18.29	-14.64/-18.22	-17.98/-16.75	-18.24/-18.63	-11.07/-12.79	-18.47/-17.5	-17.73/-9.58	-17.81/-17.35	-16.65/-15.67
Θ(135°)	-18.21/-18.82	-17.46/-17.09	-15.65/-12.47	-9.43/-7.37	-10.55/-11.88	-9.02/-14.33	-12.83/-11.06	-17.64/-16.23	-17.91/-16.13	-13.85/-15.39	-18.8/-17.82	-18.98/-18.71	-15.45/-19.44	-16.51/-18.58	-17/-18.15	-16.69/-18	-17.68/-17.68	-16.65/-18.41	-11.26/-14.82	-16.39/-15.65	-17.58/-17.17	-12.62/-15.66	-17.14/-15.2	-15.66/-12.62
Θ(142.5°)	-18/-17.85	-18.5/-17.43	-17.81/-18.78	-16.1/-14.38	-14.58/-10.7	-11.98/-16.74	-14.51/-15.56	-18.62/-15.76	-16.1/-15.18	-16.82/-12.63	-18.69/-18.5	-18.41/-17.7	-18.88/-17.49	-17.17/-17.69	-17.62/-17.24	-17.76/-16.78	-17.92/-18.99	-19.33/-18.78	-13.14/-14.64	-16.08/-19.3	-18.74/-17.68	-18.22/-19.4	-18.66/-18.34	-17.53/-18.1
Θ(150°)	-17.88/-18.41	-17.72/-18.89	-18.11/-18.46	-16.19/-15.48	-15.79/-16.31	-17.73/-14.89	-12.59/-14.64	-18.66/-18.64	-15.54/-15.07	-10.71/-10.44	-12.03/-18.06	-16.15/-14.86	-14.91/-14	-15.76/-18.55	-18.33/-18.23	-17.99/-18.02	-18.37/-18.73	-19.01/-18.17	-18.72/-17.92	-18.51/-18.02	-16.16/-16.08	-14.95/-17.4	-18.66/-19.03	
Θ(157.5°)	-18.66/-18.68	-17.36/-18.22	-17.63/-18.52	-18.49/-18.47	-17.89/-18.59	-17.67/-18.48	-18.97/-15.72	-12.73/-12.58	-16.65/-18.7	-17/-12.38	-11.83/-15.1	-18.12/-18.72	-18.54/-13.47	-16.89/-18.11	-18.45/-17.23	-16.59/-17.07	-17.6/-18.32	-17.8/-17.6	-17.37/-17.83	-18.92/-18.74	-18.49/-17.23	-17.64/-19.02	-18.17/-18.88	-17.41/-18.22
Θ(165°)	-19.22/-18.45	-18.54/-19.15	-18.34/-18.39	-17.36/-17.37	-15.45/-15.67	-17.44/-18.02	-18.24/-19.2	-15.9/-14.52	-15.24/-16.48	-19.18/-19.16	-16.65/-14.49	-14.53/-16.65	-18.43/-18.08	-17.97/-18.45	-18.35/-18.66	-18.25/-19.01	-17.83/-17.35	-17.09/-17.23	-16.08/-15.99	-16.76/-16.85	-18.03/-17.74	-17.98/-18.09	-18.22/-17.62	-18.32/-18.73
Θ(172.5°)	-17.22/-18.59	-18.78/-17.88	-18.26/-18.97	-18.08/-17.63	-16.56/-18.88	-18.48/-18.17	-18.51/-19.15	-19.05/-18.01	-16.36/-17.26	-17.5/-18.06	-19.01/-17.81	-17.74/-17.96	-17.54/-16.62	-16.36/-18.4	-18.36/-18.37	-19.01/-18.55	-18.94/-17.19	-17.68/-18.24	-17.77/-18.06	-17.17/-17.27	-17.49/-15.94	-15.81/-17.05	-18.18/-18.81	-18.94/-17.64
Θ(180°)	-18.35/-18.94	-19.08/-17.22	-18.62/-17.65	-18.02/-17.91	-17.75/-17.78	-17.85/-18.19	-18.47/-17.81	-18.21/-18.73	-18.5/-17.08	-17.03/-18.01	-17.77/-18.23	-17.82/-18.14	-18.08/-17.6	-18.97/-17.66	-19.17/-18.07	-18.36/-17.93	-17.74/-17.4	-17.97/-18.22	-18.73/-18.5	-17.79/-18.63	-18.36/-18.74	-17.18/-18.13	-17.9/-18.44	-18.92/-18.91
Freq(Hz)	5.3GPol	PhiAnt. 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°)	7.07/5.94	4.43/2.41	-0.51/-4.98	-15.46/-12.6	-4.15/0.1	2.76/4.6	5.98/7.07	7.97/8.6	9.09/9.4	9.55/9.55	9.37/8.99	8.53/7.86	6.96/5.75	4.09/1.94	-1.29/-6.61	-18.37/-8.51	-2.13/1.41	3.75/5.45	6.82/7.84	8.6/9.15	9.56/9.81	9.87/9.79	9.58/9.15	8.64/7.95
Θ(7.5°)	6.58/5.64	4.17/2.16	-0.44/-4.44	-12.49/-15.92	-5.31/-0.54	2.24/2.66	5.77/6.98	7.94/8.63	9.13/9.34	9.58/9														



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(7.5°)	5.756/8	7.638/24	8.759/1	9.249/19	8.978/68	8.237/48	6.535/42	3.991/93	-0.78/-4.48	-11.06/-10.5	-4.21/-0.52	1.973/86	5.2/6.28	7/7.55	8.068/4	8.588/57	8.367/98	7.396/63	5.634/34	2.7/0.49	-2.76/-8.27	-17.76/-10.13	-3.21/0.26	2.76/4.47
Θ(15°)	5.085/93	6.537/28	7.848/35	8.748/87	8.768/43	7.957/13	6.185/09	3.712/11	0.13/-2.56	-6.9/-12.3	-8.29/-3.44	-0.31/-1.75	3.083/91	4.414/91	5.415/87	6.336/58	6.6/6.35	5.885/23	4.353/26	1.77/-0.24	-3.2/-8.13	-18.14/-10.17	-4.04/-0.35	2.223/98
Θ(22.5°)	3.364/33	4.915/26	5.535/8	6.286/73	6.976/96	6.567/8	4.813/56	2.140/66	-1.42/-0.82	-8.75/-10.95	-7.33/-4.5	-2.33/-0.76	0.691/93	2.7/3.04	2.995/85	3.1/3.64	4.23/4.53	4.263/7	0.061/93	0.08/-2.54	-6.24/-10.39	-14.68/-11.36	-6.52/-2.59	0.041/93
Θ(30°)	-1.210/39	1.387/1	2.453/7	4.334	3.433/54	4.023/94	3.071/89	0.29/-1.47	-3.23/-5.65	-8.45/-8.83	-11.09/-17.83	-17.61/-16.6	-11/-11.62	-3.78/-2.84	-1.89/-1.18	-1.14/-1.61	-0.561/14	1.180/41	-0.29/-1.2	-3.52/-7.46	-10.48/-12.29	-18.02/-18.57	-13.41/-7.11	-4.37/-2.66
Θ(37.5°)	-2.12/-0.9	-1.25/-1.98	-2.24/-0.38	1.43/1.26	-1.18/-2.21	0.51/2	0.38/-0.57	-1.86/-3.75	-5.36/-4.4	-9.4/-13.8	-18.4/-13.65	-10.17/-10.98	-10.66/-9.37	-10.75/-12.9	-12.33/-8.59	-6.36/-3.87	-8.89/-5.31	-4.64/-5.21	-4.98/-1.75	-12.24/-14.76	-18.04/-18.18	-17.84/-17.02	-11.75/-6.62	4.06/-3
Θ(45°)	-8.19/-6.67	-4.93/-3.17	-2.79/-4.5	-4.48/-3.57	-3.66/-8.21	-4.37/-3.28	-5.6/-4.12	-2.6/-4.93	-6.65/-8.43	-12.01/-17.83	-10.66/-11.29	-11.33/-12.44	-16.24/-12.78	-12.96/-15.93	-18.58/-16.66	-18.27/-17.07	-14.34/-17.58	-16.17/-18.39	-18.1/-18.99	-19.43/-15.36	-12.22/-12.31	-16.69/-18.49	-14.3/-11.22	
Θ(52.5°)	-8.54/-12.48	-13.04/-8.34	-4.35/-2.79	-4.32/-6.73	-3.9/-6.07	-6.88/-4.32	-16.6/-6.1	-5.27/-9.47	-7.49/-11.6	-18.67/-16.73	-10.77/-4.5	-6.89/-6.65	-5.52/-6.76	-12.11/-19.22	-8.02/-6.93	-10.16/-10.26	-11.37/-18.58	-12.81/-17.54	-18/-16.03	-13.68/-17.49	-18.66/-14.98	-15.94/-17.93	-16.08/-13.55	-12.15/-8.96
Θ(60°)	-6.34/-7.55	-8.51/-7.2	-6.3/-4.98	-4.15/-5.16	-4.23/-3.95	-10.94/-4.72	-17.7/-6.85	-8.21/-18.22	-8.12/-9.71	-18.12/-13.09	-9.88/-8.04	-8.27/-8.09	-6.77/-4.76	-5.89/-14	-10.5/-6.67	-7.35/-8.23	-7.09/-17.19	-12.39/-16.72	-17.9/-16.49	-16.69/-19.14	-18.5/-16.51	-16.51/-18.78	-15.56/-11.19	-8.89/-7.05
Θ(67.5°)	-5.85/-6.39	-7.2/-5.59	-5.75/-7.66	-7.35/-4.49	-5.32/-4.24	-13.46/-5.23	-14.25/-7.72	-13.51/-18.39	-8.52/-11.25	-12.12/-10.4	-9.46/-12.36	-18.77/-16.3	-10.24/-5.93	-6.62/-17.62	-11.9/-8.71	-8.15/-8.87	-6.89/-14.86	-14.85/-19.69	-17.16/-17.93	-13.83/-18.46	-15.5/-15.19	-18.43/-17.99	-11.61/-7.73	-6.93/-6.4
Θ(75°)	-6.18/-6.26	-7.08/-5.94	-7.11/-8.22	-8.87/-4.3	-6.27/-6.45	-16.46/-5.85	-11.66/-7.87	-13.54/-18.58	-14.17/-15.86	-9.47/-8.35	-9.51/-13.78	-17.61/-18.98	-15.52/-6.9	-6.06/-14.07	-13.29/-8.93	-8.04/-12.63	-8.79/-13.51	-18.78/-18.17	-12.81/-17.89	-11.88/-19.16	-11.92/-14.67	-15.31/-10.47	-8.12/-7.02	-6.9/-6.85
Θ(82.5°)	-7.58/-6.98	-8.04/-7.45	-7.97/-8.1	-10.42/-5.86	-9.63/-8.38	-18.64/-8.48	-13.62/-8.33	-14.89/-18.27	-18.58/-18.75	-9.25/-8.77	-10.93/-18.1	-12.4/-14.16	-18.17/-9.58	-7.36/-18.88	-13.7/-10.57	-10.14/-17.24	-12.24/-17.09	-18.63/-14.05	-11.14/-18.68	-13.61/-18.01	-10.53/-17.09	-11.81/-7.88	-7.88/-8.49	-8.84/-8.53
Θ(90°)	-10.15/-8.41	-8.87/-8.54	-9.42/-9.64	-13.54/-5.05	-12.44/-8.69	-18.63/-9.72	-15.42/-11.5	-15.18/-17.21	-18.74/-16.01	-10.29/-10.77	-10.86/-18.46	-14.31/-14.17	-17.89/-14.89	-7.27/-10.55	-18.13/-10.68	-11.24/-18.4	-18.97/-17.79	-18.56/-13.28	-10.21/-18.01	-16.08/-17.18	-10.58/-16.28	-11.09/-7.3	-8.67/-10.98	-11.54/-12.76
Θ(97.5°)	-14.85/-11.37	-11.81/-11.12	-12.16/-12.32	-15.43/-11.33	-15.26/-10.88	-13.2/-9.52	-18.25/-16.3	-16.94/-16.78	-18.85/-12.92	-10.95/-12.07	-13.12/-18.46	-16.06/-13.94	-18.86/-16.14	-8.86/-13.68	-18.64/-12.65	-14.65/-17.64	-18.47/-18.51	-18.53/-15.36	-12.61/-18.52	-16.51/-17.5	-13.47/-17.2	-12.09/-8.55	-10.51/-14.95	-15.36/-15.04
Θ(105°)	-15.74/-11.38	-11.16/-13.21	-16.22/-16.43	-14.89/-14.76	-14.88/-11.51	-14.03/-11.73	-17.27/-15.87	-16.17/-15.7	-17.97/-17.73	-12.66/-17.81	-18.66/-18.16	-18.36/-16.4	-11.34/-11.83	-18.21/-14.1	-16.86/-18.01	-19.16/-18.33	-17.93/-18.43	-14.98/-17.2	-18.9/-13.67	-14.23/-16.09	-11.32/-10.03	-13.35/-17.15	-18.13/-15.6	
Θ(112.5°)	-17.58/-10.91	-13.66/-17.95	-15.04/-13.61	-11.76/-14.11	-11.75/-13.38	-13.29/-12.57	-14.45/-15.19	-17.06/-17.74	-18.25/-13.98	-13.62/-12.46	-14.86/-18.66	-18.75/-18.56	-18.2/-15.67	-10.12/-15.11	-16.89/-14.34	-16.05/-17.59	-17.85/-17.43	-18.05/-18.93	-15.63/-18.97	-17.68/-18.11	-16.39/-19.08	-12.24/-10.75	-12.18/-18.45	-17.52/-18.17
Θ(120°)	-17.93/-14.17	-15.33/-15.11	-12.08/-16.1	-13.61/-12.93	-10.46/-15.62	-14.18/-11.81	-12.22/-11.41	-16.9/-17.68	-18.9/-18.12	-12.45/-14.88	-17.03/-17.13	-18.86/-17.86	-18.78/-16.58	-11.15/-13.41	-16.95/-15.06	-15.91/-19.05	-17.75/-18.55	-19.18/-18.4	-14.46/-18.87	-17.91/-18.26	-14.41/-13.54	-12.97/-10.58	-13.55/-17.93	-18.56/-18.29
Θ(127.5°)	-16.14/-15.03	-15.69/-15.08	-12.45/-15.1	-13.53/-14.62	-14.42/-15.76	-11.46/-10.49	-12.11/-10.91	-17.29/-17.75	-18.21/-18.66	-14.62/-12.73	-12.31/-13.16	-17.85/-18.16	-18.01/-14.11	-14.43/-14.76	-17.9/-19.14	-18.23/-15.31	-18.14/-15.34	-18.14/-19.17	-17.48/-16.8	-17.73/-18.27	-13.09/-16.93	-13.69/-9.93	-13.02/-19.25	-17.05/-18.62
Θ(135°)	-16.9/-16.7	-18.6/-13.84	-15.15/-16.55	-15.69/-12.94	-12.65/-12.94	-11.94/-11.59	-13.22/-10.82	-17.78/-18.5	-18.71/-16.29	-18.27/-14.13	-13.07/-17.03	-16.78/-16.9	-16.01/-18.32	-18.29/-17.24	-18.09/-15.91	-17.4/-16.19	-18.21/-18.11	-15.67/-14.35	-15.47/-18.44	-18.02/-13.66	-12.22/-12.49	-16.09/-15.6	-12.45/-18.79	
Θ(142.5°)	-17.59/-18.12	-18.58/-17.88	-18.74/-13.79	-11.44/-11.14	-13.65/-17.56	-18.81/-18.85	-16.23/-11.86	-13.02/-16.05	-18.19/-17.4	-16.39/-12.89	-11.66/-13.13	-18.81/-18.72	-17.97/-13.06	-17.79/-18.38	-19.06/-17.84	-18.2/-18.42	-14.58/-17.87	-18.89/-17.66	-15.52/-17.77	-16.93/-17.59	-18.86/-13.39	-13.11/-16.97	-13.54/-12.02	-11.04/-13.17
Θ(150°)	-18.27/-18.07	-18.61/-18.26	-18.22/-17.79	-18/-18.4	-18.39/-15.3	-15.39/-17.94	-16.96/-16.44	-16.52/-12.53	-14.33/-18.89	-13.08/-12.82	-17.34/-17.47	-17.68/-18.14	-17.72/-17.36	-17.45/-17.72	-19.21/-18.65	-17.93/-18.76	-18.75/-18.18	-18.27/-18.03	-16.59/-15.95	-16.59/-16.4	-18.29/-17.7	-18.84/-16.16	-14.85/-17.25	-17.96/-18.36
Θ(157.5°)	-18.53/-17.85	-17.87/-17.47	-18.32/-18.03	-18.37/-18.56	-18.8/-18.48	-16.98/-15.87	-17.3/-17.99	-16.24/-12.94	-16/-18.38	-14.48/-11.85	-11.41/-12.75	-15.44/-18.67	-17.39/-18.1	-18.05/-17.77	-17.18/-18.67	-18.31/-18.97	-18.28/-17.97	-17.73/-18.26	-18.54/-17.84	-18.31/-18.36	-17.55/-16.66	-14.48/-11.85	-11.8/-13.82	-15.53/-17.99
Θ(165°)	-18.13/-18.71	-18.41/-17.72	-18.14/-17.84	-18.71/-18.53	-17.87/-19.18	-17.7/-19.13	-17.27/-14.94	-12.82/-11.41	-12.58/-15.36	-18.66/-16.83	-14.75/-12.88	-12.85/-14.34	-16.72/-19.16	-18.06/-17.86	-17.78/-18.68	-18.31/-18.29	-17.86/-18.55	-18.31/-18.01	-17.78/-17.07	-17.18/-16.17	-16.19/-17	-17.63/-19.09	-17.44/-18.56	-18.89/-17.59
Θ(172.5°)	-18.68/-18.47	-18.95/-18.63	-17.5/-18.05	-18.49/-18.16	-18.33/-18.71	-19.06/-17.78	-18.58/-18.33	-18.78/-14.43	-18.05/-19.31	-17.13/-16.06	-16.66/-17.96	-17.98/-17.9	-17.94/-18.03	-18.49/-17.51	-18.59/-18.96	-18.87/-18.72	-18.02/-18.7	-18.08/-19.01	-17.72/-17.97	-18.56/-18.81	-19.03/-17.95	-17.35/-19.01	-18.91/-17.32	-18.04/-18.15
Θ(180°)	-17.69/-18.45	-17.95/-18.61	-18.19/-18.53	-17.03/-16.05	-16.72/-17.62	-18.57/-18.91	-18.36/-17.85	-19.2/-18.63	-17.67/-18.24	-18.14/-17.43	-18.09/-18.08	-18.3/-16.14	-15.94/-15.71	-15.91/-16.04	-15.63/-16.8	-18.87/-17.87	-19.34/-19.19	-17.04/-18.4	-18.09/-18.02	-18.55/-18.81	-17.49/-18.5	-18.67/-18.3	-18.19/-18.49	-17.45/-16.04
Freq(Hz)	5.785GPol.	PhiAnt.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°)	6.595/36	3.66/71	-1.13/-5.8	-15.75/-14.8	-4.28/-0.28	2.34/22	5.586/68	7.518/17	6.858/92	9.04/95	8.878/47	7.97/18	6.315/1	3.491/41	-1.91/-2.7	-18.49/-9.65	-3.150/44	2.914/68	6.077/09	7.898/55	8.979/2	9.319/25	9.076/67	8.177/35
Θ(7.5°)	6.225/14	3.751/99	-0.79/-5.36	-15.64/-11.17	-3.520/52	3.064/92	6.187/14	7.848/36	8.718/91	9/86	8.748/34	7.76/7	6.064/66	2.870/78	-2.52/-8.26	-18.82/-9.32	-3.220/22	2.564/27	5.626/57	7.357/93	8.378/62	8.728/66	8.548/17	7.777/09
Θ(15°)	5.764/55	2.720/57	-2.37/-6.46	-16.29/-13.67	-4.56/-0.19	2.514/28	5.336/03	6.637/22	7.858/37	8.618/54	8.267/84	7.256/44	5.434/08	2.430/22	-3.4/-9.19	-17.41/-12.32	-5.96/-2.25	0.392/54	4.245/51	6.547/34	7.928/29	8.478/48	8.287/87	7.376/68
Θ(22.5°)	4.833/68	1.9/-0.56	-4.72/-10.14	-17.65/-15.86	-6.44/-1.79	0.982/42	2.993/84	5.186/46	7.277/47	7.096/39	5.655/01	4.323/54	2.81/37	-0.32/-3.1	-7.35/-14.03	-18.09/-11.63	-6.99/-4.2	-2.040/65	3.164/99	6.176/77	7.197/42	7.574/3	7.036/51	5.866/35
Θ(30°)	2.571/63	0.01/-2.56	-7.47/-17.49	-18.81/-12.09	-8.71/-5.38	-1.980/4	1.34/25	3.974/93	4.783/85	3.1/288	2.792/68	2.191/48	0.4/-1.46	-4.29/-7.61	-10.99/-15.32	-18.27/-16.57	-11.34/-8.06	-5.4/-2.31	0.752/7	3.5/52	3.694/21	6.644/9	4.824/42	3.362/28
Θ(37.5°)	-1.49/-2.89	-4.5/-5.71	-7.37/-10.55	-14.68/-10.42	-7.71/-8.02	-4.05/-0.01	0.520/93	3.013/08	1.610/93	1.631/51	0.51/-0.9	-2.49/-3.32	-5.06/-6.58	-11.44/-13.88	-18.18/-19.31	-19.15/-18.7	-17.97/-12.98	-9.66/-5.55	-2.06/-0.79	-1.23/-0.61	0.881/97	2.582/49	1.961/27	0.62/-0.24
Θ(45°)	-2.95/-5.81	-10.5/-13.16	-12.04/-9.5	-10.55/-14.25	-9.69/-10.42	-9.19/-2.72	-2.63/-2.39	1.040/6	-0.181/03	0.79/-1.13	-3.41/-5.32	-7.8/-6.8	-9.21/-12.6	-17.72/-18.55	-18.45/-18.51	-17.62/-17.78	-18.38/-19.02	-17.51/-15.19	-7.43/-6.14	-6.74/-2.71	-0.91/-0.65	-0.20/06	0.580/71	0.03/-1.09
Θ(52.5°)	-5.07/-8.52	-12.58/-12.79	-12.25/-18	-18.55/-18.43	-17.12/-12.01	-17.43/-6.93	-4.78/-4.68	-2.01/-3.42	-1.02/-0.65	-4.84/-7.54	-5.03/-4.94	-7.26/-10.05	-14.87/-18.71	-19.21/-19.12	-19.19/-15.76	-1								



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(60°)	-7.17/-5.98	-5.66/-4.21	-7.25/-5.69	-6.06/-6.43	-9.13/-7.44	-9.19/-8.29	-5.81/-17.04	-10.24/-12.34	-14.29/-9.83	-11.66/-18.44	-7.13/-4.33	-7.27/-11.6	-13.54/-6.93	-6.39/-6.87	-5.86/-3.03	-3.43/-6.17	-5.7/-5.41	-9.08/-12.05	-13.04/-17.87	-11.61/-9.86	-10.77/-9.16	-14.79/-19.14	-15.89/-11.95	-9.68/-8.48
Θ(67.5°)	-11.82/-8.53	-6.35/-8.21	-9.12/-5.05	-6.07/-8.11	-8.02/-6.29	-7.44/-8.24	-8.11/-17.58	-8.74/-9.2	-10.87/-16.63	-16.29/-18.24	-11.69/-8.98	-13.56/-17.39	-14.28/-8.42	-6.31/-8.08	-10.19/-5.39	-4.61/-6.87	-7.21/-7.65	-11.92/-11.36	-13.63/-15.55	-13.16/-15.04	-14.9/-15.19	-17.48/-19.06	-16.92/-16.72	-19.27/-19.71
Θ(75°)	-13.74/-12.59	-9.12/-9.53	-10.79/-7.8	-7.97/-10.72	-7.6/-6.63	-7.53/-7.79	-9.72/-11.96	-8.82/-10.01	-11.52/-16.88	-18.19/-17.24	-14.68/-14.04	-17.26/-19.33	-14.43/-12.55	-8.36/-9.04	-12.83/-10.39	-8.41/-10.21	-9.24/-9.36	-15.32/-10.69	-15.32/-13.51	-17.94/-18.91	-19.18/-18.27	-16.61/-18.84	-16.68/-17.73	
Θ(82.5°)	-12.96/-16.54	-11.58/-9.83	-12.1/-11.59	-8.19/-10.45	-8.12/-9.94	-11.02/-8.64	-12.5/-9.84	-11.5/-13.75	-14.58/-19.02	-17.03/-14.17	-16.33/-17.35	-17.59/-18.87	-13.76/-17.95	-10.06/-13.95	-18.46/-13.83	-12.59/-14.85	-11.3/-12.84	-14.13/-9.87	-16.04/-13.04	-17.59/-16.18	-15.67/-17.87	-19.39/-18.27	-18.92/-19.13	-19.13/-18.81
Θ(90°)	-15.52/-17.79	-11.98/-8.84	-12.45/-14.45	-10.68/-13.65	-10.9/-15.85	-13.97/-12.93	-14.04/-10.39	-14.71/-16.02	-14.44/-17.4	-17.75/-12.93	-17.52/-18.77	-18.5/-18.57	-16.15/-18.2	-13.52/-16.26	-18.44/-17.56	-18.94/-17.5	-13.48/-17.1	-16.33/-10.97	-17.34/-13.88	-16.19/-19.86	-17.64/-19.23	-18.16/-15.8	-17.9/-17.98	-17.66/-18.87
Θ(97.5°)	-17.6/-18.57	-10.58/-8.64	-13.22/-15.81	-13.08/-17.75	-14.1/-12.63	-16.38/-13.44	-18.27/-10.71	-17.94/-13.35	-15.35/-18.75	-15.51/-14.95	-18.33/-18.47	-17.86/-18.41	-19.17/-17.62	-15.68/-17.89	-17.88/-15.4	-19.02/-17.85	-15.12/-17.9	-18.32/-14.51	-17.87/-16.71	-15.53/-19.12	-15.22/-17.89	-17.95/-18.26	-18.92/-18.19	-17.69/-17.74
Θ(105°)	-18.84/-18.2	-9.5/-11.16	-14.02/-14.41	-12.6/-17.27	-15.49/-13.15	-17.08/-12.83	-17.51/-13.89	-18.06/-13.19	-17.65/-18.54	-16/-16.01	-18.32/-18.29	-18.14/-17.6	-18.39/-18.72	-18.17/-17.95	-17.87/-13.07	-15.19/-18.06	-16.48/-18.3	-18.37/-18.01	-18.56/-18.77	-15.79/-17.79	-17.29/-18.85	-18.93/-18.9	-18.96/-18.98	-18.05/-18.29
Θ(112.5°)	-18.06/-13.72	-10.63/-14.47	-13.52/-14.17	-13.76/-12.65	-14.85/-13.89	-15.82/-12.51	-18.25/-18.68	-18.69/-13.83	-17.97/-19	-14.37/-16.86	-18.53/-18.31	-18.78/-18.34	-17.74/-17.81	-18.84/-18.6	-17.72/-13.08	-18.24/-18.32	-17.88/-18.66	-18.61/-16.06	-18.29/-18.74	-18.95/-18.05	-15.71/-18.83	-18.32/-17.78	-18.11/-18.63	-18.68/-17.83
Θ(120°)	-17.91/-15.77	-13.69/-12.65	-16.89/-16.97	-15.95/-8.96	-12.9/-10.82	-17.72/-12.68	-18.14/-18.29	-17.71/-14.09	-18.19/-19.06	-18.2/-14.61	-17.7/-18.86	-17.72/-17.48	-18.53/-18.04	-18.85/-17.16	-16.86/-18.7	-18.21/-14.83	-18.42/-17.37	-16.65/-17.25	-16.26/-18.77	-17.9/-18.03	-18.66/-18.07	-15.2/-18.12	-17.83/-18.15	-18.67/-19
Θ(127.5°)	-18.13/-15.57	-14.78/-17.41	-16.93/-13.78	-16.19/-10.3	-10.43/-9.9	-16.9/-12.65	-18.39/-17.6	-16.03/-16.51	-19.37/-17.1	-17.9/-15.68	-18.83/-18.16	-16.41/-17.29	-17.4/-18.38	-18.57/-18.01	-18.04/-15.69	-15.56/-18.4	-19.01/-17.56	-17.31/-18.34	-18.87/-18.43	-18.03/-15.15	-17.22/-13.13	-17.3/-18.43	-18.84/-17.8	-18.89/-18.17
Θ(135°)	-17.62/-16.64	-13.17/-14.55	-15.03/-18.78	-17.94/-15.15	-14.04/-15.72	-13.85/-11.63	-12.95/-10.87	-11.14/-19.11	-18.42/-18.5	-15.68/-18.53	-13.36/-19.13	-13.05/-13.46	-18.25/-18.57	-17.59/-19.15	-18.82/-18.86	-17.12/-17.55	-18.47/-17.38	-18.28/-18.04	-18.61/-17.98	-18.81/-18.5	-17.53/-15.19	-18.15/-17.96	-18.25/-18.47	-18.21/-18.91
Θ(142.5°)	-17.02/-18.76	-17.12/-18.24	-16.33/-17.88	-16.41/-18.84	-14.06/-16.64	-16.77/-11.02	-13.33/-19.13	-11.65/-18.46	-13.74/-16.72	-15.87/-19.08	-13.79/-14.92	-18.34/-18.78	-19.17/-14.75	-18.33/-18.16	-18.92/-18.06	-18.34/-18.9	-18.43/-18.75	-18.59/-19.18	-17.8/-17.86	-18.73/-18.01	-18.19/-18.66	-17.17/-18.72	-16.58/-16.04	-15.15/-15.21
Θ(150°)	-19.3/-18.99	-17.59/-18.95	-18.56/-17.96	-19.13/-17.7	-14.51/-17.71	-18.47/-15.13	-19.34/-15.98	-14.07/-18.03	-14.17/-17.79	-18.04/-13.27	-16.1/-18.85	-17.75/-18.19	-18.42/-18.07	-14.16/-18.35	-18.35/-18.22	-18.37/-18.03	-18.16/-18.93	-19.25/-18.5	-18.44/-17.3	-18.92/-18.08	-18.32/-16.76	-18.17/-19.01	-18.72/-17.69	-17.62/-18.7
Θ(157.5°)	-18.29/-18.79	-18.57/-17.45	-14.9/-13.98	-17.97/-18.72	-17.57/-18.12	-17.83/-17.77	-17.6/-18.78	-19.28/-15.35	-10.9/-10.65	-15.72/-18.68	-13.78/-19.13	-11.73/-16.69	-18.86/-18.76	-17.55/-18.03	-18.47/-18.54	-18.06/-17.47	-19/-19.04	-17.3/-18.6	-18.58/-17.81	-18.12/-16.79	-17.34/-18.6	-13.89/-18.78	-13.65/-15.51	
Θ(165°)	-18.58/-18.57	-18.37/-18.87	-18.91/-18.27	-17.59/-17.91	-18.7/-16.54	-16.43/-17.8	-19.09/-19.1	-18.68/-17.82	-18.71/-14.25	-13.4/-15.88	-18.12/-18.47	-18.11/-18.28	-18.22/-18.88	-18.81/-18.59	-17.91/-18.2	-18.75/-16.57	-15.44/-18.54	-18.79/-18.75	-18.25/-18.94	-16.83/-15.73	-14.84/-14.81	-15.54/-18.47	-13.67/-17.97	
Θ(172.5°)	-17.95/-17.83	-17.88/-18.89	-18.57/-17.66	-18.96/-17.99	-17.78/-18.36	-17.88/-18.38	-17.71/-18.76	-17.77/-18.44	-19/-18.49	-18.19/-17.1	-17.82/-19.63	-19.31/-17.9	-19/-19.23	-17.33/-18.47	-18.78/-18.38	-18.8/-18.97	-18.38/-18.46	-18.57/-17.45	-16.04/-15.73	-15.77/-18.08	-18.54/-17.76	-18.79/-17.9	-18.98/-17.3	-18.11/-18.23
Θ(180°)	-18.05/-18.07	-17.84/-18.5	-17.76/-18.43	-19.05/-18.07	-18.76/-18.33	-18.42/-17.92	-17.37/-18.68	-18.81/-18.89	-18.19/-19.23	-18.42/-18.78	-18.5/-18.58	-18.44/-18.15	-18.35/-17.68	-18.33/-17.81	-19.18/-19.04	-18.94/-18.07	-17.95/-18.19	-18.08/-17.64	-18.07/-19.01	-18.3/-17.46	-17.87/-17.58	-18.55/-18.17	-18.26/-17.39	-17.44/-19.14
Freq(Hz)	6.4750GPol.	PhiAnt. 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°)	8.47/39	5.924/13	1.76/-1.95	-9.31/-16.03	-5.14/-0.14	2.84/4.9	6.49/7.72	8.71/9.46	10.02/10.39	10.67/10.74	10.17/9.61	8.71/7.55	5.97/4.06	1.13/-3.08	-12.85/-12.62	-3.24/1	3.84/5.83	7.32/8.41	9.24/9.88	10.31/10.61	10.75/10.73	10.54/10.23	9.79/9.19	
Θ(7.5°)	8.32/13	5.523/69	1.222/-2.88	-10.18/-19.05	-5.27/0	3.01/5.06	6.67/7.7	8.72/9.43	9.98/10.34	10.63/10.69	10.61/10.34	8.95/9.12	8.17/6.88	5.19/3.11	-0.05/4.91	-15.48/-10.16	-2.93/19	0.39/6.05	7.58/8.72	9.69/10.09	10.27/10.57	10.69/10.6	10.37/10.04	9.96/9.19
Θ(15°)	7.586/2	4.231/59	-2.04/-7.51	-17.87/-8.3	-3.46/-0.43	1.923/74	5.256/45	7.518/34	8.959/22	9.289/16	8.928/63	8.157/54	6.69/5.51	4.122/03	-1.68/-8.17	-18.56/-7.19	-2.55/0.44	2.844/86	6.397/57	8.48/9.08	9.44/9.74	9.859/88	9.73/9.5	9.29/8.71
Θ(22.5°)	5.24/58	3.351/18	-1.61/-4.51	-7.12/-7.59	-3.13/-1.06	0.652/6	4.616/21	7.27/7.81	7.887/64	7.437/4	7.467/3	6.175/42	3.541/37	-1.07/-3.92	-7.22/-12.59	-15.81/-9.63	-4.7/-1.88	0.322/18	3.444/45	5.376/62	6.537/08	7.41/7	6.936/5	6.095/71
Θ(30°)	2.48/0.52	-1.97/-4.72	-8.21/-17.3	-12.32/-9.23	-5.64/-2.76	1.070/96	2.92/047	4.564/71	4.514/27	7.44/1.4	4.384/45	4.15/3.16	1.54/-0.25	-2.93/-6.99	-18.39/-13.9	-9.75/-8.18	-4.23/-0.84	0.55/0.1	2.584/08	8.485/44	6.176/3	6.075/73	5.07/4.1	
Θ(37.5°)	0.74/-1.59	-4.8/-7.11	-10.19/-14.8	-18.09/-18.87	-13.1/-6.54	-4.58/-2.16	0.070/85	1.21/0.5	-0.38/-0.55	-2.3/-5.53	-6.56/-5.07	-4.22/-4.35	-4.57/-5.54	-7.9/-12.55	-18.47/-16.38	-15.82/-17.91	-11.19/-12.3	-9.86/-4.79	-3.18/-0.91	1.48/2.24	2.12/2.54	2.82/42	1.93/1.66	1.81/1.78
Θ(45°)	-2.88/-4.2	-8.93/-13.55	-12.26/-12.26	-17.51/-18.78	-16.41/-13.63	-9.67/-5.1	-1.89/-2.23	-3.68/-8.13	-7.43/-5.11	-4.81/-8.43	-4.18/-4.97	-7.98/-11.97	-12.19/-13.61	-15.5/-13.87	-17.91/-17.17	-15.41/-19.18	-18.44/-18.08	-17.85/-11.69	-6.98/-3.8	-1.31/-2.86	-3.97/-4.04	-4.67/-2.97	-1.7/-2	-2.9/-3.1
Θ(52.5°)	-5.71/-6.98	-9.65/-14.51	-17.63/-15.07	-12.72/-17.24	-14.75/-18.89	-13.27/-7.72	-5.04/-8.21	-5.94/-8.39	-9.02/-9.03	-10.72/-10.66	-9.78/-12.7	-18.39/-18.43	-18.55/-18.87	-18.12/-18.12	-18.72/-17.95	-19.05/-17.76	-18.13/-15.68	-12.55/-7.95	-7.4/-8.34	-7.51/-7.35	-4.81/-3.22	-2.95/-3.28	-3.79/-4.64	
Θ(60°)	-7.73/-8.2	-11.88/-13.83	-10.04/-18.34	-16.54/-18.24	-18.6/-18.71	-12.91/-17.12	-9.27/-11.3	-4.31/-8.46	-10.42/-11.4	-13.43/-12.89	-18.52/-15.9	-7.7/-8.1	-13.84/-18.7	-14.53/-14.71	-17.46/-18.63	-19.24/-19.3	-15.87/-13.29	-13.2/-17.59	-13.96/-11.89	-10.79/-8.31	-9.34/-5.51	-4.52/-6.86	-7.06/-5.02	-3.85/-5.15
Θ(67.5°)	-9.39/-12.39	-18.67/-17.85	-7.27/-12.36	-17.79/-18.75	-18.58/-18.34	-11.53/-18.2	-10.82/-9.19	-6.65/-18.4	-8.77/-13.36	-15.28/-10.7	-16.23/-17.81	-15.7/-16.25	-15.12/-19.05	-17.29/-17.9	-16.53/-18.02	-16.1/-18.43	-11.09/-13.34	-9.97/-18.8	-11.25/-4.93	-10.26/-8.55	-7.32/-4.55	-3.96/-4.29	-5.28/-7.06	-4.97/-6.07
Θ(75°)	-9.47/-12.64	-18.48/-17.78	-7.22/-10.57	-18.84/-18.14	-16.48/-15.7	-13/-18	-11.68/-6.67	-7.13/-10.42	-13.32/-8.01	-11.15/-16.26	-17.6/-15.95	-17.91/-13.39	-15.63/-19.29	-17.15/-15.04	-18.47/-16.97	-15.01/-12.41	-14.42/-16.49	-12.48/-8.57	-14.32/-11.05	-5.44/-3.94	-1.01/-1.36	-4.43/-8.3	-5.68/-6.28	
Θ(82.5°)	-10.6/-12.81	-18.96/-18.58	-9.39/-13.71	-13.77/-19	-14.53/-16.42	-16.49/-14.97	-10.16/-8.79	-7.06/-6.72	-3.25/-7.07	-5.33/-5.44	-9.08/-12.45	-15.33/-9.34	-19.02/-11.3	-10.41/-15.67	-16.02/-15.9	-19.26/-18.45	-18.32/-12.28	-16.19/-14.92	-14.63/-7.65	-15.24/-9.11	-5.23/-2.43	0.78/-0.7	-3.85/-8.18	-6.37/-7.73
Θ(90°)	-10.13/-10.09	-16.32/-13.63	-13.36/-13.84	-13.13/-17.38	-13.8/-17.67	-17.16/-13	-8.43/-8.6	-8/-6.53	-4.51/-5.41	-2.49/-4.95	-7.59/-9.53	-14.87/-9.97	-11.25/-16.57	-10.46/-17.78	-14.36/-13.6	-18.43/-19.03	-10.97/-13.68	-16.53/-18.42	-11.57/-17.38	-18.97/-8.67	-5.2/-2.17	-0.18/-1.59	-4.25/-8.71	-7.55/-10.57
Θ(97.5°)	-9.26/-14.08	-14.47/-12.79	-18.27/-15.21	-13.35/-18.68	-15.65/-18.05	-15.13/-10.38	-7.88/-8.27	-13.29/-8.88	-8.42/-5.72	-1.8/-6.96	-10.10/-33	-17.78/-12.49	-11.99/-15.55	-9.88/-14.32	-17.87/-18.19	-18.71/-18	-10/-17.32	-16.52/-17.95	-13.71/-10.35	-18.02/-9.43	-5.17/-2.18	-0.61/-2.52	-5.72/-11.63	-7.9/-10.49
Θ(105°)	-10.04/-15.13	-15.13/-13.52	-10.69/-15.																					



Radiated Composite Gain Data of 5GHz/6GHz

Appendix A.2

Θ(112.5°)	-17.53/-16.63	-14.59/-14.77	-16.26/-12.34	-18.1/-10.66	-17.64/-10.84	-12.75/-17.74	-18.05/-18.2	-17.99/-18.08	-18.62/-17.69	-18.71/-18.55	-18.38/-18.27	-18.47/-17.82	-15.23/-18.72	-17.45/-18.42	-17.66/-17.27	-18.62/-15.91	-17.61/-18.59	-19.08/-19.1	-16.94/-18.2	-18.82/-19.22	-17.55/-18.94	-16.58/-17.88	-18.56/-18.88	-16.54/-18.84
Θ(120°)	-14.95/-13.28	-9.69/-9.86	-18.35/-16.69	-17.79/-18.09	-14.72/-13.48	-10.8/-17.77	-19.17/-17.96	-19.14/-16.05	-18.08/-19.15	-18.42/-18.73	-16.32/-18.36	-18.92/-18.63	-18.48/-16.63	-18.5/-18.19	-18.59/-17.91	-17.65/-15.72	-17.72/-18.16	-17.62/-16.93	-18.8/-17.64	-18.41/-18.04	-18.78/-19.17	-18.32/-18.77	-17.46/-17.71	-19.02/-17.34
Θ(127.5°)	-18.58/-16.57	-14.65/-18.35	-17.82/-17.68	-18.28/-16.24	-12.66/-12.94	-13.85/-16.8	-18.14/-18.07	-17.89/-15.76	-18.16/-17.35	-18.51/-18.33	-15.15/-17.92	-18.16/-17.79	-19.5/-13.55	-18.84/-17.5	-17.96/-18.17	-12.3/-18.2	-18.57/-18.67	-17.03/-13.68	-17.64/-18.45	-17.78/-18.4	-17.88/-17.24	-14.64/-13.68	-18.52/-18.46	-17.95/-17.58
Θ(135°)	-19.13/-12.12	-10.21/-15.25	-17.97/-18.32	-10.92/-14.49	-19.21/-14.69	-19.06/-12.3	-18.19/-13.53	-18.57/-15.53	-17.98/-13.65	-16.18/-17.89	-15.85/-18.89	-19.35/-18.26	-19.08/-19.12	-18.38/-17.7	-18.38/-12.27	-18/-17.15	-18.06/-19.12	-13.57/-18.42	-18.51/-17.31	-18.59/-18.9	-17.71/-15.73	-12.37/-15.08	-15.14/-19.02	-17.8/-17.62
Θ(142.5°)	-16.93/-15.44	-11.22/-13.44	-18.37/-18.61	-18.14/-17.69	-18.37/-18.71	-13.35/-15.37	-18.73/-19.39	-19.17/-18.88	-15.39/-11.34	-14.93/-18.24	-16.38/-17.86	-17.91/-18.71	-16.92/-18.08	-18.47/-18.11	-18.4/-18.6	-11.78/-18.47	-18.27/-17.83	-15.33/-18.4	-18.18/-17.64	-18.73/-18.08	-17.65/-17.52	-18.15/-16.5	-18.25/-18.74	-18.87/-18.91
Θ(150°)	-14.75/-13.14	-14.04/-17.53	-18.43/-16.08	-15.22/-12.62	-15.5/-17.57	-18.11/-18.53	-18.11/-19.07	-18.82/-19.07	-12.99/-9.95	-14.31/-18.43	-17.06/-17.38	-16.71/-18.56	-18.36/-18.89	-12.56/-18.49	-16.93/-18.19	-18.64/-17.55	-17.68/-17.71	-19.1/-17.81	-18.85/-18.85	-17.27/-18.49	-17.57/-16.46	-15.18/-14.22	-17.54/-18.03	-18.25/-15.64
Θ(157.5°)	-18.57/-17.22	-16.05/-14.95	-14.28/-16.61	-19.2/-18.27	-17.84/-18.43	-18.59/-18.24	-19.01/-14.78	-15.07/-18.21	-16.17/-12.28	-13.58/-18.08	-17.82/-15.64	-15.48/-18.37	-17.29/-18.63	-17.89/-17	-18.32/-19.4	-17.53/-16.79	-18.9/-17.97	-17.62/-19.16	-19.21/-17.84	-18.42/-17.11	-18.05/-18.31	-18.85/-17.51	-18.89/-16.65	-14.9/-16.83
Θ(165°)	-18.25/-17.63	-16.92/-18.42	-17.85/-19.03	-18.32/-18.34	-16.55/-15.7	-18.51/-18.27	-18/-19.01	-18.79/-18.8	-17.59/-18.28	-17.48/-17.67	-17.51/-18.64	-18.42/-17.4	-17.88/-18.43	-17.67/-18.53	-19.06/-19.07	-17.89/-19.34	-19.19/-17.62	-16.83/-16.01	-18.42/-19.44	-17.87/-17.29	-17.41/-18.46	-17.9/-18.71	-17.56/-17.73	-17.48/-18.12
Θ(172.5°)	-18.33/-17.85	-18.23/-19.36	-18.53/-19.36	-18.05/-17.6	-18.4/-18.68	-17.69/-18.14	-18.47/-18.1	-17.96/-17.23	-17.96/-17.87	-17.79/-18	-18.83/-17.65	-19.27/-19.39	-17.68/-18.3	-18.38/-19.28	-18.19/-18.66	-18.76/-18.06	-19.3/-18.26	-17.19/-15.68	-16.12/-16.54	-15.32/-15.23	-14.67/-14.51	-15.46/-16.67	-18.14/-18.71	-18.12/-17.87
Θ(180°)	-18.28/-18.07	-18.73/-18.13	-19.01/-19.16	-18.13/-18.25	-18.54/-18.96	-19.15/-18.66	-17.94/-18.87	-18.56/-17.88	-18.19/-18.95	-18.19/-18.93	-19.16/-17.21	-18.68/-18.64	-17.52/-17.2	-17.79/-17.96	-18.85/-18.3	-18.25/-18.17	-18.78/-18.51	-19.04/-18.09	-19.16/-17.54	-17.4/-18.63	-17.88/-19.12	-17.25/-18.47	-18.6/-18.72	-18.81/-18.64
Freq(Hz)	6.995GPol.	Phi/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°)	8/6.85	5.2/3.19	0.14/-5.08	-18.4/-9.33	-2.4/1.37	3.75/5.6	7/8.14	8.95/9.61	10.07/10.33	10.47/10.5	10.38/10.04	9.54/8.73	7.72/6.51	4.84/2.72	-1.14/-7.43	-18.93/-5.52	-0.4/2.83	5.15/6.79	8.07/9.04	9.79/10.33	10.26/10.52	10.4/10.5	10.27/9.83	9.75/8.94
Θ(7.5°)	7.09/6.2	4.56/2.59	-0.41/-5.89	-17.85/-7.08	-1.19/2.06	4.27/5.75	6.91/7.78	8.45/8.99	9.38/9.48	9.61/9.46	9.18/8.66	7.92/7.06	5.87/4.52	2.71/0.69	-2.6/-8.75	-18.19/-7.58	-1.93/1.53	3.88/5.57	6.81/7.72	8.41/8.86	9.24/9.42	9.46/9.42	9.16/8.8	8.39/7.76
Θ(15°)	4.994.28	3.35/2.84	0.94/-2.88	-11.24/-13.66	-4.93/-0.61	1.98/3.1	4.94/6.03	7.04/7.94	8.54/8.77	8.86/8.71	8.33/7.85	7.19/6.27	5.70/5.53	1.26/-1.51	-4.9/-10.48	-18.82/-12.03	-5.86/-1.68	1.37/3.57	4.94/5.94	6.52/7	7.58/8.14	8.55/8.66	8.38/7.89	7.13/6.09
Θ(22.5°)	2.990.45	-2.15/-3.9	-5.14/-7.24	-10.72/-15.64	-18.54/-4.07	0.722.54	2.693.36	4.896.09	6.28/6	5.575.11	4.854.16	3.32/1.92	-0.3/-2.74	-5.28/-7.95	-8.91/-11.37	-18.02/-15.65	-7.42/-4.3	-2.75/-1.41	0.02/1.74	3.66/5.51	6.62/7.17	7.31/7	6.74/6.56	5.934.78
Θ(30°)	1.83/-0.46	-2.92/-4.9	-8.51/-18.31	-13.61/-11.86	-17.67/-6.28	-1.18/-0.42	-1.12/0.97	3.43/5.8	2.28/2.19	2.95/2.42	1.04/-0.05	-0.65/-0.89	-2.41/-5.33	-9.01/-11.91	-15.71/-18.84	-17.32/-13.66	-13.08/-10.89	-8/-7.14	-6.79/-3.35	-0.21/-1.38	1.79/1.63	2.01/2.31	2.31/2.53	2.98/2.92
Θ(37.5°)	-0.86/-3.99	-8.68/-11.57	-13.4/-17.89	-18.64/-18.13	-14.25/-8.87	-6.88/-5.07	-4.29/-1.21	0.31/-2.08	-4.5/-3.46	-4.19/-5.37	-7.18/-5.07	-14.47/-13.76	-12.61/-18.45	-17.99/-15.46	-18.48/-18.67	-14.77/-11.21	-10.97/-9.1	-7.5/-8.7	-3.65/-1.93	-1.55/-0.98	-0.79/-0.84	-0.86/-0.29		
Θ(45°)	-5.31/-6.74	-9.8/-13.88	-14.39/-17.96	-17.83/-18.58	-15.36/-15.84	-15.45/-8.33	-9.31/-6.34	-5.47/-8.56	-10.01/-14.5	-10.88/-8.35	-12.97/-18.63	-15.45/-17.08	-14.02/-10.1	-8.27/-11.91	-19.19/-17.95	-18.65/-18.13	-18.44/-18.48	-18.12/-12.43	-9.91/-10.63	-10.58/-6.92	-5.17/-6.09	-5.4/-4.5	-3.61/-3.13	-2.85/-3.22
Θ(52.5°)	-10.26/-18.36	-16.78/-18.7	-19.03/-17.66	-18.29/-17.8	-17.75/-18.81	-14.08/-11.81	-12.09/-7.01	-8.5/-13.73	-9.74/-13.42	-14.74/-17.74	-13.44/-9.84	-15.53/-18.42	-16.84/-18.75	-17.35/-11.65	-18.04/-12.09	-19.26/-14.34	-15.02/-18.41	-12.92/-17.49	-11.25/-11.45	-10.83/-11.71	-14.93/-13.11	-9.36/-7.8	-7.28/-6.83	-4.99/-5.28
Θ(60°)	-10.45/-18.23	-16.4/-18.49	-17.87/-18.26	-15.86/-17.77	-16.25/-17.64	-13.84/-14.18	-11.51/-7.8	-12.59/-18.59	-12.68/-6.2	-6.47/-5.9	-11.31/-12.26	-12.72/-16.21	-17.03/-14.03	-15.76/-17.01	-13.17/-18.88	-18.52/-15.66	-17.92/-18.95	-12.48/-17.72	-12.11/-19.15	-12.08/-10.37	-7.58/-6.34	-7.81/-8.88	-7.92/-6.5	
Θ(67.5°)	-12.09/-18.64	-18.69/-18.22	-18.76/-18.53	-12.8/-17.91	-18.76/-18.02	-18.61/-13.17	-13.93/-11	-12.75/-10	-13.88/-8.24	-5.88/-8.35	-12.4/-18.08	-13.8/-14.88	-18.69/-16.48	-17.55/-17.59	-17.22/-16.63	-17.11/-11.78	-18.7/-14.09	-18.63/-13.92	-10.69/-16.97	-15.31/-12.56	-9.48/-4.93	-3.07/-3.95	-7.54/-8.56	-11/-8.27
Θ(75°)	-10.8/-17.74	-17.61/-18.7	-16.54/-17.93	-14.37/-18.85	-18.56/-18.73	-18.12/-17.46	-12.59/-13.71	-9.41/-9	-13.23/-14.97	-16.92/-13.48	-18.14/-18.05	-15.6/-17.58	-17.29/-17.58	-16.68/-18.75	-17.59/-16.57	-14.41/-10.33	-13.39/-10.55	-12.01/-14.87	-17.61/-9.08	-7.51/-2.17	-1.95/-2.82	-4.44/-7.48	-11.19/-10.35	
Θ(82.5°)	-9.33/-13.1	-18.36/-13.16	-16.45/-18.1	-19.52/-18.45	-18.02/-14.92	-18.91/-15.35	-11.97/-12.01	-9.07/-9.53	-6.95/-5.68	-6.47/-5.9	-11.31/-12.26	-14.73/-17.85	-15.76/-17.85	-16.09/-17.98	-11.75/-18.56	-19.2/-18.57	-12.48/-10.4	-10.09/-9.49	-12.47/-13.42	-18.51/-7.19	-4.6/-2.12	-1.93/-1.34	-3.35/-7.81	-10.21/-11.53
Θ(90°)	-10.16/-10.75	-18.13/-10.65	-17.72/-17.79	-18.31/-18.82	-18.03/-14.62	-18.61/-13.18	-11.48/-9.42	-9.78/-8.28	-4.36/-3.3	-2.77/-3.09	-5.37/-9.69	-12.06/-9.63	-11.26/-18.39	-16.02/-18.82	-12.98/-16.62	-18.78/-16.61	-17.95/-12.61	-11.66/-12.06	-8.78/-11.99	-17.26/-7.63	-5.08/-3.73	-1.78/-1.11	-4.17/-9	-7.7/-12.43
Θ(97.5°)	-10.84/-9.53	-16.16/-12.23	-17.77/-18.95	-17.63/-16.9	-18.54/-17.75	-18.68/-12.57	-10.23/-7.18	-13.99/-1.17	-5.97/-3.85	-1.82/-3.9	-5.11/-9.62	-15.75/-9.31	-9.26/-17.61	-15.84/-14.89	-15.56/-18.7	-18.16/-16.76	-17.51/-14.21	-13.25/-13.88	-8.94/-16.89	-18.84/-7.07	-4.46/-4.37	-1.97/-2.48	-6.54/-9.69	-7.62/-11.63
Θ(105°)	-9.82/-8.67	-15.39/-17.93	-18.01/-18.74	-16.41/-17.29	-17.05/-18.6	-19.04/-10.83	-9.77/-7.23	-11.8/-8.92	-11.47/-8.77	-2.17/-3.78	-8.45/-8.52	-14.73/-13.17	-8.45/-15.28	-17.5/-12.03	-19.35/-18.29	-17.76/-17.79	-17.97/-11.72	-11.87/-13.35	-10.99/-15.43	-16.72/-7.39	-6.15/-6.96	-2.08/-4.06	-10.68/-11.6	-9.57/-11.55
Θ(112.5°)	-9.01/-9.28	-18.57/-17.55	-19.25/-18.72	-17.28/-18.09	-14.09/-15.64	-17.5/-16.2	-9.52/-8.55	-9.31/-10.64	-11.04/-8.39	-2.66/-5.11	-8.48/-13.68	-12.54/-13.77	-11.09/-18.77	-19.15/-17.61	-17.87/-18.73	-17.58/-18.86	-18.26/-12.43	-14.08/-11.85	-9.94/-15.74	-13.87/-5.45	-6.76/-4.52	-3.84/-6.07	-13.52/-11.76	-11.46/-13.56
Θ(120°)	-9/-9.51	-18.71/-18.63	-18.86/-18.32	-16.5/-18.32	-16.49/-16.78	-15.42/-14.34	-8.74/-9.7	-5.96/-8.19	-15.67/-7.39	-5.79/-5.99	-6.18/-16.91	-11.25/-13.09	-13.96/-13.97	-17.87/-19.02	-18.8/-18.17	-16.47/-16.69	-13.5/-15.03	-11.77/-10.3	-14.22/-13.87	-13.66/-6.01	-6.54/-6.16	-7.53/-7.84	-13.16/-12.99	-13.19/-12.12
Θ(127.5°)	-10.99/-10.37	-18.52/-18.42	-17.77/-17.86	-16.63/-17.51	-17.66/-15.82	-15.06/-9.22	-10.08/-19.13	-9.34/-11.42	-15.77/-9.51	-8.17/-6.67	-6.81/-16.85	-9.64/-13.22	-19.13/-13.98	-16.86/-18.26	-17.5/-14.56	-18.14/-9.06	-12.45/-18.45	-10.22/-9.65	-14.79/-10.57	-12.32/-9.3	-6.14/-4.94	-9.51/-15.16	-12.14/-13.65	-16.04/-16.7
Θ(135°)	-13.39/-13.67	-18.37/-17.46	-15.85/-17.57	-16.67/-18.51	-17.69/-16.05	-18.75/-10.86	-12.21/-14.45	-9.58/-11.49	-14.69/-12.64	-9.1/-8.72	-8.16/-11.74	-15.26/-9.87	-15.78/-18.18	-18.39/-18.32	-19.29/-17.36	-13.73/-11.13	-18.82/-16.64	-12.15/-11.43	-17.63/-8.84	-9.19/-11.09	-12.06/-10.05	-8.11/-10.7	-14.58/-13.64	-18.63/-18.14
Θ(142.5°)	-18.02/-14.19	-17.73/-19	-18.18/-17.52	-18.51/-18.45	-15.58/-18.96	-17.18/-13.92	-14.43/-11.04	-8.56/-10.46	-16.19/-18.12	-10.78/-9.7	-7.69/-13.56	-16.77/-12.66	-14.83/-17.39	-17.41/-12.37	-17.68/-18.49	-18.04/-18.54	-18.27/-17.98	-18.22/-18.11	-19.08/-10.57	-16.93/-13.78	-16.51/-13.76	-9.86/-10.35	-13.56/-18.45	-18.51/-17.32
Θ(150°)	-17.58/-17.97	-16.51/-16.44	-18.73/-18.26	-18.62/-18.39	-18.42/-18.15	-18.22/-17.31	-18.57/-17.51	-13.5/-13.11	-17.82/-18.04	-17.61/-14.46	-10.11/-11	-19.01/-13.23	-14.67/-15.87	-17.95/-18.56	-18.81/-17.92	-19.								



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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	5.33	2.89	3.35	4.93	3.56	4.96	3.88	3.55	4.32
Ant. 2 Max Gain (dBi)	3.15								
Ant. 3 Max Gain (dBi)	4.25								
Ant. 4 Max Gain (dBi)	3.77								
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/52.5/285	Theta/75/112.5	Theta/75/112.5	Theta/75/120	Theta/60/180	Theta/82.5/247.5	Theta/75/105	Theta/75/112.5	Theta/82.5/105
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/60/157.5								
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/67.5/157.5								
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/52.5/270								

Gain Result

Freq(Hz)	2.45GPol.	PhiAnt.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°)	-15.14-14.45	-14.05(-13.74)	-13.54(-13.47)	-13.33(-12.87)	-12.57-12.55	-12.88(-13.05)	-12.84(-12.45)	-12.34(-12.88)	-13.68(-15.05)	-16.6(-18.26)	-18.16(-18.71)	-17.37(-17.89)	-18.83(-18.54)	-19.13(-18.91)	-18.11(-16.88)	-16.23(-16.08)	-16.16(-16.66)	-18.04(-19.71)	-17.93(-19.25)	-19.18(-18.6)	-18.25(-17.97)	-19.07(-18.25)	-18.61(-18.15)	-17.56(-16.65)		
Θ(7.5°)	-9.47(-9.84)	-10.57(-11.54)	-12.71(-13.64)	-13.95(-13.58)	-13.08(-12.96)	-12.81(-12.59)	-12.42(-12.4)	-12.74(-13.06)	-13.48(-13.53)	-13.36(-12.96)	-12.77(-13.47)	-15.05(-16.88)	-15.84(-18.49)	-18.19(-18.93)	-17.91(-19.23)	-16.24(-14.22)	-13.26(-13.38)	-14.36(-19.44)	-17.02(-18.44)	-17.88(-18.95)	-17.96(-15.67)	-13.94(-12.03)	-10.63(-9.83)	-9.28(-9.82)		
Θ(15°)	-6.37(-6.76)	-7.82(-9.5)	-12.14(-15.45)	-16.48(-14.15)	-12.07(-14.7)	-10.05(-9.74)	-10.04(-10.76)	-12.04(-13.43)	-13.68(-12.79)	-11.61(-10.34)	-9.34(-9.8)	-8.98(-9.4)	-11.5(-14.57)	-18.53(-18.62)	-14.34(-11.06)	-9.29(-8.55)	-9.34(-10.75)	-13.16(-17.48)	-18.57(-18.4)	-16.89(-13.05)	-10.6(-9.84)	-7.75(-7.08)	-6.58(-6.26)			
Θ(22.5°)	-5.62(-5.82)	-7.21(-7.9)	-11.88(-17.52)	-17.97(-16.28)	-12.07(-14.7)	-8.99(-8.86)	-9.36(-10.29)	-11.8(-13.74)	-14.54(-13.48)	-12.97(-11.23)	-10.59(-10.31)	-10.16(-9.45)	-8.67(-8.59)	-9.94(-13.46)	-10.09(-17.09)	-11.08(-7.93)	-6.31(-5.81)	-6.26(-7.63)	-10.36(-15.2)	-19.1(-19.64)	-13.65(-10.62)	-8.9(-8.01)	-7.53(-7.29)	-7.06(-6.76)		
Θ(30°)	-9.02(-9.9)	-7.65(-9.18)	-10.05(-14.3)	-18.04(-19.26)	-13.8(-11.45)	-10.69(-11.09)	-11.87(-12.36)	-12.93(-14.1)	-15.13(-14.96)	-13.78(-12.82)	-12.95(-14.36)	-15.23(-13.38)	-11.05(-9.72)	-9.62(-11.4)	-17.9(-17.37)	-11.12(-6.88)	-4.71(-3.92)	-4.1(-5.16)	-7.46(-11.59)	-18.25(-15.46)	-10.81(-8.41)	-7.56(-7.66)	-8.26(-8.3)	-9.44(-9.27)		
Θ(37.5°)	-13.69(-10.85)	-9.01(-8.2)	-8.58(-10.43)	-13.32(-16.52)	-16.33(-14.87)	-14.6(-16.56)	-16.47(-15.65)	-14.92(-15.23)	-17.72(-18.25)	-18.43(-16.11)	-17.05(-18.94)	-18.16(-17.3)	-13.71(-11.4)	-10.24(-11.04)	-16.04(-17.94)	-11.26(-5.67)	-4.35(-3.47)	-3.53(-4.46)	-6.56(-10.4)	-14.69(-11.68)	-8.45(-7.1)	-7.19(-8.41)	-10.47(-12.82)	-14.56(-14.59)		
Θ(45°)	-17.81(-15.06)	-11.93(-9.56)	-8.33(-8.58)	-10.42(-14.58)	-18.52(-17.93)	-18.12(-18)	-15.67(-15.81)	-16.6(-15.72)	-16.41(-18.9)	-17.97(-18.83)	-19.12(-18.89)	-18.77(-15.98)	-13.53(-11.76)	-10.47(-10.1)	-12.16(-17.95)	-15.01(-7.93)	-5.12(-4.08)	-3.97(-4.52)	-6.13(-9.33)	-12.48(-9.67)	-17.14(-6.64)	-17.77(-10.57)	-15.28(-18.26)	-18.71(-17.78)		
Θ(52.5°)	-14.16(-14.56)	-15.58(-12.29)	-9.54(-8.18)	-8.89(-12.21)	-18.55(-18.69)	-18.55(-16.87)	-15.93(-17.4)	-17.93(-17.48)	-16.75(-18.79)	-18.68(-18.22)	-18.34(-18.66)	-17.49(-15.55)	-15.34(-14.69)	-13.84(-13.5)	-14.93(-17.54)	-16.46(-9.26)	-6.72(-6.08)	-5.98(-5.95)	-6.65(-8.91)	-11.73(-9.37)	-6.94(-7.9)	-8.75(-13.03)	-17.66(-17.18)	-17.56(-15.27)		
Θ(60°)	-11.26(-11.39)	-15.28(-18.25)	-11.42(-8.55)	-8.8(-11.51)	-16.5(-17.15)	-13.34(-10.74)	-11.06(-14.53)	-17.62(-18.16)	-17.86(-19.04)	-18.82(-13.39)	-19.42(-18.44)	-16.76(-17.01)	-17.72(-18.1)	-18.11(-16.59)	-14.14(-16.45)	-18.08(-13.66)	-10.28(-10.11)	-10.21(-8.71)	-7.93(-9.09)	-11.55(-10.15)	-7.81(-7.61)	-10.07(-16.07)	-18.31(-17.38)	-14.76(-12.51)		
Θ(67.5°)	-15.55(-10.08)	-12.88(-17.77)	-15.46(-10.64)	-10.52(-14.2)	-16.63(-18.35)	-11.76(-8.77)	-9.2(-12.62)	-16.62(-16.94)	-17.51(-17.11)	-17.27(-18.99)	-18.26(-18.74)	-17.37(-18.05)	-17.96(-19.16)	-18.1(-18.35)	-15.36(-16.95)	-18.77(-17.58)	-14.16(-15.67)	-14.54(-10.23)	-8.46(-9.12)	-11.52(-11.49)	-9.48(-9.67)	-13.68(-18.56)	-18.48(-18.93)	-18.11(-12.58)		
Θ(75°)	-12.32(-16.04)	-11.64(-16.46)	-15.1(-10.52)	-11.31(-17.88)	-17.91(-18.64)	-10.7(-7.41)	-7.71(-10.2)	-14.02(-12.5)	-12.71(-12.15)	-12.31(-15.06)	-18.34(-18.1)	-16.24(-14.29)	-15.24(-18.1)	-17.93(-18.3)	-16.37(-14.22)	-18.46(-10.62)	-18.55(-10.68)	-17.99(-12.01)	-9.39(-9.41)	-11.85(-18.27)	-11.02(-11.31)	-14.78(-16.28)	-13.49(-14.41)	-18.74(-16.81)		
Θ(82.5°)	-14.83(-11.78)	-11.58(-14.79)	-13.65(-13.9)	-10.10(-17.95)	-18.1(-18.78)	-9.67(-6.23)	-6.47(-8.72)	-9.86(-10.6)	-11.1(-12.24)	-14.38(-19.1)	-18.13(-17.66)	-16.27(-18.12)	-18.88(-17.48)	-16.71(-15)	-19.06(-17.65)	-18.78(-17.28)	-17.77(-13.9)	-10.18(-9.68)	-12.42(-16.85)	-14.18(-13.71)	-16.31(-15.6)	-14.1(-15.29)	-18.56(-18.24)			
Θ(90°)	-18.08(-13.66)	-11.57(-13.79)	-14.65(-10.13)	-11.25(-10.69)	-18.57(-16.39)	-11.11(-8.02)	-9.39(-9.46)	-9.35(-8.66)	-9.52(-11.58)	-14.14(-15.9)	-17.51(-19.5)	-19.21(-18.97)	-17.93(-18.72)	-18.28(-18.81)	-18.2(-16.54)	-13.86(-18.63)	-18.68(-19.22)	-17.92(-17.15)	-11.93(-10.56)	-12.55(-18.33)	-18.34(-16.75)	-17.63(-17.26)	-17.21(-17.42)	-19.32(-18.17)		
Θ(97.5°)	-16.22(-14.54)	-12.23(-13.22)	-14.08(-10.4)	-11.51(-18.46)	-18.67(-12.89)	-8.12(-6.33)	-7.28(-9)	-8.43(-8.17)	-9.85(-12.49)	-14.69(-10.72)	-18.16(-18.27)	-17.01(-17.92)	-17.61(-15.6)	-15.28(-18.9)	-17.92(-16.66)	-18.05(-18.74)	-18.51(-18.06)	-18.71(-18.02)	-17.26(-14.72)	-16.73(-18.14)	-17.76(-17.56)	-16.03(-16.78)	-19.01(-17.18)	-17.28(-18.5)		
Θ(105°)	-14.19(-12.83)	-11.41(-11.99)	-15.05(-13.39)	-14.67(-16.1)	-14.19(-14.14)	-9.96(-7.5)	-8.03(-7.24)	-8.51(-11.39)	-15.33(-18.17)	-17.79(-16.7)	-16.41(-17.94)	-17.72(-17.73)	-17.69(-18.85)	-16.64(-18.97)	-17.78(-17.73)	-17.69(-18.85)	-18.11(-17.68)	-18.35(-15.47)	-14.92(-17.99)	-19.13(-17.71)	-19.01(-19.06)	-17.88(-14.91)	-13.57(-17.9)			
Θ(112.5°)	-14.26(-15.39)	-13.94(-11.62)	-12.88(-14.88)	-16.82(-16.65)	-12.01(-11.65)	-10.01(-8.43)	-9.1(-10.24)	-9.77(-9.78)	-11.77(-14.53)	-15.32(-17.1)	-15.25(-13.69)	-14.24(-14.23)	-14.57(-13.89)	-16.91(-17.89)	-18.66(-19)	-17.3(-19.29)	-19.02(-17.47)	-17.96(-19.25)	-18.48(-19.16)	-15.97(-17.58)	-15.88(-18.09)	-19.14(-18.5)	-17.72(-13.5)	-10.73(-12.36)		
Θ(120°)	-10.72(-12.17)	-18.76(-16.54)	-15.05(-14.96)	-16.54(-18.8)	-14.89(-13.27)	-12.41(-10.97)	-10.94(-10.63)	-9.55(-10.06)	-13.35(-18.52)	-18.42(-18.09)	-17.67(-17.44)	-16.73(-18.6)	-18.46(-14.12)	-14.02(-18.48)	-18.94(-18.98)	-18.15(-18.88)	-19.01(-19.59)	-16.44(-17.29)	-18.38(-18.33)	-18.13(-17.69)	-17.96(-16.75)	-14.81(-16.64)	-18.43(-19.03)	-13.38(-12.44)		
Θ(127.5°)	-12.02(-12.07)	-16.91(-17.07)	-19.01(-19.07)	-15.97(-16.61)	-15.27(-13.76)	-14.62(-15.22)	-16.49(-16.1)	-12.29(-11.3)	-13.55(-18.06)	-18.06(-18.7)	-17.08(-14.14)	-14.48(-18.26)	-18.86(-17.93)	-18.87(-19.13)	-19.15(-18.24)	-18.53(-17.33)	-17.82(-18.93)	-18.1(-19.69)	-18.51(-18.09)	-18.52(-18.56)	-15.58(-15.57)	-16.75(-19.09)	-18.61(-18.84)			
Θ(135°)	-19.43(-18.1)	-18.33(-18.31)	-18.18(-18.59)	-18.75(-18.14)	-18.46(-16.13)	-14.95(-15.59)	-17.47(-18.1)	-18.16(-17.78)	-19.07(-18.48)	-17.34(-17.63)	-17.97(-19.29)	-17.09(-18.68)	-17.54(-15.91)	-14.58(-16.39)	-18.19(-18.46)	-17.42(-19.16)	-15.74(-15.47)	-17.79(-18.39)	-17.72(-17.85)	-16.1(-18.3)	-17.85(-18.84)	-18.15(-17.5)	-16.1(-15.61)	-18.94(-17.58)		
Θ(142.5°)	-18.37(-18.36)	-18.7(-18.16)	-18.11(-17.61)	-18.79(-18.68)	-17.49(-18.72)	-18.41(-17.62)	-18.73(-18.04)	-17.63(-19.36)	-18.03(-18.98)	-18.11(-17.58)	-18.67(-19.87)	-18.76(-17.89)	-18.19(-16.64)	-15.82(-18.37)	-18.04(-18.3)	-18.1(-17.48)	-14.11(-14.04)	-16.87(-17.66)	-19.06(-18.94)	-18.6(-18.98)	-18.3(-18.38)	-18.07(-17.82)	-17.82(-16.56)	-17.58(-18.87)		
Θ(150°)	-19.17(-18.16)	-17.84(-16.48)	-17.54(-18.79)	-18.15(-16.74)	-17.84(-18.95)	-17.9(-17.51)	-17.11(-18.74)	-16.84(-16.4)	-17.41(-17.82)	-18.72(-17.42)	-19.19(-18.45)	-17.18(-18.54)	-19.72(-18.19)	-19.57(-18.4)	-17.64(-18.45)	-18.11(-17.65)	-15.34(-14.66)	-16.1(-19.2)	-17.97(-17.4)	-18.06(-18.14)	-19.51(-17.77)	-18.33(-18.94)	-18.48(-18.89)	-18.7(-18.32)		
Θ(157.5°)	-17.77(-17.55)	-17.77(-18.51)	-18.82(-18.99)	-17.15(-15.48)	-18.53(-17.68)	-18.05(-19.36)	-17.14(-15.28)	-14.28(-14.38)	-15.62(-17.62)	-19.01(-18.64)	-18.59(-17.95)	-17.54(-18.89)	-17.12(-18.59)	-18.41(-18.94)	-18.07(-18.89)	-18.95(-18.94)	-18.44(-17.96)	-18.24(-19.33)	-18.48(-18.26)	-18.65(-18.99)	-17.83(-16.68)	-17.07(-18.69)	-18.56(-18.66)	-17.93(-19.32)		
Θ(165°)	-17.44(-17.52)	-17.91(-17.78)	-17.46(-17.81)	-15.74(-14.77)	-14.93(-16.06)	-17.83(-19.58)	-17.63(-18.62)	-18.56(-17.92)	-17.75(-17.22)	-16.37(-16.16)	-16.74(-17.96)	-18.89(-19.3)	-17.65(-18.64)	-18.36(-17.84)	-18.44(-17.51)	-18.61(-18.56)	-18.73(-17.64)	-18.65(-17.41)	-17.73(-18.68)	-17.98(-18.21)	-18.13(-18.64)	-18.17(-18.24)	-18.7(-19.12)	-19.08(-18.87)		
Θ(172.5°)	-15.17(-15.33)	-15.13(-14.87)	-13.99(-13.28)	-12.99(-13.32)	-13.96(-15.15)	-16.77(-16.58)	-18.36(-17.91)	-18.36(-17.91)	-18.24(-18.77)	-19.23(-18.97)	-18.78(-18.31)	-18.63(-18.3)	-17.72(-18.31)	-19.08(-17.94)	-18.16(-18.12)	-18.68(-18.95)	-17.57(-18.26)	-19.12(-18.14)	-18.34(-17.29)	-18.43(-18.03)	-18.54(-17.95)	-17.45(-16.92)	-14.93(-15.24)			
Θ(180°)	-18.57(-16.31)	-14.08(-14.13)	-14.26(-14.22)	-12.87(-13.35)	-16.39(-17.47)	-18.57(-17.54)	-18.31(-19.2)	-19.15(-19.03)	-18.43(-17.69)	-19.03(-19.1)	-19.45(-18.04)	-18.23(-18.65)	-17.73(-18.95)	-17.91(-19.03)	-17.32(-17.84)	-19.21(-18.13)	-18.62(-17.62)	-18.04(-17.22)	-18.81(-17.11)	-18.34(-17.48)	-18.91(-17.43)	-16.61(-16.1)	-15.88(-15.62)	-14.04(-16.37)		
Freq(Hz)	2.45GPol.	ThetaAnt.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°)	-16.84(-16.67)	-16.88(-17.28)	-17.97(-18.8)	-17.66(-17.99)	-18(-18.89)	-17.78(-19.11)	-18.68(-18.96)	-19.18(-18.15)	-16.82(-15.51)	-14.28(-13.1)	-12.63(-12.89)	-13.52(-14.35)	-15.04(-15.49)	-16.51(-18.3)	-19.13(-18.42)	-18.63(-17.34)	-16.82(-16.57)	-15.91(-14.83)	-13.83(-13.49)	-13.52(-13.92)	-14.42(-14.91)	-15.35(-15.77)	-16.06(-16.3)	-16.56(-16.56)		
Θ(7.5°)	-18.9(-16.26)	-16.66(-12.21)	-11.46(-11.27)	-11.45(-11.86)	-12.65(-13.61)	-14.65(-15.46)	-15.73(-15.32)	-14.15(-12.98)	-12.18(-11.9)	-11.61(-10.94)	-10.13(-9.31)	-8.65(-8.34)	-8.1(-7.94)	-8.02(-8.17)	-8.53(-9.19)	-10.22(-11.5)	-13.47(-16.29)	-18.55(-18.05)	-17.36(-17.92)	-17.19(-18.14)	-17.65(-18.47)	-18.9(-19.44)	-18.65(-17.74)	-18.1(-18.24)		
Θ(15°)	-9.33(-7.62)	-6.22(-5.38)	-4.96(-4.88)	-5.14(-5.86)	-6.88(-6.36)	-10.16(-11.94)	-12.12(-11.96)	-11.39(-9.92)	-9.18(-9.14)	-8.5(-7.6)	-6.69(-5.82)	-5.01(-4.3)	-3.37(-2.57)	-2.2(-2.3)	-2.89(-3.22)	-4.86(-6.34)	-7.84(-9.22)	-10.37(-11.07)	-11.1(-12.33)	-13.15(-14.2)	-15.22(-15.27)	-14.51(-13.32)	-11.91(-10.44)			
Θ(22.5°)	-6.8(-5.8)	-4.72(-3.91)	-3.35(-3.2)	-3.37(-4)	-4.99(-6.36)	-8.02(-10.08)	-12.41(-14)	-12.13(-9.39)	-7.26(-6.08)	-5.65(-5.35)	-4.93(-4.31)	-3.74(-3.45)	-3.15(-2.56)	-1.6(-0.66)	-0.07(0.03)	-0.36(-1)	-1.73(-2.38)	-2.65(-2.59)	-2.42(-2.32)	-2.38(-2.75)	-3.39(-4.29)	-5.31(-6.22)	-6.89(-7.33)	-7.54(-7.31)		
Θ(30°)	-6.28(-6.25)																									



Radiated Composite Gain Data of Scan/BT LE

Appendix A.3

Θ(22.5°)	-17.9/-18.35	-15.73/-12.77	-9.13/-6.11	-3.02/-0.53	0.63/0.99	0.95/0.7	0.52/0.28	-0.04/-0.46	-0.79/-0.8	-0.67/-0.91	-1.91/-4.95	-12.14/-16.83	-8.3/-4.18	-2.85/-2.81	-3.39/-4.44	-4.97/-4.78	-4.65/-4.24	-3.81/-3.76	-3.77/-3.54	-3.4/-3.07	-3.21/-3.95	-5.03/-6.37	-7.43/-10.21	-13.56/-17.72
Θ(30°)	-12.06/-14.34	-16.46/-15.97	-14.85/-11.24	-7.06/-3.75	-2.51/-1.95	-1.19/-0.58	-0.29/-0.4	-0.86/-1.7	-2.4/-1.57	-0.28/-0.2	-0.25/-2	-5.81/-13.43	-13.02/-6.67	-4.76/-4.89	-4.4/-3.28	-3.09/-4.07	-5.22/-5.34	-4.4/-3.12	-2.67/-2.96	-3.34/-3	-2.4/-2.28	-3.85/-6.11	-7.27/-9.3	-9.44/-10.5
Θ(142.5°)	-12.75/-15.29	-12.28/-13.95	-13.23/-10.57	-7.4/-5.28	-3.74/-2.21	-0.98/-0.08	-0.18/-0.24	-0.98/-1.61	-1.88/-0.88	0.38/0	-1.72/-5.74	-12.94/-17.64	-11.31/-8.34	-6.76/-5.39	-3.37/-1.59	-1.22/-1.95	-3.3/-6	-4.7/-9.5	-3.5/-2.89	-3.18/-2.74	-2.1/-2.54	-4.58/-6.86	-7.69/-7.88	-9.2/-11.98
Θ(45°)	-18.7/-10.46	-9.94/-10.6	-11.78/-10.94	-8.68/-7.84	-7.93/-7.79	-4.94/-0.98	0.94/0.73	-0.51/-1.23	-0.57/0.92	1.77/0.25	-3.59/-8.3	-9.34/-9.8	-11.68/-18.83	-14.83/-9.14	-6.52/-6.1	-3.35/-1.74	-1.45/-3.36	-8.35/-4.84	-3.78/-2.74	-3.48/-3.62	-3.4/-5.18	-10.38/-10.9	-6.63/-7.62	-10.94/-18.08
Θ(52.5°)	-10.28/-8.7	-11.55/-14.4	-14.54/-11.45	-7.16/-5.94	-8.49/-4.92	-6.43/-2.55	-0.6/-0.31	-1.75/-2.41	-0.36/0.33	-0.77/-3.16	-9.79/-18.71	-12.4/-11.37	-15.18/-11.41	-7.35/-7.71	-8.36/-9.68	-10.85/-8.44	-4.76/-4.94	-8.87/-15.62	-6.46/-2.7	-3.99/-5.37	-4.3/-6.96	-12.71/-12.02	-9.66/-10.44	-12.27/-12.64
Θ(60°)	-6.71/-9.35	-18.39/-19.08	-18.79/-12.42	-6.34/-3.34	-3.76/-3.77	-4.08/-3.81	-3.94/-4.57	-6.68/-4.99	-0.95/-0.72	-3.43/-7.46	-18.93/-15.24	-15.54/-18.72	-19.22/-14.86	-6.58/-7.1	-4.2/-2.74	-4.15/-7.08	-7.01/-6.71	-9.52/-15.98	-10.08/-3.92	-4.4/-6.89	-4.77/-6.95	-14.55/-14.22	-13.76/-13.66	-12.29/-11.64
Θ(67.5°)	-9.44/-14.49	-18.36/-18.4	-17.07/-12.34	-6.44/-3.6	-1.9/-1.55	-2.29/-2.89	-4.24/-6.68	-7.97/-5.1	-2.27/-3.55	-13.38/-17.85	-10.22/-9.05	-18.99/-14.1	-14.68/-14.16	-10.97/-9.87	-3.67/-1.97	-1.57/-3.74	-5.8/-5.86	-5.94/-8.44	-7.98/-3.89	-4.54/-8.7	-5.22/-5.77	-10.32/-10.93	-10.23/-16.69	-16.47/-11.77
Θ(75°)	-13.56/-12.71	-14.83/-14.06	-10.89/-10.55	-7.34/-5.92	-4.22/-2.86	-2.6/-2.87	-3.92/-4.95	-5.79/-5.31	-5.59/-5.96	-18.29/-10.69	-6.67/-6.35	-13.49/-18.87	-15.35/-15.78	-18.66/-15.58	-8.77/-3.16	-1.15/-3.1	-5.2/-5.02	-4.97/-5.92	-6.56/-3.63	-3.66/-9.13	-5.32/-4.92	-7.55/-7.63	-7.08/-11.34	-18.52/-18.52
Θ(82.5°)	-17.86/-13.55	-15.13/-13.37	-9.22/-9.32	-7.35/-7.08	-6.87/-5.57	-4.54/-3.65	-4.97/-5.4	-5.98/-6.32	-10.07/-10.17	-12.13/-6.76	-6.65/-11.11	-18.87/-13.03	-14.25/-17.3	-14.6/-11.14	-11.02/-6.65	-4.02/-5.12	-5.71/-5.29	-6.36/-7.36	-7.56/-5.81	-5.56/-8.95	-4.97/-4.12	-11.74/-10.25	-9.24/-14.68	-17.6/-19.43
Θ(90°)	-14.72/-13.3	-13.05/-11.51	-8.9/-6.2	-5.39/-9.88	-16.99/-8.17	-6.39/-6.69	-7.49/-5.93	-7.26/-6.12	-13.69/-18.51	-13.29/-6.65	-6.83/-13.89	-18.03/-17.54	-13.96/-10.72	-11.86/-7.35	-11.75/-13.33	-5.97/-7.89	-7.94/-5.1	-5.86/-6.6	-5.19/-6.2	-5.56/-6.88	-7.81/-5.89	-9.08/-10.27	-9.38/-12.5	-18.14/-19.38
Θ(97.5°)	-13.57/-11.42	-11.27/-12.13	-8.9/-5.54	-5.86/-12.79	-15.94/-8.34	-9.97/-10.81	-8.95/-8.61	-12.77/-7.35	-16.46/-18.99	-9.67/-6.87	-11.42/-18.25	-13.46/-18.91	-13.02/-10.65	-8.73/-7.82	-9.91/-10.25	-7/-8.2	-9.6/-9.5	-8.5/-9.08	-7.39/-7.51	-13.9/-8.94	-8.46/-7.44	-8.61/-12.79	-11.54/-12.79	-18.81/-18.63
Θ(105°)	-16.63/-13.4	-13.48/-16.37	-13.64/-6.84	-12.47/-16.02	-13.97/-10.11	-12.56/-11.47	-8.26/-11.5	-17.34/-7.43	-14.23/-18.48	-12.07/-6.82	-8.69/-12.21	-17.03/-16.15	-16.81/-8.85	-5.55/-7.09	-7.56/-11.31	-7.54/-6.97	-8.96/-18.97	-18.65/-9.59	-7.8/-11.79	-11.9/-10.83	-11.74/-10.25	-9.74/-13.74	-18.73/-9.96	-18.89/-16.45
Θ(112.5°)	-18.68/-17.74	-16.37/-17.35	-10.93/-5.38	-6.4/-10.59	-11.28/-11.13	-10.69/-8.57	-9.05/-19.14	-11.37/-8.65	-17.39/-13.63	-10.93/-17.93	-10.11/-8.17	-18.72/-15.44	-17.3/-8.52	-6.82/-7.67	-8.87/-12.34	-13.4/-6.24	-6.88/-17.38	-18.3/-17.8	-13.41/-16.28	-18.25/-15.59	-9.96/-12.05	-11.37/-10.28	-10.19/-9.96	-19.02/-17.76
Θ(120°)	-11.74/-17.97	-18.59/-18.21	-9.2/-8.05	-8.99/-7.78	-7.84/-9.84	-12.26/-16.42	-19.11/-15.62	-11.85/-13.14	-17.76/-10.92	-10.58/-14.28	-13.09/-8.41	-13.46/-18.91	-15.04/-12.31	-7.05/-8.66	-8.78/-13.12	-16.81/-10.14	-6.1/-7.11	-14.21/-17.7	-8.74/-8.63	-15.53/-15.52	-10.8/-11.27	-10.51/-11.27	-12.62/-16.01	-18.64/-17.49
Θ(127.5°)	-18.57/-17.97	-18.12/-19.03	-18.26/-14.32	-8.7/-8.46	-7.91/-10.92	-12.67/-18.97	-18.62/-11.67	-14.22/-18.19	-11.28/-11.9	-14.22/-18.19	-6.72/-9.12	-15.09/-19.02	-14.3/-12.22	-11.68/-11.68	-11.54/-16.01	-13.93/-15.87	-16.92/-9.74	-6.84/-10.84	-12.2/-6.33	-7.89/-17.89	-11.86/-15.02	-11.67/-9.2	-14.13/-11	-14.31/-13.58
Θ(135°)	-13.41/-16.52	-18.43/-12.89	-11.94/-10.05	-10.14/-11.84	-14.72/-18.49	-18.4/-16.22	-12.84/-18.9	-16.41/-13.25	-13.47/-12.85	-19.29/-11.79	-9.2/-10.87	-17.91/-13.27	-18.17/-11.63	-11.81/-13.27	-16.61/-13.95	-15.43/-16.21	-14.43/-14.66	-9.01/-7.86	-16.1/-15.04	-8.53/-11.9	-19.03/-12.43	-14.03/-17.01	-10.4/-14.34	-15.83/-9.17
Θ(142.5°)	-17.1/-13.1	-16.34/-14.97	-12.83/-10.82	-8.91/-8.87	-10.53/-12.96	-17.46/-18.67	-17.96/-14.74	-13.04/-11.71	-17.71/-16.16	-10.83/-11.5	-14.58/-16.43	-18.37/-19.06	-17.65/-17.29	-16.31/-17.59	-14.68/-12.17	-17.01/-15.99	-11.16/-10.56	-12.65/-16.53	-17.81/-18.99	-12.12/-14.74	-18.36/-18.87	-14.78/-15.37	-15.6/-18.8	-15.34/-17.7
Θ(150°)	-18.08/-12.05	-9.98/-9.51	-3.36/-6.65	-5.87/-7.52	-12.71/-15.51	-13.24/-15.23	-17.97/-18.07	-17.73/-16.93	-11.75/-10.59	-17.31/-10.79	-10.95/-17.43	-19.07/-10.41	-11.03/-14.57	-18.38/-18.22	-18.43/-19.46	-17.94/-18.06	-19.17/-17.26	-16.91/-15.69	-18.67/-16.33	-19.17/-12.24	-18.17/-18.42	-18.26/-17.33	-18.73/-17.53	-12.45/-15.73
Θ(157.5°)	-18.41/-11.74	-10.1/-12.37	-18.65/-17.78	-19.17/-18.21	-17.01/-13.04	-12.78/-13.55	-12.24/-12.03	-13.67/-15.58	-14.91/-13.91	-14.13/-15.12	-15.96/-14.05	-12.18/-12.33	-12.22/-12.74	-18.35/-18.33	-17.29/-15.42	-13.84/-13.68	-15.11/-18	-17.01/-15.8	-18.97/-18.87	-17.06/-15.99	-18.69/-19	-17.94/-19.37	-12.86/-10.61	-10.46/-14.27
Θ(165°)	-17.67/-18.56	-16.92/-17.02	-17.9/-18.17	-19.36/-18.96	-17.78/-18.81	-18.98/-15.46	-12.34/-10.28	-9.4/-9.56	-11.3/-13.14	-14.47/-16.57	-17.67/-17.95	-17.84/-18.09	-18.72/-17.01	-16.41/-19.45	-18.86/-18.44	-16.3/-17.88	-18.57/-18.52	-15.68/-13.57	-13.69/-15.48	-18.43/-18.18	-19.33/-18.08	-18.09/-19.01	-15.03/-12.26	-13.98/-18.48
Θ(172.5°)	-18.77/-14.91	-15.65/-16.62	-11.73/-11.28	-11.37/-11.44	-11.25/-10.17	-9.21/-8.25	-8.12/-8.25	-9.22/-10.63	-12.38/-13.49	-13.81/-14.56	-16.17/-18.92	-17.74/-18.07	-18.5/-16.03	-14.16/-12.23	-10.56/-9.75	-9/-9	-9.43/-10.22	-11.49/-12.06	-13.07/-14.14	-14.82/-13.91	-12.76/-13.67	-14.7/-17.92	-18.89/-17.64	-17.95/-18.23
Θ(180°)	-15.82/-14.89	-14.43/-13.56	-12.83/-11.8	-10.76/-10.95	-11.14/-11.74	-12.1/-12.85	-14.22/-15.44	-16.59/-18.31	-18.64/-18.42	-17.14/-17.76	-18.5/-17.6	-17.07/-16.02	-14.58/-14.42	-16.25/-16.87	-18.09/-18.62	-18.69/-17.66	-15.96/-15.47	-14.62/-14.21	-14.91/-15.74	-17.17/-17.68	-16.18/-15.59	-15.36/-14.98	-15.23/-16.57	-17.62/-17.67
Freq(Hz)	5.3GPol.	ThetaAnt. 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°)	-4.36/-4.11	-3.92/-3.89	-4.09/-4.42	-5.24/-6.49	-7.61/-9.05	-10.77/-13.41	-16.04/-18.44	-18.84/-18.97	-15.64/-12.87	-11.12/-9.24	-7.6/-6.49	-5.56/-4.73	-4.18/-3.95	-4.09/-3.83	-3.97/-4.23	-4.44/-5.05	-5.72/-6.6	-7.62/-9.09	-11.05/-14.35	-19.03/-19	-16.23/-12.72	-9.75/-8.19	-7.24/-6.03	-4.91/-4.26
Θ(7.5°)	-2.97/-2.32	-1.72/-1.49	-1.59/-1.93	-2.53/-3.59	-4.95/-6.55	-8.95/-12.28	-17.31/-18.04	-17.92/-13.32	-9.91/-7.31	-5.54/-3.83	-2.89/-2.5	-2.03/-1.88	-2.26/-2.66	-3.25/-3.53	-4.19/-4.69	-5.32/-6.11	-6.99/-8.05	-9.44/-11.71	-14.56/-19.22	-17.61/-19.34	-15.62/-13.09	-10.72/-9.1	-7.41/-6.2	-4.42/-3.35
Θ(15°)	-1.24/-1.08	-0.70/-58	-0.75/-3.77	-2.24/-3.79	-5.32/-7.77	-10.83/-14.48	-18.01/-17.64	-17.33/-13.41	-10.08/-7.17	-4.82/-9.23	-1.75/-0.82	-0.20/-0.2	0.09/-0.03	0.2/-0.77	-1.56/-2.3	-3.32/-4.78	-7.39/-10.76	-16.23/-18.47	-16.94/-11.07	-8.58/-6.78	-5.37/-4.98	-5.24/-5.2	-4.21/-3.08	-2.16/-2.02
Θ(22.5°)	-4.77/-6.05	-6.5/-5.85	-5.44/-4.73	-4.32/-4.98	-7.18/-11.3	-15.77/-15.95	-16.32/-15.06	-12.65/-9.21	-6.51/-4.88	-3.73/-3.19	-2.41/-1.48	-0.60/-3.36	-0.68/-1.8	-2.99/-3.84	-3.92/-3.25	-3.17/-4.14	-6.75/-11.31	-19.01/-15.7	-10.91/-9.93	-9.96/-8.9	-8.58/-9.52	-9.83/-8.2	-6.07/-4.24	-3.43/-4.03
Θ(30°)	-10.56/-9.6	-7.43/-5.89	-6.02/-6.62	-5.84/-6.52	-9.39/-11.79	-11.06/-10.04	-9.96/-11.48	-16.12/-11.75	-5.59/-6.63	-1.81/-2.48	-3.09/-3.57	-3.55/-2.89	-2.74/-3.22	-4.21/-5	-5.05/-5.19	-6.04/-7.76	-9.47/-12.07	-16.89/-13	-7.73/-6.14	-7.72/-11.4	-15.72/-15.98	-11.64/-12.32	-15.55/-18.59	-15.25/-10.84
Θ(37.5°)	-5.12/-5.28	-6.35/-6.87	-7.66/-10.2	-15.32/-14.23	-11.37/-10.46	-8.48/-6.66	-6.61/-8.14	-11.39/-18.13	-8.74/-3.35	-2.06/-1.22	-3.8/-2.71	-2.06/-1.42	-0.96/-1.86	-2.56/-2.67	-3.78/-4.85	-7/-10.41	-13.12/-13.2	-12.34/-12.84	-17.93/-10.84	-9.97/-13.71	-18.23/-16.67	-18.4/-18.17	-18.11/-16.47	-12.3/-8.23
Θ(45°)	-1.31/-1.74	-4.15/-7.28	-7.86/-8.6	-15.23/-16.54	-18.11/-19.38	-6.98/-3.81	-4.85/-8.61	-11.88/-16.62	-15.85/-7.31	-4.74/-4.36	-5.04/-3.18	-1.70/-0.8	0.54/-0.42	-0.63/-0.21	-0.54/-0.11	-1.53/-3.29	-7.07/-7.29	-4.91/-4.26	-7.71/-16.08	-6.69/-6.74	-8.52/-11.3	-19.08/-13.69	-9.12/-10.02	-9.97/-5.41
Θ(52.5°)	-2.37/-2.52	-4.4/-6.22	-6.25/-6.65	-8.02/-8.92	-9.93/-7.31	-3.42/-3.06	-8.56/-16.26	-10.94/-10.57	-9.19/-5.46	-4.35/-2.84	-2.45/-0.89	0.12/-1.06	0.54/-0.85	-0.95/0.02	0.47/0.11	0.38/-0.56	-3.29/-6.01	-5.45/-3.31	-5.77/-10.49	-4.35/-3.72	-4.22/-6.31	-15.7/-16.05	-11.73/-12.37	-12.22/-4.88
Θ(60°)	-2.67/-3.73	-4.8/-6.68	-4.21/-5.91	-5.02/-3.01	-2.16/-1.42	-1.1/-1.25	-4.26/-4.96	-1.37/-0.28	-2.11/-2.77	-2.87/-1.81	-0.26/0.55	0.73/0.78	-0.08/-0.64	-1.64/0.11	1.59/0.71	-0.09/0.07	-0.91/-3.77	-4.73/-4.08	-4.59/-9.47	-3.61/-18.3	-2.17/-3.98	-9.48/-7.58	-6.8/-0.84	-7.01/-2.91
Θ(67.5°)	-1.65/-5.05	-6.55/-6.16	-4.46/-8.88	-4.77/-1.77	1.06/0.74	0.0/-0.9	-2.18/-2.48	1.69/3.19	1.42/0.74	-1.77/-0.11	0.44/0.53	1.61/-3.												



Radiated Composite Gain Data of Scan/BT LE

Appendix A.3

Θ(67.5°)	-12.99/-6.45	-8.21/-11.53	-11.09/-7.68	-7.75/-8.75	-7.51/-9.32	-8.52/-6.97	-4.71/-9.64	-12.02/-7.75	-11.74/-11.95	-9.53/-13.92	-17.41/-15.06	-18.73/-18.67	-12.88/-8.54	-9.05/-12.39	-7.06/-5.91	-3.74/-4.68	-8.93/-14.69	-9.11/-5.68	-7.59/-18.6	-17.53/-12.15	-9.4/-8.57	-7.81/-10.12	-12.61/-10.46	-14.53/-18.92
Θ(75°)	-13.19/-8.62	-8.84/-13.72	-10.48/-7.14	-8.11/-7.96	-3.99/-4.78	-13.81/-6.94	-4.15/-10.4	-11.66/-8.44	-9.97/-9.05	-8.7/-13.53	-8.89/-8.85	-16.5/-18.93	-16.09/-8.87	-5.06/-7.98	-5.53/-4.41	-3.46/-2.32	-4.53/-10.92	-17.82/-7.12	-3.62/-10.29	-18.74/-9.66	-8.37/-8.43	-9.74/-10.32	-16.84/-13	-11.97/-18.59
Θ(87.5°)	-13.78/-7.52	-12.93/-17.2	-11.87/-8.89	-10.14/-5.66	-2.79/-2.97	-15.09/-7.56	-5.42/-10.25	-7.25/-6.63	-9.22/-6.39	-10.49/-8.65	-7.12/-9.41	-18.85/-15.47	-12.73/-7.85	-8.09/-9.23	-5.18/-6.69	-6.39/-3.42	-3.84/-8.34	-14.85/-10.79	-3.11/-7.31	-15.29/-8.34	-8.87/-9.98	-11.51/-15.04	-17.35/-19.4	-14.6/-18.49
Θ(90°)	-16.7/-7.96	-11.77/-19.31	-8.99/-12.33	-13.81/-4.17	-3.47/-3.93	-16.66/-7.31	-6.21/-11.44	-4.77/-7.9	-12.42/-10.64	-15.98/-6.82	-5.86/-6.92	-14.49/-18.54	-10.48/-10.25	-8.45/-9.27	-6.08/-7.24	-15.08/-9.91	-7.53/-7.71	-9.98/-17.52	-6.93/-6.52	-13.7/-7.76	-8.31/-10.47	-12.26/-17.61	-18.69/-18.66	-13.72/-18.03
Θ(97.5°)	-17.46/-10.86	-13.56/-15.1	-11.45/-19.55	-11/-3.95	-5.49/-6.53	-18.55/-7.16	-10.78/-19.9	-5.55/-10.41	-14.89/-16.32	-17.82/-5.84	-11.15/-9.52	-16.61/-15.34	-10.66/-15.1	-12.31/-10.95	-9.07/-9.53	-14.01/-17.97	-12.65/-11.1	-13.17/-13.33	-11.85/-9.51	-12.66/-8.12	-14.25/-13.18	-17.94/-18.68	-16.83/-14.73	-16.25/-19.23
Θ(105°)	-15.01/-12.16	-11.89/-12.25	-11.71/-13.46	-7.28/-4.87	-10.17/-17.38	-13.42/-8.29	-14.11/-12.92	-5.57/-9.58	-17.02/-16.31	-13.66/-6.38	-9.45/-12.58	-15.67/-14.71	-12.65/-12.58	-16.37/-9.23	-11.8/-8.18	-9.49/-11.59	-12.04/-10.05	-13.76/-12.52	-16.27/-10.76	-18.92/-18.14	-16.76/-17.33	-15.59/-16.65		
Θ(112.5°)	-18.52/-16.91	-12.06/-15.4	-18.81/-10.42	-5.79/-8.19	-17.28/-17.73	-13.17/-16.52	-17.8/-10.37	-8.49/-13.56	-19.03/-12.09	-10.16/-8.35	-11.07/-13.96	-16.18/-15.15	-10.32/-15.44	-11.48/-9.88	-10.91/-10.12	-8.44/-7.18	-8.83/-14.24	-18.58/-13.37	-13.2/-14.36	-17.12/-11.28	-14.33/-16.37	-17.69/-18.03	-16.24/-13.63	-18.2/-19.34
Θ(120°)	-19.27/-16.78	-16.14/-18.33	-17.83/-7.43	-7.25/-10.8	-15.72/-14.1	-15.92/-17.02	-10.55/-12.24	-12.05/-13.94	-18.72/-11.56	-6.35/-10.43	-10.38/-19.22	-14.61/-19.3	-15.58/-14.33	-10.42/-11.93	-8.94/-13.08	-13.86/-5.74	-5.78/-9.11	-11.34/-11.66	-12.26/-17.77	-19.64/-14.1	-11.67/-10.17	-17.25/-15.47	-13.67/-17.95	-12.73/-18.74
Θ(127.5°)	-15.39/-10.75	-17.64/-14.29	-12.14/-7.45	-8.77/-18.59	-17.33/-15.29	-16.11/-11.23	-10.26/-18.36	-19.23/-18.55	-17.98/-9.74	-7.53/-9.15	-19.01/-18.78	-15.5/-19.38	-14.02/-13.46	-14.29/-9.01	-12.45/-10.15	-12.92/-14.18	-10.08/-10.1	-10.45/-19.05	-13.14/-11.15	-15.95/-18.55	-11.97/-19.36	-8.64/-15.58	-13.04/-18.77	-17.88/-14.76
Θ(135°)	-18.17/-17.22	-17.51/-9.48	-9.43/-12.23	-12.46/-14.11	-16.02/-16.44	-16.19/-17.56	-18.79/-18.63	-19.01/-16.29	-13.91/-10.28	-10.37/-12.43	-11.63/-18.49	-18.7/-19.38	-15.77/-17.07	-11.04/-12.82	-10.72/-14.17	-9.43/-17.97	-18.16/-15.23	-11.17/-14.06	-14.88/-10.21	-11.47/-18.9	-16.62/-17.81	-18.72/-13.22	-18.23/-14.2	-16.96/-14.12
Θ(142.5°)	-18.95/-12.81	-11.07/-11.93	-14.71/-14.69	-16.83/-17.97	-18.97/-17.15	-16.14/-14.29	-14.05/-19.24	-14.15/-14.21	-12.93/-10.22	-13.71/-16.58	-18.05/-18.11	-17/-19.04	-10.35/-11.16	-10.86/-7.77	-11.27/-9.14	-11.89/-11.76	-12.45/-18.31	-14.74/-13.07	-16.31/-17.79	-18.16/-19	-15.72/-18.96	-16.24/-18.48	-12.11/-14.9	-18.71/-14.47
Θ(150°)	-18.06/-14.02	-11.51/-14.53	-13.02/-11.43	-12.89/-18.93	-14.85/-10.47	-10.93/-14.98	-17.68/-13.91	-12.69/-11.13	-14.31/-14.54	-16.39/-14.77	-14.29/-19.08	-18.15/-16.05	-18.9/-19	-16.1/-18.24	-16.71/-15.63	-15.45/-12.96	-15.82/-15.81	-14.94/-13.96	-19.23/-16.81	-13.65/-18.02	-18.18/-18.4	-13.62/-16.81	-17.99/-19.12	-15.58/-17.19
Θ(157.5°)	-17.36/-13.92	-12.98/-15.39	-18.4/-19.38	-15.25/-14.97	-16.1/-18.5	-18.28/-17.74	-14.41/-13.05	-12.65/-14.1	-17.92/-18.78	-17.92/-18.51	-18.01/-19.07	-18.42/-18.29	-17.35/-16.07	-15.26/-19.18	-19.19/-14.3	-14.44/-14.77	-15.95/-17.22	-17.79/-18.3	-17.52/-18.51	-18.88/-17.68	-18.96/-18.27	-17.82/-18.06	-18.9/-15.13	-14.09/-18.17
Θ(165°)	-18.27/-15.92	-16.22/-17.1	-17.65/-18.42	-15.01/-12.03	-11.34/-11.56	-12.9/-14.66	-17.39/-17.93	-18.48/-18.28	-19.08/-17.74	-18.67/-17.36	-17.2/-18.54	-17.86/-19.92	-16.38/-14.84	-15.62/-18.48	-17.81/-18.8	-17.8/-17.58	-14.74/-13.07	-16.31/-17.79	-18.16/-19	-16.01/-14.93	-18.4/-17.42	-17.38/-15.16	-14.88/-17.78	
Θ(172.5°)	-17.47/-19.21	-17.53/-18.72	-18.11/-17.03	-18.06/-18.61	-18.79/-18.46	-16.48/-14.24	-12.53/-11.87	-13.4/-16.43	-18.54/-18.22	-18.14/-16.88	-17.33/-18.59	-18.41/-18.68	-17.61/-18.85	-17.93/-19.66	-16.89/-14.98	-17.76/-13.82	-15.51/-18.46	-18.24/-17.41	-18.5/-18.51	-17.74/-18.23	-18.18/-18.6	-18.14/-12.13	-19.05/-18.62	-17.51/-18.79
Θ(180°)	-15.61/-15.97	-15.05/-14.21	-14.27/-13.15	-13.65/-15.07	-16.43/-17.28	-17.78/-17.09	-18.25/-17.96	-19.11/-18.54	-17.64/-18.68	-17.31/-17.71	-18.85/-19.02	-18.47/-18.36	-19.16/-18.3	-17.97/-19.28	-17.82/-18.66	-18.97/-17.21	-17.54/-18.25	-18.8/-17.51	-14.67/-14.34	-15.73/-15.96	-17.28/-17.56	-18.79/-16.95	-15.18/-15	-17.29/-17.1
Freq(GHz)	5.785GPol.	ThetaAnt. 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°)	-1.05/-0.51	-0.3/-0.08	-0.01/-0.03	-0.41/-1.17	-1.86/-2.71	-3.73/-5.22	-7.19/-9.86	-14.8/-18.35	-19.25/-13.74	-9.39/-6.96	-5.37/-3.26	-2.43/-1.64	-0.81/-0.44	-0.11/0.1	-0.1/-0.56	-0.85/-1.3	-2.11/-3.33	-4.93/-6.85	-9.48/-13.38	-19.01/-18.72	-15.14/-10.66	-7.72/-5.62	-3.76/-2.77	-1.3/-1.29
Θ(7.5°)	-4.19/-4.21	-4.49/-4.18	-3.71/-3.51	-3.74/-4.01	-4.36/-5.02	-6.16/-7.64	-10.04/-13.93	-18.76/-19.11	-13.95/-10.3	-6.97/-5.38	-4.31/-2.72	-2.3/-2	-1.78/-1.86	-1.71/-1.88	-1.96/-2.17	-2.45/-2.65	-3.27/-3.47	-5.95/-4.89	-11.65/-8.68	-17.91/-17.75	-12.42/-16.16	-6.89/-5.07	-3.94/-4.02	-4.17/-4.77
Θ(15°)	-15.74/-12.64	-10.35/-9.6	-9.01/-9.32	-9.63/-10.35	-10.89/-11.6	-12.08/-13.3	-17.13/-18.92	-12.56/-15.32	-12.39/-9.51	-7.08/-5.29	-3.37/-1.81	-0.720/-17	0.390/-09	-0.87/-2.59	-4.95/-6.93	-8.89/-9.89	-11.41/-14.47	-19.15/-18.08	-10.67/-4.44	-5.57/-5.27	-5.65/-6.36	-7.14/-8.99	-11.53/-15.02	
Θ(22.5°)	-14.83/-13.6	-10.19/-8.35	-7.73/-7.76	-9/-11.56	-10.08/-7.5	-6.99/-8.62	-12.89/-18.27	-16.42/-14.78	-12.56/-9.3	-6.74/-4.07	-1.88/-0.19	0.95/-1.44	1.63/-1.3	-0.06/-2.64	-6.13/-10.35	-14.38/-14.37	-12.55/-10.91	-10.26/-12.15	-14.79/-13.9	-8.24/-4.86	-3.57/-4.58	-8.12/-11.81	-12.29/-10.74	-10.54/-12.54
Θ(30°)	-7.43/-10.11	-17.36/-18.99	-16.54/-9.81	-7.15/-8.91	-10.87/-9.63	-5.04/-5.77	-8.03/-7.06	-5.48/-4.69	-9.18/-9.57	-5.71/-2.9	-1.55/-0.36	-0.05/-0.54	-0.31/0.8	1.13/-0.19	-2.27/-4.89	-6.27/-10.5	-7.49/-5.65	-6.5/-7.51	-8.41/-13.73	-5.84/-4.77	-4.86/-4.93	-9.21/-12.81	-17.77/-9.1	-4.58/-19.73
Θ(37.5°)	-6.79/-12.09	-12.47/-12.71	-12.54/-15.37	-9.4/-5.84	-5.86/-6.95	-7.17/-5.52	-2.02/-3.32	-7.48/-9.44	-5.56/-4.25	-1.19/-1.81	-3.44/-4.73	-4.37/-2.4	-0.94/-0.33	-0.62/-2.15	-6.27/-9.94	-8.91/-8.65	-13.58/-17.87	-10.84/-6.24	-4.7/-6.99	-7.57/-7.55	-9.31/-6.88	-11.6/-8.1	-3.61/-4.7	
Θ(45°)	-6.06/-6.2	-3.8/-4.2	-7.09/-17.12	-16.14/-6.4	-4.86/-5.01	-4.58/-4.24	-4.39/-4.3	-4.38/-5.07	-9.94/-8.63	-5.65/-3.58	-2.33/-3.09	-4.01/-3.71	-2.79/-1.69	-0.94/-0.44	-0.27/-1.53	-3.32/-5.36	-5.33/-4.11	-5.94/-11.65	-13.54/-4.79	-1.37/-2.99	-6.03/-6.2	-5.65/-7.68	-7.51/-5.89	-7.63/-6.96
Θ(52.5°)	-3.4/-2.9	0.33/-0.85	-3.42/-12.08	-9.01/-5.31	-2.24/-1.56	-1.91/-3.39	-4.13/-3.62	-4.27/-1.59	-2.38/-2.55	-0.91/-1.28	-2.51/-2.74	-0.53/-2.13	1.16/-0.87	-0.46/-0.38	0.41/0.27	-0.61/-3.1	-5.13/-4.71	-3.34/-5.66	-11.71/-4.72	-2.65/-2.51	-4.4/-2.25	-1.13/-3.16	-4.72/-3.77	-5.06/-6.46
Θ(60°)	-4.64/-3.02	-0.11/-2.7	0.82/-5.37	-7.32/-2.72	1.11/-65	-1.22/-6.57	-1.34/0.55	-1.34/0.55	0.88/0	-0.35/-1.51	0.24/-2.38	3.56/-5.99	-0.04/-0.67	0.79/-155	1.61/-1.35	-3.17/-4.13	-1.9/-2.68	-4.57/-5.88	-3.92/-2.52	-2.24/-1.02	0.48/-1.65	-3.06/-2.49	-5.13/-6	
Θ(67.5°)	-4.89/-1.99	-0.57/-1.49	1.42/-4.24	-9.12/-2.64	1.1/-75	-0.81/-3.6	-2.33/-0.99	-0.96/0.86	2.56/-11	1.72/-1.03	0.49/-0.48	0.593/0.7	2.99/-0.83	-1.72/-1.5	1.372/-51	2.99/-0.49	-1.85/-1.99	-0.83/-0.28	0.11/-2.57	-2.82/-0.79	-0.47/0.54	0.24/-1.83	-2.22/-3.18	-7.98/-11.53
Θ(75°)	-6.83/-2.25	-1.750/-29	0.24/-9.88	-8.69/-2.4	-0.350/-09	-0.26/-1.6	-1.4/-0.02	0.54/-1.7	3.363/0.6	1.480/8.4	-0.120/-41	-1.92/-0.57	2.51/-0.06	-2.96/-3.12	0.372/-47	3.520/-3	-0.35/-0.11	-0.25/-0.52	2.670/-77	-1.650/-73	0.621/-08	-1.41/-3.27	-2.51/-4.26	-8.51/-15.88
Θ(82.5°)	-8.29/-3.79	-3.37/-1.37	-1.47/-4.38	-4.88/-2.09	-1.75/-1.88	-1.88/-1.84	-1.95/-1.02	0.942/-53	2.922/-45	-0.43/-0.57	0.04/-0.27	-3.24/-0.39	-0.06/-6.26	-5.5/-3.81	0.132/-17	2.28/-0.2	0.131/-25	0.22/-1.83	2.661/-36	-0.91/-52	1.471/-09	-3.49/-6.43	-3.69/-7.25	-8.33/-14.82
Θ(90°)	-7.38/-6.77	-0.02/-2.27	-2.69/-2.84	-3.41/-1.7	-2.68/-4.79	-4.38/-3.29	-4.27/-3.37	-0.37/-1.59	2.49/-13	-0.56/-2.35	-2.56/-0.41	-6.29/-6.16	-0.89/-5.21	-14.35/-7.74	-2.940/-39	0.830/-05	-0.260/-7	0.76/-1.85	1.040/-67	-0.38/-0.08	0.47/-0.27	-5.43/-8.36	-4.06/-7.92	-10.17/-15.32
Θ(97.5°)	-6.73/-10.91	-7.87/-4.28	-3.85/-4	-2.77/-2.82	-5.05/-10.43	-4.51/-4.67	-7.3/-8.08	-1.580/-69	1.07/-1.04	-4.22/-2.53	-3.63/-4.12	-11.13/-5.56	-5.13/-8.76	-16.64/-8.51	-5.18/-0.04	-1.2/-2.06	-2.01/-1.94	-1.66/-4.18	-1.19/-1.38	-2.79/-3.01	-2.55/-1.5	-9.19/-11.51	-6.63/-8.96	-16.45/-15.04
Θ(105°)	-7.98/-10.99	-8.2/-4.53	-5.89/-4.04	-4.55/-4.77	-7.51/-9.39	-4.76/-7.18	-9.79/-7.95	-3.37/-1.76	0.25/-2.12	-4.74/-6.85	-7.07/-9.41	-13.99/-17.93	-4.22/-8.96	-13.56/-18.97	-14.44/-3.37	-2.23/-2.98	-4.05/-5.14	-6.12/-6.84	-6.06/-6.69	-7.07/-8.35	-7.7/-6.14	-11.61/-9.13	-6/-10.4	-19.12/-18.71
Θ(112.5°)	-13.1/-13.98	-9.45/-9.75	-7.7/-5.63	-5.22/-7.16	-9.89/-8.81	-7.4/-10.79	-10.05/-8.73	-7.01/-2.76	-0.2/-2.83	-7.14/-10.21	-7.53/-13.81	-18.07/-13.18	-10.27/-10.61	-16.44/-12.35	-13.03/-5.78	-4.69/-5.75	-2							



Radiated Composite Gain Data of Scan/BT LE

Appendix A.3

Θ (120°)	-18.37/-18.71	-18.84/-16.51	-18.39/-16.79	-13.33/-12.77	-17.72/-17.82	-15.4/-16.86	-12.67/-9.2	-7.93/-15.3	-10.29/-12.22	-10.83/-11.72	-7.29/-10.83	-13.16/-14.53	-15.48/-17.51	-19.39/-13.31	-12.82/-10.96	-6.19/-11.46	-12.66/-13.1	-10.98/-18.07	-18.57/-16.41	-14.65/-5.64	-11.15/-18.15	-11.92/-17.59	-15.6/-16.55	-18.55/-18.02
Θ (127.5°)	-14.54/-17.41	-14.88/-17.78	-11.59/-12.78	-17.34/-16.38	-12.49/-14.2	-17.17/-12.82	-10.42/-10.35	-18.86/-16.21	-14.54/-8.33	-10.21/-11.38	-8.99/-18.6	-18.09/-12.69	-16.9/-14.51	-18.13/-17.21	-13.03/-10.16	-9.37/-13.94	-14.91/-17.85	-18.51/-18.66	-18.5/-18.77	-16.98/-10.62	-8.54/-14.51	-15.98/-11.01	-9.4/-15.22	-16.64/-11.18
Θ (135°)	-9.48/-19.21	-15.02/-19.53	-14.76/-13.96	-18.19/-18.37	-13.15/-8.76	-16.66/-17.66	-18.18/-10.59	-17.18/-12.96	-7.84/-16.54	-17.76/-18.48	-16.38/-18.46	-16.77/-13.75	-16.44/-9.32	-13.42/-18.47	-17.8/-15.72	-16.44/-16.55	-19.33/-10.37	-16.93/-14.76	-7.62/-19.15	-9.71/-18.45	-14.45/-12.01	-15.91/-12.83		
Θ (142.5°)	-18.49/-11.25	-12.87/-18.04	-12.11/-16.52	-18.36/-18.3	-14.3/-13.85	-18.06/-19.23	-15.28/-13.27	-12.18/-16.12	-6.05/-9.55	-11.68/-8.86	-16.06/-18.89	-14.42/-10.89	-17.23/-13.16	-13.26/-18.07	-18.23/-17.65	-16.24/-19.14	-16.29/-18.62	-16.24/-10.36	-18.26/-13.39	-16.06/-17.69	-13.7/-8.09	-14.04/-10.85	-9.03/-8.97	-19.06/-15.44
Θ (150°)	-18.04/-18.29	-18.5/-18.12	-18.74/-18.32	-19.23/-13.31	-9.66/-11.56	-18.55/-18.08	-17.8/-19.35	-13.75/-14.01	-9.21/-8.33	-14.24/-19.91	-11.98/-13.28	-17.85/-19.05	-18.24/-18.01	-13.52/-16.12	-19.26/-18.62	-19.01/-18.94	-16.26/-14.89	-14.81/-19.27	-19.22/-18.88	-18.15/-17.85	-17.88/-18.51	-17.49/-16.63	-15.92/-17.69	-18.1/-19.42
Θ (157.5°)	-18.04/-18.21	-9.49/-13.42	-8.37/-9.08	-13.05/-10.17	-8.37/-9.08	-14.02/-18.27	-17.32/-16.12	-10.1/-10.95	-15.33/-17.88	-18.26/-18.54	-18.44/-17.95	-15.33/-12.61	-14.64/-17.57	-17.74/-18.39	-17.98/-18.98	-18.06/-17.85	-17.52/-17.1	-17.24/-16.3	-17.01/-18.84	-16.05/-17.56	-18.06/-18.11	-17.94/-18.45	-16.82/-17.77	
Θ (165°)	-14.93/-11.66	-11.6/-16.67	-18.49/-18.82	-15.25/-11.09	-8.52/-8.86	-7.02/-8.9	-12.24/-13.46	-11.81/-13.28	-19.44/-18.79	-17.82/-18.59	-19.45/-17.07	-17.84/-19.04	-17.86/-18.79	-11.66/-11.41	-13.27/-17.61	-18.88/-18.94	-18.4/-18.37	-18.41/-18.07	-17.82/-18.76	-16.67/-12.51	-11.4/-13.07	-16.58/-17.35	-18.23/-13.61	-14.32/-19.2
Θ (172.5°)	-18.9/-18.69	-18.04/-14.49	-13.74/-14.89	-15.99/-16.34	-16.77/-14.08	-10.74/-8.14	-7.22/-7.43	-8.52/-10.57	-13.34/-16.08	-19.4/-17.96	-18.99/-18.5	-17.84/-17.86	-15.76/-16.47	-13.77/-16.09	-18.14/-18.49	-18.77/-16.4	-14.87/-15.83	-16.22/-15.97	-17.47/-18.83	-19.03/-17.57	-17.8/-18.81	-17.5/-18.31	-19.02/-17.16	-18.62/-17.52
Θ (180°)	-18.34/-17.81	-19.44/-15.95	-14.41/-13.3	-11.39/-10.37	-9.93/-9.94	-10.31/-10.66	-12.33/-13.76	-15.27/-17.01	-17.85/-19.21	-17.88/-18.16	-17.27/-17.99	-17.19/-18.86	-18.18/-18.84	-17.94/-19.11	-16.08/-16.28	-17.18/-17.83	-17.22/-15.89	-13.28/-12.62	-14.36/-17.11	-19.08/-19.26	-17.76/-17.76	-16.5/-17.42	-18.91/-17.88	-18.32/-17.93
Freq(Hz)	6.475GPol.	ThetaAnt. 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°)	-3.15/-2.81	-3.25/-3.54	-3.84/-4.34	-5.01/-6.16	-7.83/-9.57	-11.47/-15.09	-18.31/-18.93	-17.57/-13.36	-9.09/-6.84	-6.63/-3.14	-2.07/-1.54	-0.88/-0.61	-0.57/-0.6	-0.74/-1.56	-2.59/-3.76	-5.7/-12	-9.55/-12.79	-17.72/-17.63	-18.35/-14.59	-10.98/-8.75	-6.68/-5.49	-4.41/-4.02	-3.75/-3.77	-3.34/-3.06
Θ (7.5°)	-3.23/-3.72	-4.75/-5.5	-6.07/-6.93	-8.22/-10.51	-13.19/-16.6	-19.11/-19.13	-18.3/-14.78	-11.25/-9.1	-7.53/-6.15	-4.93/-3.64	-3/-2.32	-1.51/-0.92	-0.120.35	0.460.55	0.24/-0.24	-0.8/-1.91	-3.44/-5.74	-9.06/-12.9	-18.34/-15.93	-9.74/-9.19	-5.61/-4.87	-4.49/-4.14	-3.94/-3.35	-2.83/-2.86
Θ (15°)	-5.21/-5.31	-6.29/-7.79	-9.41/-9.96	-8.81/-8.02	-7.34/-7.71	-8.5/-8.93	-11.02/-9.57	-8.18/-7.73	-8.1/-6.64	-4.46/-2.55	-1.19/-0.41	-0.070.37	0.780.96	1.26/-1.26	1.090.96	0.870.38	0.28/-0.37	-1.54/-3.24	-6.08/-9.76	-11.15/-9.13	-7.71/-6.94	-6.89/-6.43	-5.62/-5.5	-5.89/-6.31
Θ (22.5°)	-8.07/-12.27	-14.29/-17.93	-19.12/-17.76	-14.4/-10.64	-9.09/-8.6	-8.85/-7.99	-5.92/-3.77	-2.86/-3.28	-5.74/-8.85	-7.11/-3.57	-0.640.52	1.140.97	0.50.38	-0.03/-0.26	-0.69/-1.32	-2.22/-3.64	-4.36/-3.84	-2.36/-1.53	-1.63/-3.46	-6.57/-8.16	-6.93/-5.45	-1.6/-1.66	-3.41/-5.03	-6.86/-7.76
Θ (30°)	-5.14/-6.34	-6.56/-6.37	-5.93/-5.52	-7.58/-11.58	-15.82/-10.55	-7.61/-6.37	-5.8/-4.43	-2.99/-2.96	-4.59/-7.04	-5.55/-2.09	-0.100.63	1.030.37	-0.84/-1.81	-2.25/-1.38	-1.86/-2.55	-2.3/-1.87	-2.5/-5.22	-6.05/-4.24	-2.83/-3.05	-3.72/-5.06	-6.21/-7.56	-5.72/-3.94	-5.88/-11.89	-11.32/-7.39
Θ (37.5°)	-9.14/-8.77	-7.25/-7.52	-6.86/-9.92	-16.05/-17.16	-11.67/-8.41	-7.71/-7.92	-6.72/-6.45	-3.45/-3.84	-5.69/-6.4	-4.16/-2.92	-2.69/-3.34	-2.91/-3.23	-3.3/-2.57	-2.28/-0.93	-0.87/-1.57	-2.36/-2.37	-4/-6.46	-7.02/-3.52	-3.5/-4.92	-7.89/-7.18	-4.13/-3.73	-2.6/-1.74	-5.49/-14.26	-16.31/-16.37
Θ (45°)	-8.51/-8.15	-6.57/-6.66	-7.86/-6.38	-7.22/-11.31	-9.28/-9.37	-9.24/-9.06	-8.09/-6.13	-5.76/-5.07	-5.73/-6.57	-2.56/-2.08	-4.63/-5.65	-5.94/-6.87	-4.49/-2.65	-1.41/-0.7	-0.020.33	-2.21/-3.57	-5.12/-4.57	-0.770.14	-0.29/-2.88	-6.93/-5.9	-4.69/-5.16	-5.45/-2.85	-5.11/-7.5	-10.7/-8.12
Θ (52.5°)	-6.1/-6.1	-4.72/-4.15	-6.21/-6.89	-5.69/-7.77	-12.8/-9.78	-7.47/-4.92	-3.27/-1.97	-2.9/-4.64	-2.7/-1.92	-1.400.29	-1.92/-4.65	-4.05/-3.15	-2.67/-1.59	-2.24/-0.67	0.891.54	0.280.14	-1.87/-1.69	0.671.23	0.23/-0.07	-2.79/-4.7	-3.87/-5.46	-4.49/-2.98	-5.15/-8.81	-5.1/-4.75
Θ (60°)	-2.79/-3.06	-2.99/-3.47	-3.42/-5.35	-3.91/-2.42	-3.02/-3.59	-4.21/-2.45	-0.760.35	0.980.07	0.370.65	0.40.7	-0.38/-1.99	-1.440.27	-0.350.08	-0.18/-0.83	1.580.35	1.42/-1.57	0.840.36	1.480.77	-0.86/-0.09	-2/-3.55	-2.07/-4.95	-1.35/-0.52	-1.34/-4.5	-1.73/-1.54
Θ (67.5°)	-0.85/-1.68	-1.73/-1.32	-1.61/-4.21	-2.48/-0.29	1.50/-3.33	-1.155/-0.58	0.812.44	3.55/-1.57	1.812.27	1.921.28	-1.33/-2.08	1.311.98	1.341.72	0.12/-0.66	2.23/-1.4	0.421.09	1.862.68	2.16/-0.9	-0.43/-0.86	-1.76/-1.46	-0.54/-3.99	-0.361.08	1.41/-38	-0.86/-0.14
Θ (75°)	-1.04/-2.83	-2.06/-0.32	-1.23/-4.97	-4.52/-1.05	1.510.93	-2.56/-2.38	-0.610.42	3.88/2.95	1.393.09	2.841.13	-0.55/-1.02	-0.590.95	2.462.24	0.73/-3.17	-0.211.88	-1.1/-1.68	0.792.72	1.61/-0.02	0.6/-0.71	-2.43/-0.35	0.45/-3.34	-1.180.64	1.95/-0.85	-1.31/-0.3
Θ (82.5°)	-2.66/-2.5	-4.27/-1.19	-1.78/-6.51	-5.16/-2.69	0.060.07	-5.74/-1.93	-1.78/-2.99	2.452.39	0.30.82	2.020.49	-0.36/-0.45	-1.150.41	2.321.45	-1.57/-5.19	-1.94/-0.37	-4.24/-5.18	0.040.07	1.01/-1.82	1.26/-0.32	-2.860.57	0.41/-3.73	-2.73/-0.31	1.62/-2.17	-3.07/-2.19
Θ (90°)	-5.14/-1.68	-5.88/-2.67	-1.81/-6.48	-4.49/-6.08	-1.65/-2.88	-8.65/-6.11	-2.73/-5.96	0.111.48	-1.621.97	0.95/-2.05	-0.84/-1.14	-2.61/-2.18	0.51/-2.02	-3.27/-8.26	-4.76/-3.19	-6.38/-4.95	-3.331.68	-0.06/-5.96	-0.52/-1.21	-4.410.18	-0.72/-4.65	-5.79/-3.27	0.95/-3.43	-3.38/-5.03
Θ (97.5°)	-7.87/-2.84	-6.12/-2.39	-2.04/-5.9	-5.14/-7.15	-2.06/-7.97	-7.97/-1.72	-4.83/-6.46	-1.75/-1.51	-1.690.28	-1.27/-3.11	-1.39/-3.8	-4.21/-1.32	-3.43/-4.78	-6.46/-8.22	-3.76/-3.38	-7.5/-11.5	-7.12/-2.07	-4.26/-11.42	-3.88/-4.71	-8.31/-2.84	-4.45/-7.3	-9.07/-6.43	-0.57/-6.33	-3.23/-6.86
Θ (105°)	-6.21/-7.29	-9.31/-9.1	-4.03/-8.77	-7.49/-7.42	-3.86/-15.92	-6.67/-4.28	-9.61/-6.41	-3.94/-0.08	-1.67/-1.7	-3.03/-3.97	-5.09/-6.69	-7.66/-5.91	-5.42/-9.98	-10.64/-11.38	-7.88/-5.1	-6.38/-12.44	-10.25/-2.71	-12.22/-10.22	-8.72/-16.23	-16.37/-8.59	-9.25/-11.85	-12.51/-8.41	-3.58/-9.85	-6.99/-6.4
Θ (112.5°)	-8.69/-10.24	-8.17/-5.05	-4.64/-7.3	-8.49/-6.21	-5.62/-9.56	-10.47/-6.64	-10.9/-8.11	-7.07/-7.75	-1.96/-5.8	-5.07/-5.87	-8.17/-7.1	-9.05/-9.55	-5.89/-9.74	-10.77/-19.3	-10.9/-8.74	-6.18/-12.69	-6.4/-9.77	-13.49/-12.63	-6.25/-9.19	-17.07/-10.6	-7.41/-11.21	-17.74/-9.26	-6.08/-9.7	-10.34/-9.55
Θ (120°)	-17.08/-8.36	-8.95/-10.26	-10.75/-9.36	-9.86/-10.27	-15.27/-7.16	-12.82/-10.51	-8.38/-15.05	-13/-6	-5.38/-5.44	-8.91/-7.37	-10.28/-8.93	-16.93/-17.48	-9.34/-11.51	-19.23/-16.19	-10.29/-9.21	-8.96/-18.05	-8.08/-6.45	-11.39/-16.8	-7.14/-9.86	-17.61/-9.06	-5.61/-12.7	-10.85/-5.03	-7.13/-12.95	-10.07/-14
Θ (127.5°)	-17.37/-10.24	-9.41/-14.14	-12.1/-6.44	-8.56/-10.61	-18.81/-10.99	-15.42/-12.18	-13.23/-15.69	-16.77/-10.47	-3.58/-7.07	-8.33/-6.73	-8.53/-11.64	-12.6/-17.87	-9.4/-9.6	-15.04/-13.51	-10.16/-15.41	-13.67/-12.12	-9.91/-9.23	-18.39/-13.28	-8.04/-11.27	-14.06/-16.34	-15.82/-14.61	-10.23/-7.54	-7.97/-15.61	-16.09/-16.88
Θ (135°)	-12.94/-11.12	-19.21/-18.6	-15.24/-7.45	-10.72/-13.48	-10.1/-7.54	-13.75/-18.46	-9.41/-11.18	-18.1/-10.47	-3.17/-8.29	-8.25/-7.45	-10.01/-17.63	-17.74/-15.73	-16.27/-11.91	-15.49/-16.31	-19.11/-17.53	-12.33/-18.97	-8.8/-8.46	-17.12/-13.49	-8.84/-8.74	-17.94/-17.4	-17.84/-17.3	-7.57/-9.37	-8.89/-15.91	-17.81/-17.9
Θ (142.5°)	-18.79/-19.08	-18.91/-14.01	-13.86/-18.64	-17.72/-12.77	-19.31/-15.82	-10.89/-19.21	-10.9/-10.68	-16.78/-5.26	-6.69/-17.6	-13.36/-18.92	-14.04/-19.08	-12.23/-9.32	-11.1/-18.26	-18.26/-18.96	-18.75/-17.06	-15.31/-12.96	-17.66/-16.8	-17.93/-8.63	-16.47/-13.18	-11.57/-14.17	-16.89/-17.14	-18.28/-18.42	-18.11/-18.64	
Θ (150°)	-17.3/-18.32	-15.57/-15.02	-12.24/-11.35	-13.99/-14.32	-15.66/-14.57	-15.37/-18.1	-17.92/-15.79	-14.84/-16.9	-9.3/-3.92	-5.18/-19.12	-12.46/-15.43	-16.41/-16.92	-13.19/-12.21	-18.89/-17.7	-18.48/-18.21	-18.71/-17.38	-17.26/-16.65	-18.1/-18.27	-19.23/-16.09	-18.18/-17.93	-18.7/-19.07	-17.69/-18.98	-19.6/-14.2	-14.85/-18.9
Θ (157.5°)	-13.64/-14.81	-19.05/-18.72	-18.48/-19.34	-18.49/-18.58	-17.97/-18.36	-19.05/-18.9	-18.66/-18.61	-11.14/-7.12	-7.58/-10.69	-14.58/-9.52	-12.97/-15.96	-9.16/-11.26	-19.12/-18.53	-18.72/-16.66	-16.19/-17.86	-18.14/-54	-15.63/-19.12	-17.46/-18.65	-17.97/-19.14	-13.19/-18.91	-18.5/-13.96	-12.7/-15.18	-18.71/-17.52	-17.04/-13.7
Θ (165°)	-18.73/-18.56	-18.74/-17.65	-17.78/-18.19	-19.03/-18.13	-18.01/-18.42	-18.97/-17.36	-12.67/-9.71	-8.52/-8.88	-19.4/-15.23	-15.26/-16.75	-18.86/-18.68	-17.44/-12.01	-14.2/-18.6	-19.09/-16.93	-16.98/-18.22	-18.09/-18.06	-16.47/-16.11	-18.44/-						



Radiated Composite Gain Data of Scan/BT LE

Appendix A.3

Θ (172.5°)	-19.34/-18.34	-18.31/-16.07	-14.18/-13.36	-12.03/-12.15	-12.08/-14.3	-17.14/-17.72	-18.21/-16.98	-16.36/-17.12	-17.4/-18.45	-19.17/-19.13	-19.17/-18.66	-18.12/-17.89	-19.08/-18	-18.31/-18.04	-18.66/-18.9	-17.76/-19.54	-16.06/-13.82	-13.64/-14.39	-15.43/-17.21	-19/-17.99	-17.94/-18.42	-18.56/-18.01	-17.79/-15.68	-16.04/-17.05
Θ (180°)	-18.75/-14.9	-13.26/-16.78	-9.78/-8.74	-8.07/-8.65	-9.89/-9.84	-10.14/-9.79	-10.9/-11.65	-12.37/-12.92	-14.23/-16.03	-17.68/-17.85	-18.44/-18.29	-18.07/-14.65	-11.83/-10.44	-10.65/-12.04	-13.58/-14.59	-15.37/-17.26	-18.24/-18.92	-17.49/-14.82	-14.71/-14.39	-15.11/-14.85	-17.51/-18.42	-18.65/-17.89	-18.34/-18.87	-18.79/-18.86
Freq(Hz)	6.995GPol.	Theta/Ant.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(17°)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°)	-3.2/-3.06	-3.01/-2.93	-3.37/-3.43	-5.06/-6.1	-8.14/-9.75	-10.83/-12.55	-15.21/-14.37	-11.97/-10.14	-8.39/-7.53	-7.02/-6.27	-5.68/-4.98	-4.35/-4.62	-4.99/-5.03	-6.73/-6.7	-7.78/-8.6	-10.27/-17.5	-13.79/-13.48	-14.33/-14.79	-13.38/-12.77	-12.05/-9.83	-8.5/-7.65	-6.42/-5.16	-4.54/-3.62	-3.63/-3.44
Θ (7.5°)	-4.79/-4.98	-4.61/-4.86	-5.2/-5.71	-5.83/-5.68	-5.45/-5.71	-6.77/-7.66	-9.56/-11.1	-14.93/-14.3	-10.45/-7.15	-4.71/-3.02	-1.47/-0.48	0.21/0.66	0.92/0.9	0.63/0.07	-0.84/-1.91	-3.22/-4.6	-7.13/-8.96	-10.87/-13.06	-12.75/-11.85	-11.39/-9.83	-8.45/-7.34	-6.4/-5.43	-5.23/-4.47	-4.94/-9.3
Θ (15°)	-1.61/-1.73	-2.23/-3.16	-5.35/-8.66	-12.63/-14.1	-9.61/-5.85	-4.14/-3.54	-4.41/-7.07	-8.47/-6.02	-4.12/-3.48	-3.14/-2.62	-2.52/-1.77	-0.71/0.29	1.59/2.4	2.71/2.37	1.45/0.82	-0.02/-0.5	-0.59/-1.32	-2.73/-3.74	-3.79/-3.59	-3.25/-3.96	-5.01/-4.15	-2.94/-1.96	-1.93/-1.88	-1.71/-1.57
Θ (22.5°)	-9.2/-7.46	-5.78/-5.95	-7.81/-12.83	-18.68/-11.86	-6.93/-4.07	-2.31/-1	-0.23/-0.63	-1.8/-2.32	-0.91/0.41	1.17/1.22	0.65/-0.04	-0.21/0.03	0.59/1.11	1.2/0.81	-0.24/-1.24	-1.62/-1.6	-1.57/-2.09	-3.28/-5.79	-7.42/-5.81	-3.7/-1.92	-2.18/-3.4	-3.77/-3.11	-2.16/-1.84	-3.04/-5.96
Θ (30°)	-8.5/-7.38	-5.99/-5.55	-6.12/-8.66	-10.18/-7.25	-5.84/-7.77	-10.74/-7.78	-3.91/-1.39	-1.04/-3.31	0.26/0.84	1.79/2.16	1.42/0.4	-0.54/-0.51	0.57/0.76	-0.1/-1.45	-1.35/-0.1	1.02/1.17	0.68/-0.41	-1.64/-1.84	-1.78/-2.56	-3.74/-7.66	-16.86/-15.29	-5.49/-2.99	-4.19/-8.22	
Θ (37.5°)	-6.78/-6.99	-6.15/-5.83	-6.26/-9.14	-12.49/-11.6	-8.49/-8.32	-7.98/-5.49	-2.61/-4.3	-2.34/-5.03	-6.23/-1.78	-1.33/-3.26	-1.36/0.45	-0.25/-3.09	-5.1/-3.85	-1.8/-0.91	-1.24/-2.08	-1.11/0.54	0.64/-0.65	-1.71/-0.37	0.95/1.84	1.01/-1.49	-5.4/-7.72	-7.76/-12.01	-14.53/-7.53	-7.18/-6.09
Θ (45°)	-4.01/-13.8	-3.86/-5.94	-4.92/-3.49	-4.84/-5.96	-10.01/-10.27	-5.24/-2.4	-2.1/-1.4	-0.29/-2.32	-5.44/0.23	0.07/-2.28	-2.12/-0.41	-1.41/-4.54	-5.97/-4.2	-1.06/0.03	-0.48/-2.75	-2.1/0.5	2.55/0.82	-1.61/-1.57	1.37/3.01	2.08/-0.47	-3.94/-4.08	-4.12/-5.67	-6.69/-6.4	-5.65/-3.65
Θ (52.5°)	-1.03/-0.74	-0.99/-1.9	-0.53/-0.44	-0.3/-0.44	-4.5/-6.57	-2.09/-1.81	-3.31/-4.42	1.05/0.03	-3.26/-0.45	-0.84/-2.47	-0.74/-0.08	-1.5/-2.11	-0.24/-1.46	1.59/0.36	-2.55/-1.69	-2.42/-0.07	1.58/1.04	-1.5/-2.19	-0.36/0.32	1.07/0.63	-2.25/-0.07	0.64/-1.35	-2.47/-1.61	-2.92/-3.45
Θ (60°)	0.23/-0.43	0.91/1.09	1.45/1.06	0.87/2.36	-0.26/-2.48	0.01/0.19	-1.77/-0.57	2.11/1.94	-0.88/-1.02	2.45/0.88	-1.89/-1.68	0.82/1.56	0.81/1.53	2.65/1.12	0.77/0.23	-2.31/-1.21	-1.11/-1.13	-2.35/-1.9	-2.75/-3.47	-2.2/-1.29	-2.66/0.25	2.29/1.06	0.99/-0.08	0.22/1.23
Θ (67.5°)	-1.21/-0.55	1.21/1.37	2.01/0.36	0.26/2.38	1.7/0.15	-1.82/2.14	1.75/1.75	2.2/3.7	1.13/2.13	4.26/0.45	0.31/0.49	2.87/1.19	-0.09/-1.07	1.87/0.52	1.06/0.06	-2.36/-1.06	-3.41/-1.32	-0.34/0.54	-1.46/-4.13	-7.79/-3.11	-1.68/0.76	2.29/0.34	0.8/0.17	1.36/1.17
Θ (75°)	-2.68/-1.74	0.19/0.2	0.64/-0.48	-3.75/-0.6	2.26/0.57	-3.86/1.99	3.51/3.82	4.19/-0.3	1.59/2.15	3.78/2.27	1.47/1.25	-1.13/0.87	1.48/0.23	0.73/1.02	-0.18/0.17	-2.33/-1.53	1.35/2.72	0.5/-3.5	-1.67/-5.13	-7.67/-5.13	0.21/3.31	-1.16/0.17	1.11/-0.97	
Θ (82.5°)	-5.13/-3.33	-2.06/-0.85	-1.06/-1.32	-9.69/-3.81	1.73/-0.5	-7.09/-0.34	1.75/2.56	4.32/0.05	1.07/1.17	1.44/1.76	1.38/-1.65	1.99/0.76	-1.99/-0.19	-1.79/-1.84	-0.44/0.41	-0.87/0.52	-1.68/-0.2	2.03/2.91	0.82/-3.92	-8.17/-5.4	0.54/-0.57	-2.84/-7.26	-2.92/-1.16	0.02/-3.05
Θ (90°)	-10.45/-5.78	-4.65/-2.1	-1.92/-2.13	-11.4/-4.99	0.96/-1.29	-14.71/-11.58	1.11/0.24	1.72/0.6	-0.22/0.15	0.18/-0.39	0.62/-3.35	-3.2/-1.52	-2.96/-0.35	-3.57/-4.12	-1.66/-1.34	-1.35/-1.1	-2.33/-0.62	0.72/1.98	0.2/-3.95	-8.94/-6.96	0.42/-2.14	-6.77/-13.81	-3.18/-2.74	-2.57/-3.44
Θ (97.5°)	-14.71/-4.21	-6.26/-3.19	-3.03/-4.9	-9.65/-4.5	-0.91/-4.63	-13.28/-1.69	-0.32/-1.44	-1.13/-0.84	-2.16/-0.05	-2.85/-2.74	-0.61/-4.53	-3.52/-2.88	-3.49/-0.66	-8.23/-5.17	-4.44/-2.78	-1.4/-3.01	-4.21/-2.32	-2.84/-1.76	-2.69/-6.08	-13.61/-7.19	-1.22/-5.32	-10.71/-16.01	-4.27/-8.44	-6.69/-8.1
Θ (105°)	-18.84/-4.93	-7/-3.28	-4.16/-5.32	-8.16/-6.8	-4.05/-9.77	-12.28/-4.45	-3.3/-4.9	-3.08/-3.2	-2.02/-1.75	-4.18/-6.14	-2.71/-5.25	-7.45/-4.63	-6.58/-2.04	-6.31/-7.24	-6.21/-7.46	-4.22/-7.03	-6.74/-6.56	-11.26/-8.22	-7.89/-4.99	-9.84/-12.79	-6.96/-11.3	-16.54/-12.78	-5.28/-5.12	-7.57/-9.53
Θ (112.5°)	-15.28/-10.39	-8.04/-5.8	-5.15/-4.2	-9.03/-9.2	-5.48/-12.61	-19.02/-4.97	-8.42/-5.99	-6/-4.57	-4.27/-2.49	-5.96/-6.19	-2.84/-9.35	-8.76/-7.35	-8.19/-5.47	-8.79/-10.04	-11.73/-9.86	-10.63/-4.73	-7.27/-6.72	-9.16/-6.95	-8.67/-7.27	-9.49/-8.87	-9.2/-8.9	-12.39/-13.06	-7.62/-10.25	-8.97/-13.21
Θ (120°)	-13.62/-8.41	-5.14/-6.98	-7.75/-12.92	-10.21/-10.35	-6.25/-19.14	-10.81/-7.56	-9.54/-9.11	-6.83/-9.22	-3.58/-7.77	-4.76/-14	-9.96/-8.85	-18.21/-13.91	-9.49/-14.67	-11.32/-10.77	-15.85/-11.77	-14.12/-9.93	-7.25/-4.75	-14.42/-13.21	-9.64/-6.57	-11.76/-18.36	-9.3/-11.22	-14.07/-12.84	-8/-11.95	-15.53/-19.17
Θ (127.5°)	-17.27/-10.43	-12.33/-10.29	-9.15/-17.45	-16.95/-18.74	-16.44/-14.3	-18.33/-17.81	-15.61/-10.87	-17.93/-6.48	-6.56/-5.42	-6.13/-6.93	-15.65/-18.25	-16.43/-10.34	-12.24/-18.48	-15.35/-9.86	-17.82/-12.86	-11.14/-14.74	-9.38/-13.09	-18.24/-17.6	-18.01/-10.02	-17.14/-17.42	-10.96/-14.16	-13.48/-8.27	-11.93/-18.03	-11.19/-18.95
Θ (135°)	-16.49/-15.8	-8.59/-17.37	-14.81/-10.63	-9.44/-11.56	-18.74/-17.62	-10.98/-8.79	-9.49/-9.31	-13.54/-8.13	-8.5/-6.46	-6.3/-8.6	-10.8/-14.76	-18.44/-17.65	-11.65/-16.03	-13.9/-17.3	-15.74/-10.91	-14.75/-18.43	-12.92/-15.53	-14.3/-16.18	-15.25/-7.83	-17.9/-18.01	-17.73/-16.32	-4.48/-12.82	-17.68/-15.57	-12.75/-17.51
Θ (142.5°)	-12.53/-11.35	-12.75/-12.61	-16.55/-11.9	-19.31/-18.11	-14.42/-10.71	-17.14/-18.41	-16.94/-18.89	-16.2/-11.3	-3.47/-6.54	-8.53/-8.01	-18.17/-18.61	-18.23/-13.36	-17.94/-18.57	-17.97/-18.95	-18.61/-15.78	-13.24/-18.04	-18.4/-15.83	-17.16/-15.28	-18.33/-18.39	-12.75/-16.57	-16.42/-10.4	-12.42/-13.09	-12.53/-12.24	-18.74/-16.13
Θ (150°)	-18.04/-18.6	-15.39/-12.7	-17.44/-19.64	-13.39/-12.13	-17.78/-12.94	-12.79/-16.51	-12.7/-19.26	-11.27/-9.36	-9.94/-12.99	-7.45/-9.07	-16.87/-12.24	-12.73/-18.27	-13.98/-15.01	-18.11/-18.9	-18.57/-18.9	-15.72/-13.71	-16.44/-19.17	-18.48/-18.74	-19.05/-19.03	-19.01/-18.77	-19.18/-18.32	-18.2/-18.41	-18.06/-19.37	-17.88/-16.8
Θ (157.5°)	-15.87/-12.09	-12.07/-12.04	-11.84/-11.77	-16.19/-18.55	-17.88/-18.61	-19.14/-17.94	-14.71/-12.74	-13.21/-16.72	-12.54/-9.04	-12.8/-17.67	-10.95/-18.61	-18.18/-16.05	-16.2/-17.8	-17.52/-17.97	-18.63/-19.46	-18.31/-17.56	-17.93/-18.02	-17.66/-18.14	-14.79/-14.1	-14.72/-17.22	-18.8/-18.87	-17.76/-15.96	-16.42/-14.58	-17.55/-18.04
Θ (165°)	-18.95/-18.01	-17.78/-18.8	-18.21/-17.66	-18.15/-19.18	-18.82/-18.04	-19.05/-18.08	-18.2/-12.55	-10.71/-10.08	-10.03/-11.53	-19.52/-18.95	-13.11/-11.12	-13.37/-16.75	-18.98/-19.26	-18.52/-18.97	-19.06/-18.27	-18.58/-18.33	-18.81/-18.21	-18.45/-19.22	-18.45/-17.67	-18.42/-18.26	-17.44/-17.98	-18.12/-15.2	-11.79/-10.52	-11.08/-12.91
Θ (172.5°)	-18.42/-15.26	-14.96/-14.39	-14.46/-17.06	-18.75/-17.97	-17.71/-18.88	-18.02/-18.45	-16.61/-15.57	-15.62/-15.77	-14.87/-14.35	-14.43/-13.94	-14.97/-18.16	-13.33/-17.74	-17.74/-17.06	-18.86/-18.82	-18.65/-18.24	-18.33/-16.25	-17.4/-15.56	-13.21/-11.68	-11.52/-13.49	-16.71/-18.78	-18.13/-18.26	-17.16/-18.56	-17.75/-18.16	-17.64/-18.75
Θ (180°)	-9.43/-9.99	-10.73/-11.81	-12.64/-14.28	-15.94/-17.67	-18.99/-18.15	-18.56/-17.55	-17.55/-14.41	-14.34/-12.71	-11.07/-10.1	-9.88/-9.75	-10.26/-10.04	-9.96/-10.38	-11.52/-11.8	-15.58/-17.32	-18.25/-19.33	-18.51/-17.37	-14.71/-17.59	-18.51/-18.36	-18.11/-18.31	-19.2/-18.47	-14.77/-15.93	-16.81/-17.73	-18.66/-18.92	-16.35/-15.61
Freq(Hz)	2.45GPol.	Phi/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°)	-4.21/-5.27	-6.41/-7.37	-8.31/-9.2	-9.56/-9	-8.11/-7.06	-6.02/-5.03	-4.17/-3.39	-2.72/-2.16	-1.71/-1.37	-2.6/-3.42	-4.07/-4.66	-5.34/-6.27	-7.99/-9.63	-10.23/-9.32	-7.79/-6.26	-4.89/-3.72	-2.89/-2.38	-2/-1.7	-1.44/-1.19	-1.03/-0.96	-1.15/-1.6	-2.28/-3.17		
Θ (7.5°)	-2.24/-3.05	-3.93/-4.73	-5.53/-6.4	-7.39/-8.15	-8.68/-8.59	-7.93/-7.13	-6.33/-5.52	-4.66/-3.96	-3.45/-2.98	-2.57/-2.32	-2.32/-2.72	-3.24/-4.28	-5.71/-5.58	-9.64/-11.83	-14.01/-15.24	-13.55/-10.59	-7.89/-5.79	-4.13/-2.86	-2.02/-1.56	-1.36/-1.23	-1.0/-0.66	-0.34/-0.21	-0.28/-0.57	-1.03/-1.62
Θ (15°)	-1.28/-1.95	-2.68/-3.36	-4.03/-4.74	-5.68/-6.94	-8.46/-9.75	-10.13/-9.78	-9.13/-8.49	-8.02/-7.58	-6.82/-5.56	-4.16/-3.08	-2.44/-2.24	-2.46/-3.23	-4.54/-5.68	-9.96/-14.51	-19.03/-17.84	-14.64/-11.47	-9.05/-7.1	-5.27/-3.7	-2.51/-1.84	-1.59/-1.56	-1.39/-0.9	-0.35/0.03	0.13/-0.06	-0.4/-0.92
Θ (22.5°)	-1.42/-1.26	-2.83/-3.25	-3.54/-3.88	-4.63/-5.91	-8.10/-74	-12.17/-11.11	-9.57/-9.31	-9.97/-																



Radiated Composite Gain Data of Scan/BT LE

Appendix A.3

Θ (15°)	-4.65/-4.53	-4.4/-4.32	-4.25/-4.11	-3.8/-3.36	-2.83/-2.3	-1.86/-1.56	-1.37/-1.28	-1.49/-2.32	-3.83/-5.42	-6.05/-5.75	-5.33/-4.55	-3.37/-2.41	-1.89/-1.62	-1.26/-0.9	-0.58/-0.51	-0.75/-1.24	-1.95/-2.91	-4.26/-6.16	-8.75/-12.25	-17.91/-17.86	-11.82/-8.31	-6.53/-5.52	-4.9/-4.54	-4.36/-4.39
Θ (22.5°)	-4.02/-4.67	-5.42/-6.22	-6.83/-7.04	-6.78/-6.27	-5.49/-4.45	-3.41/-2.5	-1.79/-1.33	-1.29/-1.85	-3.03/-4.18	-4.11/-3.28	-2.53/-1.79	-1.12/-0.95	-1.39/-2.16	-2.69/-2.68	-2.27/-1.88	-1.78/-1.95	-2.39/-3.1	-4.07/-5.63	-7.92/-10.96	-13.51/-12.27	-9.35/-6.98	-5.36/-4.27	-3.53/-3.13	-3.16/-3.58
Θ (30°)	-2.49/-3.66	-5.14/-6.55	-7.62/-8.07	-8.13/-8.12	-8.02/-7.5	-6.36/-4.52	-2.55/-0.99	-0.2/-0.26	-1.22/-2.59	-2.86/-1.78	-0.68/0.13	0.68/0.72	0.04/-1.28	-3.24/-4.45	-4.17/-3.04	-2.02/-1.44	-1.45/-1.95	-2.93/-4.41	-6.23/-7.91	-8.75/-8.1	-6.95/-5.78	-4.37/-2.99	-1.77/-1.1	-1.03/-1.61
Θ (37.5°)	-0.42/-1.84	-3.45/-4.91	-6.29/-7.54	-8.3/-8.26	-7.88/-7.61	-7.25/-5.61	-2.76/-0.15	1.45/1.95	1.27/0.47	-1.45/-0.27	1.28/1.98	1.96/1.38	0.4/-1.33	-3.78/-5.85	-5.59/-3.71	-1.85/-0.71	-0.39/-0.79	-1.79/-3.32	-5.03/-5.92	-5.36/-3.94	-2.84/-2.26	-1.72/-0.9	0.09/0.72	0.68/0.06
Θ (45°)	0.91/-0.42	-1.96/-3.41	-5.08/-6.97	-8.06/-7.77	-7.18/-6.68	-6.33/-5.54	-3.13/-0.13	2.16/3.32	3.23/1.81	-0.11/0.5	2.38/3.11	2.92/46	1.85/0.67	-1.72/-4.46	-5.99/-4.57	-2.17/-0.43	0.28/0.08	-0.86/-2.18	-3.7/-4.53	-3.4/-1.39	-0.01/0.54	0.84/1.4	2.12/5	2.25/1.52
Θ (52.5°)	1.71/0.38	-1.15/-2.52	-4.12/-5.71	-6.41/-6.74	-6.69/-5.85	-5.07/-4.34	-2.48/0.08	2.32/3.68	3.93/2.71	0.65/1.09	3.31/4.14	3.64/2.85	2.34/1.39	-0.65/-3.68	-5.59/-4.24	-1.79/-0.14	0.4/-0.06	-1.18/-2.4	-3.37/-3.53	-2.21/-0.36	0.85/1.32	1.662/35	3.183/56	3.142/26
Θ (60°)	2.05/0.79	-0.73/-1.87	-2.89/-3.45	-3.76/-4.98	-5.81/-4.95	-4.47/-4.44	-2.55/0.19	2.19/3.26	3.48/2.74	0.9/0.57	2.854/1	4.13/69	3.06/2.38	0.84/-1.81	-4.65/-4.84	-2.66/-0.58	0.29/-0.03	-1.2/-2.58	-3.7/-3.43	-1.55/0.16	1.01/1.24	1.512/41	3.514/07	3.672/69
Θ (67.5°)	2.02/0.56	-0.98/-1.74	-1.86/-1.46	-1.8/-3.62	-4.89/-4.6	-4.95/-5.12	-2.22/0.72	2.22/2.43	1.91/1.28	0.4/0.83	3.11/4.25	3.94/3.22	2.66/1.87	0.48/-2.02	-4.71/-4.58	-2.65/-0.96	-0.19/-0.39	-1.14/-2.1	-3.48/-3.87	-1.69/0.33	0.96/0.78	0.82/1.81	3.13/3.74	3.352/48
Θ (75°)	1.68/0.27	-1.29/-1.88	-1.42/-0.54	-0.96/-2.97	-4.22/-4.72	-5.55/-5.6	-2.82/-0.04	1.38/1.32	0.2/-0.64	-0.6/-0.14	1.79/3.21	3.54/3.32	2.48/1.69	1.02/-0.49	-2.98/-4	-3.5/-2.6	-1.96/-1.91	-2.13/-2.3	-3.18/-3.87	-2.1/0	0.77/0.59	0.38/1.19	2.593/12	2.662/06
Θ (82.5°)	1.2/-0.13	-1.25/-1.59	-0.85/0.29	-0.22/-2.35	-3.9/-5.35	-7.08/-7.05	-3.92/-0.94	0.67/0.64	-1.27/-3.35	-1.91/-0.07	1.82/2.85	2.61/2	1.29/0.43	0.36/-0.69	-2.65/-3.82	-4.32/-4.47	-4.41/-4.74	-4.72/-4.45	-5.17/-5.41	-3.07/-0.88	-0.08/-0.19	-0.24/0.68	2.182/45	1.47/0.92
Θ (90°)	0.28/-0.86	-1.72/-1.88	-1.08/0.26	-0.24/-2.54	-4.74/-7.45	-10.5/-8.91	-4.44/-1.34	0.12/-0.32	-3.32/-6.79	-2.69/-0.65	0.19/1.38	1.46/1.45	10.12	0.09/-0.28	-2.39/-4.05	-4.61/-4.9	-5.25/-5.95	-5.92/-5.39	-6.29/-7.69	-4.97/-2.04	-0.97/-1.01	-1.13/-0.3	1.562/03	0.73/-0.07
Θ (97.5°)	-0.98/-1.83	-2.16/-2.51	-2.16/-0.9	-1.68/-4.57	-7.85/-10.08	-9.02/-6.53	-3.38/-1.38	-1.05/-2.61	-7.02/-7.61	-2.44/-1.29	-0.84/0.06	-0.58/-0.9	-0.61/-1.34	-1.22/-1.77	-3.62/-4.25	-4.74/-5.76	-6.36/-6.88	-6.46/-5.59	-6.23/-8.38	-6.91/-4.12	-3.18/-3.05	-2.62/-1.46	0.53/1.13	-0.33/-1.11
Θ (105°)	-2.35/-3.09	-2.4/-2.86	-3.66/-2.92	-3.71/-6.49	-8.06/-6.31	-4.59/-3.95	-3.11/-2.57	-3.14/-4.82	-7.74/-8.6	-4.96/-4.12	-3.37/-1.83	-2.27/-1.2	-0.63/-2.29	-3.67/-4.08	-5.07/-4.87	-5.46/-6.67	-6.51/-5.93	-5.05/-4.34	-4.99/-7.37	-9.23/-7.46	-6.15/-5.55	-4.77/-3.53	-1.44/-0.51	-1.65/-2.04
Θ (112.5°)	-4.12/-5.33	-3.2/-2.86	-4.41/-5.12	-6.05/-6.76	-5.54/-3.62	-2.91/-3.46	-4.28/-5	-5.77/-6.89	-9.54/-10.06	-6.4/-5.26	-4.18/-3.92	-5.02/-3.63	-3.26/-5.97	-8.95/-8.46	-6.7/-5.67	-7.66/-11.2	-10.68/-8.26	-6.63/-6.08	-6.3/-7.38	-9.15/-11.51	-12.9/-9.33	-6.4/-5.13	-3.81/-3.19	-4.35/-3.98
Θ (120°)	-6.68/-8.26	-5.52/-4.4	-5.69/-7.19	-7.5/-6.34	-4.76/-3.34	-2.6/-2.84	-3.67/-4.66	-5.69/-7.3	-10.73/-13.83	-11.51/-9.83	-7.54/-6.36	-6.84/-6.33	-6.97/-9.81	-12.69/-10.16	-7/-6.75	-10.37/-18.68	-11.45/-7.69	-7.12/-8.26	-9.09/-8.83	-8.3/-9.03	-13/-14.73	-8.93/-6.65	-6.12/-6.46	-8.29/-7.53
Θ (127.5°)	-12.71/-14.56	-9.15/-7.33	-7.98/-8.29	-6.51/-4.31	-3.15/-2.81	-2.98/-3.7	-4.94/-6.59	-8.58/-11.46	-16.97/-18.4	-14.33/-11.01	-9.43/-10.13	-12.15/-11.1	-9.39/-10.61	-15.16/-11.8	-8.36/-8.91	-14.66/-18.92	-10.28/-7.9	-8.54/-11.34	-13.18/-12.01	-10.27/-10.31	-13.44/-14.06	-8.79/-6.82	-6.91/-8.1	-10.85/-12.21
Θ (135°)	-12.16/-18.38	-19.23/-12.52	-9.08/-6.35	-4.21/-2.88	-2.65/-3.46	-5.08/-7.26	-9.58/-11.32	-12.19/-13.54	-16.71/-19.16	-18.41/-15.1	-14.64/-17.95	-17.67/-11.26	-9.37/-11.37	-18.17/-14.14	-9.34/-10.15	-15.97/-17.04	-11.08/-9.43	-10.58/-14.51	-17.81/-17.72	-14.4/-13.43	-16.25/-14.75	-9.22/-7.6	-8.36/-9.84	-11.43/-11.76
Θ (142.5°)	-11.71/-12.56	-11.99/-9.55	-7.05/-5.15	-3.94/-3.61	-2.63/-4.01	-8.96/-12.49	-14.54/-13.99	-13.27/-13.92	-16.83/-18.21	-18.74/-17.83	-13.61/-10.53	-10.18/-13.34	-18.33/-12.22	-9.78/-11.15	-16.95/-19.15	-18.43/-16.46	-17.61/-17.51	-18.39/-17.89	-18.26/-17.34	-17.88/-15.67	-10.67/-9.5	-10.95/-13.45	-14.73/-13.95	
Θ (150°)	-14.36/-13.67	-11.23/-8.5	-6.45/-5.26	-4.79/-5.15	-6.18/-7.75	-9.62/-10.77	-11.39/-12.29	-14.22/-18.44	-18.94/-18.26	-15.05/-14.2	-15.37/-17.9	-17.6/-14.97	-13.66/-13.72	-14.85/-13.98	-12.94/-15.28	-17.9/-17.86	-12.59/-10.68	-10.88/-12.57	-15.46/-17.65	-16.98/-15.46	-15.32/-15.2	-14.15/-14.07	-15.92/-18.97	-18.93/-16.33
Θ (157.5°)	-18.08/-18.02	-16.28/-13.2	-10.52/-8.96	-8.22/-8.31	-8.86/-9.56	-9.93/-10.01	-10.46/-12.19	-16.46/-18.5	-16.54/-13.14	-12.5/-13.66	-17.03/-19.09	-17.86/-16.91	-14.77/-15.42	-18.69/-18.47	-18.68/-18.22	-17.82/-16.61	-11.9/-9.72	-9.72/-11.72	-15.78/-19.04	-17.09/-15.36	-16.1/-18.45	-18.05/-19	-18.23/-18.82	-19.31/-17.87
Θ (165°)	-19.34/-18.18	-18.63/-18.89	-16.27/-14.1	-13.06/-13.01	-13.33/-13.67	-14.33/-15.49	-16.47/-17.32	-17.93/-16.35	-14.08/-12.83	-12.91/-13.56	-14.94/-16.66	-18.71/-17.83	-18.79/-19.05	-17.18/-18.05	-17.42/-17.57	-18.17/-18.36	-17.6/-15.91	-15.7/-18.36	-18.59/-19.05	-17.76/-17.18	-17.56/-17.52	-17.72/-19.2	-18.79/-18.27	-18.61/-17.86
Θ (172.5°)	-16.53/-14.62	-13.62/-13.48	-13.33/-12.56	-11.74/-11.46	-11.32/-11.61	-13.93/-16.8	-19.74/-18.24	-18.12/-18.36	-16.77/-15.35	-14.12/-13.54	-13.28/-13.55	-14.64/-14.92	-14.2/-13.25	-12.79/-12.68	-12.92/-13.62	-15.5/-18.24	-17.77/-17.98	-17.12/-16.69	-18.66/-18.91	-18.28/-17.59	-18.33/-17.58	-18.73/-17.85	-18.07/-19.21	
Θ (180°)	-12.19/-11.45	-11.23/-11.38	-11.53/-11.17	-10.57/-10.16	-9.87/-9.94	-10.57/-11.78	-13.64/-16.18	-18.41/-18.29	-18.4/-18.1	-18.69/-18.55	-17.37/-16.6	-16.41/-16.39	-15.74/-14.4	-12.44/-11.53	-11.12/-11.18	-11.68/-12.49	-13.05/-12.9	-12.38/-12.33	-13.3/-15.63	-18.33/-17.65	-18.65/-19.02	-18.7/-17.41	-16.3/-15.91	-15.1/-13.6
Freq(Hz)	2.450Pol.	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°)	-12.89/-7.65	-4.46/-2.87	-1.55/-0.5	0.41/1.15	1.732/0.9	2.192/1.5	1.991/55	1.030/48	-0.12/-0.87	-2.25/-4.55	-7.2/-9.38	-11.02/-13.18	-12.4/-8.22	-4.91/-2.56	-0.89/-0.03	0.64/1.19	1.61/1.88	2/1.92	1.65/1.26	0.89/0.55	0.1/-0.78	-2.32/-4.66	-7.87/-11.67	-17.38/-19.45
Θ (7.5°)	-13.87/-8.62	-5.24/-2.96	-1.29/-0.13	0.76/1.51	2.092/49	2.682/73	2.62/26	1.71/02	0.15/-0.77	-2.35/-4.92	-8.61/-12	-11.45/-10.44	-9.41/-6.93	-4.3/-2.24	-0.94/-0.25	0.17/0.4	0.55/0.67	0.76/0.75	0.55/0.18	-0.24/-0.6	-0.99/-1.69	-3.04/-5.01	-7.75/-11.64	-18.8/-18.46
Θ (15°)	-13.88/-8.43	-4.95/-2.57	-0.87/0.2	0.91/1.47	1.942/32	2.572/75	2.772.53	2.03/1.26	0.23/-0.96	-2.61/-5.37	-9.99/-14.19	-10.94/-8.3	-7.21/-6.22	-4.52/-2.75	-1.48/-0.72	-0.67/-0.89	-1.19/-1.33	-1.3/-1.29	-1.52/-1.99	-2.61/-3.15	-3.59/-4.05	-4.73/-5.82	-7.4/-9.94	-15.13/-18.17
Θ (22.5°)	-17.78/-9.7	-4.65/-1.79	-0.07/0.81	1.18/1.32	1.44/1.67	1.892/11	2.181/97	1.47/0.6	-0.69/-2.43	-4.77/-8.5	-16.58/-18.57	-9.78/-6.51	-5.24/-3.41	-3.34/-2.16	-1.25/-0.94	-1.2/-1.86	-2.56/-2.87	-2.99/-3.27	-4.5/-19	-6.66/-7.9	-8.45/-8.15	-7.43/-7.02	-7.1/-7.98	-10.66/-16.83
Θ (30°)	-18.62/-14.23	-5.03/-1.17	0.71/1.42	1.51/1.18	0.58/0.16	0.18/0.38	0.4/0.16	-0.36/-1.22	-2.44/-3.96	-6.2/-9.41	-15.4/-17.72	-12.11/-7.07	-4.46/-3.03	-2.56/-2.49	-2.48/-1.96	-1.94/-2.45	-3.15/-3.53	-3.98/-5.17	-7.55/-11.02	-13.75/-13.13	-12.02/-11.18	-9.83/-8.26	-6.92/-6.38	-7.08/-9.86
Θ (37.5°)	-9.21/-12.47	-5.32/-0.87	1.07/1.54	1.33/0.69	-0.28/-1.12	-1.14/-0.83	-1.11/-1.91	-3.08/-4.45	-5.6/-6.48	-7.71/-9.75	-13.88/-19.14	-12.82/-12.26	-3.84/-1.78	-1.59/-2.69	-3.88/-3.42	-2.54/-2.52	-2.99/-3.36	-4.23/-6.85	-12.82/-15.86	-11.16/-10.12	-11.46/-13.29	-12.94/-10.54	-7.79/-5.91	-5.49/-6.46
Θ (45°)	-5.97/-6.79	-3.99/-0.61	0.82/0.78	0.2/-0.46	-1.13/-1.49	-1.18/-1.04	-1.62/-2.44	-3.5/-5.3	-7.61/-9.17	-10.06/-10.56	-12.33/-17.47	-17.04/-9.96	-4.39/-2.16	-1.98/-3.55	-5.78/-4.57	-2.72/-2.35	-2.83/-3.16	-3.93/-4.14	-13.57/-8.63	-5.28/-5.91	-10.11/-17.72	-18.15/-17.93	-10.52/-6.43	-5.01/-5.36
Θ (52.5°)	-5.4/-4.93	-2.35/-0.05	0.39/-0.67	-1.62/-1.48	-1.12/-0.7	-0.45/-0.74	-1.29/-1.27	-1.51/-2.94	-5.26/-7.83	-10.49/-12.06	-13.79/-18.42	-15.17/-8.01	-4.72/-9.21	-2.97/-4.46	-6.31/-5.08	-3.11/2.87	-3.46/-3.46	-3.82/-7.09	-12.23/-5.91	-3.21/-4.88	-9.57/-17.89	-15.09/-18.54	-19.15/-8.16	-4.83/-4.65
Θ (60°)	-9.34/-5.59	-2.61/-0.32	-0.21/-2.18	-3.29/-1.88	-0.84/-0.26	-0.06/-0.51	-0.85/-0.37	-0.33/-1.52	-3.63/-1.42	-6.55/-11.23	-17.19/-17.92	-19.25/-9.85	-5.79/-3.75	-3.31/-4.74	-8.27/-1.04	-4.22/-3.62	-4.35/-3.73	-3.25/-5.97	-10.66/-4.87	-2.73/-4.6	-10.58/-16	-11.71/-11.91	-18.22/-12.16	-6.02/-4.02
Θ (67.5°)	-4.69/-5.46	-4.33/-1.9	-1.62/-3.98	-4.33/-1.98	-1.05/-0.74	-0.41/-0.63	-0.67/0.12	0.18/-0.98	-1.96/-2.29	-4.27/-9.81	-18.61/-18.11	-17.45/-9.29												

