

Antenna Composite Gain Test Report

Equipment	Tri-Band Wireless BE19000 2.5G Extender
Brand Name	ZYXEL
Model Name	WE4600-00
Applicant	Zyxel Communications Corporation No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C
Manufacturer	Zyxel Communications Corporation No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C
Standard	KDB 662911 D03 v02
Sample Received	Feb. 20, 2025
Start Test Date	Feb. 24, 2025
Final Test Date	Feb. 25, 2025

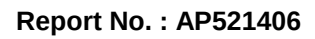

Approved by: Jackson Tsai**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**

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



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1. Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant. Type	Connector	Modes of Operation
2G5G Ant1	1	INPAQ	56-001-000602Z	Dipole	UFL	2.4G+5G
2G5G Ant2	2	INPAQ	56-001-000603Z	Dipole	UFL	2.4G+5G
2G5G Ant3	3	INPAQ	56-001-000604Z	Dipole	UFL	2.4G+5G
2G5G Ant4	4	INPAQ	56-001-000605Z	Dipole	UFL	2.4G+5G
6G Ant1	1	INPAQ	56-001-000598Z	Dipole	UFL	6G
6G Ant2	2	INPAQ	56-001-000599Z	Dipole	UFL	6G
6G Ant3	3	INPAQ	56-001-000600Z	Dipole	UFL	6G
6G Ant4	4	INPAQ	56-001-000601Z	Dipole	UFL	6G

Note:

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

2G5G Ant1~2G5G Ant4 could transmit/receive simultaneously.

6GHz Operation Mode (4TX/4RX)

6G Ant1~6G Ant4 could transmit/receive simultaneously.

2. Test Frequency

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

Band [MHz]	Test Frequency [MHz]
2400-2483.5	2450
5150-5250	5200
5250-5350	5300
5470-5725	5600
5725-5850	5785
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%	24/Feb/2025~25/Feb/2025

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

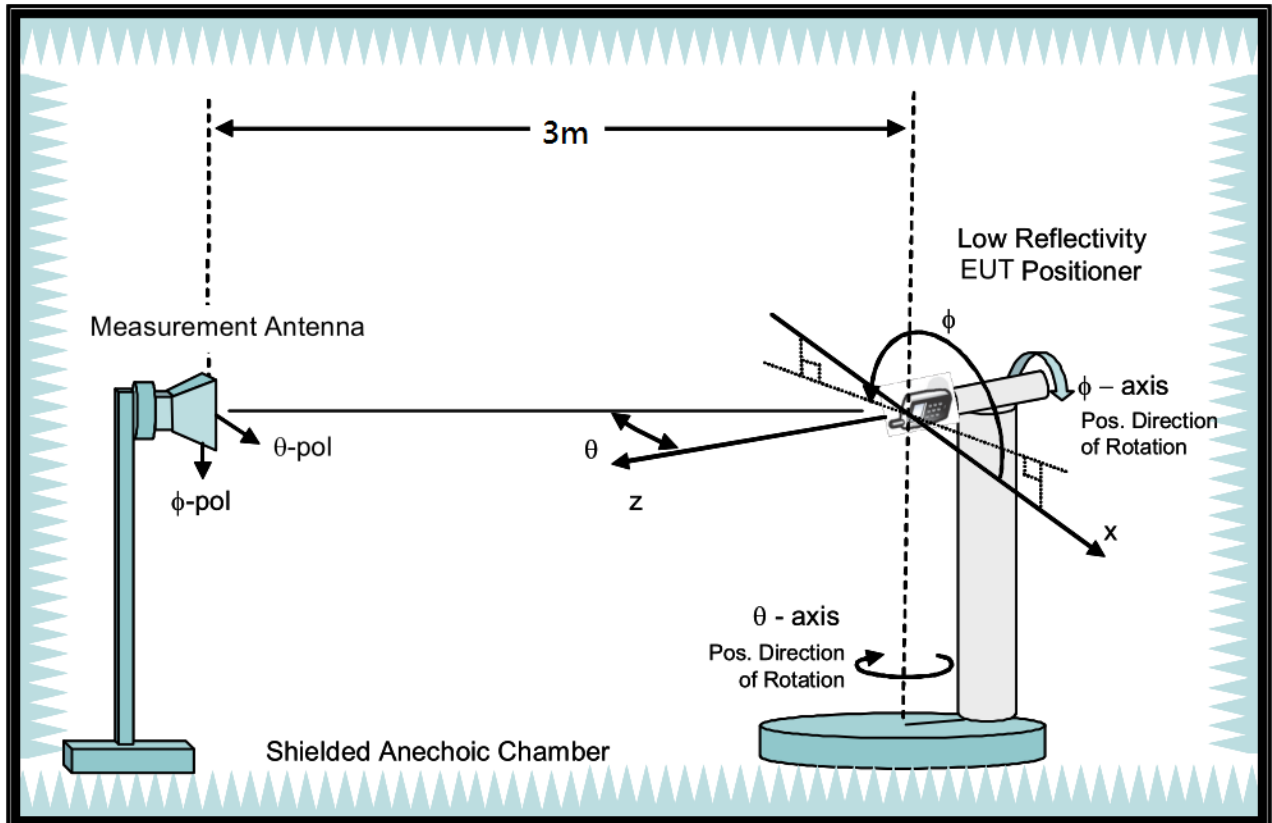
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Dual Polarization Horn antenna

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

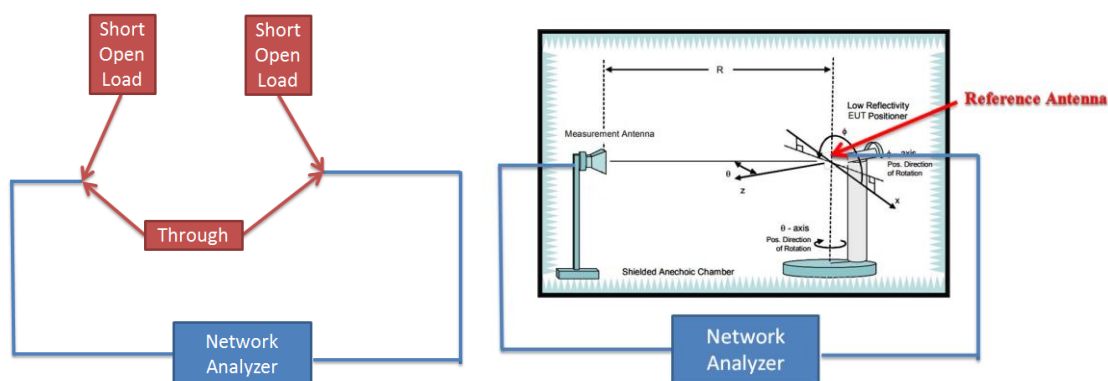
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



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.

Factor = gain factor + power gain conversion= (Reference antenna gain)-(G 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

<2G5G Ant1, 2G5G Ant2, 2G5G Ant3, 2G5G Ant4>

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	4.6	-8.45	2.94	2.58	2.99
Ant. 2 (dBi)	-6.33	-0.03	-9.46	-7.83	1.07
Ant. 3 (dBi)	2.89	-5.24	1.98	3.58	0.51
Ant. 4 (dBi)	-10.59	4.79	-2.33	-7.74	-8.59
DG [1SS] (dBi)	5.74	5.24	5.48	5.28	5.96
Polarization	Phi	Theta	Phi	Phi	Theta
$\Theta(^{\circ})$	67.5	97.5	7.5	15	45
$\Phi(^{\circ})$	7.5	75	7.5	7.5	277.5

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

DG_1SS max value position calculation

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(4.6/20)}$	$10^{(-8.45/20)}$	$10^{(2.94/20)}$	$10^{(2.58/20)}$	$10^{(2.99/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-6.33/20)}$	$10^{(-0.03/20)}$	$10^{(-9.46/20)}$	$10^{(-7.83/20)}$	$10^{(1.07/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(2.89/20)}$	$10^{(-5.24/20)}$	$10^{(1.98/20)}$	$10^{(3.58/20)}$	$10^{(0.51/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-10.59/20)}$	$10^{(4.79/20)}$	$10^{(-2.33/20)}$	$10^{(-7.74/20)}$	$10^{(-8.59/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.698	0.378	1.403	1.346	1.411
Ant. 2 [$10^{(G/20)}$] value	0.483	0.997	0.337	0.406	1.131
Ant. 3 [$10^{(G/20)}$] value	1.395	0.547	1.256	1.51	1.06
Ant. 4 [$10^{(G/20)}$] value	0.295	1.736	0.765	0.41	0.372
Sum All Antenna [Amax]	3.871	3.657	3.76	3.672	3.974
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	5.74	5.24	5.48	5.28	5.96

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

<6G Ant1, 6G Ant2, 6G Ant3, 6G Ant4>

DG_1SS max value position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	0.49	0.22	0.69	0.68
Ant. 2 (dBi)	-1.42	0.12	-1.4	1.24
Ant. 3 (dBi)	-2.04	-3.17	-2.44	-2.78
Ant. 4 (dBi)	-0.7	3.93	1.09	0.23
DG [1SS] (dBi)	5.15	6.66	5.63	5.99
Polarization	Theta	Phi	Theta	Phi
$\Theta(^{\circ})$	105	15	15	7.5
$\Phi(^{\circ})$	60	120	37.5	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)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [$10^{(G/20)}$]	$10^{(0.49/20)}$	$10^{(0.22/20)}$	$10^{(0.69/20)}$	$10^{(0.68/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-1.42/20)}$	$10^{(0.12/20)}$	$10^{(-1.4/20)}$	$10^{(1.24/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(-2.04/20)}$	$10^{(-3.17/20)}$	$10^{(-2.44/20)}$	$10^{(-2.78/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-0.7/20)}$	$10^{(3.93/20)}$	$10^{(1.09/20)}$	$10^{(0.23/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.058	1.026	1.083	1.081
Ant. 2 [$10^{(G/20)}$] value	0.849	1.014	0.851	1.153
Ant. 3 [$10^{(G/20)}$] value	0.791	0.694	0.755	0.726
Ant. 4 [$10^{(G/20)}$] value	0.923	1.572	1.134	1.027
Sum All Antenna [Amax]	3.62	4.306	3.823	3.988
DG [$10 \cdot \log(A_{\max}^2/N_{\text{ant}})$]	5.15	6.66	5.63	5.99

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

8. Summary of Test Result

<2G5G Ant1, 2G5G Ant2, 2G5G Ant3, 2G5G Ant4>

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.6	2.97	3.1	4.09	4.21
Ant. 2 Max Gain (dBi)	2.9	2.29	2.29	2.74	4.56
Ant. 3 Max Gain (dBi)	3.88	2.93	2.92	3.67	2.76
Ant. 4 Max Gain (dBi)	4.75	4.98	4.76	3.7	3.77
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/67.5/7.5	Phi/7.5/352.5	Phi/15/7.5	Theta/30/270	Phi/7.5/352.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/150/150	Phi/127.5/187.5	Theta/112.5/277.5	Theta/135/232.5	Phi/135/195
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/22.5/82.5	Phi/52.5/30	Phi/22.5/7.5	Phi/15/0	Theta/7.5/82.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/135/30	Theta/90/67.5	Theta/90/67.5	Theta/90/180	Theta/90/157.5
Max Gain (dBi)	4.75	4.98	4.76	4.09	4.56
DG [1SS] (dBi)	5.74	5.24	5.48	5.28	5.96
DG [2SS] (dBi)	4.75	4.98	4.76	4.09	4.56
DG [4SS] (dBi)	4.75	4.98	4.76	4.09	4.56

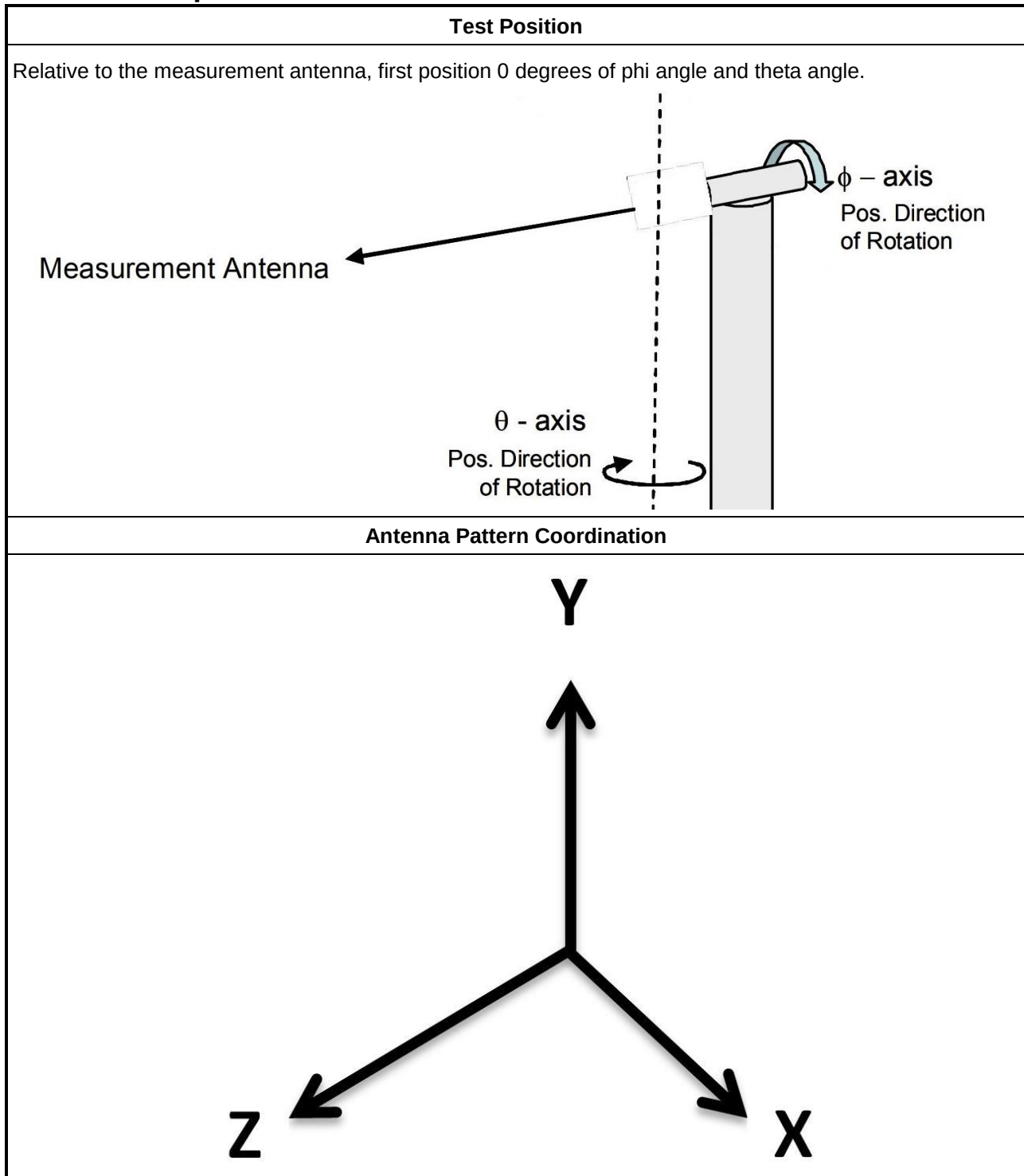
<6G Ant1, 6G Ant2, 6G Ant3, 6G Ant4>

Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.18	4.8	4.11	4.6
Ant. 2 Max Gain (dBi)	4.81	4.78	4.87	4.8
Ant. 3 Max Gain (dBi)	4.61	3.91	3.2	3.15
Ant. 4 Max Gain (dBi)	3.84	4.69	3.85	4.84
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/120/337.5	Phi/120/337.5	Phi/127.5/337.5	Phi/127.5/345
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/157.5/0	Theta/157.5/0	Theta/157.5/352.5	Phi/135/270
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/135/172.5	Phi/127.5/157.5	Theta/97.5/247.5	Theta/97.5/247.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/45/202.5	Phi/15/105	Phi/52.5/75	Phi/52.5/82.5
Max Gain (dBi)	4.81	4.8	4.87	4.84
DG [1SS] (dBi)	5.15	6.66	5.63	5.99
DG [2SS] (dBi)	4.81	4.8	4.87	4.84
DG [4SS] (dBi)	4.81	4.8	4.87	4.84

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
5. Directional Gain (4SS) = Directional Gain (1SS) – 6dB

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
Dual Polarization Horn Antenna	Sporton	S0209DP	S0209DP-001	2GHz~9GHz	N.C.R.	N.C.R.
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	N.C.R.	N.C.R.
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	N.C.R.	N.C.R.
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	N.C.R.	N.C.R.

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

NCR means Non-Calibration required.



11. Test Results

Please refer to the appendix.

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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.6	2.97	3.1	4.09	4.21
Ant. 2 Max Gain (dBi)	2.9	2.29	2.29	2.74	4.56
Ant. 3 Max Gain (dBi)	3.88	2.93	2.92	3.67	2.76
Ant. 4 Max Gain (dBi)	4.75	4.98	4.76	3.7	3.77
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/67.5/7.5	Phi/7.5/352.5	Phi/15/7.5	Theta/30/270	Phi/7.5/352.5
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/150/150	Phi/127.5/187.5	Theta/112.5/277.5	Theta/135/232.5	Phi/135/195
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/22.5/82.5	Phi/52.5/30	Phi/22.5/7.5	Phi/15/0	Theta/7.5/82.5
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/135/30	Theta/90/67.5	Theta/90/67.5	Theta/90/180	Theta/90/157.5
Max Gain (dBi)	4.75	4.98	4.76	4.09	4.56
DG [1SS] (dBi)	5.74	5.24	5.48	5.28	5.96
DG [2SS] (dBi)	4.75	4.98	4.76	4.09	4.56
DG [4SS] (dBi)	4.75	4.98	4.76	4.09	4.56



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

DG 1SS Result

Freq(Hz)	2.45G/Pol.	Phi-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
DG(dB)	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	3.96/3.98	3.84/3.54	3.09/2.48	1.63/0.57	-0.74/-2.41	-4.32/-6.66	-7.56/-6.03	-4.38/-2.97	-1.53/-0.05	1.27/2.3	3.05/5.56	3.92/4.18	4.41/4.45	4.38/4.12	3.66/2.93	2.06/0.9	-0.42/-2.04	-4.11/-6.8	-8.59/-7.25	-4.89/-3.03	-1.5/-0.2	0.92/1.88	2.62/3.13	3.5/3.76
Θ(7.5°)	4.27/4.22	4.35/39	3.01/2.29	1.42/0.36	-0.9/-2.49	-4.36/-6.13	-7.21/-6.19	-4.36/-2.76	-1.48/-0.36	0.72/1.69	2.45/5.09	3.55/3.92	4.18/4.31	4.27/4.04	3.64/3.03	2.19/1.17	-0.15/-1.83	-4.17/-6.66	-7.67/-6.3	-4.52/-2.66	-1.01/0.44	1.62/2.52	3.19/3.65	4.01/4.21
Θ(15°)	4.97/4.92	4.63/4.17	3.56/2.88	2.09/1.13	-0.04/-1.57	-3.39/-5.27	-6.62/-6.48	-4.7/-2.87	-1.54/-0.63	0.1/0.87	1.6/2.24	2.79/3.29	3.74/3.96	4.01/3.87	3.53/3.02	2.24/1.24	-0.09/-1.84	-4.12/-6.41	-6.65/-6.62	-3.92/-2.14	-0.52/0.9	2.09/2.99	3.64/4.12	4.51/4.83
Θ(22.5°)	5.4/5.49	5.32/4.99	4.5/3.9	3.2/2.32	1.22/-0.23	-1.93/-3.84	-5.57/-5.84	-4.47/-2.49	-1.13/-0.4	0.08/0.59	1.12/1.71	2.26/2.76	3.17/3.44	3.5/3.35	3.02/2.45	1.69/0.62	-0.93/-2.79	-5.05/-6.72	-6.44/-5.41	-3.87/-2.34	-0.93/0.56	1.88/2.89	3.67/4.25	4.75/5.15
Θ(30°)	4.97/5.2	5.31/5.25	4.96/4.48	3.89/3.1	2.07/0.7	-0.91/-2.71	-4.46/4.89	-3.52/-1.96	-0.79/-0.14	0.23/0.51	0.84/1.2	1.63/2.1	2.57/2.92	3.12/3.12	2.87/2.34	1.4/0.11	-1.39/-3.28	-5.43/-7.65	-8.27/-8.11	-6.66/-4.51	-2.49/-0.89	0.65/1.84	2.93/3.7	4.25/4.7
Θ(37.5°)	4.06/4.33	4.53/4.69	4.64/4.33	3.84/3.15	2.16/0.83	-0.78/-2.46	-3.57/-3.7	-2.95/-1.83	-1.14/-0.75	-0.35/0.23	0.69/1.06	1.5/1.92	2.41/2.9	3.25/3.34	3.04/2.32	1.13/-0.35	-2.05/-3.72	-5.57/-7.42	-8.59/-7.26	-5.26/-2.96	-1.05/0.45	1.62/2.4	2.88/3.15	3.39/3.75
Θ(45°)	4.59/4.5	4.22/4.04	3.97/3.69	3.26/2.67	1.81/0.5	-1.23/-3.21	-3.99/-3.34	-2.55/-1.45	-1.13/-0.92	-0.52/0.04	0.39/0.72	1.06/1.4	1.92/2.47	2.81/2.79	2.32/1.49	0.37/-0.85	-2.06/-3.13	-4.27/-5.73	-6.25/-4.26	-1.43/0.56	1.93/2.9	3.74/3.32	4.71/4.76	4.63/4.6
Θ(52.5°)	5.14/88	4.32/3.7	3.31/2.88	2.38/1.85	1.12/-0.17	-2/-4.49	-5.09/-3.65	-2.3/-0.98	-0.36/0.21	0.77/0.93	0.89/0.84	0.84/1.04	1.52/1.93	1.23/0.41	-0.61/-1.7	-2.72/-3.46	-5.07/-7.52	-8.25/-4.81	-1.15/1.08	2.42/3.23	3.79/4.29	4.77/5.06	5.15/5.15	
Θ(60°)	4.45/4.57	4.23/3.71	3.16/2.65	2.1/24	0.6/0.35	-1.84/-4.33	-6.3/-5.75	-3.72/-2.01	-0.79/0.19	0.81/1.06	1.14/1.19	1.25/1.41	1.61/1.67	1.53/1.13	0.49/-0.4	-1.5/-2.64	-4.17/-5.85	-8.8/-12.23	-11.85/-5.52	-2.2/-0.28	1.08/2.04	2.46/2.62	2.77/3.1	3.64/4.13
Θ(67.5°)	5.415.74	5.67/5.13	4.46/3.46	2.53/1.48	0.5/0.37	-1.32/-2.86	-5.72/-7.52	-4.98/-2.69	-1.49/-0.74	-0.11/0.3	0.50/0.44	0.09/-0.23	-0.37/-0.35	-0.65/-1.25	-2.31/-3.44	-4.07/-4.58	-5.99/-8.21	-10.98/-10.98	-8.36/-5.43	-3.31/-1.65	-0.15/0.94	1.43/1.52	1.99/2.59	3.82/4.84
Θ(75°)	5.26/5.41	5.19/4.62	3.77/2.95	2.11/1.12	-0.06/-1.5	-3.07/-5.18	-7.92/-8.41	-5.32/-2.96	-1.59/-1	-0.8/-0.03	-0.95/-1	-1.07/-0.52	0.04/0.19	-0.26/-1.25	-2.39/-3.68	-5.28/-7.03	-9.02/-11.14	-10.98/-9.4	-7.8/-6.35	-4.17/-2.15	-0.56/0.57	1.41/2.11	2.75/3.59	4.32/4.9
Θ(82.5°)	5.37/5.37	5.02/4.44	3.85/3.31	2.77/2.09	1.3/0.21	-1.34/-3.62	-6.8/-8.14	-6.88/-4.53	-3.15/-2.65	-2.58/-1.77	-1.01/-0.21	0.39/0.7	0.58/-0.11	-1.4/-2.47	-3.17/-3.77	-5.3/-7.2	-8.36/-8.64	-7.69/-7	-6.74/-5.87	-3.53/-1.51	-0.25/0.66	1.25/1.87	2.61/3.43	4.42/5.08
Θ(90°)	4.54/4.97	5.16/4.99	4.38/3.33	2.02/0.81	0.08/-0.44	-1.42/-3.2	-5.69/-7.75	-8.53/-8.58	-6.12/-4.49	-3.35/-2.06	-0.61/0.43	0.92/0.81	0.22/-0.63	-1.55/-3.23	-3.04/-3.78	-4.49/-4.99	-6.01/-6.93	-7.85/-9.09	-9.33/-7.06	-4.16/-1.95	-0.41/0.48	0.85/1.11	1.59/2.02	2.86/3.83
Θ(97.5°)	4.79/5.28	5.52/5.51	5.24/4.49	3.18/1.65	0.64/-0.28	-1.83/-3.76	-4.79/-4.41	-4.77/-5.22	-4.74/-3.68	-2.41/-0.89	0.15/0.56	0.41/-0.18	-0.86/-1.57	-2.68/-3.65	-3.93/-3.59	-3.3/-0.45	-5.11/-5.28	-5.82/-7.77	-8.4/-8.47	-4.48/-3.02	-1.51/-0.13	0.61/1.57	2.29/2.59	3.2/4.1
Θ(105°)	4.81/4.98	4.83/4.79	4.72/4.22	3.01/1.18	0.09/-0.21	-1.24/-3.86	-6.3/-6.52	-6.11/-6.46	-5.79/-4.62	-2.98/-1.87	-1.04/-0.7	-0.69/-0.63	-0.64/-0.97	-1.37/-1.35	-1.27/-1.95	-5.98/-6.67	-5.48/-3.81	-3.52/-3.05	-2.02/-0.72	0.35/1.13	1.84/2.59	3.43/4.26		
Θ(112.5°)	4.43/4.78	4.61/4.12	3.88/3.54	2.48/0.44	-0.43/-0.19	-0.37/-1.62	-4.08/4.76	-3.86/-3.43	-3.15/-3.33	-3.28/-2.11	-1.04/0.25	0.92/1.12	0.85/0.34	0.03/0.33	-1.62/-4.21	-5.33/-6.16	-5.5/-5.43	-7.23/-7.25	-5.2/-3.84	-3.15/-2.46	-1.73/0.74	0.41/0.22	1.16/1.55	2.48/3.53
Θ(120°)	2.85/3.18	3.06/2.67	2.82/3.19	3.02/1.7	-0.9/-3.02	-3.12/-4.04	-5.43/-5.75	-4.17/-2.28	-1.26/-0.96	0.47/0.86	1.01/0.54	-0.58/-1.87	-3.05/-3.77	-4.44/-3.14	-3/-3.26	-3.8/-5.16	-5.36/-3.53	-2.53/-2.72	-3.49/-3.99	-3.5/-2.05	0.1/1.28	1.43/1.15	1.32/2.17	
Θ(127.5°)	4.15/4.49	4.33/3.83	3.42/3.58	3.39/2.31	0.38/-0.74	-0.52/-0.85	-2/-3.39	-4.16/-4.05	-3.62/-3.53	-3.21/-2.32	-1.48/-1.15	-1.16/-1.45	-1.91/-2.85	-4.75/-4.93	-3.32/-0.03	0.95/0.48	-1.2/-3.18	-2.91/-0.65	0.09/0.27	-0.98/-1.84	-3.06/-3.29	1.68/0	0.78/1.45	2.26/3.12
Θ(135°)	1.82/2.29	2.35/2.27	2.03/1.68	0.86/-0.97	-2.67/-1.35	0.02/0.35	-0.17/-1.3	-2.82/-3.83	-4.54/-4.38	-3.62/-1.8	-0.6/-0.01	0.45/0.85	0.79/0.17	-0.39/-0.2	0.93/1.56	1.12/0.43	-2.32/0.49	-3.17/-1.35	-1.17/-1.92	-2.43/-2.09	-2.14/-2.32	-1.63/-0.4	0.39/0.56	0.54/1.08
Θ(142.5°)	1.84/1.96	1.96/1.86	1.66/1.23	0.48/-0.69	-2.17/-3.51	-3.65/-3.81	-4.13/-5.09	-6.12/-8.77	-8.36/-8.63	-3.9/-1.99	-0.82/0.21	1.11/1.66	1.86/1.91	1.76/1.59	1.3/0.4	-1/-2.52	-3.76/-2.57	-1.11/-0.59	-0.98/-1.74	-2.32/-2.75	-2.49/-1.89	-0.44/0.84	1.68/2.03	2.1/88
Θ(150°)	3.06/3.16	3.06/2.64	1.94/1.12	0.2/0.96	-2.39/-3.88	-4.56/-4.85	-5.64/-6.31	-6.99/-6.59	-6.44/-5.89	-5.07/-3.6	-2.16/-0.93	0.08/0.77	1.14/1.07	0.66/-0.12	1.3/-2.75	-4.64/-5.24	-3.9/-1.97	-0.77/-0.45	-0.54/-0.85	-0.64/-0.5	0.05/0.85	1.67/2.23	2.58/2.8	
Θ(157.5°)	1.17/1.22	1.07/0.78	0.42/0.09	-0.36/-1.14	-2.29/-3.78	-4.59/-5.13	-4.61/3.76	-3.04/-2.83	-3.06/-3.51	-3.99/-4.17	-3.65/-2.95	-2.36/-2.12	-2.3/-2.74	-3.5/-4.83	-6.64/-7.48	-6.8/-4.47	-2.57/-1.39	-0.81/-0.76	-1.11/-1.14	-0.76/-0.36	-0.18/-0.16	-0.17/-0.07	0.2/0.52	0.81/0.9
Θ(165°)	-1.87/-2.14	-2.48/-2.09	-1.75/-1.69	-2.1/-2.92	-3.99/-5.02	-5.51/-5.27	-4.46/-3.47	-2.55/-2.72	-2.3/-2.82	-3.68/-3.44	-4.94/-5.3	-5.57/-5.41	-5.16/-5.04	-5.12/-5.22	-5/-4.31	-3.45/-2.64	-1.99/-1.63	-1.55/-1.73	-2.08/-2.32	-2.32/-1.85	-1.56/-1.39	-1.32/-1.23	-1.19/-1.23	-1.42/-1.78
Θ(172.5°)	-3.65/-3.64	-3.44/-3.26	-3.26/-3.6	-4.21/-4.91	-5.59/-6.21	-6.43/-6.04	-5.33/-4.73	-4.53/-4.42	-4.36/-4.79	-4.36/-4.27	-7.91/-7.74	-7.17/-5.91	-4.71/-5.47	-3.49/-3.03	-2.71/-2.52	-2.45/-2.44	-2.52/-2.68	-3.47/-4.29	-4.37/-4.25	-4.23/-3.72	-3.37/-3.11	-3.02/-3.16	-3.41/-3.56	
Θ(180°)	-3/-2.6	-2.35/-2.37	-2.65/-3.1	-3.6/-4.04	-4.28/-4.5	-4.71/-5.01	-5.46/-5.83	-6.52/-7.4	-8.19/-9.17	-9.93/-10.26	-9.51/-8.51	-7.13/-5.86	-4.94/-4.32	-3.9/-3.66	-3.64/-3.79	-4.05/-4.19	-4.46/-4.68	-5.26/-5.99	-6.62/-6.69	-7.04/-6.8	-6.58/-6.36	-6.03/-5.68	-5.41/-4.77	-4.26/-3.52
Freq(Hz)	2.45G/Pol.	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°)	-7.32/-7.44	-5.94/-4.16	-2.41/-0.6	0.81/2	2.79/3.36	3.59/3.61	3.35/3.15	3.01/2.93	2.82/2.54	2.03/1.23	0.07/-1.59	-3.44/-6.03	-7.3/-7.49	-5.59/-3.73	-1.87/-0.43	0.85/1.84	2.57/3.1	3.44/3.7	3.92/4.03	4.01/3.77	3.32/3.61	1.79/0.94	-0.06/-1.38	-3.21/-5.66
Θ(7.5°)	-8.21/-7.48	-5.63/-3.62	-1.73/-0.25	1.11/2.14	2.87/3.38	3.63/3.64	3.39/3.03	2.67/2.47	2.37/2.32	2.05/1.51	0.61/-0.75	-2.31/-4.34	-5.73/-6.54	-5.77/-3.99	-2.29/-0.87	0.61/1.75	2.63/3.22	3.59/3.82	3.95/4.05	3.95/3.73	3.33/2.74	2.12/1.19	0.01/-1.52	-3.76/-6.16
Θ(15°)	-5.44/-5.99	-4.56/-2.94	-1.04/0.33	1.59/2.46	3.13/3.65	3.93/3.96	3.76/3.31	2.85/2.58	2.54/2.61	2.58/2.32	1.7/0.78	-0.39/-1.85	-3.63/-4.74	-4.87/-4.05	-2.59/-1.15	0.17/1.44	2.46/3.2	3.71/4.05	4.28/4.39	4.41/4.36	4.23/3.89	3.42/2.7	1.69/0.39	-1.26/-3.34
Θ(22.5°)	-2.64/-3.78	-3.34/-1.79	-0.30/-96	1.96/2.79	3.44/3.95	4.32/4.46	4.35/4.03	3.59/3.18	2.94/2.92	2.92/2.67	2.09/1.18	0.01/-1.43	-2.79/-3.51	-3.48/-2.88	-1.92/-0.9	0.25/1.17	1.89/2.59	3.2/3.64	3.95/4.21	4.42/4.54	4.55/4.42	4.11/3.6	2.83/1.82	0.54/-0.97
Θ(30°)	-1.25/-2.18	-1.99/-0.96	0.29/1.46	2.39/3.15	3.72/4.17	4.54/4.78	4.83/4.69	4.39/3.98	3.51/3.16	2.94/2.64	2.12/1.34	0.34/-0.79	-1.65/-1.88	-1.87/-1.7	-1.33/-0.71	-0.02/0.65	1.3/1.9	2.45/2.79	3.23/3.5	3.64/3.78	3.87/3.67	3.46/3.09	2.52/1.81	0.94/-0.14
Θ(37.5°)	-1.42/-2.06	-1.58/-0.5	0.72/1.85	2.73/3.34	3.75/4.04	4.33/4.62	4.75/4.66	4.35/4.36	3.06/2.74	2.32/1.66	0.85/0.66	-0.38/-0.57	-0.76/-0.97	-1.33/-0.71	-1.33/-0.71	1.21/2.09	2.81/3.23	3.93/4.49	3.62/3.68	3.61/3.47	3.27/3.97	2.51/7.8	1.0/39	-1.04/-0.7
Θ(45°)	-2.71/-2.44	-1.8/-0.43	1.06/2.39	3.36/3.96	4.26/4.41	4.54/4.69	4.78/4.8	4.75/4.51	4.09/3.67	3.38/3.11	2.73/2.18	1.56/0.94	0.4/0.02	-0.33/-0.43	0.16/1.22	2.21/2.96	3.47/3.67	3.64/3.57	3.56/3.52	3.32/3.89	2.38/1.91	1.47/0.8		



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(22.5°)	4.094.11	4.013.6	3.052.5	1.730.91	0.34/-0.4	-1.67/-3.69	-6.91/-9.03	-6.47/-3.95	-2.61/-1.07	0.37/1.34	2.09/2.81	3.16/3.21	3.18/3.05	2.74/2.35	1.49/0.66	-0.07/-1.17	-2.57/-3.56	-4.24/-4.36	-3.97/-3.07	-2.31/-1.4	-0.19/0.68	1.25/1.83	2.29/2.92	3.52/3.91
Θ(30°)	3.66/3.8	3.43/3.04	2.69/2.44	1.76/0.98	0.22/-0.68	-1.96/-3.94	-6.93/-9.03	-7.72/-5.41	-3.87/-2.65	-1.13/0.8	1.74/2.25	2.67/2.87	3.2/95	2.57/2	1.08/0.43	-0.15/-0.5	-0.96/-2.18	-3.62/-4.47	-5.22/-4.95	-3.04/-1.35	-0.20/-7.1	1.58/2.22	2.39/2.74	3.14/3.24
Θ(37.5°)	4.34/2.1	3.96/3.14	2.49/2.19	1.92/1.49	0.08/-2.45	-2.82/-7.66	-10.01/-9.62	-7.59/-6.53	-5.3/-5.05	-2.59/-0.13	0.57/1.23	1.78/2.32	2.21/4	0.72/0.55	0.47/0.06	-0.68/-1.93	-3.69/-5.9	-7.84/-8.21	-5.94/-3.4	-1.91/-1.35	-0.69/0.65	1.09/1.19	1.57/1.91	2.89/3.87
Θ(45°)	3.99/3.57	2.99/2.87	2.88/2.42	1.39/0.58	-0.67/-1.91	-3.86/-6.69	-8.89/-8.62	-7.18/-5.9	-4.47/-3.79	-3.48/-2.26	-1.06/-0.13	0.35/1.27	1.5/1.12	0.38/0.12	-0.09/-0.54	-1.77/-2.87	-3.51/-3.46	-3.27/-4.18	-4.76/-4.54	-3.74/-1.81	-0.03/0.58	0.45/0.51	1.29/2.09	2.89/3.7
Θ(52.5°)	3.2/3.33	3.2/3.51	3.42/2.57	1.17/0.31	-0.72/-1.89	-4.04/-5.72	-7.03/-8.19	-7.42/-6.44	-5.23/-4.48	-3.67/-2.84	-2.11/-1.11	-0.20/92	1/0.42	-0.52/0.14	-0.82/-1.31	-1.49/-2.36	-4.4/-5.69	-6.43/-6.19	-2.36/-1.44	-1.32/-0.47	0.67/0.68	1.21/1.94	2.52/2.85	
Θ(60°)	2.26/3.24	2.78/2.78	2.47/1.78	-0.11/-1.05	-0.48/-1.08	-2.79/-4.22	-5.66/-7.39	-7.46/-6.9	-2.59/-4.05	-3.78/-2.82	-2.2/2.63	-1.63/-0.36	0.47/-0.53	-1.68/-1.22	-0.66/-1.42	-4.15/-5.07	-0.06/-5.13	-8.86/-7.42	-8.35/-5.84	-3.94/-2.61	-1.47/-0.18	-0.40	0.45/1.08	
Θ(67.5°)	3.08/3.01	2.26/2.32	2.72/2.05	0.15/-0.79	-0.69/-1.54	-2.86/-4.13	-6.05/-9.29	-9.21/-5.74	-3.2/-2.64	-3.64/-3.8	-3.26/-2.77	-3.11/-1.94	-1.51/-1.73	-1.52/-1.23	-1.24/-1.74	-1.95/-2.68	-3.8/-4.85	-5.9/-6.36	-6.71/-7.7	-7.01/-6.29	-5.54/-3.56	-1.44/-0.53	0.11/-0.02	1.4/2.6
Θ(75°)	1.85/1.51	2.24/2.93	2.42/0.9	-0.84/-0.74	-0.58/-1.18	-2.52/-4.53	-6.75/-8.97	-8.49/-6.66	-3.48/-3.24	-3.91/-3.78	-3.65/-3.91	-4.43/-2.65	-2.54/-3.03	-2.29/-2.62	-2.8/-1.55	-1.47/-3.59	-5.14/-7.92	-9.11/-11.28	-11.07/-8.42	-8.81/-8.25	-6.6/-4.88	-2.63/-0.62	-0.21/0.35	1.12/1.8
Θ(82.5°)	1.61/0.9	1.44/2.03	1.63/-0.08	-1.42/-0.52	-0.28/-0.96	-2.22/-4.14	-7.2/-8.07	-6.29/-4.42	-2.37/-2.38	-3.99/-3.72	-3.01/-4.01	-5.52/-5.38	-4.41/-3.12	-2.44/-3.38	-1.48/-0.6	-0.61/-1.77	-4.48/-8.12	-10.79/-11.67	-11.08/-9.14	-8.71/-7.09	-6.48/-3.75	-2.88/-2.44	-2.04/-0.46	1.352/1.7
Θ(90°)	1.05/1	2.11/67	0.35/-1.81	-1.44/-0.83	0.07/-0.41	-1.62/-3.52	-6.23/-8.18	-6.1/-4.23	-3.22/-3.06	-4.61/-4.77	-4.9/-4.11	-4.88/-6.02	-5.9/-3.02	-1.22/-2.31	-2.92/-0.48	0.36/-0.25	-2.34/-5.97	-7.96/-9.1	-10.2/-7.11	-6.71/-3.81	-1.7/-0.62	-1.08/-1.15	-1.59/-1.38	1.18/1.96
Θ(97.5°)	0.65/0.53	1.71/0.59	-1.55/-2.81	-1.68/-0.91	-1.05/-1.61	-2.68/-4.61	-5.05/-5.28	-4.63/-3.84	-3.1/-3.37	-5.71/-5.87	-4.56/-4.4	-2.05/-2.94	-4.8/-2.66	-0.78/-1.26	-2.05/-2.97	-2.48/-4.9	-9.32/-7.85	-9.35/-6.85	-6.91/-4.37	-0.49/0.62	-0.21/-0.9	-1.26/-1.57	-0.26/-1.18	
Θ(105°)	0.64/0.31	1.39/0.75	-1.78/-3.88	-1.85/-1.67	-2.09/-2.46	-3.35/-4.05	-5.56/-5.68	-5.91/-5.71	-4.16/-4.28	-5.96/-5.53	-4.29/-4.02	-2.97/-2.31	-2.02/-2.42	-1.07/-1.43	-2.65/-4.18	-3.16/-1.72	-0.87/-2.84	-4.92/-6.16	-5.76/-4.21	-6.48/-3.49	-2.34/-0.94	-2.84/-2.87	-2.33/-0.36	0.82/0.23
Θ(112.5°)	-0.12/0.36	1.77/2.07	-1.46/-3.16	-3.11/-2.38	-2.69/-2.82	-4.62/-6.13	-5.52/-3.95	-3.65/-4.69	-4.23/-4.68	-5.01/-2.8	-3.64/-4.38	-1.46/-1.21	-2.14/-3.68	-2.06/-1.73	-3.85/-6.01	-4.86/-2.52	-1.94/-2.83	-4.48/-5.88	-6.56/-5.31	-4.99/-4.68	-3.72/-2.62	-3.16/-4.65	-2.59/-1.32	-0.74/1.68
Θ(120°)	1.25/1.81	3.27/2.34	-0.14/-2.46	-2.65/-2.71	-3.18/-4.94	-5.94/-6.27	-6.06/-5.57	-4.77/-3.07	-2.64/-3.81	-3.87/-4.11	-4.71/-6.22	-3.56/-1.75	-1.45/-3.41	-0.88/-1.16	-1.18/-2.15	-4.87/-3.26	-2.31/-3.53	-3.36/-4.41	-5.67/-4.44	-4.5/-3.81	-2.02/-4.08	-2.06/0.53	2.47/2.18	
Θ(127.5°)	1.25/1.27	1.80/85	-0.6/-1.74	-2.96/-4.31	-5.43/-6.71	-7.27/-7.07	-6.21/5.15	-2.71/-1.85	-2.37/-3.22	-5.23/-6.41	-6.05/-2.69	-1.35/-0.28	-0.53/-1.58	-0.15/-1.6	-2.43/-2.98	-4.76/-2.17	-1.86/-1.52	-3.05/-5.9	-6.27/-5.14	-2.86/-2.62	-2.93/-4.38	-4.32/-2.15	-2.20/0.19	1.19/1.92
Θ(135°)	-1.71/-2.42	-1.27/-2.26	-2.32/-2.33	-3.46/-5.13	-6.48/-4.31	-3.41/-4.24	-4.73/-5.29	-5.58/-3.84	-4.14/-4.78	-3.97/-4.5	-3.85/-2.93	-1.38/-1.72	-3.74/-2.04	-0.45/-2.44	-3.9/-4.43	-4.24/-1.4	-0.83/0.08	-2.86/-5.71	-5.18/-5.38	-6.42/-3.02	-0.42/-2.66	-4.44/-4.02	-6.29/-3.95	-2.94/-0.57
Θ(142.5°)	0.46/-0.51	-1.28/-3.22	-3.24/-2.32	-2.96/-1.42	-4.17/-2.85	-2.21/-1.73	-1.31/-2.32	-4.77/-6.4	-7/-6.32	-4.66/-3.15	-2.08/-0.58	-0.17/-1.35	-2.01/-1.96	-1.46/-1.56	-2.5/-1.8	-1.15/-0.62	0.15/-1.26	-5.19/-6.62	-5.59/-0.77	-9.35/-6.22	-1.59/-2.07	-1.78/-2.35	-2.75/-1.46	
Θ(150°)	0.81/0.01	-0.64/-1.13	-2.44/-3.38	-3.78/-3.93	-3.27/-1.69	-1.69/-4.22	-3.73/-5.89	-7.01/-5.25	-4.35/-4	-2.41/-0.67	0.17/0.4	0.53/0.62	0.4/-0.67	-1.64/-1.72	-0.88/0.25	-0.2/-1.75	-3.14/-3.16	-3.65/-5.78	-8.1/-7.1	-3.65/-1.1	-1.25/-1.45	-0.18/0.13	0.76/0.91	
Θ(157.5°)	0.62/0.25	-0.51/-1.29	-2.01/-2.71	-4.03/-6.16	-6.92/-5.95	-5.34/-5.57	-6.3/-6.69	-6.29/-6.56	-6.27/-4.21	-1.81/-0.38	0.59/1.23	1.74/1.64	1.09/0.74	-0.02/-1.73	-3.21/-3.12	-3.32/-4.07	-4.86/-5.61	-6.32/-7.03	-6.93/-6.03	-8.6/-7.18	-6.25/-5.05	-3.95/-2.89	-1.48/-0.79	-0.04/0.55
Θ(165°)	-2.15/-2.5	-2.86/-3.77	-5.2/-6.46	-6.35/-6.42	-6.5/-6.82	-7.73/-8.98	-9.9/-10.57	-10.04/-8.42	-8.01/-7.2	-5.5/-4.13	-3.27/-2.11	-1.05/-0.99	-1.78/-2.52	-3.65/-4.7	-5.09/-5.17	-5.55/-6.05	-5.02/-4.83	-5.07/-5.57	-5.68/-6.74	-6.33/-6.74	-7.86/-8.16	-6.74/-5.29	-4.05/-2.64	-2.28/-2.33
Θ(172.5°)	-8.53/-8	-7.73/-4.79	-6.53/-6.11	-5.86/-5.84	-6.08/-7.28	-8.71/-8.77	-8.81/-8.06	-7.46/-6.55	-6.4/-5.75	-4.91/-4.13	-3.33/-2.62	-2.13/-1.96	-2.03/-2.41	-3.34/-4.61	-5.99/-7.22	-8.04/-7.87	-7.06/-6.22	-5.8/-5.6	-6.63/-6.55	-6.67/-7.12	-8.05/-8.97	-9.51/-10.61	-12.78/-11.91	-10.35/-9.7
Θ(180°)	-4.66/-4.83	-5.76/-5.99	-6.38/-6.36	-5.6/-5.88	-7.28/-7.84	-7.6/-7.87	-8.71/-9.49	-9.07/-7.9	-7.71/-8.06	-8.31/-8.63	-9.05/-9.03	-7.94/-7.5	-7.59/-7.94	-8.46/-9.16	-9.94/-9.37	-7.54/-6.47	-5.67/-4.41	-3.71/-3.69	-4/-4.83	-5.5/-5.53	-5.45/-5.75	-6.37/-6.75	-6.64/-6.38	-5.73/-5.16
Freq(Hz)	5.3GPol	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°)	-6.52/-8.97	-8.32/-6.47	-5.17/-3.21	-1.53/0.26	1.52/2.42	3.14/3.67	4.06/4.32	4.4/4.37	4.09/3.63	3.15/2.43	1.27/-0.32	-2.29/-4.82	-7.59/-9.69	-8.62/-6.31	-4.24/-2.58	-0.82/0.86	1.99/2.75	3.25/3.62	4.04/4.32	4.47/4.35	4.01/3.5	3.03/2.33	1.34/0.01	-1.57/-4.04
Θ(7.5°)	-8.04/-10.72	-9.82/-7.27	-5.16/-2.94	-1.11/0.52	1.75/2.74	3.47/3.89	4.13/4.31	4.44/4.41	4.1/3.72	3.35/2.8	1.88/0.16	-1.97/-4.52	-7.25/-8.49	-8.32/-6.18	-4.16/-2.71	-0.64/0.89	2.02/2.9	3.52/3.9	4.14/4.25	4.26/4.07	3.67/2.99	2.36/1.5	0.4/-1.07	-2.95/-5.57
Θ(15°)	-9.67/-10.93	-9.72/-6.63	-4.29/-2.22	-0.33/0.68	1.68/2.65	3.33/3.72	3.99/4.25	4.43/4.17	3.68/3.37	3.13/2.52	1.41/-0.06	-1.71/-3.85	-5.54/-7.05	-6.33/-4.57	-3.59/-2.29	-1.01/-0.11	1.03/1.67	2.15/2.7	3.08/2.97	2.61/2.29	1.97/1.56	0.94/0.01	-1.14/-2.87	-4.82/-7.1
Θ(22.5°)	-8.42/-8.95	-8.14/-5.86	-3.62/-1.42	0.10/2	1.11/2.27	2.96/3.44	3.53/3.61	3.76/3.6	3.12/6	2.39/1.63	0.23/-1.14	-1.99/-2.81	-4.14/-4.84	-4.5/-3.59	-2.87/-2.02	-1.1/-0.3	4.91/3.1	1.86/1.91	1.95/1.71	0.95/0.24	-0.21/0.81	-1.67/-3.44	-5.33/-7.09	
Θ(30°)	-7.91/-7.48	-5.62/-4.13	-3.48/-1.95	-0.43/0.7	1.22/1.9	2.23/2.45	2.85/3.12	3.16/2.94	2.68/2.5	2.01/1.32	0.68/-0.16	-1.76/-2.99	-3.58/-3.4	-3.54/-2.92	-2.23/-1.51	-1.09/-0.35	0.46/0.89	1.06/1.64	2.17/2.58	2.99/3.42	3.43/2.74	1.63/0.85	-0.11/-2.01	-4.58/-6.91
Θ(37.5°)	-4.82/-5.13	-4.58/-2.99	-2.09/-0.76	0.32/0.88	1.72/2.1	2.43/2.68	3.13/3.06	2.57/2.29	2.19/1.54	0.43/-0.92	-3.16/-3.68	-3.15/-2.76	-1.88/-1.24	-0.8/-0.9	0.40/0.84	0.98/1.28	2.23/2.22	3.64/3.62	3.56/3.31	3.13/1.8	2.63/1.35	-0.32/-2.18	-4.13/-4.86	
Θ(45°)	-3.08/-4.45	-4.84/-3.58	-1.66/0.32	1.48/1.86	2.33/2.46	2.38/2.35	1.94/1.5	1.71/2.14	1.99/1.42	1.51/1.23	-0.05/-0.66	-1.25/-1.72	-2.51/-2.25	-0.81/-0.11	0.01/0.07	0.63/-0.91	-0.38/-0.17	0.10/2.9	0.62/1	1.83/2.61	1.94/1.05	-0.23/-2.11	-3.66/-3.38	
Θ(52.5°)	-2.43/-2.59	-3.56/-2.13	-0.77/1.47	2.5/2.75	3.13/3.12	2.61/2.23	1.97/1.82	1.77/2.16	2.23/1.93	1.92/1.68	0.96/-0.05	-0.9/-1.16	-1.56/-1.29	-1.07/-0.72	-0.34/-1.32	-1.09/-0.52	0.39/0.6	0.35/0.93	1.0/5.6	0.91/1.39	1.24/0.49	0.67/0.14	-1.76/-3.32	-4.13/-2.3
Θ(60°)	-1.84/-1.4	-2.71/-2.4	0.26/1.92	2.21/2.27	2.51/2.73	2.77/2.81	2.88/2.66	2.35/2.47	2.54/1.89	0.98/0.23	-0.74/0.14	0.65/-0.05	-0.74/-0.4	0.24/0.48	0.06/-0.12	-0.35/-0.45	0.52/1.23	1.59/1.63	0.68/0.23	-1.04/-1.39	-1.89/-4.06	-5.21/-3.71		
Θ(67.5°)	-1.64/-1.39	-1.21/0.37	1.36/2.02	2.82/2.67	2.9/2.3	3.24/3.01	2.7/2.49	2.42/3.7	2.23/1.79	1.76/1.71	1.07/-1.09	-0.74/0.48	1.09/0.7	0.26/1.02	0.96/0.3	-0.54/-1.26	-1.5/-0.02	0.73/0.87	1.32/1.01	-0.18/-1.56	-1.57/-0.25	-0.58/-1.07	-1.62/-2.9	-3.85/-2.92
Θ(75°)	-2.14/-1.47	-2.19/-0.61	2.12/2.74	2.42/2.51	3.01/3.75	4.07/4.14	3.93/3.38	2.71/2.14	2.78/2.46	1.31/1.65	1.8/-0.5	-1.43/0.9	1.12/0.44	-0.06/0.11	0.21/0.48	0.23/-1.51	-1.19/-0.24	0.97/1.33	1.66/0.94	-0.56/-1.26	-0.96/-0.98	-1.72/-2.21	-3.21/-5.13	-4.13/-2.41
Θ(82.5°)	-1.36/-0.91	-3.89/-0.84	1.42/1.48	2.64/3.27	3.54/4.23	4.33/4.29	4.12/3.94	3.46/3.04	2.93/2.39	1.63/2.04	1.23/-0.87	-0.81/1.28	1.38/0.2	0.04/-0.23	0.43/0.95	-0.06/-1.12	-1.26/-0.11	0.31/1.26	0.66/0.67	0				



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(67.5°)	3.59/4.51	4.47/3.9	2.55/2.18	2.56/2.6	1.83/0.37	-1.38/-3.21	-6.3/-10.34	-7.5/-3.79	-3.08/-2.87	-3.7/-2.35	-0.92/+0.23	0.35/-1.05	-1.53/+0.26	-0.24/+0.84	0.2/0.64	-0.68/-1.75	-3.54/+4.63	-7.45/-10.13	-11.48/-9.04	-5.75/-4.85	-4.98/+4.23	-2.02/0.14	2.05/2.85	3.53/2.96
Θ(75°)	2.71/3.46	3.76/2.36	1.92/2.07	2.19/2.62	1.38/-0.18	-1.47/-3.16	-5.8/-7.56	-6.84/-5.01	-2.93/-1.64	-2.91/-3.6	-3.09/-2.38	-2.2/-2.12	-1.91/-1.68	-2.64/-2.61	-0.56/-0.44	-0.67/-2.29	-3.8/-5.48	-8.48/-9.84	-9.31/-7.9	-7.41/-5.25	-4.41/-3.5	-1.6/0.37	1.45/1.96	2.52/2.34
Θ(82.5°)	2.39/2.49	1.41/2.2	1.75/2.13	1.48/1.22	0.46/+0.37	-1.72/+4.08	-7.24/-9.7	-6.58/-2.59	-2.03/-1.23	-2.03/-4.77	-3.26/+3.09	-3.21/+3.06	-1.3/-1.08	-1.35/-2.63	-2.41/-1.71	-0.45/-1.18	-1.7/-5.22	-7.5/-10.85	-11.01/-7.64	-7.58/-5.14	-4.05/-2.93	-1.51/0.21	1.21/1.45	2.19/1.96
Θ(90°)	1.7/2.5	1.3/-0.01	0.79/1.6	0.61/0.46	0.17/-1.85	-2.68/-3.2	-6.17/-8.4	-6.66/+3.63	-2.09/-1.7	-2.68/-5.32	-6.41/+3.64	-4.49/-4.82	-2.17/-3.23	-2.94/-3.71	-3.38/-2.12	-0.67/-1.25	-3.02/-5.34	-7.36/-9.74	-11.31/-9.24	-8.14/-6.45	-4.09/-1.92	-1.42/-0.26	0.54/0.43	1.67/1.81
Θ(97.5°)	1.51/2.63	1.52/1.65	0.44/+0.75	-1.14/-0.62	-0.81/+0.39	-1.45/-3.76	-6.12/-8.75	-6.83/-5.49	-3.32/-2.4	-3.99/-5.02	-6.74/-0.4	-6.35/-7.4	-4.4/-3.65	-2.72/-2.37	-2.78/-1.75	-1.18/-0.76	-2.25/-6.6	-11.29/-10.32	-7.15/-4.71	-5.38/-4.56	-2.84/-1.1	-0.36/+0.15	-1.33/-0.78	0.14/0.56
Θ(105°)	1.27/1.91	1.69/+0.06	-0.36/+0.26	-1.43/-2.14	-1.91/-1.91	-2.56/-3.47	-6.78/-8.55	-7.14/-4.22	-4.18/-3.43	-4.93/-5.8	-5.88/-4.06	-3.42/-6.14	-6.15/-2.02	-1.92/-4.01	-2.32/-1.93	-0.84/-0.69	-2.38/-5.2	-9.06/-12.06	-7.14/-2.4	-4.97/-3.48	-1.35/-1.77	-1.76/-2.21	-2.13/-0.64	0.52/1.15
Θ(112.5°)	0.68/1.23	1.76/0.42	-0.8/-2.47	-2.29/-3.69	-3.85/-4.81	-4.6/-5.34	-7.14/-7.18	-5.2/+4.4	-4.57/-6.92	-5.21/-6.8	-3.4/+3.33	-2.99/-4.34	-3.5/-0.34	-0.54/-2.4	-4.44/-3.95	-3.05/-2.84	-2.59/-4.47	-7.71/-9.49	-7.71/-4.11	-5.61/-5.64	-2.87/-2.49	-4.01/-3.64	-3.06/0.07	0.68/-0.34
Θ(120°)	-0.94/1.82	2.18/1.24	-0.46/-1.06	-1.43/-1.48	-3.41/-3.76	-5.2/+6.33	-6.15/-5.98	-5.14/-4.72	-5.45/-6.44	-7.23/-4.68	-3.86/-2.23	-0.83/-1.76	-1.96/-1.27	-2.27/-1.54	-3.84/-3.84	-4.65/-1.51	-0.52/-1.37	-3.8/-6.61	-6.67/-5.28	-5.44/-3.06	-0.58/-0.84	-2.75/-2.29	-1.61/0.97	2.09/0.82
Θ(127.5°)	1.32/2.6	2.88/0.68	-1.86/-2.13	-1.25/-1.72	-2.72/-4.56	-8.02/-7.25	-4.9/-3.81	-3.66/-4.27	-5.22/-5.62	-3.48/-2.51	-2.9/-1.4	-0.25/0.35	-0.52/-0.1	0.62/0.07	-4.5/-4.85	-3.47/-2.62	-1.66/-2.77	-3.82/-7.41	-7.01/-4.22	-5.25/-2.9	-3.26/-3.51	-2.87/-2.32	-2.25/0.94	2.75/3.26
Θ(135°)	1.05/0.65	-1.02/-3.65	-3.83/-3.15	-2.11/-5.04	-5.88/-5.08	-5.54/-5.24	-4.68/-4.35	-4.55/-5.07	-6.39/-5.23	-4.3/-2.29	-0.13/1.06	1.07/0.78	0.51/1.88	3.54/2.15	-1.67/-2.71	-2.97/-1.92	-2.71/-5.53	-8.63/-10.29	-7.33/-7.21	-8.77/-3.28	-0.8/-2.85	-1.88/-5.14	-3.17/-0.47	-0.09/1.8
Θ(142.5°)	-1.64/-1.67	-1.02/-2.5	-2.7/-0.82	-0.82/-3.91	-4.41/-3.21	-3.08/-3.01	-3.59/-3.91	-3.76/-3.88	-6.16/-7.58	-5.6/-3.33	-2.17/-1.73	0.19/0.59	-0.81/-1.55	-2.72/-2.54	-1.73/-1.88	-0.57/0.89	-1.62/-2.78	-5.13/-8.32	-5.48/-5.49	-9.45/-6.12	-1/-0.03	-2.3/-0.92	-1.61/-2.56	-1.08/-0.45
Θ(150°)	-0.45/+0.97	-1.11/-2.77	-4.64/-3.87	-4.08/-4.4	-3.65/-3.79	-3.64/-2.93	-3.45/-5.58	-7.8/-8.77	-7.62/-5.58	-3.28/-1.24	-0.01/0.72	0.54/+0.57	-1.08/0.08	1.18/0.98	-0.27/-0.93	-0.83/-2.92	-4.24/-4.51	-7.77/-8.73	-6.72/-6.2	-8.39/-6.44	-5.28/-4.27	-2.53/-1.04	1.04/1.26	1.11/0.9
Θ(157.5°)	-0.22/+0.64	-0.8/-0.73	-0.44/-1.16	-3.1/-6.16	-5.75/-4.91	-5.15/-4.96	-5.52/-7.28	-9.7/-10.99	-8.35/-4.84	-2.28/-0.48	1.14/1.84	2.47/3.49	4.32/4.53	3.96/2.81	1.46/0.33	-0.61/-1.89	-2.46/-3.77	-7.43/-9.94	-7.12/-5.83	-7.76/-9.48	-9.79/-7.57	-3.58/-1.51	0.06/1.49	1.47/0.65
Θ(165°)	-0.09/+0.65	-1.29/-2.22	-2.98/-4.48	-4.6/-4.8	-5.99/-7.4	-9.68/-11.35	-11.7/-10.82	-9.51/-6.52	-3.98/-1.55	0.54/1.98	2.73/2.82	2.47/1.91	1.23/0.04	-1.1/-0.97	-0.19/-0.22	-0.8/-1.87	-3.99/-7.03	-10.91/-12.69	-11.35/-10.76	-10.52/-9.64	-7.83/-6.4	-5.33/-3.57	-1.65/-0.2	0.14/0.38
Θ(172.5°)	-5.24/-4.88	-4.66/+5.22	-5.1/-5.1	-5.63/-5.59	-6.08/-6.89	-8.21/-8.46	-7.33/-5.93	-4.94/-3.44	-1.86/-0.96	-0.64/-0.49	-0.44/-0.43	-0.56/-0.78	-1.1/-1.57	-1.63/-1.65	-2.29/-3.74	-5.85/-7.52	-9.42/-9.82	-9.13/-8.2	-7.76/-6.79	-6.12/-6	-6.01/-6.29	-6.62/-7.32	-7.92/-7.92	-7.75/-6.05
Θ(180°)	-6.05/-6.15	-5.82/-5.82	-6.12/-7.24	-7.72/-8.41	-8.99/-10.46	-10.72/-9.11	-8.39/-8.69	-8.42/-7.25	-6.34/-6.27	-6.61/-7.15	-7.38/-8.06	-9.15/-9.22	-9.21/-8.24	-7.38/-6.9	-6.93/-6.67	-6.16/-5.94	-6.03/-5.71	-5.74/-5.66	-5.9/-6.66	-7.17/-7.42	-7.03/-6.9	-6.07/-5.53	-4.8/-4.09	-4.19/-5.1
Freq(Hz)	5.7856Pol.	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°)	-8.29/-7.32	-4.51/2.31	-0.64/0.72	1.95/2.94	3.63/4.33	4.79/4.99	5.07/5.23	5.17/4.97	4.38/3.64	2.88/1.78	0.46/+1.05	-3.09/-5.82	-7.76/-6.34	-3.93/-1.9	-0.13/1.15	2.11/2.82	3.58/4.36	5.07/5.39	5.43/5.22	5/4.81	4.56/3.98	3.04/1.88	0.39/-1.38	-3.55/-6.23
Θ(7.5°)	-6.96/-5.89	-3.77/-1.58	0.17/1.66	2.96/3.81	4.27/4.88	5.54/5.89	5.88/5.8	5.65/5.43	4.82/4.02	3.16/2.15	0.58/-1.13	-3.91/-6.94	-8.82/-6.56	-4.13/-2.11	-0.35/1.06	2.29/3.1	3.72/4.18	4.71/5.11	5.29/5.1	4.77/4.48	4.09/3.66	2.87/1.95	0.61/-0.97	-3.12/-5.63
Θ(15°)	-6.26/-5.38	-3.84/-1.89	-0.48/1.16	2.72/3.79	4.36/4.87	5.25/4.7	5.56/5.6	5.55/5.3	4.79/4.3	3.64/2.53	0.83/-1.32	-3.89/-7.42	-10/-7.87	-4.68/-2.25	-0.67/0.5	1.41/2.29	3.02/3.75	4.23/4.43	4.51/4.48	4.48/4.45	4.23/3.7	2.62/1.52	0.04/-1.02	-3.36/-5.47
Θ(22.5°)	-4.68/-4.49	-3.32/-2.23	-0.57/0.53	1.92/3.11	3.95/4.46	4.74/4.89	5.11/5.23	5.25/5.08	4.71/4.05	2.96/1.71	0.49/+1.39	-3.52/-5.86	-7.41/-5.64	-3.82/-2.41	-0.73/0.58	1.39/2	2.94/3.75	4.17/4.11	4.04/3.96	3.69/3.37	2.84/2.28	1.64/1.15	0.36/-0.22	-2/-3.8
Θ(30°)	-6.32/-5.53	-3.26/-1.71	-0.93/0.36	2.23/3.39	4.03/4.41	4.74/5	5.24/4.95	4.44/4.2	4.12/3.66	2.92/2.4	1.72/-0.01	-2.54/-5.09	-5.74/-4.41	-1.98/-0.4	0.82/1.62	2.23/2.7	3.4/3.6	3.43/4.7	3.83/4.29	4.28/3.93	3.26/2.6	2.01/1.47	1.05/0.43	-1.39/-3.77
Θ(37.5°)	-3.33/-2.68	-1.33/+0.32	0.51/1.7	2.95/3.8	4.41/4.74	4.93/5.15	5/4.48	4.45/4.33	3.82/3.36	3.21/2.45	1.28/+0.21	-0.94/-1.8	-2.37/-0.5	0.81/1.09	1.57/1.93	3.21/2.99	3.67/4.76	5.39/5.6	5.46/4.87	4.22/3.68	3.34/2.98	2.36/1.59	0.58/-0.23	-1.61/-3.23
Θ(45°)	-3.44/-2.64	-1.22/-0.57	0.03/0.82	1.41/2.33	3.45/4.14	4.44/4.59	4.44/4.67	4.53/3.93	3.77/3.74	2.93/1.93	1.93/0.61	-1.59/-2.08	-1.79/-1.35	-0.08/0.78	1.33/2.39	2.73/3.57	4.61/5.04	5.32/5.65	5.86/5.96	5.75/5.04	3.88/3.6	3.38/2.62	1.69/0.74	-0.91/-3.07
Θ(52.5°)	-4.17/-1.69	0.53/+0.7	0.91/0.88	1.99/3.18	3.82/3.85	3.79/4.04	4.28/4.25	3.96/3.67	3.49/3.35	2.77/1.98	1.54/0.32	-0.15/-0.77	-1.52/-0.86	-0.09/0.5	1.31/1.63	2.09/3.43	4.4/4.58	5.15/5.48	5.33/5.18	4.91/4.91	4.38/3.26	2.47/1.65	0.88/0.04	-1.56/-3.5
Θ(60°)	-4.13/-0.74	0.32/0.61	0.45/+1.64	2.72/3.99	4.14/3.43	3.36/3.65	3.55/3.25	2.86/2.5	2.24/2.49	2.36/2.1	1.56/0.47	-0.17/-0.23	-0.6/-0.77	-0.28/0.13	0.18/0.59	1.62/2.61	3.39/4.25	4.98/5.13	4.87/4.73	4.62/3.93	2.61/1.84	1.98/1.45	0.81/0.42	-0.95/-4.33
Θ(67.5°)	-4.06/-1.45	0.64/1.21	1.11/1.72	3.11/3.78	3/3.95	4.05/4.23	4.15/3.94	3.57/2.87	2.22/0.9	2.13/2.2	2.05/1.93	1.82/1.07	0.85/0.26	0.9/0.6	0.32/-0.51	-0.05/1.55	1.99/2.13	2.24/3.26	3.4/3.37	3.65/3.03	1.98/0.54	1/0.45	-0.33/-0.47	-0.9/-2.59
Θ(75°)	-3.1/-1.8	0.2/0.21	-0.55/1	2.66/3.76	3.29/2.95	2.94/3.29	4.01/4.35	4.15/3.48	2.02/1.18	1.91/2.53	2.42/0.8	2.53/2.14	1.04/0.94	1.46/1.93	0.46/0.29	0.41/1.42	1.34/1.41	1.78/1.96	2.95/3.19	2.22/2.12	1.79/0.52	-0.22/-0.57	-2.56/-2	-0.5/-1.7
Θ(82.5°)	-1.6/-1.75	-0.3/-0.71	-0.63/1.35	2.55/3.54	3.17/3.21	3.59/4.31	4.68/4.74	4.3/3.84	3.12/1.53	1.56/2.43	1.87/1.69	1.63/1.53	1.27/1.02	2.16/1.61	-0.21/-1.38	-0.34/0.95	1.07/1.88	1.47/1.84	3.43/3.4	2.21/1.81	1.11/-0.21	-0.67/0.53	-0.79/-1.01	0.42/-1.52
Θ(90°)	-2.05/-1.84	-0.56/-1.37	-1.1/0.43	1.3/2.02	1.7/2.59	2.88/3.51	4.23/4.25	4.11/4	2.24/0.68	1.58/2.29	2.23/2.22	1.15/1.68	1.62/0.69	2.04/1.38	-0.14/-0.99	-0.22/0.8	2.44/2.51	2.8/3.23	3.27/3.52	2.96/1.57	0.46/-0.74	-1.07/+0.02	-0.41/-1.73	-0.38/-2.08
Θ(97.5°)	-1.16/-0.71	-0.62/-1.32	-1.25/+0.32	0.49/1.11	0.85/1.97	2.35/3.08	3.45/3.31	3.06/3.24	2.39/0.43	0.65/1.39	1.31/1.6	0.14/1.08	0.53/1.03	2.11/0.5	-1.38/-0.52	0.46/2.52	3.91/4.12	3.52/2.65	2.99/3.76	3.49/2.16	0.32/-0.53	-2.03/-2.13	-0.85/-1.02	0.75/-0.04
Θ(105°)	-2.23/-1.55	-0.39/-2.58	-1.05/+0.68	0.17/0.67	0.42/2.16	2.7/2.48	2.69/2.45	3.05/3.21	2.34/1.41	0.35/1.36	1.31/0.29	-1.19/-0.61	-0.62/0.36	1.1/-0.78	-1.89/-1.54	-1.39/0.88	2.29/2.55	1.61/1.92	1.94/2.16	2.21/1.08	0.41/-1.04	-2.95/-3.64	-2.93/-3.17	-0.86/-0.49
Θ(112.5°)	-3.55/-5.13	-3.29/-3.36	-0.96/-2.61	-0.93/-1.65	-0.79/0.76	2.41/1.86	1.48/1.33	1.11/1.21	0.97/-0.42	-0.22/2.27	0.94/-1.14	0.53/-0.17	-1.27/-0.11	1.37/-0.1	-3.87/-3.42	-2.51/-0.94	0.94/0.69	-0.45/0.47	-1.79/1.29	0.5/-2.34	-3.64/-4.39	-3.04/-1.77	-4.81/-4.9	-2.37/-2.73
Θ(120°)	-3.33/-5.83	-2.35/-0.74	-0.75/+0.09	-2/-1.38	-1.82/-0.4	0.18/0.46	-0.41/-1.24	-1.33/0.35	1.01/+0.39	-1.15/-0.2	-0.5/-2.37	-1.22/-1.41	-1.96/-2.53	-0.12/0.55	-3.2/-1.45	-0.36/-0.38	0.15/+0.77	-3.05/-1.93	-2.4/0.17	0.09/-6.23	-3.71/-2	-3.19/-2.01	-5.25/-3.98	-2.45/-1.23
Θ(127.5°)	-3.13/-3.24	-2.29/-2.62	-0.74/+0.44	-1.49/0.09	-1.5/-2.23	-3.34/-2.91	-3.51/-2.11	-0.47/0.38	0.12/0.39	-0.16/-1.55	-2.4/-2.53	-3.32/-2.33												

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°)	2.672/51	2.121/55	0.90/19	-0.8/-2.02	-3.72/-6.15	-9.79/-16.02	-18.53/-11.93	-7.29/-4.35	-2.21/-0.63	0.61/54	2.23/27	3.03/17	3.19/06	2.82/39	1.76/06	-0.14/-1.5	-3.26/-5.65	-9.29/-15.96	-18.62/-13.21	-8.3/-3.31	-3.17/-1.49	-0.18/0.8	1.57/2.1	2.45/2.64	
Θ(7.5°)	3.092/86	2.461/96	1.40/77	-0.09/-1.28	-2.8/-4.91	-7.67/-11.73	-16.63/-14.39	-9.22/-5.82	-3.44/-1.75	-0.41/0.66	1.49/2.13	2.52/2.75	2.81/2.77	2.54/2.12	1.53/0.71	-0.43/-1.93	-4.03/-9.63	-11.81/-17.86	-16.47/-9.57	-5.94/-3.53	-1.77/-0.33	0.81/65	2.32/2.76	3.04/3.11	
Θ(15°)	3.573/32	2.952/59	2.21/69	-0.89/-0.26	-1.74/-3.69	-6.11/-9.32	-14.32/-18.56	-13.54/-8.69	-5.76/-3.79	-2.22/-0.86	0.27/1.11	1.67/2.04	2.23/2.25	2.07/1.68	1.11/0.4	-0.75/-2.31	-4.54/-7.76	-13.11/-18.99	-12.68/-7.72	-4.57/-2.44	-0.78/0.54	1.62/37	2.973/36	3.593/66	
Θ(22.5°)	3.834/68	3.473/26	2.972/48	1.67/0.45	-1.18/-3.26	-5.69/-8.8	-13.8/-19	-16.87/-10.41	-8.70/-5.08	-3.44/-1.95	1.06/4.45	1.65/1.71	1.51/08	0.47/0.43	-1.72/-3.44	-5.91/-9.49	-15.28/-17.32	-10.84/-6.88	-4.17/-2.13	-0.48/0.84	1.892/68	3.273/65	3.853/89		
Θ(30°)	3.433/48	3.463/35	3.112/63	1.82/0.49	-1.32/-3.78	-6.66/-10.08	-14.02/-14.61	-11.1/-8.05	-5.87/-4.38	-3.16/-1.99	-0.84/0.18	0.92/1.37	1.54/1.46	1.18/0.68	0.01/0.9	-2.29/-4.2	-6.84/-10.58	-16.42/-18.76	-13.58/-9.2	-6.17/-3.8	-1.85/-2.05	1.052/06	2.783/18	3.333/38	
Θ(37.5°)	2.963/04	2.952/73	2.391/95	1.2/0.06	-1.96/-4.65	-8.16/-12.25	-13.57/-10.31	-7.67/-6.02	-4.82/-3.82	-2.77/-1.71	-0.69/0.31	1.02/1.45	1.56/1.42	1.09/0.57	-0.18/-1.25	-2.78/-4.8	-7.55/-10.91	-14.81/-16.51	-14.39/-11.24	-8.21/-5.58	-3.29/-1.31	0.31/147	2.212/57	2.72/2.84	
Θ(45°)	3.63/31	2.762/1	1.41/0.8	0.11/-0.86	-2.34/-4.74	-8.49/-14.28	-14.35/-9.03	-6.26/-5.15	-4.84/-4.7	-1.19/-3.31	-2.32/-1.36	-0.54/0.08	0.40/3.7	-0.03/-0.77	-1.76/-3.03	-7.48/-7.06	-10.11/-12.9	-13.61/-12.7	-10.11/-7.54	-5.05/-2.96	-1.17/0.38	1.72/65	3.283/6	3.733/75	
Θ(52.5°)	3.93/43	2.691/76	0.74/-0.21	-1.03/-1.88	-3.03/-5.08	-8.65/-16.08	-14.72/-7.88	-4.72/-3.37	-2.99/-3.04	-3.16/-3.06	-2.79/-2.26	-1.64/-1.03	-0.62/-0.63	-1.09/-2.01	-3.41/-5.34	-8.28/-12.76	-18.53/-13.98	-16.73/-13.59	-10.52/-7.1	-4.18/-2	-0.38/0.92	1.982/84	3.54/4	4.24/16	
Θ(60°)	3.973/92	3.482/72	1.71/0.5	-0.86/-2.43	-3.97/-5.75	-8.94/-14.36	-18.11/-11.22	-6.26/-3.96	-2.79/-2.14	-1.71/-1.48	-1.44/-1.34	-1.04/-0.58	-0.21/-0.4	-0.41/-0.5	-2.11/-3.86	-6.71/-10.77	-16.71/-18.06	-17.89/-18.45	-15.22/-8.96	-5.36/-3.24	-1.83/-0.8	0.080/97	1.842/61	3.263/74	
Θ(67.5°)	4.454/6	4.33/53	2.391/02	-0.59/-2.34	-4.23/-6.14	-7.98/-10.77	-17.47/-19.45	-10.26/-7.3	-5.19/-4.15	-3.32/-2.99	-3.14/-3.01	-2.64/-2.42	-2.4/-2.68	-3.62/-5.68	-9.28/-14.17	-18.96/-18.35	-18.63/-17.93	-12.46/-7.89	-5.23/-3.64	-2.55/-1.59	-0.59/0.46	1.482/41	3.34/02		
Θ(75°)	3.843/71	3.152/21	1.080/13	-0.67/-1.59	-3.03/-5.44	-8.92/-13.59	-19.04/-15.52	-8.57/-5.53	-4.41/-4.21	-4.23/-4.42	-4.85/-3.56	-5.73/-5.79	-5.43/-4.56	-3.54/-2.9	-3.15/-4.61	-7.5/-11.9	-14.53/-17.23	-18.63/-17.51	-13.57/-10.72	-8.99/-6.61	-4.67/-2.83	-1.10/47	1.812/75	3.363/72	
Θ(82.5°)	4.11/3.86	3.292/54	1.64/0.62	-0.34/-1.09	-1.98/-3.81	-6.89/-11.52	-18.74/-16.59	-12.74/-8.45	-6.76/-6.16	-5.92/-5.82	-5.83/-6.36	-7.28/-7.86	-7.22/-5.79	-4.57/-3.95	-4.57/-6.96	-11.83/-19.1	-17.81/-17.83	-15.14/-10.74	-8.78/-7.62	-5.94/-3.72	-1.83/-0.8	0.491/32	2.182/97	3.634/05	
Θ(90°)	3.13/41	3.332/71	1.47/-0.39	-2.46/-3.62	-3.68/-4.27	-6.29/-9.91	-14.04/-18.21	-18.25/-18.22	-11.5/-8.29	-6.15/-4.53	-3.6/-3.58	-4.2/-4.85	-4.92/-4.48	-3.99/-4.15	-5.81/-8.28	-10.97/-11.34	-12.41/-15.43	-17.83/-16.64	-10.47/-12.76	-8.06/-4.69	-2.84/-2.05	-1.8/-1.4	-0.44/0.78	1.842/62	
Θ(97.5°)	3.04/3.57	3.883/72	2.881/15	-1.47/-3.73	-3.75/-3.59	-5.27/-9.36	-13.38/-12.33	-12.36/-12.72	-9.91/-6.94	-4.77/-3.47	-3.19/-3.98	-5.14/-6.23	-6.99/-7.69	-8.96/-11.6	-13.61/-11.9	-9.35/-8.92	-14.14/-18.93	-17.96/-17.99	-18.77/-12.23	-7.24/-6.47	-3.75/-3.74	-3.5/-2.3	-0.64/0.72	1.752/49	
Θ(105°)	3.023/46	3.733/66	2.941/26	-1.53/-2.9	-6.81/-5.44	-5.49/-9.34	-15.71/-19.05	-17.4/-15.39	-11.72/-8.57	-6.21/-4.81	-4.48/-4.81	-5.17/-5.81	-7.8/-7.36	-9.53/-8.61	-6.5/-6.2	-5.34/-7.91	-14.83/-14.21	-17.48/-17.85	-17.79/-11.75	-8.51/-7.28	-7.49/-7.75	-6.15/-3.61	-1.420/19	1.482/45	
Θ(112.5°)	2.893/4	3.463/16	2.481/24	-0.93/-4.47	-6.44/-4.2	-3.42/-4.93	-9.15/-13.98	-12.33/-10.21	-11.10/-12.39	-15.89/-14.04	-10.48/-7.65	-6.54/-6.85	-7.68/-7.36	-5.77/-4.2	-3.76/-4.92	-8.54/-18.65	-17.82/-12.75	-14.88/-17.71	-11.7/-6.9	-8.85/-4.66	-5.44/-5.61	-4.02/-2.09	-1.740/07	0.911/96	
Θ(120°)	0.491/41	1.581/15	0.36/-0.59	-2.03/-4.88	-10.27/-14.44	-10.69/-9.29	-12.22/-17.48	-13.76/-9.34	-7.22/-6.8	-7.01/-9.62	-6.16/-5.35	-5.09/-5.57	-6.01/-5.68	-4.7/-4	-4.67/-7.5	-14.93/-18.33	-12.77/-12.05	-16.05/-16.71	-10.93/-7.51	-6.03/-6.31	-7.86/-6.81	-6.73/-4.47	-3.03/-2.43	-1.87/-0.72	
Θ(127.5°)	1.232/39	2.942/79	2.171/37	0.21/-1.84	-4.56/-5.2	-7.43/-6.28	-8.3/-12.5	-12.82/-17.88	-10.97/-8.87	-6.92/-5.82	-5.94/-6.95	-8.77/-11.81	-15.75/-17.01	-16.57/-13.62	-10.06/-8.44	-9.49/-15.25	-18.37/-9.31	-5.6/-4.1	-3.75/-5.85	-3.58/-6.09	-8.5/-12.43	-13.15/-9.63	-2.59/-1.52	-0.89/-0.01	
Θ(135°)	-0.60/51	1.030/85	0.07/-1.34	-3.73/-7.99	-15.93/-12.77	-7.84/-6.21	-6.83/-9.74	-16.42/-17.86	-13.62/-10.16	-7.57/-5.48	-4.13/-6.34	-1.17/-5.89	-8.84/-12.28	-11.73/-8.71	-6.36/-5.07	-6.44/-5.28	-7.76/-13.54	-18.89/-10.69	-7.33/-5.85	-4.37/-6.45	-5.81/-5.28	-4.54/-4.59	-3.22/-1.93		
Θ(142.5°)	-1.25/-0.45	0.090/28	-0.05/-1.02	-2.72/-5.55	-9.34/-16.65	-18.83/-16.58	-13.58/-12.61	-12.62/-13.88	-16.86/-14.82	-9.63/-5.57	-5.26/-5.25	-6.33/-6.07	-8.62/-7.76	-4.41/-4.69	-5.78/-7.73	-10.81/-12.58	-10.73/-8.62	-7.9/-8.1	-8.72/-10.23	-13.69/-17.46	-14.39/-10.55	-7.56/-1.56	-3.31/-2.04		
Θ(150°)	-0.85/-0.26	0.04/-0.15	-0.86/-2.14	-4/-6.8	-11.01/-16.5	-17.19/-12.25	-9.51/-7.75	-7.33/-7.7	-9.76/-13.47	-19.25/-15.77	-12.33/-11.36	-11.03/-9.94	-8.05/-6.52	-5.68/-6.2	-7.4/-9.14	-11.42/-12.76	-11.44/-9.19	-6.22/-6.48	-5.93/-7.83	-8.91/-9.49	-8.92/-7.55	-5.9/-4.29	-2.83/-1.66		
Θ(157.5°)	-3.83/-3.79	-4.16/-4.91	-5.91/-6.89	-8.05/-9.9	-13.02/-18.93	-18.97/-17.81	-12.94/-10.09	-8.41/-7.78	-8.2/-9.84	-12.79/-16.95	-18.3/-16.65	-13.23/-10.12	-9.85/-9.76	-10.95/-13.68	-19.21/-18.11	-3.39/-11.02	-8.42/-6.89	-5.92/-5.33	-5.01/-4.92	-6.05/-5.31	-5.7/-6.11	-3.32/-6.22	-5.81/-5.28	-4.74/-4.26	
Θ(165°)	-9.54/-10.44	-10.68/-9.8	-8.59/-8.67	-7.93/-8.4	-10.36/-12.73	-15.98/-18.52	-18.36/-16.08	-12.64/-10.83	-9.92/-9.78	-10.21/-10.92	-11.61/-16.11	-11.2/-11.12	-11.64/-12.88	-14.9/-16.81	-16.26/-13.23	-10.55/-8.7	-7.47/-6.64	-6.02/-5.55	-5.18/-4.94	-4.87/-4.96	-5.26/-5.65	-6.11/-6.58	-7.18/-7.86	-8.51/-9.07	
Θ(172.5°)	-15.67/-13.75	-11.08/-9.15	-8.12/-8.09	-8.8/-10.07	-11.65/-13.51	-16.52/-18.08	-18.22/-16.11	-18.27/-16.16	-17.14/-13.99	-13.71/-10.51	-13.15/-12.55	-12.26/-12.42	-12.81/-12.19	-11.26/-10.3	-9.41/-8.63	-8.01/-7.45	-6.98/-6.55	-6.32/-6.18	-6.23/-6.46	-6.87/-7.4	-10.97/-9.07	-10.67/-12.86	-14.95/-15.75		
Θ(180°)	-16.83/-12.01	-10.68/-9.98	-10.19/-11.18	-12.79/-14.05	-15.57/-16.31	-16.52/-17.04	-18.88/-17.61	-18.75/-19.07	-17.15/-18.71	-13.72/-18.69	-12.65/-14.29	-12.92/-16.74	-12.75/-12.99	-12.91/-11.79	-10.94/-10.41	-9.94/-9.46	-9.02/-8.59	-8.28/-8.16	-8.63/-8.36	-8.83/-9.39	-10.16/-11.17	-12.36/-14.34	-10.97/-18.32	-18.51/-15.72	
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°)	-18.32/-14.89	-9.27/5.73	-3.24/-14.4	-0.21/0.79	1.45/1.89	2.12/2.15	2.05/1.84	1.55/1.15	0.53/-0.26	-1.34/-2.8	-4.78/-7.68	-11.89/-19.11	-17.43/-12.85	-8.01/-5.05	-2.85/-1.32	-0.10/8.8	1.66/2.22	2.6/2.8	2.86/2.68	2.34/1.84	1.15/0.26	-0.81/-2.11	-3.83/-6.2	-9.69/-15.42	
Θ(7.5°)	-18.35/-13.1	-8.75/-5.75	-3.44/-17.6	-0.57/0.32	0.95/1.41	1.64/1.68	1.57/1.41	1.19/0.82	0.21/-0.52	-1.49/-2.67	-4.38/-7.08	-10.69/-17.1	-18.11/-14.74	-8.84/-5.34	-2.99/-1.35	-0.03/0.98	1.82/2.43	2.82/2.91	2.44/1.85	1.10/-0.15	-0.94/-2.25	-4.07/-6.44	-10.11/-15.59		
Θ(15°)	-18.11/-17.47	-11.01/-17.37	-4.78/-2.93	-1.58/0.58	0.12/0.64	1.92/1.04	1.50/1.94	0.83/0.58	0.06/-0.6	-1.37/-2.26	-3.57/-5.5	-8.32/-12.73	-18.93/-17.8	-10.93/-6.35	-3.71/-1.82	-0.42/0.68	1.59/2.27	2.72/3	2.61/2.24	1.62/0.82	-0.16/-1.33	-2.83/-4.82	-7.5/-11.8		
Θ(22.5°)	-14.07/-18.74	-16.92/-10.92	-7.38/-0.54	-3.39/-2.14	-1.24/-0.54	-0.10/-15	0.21/0.21	0.18/0.01	0.38/-0.94	-1.65/-2.55	-3.88/-6.06	-9.16/-14.2	-19.19/-15.07	-9.39/-5.94	-3.61/-1.96	-0.67/0.32	1.18/1.89	2.43/2.77	2.92/95	2.86/2.59	2.16/1.54	0.72/-0.31	-1.72/-3.45	-5.7/-8.78	
Θ(30°)	-10.77/-12.65	-13.86/-12.67	-10.28/-7.94	-5.97/-4.26	-2.99/-2.02	-3.32/-0.86	-0.67/-0.57	-0.55/-0.67	-1.01/-1.53	-2.19/-3.08	-4.42/-6.42	-9.25/-12.83	-17.77/-10.66	-7.41/-4.94	-3.32/-2.13	-1.19/-0.44	2.34/2.17	2.34/2.17	1.82/1.26	0.46/-0.58	-1.99/-3.62	-5.49/-6.77			
Θ(37.5°)	-9.82/-10.06	-8.86/-9.44	-8.57/-7.2	-5.66/-4.26	-3.14/-2.28	-1.62/-1.12	-0.86/-0.76	-0.79/-0.97	-1.02/-1.82	-2.47/-3.34	-4.58/-6.44	-8.58/-10.77	-9.77/-7.78	-5.77/-4.2	-3.06/-2.22	-1.59/-1.06	0.57/0.04	0.40/0.74	0.90/0.93	-0.05/-0.57	-1.41/-2.5	-3.98/-5.74	-7.49/-8.66		
Θ(45°)	-11.11/-9.76	-8.36/-7.08	-5.65/-4.19	-2.89/-1.91	-1.38/-1.18	-1.04/-0.81	-0.63/-0.57	-0.65/-0.97	-1.43/-2.04	-2.86/-3.93	-5.21/-6.81	-8.66/-10.27	-10.64/-9.36	-7.29/-5.35	-4.01/-3.14	-2.53/-2	-1.46/-0.94	-0.61/-0.54	-0.76/-1.29	-1.95/-					



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(22.5°)	1.1/1.43	1.62/1.47	0.98/-0.12	-1.24/-2.22	-3.25/-5.56	-8.53/-12.7	-19.07/-17.6	-10.55/-6.84	-4.47/-2.98	-1.75/-0.92	-0.29/0.21	0.15/-0.15	-0.5/-0.99	-1.72/-2.67	-3.92/-5.42	-6.98/-8.81	-9.52/-10.68	-13.25/-18.18	-19.09/-12.85	-8.69/-6.09	-4.15/-5.58	-1.39/-0.57	-0.02/0.78	1.22/1.13
Θ(30°)	2.67/2.42	2.18/1.71	0.84/-0.29	-1.27/-2.22	-3.53/-5.12	-6.93/-10.06	-15.13/-18.44	-13.86/-17.7	-8.02/-5.73	-4.03/-2.76	-1.58/-0.83	-0.61/-0.69	-0.97/-1.51	-2.4/-3.52	-4.82/-6.09	-6.75/-8.68	-6.57/-7.2	-9.32/-14	-18.9/-13.07	-8.6/-6	-3.97/-2.11	-0.56/0.66	1.44/2.06	2.62/2.86
Θ(37.5°)	1.51/1.48	1.120/57	0.11/-0.35	-0.81/-1.44	-2.91/-6.12	-9.68/-14.27	-18.5/-18.14	-15.93/-14.68	-13.45/-10.79	-7.65/-4.55	-2.44/-1.54	-1.19/-1.93	-3.53/-4.98	-5.72/-6.38	-7.18/-7.74	-9.42/-12.4	-17.95/-13.93	-16.55/-12.07	-8.58/-5.46	-3.34/-1.98	-1.07/0.77	-0.47/0	0.63/-3.2	
Θ(45°)	0.96/0.57	0.71/-0.01	-0.66/-1.13	-1.91/-2.52	-3.55/-6.23	-11.75/-17.51	-19.19/-18.18	-11.35/-9.29	-8.57/-8.19	-8.47/-7.43	-5.35/-4.05	-3.55/-2.2	-1.38/-2.56	-4.73/-4.85	-4.11/-4.67	-5.63/-6.65	-7.71/-7.83	-9.06/-14.15	-18.25/-16.35	-9.66/-5.78	-3.3/-1.95	-1.29/-0.54	-0.01/0.39	1.08/1.58
Θ(52.5°)	1.41/0.79	0.56/0.57	-0.18/-0.13	-1.5/-2.84	-4.32/-6.63	-12.85/-17.83	-17.71/-17.94	-14.81/-13.25	-11.08/-9.17	-7.65/-6.31	-5.6/-6.31	-4.44/-2.34	-3.07/-3.83	-5.88/-7.45	-6.87/-7.65	-8.13/-8.95	-12.96/-17.86	-18.71/-16.78	-9.5/-6.13	-4.13/-2.28	-1.29/-0.78	0.1/0.75	0.88/1.16	
Θ(60°)	-2.12/-0.69	-0.43/-0.64	-1.76/-3.66	-4.18/-4.77	-7.16/-11.82	-18.34/-16.45	-14.06/-12.7	-11.09/-10.67	-10.01/-8.37	-6.53/-5.86	-4.86/-3.61	-2.87/-2.63	-3.05/-5.03	-6.33/-5.71	-6.59/-9.1	-10.37/-11.13	-12.94/-13.98	-19.13/-18.27	-15.04/-11.14	-8.73/-6.82	-5.01/-3.3	-1.87/-1.39	-1.67/-2.44	
Θ(67.5°)	-1.12/-0.13	-0.21/-1.42	-1.76/-2.8	-4.48/-7.02	-11.66/-18.53	-16.57/-12.7	-11.12/-11.56	-11.74/-11.31	-10.86/-10.1	-10.05/-8.23	-5.78/-4.81	-4.92/-5.13	-3.94/-3.03	-3.06/-4.23	-6.28/-6.99	-8.15/-9.63	-10.32/-11.47	-13.5/-18.89	-17.84/-17.75	-11.31/-8.34	-7.79/-6.56	-4.8/-3.49	-2.04/-0.92	-0.45/-0.62
Θ(75°)	-1.18/-0.93	-0.81/-2.29	-3.29/-3.59	-5.37/-7.78	-13.21/-18.4	-18.33/-16.33	-14.22/-12.44	-11.85/-13.59	-12.18/-10.39	-8.78/-7.35	-6.21/-5.9	-6.42/-5.22	-3.76/-3.17	-2.92/-4.47	-6.59/-6.82	-7.23/-8.9	-10.67/-15.29	-18.98/-17.11	-16.66/-12.82	-11.96/-11.33	-9.34/-7.27	-5.13/-2.97	-1.14/-0.17	-0.26/-1.14
Θ(82.5°)	-1/-1.41	-2.89/-3.78	-4.54/-5.3	-7.02/-9.66	-14.65/-17.5	-13.77/-11.12	-11.72/-14.75	-13.49/-10.04	-7.74/-3.71	-7.51/-7.69	-5.8/-5.62	-5.93/-7.02	-6.4/-3.94	-4.31/-5.89	-6.13/-6.62	-8.2/-8.79	-11.37/-12.93	-13.66/-17.9	-16.48/-11.44	-9.81/-7.62	-5.95/-4.91	-4.25/-4.17	-3.32/-1.97	-1.22/-1.03
Θ(90°)	-1.67/-1.17	-2.5/-4.48	-5.17/-7.29	-9.46/-13.83	-14.02/-12.54	-11.04/-12.56	-17.11/-13.86	-11.96/-10.75	-8.74/-8.17	-8.71/-10.69	-12/-9.63	-6.64/-8.12	-7.15/-4.24	-3.28/-4.32	-7.12/-6.32	-5.9/-7.44	-8.79/-10.99	-15.17/-18.32	-15.89/-10	-8.63/-6.02	-3.48/-2.22	-1.68/-2.15	-2.77/-2.83	-1.72/-1.17
Θ(97.5°)	-1/-1.9-1.2	-1.74/-5.14	-6.69/-9.44	-12.85/-17.55	-17.79/-15.48	-15.45/-16.68	-18.79/-16.64	-11.47/-9.61	-8.99/-8.63	-10.61/-13.37	-11.51/-8.29	-7.09/-8.6	-7.96/-4.81	-5/-5.73	-5.36/-6.6	-6.06/-6.42	-9.77/-13.33	-14.28/-14.77	-18.83/-10.92	-9.48/-5.71	-2.97/-1.41	-1.37/-2.22	-3.39/-2.5	-1.42/-1.64
Θ(105°)	-2.21/-1.32	-2.22/-6.17	-11.6/-13.78	-16.68/-18.53	-18.12/-19.02	-18.58/-18.93	-18.98/-19.13	-17.88/-12.4	-10.25/-10.43	-10.19/-10.92	-12.22/-9.41	-7.23/-10.14	-7.49/-4.16	-3.77/-7.32	-10.46/-9.27	-9.39/-9.31	-10.86/-16.64	-14.3/-10.88	-8.37/-8.22	-7.35/-3.54	-1.75/-1.59	-2.54/-3.99	-3.61/-1.41	-0.46/-1.58
Θ(112.5°)	-2.34/-1.91	-3.23/-6.68	-10.2/-11.51	-13.08/-15.75	-15.71/-12.7	-12.48/-16.01	-19.28/-16.1	-12.31/-13.09	-12.07/-11.56	-10.68/-11.06	-11.63/-7.08	-5.08/-6.3	-10.83/-11.37	-7.64/-6.11	-9.72/-11.94	-12.73/-14.68	-19.03/-16.49	-14.21/-11.71	-8.59/-8.01	-7.14/-4.54	-2.47/-1.84	-4.24/-6.81	-6.75/-5.78	-2.44/-1.75
Θ(120°)	-0.06/0.16	-0.49/-3.76	-9.12/-9.46	-11.49/-18.88	-14.44/-13.44	-13.02/-18.09	-18.32/-17.88	-16.83/-14.04	-13.74/-12.87	-17.41/-14.14	-10.16/-10.9	-9.78/-9.42	-7.86/-11.33	-10.06/-15.29	-17.92/-17.47	-17.77/-17.62	-16.81/-15.28	-12.04/-11.43	-12.36/-8.02	-4.32/-3.67	-4.09/-6.63	-6.69/-2.75	0.54/-1.1	0.41/-11
Θ(127.5°)	0.53/-0.49	-1.06/-3.14	-6.24/-6.93	-6.43/-15.42	-18.44/-19.12	-15.94/-18.19	-17.75/-17.76	-15.52/-16.51	-17.58/-19.03	-18.55/-18.73	-17.85/-14.52	-9.59/-9.24	-12.06/-14.68	-8.87/-10.1	-11.56/-10.45	-11.16/-12.84	-10.89/-11.1	-15.78/-18.2	-18.47/-18.22	-18.24/-17.87	-9.1/-5.49	-6.56/-7.94	-5.58/-1.48	1.48/-1.99
Θ(135°)	4.77/-6.15	-5.52/-8.72	-11.42/-8.64	-9.69/-13.43	-18.01/-18.09	-16.38/-17.41	-16.27/-14.05	-14.65/-10.99	-12.57/-17.76	-18.84/-18.62	-19.01/-16.97	-18.04/-16.07	-16.59/-18.36	-16.66/-14.01	-7.89/-12.57	-19.34/-9.95	-4.49/-6.7	-13.37/-14.77	-13.57/-17.28	-18.2/-8.24	-4.26/-3.72	-3.91/-6.56	-11.27/-5.37	-1.88/-1.98
Θ(142.5°)	-5.21/-9.63	-8.79/-9.57	-9.68/-7.06	-11.49/-18.88	-12.84/-13.44	-13.02/-18.09	-17.77/-18.8	-17.57/-18.29	-17.51/-16.62	-19.18/-13.34	-19.2/-14.77	-12.32/-9.53	-6.42/-7.1	-13.7/-18.64	-17.08/-12.37	-15.72/-7.07	-6.77/-12.73	-15.35/-16.71	-11.66/-15.41	-18/-9.95	-3.45/-1.71	-4.26/-3.81	-5.04/-5.03	-3.45/-3.12
Θ(150°)	-4.67/-9.64	-8.14/-9.84	-10.7/-10.71	-9.61/-10.81	-15.84/-13.37	-8.48/-7.95	-11/-18.54	-18.77/-16.58	-14.38/-14.92	-12.68/-13.29	-14.38/-14.23	-11.39/-8.79	-8.36/-10.84	-15.69/-17.36	-16.32/-17.14	-9.83/-7.26	-11.09/-15.18	-10.57/-11.1	-9.83/-14.98	-18.94/-17.51	-11.62/-6.05	-4.35/-4.24	-3.38/-2.04	-1.35/-2.06
Θ(157.5°)	4.4/-6.7	-8.52/-9.03	-8.55/-9.63	-13.06/-17.09	-18.4/-18.38	-14.99/-11.7	-11.3/-12.94	-16.38/-19.17	-16.42/-13.13	-12.05/-12.49	-12.06/-10.71	-10.41/-12.39	-15.61/-13.49	-11.82/-12.23	-13.36/-13.24	-13.47/-18.3	-18.71/-13.93	-12.52/-13.25	-13.62/-16.16	-19.05/-17.06	-17.82/-12.12	-7.07/-4.49	-2.82/-1.58	-1.44/-2.55
Θ(165°)	-4.43/-5.34	-6.39/-7.79	-10.69/-15.9	-17.35/-19.09	-18.74/-17.54	-18.05/-18.05	-17.23/-17.99	-17.37/-16.45	-17.23/-19.06	-18.54/-18.09	-17.18/-15.28	-14.3/-15.5	-17.67/-19.35	-18.29/-18.08	-18.68/-18.38	-17.93/-17.84	-12.99/-10.35	-9.22/-9.01	-9.21/-10.24	-12.41/-14.79	-15.72/-16.04	-10.38/-7.17	-6.33/-5.08	-4.36/-4.08
Θ(172.5°)	-17.51/-16.48	-14.68/-11.65	-9.99/-9.56	-8.99/-8.9	-10.1/-13.18	-17.83/-19.09	-18.45/-15.48	-15.2/-16.12	-15.57/-13.7	-12.45/-12.14	-12.76/-12.47	-11.47/-10.7	-10.14/-9.57	-9.31/-9.59	-10.33/-11.57	-13.79/-15.43	-15.02/-12.73	-10.68/-9.08	-8.6/-8.73	-9.26/-10.49	-11.66/-13.43	-14.79/-16.91	-18.9/-18.47	-18.01/-17.68
Θ(180°)	-9.66/-10.87	-11.97/-11.77	-12.42/-13.32	-13.56/-14.8	-18.95/-18.69	-17.83/-18.26	-18.59/-17.63	-17.17/-14.8	-12/-10.31	-9.45/-9.52	-10.24/-11.1	-11.69/-12.68	-13.64/-14.72	-15.57/-16.64	-18.91/-19.08	-17.62/-18.45	-19.54/-16.51	-14.63/-13.37	-12.24/-11.72	-11.88/-12.27	-12.57/-12.75	-13.2/-13.2	-12.23/-11.46	-10.58/-9.69
Freq(Hz)	5.3GPdL	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°)	-14.34/-19.08	-17.96/-12.04	-8.68/-5.76	-3.58/-2.12	-1.13/-0.44	0.25/0.68	0.93/1.15	1.04/0.79	0.56/0.18	-0.49/-1.42	-2.64/-4.21	-6.95/-8.91	-15.02/-18.92	-17.59/-10.84	-7.71/-0.78	-2.94/-1.54	-0.58/0.1	0.49/0.84	1.03/1.12	1.07/0.75	0.32/-0.27	-1.01/-1.95	-3.2/-4.74	-6.61/-9.81
Θ(7.5°)	-13.53/-18.56	-17.98/-11.95	-8.22/-5.34	-3.24/-1.89	-0.97/-0.29	0.27/0.71	0.96/0.99	0.84/0.6	0.19/-0.44	-1.36/-2.55	-4.08/-6.23	-8.93/-13.27	-19.18/-38	-13.34/-9.07	-6.41/-4.37	-2.72/-1.5	-0.54/0.17	0.75/1.24	1.51/1.77	1.79/1.58	1.42/0.91	0.14/-0.76	-1.95/-3.38	-5.45/-8.43
Θ(15°)	-16.2/-17.75	-15.91/-10.03	-6.36/-3.83	-2.31/-1.46	-0.56/0.14	0.82/1.26	1.25/1.12	0.91/0.52	-0.09/-0.85	-1.87/-3.24	-4.92/-6.86	-9.56/-14.89	-17.33/-15.19	-9.57/-6.41	-5.95/-3.35	-2.29/-1.32	-0.45/0.11	0.61/0.77	1.47/1.71	1.75/1.55	1.22/0.53	-0.42/-1.55	-2.75/-4.29	-6.59/-10.11
Θ(22.5°)	-14.76/-17.84	-17.75/-11.36	-7.36/-4.61	-2.88/-2.04	-1.12/-0.4	0.01/0.04	-0.17/-0.1	-0.03/-0.3	-0.89/-1.75	-2.91/-4.61	-6.63/-9.02	-12.82/-17.93	-18.8/-15.67	-10.36/-7.08	-5.06/-3.82	-3/-2.07	-0.99/0.02	0.81/1.22	1.29/1.07	1.74/0.38	-0.14/-0.9	-1.91/-3.02	-4.19/-5.89	-1.1/-10.88
Θ(30°)	-16.45/-18.16	-16.38/-10.39	-7.31/-5.93	-4.56/-3.22	-1.73/-1.01	-0.97/-1.16	-1.19/-1.4	-1.94/-2.36	-2.75/-3.44	-4.39/-5.48	-7.36/-10.7	-15.97/-18.1	-18.65/-13.77	-11.11/-8.4	-6.62/-5.69	-4.73/-3.41	-2.1/-1.64	-1.73/-1.65	-1.2/-0.43	0.11/0.02	-0.28/-0.7	-1.5/-2.64	-4.45/-6.74	-9.4/-13.05
Θ(37.5°)	-9.57/-11.98	-13.01/-10.81	-7.12/-5.28	-4.52/-4.03	-3.37/-3.11	-3.14/-2.76	-2.63/-2.82	-2.98/-2.9	-3.02/-3.57	-4/-4.57	-6.15/-9.08	-12.04/-16.13	-18.66/-14.96	-11.4/-8.8	-6.93/-5.99	-5.25/-4.59	-4.18/-4.03	-2.82/-0.88	0.1/0.12	-0.22/-0.46	-0.66/-1.17	-1.87/-2.79	-4.19/-5.97	-7.15/-8.03
Θ(45°)	-9.09/-11.24	-17.87/-17.8	-6.48/-7.09	-6.4/-6.8	-5.09/-4.79	-4.74/-4.31	-4.38/-4.73	-5.01/-5	-5.04/-5.36	-5.65/-5.87	-7.1/-9.69	-12.01/-14.3	-19.18/-19.21	-15.46/-11.23	-8.37/-7.1	-6.12/-3.77	-1.84/-1.17	-0.79/-0.31	0.14/0.03	-0.64/-1.71	-3.24/-4.96	-7.42/-10.81	-11.77/-13.13	-11.77/-13.13
Θ(52.5°)	-7.48/-9.34	-15.61/-12.56	-8.4/-6.77	-7.75/-9.04	-7.52/-5.9	-5.16/-4.35	-4.32/-4.75	-5.33/-5.46	-5.42/-5.89	-6.23/-6.42	-7.8/-12.11	-15.08/-14.43	-16.79/-18.28	-16.7/-10.65	-7.81/-8.24	-8.94/-6.96	-4.59/-3.76	-2.74/-1.54	-1.27/-2.02	-2.44/-2.73	-3.16/-3.65	-3.95/-4.89	-6.31/-7.76	-7.77/-12.2
Θ(60°)	-9.14/-10.54	-14.75/-18.74	-15.26/-12.61	-14.28/-14.6	-10.84/-7.06	-6.03/-5.97	-5.23/-4.35	-4.09/-4.47	-5.73/-7.1	-7.56/-7.57	-8.57/-11.7	-14.83/-18.9	-17.87/-18.9	-16.02/-10.98	-8.26/-8.39	-9.34/-11.7	-4.75/-3.79	-2.86/-2.79	-2.89/-2.73	-3.18/-3.93	-4.63/-4.95	-5.63/-5.79	-7.49/-9.04	-8.45/-7.77
Θ(67.5°)	-10.03/-10.54	-13.87/-17.71	-14.87/-15.17	-15.79/-11.89	-8.55/-6.82	-5.57/-5.72	-6.74/-6.59	-5.75/-5.34	-5.66/-6.84	-8.88/-9.31	-8.97/-10.71	-12.77/-18.09	-18.32/-18.42	-17.27/-13.49	-10.17/-10.74	-11.39/-8.46	-7.02/-5.66	-5.13/-5.48	-5.15/-5.09	-5.47/-4.86	-3.95/-4.39	-5.17/-5.42	-6.28/-7.53	-



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(75°)	0.510/4.4	0.10/39	-0.27/-0.8	-1.4/-3.2	-7.32/-10.57	-9.91/-10.36	-14.93/-18.1	-12.3/-7.91	-5.7/-5.15	-5.97/-6.77	-6.44/-6.68	-7.4/-5.49	-4.43/-4.03	-4.1/-4.14	-4.39/-5.33	-4.4/-5.6	-6.92/-9.12	-12.11/-14.46	-18.89/-13.16	-11.39/-9	-8.67/-6.95	-5.23/-4.37	-3.96/-3.29	-1.5/-0.15
Θ(82.5°)	1.340/5	-0.33/-0.16	-0.03/-0.8	-2.51/-4.64	-8.63/-10.91	-9.85/-10.95	-15.36/-18.73	-10.67/-6.95	-5.81/-5.43	-6.56/-6.65	-9.26/-8.06	-6.27/-5.25	-3.66/-1.94	-2.62/-3.38	-5.03/-5.19	-4.63/-5.7	-6.17/-9.02	-12.4/-15.96	-18.19/-17.38	-14.65/-9.4	-6.49/-5.19	-3.71/-2.96	-1.49/-0.16	0.99/-1.33
Θ(90°)	0.190/35	-0.62/-0.97	-1.74/-1.99	-3.67/-6.71	-11.75/-14.11	-11.45/-12.06	-17.17/-18.42	-9.79/-5.12	-3.83/-5.87	-7.26/-10.72	-12.53/-11.25	-9.52/-9.72	-5.85/-3.69	-3.99/-5.22	-6.02/-5.58	-4.86/-5.49	-7.31/-9.22	-11.4/-17.22	-17.52/-12.34	-10.97/-8.63	-4.92/-2.78	-2.7/-3.51	-3.17/-1.88	0.23/-0.81
Θ(97.5°)	-1.45/-0.34	-0.58/-1.78	-4.06/-4.1	-4.72/-9.56	-12.31/-10.75	-10.59/-10.63	-13.18/-17.8	-11.31/-8.19	-5.57/-6.82	-12.11/-19.25	-18.99/-13.32	-10.51/-16.26	-9.14/-6.39	-7.48/-5.22	-4.8/-4.93	-6.53/-6.48	-6.86/-11.52	-17.53/-17.86	-8.84/-7.11	-7.73/-4.96	-4.22/-1.49	-3.76/-4.45	-5.03/-4.18	-1.88/-0.6
Θ(105°)	-1.98/-0.73	-1.04/-2.92	-4.74/-4.95	-6.42/-15.54	-16.33/-8.81	-9.82/-9.91	-13.82/-18.29	-13.31/-9.94	-10.68/-11.98	-18.23/-18.66	-18.41/-17.7	-11.35/-14.86	-11.64/-7.83	-10.11/-11.79	-7.95/-8.4	-8.44/-9.34	-9.79/-13.45	-18.97/-18.3	-9.58/-7.2	-9.61/-6.37	-3.12/-2.49	-2.85/-3.4	-3.09/-1.51	-0.73/-1.82
Θ(112.5°)	-1.12/-0.2	-0.21/-1.78	-3.93/-6.13	-6.1/-18.3	-18.67/-18.21	-12.39/-11.51	-14.36/-13.9	-10.09/-8.61	-10.97/-15.04	-17.97/-17.7	-18.04/-18.55	-17.37/-18.77	-10.69/-5.1	-16.27/-16.55	-9.44/-13.76	-16.87/-18.04	-18.15/-15.87	-8.78/-8.29	-9.27/-7.06	-3.84/-3.11	-4.31/-7.42	-1.79/-2.64	-0.18/-0.72	
Θ(120°)	-1.680/69	1.15/-0.31	-2.49/-3.5	-4.65/-10.31	-18.72/-16.4	-11.07/-12.2	-11.73/-12.04	-10.39/-10.22	-11.58/-12.68	-13.35/-12.73	-13.17/-9.83	-7.42/-9.62	-14.41/-10.2	-6.32/-9.19	-18.94/-16.86	-14.98/-17.04	-16.97/-17.71	-18.76/-16.53	-7.58/-8.94	-11.03/-6.34	-2.72/-1.74	-3.63/-5.44	-3.97/-0.95	0.21/-1.31
Θ(127.5°)	0.821/13	0.33/-2.15	-4.33/-4.48	-4.8/-11.24	-18.58/-13.11	-11.68/-13.7	-11.77/-12.94	-13.09/-14.04	-11.05/-11.84	-18.3/-19.27	-17.84/-13.21	-10.41/-10.75	-11.24/-12.49	-17.61/-14.71	-19.14/-18.78	-10.25/-13	-18.99/-19.68	-19.09/-13.66	-9.21/-9.8	-10.77/-9.92	-6.31/-8.1	-6.24/-7.5	-6.16/-0.86	3.04/-6.66
Θ(135°)	-1.25/-0.94	-2.51/-6.26	-6.36/-5.25	-5.87/-13.88	-17.55/-18.83	-10.64/-17.48	-18.34/-18.79	-15.21/-10.66	-15.64/-18.21	-18.22/-19.18	-18.23/-18.28	-15.11/-13.9	-15.53/-14.66	-14.15/-17.2	-11.33/-11.45	-8.58/-13.87	-9.28/-12.36	-16.25/-18.21	-19.72/-17.64	-18.04/-11.54	-4.6/-2.23	-2.21/-6.66	-6.84/-1.82	0.51/-0.08
Θ(142.5°)	-2.83/-4.02	-3.88/-5.99	-5.61/-3.14	-4.49/-9.47	-18.28/-17.47	-11/-11.42	-18.62/-14.34	-13.96/-15.59	-17.72/-17.91	-17.59/-17.71	-18.63/-14.46	-8.01/-6.47	-11/-17.77	-19.47/-18.47	-9.82/-10.13	-19.02/-9.07	-8.55/-15.04	-17.03/-14.86	-12/-11.19	-11.33/-5.6	-1.18/-0.27	-0.62/-1.64	-3.88/-3.22	-1.08/-0.96
Θ(150°)	-2.67/-6.8	-9.74/-11.3	-12.39/-11.3	-10.73/-10.25	-13/-16.39	-9.38/-9.97	-11.87/-15.25	-15.79/-16.58	-18.65/-18.31	-18.71/-11.94	-8.27/-8.25	-13.83/-17.76	-15.28/-17.43	-19.2/-12.76	-7.92/-9.93	-16.72/-10.45	-18.3/-14.34	-8.81/-8.07	-9.95/-14.55	-10.25/-6.65	-3.12/-2.78	-2/-1.29	-0.75/-0.79	
Θ(157.5°)	-2/-44	-5.66/-15.83	-6.09/-7.65	-10.58/-12.17	-14.56/-17.84	-14.84/-11.07	-11.83/-16.63	-18.57/-17.82	-18.45/-19.04	-17.83/-14.94	-16.88/-15.16	-11.71/-18.4	-5.72/-8.4	-15.68/-17.06	-7.54/-7.82	-10.23/-17.69	-14.65/-11.07	-15.09/-18.29	-11.78/-9.5	-10/-12.34	-17.41/-12.26	-6.54/-3.85	-1.8/-0.08	0.55/-0.25
Θ(165°)	-2.43/-2.82	-3.4/-4.23	-6.8/-11.06	-14.28/-14.93	-17.42/-18.81	-18.95/-17.84	-16.28/-16.42	-17.4/-17.87	-18.15/-14.6	-11.64/-10.53	-10.44/-11.68	-14.73/-18.08	-18.58/-18.22	-16.51/-18.47	-18.11/-17.57	-14.98/-11.64	-10.99/-12.82	-17.97/-18.7	-15.18/-13.19	-12.97/-12.52	-12.08/-10.79	-8.31/-5.3	-2.93/-1.79	-1.71/-2.23
Θ(172.5°)	-18.27/-18.68	-17.77/-17.67	-16.7/-14.01	-14.08/-15.31	-18.32/-18.96	-18.97/-15.83	-12.27/-10.21	-9.4/-9.01	-8.36/-7.9	-8.15/-8.73	-9.25/-9.24	-8.53/-7.58	-6.76/-6.12	-5.94/-5.87	-6.34/-7.38	-8.72/-10.59	-13.56/-16.65	-16.54/-14.81	-13.84/-13.25	-12.14/-10.82	-10.06/-9.46	-9.61/-8.0	-11.29/-12.52	-16.87/-18.65
Θ(180°)	-19.01/-17.86	-15.14/-12.85	-12.52/-14.1	-15.45/-18.02	-19.35/-18.04	-17.52/-15.61	-15.44/-16.26	-15.74/-13.95	-12.41/-12.07	-12.23/-12.43	-12.68/-13.7	-13.94/-12.94	-12.31/-12.7	-12.47/-12.92	-13.86/-15.01	-15.85/-16.37	-16.62/-15.7	-15.05/-14.21	-13.51/-13.85	-14.59/-14.96	-15.11/-14.78	-14.44/-15.54	-17.85/-18.07	-17.86/-19.13
Freq(Hz)	5.785GPol.	Theta/Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-18.98/-11.85	-7.15/-4.11	-2.06/-0.4	0.92/-1.97	2.65/-3.13	3.49/-5.34	3.53/-3.53	2.27/-2.82	2.14/-1.32	3.10/-3.09	-5.22/-5.05	-8.73/-16.03	-19.1/-11.43	-6.58/-3.66	-1.56/-0.11	1.162/1.3	2.79/-3.24	3.71/-3.45	3.18/-2.76	3.19/-3.58	0.57/-0.9	-2.92/-5.54	-9.24/-16.35	
Θ(7.5°)	-15.13/-8.99	-5.51/-2.95	-1.20/-0.8	1.16/-1.97	2.29/-2.68	3.07/-3.09	3.04/-2.91	2.62/-2.14	1.480/69	-0.29/-1.53	-3.28/-5.95	-9.54/-15.53	-17.49/-10.89	-6.72/-3.97	-2.04/-0.57	0.781/78	2.55/-3.15	3.61/-3.93	4.044	3.93/-5.6	3.06/-2.25	1.02/-0.5	-2.84/-5.72	-9.74/-18.09
Θ(15°)	-15.09/-8.91	-6.37/-4.14	-2.73/-1.58	-0.430/-49	0.751/-0.8	1.321/-27	1.27/-1.61	1.87/-1.66	1.040/-29	-0.68/-2.04	-4/-6.88	-11.11/-18.98	-19.6/-17.5	-7.78/-5.01	-3.23/-1.82	1.32/-19	2.96/-3.52	3.82/-3.89	3.72/-3.41	2.91/-2.02	0.79/-3.86	-3.16/-5.6	-9.88/-14.4	
Θ(22.5°)	-16.94/-12.11	-8.71/-6.8	-4.87/-3.42	-2.10/-59	-0.060/-38	0.730/-53	0.680/-9	0.860/-73	0.33/-0.33	1.073/-304	-4.57/-6.78	-10/-16.44	-18.34/-11.6	-8.17/-5.92	-4.21/-3.12	-2.09/-0.85	0.742/-1	3.013/-44	3.48/-3.15	2.43/-1.5	0.680/-0.2	-1.09/-2.33	-4.21/-6.09	-10.55/-16.34
Θ(30°)	-17.97/-13.12	-10.13/-8.57	-7.06/-5.03	-3.07/-1.21	-0.50/-0.6	0.530/-77	0.930/-48	-0.21/-0.79	-1.15/-1.83	-2.81/-3.99	-5.61/-8	-11.45/-17.86	-17.45/-15.78	-11.59/-8.47	-6.11/-4.43	-2.65/-0.69	0.881/-4	1.24/-1.16	1.56/-1.8	1.72/-1.33	0.49/-0.61	-1.95/-3.77	-6.22/-8.6	-13.69/-17.68
Θ(37.5°)	-11.68/-10.2	-9.59/-8.48	-5.96/-2.88	-1.09/-0.4	0.520/-55	0.240/-62	1.25/-1.42	1.10/-24	-0.66/-1.69	-2.99/-4.59	-6.74/-10.79	-14.78/-17.9	-7.75/-6.56	-5.53/-4.19	-2.16/-0.89	-0.260/-87	2.69/-61	3.41/-6.62	1.610/-41	-0.66/-1.85	-4.1/-6.26	-7.9/-8.88	-11.71/-14.15	
Θ(45°)	-17.58/-15.98	-13.78/-9.89	-6.81/-4.32	-2.42/-1.98	-1.320/-0.4	1.13/-53	1.41/-28	0.890/-42	-0.25/-1.1	-2.44/-3.98	-5.62/-9.2	-15.22/-18.95	-17.46/-16.17	-12.52/-10.46	-8.37/-5.22	0.303/-1.76	0.852/-73	3.14/-3.22	3.45/-2.99	2.45/-1.73	-0.38/-1.22	-3.04/-5.02	-8.81/-8.41	-12.14/-14.72
Θ(52.5°)	-17.12/-12.54	-11.66/-9.43	-5.21/-3.13	-2.04/-1.32	-0.57/-0.29	-0.240/-1	0.50/-47	-0.15/-1.15	-2.23/-2.94	-4.06/-6.3	-6.31/-8.81	-10.3/-12.7	-18.28/-17.72	-18.41/-14.79	-11.21/-7.12	-4.89/-1.97	0.250/-72	1.49/-1.6	1.29/-28	0.720/-05	-0.43/-1.98	-3.88/-6.62	-10.21/-11.18	-14.39/-16.61
Θ(60°)	-17.96/-15.58	-17.53/-12.98	-6.36/-3.68	-3.21/-3.56	-2.65/-2.26	-1.86/-1.57	-1.87/-2.48	-3.26/-4.44	-6.1/-6.94	-6.83/-7.13	-7.88/-9.92	-10.78/-12.01	-18.68/-19.17	-18.36/-18.39	-12.45/-6.38	-6.55/-3.92	-1.83/-0.31	0.060/-84	0.880/-36	-0.51/-1.5	-2.98/-3.71	-3.62/-5.05	-7.08/-9.08	-11.28/-15.12
Θ(67.5°)	-18.85/-18.07	-17.63/-11.89	-6.28/-4.75	-5.12/-4.73	-3.13/-2.36	-2.37/-2.31	-2.24/-2.46	-2.83/-3.52	-5.29/-7.22	-7.82/-8.74	-7.51/-9.02	-10.12/-11.85	-12.55/-14.27	-17.95/-17.67	-13.18/-12.17	-9.87/-6.01	-3.31/-2.39	-2.11/-1.82	-1.89/-1.99	-2.58/-3.18	-4.42/-6.16	-6.06/-7.07	-8.94/-9.9	-11.37/-14.96
Θ(75°)	-18.25/-15.61	-17.87/-14.86	-7.64/-6.23	-7.28/-5.76	-4.97/-4.45	-4.19/-4.04	-3.02/-1.86	-1.81/-2.88	-5.08/-4.78	-8.45/-7.21	-6.1/-7.71	-8.16/-8.67	-12.19/-14.27	-16.1/-18.41	-19.06/-16.91	-15.63/-8.39	-4.94/-4.67	-3.26/-3.31	-3.86/-3.79	-4.74/-5.64	-5.34/-6.76	-8.62/-8.33	-9.63/-8	-17.1/-12.26
Θ(82.5°)	-8.59/-10.54	-14.14/-18.48	-10.49/-8.85	-13.13/-8.7	-5.05/-13.3	-5.53/-9.7	-3.11/-21.1	-1.89/-2.9	-4.64/-7.1	-9.39/-8.93	-7.34/-9.26	-9.78/-10.34	-10.07/-10.25	-11.15/-18.52	-17.72/-16.21	-13.32/-9.83	-6.6/-5.07	-4.65/-4.59	-4.56/-5.34	-6.11/-6.5	-6.22/-6.28	-6.98/-7.06	-6.82/-6.16	-5.97/-6.16
Θ(90°)	-8.47/-11.25	-18.15/-18.02	-14.34/-11.92	-14.17/-9.57	-7.52/-6.86	-8.12/-7.98	-5.82/-3.94	-3.31/-3.49	-5.87/-9.93	-14.43/-9.72	-7.55/-9.27	-12.66/-14.18	-15.72/-16.11	-18.22/-18.41	-18.32/-10.44	-10.61/-9.9	-4.56/-4.95	-5.46/-5.34	-6.16/-6.72	-7.37/-8.55	-9.23/-9.73	-8.96/-8.63	-9.26/-8.7	-6.65/-7.01
Θ(97.5°)	-9.06/-9.63	-12.44/-18.29	-18.01/-19.3	-17.94/-9.83	-9.93/-10.69	-12.75/-9.73	-7.71/-5.73	-4.95/-4.91	-6.91/-9.99	-17.78/-13.41	-12.85/-13.36	-18.69/-14.92	-15.36/-15.11	-14.67/-17.11	-13.59/-14.24	-11.06/-8.26	-6.47/-6.4	-7.95/-9.82	-8.67/-9.75	-11.76/-10.06	-10.59/-11.14	-14.22/-9.3	-8/-6	-5.21/-6.38
Θ(105°)	-6.17/-5.18	-8.57/-15.65	-18.03/-18.16	-17.53/-8.64	-9.29/-9.18	-10.39/-10.04	-7.63/-5.64	-4.82/-5.65	-7.95/-9.82	-14.54/-8.76	-8.91/-11.47	-18.62/-17.43	-13.73/-10.97	-13.72/-14.8	-15.65/-13.14	-13.85/-12.15	-9.97/-9.5	-14.91/-14.26	-15.89/-18.57	-15.5/-14.15	-9.91/-9.86	-10.83/-11.74	-9.91/-7.2	-4.93/-5.39
Θ(112.5°)	-8.17/-8.45	-15.58/-14.53	-13.16/-14.9	-16.13/-10.17	-7.84/-11	-12.56/-12.68	-9.97/-8.55	-8.25/-9.62	-12.12/-17.74	-15.13/-9.61	-12.83/-14.71	-17.9/-13.1	-12/-11.66	-11.72/-15.37	-18.84/-15.56	-14.7/-11.9	-12.69/-18.05	-14.24/-19.25	-15.8/-11.47	-15.56/-15.7	-17.92/-18.5	-17.78/-18.1	-11.48/-9.48	-6.24/-5.68
Θ(120°)	-18.51/-18.03	-12.44/-13.05	-17.77/-15.07	-18.52/-12.16	-9.02/-12.41	-13.28/-13.93	-10.83/-8.38	-9.63/-11.99	-13.8/-18.65	-18.98/-12.02	-12.21/-16.39	-15.77/-19.15	-16.16/-17.6	-10.06/-9.09	-15.68/-16.91	-13.54/-13.96	-14.37/-13.58	-10.86/-6.53	-4.65/-8.1	-9.03/-9.7	-10.24/-8.29	-9.71/-17.14	-13.56/-14.1	-13.56/-13.83
Θ(127.5°)	-11.35/-11.94</																							



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(127.5°)	-11.78/-14.01	-11.11/-16.61	-18.85/-16.91	-12.22/-9.31	-12.14/-8.78	-8.43/-7.31	-5.27/-3.66	-2.59/-2.73	-3/-3.8	-6.02/-6.38	-5/-7.02	-7.04/-2.55	-0.25/-2.29	0.75/-2.72	-6.42/-5.93	-4.47/-3.84	-7.68/-8.19	-16.3/-15.31	-14.36/-17.78	-15.05/-8.22	-10.04/-12.95	-7.37/-10.55	-11.42/-8.72	-11.58/-11.62
Θ(135°)	-14.36/-17.24	-15.17/-16.65	-10.1/-10.9	-18.8/-16.32	-15.23/-6.94	-4.72/-4.87	-3.92/-5.58	-3.86/-3.37	-4.56/-6.47	-6.32/-4.78	-5.53/-6.81	-5.12/-3.33	-1.95/-5.55	-0.59/-5.44	-9.5/-13.99	-7.01/-6.84	-6.25/-4.78	-9.63/-8.6	-8.26/-13.15	-18.41/-10.47	-7.29/-13.46	-10.99/-6.29	-13.03/-17.4	-17.29/-15.7
Θ(142.5°)	-8.71/-8.22	-11.98/-18.36	-19.17/-19	-17.12/-18.72	-16.45/-8.49	-5.65/-5.6	-5.29/-4.98	-5.69/-6.02	-4.92/-3.89	-3.77/-5.19	-5.16/-3.93	-4.77/-6.06	-4.19/-1.22	-0.69/-3.97	-15.69/-11.05	-10.53/-9.89	-5.82/-8.06	-12.28/-7.65	-6.35/-8.99	-15.45/-11.83	-5.77/-5.99	-11.2/-6.76	-8.73/-19.12	-18.72/-13.92
Θ(150°)	-6.57/-4.51	-4.32/-5.04	-6.57/-8.75	-10.65/-9.44	-6.72/-4.94	-4.36/-4.71	-4.54/-3.73	-3.86/-5.66	-7.97/-8.46	-7.15/-5.31	-3.57/-3.5	-5.69/-7.45	-5.05/-3.5	-4.19/-6.19	-6.95/-8.19	-9.07/-7.08	-7.98/-13.36	-14.76/-10.54	-8.46/-10.77	-18.66/-16.73	-10.94/-8.13	-10.57/-10.38	-8.62/-10.31	-12.37/-10.31
Θ(157.5°)	-10.44/-8.11	-7.49/-8.7	-12.52/-14.34	-15.41/-17.53	-17.71/-14.04	-11.51/-11.99	-14.08/-14.14	-13.82/-14.32	-16.64/-13.55	-9.03/-5.69	-3.9/-3.22	-3.1/-2.85	-2.22/-1.94	-2.05/-2.76	-4.05/-5.61	-6.78/-8.52	-12.49/-16.93	-16.66/-12.18	-10.09/-14.2	-12.08/-13.7	-11.66/-10.87	-11.04/-10.6	-8.85/-9.27	-13.13/-13.06
Θ(165°)	-11.56/-13.68	-14.79/-13.82	-13.23/-13.17	-13.39/-13.15	-12.57/-12.9	-17.16/-16.31	-15.08/-13.33	-10.29/-9.58	-7.93/-6.85	-6.32/-5.73	-5.04/-4.31	-3.84/-3.73	-4.08/-4.81	-6.3/-8.3	-5.19/-15.6	-18.03/-19.04	-17.99/-18.97	-17.86/-17.31	-16.28/-15.71	-15.32/-14.06	-12.53/-11	-8.97/-8.02	-9.06/-10.75	
Θ(172.5°)	-18.92/-17.42	-19.25/-18.58	-17.08/-15.38	-15/-14.5	-13.89/-13.46	-13.93/-14.53	-13.66/-12.19	-12.13/-12.37	-11.34/-10.56	-9.47/-8.18	-7.35/-6.23	-5.53/-5.57	-6.04/-6.99	-8.01/-8.94	-9.6/-9.8	-9.81/-9.67	-9.31/-9.43	-9.21/-9.09	-8.97/-8.88	-8.13/-9.28	-9.66/-10.26	-10.87/-12.5	-15.76/-17.14	-17.98/-18.6
Θ(180°)	-14.48/-15.38	-15.14/-17.03	-17.82/-16.4	-15.01/-14.4	-13.78/-12.89	-12.14/-11.93	-12.03/-12.77	-13/-12.6	-12.39/-12.44	-12.53/-12.51	-12.38/-12.12	-12.29/-12.6	-12.9/-12.7	-12.35/-11.85	-11.44/-10.8	-10.13/-9.46	-8.68/-8.5	-8.3/-8	-7.71/-7.43	-7.52/-7.6	-7.67/-7.82	-7.87/-8.12	-8.86/-9.47	-10.99/-12.86
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°)	-12.28/-14.02	-16.71/-17.78	-17.68/-16.95	-11.12/-11.88	-10.78/-9.56	-8.43/-7.28	-6.24/-5.76	-5.43/-5.71	-5.53/-5.25	-5.98/-6.48	-6.83/-7.25	-7.8/-9.39	-11.34/-12.7	-14.65/-16.1	-15.44/-14.57	-12.87/-12.75	-11.92/-10.6	-9.23/-8.29	-8.09/-7.54	-6.81/-6.39	-6.16/-6.16	-6.11/-6.27	-7/-6.9	-8.41/-9.65
Θ(7.5°)	-14.44/-14.67	-14.65/-13.82	-12.96/-12.88	-14.87/-10.3	-11.71/-11.02	-10.32/-8.95	-8.17/-8.03	-8.05/-8.04	-7.28/-6.82	-7.21/-7.54	-7.26/-7.08	-7.51/-8.88	-10.83/-14.45	-19.03/-18.29	-18.24/-14.34	-11.61/-9.75	-8.26/-7.1	-6.31/-5.94	-5.67/-5.54	-6.69/-6.18	-6.83/-7.36	-7.75/-8.84	-9.85/-10.41	-10.65/-12.02
Θ(15°)	-12.85/-12.92	-11.48/-10.92	-9.67/-8.82	-7.88/-7.14	-7.63/-7.7	-7.55/-7.89	-8.59/-9.35	-9.91/-9.84	-9.72/-9.77	-9.84/-9.03	-8.3/-8.03	-9.14/-10.73	-12.22/-13.9	-14.86/-16.14	-19.45/-18.6	-18.12/-13.27	-10.47/-8.39	-6.83/-5.54	-4.79/-4.32	-4.32/-4.96	-5.66/-6.28	-6.96/-8.28	-9.35/-10.09	-10.10/-10.87
Θ(22.5°)	-9.52/-8.1	-6.97/-6.45	-6.34/-6.72	-7.16/-7.19	-8.75/-9.48	-10.56/-12.61	-13.77/-13.43	-13.4/-13.69	-14.33/-14.15	-12.77/-11.4	-10.01/-12.22	-11.19/-11.4	-11.13/-10.94	-11.65/-13.29	-15.99/-17.76	-17.66/-18.56	-17.8/-15.72	-13.12/-10.23	-7.86/-6.04	-4.61/-3.82	-3.99/-4.83	-5.49/-6.14	-6.94/-8.3	-9.73/-10.19
Θ(30°)	-9.58/-9.03	-8.92/-8.92	-10.47/-14.29	-16.43/-18.34	-17.77/-17.79	-17.25/-13.62	-13.43/-14.45	-15.95/-15.78	-13.76/-13.04	-12.63/-13.58	-13.8/-10.64	-8.37/-8.38	-10.29/-14.14	-18.21/-18.92	-18.63/-17.71	-15.87/-14.71	-14.13/-10.73	-8.69/-7.79	-6.77/-5.74	-5.61/-4.85	-5.24/-5.81	-6.54/-7.21	-8.46/-9.62	
Θ(37.5°)	-6/-6.01	-7.76/-10.17	-13.58/-18.7	-17.61/-15.85	-11.03/-10.55	-10.82/-11.72	-10.54/-7.72	-6.9/-7.55	-8.99/-9.13	-8.39/-9.03	-11.16/-12.24	-8.84/-6.32	-6/-7.3	-9.08/-9.97	-10.17/-9.55	-8.62/-8.21	-8.03/-8.44	-7.21/-5.26	-4.43/-4.85	-5.98/-5.7	-4.09/-3.21	-3.49/-4.25	-5.4/-6.65	-7.61/-7.14
Θ(45°)	-6.45/-5.85	-8.51/-13.4	-19.23/-14.63	-10.27/-9.42	-8.51/-8.73	-8.11/-8.31	-8.34/-7.79	-7.08/-6.54	-7.12/-7.19	-6.81/-7.86	-9.68/-10.01	-8/-8.63	-7.16/-8.12	-8.66/-9.45	-8.41/-6	-5.53/-6.37	-8.43/-10.23	-8.42/-5.55	-3.58/-2.74	-3/-3.52	-4.34/-3.97	-5.72/-8.1	-9.82/-9.29	
Θ(52.5°)	-4/-3.83	-6.64/-11.89	-10.31/-6.54	-5.21/-4.92	-5.23/-5.78	-6.86/-8.47	-9.82/-8.69	-7.02/-5.33	-4.23/-4.2	-5.47/-7.04	-7.95/-7.49	-5.7/-4.41	-4.5/-5.45	-5.73/-5.11	-4.38/-3.73	-4.31/-4.67	-4.64/-6.51	-8.59/-7.91	-8.51/-8.93	-6.39/-4.4	-2.88/-2.91	-4.12/-5.54	-6.77/-8.17	-8.19/-6.03
Θ(60°)	-3.58/-3.08	-6.68/-11.72	-7.38/-3.83	-3.34/-3.19	-4.72/-6.46	-7.39/-6.42	-5.65/-7.11	-7.62/-6.57	-5.38/-4.89	-5.39/-5.83	-7.41/-9.95	-8.88/-5.89	-5.11/-5.08	-5.52/-5.85	-4.07/-3.79	-3.67/-4.03	-6.79/-9.15	-9.32/-10.37	-10.78/-9.9	-7.97/-6.42	-5.5/-4.99	-4.77/-5.25	-6.33/-7.69	-7.19/-5.57
Θ(67.5°)	-3.54/-2.45	-5.75/-10.57	-6.25/-6.18	-3.74/-4.42	-8.25/-4.75	-5.21/-6.45	-4.99/-5.38	-7.06/-7.1	-4.85/-4.63	-6.15/-4.98	-4.45/-6.97	-6.96/-5.23	-5.07/-4.56	-6.31/-5.02	-3.62/-2.73	-2.27/-1.56	-8.16/-9	-9.84/-10.75	-11.48/-12.12	-12.92/-10.22	-7.12/-5.38	-5.06/-5.04	-5.55/-6.43	-6.93/-4.92
Θ(75°)	-3.74/-3.18	-7.22/-13.37	-6.02/-8.82	-3.17/-3.82	-6.14/-5.27	-2.74/-1.42	-3.19/-2.58	-4.62/-6.15	-6.21/-4.66	-5.21/-6.09	-5.62/-4.27	-3.02/-2.08	-3.44/-3.08	-5.21/-5.45	-6.24/-5.95	-5.85/-5.17	-6.25/-6.65	-6.39/-10.22	-13.11/-10.11	-5.18/-3.58	-2.75/-3.55	-5.81/-6.23	-7.13/-6.23	
Θ(82.5°)	-5.58/-3.38	-9.17/-12.11	-4.49/-3.3	-4.13/-6.3	-9.75/-5.17	-2.13/-0.42	-0.27/-1.8	-3.17/-4.44	-3.71/-3.63	-4.88/-4.78	-4.62/-5.35	-4.68/-2.65	-2.38/-3.34	-4.2/-2.45	-1.94/-1.39	-2.59/-4.67	-4.16/-4.98	-3.88/-3.97	-5.09/-6.42	-9.73/-8.16	-4.41/-4.15	-5.97/-6.36	-7.45/-8.55	-7.83/-7.05
Θ(90°)	-6.14/-3.97	-10.87/-18.76	-6.27/-4.79	-5.25/-8.26	-8.88/-4.24	-0.6/-0.8	-0.91/-2.38	-4.17/-4.17	-4.64/-6.46	-6.24/-5.23	-2.74/-4.36	-5.22/-3.32	-3.73/-2.71	-2.68/-1.98	-3.03/-2.7	-2.97/-2.46	-2.66/-3.84	-4.18/-3.84	-4.83/-4.77	-3.7/-2.73	-3.66/-4.51	-3.19/-4.34	-4.39/-4.21	
Θ(97.5°)	-4.8/-6.25	-9.38/-16.03	-6.81/-3.68	-7.44/-9.07	-7.02/-2.89	-0.03/-0.25	-1.46/-1.35	-5.4/-6.28	-5.27/-4.52	-8.75/-7.24	-2.71/-4.72	-3.81/-1.81	-3.65/-4.66	-5.79/-4.55	-2.73/-1.17	-0.52/-0.56	-0.89/-0.7	-0.9/-2.26	-5.26/-5.53	-2.65/-2.54	-2.21/-2.34	-2.69/-4.58	-6.17/-5.66	
Θ(105°)	-5.02/-7.63	-18.64/-13.06	-6.52/-3.7	-9.77/-11.74	-8.95/-4.88	-2.81/-2.88	-3.57/-6.53	-8.4/-7.12	-4.57/-3.55	-8.32/-8.18	-4.82/-6.93	-5.17/-2.14	-3.81/-4.33	-6.11/-3.47	-1.95/-0.56	0.52/-0.1	-0.3/-0.44	-0.96/-1.63	-3.67/-2.97	-5.67/-3.81	-2.6/-3.64	-2.12/-2.23	-4.67/-6.2	-7.79/-5.84
Θ(112.5°)	-6.97/-11.64	-11.12/-11.3	-10.5/-13.7	-18.38/-15.22	-16.13/-8.55	-4.95/-5.45	-8.41/-12.4	-18.51/-6.03	-6.13/-5.84	-8.11/-6.03	-6.02/-3.52	-4.32/-3.72	-5.88/-4.59	-4.11/-2.05	-1.53/-1.57	-1.14/-2.6	-2.06/-2.86	-4.0/-0.73	-3.22/-5.11	-5.66/-6.41	-6.41/-4.11	-6.13/-13.3	-10.27/-6.58	
Θ(120°)	-8.62/-10.07	-11.28/-18.39	-17.89/-12.79	-18.46/-18.02	-17.71/-12.89	-13.15/-9.02	-9.61/-17.97	-17.81/-12.89	-7.59/-9.55	-15.38/-9.37	-6.21/-6.31	-6.04/-4.55	-4.5/-3.48	-2.46/-3.42	-2.48/-0.7	-0.95/-0.62	-2.95/-3.38	-1.98/-0.64	-3.13/-2.78	-7.92/-5.14	-6.17/-5.28	-9.55/-13.24	-10.17/-7.88	
Θ(127.5°)	-10.3/-14.29	-8.43/-18.13	-14.96/-9.95	-9.79/-13.85	-14.25/-17.83	-18.5/-17.69	-17.54/-14.88	-11.75/-8.38	-7.68/-8.55	-10.78/-18.81	-12.6/-8.18	-4.56/-2.84	-7.37/-3.98	-3.09/-3.24	-5.84/-4.55	-1.96/-0.83	-0.110.19	-3.36/-8.73	-5.83/-2.14	-2.88/-12.07	-19.11/-6.68	-3.75/-11.76	-8.31/-15.25	-17.71/-11.75
Θ(135°)	-12.45/-14.74	-19.12/-17.68	-12.32/-13.56	-19.24/-13.6	-12.11/-15.83	-10.91/-10.12	-12.81/-11.7	-9.02/-8.82	-10.13/-11.79	-12.92/-14	-15.97/-13.46	-8.56/-7.67	-8.05/-4.99	-4.74/-5.26	-5.63/-8.56	-4.26/-0.93	-0.030	-2.14/-5.43	-8.08/-1.85	0.39/-3.16	-9.01/-19.05	-2.26/-2.22	-1.34/-14.6	-15.49/-15.94
Θ(142.5°)	-12.16/-17.88	-18.56/-18.83	-13.93/-12.64	-19.08/-15.45	-12.81/-14.67	-14.11/-13.35	-16.57/-15.69	-12.24/-15.01	-19.03/-19.12	-14.87/-12.66	-10.99/-7.83	-5.81/-5.31	-4.31/-3.1	-3.55/-5.11	-9.5/-10.6	-4.4/-3.89	-2.7/-2.14	-4.14/-6.19	-12.28/-4.77	-0.4/-0.88	-2.62/-6.83	-10.47/-5.05	-8.84/-19.14	-14.34/-10.1
Θ(150°)	-5.97/-5.65	-8.17/-10.87	-13.61/-17.76	-18.48/-16.15	-12.45/-9.53	-8.48/-8.38	-9.2/-9.83	-15.07/-15.67	-11.57/-13.67	-13.75/-14.09	-11.58/-10.16	-11.07/-13.13	-11.13/-8.6	-8.89/-11.62	-14.52/-17.13	-19.36/-10.41	-6.03/-6.1	-8.1/-9.21	-10.22/-6.96	-4.07/-4.23	-7.89/-11.59	-14.86/-18.23	-13.41/-9.93	-11.68/-9.6
Θ(157.5°)	-15.64/-17.58	-18/-18.57	-15.02/-13.23	-14.08/-15.94	-16.49/-15.39	-16.18/-19	-18.15/-18.53	-14.22/-11.15	-9.84/-10.61	-14.12/-13.93	-18.55/-17.7	-18.2/-18.25	-19.21/-17.89	-19.66/-19.26	-17.91/-16.02	-11.21/-9.4	-11.13/-14.8	-14.85/-13.82	-12.48/-8.6	-6.73/-6.89	-9.26/-15.06	-18.59/-17.32	-18.15/-18.17	-13.65/-11.52
Θ(165°)	-9.81/-9.89	-8.97/-8.75	-10.11/-12.52	-15.35/-16.79	-17.26/-18.4	-18.11/-17.8	-18.37/-18.51	-17.94/-19.09	-17.53/-17.8	-18.67/-16.86	-15.58/-15.29	-14.67/-13.54	-12.12/-10.91	-9.85/-9.1	-8.78/-9.01	-9.5/-10.84	-12.14/-13.95	-15.19/-15.76	-16.41/-15.31	-13.94/-13.52	-14.14/-14.84	-15.86/-16.4	-16.21/-17.75	-17.39/-11.15
Θ(172.5°)	-18.99/-17.92	-17.94/-18.94	-18.99/-18.96	-17.97/-14.13	-12.14/-11.75	-11.75/-11.92	-11.94/-12.53	-12.9/-13.61	-14.92/-16.83	-17.74/-17.11	-15.8/-14.91	-15.46/-16.02	-16.82/-18.03	-17.96/-19.21	-18.47/-18.71	-17.8/-16.33	-14.97/-14.78	-14.33/-14.09	-14.81/-18.62	-16.63/-16.39	-14.6/-14.43	-15.41/-16.59	-16.27/-16.06	-17.87/-18.75
Θ(180°)	-11.49/-10.6	-10.92/-11.1																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Φ(180°)	-14.72/-18.15	-16.41/-11.72	-10.61/-9.5	-9.5/-10.61	-12.81/-14.02	-12.97/-12.67	-14.16/-16.15	-18.22/-17.71	-17.44/-18.88	-18.3/-18.06	-18.34/-17.73	-15.95/-13.21	-10.48/-7.84	-6.18/-5.36	-5.02/-4.7	-4.44/-4.61	-4.87/-5.28	-5.75/-6.84	-7.31/-7.98	-9.54/-11.32	-14.04/-18.91	-18.87/-17.2	-14.03/-12.03	-11.63/-12.28
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°)	-16.47/-18.49	-18.57/-18.42	-15.61/-13.34	-12.24/-11.96	-12.12/-11.92	-11.53/-11.56	-11.78/-11.28	-10.33/-10.22	-10.24/-10.49	-10.19/-10.6	-11.6/-12.09	-12.43/-13.53	-14.74/-16.17	-18.09/-17.67	-14.69/-12.19	-11/-10.35	-9.68/-8.92	-9.18/-9.87	-9.35/-9.36	-9.94/-10.16	-10.54/-11.27	-11.79/-12.99	-12.41/-13.39	-13.55/-15.29
Θ(7.5°)	-17.79/-18.5	-18.2/-17.03	-12.96/-9.81	-8.67/-8.82	-8.67/-8.52	-8.49/-8.37	-8.84/-9.32	-9.81/-10.58	-11.55/-12.25	-12.87/-15.04	-17.89/-18.66	-18.12/-18.58	-17.89/-18.16	-17.55/-18.28	-18.1/-18.98	-17.26/-18.67	-18.82/-17.88	-16.69/-14.58	-12.52/-12.53	-12.85/-11.81	-11.14/-10.86	-10.41/-10.49	-10.59/-12.68	-13.27/-15.61
Θ(15°)	-18.61/-19.21	-17.97/-17.63	-15.3/-13.18	-13.25/-15.49	-17.71/-16.45	-14.93/-13.11	-12.66/-13.48	-14.93/-16.34	-18.45/-18.6	-18.72/-15.08	-18.18/-18.17	-18.66/-19.08	-18.88/-18.17	-17.82/-17.04	-15.53/-14.39	-13.3/-13.03	-13.01/-12.23	-12.02/-12.28	-11.19/-10.92	-11.33/-11.51	-11.68/-10.83	-9.71/-9.6	-9.49/-12.37	-12.38/-14.69
Θ(22.5°)	-17.71/-18.12	-18.04/-17.68	-18.14/-19	-17.68/-16.16	-15.92/-18.98	-17.21/-17.35	-18.71/-18.3	-18.56/-19.05	-18.21/-18.98	-15.8/-12.58	-11.58/-12.57	-14.24/-16.44	-16.53/-15.28	-13.46/-12.13	-11.56/-11.57	-12.17/-13.27	-14.91/-18.16	-18.25/-16.95	-11.32/-8.92	-7.61/-6.87	-6.62/-6.52	-6.19/-6.82	-6.3/-8.26	-9.77/-13.16
Θ(30°)	-19.34/-19.05	-18.21/-15.6	-13.33/-15.47	-18.65/-15.39	-12.04/-10.95	-10.66/-11.47	-14.02/-16.45	-19.23/-18.85	-18.94/-18.13	-17.95/-17.68	-16.25/-15.34	-15.22/-13.44	-10.97/-9.27	-8.12/-3.72	-7.98/-10.09	-11.92/-12.38	-15.06/-18.19	-14.13/-3.89	-6.98/-7.82	-8.46/-7.29	-5.34/-4.63	-4.93/-6.21	-6.79/-8.71	-11.48/-16.22
Θ(37.5°)	-8.86/-8.43	-9.46/-12.17	-18.18/-19.1	-15.61/-13.22	-12.89/-13.59	-14.61/-17.88	-19.01/-18.34	-18.09/-17.09	-16.32/-15.92	-16.3/-13.9	-10.9/-9.69	-9.41/-8.76	-8.53/-8.66	-9.44/-10.63	-11.57/-10.65	-9.82/-10.72	-13.45/-16.67	-16.43/-12.27	-9.4/-6.33	-4.13/-4.77	-6.81/-7.07	-5.72/-4.55	-4.4/-4.86	-6.4/-7.91
Θ(45°)	-6.65/-5.77	-7.64/-10.28	-14.51/-16.89	-13.96/-12.51	-13.24/-16.45	-18.33/-18.28	-18.68/-17.79	-18.35/-15.05	-9.27/-7.6	-9.09/-9.9	-8.5/-8.51	-9.34/-8.05	-6.62/-6.95	-8.31/-9.94	-9.24/-9.06	-8.43/-6.23	-4.53/-6.47	-3.64/-3.33	-4.7/-6.31	-6.34/-5.58	-4.73/-4.65	-5.28/-5.49	-5.73/-6.66	-6.16/-6.88
Θ(52.5°)	-4.87/-3.91	-5.24/-8.98	-12.96/-10.98	-8.53/-7.75	-10.26/-14.32	-12.58/-11.04	-13.72/-17.41	-18.1/-18.58	-15.44/-10.36	-8.52/-6	-4.67/-6.63	-8.21/-7.1	-7.55/-9.75	-10.02/-7.22	-5.76/-6.34	-5.94/-6.5	-5.96/-3.75	-2.02/-1.33	-0.46/-0.42	-1.37/-5.55	-6.79/-4.05	-2.6/-2.14	-1.37/-1.26	-2.45/-4.53
Θ(60°)	-3.51/-2.18	-3.42/-8.14	-10.33/-7.07	-6.3/-5.86	-6.3/-5.86	-6.03/-3.93	-4.77/-7.86	-12.66/-16.82	-13.01/-11.7	-8.89/-5.85	-4.04/-5.59	-7.57/-5.61	-4.54/-5.34	-4.6/-3.07	-6.87/-5.82	-4.02/-2.7	-1.48/-0.34	-0.94/-2.18	-4.65/-4.39	-6.66/-4.4	-3.7/-1.91	-2.26/-3.72		
Θ(67.5°)	-3.22/-2.01	-3.81/-9.36	-8.91/-5.74	-4.57/-5.26	-6.13/-4.32	-3.01/-1.96	-2.12/-4.08	-6.57/-8.73	-9.48/-9.12	-6.52/-4.31	-4.05/-5.22	-4.46/-4.01	-5.42/-5.69	-3.53/-2.39	-2.28/-3.91	-3.61/-2.92	-3.22/-2.32	-0.84/-0.56	0.97/0.33	-1.12/-3.32	-5.5/-5.98	-5.34/-6.33	-8.92/-4.09	-3.93/-5.24
Θ(75°)	-2.18/-1.68	-2.22/-6.74	-5.52/-3.29	-3.26/-4.43	-5.6/-3.12	-1.18/-0.69	-1.24/-2.09	-2.91/-2.9	-4.55/-9.82	-8.4/-4.41	-3.93/-6.57	-4.78/-3.38	-4.81/-6.09	-3.72/-1.81	-2.5/-4.24	-2.53/-1.66	-2.52/-2.02	0.50/0.74	1.14/0.77	0.05/-1.93	-5.98/-10.46	-7.71/-8.46	-7.16/-7.28	-1.67/-1.345
Θ(82.5°)	-6.68/-4.47	-4.9/-8.02	-3.69/-0.45	0.11/-2.61	-3.81/-1.13	0.45/-1.44	1/-0.32	-1.26/-2.48	-3.12/-6.26	-10.61/-3.84	-2.37/-3.91	-4.12/-1.61	-2.4/-3.61	-1.17/-0.77	-2.34/-3.59	-1.71/-3.24	-1.44/-0.06	-0.68/-0.32	0.83/-0.44	-0.97/-3.65	-8.7/-8.26	-5.34/-4.26	-5.98/-3.96	-1.88/-11.06
Θ(90°)	-6.17/-4.69	-4.76/-9	-5.04/-3.15	-1.59/-5.84	-5.6/-1.23	1.01/-1.28	1.26/0.83	-0.10/0.13	-0.89/-4.74	-9.35/-3.99	-2.64/-3.29	-2.59/-0.11	-1.49/-1.49	1.31/-1.34	-2.28/-3.56	-2.22/-3.91	-0.35/-0.83	-0.29/-0.19	0.79/-1.52	-0.6/-3.9	-3.24/-2.06	-2.69/-2.42	-3.37/-3.87	-3.88/-8.14
Θ(97.5°)	-10.47/-6.51	-6.41/-13.74	-6.43/-5.55	-2.92/-7.99	-6.84/-0.71	1.08/-1.44	0.16/-2.31	-2.69/-0.53	-1.14/-6.13	-0.83/-2.26	-0.54/-3.43	-0.62/-0.03	-4.23/-2.07	0.76/-1.05	-2.6/-2.55	-2.19/-0.3	0.42/-1.35	1.73/-1.78	2.24/-2.18	2.01/-0.15	-1.29/-1.35	-0.76/-1.92	-3.21/-3.77	-2.87/-7.33
Θ(105°)	-7.75/-10.27	-3.21/-17.6	-4.54/-4.06	-2.19/-9.88	-14.51/-12.3	1.08/-1.48	0.06/-2.81	-2.75/-1.17	-0.99/-2.51	-1.67/-0.72	-3.51/-5.81	-3.02/-2.22	-2.22/-3.28	-1.26/-0.57	-1.85/-2.48	-1.5/-0.75	0.732/-24	1.09/-1.58	0.83/-1.74	0.67/-0.75	-1.07/-3.39	-2.67/-3.85	-4.19/-4.97	-4.52/-5.65
Θ(112.5°)	-14.37/-10.45	-5.17/-11.68	-5.19/-4.5	-4.65/-9.73	-13.59/-5.56	-1.45/-0.81	-2.65/-5.58	-5.51/-3.42	-4.01/-6.55	-7.11/-3.31	-3.05/-6.36	-1.81/-1.22	-3.73/-5.51	-1.45/-0.37	-1.46/-3.06	-1.34/-0.07	0.63/0.5	-2.47/-1.32	-0.432/65	-1.34/-1.86	-1.52/-3.91	-1.83/-0.9	-5.46/-6.29	-7.93/-18.22
Θ(120°)	-8.22/-8.25	-5.12/-9.53	-11.13/-8.15	-15.32/-9.99	-11.65/-7.7	-5.65/-4.59	-8.22/-13.07	-13.51/-6.76	-5.46/-11.6	-9.26/-5.17	-5.45/-8.57	-6.57/-7.29	-2.98/-7.1	-2.42/-2.02	-1.14/-2.04	1.03/-1.37	-1.86/-6.12	-5.59/-0.85	-2.96/-6.09	-4.92/-3.22	-1.8/-3.05	-5.56/-5.28	-1.13/-3.89	
Θ(127.5°)	-7.09/-4.75	-4.63/-14.18	-9.45/-5.9	-12.39/-6.47	-11.55/-11.3	-10.57/-14.4	-10.05/-15.04	-9.64/-7.67	-7.06/-87	-13.45/-9.88	-5.04/-6.58	-6.25/-9.24	-5.23/-5.71	-2.37/-8.12	-6.43/-0.86	-0.78/-2.21	-0.49/-3.98	-3.64/-0.97	-3.21/-6.17	-4.58/-4.27	-6.05/-3.26	-1.22/-3.97	0.4/-1.3	
Θ(135°)	-6.24/-19.06	-9.11/-11.5	-7.8/-14.1	-12.05/-10.18	-19.21/-15.67	-11.78/-13.07	-13.41/-18.12	-10.56/-6.51	-4.91/-5.05	-7.12/-9.58	-14.78/-13.22	-5.61/-2.7	-4.27/-3.35	-1.11/-0.6	-2.33/-1.88	1.432/-2.74	-1.13/-1.77	-2.97/-15.9	-3.452	-0.7/-4.42	-11.97/-5.57	-2.27/-2.79	-9.3/-7.9	-7.97/-5.85
Θ(142.5°)	-7.47/-12.71	-14.95/-16.27	-15.52/-15.93	-12.05/-10.87	-17.42/-12.27	-12.78/-15.08	-8.22/-11.7	-12.17/-8.22	-6.25/-5.44	-4.81/-6.16	-9.05/-9.53	-7.38/-7.5	-6.71/-6.96	-6.45/-3.18	-3.71/-7.96	-1.49/-0.91	1.53/-0.05	-6.72/-5.06	-4.96/-1.27	2.662/53	-3.5/-15.95	-6.47/-7.45	-13.89/-12.76	-8.98/-7.51
Θ(150°)	-5.16/-7.12	-12.28/-18.41	-16.77/-13.61	-15.97/-18.09	-10.61/-6.01	-5.13/-5.14	-3.61/-2.53	-4.45/-9.09	-10.51/-15.28	-17.99/-18.63	-19.09/-17.52	-10.12/-9.25	-10.99/-9.87	-6.81/-6.46	-5.58/-9.22	-5.58/-7.66	-6.69/-8.29	-10.47/-9.54	-9.52/-2.41	-1.06/0.04	-2.3/-12.85	-9.02/-9.32	-18.76/-18.46	-15.15/-6.85
Θ(157.5°)	-8.56/-11.34	-15.44/-11.58	-9.62/-13.24	-18.72/-13.41	-10.09/-10.93	-14.28/-10.23	-6.54/-5.64	-7.51/-10.67	-12.31/-10.87	-8.84/-8.25	-10.04/-12.18	-12.23/-11.22	-9.93/-9.61	-13.32/-17.56	-14.48/-11.41	-13.88/-16.26	-10.54/-9.36	-10.97/-12.71	-7.67/-3.79	-2.17/-2.59	-4.88/-8.2	-9.51/-7.71	-7.11/-8.37	-9.22/-8.61
Θ(165°)	-11.45/-10.37	-9.4/-10.54	-13.63/-13.94	-12.46/-12.94	-13.85/-13.59	-12.25/-10.61	-10.04/-9.41	-8.12/-6.1	-5.03/-5.74	-6.68/-7.51	-19.16/-16.98	-17.48/-15.78	-13.95/-15.71	-15.11/-14.01	-12.37/-11.37	-10.06/-10.08	-11.16/-12.83	-10.66/-8.05	-7.68/-8.76	-11.3/-13.07	-16.11/-12.18	-9.53/-7.54	-8.74/-11.38	
Θ(172.5°)	-18.18/-15.9	-14.27/-10.53	-18.02/-19.13	-18.14/-14.23	-11.87/-10.06	-8.97/-8.14	-8.4/-8.9	-9.83/-10.47	-16.78/-10.28	-9.49/-6.87	-8.4/-8.62	-8.9/-9.01	-9.78/-11.32	-13.75/-18	-12.78/-12.97	-18.48/-17.18	-16.25/-15.95	-16.68/-18.25	-17.58/-16.2	-7.89/-9.68	-11.89/-13.32	-18.69/-18.38		
Θ(180°)	-11.78/-12.26	-13.79/-15.68	-16.71/-18.41	-18.69/-18.66	-18.27/-16.04	-13.88/-12.16	-11.03/-9.86	-8.54/-7.57	-6.81/-6.13	-5.94/-6.18	-6.62/-7.63	-8.63/-9.41	-11.0/-11.06	-12.25/-12.61	-12.66/-12.26	-11.84/-11.91	-11.81/-11.67	-10.49/-9.16	-7.95/-7.07	-6.14/-5.28	-4.97/-4.61	-3.78/-4.99	-5.62/-7.17	-8.62/-10.82
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°)	-8.01/-7.68	-7.59/-7.66	-7.53/-6.88	-6.94/-7.14	-7.1/-7.52	-8.54/-9.1	-9.72/-11.22	-13.59/-16.53	-18.31/-18.65	-18.71/-18.59	-15.95/-12.11	-10.62/-9.88	-9.52/-9.06	-8.15/-7.85	-7.99/-7.54	-7.05/-7.38	-8.06/-8.25	-8.63/-9	-11.07/-12.62	-13.7/-16.54	-18.34/-17.77	-18.12/-16.39	-13.17/-10.84	-9.19/-8.16
Θ(7.5°)	-6.03/-5.34	-5.44/-5.29	-5.65/-5.72	-6.3/-7.53	-7.86/-9.22	-11.62/-15.5	-18.41/-18.1	-18.41/-18.66	-18.69/-17.45	-15.08/-13.41	-12.01/-10.82	-9.88/-9.3	-9.61/-9.71	-9.31/-8.88	-8.92/-8.55	-8.61/-8.92	-9.4/-9.53	-9.4/-8.94	-10.01/-11.08	-12.82/-15.38	-17.47/-18.79	-18.84/-16.17	-12.85/-9.99	-8.88/-7.29
Θ(15°)	-7.44/-7.87	-8/-8.58	-8.47/-7.04	-6.65/-7.78	-7.76/-9.78	-12.25/-16.42	-17.4/-18.24	-18.73/-13.77	-11.39/-10.15	-8.93/-8.39	-8.26/-8.58	-7.91/-6.89	-6.39/-6.5	-7.4/-8.98	-10.96/-12.32	-13.01/-13.06	-13.71/-14.68	-15.16/-15.34	-15.68/-14.32	-13.19/-12.06	-11.04/-10.08	-8.99/-8.38	-7.74/-7.39	-7.71/-7.72
Θ(22.5°)	-7.94/-8.09	-7.6/-8.6	-10.1/-10.13	-8.76/-10.05	-10.02/-11.45	-11.52/-11.64	-13.78/-17.68	-18.75/-18.52	-12.85/-9.37	-6.98/-6.02	-7.09/-9.76	-14.2/-15.41	-10.35/-8.16	-7.78/-8.38	-9.19/-10.7	-14.07/-17.5	-17.91/-18.25	-19.07/-18.39	-18.47/-19.39	-13.38/-10.46	-8.48/-7.4	-7.64/-8.03	-8.81/-8.67	-9.08/-8.55
Θ(30°)	-17.07/-18.39	-13.83/-9.61	-7.34/-8.42	-10.29/-12.24	-11.71/-10.2	-8.13/-7.45	-7.36/-																	



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(22.5°)	-8.66/-10.04	-7.93/-4.3	-2.32/-0.38	1.09/2.21	3/3.56	3.86/3.88	3.58/2.93	2/1.13	0.69/0.68	0.65/0.26	-0.52/-1.6	-2.92/-4.5	-6.43/-8.93	-11.15/-10.6	-8.05/-5.62	-3.58/-1.96	-0.66/0.31	1.03/1.5	1.81/1.99	2.09/2.08	1.91/1.53	0.91/0.08	-1.01/-2.37	-4.15/-6.44
Θ(30°)	-10.47/-12.49	-9.32/-5.43	-2.46/-0.35	1.14/2.21	2.92/3.41	3.73/7.6	3.57/3.03	2.15/1.12	0.23/-0.22	-0.41/-0.81	-1.56/-2.54	-3.66/-4.96	-6.34/-7.98	-9.81/-10.94	-10.04/-7.72	-5.12/-2.92	-1.23/-0.1	0.64/1.03	1.17/1.19	1.14/1.08	0.89/0.47	-0.23/-1.17	-2.35/-3.69	-5.38/-7.79
Θ(37.5°)	-13.18/-17.8	-12.43/-7.16	-3.58/-1.22	3.05/1.4	2.07/2.55	2.84/2.98	2.91/2.52	1.75/0.64	0.27/-0.88	-2.53/-2.95	-3.44/-4.06	-4.79/-5.56	-6.41/-7.79	-10.01/-12.73	-12.55/-8.51	-4.85/-2.37	-0.71/0.23	0.73/0.84	0.68/0.35	0/-0.28	-4.08/-4.8	-1.43/-2.47	-2.56/-9.69	
Θ(45°)	-16.35/-18.82	-15.67/-9.33	-5.44/-2.84	-1.13/-0.03	0.68/1.19	1.57/1.78	1.74/1.34	0.55/-0.65	-2.23/-3.55	-4.08/-4.18	-4.38/-4.82	-5.38/-5.92	-6.67/-8.16	-11.18/-15.29	-13.9/-8.8	-5.2/-2.97	-1.61/-0.92	-0.58/-0.52	-0.58/-0.58	-0.74/-1.05	-1.45/-1.81	-2.29/-3.24	-4.81/-6.76	-8.91/-11.7
Θ(52.5°)	-18.6/-18.5	-12.7/-6.62	-5.83/-7.2	-2.22/-1.31	-0.71/-0.1	0.48/0.93	1.02/0.72	0.01/-1.17	-2.74/-4.09	-4.69/-4.91	-5.5/-6.55	-7.48/-8.12	-9.19/-11.27	-14.09/-15.47	-12.96/-9.31	-6.37/-4.63	-3.71/-3.25	-2.82/-2.3	-1.59/-1.09	-0.96/-1.32	-2.17/-3.18	-4.1/-5.05	-6.59/-8.73	-11.11/-13.82
Θ(60°)	-17.61/-17.59	-12.84/-9.15	-6.44/-4.27	-2.76/-1.94	-1.48/-0.86	-0.01/0.72	0.99/0.63	-0.35/-1.93	-4.13/-5.84	-6.25/-6.59	-7.96/-8.96	-10.45/-10.14	-10.37/-10.91	-11.68/-13	-12.84/-9.55	-6.51/-4.74	-3.87/-3.27	-2.61/-3.9	-1.39/-1.17	-1.36/-1.98	-3.03/-4.54	-6.54/-8.34	-10.03/-11.87	-13.49/-15.08
Θ(67.5°)	-15.3/-13.48	-12.44/-11.75	-9.64/-6.66	-4.46/-3.47	-3.21/-2.71	-1.83/-1.01	-0.85/-1.49	-2.88/-4.98	-7.18/-7.44	-6.82/-7.44	-9.49/-10.6	-9.66/-9.37	-9.33/-9.11	-9.81/-11.93	-12.15/-9.12	-6.89/-5.89	-5.26/-4.63	-3.96/-3.37	-2.93/-2.83	-3.18/-3.9	-4.88/-6.12	-7.89/-10.59	-14.57/-18.76	-18.93/-16.99
Θ(75°)	-18.38/-12.96	-10.22/-10.15	-11.32/-9.35	-6.5/-5.34	-5.63/-6.32	-6.45/-5.9	-5.46/-5.32	-5.55/-6.11	-6.5/-6.29	-6.28/-7.82	-10.77/-12.28	-10.43/-10.1	-8.66/-7.83	-8.97/-11.52	-11.27/-9.58	-9.12/-9.02	-8.37/-7.73	-7.36/-7.08	-6.71/-6.56	-6.82/-7.63	-8.58/-9.28	-9.75/-11.09	-14.08/-19.38	-18.22/-18.82
Θ(82.5°)	-15.98/-15.44	-12.29/-11.15	-13.45/-17.62	-12.22/-8.91	-8.23/-8.71	-9.25/-9.01	-8.37/-7.71	-7.47/-8.06	-9.11/-9.5	-9.94/-12.61	-14.69/-12.56	-11.28/-8.76	-6.91/-7.4	-9.49/-10.04	-9.09/-9.59	-8.91/-8.45	-8.69/-8.68	-8.37/-8.39	-9.13/-10.22	-15.8/-15.18	-15.8/-16.13	-17.78/-18.56	-17.79/-16.17	
Θ(90°)	-14.24/-12.3	-11.03/-9.46	-9.14/-11.41	-15.94/-15.62	-13.93/-14.61	-15.99/-16.88	-17.59/-18.25	-18.16/-16.81	-14.3/-12.21	-12.22/-13.99	-14.84/-14.74	-12.72/-9.16	-8.23/-9.48	-9.55/-8.08	-8.68/-12.05	-15.81/-13.18	-11.34/-11.84	-13.34/-12.71	-10.62/-10.02	-10.9/-12.43	-13.73/-15.46	-18.87/-18.61	-18.87/-18.86	-19.41/-18.65
Θ(97.5°)	-13.16/-9.52	-8.68/-9.44	-10.11/-10.7	-12.91/-15.54	-16.45/-17.13	-17.93/-17.21	-15.18/-14.37	-15.07/-15.88	-16.22/-17.84	-18.09/-17.88	-18.6/-18.08	-14.29/-12.21	-12.84/-10.65	-8.16/-8.73	-12.85/-17.77	-14.61/-10.96	-10.86/-13.21	-13.48/-10.77	-9.23/-9.44	-10.97/-13.15	-14.94/-17.31	-18.24/-17.67	-17.17/-15.64	-16.2/-18.37
Θ(105°)	-15.96/-10.21	-7.83/-8.15	-10.18/-11.21	-10.17/-11.12	-12.71/-11.52	-11.51/-11.98	-13.28/-15.1	-15.49/-15.69	-18.16/-18.01	-18.62/-16.97	-18.32/-19.27	-12.88/-16.23	-10.94/-7.62	-7.21/-9.74	-13.53/-15.05	-12.01/-9.59	-10.45/-13.23	-11.15/-8.71	-8.36/-9.16	-10.99/-14.09	-17.63/-17.93	-18.71/-18.84	-19.86/-14.75	-13.53/-16.69
Θ(112.5°)	-13.96/-12.41	-9.22/-8.31	-9.89/-13.8	-17.27/-16.84	-17.22/-19.15	-18.5/-19.1	-17.92/-18.47	-19.2/-19.22	-18.18/-17.66	-18.35/-16.43	-14.59/-12.94	-11.41/-9.16	-7.19/-7.14	-9.36/-12.75	-16.13/-17.48	-12.18/-10.22	-11.89/-11.9	-8.45/-7.11	-7.79/-9.33	-11.45/-15.19	-18.62/-18.9	-18.75/-18	-18.75/-13.37	-10.81/-11.48
Θ(120°)	-15.95/-13.67	-13.06/-10.65	-9.96/-11.29	-14.52/-15.34	-12.61/-11.02	-11.09/-12.62	-15.04/-15.67	-15.72/-17.86	-17.78/-17.57	-16.21/-15.99	-15.07/-13.51	-12.15/-10.66	-9.92/-10.57	-10.83/-10.57	-11.65/-10.85	-8.58/-8.77	-12.06/-12.29	-9.1/-8.03	-8.14/-8.19	-8.47/-9.68	-11.08/-11.17	-10.91/-12.11	-16.24/-19.38	-15.59/-14.73
Θ(127.5°)	-11.84/-12.54	-12.52/-10.68	-8.52/-7.71	-8.87/-12.27	-17.13/-17.56	-14.78/-11.76	-15.01/-7.5	-7.17/-7.92	-12.37/-14.55	-15.65/-14.33	-12.88/-11.31	-9.93/-8.86	-7.88/-8.64	-10.25/-9.94	-9.51/-12.25	-17.46/-12.07	-9.91/-9.85	-10.89/-9.52	-8.09/-7.72	-7.76/-7.43	-7.03/-7.5	-9.37/-11.6	-12.01/-11.43	
Θ(135°)	-10.04/-9.98	-9.46/-8.27	-6.72/-5.8	-5.97/-7.35	-9.28/-10.07	-8.77/-6.89	-5.51/-4.97	-5.34/-6.62	-9.13/-13.21	-18.18/-18.08	-18.81/-17.81	-18.8/-18.4	-15.08/-11.67	-10.46/-10.76	-10.48/-9.67	-10.61/-14.65	-15.49/-10.48	-8.67/-9.19	-10.17/-9.25	-7.59/-6.82	-6.78/-6.91	-6.99/-7.48	-8.85/-10.44	-11.03/-10.45
Θ(142.5°)	-9.46/-9.54	-9.41/-9.1	-8.65/-8.4	-8.81/-10.32	-13.16/-108	-16.19/-13.61	-11.47/-10.64	-11.1/-12.8	-15.03/-13.92	-10.69/-8.73	-8.24/-8.9	-9.87/-10.07	-9.28/-8.58	-8.43/-8.47	-8.51/-9.31	-12.18/-18.41	-16.22/-11.92	-11.15/-12.23	-12.58/-10.19	-7.85/-6.54	-6.04/-5.9	-5.98/-6.23	-6.87/-7.77	-8.57/-9.09
Θ(150°)	-8.04/-8	-7.75/-7.59	-7.46/-7.45	-7.49/-7.78	-8.34/-9.15	-10.23/-11.54	-12.6/-12.94	-12.1/-10.8	-9.44/-8.42	-7.86/-7.45	-7.82/-8.63	-9.33/-9.14	-9.29/-9.78	-10.7/-12.55	-16.8/-18.2	-14.68/-11.43	-15.18/-15.18	-12.47/-10.34	-9.21/-8.56	-8.12/-7.78	-7.52/-7.45	-7.55/-7.84		
Θ(157.5°)	-9.01/-8.74	-8.35/-6.03	-7.86/-7.68	-7.54/-7.39	-7.36/-7.25	-7.27/-7.45	-7.66/-7.76	-7.62/-7.5	-7.95/-8.81	-10.13/-11.89	-14.3/-16.59	-18.04/-17.85	-16.59/-15.71	-15.16/-14.58	-14.51/-15.07	-16.11/-16.08	-13.91/-12.04	-11.06/-10.84	-11.17/-11.42	-11.48/-11.27	-11/-10.84	-10.73/-10.45	-10.1/-9.69	-7.32/-9.08
Θ(165°)	-9.17/-9.46	-9.67/-9.73	-9.79/-9.95	-10.14/-10.31	-10.38/-10.31	-10.06/-9.86	-9.63/-9.28	-8.91/-8.81	-9.19/-9.92	-10.98/-12.35	-13.97/-15.9	-17.77/-17.81	-19.43/-17.84	-15.53/-13.53	-12.24/-11.5	-11.23/-11.32	-11.45/-11.36	-11/-10.5	-10.01/-9.64	-9.39/-9.22	-8.96/-8.87	-8.78/-8.69	-8.58/-8.5	-8.57/-8.84
Θ(172.5°)	-11.95/-12.9	-13.47/-13.7	-13.72/-13.98	-14.53/-15.41	-16.6/-17.72	-18.1/-17.96	-17.18/-16.15	-14.65/-13.36	-12.34/-11.82	-11.91/-12.9	-13.35/-14.74	-16.3/-17.07	-16.25/-14.57	-13.07/-11.68	-10.62/-9.79	-9.29/-9.11	-9.28/-9.67	-10.13/-10.37	-10.4/-10.18	-9.91/-9.71	-9.67/-9.74	-9.93/-9.94	-9.91/-9.91	-10.28/-11
Θ(180°)	-18.77/-18.5	-18.28/-16.2	-14.94/-14.27	-14.28/-14.5	-14.39/-13.61	-12.67/-11.9	-11.57/-11.63	-11.77/-11.89	-12.12/-12.75	-14.08/-16.15	-19.07/-19.19	-19.12/-18.97	-18.62/-16.58	-14.41/-12.93	-11.66/-10.72	-10.28/-10.14	-10.51/-11.23	-12.12/-12.99	-13.43/-13.16	-12.71/-12.56	-12.87/-13.81	-19.39/-17.18	-18.89/-19.61	-18.28/-18.34
Freq(Hz)	5.2GPol	PhiAnt.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	0.16/0.03	-0.07/-0.25	-0.75/-1.52	-0.46/-3.74	-5.34/-7.32	-9.96/-14.33	-19.13/-16.17	-11.02/-7.83	-5.74/-4	-2.64/-1.7	-1.02/-0.56	-0.23/-0.03	0.05/-0.06	-0.25/-0.53	-0.82/-1.28	-1.98/-3.29	-5.25/-7.51	-10.21/-13.91	-16.41/-13.01	-8.55/-7.18	-5.4/-3.9	-2.68/-1.77	-0.97/-0.35	0.15/0.23
Θ(7.5°)	0.53/0.51	0.38/0.18	-0.21/-0.73	-1.39/-2.27	-3.31/-4.94	-7.23/-10.19	-13.36/-15.67	-13.56/-9.17	-6.29/-4.35	-3.06/-2.13	-1.4/-0.76	-0.42/-0.23	-0.17/-0.18	-0.44/-0.75	-1.17/-2.03	-3.06/-4.36	-6.21/-8.71	-12.14/-15.13	-14.14/-11.12	-8.51/-6.45	-4.77/-3.43	-2.34/-1.38	-0.55/0.01	0.39/0.53
Θ(15°)	0.55/0.5	0.36/0.44	0.09/-0.31	-0.91/-1.73	-2.74/-4.06	-5.88/-8.46	-11.65/-15.04	-14.42/-10.91	-8.06/-5.69	-4.2/-6.5	-1.54/-0.95	-0.68/-0.64	-0.87/-0.98	-0.91/-1.01	-1.31/-2.01	-2.86/-3.87	-5.39/-7.68	-10.51/-12.51	-12.48/-10.72	-8.33/-6.14	-4.59/-3.58	-2.71/-1.65	-0.67/-0.31	0.11/0.49
Θ(22.5°)	0.42/0.71	0.84/0.94	0.59/0.16	-0.41/-1.31	-2.35/-3.75	-5.7/-8.41	-11.82/-15.42	-15.88/-10.98	-7.14/-4.92	-3.78/-2.71	-1.97/-1.58	-1.5/-1.69	-1.98/-1.72	-1.57/-1.8	-2.59/-3.44	-4.15/-5.29	-7.25/-9.63	-11.97/-13.64	-13.37/-10.71	-7.86/-5.45	-4.39/-2.14	-1.42/-0.84	-0.26/0.08	0.16/0.2
Θ(30°)	0.85/0.8	0.75/0.77	0.73/0.61	0.3/-0.47	-1.51/-2.83	-4.98/-8.92	-16.16/-17.05	-16.83/-11.05	-6.4/-4.04	-3.25/-3.03	-2.59/-2	-1.92/-2.54	-2.64/-1.88	-1.37/-1.59	-2.05/-2.34	-3.38/-4.72	-6.66/-9.91	-12.1/-13.36	-10.54/-7.46	-5.36/-4.12	-3.31/-2.39	-1.63/-1.18	-0.59/0.25	0.91
Θ(37.5°)	0.871/0.6	1.32/1.31	1.23/1.31	1.03/0.09	-1.31/-3.09	-5.48/-9.67	-17.76/-18.4	-15.31/-10.9	-7.08/-4.51	-3.15/-2.47	-2.04/-1.82	-2.5/-3.8	-3.53/-2.42	-2.67/-3.54	-3.71/-4.32	-5.76/-7.85	-9.49/-9.61	-10.1/-12.37	-12.8/-9.94	-7.15/-4.77	-2.99/-1.8	-0.92/-0.43	-0.28/-0.1	0.28/0.74
Θ(45°)	0.17/0.37	0.93/1.65	1.89/1.43	0.85/-0.65	-2.77/-5.15	-4.81/-12.94	-18.38/-17.27	-14.38/-10.66	-6.53/-3.92	-2.18/-1.63	-1.97/-2.68	-3.71/-5.1	-4.35/-3.44	-3.97/-3.65	-4.01/-5.19	-6.28/-6.76	-6.89/-9	-13.6/-18.05	-15.85/-12.4	-8.66/-6.31	-4.92/-3.75	-2.62/-2.01	-1.59/-0.86	-0.08/0.47
Θ(52.5°)	0.37/0.44	0.79/1.34	2.93/1.65	0.81/-0.73	-2.85/-6.25	-11.32/-18.72	-17.87/-16.79	-13.7/-9.8	-7.68/-6.27	-4.13/-2.35	-1.72/-2.29	-3.2/-5.3	-5.02/-5.59	-6.49/-7.16	-7.62/-7.48	-7.74/-7.77	-8.52/-10.39	-14.71/-17.91	-18.52/-15.03	-11.72/-8.21	-5.5/-3.76	-2.72/-2.03	-1.43/-0.8	-0.63/0.25
Θ(60°)	-1.54/-1.07	-0.19/0.62	1.17/1.09	-0.3/-2.53	-5.19/-8.45	-12.73/-18.05	-18.31/-16.52	-12.81/-10.45	-7.9/-5.15	-2.76/-1.76	-2.47/-4.36	-6.18/-6.71	-5.53/-6.76	-7.13/-6.85	-5.42/-6.23	-6.29/-6.06	-7.5/-10.78	-13.32/-16.83	-17.62/-15.61	-8.69/-7.49	-6.15/-4.43	-3.21/-1.47	-1.71/-1.47	-0.8/-0.91
Θ(67.5°)	-1.8/-1.34	-0.31/0.69	1.23/0.87	-0.08/-2.24	-4.54/-6.91	-10.15/-15.51	-18.18/-16.6	-13.64/-12.67	-9.59/-5.88	-4.14/-3.4	-2.99/-4.06	-7.01/-8.66	-11.27/-11.89	-12.01/-10.26	-9.95/-8.63	-7.24/-7.57	-8.71/-11	-13.69/-16.75	-16.93/-13.61	-12.18/-9.32	-6.34/-4.69	-3.34/-3.26	-3.34/-2.82	-2.62/-2.02



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(75°)	-19.13/-18.19	-11.4/-8.9	-7.71/-7.32	-7.58/-6.93	-6.68/-5.83	-5.13/-4.69	-4.22/-3.84	-4.03/-4.49	-4/-3.88	-5.29/-7.36	-10.8/-12.94	-15.35/-18.22	-13.72/-14.97	-11.54/-13.72	-17.87/-19.05	-17.53/-18.59	-19.18/-15.8	-10.42/-8.73	-7.08/-5.57	-5.85/-7.01	-7.89/-9.99	-9.37/-9.95	-11.91/-9.11	-19.12/-18.94
Θ(82.5°)	-18.81/-17.48	-12.2/-10.95	-10.84/-10.46	-8.82/-9.42	-7.88/-6.19	-5.34/-4.77	-4.22/-4.26	-4.98/-5.83	-5.79/-5.1	-5.95/-8.19	-9.85/-14.71	-19.32/-13.05	-11.53/-14.97	-17.66/-17.06	-18.76/-17.56	-18.89/-18.66	-17.72/-16.24	-14.76/-12.3	-9.49/-8.3	-7.76/-8.77	-10.49/-10.45	-10.2/-11.62	-12.24/-17.72	-18.52/-18.85
Θ(90°)	-19.18/-17.91	-15.86/-13.84	-14.05/-15.72	-14.23/-12.26	-10.09/-8.49	-7.74/-6.95	-6.05/-5.35	-5.77/-7.63	-8.61/-8.32	-8.53/-10.44	-12.23/-16.69	-15.51/-13.89	-11.81/-15.55	-15.15/-18.44	-16.77/-17.11	-18.76/-17.83	-14.60/-18.91	-14.66/-10.26	-9.45/-8.33	-7.26/-8.51	-12.26/-15.92	-10.3/-13.92	-11.3/-16.28	-18.77/-18.19
Θ(97.5°)	-18.71/-14.21	-13.38/-14.38	-17.4/-17.4	-14.83/-11.93	-10.48/-7.98	-6.52/-5.85	-5.77/-6.09	-7.15/-8.47	-7.96/-7.36	-8.85/-8.38	-10.81/-15.49	-14.84/-14.87	-16.08/-15.58	-18.95/-14.48	-13.08/-14.95	-12.27/-15.16	-16.89/-18.5	-18.73/-13.98	-10.93/-9.31	-8.16/-8.95	-12.56/-18.79	-15.69/-13.26	-14.22/-18.94	-18.81/-18.95
Θ(105°)	-17.62/-13.43	-14.16/-18.14	-18.42/-18.47	-18.17/-13.8	-10.66/-8.87	-6.66/-6.1	-6.1/-6.26	-6.87/-8.98	-8.84/-8.63	-8.98/-11.66	-15.07/-17.31	-16.51/-19.27	-15.96/-19.16	-18.21/-18.27	-17.5/-18.17	-18.4/-17.31	-19.37/-15.33	-18.74/-17.26	-13.37/-11.46	-10.58/-12.28	-15.45/-18.85	-17.68/-18.8	-18.03/-17.38	-18/-18.02
Θ(112.5°)	-14.65/-15.06	-18.94/-17.67	-14.93/-15.13	-14.33/-16.79	-13.15/-12.01	-10.1/-10.25	-11.32/-11.74	-11.72/-12.68	-14.33/-15.03	-15.72/-16.31	-19.22/-18.36	-17.25/-13.27	-13.37/-16.78	-17.88/-18.62	-17.82/-15.04	-12.4/-17.19	-15.54/-15.09	-18.31/-14.5	-10.68/-13.12	-15.14/-16.64	-18.4/-19.32	-18.98/-18.53	-18.32/-18.92	
Θ(120°)	-16.23/-18.34	-17.99/-14.79	-10.63/-12.37	-11.1/-11.65	-10.84/-10.29	-11.27/-11.91	-12.76/-14.01	-14.63/-14.42	-12.3/-11.17	-10.92/-11.92	-13.09/-14.38	-15.54/-18.79	-15.7/-19.33	-17.6/-18.71	-16.96/-13.09	-17.65/-19.15	-15.57/-15.29	-14.7/-17.65	-18.04/-17.58	-19.04/-16.65	-16.8/-15.9	-17.36/-17.31	-18.92/-18.77	-19.41/-15.32
Θ(127.5°)	-18.25/-18.12	-17.16/-14.77	-10.09/-9.73	-10.11/-9.24	-11.31/-11.66	-11.86/-12.21	-11.72/-12.12	-13.6/-13.15	-11.78/-11.6	-12.7/-14.17	-12.74/-15.35	-18.44/-18.99	-17.86/-17.59	-17.64/-18.04	-15.02/-17.46	-15.6/-18.3	-19.17/-17.7	-18.21/-17.56	-17.36/-18.89	-18.93/-13.13	-14.78/-18.02	-18.21/-16.44	-17.12/-18.11	-18.82/-19.28
Θ(135°)	-18.42/-18.42	-16.82/-11.87	-7.91/-7.36	-8.05/-8.23	-9.16/-12.68	-16.53/-17.1	-15.88/-17.02	-17.39/-16.67	-17.1/-17.87	-19.15/-19.1	-18.87/-18.4	-18.49/-18.7	-18.3/-18.41	-17.79/-17.5	-18.49/-16.23	-15.74/-16.16	-18.41/-14.54	-14.77/-11.05	-14.77/-18.67	-18.88/-18.3	-17.77/-19.4	-17.61/-17.84	-17.77/-17.83	-18.3/-17.95
Θ(142.5°)	-19.21/-19.08	-14.56/-11.19	-11.13/-10.16	-9.34/-8.5	-9.38/-11.03	-12.87/-13.37	-11.33/-9.65	-9.29/-9.73	-8.79/-10.34	-11.87/-13.79	-14.13/-14.78	-15.61/-17.62	-18/-18.93	-17.51/-19.1	-17.3/-15.21	-16.16/-17.77	-17.98/-17.94	-17.27/-17.96	-18.23/-18.73	-18.54/-18.88	-19.2/-18.44	-18.09/-18.91	-17.84/-18.12	-18.72/-17.85
Θ(150°)	-18.24/-18.52	-16.51/-10.9	-9.27/-9.38	-8.81/-7.48	-6.14/-5.28	-5.84/-6.46	-6.43/-5.49	-4.88/-5.36	-7.5/-7.97	-7.85/-8.92	-10.99/-14.52	-18.32/-18.67	-18.2/-18.41	-18.52/-17.95	-17.6/-19.09	-18.71/-18.81	-18.72/-16.02	-18.14/-17.35	-18.57/-18.16	-18.38/-17.17	-18.13/-18.14	-17.97/-19.12	-18.02/-17.14	-14.53/-15.16
Θ(157.5°)	-14.27/-14.53	-14.27/-11.36	-8.54/-7.32	-4.63/-5.42	-4.67/-4.09	-4.05/-3.97	-3.75/-3.6	-4.18/-5.61	-6.41/-6.26	-6.91/-8.27	-9.42/-10.22	-10.34/-10.37	-11.31/-12.95	-15.1/-16.91	-16.84/-15.34	-13.74/-13.46	-13.49/-13.26	-14.3/-16.32	-18.13/-17.81	-18.13/-14.23	-12.58/-11.87	-11.64/-15.1	-11.17/-11.57	-12.73/-13.78
Θ(165°)	-14.62/-14.58	-13.84/-12.74	-11.14/-9.23	-8.22/-8.28	-8.92/-9.46	-8.96/-7.18	-5.67/-5.32	-5.87/-5.94	-5.14/-4.95	-5.51/-6.55	-7.68/-9.1	-10.87/-12.87	-13.87/-14.39	-15.18/-16.06	-15.51/-13.83	-11.7/-10.86	-11.18/-12.38	-14.62/-18.48	-17.75/-17.93	-17.92/-18.3	-16.94/-15.7	-14.47/-13.46	-12.71/-12.64	-13.49/-14.39
Θ(172.5°)	-17.5/-15.84	-14.16/-12.68	-11.35/-10.15	-9.03/-7.8	-6.77/-5.85	-5.06/-4.49	-4.42/-4.76	-5.33/-7.56	-6.11/-7.32	-9.95/-12.97	-13.75/-14.18	-15.06/-17.19	-19.21/-19.08	-18.01/-19.32	-16.01/-14.76	-14.03/-13.7	-14.41/-15.31	-16.69/-18.34	-18.43/-18.88	-19.63/-17.32	-17.25/-17.57	-18.83/-18.38	-18.45/-18.23	-18.78/-17.64
Θ(180°)	-13.67/-12.84	-12.17/-11.09	-10.58/-10.46	-10.34/-10.84	-11.69/-12.11	-11.08/-10.61	-11.44/-13.4	-16.36/-18.02	-19.3/-17.23	-17.78/-14.51	-13.97/-14.18	-15.01/-15.58	-15.76/-16.59	-16.84/-16.87	-16.74/-16.9	-17.31/-18.19	-18.62/-18.62	-18.43/-16.1	-14.93/-15.15	-17/-18.34	-18.47/-18.27	-17.8/-18.1	-18.08/-16.98	-15.63/-14.55
Freq(Hz)	5.6GPol.	PhiAnt.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	2.642/0.54	2.342/0.2	1.470/7.3	-0.27/-1.55	-3.27/-5.8	-9.05/-14	-17.83/-15.92	-29.6/-17	-4.03/-20.3	-1.020/0.7	1.031/65	2.012/18	2.342/57	2.762/54	1.850/9	-0.36/-1.79	-3.43/-5.32	-8.44/-13.94	-17.95/-17.75	-10.76/-6.36	-3.65/-1.85	-0.590/42	1.342	2.532/84
Θ(7.5°)	3.122/84	2.432/11	1.721/11	0.42/-0.38	-1.58/-3.48	-6.42/-11.48	-17.75/-18.67	-13.3/-7.88	-4.41/-2.27	-0.99/-0.07	0.81/51	1.791/82	2.022/1	1.931/21	0.03/-1.11	-2.29/-3.53	-5.56/-8.81	-13.99/-17.57	-18.73/-12.19	-8.47/-5.41	-3.09/-1.49	-0.260/66	1.5/222	2.773/02
Θ(15°)	3.673/58	3.433/12	2.752/06	1.06/-0.05	-1.05/-1.98	-12.82/-18.36	-13.79/-9.59	-6.27/-3.3	-1.2/-0.17	0.71/19	1.251/06	1.041/06	0.55/-0.57	-1.62/-2.32	-3.06/-4.36	-6.74/-9.73	-13.78/-19.05	-17.35/-16.93	-9.29/-5.99	-3.67/-1.87	-0.530/43	1.432/39	3.013/4	
Θ(22.5°)	3.473/43	3.273/05	2.842/4	1.510/41	-0.91/-2.87	-5.01/-7.72	-12.03/-17.81	-14.12/-9	-6.26/-3.46	-2.73/-0.95	0.591/35	1.140/64	0.510/25	-0.57/-1.53	-3.34/-4.95	-6.97/-9.33	-12.36/-19.48	-18.13/-13.08	-8.43/-5.92	-3.41/-6.5	-0.171/1	2.112/72	3.043/26	
Θ(30°)	3.143/22	3.182/78	2.111/49	0.860/22	-0.85/-2.7	-4.98/-8.55	-13.8/-13.95	-9.96/-9.38	-8.3/-5.16	-3.34/-2.11	-0.290/97	1.0/67	0.42/-0.27	-1.31/-1.56	-1.38/-2.22	-3.93/-5.55	-7.83/-11.44	-15.78/-17.54	-17.7/-14.84	-10.77/-7.23	-5.09/-3.46	-1.68/-0.25	0.721/64	2.352/8
Θ(37.5°)	2.112/11	2.251/95	2.431/62	0.54/-0.52	-1.72/-3.79	-5.96/-9.02	-12.95/-18.08	-12.31/-9.22	-7.2/-4.83	-3.23/-2.25	-0.890/36	0.54/-0.01	-0.62/-1.83	-3.12/-6.23	-3.24/-4.96	-6.80/-4.93	-5.96/-7.6	-10.01/-10.48	-13.13/-8.19	-5.64/-4.72	-3.44/-2.15	-1.38/-0.6	0.230/86	1.271/65
Θ(45°)	1.462/24	2.281/88	1.090/64	0.06/-0.6	-1.25/-2.85	-5.03/-7.87	-12.32/-18.78	-13.75/-8.8	-7.22/-6.79	-4.53/-2.21	-1.49/-1.53	-1.44/-1.72	-1.79/-2.78	-2.84/-2.22	-3.62/-3.72	-5.6/-5.41	-7.68/-12.09	-18.78/-18.98	-13.76/-10.47	-7.85/-5.46	-4.31/-3.11	-1.29/-0.17	0.921/26	1.080/87
Θ(52.5°)	0.330/1	1.461/98	1.880/84	0.23/-0.23	-0.81/-1.73	-3.67/-7.16	-15.12/-17.76	-15.12/-11.6	-7.29/-5.07	-5.37/-5.11	-2.91/-9.02	-0.82/-2.12	-4.42/-4.44	-4.99/-6.1	-5.78/-5.3	-5.93/-7.79	-11.76/-13.62	-19.16/-18.1	-16.23/-12.12	-7.28/-4.85	-3.53/-2.73	-2.07/-1	-0.10/5	0.570/18
Θ(60°)	0.71/68	2.181/92	1.290/29	0.060/22	-0.71/-2.28	-4.48/-7.08	-10.26/-16.9	-17.85/-13.25	-8.79/-6.92	-4.57/-3.88	-5.1/-4.55	-3.22/-3.18	-4.82/-4.35	-4.59/-6.78	-8.22/-9.74	-9.97/-12.02	-11.35/-11.93	-13.72/-16.9	-17.86/-19.05	-14.88/-9.44	-5.97/-3.85	-2.65/-2.79	-2.03/-0.56	0.08/-0.09
Θ(67.5°)	0.870/91	1.231/37	0.810/23	-0.15/-0.21	-0.83/-2.31	-4.42/-7.34	-11.67/-17.43	-18.56/-14.4	-10.24/-9.28	-8.24/-5.84	-3.97/-4	-5.72/-8.72	-6.37/-4.52	-6.09/-10.57	-7.47/-7.93	-9.9/-10.02	-11.52/-13.02	-14.14/-17.69	-18.2/-18.2	-15.31/-11.61	-8.12/-5.43	-3.7/-2.29	-0.710/31	0.70/66
Θ(75°)	0.210/75	0.840/73	-0.12/-0.69	-0.18/-0.16	-0.86/-2.67	-3.53/-8.75	-13.35/-17.43	-18.17/-13.83	-9.25/-8.42	-8.65/-1.65	-5.89/-5.46	-7.22/-12.38	-13.21/-10.25	-19.25/-16.89	-9.65/-10.5	-9.55/-9.97	-10.81/-14.09	-18.48/-19.7	-18.97/-17.93	-16.84/-13.73	-8.5/-5.82	-4.35/-2.46	-0.890/11	-0.02/-0.49
Θ(82.5°)	-0.290/62	0.33/-0.56	-0.84/-1.21	-1.66/-1.24	-2.23/-3.96	-7.09/-10.04	-14.13/-19.04	-18.46/-14.13	-10.73/-8.63	-8.11/-9.17	-7.36/-6.81	-9.13/-9.82	-10.33/-11.71	-12/-9.29	-10.65/-10.1	-9.02/-10.95	-16.03/-19.15	-14.27/-12.39	-17.03/-18.31	-18.84/-13.53	-10.28/-7.18	-5.56/-4.06	-2.27/-1.45	-1.01/-1.26
Θ(90°)	-0.820/06	0.29/-0.76	-1.15/-1.06	-2.11/-2.82	-3.68/-5.22	-7.59/-9.47	-11.16/-15.53	-18.19/-16.65	-14.41/-9.96	-8.89/-9.15	-9.22/-11.04	-11.55/-10.55	-11.12/-14.03	-12.06/-11.46	-10.05/-10.63	-9.38/-10.61	-15.62/-18.05	-15.58/-16.96	-17.17/-17.09	-17.64/-12.84	-9.76/-9.01	-7.24/-5.16	-3.19/-1.27	-0.89/-1.1
Θ(97.5°)	-1.490/52	-1.1/-0.52	-2.06/-2.61	-3.57/-4.11	-5.56/-7.23	-7.87/-9.17	-11.82/-15.02	-18.12/-17.66	-13.1/-7.62	-7.57/-10.22	-11.34/-11.51	-11.48/-15.18	-17.75/-15.15	-13.52/-14.02	-13.66/-14.38	-12.36/-11.4	-9.48/-13.17	-18.1/-18.15	-18.95/-17.65	-16.02/-12.67	-8.45/-6.71	-3.44/-1.25	-0.69/-1.39	
Θ(105°)	-2.53/-0.92	-0.59/-1.54	-2.57/-2.78	-3.81/-5.58	-6.74/-8.18	-10.21/-14.85	-17.14/-17.21	-18.06/-18.39	-16.45/-12.42	-12.05/-10.05	-10.19/-13.02	-15.81/-17.54	-19/-12.97	-12.09/-10.27	-14.9/-15.36	-13.99/-11.41	-12.33/-15.79	-17.35/-19.74	-18.41/-13.63	-18.15/-12.31	-8.92/-9.51	-12.94/-6.84	-3.16/-1.61	-1.65/-2.31
Θ(112.5°)	-2.39/-0.96	0.24/-0.73	-2.39/-1.58	-2.54/-3.79	-6.04/-9.14	-12.09/-15.33	-16.25/-16.33	-17.35/-19.11	-17.37/-16.31	-11.32/-11.2	-14.4/-17.01	-15.55/-17.88	-18.22/-18.1	-19.04/-17.75	-11.47/-16.28	-17.25/-13.05	-12.95/-13.57	-18.3/-16.06	-18.49/-13.82	-14.5/-14.19	-13.88/-13.1	-11.1/-6.69	-4.63/-3.1	-1.88/-3.27
Θ(120°)	-1.740/3	0.84/-1.38	-2.49/-1.79	-2.58/-3.85	-5.74/-8.85	-10.89/-12.55	-14.29/-13.94	-13.71/-15.63	-15.63/-13.46	-12.33/-13.7	-18.81/-14.88	-14.81/-14.8	-16.28/-17.11	-19.25/-16.89	-16									



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(127.5°)	-11.85/-15.83	-17.67/-8.54	-6.82/-9.46	-10.41/-9.55	-13.27/-12.42	-15.29/-18.14	-17.87/-13.31	-13.3/-12.52	-11.06/-10.79	-11.71/-14.04	-15.41/-14.09	-17.92/-18.42	-16.23/-15.92	-19.16/-18.15	-10.28/-18.75	-18.37/-11.82	-14.55/-17.28	-13.26/-9.59	-14.25/-14.42	-10.81/-11.74	-8.57/-10.26	-12.45/-18.81	-12.19/-14.68	-15.24/-11.8
Θ(135°)	-15.23/-16.43	-18.71/-14.99	-11.19/-12.6	-11.85/-12.32	-14.18/-17.05	-17.75/-17.46	-18.24/-16.58	-16.84/-18.91	-18.59/-18.57	-18.38/-18.16	-19.18/-16.95	-16.34/-17.35	-11.97/-16.17	-18.06/-18.47	-16.42/-18.61	-15.05/-14.14	-18.2/-11.64	-7.77/-8.27	-13.75/-18.12	-12.25/-12.2	-13.29/-12.09	-17.98/-18.44	-14.78/-16.32	-17.97/-18.93
Θ(142.5°)	-15.95/-14.53	-14.41/-17.59	-13.93/-12.88	-11.22/-13.13	-6.99/-8.93	-10.51/-9.46	-10.51/-10.63	-13.89/-17.99	-17.68/-13.47	-12.69/-13.59	-14.99/-16.95	-18.03/-18.05	-18.89/-18.59	-19.43/-18.66	-14.83/-13.35	-13/-18.54	-13.96/-19.07	-17.88/-15.01	-14.36/-17.17	-17.83/-17.99	-18.62/-18.16	-16.85/-18.64	-16.31/-18.4	-18.46/-15.44
Θ(150°)	-18.22/-17.59	-9.87/-7.79	-8.49/-8.31	-8.04/-7.14	-6.02/-5.24	-5.42/-6.2	-5.43/-4.09	-3.43/-3.69	-4.53/-6.23	-7.73/-8.56	-10.02/-12.33	-12.13/-12.26	-15.85/-18.11	-18.93/-15.4	-11.46/-11.67	-17.04/-18.48	-18.71/-18.63	-17.77/-17.1	-18.48/-19.29	-19.13/-17.54	-18.28/-14.88	-17.42/-17.59	-18.64/-17.48	-19.04/-18.21
Θ(157.5°)	-14.74/-11.45	-8.64/-7.55	-8.18/-8.16	-7.23/-7.7	-8.01/-7.23	-6.57/-6.05	-6.07/-6.03	-5.47/-4.84	-4.93/-5.66	-6.47/-4.7	-8.99/-9.72	-11.74/-11.7	-9.8/-9.33	-13.77/-18.5	-18.54/-14.11	-14.25/-17.16	-18.9/-18.34	-17.66/-18.76	-16.64/-18.86	-13.71/-11.94	-11.89/-11.9	-12.29/-14.89	-17.48/-17.34	-17.81/-14.3
Θ(165°)	-15.33/-15.01	-14.44/-12.88	-11.16/-10.34	-9.86/-7.67	-6.36/-5.15	-6.64/-6.1	-4.71/-4.65	-5.53/-4.91	-4.31/-5.24	-7.25/-6.64	-9.85/-11.34	-13.17/-14.85	-17.74/-17.94	-16.15/-10.26	-7.82/-7.41	-8.34/-11.22	-15.6/-18.14	-18.07/-18.32	-18.81/-14.52	-12.94/-12.59	-12.31/-12.57	-14.42/-15.77	-14.42/-15.77	-14.42/-15.77
Θ(172.5°)	-19.07/-17.66	-14.92/-12.68	-10.58/-8.59	-6.68/-5.34	-4.47/-3.89	-3.73/-3.56	-3.05/-2.43	-2.53/-2.99	-3.92/-4.89	-6.98/-10.26	-13.36/-16.34	-18.58/-18.76	-18.36/-15.71	-13.41/-11.69	-10.39/-9.55	-9.52/-10.57	-12.49/-14.08	-14.54/-14.54	-16.32/-18.34	-18.59/-17.9	-17.8/-17.37	-18.92/-16.53	-15.43/-15.78	-17.89/-19.09
Θ(180°)	-12.15/-11.28	-10.99/-10.64	-9.62/-8.78	-8.02/-7.48	-7.17/-7.16	-7.87/-8.03	-8.05/-8.7	-10.32/-11.69	-14.64/-15.94	-14.73/-13.84	-13.47/-12.66	-12.65/-13.52	-14.78/-16.04	-17.33/-18.82	-18.38/-17.1	-17.4/-14.25	-11.84/-10.42	-9.76/-9.31	-9.49/-10.25	-11.61/-12.92	-14.1/-14.8	-14.45/-13.82	-13.39/-13.05	-12.85/-12.85
Freq(Hz)	2.45GPol	PhiAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-14.46/-14.5	-14.65/-14.44	-14.29/-14.77	-15.74/-17.11	-18.12/-18.98	-18.19/-18.18	-18.23/-15.7	-13.51/-12.48	-12.07/-11.94	-11.89/-12.13	-12.57/-12.99	-13.13/-12.94	-11.83/-11.71	-12.06/-12.12	-13.49/-14.77	-16.38/-18.44	-19.09/-19.12	-18.78/-18.65	-19.3/-15.82	-13.73/-12.39	-11.69/-11.55	-11.82/-12.42	-13.17/-13.59	-13.81/-13.86
Θ(7.5°)	-15.88/-14.71	-14.46/-14.24	-14.34/-14.94	-15.89/-16.58	-16.93/-17.19	-17.68/-17.3	-15.76/-13.78	-10.81/-10.71	-11.78/-11.81	-12.12/-15.18	-10.88/-11.41	-12.18/-12.67	-12.72/-12.34	-11.77/-11.83	-12.22/-13.12	-14.37/-15.88	-18.64/-18.42	-18.84/-18.67	-16.8/-14.65	-13.01/-12.06	-11.64/-11.59	-12/-12.67	-13.51/-14.09	-14.42/-15.42
Θ(15°)	-15.41/-14.91	-14.58/-14.2	-14.3/-14.78	-15.33/-15.31	-14.78/-14.65	-14.77/-14.7	-14.17/-12.8	-11.33/-10.27	-9.74/-9.78	-10.32/-11.28	-12.5/-13.8	-14.37/-14.1	-12.64/-12.43	-12.83/-13.83	-15.03/-16.46	-17.69/-18.14	-17.76/-16.9	-15.79/-14.59	-13.23/-12.07	-11.51/-11.46	-11.83/-12.28	-12.75/-14.02	-14.52/-15.36	-15.52/-15.12
Θ(22.5°)	-17.78/-16.16	-15.24/-14.5	-14.29/-14.5	-14.12/-12.83	-11.63/-10.97	-10.69/-10.64	-10.61/-10.6	-9.36/-8.82	-8.68/-9.14	-10.2/-11.73	-13.71/-15.41	-16.2/-15.53	-14.44/-13.93	-14.22/-15.2	-16.54/-18.25	-17.87/-18.05	-19.18/-18.44	-16.45/-14.47	-12.65/-11.47	-11.15/-11.77	-13.11/-14.16	-14.12/-14.01	-14.53/-15.7	-16.9/-17.16
Θ(30°)	-18.11/-19.29	-18.14/-15.83	-14.5/-13.42	-11.69/-9.57	-8.12/-7.28	-6.88/-6.77	-6.95/-7.29	-7.71/-8.28	-9.17/-10.4	-12.09/-14.32	-16.52/-18.6	-18.89/-17.36	-14.86/-13.75	-13.32/-13.54	-14.39/-15.54	-17.13/-18.71	-17.77/-18.26	-17.3/-19.54	-17.82/-16.4	-16.27/-17.76	-18.16/-17.71	-14.16/-11.99	-11.01/-11.16	-12.4/-14.32
Θ(37.5°)	-12.54/-16.27	-19.44/-17.37	-14.28/-12.13	-9.54/-7.17	-5.64/-4.82	-4.39/-4.22	-4.36/-4.93	-6.16/-8.14	-11.17/-15.27	-19.19/-18.9	-18.12/-18.34	-17.95/-17.86	-15.42/-13.4	-12.25/-11.87	-12.07/-12.71	-13.88/-15.25	-16.45/-16.66	-17.35/-19.15	-18.51/-17.49	-18.32/-17.52	-14.84/-12.4	-10.4/-8.81	-7.78/-7.63	-8.38/-9.8
Θ(45°)	-8.93/-11.46	-16.48/-18.93	-15.21/-12.44	-9.46/-6.97	-5.58/-4.95	-4.55/-4.2	-4.07/-3.47	-5.53/-7.93	-12.67/-17.49	-19.04/-16.33	-16.59/-18.22	-19.03/-18.72	-11.77/-13.81	-11.66/-10.76	-10.33/-10.19	-10.35/-11.03	-12/-12.81	-13.88/-18.69	-15.92/-13.23	-9.15/-7.24	-6.51/-6.6	-6.95/-6.97	-6.7/-6.65	-8.67/-9.63
Θ(52.5°)	-9.65/-11.06	-15.03/-18.38	-12.54/-12.61	-10.18/-8.16	-7.37/-7.44	-7.41/-6.96	-6.52/-6.71	-8.22/-11.89	-17.89/-17.11	-10.49/-11.52	-12.32/-12.42	-11.79/-10.98	-10.34/-9.79	-9.99/-10.98	-8.44/-8.73	-9.59/-10.98	-13.7/-18.46	-16.34/-9.45	-5.74/-3.81	-3.24/-3.84	-5.25/-6.85	-8.15/-8.91	-9.27/-9.39	-9.27/-9.39
Θ(60°)	-14.39/-14.39	-17.66/-18.31	-16.79/-12.58	-9.71/-7.7	-6.91/-7.13	-7.58/-7.57	-7.41/-7.85	-9.68/-13	-15.53/-12.87	-10.35/-9.22	-9.1/-9.4	-9.87/-10.6	-11.22/-11.78	-11.99/-11.43	-10.53/-9.43	-8.56/-8.34	-8.99/-10.46	-13.52/-17.92	-18.59/-10.38	-6.37/-4.21	-3.43/-4	-6.06/-9.52	-14.16/-17.52	-16.56/-14.94
Θ(67.5°)	-10/-10.59	-12.28/-16.97	-17.61/-18.51	-12.72/-9.05	-7.26/-5.69	-6.39/-6.13	-5.99/-6.22	-7/-8.02	-9.06/-9.79	-10.16/-10.32	-10.42/-10.86	-12.43/-15.62	-19.29/-18.66	-18.78/-17.1	-16.02/-14.26	-12.11/-14.7	-12.1/-13.18	-14.22/-15	-14.85/-13.17	-11.17/-9.67	-8.66/-8.95	-11.48/-17.77	-19.35/-15.82	-11.42/-9.74
Θ(75°)	-6.62/-7.05	-8.63/-11.46	-15.85/-18.07	-18.07/-15.85	-12.74/-11.11	-10.38/-10.14	-10.1/-10.24	-10.36/-10.54	-11.11/-11.81	-12.82/-14.77	-18.68/-18.81	-11.71/-11.22	-12.16/-14.74	-17.11/-18.2	-18.88/-19.08	-18.93/-17.72	-17.46/-14.81	-13.38/-12.62	-12.24/-12.33	-12.86/-13.95	-15.83/-17.75	-17.55/-12.02	-8.78/-9.68	-8.78/-9.68
Θ(82.5°)	-5.5/-4.94	-5.72/-8.14	-12.25/-14.74	-13.38/-11.6	-10.13/-8.86	-8.25/-8.03	-8.35/-9.13	-10.35/-11.81	-13.4/-15.21	-18.68/-17.8	-15.94/-10.5	-7.3/-7.29	-8.39/-10.8	-14.54/-17.34	-18.74/-17.82	-16.38/-16.45	-15.81/-15.07	-15.02/-16.84	-18.05/-18.42	-12.92/-10.47	-10.05/-11.43	-14.81/-18.27	-18.54/-15.37	-9.94/-7.17
Θ(90°)	-6.73/-5.27	-4.71/-5.42	-7.47/-9.47	-9.72/-9.38	-8.8/-8.01	-7.41/-7.55	-8.14/-9.34	-11.2/-18.51	-10.61/-12.94	-14.2/-9.59	-8.62/-9.63	-11.52/-12.4	-13.36/-18.55	-16.92/-17.22	-11.57/-12.93	-11.37/-10.92	-11.38/-13.25	-16.19/-14.01	-10.4/-9.78	-10.76/-14.01	-17.41/-12.82	-14.68/-13.28	-10.99/-9.77	-10.99/-9.77
Θ(97.5°)	-8.32/-8.45	-7.45/-6.45	-6.42/-6.52	-5.97/-5.5	-5.46/-5.53	-5.66/-6.18	-7.44/-9.84	-14.54/-17.05	-17.89/-15.57	-17.55/-11.69	-8.25/-7	-7.05/-7.88	-8.73/-9.92	-12.56/-14.13	-16.33/-13.71	-11.65/-9.51	-8.36/-7.7	-7.23/-7.33	-7.86/-8.48	-9.58/-12.14	-17.33/-18.18	-18.06/-11.54	-8.67/-8	-8.03/-8.12
Θ(105°)	-6.34/-8.43	-12.14/-11.1	-8.68/-7.45	-6.14/-5.02	-4.49/-4.48	-4.82/-5.62	-7.07/-9.41	-12.99/-18.57	-18.41/-17.05	-11.87/-9.7	-9.63/-11.4	-13.64/-13.27	-11.42/-10.08	-8.62/-7.44	-7.69/-8.72	-8.45/-7.12	-6.02/-5.32	-4.91/-4.91	-5.48/-6.49	-7.89/-9.68	-11.79/-13.21	-12.41/-10.07	-7.98/-6.99	-6.65/-6.29
Θ(112.5°)	-6.78/-7.05	-10.41/-14.53	-12.03/-9.39	-9.15/-7.08	-5.54/-4.8	-4.76/-5.25	-6.43/-8.58	-12.28/-18.51	-19.07/-18.14	-13.73/-13.85	-17.57/-19.98	-6.64/-5.26	-5.07/-5.52	-6.19/-7.34	-9.73/-12.75	-12.49/-11.0	-8.67/-8.25	-8.25/-8.65	-9.6/-10.66	-11.44/-12.15	-13.91/-16.63	-15.57/-12.68	-10.64/-9.73	-9.59/-8.49
Θ(120°)	-7.66/-7.64	-9.86/-14.86	-12.69/-9.79	-9.53/-9.43	-8.18/-7.14	-7.03/-7.75	-9.36/-12.01	-15.96/-17.33	-18.85/-17.82	-16.38/-14.44	-10.38/-8.16	-7.24/-7.94	-10.37/-11.51	-19.47/-17.58	-17.63/-13.55	-12.34/-14.25	-15.02/-14.32	-12.55/-11.61	-19.25/-16.92	-17.09/-16.19	-10.47/-7.3	-5.79/-5.5	-6.37/-5.26	-6.37/-5.26
Θ(127.5°)	-5.44/-5.71	-7.4/-11.98	-16.29/-11.64	-9.89/-9.95	-9.77/-9.15	-9.17/-9.75	-10.72/-11.88	-13.68/-17.23	-18.17/-18.62	-18.9/-18.26	-17.23/-17.51	-14.44/-12.6	-9.68/-7.91	-7.44/-6.94	-5.79/-4.97	-12.5/-5.88	-6.38/-5.83	-4.81/-4.38	-4.92/-6.37	-8.62/-11.59	-17.01/-18.69	-12.42/-7.6	-5.46/-4.66	-4.73/-5.26
Θ(135°)	-6.33/-6.61	-7.58/-10.41	-15.39/-15.8	-13.68/-13.75	-14.65/-14.07	-12.61/-11.25	-10.63/-10.95	-12.73/-15.93	-17.92/-18.4	-18.24/-18.28	-10.65/-8.45	-6.58/-6.44	-3.3/-2.85	-3.03/-3.33	-3.19/-3.05	-3.34/-4.02	-4.6/-4.53	-4.12/-4.12	-4.77/-5.76	-6.58/-6.78	-7.02/-7.45	-7.01/-5.65	-4.6/-4.7	-4.95/-5.84
Θ(142.5°)	-4.03/-5.11	-6.41/-8.44	-11.85/-15.32	-15.6/-14.89	-15.55/-17.86	-18.25/-18.66	-17.96/-19.01	-17.7/-19.08	-18.28/-16.59	-12.74/-9.89	-7.71/-5.77	-4.1/-2.88	-2.39/-2.48	-2.96/-3.48	-3.86/-4.33	-5.04/-5.97	-6.69/-6.92	-7.02/-7.64	-8.6/-8.56	-6.83/-4.9	-3.63/-2.91	-2.29/-1.59	-1.09/-1.16	-1.85/-2.91
Θ(150°)	-1.07/-1.75	-2.61/-3.81	-5.17/-3.78	-4.78/-4.13	-3.28/-9.69	-10.66/-11.58	-12.5/-12.64	-11.95/-10.77	-9.38/-8.11	-6.93/-5.88	-4.87/-4.02	-3.33/-3.06	-3.21/-3.9	-4.84/-5.91	-6.92/-8.05	-9.3/-10.22	-10.59/-10.77	-11.36/-13.25	-16.19/-13.71	-8.79/-5.58	-3.63/-2.39	-1.51/-0.67	-0.04/-0.19	-0.04/-0.19
Θ(157.5°)	-0.65/-0.95	-1.5/-2.33	-3.53/-4.91	-6.32/-4.45	-8.12/-8.53	-8.86/-8.99	-8.58/-7.57	-6.28/-5.25	-4.57/-4.18	-4.04/-4.02	-4.06/-4.28	-4.78/-5.56	-6.67/-6.4	-8.44/-8.81	-8.93/-8.82	-8.61/-8.45	-8.52/-8.99	-10.19/-12.71	-18.25/-18.46	-12.6/-8.33	-5.87/-4.32	-3.18/-2.07	-1.28/-0.72	-0.54/-0.58
Θ(165°)	-1.69/-1.87	-2.27/-2.98	-4.08/-5.57	7.48/-9.79	-12.32/-14.45	-14.34/-12.24	-9.61/-4.76	-5.77/-4.74	-4.33/-4.51	-5.09/-5.98	-7.18/-8.89	-11.03/-12.74	-12.4/-10.93	-9.25/-7.84	-6.9/-6.21	-5.81/-5.8	-6.14/-6.88	-8.17/-10.42	-14.36/-18.66	-19.25/-13.65	-10.43/-8.26			



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ (180°)	-18.66/-18.78	-18.07/-17.96	-16.91/-13.89	-11.82/-10.72	-11.27/-12.11	-12.32/-12.9	-13.7/-13.39	-13.06/-12.78	-14.63/-17.82	-17.78/-18.64	-18.22/-18.84	-19.6/-17.94	-18.66/-18.46	-17.89/-17.76	-18.26/-18.1	-19.23/-14.71	-12.25/-11.34	-11.39/-11.41	-11.37/-11.3	-11.54/-12.82	-14.05/-14.57	-14.72/-17.84	-18.51/-19.24	-17.88/-18.18	
Freq(Hz)	5.3GPol.	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°)	-1.73/-0.78	-0.51/-0.44	-0.39/-0.7	-1.05/-1.48	-1.98/-2.95	-3.85/-5.27	-7.56/-9.69	-12.71/-18.58	-18.53/-17.5	-13.95/-10.16	-6.76/-5.11	-4.52/-4.09	-3.32/-2.73	-2.26/-1.72	-1.3/-1.12	-1.52/-2.12	-2.74/-2.91	-3.72/-5.45	-7.95/-10.06	-13.55/-14.77	-17.5/-15.59	-11.19/-7.54	-4.92/-3.38	-2.96/-2.53	
Θ (7.5°)	-3.51/-2.33	-1.89/-2.07	-2.25/-2.52	-2.63/-2.78	-3.53/-4.49	-5.6/-7.03	-9.11/-11.38	-14.91/-18.09	-19.19/-14.25	-12.49/-9.17	-5.09/-2.85	-1.92/-1.58	-1.4/-1.46	-1.57/-1.68	-1.89/-2.53	-3.66/-5.15	-6.28/-6.81	-7.76/-11.38	-18.77/-17.38	-19.04/-18.92	-18.05/-12.25	-9.46/-8.27	-6.72/-5.28	-4.78/-4.37	
Θ (15°)	-5.38/-4.95	-4.77/-5.73	-7.03/-8.22	-8.05/-8.08	-8.49/-8.75	-8.69/-8.63	-10.69/-12.87	-14.08/-16.6	-16.68/-13.12	-10.68/-8.98	-6.59/-3.97	-2.44/-1.85	-1.63/-2.04	-2.92/-3.27	-3.87/-5.16	-5.97/-6.92	-8.07/-11.43	-15.91/-14.16	-12.27/-14.44	-13.74/-11.71	-10.51/-10.08	-8.74/-7.2	-6.82/-6.79	-5.65/-5.87	
Θ (22.5°)	-8.74/-10.22	-11.54/-13.44	-13.42/-10.52	-8.4/-8.05	-7.39/-6.74	-6.97/-8.44	-12.47/-17.01	-16.46/-15.25	-16.94/-13.71	-10.5/-8.2	-5.84/-3.6	-2.42/-2.55	-2.74/-3.12	-3.77/-4.46	-6.62/-8.31	-9.3/-12.22	-16.06/-13.72	-8.83/-6.31	-6.07/-6.65	-8.57/-10.22	-9.94/-9.81	-10.83/-11.66	-14.2/-13.01	-11.65/-9.43	
Θ (30°)	-12.03/-10.64	-14.39/-18.26	-18.01/-12.74	-11.67/-11.36	-10.9/-57	-10.61/-13.26	-18.35/-17.41	-17.88/-18.69	-17.77/-17.45	-15.94/-8.93	-6.37/-4.55	-3.2/-3.08	-2.77/-3.34	-4.63/-5.92	-7.91/-8.17	-8.87/-8.73	-6.23/-6.1	-6.67/-5.77	-7.24/-10.14	-8.12/-0.71	-6.76/-7.95	-9.15/-10.3	-15.96/-18.58	-18.21/-18.66	
Θ (37.5°)	-8.6/-10.76	-12.37/-15.87	-18.32/-18.14	-16.93/-13.58	-13.03/-14.48	-15.31/-17.48	-17.73/-14.81	-13.27/-12.27	-13.92/-18.5	-13.47/-9.31	-9.28/-5.84	-4.25/-3.3	-3.49/-6.74	-9.45/-8.17	-7.53/-8.67	-12.01/-17.51	-17.68/-16.3	-11.4/-7.1	-4.65/-2.87	-2.93/-6	-8.43/-6.48	-6.86/-9.94	-13.53/-18.78	-13.51/-10.17	
Θ (45°)	-9.15/-10.15	-12.41/-10.16	-9.38/-12.62	-17.99/-17.63	-16.28/-12.59	-11.03/-12.04	-11.4/-10.82	-11.34/-11.04	-10.12/-11.1	-15.16/-15.76	-13.04/-7	-4.49/-3.02	-3.57/-1.62	-8.17/-11.12	-12.52/-11.12	-14.14/-13.91	-10.31/-6.8	-3.06/-1.8	-2.03/-3.44	-6.17/-6.46	-6.17/-8.01	-10.82/-16	-19.05/-18.18	-13.31/-9.8	
Θ (52.5°)	-9.37/-10.56	-13.23/-11.21	-7.93/-8.48	-12.66/-18.17	-12.64/-9.64	-8.71/-7.18	-7.21/-9.36	-12.73/-12.35	-10.7/-13	-18.9/-19.08	-13.69/-8.33	-6.63/-5.11	-4.76/-9.39	-10.6/-7.23	-7.8/-8.45	-6.25/-9.37	-5.07/-3.9	-3.12/-3.59	-4.47/-3.26	-2.08/-3.96	-8.75/-12.82	-11.01/-14.26	-14.74/-13.08	-11.76/-10.62	
Θ (60°)	-5.93/-5.33	-10.61/-11.41	-10.07/-8.75	-18.62/-19.19	-10.96/-7.85	-8.08/-9.06	-9.01/-10.28	-11.15/-11.9	-9.52/-10.88	-16.72/-16.51	-19.06/-17.41	-8.7/-3.58	-2.39/-7.66	-15.12/-7.78	-9.52/-6.55	-5.14/-3.52	-3.51/-7.04	-14.11/-12.3	-11.66/-12.88	-13.95/-11.31	-18.07/-13.79	-10.85/-8.22			
Θ (67.5°)	-4.18/-6.83	-10.11/-8.15	-7.57/-7.01	-12.76/-18.1	-9.08/-7.74	-8.49/-9.91	-11.43/-15.76	-18.51/-11.47	-5.79/-6	-11.65/-16.67	-19.34/-18.59	-17.63/-8.17	-5.91/-8.96	-9.03/-8.13	-6.65/-7.84	-10.28/-9.76	-7.37/-5.84	-5.38/-4.27	-5.13/-7.62	-9.87/-12.86	-17.33/-16.32	-9.85/-8.96	-9.05/-17.85	-7.58/-3.67	
Θ (75°)	-4.72/-8.93	-7.21/-6.47	-5.61/-10.34	-17.84/-19.19	-10.52/-7.68	-6.89/-7.89	-11.04/-15.62	-15.48/-10.67	-8.41/-9.51	-14.95/-18.62	-18.01/-18.65	-19.14/-9.76	-9.43/-12.63	-12.55/-19.26	-13.57/-9.07	-9.36/-12.51	-11.57/-11.71	-10.07/-14.73	-15.71/-11.6	-15.74/-17.85	-15.76/-17.41	-13.56/-10.72	-15.25/-12.91	-7.62/-3.98	
Θ (82.5°)	-4.75/-10.58	-8.02/-3.63	-4.97/-10.67	-17.86/-8.79	-5.66/-5.39	-7.14/-10.09	-14.35/-18.31	-7.19/-8.83	-18.02/-15.65	-14.75/-15.06	-19.05/-12.99	-8.7/-9.61	-12.19/-19.55	-10.34/-7.04	-4.85/-5.34	-9.71/-13.8	-17.53/-15.85	-15.54/-14.99	-19.27/-18.66	-15.54/-15.25	-15.72/-10.11	-17.21/-10.75	-5.5/-3.15		
Θ (90°)	-6.47/-16.8	-8.04/-5.95	-8.17/-18.93	-9.7/-6.78	-4.8/-4.98	-5.3/-6.82	-10.03/-17.24	-17.12/-10.96	-9.41/-10.34	-16.86/-13.55	-11.31/-9.34	-18.64/-18.67	-12.78/-9.53	-8.52/-14.77	-17.6/-8.23	-4.11/-4.69	-8.75/-15.1	-8.47/-9.02	-13.31/-11.12	-10.22/-9.47	-8.51/-8.21	-8.55/-8.9	-14.25/-18.52	-5.03/-3.2	
Θ (97.5°)	-8.46/-16.45	-11.16/-7.9	-14.59/-18.7	-1.04/-5.92	-4.37/-4.75	-6.35/-7.17	-6.83/-8.75	-13/-16.7	-11.47/-10.86	-8.85/-9.68	-15.71/-10.34	-9.47/-13.31	-8.85/-9.68	-16.28/-10.02	-5.62/-6.99	-17.19/-16.72	-10.3/-7.18	-6.97/-9.22	-16.34/-12.82	-11.58/-9.79	-12.89/-13.86	-6.5/-5.95	-9.87/-11.7	-12.1/-18.01	-10.44/-9.39
Θ (105°)	-8.01/-16.46	-10.53/-9.34	-11.54/-17.98	-1.19/-6.87	-7.56/-8.42	-7.28/-6.21	-7.06/-6.51	-10.87/-16.83	-11.89/-19.16	-11.91/-12.82	-9.65/-10.39	-12.49/-8.11	-7.21/-12.27	-7.05/-8	-8.59/-17.16	-8.59/-4.87	-2.28/-5.48	-18.31/-18.85	-11.85/-9.23	-16.61/-14.2	-13.04/-12.9	-18.01/-15.94	-9.61/-7.84		
Θ (112.5°)	-9.84/-12.51	-12.11/-5.8	-9.2/-11.93	-11.11/-8.47	-10.08/-12.01	-13.12/-13.54	-9.17/-7.58	-11.09/-16.49	-17.84/-15.43	-11.24/-6.25	-6.55/-9.26	-6.8/-9.22	-8.68/-9.81	-7.06/-11.66	-18.71/-13.73	-10.75/-3.83	-2.2/-3.63	-7.97/-17.79	-18.28/-18.11	-12.97/-13.98	-17.05/-13.55	-12.14/-12.76	-13.25/-12.2	-13.44/-4.29	
Θ (120°)	-5.1/-10.36	-7.35/-5.35	-5.98/-11.43	-12.5/-8.85	-8.19/-7.75	-13.51/-11.78	-15.72/-17.98	-19.11/-13.95	-9.47/-8.88	-6.91/-8.84	-8.1/-13.13	-7.04/-3.93	-4.57/-9.15	-1.74/-17.13	-4.57/-9.15	-13.06/-4.73	-1.87/-1.71	-1.924/-5.9	-8.14/-7.4	-4.68/-6.54	-17.78/-10.65	-10.83/-13.15	-12.44/-8.69	-5.43/-6.3	
Θ (127.5°)	-7.93/-9.44	-8.08/-6.67	-8.42/-12.25	-15.58/-11.25	-12.28/-18.58	-17.73/-15.16	-17.16/-15.16	-7.97/-9.47	-4.67/-4.05	-5.81/-8.32	-11.31/-5	-3.74/-3.97	-4.54/-8.79	-4.32/-5.36	-5.02/-7.3	-14.98/-5.76	-2/-1.06	-2.03/-6.28	-8.24/-6.09	-2.51/-3.49	-9.28/-17.84	-5.6/-8.6	-14.08/-14.98	-10.91/-7.73	
Θ (135°)	-7.65/-11.77	-10.69/-9.56	-10.64/-12.34	-13.72/-19.33	-16.27/-12.47	-8.41/-7.8	-9.54/-13.28	-15.14/-10.91	-8.63/-6.8	-5.51/-9.39	-5.51/-2.26	-0.51/-3.66	-11.69/-8.5	-2.61/-2.74	-7.36/-13.75	-9.01/-4.55	-4.32/-2.43	-4.9/-12.05	-12.53/-8.91	-9/-8.91	-6.82/-12.77	-18.93/-11.83	-18.08/-15.26	-19.24/-6.65	
Θ (142.5°)	-4.06/-0.57	-7.26/-8.77	-10.92/-10.33	-9.46/-8.59	-8.3/-8.8	-7.84/-5.8	-4.66/-5.49	-8.67/-12.28	-15.17/-14.75	-9.04/-5.33	-3.39/-1.15	-2.1/-4.76	-6.06/-10.38	-7.21/-5.1	-2.8/-0.98	-0.36/-1.53	-2.32/-2.02	-5.01/-11.13	-15.72/-12.99	-9.77/-8.69	-12.68/-14.39	-13.61/-10.84	-9.82/-11.59	-12.15/-15.05	
Θ (150°)	-6.33/-6.65	-8.08/-9.59	-10.97/-11.76	-13.19/-14.77	-12.44/-10.03	-8.85/-8.05	-8.25/-11.08	-11.35/-9.12	-8.6/-8.36	-5.92/-4.32	-1.84/-1.08	-1.65/-1.94	-0.79/-0.66	-0.370/-61	0.740 /-44	0.37/-0.13	-1.99/-5.11	-8.47/-9.95	-9.71/-7.33	-5.53/-6.34	-10.34/-12.22	-9.32/-8.5	-5.9/-6.01		
Θ (157.5°)	-4.21/-3.81	-4.09/-5.27	-7.74/-9.25	-9.41/-11.27	-14.34/-13.93	-13.5/-13.08	-11.54/-9.21	-7/-5.71	-5.04/-4.3	-2.8/-1.82	-1.6/-1.82	-0.95/-0.37	-0.78/-1.44	-2.6/-5.21	-6.47/-4.77	-3.7/-3.15	-3.14/-4.36	-6.48/-9.06	-11.41/-12.86	-11.1/-8.17	-7.2/-8.99	-13.01/-13.59	-10.98/-9.96	-6.63/-4.79	
Θ (165°)	-12.6/-10.72	-8.46/-8.91	-10.75/-12.47	-12.34/-12.11	-12.15/-12.11	-12.65/-13.74	-14.51/-15.69	-15.58/-12.39	-10.12/-12.33	-9.71/-5.72	-6.24/-1.5	-2.1/-1.86	-2.75/-4.55	-7.42/-11.6	-10.35/-7.4	-5.54/-4.3	-3.78/-4.48	-5.56/-6.72	-8.18/-9.19	-9.62/-10.37	-13.09/-18.43	-19.24/-17.77	-16.17/-12.79	-12.16/-13.23	
Θ (172.5°)	-15.6/-13.9	-14.53/-16.75	-18.46/-18.36	-16.88/-17.57	-16.62/-18.78	-18.9/-13.78	-17.95/-16.29	-12.07/-9.9	-12.95/-10.93	-9.76/-8.9	-7.13/-5.78	-5.09/-5.23	-5.82/-7.2	-9.71/-13.49	-16.88/-18.09	-16.28/-15.66	-12.63/-10.68	-10.12/-12.01	-18.09/-18.59	-19.09/-17.89	-19.27/-18.38	-18.77/-18.21	-19.32/-19.09	-18.29/-18.05	
Θ (180°)	-8.6/-7.26	-6.86/-6.8	-7.2/-7.25	-6.64/-6.42	-7.23/-8.29	-9.03/-10	-11.62/-13.82	-12.92/-11.83	-14.71/-18.91	-19.05/-18.83	-18.11/-16.76	-12.83/-11.19	-11.34/-11.69	-13.02/-15.56	-18.39/-17.8	-13.76/-10.56	-7.85/-6.52	-6.16/-6.85	-8.51/-11.92	-16.07/-15.62	-13.57/-12.97	-15.19/-18.36	-18.26/-16.39	-13.09/-10.41	
Freq(Hz)	5.3GPol.	ThetaAnt.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	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°)	-6.99/-8.67	-11.3/-14.39	-18.99/-18.5	-17.1/-12.83	-10.54/-8.46	-6.84/-5.36	-4.65/-3.93	-3.17/-2.7	-2.74/-3.31	-3.53/-3.82	-4.04/-4.79	-6.61/-6.47	-8.08/-10.42	-12.94/-16.03	-18.55/-18.04	-15.78/-12.06	-9.96/-8.06	-6.65/-5.62	-4.22/-3.17	-2.5/-2.52	-2.74/-2.76	-2.35/-2.47	-3.07/-3.89	-4.71/-5.82	
Θ (7.5°)	-10.41/-12.41	-15.91/-18.32	-19.07/-15.55	-12.8/-11	-9.8/-8.33	-6.41/-4.85	-4.42/-4.41	-4.36/-3.61	-2.76/-2.45	-2.48/-2.44	-4.17/-5.77	-8.04/-10.93	-14.48/-17.25	-18.54/-19.31	-14.94/-12.34	-10.26/-8.31	-6.61/-5.92	-5.38/-5.31	-4.88/-4.76	-5.15/-5.87	-5.81/-5.86	-6.83/-7.78	-8.25/-9		
Θ (15°)	-15.33/-18.88	-18.62/-18.9	-19/-16.76	-14.24/-14.8	-15.25/-12.73	-10.08/-8.15	-14.7/-6.22	-5/-4.36	-3.77/-2.34	-3.19/-3.52	-3.75/-4.12	-4.89/-5.86	-7.42/-10.12	-11.71/-12.31	-15.65/-18.56	-18.04/-17.86	-15.39/-14.9	-15.75/-14.5	-13.32/-15.05	-18.37/-18.58	-18.46/-18.38	-18.49/-17.93	-18.27/-17.69	-15.81/-14.6	
Θ (22.5°)	-18.14/-15.05	-13.9/-15.06	-15.97/-13.48	-13.12/-18.85	-14.87/-9.1	-6.17/-4.89	-4.64/-4.15	-3.48/-3.36	-3.81/-4.06	-3.15/-3.18	-4.62/-5.06	-3.82/-2.82	-2.81/-3.77	-4.83/-6.29	-8.54/-10.43	-11.61/-13.31	-14.97/-14.67	-13.17/-13.35	-12.72/-11.36	-9.83/-10.09	-11.95/-12.99	-12.86/-14.1	-16.18/-18.51	-18.74/-18.65	
Θ																									



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A

Θ(22.5°)	-8.67/-11.22	-9.62/-9.07	-9.67/-11.31	-14.84/-18.46	-17.1/-14.68	-14.49/-12.52	-10.44/-9.44	-9.61/-8.36	-6.63/-6.15	-6.7/-6.08	-4.38/-4.75	-6.37/-6.63	-6.15/-6.84	-9.15/-9.83	-8.69/-7.44	-6.67/-6.24	-6.11/-7.28	-10.11/-12.07	-11.22/-10.68	-8.76/-7.9	-8.49/-7.87	-5.55/-4.7	-5.93/-6.15	-5.71/-6.32
Θ(30°)	-8.4/-9.62	-8.75/-8.23	-9.08/-11.44	-14.43/-18.58	-18.31/-18.7	-15.65/-11.72	-10.68/-10.84	-10.57/-8.8	-7.23/-7.09	-7.14/-5.7	-4.44/-5.12	-6.98/-7.82	-8.73/-9.9	-9.09/-8.14	-9.02/-8.08	-7.19/-7.48	-9.4/-13.6	-18.77/-14.67	-10.54/-8.37	-7.47/-7.78	-9.07/-8.83	-7.95/-7.66	-7.97/-7.13	-6.33/-6.84
Θ(37.5°)	-13.22/-12.37	-9.2/-7.62	-7.27/-9.43	-14.06/-17.88	-17.85/-19.09	-16.62/-13.71	-13.15/-12.02	-11.1/-9.53	-7.94/-8.22	-8.8/-7.25	-6.31/-7.98	-7.29/-6.22	-4.54/-4.24	-7.77/-9.61	-6.62/-4.51	-4.96/-7.37	-10.5/-15.25	-17.49/-15.63	-14.02/-12.84	-9.46/-7.27	-7.28/-8.17	-8.45/-9.37	-10.03/-10.76	-10.85/-11.21
Θ(45°)	-9.36/-6.75	-7.54/-8.4	-9.85/-10.45	-11.28/-13.07	-13.55/-15.88	-17.56/-19.64	-17.79/-12.47	-10.39/-11.85	-12.43/-9.21	-7.25/-6.08	-5.58/-6.34	-5.98/-6.89	-5.44/-4.99	-8.1/-19.1	-8.4/-5.85	-5.83/-7.5	-12.22/-18.92	-18.25/-18.84	-14.62/-10.02	-8.13/-11.2	-13.93/-9.49	-9.8/-14.18	-18.24/-19.01	-18.04/-13.35
Θ(52.5°)	-9.66/-8.87	-8.81/-6.01	-4.96/-6.98	-7.37/-9.1	-9.66/-10.95	-13.37/-16.79	-17.98/-16.71	-15.69/-15.05	-13.2/-10.8	-10.33/-8.77	-5.64/-6.18	-7.85/-7.22	-6.26/-8.26	-8.7/-6.64	-6.17/-7.07	-7.92/-11.7	-14.01/-14.09	-15.73/-16.77	-14.99/-12.51	-10.88/-10.08	-12/-18.41	-19.28/-16.73	-12.92/-13.66	-11.08/-8.2
Θ(60°)	-5.9/-6.09	-8.11/-7.67	-6.04/-5.72	-5.27/-6.18	-8.24/-10.54	-13.92/-16.63	-15.21/-13.09	-12.92/-13.48	-14.25/-15.29	-13.89/-10.52	-7.03/-7.38	-7.36/-6.66	-7.34/-9.47	-15.02/-9.05	-7.43/-6.68	-7.32/-9.51	-12.25/-14.08	-12.13/-13.99	-17.11/-14.02	-12.89/-12.53	-15.49/-18.13	-18.7/-18.55	-14.24/-14.14	-14.73/-8.72
Θ(67.5°)	-8.5/-6.42	-7.31/-8.11	-6.5/-5.59	-6.07/-6.97	-7.03/-7.42	-8.19/-9.49	-11.22/-13.77	-11.91/-10.48	-14.94/-17.49	-18.23/-10.58	-8.41/-8.02	-6.79/-9.07	-6.11/-5.34	-10.67/-16.46	-7.23/-5.53	-7.03/-7.07	-8.75/-10.47	-13.88/-15.65	-18.93/-17.97	-18.63/-18.34	-18.28/-18.04	-18.14/-18.74	-11.04/-11.46	-9.33/-11.15
Θ(75°)	-11.33/-7.67	-7.65/-9.48	-6.74/-4.99	-4.6/-4.1	-5.1/-6.47	-8.16/-10.05	-12.71/-13.48	-13.48/-16.56	-18.37/-11.57	-15.62/-18.45	-10.74/-7.95	-8.36/-9.28	-8.92/-8.03	-8.3/-10.77	-8.21/-5.91	-7.29/-8.77	-8.59/-9.3	-11.7/-13.19	-13.5/-15.63	-18.35/-17.95	-18.44/-18.43	-18.46/-17.79	-13.49/-8.75	-6.85/-10.5
Θ(82.5°)	-9.45/-8.34	-10.5/-9.4	-8.64/-7.04	-5.04/-6.1	-7.13/-6.87	-7.56/-8.92	-11.04/-17.34	-18.64/-11.22	-12.37/-8.34	-10.22/-18.06	-9.98/-9.11	-11.91/-11.11	-13.38/-15.79	-10.21/-15.54	-9.85/-7.27	-5.09/-4.54	-5.12/-8.82	-14.53/-18.41	-16.38/-11.31	-17.25/-18.46	-19.47/-18.29	-16.89/-15.34	-18.46/-11.71	-10.85/-14.7
Θ(90°)	-9.42/-7.53	-10.91/-12.88	-9.53/-7.43	-6.45/-5.96	-4.8/-7.93	-9.77/-11.05	-14.06/-14.98	-17/-15.64	-10.39/-8.04	-10.55/-12.23	-16.91/-8.5	-9.64/-14.51	-10.67/-15.71	-13.75/-10.74	-8.82/-8.03	-5.74/-5.18	-7.35/-9.55	-14.69/-15.13	-15.65/-14.73	-18.24/-17.59	-18.57/-17.83	-18.66/-15.19	-10.41/-10.34	-11.96/-12.75
Θ(97.5°)	-11.9/-9.46	-18.15/-13.67	-8.96/-9.79	-10.4/-7.39	-7.88/-6.77	-7.79/-13.05	-16.97/-16.24	-18.1/-12.33	-9.47/-7.66	-7.25/-9.59	-12.77/-6.45	-12.22/-13.24	-10.44/-18.14	-12.37/-12.68	-12.2/-7.9	-5.31/-4.46	-7.06/-9.85	-14.96/-14.69	-15.7/-12.54	-13.24/-18.72	-13.82/-12.19	-10.21/-12.5	-10.18/-13.12	-18.78/-16.97
Θ(105°)	-18.47/-17.66	-18.13/-18.24	-11.03/-11.75	-11.86/-11.73	-10.34/-11.24	-10.95/-9.98	-11.26/-14.32	-18.38/-12.18	-8.88/-5.76	-6.36/-12.08	-11.11/-5.38	-7.01/-11.96	-13.52/-11.33	-11.9/-18.35	-11.94/-7.66	-5.69/-4.06	-3.19/-5.48	-9.26/-19.31	-11.25/-6.98	-10.71/-11.74	-16.28/-18.7	-18.1/-19.41	-18.95/-18.62	-18.16/-16.98
Θ(112.5°)	-17.33/-18.24	-15.22/-15.4	-17.2/-19.19	-18.92/-17.66	-14.26/-15.89	-15.64/-14.7	-14.92/-18.2	-14.7/-9.91	-6.17/-6.13	-7.87/-18.77	-6.59/-4.15	-7.93/-10.44	-8.38/-10.11	-16.6/-14.95	-16.6/-13.04	-12.46/-7.82	-5.68/-5.54	-9.14/-14.88	-15.54/-15.04	-16.62/-16.8	-15.89/-18.99	-16.78/-8.94	-11.96/-10.75	-19.06/-18.18
Θ(120°)	-18.72/-15.92	-13.85/-13.78	-19.15/-18.05	-18.74/-18.82	-18.64/-19.06	-18.51/-17.78	-16.79/-15.53	-10.7/-8.43	-8.02/-9.32	-13.58/-10.63	-5.59/-4.04	-6.68/-8.02	-4.21/-4.63	-18.11/-12.63	-12.02/-7.04	-18.75/-8.69	-3.11/-2.96	-4.05/-11.64	-18.44/-10.91	-6.96/-10.02	-11.17/-7.34	-6.36/-8.35	-14.27/-16.38	-13.26/-9.77
Θ(127.5°)	-19.05/-9.55	-9.71/-9.84	-14.33/-15.08	-13.84/-12.15	-12.62/-16.57	-18.65/-16.46	-12.99/-11.45	-10.18/-10.15	-9.13/-9.93	-7.76/-5.49	-3.83/-4.75	-6.29/-5.78	-5.25/-5.05	-5.45/-6.54	-13.19/-11.47	-15.68/-7.65	-3.94/-2.54	-3.29/-9.41	-10.84/-7.18	-5.72/-9.18	-18.13/-13.53	-8.25/-14.73	-18.84/-15.22	-15.85/-11.85
Θ(135°)	-14.62/-12.67	-15.03/-15.39	-18.21/-17.62	-16.24/-14.8	-13.49/-14.27	-18.48/-18.92	-17.99/-17.42	-19.12/-12.18	-12.09/-14.36	-13.98/-6.72	-4.61/-2.51	-4.21/-6.38	-5.52/-4.55	-2.46/-3.53	-8.69/-11.58	-8.8/-5.66	-6.96/-6.63	-11.29/-16.55	-12.95/-11.67	-8.57/-6.59	-12.52/-17.03	-18.51/-13.73	-16.87/-16.94	-18.49/-13.89
Θ(142.5°)	-11.97/-17.68	-17.65/-13.96	-13.62/-15.92	-13.83/-12.22	-12.79/-13.79	-15.32/-17.2	-17.61/-15.6	-16.67/-18.23	-17.67/-14.77	-11.81/-7.56	-2.93/-2.3	-1.25/-0.45	-1.85/-5.83	-11.81/-10.39	-8.26/-5.01	-3.69/-4.19	-5.24/-6.74	-10.95/-16.88	-18.29/-17.42	-17.89/-17.12	-18.83/-17.68	-13.32/-11.17	-10.79/-10.96	-13.55/-11.88
Θ(150°)	-8.62/-8.92	-8.12/-12.97	-16.76/-12.07	-10.9/-12.52	-15.95/-18.56	-19.28/-17.28	-17.15/-18.66	-18.06/-16.76	-13.33/-8.66	-4.94/-2.72	-1.99/-1.84	-2.85/-5.71	-6.74/-4.7	-1.64/-0.39	-0.57/-0.36	-0.84/-1.92	-2.94/-5.03	-8.52/-12.16	-13.28/-13.64	-13.55/-10.56	-10.33/-16.68	-17.35/-13.54	-9.85/-8.29	-8.64/-8.33
Θ(157.5°)	-16.26/-12.08	-9.61/-9.71	-12.61/-18.23	-18.22/-18.46	-18.25/-14.25	-13.18/-13.99	-17.69/-17.48	-18.5/-18.4	-12.2/-7.85	-5.62/-3.93	-2.18/-1.91	-1.86/-0.73	-0.17/-0.69	-1.33/-1.75	-2.35/-3.3	-3.83/-3.85	-4.22/-5.91	-9.43/-15.09	-16.29/-15.51	-18.2/-18.23	-18.76/-18.29	-13.11/-10.67	-8.39/-7.54	-9.14/-13.39
Θ(165°)	-18.8/-13.8	-10/-8.61	-8.43/-8.93	-7.78/-7.31	-8.42/-10.72	-14.24/-17.37	-18.22/-14.69	-10.34/-7.24	-5.46/-4.58	-3.33/-1.9	-1.22/-1.31	-1.9/-2.99	-4.64/-8.11	-14.44/-11.36	-6.66/-5.06	-4.8/-5.61	-7.56/-10.29	-15.96/-18.09	-17.8/-17.64	-17.76/-18.31	-15.53/-15.46	-16.85/-14.59	-12.13/-13.26	-17.9/-17.34
Θ(172.5°)	-14.01/-11.55	-9.97/-9.96	-9.72/-9.05	-8.02/-7.1	-7.46/-9.27	-11.83/-14.14	-13.61/-13.37	-13.67/-11.81	-9.64/-9.13	-8.71/-7.21	-6.39/-6.97	-8.92/-11.3	-14.2/-16.97	-12.53/-8.95	-7.58/-8.11	-9.62/-11.98	-15.59/-19.29	-18.83/-17.51	-18.57/-18.59	-18.04/-18.05	-17.36/-17.4	-17.91/-17.98	-17.83/-18.83	-17.42/-15.58
Θ(180°)	-9.05/-8.99	-8.71/-9.36	-10.18/-10.54	-10.67/-10.96	-11.31/-13.25	-16.86/-18.53	-18.5/-18.7	-18.49/-17.31	-16.51/-14.43	-11.99/-10.55	-9.97/-10.29	-11.32/-12.84	-15.34/-18.64	-18.43/-18.49	-18.48/-18.96	-17.91/-16.64	-15.27/-12.99	-11.47/-9.74	-9.23/-10.48	-11.12/-10.06	-8.62/-8.41	-8.67/-9.3	-9.37/-9.19	-8.68/-8.39
Freq(Hz)	5.785GPol.	ThetaAnt. 4	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-11.18/-10.42	-9.54/-9.15	-9.08/-8.67	-7.58/-6.76	-6.62/-6.94	-7.37/-7.52	-7.62/-7.94	-8.97/-9.28	-8.88/-10.96	-11.82/-13.39	-14.26/-14.27	-14.24/-13.4	-12.2/-10.87	-9.86/-8.81	-8.06/-7.43	-7.49/-8.18	-8.47/-7.28	-5.72/-5.47	-6.23/-7.4	-7.83/-7.53	-7.46/-8.25	-9.82/-11.83	-14.18/-13.91	-12.3/-11.15
Θ(7.5°)	-11.17/-10.03	-8.77/-7.65	-6.82/-5.78	-4.47/-3.94	-3.7/-3.36	-2.93/-3.05	-3.34/-3.19	-3.2/-3.63	-4.32/-4.97	-5.28/-5.78	-7.25/-9.4	-10.82/-11.49	-11.51/-11.33	-11.09/-10.9	-8.26/-5.01	-9.58/-10.99	-10.78/-9.27	-8.5/-9.93	-13.12/-16.1	-19.47/-17.68	-17.94/-18.3	-18.19/-17.99	-14.86/-11.83	
Θ(15°)	-10.11/-8.76	-7.25/-6.1	-5.33/-4.29	-2.91/-2.49	-2.17/-1.77	-1.72/-1.89	-1.77/-1.6	-1.55/-1.9	-2.45/-2.55	-2.16/-2.57	-4.45/-7.01	-9.12/-10.37	-12.16/-14.29	-16.97/-18.87	-18.07/-18.39	-18.33/-14.51	-12.38/-11.15	-10.9/-9.6	-10.06/-9.38	-8.23/-7.95	-8.92/-11.25	-13.91/-16.59	-19.14/-18.31	-17.24/-12.26
Θ(22.5°)	-8.43/-7.49	-5.88/-4.69	-3.64/-3.06	-2.25/-2.37	-2.12/-1.79	-1.82/-1.37	-0.93/-0.96	-0.8/-0.46	-0.42/-1.24	-1.94/-1.8	-2.15/-3.64	-4.99/-5.55	-6.62/-8.76	-11.68/-13.87	-11.77/-10.42	-10.56/-10.78	-10.34/-10.73	-11.6/-13.67	-14.33/-14.77	-17.6/-17.65	-18.71/-18.66	-18.42/-16.76	-13.77/-12.97	-11.31/-9.58
Θ(30°)	-7.88/-6.52	-4.37/-3.19	-2.78/-2.65	-2.16/-2.28	-2.58/-2.76	-2.41/-1.79	-1.27/-1.77	-2.07/-0.73	0.460/0.29	0.210/69	0.83/-0.24	-2.1/-2.98	-4.63/-6.78	-6.26/-5.06	-4.36/-4.27	-4.81/-5.18	-5.78/-7.61	-9.88/-10.29	-10.71/-10.84	-12.94/-13.3	-11.08/-9.51	-9.44/-10.6	-8.15/-6.48	-6.91/-7.29
Θ(37.5°)	-6.13/-2.79	-0.92/-0.64	-0.3/-0.67	-1.87/-2.7	-2.62/-2.46	-2.08/-1.92	-1.93/-1.91	-1.32/-0.57	-0.530/0.7	1.741/59	0.01/-0.85	0.03/-0.11	-2.86/-3.42	-2.54/-2.22	-1.69/-2.11	-3.17/-5.51	-8.09/-8.61	-11.27/-12.88	-12.37/-11.16	-9.42/-9.18	-10.32/-10.04	-7.18/-5.54	-6.33/-6.65	-6.59/-8.25
Θ(45°)	-5.63/-3.95	-1.35/-0.15	-0.43/-1.55	-3.36/-2.96	-1.57/-0.91	-0.86/-1.27	-1.43/-1.11	-1.47/-2.35	-0.670/0.9	0.780/72	21/58	0.380/63	-0.09/-1.18	-1.61/-0.65	-0.74/-0.98	-2.8/-4.03	-5.76/-8.39	-7.97/-7.08	-7.76/-8.59	-8.69/-8.04	-7.94/-5.54	-5.67/-5.94	-6.14/-6.18	-5.95/-6.04
Θ(52.5°)	-8.6/-4.03	0.051/0.05	0.36/-7.77	-1.66/-1.07	-0.53/-0.56	-0.79/-1.13	-1.18/-0.82	-0.48/-0.69	-0.370/4.1	0.891/62	1.841/32	0.610/0.2	-0.180/15	0.450/73	0.6/-0.9	-1.67/-2.4	-3.03/-4.28	-5.56/-9.13	-13.27/-12.34	-9.54/-5.66	-3.87/-5.91	-7.84/-7.86	-5.73/-5.85	-6.83/-8.43
Θ(60°)	-9.03/-3.31	0.171/1.29	0.561/1.08	-2.340/2.8	1.381/11	-0.22/-0.84	-0.450/4.1	1.070/93	0.741/27	1.161/88	2.381/8	0.70/53	0.650/81	0.49/-0.11	-1.36/-1.54	-1.54/-1.79	-2.74/-3.36	-4.56/-4.97	-8.5/-9.69	-6.38/-5.48	-6.71/-5.92	-6/-7.69	-5.57/-3.84	-5.49/-12.35
Θ(67.5°)	-14.51/-4.69	-0.161/89	1.33/-0.15	0.241/84	1.781/13	-0.030/0.7	0.571/1	0.790/85	1.20/76	0.69/2.2	2.52/81	2.51/11.3	1.951/73	1.63										



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Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.18	4.8	4.11	4.6
Ant. 2 Max Gain (dBi)	4.81	4.78	4.87	4.8
Ant. 3 Max Gain (dBi)	4.61	3.91	3.2	3.15
Ant. 4 Max Gain (dBi)	3.84	4.69	3.85	4.84
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/120/337.5	Phi/120/337.5	Phi/127.5/337.5	Phi/127.5/345
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/157.5/0	Theta/157.5/0	Theta/157.5/352.5	Phi/135/270
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/135/172.5	Phi/127.5/157.5	Theta/97.5/247.5	Theta/97.5/247.5
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/45/202.5	Phi/15/105	Phi/52.5/75	Phi/52.5/82.5
Max Gain (dBi)	4.81	4.8	4.87	4.84
DG [1SS] (dBi)	5.15	6.66	5.63	5.99
DG [2SS] (dBi)	4.81	4.8	4.87	4.84
DG [4SS] (dBi)	4.81	4.8	4.87	4.84

DG 1SS Result

[illegible]



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(22.5°)	-0.32/0.12	0.46/0.7	0.60/0.84	1.26/1.52	1.19/1.59	2.33/0.6	3.8/4.04	4.06/4.01	3.73/3.57	3.75/3.58	3.2/3.03	2.91/2.54	2.16/1.63	1.24/1.32	1.37/1.61	1.14/0.62	0.51/0.14	0.24/0.52	0.69/0.83	1.22/1.53	1.81/2.48	2.74/2.49	2.01/0.88	-0.05/-0.34
Θ(30°)	-1.34/-0.89	-0.55/-0.15	0.72/0.49	0.21/0.35	0.51/0.15	1.32/2.13	2.78/3.09	3.44/3.05	2.41/8.4	1.81/1.81	1.79/1.64	1.74/1.96	1.91/1.61	1.21/1.38	1.39/1.04	0.16/0.3	0.48/0.26	0.04/0.76	1.39/1.6	1.44/1.33	1.42/1.52	1.51/1.7	0.93/0.09	-1.27/-1.77
Θ(37.5°)	-0.59/0.1	0.66/0.55	1.05/1.37	1.95/2.36	2.31/8.6	1.59/2.12	3.13/9.6	4.44/1.4	3.32/3.7	1.34/0.49	0.22/-0.61	0.68/1.53	1.57/1.4	1.49/1.19	0.66/-0.74	-1.17/-0.65	-0.79/-0.54	-0.48/-1.19	-1.47/-0.69	0.56/0.95	0.52/0.61	1.33/1.92	1.02/-0.72	-1.07/-0.63
Θ(45°)	-0.74/-1.22	-1.52/-1.6	-0.41/1.07	1.89/2.45	2.94/3.49	3.15/2.3	2.71/3.52	3.76/3.5	3.29/2.73	2.12/0.34	-0.99/-0.8	-0.39/0.17	-0.3/-0.22	0.5/0.71	-0.48/-1.08	0.17/0.82	0.81/-0.7	-2.03/-1.49	-1.07/-1.16	0.36/0.42	0.74/1.3	1.65/2.12	1.61/-0.24	-1.66/-1.34
Θ(52.5°)	-0.09/-0.51	-0.77/-1.24	-1.14/0.45	1.52/2.69	3.64/3.85	3.77/3.15	3.17/3.91	4.16/3.86	3.46/2.29	2.33/1.4	-0.27/-2.1	-1.36/0.22	1.07/0.15	0.56/-1.25	-2.24/-1.22	1.61/1.57	0.64/-0.42	-0.44/-0.65	0.92/2.06	1.32/0.57	0.91/0.1	0.89/1.63	1.59/-0.3	-1.31/-0.46
Θ(60°)	0.99/0.94	-0.56/-2.54	-1.81/-0.38	-0.08/1.4	2.58/2.74	2.53/1.49	1.74/2.96	3.33/3.26	3.29/2.29	1.3/-0.27	-0.96/-2.04	-1.78/-0.77	-0.59/-0.26	-0.25/-0.72	-1.60/1.71	1.46/1.36	0.83/-0.3	-0.6/0.6	1.51/2.17	1.88/1.91	1.91/1.62	2.13/0.8	0.9/1.1	1.03/0.15
Θ(67.5°)	0.57/-0.01	-0.16/-0.76	-1.15/-1.27	-0.36/1.48	1.83/2.91	2.93/2.48	2.16/3.2	3.32/6.5	2.72/3.5	1.22/-0.04	-0.51/-0.93	-0.86/-1.05	-1.98/-2.25	-1.18/-1.31	-0.35/-0.94	-1.29/-0.73	-1.59/-4.47	-3.5/0.01	0.77/1.26	1.82/0.47	0.12/0.9	1.81/2.18	1.86/1.91	2.29/1.52
Θ(75°)	-1.96/-1.47	-0.29/0.34	-0.19/-2.11	-2.29/0.68	1.53/1.46	1.38/1.83	2.95/3.4	4.34/3.46	2.65/2.64	2.13/0.98	-0.11/-0.47	0.28/-0.99	-2.86/-2.87	-3.44/-1.01	-0.04/0.11	0.38/0.74	-1.25/-2.93	-2.68/-1.07	-0.95/-0.17	0.22/0.36	0.76/1.55	1.71/3.12	3.04/3.01	1.99/-0.02
Θ(82.5°)	-1.14/-2.23	-0.65/-0.28	-0.6/-1.88	-1.14/-1.44	-0.99/0.03	2.41/2.21	2.36/2.99	3.12/2.88	2.72/2	0.53/-0.39	-0.86/-0.77	-0.87/-2.06	-3.9/-4.19	-4.45/-1.33	-0.53/0.18	0.3/0.63	0.11/0.88	-0.02/-0.39	-0.21/-0.42	-0.79/-0.22	0.67/1.65	0.89/2.03	1.31/1.19	1.97/0.65
Θ(90°)	-1.41/-3.87	-1.1/-0.54	0.87/-0.44	-1.1/-1.7	-1.85/-0.35	1.94/1.38	0.25/-0.58	0.92/1.99	2.61/1.79	-0.5/-1.54	-0.26/-1.2	-1.24/-1.23	-2.92/-3.44	-4.05/-3.43	-3.61/-3.45	-3.42/-2.51	0.77/-0.16	-1.9/-1.66	-1.4/-2.86	-1.57/0.4	0.11/1.86	0.78/-0.35	0.54/0.76	0.84/0.95
Θ(97.5°)	-2.61/-6.91	-4.55/-0.1	1.95/-0.6	-0.72/-0.56	-4.18/-2.29	0.54/1.12	1.73/0.3	0.55/1.7	1.22/0.68	0.11/0.53	-0.41/-1.49	-0.89/-2.32	-3.35/-3.17	-0.99/-2.25	-2.04/-0.99	-0.99/-0.01	0.02/-1.85	-0.49/-0.22	1.28/-0.39	-0.69/0.85	1.12/1.82	1.39/-0.51	0.04/-0.18	0.34/1.17
Θ(105°)	0.25/-4.13	-5.24/-0.88	-0.5/-0.44	0.02/-0.16	-3.65/-5.32	-0.77/-0.15	-0.59/-0.99	-0.58/-0.02	0.23/-0.59	0.07/1.83	1.93/0	0.62/-0.77	-3.39/-5.12	-6.2/-3.74	-2.5/-0.24	-0.22/-1.38	-3.19/-2.93	-8.31/-2.16	-2.99/-1.1	0.06/0.86	1.43/0.2	-2.08/-1.49	0.29/1.08	1.62/2.28
Θ(112.5°)	1.52/-2.08	-3.49/-4.08	-3.28/-1.69	-1.07/-1.08	0.85/-2.2	-5.3/-2.48	-0.93/-1.45	-0.78/0.25	-0.05/-1.4	-0.28/0.79	-0.24/-1.82	-0.02/-0.96	-2.9/-3.69	-5.97/-1.49	-3.93/-2.76	-3.34/-4.34	-3.88/-3.83	-6.88/-1.08	-2.28/-1.44	-0.36/-0.9	0.84/0.46	-2.01/-2.54	-1.26/0.84	3.29/3.42
Θ(120°)	2.68/-0.23	-2.73/-3.38	-0.63/-0.18	-0.62/0.66	-0.06/0.44	-0.1/-3.28	-1.26/-0.33	-0.58/0.32	1.71/1.63	1.14/2.06	0.2/-1.93	-0.21/-1.84	-3.67/-2.83	-4.37/-2.06	-0.91/-1.55	-1.32/-3.6	-3.26/-7.25	-4.09/-2.54	-1.51/-1.26	-1.34/0.85	1.69/2.45	0.17/0.14	0.72/2.72	3.83/4.81
Θ(127.5°)	1.98/0.45	-0.09/0.81	-1/-1.57	0.21/0.33	-1.15/-1.72	-0.12/-3.07	0.52/-0.55	0.2/0.52	1.11/0.48	-0.3/-1.13	-0.71/-0.94	-2.16/-0.44	1.11/-1.47	-0.87/-1.51	0.98/-2.58	-2.63/-2.78	-1.56/-0.68	1.18/-1.27	1.67/0.29	-2.03/0.29	3.43/3.65	3.91/4.73		
Θ(135°)	-0.28/1.06	0.62/-0.28	-4.01/-0.78	2.07/1.07	0.62/-0.94	-2/-3.6	-4.57/-1.42	1.62/2.77	1.48/-0.04	-0.38/-0.37	-0.81/-1.81	-1.28/1.05	0.79/0.28	1.72/0.38	-4.32/-0.88	-2.97/1.03	-0.22/-1.53	0.54/-0.55	2.57/2.61	1.21/-1.25	0.21/-1.73	-1.61/-1.74	-1.41/-1.51	-2.12/-1.11
Θ(142.5°)	-1.13/-1.05	-0.49/-1.46	-2.19/0.83	3.82/1.39	-0.04/-3.1	-3.91/-1.95	-2.34/-2.29	0.01/1.27	-0.15/-2.18	-4.07/-3.18	-1.79/-1.38	-2.21/-3.19	-3.09/-4.62	-2.25/-2.38	-5.69/-7.22	-0.03/-2.28	-2.09/-1.74	-5.39/-6.27	-0.87/0.21	-1.02/-2.88	-2.01/-1.05	-1.43/-1.95	-1.3/-2.18	-7.67/-3.94
Θ(150°)	-0.96/-1.47	-1.59/0.27	-0.05/-1.05	-0.16/-1.16	-3.73/-3.29	0.27/2.08	2.64/-1.99	-0.04/-1.52	-0.62/-0.09	-0.14/-0.26	-1.82/-3.11	-4.84/-5.29	-4.64/-9.8	-4.41/-13.2	-3.21/-3.66	-2.24/-2.07	-0.95/-2.31	-0.65/-0.47	-1.09/-1.63	-3.15/-3.16	-2.8/-1.73	-1.33/-0.73	-0.44/-1.78	
Θ(157.5°)	-0.17/0.27	-0.6/-0.08	0.95/1	0.15/-1.37	-2.43/-2.67	-1.86/-0.34	0.92/1.78	2.32/2.25	0.78/-1.25	-3.19/-5.67	-8.02/-6.98	-4.54/-2.43	-1.2/-1.12	-2.4/-3.55	-2.89/0.34	2.07/1.83	0.8/0.03	-0.74/-0.34	0.13/-0.25	-1.4/-1.61	-2.07/-2.06	-1.08/0.77	1.22/0.71	-0.31/-1.04
Θ(165°)	-5.54/-4.7	-4.05/-3.3	-2.38/-2.22	-2.27/-2.16	-1.11/0.35	1.12/1.28	1.14/0.96	1.16/1.34	0.9/0.07	-0.45/-0.73	-0.8/-1.12	-1.78/-1.93	-1.67/-1.82	-2.44/-2.83	-3.16/-3.21	-3.05/-3.66	-5.74/-5.27	-4.03/-2.67	-1.49/-1.25	-1.65/-2.37	-3.02/-3.55	-4.34/-4.98	-5.16/-5.87	-6.46/-6.49
Θ(172.5°)	-5/-5.49	-5.14/-0.9	-3.28/-2.63	-1.91/-1.71	-1.38/-0.69	-0.33/0.23	0.68/1.14	1.73/2.11	2.14/1.73	1.73/1.43	0.02/-1.96	-3.81/-5.39	-7.44/-9.17	-9.5/-7.22	-4.65/-3.32	-2.33/-2.22	-2.34/-1.79	-0.98/-0.62	-0.44/-0.46	-0.85/-1.86	-2.36/-2.81	-3.65/-3.99	-3.98/-4.1	-4.14/-4.45
Θ(180°)	-3.56/-3.6	-3.87/-3.24	-2.48/-2.11	-1.35/-0.89	-0.06/0.47	0.93/1.27	1.17/1.1	1.15/1.19	0.83/0	-0.94/-1.82	-8.79/-8.85	-7.21/-5.76	-3.61/-2.44	-1.97/-1.52	-0.65/0.21	1.11/1.6	1.91/2.27	2.45/2.38	1.91/1.33	0.47/-0.52	-1.44/-2	-2.13/-2.58	-3.01/-3.57	
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°)	1.91/2.56	2.86/3.12	3.23/3.41	3.13/2.98	2.91/2.63	2.45/2.51	2.64/2.78	2.79/2.65	2.65/2.41	2.08/1.76	1.13/0.49	0.05/-0.31	0.18/0.92	2.01/2.81	3.34/3.59	3.91/3.89	3.47/2.62	3.37/2.29	2.55/3.07	3.36/3.29	3.06/2.96	2.83/2.41	1.99/1.47	1.18/1.57
Θ(7.5°)	1.84/2.78	3.63/3.9	4.184/4.4	4.42/4.24	4.11/3.56	2.94/2.48	3.17/2.7	3.17/2.7	3.39/3.55	3.53/3.51	3.17/2.32	1.92/2.58	3.14/2.91	3.39/3.72	3.45/3.09	2.92/6.3	1.71/1	1.41/1.58	1.37/1.01	0.44/-0.84	-2.51/-5.43	-5.5/-4.41	-1.41/-4.45	
Θ(15°)	2.35/3.29	4/4.6	5.155/6.3	5.55/5.36	5.184/9.6	4.69/4.24	3.97/4.03	3.93/3.75	3.67/3.42	3.62/4.44	4.43/3.77	3.22/9.6	3.05/3.31	3.32/9.5	3.08/3.16	2.94/2.97	2.93/3.16	2.86/2.62	1.97/2.21	1.45/0.93	0.73/0.42	-0.22/-0.84	-0.67/0.11	0.76/1.29
Θ(22.5°)	1.69/3.02	3.95/4.71	5.27/5.5	5.17/4.81	4.56/4.4	4.43/4.54	4.52/4.33	4.23/4.14	3.97/3.81	4.11/4.13	3.93/6.8	3.47/3.47	3.43/3.13	2.56/2.07	2.14/1.88	1.89/2.32	2.86/3.29	2.92/2.4	1.89/1.41	1.03/0.13	-1.13/-1.55	-2.08/-2.38	-2.92/-2.98	-1.88/-0.26
Θ(30°)	0.27/1.45	1.89/2.32	3.04/3.61	3.81/3.84	3.43/2.98	2.63/2.54	2.86/2.43	2.46/2.97	3.37/3.43	3.05/2.64	2.86/3.87	4.23/3.77	2.85/2.32	2.48/3.3	3.79/3.72	3.45/3.09	2.92/6.3	1.71/1	1.41/1.58	1.37/1.01	0.44/-0.84	-2.51/-5.43	-5.5/-4.41	-1.41/-4.45
Θ(37.5°)	-1.79/-1.11	-1.26/-0.24	1.15/1.95	1.43/0.37	-0.14/-0.31	-0.02/0.1	1.26/1.8	1.57/1.16	1.54/1.47	1.05/0.84	1.95/2.65	2.53/2.45	1.81/1.75	0.59/0.92	1.35/2.43	2.74/3.01	3.13/2.46	1.52/0.49	-0.67/-1.14	-1.43/-1.22	-1.01/-1.03	-2.33/-3.46	-5.5/-5.71	-3.43/-2.66
Θ(45°)	-3.39/-4.71	-3.44/-0.74	0.39/0.01	-1.24/-1.11	-0.32/0.87	1.09/1.51	1.43/1.41	2.24/2.72	2.08/0.9	-0.82/-1.06	0.57/1.86	2.06/2.23	0.97/-0.79	-0.2/1.63	1.75/1.46	1.39/1.61	2.18/2.55	2.17/1.99	0.64/-2.37	-4.09/-3.39	-2.81/-2.33	-1.13/-2.84	-3.8/-4.74	-3/-2.23
Θ(52.5°)	-3.67/-3.76	-1.69/-0.48	0.04/-0.39	-0.82/-0.55	0.92/1.79	2.39/2.37	1.72/0.98	0.87/0.3	0.67/0.58	-0.8/-0.56	0.31/1.39	1.55/1.66	1.6/-0.58	1.79/3.09	3.01/2.66	2.12/1.7	2.95/3.22	2.82/1.13	-0.82/-2.03	-3.43/-3.89	-3.46/-2.85	-4.88/-3.5	-2.38/-2.6	
Θ(60°)	-2/4.63	-2.73/-0.26	-0.1/-1.96	-3.13/-2.71	-1.55/-0.24	-0.15/0.98	0.91/0.63	1.24/1.57	1.32/1.01	0.65/0.83	1.84/1.61	1.55/1.07	-0.01/0.27	1.91/3.45	3.29/2.23	0.98/1.93	3.35/3.65	3.13/1.75	-0.53/-3.51	-3.56/-2.91	-2.55/-3.56	-3.81/-4.46	-4.25/-4.11	-1.93/-1.93
Θ(67.5°)	-3.27/-3.73	-3.2/-1.3	-0.43/-0.8	-0.67/-0.64	-0.05/0.23	0.4/0.21	0.08/-1.03	-1.35/-0.37	0.75/1.15	0.91/1.43	2.24/2.25	1.13/-0.16	0.82/2.45	2.82/3.49	2.83/0.96	0.37/1.28	2.84/2.45	1.72/0.97	-2.08/-0.46	-4.28/-5.15	-3.86/-4.22	-5.29/-6.48	-4.18/-3.68	-1.93/-2.07
Θ(75°)	-1.97/-3.7	-1.53/-0.35	0.85/0.78	0.96/1.75	1.89/1.33	0.58/1.14	2.25/2.05	1.68/0.36	0.81/1.91	1.44/1.05	2.94/2.65	2.78/1.76	0.83/0.58	3.87/3.51	3.26/1.8	2.32/2.47	1.76/1.31	0.1/-1.19	-3.24/-4.13	-3.28/-2.77	-1.03/0.14	-0.59/-2.12	-1.85/-1.44	-2.13/-1.36
Θ(82.5°)	-2.61/-4.43	0.14/0.67	0.98/0.19	1.45/1.86	2.39/0.78	-0.90/2.3	0.67/1.42	-0.21/-0.74	0.11/1.72	1.09/0.88	2.54/0.89	1.43/0.98	0.06/1.72	1.91/2.77	2.73/2.12	1.15/1.86	1.11/2.1	0.78/-0.34						

Gain Result

6.175GPa		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°)	-2.76/-3.33	-3.67/-3.38	-4.07/-3.91	-4.24/-4.76	-5.98/-7.15	-8.28/-9.98	-11.55/-11.84	-10.34/-8.52	-6.37/-5.6	-4.74/-3.67	-2.46/-1.67	-1.47/-1.38	-1.59/-2.15	-3.04/-4.04	-4.77/-5.45	-6.06/-5.69	-6.23/-6.96	-8.03/-8.72	-8.44/-8.82	-7.45/-6.37	-5.85/-5.15	-4.36/-3.65	-3.39/-3.02	-2.72/-2.43			
Θ(7.5°)	-1.17/-1.51	-1.47/-1.92	-2.38/-2.68	-3.57/-4.86	-6.83/-7.03	-6.97/-6.96	-6.27/-6.32	-5.93/-5.29	-4.14/-3.52	-2.9/-2.27	-1.39/-1.07	-1.09/-1.29	-1.81/-2.52	-3.23/-3.78	-4.25/-4.45	-4.48/-4.98	-5.99/-6.71	-5.86/-6.43	-8.63/-8.84	-8.38/-7.86	-7.22/-6.65	-5.59/-6.44	-3.72/-2.84	-2.01/-1.9			
Θ(15°)	-1.07/-1.23	-1.11/-1.28	-1.67/-2.82	-4.85/-7.5	-10.57/-11.5	-9.34/-7.2	-5.48/-4.2	-3.85/-3.6	-3.42/-3.79	-3.22/-4.29	-2.02/-1.89	-1.87/-1.23	-2.84/-3.1	-3.19/-3.35	-3.82/-4.19	-3.38/-3.73	-4.48/-5.59	-5.39/-6.01	-6.44/-6.57	-6.08/-5.18	-4.08/-3.26	-2.64/-2.47	-2.14/-1.81	-1.31/-1.15			
Θ(22.5°)	-0.27/0	-0.14/-0.11	-1.71/-3.91	-4.83/-13.18	-16.87/-16	-11.94/-8.39	-5.74/-3.95	-2.8/-2.54	-3.05/-3.96	-4.61/-2.49	-3.57/-3.33	-4.43/-3.73	-4.2/-4.5	-5.4/-8.1	-5.67/-6.32	-5.66/-6.28	-6.27/-5.58	-4.44/-4.13	-4.37/-3.5	-2.63/-1.76	-1.23/-1.36	-1.29/-1.26	-1.02/-0.67				
Θ(30°)	-0.11/-0.35	-0.76/-1.07	-1.27/-2.33	-4.61/-9.67	-18.98/-18.59	-14.43/-8.76	-5.75/-4.27	-4.47/-5.43	-7.27/-9.51	-9.73/-6.77	-4.59/-5.34	-3.48/-4.21	-5.12/-4.9	-5.86/-7.6	-9.95/-11.06	-12.21/-10.79	-8.55/-6.57	-5.48/-5.29	-5.11/-4.07	-3.19/-2.12	-1.39/-0.92	-0.46/-0.12	0.27/0.77	0.89/0.31			
Θ(37.5°)	0.95/1.07	0.89/1.03	-1.13/-3.16	-5.92/-8	-11.48/-17.54	-19.15/-12.22	-8.93/-9.78	-8.7/-10.6	-11.89/-12.65	-13.07/-11.76	-8.2/-6.63	-5.68/-6.6	-4.67/-4.19	-5.96/-6.1	-7.72/-10.9	-12.24/-14.14	-14.14/-12.15	-10.59/-9.92	-8.29/-6.26	-4.1/-2.14	-0.46/-0.82	1.48/-1.7	1.32/0.91	0.8/0.98			
Θ(45°)	-1.29/-1.99	-0.58/-4.36	-4.15/-3.44	-2.68/-3.07	-1.25/-4.94	-12.97/-14.33	-12.58/-9.97	-8.42/-9.42	-13.31/-18.54	-16.88/-13.5	-10.74/-6.47	-8.3/-2.59	-7.16/-3.02	-9.38/-8.81	-9.26/-12.31	-11.13/-16.09	-18.12/-18.46	-11.83/-6.05	-5.98/-6.29	-5.55/-3.08	-1.41/-2.09	-0.06/-0.67	-1.24/-1.75				
Θ(52.5°)	-1.15/-2.09	-2.4/-3.24	-1.54/-1.31	-0.73/-2.06	-4.22/-7.93	-12.95/-15.42	-14.09/-9.95	-7.45/-7.54	-9.84/-12.29	-13.86/-11.54	-8.93/-8.71	-5.63/-3.73	-4.13/-6.05	-6.07/-5.52	-5.04/-6.06	-7.15/-6.39	-8.09/-11.87	-18.4/-11.6	-6.88/-4.73	-5.82/-6.73	-7.31/-6.9	-3.74/-1.6	0.54/1.3	0.56/-0.19			
Θ(60°)	-0.48/-0.16	-1.05/-0.62	-1.26/-0.59	0.59/-0.24	-2.7/-6.05	-13.64/-18.83	-12.28/-13.01	-9.86/-8.69	-8.06/-7.97	-11.47/-12.52	-9.88/-8.63	-5.65/-3.18	-4.45/-3.71	-5.36/-5.38	-8.42/-8.26	-6.09/-5.32	-5.72/-9.31	-13.07/-15.21	-10.33/-8.76	-8.49/-6.35	-8.88/-6.95	-3.33/-0.25	1.18/-1.76	1.74/0.24			
Θ(67.5°)	-2.23/-1.36	-2.33/-2.66	-1.74/-0.68	0.26/-0.58	-2.61/-5.59	-10.68/-16.35	-17.11/-18.83	-7.93/-5.62	-5.98/-9.81	-12.19/-8.76	-7.19/-6.52	-3.98/-3.09	-1.96/-2.65	-3.21/-5.17	-5.29/-6.13	-8.8/-6.64	-8.39/-10.85	-16.6/-11.53	-8.21/-8.27	-8.39/-6.96	-6.63/-5.35	-4.09/-1.2	0.91/5.8	0.51/-0.72			
Θ(75°)	-1.18/-1.71	-1.89/-2.42	-1.40/3	1.28/0.66	-0.93/-4.01	-5.69/-7.1	-11.63/-17.65	-11.17/-9.2	-6.97/-10.32	-10.8/-9.02	-8.7/-8.27	-7.33/-6.32	-5.15/-2.52	-1.91/-3.83	-9.71/-8.53	-16.07/-12.21	-11.99/-11.28	-14.45/-10.89	-9.93/-6.49	-5.74/-5.31	-5.04/-3.81	-4.64/-2.46	-1.14/-0.16	0.32/-0.63			
Θ(82.5°)	-0.06/-0.27	-2.13/-1.84	-0.33/0.61	1.67/1.01	-0.71/-6.1	-10.55/-10.19	-13.6/-14.3	-12.73/-9.64	-7.28/-6.55	-7.63/-9.92	-16.61/-14.26	-12.46/-10.3	-7.84/-9.35	-4.16/-6.77	-7.95/-14.24	-8.66/-11.72	-8.72/-7.52	-10.53/-14.9	-12.35/-7.54	-5/-2.7	-3.45/-4.93	-6.24/-6.33	-0.51/0.62	1.41/1.73			
Θ(90°)	0/-2.03	-4.19/-3.07	-2.99/-1.07	1.25/-0.05	-2.56/-5	-4.69/-3.32	-5.52/-9.01	-1.74/-6.12	-8.45/-11.31	-1.32/-6.92	-9.03/-13	-10.71/-9.4	-8.63/-4.93	-4.66/-6.25	-11.48/-14.55	-10.63/-7.61	-9.15/-18.46	-8.11/-7.22	-2.58/0.68	0.83/-1.96	-2.32/-1.67	0.01/7.78	1.52/1.84				
Θ(97.5°)	0.01/-3.17	-4.38/-3.81	-4.58/-0.57	0.72/-0.13	-1.48/-2.51	-3.09/-2.96	-4.1/-7.83	-19.38/-16.2	-9.7/-8.75	-7.91/-7.56	-16.94/-13.97	-10.18/-12.63	-17.28/-10.4	-8.08/-7.78	-11.44/-10.43	-10.22/-11.94	-9.82/-5.6	-13.15/-18.48	-7.57/-5.54	-2.29/0.25	-0.18/-0.88	-3.23/-2.33	-2.01/0.9	1.23/0.67			
Θ(105°)	1.3/-1.69	-2.97/-4.2	-6.25/-6.33	-4.02/0.68	-4.47/-0.96	-2.65/-3.06	-4.93/-9.81	-18.34/-11.06	-12.86/-6.48	-5.23/-6.94	-14.11/-16.06	-10.09/-9.67	-8.81/-3.44	-3.47/-6.46	-4.77/-6.15	-5.55/-9.1	-10.09/-6.83	-9.6/-8.98	-8.57/-6.52	-1.32/-0.35	-2.92/-4.96	-4.84/-2.52	1.61/2.71	2.52/2.59			
Θ(112.5°)	2.06/-1.14	-2.35/-4.53	-6.59/-2.65	-1.27/0.3	-3.23/-3.38	-2.88/-2.66	-2.96/-1.9	-8.65/-11.85	-17.83/-19.05	-10.77/-9.4	-15.34/-17.19	-16.08/-9.49	-8.46/-3.96	-7.93/-11.8	-14.77/-16.22	-9.45/-11.6	-14.07/-7.94	-10.31/-8.52	-9.72/-12.25	-3.95/-1.82	-0.81/-2.18	-4.11/-2.39	1.26/0.29	3.27/2.52			
Θ(120°)	0.66/-0.59	-1.45/-1.73	-4.38/-3.42	-1.01/-1.87	-2.01/-6.49	-5.16/-4.26	-5.07/-7.14	-8.39/-12.71	-16.29/-12.46	-6.97/-5.88	-10.71/-14.15	-12.79/-13.92	-11.91/-9.81	-17.99/-18.97	-19.13/-11.98	-8.61/-13.43	-7.27/-5.99	-3.55/-6.4	-17.75/-16.74	-4.1/-2.21	-1.04/-4.72	-5.85/-0.15	3.14/1.18	3.59/3.68			
Θ(127.5°)	1.20/-47	-0.33/-1.02	-1.84/-0.94	-1.26/-2.98	-4.95/-7.06	-14.19/-15.93	-9.46/-8.09	-7.65/-7.85	-14.38/-12.46	-5.11/-3.94	-7.46/-17.76	-18.83/-13.49	-6.5/-6.84	-9.46/-18.01	-16.39/-11.65	-10.66/-14.19	-15.25/-5.33	-2.49/-3.3	-8.65/-15.86	-2.93/0.69	20.09	-4.24/-2.46	3.484/07	2.94/3.9			
Θ(135°)	1.37/-15	2.38/-0.56	-4.8/-4.64	-4.18/-5.51	-6.88/-1.61	-16.65/-16.16	-9.02/-4.03	-3.77/-4.82	-10.88/-17.06	-9.9/-7.22	-10.87/-15.21	-9.58/-11.18	-7.33/-6.35	-3.86/-7.1	-16.66/-13.44	-11.14/-8.6	-8.95/-8.66	-6.38/-3.74	-8.05/-2.27	-3.23/-1.71	-8.4/-0.1	-4.87/-2.01	-2.57/-2.01	3.27/2.32			
Θ(142.5°)	-2.27/-1.6	-6.66/-8.36	-7.5/-8.33	-7.24/-6.32	-6.09/-6.43	-7.87/-9.32	-7.44/-5.26	-5.41/-8.98	-13.13/-17.51	-17.26/-11.52	-7.08/-8.22	-10.89/-7.13	-5.83/-9.03	-13.69/-14.94	-17.18/-17.22	-16.97/-8.07	-7.58/-8.52	-10.69/-15.66	-15.71/-7.38	-5.2/-6.8	-7.27/-3.5	-2.89/-1.36	-0.41/-0.04	-0.05/-1.53			
Θ(150°)	1.04/-1.05	-4.66/-5.3	-2.55/-0.96	-0.37/-1.23	-2.14/-3.08	-4.48/-5.59	-5.94/-6.19	-6.39/-7.61	-10.47/-15.46	-18.23/-15.73	-16.28/-18.62	-18.7/-15.47	-15.22/-12.24	-8.22/-6.97	-7.55/-10.57	-17.37/-10.67	-10.75/-17.47	-17.83/-18.27	-18.39/-14.64	-10.71/-9.9	-8.29/-5.1	-2.11/0.37	2.25/2.84	3.06/2.43			
Θ(157.5°)	2.63/0.55	-2.34/-4.32	-3.63/-2.58	-0.22/-1.6	-3.15/-3.06	-2.95/-3.37	-5.36/-7.51	-9.9/-12.3	-16.27/-18.65	-19.02/-15.51	-16.46/-16.57	-13.82/-11.14	-8.15/-5.5	-4.6/-6.07	-9.81/-11.99	-10.16/-10.08	-17.13/-19.15	-17.54/-14.41	-15.21/-18.11	-18.94/-15.85	-8.19/-3.96	-1.52/0.57	2.34/3.17	1.85/4.48			
Θ(165°)	-3.25/-5.25	-6.91/-7.18	-7.22/-3.71	-7.78/-8.01	-8.22/-7.62	-6.15/-5	-5.36/-6.87	-9.95/-14.07	-17.26/-16.15	-12.87/-11.22	-10.87/-11.98	-14.55/-17.44	-15.72/-12.46	-9.75/-8.72	-9.05/-10.89	-14.18/-15.82	-18.58/-17.74	-17.44/-18.12	-19.15/-18	-18.58/-18.16	-10.9/-6.37	-4.06/-2.22	-0.92/-0.41	-0.82/-1.76			
Θ(172.5°)	-5.77/-5.47	-4.66/-4.19	-5.07/-3.57	-5.6/-8.59	-6.13/-6.16	-6.39/-6.78	-6.44/-8.04	-10.45/-13.15	-14.24/-18.71	-14.18/-12.8	-13.07/-13.53	-13.39/-12.78	-11.32/-10.09	-9.25/-8.78	-7.08/-7.51	-8.04/-9.36	-11.07/-13.46	-16.37/-18.05	-18.82/-16.98	-16.12/-15.49	-15.59/-17.94	-17.68/-14.34	-11.79/-9.23	-7.4/-5.98			
Θ(180°)	-8.81/-6.64	-7.21/-6.61	-6.51/-8.04	-10.74/-13.66	-17.71/-18.16	-18.18/-17.83	-19.2/-18.71	-18.21/-13.55	-10.98/-10.81	-11.71/-12.93	-13.16/-12.33	-11.86/-11.54	-11.25/-11.08	-10.88/-10.78	-11.01/-12.24	-14.49/-17.01	-17.35/-17.98	-18.65/-17.95	-19/-18.24	-16.13/-13.03	-10.58/-9.43	-8.71/-8.08	-7.15/-6.81	-5.54/-5.99			
Freq(Hz)	6.175GPa	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°)	-7.68/-7.36	-6.79/-5.44	-4.6/-3.69	-3.47/-3.37	-3.12/-2.57	-2.02/-2.22	-2.03/-2.47	-3.04/-3.64	-4.65/-4.99	-5.42/-5.62	-5.68/-6.26	-7.22/-7.75	-8.12/-7.95	-9.32/-3.38	-3.06/-3.1	-4.05/-3.48	-4.34/-3.38	-3.31/-3.17	-3.34/-3.89	-4.71/-5.9	-6.76/-7.45	-8.02/-8.08					
Θ(7.5°)	-8.94/-7.13	-5.26/-3.29	-2.05/-1.64	-1.26/-0.95	-0.29/0.09	0.36/0.01	-0.19/-0.66	-1.43/-2.23	-3.27/-4.14	-5.14/-5.73	-6.55/-7.51	-7.77/-7.96	-8.08/-7.86	-7.28/-6.96	-6.41/-5.57	-4.69/-4.49	-4.75/-4.62	-3.65/-2.91	-2.81/-2.58	-2.74/-2.88	-3.17/-3.67	-4.17/-5.12	-6.19/-7.55	-9.16/-9.62			
Θ(15°)	-10.75/-7.47	-5.38/-3.59	-2.54/-1.1	-0.31/0.89	1.57/1.99	1.76/0.93	-0.27/-1.54	-3.51/-9.33	-5.56/-5.42	-5.11/-0.77	-5.85/-6.81	-7.26/-7.86	-8.84/-8.34	-7.45/-6.2	-5.41/-4.73	-4.3/-3.95	-3.07/-2.74	-2.01/-1.75	-1.52/-2.08	-2.23/-2.48	-2.62/-2.48	-2.87/-3.95	-5.27/-7.13	-8.84/-9.98			
Θ(22.5°)	-16.95/-10.01	-5.35/-3.57	-3.05/-1.23	0.95/2.12	3.09/3.5	2.92/1.91	-0.21/-1.56	-7.36/-10.82	-12.61/-12.03	-10.10/-9.7	-8.14/-7.28	-6.78/-6.78	-7.11/-7.6	-7.25/-6.11	-5.31/-5.41	-5.33/-6.83	-5.62/-5.53	-4.54/-3.24	-2.24/-1.54	-1.23/-1.65	-2.24/-3.4	-5.19/-6.46	-7.41/-9.3	-10.3/-13.7			
Θ(30°)	-11.37/-9.25	-4.9/-2.3	-0.05/-1.66	2.05/1.75	1.09/0.73	0.94/0.95	-0.33/-2.11	-3.58/-5.1	-8.06/-10.04	-9.66/-10.27	-11.5/-12.65	-12.75/-12.89	-17.64/-17.51	-18.84/-13.05	-10.77/-10.77	-6.8/-8.89	-8.7/-7.09	-5.81/-4.91	-4.68/-5.41	-5.6/-5.85	-6.4/-7.22	-8.33/-9.83	-12.86/-18.53	-13.16/-10.45			
Θ(37.5°)	-7.22/-5.73	-3.64/-2.89	-1.86/-0.51	0.27/0.8	1.59/1.97	1.83/0.74	-0.33/-1.75	-3.72/-5.65	-6.01/-6.67	-6.59/-6.91	-9.54/-12.77	-16.68/-12.67	-17.49/-17.37	-12.47/-10.23	-11.72/-12.52	-9.22/-9.27	-6.69/-9.37	-8.91/-9.19	-6.13/-6.78	-8.53/-8.35	-8.8/-10.58	-17.49/-18.21	-13.44/-15.58	-14.1/-9.17			
Θ(45°)	-4.12/-2.97	-2.14/-1.35	-1.01/-0.05	-0.28/0.44	1.78/2.96	1.94/1.51	0.54/-1.62	-4.47/-6.95	-6.22/-5.78	-5.96/-5.96	-7.5/-7.76	-10.08/-17.65	-16.87/-18.2														



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(22.5°)	-0.52/-0.4	-0.67/-1.92	-3.72/-6.36	-7.8/-7.78	-7.65/-6.68	-6.59/-4.09	-2.32/-1.51	-1.41/-1.67	-2.19/-2.67	-2.6/-2.47	-2.41/-2.09	-2.12/-2.24	-2.9/-3.51	-3.86/-4.44	-5.18/-5.21	-4.98/-4.82	-5.63/-7.06	-8.33/-9.9	-10.7/-10.7	-9.42/-6.87	-4.61/-2.94	-2.13/-1.57	-0.75/-1.12	-1.24/-0.61
Θ(30°)	-2.62/-3.24	-4.11/-4.7	-4.86/-5.46	-6.28/-7.75	-9.27/-8.68	-10.48/-7.4	-5.62/-5.05	-4.51/-4.63	-3.51/-4.12	-4.6/-4.95	-4.92/-4.69	-3.34/-2.21	-2.19/-3.16	-3.96/-4.97	-6.18/-6.52	-6.45/-9.2	-7.86/-9.3	-10.43/-9.41	-7.72/-6.16	-5.86/-6.1	-5.68/-4.42	-3.29/-2.64	-1.87/-1.79	-2.25/-2.41
Θ(35°)	-2.92/-2.29	-1.84/-2.54	-5.83/-5.12	-6.36/-6.91	-9.10/-8.8	-12.93/-14.05	-12.23/-8.14	-6.01/-5.69	-5.14/-6.3	-5.16/-4.63	-7.96/-8.55	-6.13/-4.3	-3.81/-2.86	-3.9/-6.25	-6.68/-1.27	-6.1/-5.63	-7.87/-11.19	-15.93/-13.16	-12.03/-7.91	-5.21/-3.42	-2.33/-1.53	-0.84/-0.44	-0.9/-1.33	-1.31/-1.77
Θ(45°)	-3.59/-3.76	-3.8/-3.74	-4.08/-4.07	-5.22/-5.39	-5.87/-6.15	-8.1/-11.38	-16.22/-13.14	-9.72/-8.48	-8.27/-8.12	-7.73/-8.37	-9.64/-9.03	-7.6/-6.21	-5.17/-3.52	-4.44/-6.12	-9.02/-8.7	-7.31/-8	-8.86/-14.54	-17.96/-9.29	-6.43/-6.8	-6.74/-4.98	-3.75/-2.5	-1.56/-0.74	-0.52/-1.03	-2.34/-3.25
Θ(52.5°)	-3.66/-3.21	-2.42/-2.96	-4.97/-6.1	-5.89/-4.99	-5.99/-8.17	-12.85/-14.84	-16.1/-10.97	-9.18/-8.81	-7.34/-6.35	-5.75/-5.79	-10.49/-11.29	-8.57/-7	-4.36/-4.76	-5.82/-9.61	-9.56/-9.39	-3.67/-3.3	-5.66/-11.07	-15.1/-10.69	-5.21/-3.36	-4.22/-4.58	-3.85/-2.59	-1.59/-1.16	-1.51/-1.91	-2.6/-3.54
Θ(60°)	-1.9/-1.99	-2.72/-4	-5.13/-4.73	-4.39/-4.25	-5.22/-6.6	-12.92/-16.22	-14.98/-11.3	-7.69/-5.79	-5.14/-7.32	-10.57/-13.21	-12.77/-9.88	-7.24/-5.32	-5.78/-5.59	-6.43/-6.7	-9.53/-4.68	-3.31/-3.9	-4.46/-8.79	-6.13/-4.15	-3.65/-4.28	-4.07/-3.78	-1.86/-1.97	-1.69/-1.39	-1.53/-1.78	
Θ(67.5°)	-0.83/-0.92	-1.65/-1.92	-2.61/-1.73	-1.18/-1.72	-5.2/-7.92	-12.85/-18.4	-16.73/-9.38	-6.94/-5.83	-4.99/-6.22	-11.85/-14.6	-12.27/-10.19	-6.1/-7.83	-7.81/-9.33	-7.33/-10.15	-6.09/-6.84	-3.95/-4.13	-7.02/-14.85	-17.75/-11.9	-7.57/-6.57	-6.22/-7.54	-7.89/-7.19	-4.35/-2.87	-0.780/22	0.70/19
Θ(75°)	-1.74/-2.53	-2.18/-2.17	-1.32/-3.09	-0.53/-1.98	-3.26/-7.39	-17.41/-18.28	-15.05/-9.74	-8.1/-7.55	-6.29/-6.02	-7.8/-11.78	-13.28/-9.96	-6.63/-6.2	-8.27/-8.83	-7.03/-7.96	-9.29/-9.04	-8.75/-5.37	-6.91/-10.19	-18.65/-13.45	-12.03/-10.81	-8.74/-6.83	-5.62/-4.84	-4.22/-1.98	0.38/165	1.93/0.1
Θ(82.5°)	-2.78/-4.62	-1.238/-5.58	-2.71/-1.13	-1.42/-1.73	-6.67/-13.14	-12.32/-8.94	-9.54/-13.43	-11.03/-5.81	-5.08/-5.71	-11.12/-18.57	-19.43/-9.56	-5.84/-7.23	-6.45/-7.32	-6.45/-7.32	-13.35/-9.35	-12.83/-5.44	-7.14/-8.96	-16.91/-19.11	-19/-12.01	-10.27/-14.78	-3.27/-2.79	-3.67/-1.2	0.84/107	1.31/-0.93
Θ(90°)	-5/-5.54	-3.14/-2.69	-2.14/-0.7	-0.61/-1.67	-6.25/-10.07	-7.16/-7.26	-12.24/-18.44	-10.95/-3.53	-4.34/-4.82	-9.36/-11.85	-11.5/-9.61	-7.55/-8.6	-8.4/-7.89	-8.46/-11.75	-19.66/-18.79	-16.75/-9.65	-4.04/-6.29	-16.59/-18.73	-18.11/-13.45	-9.69/-2.97	-0.85/-0.34	-2.01/-2.83	-0.380/63	-0.81/-1.11
Θ(97.5°)	-3.8/-6.83	-7.5/-2.83	-1.33/-0.82	0.21/-2.27	-6.74/-9.78	-3.83/-5.9	-7.41/-12.5	-15.87/-11.65	-9.13/-5.88	-8.68/-9.84	-11.66/-9.83	-7.64/-9.21	-9.45/-9.56	-8.6/-10.33	-17.52/-18.33	-16.96/-8.51	-5.78/-5.35	-11.04/-9.58	-10.91/-14.94	-8.02/-2.53	-1.27/-1.33	-0.85/-0.7	1.13/20.1	0.380/12
Θ(105°)	0.28/-6.93	-12.38/-5.51	-5.83/-2.43	-0.05/-3	-4.03/-10.26	-4.85/-4.85	-8.11/-12.68	-14.43/-6.51	-11.61/-6.3	-12.97/-8.05	-7/-10.59	-7.39/-8.11	-12.8/-10.13	-11.52/-15.34	-18.36/-9.56	-7.94/-10.51	-10.37/-7.48	-17.91/-13.4	-6.48/-1.91	-2.67/-4.1	-3.650/65	2.950/5	2.66/109	
Θ(112.5°)	1.41/-6.67	-10.38/-9.35	-14.85/-4.9	-0.91/-5.51	-3.56/-9.84	-13.96/-6.24	-7.26/-11.81	-13.17/-10.56	-6.57/-13.59	-8.5/-5.87	-7.68/-12.4	-10.14/-9.5	-11.5/-8.15	-19.39/-12.59	-17.86/-7.37	-9.61/-19.2	-17.39/-13.93	-16.6/-9.12	-12.81/-16.58	-9.06/-3.24	-2.81/-3.7	-4.81/-2.19	1.432/56	3.142/94
Θ(120°)	1.24/-3.6	-5.46/-8.05	-6.25/-3.32	-2.83/-2.29	-6.92/-5.82	-7.38/-7.89	-7.07/-8.92	-9.54/-9.93	-12.73/-18.58	-12.47/-8.33	-8.64/-16.26	-13.34/-19.18	-13.02/-7.48	-10.67/-10.72	-7.16/-12.16	-17.32/-9.68	-15.26/-10.26	-10.65/-15.28	-6.64/-8.09	-1.09/-1.37	-3.110/65	4.07/8.7	2.843/16	
Θ(127.5°)	0.5/-1.1	-3.55/-3.66	-7.82/-4.56	-1.7/-5.68	-6.1/-14.48	-12.89/-15.64	-19.48/-18.39	-12.95/-17.79	-13.69/-13.97	-8.85/-8.66	-13.51/-18.08	-18.67/-18.33	-9.32/-8.96	-10.58/-18.79	-6.76/-8.25	-10.01/-19.11	-6.23/-12.28	-10.05/-9.75	-13.38/-8.81	-3.26/-2.97	0.71/-3.95	-0.60/-0.95	3.294/11	3.643/96
Θ(135°)	-2.55/-1.71	-2.32/-5.16	-11.61/-4.47	-3.44/-4.74	-5.46/-5.01	-11.29/-18.85	-18.84/-10.8	-7.22/-8.34	-10.86/-9.85	-6.18/-7.34	-12.12/-18.85	-18.14/-17.85	-9.77/-10.04	-9.64/-18.08	-15.33/-10.88	-17.58/-13.31	-17.55/-10.69	-17.72/-7.86	-8.11/-6.25	-4.23/-3.4	-0.01/-1.86	-1.38/-2.53	0.5/-0.42	-1.35/-1.14
Θ(142.5°)	-7.17/-5.03	-2.54/-3.52	-5.19/-2.72	-2.36/-6.4	-8.09/-7.82	-7.53/-10.22	-11.69/-11.26	-11.98/-12.05	-17.29/-14.24	-15.12/-17.23	-12.47/-18.33	-10.34/-19.18	-12.08/-13.78	-10.84/-8.79	-12.65/-18.87	-12.29/-19.4	-12.44/-14.01	-14.08/-10.36	-9.56/-9.57	-5.28/-8.74	-6.93/-5.9	-5.19/-4.94	-1.104/-10.21	
Θ(150°)	-0.16/-2.54	-6.99/-4.73	-2.81/-7.1	-2.07/-5.42	-9.06/-6.39	-3.18/-1.65	-1.97/-3.51	-5.15/-7.88	-12.56/-18.38	-18.22/-18.13	-17.51/-17.29	-18.92/-16.74	-14.96/-15.4	-18.55/-17.94	-17.08/-17.94	-17.98/-12.79	-13.71/-16.48	-12.4/-15.59	-19.12/-18.65	-16.6/-12.51	-13.44/-10.15	-5.02/-1.67	-0.310/-42	-0.03/-0.64
Θ(157.5°)	-1.08/-4.27	-10.29/-8.49	-3.94/-3.33	-4.8/-7.76	-9.88/-6.99	-3.39/-1.25	-0.75/-1.26	-2.21/-3.18	-4.94/-7.87	-10.27/-15.02	-17.93/-19.15	-18.65/-16.73	-16.43/-13.91	-11.38/-9.16	-7.43/-6.91	-17.76/-10.33	-14.53/-13.21	-12.46/-13.12	-15.67/-18.98	-17.46/-9.81	-6.34/-4.24	-1.910/22	1.38/1.9	1.540/49
Θ(165°)	-7.16/-7.83	-9.57/-10.51	-10.86/-11.51	-12.34/-13.1	-11.47/-10.87	-7.31/-6.34	-5.49/-5.5	-6/-6.99	-9.11/-11.5	-13.58/-14.25	-12.78/-12.32	-11.91/-11.02	-10.63/-11.68	-13.59/-13.53	-17.09/-17.92	-12.67/-9.4	-8.19/-8.76	-10.13/-11.91	-13.31/-15.84	-17.73/-17.43	-11.81/-8.66	-7.14/-6.96	-1.72/-4.71	-7.33/-9.07
Θ(172.5°)	-9.69/-11.44	-13.87/-14.89	-14.78/-13.29	-12.14/-12.02	-11.87/-10.44	-10.27/-10.44	-11.76/-12.34	-12.94/-13.57	-12.48/-12.9	-14.39/-17.29	-16.92/-17.27	-16.67/-14.83	-14.21/-14.04	-13.39/-11.93	-9.53/-8.45	-7.84/-9.02	-10.21/-10.68	-11.33/-11.64	-12.07/-14.4	-17.18/-19.41	-18.73/-18.54	-17.63/-16.22	-12.01/-10.1	-8.76/-8.73
Θ(180°)	-5.58/-6.1	-8.01/-8.56	-8.91/-9.15	-10.99/-11.61	-10.36/-9.61	-8.94/-8.93	-9.7/-10.32	-10.03/-10.46	-11.08/-11.92	-12.68/-12.81	-13.29/-12.22	-10.72/-10.11	-10.31/-10.74	-11.27/-12.84	-14.44/-15.37	-13.87/-13.64	-13.95/-16.83	-19.21/-19	-14.23/-11.25	-9.87/-9.24	-9.21/-9.19	-8.43/-7.9	-6.79/-5.81	-5.78/-6.86
Freq(Hz)	6.995GPol.	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°)	-7.57/-5.47	-3.88/-2.96	-2.42/-1.38	-1.03/-0.8	-0.61/-0.57	-0.450/0.6	0.02/-0.15	-0.33/-1.18	-2.12/-3.55	-6.08/-9.48	-12.73/-16.62	-17.2/-13.87	-9.7/-6.61	-4.23/-2.64	-1.45/-0.66	-0.27/-0.17	-0.020.12	-0.05/-0.31	-0.090/0.37	-0.2/-1.18	-2.54/-1.47	-6.07/-8.41	-10.51/-12.18	-11.83/-6.69
Θ(7.5°)	-8.21/-5.03	-2.29/-1.19	-1.44/-0.36	0.430/1.7	0.980/7.4	0.650/5.7	-0.02/-0.25	-0.63/-1.13	-1.46/-2.44	-3.93/-5.29	-7/-8.13	-8.91/-8.8	-7.95/-6.75	-5.53/-4.66	-3.66/-2.71	-1.86/-1.45	-0.81/-0.53	0.250/0.8	-0.46/-1.24	-2.43/-0.45	-4.77/-9.72	-15.05/-10.92	-19.09/-12.16	
Θ(15°)	-5.05/-3.44	-2.91/-1.55	-0.670/0.69	1.11/-55	1.822/0.1	1.932/0.2	1.671/-18	0.60/0.7	-0.44/-1.37	-2.44/-3.07	-4.33/-5.33	-5.52/-5.21	-4.93/-6.47	-3.32/-3.82	-3.62/-3	2.35/-0.79	-0.75/-0.56	-0.81/-0.53	-1.45/-2.45	-3.48/-4.85	-7.25/-10.64	-15.92/-18.27	-10.96/-9.71	
Θ(22.5°)	-4.27/-2.32	-1.09/-0.46	-0.270/0.41	1.11/-1.8	2.672/9.7	3.243/0.3	2.31/1.37	0.60/-11	-2.12/-2.55	-4.46/-5.3	-4.74/-4.34	-4.35/-4.7	-4.9/-5.07	-5.57/-5.83	-5.62/-4.05	-2.71/-1.64	-1.61/-1.67	-1.14/-1.28	-1.48/-1.9	-3.24/-5.38	-8.36/-11.69	-17.63/-17.1	-10.97/-6.94	
Θ(30°)	-4.47/-2.77	-1.99/-1.19	0.120/0.92	1.35/1.91	1.931/8.4	2.32/0.8	1.761/-12	0.42/-0.2	-0.95/-1.69	-2.95/-4.22	-5.03/-2.55	-4.82/-4.22	-4.54/-5.06	-4.92/-4.22	-4.76/-5.53	-5.85/-5.37	-4.32/-3.33	-2.84/-1.99	-0.85/-0.19	-0.31/-1.18	-2.03/-2.81	-4.34/-7.09	-10.03/-10.29	-7.91/-6.62
Θ(37.5°)	-6.98/-4.17	-1.99/-2.05	-1.96/-1.45	-1.72/-0.87	-0.010/0.3	0.70/9.3	1.391/2.9	1.140/3.4	-0.51/-1.68	-3.31/-4.25	-4.1/-4.67	-4.25/-4.49	-6.86/-8.84	-6.92/-6.24	-8.2/-8.46	-8.07/-6.94	-5.24/-4.32	-3.46/-2.81	-2.96/-3.29	-3.03/-2.3	-2.34/-3.53	-4.68/-6.81	-9.46/-10	-8.99/-8.01
Θ(45°)	-8/-6.26	-3.43/-3.16	-1.81/-1.56	-1.75/-1.03	-0.180/7.5	0.797/0.8	0.8/0.28	-0.42/-0.96	-1.74/-2.22	-4.12/-5.93	-5.54/-5.78	-5.86/-7.33	-12.07/-18.27	-14.84/-13.61	-15.92/-17.47	-19.04/-16.2	-7.41/-4.04	-4.39/-4.17	-4.41/-5.8	-6.22/-5.87	-5.28/-0.55	-6.33/-9.12	-13.51/-19.25	-14.99/-10.61
Θ(52.5°)	-8.56/-7.15	-3.62/-2.09	-2.29/-2.64	-2.85/-1.31	0.51/1.97	2.181/7.2	1.170/2	1.31/-3.25	-4.97/-5.47	-6.43/-6.49	-5.76/-6.22	-7.45/-11.3	-12.19/-18.78	-12.07/-11.35	-11.74/-12.29	-18.77/-11.81	-5.59/-3.66	-2.76/-4.66	-8.97/-10.29	-11.19/-11.51	-10.13/-10.53	-11.57/-14.75	-17.97/-17.06	-13.73/-11.81
Θ(60°)	-6.86/-7.11	-3.89/-2.88	-1.53/-3.33	-3.67/-3.05	-1.170/0.3	-0.16/-0.21	-0.79/-1.35	-1.43/-1.56	-2.45/-4.08	-4.18/-4.54	-5.61/-6.76	-9.83/-9.56	-6.71/-7.3	-8.44/-10.27	-18.59/-13.22	-6.63/-4.37	-4.88/-7.31	-11.78/-17.91	-17.78/-18.37	-16.96/-17.88	-18.27/-17.83	-17.26/-10	-7.76/-7.35	
Θ(67.5°)	-8.9/-8.38	-6.18/-4.09	-2.54/-1.97	-1.41/-0.63	0.970/9.7	0.05/-1.9	-4.09/-5.46	-6.81/-6.37	-6.53/-8.71	-7.12/-5.81	-4.59/-4.96	-6.27/-7.6	-6.45/-5.06	-3.91/-5.26	-7.08/-10.3	-17.21/-13.3	-7.15/-6.73	-8.11/-10.83	-17.8/-17.57	-17.36/-13.08	-18.1/-18.63	-12.47/-8.12	-5.17/-9.72	
Θ(75°)	-5.44/-4.49	-3.5/-1.3	-1.04/-1.21	-1.61/-0.35	0.931/65	0.46/-0.67	-1.4/-1.96	-2.04/-3.59	-5.33/-6.81	-6.27/-4.67	-3.05/-2.49	-4.77/-6.7	-5.63/-4.25	-3/-6.43	-6.58/-10.39	-8.93/-14.94	-9.6/-9.65							



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(75°)	-5.82/-9.51	-12.12/-13.38	-17.34/-11.64	-8.13/-6.71	-6.68/-3.08	-1.26/-1.3	-0.87/-1.73	-3.18/-5.46	-9.57/-7.49	-4.76/-6.46	-7.74/-7.23	-9.2/-18.57	-13.62/-6.62	-7.97/-7.82	-4.23/-2.99	-3.28/-3.83	-2.9/-8.07	-4.24/-4.75	-3.01/-4.68	-7.56/-6.1	-5.89/-6.61	-8.83/-12.11	-9.61/-6.08	-4.48/-3.57
Θ(82.5°)	-3.7/-7.48	-7.45/-10.08	-12.01/-17.74	-15.94/-7.02	-4.43/-3.64	-3.71/-0.69	0.14/-2.29	-5.23/-6.82	-10.75/-5.52	-5/-6.72	-7.1/-6.45	-10.85/-18.51	-15.99/-10.43	-6.92/-7.57	-5.82/-3.41	-5.03/-6.82	-1.68/-0.95	-2.03/-4.44	-4.34/-10.46	-7.43/-7.23	-7.79/-3.53	-3.24/-5.22	-7.13/-3.54	-2.87/-1.53
Θ(90°)	-7.73/-9.28	-8.67/-13.99	-13.38/-9.32	-7.47/-7.15	-2.91/-7.62	-4.6/-2.15	0.25/-3.84	-9.26/-17.33	-7.83/-3.66	-2.74/-4.68	-6.11/-4.81	-5.31/-12.79	-15.78/-10.65	-8.68/-7.52	-4.99/-2.15	-3.03/-2.84	-1.45/-4.86	-3.46/-3.43	-3.53/-4.01	-4.51/-4.22	-4.21/-8.4	-0.42/-5.96	-11.94/-15.89	-7.51/-2.37
Θ(97.5°)	-4.45/-6.65	-14.14/-18.34	-18.59/-15.53	-9.15/-7.2	-7.16/-8.79	-6.38/-6.34	-8.98/-11.65	-17.86/-11.4	-5.51/-15.3	-2.57/-5.52	-4.64/-4.86	-7.37/-15.68	-16.09/-9.9	-11.01/-11.71	-5.23/-2.8	-3.37/-1.15	-4.22/-3.05	-3.71/-2.37	-3.35/-1.44	-2.43/-3.03	-1.67/-4.52	-6.92/-8.56	-9.29/-5.23	-3.31/-3.42
Θ(105°)	-4.73/-8.1	-13.41/-17.89	-19.31/-14.4	-13.97/-17.11	-8.43/-5.74	-12.91/-17.7	-18.39/-12.73	-8.53/-10.77	-8.19/-4	-6.28/-7.88	-5.87/-5.2	-6.36/-13.37	-15.95/-15.69	-14.76/-10.34	-5.91/-3.32	-1.51/-5.38	-5.53/-3.7	-2.79/-0.03	-1.53/-0.22	-0.42/-2.57	-2.45/-1.69	-4.07/-7.96	-4.74/-5.3	-1.780.31
Θ(112.5°)	-2.11/-5.99	-13.43/-17.32	-14.47/-17.97	-17.91/-14.72	-9.99/-7.32	-10.52/-13.01	-13.95/-11.43	-10.1/-6.75	-2.48/-2.38	-8.96/-6.36	-5.46/-5.98	-8.73/-14.44	-15.35/-6.34	-5.71/-7.64	-7.67/-6.65	-6.39/-4.34	-2.74/-7.74	-4.58/-3.65	-0.83/-0.21	-0.71/-0.94	0.450.23	-2.89/-7.26	-16.89/-9.33	-4.52/-0.77
Θ(120°)	-3.22/-3.35	-5.04/-6.5	-9.87/-5.94	-6.61/-9.17	-18.32/-9.71	-8.94/-16.88	-18.98/-9.1	-5.09/-2.88	-1.49/-6.26	-10.03/-2.86	-2.24/-4.55	-8.44/-6.5	-10.92/-16.52	-5.42/-10.87	-9.17/-5.09	-2.49/-0.85	-3.44/-4.55	-4.89/-0.86	2.531.94	0.56/-0.69	-2.14/-1.71	-2.53/-5.04	-3.51/-4.99	-2.530.82
Θ(127.5°)	-2.92/-5.15	-4.19/-4.54	-1.98/-3.29	-4.77/-13.06	-15.34/-7.94	-8.68/-7.45	-5/-4.48	-1.79/-0.09	-2.77/-5.02	-5.15/-3.62	-1.09/-3.33	-10.87/-12.06	-7.43/-6.6	-2/-2.19	-6.39/-7.36	-0.811.56	1.23/-0.03	-1.67/-0.59	2.940.94	-0.82/-2.16	-3.61/-5.42	-6.54/-2.28	-1.54/-2.68	-1.52/-0.26
Θ(135°)	-2.53/-3.96	-3.32/-9.82	-7.64/-3.17	-2.36/-10.9	-12.51/-13.33	-8.69/-10.28	-18.95/-9.18	-6.1/-6.64	-5.46/-6.69	-8.29/-5.5	-4.72/-5.63	-10.48/-18.63	-10.06/-10.17	-1.77/-4.9	-11.31/-6.85	2.513.2	1.172.94	-3.06/-2.79	4.082.2	-8.44/-8.87	-6.79/-3.68	-4.13/-3.85	-3.42/-6.15	-7.9/-2.81
Θ(142.5°)	-7.26/-4.27	-2.39/-2.1	-2.48/-2.8	-1.66/-0.8	-5.84/-7.76	-7.28/-10.86	-14.22/-18.19	-10.3/-5.58	-4.06/-3.6	-5.33/-10.58	-12.47/-10.04	-17.46/-13.49	-9.31/-6.36	-6.99/-4.93	-13.19/-3.29	-0.25/-2.02	2.55/-1.45	-18.3/-9.64	-0.61/-0.67	-5.62/-5.97	-4.38/-0.97	-1.16/-2.85	-6.88/-10.76	-10.75/-16.81
Θ(150°)	-15.48/-11.78	-13.07/-13.09	-10.3/-6.77	-7.74/-8.18	-5.73/-5.2	-5.14/-0.8	-3.4/-2.8	-1.77/-18.44	-14.24/-16.94	-18.33/-18.29	-13.25/-4.17	-2.55/-5.38	-7.56/-6.63	-4.44/-0.26	0.97/-2.01	-2.470.67	3.14/3.06	0.25/-3.29	-5.37/-4.29	-3.6/-5.42	-8.74/-8.08	-6.08/-8.01		
Θ(157.5°)	-7.06/-6.17	-6.42/-6.85	-3.38/-3.44	-3.44/-8.3	-6.22/-5.36	-4.64/-5.17	-5.48/-5.98	-6.98/-7.57	-7.71/-9.05	-12.51/-17.93	-17.43/-18	-7.24/-4.44	3.01/-2.06	-1.53/-1.59	-2.39/-4.14	-6.02/-4.99	-2.46/-0.21	0.971.3	0.47/-1.09	-2.94/-0.07	-4.42/-4.08	-3.31/-3.09	-4.12/-6.02	
Θ(165°)	-18.51/-15.37	-17.09/-18.01	-16.82/-17.5	-15.17/-13.99	-12.97/-9.98	-8.54/-8.58	-10.21/-10.43	-7.72/-6.47	-6.66/-8.72	-10.32/-9.45	-7.69/-6.99	-9.04/-18.32	-13.25/-5.25	-2.21/-1.63	-3.02/-6.31	-9.51/-7.87	-4.46/-2.61	-1.22/-0.04	0.290.13	-0.97/-2.57	-4.67/-6.42	-7.13/-7.05	-7.59/-10.67	-18.16/-19.16
Θ(172.5°)	-19.04/-17.94	-18.48/-18.12	-18.29/-12.98	-10.39/-8.14	-7.36/-7.93	-8.83/-9.53	-9.84/-9.86	-9.13/-8.52	-7.52/-6.82	-5.96/-5.49	-5.9/-7.14	-9.17/-11.29	-11.14/-8.37	-6.08/-4.55	-3.29/-2.66	-1.51/-0.68	0.140.92	1.852.59	2.952.89	2.171.06	-0.55/-2.84	-5.18/-7.86	-11.33/-14.31	-13.63/-15.57
Θ(180°)	-12.05/-10.43	-8.41/-4.87	-3.86/-3.25	-3.06/-3.58	-3.76/-2.71	-1.82/-1.36	-1.51/-1.71	-2.43/-3.25	-3.73/-4.55	-5.37/-6.94	-8.51/-10.04	-12.84/-12.53	-9.34/-6.64	-5.07/-4.35	-3.63/-2.68	-1.67/-1.01	-0.260.19	0.420.36	-0.12/-0.95	-2.09/-3.75	-5.76/-7.77	-10.62/-14.02	-16.65/-18.4	-18.03/-15.02
Freq(Hz)	6.175GPol.	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°)	1.771.8	1.891.72	0.980.42	-0.29/-0.93	-2.53/-4.31	-6.34/-8.8	-12.39/-18.57	-18.32/-13.13	-8.69/-6.19	-1.5/-2.54	-1.37/-0.72	-0.280.14	0.690.74	0.740.61	0.070.04	-1.35/-2.48	-3.71/-4.64	-6.86/-10.61	-16.31/-17.43	-16.92/-11.6	-8.71/-5.66	-0.33/-2.64	-1.13/-0.66	0.761.4
Θ(7.5°)	0.380.98	1.1/-1.11	1.040.3	-0.5/-1.47	-3.3/-4.97	-7.01/-9.16	-12.23/-16.74	-18.35/-12.25	-8.01/-5.34	-3.12/-1.65	-0.510.5	1.211.38	1.441.41	1.030.29	-0.36/-1.13	-2.3/-3.28	-4.24/-5.69	-8.08/-11.8	-16.7/-18.72	-19.37/-17.57	-13.66/-10.27	-8.87/-7.2	-5.42/-3.07	-1.23/-0.36
Θ(15°)	-2.8/-2.76	-2.76/-2.24	-2.2/-2.71	-4.52/-6.61	-9.25/-12.59	-17.95/-12.27	-18.48/-15.02	-12.78/-10.9	-8.26/-5.89	-3.82/-2.04	-0.93/-0.33	-0.070.16	0.570.85	0.43/-1.22	-1.65/-3.4	-4.89/-5.8	-6.2/-6.94	-9.08/-11.64	-14.19/-17.72	-18.62/-19.9	-17.88/-14.9	-13.73/-11.27	-10.29/-6.72	-4.41/-1.31
Θ(22.5°)	-3.61/-4.05	-4.63/-4.26	-4.4/-4.14	-3.94/-4.91	-6.6/-6.35	-11.84/-16.78	-14.04/-11.27	-10.21/-10.09	-8.03/-4.92	-0.03/-0.34	0.171.03	-0.94/-1.11	-0.75/-0.02	0.12/-0.11	-3.91/-7.19	-9.19/-9.27	-7.84/-8.24	-1.21/-2.12	-12/-13.35	-15.85/-18.46	-19.06/-19.05	-14.71/-10.43	-8.24/-5.74	-3.91/-3.56
Θ(30°)	-10.26/-8.19	-4.57/-2.89	-2.26/-2.26	-2.01/-2.84	-4.34/-6.74	-7.56/-8.87	-13.11/-18.39	-15.67/-13.43	-11.88/-9.15	-5.74/-3.58	-2.61/-2.6	-2.68/-1.94	-0.091.04	0.15/-2.96	-6.95/-8.88	-7.47/-5.88	-5.27/-6.36	-7.31/-7.91	-10.28/-15.72	-19.36/-18.98	-17.76/-19.18	-16.31/-13.03	-12.12/-7.96	-8.05/-9.94
Θ(37.5°)	-10.64/-6.68	-2.450.02	0.84/-0.64	-2.47/-4.4	-5.66/-5.91	-5.87/-7.88	-13.67/-17.29	-18.02/-16.55	-11.77/-8.58	-6.42/-8.32	-1.21/-1.51	-0.9/-0.18	-2.7/-6.28	-10.71/-9.35	-8.07/-6.47	-6.07/-6.68	-5.55/-6.51	-9.36/-14.61	-19.09/-16.45	-11.64/-11.8	-12.33/-15.63	-13.71/-12.4	-10.29/-6.72	-15.41/-12.46
Θ(45°)	-5.73/-2.41	0.70.02	0.55/-0.36	-2.32/-3.13	4.02/-5.51	-7.86/-10.35	-14.33/-17.77	-10.59/-7.25	-6.49/-6.35	-7.3/-6.97	-5.15/-3.89	-5.42/-4.27	-1.61/-1.24	-4.17/-9.82	-10.55/-6.04	-4.29/-3.04	-3.67/-4.24	-5.17/-7.31	-9.67/-12.94	-18.77/-13.4	-12.51/-17.84	-16.05/-7.95	-7.32/-3.8	
Θ(52.5°)	-4.98/-3.7	-1.5/-0.9	-0.85/-2.37	-3.96/-5.88	-8.63/-9.17	-8.38/-10.99	-18.17/-17.92	-9.09/-5.02	-3.57/-4.42	-7.67/-7.29	-8.62/-14.66	-8.28/-2.72	-1.81/-1.56	-2.25/-8.06	-7.85/-3.45	-5.3/-3.84	-4.25/-5.94	-6.6/-8.58	-12.85/-18.01	-19.36/-13.25	-12.22/-9.7	-11.27/-18.61	-18.38/-10.28	-7.4/-5.36
Θ(60°)	-12.13/-8.63	-2.81/-2.06	-0.84/-2.86	-5.77/-7.78	-6.47/-4.22	-3.35/-3.12	-5.4/-11.54	-18.86/-1.6	-1.480.19	-1.54/-3.13	-2.39/-2.19	-2.54/-3.39	-3.21/-1.55	-1.52/-2.54	-5.12/-3.16	-3.21/-6.64	-6.4/-5.26	-6.38/-7.29	-8.58/-13.61	-9.81/-11.67	-14.67/-15.91	-18.81/-19.02	-18.01/-10.37	-5.42/-6.66
Θ(67.5°)	-16.78/-14.92	-8.37/-6.48	-7.47/-13.01	-10.72/-10.33	-8.81/-7.22	-5.18/-2.61	-2.58/-0.43	-0.66/-0.79	-0.38/-1.66	-1.76/-2.42	-2.21/-2.26	-1.860.13	-0.62/-4.53	-4.6/-3.56	-4.13/-6.57	-7.11/-6.27	-6.33/-5.51	-5.22/-5.68	-6.43/-8.04	-11.76/-14.18	-8.7/-10.7	-16.4/-17.22	-18.99/-18.19	
Θ(75°)	-15.82/-10.53	-9/-5.5	-8.63/-10.73	-13.7/-12.35	-13.94/-12.69	-8.81/-5.05	-4.1/-6.52	-1.34/-3.63	-0.62/-1.35	-0.14/-1.36	-1.72/-2.55	-3.81/-2.53	-4.48/-3.64	-4.45/-11.52	-6.3/-3.85	-2.36/-3.92	-3.98/-2.59	-3.81/-5.57	-3.65/-5.83	-7.31/-10.6	-18.59/-18.52	-8.28/-9.81	-8.69/-13.53	-12.94/-15.34
Θ(82.5°)	-19.33/-18.57	-13.16/-5.46	-8.74/-10.78	-6.43/-3.35	-3.86/-5.79	-5.19/-1.89	0.39/-0.15	-2.66/-8.28	-1.082.35	0.99/-3.51	-2.39/-1.27	-1.85/-1.07	-3.46/-3.12	-2.02/-4.85	-5.42/-2.51	-3.26/-5.87	-1.3/-2.13	-2.41/-1.52	-5.44/-4.85	-3.62/-8.49	-11.91/-9.1	-9.84/-13.51	-9.87/-8.14	-17.08/-17.71
Θ(90°)	-7.81/-7.83	-8.78/-5.71	-5.96/-7.08	-2.34/-1.13	-0.8/-4.99	-8.5/-3.39	-1.29/-0.27	-1.54/-4.76	-1.1/-43	0.19/-6.8	-4.94/-3.85	-5.37/-2.8	-8.81/-6.46	-2.4/-8.1	-7.03/-3.38	-3.41/-5.88	-2.77/-5.2	-2.16/-3.08	-1.94/-1.31	-4.06/-4.36	-5.96/-9.2	-11.05/-7.68	-7.42/-12.62	-12.71/-14.42
Θ(97.5°)	-2.59/-3.59	-2.13/-13.64	-5.14/-7.6	-7.21/-4.57	-4.09/-9.7	-10.51/-6.39	-2.96/-2.73	-8.81/-1.58	-4.87/-0.52	-0.9/-6.95	-4.95/-5.22	-9.37/-6.49	-5.44/-8.66	-6.53/-12.82	-12.25/-3.03	-3.29/-1.34	-1.48/-0.23	-2.11/-1.53	-1.93/-5.55	-6.19/-10.33	-14.22/-17.58	-4.82/-5.48	-5.54/-7.88	-12.22/-0.23
Θ(105°)	-1.17/-0.95	-4.4/-10.29	-4.04/-12.36	-11.2/-3.1	-1.42/-0.59	-8.5/-3.6	-1.63/-0.88	-1.17/-5.75	-2.96/-4.82	-6.28/-2.38	-1.14/-0.28	-0.61/-3.81	-3.84/-4.93	-7.19/-3.23	-0.07/-1.17	-1.8/-2.18	-4.3/-1.29	-5.01/-1.93	-1.36/-5.19	-1.17/-0.25	-0.51/-1.29	-2.09/-4.73	-1.04/-1.2	
Θ(112.5°)	-2.02/-1.93	-2.29/-3.64	-4.74/-9.12	-10.65/-2.92	-1.42/-1.48	-9.33/-11.53	-4.37/-3.78	-8.44/-9.21	-8.07/-7.66	-10.18/-16.52	-8.32/-8.67	-5.18/-3.6	-6.08/-11.09	-4.93/-6.88	-8.41/-5.32	-1.62/-1.45	-2.13/-3.5	-2.27/-0.65	0.35/-1.19	0/-1.32	-3.310.17	0.5/-2.09	-4.32/-4.16	-1.41/-1.26
Θ(120°)	-2.29/-2.78	-2.07/-18.12	-13.87/-8.31	-18.34/-12.26	-9.85/-11.61	-18.63/-11.09	-5.13/-3.94	-6/-12.4	-9.4/-33	-10.28/-11.79	-8.21/-4.05	-5.45/-3.99	-3.15/-9.15	-14.07/-17.95	-16.96/-15.21	-6.4/-4.37	-4.56/-14.6	-14.24/-5.37	-8.7/-5.96	-10.87/-8.69	-3.48/-2.45	-2.39/-2.94	-3.37/-4.22	-4.05/-3.17
Θ(127.5°)	-0.22/-2.3	-5.96/-10.44	-4.73/-6.18	-9.48/-14.78	-9.62/-5.55	-6/-8.74	-7.34/-6.51	-10.72/-17.49	-10.22/-4.17	-5.19/-9.05	-6.93/-3.36	-3.01/-2.35	-7.43/-9.8	-15.82/-9.46	-11.96/-12.58	-11.25/-6.86	-7.91/-4.22	-10.12/-18.33	-0.68/-1.23	-8.67/-				



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(127.5°)	-7.09/-11.71	-17.71/-12.92	-9.4/-8.74	-19.18/-18.27	-14.48/-6.98	-4.16/-5.47	-6.81/-10.48	-5.08/-3.81	-5.28/-7.23	-5.52/-4.14	-7.11/-13.8	-6.1/-3.96	-12.59/-4.57	-1.24/-3.99	-3.8/-5.97	-0.42/-0.06	-1.15/-3	-3.02/-2.44	1.45/0.71	-0.25/-2.49	-2.96/-0.91	-5.11/-10.64	-7.41/-10.38	-8.44/-2.92
Θ(135°)	-5.79/-7.82	-10.16/-10.76	-11.33/-6.7	-3.52/-12.78	-8.02/-7.88	-7.31/-11.4	-12.13/-4.96	-2.95/-0.74	-1.38/-3.84	-8.37/-12.53	-11.85/-11.5	-7.49/-5.47	-6.65/-3.27	-0.22/-2.05	-18.13/-4.78	-2.812/83	-1/0.06	-0.14/-4.44	3.83/1.49	-4.23/-7.55	-8.86/-10.79	-6.17/-7.52	-11.17/-14.54	-18.17/-17.17
Θ(142.5°)	-4.2/-4.52	-3.96/-5.1	-4.86/-2.61	-0.83/0.66	-3.37/-6.88	-18.59/-12.81	-15.29/-12.76	-7.67/-7.59	-9.56/-13.66	-15.33/-8.21	-8.07/-11.3	-12.21/-10.95	-6.51/8	-7.2/-5.44	-6.63/-4.86	-1.64/-2.43	-0.76/-11	-8.74/-12.19	0.17/-0.53	-9.42/-11.96	-2.58/-1.14	-3.72/-6.68	-7.97/-10.06	-11.88/-7.25
Θ(150°)	-6.6/-4.86	-4.64/-4.96	-8.04/-11.81	-12.58/-6.63	-11.89/-13.55	-7.64/-4.26	-2.7/-3.75	-9.5/-17.32	-13.43/-13.42	-8.82/-6.86	-10.41/-11.45	-13.44/-14.34	-15.11/-17.7	-14.18/-9.13	-7.12/-5.3	-5.48/-3.54	-0.6/-4.23	-8.69/-0.89	3.072/93	-0.24/-2.87	-3.45/-3.63	-4.31/-5.96	-8.97/-10.98	-10.89/-12.18
Θ(157.5°)	-9.95/-9.36	-4.86/-4.24	-3.53/-4.45	-7.88/-12.71	-12.9/-10.79	-8.85/-7.69	-6.49/-5.64	-5.51/-6.03	-7.1/-8.78	-10.71/-12.96	-17.76/-16.28	-12.39/-8.2	-6.2/-6.32	-8.36/-11.68	-11.18/-5.38	-2.36/-1.69	-2.52/-2.64	-1.02/-1.6	2.53/2.1	0.62/-1.51	-3.3/-4.08	-4.74/-5.46	-6.53/-6.99	-8.07/-12.36
Θ(165°)	-15.45/-15.35	-15.28/-16.1	-14.97/-16.39	-15.57/-14.11	-9.32/-5.23	-3.56/-3.34	-4.28/-6.66	-9/-11.01	-13.59/-19.43	-18.15/-17.73	-18.86/-19.21	-18.63/-11.84	-1.57/-5.7	-4.72/-4.21	-4.07/-4.62	-6.66/-1.68	-18.97/-13.98	-7.05/-3.47	-1.87/-1.63	-2.99/-5.39	-8.17/-10.73	-13.93/-15.61	-16.97/-18	-18.12/-18.09
Θ(172.5°)	-16.78/-16.95	-15.2/-13.35	-13.15/-14.45	-14.08/-14.23	-14.93/-13.52	-11.87/-8.58	-6.65/-5.46	-3.81/-3.19	-3.52/-4.3	-4.96/-5.91	-9.01/-10.92	-12.69/-15.44	-16.77/-17.39	-17.28/-17.96	-16.87/-14.53	-10.67/-7.22	-4.83/-2.63	-0.84/0.2	0.91/28	0.89/-0.01	-1.11/-2.83	-5.29/-8.58	-12.93/-15.82	-15.01/-15.79
Θ(180°)	-8.35/-6.95	-6.01/-3.97	-2.65/-2.28	-1.21/-0.99	-0.93/-0.88	-0.64/-0.34	-0.82/-1.07	-1.46/-2.17	-3.21/-4	-4.87/-6.52	-8.65/-12.34	-18.32/-16.46	-10.07/-6.46	-3.8/-2.14	-1.28/-0.52	0.36/0.95	1.45/1.79	1.94/1.94	1.47/1.07	0.17/-1.38	-3.2/-5.27	-7.98/-11.02	-13.31/-14.94	-12.54/-11.01
Freq(Hz)	6.695GPol.	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°)	0.05/-0.55	-1.56/-2.32	-3.41/-4.74	-6.98/-8.04	-9/-10.6	-11.08/-11.39	-11.04/-9.65	-8.08/-7.46	-5.46/-4.28	-3.34/-2.44	-1.73/-1.18	-0.77/-0.58	-0.54/-0.73	-1.34/-2.35	-3.29/-5.46	-5.17/-6.58	-8.94/-11.02	-12.27/-12.02	-9.21/-7.4	-5.73/-4.24	-3.07/-2.07	-1.18/-0.46	0.21/0.22	0.03/0.1
Θ(7.5°)	-0.17/-0.2	-0.03/-0.57	-1.08/-2.7	-5.09/-6.88	-8.44/-11.57	-17.68/-18.18	-10.60/-10.49	-7.82/-7.47	-2.59/-1.22	-0.21/0.4	0.85/1.27	1.24/0.81	0.66/0.15	-0.54/-1.32	-1.98/-3.03	-3.97/-4.93	-6.02/-7.03	-8.08/-6.73	-6.53/-6.08	-6.06/-5.44	-4.58/-3.88	-2.29/-2.16	-1.54/-1.12	-0.63/-0.56
Θ(15°)	-0.22/0.62	0.35/0.03	-0.62/-1.4	-2.94/-4.88	-6/-8.56	-12.13/-17.9	-15.92/-10.23	-7.23/-4.96	-3.72/-2.35	-0.79/0.56	1.31/1.78	1.93/1.76	1.28/0.59	-0.06/-0.64	-0.75/-1.14	-1.81/-2.55	-3.68/-4.52	-4.87/-4.86	-7.85/-6.76	-6.41/-5.84	-4.99/-4.71	-4.3/-4.21	-3.66/-2.26	-1.44/-1.33
Θ(22.5°)	-1.85/-1.64	-1.2/-1.01	-1.15/-2.15	-5.17/-9.2	-14.09/-18.23	-18.55/-12.18	-8.07/-6.16	-4.99/-4.12	-2.97/-1.64	-0.43/0.45	1.12/1.6	1.73/1.58	1.33/0.79	0.2/-0.31	-0.97/-1.93	-3.23/-4.32	-4.87/-5	-5.36/-5.7	-7.5/-9	-11.37/-13.9	-12.66/-8.56	-6.21/-4.86	-3.9/-3.37	-3.44/-2.77
Θ(30°)	-2.19/-2.63	-4.76/-7.46	-10.41/-9.96	-8.45/-8.1	-8.81/-9.59	-10.86/-13.48	-14.93/-13.07	-9.74/-6.43	-3.92/-2.26	-1.08/-0.33	0.34/1.34	1.74/1.38	0.99/0.66	0.41/-0.18	-1.13/-2.5	-4.76/-6.78	-7.89/-8.87	-10.53/-10.04	-10.29/-11.26	-9.73/-8.83	-9.89/-13.43	-12.24/-18.95	-12.25/-8.27	-6.8/-4.05
Θ(37.5°)	-6.34/-8.22	-13.36/-11.61	-7.17/-5.37	-6.27/-10.86	-14.1/-14.91	-14.32/-17.34	-15.08/-13.33	-15.9/-17.69	-12.62/-6.92	-4.77/-4.02	-3.23/-2.37	-1.59/-1.11	-0.56/-1.05	-2.58/-3.69	-3.4/-4.48	-7.49/-8.36	-7.5/-7.77	-7.9/-10.83	-14.57/-11.32	-12.33/-13.5	-12.53/-14.2	-18.97/-18.45	-18.07/-11.64	-7.41/-5.93
Θ(45°)	-14.63/-18.9	-10.22/-9.49	-4.06/-2.63	-10.65/-9.31	-7.11/-5.73	-5.72/-6.78	-10.11/-10.83	-6/-4.25	-5.23/-9.14	-9.69/-5.7	-3.27/-3.73	-3.38/-0.83	0.66/-0.23	-2.46/-2.63	-2.66/-4.38	-3.72/-6.28	-2.31/-2.19	-3.29/-3.98	-6.08/-10.37	-11.55/-12.75	-14.78/-15.9	-17.11/-14.61	-19.81/-16.14	-11.88/-11.76
Θ(52.5°)	-18.18/-9.13	-10.49/-3.91	-5.13/-7.98	-7.88/-6.65	-6.04/-6.36	-7.57/-9.93	-10.07/-19.16	-7.82/-3.84	-2.35/-3.07	-5.28/-7.67	-3.38/-4.13	1.2/-0.56	-1.71/-2.3	-3.2/-2.2	-1.25/-1.3	-0.64/-0.45	-0.61/-2.73	-3.61/-4.24	-7.33/-8.15	-9.57/-18.6	-12.91/-13.8	-12.83/-18.33	-15.26/-14.53	
Θ(60°)	-11.27/-11.17	-6.89/-4.95	-8.74/-11.81	-11.54/-11.43	-10.89/-11.88	-11.29/-10.29	-13.85/-15.93	-10.22/-4.35	-1.14/-2.21	-4.78/-5.65	-4.26/-5.75	-4.03/-2.2	-2.37/-1.96	-1.67/-1.83	-2.73/-3.03	-3.04/-1.47	-1.08/-0.89	-0.66/-1.73	-3.89/-6.59	-9.01/-9.85	-13.11/-15.26	-15.2/-13.51	-10.09/-12.89	-16.27/-15.42
Θ(67.5°)	-10.43/-10.58	-11.97/-9.55	-9.77/-13.37	-12.15/-9.85	-8.9/-12.61	-10.31/-7.16	-7.01/-10.8	-13.98/-6.48	-1.59/0.07	-2.98/-4.77	-2.26/-4.75	-5.58/-3.29	-0.84/-0.43	-1.33/-2.27	-2.28/-2.95	-3.42/-4.15	-1.53/-1.38	-1.37/-2.66	-5.58/-6.98	-9.66/-11.9	-12.06/-16.6	-18.05/-18.72	-12.05/-3.98	-10.03/-10.45
Θ(75°)	-10.88/-14.31	-14.99/-17.51	-12.15/-11.35	-8.22/-3.73	-3.22/-5.67	-8.86/-5.5	-3.48/-2.8	-1.58/-1.54	-2.36/-3.07	-1.55/-5.35	-3.93/-1.9	-1.29/-0.6	-1.58/-2.79	-1.49/-1.98	-1.94/-0.27	-1.64/-0.57	-1.94/-3.39	-4.82/-6.48	-7.61/-8.75	-6.09/-6.26	-4.81/-15.27	-15.15/-8.88	-6.06/-6.13	
Θ(82.5°)	-17.09/-15.62	-8.71/-10.9	-12.78/-8.75	-6.68/-4.42	-3.84/-5.59	-7.82/-6.59	-4.88/-4.23	-9.9/-7.71	-1.63/0.55	-2.49/-6.63	-2.68/-7.46	-6.08/-5.61	-6.13/-3.07	-6.63/-3.27	-1.78/-3.62	-2.8/-2.17	-4.53/-2.8	-5.49/-7.13	-8.99/-8.52	-6.06/-7	-5.78/-5.91	-11.56/-9.91	-11.86/-9.18	-6.52/-9.71
Θ(90°)	-17.94/-13.15	-8.87/-18.83	-10.39/-11.23	-10.33/-3.21	-2.89/-3.32	-9.19/-7.94	-3.38/-1.42	-3.58/-5.99	-4.71/0.15	-1.89/-7.2	-3.27/-2.06	-7.97/-5.17	-6.53/-8.29	-3.59/-5.35	-5.58/-6.01	-2.13/-2.57	-7.95/-1.78	-7.52/-9.84	-4.72/-6.25	-8.73/-2.08	-7.16/-15.16	-12.23/-7.72	-6.73/-11.03	
Θ(97.5°)	-13.45/-9.92	-5.91/-11.23	-8.89/-5.06	-8.44/-2.68	-2.83/-2.92	-15.57/-9.81	-3.7/-3.51	-4.21/-6.61	-3.25/-0.78	-4.62/-19.37	-8.61/-11.44	-6.67/-4.43	-11.61/-3.26	-8.28/-11.88	-6.94/-3.33	-3.24/-1.73	-0.44/-4.14	-4.86/-9.49	-7.89/-4.54	-9.33/-6.76	-3.95/-0.76	-8.22/-6.57	-4.82/-6.5	-4.96/-7.79
Θ(105°)	-12.93/-9.54	-3.01/-10.69	-5.03/-4.41	-7.15/-5.11	-3.58/-6.52	-10.13/-8.5	-2.72/-3.44	-3.3/-13.41	-10.07/-3.24	-4.31/-11.3	-7.68/-6.33	-5.37/-5.68	-8.38/-4.74	-5.09/-11.25	-3.8/-2.76	-2.27/-0.65	0.62/-1.26	-6.03/-3.29	-5.58/-7.31	-1.94/-4.88	-2.27/-3.59	-2.82/-3.71	-2.54/-4.62	-8.93/-6.22
Θ(112.5°)	-3.94/-3.72	-2.57/-8.17	-6.61/-6.67	-11.61/-7.85	-1.99/-5.4	-7.07/-14.39	-10.92/-6.9	-7.56/-7.1	-5.24/-4.85	-7.97/-8.97	-5.85/-6.43	-2.7/-5.42	-10.38/-3.71	-4.78/-13.36	-8.26/-2.93	-3.08/-2.68	-3.09/-4.07	-14.05/-3.89	-9.45/-3.75	-0.81/-4.88	-1.25/0.52	-1.69/-4.96	-9.31/-7.25	-0.21/0.58
Θ(120°)	-7.8/-6.05	-2.56/-6.09	-5.63/-6.68	-5.63/-6.68	-5.24/-6.88	-12.93/-13.95	-10.27/-9.69	-6.82/-7.72	-8.26/-7.88	-9.69/-14.7	-8.65/-8.67	-7.68/-6.03	-8.26/-4.56	-5.25/-10.27	-9.19/-6.63	-4.58/-6.62	-5.14/-8.47	-10.98/-9.4	-4.04/-3.15	-1.1/-8.71	-9.93/-0.91	-0.63/-2.32	-4.3/-3.73	-0.08/-0.16
Θ(127.5°)	-1.18/-0.6	0.12/-7.87	-6.78/-3.01	-4.38/-10.92	-11.56/-9.35	-12.08/-8.33	-5.36/-6.17	-8.46/-17.98	-14.73/-7.58	-6.94/-13.74	-6.55/-4.5	-7.52/-19.07	-18.49/-9.85	-12.68/-18.89	-10.99/-9.58	-4.49/-6.65	-4.81/-12.5	-12.11/-5.04	-7.81/-4.49	-10.99/-12.39	-3.34/-1.81	-0.55/-5.6	-5.56/-10.25	2.53/0.63
Θ(135°)	-4.44/-5.43	-1.84/-5.87	-2.58/-0.41	-2.29/-6.84	-7.44/-7.95	-8.32/-10.78	-9.57/-9.11	-11.44/-12.97	-13.14/-17	-12.56/-18.95	-12.25/-5.62	-5.62/-5.55	-8.78/-15.22	-12.01/-18.33	-14/-14.74	-11.98/-4.55	-9.2/-6.84	-9.87/-10.29	-2.98/0.51	-11.22/-3.96	-0.18/-0.05	2.75/4.14	-1.83/-2.48	-0.36/-0.37
Θ(142.5°)	2/1.09	0.55/-3.77	-7.9/-7.66	-10.59/-8.44	-5.45/-4.83	-6.35/-9.41	-19.22/-13.15	-10.71/-7.6	-6.21/-14.35	-18.56/-14.55	-11.86/-13.66	-17.66/-14.24	-10.07/-17.87	-13.57/-9.89	-17.83/-10.27	-8.87/-4.17	-15.12/-18.07	-0.32/2.31	-9.03/-8.28	-2.82/2.27	-4.45/-2.68	-2.77/-3.55	1.65/2.93	
Θ(150°)	2.91/-0.88	-4.95/-5.67	-8.27/-18.15	-12.02/-10.75	-14.93/-8.77	-11.79/-15.89	-18.85/-18.78	-13.49/-11.61	-15/-14.56	-9.7/-10.78	-18.13/-12.87	-13.63/-12.62	-9.81/-10.9	-16.28/-13.21	-9.95/-11.48	-18.86/-14.61	-13.51/-17.69	-18.01/-14.32	-2.7/-0.59	-3.75/-7.49	-3/-2.02	-7.52/-7.69	-0.92/-1.57	2.99/1.63
Θ(157.5°)	4.63/4.41	2.92/1.9	1.4/-0.86	-3.35/-6.17	-8.01/-6.68	-9.14/-12.65	-14.1/-14.28	-10.8/-3.7	-5.09/-3.08	-2.45/-5.5	-13.78/-9.23	-4.73/-2	-1.78/-3.15	-5.45/-6.57	-6.06/-5.98	-8.13/-12.09	-14.19/-15.88	-18.97/-16.07	-7.41/-4.53	-5.27/-8.17	-15.16/-14.67	-7.55/-2.03	0.88/3.23	4.254/4.87
Θ(165°)	-8.04/-8.23	-7.5/-7.67	-8.77/-9.69	-15.17/-18	-15.06/-12.85	-12.27/-10.17	-10.09/-10.03	-13.62/-18.92	-18.13/-18.73	-15.01/-8.85	-5.1/-2.01	0.31/1.74	1.96/1.04	0.63/-2.44	-4.59/-8.11	-15.25/-18.14	-19.18/-13.55	-18.09/-17.97	-12.99/-7.37	-5.73/-5.72	-7.51/-10.97	-10.11/-7.4	-5.69/-5.46	-5.79/-7.65
Θ(172.5°)	-7.94/-6.45	-5.11/-4.27	-4.97/-6.7	-6.95/-7.34	-8.21/-8.41	-10.51/-11.52	-15.88/-17.08	-15.58/-9.78	-6.25/-4.65	-4.12/-4.28	-4.76/-5.26	-5.99/-6.16	-6.86/-5.36	-5.71/-6.23	-6.74/-6.82	-6.58/-6.1	-6.54/-9.04	-14.8/-19.05	-10.49/-5.3	-2.45/-1.46	-1.13/-2.11	-3.51/-3.84	-5.16/-9.73	-17.32/-11.67
Θ(180°)	-1.83/-2.16	-3.48/-5.13	-5.9/-7.42	-10.34/-13	-14.14/-14.96	-14.61/-12.72	-11.14/-7.27	-5.73/-4.03	-2.14/-0.9	-0.05/0.67	1.27/1.76	2.12/2.34	2											



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(180°)	-10.65/-10.57	-11.37/-12.16	-12.11/-12.92	-14.94/-16.5	-15.71/-12.74	-11.28/-10.07	-8.54/-8.06	-6.82/-5.55	-4.87/-5.21	-5.16/-5.09	-5.29/-5.83	-6.16/-6.84	-8.31/-10.74	-12.21/-10.26	-8.85/-8.51	-9.61/-12.25	-15.49/-16.79	-14.73/-12.8	-13.97/-16.44	-18.32/-18.01	-19.19/-19.21	-19.31/-15.92	-11.75/-9.37	-9.02/-9.78		
Θ(180°)	-11.39/-11.71	-12.36/-15	-17.39/-17.76	-17.38/-17.95	-15.2/-14.45	-14.78/-15.4	-14.87/-13.25	-11.74/-10.93	-11.66/-12.96	-14.66/-16.2	-18.63/-19.41	-19.08/-18.59	-18.39/-18.6	-15.57/-14.75	-16.1/-17.46	-18.5/-18.66	-16.71/-15.8	-15.98/-17.04	-15.51/-14.13	-14.15/-13.42	-12.45/-11.94	-11.06/-10.1	-9.5/-8.72	-9.02/-10.34		
Freq(Hz)	6.175GPol.	ThetaAnt. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)		
Θ(0°)	-16.91/-10.73	-6.94/-4.42	-2.74/-1.37	-0.28/0.54	1.05/-1.43	1.71/-85	1.91/-16	1.01/-05	-0.27/-1.2	-2.53/-4.19	-6.53/-9.66	-14.73/-18.18	-16.81/-11.13	-7.59/-5.29	-3.38/-1.77	-0.65/-0.16	0.79/-0.71	0.88/-69	0.62/-0.34	-0.11/-0.35	-0.99/-1.91	-3.34/-5.15	-6.32/-7.4	-8.91/-8.95		
Θ(7.5°)	-8.1/-5.95	-4.19/-2.92	-2.46/-2	-1.13/-0.32	0.36/0.85	1.53/-13	1.53/-13	1.20/-92	-0.94/-2.3	-2.83/-5.22	-6.18/-6.72	-6.17/-4.97	-3.6/-2.68	-2.03/-1.28	-0.32/0.03	0.21/-0.29	0.18/-0.6	-1.53/-2.11	-2.62/-3.32	-8.7/-12.3	-16.37/-15.48	-14.85/-12.04	-	-		
Θ(15°)	-10.95/-8.91	-6.77/-5.26	-4.94/-4.68	-3.99/-3.06	-1.8/-8.01	-0.34/0.09	0.64/0.99	1.25/-1.29	1.28/0.84	0.04/-0.85	-1.66/-2.86	-4.78/-7.45	-9.29/-8.81	-6.71/-5.31	-4.25/-3	-1.82/-1.21	-0.36/0.46	0.41/-0.14	-0.28/-0.9	-2.08/-3.44	-4.92/-5.89	-7.56/-10.44	-12.77/-15.93	-15.48/-13.19		
Θ(22.5°)	-10.05/-12.09	-11.89/-10.83	-10.1/-9.53	-7.84/-5.93	-4.13/-3.04	-2.19/-1.37	-0.97/-0.77	-0.53/-0.5	-0.74/-1.3	-1.67/-1.68	-2.1/-3.63	-6.61/-9.36	-9.07/-6.4	-4.42/-3.31	-2.15/-1.32	-1.36/-1.57	-1.76/-2.05	-2.39/-2.72	-2.55/-2.13	-1.99/-2.71	-4.15/-6.04	-7.9/-9.07	-8.12/-7.86	-7.77/-8.57		
Θ(30°)	-6.56/-9.48	-12.58/-11.69	-9.17/-8.18	-7.35/-6.44	-5.55/-4.85	-4.07/-2.95	-2.45/-2.4	-2.58/-2.15	-1.22/-1.2	-1.93/-2.29	-2.6/-4.03	-7.44/-10.51	-8.85/-5.84	-4.39/-5.1	-5.11/-4.95	-4.97/-4.24	-3.1/-2.57	-2.12/-1.71	-1.55/-1.59	-2.33/-2.87	-3.44/-4.47	-5.26/-4.54	-3.37/-2.83	-2.88/-4.16		
Θ(37.5°)	-5.9/-8.9	-12.96/-12.04	-8.6/-6.61	-5.72/-5.51	-4.71/-3.7	-3.5/-3.8	-3.97/-4.14	-3.69/-3.68	-3.91/-4	-4.62/-5.19	-5.04/-7.55	-15.31/-17.51	-10.06/-6.46	-6.11/-5.17	-3.94/-3.59	-3.54/-2.34	-0.81/-0.59	-0.81/-0.84	-1.67/-2.51	-2.77/-3.59	-4.24/-3.61	-3.16/-2.98	-2.3/-1.44	-1.24/-2.84		
Θ(45°)	-3.44/-5.99	-8.78/-6.2	-4.36/-4.89	-7.01/-11.79	-14.25/-10.64	-6.41/-3.54	-1.39/-0.45	-0.85/-2.82	-5.88/-7.37	-6.5/-7.51	-8.46/-6.96	-15.94/-14.71	-9.84/-7.65	-6.92/-4.34	-4.51/-4.71	-4.32/-3.77	-3.84/-3.52	-2.57/-2.61	-2.7/-3.94	-6.12/-4.92	-2.55/-2.26	-1.77/-2.35	-2.12/-1.65	-2.46/-2.92		
Θ(52.5°)	-5.57/-9.26	-12.87/-7.61	-6.33/-9.18	-12.53/-9.49	-8.9/-12.7	-12.73/-6.22	-2.48/-1.12	-1.15/-2.66	-5.77/-11.88	-17.14/-15.32	-16.59/-19.77	-15.61/-11.71	-9.08/-7.81	-7.54/-6.79	-8.25/-6.15	-5.24/-2.63	-1.14/-0.21	-0.16/-1.53	-3.47/-4.76	-3.51/-2.19	-1.79/-1.78	-1.99/-1.93	-4.27/-4.74	-3.71/-4.12		
Θ(60°)	-9.74/-15.67	-8.4/-5.32	-5.51/-9.69	-16.15/-9.73	-6.84/-6.03	-7.42/-7.5	-5.79/-3.99	-2.96/-3.5	-5.49/-9.1	-14.03/-11.9	-10.52/-9.52	-9.03/-8.17	-5.77/-5.32	-4.82/-6.04	-7.34/-7.34	-6.21/-4.64	-2.76/-1.6	-1.78/-3.14	-5.26/-4.14	-1.57/-0.2	0.12/0.06	-0.93/-0.83	-1.12/-3.07	-5.23/-5.77		
Θ(67.5°)	-10.91/-12.36	-5.11/-2.84	-4.09/-9.54	-18.43/-13.41	-10.81/-10.2	-9.5/-5.96	-3.52/-2.48	-4.13/-6.58	-1.36/-1.36	-1.98/-2.24	-3.96/-10.39	-6.35/-3.91	-3.62/-3.86	-4.64/-4.44	-3.25/-2.87	-3.54/-3.73	-6/-5.6	-6.08/-4.44	-4.15/-3.83	-5.24/-5.27	-7.22/-5.03	-2.75/-1.75	0.14/0.74	0.52/-0.07	-1.58/-3.12	-8.38/-8.5
Θ(75°)	-13.72/-12.56	-4.17/-2.11	-4.66/-11.14	-14.61/-10.58	-11.71/-15.03	-13.77/-9.06	-6.89/-5.1	-1.49/-5.16	-6.94/-11.12	-8.44/-2.66	-1.37/-1.87	-3.04/-4.24	-3.01/-2.17	-1.46/-3.46	-6.11/-6.83	-7.79/-3.18	-2.19/-1.13	-1.41/-2.54	-3.43/-4.02	-4.11/-2.68	-1.70/-0.77	-6.04/-0.45	-2.79/-5.09	-12.58/-13.35	-	
Θ(82.5°)	-14.4/-7.55	-2.58/-0.22	-3.03/-7.89	-18.75/-13.64	-10.17/-12.06	-8.63/-7.29	-7.54/-8.32	-7.51/-6.32	-5.78/-5.31	-4.16/-1.29	-0.41/-1.76	-2.51/-3.18	-1.88/-2.38	-1.37/-1.73	-3.27/-5.94	-6.84/-4.46	-2.81/-2.57	-2.63/-4.07	-2.66/-2.64	-3.44/-1.52	-0.54/-0.67	-2.55/-1.32	-3.46/-3.13	-11.81/-12.8	-	
Θ(90°)	-15.61/-8.36	-1.93/-0.06	-2.73/-1.62	-15.97/-18.96	-12.07/-7.64	-3.52/-2.63	-2.28/-3.4	-4.13/-6.58	-7.71/-6.06	0.8/-0.54	-2.48/-3.58	-3.25/-0.16	-0.57/-0.59	-1.63/-6.05	-5.99/-2.57	-0.08/0.78	0.32/-0.83	0.18/-1.24	-2.94/-1.87	-1.43/-0.87	-1.64/-2.82	-2.88/-2.73	-7.88/-17.03	-		
Θ(97.5°)	-17.85/-19.71	-5.30/-3.07	-4.3/-6.03	-17.19/-14.91	-8.06/-7.95	-7.53/-8.36	-5.48/-2.39	0.09/-1.61	-3.4/-4.67	-2.97/-0.19	1.05/0.08	-2.71/-2.95	-3.88/0.06	-0.37/-0.22	-2.87/-4.71	-6.05/-1.55	0.39/1.14	0.19/-0.93	-1.54/-1.81	-4.22/-4.17	-8.14/-5.31	-4.54/-3.83	-5.55/-4.35	-6.09/-1.68		
Θ(105°)	-13.71/-10.72	-4.26/-4.61	-5.91/-8.07	-14.44/-5.87	-2.04/-1.69	-1.11/-4.59	-9.73/-6.79	-1.32/-0.12	-0.08/-1.08	-0.99/0.94	1.74/0.64	-3.76/-2.57	-2.55/-1.56	0.14/-1.03	-2.97/-7.21	-8.8/-3.79	-2.09/-1.29	0.06/-1.55	0.82/-0.73	-3.31/-3.82	-14.72/-13.99	-9.17/-6.27	-5.42/-5.65	-8.47/-17.1		
Θ(112.5°)	-17.8/-16.53	-6.06/-7.19	-9.3/-11.82	-15.82/-7.5	-2.57/-0.76	-0.35/-0.61	-1.36/-1.36	-1.98/-2.24	-4.02/-1.74	-1.49/0.43	0.66/0.03	-3.66/-4.98	-4.71/-0.68	-1.27/-0.29	-1.21/-3.93	-8.24/-8.79	-5.12/-3.76	-3.28/-6.46	-2.6/-4.28	-7.96/-11.34	-18.75/-7.3	-8.21/-6.34	-5.56/-5.44	-13.51/-18.56		
Θ(120°)	-18.1/-16.45	-8.48/-7.32	-11.14/-15.37	-15.05/-18.7	-5.05/-3.27	-3.34/-3.28	-1.69/0.13	1.85/2.85	2.14/-0.01	-2.66/-2.13	-1.51/-1.03	-1.62/-3.11	-3.32/-4.93	-3.14/-1.66	-0.41/-0.52	-5.46/-7.65	-9.16/-7.04	-11.71/-7.06	-10.46/-13.88	-12.35/-15.24	-8.43/-6	-8.08/-5.87	-8.14/-3.41	-12.63/-18.86		
Θ(127.5°)	-13.03/-10.46	-8.72/-12.42	-12.1/-9.29	-8.18/-5.37	-3.99/-3.34	-4.48/-6.57	-6.87/-2.16	1.12/-05	1.52/0.36	-2.95/-7.57	-8.41/-7.29	-6.32/-5.59	-4.07/-4.64	-3.55/-11.92	-5.18/-7.43	-9.59/-6.94	-12.05/-7.48	-12.39/-8.52	-10.84/-9.66	-9.44/-12.11	-8.04/-16.41	-6.55/-17.98	-7.57/-6.01	-13.73/-18.83		
Θ(135°)	-14.61/-14.71	-11.75/-8.85	-8.61/-11.28	-9.18/-3.65	-0.26/0.63	-0.62/-1.17	-7.95/-6.66	-3.15/-0.71	-0.34/-1.07	-2.9/-5.5	-8.37/-10.8	-7.5/-5.25	-7.88/-6.25	-3.93/-12.07	-4.48/-2.15	-5.07/-6.42	-9.34/-8.1	-8.64/-10.84	-8.22/-7	-4.45/-15.67	-5.64/-8.49	-11.6/-11.25	-1.246/-13.1	-18.79/-17.59		
Θ(142.5°)	-17.75/-15.62	-9.01/-9.02	-10.28/-10.72	-4.86/-2.14	-0.78/0.18	-0.07/-1.34	-2.99/-3.59	-2.93/-3.03	-3.82/-5.42	-7.07/-8.27	-7.42/-9.25	-8.92/-6.14	-7.04/-7.25	-5.64/-7.23	-6.76/-10.65	-8.19/-15.1	-6.71/-6.93	-6.55/-6.19	-5.84/-3.3	-4.05/-10.84	-12.26/-8.4	-18.54/-13.43	-13.72/-12.59	-11.95/-19		
Θ(150°)	-12.34/-17.45	-18.89/-15.3	-8.3/-5.75	-4/-3.34	-3.91/-3.27	-1.77/-0.27	-1.9/-0.3	-1.62/-3.02	-3.55/-3.79	-5.89/-9.6	-11.19/-9.28	-6.67/-4.71	-5.24/-7.64	-9.52/-16.07	-10.94/-6.01	-8.27/-6.49	-7.25/-5.74	-3.67/-4.18	-6.07/-5.34	-4.79/-5.81	-8.15/-9.13	-7.81/-7.77	-7.75/-9.42	-13.07/-13		
Θ(157.5°)	-7.86/-8.87	-8.5/-9.01	-10.37/-8.5	-5.77/-3.92	-2.97/-2.74	-2.38/-1.86	-1.25/-1.53	-2.39/-2.82	-3.39/-5.17	-7.47/-8.12	-8.41/-11.01	-7.38/-6.14	-7.12/-7.85	-6.06/-4.79	-3.52/-2.41	-2.77/-4.18	-5.59/-5.32	-5/-5.44	-4.9/-4.75	-6.57/-9.57	-13.65/-14.78	-8.05/-4.32	-3.15/-3.59	-5.34/-6.63		
Θ(165°)	-11.52/-9.97	-8.2/-7.56	-7.72/-6.45	-4.79/-3.89	-4.15/-5.35	-7.05/-8.29	-8.86/-8.84	-8.55/-7.28	-6.32/-6.51	-6.75/-4.95	-9.39/-10.44	-8.36/-5.88	-4.41/-4.2	-5.12/-6.68	-8.53/-12.17	-17.17/-15.86	-14.32/-15.79	-16.46/-11.18	-8.09/-6.53	-6.42/-6.47	-6.5/-6.98	-9.29/-11.51	-12.94/-13.59	-13.73/-12.47		
Θ(172.5°)	-14.29/-13.46	-11.38/-9.68	-8.36/-6.5	-4.68/-3.68	-3.36/-3.69	-4.49/-5.04	-5.81/-6.72	-7.89/-9.39	-10.78/-11.47	-11.03/-9.93	-6.88/-7.93	-8.32/-9.02	-9.99/-12.01	-16.43/-16.15	-11.93/-8.37	-6.74/-7.14	-8.51/-11.16	-14.05/-15.43	-18.18/-11.71	-8.82/-8.26	-8.49/-9.76	-11.75/-11.07	-10.73/-11.97	-14.52/-15.12		
Θ(180°)	-12.49/-13.12	-12.65/-12.32	-11.78/-10.75	-9.67/-9.66	-10.57/-12.12	-14.44/-16.56	-18.14/-18.15	-19.01/-18.29	-18.39/-16.02	-14.9/-14.22	-14.38/-14.92	-15.77/-17.05	-18.05/-17.35	-16.45/-15.92	-15.42/-16.23	-18.25/-19	-17.89/-15.01	-14.48/-16.13	-17.55/-17.19	-18.19/-18	-18.16/-16.4	-14.37/-15.48	-17.36/-16.55	-14.5/-12.85		
Freq(Hz)	6.475GPol.	PhiAnt. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)		
Θ(0°)	0.91/-1.6	1.45/-1.53	1.36/0.81	-0.01/-1.69	-3.6/-5.62	-8.4/-11.99	-17.65/-19.03	-13.69/-8.94	-5.73/-3.91	-2.53/-1.33	-0.31/0.31	0.81/-36	1.64/-173	1.71/-33	0.99/0.64	0.16/-1.01	-3.04/-6.72	-10.14/-14.15	-17.38/-14.05	-10.79/-8.26	-5.59/-2.81	-1.1/-0.4	-0.12/0.28	0.6/-0.7		
Θ(7.5°)	-0.4/0.03	0.44/0.51	0.32/0.12	-0.63/-1.84	-3.27/-6.41	-8.71/-13.47	-18.69/-16.42	-10.22/-6.92	-4.22/-2.33	-1.07/0.05	0.98/1.64	2.032/3.32	2.58/6.65	2.52/-26	1.70/-97	0.14/-0.89	2.36/-4.82	-7.54/-9.3	-9.1/-6.76	-5.03/-3.98	-3.01/-1.91	-1.22/-0.71	-0.21/0.36	-0.57/-0.42		
Θ(15°)	-1.5/-1.34	-0.91/-0.58	-0.5/-0.57	-1.48/-2.96	-4.62/-6.82	-9.03/-10.72	-10.71/-8.78	-6.56/-4.83	-3.17/-1.5	0.1/-1	1.772/-35	2.772/8.84	2.551/93	1.2/0.75	0.26/-0.36	-0.95/-1.93	-3.28/-5.33	-7.41/-8.9	-8.16/-6.65	-5.47/-3.89	-2.48/-1.4	-0.8/-0.93	-0.88/-1.53	-1.99/-1.56		
Θ(22.5°)	-2.16/-1.76	-1.43/-1.33	-1.85/-2.89	-4.57/-6.69	-9.05/-9.01	-7.1/-5.57	-4.21/-3.3	-2.57/-2.49	-2.27/-1.23	0.17/0.7	1.071/77	2.32/-1	1.551/07	1.091/-32	1.18/0.48	-0.2/-1.25	-2.59/-4.57	-7.51/-12.09	-14.85/-12.38	-8.89/-3.69	-3.99/-2.1	-0.				



Radiated Composite Gain Data of 6GHz

Appendix B

Θ (15°)	-12.96/-10.84	-8.72/-6.69	-4.15/-2.44	-1.29/-0.42	0.17/0.68	1.33/1.62	1.73/1.29	0.64/-0.33	-1.77/-3.41	-4.93/-6.44	-8.14/-9.13	-9.66/-9.15	-8.54/-8.21	-7.9/-7.35	-6.05/-4.67	-3.48/-2.34	-1.38/-0.74	-0.42/-0.29	-0.25/-0.58	-1.23/-1.59	-2.06/-3.2	-4.7/-6.06	-7.67/-10.08	-12.13/-13.92
Θ (22.5°)	-12.28/-10.41	-9.16/-6.82	-3.99/-1.94	-0.50/-45	1.05/-16	1.91/71	1.2/0.43	-0.09/-0.99	-2.32/-3.9	-5.8/-7.65	-9.63/-10.67	-10.05/-9.63	-9.56/-9.59	-9.36/-7.76	-5.6/-3.96	-2.43/-1.31	-0.58/-0.16	0.10/0.4	0.15/-0.08	-0.73/-2.1	-3.41/-4.57	-6.05/-7.08	-9.81/-14.62	-16.18/-15.35
Θ (35°)	-8.52/-8.32	-8.16/-6.98	-4.58/-2.68	-1.57/-1.04	-0.80/-0.45	-0.15/0.04	-0.58/-1.73	-3.19/-3.64	-3.58/-4.45	-6.41/-9.18	-11.45/-10.74	-9.63/-9.41	-8.5/-7.74	-7.49/-5.92	-3.5/-2.07	-0.20/-0.32	0.46/-1.21	0.99/0.19	-0.85/-2.19	-3.61/-4.24	-5.12/-6.2	-6.65/-8.02	-8.46/-10.06	-10.08/-9.74
Θ (37.5°)	-7.06/-8.26	-9.64/-10.13	-8.39/-7.11	-6.38/-5.94	-5.61/-5.15	-4.42/-3.57	-3.12/-3.66	-4.19/-4.97	-5.88/-8.34	-11.93/-15.53	-12.97/-8.13	-5.9/-7.49	-8.85/-9.56	-9.59/-6.4	-2.85/-0.45	1.45/2.48	2.69/1.88	0.97/-0.19	-1.63/-3.37	-5.72/-8.11	-7.88/-6.14	-6.65/-7.03	-9.05/-11.15	-9.15/-7.94
Θ (45°)	-4.88/-7.83	-13.94/-15.68	-15.28/-14.64	-14.04/-11.38	-8.71/-6.62	-5.34/-4.88	-4.56/-5.21	-5.61/-6.21	-7.31/-9.02	-15.49/-15.58	-8.83/-8.87	-8.14/-8.79	-8.06/-8.16	-7/-3.55	-1.57/-0.41	0.40/28	0.30/-15	0.3/-0.37	-1.99/-4.72	-8.38/-7.37	-4.83/-3.38	-2.36/-4.18	-3.92/-5.43	-4.79/-6.43
Θ (52.5°)	-6.79/-9.73	-18.19/-18.68	-14.41/-10.64	-8.83/-7.79	-6.26/-4.43	-3/-2.8	-3.61/-5.98	-10.9/-16.8	-14.71/-13.16	-12.48/-9.4	-7.03/-6.8	-7.84/-10.81	-10.99/-6.6	-2.46/-1.43	-0.79/-2.64	-0.38/-0.36	0.11/0.62	-0.07/-1.39	-3.41/-5.17	-6.41/-5.38	-4.56/-2.85	-2.25/-1.83	-3.38/-3.5	-3.86/-5.49
Θ (60°)	-7.46/-13.57	-18.04/-10.95	-10.18/-10.77	-13.66/-16.31	-17.99/-9.95	-6.45/-4.08	-3.01/-3.54	-5.42/-9.22	-19.13/-13.47	-7.69/-4.18	-3.07/-4.16	-5.57/-6.9	-9.08/-6.81	-3.92/-1.44	-0.35/-0.82	-0.24/-1.1	-0.04/0.98	1.18/0.65	-1.13/-4.07	-4.58/-4.42	-2.85/-2.82	-1.23/-3.58	-3.49/-5.92	-4.21/-7.52
Θ (67.5°)	-9.1/-16.2	-7.21/-5.11	-4.36/-5.98	-0.09/-16.07	-15.85/-9.73	-7.71/-6.86	-6.98/-7.33	-7.93/-10.66	-6.14/-12.65	-6.4/-3.9	-3.08/-3.7	-5.65/-5.27	-6.25/-3.47	-1.7/-0.1	0.48/-0.47	-1.79/-3.15	-0.84/-0.59	-0.07/-1.09	-3.67/-7.24	-7.41/-8.03	-5.5/-5.41	-4.12/-4.56	-4.24/-7.07	-5.87/-6.59
Θ (75°)	-5.85/-10.74	-4.24/-2.83	-1.63/-2.77	-5.37/-11.45	-17.34/-16.72	-10.58/-6.36	-4.86/-6.86	-8.54/-13.98	-18.18/-8.51	-5.47/-2.81	-1.69/-2.77	-3.64/-4.03	-5.07/-2.34	-1.56/-0.39	-0.19/-0.82	-2.34/-2.12	-1.04/-0.95	-1.58/-2.52	-5.17/-5.54	-5.67/-6.23	-6.71/-5.13	-3.8/-4.3	-4.71/-7.1	-7.23/-6.33
Θ (82.5°)	-7.36/-10.7	-3.08/-2.2	-1.92/-4.35	-5.93/-12.64	-13.28/-15.94	-17.4/-9.28	-6.56/-6.08	-8.86/-8.42	-18.58/-9.16	-2.81/-1.74	-1.45/-3.02	-3.86/-1.77	-4.08/-2.83	-1.55/0.11	0.39/-0.67	-4.11/-1.96	-1.05/0.64	0.55/-1	-2.03/-2.31	-2.65/-2.97	-7.78/-7.84	-5.64/-4.21	-7.65/-6.04	-8.41/-7.02
Θ (90°)	-5.23/-7.4	-3.17/-1.35	0.44/-2.46	-6.75/-8.99	-6.84/-8.72	-7.79/-7.15	-8.15/-7.23	-7.26/-9.12	-6.18/-6.84	-2.55/-0.95	-0.8/-3.13	-4.52/-2.33	-2.08/-1.15	-0.67/0.28	0.41/-2.34	-9.8/-1.82	1.21/2.39	0.57/-1.25	-1.13/-0.04	-0.46/-1.27	-4.32/-6.97	-7.98/-3.05	-5.03/-3.63	-7.02/-6.76
Θ (97.5°)	-4.63/-7.6	-6.73/-3.8	-1.22/-3.32	-7.81/-12.25	-8.89/-9.37	-6.49/-6.26	-1.72/-2.2	-7.18/-8.48	-6.06/-5.93	-0.52/-0.08	-0.26/-2.19	-2.78/-3.53	-2.94/-0.43	-1.7/-0.73	-1.28/-6.04	-7.64/-0.52	1.33,2	2.2/-0.21	0.86/0.69	-0.99/-3.62	-8.94/-7.6	-3.33/-3.92	-5.97/-4.17	-6.18/-6.1
Θ (105°)	-10.4/-18.52	-7.02/-5.59	-4.03/-5.56	-13.08/-7.49	-3.28/-1.5	-8.93/-4.65	-0.95/0.47	-1.79/-1.16	-3.85/-5.37	-2.76/-1.75	-1.07/-4.83	-3.84/-3.8	-2.68/-0.72	-2.49/-2.8	-6.05/-6.09	-10.25/-3.58	0.33/-1.21	-0.16/-2.23	0.85/1.77	-0.24/-1.85	-16.67/-11.03	-7.33/-10.6	-15.59/-5.57	-7.3/-5.18
Θ (112.5°)	-7.88/-10.08	-6.58/-6.71	-4.95/-8.11	-14.32/-6.59	-2.75/-0.34	-3.36/-6.02	-3.38/-2.4	-1.96/0	-3.45/-1.92	-0.43/0.85	-0.21/-4.27	-6.85/-5.78	-2.8/-0.43	-1.26/-5.08	-6.82/-9.68	-18.54/-7.58	-5.8/-7.51	-5.4/-6.37	-1.02/-1.27	-4.33/-4.23	-17.88/-19.64	-12.04/-12.22	-8.43/-6.38	-12.05/-12.07
Θ (120°)	-8.89/-15.7	-10.11/-16.25	-6.78/-9.05	-18.89/-15.51	-8.16/-5.72	-3.42/-2.55	-1.39/-0.45	0.23/-2.08	-3.61/-4.38	-3.14/-1.85	-1.2/-3.38	-6.35/-6.7	-5.77/-3.65	-2.55/-5.8	-5.57/-6.5	-12.35/-12.52	-7.34/-12.85	-12.23/-8.86	-5.6/-7.01	-6.81/-6.6	-7.11/-6.47	-11.05/-18.34	-8.86/-4.53	-18.9/-10.3
Θ (127.5°)	-18.4/-17.36	-13.5/-10.46	-8.05/-11.88	-10.25/-6.49	-9.14/-11.57	-9.87/-5.7	-1.76/-1.29	1.69/-1.2	0.04/-1.3	-2.81/-4.75	-7.17/-7.73	-6.58/-6.42	-5.68/-4.41	-5.05/-8.94	-6.38/-14.76	-14.33/-12.12	-10.69/-8.51	-18.67/-6.53	-11.39/-11.15	-6.54/-13.22	-14.4/-9.25	-13.2/-17.93	-11.22/-4.68	-18.41/-13.12
Θ (135°)	-16.5/-18.61	-11.22/-9.55	-11.48/-14.21	-8.67/-5.55	-3.47/-5.81	-8.15/-8.67	-3.56/-1.5	-0.30/-41	0.2/-0.13	-1.4/-3.39	-7.17/-12.53	-12.35/-12.36	-7.32/-5.7	-4.46/-7.45	-6.77/-6.54	-10.64/-7.02	-9.27/-6.16	-5.52/-5.55	-6.62/-12.27	-12.29/-7.16	-3.85/-11.01	-6.53/-14.85	-16.16/-17.73	-17.19/-14.97
Θ (142.5°)	-19.02/-13.55	-11.33/-15.4	-18.32/-14.16	-9.5/-4.49	-2.55/-1.44	-1.84/-2.47	-2.79/-2.79	-2.31/-2.86	-3.33/-3.8	-0.67/-6.96	-9.57/-9.46	-12.94/-10.48	-8.8/-7.4	-8.14/-7.31	-5.39/-6.31	-9.81/-11.42	-9.18/-9.83	-15.86/-8.54	-5.15/-6.18	-10.47/-18.56	-8.47/-17.02	-16.54/-17.96	-19.22/-11.38	-11.22/-18.72
Θ (150°)	-14.5/-18.07	-18.3/-16.56	-11.55/-9.57	-8.52/-6.16	-3.53/-2.48	-2.35/-2.16	-2.06/-1.88	-2.34/-3.1	-4.4/-6.88	-10.74/-16.14	-18.88/-18.44	-17.14/-11.33	-9.88/-12	-12.93/-11.05	-11.11/-13.46	-19.5/-19.1	-15.91/-12.28	-10.1/-12.63	-11.17/-11.46	-13.22/-18.63	-18.98/-17.27	-16.29/-13.67	-10.75/-9.95	-11.23/-15.23
Θ (157.5°)	-17.65/-18.39	-16.2/-14.38	-12/-25	-6.32/-4.27	-3.08/-2	-1.4/-1.25	-1.36/-1.73	-2.57/-3.18	-3.55/-4.65	-7.03/-9.65	-11.62/-10.37	-9.06/-8.08	-7.46/-6.92	-6.61/-6.94	-8.64/-7.79	-4.97/-4.1	-4.98/-8.7	-4.15/-4.72	-4.67/-8.47	-6.3/-8.89	-11.7/-8.93	-5.06/-3.44	-2.6/-2.94	-5.25/-9.41
Θ (165°)	-10.39/-13.81	-19.23/-18.82	-13.38/-10.04	-8.89/-7.94	-7.85/-7.71	-7.48/-6.87	-5.84/-4.88	-4.54/-4.61	-4.22/-3.73	-4.19/-5.59	-7.92/-10.27	-10.81/-11.1	-12.03/-12.22	-11.51/-13.04	-8.74/-7.94	-8.36/-10.7	-11.02/-9.78	-7.88/-6.22	-5.33/-4.85	-6.29/-9.31	-12.86/-15.12	-14.5/-15.18	-14.4/-10.29	-8.82/-8.66
Θ (172.5°)	-18.13/-18.21	-13.24/-11.9	-10.46/-9.9	-10.08/-9.99	-10.44/-11.93	-14.1/-16.12	-15.52/-13.5	-12.22/-12.44	-12.54/-14.38	-18.67/-18.53	-12.59/-8.99	-7.18/-6.64	-6.9/-8.12	-10.99/-16.02	-18.25/-18.98	-16.94/-13.83	-12.72/-12.86	-12.07/-10.49	-11.39/-11.28	-8.93/-7.64	-7.28/-7.55	-7.81/-8.75	-10.97/-12.93	-17.77/-18.86
Θ (180°)	-15.46/-14.82	-14.54/-14.23	-13.45/-13.36	-13.8/-15.05	-17.54/-18.53	-19.04/-19.35	-18.51/-19.71	-19.04/-18.99	-17.43/-15.44	-12.95/-11.63	-10.63/-10.07	-9.91/-10.53	-12.67/-16.89	-17.67/-17.64	-18.32/-17.96	-18.87/-18.03	-18.9/-18.13	-19.08/-15.59	-13.13/-11.92	-12.29/-12.64	-13.32/-13.69	-14/-13.6	-13.48/-14.11	-14.35/-15.5
Freq(Hz)	6.995GHz	PhiAnt. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	0.880/89	0.55/-0.11	-0.26/-0.48	-1.03/-1.91	-1.31/-4.82	-6.18/-8.15	-10.46/-11.61	-11.76/-10.14	-7.71/-5.99	-4.48/-3.27	-2.32/-1.36	-0.71/-0.37	-0.15/0.09	0.18/0.13	-0.34/-0.87	-1.61/-2.08	-2.52/-2.2	-3.71/-5.45	-6.81/-7.1	-7.16/-6.19	-5.44/-4.79	-3.92/-3	-1.58/-1.02	-0.13/-0.07
Θ (7.5°)	0.840/8	0.39/-0.06	0.08/-0.29	-0.84/-1.86	-3.13/-4.54	-6.39/-9.05	-10.89/-10.61	-8.82/-37	-5.43/-8.3	-2.78/-2.01	-1.44/-1.01	-0.64/-0.2	0.3/0.6	0.74/0.38	0.03/-0.43	0.98/-2.08	-3.28/-4.25	-6.37/-8.34	-9.34/-8.94	-7.78/-7.49	-7.38/-6.42	-5.91/-6.11	-4.42/-2.4	-0.64/0.03
Θ (15°)	0.741/31	1.461/35	0.85/-0.01	-0.45/-1.38	-2.48/-3.31	-4.5/-6.8	-9.71/-12.28	-12.31/-11.53	-8.96/-6.1	-3.67/-2.56	-1.41/-0.82	-0.66/-0.69	-0.55/-0.56	-0.82/-1.16	-1.67/-2.07	-0.98/-2.51	-3.83/-4.16	-4.99/-6.83	-9.79/-14.33	-15.98/-13.22	-10.12/-7.92	-5.91/-4.54	-3.66/-3.44	-1.93/-0.25
Θ (22.5°)	-0.63/-0.65	-0.98/-1.42	-1.67/-1.63	-1.57/-2.46	-3.12/-4	-5.44/-7.29	-8.25/-9.46	-10.62/-11.36	-9.8/-8.77	-5.06/-3.94	-3.5/-3.31	-3.18/-2.92	-2.04/-1.82	-1.58/-1.89	-1.68/-2.26	-2.95/-3.63	-4.27/-5.1	-6.08/-6.93	-9.24/-17.14	-18.91/-15.1	-8.11/-6.35	-4.67/-3.18	-1.55/-1.05	-1.0/-0.63
Θ (30°)	-1.31/-1.22	-1.33/-2.35	-3.58/-5.05	-7.49/-9.21	-9.18/-9.96	-9.34/-9.99	-8.55/-7.21	-6.32/-5.08	-4.33/-4.24	-4.43/-4.76	-5.48/-5.29	-4.2/-2.6	-1.53/-1.2	-1.46/-1.79	-1.97/-2.39	-2.7/-3.68	-4.61/-5.65	-8.76/-14.82	-13.44/-12.32	-11.52/-9.24	-7.17/-5.46	-3.43/-2.37	-2.92/-3.46	-2.89/-1.77
Θ (37.5°)	-4.93/-5.11	-4.05/-3.17	-3.43/-4.41	-5.97/-7.48	-9.8/-15.57	-18.66/-12.05	-6.81/-4.03	-3.14/-2.88	-3.23/-3.44	-3.87/-5.03	-6.73/-6.28	-5.26/-3.53	-1.53/-2.31	-4.91/-7.3	-7.69/-6.65	-4.67/-3.68	-3.23/-4.48	-18.11/-13.24	-7.57/-4.82	-4.25/-4.02	-3.85/-2.52	-1.55/-2.06	-3.37/-4.39	-3.71/-4.8
Θ (45°)	-6.16/-4.45	-3.18/-3.38	-4.78/-5.51	-5.87/-5.65	-6.2/-8.13	-13.17/-12.14	-5.51/-2.12	-0.98/-0.53	-0.44/-1.56	-2.35/-3.34	-6.13/-9.1	-9/-6.49	-2.61/-1.74	-3.33/-4.35	-5.22/-6.65	-4.89/-3.68	-3.4/-4.11	-5.64/-10.03	-18.64/-16.29	-8.82/-4.16	-2.28/-3.21	-4.17/-3.55	-4.92/-5.26	-6.28/-6.61
Θ (52.5°)	-8.91/-6.39	-7.5/-8.7	-5.97/-5.26	-3.88/-3	-2.53/-3.12	-6.42/-16.16	-6.24/-0.75	1.02/-1.42	1.21/-0.43	-2.18/-3.72	-4.27/-4.48	-5.02/-4.46	-3.13/-1.78	-1.25/-1.55	-2.56/-3.66	-4.99/-3.81	-3.17/-3.4	-6.26/-9.54	-14.81/-18.11	-9.98/-6.24	-4.07/-3.78	-4.16/-5.22	-2.6/-7.7	-9.8/-8.95
Θ (60°)	-11.57/-7.79	-5.99/-3.55	-3.64/-3.44	-2.22/-1.48	-1.21/-1.97	-6.21/-16.92	-8.21/-2.09	0.59/1.39	1.52/6.05	-1.01/-3.07	-3.86/-3.88	-4.42/-3.63	-3.67/-3.05	-1.97/-1.84	-2.7/-4.1	-4.34/-4.42	-6.37/-8.9	-11.69/-16.43	-18.84/-15.86	-11.94/-9.44	-9.99/-6.65	-10.46/-4.89	-3.31/-5.46	-9.86/-11.91
Θ (67.5°)	-5.83/-5.19	-5.13/-5.36	-5.95/-4.45	-3.2/-2.74	-2.03/-2.47	-5.33/-6.58	-5.74/-2.38	-1.22/-0.87	-0.12/-0.44	-0.27/-1.45	-2.3/-4.63	-3.71/-3.4	-2.59/-3.65	-4.97/-3.17	-1.89/-0.95	-1.95/-3.16	-6.8/-9.33							



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(67.5°)	-5.07/-9.54	-7.87/-10.67	-13.91/-14.27	-16.89/-17.98	-13.56/-12.68	-12.06/-11.38	-10.11/-7.38	-5.12/-4.47	-3.01/-1.93	-0.85/-2	-2.87/-1.47	-2.62/-4.17	-2.84/-1.04	1.47/-0.98	-4.48/-4.04	-3.06/-4.74	-7.71/-10.34	-17.01/-15.05	-16.81/-18.46	-17.71/-11.62	-12.38/-17.87	-12.99/-12.47	-10.62/-8.24	-5.45/-5.57
Θ(75°)	-10.37/-11.04	-11.68/-10.44	-15.66/-11.93	-12.28/-13.85	-9.92/-7.93	-7.16/-6.91	-7.27/-6.24	-4.25/-3.05	-1.97/-2.38	-1.75/-1.76	-2.94/-3.24	-4.07/-4.94	-5.56/-3.18	-1.73/-3.13	-9.76/-6.06	-4.78/-2.75	-2.52/-5.53	-6.93/-6.9	-4.23/-5.16	-7.74/-7.4	-5.31/-5.8	-12.1/-11.47	-9.02/-9.22	-14.25/-12.91
Θ(82.5°)	-11.76/-10.17	-13.2/-10.26	-17.61/-10.26	-10.67/-7.27	-8.24/-4.89	-4.66/-4.63	-4.63/-5.38	-4.16/-2.56	-2.8/-2.86	-2.31/-0.36	0.49/-5.75	-6.15/-5.7	-8.31/-4.82	-4.13/-8.27	-17.8/-6.02	-5.24/-5.85	-7.26/-10.72	-10.12/-7.77	-9.99/-8.48	-9.76/-9.94	-5.46/-4.98	-10.09/-15.51	-12.27/-12.92	-12.76/-11.92
Θ(90°)	-18.9/-6.75	-5.67/-5.26	-3.5/-7.24	-9.67/-4.26	-3.78/-4.46	-4.32/-8.14	-6.02/-5.35	-8.15/-4.69	-3.81/-3.34	-3.97/-2.97	-3.56/-4.68	-3.13/-4.54	-3.71/-1.56	-2.13/-4.79	-8.35/-3.64	-3.55/-5.45	-9/-6.4	-6/-5.75	-4.41/-4.74	-6.92/-6.39	-2.35/-1.72	-5.13/-15.6	-6.13/-7.29	-4.12/-13.06
Θ(97.5°)	-9.31/-3.64	-3.62/-3.33	-5.17/-6.21	-8.94/-5.87	-2.46/-5.17	-2.45/-3.13	-6.49/-5.39	-4.75/-4.53	-4.25/-4.8	-6.3/-6.66	-6.65/-7.5	-13.23/-8.77	-6.93/-10.36	-7.74/-12.41	-10.64/-6.52	-6.07/-4.49	-3.19/-3.66	-3.88/-7.86	-4.13/-4.33	-8.93/-2.46	-0.53/-0.4	-4.68/-19.07	-7.62/-9.47	-4.67/-12.15
Θ(105°)	-13.48/-8.09	-4.62/-1.59	-1.35/-9.33	-8.27/-3.62	-0.71/-4.61	-4.2/-2.33	-4.38/-5.45	-4.24/-5.41	-4.53/-7.42	-10.2/-5.4	-6.22/-11.44	-12.09/-2.34	-4.14/-6.18	-1.72/-3.52	-3.76/-5.57	-8.33/-3.3	-8.28/-15.67	-4.94/-11	-3.61/-8.31	-8.46/-9.96	-3.61/-3.7	-3.86/-10.62	-9.47/-9.88	-11.72/-14.5
Θ(112.5°)	-10.62/-7.08	-2.150/-1.4	1.17/-0.81	-5.35/-3.39	-0.42/-1.06	-4.01/-2.19	-3.53/-5.65	-4.24/-7.69	-6.37/-7.24	-9.5/-7.23	-8.44/-11.58	-13.49/-17.06	-7.69/-9.51	-7.02/-6.7	-10.82/-7.04	-5.59/-7.69	-5.66/-4.52	-9.82/-7.65	-6.56/-8.2	-16.98/-7.26	-5.78/-2.13	-8.81/-13.73	-8.36/-8.96	-4.38/-6.04
Θ(120°)	-10.26/-7.18	-2.44/-0.06	1.340/-7	-2.16/-10.26	-4.37/-3.16	-7.43/-5.4	-2.38/-6.03	-11.22/-7.84	-9.24/-10.35	-9.73/-7.88	-11.76/-19.42	-8.96/-9.34	-13.16/-6.66	-6.71/-8.95	-17.13/-4.67	-5.48/-7.3	-8.17/-9.98	-14.77/-9.8	-13.94/-12.07	-8.81/-18.13	-9.51/-5.74	-17.36/-9.42	-9.23/-18.32	-9.08/-11.89
Θ(127.5°)	-14.13/-7.98	-2.320/-8.1	1.360/-44	-2.8/-4.59	-3.56/-2.11	-3.16/-5.82	-3.79/-1.94	-3.52/-5.91	-4.85/-4.7	-6.02/-13.9	-18.71/-11.42	-10.93/-8.58	-10.61/-4.5	-6.62/-4.62	-6.03/-5.21	-7.34/-5.76	-16.96/-5.78	-11.7/-5.3	-9.05/-13.11	-10.03/-6.89	-5.91/-12.34	-15.75/-17.65	-8.23/-7.15	-18.31/-18.62
Θ(135°)	-0.99/-0.86	-0.3/-1.53	1.26/-1.68	0.36/-2.74	-2.05/-1.02	-1.98/-4.13	-2.87/-2.3	-4.03/-7.15	-10.31/-10.39	-8.39/-10.24	-18.84/-6.58	-3.36/-5.46	-7.77/-5.74	-0.93/-1.13	-4.08/-9.97	-16.6/-3.74	-9.59/-4.71	-15.54/-5.57	-4.8/-9.38	-15.46/-12.37	-8.06/-17.34	-17.42/-12.64	-15.99/-7.15	-4.71/-8.92
Θ(142.5°)	0.250/-56	1.410/-52	0.540/-31	0.77/-0.74	-2.14/-3	-5.1/-7.24	-8.28/-6.72	-4.46/-5.03	-9.91/-17.18	-14.82/-11.17	-11.35/-7.71	-4.26/-4.73	-5.5/-3.99	-14.43/-14.81	-13.22/-12.14	-9.4/-7.42	-13.88/-18.99	-16.45/-14.96	-10.4/-13.74	-18.96/-14.67	-13.08/-12.34	-10.73/-4.45	-8.66/-4.8	-4.18/-1.91
Θ(150°)	-4.77/-4.89	-6.01/-5.91	-6.91/-8.32	-5.88/-3.47	-4.04/-4.85	-5.46/-6.76	-8.91/-9.28	-8.15/-8.4	-11.03/-12.3	-9.21/-6.16	-5.38/-4.86	-3.28/-2.62	-2.47/-6.11	-7.51/-3.13	-0.84/-1.48	-2.41/-5.09	-13.49/-13.56	-11.04/-14.93	-16.86/-11.73	-18.63/-15.09	-7.94/-5.58	-3.97/-5.32	-8.27/-8.92	-9.93/-7.59
Θ(157.5°)	-2.56/-3.83	-8.97/-19.15	-12.62/-6	-2.37/-0.41	0.560/-43	-0.97/-3.51	-5.43/-6.72	-9.31/-10.44	-9.77/-11.99	-12.92/-10.78	-9.22/-9.32	-9.6/-5.09	-1.79/-0.57	0.160/-46	-0.43/-3.29	-7.52/-14.58	-17.47/-16.78	-16.65/-15.39	-18.01/-18.31	-18.71/-12.04	-6.52/-4.5	-3.47/-2.16	-2.02/-2.39	-2.69/-2.97
Θ(165°)	-1.41/-1.31	-1.75/-1.57	-1.08/-0.85	-0.390/-03	-0.32/-1.35	-2.46/-3.36	-4.46/-6.58	-9.12/-12.06	-10.36/-6.46	-4.59/-3.68	-1.830/-21	1.11/-1.58	1.320/-12	-1.82/-4.48	-7.62/-7.54	-5.53/-6.12	-8.65/-19.21	-17.99/-17.4	-16.91/-17.86	-18.2/-12.62	-9.15/-7.72	-6.01/-4.05	-4.51/-6.94	-6.71/-3.43
Θ(172.5°)	2.783/-49	3.653/-65	3.683/-52	2.952/-06	1.170/-11	-1.41/-3.98	-7.02/-10.51	-13.12/-15.93	-12.65/-7.73	-4.67/-1.82	0.110/-53	-0.18/-1.89	-4.07/-5.49	-4.93/-3.84	-3.17/-2.92	-3.61/-5.59	-8.97/-13.74	-17.81/-18.46	-18.26/-14.01	-11.09/-10.94	-10.87/-8.56	-6.24/-5.4	-3.73/-1.81	0.11/-1.64
Θ(180°)	1.96/-1.82	1.410/-94	0.45/-0.05	-0.65/-1.57	-2.99/-4.92	-6.79/-8.04	-10.09/-12.22	-12.32/-9.12	-6.03/-4.94	-3.97/-3.53	-3.66/-3.3	-2.7/-1.6	-0.210/-95	1.0/-03	-0.83/-1.85	-3.69/-5.53	-5.5/-5.18	-6.16/-7.96	-9.82/-10.72	-10.64/-8.32	-5.33/-2.81	-1.41/-0.81	-0.170/-65	1.14/-71
Freq(Hz)	6.475GPol.	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°)	-5.83/-6.83	-7.65/-7.24	-6.25/-4.44	-3/-1.81	-0.8/-0	0.610/-97	1.251/-34	1.18/-1	0.510/-48	0.4/-0.22	-1.27/-2.24	-3.29/-4.68	-5.97/-7.82	-10.23/-9.24	-7.68/-6.13	-3.46/-2.27	-1.65/-0.58	0.020/-16	0.631/-38	1.411/-03	0.740/-45	-0.16/-1.2	-2.15/-2.77	-3.63/-4.92
Θ(7.5°)	-4.93/-6	-6.61/-6.19	-4.83/-9.23	-1.76/-1.04	-0.030/-88	1.351/-75	2.142/-4	2.52/-41	2.312/-06	1.610/-85	-0.61/-1.79	-2.63/-4.03	-4.94/-6.96	-8.95/-8.8	-8.1/-6.32	-5.19/-5.03	-4.34/-3.44	-2.68/-2.42	-2.37/-1.66	-0.30/-14	-0.09/-0.4	0.21/-0.44	-0.74/-1.15	-2.18/-3.77
Θ(15°)	-7.63/-8.64	-8.06/-7.11	-5.35/-2.92	-1.170/-27	1.662/-73	3.285/-65	4.294/-59	4.694/-17	3.933/-83	3.592/-57	0.5/-4.66	-0.86/-2.33	-4.09/-6.91	-9.05/-10.47	-12.99/-16.38	-18.74/-11.08	-1.69/-2.21	-3.77/-2.23	-1.53/-1.67	-1.69/-2.21	-3.01/-2.82	-2.01/-2.6	-3.23/-3.14	-3.94/-5.77
Θ(22.5°)	-9.33/-9.42	-7.92/-6.52	-4.68/-2.51	-0.81/-22	2.933/-84	3.993/-98	4.024/-04	4.164/-08	3.663/-4	3.172/-49	1.17/-0.01	-1.59/-4.15	-4.98/-5.75	-7.05/-10.85	-15.24/-17.93	-10.79/-6.63	-3.04/-0.83	0.461/-01	1.020/-51	-0.27/-1.21	-3.23/-5.55	-6.3/-5.59	-5.4/-5.98	-6.88/-7.3
Θ(30°)	-18.61/-15.61	-8.77/-7.59	-3.65/-0.68	1.032/-39	3.253/-14	2.632/-51	2.582/-1	1.431/-51	1.21/-34	2.122/-2	1.440/-14	-2.06/-3.58	-9.33/-6.86	-8.12/-10.03	-9.92/-6.68	-7.22/-4.83	-3.12/-1.41	0.30/-87	0.47/-0.27	-0.8/-1.7	-2.86/-4.38	-6.04/-14.8	-9.93/-9.9	-10.71/-12.88
Θ(37.5°)	-18.75/-18.98	-11.08/-5.26	-2.95/-0.07	1.882/-57	3.393/-29	2.842/-7	2.491/-99	1.880/-53	0.430/-77	1.210/-58	-1.110/-79	-2.4/-09	-7.36/-7.82	-8.28/-13.08	-18.96/-13.48	-7.44/-4.35	-3.37/-3.35	-3.73/-3.35	-3.54/-5.82	-8.8/-7.71	-5.38/-1.43	-8.71/-6.42	-7.09/-10.14	-16.06/-14.13
Θ(45°)	-16.45/-14.02	-10.18/-6.43	-4.02/-0.97	2.092/-7	3.293/-58	3.754/-17	3.982/-97	2.11/-72	-0.25/-0.77	0.090/-37	0.31/-1.21	-4.23/-3.64	-4.02/-5.52	-8.73/-13.86	-18.63/-10.98	-5.46/-4.88	-5.46/-7.09	-10.39/-10.97	-5.46/-5.92	-13.63/-9.95	-9.41/-7.02	-7.67/-12.04	-13.44/-13.2	-11.81/-13.81
Θ(52.5°)	-16.09/-19.1	-17.91/-9.26	-3.78/-3.63	0.241/-42	3.404/-4	4.344/-58	4.263/-21	2.281/-35	0.20/-42	0.290/-03	-0.55/-0.97	-2.67/-5.85	-7.17/-7.07	-6.66/-10.82	-12.64/-8.95	-6.99/-3.51	-6.05/-6.85	-5.28/-1.41	-0.85/-1.72	-1.73/-2.44	-4.99/-5.4	-5.06/-5.54	-8.54/-8.46	-13.41/-16.09
Θ(60°)	-17.8/-15.97	-12.56/-16.88	-1.79/-7.5	-2.510/-01	1.483/-25	3.883/-33	2.882/-59	2.231/-02	-1.963/-375	-4.81/-2.66	-1.55/-4.05	-7.35/-6.83	-7.8/-9.98	-7.96/-8.06	-11.66/-8.09	-6.09/-8.72	-7.38/-6.85	-3.63/-0.02	0.77/-0.08	0.06/-0.24	0.01/-0.62	-2.13/-2.75	-3.85/-4.39	-8.99/-18.32
Θ(67.5°)	-14.09/-17.08	-9.22/-7.86	-14.97/-12.44	-5.72/-2.28	-0.331/-14	2.033/-05	2.851/-17	1.271/-6	-1.01/-3.06	-4.89/-3.8	-1.25/-3.83	-13.02/-9.71	-11.44/-14.55	-10.8/-6.74	-11.27/-10.66	-10.79/-11.18	-18.77/-10.45	-4.89/-1.06	0.950/-6	1.150/-58	-1.62/-2.73	-2.03/-2.88	-4.23/-5.96	-8.49/-16.97
Θ(75°)	-16.73/-14.3	-7.82/-6.59	-9.31/-15.84	-8.29/-4.69	-2.32/-0.31	1.471/-78	1.982/-05	-0.45/-0.99	0.1/-1.24	-5.33/-3.04	-3.41/-1.76	-7.11/-15.24	-10.86/-12.06	-6.91/-5.61	-4.09/-4.52	-3.14/-5.31	-6.79/-5.06	-1.84/-3.03	-2.83/-4.06	-2.9/-2.26	-0.15/-0.45	-1.82/-4.89	-4.27/-4.88	-8.2/-11.98
Θ(82.5°)	-12.41/-18.88	-7.26/-2.81	-3.26/-11.14	-14.95/-8.7	-8.15/-3.7	-1.78/-0.38	-0.65/-1.28	-3.48/-6.26	-6.81/-5.77	-5.38/-6.95	-5.58/-7.1	-8.95/-13.55	-18.06/-14.18	-13.17/-10.58	-5.06/-4.79	-5.25/-3.92	-4.91/-3.47	-2.15/-1.1	0.370/-36	-1.45/-2.11	-1.51/-1.13	-2.16/-4.16	-3.11/-4.44	-2.98/-7.44
Θ(90°)	-16.39/-12.76	-6.59/-1.08	-2.56/-5.1	-9.35/-7.47	-8.43/-3.93	-4.21/-1.57	-1.91/-2.17	-2.66/-4.01	-6.89/-4.52	-3.75/-3.45	-6.63/-10.65	-11.24/-15.77	-13.02/-9.18	-13.18/-15.58	-9.95/-14.58	-10.38/-4.67	-7.28/-10.71	-3.87/-0.84	-2.26/-3.96	-2.39/-1.84	-1.52/-1.15	-3.9/-8	-3.75/-5.96	-3.67/-9.13
Θ(97.5°)	-9.16/-15.58	-6.98/-3.22	-2.72/-5.65	-7.74/-7.34	-14.03/-5.31	-4.02/-2.1	-2.28/-2.45	-3.52/-6.65	-7.69/-4.09	-3.09/-2.7	-9.42/-6.13	-8.65/-17.65	-10.51/-6.72	-7.1/-10.93	-5.99/-4.22	-5.14/-7.43	-6.24/-8.14	-1.73/-1.39	0.320/-81	-1.92/-2.3	-2.93/-1.5	-2.79/-11.8	-8.91/-7.72	-9.99/-9.27
Θ(105°)	-9.66/-15.04	-13.6/-7.3	-1.45/-5.8	-9.4/-3.45	-4.46/-6.39	-6.74/-6.13	-5.38/-8.31	-9.27/-7.12	-8.5/-1.4	-3.45/-4.89	-9.96/-13.17	-6.54/-7.59	-17.01/-18.45	-16.24/-6.98	-8.25/-4.78	-8.52/-8.58	-4.18/-4.91	-18.12/-8.01	-4.8/-6.93	-3.11/-8.79	-9.95/-4.4	-5.77/-17.88	-12.91/-8.83	-4.43/-5.68
Θ(112.5°)	-8.45/-14.69	-14.05/-7.2	-2.63/-3.61	-9.22/-3.25	-3.45/-3.57	-1.93/-5.77	-3.95/-6.98	-9.26/-4.03	-0.82/-1.15	-1.34/-4.04	-9.89/-9.85	-18.81/-9.35	-6.28/-7.4	-6.43/-5.12	-9.55/-18.52	-18.21/-9.25	-8.11/-6.56	-10.29/-3.13	-3.83/-3.17	-3.97/-15.78	-11.77/-7.57	-7.3/-10.2	-1.07/-8.06	-3.08/-4.35
Θ(120°)	-5.74/-18.35	-8.22/-5.02	-2.2/-2.62	-5.71/-2.85	-4.12/-7.6	-3.4/-6.02	-8.6/-2.73	-3.04/-2.49	0.421/-59	-1.49/-5.38	-7.85/-2.73	-9.89/-13.2	-16.66/-4.77	-8.96/-4.79	-6.64/-7.17	-14.87/-11.48	-6.53/-6.66	-6.65/-15.76	-10.57/-11.51	-19.12/-10.62	-7.93/-3.35	-7.13/-5.34	-9.89/-	



Radiated Composite Gain Data of 6GHz

Appendix B

Θ(120°)	-7.89/-2.44	0.98/2.29	1.16/-0.72	-6.12/-2.14	-0.35/-4.14	-3.32/-2.77	-5.29/-5.07	-4.35/-6.2	-8.41/-7.44	-7.33/-10.46	-12.95/-17.33	-18.98/-18.68	-14.73/-12.94	-8.53/-4.83	-5.05/-3.99	-5.12/-11.15	-11.43/-7.24	-11.21/-12.11	-16.43/-11.01	-12.88/-18.52	-7.29/-11.35	-14.22/-8.78	-14.29/-7.56	-8.89/-11.97
Θ(127.5°)	-8.45/-3.33	-0.48/-1.62	0.05/-4.52	-3.34/-0.81	-0.95/-3.3	-4.76/-3.2	-4.68/-6.83	-4.47/-5.74	-10.51/-13.41	-9.77/-16.93	-17.94/-12.03	-5.75/-3.75	-3.59/-2.7	-5.43/-1.97	-1.96/-2.69	-8.57/-17.77	-7.7/-6.54	-9.91/-7.86	-7.56/-11.32	-18/-6.68	-8.94/-9.49	-9.8/-10.09	-8.69/-8.71	-14.21/-8.11
Θ(135°)	-4.08/-3.78	-2.75/0.66	0.19/-2.28	-2.77/-0.49	1.07/-0.81	-3.56/-3.22	-3.16/-6.63	-7.93/-6.27	-7.07/-8.15	-15.38/-17.67	-18.59/-14.47	-15.82/-9.52	-9.3/-7.14	-9.71/-5.79	-4.96/-3.61	-3.37/-12.04	-18.31/-6.9	-18.09/-7.12	-7.55/-13.47	-11.41/-10.87	-11.08/-10.48	-19.28/-18.22	-13.77/-8.61	-8.5/-3.56
Θ(142.5°)	0.09/0.51	0.28/-0.01	-0.03/0.11	0.11/0.45	-1.18/-2.59	-4.41/-4.97	-3.87/-4.76	-8.12/-13.17	-10.11/-7.58	-9.92/-17.96	-17.87/-16.06	-11.89/-8.13	-8.91/-10.21	-14.8/-18.66	-18.26/-9.78	-6.59/-6.72	-10.86/-13.38	-14.36/-18.74	-10.42/-18.97	-12.21/-14.22	-13.43/-13.47	-9.72/-8.04	-5.91/-3.87	-1.19/-0.75
Θ(150°)	-4.83/-8.32	-6.51/-3.59	-1.91/0.25	1.06/0.74	-1.63/-5.18	-8.85/-9.13	-8.7/-8.63	-9.25/-11.18	-16.28/-18.1	-9.33/-5.31	-4.28/-5.54	-6.59/-4.15	-5.45/-6.97	-8.47/-18.03	-14.8/-10.45	-7.88/-6.88	-9.45/-15.56	-13.2/-15.8	-18.51/-19.07	-17.5/-15.5	-6.01/-3.45	-4.51/-6.26	-9.46/-6.21	-4.32/-3.92
Θ(157.5°)	-14.24/-13.15	-6.6/-3.31	-0.14/0.9	0.93/0.71	0/-1.46	-3.13/-4.71	-6.71/-9.94	-14.2/-18.44	-18.84/-18.12	-16.65/-9.48	-4.27/-2.74	-3.54/-7.81	-17.89/-6.36	-3.45/-3.17	-3.53/-3.39	-5.83/-13.87	-18.59/-18.51	-17.9/-12.69	-13.7/-17.77	-18.86/-16.58	-7.71/-4.71	-3.85/-4.34	-7.44/-7.96	-4.76/-5.7
Θ(165°)	-2.23/-1.68	-1.64/-2.22	-1.98/-1.11	-0.89/-1.33	-1.79/-2.06	-2.59/-3.75	-4.52/-5.28	-7.26/-9.8	-12.19/-10.6	-8.38/-9.66	-11.36/-10.18	-9.48/-7.63	-5.12/-4.89	-5.9/-10.2	-13.18/-12.98	-10.69/-7.62	-6.73/-9.05	-18.83/-16.06	-13.06/-9.27	-7.82/-8.53	-8.44/-7.48	-8.01/-7.4	-6.76/-7.58	-6.55/-3.86
Θ(172.5°)	0.69/1.21	1.47/2.15	2.42/2.18	1.61/0.79	-0.09/-1.15	-2.12/-3.51	-5.56/-7.77	-12.65/-19.36	-16.44/-9.31	-5.32/-2.15	-0.95/-2.04	-5.66/-11.32	-10.35/-4.97	-2.19/-1.37	-1.56/-2.53	-4.02/-6.67	-10.75/-13.08	-11.37/-12.83	-18.27/-15.46	-15.45/-13.85	-9.59/-7.07	-4.56/-2.42	-1.49/-1	-0.13/0.53
Θ(180°)	-0.82/-0.38	-0.43/-0.39	-0.3/-0.54	-0.87/-1.58	-2.73/-4.16	-6.32/-9.73	-14.06/-17.38	-17.8/-14.94	-10.78/-10.06	-9.14/-8.98	-8.54/-6.67	-3.87/-1.78	-0.79/-0.3	-0.72/-1.83	-2.83/-4.35	-8.83/-6.77	-5.42/-4.75	-6.22/-10.64	-18.66/-18.32	-15.47/-10.87	-7.95/-5.53	-4.28/-4.03	-3.92/-3.04	-1.73/-1.01
Freq(Hz)	6.995GPd.	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°)	-8.13/-10.46	-14.56/-17.32	-14.78/-14.73	-11.19/-7.47	-5.72/-4.69	-3.67/-2.83	-1.8/-1.88	-1.61/-1.28	-1.92/-2.27	-3.13/-3.62	-4.33/-5.76	-7.8/-9.93	-13.96/-17.47	-16.94/-14.64	-11.03/-7.83	-5.91/-4.67	-3.56/-2.81	-1.7/-0.63	-0.62/-1.28	-0.98/-0.8	-1.26/-1.97	-2.51/-3.56	-4.68/-6.13	-
Θ(7.5°)	-11.15/-13.01	-16.87/-14.91	-10.37/-8.66	-7.26/-4.94	-2.91/-1.55	-0.83/-0.41	0.29/0.72	1.18/1.14	0.61/-0.07	0.23/0.2	-1.34/-2.43	-2.49/-3.38	-5.4/-8.03	-11.87/-17.77	-17.72/-18.31	-13.6/-10.27	-7.66/-6.97	-5.65/-4.43	-3.94/-2.78	-2.37/-3.1	-3.61/-3.01	-3.1/-4.2	-4.72/-5.5	-6.73/-6.78
Θ(15°)	-15.63/-15.78	-11.69/-8.53	-5.46/-3.62	-1.96/-0.99	0.14/0.81	1.31/-1.47	1.49/-1.26	1.58/-1.35	0.44/-0.36	-0.69/-0.29	-0.55/-2.43	-3.55/-4.08	-5.35/-6.76	-11.9/-19.11	-18.01/-16.38	-15.75/-11.99	-8.51/-7.36	-7.5/-7.5	-7.51/-8.3	-7.68/-7.05	-8.43/-8.09	-5.99/-6.76	-8.01/-8.51	-10.48/-14.27
Θ(22.5°)	-13/-9.66	-6.07/-3.81	-2.9/-1.58	0.11/0.92	1.49/2.11	2.52/-39	2.18/-198	1.61/0.74	0.03/-1.68	-3.12/-2.08	-2.06/-2.42	-6.99/-11.59	-14.25/-14.9	-14.37/-13.76	-15.09/-11.88	-10.44/-11.08	-13.16/-13	-10.48/-9.72	-10.22/-10.92	-12.67/-12.77	-11.24/-11.9	-13.02/-10.24	-10.17/-12.69	-
Θ(30°)	-13.35/-8.94	-6.9/-3.76	-1.42/0.12	1.33/-1.5	1.06/-1.57	2.58/-3.28	3.23/2.85	3.07/2.34	0.97/-0.09	-2.14/-3.5	-3.38/-3.32	-2.59/-3.78	-4.69/-4.01	-6.46/-10.41	-11.18/-13.5	-14.1/-13.36	-12.98/-11.09	-9.9/-9.22	-10.58/-11.49	-11.56/-9.45	-8.2/-12.55	-13.55/-10.65	-12.02/-10.68	-11.5/-14.84
Θ(37.5°)	-16.07/-9.41	-6.62/-5.27	-3.08/-1.4	0.52/0.03	2.94/-3.64	4.12/-5.42	4.74/-5	3.29/2.13	1.18/-0.74	-1.39/-3.07	-3.37/-4.79	-2.22/-2.63	-3.62/-6.14	-6.42/-7.83	-7.65/-9.94	-11.47/-8.62	-6.67/-6.26	-8.24/-10.72	-10.23/-14.53	-11.69/-10.32	-11.78/-8.16	-7.53/-10.63	-14.06/-17.91	-17.16/-19.31
Θ(45°)	-14.82/-14	-13.85/-12.9	-7.98/-3.22	-0.67/-1.6	3.24/-29	4.51/-14	4.04/-3.68	2.83/2.29	0.92/-1.93	-3.3/-4.99	-5.37/-8.62	-6.93/-7.9	-4.77/-3.94	-6.2/-7.17	-9.55/-8.42	-4.65/-3.69	-3.83/-3.2	-3.86/-6.1	-11.92/-12.12	-11.96/-10.37	-10.07/-10.27	-9.67/-12.78	-18.48/-17.28	-
Θ(52.5°)	-18.22/-14.78	-17.69/-19.03	-10.74/-2.53	0.08/2.03	3.51/-0.07	4.58/4.84	4.56/-3.95	3.26/2.74	1.11/-2.62	-6.64/-3.72	-5.26/-11.18	-6.29/-7.01	-7.93/-4.93	-5.16/-7.74	-7.16/-4.79	-4.64/-6.45	-6.29/-8.96	-16.28/-18.62	-11.48/-8.52	-16.46/-8.42	-6.38/-6.49	-8.49/-7.83	-5.43/-8.98	-11.3/-15.97
Θ(60°)	-13.49/-12.18	-14.32/-18.98	-5.05/-0.39	1.28/-3.2	3.85/-0.03	4.53/-4.16	3.54/2.93	2.01/2.03	2.02/0.31	-1.95/-5.19	-4.83/-6.26	-8.68/-5.87	-6.43/-5.74	-4.64/-5.89	-3.33/-3.6	-4.92/-3.96	-5.36/-7.74	-6.17/-3.14	-2.93/-2.63	-2.13/-2.56	-2.55/-1.39	-4.57/-4.68	-2.62/-3.79	-7.32/-14.03
Θ(67.5°)	-15.74/-17.54	-13.26/-7.23	-5.04/-2.98	-0.51/-24	2.04/3.04	2.59/-15	1.05/0.49	-0.72/-0.71	0.04/-1	-1.56/-5.66	-8.76/-10.03	-15.21/-11.4	-10.31/-8.2	-8.09/-6.87	-2.61/-1.2	-3.67/-3.13	-3.44/-2.98	-2.78/-0.55	0.23/-0.01	-2.22/-2.15	-0.05/-0.78	-0.66/-2.89	-2.04/-1.05	-3.1/-7.19
Θ(75°)	-11.03/-14.45	-5.02/-2.83	-5.55/-9.59	-7.01/-2.88	-0.37/-1.5	1.82/38	1.59/0.16	0.13/0.52	0.65/-0.49	-1.6/-5.52	-7.2/-9.85	-17.44/-14.01	-11.94/-17.44	-12.64/-6.74	-5.25/-5.97	-8.28/-7.98	-4.49/-6.06	-4.54/-1.32	0.23/-0.11	-0.81/-1.91	-0.87/0.1	0.46/-1.44	-2.84/0.14	-0.97/-6.05
Θ(82.5°)	-9.34/-19.04	-5.54/-2.7	-4.01/-7.62	-8.32/-3.25	-0.72/0.79	0.16/-0.02	0.5/-0.18	-1.59/-0.21	0.79/-1.19	-2.05/-4.11	-4.57/-7.25	-13.76/-15.84	-8.57/-12.3	-8.7/-5.71	-4.45/-5.97	-2.53/-3.38	-3.52/-4.19	-2.64/-4.13	-1.63/-1.54	-4.75/-4.02	-1.68/-1.05	-0.46/-2.14	-3.67/-0.96	-0.94/-7.09
Θ(90°)	-7.79/-11.82	-6.07/-0.08	0.35/-3.85	-9.8/-11.57	-8.45/-5.23	-4.32/-2.47	-3.35/-2.01	-4.46/-4.15	-5.41/-2.92	-5.82/-6.11	-7.08/-8.22	-12.56/-15.24	-18.9/-14.05	-15.54/-8.28	-7.18/-9.84	-7.03/-3.53	-1.61/-1.69	-3.14/-4.4	-1.38/-0.92	-1.36/-1.04	-0.89/0.92	-1.76/-2.97	-3.8/-1.37	-0.65/-6.14
Θ(97.5°)	-9.47/-10.03	-6.23/0.37	0.51/-4.25	-9.93/-18.82	-8.36/-2.76	-7.58/-1.55	-3.36/-2.7	-4.03/-2.57	-0.95/-3.34	-4.91/-3.58	-4.48/-12.74	-13.69/-15.78	-10.79/-13.37	-7.21/-6.03	-9.82/-14.47	-6.36/-3.94	-5.38/-17.09	-11.53/-4.47	-2.34/-1.59	-2.64/-4.01	-1.84/-1.37	-6.01/-7.94	-9.48/-3.54	-1.17/-5.66
Θ(105°)	-12.41/-10.38	-6.86/-9.05	-0.74/-10.1	-12.31/-12.08	-13.32/-3.85	-8.02/-4.21	-1.99/-0.15	-3.12/-3.57	-4.09/-6.28	-7.65/-2.5	-3.53/-3.83	-9.47/-16.32	-17.28/-19.13	-9.79/-7.18	-8.38/-6.45	-6.33/-9.65	-6.99/-9.92	-7.05/-3.37	-1.9/-2.24	-2.19/-2.59	-1.93/-6.1	-10.51/-5.32	-7.22/-3.62	-1.59/-6.13
Θ(112.5°)	-18.83/-17.19	-9.14/-3.96	-1.81/-8.26	-13.23/-5.69	-12.78/-8.96	-3.95/-6.35	-6.1/-6.59	-3.26/-4.47	-7.45/-5.74	-10.7/-2.75	-3.68/-6.22	-8.85/-13.83	-18.06/-15.02	-15.1/-8.34	-11.05/-13.17	-14.98/-11.46	-7.17/-8.53	-9.87/-2.8	-5.14/-8.73	-6.29/-12.23	-19.07/-18.51	-13.57/-9.54	-13.33/-6.7	-4.35/-5.31
Θ(120°)	-11.54/-15.75	-18.04/-10.15	-6.65/-12.08	-9.36/-6.72	-5.77/-2.93	-2.65/-2.61	-0.46/-2.49	-3.54/-3.38	-5.28/-4.38	-1.05/-2.77	-6.55/-13.34	-13.82/-17.88	-18.73/-18.9	-10.18/-7.97	-13.21/-7.06	-12.75/-17.99	-17.71/-13.92	-18.79/-18	-18.64/-16.29	-17.71/-15.68	-11.85/-10.81	-11.32/-17.79	-18.37/-10.62	-5.66/-6.63
Θ(127.5°)	-7.94/-11.3	-7.71/-6.24	-6.43/-14.03	-8.3/-5.5	-5.63/-1.66	-1.8/-5.7	-2.41/-3.38	-8.26/-4.37	-1.8/-1.83	-4.04/-5.39	-6.7/-3.79	-7.38/-17.2	-9.84/-11.75	-17.86/-4.98	-6.71/-7.73	-14.07/-11.49	-6.69/-5.52	-5.98/-0.99	-10.27/-8.8	-9.17/-15.75	-8.06/-7.4	-7.2/-3.7	-4.55/-3.04	-1.55/-2.81
Θ(135°)	-8.58/-4.99	-7.05/-7.8	-7.79/-8.96	-6.66/-4.01	-8.89/-4.96	-2.12/-5.03	-9.35/-4.55	-2.64/-3.71	-3.27/0.54	-1.98/-4.95	-3.56/-5.1	-11.32/-16.32	-16.44/-10.21	-17.16/-14.5	-6.07/-4.63	-11.64/-10.15	-10.83/-8.49	-7.81/-16.93	-14.31/-5.25	-4.41/-8.2	-15.37/-12.26	-15.2/-14.76	-8.45/-6.7	-6.32/-17.61
Θ(142.5°)	-9.94/-10.07	-9.04/-11.98	-13.83/-10.46	-7.25/-10.04	-12.55/-5.18	-0.95/-1.2	-2.62/-2.36	0.36/0.34	-3.47/-6.65	-10.18/-8.86	-3/-4.22	-3.22/-5.77	-10.94/-15.3	-9.63/-9.33	-16.69/-18.92	-12.58/-6.75	-7.87/-15.77	-14.64/-11.44	-13.29/-18.05	-9.21/-7.69	-17.12/-12.4	-9.09/-9.54	-9.65/-17.23	-12.45/-10.38
Θ(150°)	-10.17/-11.05	-10.26/-12.93	-16.14/-13.28	-8.04/-7.72	-9.56/-8.87	-4.25/-1.07	-0.53/-1.9	-1.98/-1.04	-1.63/-2.77	-6.28/-7.35	-9.85/-9.03	-6.28/-6.64	-8.12/-12.33	-16.48/-8.5	-5.32/-3.15	-3.96/-4.19	-7.75/-7.73	-11.21/-16.04	-18.93/-16.99	-10.14/-18.78	-12.93/-15.95	-17.98/-10.97	-6.67/-6.6	-8.69/-7.8
Θ(157.5°)	-2.39/-2.55	-4.08/-7.34	-10.17/-8.57	-5.14/-3.43	-4.2/-6.61	-9.9/-9.72	-6.77/-5.02	-4.85/-6.27	-9.83/-14.96	-11.75/-10.44	-13.69/-18.55	-10.88/-5.24	-5.36/-7.8	-7.17/-7.52	-7.84/-7.76	-4.11/-1.26	-1.59/-3.53	-5.42/-5.64	-4.87/-6.04	-11.31/-18.86	-17.35/-18.32	-10.06/-6.62	-8.46/-12.8	-6.92/-3.4
Θ(165°)	-7.33/-6.13	-5.81/-5.63	-4.89/-4.47	-3.76/-2.74	-2.15/-2.24	-0.92/-2.26	-1.07/-0.27	0.62/1.72	2.21/85	0.97/0.59	0.06/-0.8	-1.92/-2.89	-4.5/-6.41	-8.96/-13.53	-16.64/-13.11	-10.89/-10.91	-15.64/-17.71	-15.46/-11.86	-8.36/-5.81	-4.58/-3.94	-4.96/-8.39	-10.55/-11.46	-14.11/-15.85	-13.22/-9.43
Θ(172.5°)	-7.97/-7.37	-5.57/-3.57	-2.14/-14.3	-1.1/-0.36	0.22/0.54	1.19/2.15	2.93/-33	3.84/0.03	3.61/2.84	1.97/-1.56														



Antenna Pattern of 2.4GHz and 5GHz

Appendix C

Total Gain Data

Freq(Hz)	2.450/Pol.	TotalAnt. 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°)	2.070.59	2.472.29	2.322.46	2.592.62	2.602.52	2.392.22	2.592.67	2.082.23	2.392.52	2.752.90	2.302.08	2.342.02	2.623.17	3.153.11	2.592.48	2.892.72	2.872.88	2.702.61	2.592.48	2.702.61	2.592.48	2.702.61	2.592.48	2.702.61
Θ(7.5°)	3.122.97	2.782.64	2.632.70	2.692.60	2.482.32	2.121.87	1.641.52	1.571.67	1.771.92	2.092.32	2.492.62	2.722.79	2.842.85	2.852.84	2.842.81	2.782.77	2.822.91	2.972.95	2.983.04	3.032.96	2.912.93	3.033.13	3.233.25	3.253.17
Θ(15°)	3.603.36	3.123.01	2.992.98	2.842.52	2.302.00	1.711.42	1.150.99	0.991.07	1.071.10	1.241.51	1.771.97	2.082.18	2.262.29	2.282.31	2.352.44	2.432.45	2.542.68	2.843.03	3.183.31	3.423.51	3.593.69	3.823.91	3.983.97	3.923.78
Θ(22.5°)	3.913.70	3.513.42	3.353.19	2.852.36	1.801.32	0.960.67	0.380.26	0.260.39	0.460.48	0.560.77	1.051.30	1.451.57	1.691.80	1.841.87	1.901.88	1.851.85	1.962.20	2.502.81	3.083.38	3.653.85	4.054.21	4.354.45	4.474.42	4.314.12
Θ(30°)	3.623.58	3.543.46	3.303.00	2.491.74	0.940.20	-0.21/-0.37	-0.47/-0.40	-0.180.06	0.220.29	0.360.51	0.741.04	1.321.53	1.871.72	1.741.73	1.671.54	1.311.09	1.041.21	1.541.96	2.332.63	2.913.15	3.373.58	3.783.95	4.034.00	3.873.71
Θ(37.5°)	3.183.25	3.172.99	2.722.45	2.011.34	0.50/-0.29	-0.75/-0.80	-0.63/-0.30	0.020.21	0.280.30	0.390.56	0.801.14	1.471.74	1.871.91	1.901.82	1.621.30	0.870.47	0.280.38	0.530.82	1.031.19	1.291.44	1.702.09	2.542.93	3.153.17	3.123.12
Θ(45°)	3.743.52	3.082.60	2.192.00	1.871.66	1.180.41	-0.32/-0.62	-0.450.01	0.040.43	0.20/-0.16	-0.46/-0.60	-0.52/-0.27	0.080.46	0.730.81	0.720.53	0.27/-0.07	-0.50/-0.82	-0.90/-0.67	-0.40/-0.26	-0.28/-0.37	-0.220.23	0.971.87	2.773.41	3.783.90	3.913.89
Θ(52.5°)	4.013.62	3.012.28	1.641.32	1.361.46	1.300.66	-0.28/-0.97	-1.01/-0.45	0.120.28	0.07/-0.42	-1.11/-1.73	-2.08/-1.97	-1.54/-0.94	-0.52/-0.33	-0.38/-0.61	-1.04/-1.65	-2.34/-2.74	-2.66/-2.23	-2.07/-2.23	-2.41/-2.31	-1.62/-0.51	0.701.86	2.843.56	4.054.32	4.384.27
Θ(60°)	4.044.05	3.672.98	2.101.22	0.570.31	0.300.06	-0.63/-1.64	-2.30/-2.34	-1.72/-1.19	-0.83/-0.68	-0.74/-1.02	-1.30/-1.25	-0.92/-0.40	0.080.36	0.480.37	-0.11/-1.10	-2.54/-3.95	-4.87/-4.95	-5.13/-5.66	-6.28/-5.57	-3.87/-2.23	-0.910.10	0.921.69	2.402.98	3.463.83
Θ(67.5°)	4.844.67	4.463.79	2.791.64	0.50/-0.30	-0.43/-0.23	-0.38/-1.07	-2.20/-3.14	-3.29/-2.96	-2.52/-2.09	-1.88/-2.09	-2.55/-2.84	-2.76/-2.34	-1.83/-1.30	-0.87/-0.74	-1.21/-2.39	-4.18/-5.88	-6.95/-7.20	-7.95/-8.80	-8.67/-6.62	-4.47/-2.87	-1.78/-0.96	-0.140.77	1.682.54	3.364.05
Θ(75°)	3.873.74	3.212.35	1.450.87	0.30/-0.51	-1.42/-2.16	-2.85/-3.90	-5.09/-5.78	-5.00/-3.92	-3.33/-3.25	-3.45/-3.90	-4.56/-5.12	-5.32/-5.02	-4.38/-3.46	-2.53/-1.94	-1.98/-2.79	-4.35/-6.02	-7.05/-7.29	-7.43/-8.17	-8.83/-8.51	-6.99/-5.11	-3.49/-2.04	-0.570.84	2.072.93	3.483.79
Θ(82.5°)	4.193.92	3.322.57	1.941.53	1.100.38	-0.68/-2.03	-3.42/-5.12	-7.21/-8.42	-8.25/-6.53	-5.31/-4.76	-4.73/-5.03	-5.40/-5.92	-6.26/-5.94	-5.23/-4.48	-3.76/-3.24	-3.46/-4.70	-6.60/-7.96	-7.92/-7.47	-7.06/-6.45	-6.42/-6.28	-4.96/-2.92	-1.30/-0.15	0.771.66	2.563.27	3.824.17
Θ(90°)	3.183.46	3.362.74	1.600.27	-0.84/-1.61	-2.15/-2.81	-3.73/-5.13	-7.33/-10.37	-12.19/-12.35	-9.07/-7.04	-5.68/-4.34	-3.46/-3.45	-4.03/-4.33	-4.24/-3.94	-3.45/-3.18	-3.72/-5.00	-6.15/-6.83	-7.61/-7.89	-7.75/-8.16	-9.60/-10.08	-6.93/-3.97	-2.46/-1.87	-1.64/-1.12	-0.101.02	1.992.73
Θ(97.5°)	3.073.59	3.913.75	2.981.62	-0.11/-1.52	-2.05/-2.38	-3.23/-4.39	-5.51/-6.69	-7.99/-8.14	-6.68/-5.43	-4.45/-3.32	-3.07/-3.82	-4.96/-5.95	-6.75/-7.18	-7.58/-7.60	-7.38/-6.64	-6.07/-7.19	-9.43/-8.58	-7.17/-7.58	-9.63/-9.53	-5.91/-3.52	-2.83/-3.05	-3.02/-2.03	-0.530.78	1.792.52
Θ(105°)	3.073.52	3.773.68	3.021.66	-0.35/-2.96	-4.81/-4.72	-4.55/-5.58	-7.71/-10.09	-13.10/-13.69	-10.81/-8.17	-5.95/-5.49	-4.00/-3.96	-4.50/-5.82	-6.37/-7.75	-7.57/-5.95	-4.57/-4.28	-5.07/-7.37	-9.64/-8.31	-7.99/-9.88	-13.55/-10.77	-6.87/-5.30	-5.52/-3.31	-1.230.35	-0.263.27	1.592.51
Θ(112.5°)	2.933.43	3.493.20	2.721.98	0.62/-1.81	-4.14/-3.74	-3.03/-3.88	-6.13/-8.48	-8.81/-8.23	-8.81/-11.10	-14.12/-12.53	-8.79/-7.58	-4.59/-4.86	-5.62/-5.25	-3.63/-2.32	-2.40/-4.09	-6.56/-6.80	-4.91/-4.52	-6.28/-9.23	-9.90/-5.38	-2.50/-1.83	-2.54/-3.24	-2.871.79	-0.680.13	0.952.01
Θ(120°)	1.001.76	1.881.53	0.910.17	-1.12/-3.86	-9.03/-13.04	-9.33/-8.33	-10.52/-14.03	-10.42/-7.30	-6.37/-6.52	-6.74/-6.65	-5.92/-5.12	-4.50/-4.75	-5.17/-4.79	-3.78/-3.31	-4.17/-5.34	-4.38/-2.77	-2.99/-5.70	-12.51/-14.80	-10.21/-6.18	-3.47/-2.90	-3.92/-4.66	-4.01/-3.07	-2.34/-1.81	-1.100.00
Θ(127.5°)	1.492.55	3.022.84	2.201.47	0.53/-1.10	-3.21/-4.07	-3.05/-2.38	-3.19/-5.57	-8.38/-9.09	-10.89/-11.75	-10.10/-8.28	-6.62/-5.58	-5.41/-5.76	-6.58/-7.67	-8.91/-9.18	-6.73/-2.95	-0.300.56	-0.62/-4.48	-10.80/-7.40	-3.55/-1.53	-0.41/-0.50	-1.89/-3.80	-4.37/-3.42	-2.22/-1.36	-0.680.27
Θ(135°)	-0.070.82	1.211.01	0.32/-0.87	-2.86/-6.32	-12.14/-11.60	-7.34/-5.06	-4.84/-6.06	-8.02/-9.37	-10.47/-9.51	-7.01/-4.79	-3.62/-3.40	-3.97/-5.66	-8.44/-11.09	-10.83/-7.40	-4.73/-2.67	-1.46/-1.52	-3.55/-8.82	-15.87/-9.14	-5.30/-3.14	-1.57/-1.00	-1.64/-3.05	-4.314.53	-3.913.10	-2.25/-1.21
Θ(142.5°)	-0.350.05	0.370.46	0.07/-0.94	-2.58/-5.15	-8.64/-10.60	-8.52/-6.80	-9.90/-6.05	-7.03/-8.97	-12.64/-13.32	-9.07/-5.63	-3.92/-3.58	-4.19/-5.21	-5.56/-5.56	-3.25/-2.40	-2.13/-2.64	-4.09/-6.59	-10.17/-10.40	-6.60/-4.25	-3.43/-3.03	-2.39/-1.84	-1.87/-2.17	-2.59/-2.72	-2.40/-1.76	-1.110.63
Θ(150°)	0.200.31	0.31/-0.05	-0.79/-2.03	-3.65/-5.69	-7.78/-8.85	-8.24/-7.20	-6.41/-6.01	-6.07/-6.71	-8.39/-10.48	-9.87/-5.94	-5.67/-4.98	-4.97/-5.08	-4.70/-4.07	-3.60/-3.70	-4.57/-6.13	-8.47/-10.19	-8.99/-6.49	-4.48/-3.27	-2.69/-2.30	-1.90/-1.48	-1.26/-1.25	-1.35/-1.35	-1.15/-0.76	-0.330.01
Θ(157.5°)	-3.64/-3.65	-3.94/-4.17	-4.32/-4.42	-4.80/-5.71	-7.28/-9.45	-10.97/-12.41	-11.46/-9.42	-7.97/-7.34	-7.20/-7.57	-7.81/-7.61	-7.44/-7.84	-8.29/-8.62	-8.76/-9.28	-10.20/-12.15	-14.18/-13.02	-11.17/-8.36	-6.41/-5.15	-4.31/-3.76	-3.46/-3.29	-3.20/-3.41	-3.75/-4.09	-4.29/-4.28	-4.12/-3.93	
Θ(165°)	-5.12/-4.90	-4.26/-3.60	-3.16/-3.19	-3.80/-5.06	-6.90/-6.69	-13.69/-15.18	-14.94/-13.78	-11.67/-10.12	-9.28/-9.01	-9.03/-9.22	-9.76/-10.46	-10.56/-10.26	-10.92/-11.11	-10.96/-10.35	-9.34/-8.14	-6.97/-6.00	-5.34/-4.88	-4.50/-4.16	-3.83/-3.55	-3.39/-3.31	-3.35/-3.47	-3.66/-3.90	-4.16/-4.44	-4.71/-4.94
Θ(172.5°)	-4.30/-4.26	-3.96/-3.76	-3.98/-4.78	-6.17/-8.12	-10.49/-12.28	-13.88/-15.52	-14.32/-12.95	-12.41/-11.82	-11.61/-11.81	-12.13/-12.24	-12.04/-11.46	-10.84/-10.33	-9.89/-9.49	-9.12/-8.67	-8.31/-7.98	-7.67/-7.29	-6.87/-6.40	-5.95/-5.52	-5.15/-4.75	-4.43/-4.18	-4.00/-3.82	-3.65/-3.49	-3.38/-3.42	-3.66/-4.01
Θ(180°)	-7.89/-7.89	-7.69/-7.87	-8.66/-10.10	-11.60/-13.09	-13.81/-13.08	-12.21/-11.54	-10.95/-10.16	-9.65/-9.22	-8.77/-8.72	-8.35/-7.96	-7.58/-7.57	-7.54/-7.44	-7.42/-7.60	-7.91/-8.22	-8.54/-8.80	-9.04/-8.86	-8.55/-8.21	-7.79/-7.83	-7.57/-7.39	-7.32/-7.21	-7.12/-7.01	-6.78/-6.63	-6.62/-6.64	-7.10/-7.59
Freq(Hz)	5.2G/Pol.	TotalAnt. 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°)	2.232.24	2.162.13	2.322.32	2.162.13	2.092.04	2.172.38	2.522.64	2.722.66	2.712.66	2.702.80	2.952.99	2.702.69	2.772.72	2.692.61	2.452.21	2.062.04	1.991.92	1.891.88	1.931.88	1.881.98	2.132.26	2.252.35	2.442.38	2.462.43
Θ(7.5°)	2.982.99	2.882.64	2.462.24	2.031.81	1.581.48	1.431.43	1.611.55	1.521.62	1.521.37	1.381.53	1.631.69	1.691.73	1.711.63	1.711.68	1.711.79	1.801.94	1.902.21	2.022.21	2.242.82	2.642.71	2.873.00	3.173.30	3.303.33	3.263.22
Θ(15°)	1.932.15	2.192.15	2.051.83	1.601.31	1.040.71	0.420.71	0.800.73	0.941.16	1.201.20	1.181.22	1.291.33	1.301.02	0.980.81	0.520.21	0.030.16	0.370.62	0.871.23	1.541.76	1.651.45	1.401.40	1.361.31	1.221.20	1.251.41	1.781.75
Θ(22.5°)	2.552.23	2.182.33	2.342.07	1.861.52	1.301.07	0.730.59	0.15/-0.25	-0.44/-0.46	-0.30/-0.52	-0.61/-0.67	-0.72/-0.59	-0.59/-0.69	-0.75/-0.82	-0.90/-0.99	-1.14/-1.08	-0.66/-0.05	0.440.66	0.500.28	0.15/-0.02	0.000.13	0.661.30	1.912.45	2.712.73	2.802.60
Θ(30°)	2.892.50	2.111.96	1.871.48	0.83/-0.15	-0.52/-0.77	-0.98/-1.19	-1.66/-1.94	-2.18/-2.22	-1.25/-1.97	-1.69/-1.49	-1.43/-1.35	-1.18/-0.95	-0.88/-1.02	-1.49/-1.69	-1.75/-1.56	-1.19/-0.88	-1.00/-1.65	-2.52/-2.55	-1.64/-0.65	0.180.73	0.880.91	1.151.45	1.791.89	2.212.64
Θ(37.5°)	2.521.98	1.551.42	1.531.51	0.82/-0.02	-0.50/-1.11	-1.55/-1.79	-1.84/-1.55	-1.23/-1.00	-1.22/-1.66	-1.97/-2.24	-2.58/-2.89	-2.53/-1.23	-0.64/-1.20	-1.75/-1.52	-1.12/-0.92	-1.24/-1.97	-2.79/-2.37	-1.03/-0.27	-0.14/-0.34	-0.150.34	0.831.08	1.341.65	2.052.49	2.832.83
Θ(45°)	0.750.08	-0.17/-0.22	-0.97/-1.76	-2.72/-3.69	-4.37/-2.52	-2.41/-2.18	-2.49/-3.18	-3.63/-3.29	-2.81/-2.74	-2.75/-2.97	-4.30/-5.57	-4.48/-2.01	-1.14/-1.89	-2.29/-2.10	-2.52/-3.23	-3.76/-3.91	-3.11/-2.29	-1.97/-2.01	-1.29/-0.72	-0.36/-0.21	-0.36/-0.36	-0.32/-0.14	0.170.24	0.260.58



Antenna Pattern of 2.4GHz and 5GHz

Appendix C

Θ(22.5°)	2.80/2.59	2.52/2.28	2.09/2.19	2.19/2.17	1.68/1.24	1.07/0.63	0.74/0.95	1.09/1.33	1.55/1.74	1.57/1.38	1.29/1.26	1.36/1.33	1.38/1.41	1.42/1.48	1.65/1.56	1.46/1.58	2.17/2.85	3.34/3.54	3.51/3.19	2.64/2.13	2.05/2.27	2.43/2.65	2.90/3.07	3.08/3.08
Θ(30°)	2.06/2.02	1.61/1.39	1.49/1.21	0.79/0.99	1.05/1.10	1.18/1.09	1.01/0.53	-0.08/-0.35	-0.18/0.02	0.17/0.25	0.39/0.45	0.36/0.09	0.09/0.03	0.00/0.02	0.35/0.47	0.80/1.50	2.26/2.30	1.73/1.29	1.60/1.97	2.25/2.23	1.99/1.89	1.92/1.88	1.90/2.11	2.19/2.13
Θ(142.5°)	2.50/1.95	1.56/1.37	1.30/1.62	2.00/2.27	2.28/1.96	1.38/1.29	1.47/1.47	1.15/0.42	-0.06/-0.29	-0.14/0.11	0.47/0.26	-0.53/-0.92	0.07/0.81	0.38/-0.37	-0.31/0.08	0.87/1.33	1.22/1.47	2.86/3.66	3.44/2.71	2.00/1.60	1.32/0.97	0.36/0.26	0.99/1.92	2.53/2.66
Θ(45°)	1.63/1.42	1.38/1.83	1.50/1.13	1.29/1.30	1.35/1.62	2.02/2.07	1.66/1.34	0.95/0.70	0.38/-0.11	-0.85/-0.98	-0.04/0.31	-0.98/-1.82	-0.71/-0.49	-1.41/-1.23	-0.33/-0.32	-0.08/0.49	2.03/3.36	3.54/3.32	3.49/3.24	2.83/2.32	1.07/0.41	0.59/0.27	0.08/0.39	1.01/1.42
Θ(52.5°)	1.36/0.83	0.09/0.18	0.80/1.08	1.15/1.31	1.44/1.08	0.48/0.39	0.58/0.65	0.35/0.11	-0.44/-0.51	-0.82/-1.16	-0.83/-1.19	-0.70/-0.79	-0.66/-2.04	-2.78/-2.78	-3.44/-2.75	-1.46/0.14	1.51/1.58	1.78/1.74	1.38/1.43	1.32/1.18	1.03/-0.01	-1.26/-2.26	-2.43/-1.21	0.12/1.19
Θ(60°)	2.52/1.86	1.48/1.26	1.24/1.61	1.48/0.65	0.12/-0.40	-0.81/-1.12	-1.72/-2.39	-2.96/-3.17	-3.70/-3.69	-0.08/-0.24	-2.35/-2.34	-2.05/-1.60	-2.22/-2.32	-2.94/-2.25	-2.23/-1.09	-0.19/0.56	1.05/1.14	1.01/0.53	-0.13/-0.63	-0.13/-0.92	-0.57/-0.57	-0.11/0.85	1.88/2.47	
Θ(67.5°)	0.49/0.82	0.52/0.82	0.63/0.37	0.33/-0.47	-0.90/-1.53	-1.93/-1.89	-2.02/2.35	-2.56/2.35	-3.11/-4.08	-4.80/-4.37	-3.66/-3.76	-3.98/-4.11	-3.51/-3.31	-2.94/-2.58	-3.10/-4.38	-3.64/-2.83	-1.89/-1.33	-1.48/-1.63	-1.80/-1.82	-2.05/-2.50	-3.27/-3.29	-2.41/2.08	-1.73/-1.08	-0.28/-0.26
Θ(75°)	0.60/0.55	0.17/0.52	0.46/0.29	-0.40/-1.28	-2.98/-3.50	-3.16/-3.13	-2.75/-1.76	-1.44/-1.69	-2.37/-3.15	-4.03/-3.97	-3.26/-4.15	-4.75/-3.78	-3.76/-3.64	-3.83/-3.98	-4.24/-5.04	-4.08/-3.76	-2.81/-3.34	-2.73/-2.99	-3.73/-3.31	-3.89/-3.99	-3.66/-3.84	-3.59/-2.90	-2.92/-2.03	-0.74/0.11
Θ(82.5°)	1.76/0.83	-0.50/-0.10	0.34/-0.17	-2.15/-3.20	-3.47/-4.11	-4.14/-3.18	-2.86/-2.02	-1.35/-1.46	-2.18/-3.17	-4.74/-5.78	-5.18/-5.61	-4.67/-4.08	-2.77/-1.34	-2.05/-3.25	-4.80/-4.86	-4.08/-4.01	-3.37/-3.60	-3.98/-4.28	-4.38/-5.08	-5.54/-4.70	-3.34/-2.69	-2.03/-1.53	-0.37/0.81	1.79/1.98
Θ(90°)	0.74/0.64	-0.54/-0.89	-1.51/-1.57	-3.12/-4.90	-6.13/-6.11	-6.46/-6.55	-5.55/-3.79	-2.43/-1.22	-1.72/-4.43	-6.50/-7.18	-6.35/-7.14	-7.80/-7.00	-5.42/-3.47	-3.83/-5.02	-4.88/-2.77	-3.83/-3.21	-2.71/-3.57	-4.47/-5.07	-5.85/-5.67	-5.80/-5.58	-3.55/-1.98	-1.78/-2.35	-2.21/-1.06	1.04/1.47
Θ(97.5°)	-0.76/0.14	-0.31/-1.68	-3.89/-3.92	-4.52/-6.68	-7.95/-7.71	-7.66/-7.15	-6.63/-5.47	-4.05/-3.24	-3.18/-5.11	-11.07/-12.40	-11.90/-10.33	-9.90/-12.53	-8.21/-8.54	-6.72/-4.95	-4.26/-4.45	-5.22/-4.27	-3.65/-5.24	-7.50/-9.19	-5.74/-5.22	-6.28/-3.79	-3.32/-3.39	-3.39/-3.22	-3.26/-1.99	-0.09/0.42
Θ(105°)	-0.58/0.60	-0.33/-2.69	-4.54/-4.75	-6.45/-4.78	-8.51/-7.83	-8.51/-9.98	-6.69/-5.41	-4.24/-4.28	-6.09/-7.76	-12.97/-8.34	-8.45/-9.80	-10.60/-12.95	-9.55/-6.11	-8.54/-10.03	-7.27/-7.14	-7.34/-7.58	-6.87/-8.03	-13.47/-12.82	-8.67/-6.89	-8.61/-4.83	-2.29/-1.76	-2.21/-2.81	-2.24/-0.47	0.67/0.24
Θ(112.5°)	-0.34/0.41	-0.08/-1.56	-3.44/-5.59	-5.69/-9.50	-7.50/-10.24	-9.46/-9.05	-8.62/-7.44	-6.06/-6.08	-8.50/-13.17	-13.31/-8.99	-11.69/-13.21	-14.62/-13.00	-8.29/-4.20	-6.45/-13.65	-14.36/-7.76	-8.31/-12.65	-10.98/-15.03	-12.76/-14.23	-7.99/-6.58	-8.35/-6.50	-3.67/-2.99	-4.12/-6.34	-6.24/-1.82	1.07/0.48
Θ(120°)	-1.59/0.75	1.20/-0.08	-1.89/-3.21	-4.48/-8.13	-8.58/-10.95	-10.33/-9.12	-8.58/-8.96	-6.98/-8.01	-9.54/-11.70	-12.30/-9.35	-9.65/-8.96	-8.63/-9.91	-12.12/-9.33	-4.79/-6.13	-14.00/-13.87	-11.19/-12.52	-12.47/-12.16	-10.21/-6.12	-2.86/-5.49	-6.91/-4.69	-2.01/-0.87	-2.67/-5.16	-3.52/-0.74	0.39/-1.07
Θ(127.5°)	1.08/1.34	0.04/-2.03	-3.39/-4.04	-4.61/-9.09	-8.72/-11.30	-10.91/-11.28	-10.00/-10.28	-8.35/-9.54	-10.43/-10.81	-14.15/-15.61	-14.67/-11.92	-8.34/-8.74	-9.20/-8.57	-12.64/-9.59	-16.11/-14.77	-8.96/-12.20	-15.63/-4.30	-3.96/-8.89	-6.01/-4.76	-5.14/-3.26	-5.10/-5.89	-4.40/-0.01	3.37/2.83	
Θ(135°)	-0.95/-0.83	-2.21/-5.00	-5.25/-4.83	-5.70/-11.03	-8.42/-14.30	-9.38/-13.56	-14.80/-10.94	-12.08/-10.02	-14.19/-12.70	-10.40/-8.10	-8.03/-12.39	-9.92/-6.95	-8.01/-9.50	-5.64/-10.92	-7.69/-9.72	-6.20/-6.77	-5.53/-9.11	-13.05/-4.60	-4.28/-12.36	-11.03/-6.43	-3.77/-1.81	-0.76/-4.36	-3.39/-0.25	1.14/0.51
Θ(142.5°)	-2.26/-3.52	-3.42/-5.45	-5.22/-8.99	-4.48/-8.12	-10.49/-12.26	-10.33/-10.51	-14.85/-12.07	-11.34/-11.66	-13.10/-11.75	-10.17/-9.17	-9.48/-9.49	-6.99/-6.21	-10.04/-14.90	-16.02/-10.10	-7.23/-8.73	-5.30/-3.30	-6.82/-10.58	-4.13/-1.44	-3.05/-7.14	-8.47/-3.81	-0.33/0.16	-0.24/-0.89	-2.96/-2.00	-0.08/-0.31
Θ(150°)	-2.40/-5.85	-8.02/-8.70	-9.42/-10.08	-10.00/-8.11	-8.35/-8.83	-6.35/-13.37	-13.03/-13.58	-13.74/-12.77	-11.25/-9.79	-8.62/-1.82	-7.38/-7.01	-6.45/-5.72	-5.06/-4.68	-4.60/-4.79	-5.17/-6.47	-6.66/-6.90	-7.11/-7.26	-5.02/-6.85	-6.35/-5.82	-5.20/-4.55	-3.93/-3.58	-3.59/-3.87	-4.27/-4.64	
Θ(157.5°)	-0.72/-2.60	-4.08/-4.58	-4.88/-6.29	-9.28/-11.26	-13.26/-13.53	-11.00/-9.28	-10.86/-13.30	-10.40/-9.09	-10.14/-11.53	-11.85/-11.66	-11.44/-11.83	-9.43/-5.44	-2.84/-1.77	-2.29/-3.97	-5.37/-6.25	-8.96/-15.43	-11.78/-7.10	-6.14/-6.36	-6.71/-7.60	-8.98/-11.27	-15.01/-11.21	-6.24/-3.68	-1.69/0.03	0.89/0.45
Θ(165°)	-1.90/-2.31	-2.87/-3.34	-4.79/-4.69	-7.69/-8.26	-9.12/-9.67	-10.07/-10.41	-10.81/-11.56	-12.38/-12.61	-12.74/-11.30	-9.71/-7.56	-5.41/-4.06	-3.17/-2.65	-2.74/-3.49	-4.54/-5.64	-6.56/-7.76	-9.13/-9.18	-6.65/-5.85	-6.05/-6.58	-7.16/-7.77	-8.08/-7.68	-7.22/-6.85	-6.25/-5.44	-2.71/-1.68	-1.61/-1.90
Θ(172.5°)	-9.73/-9.96	-9.05/-8.54	-8.43/-7.96	-7.62/-7.12	-7.23/-7.26	-7.54/-8.49	-8.74/-8.09	-8.16/-8.49	-7.96/-7.00	-6.65/-7.02	-7.69/-7.70	-7.11/-6.35	-5.64/-5.19	-5.15/-5.13	-5.41/-5.83	-5.86/-5.71	-5.47/-5.33	-5.38/-5.76	-6.52/-7.22	-8.19/-9.02	-9.35/-9.00	-9.13/-10.17	-10.52/-10.89	-11.64/-10.32
Θ(180°)	-14.73/-13.31	-12.22/-10.55	-10.22/-10.56	-9.48/-9.82	-11.02/-12.43	-13.89/-13.73	-13.56/-14.15	-13.58/-12.72	-11.20/-10.32	-10.15/-10.51	-10.53/-10.89	-10.62/-10.05	-9.79/-9.78	-9.98/-10.06	-10.24/-10.25	-9.88/-9.78	-9.72/-9.50	-9.74/-10.04	-10.67/-11.73	-12.44/-12.97	-13.09/-12.46	-11.54/-11.46	-11.98/-12.59	-14.00/-15.49
Freq(Pol)	2.45GPol	TotalAnt. 2	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-8.28/-7.88	-7.63/-7.63	-8.06/-8.40	-8.42/-8.21	-7.92/-7.62	-7.45/-7.45	-7.82/-7.86	-7.78/-7.71	-7.64/-7.32	-6.91/-6.65	-6.62/-6.79	-7.03/-7.24	-7.28/-7.24	-6.81/-6.81	-7.02/-7.56	-7.95/-8.13	-8.15/-8.12	-8.28/-8.52	-8.73/-8.57	-8.10/-7.92	-7.89/-8.04	-8.16/-7.95	-7.77/-7.90	-8.33/-8.75
Θ(7.5°)	-8.25/-8.24	-8.51/-9.29	-10.43/-8.17	-12.16/-12.02	-11.74/-11.27	-10.96/-10.59	-10.66/-10.81	-10.79/-10.42	-8.70/-9.01	-8.31/-7.85	-7.75/-7.68	-7.49/-7.09	-6.61/-6.25	-6.08/-5.90	-6.07/-6.52	-6.73/-6.71	-6.56/-5.60	-6.63/-6.84	-7.02/-7.01	-6.90/-6.71	-6.66/-6.43	-6.24/-6.14	-6.27/-6.72	-7.31/-7.88
Θ(15°)	-5.05/-5.67	-6.90/-7.55	-10.31/-11.82	-12.00/-12.74	-13.23/-13.66	-13.59/-13.37	-13.03/-13.58	-13.74/-12.77	-11.25/-9.79	-8.62/-1.82	-7.38/-7.01	-6.45/-5.72	-5.06/-4.68	-4.60/-4.79	-5.17/-6.47	-6.66/-6.90	-7.11/-7.26	-5.02/-6.85	-6.35/-5.82	-5.20/-4.55	-3.93/-3.58	-3.59/-3.87	-4.27/-4.64	
Θ(22.5°)	-1.66/-2.27	-3.33/-4.74	-6.24/-7.31	-9.83/-8.64	-9.40/-10.13	-10.35/-10.24	-10.24/-10.28	-9.81/-8.97	-8.13/-7.53	-7.11/-6.86	-6.74/-6.51	-6.04/-5.38	-4.77/-4.49	-4.56/-4.94	-5.47/-5.94	-6.31/-6.95	-8.03/-9.04	-9.63/-9.70	-8.90/-7.69	-6.47/-5.46	-4.52/-3.43	-2.50/-1.83	-1.50/-1.40	-1.40/-1.49
Θ(30°)	-0.11/-0.49	-1.17/-2.01	-2.90/-3.57	-4.09/-4.69	-5.32/-5.88	-6.15/-6.28	-6.27/-6.06	-5.43/-4.82	-4.46/-4.46	-4.71/-5.11	-5.58/-6.00	-6.15/-6.04	-5.74/-5.53	-5.52/-5.67	-5.79/-5.89	-6.26/-7.01	-8.16/-9.50	-10.95/-12.42	-10.77/-8.36	-6.27/-4.84	-3.60/-2.54	-1.72/-1.11	-0.66/-0.37	-0.13/-0.01
Θ(37.5°)	-0.72/-0.79	-1.00/-1.30	-1.64/-1.95	-2.19/-2.44	-2.78/-3.23	-3.65/-3.99	-4.06/-3.68	-3.01/-2.35	-2.04/-2.06	-2.45/-3.05	-3.71/-4.41	-4.89/-5.09	-5.03/-4.88	-4.66/-4.42	-4.22/-4.17	-4.34/-4.73	-5.49/-6.52	-7.73/-8.20	-7.10/-5.25	-3.75/-2.78	-2.23/-1.92	-1.65/-1.46	-1.31/-1.20	-1.06/-0.87
Θ(45°)	-1.50/-1.36	-1.46/-1.52	-1.51/-1.43	-1.28/-1.06	-0.92/-1.01	-1.44/-2.09	-2.85/-2.46	-1.82/-1.14	-0.73/-0.67	-0.89/-1.52	-2.07/-2.50	-2.69/-2.70	-2.80/-2.56	-2.59/-2.62	-2.71/-2.81	-2.89/-3.04	-3.40/-4.07	-4.86/-5.08	-4.12/-2.72	-1.75/-1.41	-1.55/-1.95	-2.31/-2.40	-2.34/-2.28	-2.13/-1.80
Θ(52.5°)	-1.02/-1.30	-1.90/-2.46	-2.57/-2.22	-1.64/-0.90	-0.70/-0.27	0.16/-0.51	-1.18/-1.27	-0.68/-0.01	0.37/0.30	-0.26/-1.07	-1.81/-2.17	-2.14/-2.01	-2.07/-2.38	-2.72/-3.09	-3.30/-3.28	-3.12/-3.21	-3.75/-4.60	-5.16/-4.64	-3.29/-2.19	-1.76/-2.03	-2.76/-3.49	-3.66/-3.23	-2.63/-2.11	-1.60/-1.20
Θ(60°)	-2.19/-2.49	-3.09/-3.68	-3.83/-3.50	-2.95/-2.29	-1.37/-0.39	0.13/-0.17	-0.90/-1.40	-1.03/-0.33	0.08/-0.07	0.86/-2.25	-3.69/-4.39	-4.25/-3.94	-3.96/-4.29	-4.80/-5.30	-6.04/-6.45	-4.01/-4.06	-4.81/-5.36	-4.78/-3.42	-2.37/-1.77	-1.85/-2.84	-3.67/-4.32	-4.43/-4.25	-3.91/-3.29	-2.59/-2.19
Θ(67.5°)	-1.34/-1.41	-1.82/-2.42	-2.84/-3.03	-3.18/-3.55	-3.57/-2.38	-1.01/-0.66	-1.24/-1.98	-1.88/-1.22	-0.58/-0.53	-1.29/-2.68	-3.90/-4.18	-4.05/-4.10	-4.43/-5.26	-6.39/-6.88	-6.02/-4.95	-4.15/-3.48	-2.93/-2.33	-1.63/-1.07	-0.47/-0.48	-0.99/-1.95	-2.88/-3.82	-4.85/-5.70	-5.51/-4.62	-3.04/-1.85
Θ(75°)	0.38/-0.11	-1.27/-2.64	-3.25/-2.57	-1.89/-2.15	-3.49/-4.75	-3.89/-2.71	-2.41/-2.24	-1.58/-0.79	-0.21/-0.20	-0.93/-1.97	-2.35/-2.04	-1.83/-1.91	-2.20/-3.03	-4.04/-3.88	-3.14/-2.97	-2.65/-								



Antenna Pattern of 2.4GHz and 5GHz

Appendix C

θ(75°)	-0.85/-0.78	-1.58/-6.31	-4.86/-2.63	-2.88/-1.58	-0.54/0.46	0.84/0.35	-0.79/-1.84	-2.35/-1.94	-3.31/-7.18	-7.58/-4.23	-3.80/-5.46	-4.55/-3.26	-4.39/-4.37	-2.74/-0.74	-1.53/-2.81	-1.21/-0.99	-2.19/0.01	0.56/0.82	1.31/0.97	0.39/-1.39	-5.27/-9.38	-6.33/-5.84	-5.62/-1.75	-0.35/-1.54
θ(82.5°)	-5.02/-3.09	-4.38/-6.90	-2.56/0.02	0.21/-1.47	-0.63/0.89	1.29/1.90	1.22/-0.04	-0.97/-1.85	-1.99/-4.26	-8.22/-3.53	-2.16/-3.60	-3.61/-1.20	-1.38/-2.22	0.49/0.71	-1.01/-1.72	-0.17/-2.02	-0.81/0.02	-0.47/0.52	1.15/0.89	-0.46/-2.76	-7.24/-7.80	-4.65/-3.41	-4.78/-2.73	-2.12/-6.66
θ(90°)	-5.11/-3.87	-4.60/-7.94	-2.94/-1.08	-0.14/-3.21	-1.33/1.09	2.23/1.99	1.53/1.07	0.52/0.90	0.02/-3.08	-7.89/-3.86	-2.54/-3.16	-1.20/-1.48	-1.41/-1.12	2.32/2.21	-0.55/-0.50	0.55/-1.51	0.33/-0.71	-0.23/-0.14	0.85/-1.65	-0.30/-3.39	-3.03/-1.94	-2.49/-2.20	-2.72/-2.93	-1.33/-7.61
θ(97.5°)	-7.89/-4.99	-4.94/-5.20	-3.20/-5.04	-2.66/-3.85	-1.20/1.74	2.11/1.75	0.33/-0.99	-0.47/0.99	0.10/-4.24	-7.14/-1.50	0.03/-3.09	-0.27/0.29	-0.01/-0.10	2.71/0.71	-1.04/-0.63	0.01/1.64	1.27/1.58	1.79/1.94	2.41/2.29	2.06/0.22	-1.18/-0.98	-0.52/-1.21	-2.68/-3.46	-2.76/-7.01
θ(105°)	-4.88/-5.72	-1.99/-6.20	-3.80/-3.88	-1.92/-3.98	-2.88/-0.19	1.48/1.90	0.59/-0.85	-0.11/0.70	0.34/-1.52	-13.01/-6.30	-2.52/-4.75	-1.75/-1.07	-1.97/-1.54	1.58/2.34	0.79/-0.72	0.76/0.89	1.69/2.72	1.46/1.91	1.07/2.19	0.86/-0.68	-0.85/-2.97	-2.01/-2.52	-4.04/-4.26	-4.08/-5.07
θ(112.5°)	-6.92/-5.71	-2.06/-4.26	-4.77/-4.34	-4.19/-4.05	-5.82/-2.60	-0.79/-1.21	-0.92/-0.64	-1.99/-1.24	-0.94/-6.24	-1.11/-1.98	-1.45/-3.62	1.00/1.14	-1.09/-0.69	3.02/3.35	0.26/-1.88	-1.04/0.24	1.01/1.08	-0.97/-0.15	0.24/0.24	-0.75/-1.76	-1.39/-3.69	-1.16/-0.73	-4.61/-4.59	-7.36/-8.29
θ(120°)	-6.12/-5.16	-1.09/-2.22	-7.36/-7.68	-8.21/-2.06	-3.78/-3.40	-3.37/-2.04	-2.83/-3.05	-3.39/-2.76	-3.40/-8.91	-6.26/-2.10	-2.83/-5.28	-2.53/-0.19	-1.85/-6.14	0.13/2.88	1.41/-0.13	1.90/1.38	1.96/-0.36	-1.21/-4.35	-4.69/0.90	-2.46/-3.50	-2.64/-2.96	-1.62/-2.90	-5.07/-0.71	1.16/-1.49
θ(127.5°)	-6.82/-6.96	-2.01/-5.82	-8.29/-5.44	-7.82/-2.82	-2.87/-1.17	-7.36/-4.35	-3.59/-3.04	-2.35/-3.06	-4.43/-6.17	-5.91/-4.32	-2.70/-1.87	-0.15/-1.19	-0.02/-0.61	1.61/4.42	2.14/0.14	-1.26/0.12	0.38/-1.73	-0.22/-8.66	-3.53/-0.13	-2.85/-3.81	-3.61/-4.46	-4.78/-1.74	-1.05/-2.81	0.52/-0.85
θ(135°)	-5.89/-14.41	-7.55/-10.70	-6.72/-11.14	-6.14/-4.96	-12.11/-6.74	-6.14/-4.96	-12.11/-6.74	-2.47/-2.45	-2.53/-1.69	-2.40/-2.99	-2.46/-2.23	-0.10/1.85	0.68/1.75	3.97/3.62	0.70/-0.44	2.09/0.41	-0.51/2.35	-1.92/-12.64	-2.54/2.16	-0.61/-4.18	-7.08/-5.31	-0.94/-2.57	-8.31/-5.71	-7.57/-4.98
θ(142.5°)	-6.53/-8.07	-8.60/-11.49	-13.65/-9.65	-6.78/-9.45	-10.09/-4.03	-4.04/-3.89	-1.52/-3.03	-3.74/-2.03	-2.16/-2.90	-2.29/-2.55	-4.32/-4.04	-2.14/-2.95	-2.51/-1.40	-0.69/0.55	-1.04/-4.01	1.19/0.40	2.35/2.91	-3.54/-4.02	-1.76/2.18	2.68/2.57	-1.87/-4.19	-5.14/-2.71	-5.79/-11.85	-7.39/-7.14
θ(150°)	-4.38/-5.47	-4.71/-8.12	-14.11/-12.29	-13.88/-11.17	-4.39/-2.15	-3.24/-3.88	-1.91/-1.01	-3.25/-3.72	-7.17/-5.87	-6.12/-6.66	-3.77/-1.30	-0.47/-2.12	-3.79/-2.23	-0.45/-0.14	-1.50/-2.52	-3.83/-3.85	-1.74/-4.40	-9.83/-6.72	-5.32/-1.32	-0.09/0.28	-2.20/-8.65	-6.72/-7.12	-6.66/-10.01	-11.42/-6.54
θ(157.5°)	-7.88/-9.07	-10.17/-7.88	-5.28/-5.42	-8.30/-11.85	-6.86/-5.79	-8.56/-8.28	-4.83/-3.34	-4.66/-7.07	-8.88/-4.40	-2.46/-1.04	-0.04/0.58	0.78/0.85	-0.36/-1.18	-1.62/-1.83	-2.05/-2.17	-3.06/-5.59	-8.86/-9.13	-4.45/-2.17	-1.56/-1.56	-1.06/-2.05	-4.94/-7.31	-6.71/-7.80	-8.75/-8.14	
θ(165°)	-5.07/-5.74	-7.09/-9.19	-12.50/-12.58	-11.25/-10.10	-9.04/-8.50	-9.14/-9.32	-9.43/-8.88	-7.76/-5.88	-4.52/-4.03	-3.26/-2.64	-2.18/-1.44	-0.97/-0.69	-0.57/-0.64	-0.67/-0.76	-0.95/-1.41	-2.27/-4.24	-6.58/-8.81	-10.41/-11.66	-9.86/-7.22	-6.71/-7.74	-10.14/-14.87	-14.25/-11.27	-7.98/-5.35	-5.52/-5.44
θ(172.5°)	-7.72/-8.13	-8.37/-9.54	-12.23/-15.39	-15.21/-12.63	-11.08/-9.17	-8.26/-7.35	-7.39/-7.72	-8.15/-8.54	-8.12/-7.56	-6.33/-4.99	-4.03/-3.07	-2.67/-2.78	-3.40/-4.49	-6.10/-8.19	-11.14/-13.73	-14.82/-14.52	-12.23/-10.50	-9.56/-8.61	-7.46/-7.72	-6.41/-6.90	-6.71/-6.21	-6.46/-8.73	-10.83/-11.97	-13.02/-9.48
θ(180°)	-10.00/-11.26	-11.89/-10.25	-9.65/-8.97	-9.01/-9.98	-11.72/-11.90	-10.39/-9.40	-9.31/-8.94	-8.10/-7.17	-6.45/-5.91	-5.69/-5.91	-6.34/-7.23	-7.89/-7.90	-7.22/-6.15	-5.22/-4.61	-4.33/-4.00	-3.71/-3.87	-4.07/-4.38	-4.49/-4.84	-4.61/-4.49	-4.51/-4.31	-4.46/-4.45	-3.67/-3.98	-5.03/-5.94	-6.86/-4.88
Freq(Hz)	5.785GPol.	TotalAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
θ(0°)	-6.71/-6.85	-6.90/-7.16	-7.14/-6.59	-6.64/-6.84	-6.78/-6.74	-7.07/-6.68	-6.25/-6.68	-5.53/-5.23	-5.51/-7.51	-5.52/-6.14	-6.54/-6.11	-6.12/-6.28	-6.81/-7.27	-7.27/-7.41	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
θ(7.5°)	-4.77/-4.69	-5.01/-4.92	-5.24/-5.24	-5.55/-6.13	-5.99/-6.40	-6.86/-6.64	-6.27/-6.05	-6.04/-5.69	-6.38/-7.03	-7.03/-7.17	-7.99/-8.39	-7.92/-7.78	-8.09/-8.49	-8.66/-8.43	-8.45/-8.11	-7.81/-7.76	-7.63/-7.27	-6.66/-6.18	-6.08/-6.20	-6.48/-6.07	-5.45/-5.08	-4.95/-4.48	-4.18/-3.82	-4.73/-4.86
θ(15°)	-5.12/-6.41	-7.57/-8.07	-8.11/-6.41	-5.39/-5.08	-4.49/-4.96	-5.67/-5.93	-6.33/-6.62	-6.71/-6.03	-5.93/-5.78	-5.87/-6.17	-6.62/-7.03	-6.84/-6.37	-5.95/-5.84	-6.12/-6.51	-7.01/-6.69	-6.24/-6.31	-6.60/-6.32	-6.62/-7.24	-7.71/-7.84	-7.39/-6.07	-4.72/-3.83	-3.41/-3.08	-3.02/-2.23	-3.28/-4.38
θ(22.5°)	-3.71/-5.13	-6.38/-8.16	-9.46/-9.63	-7.82/-7.32	-6.68/-6.35	-7.13/-7.34	-7.82/-8.10	-7.57/-7.51	-6.98/-6.58	-5.97/-5.79	-6.82/-9.23	-9.66/-7.08	-5.96/-5.68	-5.28/-4.50	-6.46/-6.58	-6.30/-6.05	-6.16/-9.91	-4.54/-3.39	-7.17/-6.39	-4.54/-3.39	-2.96/-3.37	-2.68/-1.72	-2.66/-3.34	
θ(30°)	-9.03/-11.87	-10.46/-8.15	-7.05/-7.90	-7.28/-7.29	-6.05/-5.46	-4.91/-4.88	-5.31/-5.46	-6.69/-9.28	-11.19/-10.43	-7.79/-5.91	-5.06/-4.96	-6.08/-9.56	-12.45/-9.41	-5.95/-4.04	-3.27/-3.46	-4.40/-6.34	-6.68/-6.28	-7.54/-8.87	-9.31/-7.05	-5.13/-5.12	-5.98/-5.58	-4.34/-2.72	-2.18/-2.14	-3.51/-6.01
θ(37.5°)	-5.13/-5.30	-4.58/-3.93	-4.17/-6.68	-7.64/-7.13	-5.64/-4.85	-4.43/-4.16	-4.55/-6.06	-5.52/-6.39	-7.90/-10.60	-10.39/-6.91	-4.66/-4.40	-5.98/-7.76	-4.87/-1.87	-1.06/-1.59	-2.60/-3.80	-4.39/-4.27	-3.02/-0.21	-1.53/-1.12	-1.42/-3.66	-6.07/-6.16	-4.29/-3.33	-2.90/-3.44	-0.39/-3.21	-3.61/-5.44
θ(45°)	-1.41/0.04	-1.28/-3.34	-4.13/-6.37	-7.68/-6.66	-6.13/-7.32	-7.59/-5.91	-4.58/-5.16	-6.35/-7.23	-7.55/-6.60	-4.77/-3.90	-4.52/-6.38	-6.93/-3.71	-0.72/-0.11	-0.77/-1.36	-2.11/-1.49	-0.55/-0.51	-0.64/-0.78	-0.15/-1.14	1.09/-0.89	-2.31/-1.28	-0.30/-0.13	-0.01/-0.75	-2.62/-3.32	
θ(52.5°)	-2.42/0.35	0.83/-1.68	-4.77/-7.33	-6.72/-4.71	-5.26/-6.14	-6.61/-7.63	-9.28/-11.44	-10.84/-7.34	-5.23/-5.42	-5.92/-6.14	-5.87/-4.45	-4.39/-5.83	-6.81/-5.30	-3.36/-2.15	-1.09/-1.63	-2.11/-1.10	-0.37/-0.13	1.50/2.86	3.26/2.86	2.04/0.86	-1.81/-3.07	-0.96/0.31	-2.68/-1.04	-1.93/-2.87
θ(60°)	-0.69/0.84	0.79/-1.01	-4.97/-4.99	-2.99/-2.32	-3.29/-4.66	-4.25/-4.50	-7.04/-11.22	-15.89/-13.71	-10.34/-8.16	-6.85/-7.01	-6.20/-5.47	-6.28/-4.55	-4.39/-3.84	-2.20/-0.74	-1.23/-2.52	-1.83/-1.11	-0.56/0.56	1.59/1.97	2.32/2.42	1.84/0.31	-1.84/-4.33	-3.18/-1.06	-0.49/-1.33	-1.48/-1.55
θ(67.5°)	0.43/1.79	2.03/-0.55	-6.74/-6.94	-3.11/-2.31	-2.67/-2.15	-1.69/-1.40	-2.84/-5.11	-6.19/-7.14	-0.88/-6.79	-4.72/-5.64	-5.07/-2.89	-1.75/-2.26	-5.01/-4.19	-0.95/-0.01	-0.58/-1.01	-2.25/-1.25	-1.80/-1.30	-0.63/0.85	1.52/2.01	2.70/1.47	-2.41/-5.44	-3.90/-2.15	-1.28/-1.03	-2.97/-2.38
θ(75°)	-1.69/-0.48	0.64/-4.50	-3.56/-7.29	-3.23/-2.48	-3.18/-2.10	-0.88/-0.81	-1.20/-2.71	-4.49/-4.83	-5.92/-6.16	-3.78/-2.94	-3.88/-4.11	-2.02/-1.56	-4.24/-4.24	-0.90/-4.02	-0.11/-0.73	0.37/0.65	-1.17/-1.52	-1.67/-1.37	0.54/1.62	1.47/1.18	-0.51/-4.61	-3.83/-1.47	-2.15/-3.57	-0.31/0.35
θ(82.5°)	-4.88/-4.39	-2.19/-4.34	-10.76/-2.60	-0.62/-1.81	-2.29/-0.18	1.29/1.68	0.35/-1.72	-3.10/-3.20	-4.53/-6.38	-4.41/-3.27	-0.01/-4.00	-1.65/-1.72	-2.67/-3.07	0.01/0.58	-0.93/-1.44	0.42/0.26	-1.24/-1.43	-2.85/-1.42	0.41/0.63	0.13/0.08	-2.36/-6.25	-4.89/-2.12	-3.12/-4.86	-3.54/-5.24
θ(90°)	-4.08/-2.70	-2.29/-7.32	-6.21/-2.56	-1.37/-3.84	-3.15/-0.86	1.54/2.14	1.52/-0.09	-1.37/-1.99	-3.26/-4.58	-4.39/-1.88	-4.14/-3.93	-1.28/-0.40	-2.54/-3.46	1.43/1.26	-1.68/-3.28	-0.13/-1.07	0.35/-0.16	-1.06/-2.20	-2.14/-0.82	-0.81/-2.20	-4.00/-4.72	-3.78/-0.86	-3.32/-6.17	-4.01/-4.85
θ(97.5°)	-3.26/-1.99	-2.29/-2.88	-5.31/-6.15	-2.27/-4.26	-2.91/0.68	2.02/2.16	0.83/-1.50	-3.17/-2.83	-2.57/-6.36	-4.37/-1.86	-3.01/-2.92	-1.10/0.07	-4.87/-7.00	2.21/-0.17	-3.06/-0.82	0.11/-1.57	2.10/0.47	-0.20/-2.38	-1.98/-0.67	0.20/-0.25	-2.12/-2.48	-0.23/-0.04	-3.22/-4.26	-1.39/-2.68
θ(105°)	-3.41/-4.03	-1.24/-7.41	-4.95/-1.76	-0.09/-2.09	-2.96/-1.74	1.04/1.76	0.77/-2.05	-3.71/-2.27	-2.77/-5.32	-5.74/-4.28	-5.40/-6.43	-1.48/-1.10	-5.76/-0.31	2.15/0.43	-0.91/-1.60	1.05/2.08	2.35/2.53	-0.03/-2.28	-2.06/-1.22	-2.41/-2.14	-0.69/-3.63	-2.04/-3.11	-8.55/-9.30	-4.40/-2.95
θ(112.5°)	-5.98/-7.04	-4.40/-8.06	-5.99/-8.99	-2.93/-3.61	-4.84/-2.35	-0.13/-0.39	-1.83/-3.43	-3.48/-3.05	-4.43/-6.00	-3.22/-2.23	-3.11/-3.37	1.47/-0.04	-3.56/0.83	3.93/3.38	0.07/-1.86	-0.41/-1.06	1.70/0.71	-3.20/-4.00	-3.02/0.03	-4.22/-3.79	-2.99/-6.12	-2.53/-2.61	-8.27/-6.89	-7.36/-12.31
θ(120°)	-9.78/-7.28	-3.62/-5.36	-9.75/-8.06	-8.65/-2.36	-5.26/-2.12	-5.04/-6.80	-6.87/-3.70	-3.38/-5.53	-7.18/-4.85	-5.70/-4.53	0.45/0.03	-1.27/-2.07	0.54/2.91	0.39/-1.04	1.15/2.74	2.69/1.30	-2.47/-5.36	-6.44/-0.49	-5.18/-6.06	-2.48/-3.95	-3.63/-3.71	-6.89/-1.89	-0.71/-4.75	
θ(127.5°)	-10.09/-6.55	-2.38/-9.21	-11.75/-5.48	-6.65/-1.76	-2.58/-4.30	-9.25/-6.16	-5.26/-3.30	-2.07/-1.56	-2.00/-2.54	-2.84/-3.47	-4.55/-1.15	1.00/2.10	-0.53/0.05	3.67/4.71	1.75/-2.32	-0.66/0.25	2.89/0.11	-0.43/-9.59	-5.34/-7.19	-2.74/-5.14				



Antenna Pattern of 2.4GHz and 5GHz

Appendix C

Θ(127.5°)	-4.43/-2.41	-1.63/-1.12	-1.20/-1.65	-3.34/-4.46	-6.15/-8.17	-9.55/-10.10	-10.26/-11.18	-12.14/-10.76	-9.49/-9.80	-10.72/-12.73	-11.71/-10.59	-13.01/-15.05	-15.14/-15.31	-15.25/-15.27	-13.53/-14.64	-13.44/-13.07	-14.15/-14.39	-12.17/-14.37	-14.69/-11.82	-11.03/-9.51	-7.68/-7.67	-8.01/-6.42	-3.14/-2.06	-3.54/-4.14
Θ(135°)	-5.33/-3.81	-3.14/-2.83	-1.66/-1.71	-2.22/-3.66	-5.22/-6.99	-9.00/-11.31	-13.42/-14.71	-15.07/-14.68	-14.31/-11.72	-11.71/-12.88	-15.31/-15.33	-15.29/-15.36	-15.27/-15.62	-13.00/-14.46	-14.08/-10.54	-12.89/-13.85	-15.69/-13.43	-9.39/-9.90	-13.12/-13.95	-11.21/-7.99	-6.88/-7.61	-8.65/-9.97	-8.57/-7.93	-7.90/-6.20
Θ(142.5°)	-5.46/-4.15	-3.11/-3.59	-3.22/-2.77	-2.90/-2.83	-3.80/-4.90	-5.98/-6.61	-6.74/-7.11	-8.28/-9.20	-9.30/-9.79	-10.81/-11.77	-11.02/-13.27	-13.87/-15.00	-11.71/-10.51	-11.98/-10.28	-9.54/-10.47	-10.21/-10.41	-12.04/-14.76	-14.49/-15.13	-15.49/-13.87	-9.84/-8.18	-6.66/-6.46	-6.71/-7.01	-7.59/-6.53	
Θ(150°)	-3.79/-4.22	-3.88/-3.06	-2.93/-2.89	-3.03/-3.17	-2.59/-2.12	-2.61/-3.66	-4.25/-4.08	-4.08/-5.55	-7.09/-7.59	-7.51/-8.45	-9.95/-9.89	-9.39/-10.44	-11.76/-10.98	-9.68/-9.67	-12.92/-15.57	-15.52/-15.23	-15.68/-13.78	-15.57/-13.62	-14.42/-15.55	-15.18/-13.10	-10.11/-8.17	-6.32/-4.79	-3.80/-3.66	-3.65/-3.59
Θ(157.5°)	-3.80/-4.33	-4.61/-3.89	-3.08/-2.92	-3.07/-3.07	-2.98/-2.65	-2.72/-3.05	-3.36/-3.47	-4.02/-5.38	-6.17/-5.85	-5.66/-6.00	-5.25/-5.91	-7.61/-9.90	-12.10/-11.47	-14.55/-12.89	-12.44/-12.27	-12.14/-12.18	-12.78/-13.94	-14.87/-15.32	-15.24/-12.14	-9.50/-7.43	-5.97/-5.08	-4.68/-4.74	-4.72/-4.17	
Θ(165°)	-5.97/-6.50	-7.37/-7.64	-7.17/-6.15	-6.65/-5.90	-6.72/-7.65	-5.31/-5.02	-5.66/-5.69	-4.79/-4.45	-4.22/-4.87	-5.67/-6.55	-7.83/-9.88	-12.26/-12.73	-13.43/-12.39	-11.97/-11.61	-10.57/-10.16	-10.23/-11.25	-12.99/-15.78	-12.35/-12.29	-11.28/-9.94	-8.75/-7.88	-7.28/-6.89	-6.49/-6.19		
Θ(172.5°)	-9.29/-8.65	-8.35/-8.04	-7.46/-6.67	-5.96/-5.16	-4.49/-4.14	-3.84/-3.56	-3.84/-4.14	-4.85/-5.16	-5.23/-6.12	-8.26/-10.42	-10.98/-11.59	-12.34/-13.22	-13.76/-12.82	-11.76/-11.48	-10.95/-11.32	-11.30/-11.12	-11.59/-12.70	-14.48/-14.86	-15.70/-15.56	-15.37/-14.62	-14.63/-15.32	-15.34/-15.23	-15.42/-13.66	-11.75/-10.34
Θ(180°)	-10.10/-9.94	-10.31/-9.88	-9.48/-9.00	-8.86/-9.59	-10.70/-11.21	-10.01/-9.43	-10.10/-11.62	-12.90/-12.43	-12.21/-12.62	-12.66/-13.07	-13.11/-13.56	-13.54/-14.15	-14.49/-14.57	-14.81/-14.94	-14.50/-14.61	-15.17/-13.59	-12.25/-11.24	-10.82/-11.04	-11.60/-11.74	-11.47/-11.57	-11.48/-11.56	-11.38/-11.12	-10.70/-10.44	
Freq(Hz)	5.6GPol.	TotalAnt. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	2.67/2.58	2.51/2.51	2.44/2.43	2.39/2.51	2.48/2.35	2.23/2.10	2.04/1.99	1.96/2.08	2.22/2.20	2.15/2.18	2.29/2.35	2.35/2.28	2.37/2.61	2.96/3.07	2.93/2.74	2.51/2.37	2.37/2.41	2.48/2.66	2.64/2.52	2.54/2.81	2.91/2.80	2.66/2.65	2.73/2.81	2.93/2.97
Θ(7.5°)	3.15/2.88	2.57/2.52	2.61/2.68	2.82/2.93	2.84/2.71	2.62/2.78	2.22/2.35	2.77/2.86	2.71/2.43	2.35/2.33	2.13/1.89	2.05/2.17	2.21/1.90	1.46/1.37	1.37/1.39	1.34/1.30	1.61/1.67	1.62/1.64	1.75/1.99	2.20/2.31	2.43/2.60	2.74/2.93	3.13/3.17	
Θ(15°)	3.70/3.60	3.54/3.44	3.43/3.24	2.93/2.63	2.53/2.55	2.58/2.58	2.61/2.55	2.32/2.37	2.64/2.96	3.06/2.68	2.40/2.07	1.62/1.14	1.10/1.16	0.91/0.38	0.13/0.26	0.40/0.40	0.23/0.27	0.28/0.27	0.44/0.55	0.71/0.93	1.14/1.39	1.73/2.01	2.45/2.98	3.32/3.51
Θ(22.5°)	3.50/3.46	3.37/3.37	3.53/3.56	3.34/3.08	3.03/2.92	2.77/2.43	2.05/2.03	2.23/2.38	2.12/1.87	1.82/1.87	2.16/2.10	1.41/0.69	0.56/0.49	-0.00/-0.46	0.30/-0.04	0.16/0.34	0.43/0.27	0.21/0.43	1.08/1.64	2.07/2.30	2.32/2.17	2.30/2.70	3.09/3.22	3.26/3.33
Θ(30°)	3.17/3.27	3.37/3.16	2.84/2.85	2.88/3.03	3.09/2.88	2.37/1.85	1.75/2.05	2.07/1.39	0.77/0.95	1.15/1.09	1.40/1.66	1.26/1.71	0.50/0.00	-0.87/-0.88	-0.21/-0.18	-0.24/-0.17	-0.03/0.63	1.39/1.43	1.14/1.18	1.20/1.08	1.10/1.39	1.72/1.89	1.93/2.22	2.61/2.88
Θ(37.5°)	2.16/2.14	2.66/3.33	3.21/3.01	2.59/2.21	2.09/1.96	1.94/1.92	1.79/1.35	0.72/-0.01	-0.27/0.22	0.65/0.61	0.65/1.01	0.86/0.08	-0.54/-1.73	-2.88/-2.14	-2.13/-2.48	-1.60/-0.41	0.59/1.04	0.96/0.92	1.02/1.31	1.71/1.95	1.86/1.51	1.17/1.17	1.45/1.63	1.68/1.83
Θ(45°)	1.51/2.28	2.40/2.31	1.87/1.79	1.74/1.91	2.14/2.07	1.98/1.70	0.90/0.15	0.05/0.18	-0.67/-1.59	-1.12/-0.24	-0.54/-1.24	-1.35/-1.61	-1.68/-2.68	-2.65/-1.92	-2.84/-2.35	-1.19/-0.65	-0.94/-0.93	-1.21/-1.53	-0.78/0.07	0.48/0.63	0.84/1.39	1.79/1.71	1.87/1.64	1.30/1.06
Θ(52.5°)	0.35/0.37	1.60/2.31	2.52/1.97	1.94/2.10	2.07/1.77	1.39/0.88	0.50/0.25	-0.63/-1.54	-1.57/-1.64	-3.05/-3.38	-2.14/-0.72	-0.75/-2.00	-4.25/-6.09	-4.74/-5.60	-4.86/-4.27	-3.93/-4.17	-4.15/-4.31	-2.54/-2.68	-1.07/0.07	0.45/0.37	0.58/0.97	1.04/1.17	0.89/0.31	
Θ(60°)	0.76/1.73	2.32/2.27	1.98/1.39	1.69/2.03	1.79/1.19	0.46/0.06	-0.32/-1.10	-2.09/-2.31	-2.07/-2.44	-2.58/-2.70	-4.09/-4.29	-3.11/-3.06	-4.65/-4.18	-4.43/-6.48	-7.84/-7.30	-7.92/-8.18	-6.80/-4.99	-4.82/-5.13	-3.82/-3.21	-3.73/-3.38	-1.68/-0.57	-0.33/-1.03	-0.65/0.35	0.42/0.03
Θ(67.5°)	0.95/0.95	1.32/1.60	1.19/0.92	1.07/1.63	1.47/0.69	-0.01/-1.18	-1.92/-2.20	-2.31/-2.80	-3.48/-4.28	-4.83/-4.08	-3.25/-3.84	-5.50/-8.22	-5.97/-4.35	-5.84/-8.88	-7.12/-7.60	-8.63/-7.91	-7.61/-7.78	-6.17/-5.55	-5.04/-5.10	-5.29/-4.78	-4.42/-3.13	-2.17/-1.00	-10.10/7.1	1.01/0.84
Θ(75°)	0.30/0.80	1.06/1.09	0.18/-0.05	0.94/1.28	0.98/-0.27	-1.90/-3.37	-4.76/-4.89	-3.61/-3.12	-3.77/-5.42	-5.57/-5.23	-5.26/-5.25	-6.98/-10.28	-6.89/-9.24	-9.07/-9.94	-9.07/-9.94	-9.56/-9.41	-9.56/-9.24	-7.54/-5.38	-5.33/-6.45	-5.93/-5.24	-2.24/-1.41	-3.06/0.33	0.24/-0.21	
Θ(82.5°)	-0.21/0.68	0.48/-0.30	-0.53/-0.53	-0.49/0.36	-0.29/-1.69	-3.75/-5.30	-6.40/-6.54	-4.82/-3.69	-3.85/-4.92	-4.99/-6.08	-6.03/-5.91	-8.62/-9.13	-8.13/-10.12	-10.63/-8.77	-9.82/-9.58	-8.52/-10.36	-13.50/-10.40	-8.32/-5.82	-5.73/-5.95	-5.85/-5.29	-4.86/-4.12	-3.21/-2.69	-1.69/-1.34	-0.87/-1.03
Θ(90°)	-0.61/0.13	0.35/0.65	-1.03/-0.79	-1.20/-1.16	-1.57/-2.62	-4.22/-5.15	-6.32/-7.04	-6.55/-5.35	-5.55/-5.65	-5.60/-6.28	-10.87/-9.37	-8.18/-12.91	-10.43/-14.04	-9.36/-10.00	-8.78/-9.77	-13.39/-12.27	-8.56/-7.03	-7.18/-6.53	-5.93/-5.27	-4.59/-5.69	-4.63/-4.21	-2.61/-1.17	-0.78/-0.86	
Θ(97.5°)	-1.31/0.59	-1.16/-0.37	-1.96/-2.50	-3.11/-3.03	-3.86/-5.15	-5.69/-7.00	-8.46/-8.21	-7.85/-8.16	-7.73/-5.46	-5.70/-8.45	-8.73/-10.11	-10.08/-10.68	-10.26/-13.57	-12.22/-10.59	-11.65/-13.09	-9.30/-9.55	-6.15/-6.53	-8.13/-6.97	-6.67/-5.94	-5.25/-5.27	-4.31/-5.73	-2.92/-1.18	-0.62/-0.97	
Θ(105°)	-2.22/-0.80	-0.40/-1.27	-2.44/-2.62	-3.64/-4.81	-5.53/-6.47	-7.97/-9.64	-9.42/-9.27	-9.32/-7.99	-6.77/-6.53	-6.11/-6.47	-7.66/-10.43	-10.41/-13.11	-12.31/-11.72	-10.30/-9.22	-12.47/-13.36	-12.59/-8.09	-8.08/-8.05	-9.67/-9.90	-8.41/-5.27	-5.46/-5.59	-6.31/-5.56	-4.34/-6.24	-3.03/-1.50	-1.45/-1.97
Θ(112.5°)	-2.02/-0.59	0.29/0.64	-2.06/-1.49	-2.44/-3.65	-5.63/-7.88	-9.32/-10.62	-10.28/-9.20	-9.67/-11.86	-10.33/-8.66	-7.99/-9.11	-11.84/-14.54	-13.95/-13.35	-12.81/-14.89	-14.34/-15.04	-10.69/-14.04	-10.36/-8.33	-7.42/-10.16	-8.22/-6.42	-11.01/-9.71	-7.66/-8.11	-7.78/-9.92	-9.97/-6.16	-4.13/-3.15	-1.76/-2.88
Θ(120°)	-1.04/0.49	0.89/0.94	-1.59/-1.34	-2.28/-3.63	-5.48/-8.44	-10.17/-11.75	-12.53/-12.86	-12.21/-11.49	-9.59/-9.02	-10.25/-11.49	-11.91/-11.88	-11.75/-12.64	-13.00/-14.78	-14.20/-11.78	-14.12/-15.15	-15.12/-11.63	-9.77/-15.25	-15.65/-13.97	-13.99/-10.51	-11.10/-12.72	-10.69/-11.33	-9.74/-6.35	-3.25/-2.65	-1.79/-1.83
Θ(127.5°)	-1.44/0.55	0.98/0.71	-1.17/-2.97	-3.50/-6.82	-8.36/-10.50	-12.13/-12.24	-11.21/-11.16	-11.50/-11.23	-10.94/-8.94	-8.36/-11.27	-14.62/-10.53	-11.63/-12.81	-13.00/-14.29	-15.23/-13.41	-10.73/-12.58	-11.40/-7.88	-12.63/-12.44	-12.34/-11.28	-15.12/-12.68	-12.40/-12.35	-9.21/-7.66	-7.98/-5.96	-2.19/-0.80	-1.12/-1.20
Θ(135°)	-1.27/-0.25	-0.66/-1.92	-3.53/-4.51	-6.73/-9.02	-9.32/-9.98	-9.70/-10.07	-11.24/-11.81	-13.29/-14.96	-13.54/-13.27	-13.40/-14.18	-14.18/-14.31	-15.85/-14.42	-12.34/-10.51	-9.49/-11.96	-15.54/-11.97	-13.95/-14.82	-15.76/-11.94	-10.49/-10.95	-15.07/-15.50	-12.64/-11.60	-10.35/-11.27	-8.97/-10.03	-8.50/-6.41	-4.48/-2.50
Θ(142.5°)	-3.94/-2.75	-3.12/-4.01	-3.81/-3.42	-3.52/-3.98	-4.16/-4.64	-5.59/-5.88	-6.20/-7.15	-9.27/-12.15	-11.58/-11.43	-11.18/-11.54	-14.28/-15.32	-14.28/-10.43	-8.43/-9.05	-11.42/-9.06	-7.77/-8.15	-9.75/-8.66	-10.16/-14.04	-13.29/-12.91	-13.24/-14.88	-15.46/-13.53	-11.05/-9.88	-9.13/-9.82	-8.12/-8.22	-7.16/-4.51
Θ(150°)	-3.79/-3.67	-2.97/-1.83	-1.12/-1.61	-2.97/-3.76	-3.49/-3.15	-3.11/-3.66	-4.40/-4.61	-3.99/-3.56	-4.42/-5.82	-6.51/-7.58	-9.70/-10.52	-10.73/-10.49	-9.79/-9.28	-9.36/-8.50	-10.01/-14.01	-14.04/-12.66	-15.64/-15.29	-15.34/-14.84	-14.73/-15.02	-15.34/-14.84	-14.96/-8.89	-5.54/-3.55	-2.31/-2.24	-3.04/-3.76
Θ(157.5°)	-3.38/-3.45	-3.32/-2.70	-1.85/-1.48	-2.03/-2.98	-3.77/-3.68	-3.47/-3.54	-3.82/-4.39	-5.12/-5.60	-5.80/-6.21	-6.81/-6.52	-5.26/-4.51	-4.35/-4.61	-5.01/-6.15	-7.47/-9.19	-11.66/-11.06	-11.13/-11.51	-11.11/-11.25	-11.86/-13.13	-15.37/-15.85	-15.16/-13.19	-11.03/-8.25	-5.94/-4.40	-3.23/-2.84	-3.25/-3.55
Θ(165°)	-6.22/-6.75	-6.95/-6.80	-6.00/-5.36	-5.14/-5.63	-6.18/-5.69	-5.04/-5.15	-5.45/-5.53	-4.73/-3.78	-3.10/-3.01	-3.05/-2.75	-2.85/-3.66	-5.73/-8.02	-9.76/-10.32	-12.13/-14.01	-13.05/-10.36	-8.42/-7.88	-7.39/-8.70	-11.56/-13.82	-16.26/-14.85	-15.11/-12.74	-10.04/-7.89	-6.48/-5.38	-4.74/-5.40	-5.95/-8.51
Θ(172.5°)	-8.97/-8.27	-7.21/-6.51	-6.00/-5.69	-5.66/-4.61	-4.22/-4.08	-3.82/-3.45	-3.36/-3.57	-3.27/-2.81	-3.07/-4.24	-5.76/-7.63	-9.98/-12.23	-13.81/-13.73	-13.13/-12.14	-11.02/-10.08	-9.57/-9.59	-10.09/-10.44	-10.63/-10.93	-11.74/-13.29	-15.03/-15.22	-15.42/-14.71	-10.01/-9.03	-8.96/-13.1		
Θ(180°)	-8.42/-8.49	-8.02/-7.52	-7.29/-7.10	-6.50/-6.86	-7.53/-8.54	-8.76/-8.56	-8.71/-8.66	-8.68/-9.29	-10.25/-10															



Antenna Pattern of 2.4GHz and 5GHz

Appendix C

Θ(172.5°)	-13.15/-11.52	-10.08/-9.30	-9.30/-9.29	-9.01/-8.36	-7.60/-7.17	-6.55/-6.14	-5.72/-5.65	-6.37/-6.09	-5.67/-5.31	-6.12/-8.10	-8.30/-7.21	-5.78/-5.29	-5.83/-7.40	-10.05/-12.55	-12.73/-11.99	-10.14/-8.87	-8.58/-8.29	-7.89/-8.16	-9.47/-10.99	-11.28/-10.50	-10.12/-10.41	-9.64/-8.63	-9.38/-13.36	-15.94/-14.57
Θ(180°)	-9.70/-8.79	-9.30/-11.30	-12.69/-11.67	-10.31/-9.72	-10.58/-11.07	-11.26/-11.67	-11.81/-10.99	-11.64/-11.60	-11.10/-11.56	-14.04/-15.78	-12.91/-9.97	-7.98/-7.14	-7.83/-9.22	-11.00/-11.79	-11.80/-11.08	-10.36/-8.87	-8.22/-8.92	-10.26/-10.72	-10.47/-10.41	-9.71/-9.89	-10.38/-11.12	-10.82/-10.45	-9.57/-10.02	-10.96/-10.81
Freq(Hz)	5.3G/Pol.	TotalAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-0.60/-0.13	-0.16/-0.27	-0.33/-0.63	-0.94/-1.17	-1.41/-1.87	-2.08/-2.30	-2.86/-2.91	-2.71/-2.59	-2.63/-3.15	-3.15/-2.75	-2.18/-1.94	-2.02/-2.11	-2.07/-2.05	-1.90/-1.56	-1.22/-1.03	-1.36/-1.70	-1.99/-1.75	-1.93/-2.52	-2.69/-2.36	-2.17/-2.38	-2.60/-2.54	-1.82/-1.29	-0.89/-0.62	-0.74/-0.86
Θ(7.5°)	-2.70/-1.92	-1.72/-1.97	-2.16/-2.31	-2.23/-2.17	-2.61/-2.99	-2.98/-2.79	-3.15/-3.61	-3.99/-3.46	-2.66/-2.17	-2.07/-1.60	-0.48/-0.15	0.11/-0.18	-0.55/-1.00	-1.35/-1.56	-1.80/-2.44	-3.35/-4.39	-4.82/-4.49	-4.25/-4.83	-5.19/-5.05	-4.72/-4.60	-4.93/-4.97	-4.25/-3.97	-3.76/-3.34	-3.17/-3.08
Θ(15°)	-4.96/-4.78	-4.60/-5.53	-6.76/-7.65	-7.11/-7.24	-7.66/-7.29	-6.32/-5.37	-5.55/-5.37	-4.49/-4.11	-3.50/-2.82	-2.48/-2.43	-1.93/-1.03	-0.48/-0.40	-0.61/-1.41	-2.38/-2.76	-3.59/-4.97	-5.71/-6.58	-7.33/-9.82	-12.82/-11.32	-9.75/-11.72	-12.45/-10.90	-9.86/-9.48	-8.30/-6.85	-6.52/-6.45	-6.02/-5.32
Θ(22.5°)	-8.27/-8.99	-9.55/-11.16	-11.50/-8.74	-7.14/-7.70	-6.68/-4.75	-3.54/-3.30	-3.98/-3.93	-3.27/-3.09	-3.60/-3.61	-2.42/-1.99	-2.18/-1.26	-0.050/0.33	0.24/-0.42	-1.26/-2.27	-4.48/-6.23	-7.29/-9.72	-12.47/-11.16	-7.47/-5.53	-5.22/-5.39	-6.14/-7.14	-7.82/-8.10	-8.72/-9.70	-12.07/-11.93	-10.87/-8.94
Θ(30°)	-10.63/-8.86	-8.61/-9.16	-10.91/-8.89	-7.83/-8.41	-6.35/-4.65	-4.16/-3.68	-2.14/-0.79	-0.69/-1.61	-2.03/-1.16	-1.18/-1.66	-1.14/-0.14	0.190/0.1	0.33/-0.22	-1.29/-2.38	-3.83/-4.37	-5.74/-6.15	-4.81/-4.01	-3.42/-2.28	-3.11/-5.41	-5.27/-2.89	-1.80/-2.69	-4.14/-1.49	-5.28/-7.40	-10.90/-13.82
Θ(37.5°)	-6.49/-7.34	-5.63/-4.99	-5.91/-5.07	-4.42/-4.33	-3.67/-3.39	-3.69/-3.23	-2.46/-1.70	-1.10/-1.47	-1.08/-1.35	-1.95/-1.09	-0.28/-1.17	-1.81/-0.69	-1.24/-0.51	0.39/-0.25	-0.45/-0.55	-1.12/-1.94	-3.34/-4.26	-5.12/-5.62	-4.55/-3.20	-2.98/-4.14	-1.11/-2.16	-1.30/-2.33	-3.55/-4.98	-6.66/-7.00
Θ(45°)	-6.04/-7.85	-7.14/-3.96	-1.79/-0.65	-0.51/-1.20	-1.48/-1.37	-1.44/-1.83	-2.33/-2.63	-2.19/-1.45	-1.62/-1.80	-0.49/-0.90	-2.23/-0.34	0.56/1.06	1.050/0.82	1.420/0.60	-0.98/-1.25	-2.99/-3.80	-3.65/-3.56	-1.89/-1.25	-1.67/-3.11	-5.42/-4.96	-3.81/-4.27	-4.64/-5.35	-5.00/-4.89	-5.61/-5.45
Θ(52.5°)	-6.77/-6.39	-5.22/-2.67	-1.130/0.30	0.940/0.10	1.001/0.6	0.940/0.10	1.04/-1.44	-1.54/-2.40	-2.74/-1.80	-1.19/-1.31	-0.200/0.12	0.330/0.46	0.720/0.85	0.82/-0.06	-1.32/-3.97	-2.24/-1.57	-1.25/-0.87	-0.98/-1.13	-1.94/-1.56	-0.80/-2.37	-7.00/-11.84	-8.12/-8.14	-11.00/-9.69	-8.86/-7.72
Θ(60°)	-3.70/-2.17	-2.83/-0.94	1.111/0.84	1.460/0.76	0.850/0.96	0.900/0.73	0.65/-0.24	1.10/-1.47	-0.520/0.33	0.970/0.66	0.960/0.43	0.392/0.39	3.472/0.38	0.900/0.15	-0.200/0.29	-0.61/-1.88	-3.03/-2.84	-2.25/-0.80	0.23/-0.62	-2.98/-4.14	-3.77/-6.26	-11.15/-10.34	-12.28/-12.48	-10.78/-6.91
Θ(67.5°)	-1.91/-3.14	-1.76/-1.70	3.45/3.00	2.47/2.11	2.89/2.78	2.43/1.55	0.860/0.06	-0.42/-0.52	0.500/0.49	1.33/1.41	0.86/-0.27	0.312/0.02	3.09/2.83	2.22/2.06	1.430/0.80	-0.48/-1.48	-1.72/-1.08	-0.55/-0.67	-1.18/-2.21	-4.01/-6.13	-8.62/-8.17	-8.21/-8.45	-8.59/-15.35	-6.85/-2.21
Θ(75°)	-1.14/-2.67	-1.59/-2.22	4.37/3.41	2.34/2.13	3.25/0.45	4.18/3.71	2.60/1.03	-0.50/-0.76	0.590/0.42	0.331/0.78	2.32/-0.40	-1.35/2.35	2.76/2.08	1.480/0.76	-0.120/0.60	0.40/-0.89	-1.31/-3.10	-2.06/-2.61	-1.81/-2.13	-4.67/-5.49	-5.61/-7.64	-11.49/-10.10	-12.97/-11.89	-4.760/0.88
Θ(82.5°)	0.28/-0.67	-2.66/2.36	3.72/2.09	2.40/3.59	4.55/4.78	3.91/3.19	2.24/1.83	1.01/0.25	0.680/0.29	1.20/2.86	1.73/-0.42	-0.051/0.82	2.84/2.39	1.58/-1.10	0.58/1.37	1.590/0.49	-3.09/-2.00	-1.97/-0.40	-1.07/-1.36	-1.10/-3.61	-6.40/-3.82	-6.40/-12.48	-10.76/-8.11	-3.68/1.84
Θ(90°)	0.22/-0.64	-0.77/3.12	4.11/1.93	2.60/4.08	5.06/5.20	4.64/3.42	2.61/1.79	0.970/0.66	0.381/2.27	0.42/2.40	2.09/-0.09	-1.14/1.55	3.13/3.07	3.03/0.65	0.240/0.44	1.66/1.90	2.51/2.76	2.73/0.66	0.040/0.30	-2.12/-2.56	-4.47/-2.88	-5.71/-8.50	-9.96/-10.58	-3.49/1.32
Θ(97.5°)	-0.24/-0.58	-0.74/2.65	3.48/2.94	2.52/3.29	4.16/4.68	4.36/3.46	2.51/1.32	0.860/0.11	-0.300/0.35	1.42/1.96	0.79/-1.83	-0.19/1.38	1.88/2.42	1.90/-1.48	-2.28/-1.81	0.63/2.24	3.32/1.56	0.25/-0.04	-0.99/-0.97	-1.97/-4.85	-3.77/-4.75	-6.37/-6.36	-7.71/-15.40	-5.12/1.76
Θ(105°)	0.870/0.09	-1.87/-0.16	2.08/2.88	3.12/2.39	3.31/2.90	3.02/2.54	1.87/1.48	1.600/0.44	0.091/6.9	2.75/2.47	1.60/-0.37	-0.580/0.39	1.22/0.76	-0.98/-1.52	-0.31/-2.61	0.210/0.71	1.34/-0.02	-2.100/0.82	-0.31/-0.07	-0.03/-4.61	-4.15/-3.59	-5.61/-10.41	-15.90/-14.22	-5.42/0.36
Θ(112.5°)	-0.020/0.97	-1.39/0.80	1.06/2.39	2.10/2.02	2.31/2.35	2.43/1.50	0.40/-0.12	-0.77/0.14	1.46/-0.59	1.64/1.86	0.40/-1.50	0.24/1.24	0.21/1.14	1.36/-2.29	-3.33/-2.26	-5.69/-0.75	0.35/-0.29	-2.22/-5.20	-10.04/-2.71	-1.63/-12.86	-10.67/-8.07	-10.17/-8.75	-11.79/-10.78	-1.13/-10.87
Θ(120°)	0.910/0.66	-0.30/-1.14	2.88/2.33	2.39/1.18	0.731/0.00	1.33/2.06	1.730/0.17	-1.37/-1.14	-1.050/0.71	1.45/1.01	-0.11/-1.24	0.18/1.45	2.53/-0.43	2.17/-0.73	0.53/-0.18	-4.450/0.21	2.22/1.38	-0.59/-4.41	-5.64/-6.96	-1.79/-5.10	-13.66/-6.72	-3.07/-3.63	-10.53/-8.34	-3.79/-0.54
Θ(127.5°)	-2.12/-1.29	-1.98/-0.59	0.370/0.26	0.910/0.82	1.010/0.73	-0.01/-1.12	-1.73/-0.79	-0.56/-0.72	0.32/1.56	2.010/0.21	-0.500/0.72	0.650/0.08	-0.69/-0.86	-0.24/-6.68	-1.62/-3.60	-9.99/-2.03	0.490/0.82	-1.69/-5.32	-6.29/-5.17	-1.09/-2.64	-7.88/-5.97	-4.33/-6.39	-11.60/-10.73	-7.89/-1.58
Θ(135°)	-2.89/-5.09	-2.37/-3.04	-2.40/-3.26	-3.13/-0.96	-0.290/0.34	0.870/59	-0.75/-3.32	-4.42/-3.66	-3.47/-2.85	-2.96/-3.44	-2.07/0.22	1.27/1.82	-1.08/-1.68	-0.31/-1.88	-2.49/-6.68	-5.13/-2.38	-2.55/-6.86	-7.69/-4.69	-4.59/-5.49	-9.89/-9.58	-7.87/-6.73	-7.48/-9.98	-13.56/-13.19	-11.23/-3.52
Θ(142.5°)	-0.71/-0.59	-1.60/-4.03	-7.51/-4.47	-3.13/-2.58	-2.18/-3.00	-3.59/-2.29	-1.31/-1.56	-2.32/-2.77	-4.14/-5.94	-4.00/-2.67	-1.850/0.56	2.14/2.36	0.53/-0.66	-2.48/-4.36	-0.660/0.56	0.52/-0.84	-1.86/-1.93	-4.64/-10.44	-13.98/-11.99	-9.23/-8.21	-11.76/-12.67	-12.59/-9.63	-9.18/-9.17	-8.10/-5.17
Θ(150°)	-4.00/-4.79	-5.32/-3.80	-4.01/-3.89	-3.80/-5.13	-7.90/-8.81	-7.16/-5.75	-3.91/-2.57	-2.49/-2.94	-2.55/-1.66	-1.93/-3.01	-2.56/-0.30	1.33/1.01	-0.99/-1.49	-0.45/-0.28	0.121/0.00	1.250/0.86	0.450/0.20	-0.74/-2.65	-5.19/-7.52	-8.26/-7.02	-5.31/-6.07	-9.75/-11.39	-8.45/-7.08	-5.26/-4.31
Θ(157.5°)	-1.65/-1.58	-2.31/-2.74	-3.57/-4.88	-5.77/-6.88	-8.68/-10.42	-11.80/-11.67	-10.01/-7.78	-5.80/-4.39	-3.52/-2.51	-1.54/-0.92	-0.57/-0.56	-0.20/-0.21	-0.66/-1.13	-2.10/-4.04	-4.72/-3.50	-2.73/-2.51	-2.64/-3.83	-6.05/-8.65	-10.39/-9.58	-7.87/-6.73	-9.63/-10.27	-9.54/-9.17	-10.86/-8.78	-3.85/-2.78
Θ(165°)	-10.52/-8.71	-7.08/-7.26	-7.84/-8.70	-9.18/-9.32	-9.72/-10.87	-11.69/-12.65	-12.09/-12.11	-11.70/-9.73	-8.76/-8.58	-7.56/-5.74	-4.81/-3.52	-2.09/-1.78	-2.57/-3.94	-6.05/-9.16	-9.53/-7.03	-4.98/-3.23	-2.30/-2.72	-3.84/-5.11	-5.86/-6.23	-6.78/-7.39	-8.01/-8.29	-9.16/-10.52	-11.99/-11.66	-11.36/-12.14
Θ(172.5°)	-10.44/-9.19	-9.41/-10.92	-12.22/-13.31	-13.95/-14.31	-13.98/-12.92	-12.13/-11.19	-10.89/-10.87	-9.34/-7.49	-7.66/-8.36	-8.01/-7.22	-6.21/-5.41	-4.93/-4.92	-5.28/-6.47	-8.74/-12.17	-14.00/-14.53	-12.39/-11.86	-10.98/-10.02	-9.46/-10.25	-12.66/-12.87	-12.87/-11.13	-9.35/-8.51	-9.07/-10.13	-11.24/-11.37	-11.90/-11.96
Θ(180°)	-7.35/-6.49	-6.26/-6.47	-8.85/-6.90	-6.27/-5.79	-6.39/-7.33	-7.88/-7.93	-8.17/-8.98	-8.73/-8.17	-8.74/-9.88	-11.08/-11.53	-12.75/-12.48	-10.47/-9.95	-10.50/-10.98	-12.04/-13.61	-15.78/-15.27	-12.31/-9.86	-7.52/-6.04	-5.55/-6.01	-6.71/-7.85	-8.44/-8.18	-8.47/-10.94	-12.97/-12.54	-10.46/-8.50	-
Freq(Hz)	5.6G/Pol.	TotalAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-6.81/-7.28	-8.64/-8.47	-8.34/-8.00	-7.86/-7.48	-7.01/-6.98	-7.41/-7.44	-7.29/-7.36	-7.25/-6.99	-7.00/-7.11	-7.66/-7.89	-7.08/-6.26	-5.82/-6.14	-7.11/-7.78	-8.17/-7.65	-6.62/-5.67	-4.82/-4.87	-5.85/-7.18	-7.91/-8.12	-7.73/-7.50	-7.42/-7.45	-7.00/-6.73	-7.08/-7.72	-8.06/-7.21	-8.80/-6.94
Θ(7.5°)	-7.23/-7.76	-9.35/-8.82	-7.79/-6.44	-6.28/-6.91	-7.82/-8.26	-7.97/-7.72	-8.01/-8.07	-7.74/-7.59	-8.97/-9.24	-7.64/-6.90	-7.59/-7.37	-6.40/-5.53	-4.99/-4.91	-4.96/-4.98	-4.94/-4.83	-4.79/-0.53	-5.89/-7.20	-7.85/-6.82	-6.49/-7.05	-7.23/-6.12	-5.70/-5.74	-5.43/-5.46	-6.14/-6.49	-6.90/-7.20
Θ(15°)	-6.65/-6.87	-7.35/-6.98	-5.40/-4.18	-4.11/-4.45	-4.84/-4.54	-3.82/-3.23	-3.01/-2.97	-3.29/-3.41	-3.34/-4.13	-5.95/-6.83	-7.24/-6.79	-7.36/-6.35	-5.25/-4.73	-4.79/-5.24	-5.54/-6.42	-6.98/-7.61	-9.23/-11.78	-14.13/-15.33	-13.32/-13.70	-11.62/-10.93	-9.87/-7.44	-5.87/-5.62	-6.59/-6.19	-5.44/-6.08
Θ(22.5°)	-6.28/-7.43	-7.00/-5.50	-3.60/-2.43	-2.09/-1.96	-1.57/-1.65	-1.68/-1.39	-0.88/-0.60	-1.32/-1.64	-1.16/-1.24	-1.71/-2.22	-3.26/-3.52	-3.26/-4.01	-5.47/-6.51	-5.84/-4.45	-4.09/-4.99	-6.76/-7.94	-7.3							