

Antenna Composite Gain Test Report

Equipment	Cisco Wireless 9174I Series Wi-Fi 7 Access Point
Brand Name	CISCO
Model Name	CW9174I
Applicant	Cisco Systems, Inc. 170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer	Cisco Systems, Inc. 170 West Tasman Drive, San Jose, CA 95134 USA
Standard	KDB 662911 D03 v02
Sample Received	Jan. 06, 2025
Start Test Date	Jan. 11, 2025
Final Test Date	Jan. 12, 2025

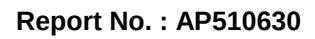

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1. Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant. Type	Connector	Modes of Operation
2G 5GAnt1	1	Fii	363.00006	PIFA	I-Pex	2.4GHz+5GHz
2G 5GAnt2	2	Fii	363.00006	Dipole	I-Pex	2.4GHz+5GHz
2G 5GAnt3	3	Fii	363.00006	PIFA	I-Pex	2.4GHz+5GHz
2G 5GAnt4	4	Fii	363.00006	Dipole	I-Pex	2.4GHz+5GHz
6G Ant1	1	Fii	363.00006	PIFA	I-Pex	6GHz
6G Ant2	2	Fii	363.00006	Dipole	I-Pex	6GHz
6G Ant3	3	Fii	363.00006	PIFA	I-Pex	6GHz
6G Ant4	4	Fii	363.00006	Dipole	I-Pex	6GHz
Scan Ant1	1	Fii	363.00006	PIFA	I-Pex	2.4GHz+5GHz+6GHz
Scan Ant2	2	Fii	363.00006	PIFA	I-Pex	2.4GHz+5GHz+6GHz
BLE Ant3	1	Fii	363.00006	PIFA	I-Pex	BLE&IEEE 802.15.4

Note:

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

2G 5GAnt1~2G 5GAnt4 can be used as transmitting/receiving antenna.

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

Scan Ant1~ScanAnt2 can be used as transmitting/receiving antenna.

6GHz Operation Mode (4TX/4RX)

6G Ant1~6G Ant4 can be used as transmitting/receiving antenna.

6GHz Operation Mode (2TX/2RX)

Scan Ant1~ScanAnt2 can be used as transmitting/receiving antenna.

BLE&IEEE 802.15.4 Operation Mode (1TX/1RX)

BLE Ant3 can be used as transmitting/receiving antenna.

2. Test Frequency

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

Band [MHz]	Test Frequency [MHz]
2400-2483.5	2450
5150-5250	5200
5250-5350	5300
5470-5725	5600
5725-5850	5785
5850-5895	5885
5925-6425	6175
6425-6525	6475
6525-6875	6695
6875-7125	6995



3. Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Wen 33rd.St.	ADD:	No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
	TEL: 886-3-318-0787	FAX: 886-3-318-0287		
Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	Rofy Chen	23.5~24.5°C / 45~55%	11/Jan/2025~12/Jan/2025

Note:

Testing Site Information

Brand Name: TDK

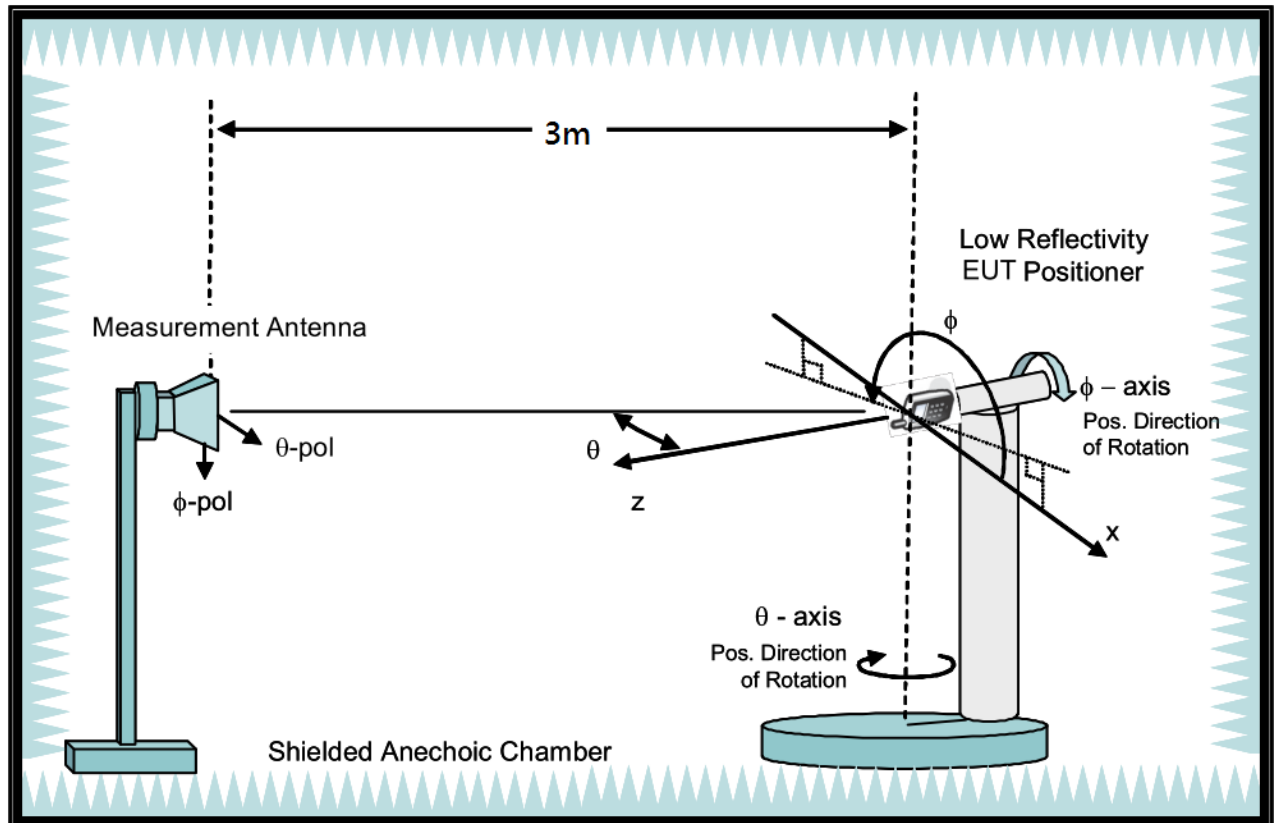
Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

Measurement antenna: Dual Polarization Horn antenna
Turntable: Multi-axis positioner (Theta and Phi angle).

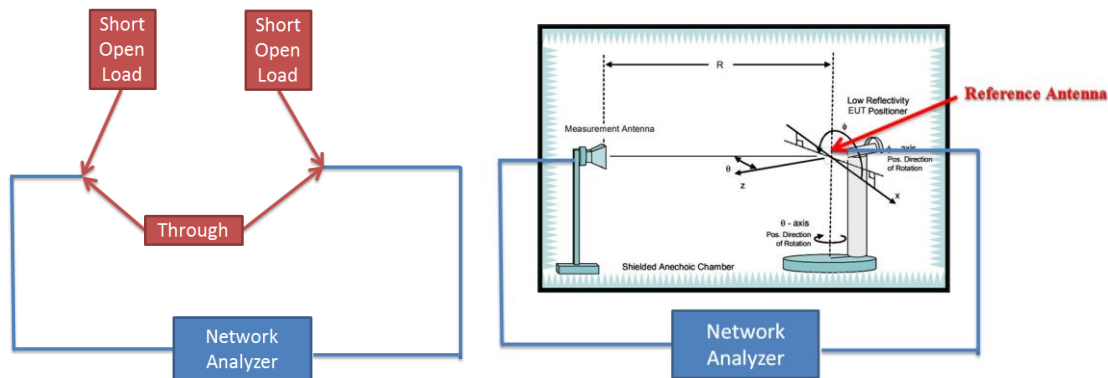
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



5. Reference Calibration

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

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



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

Note:

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

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

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

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



6. Test Method

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

DG steps:

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

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

7. Measured Values and Calculation of Maximum Gain Positions

2G5G-4TX

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	-4.15	-8.7	-8.86	-8.42	-8.23
Ant. 2 (dBi)	4.74	2.93	3.18	2.56	1.6
Ant. 3 (dBi)	4.89	3.04	4.71	4.65	4.38
Ant. 4 (dBi)	-9.14	-6.08	-12.08	-9.49	-9.23
DG [1SS] (dBi)	6.95	5.31	5.51	5.5	5.08
Polarization	Phi	Phi	Phi	Phi	Phi
$\Theta(^{\circ})$	45	52.5	52.5	45	45
$\Phi(^{\circ})$	232.5	90	345	45	52.5

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 [$10^{(G/20)}$]	$10^{(-4.15/20)}$	$10^{(-8.7/20)}$	$10^{(-8.86/20)}$	$10^{(-8.42/20)}$	$10^{(-8.23/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(4.74/20)}$	$10^{(2.93/20)}$	$10^{(3.18/20)}$	$10^{(2.56/20)}$	$10^{(1.6/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(4.89/20)}$	$10^{(3.04/20)}$	$10^{(4.71/20)}$	$10^{(4.65/20)}$	$10^{(4.38/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-9.14/20)}$	$10^{(-6.08/20)}$	$10^{(-12.08/20)}$	$10^{(-9.49/20)}$	$10^{(-9.23/20)}$
Ant. 1 [$10^{(G/20)}$] value	0.62	0.367	0.361	0.379	0.388
Ant. 2 [$10^{(G/20)}$] value	1.726	1.401	1.442	1.343	1.202
Ant. 3 [$10^{(G/20)}$] value	1.756	1.419	1.72	1.708	1.656
Ant. 4 [$10^{(G/20)}$] value	0.349	0.497	0.249	0.335	0.346
Sum All Antenna [Amax]	4.451	3.684	3.771	3.765	3.591
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	6.95	5.31	5.51	5.5	5.08

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

**2G-2TX-Ant1&2****DG_1SS max value position**

Frequency (Hz)	2.45G
Ant. 1 (dBi)	-3.38
Ant. 2 (dBi)	4.61
DG [1SS] (dBi)	4.51
Polarization	Phi
$\Theta(^{\circ})$	45
$\Phi(^{\circ})$	240

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
Ant. 1 [$10^{(G/20)}$]	$10^{(-3.38/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(4.61/20)}$
Ant. 1 [$10^{(G/20)}$] value	0.678
Ant. 2 [$10^{(G/20)}$] value	1.7
Sum All Antenna [Amax]	2.378
DG [$10 \cdot \log(A_{\max}^2/N_{\text{ant}})$]	4.51

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

**2G-2TX-Ant3&4****DG_1SS max value position**

Frequency (Hz)	2.45G
Ant. 3 (dBi)	4.96
Ant. 4 (dBi)	-3.78
DG [1SS] (dBi)	4.66
Polarization	Phi
$\Theta(^{\circ})$	30
$\Phi(^{\circ})$	202.5

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
Ant. 3 [$10^{(G/20)}$]	$10^{(4.96/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-3.78/20)}$
Ant. 3 [$10^{(G/20)}$] value	1.77
Ant. 4 [$10^{(G/20)}$] value	0.647
Sum All Antenna [Amax]	2.417
DG [$10 \cdot \log(A_{\max}^2/N_{\text{ant}})$]	4.66

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

5G-2TX

DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 2 (dBi)	3.77	3.78	-11.96	3.92
Ant. 4 (dBi)	-6.54	-6.63	5.26	-6.49
DG [1SS] (dBi)	3.07	3.06	3.37	3.2
Polarization	Phi	Phi	Theta	Phi
$\Theta(^{\circ})$	60	52.5	75	60
$\Phi(^{\circ})$	195	97.5	157.5	112.5

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)	5.2G	5.3G	5.6G	5.785G
Ant. 2 [$10^{(G/20)}$]	$10^{(3.77/20)}$	$10^{(3.78/20)}$	$10^{(-11.96/20)}$	$10^{(3.92/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-6.54/20)}$	$10^{(-6.63/20)}$	$10^{(5.26/20)}$	$10^{(-6.49/20)}$
Ant. 2 [$10^{(G/20)}$] value	1.543	1.545	0.252	1.57
Ant. 4 [$10^{(G/20)}$] value	0.471	0.466	1.832	0.474
Sum All Antenna [Amax]	2.014	2.011	2.085	2.044
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	3.07	3.06	3.37	3.2

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-4TX

DG_1SS max value position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	6.16	-0.74	2.59	-4.07
Ant. 2 (dBi)	-19.14	0.89	-12.62	5.83
Ant. 3 (dBi)	2.09	-7.98	3.55	-4.93
Ant. 4 (dBi)	-16.36	1.95	-8.65	3.61
DG [1SS] (dBi)	5.03	5.29	4.75	7.36
Polarization	Theta	Phi	Theta	Phi
$\Theta(^{\circ})$	75	37.5	60	15
$\Phi(^{\circ})$	37.5	330	37.5	345

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 [$10^{(G/20)}$]	$10^{(6.16/20)}$	$10^{(-0.74/20)}$	$10^{(2.59/20)}$	$10^{(-4.07/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-19.14/20)}$	$10^{(0.89/20)}$	$10^{(-12.62/20)}$	$10^{(5.83/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(2.09/20)}$	$10^{(-7.98/20)}$	$10^{(3.55/20)}$	$10^{(-4.93/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-16.36/20)}$	$10^{(1.95/20)}$	$10^{(-8.65/20)}$	$10^{(3.61/20)}$
Ant. 1 [$10^{(G/20)}$] value	2.032	0.918	1.347	0.626
Ant. 2 [$10^{(G/20)}$] value	0.11	1.108	0.234	1.957
Ant. 3 [$10^{(G/20)}$] value	1.272	0.399	1.505	0.567
Ant. 4 [$10^{(G/20)}$] value	0.152	1.252	0.369	1.515
Sum All Antenna [Amax]	3.567	3.677	3.456	4.665
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	5.03	5.29	4.75	7.36

Note:

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

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

8. Summary of Test Result

2G5G-4TX

Freq (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.98	4.33	5.26	4.49	4.73
Ant. 2 Max Gain (dBi)	4.79	4.19	4.19	3.89	3.93
Ant. 3 Max Gain (dBi)	4.97	4.78	4.93	4.72	4.38
Ant. 4 Max Gain (dBi)	3.83	4.89	5.1	5.26	5.05
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/187.5	Theta/67.5/330	Theta/67.5/330	Theta/67.5/322.5	Theta/60/345
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/225	Phi/60/202.5	Phi/60/202.5	Phi/52.5/15	Phi/37.5/105
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/240	Phi/52.5/337.5	Phi/45/337.5	Phi/52.5/45	Phi/45/52.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/352.5	Theta/67.5/150	Theta/67.5/157.5	Theta/75/157.5	Theta/67.5/157.5
Max Gain (dBi)	4.97	4.89	5.26	5.26	5.05
DG [1SS] (dBi)	6.95	5.31	5.51	5.5	5.08
DG [2SS] (dBi)	4.97	4.89	5.26	5.26	5.05
DG [4SS] (dBi)	4.97	4.89	5.26	5.26	5.05

2G-2TX-Ant1&2

Freq (Hz)	2.45G
Ant. 1 Max Gain (dBi)	2.98
Ant. 2 Max Gain (dBi)	4.79
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/187.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/225
Max Gain (dBi)	4.79
DG [1SS] (dBi)	4.51
DG [1SS] (dBi) Revised	4.79

2G-2TX-Ant3&4

Freq (Hz)	2.45G
Ant. 3 Max Gain (dBi)	4.97
Ant. 4 Max Gain (dBi)	3.83
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/240
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/352.5
Max Gain (dBi)	4.97
DG [1SS] (dBi)	4.66
DG [1SS] (dBi) Revised	4.97



5G-2TX

Freq (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 2 Max Gain (dBi)	4.19	4.19	3.89	3.93
Ant. 4 Max Gain (dBi)	4.89	5.1	5.26	5.05
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/60/202.5	Phi/60/202.5	Phi/52.5/15	Phi/37.5/105
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/150	Theta/67.5/157.5	Theta/75/157.5	Theta/67.5/157.5
Max Gain (dBi)	4.89	5.1	5.26	5.05
DG [1SS] (dBi)	3.07	3.06	3.37	3.2
DG [1SS] (dBi) Revised	4.89	5.1	5.26	5.05
DG [2SS] (dBi)	4.89	5.1	5.26	5.05

6G-4TX

Freq (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	6.36	4.57	4.89	5.17
Ant. 2 Max Gain (dBi)	5.4	5.83	5.14	6.96
Ant. 3 Max Gain (dBi)	5.3	3.39	3.55	3.31
Ant. 4 Max Gain (dBi)	3.14	4.9	3.21	4.91
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/82.5/37.5	Theta/90/255	Theta/75/30	Theta/75/30
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/15/300	Theta/15/300	Theta/15/307.5	Phi/15/15
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/202.5	Theta/67.5/202.5	Theta/60/37.5	Theta/52.5/262.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/75/337.5	Phi/75/255	Phi/90/307.5	Phi/22.5/330
Max Gain (dBi)	6.36	5.83	5.14	6.96
DG [1SS] (dBi)	5.03	5.29	4.75	7.36
DG [1SS] (dBi) Revised	6.36	5.83	5.14	7.36
DG [2SS] (dBi)	6.36	5.83	5.14	6.96
DG [4SS] (dBi)	6.36	5.83	5.14	6.96

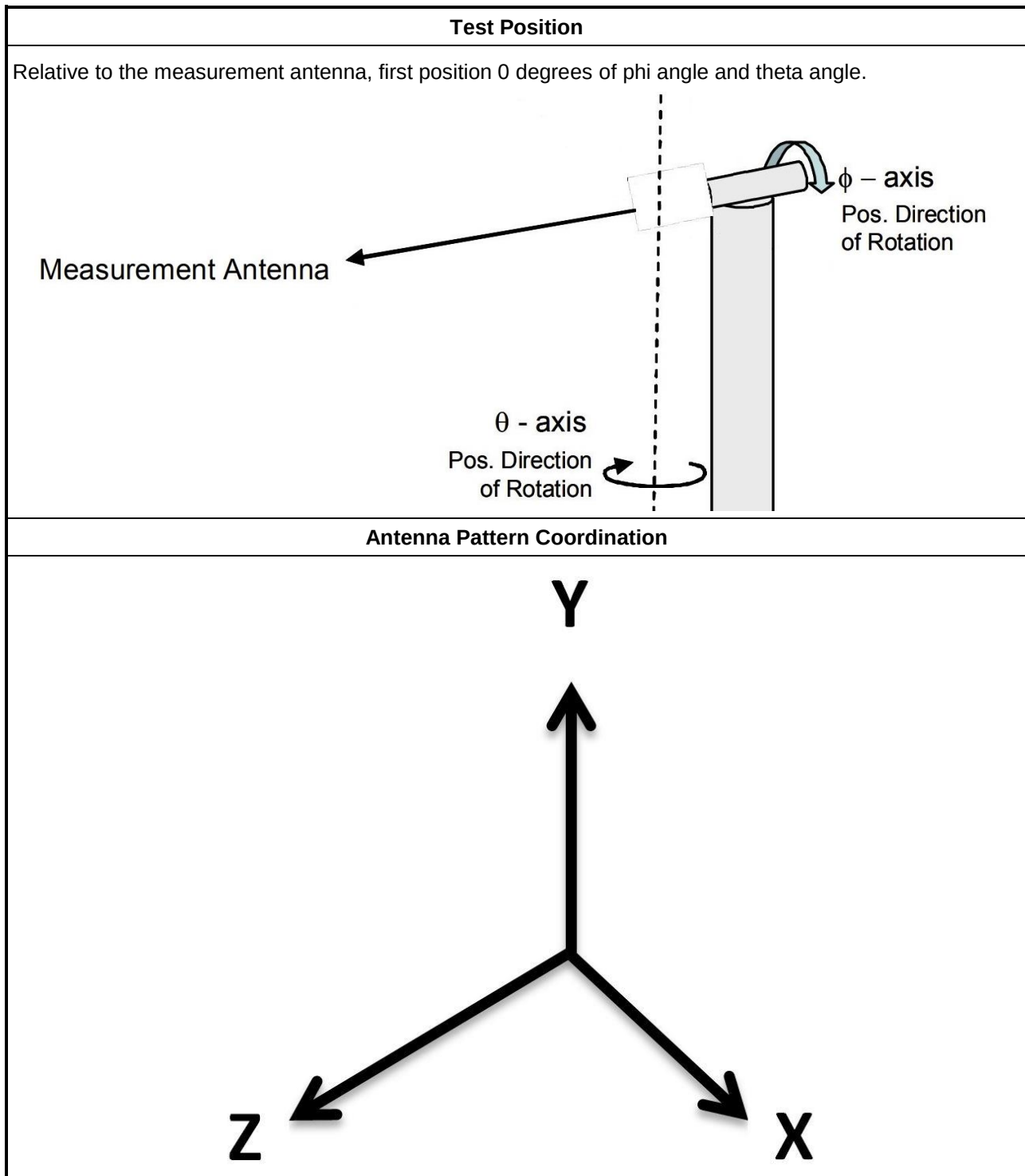
Scan Ant1 & Scan Ant2 & BLE

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G	5.885G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.72	4.19	4.77	3.94	4.55	4.94	4.52	4.63	4.06	4.29
Ant. 2 Max Gain (dBi)	3.77	3.18	4.16	4.53	4.08	4.88	4.48	3.96	4.03	4.42
Ant. 3 Max Gain (dBi)	4.56	-	-	-	-	-	-	-	-	-
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/30/ 210	Theta/67. 5/97.5	Theta/67. 5/217.5	Theta/60/ 217.5	Theta/52. 5/217.5	Theta/52. 5/225	Theta/75/ 37.5	Theta/75/ 45	Theta/75/ 45	Theta/30/ 165
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/37. 5/52.5	Theta/75/ 165	Theta/67. 5/37.5	Theta/67. 5/180	Theta/67. 5/180	Theta/67. 5/180	Theta/67. 5/165	Theta/60/ 172.5	Theta/45/ 30	Theta/30/ 337.5
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/ 67.5	-	-	-	-	-	-	-	-	-

Note:

1. Antenna max gain is the max value of each individual antenna through all measurement angles.
2. The max gain is the max value of all antennas.
3. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii).
4. Directional Gain (2SS) = Directional Gain (1SS) – 3dB.

9. Test Setup



Note:

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



10. Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1531	1GHz~18GHz	Dec. 20, 2024	Dec. 19, 2025
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	NCR	NCR
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	NCR	NCR
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	NCR	NCR

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

NCR means Non-Calibration required.



11. Test Results

Please refer to the appendix.

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Appendix B – Antenna Pattern of of 2.4GHz/5GHz/6GHz/Scan/LE.....	Page 62
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————THE END————



Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.98	4.33	5.26	4.49	4.73
Ant. 2 Max Gain (dBi)	4.79	4.19	4.19	3.89	3.93
Ant. 3 Max Gain (dBi)	4.97	4.78	4.93	4.72	4.38
Ant. 4 Max Gain (dBi)	3.83	4.89	5.1	5.26	5.05
Ant. 1 Polarization/Θ(°)/Φ(°)	Theta/52.5/187.5	Theta/67.5/330	Theta/67.5/330	Theta/67.5/322.5	Theta/60/345
Ant. 2 Polarization/Θ(°)/Φ(°)	Phi/45/225	Phi/60/202.5	Phi/60/202.5	Phi/52.5/15	Phi/37.5/105
Ant. 3 Polarization/Θ(°)/Φ(°)	Phi/30/240	Phi/52.5/337.5	Phi/45/337.5	Phi/52.5/45	Phi/45/52.5
Ant. 4 Polarization/Θ(°)/Φ(°)	Theta/67.5/352.5	Theta/67.5/150	Theta/67.5/157.5	Theta/75/157.5	Theta/67.5/157.5
Max Gain (dBi)	4.97	4.89	5.26	5.26	5.05
DG [1SS] (dBi)	6.95	5.31	5.51	5.5	5.08
DG [2SS] (dBi)	4.97	4.89	5.26	5.26	5.05
DG [4SS] (dBi)	4.97	4.89	5.26	5.26	5.05



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

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°)	-5.98/-5.34	-4.61/-0.46	-3.44/-2.89	-2.48/-2.26	-2.22/-2.36	-2.61/-2.93	-3.19/-3.29	-3.88/-3.72	-4.23/-5.02	-6.18/-7.59	-8.16/-8.5	-8.42/-7.71	-6.18/-4.82	-3.9/-3.43	-3.24/-3.18	-3.11/-2.96	-2.87/-2.83	-2.79/-2.91	-3.21/-3.68	-4.28/-4.8	-5.36/-6.01	-6.95/-8.02	-8.27/-8.12	-7.58/-6.77
Θ(7.5°)	-5.22/-2.63	-2.36/-1.99	-1.66/-1.44	-1.32/-1.28	-1.36/-1.51	-1.76/-2.09	-2.29/-2.42	-2.51/-2.67	-3.07/-3.73	-4.8/-6.08	-6.67/-6.36	-5.99/-5.31	-4.15/-2.79	-1.78/-1.12	-0.76/-0.51	0.15/0.31	0.37/0.28	0.01/-0.41	-0.87/-1.31	-1.71/-2.15	-2.77/-3.43	-3.82/-3.98	-4.79/-3.32	
Θ(15°)	0.47/0.63	0.74/0.9	1.04/1.1	1.07/0.95	0.79/0.69	0.59/0.47	0.38/0.37	0.36/0.4	0.31/0.04	-0.52/-1.36	-1.92/-1.82	-1.71/-1.29	-0.67/0.25	1.39/2.23	2.73/3.02	3.19/3.21	3.17/3.05	2.94/2.74	2.44/2.04	1.6/1.22	0.94/0.79	0.69/0.53	0.43/0.17	-0.04/0.24
Θ(22.5°)	2.91/3.04	3.12/3.2	3.22/3.15	2.95/2.65	2.35/2.16	1.95/1.79	1.66/1.61	1.61/1.73	1.74/1.71	1.49/0.96	0.8/0.83	1.26/1.77	2.13/3.1	4.05/4.81	5.33/5.62	5.69/5.59	5.34/5.07	4.76/4.41	4.02/3.59	3.22/2.96	2.78/2.65	2.66/2.6	2.47/2.65	
Θ(30°)	4.44/4.61	4.76/4.89	4.93/4.84	4.62/4.29	3.97/3.69	3.43/3.17	3.103/3.14	3.143/0.6	2.96/2.78	2.56/2.46	2.58/2.78	3.08/3.71	4.41/5.08	5.74/6.37	6.48/6.8	6.86/6.72	6.81/6.45	6.03/5.54	5.01/4.62	4.41/4.32	4.26/4.18	4.06/3.97	3.9/3.8	3.94/2.1
Θ(37.5°)	5.24/5.46	5.65/5.39	5.51/5.92	5.72/5.4	5.14/4.74	4.26/3.96	3.93/4.02	4.07/4	3.71/3.51	3.48/3.51	3.61/3.84	4.21/4.87	5.72/6.01	6.52/6.14	6.52/6.78	6.82/6.66	6.71/6.69	6.14/5.46	4.83/4.47	4.35/4.29	4.29/4.27	4.2/4.1	3.98/3.93	4.52/4.95
Θ(45°)	5.42/5.23	5.45/5.66	5.87/5.95	5.82/5.97	5.74/5.28	4.61/4.12	4.4/0.7	4.13/4.12	3.99/4.02	4.14/4.14	4.12/4.06	4.19/4.71	5.12/5.87	5.98/6.06	6.56/7.5	6.77/6.95	6.58/6.48	5.84/5.99	4.41/4.17	4.07/4	4.01/4.1	4.22/4.27	4.16/3.93	4.53/5.03
Θ(52.5°)	5.13/5.6	5.34/5.49	5.79/6.02	5.97/6.21	5.93/5.32	4.52/3.96	3.93/3.99	4/4	4.12/4.32	4.39/4.35	4.25/4.15	4.12/4.45	4.97/5.06	5.62/6.29	6.22/6.34	6.61/6.36	6.46/5.93	5.12/4.27	3.98/4.12	4.06/4.03	4.03/4.12	4.43/4.74	4.67/4.34	4.17/4.63
Θ(60°)	4.66/5.24	5.42/4.99	5.35/5.66	5.86/5.86	5.49/4.83	4/3.57	3.82/3.93	3.81/3.79	3.96/4.24	4.18/3.81	3.57/3.2	2.93/2.28	3.86/4.37	5.02/5.73	6.41/5.68	6.34/6.05	5.82/5.26	4.13/3.08	3.01/3.17	3.08/3.09	3.26/3.21	3.35/3.93	4.04/3.54	3.69/3.83
Θ(67.5°)	3.67/4.23	4.43/4.62	4.7/5.47	5.29/4.97	4.53/3.91	3.33/2.2	3.54/3.68	3.43/3.37	3.68/4.02	3.82/3.09	2.72/2.01	1.44/2.29	2.92/3.43	4.08/4.73	5.3/5.28	4.98/4.69	4.51/3.84	2.57/1.86	2.19/2.44	2.34/2.63	2.96/2.8	2.52/2.88	2.94/2.33	1.92/2.84
Θ(75°)	2.38/2.64	2.64/3.18	4.23/4.77	4.71/4.33	3.88/3.34	2.71/2.39	2.83/3.25	3.12/3.98	3.25/3.56	3.12/2.28	1.99/1.51	0.67/0.71	1.27/1.35	1.51/2.23	3.05/3.27	3.18/3.12	3.32/2.97	1.87/0.99	1.31/1.7	1.58/1.91	2.18/1.82	1.21/1.6	2.02/1.41	0.72/1.68
Θ(82.5°)	1.06/1.31	1.33/2.03	3.27/4.02	4.17/3.92	3.61/3.16	2.33/1.63	1.98/2.46	2.18/1.77	1.83/2.19	1.75/0.76	0.36/0.41	-1.34/-1.23	-0.68/-0.78	-0.53/0.75	1.77/2.09	1.66/1.62	2.28/2.06	0.54/-0.88	-0.17/0.43	0.04/0.46	0.95/0.32	-0.31/0.36	0.51/-0.31	-0.7/0.38
Θ(90°)	-0.1/0.14	0.13/-1.25	2.53/3.18	3.31/3.02	2.77/2.46	1.71/1.15	1.65/2.19	1.81/0.61	0.49/1.14	0.81/-0.13	-0.39/-0.9	-2.38/-3.17	-2.39/-1.88	-1.28/-0.7	0.37/0.56	-0.38/-0.37	0.95/1.09	-0.79/-3.34	-2.21/-1.29	-1.59/-0.3	0.21/0.74	-1.8/-0.34	-0.27/-1.28	-2.21/0.89
Θ(97.5°)	-1.32/-0.75	-0.51/0.44	1.68/2.2	2.25/2.02	1.89/1.83	1.17/0.25	0.55/1.12	0.66/-0.47	-0.03/0.26	-0.53/-1.54	-1.29/-1.66	-3.53/-4.06	-3.08/-3.06	-3.22/-2.59	-1.46/-1.77	-2.45/-1.98	-0.82/-0.95	-2.62/-2.9	-1.59/-1.08	-1.61/-0.67	-0.57/-1.89	-3.36/-1.77	-1.58/-3.01	-3.96/-2.32
Θ(105°)	-2.18/-1.71	-1.14/-0.03	1.18/1.66	1.63/1.24	0.86/0.68	0.07/-0.81	-0.34/0.44	-0.08/-1.53	-1.74/-1.23	-1.69/-2.67	-2.47/-2.53	-4.76/-5.86	-4.18/-4.07	-3.57/-2.98	-2.34/-2.77	-3.84/-4.42	-3.13/-2.08	-2.43/-2.68	-2.07/-1.91	-3.35/-2.61	-5.09/-2.68	-2.23/-3.45	-4.19/-2.58	
Θ(112.5°)	-1.95/-2.22	-2.43/-1.44	0.11/0.87	1.17/1.2	0.75/0.05	-0.71/-1.08	-0.44/0.06	-0.78/-2.48	-2.92/-1.93	-2.25/-3.69	-3.71/-3.68	-5.12/-4.65	-3.5/-4.22	-5.39/-6.08	-6.29/-4.42	-3.77/-3.82	-2.71/-2.09	-3.17/-4.36	-4.27/-4.48	-3.92/-2.79	-3.13/-5.46	-6.72/-4.9	-3.87/-4.03	-3.5/-2.18
Θ(120°)	-2.58/-2.49	-2.65/-1.27	-0.72/0.26	0.66/0.86	0.73/0.13	-0.75/-1.66	-2.02/-2.05	-2.96/-4.01	-2.93/-2.13	-2.97/-5.77	-6.16/-5.02	-6.14/-5.78	-5.11/-6.02	-5.05/-3.58	-2.97/-2.3	-3.1/-5.48	-6.47/-4.29	-3.3/-3.43	-4.29/-4.4	-4.91/-7.08	-7.89/-5.37	-4.43/-4.33	-4.65/-3.36	
Θ(127.5°)	-2.68/-1.87	-1.79/-1.91	-1.16/-0.5	-0.61/-1.14	-1.85/-2.91	-3.88/-3.66	-2.62/-2.05	-2.3/-2.74	-2.38/-2.31	-3.57/-6.48	-5.37/-4.93	-6.22/-6.94	-5.71/-4.93	-3.54/-2.76	-2.62/-3.04	-4.5/-5.1	-5.11/-4.63	-3.78/-2.76	-2.95/-4.83	-7.63/-8.8	-9.72/-9.92	-7.3/-5.58	-4.83/-4.96	-4.19/-2.58
Θ(135°)	-2.51/-2.11	-2.41/-3.17	-3.26/-2.85	-2.79/-2.28	-2.03/-2.18	-2.36/-2.16	-1.82/-1.78	-1.91/-2.26	-2.86/-3.77	-5.59/-6.71	-5.31/-4.78	-4.81/-5.2	-5.27/-5.02	-4.48/-4.67	-4.55/-3.59	-3.17/-3.46	-4.18/-4.38	-4.14/-3.85	-4.26/-5.99	-7.84/-7.97	-8.42/-9.19	-8.75/-7.32	-6.72/-5.84	-4.76/-3.65
Θ(142.5°)	-3.83/-3.36	-3.4/-3.06	-2.41/-1.78	-1.57/-1.56	-1.53/-1.54	-1.73/-2	-2.24/-2.58	-3.34/-4.52	-6.11/-8.09	-9.31/-7.64	-6.88/-5.32	-5.35/-5.72	-5.74/-5.13	-4.27/-3.64	-2.8/-2.1	-1.96/-2.28	-3.18/-4.74	-6/-6.85	-8.23/-9.62	-8.74/-7.81	-7.99/-9.62	-9.65/-8.86	-8.54/-8.15	-6.88/-5.11
Θ(150°)	-2.23/-2.21	-2.93/-2.29	-1.65/-1.16	-1.1/-1.47	-1.99/-2.54	-3.21/-4.11	-5.18/-6.31	-6.99/-7.32	-7.58/-8.31	-9.03/-7.96	-6.92/-8.23	-8.66/-7.39	-5.51/-3.92	-2.98/-2.42	-2.67/-3.63	-4.58/-5.86	-7.27/-7.8	-6.93/-7.04	-7.27/-7.8	-6.93/-7.04	-9.51/-9.44	-9.88/-9.76	-9.17/-7.24	
Θ(157.5°)	-5.85/-4.37	-3.31/-2.67	-2.25/-2.06	-2.27/-2.92	-3.93/-5.16	-6.43/-7.08	-7.11/-6.38	-5.72/-5.78	-6.47/-7.71	-9.38/-10.1	-9.19/-8.85	-8.85/-9.36	-8.72/-7.87	-6.19/-6	-4.37/-4.2	-4.22/-4.32	-4.27/-4.47	-4.72/-5.18	-6.26/-6.79	-6.85/-6.28	-6.59/-7.26	-7.98/-9.26	-9.59/-9.52	-8.86/-7.36
Θ(165°)	-7.66/-6.41	-5.45/-4.87	-4.56/-4.57	-4.86/-4.55	-6.17/-6.71	-6.93/-6.9	-6.76/-6.46	-6.28/-6.72	-7.32/-8.85	-10.46/-10.24	-9.75/-9.42	-9.24/-8.47	-8.33/-8.73	-8.45/-7.77	-7.1/6.34	-6.03/-5.4	-5.53/-5.14	-5/-5.14	-5.65/-6.78	-7.86/-8.25	-8.03/-8.83	-9.72/-10.62	-10.49/-10.73	-10.36/-9.81
Θ(172.5°)	-9.41/-8.5	-7.55/-7.2	-6.71/-6.66	-6.71/-6.22	-5.96/-5.94	-6.04/-5.84	-5.97/-6.41	-6.96/-6.09	-9.78/-9.65	-12.09/-11.74	-10.81/-10.08	-9.73/-9.62	-9.11/-8.87	-7.44/-6.87	-6.37/-6.23	-6.23/-6.32	-6.17/-6.87	-7.48/-8.7	-9.53/-10.09	-10.48/-10.88	-11.72/-12.23	-12.47/-12.32	-11.01/-9.94	
Θ(180°)	-8.77/-7.76	-7.45/-6.96	-6.55/-6.3	-5.89/-5.63	-5.44/-5.33	-5.71/-6.06	-6.44/-7.43	-8.95/-10.37	-11.51/-11.46	-12.11/-12.38	-11.93/-12.5	-11.3/-11.06	-11.27/-10.73	-9.66/-8.61	-7.73/-7.48	-7.04/-7.03	-6.86/-6.79	-7.21/-7.93	-8.77/-9.56	-9.53/-9.67	-9.65/-9.39	-9.59/-9.8	-10.55/-10.86	-9.88/-9.22
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°)	-3.94/-2.6	-4.44/-4.62	-5.14/-5.99	-7.12/-8.28	-9.14/-8.82	-8.5/-8.21	-6.69/-5.39	-4.5/-4.16	-3.97/-3.93	-3.74/-3.44	-3.11/-2.94	-2.98/-3.21	-3.65/-4.32	-5.15/-5.97	-6.91/-7.77	-8.59/-9.21	-9.22/-8.93	-7.76/-6.73	-5.8/-4.86	-4.1/-3.59	-3.26/-3.03	-2.83/-2.68	-2.66/-2.86	-3.17/-3.47
Θ(7.5°)	-3.58/-3.87	-4.01/-4.44	-4.99/-5.81	-6.43/-6.51	-6.46/-6.35	-6.58/-6.4	-5.82/-4.83	-4.18/-3.91	-3.83/-3.8	-3.71/-3.33	-3.15/-2.95	-3.03/-3.32	-3.53/-3.94	-4.45/-4.6	-4.84/-4.7	-4.52/-4.46	-4.69/-5.04	-5.39/-5.11	-4.8/-4.59	-4.12/-3.69	-3.39/-3.12	-2.93/-2.82	-2.85/-3	-3.11/-3.33
Θ(15°)	-2.3/-2.22	-2.26/-2.42	-2.69/-2.78	-2.55/-2.29	-2.27/-2.56	-3.08/-3.29	-3.62/-3.52	-3.44/-3.15	-3.11/-2.98	-2.93/-2.83	-2.78/-2.63	-2.26/-2.11	-2.06/-1.91	-1.67/-1.5	-1.29/-1.05	-0.79/-0.9	-1.27/-1.92	-2.45/-2.88	-2.96/-2.92	-2.94/-2.87	-2.71/-2.33	-2.27/-2.2	-2.33/-2.29	-2.31/-2.36
Θ(22.5°)	0.01/0.22	0.26/0.2	0.12/0.15	0.32/0.21	-0.24/-0.83	-1.69/-2.51	-2.98/-2.93	-2.46/-1.91	-1.42/-1.1	-0.93/-0.85	-0.65/-0.56	-0.37/-0.12	0.03/0.36	0.67/0.87	1/1.18	1.24/0.81	0.11/0.84	-1.7/-2.23	-2.39/-2.39	-2.13/-1.89	-1.65/-1.38	-1.13/-0.9	-0.68/-0.5	-0.37/-0.24
Θ(30°)	1.58/2.03	2.33/2.39	2.29/2.15	2.09/1.76	0.95/-0.5	-2.05/-3.9	-3.7/-3.02	-2.18/-1.48	-0.89/-4.0	-0.02/0.31	0.54/0.7	1.21/4.5	1.76/2.13	2.31/2.44	2.54/2.55	2.34/1.73	0.64/-0.83	-1.85/-2.11	-1.94/-1.83	-1.54/-1.23	-0.9/-0.68	-0.55/-0.4	-0.13/0.22	0.63/1.1
Θ(37.5°)	2.63/2.4	3.67/3.79	3.65/3.41	3.11/2.52	1.27/0.53	-2.42/-8.8	-3.75/-3.12	-0.69/-0.35	-0.12/0.17	0.58/0.85	0.91/0.5	1.74/2.45	2.92/3.37	3.59/-3.39	2.92/1.9	0.8/-0.9	1.78/-1.71	-1.12/-0.76	-0.56/-0.42	-0.34/-0.22	-0.66/-0.27	-0.12/0.48	1.17/1.88	
Θ(45°)	3.13/8.2	4.31/4.44	4.27/3.99	3.69/2.91	1.41/-0.63	-1.82/-1.39	-0.25/0.67	1.16/1.23	1.07/0.93	0.94/0.83	0.52/0.49	1.12/2.21	3.12/3.7	3.93/6.9	3.27/3.07	2.92/1.9	0.66/-1.17	-1.5/-0.79	-0.18/0.04					



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(22.5°)	1.822/3.2	2.562/5.2	2.172/0.4	2.182/2.2	2.292/2.2	1.86/1.9	1.821/3.4	0.830/4.9	0.13/-0.04	0.120/0.7	0.180/5.6	1.11/1.99	2.81/3.3	3.26/2.98	2.93/3.12	3.16/3.11	2.99/2.99	2.89/2.73	2.33/1.58	0.91/0.96	1.18/1.04	0.74/0.59	0.12/0.2	0.85/1.06
Θ(30°)	2.34/3.08	3.44/3.24	2.83/3	3.52/4.02	3.99/3.68	3.2/3.06	2.77/2.57	2.46/2.79	2.47/2.05	1.5/1.06	0.41/0.64	1.24/1.76	2.26/2.93	3.35/3.43	4.07/4.65	4.54/4.08	3.52/3.22	2.62/2.13	1.74/1.67	2.1/2.51	2.57/2.18	1.68/1.72	1.58/1.42	1.29/1.79
Θ(142.5°)	3.25/3.57	3.85/3.78	3.36/3.76	4.06/3.3	4.21/3.81	3.2/3.22	3.34/6.6	4.1/4.5	4.41/3.85	3.49/3.25	2.77/2.06	2.39/2.89	2.71/2.99	3.72/3.63	3.69/3.74	3.72/3.93	4.11/4.02	4.64/2.25	4.56/4.09	4.34/4.59	4.56/4.09	3.94/4.18	2.91/2.99	3.36/3.42
Θ(45°)	4.57/4.52	4.55/4.35	4.19/4.49	4.51/4.15	4.06/3.63	3.54/3.68	4.34/4.63	4.43/4.39	4.28/4.12	3.99/3.83	3.88/3.83	3.31/3.45	2.95/2.54	3.15/3.15	2.79/2.96	3.36/3.89	3.86/3.65	3.61/4.33	4.68/4.58	4.24/3.46	3.16/3.11	3.47/4.06	4.36/4.51	4.94/5.01
Θ(52.5°)	4.76/4.12	4.15/3.88	3.87/4.45	4.63/4.62	4.28/3.69	3.91/4.48	5.3/5.28	4.8/4.32	3.66/3.92	3.67/3.07	3.28/2.72	3.84/3.33	2.46/2.33	3.64/3.78	3.05/2.7	3.36/3.54	3.67/3.63	3.58/3.13	3.65/3.63	2.86/2.43	2.77/3.95	4.47/5.21	5.51/5.42	
Θ(60°)	4.23/7.7	3.15/3.12	3.89/4.43	4.45/4.08	3.82/3.89	4.43/4.7	5.04/4.94	4.47/4.1	3.49/3.65	3.48/2.65	2.71/3.41	3.76/3.7	2.7/3.02	3.35/4.04	2.57/2.5	2.9/3.09	2.98/2.76	2.57/2.08	3.25/3.33	2.85/2.81	1.95/3.12	3.9/4.1	4.62/4.9	
Θ(67.5°)	2.94/2.42	2.18/2.52	2.93/3.52	3.37/3.19	3.28/3.37	3.89/4.09	4.32/4.14	3.81/3.73	3.14/3.09	2.81/2.76	2.68/2.89	3.01/3.18	2.87/3.06	3.01/4.05	4.27/3.85	2.75/2.43	3.05/2.99	2.82/43	2.44/1.56	2.9/2.68	2.05/1.82	1.18/1.94	2.92/3.12	3.62/3.36
Θ(75°)	1.46/1.44	0.96/1.47	1.8/2.51	2.48/1.62	2.2/2.54	2.89/2.64	2.31/2.67	2.58/2.66	2.38/2.26	1.85/2.24	2.07/2.3	1.7/2.3	2.25/1.77	1.42/2.62	3.46/2.77	2.3/2.23	2.65/2.57	1.99/2.02	1.97/1.5	2.8/2.14	1.04/0.34	0.38/0.88	1.6/1.6	1.33/1.77
Θ(82.5°)	-0.33/-0.52	-0.38/0.1	0.66/1.54	1.52/-0.03	0.4/0.48	1.12/1.17	0.52/0.9	0.81/2.9	1.03/0.47	0.07/0.84	0.31/0.67	-0.46/0.65	0.61/-0.02	-0.35/1.17	1.38/1.91	1.6/1.24	2.07/2.14	1.79/1.11	1.41/1.02	2.56/1.73	0.73/-0.73	-1.21/-0.16	0.65/0.03	-0.15/-0.06
Θ(90°)	-2.13/-2.32	-1.77/-0.56	-0.44/0.08	-0.14/-1.26	-1.44/-1.34	-0.65/-0.97	-2.61/-1.96	-1.29/0.13	-0.27/-1.32	-1.25/-1.73	-1.19/-1.17	-2.48/-1.03	-1.49/-2.03	-2.86/-0.83	-0.06/0.66	0.19/0.42	1.43/0.73	0.59/0.18	-0.33/0.21	1.61/1.35	-0.32/-1.77	-2.6/-1.73	-0.96/-1.94	-2.08/-1.84
Θ(97.5°)	-3.58/-3.2	-3.31/-1.83	-1.94/-0.87	-0.75/-2.96	-3.3/-3.91	-2.19/-2.44	-4.33/-4.42	-3.06/-1.48	-2.09/-2.94	-2.33/-3.77	-2.74/-3.38	-4.76/-2.93	-3.6/-3.73	-3.62/-2.9	-2.14/-0.57	-2.01/-0.84	-0.12/-1.09	-2.35/-2.23	-1.71/-1.54	-1.09/-1.11	-2.47/-2.32	-4.38/-3.15	-2.84/-3.78	-3.82/-3.21
Θ(105°)	-5.12/-4.42	-4.14/-2.14	-2.89/-3.08	-2.94/-4.4	-3.9/-4.68	-4.17/4.04	-4.8/4.5	-4.65/-3.26	-2.8/2.87	-3.88/4.74	-4.04/-5.64	-6.83/-4.39	-4.88/-5.3	-6.55/-4.56	-1.95/-3.18	-3.88/-2.9	-4.39/-5.9	-5.36/-2.34	-2.72/-3.16	-5.18/-5.38	-6.3/-4.49	-5.1/-4.62	-6.36/-4.84	
Θ(112.5°)	-6.39/-4.57	-4.88/-4.39	-3.21/-3.67	-5.23/-6.07	-4.79/-5.02	-4.76/-6.09	-6.62/-5.94	-4.93/-4.83	-4.98/-5.52	-4.12/-6.35	-5.39/-7.39	-8.13/-5.77	-6.19/-5.82	-6.69/-5.67	-6.19/-4.44	-4.17/-4.99	-5.84/-6.62	-7.27/-7.79	-7.14/-6.03	-5.45/-6.21	-8.4/-6.51	-7.25/-6.06	-6.99/-7.97	-7.48/-6.6
Θ(120°)	-6.07/-5.8	-6.26/-5.55	-4.78/-6.4	-6.71/-6.01	-7.29/-6.88	-5.73/-6.36	-5.97/-6.91	-6.75/-6.09	-8.85/-8.99	-6.62/-7.8	-8.17/-10.17	-9.11/-8.56	-5.91/-7.18	-6.46/-6.96	-5.95/-5.48	-7.47/-6.02	-6.51/-6.69	-9.96/-7.93	-5.29/-5.18	-4.79/-8.05	-7.16/-10.57	-9.59/-6.49	-8.97/-9.53	-8.04/-6.9
Θ(127.5°)	-7.08/-6.91	-7.26/-7.59	-5.43/-6.47	-9.29/-7.26	-6.71/-7.39	-6.52/-6.68	-5.85/-6.98	-6.97/-7.07	-9.36/-9.56	-7.9/-10.31	-9.19/-9.61	-9.96/-10.08	-6.49/-7.26	-6.57/-9.96	-10.46/-4.73	-5.92/-8.1	-4.54/-7.2	-8.16/-6.55	-4.72/-4.61	-5.08/-7.52	-8.23/-10.79	-9.5/-7	-8.73/-8.55	-6.63/-7.53
Θ(135°)	-7.49/-9.94	-9.14/-8.57	-10.91/-8.66	-8.48/-9.87	-8.27/-6.55	-6.25/-6.78	-6.72/-7.52	-7.1/-8.18	-10.32/-9.96	-9.67/-10.03	-9.53/-8.84	-10.81/-10.42	-8.84/-8.17	-8.36/-9.69	-8.22/-9.58	-7.98/-7.26	-4.44/-7.61	-10.5/-8.69	-6.3/-5.18	-6.22/-9.37	-11.52/-12.35	-10.62/-9.37	-10.17/-10.01	-8.64/-7.99
Θ(142.5°)	-11.49/-10.57	-10.94/-11.54	-11.69/-10.08	-9.68/-9.01	-7.28/-6.83	-10.96/-10.17	-8.75/-9.77	-6.66/-8.92	-6.62/-7.8	-11.66/-10.47	-9.44/-9.92	-9.76/-11.87	-8.71/-10.25	-11.09/-9.55	-10.52/-9.43	-9.04/-6.98	-6.73/-10.86	-12.01/-7.46	-7.5/-8.11	-6.97/-8.32	-11.06/-12.55	-11.48/-12.26	-11.83/-11.68	-11.12/-11.03
Θ(150°)	-12.04/-9.74	-9.77/-11.81	-10.85/-7.67	-8.11/-10.05	-8.71/-8.19	-10.17/-8.33	-7.36/-8.94	-10.36/-9.14	-7.64/-8.01	-9.94/-11.29	-11.97/-12.21	-12.43/-10.18	-8.84/-9.26	-9.68/-8.32	-10.74/-10.1	-8.27/-7.06	-8.76/-9.86	-9.79/-9.68	-8.12/-9.11	-9.48/-9.99	-10.45/-12.11	-9.81/-12.33	-9.81/-12.33	-9.42/-11.97
Θ(157.5°)	-9.74/-8.23	-8.74/-9.44	-8.66/-8.52	-8.83/-8.79	-7.7/-7.61	-9.4/-9.53	-7.45/-7.58	-9.62/-11.14	-10.18/-9.11	-9.72/-11.12	-12.4/-11.97	-8.97/-8.03	-10.08/-9.59	-6.88/-7.39	-8.79/-8.93	-7.88/-6.44	-6.13/-7.54	-9.84/-9.62	-8.96/-10.01	-10.37/-9.93	-9.49/-10.71	-11.14/-10.7	-10.88/-11.36	-9.12/-14.12/0.4
Θ(165°)	-8.7/-8.35	-10.24/-9.12	-8.03/-5.66	-6.11/-6.3	-7.34/-7.66	-8.06/-8.4	-8.18/-8.4	-9.73/-10.28	-10.98/-10.84	-11.69/-12.69	-12.61/-12.17	-12.08/-12.07	-12.06/-10.01	-8.35/-7.96	-8.3/-8.83	-9.69/-9.22	-9.36/-9.57	-9.84/-5.32	-7.12/-7.79	-9.11/-10.58	-12.02/-11.7	-11.81/-11.27	-10.44/-10.42	-10.85/-6.97
Θ(172.5°)	-9.45/-10.07	-9.35/-8.87	-8.81/-8.98	-8.87/-9.07	-9.27/-9.19	-8.8/-8.39	-8.49/-8.83	-8.49/-8.24	-9.41/-10.66	-10.32/-9.66	-9.98/-11.05	-10.72/-9.5	-8.15/-7.67	-7.69/-7.82	-8.54/-8.94	-8.4/-8.18	-7.53/-7.03	-6.97/-7.21	-7.61/-7.79	-8.56/-10.08	-11.4/-10.95	-10.16/-10.53	-11.01/-10.98	-11.09/-9.92
Θ(180°)	-10.43/-10.7	-10.3/-9.6	-8.88/-8.59	-8.76/-8.85	-8.7/-8.72	-8.86/-8.2	-7.98/-8.17	-9.05/-10.12	-11.2/-11.76	-11.32/-10.96	-11.69/-11.7	-11.28/-11.07	-11.22/-12.04	-12.5/-12.39	-10.65/-9.34	-8.48/-8.3	-8.47/-8.86	-9.77/-10.16	-10.76/-9.82	-9.76/-9.91	-10.56/-12.09	-12.43/-12.32	-12.34/-11.98	-11.87/-10.68
Freq(Hz)	5.36GPol.	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°)	-1.6/-6.63	-7.08/-7.51	-8.43/-9.13	-9.67/-9.66	-9.49/-9.06	-9.84/-9.65	-8.54/-7.48	-7.12/-6.21	-5.8/-6.12	-5.81/-5	-4.91/-5.18	-4.55/-5.87	-6.25/-6.81	-6.91/-6.87	-8.02/-8.53	-8.54/-8.85	-9.27/-9.81	-9.53/-8.95	-8.12/-8.22	-7.84/-6.78	-5.89/-5.62	-6.2/-5.84	-5.28/-5.79	-5.62/-5.69
Θ(7.5°)	-5.35/-5.82	-6.57/-7.21	-7.65/-8.81	-9.99/-9.96	-10.03/-10.05	-10.79/-11.33	-10.35/-8.26	-7.61/-8.21	-7.06/-6.34	-5.27/-4.94	-5.01/-4.58	-5.71/-5.48	-6.22/-6.18	-6.2/-6.33	-7.09/-7.49	-7.56/-6.15	-8.5/-8.35	-8.14/-8.46	-7.7/-6.69	-6.7/-6.65	-5.73/-5.29	-4.99/-5.34	-5.07/-5.21	-5.68/-5.39
Θ(15°)	-3.73/-4.05	-4.56/-4.81	-5.3/-6.04	-6.95/-7.98	-8.84/-9.23	-9.24/-9.29	-9.38/-8.45	-7.46/-7.63	-7.89/-7.18	-6.06/-5.68	-5.43/-4.63	-4.15/-4.29	-3.89/-3.53	-3.1/2.62	-3.32/-4.22	-5.37/-6.26	-6.84/-5.57	-4.92/-5.01	-5.17/-4.94	-4.85/-5.22	-6.43/-6.44	-5.14/-3.47	-4.09/-3.23	-3.15/-3.54
Θ(22.5°)	-1.97/-2.41	-3.13/-4.02	-4.98/-4.58	-4.17/-4.6	-5.07/-5.5	-6.08/-6.39	-5.98/-6.07	-5.59/-4.26	-3.59/-3.25	-2.44/-1.9	-2.08/-2.62	-2.73/-3.01	-3.39/-2.62	-2.6/-3.01	-3.59/-3.88	-4.23/-5.15	-5.98/-4.97	-3.34/-3.58	-3.61/-4.07	-3.95/-3.41	-3.14/-2.94	-2.55/-1.72	-1.84/-1.79	-1.51/-1.6
Θ(30°)	-0.1/-0.89	-2.63/-2.73	-2.41/-2.19	-2.14/-2.73	-3.2/-3.31	-3.68/-4.39	-4.38/-4.08	-3.41/-2.44	-2.43/-2.65	-2.48/-1.78	-1.44/-1.02	-0.98/-1.35	-1.37/-1.16	-2.17/-2.56	-1.96/-2.71	-3.59/-3.45	-3.2/-1.77	-0.49/-0.06	-0.04/-0.85	-2.13/-2.83	-1.74/-1.12	-1.68/-1.96	-1.26/-1.85	-1.4/-0.25
Θ(37.5°)	0.13/-0.29	-1.51/-1.6	-0.62/-0.13	-0.84/-0.87	-0.65/-1.41	-2.26/-2.97	-2.45/-1.54	-0.73/-0.64	-1.28/-1.87	-1.94/-1.59	-1.1/-0.43	0.45/0.38	0.16/-0.23	-0.7/-0.37	-0.22/-0.04	-0.11/-0.28	0.25/0.76	0.91/0.59	0.34/0.29	0.45/0.54	0.63/0.99	0.77/0.16	-0.27/-0.52	-0.34/-0.16
Θ(45°)	1.2/0.57	-0.22/-0.51	0.18/0.98	0.32/1.1	0.85/-0.4	-1.31/-2.08	-1.04/0.68	1.15/1.04	0.85/0.4	0.25/0.18	0.94/1.34	1.77/2.38	1.89/0.64	0.61/0.3	1.37/1.64	1.44/-1.72	1.04/0.79	0.28/-0.28	0.35/1.1	1.47/1.69	1.58/1.41	1.93/2.11	1.83/1.16	0.85/1.57
Θ(52.5°)	1.68/0.98	0.17/0.03	0.42/1.37	1.65/2.17	1.22/0.16	-0.28/-0.74	-0.75/0.78	1.57/1.68	1.43/0.51	0.92/0.78	2.12/2.08	2.43/2.22	2.75/1.25	1.28/1.65	2.18/2.43	1.88/1.89	0.89/0.53	0.08/-1.17	0.17/1.07	1.41/1.23	1.56/2.23	1.86/2.32	2.45/2.04	1.95/2.12
Θ(60°)	1.5/0.74	1.04/0.62	0.98/1.62	1.87/2.26	2.46/1.44	1.36/0.65	-0.83/0.76	2.07/2.2	2.15/1.78	1.41/1.16	3.33/3.25	2.27/2.86	2.62/2.3	1.51/1.89	2.79/2.65	2.32/2.44	1.01/0.74	0.94/-0.3	0.91/2.3	0.85/0.77	1.79/3.04	2.86/3.44	3.55/2.53	2.05/1.45
Θ(67.5°)	1.06/1.15	0.66/0.35	1.04/1.7	1.85/2.51	2.52/1.65	1.79/0.47	-0.81/1.39	2.43/2.79	3.17/2.77	2.34/2.7	4.28/4.14	2.31/2.16	1.92/0.1	2.48/2.31	2.88/2.66	2.57/2.76	1.27/1.3	1.56/0.16	1.18/1.32	1.05/1.28	2.24/3.33	2.87/3.95	4.37/3.31	2.1/1.4
Θ(75°)	0.81/3.6	0.95/0.3	1.06/1.45	1.07/2.12	2.4/2.11	2/0.6	-1.05/1.21	1.97/2.57	3.29/2.87	1.82/2.72	3.82/4.23	2.27/2.06	0.83/1.91	1.55/1.88	2.79/2.18	1.99/3.02	1.57/1.29	1.99/0.87	0.68/1.05	1.26/1.96	3.05/3.38	2.57/3.91	4.28/2.79	1.47/0.97
Θ(82.5°)	0.59/0.7	0.62/-0.																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(67.5°)	2.55/2.35	1.88/2.42	2.26/3.12	3.07/2.67	2.12/2.78	3.22/3.68	3.31/3.12	2.99/3.63	3.54/2.05	1.9/2.45	2.07/2.27	2.27/1.27	1.94/2.09	2.81/2.51	2.87/2.81	1.84/1.01	1.34/0.95	1.81/1.33	1.63/1.79	2.22/2.77	1.63/1.26	1.29/1.29	1.1/1.45	1.96/2.66
Θ(75°)	1.31/0.8	0.53/0.82	1.72/2.02	1.66/1.76	0.7/0.95	1.09/1.57	1.89/1.79	1.77/1.94	2.27/1.11	0.67/1.88	1.65/1.94	1.23/0.37	1.1/1.53	1.49/1.53	2.23/2.21	1.86/1.21	0.85/1.37	1.77/2.3	2.04/1.73	2.22/2.5	1.08/0.28	0.42/0.26	-0.15/-0.3	0.53/1.11
Θ(82.5°)	-0.48/-0.66	-0.7/-1.03	1.08/1.12	0.22/0.28	-0.54/-1.17	-0.52/-0.04	-0.31/-0.37	0.6/0.87	0.84/0.58	-0.69/0.23	0.01/0.73	-0.29/-1.22	0.74/-0.56	0.18/-0.6	1.32/1.12	0.85/1.03	0.67/0.98	0.77/1.79	1.29/1.22	1.92/1.84	0.7/-1.24	-1.17/-0.55	-1.57/-1.76	-1.44/-0.88
Θ(90°)	-2.28/-3.2	-2.47/-2.18	-0.76/-0.59	-1.7/-1.51	-1.81/-3.88	-2.88/-2.18	-1.87/-2.31	-1.84/-1.29	-0.14/-0.3	-2.73/-1.75	-1.52/-1.05	-2.9/-2.57	-1.8/-3.04	-2.05/-2.68	-0.69/0.61	-0.09/-0.31	-0.25/0.13	-0.89/0.05	0.39/0.02	0.76/0.27	-0.21/-2.52	-3.68/-2	-3.1/-4.11	-3.2/-2.68
Θ(97.5°)	-4.1/-4.66	-3.21/-3.29	-2.14/-2.45	-2.86/-3.08	-3.65/-5.19	-3.94/-3.7	-3.19/-3.48	-3.63/-2.56	-1.38/-1.85	-3.3/-3.55	-3.62/-3.4	-5.12/-3.97	-2.8/-6.62	-4.68/-3.45	-1.81/-0.8	-1.24/-1.93	-1.73/-1.37	-2.83/-2.77	-1.87/-1.65	-1.03/-2.35	-1.98/-4	-5.61/-3.88	-4.98/-6.93	-5.82/-4.72
Θ(105°)	-5.04/-5.99	-3.17/-5.2	-3.53/-3.9	-6.1/-5.47	-4.65/-6.01	-6.8/-6.14	-5.89/-5.62	-4.78/-3.65	-2.88/-3.72	-4.24/-5.77	-5.13/-4.34	-7.1/-5.51	-5.71/-6.1	-4.83/-4.99	-2.77/-3.42	-4.27/-3.74	-3.91/-5.22	-5.91/-5.63	-5.29/-5.44	-4.34/-4.45	-4.56/-6.44	-6.07/-5.11	-9.19/-9.28	-7.01/-7.94
Θ(112.5°)	-6.1/-6.59	-4.69/-6.27	-4.82/-5.98	-6.67/-6.77	-7.07/-6.11	-7.55/-6.31	-6.45/-7.19	-7.38/-5.79	-5.08/-5.72	-5.62/-7.26	-6.03/-7.2	-8.83/-6.94	-7.53/-7.37	-6.24/-6.31	-4.15/-3.84	-4/-5.61	-5.24/-6.7	-9.14/-7.9	-6.33/-6.74	-7.23/-8.18	-7.96/-6.9	-7.47/-7.65	-10.24/-9.81	-9.32/-7.37
Θ(120°)	-7.12/-6.68	-5.43/-6.73	-6.29/-6.52	-7.76/-7.93	-7.23/-7.31	-8.76/-7.05	-6.65/-5.61	-7.71/-7.67	-9.59/-7.41	-7.16/-8.33	-6.97/-8.64	-8.85/-9.18	-9.4/-6.61	-6.17/-8.81	-6.79/-4.22	-4.24/-5.96	-5.81/-6.59	-9.28/-9.55	-5.45/-5.54	-5.59/-7.79	-7.82/-10.62	-8.75/-7.46	-10.52/-9.47	-8.15/-7.18
Θ(127.5°)	-7.81/-8.52	-6.59/-7.65	-6.69/-9.55	-9.97/-9.45	-7.75/-7.61	-8.31/-7.35	-8.42/-7.14	-7.18/-8.15	-10.13/-9.65	-7.29/-7.88	-8.23/-9.96	-9.36/-11.15	-8.43/-8.16	-8.36/-7.46	-8.45/-8.28	-5.52/-5.67	-6.6/-6.19	-7.83/-6.34	-4.69/-4.34	-5.99/-8.42	-9.04/-9.74	-9.09/-7.28	-8.42/-7.4	-9.82/-7.03
Θ(135°)	-8.93/-9.53	-8.68/-11.98	-9.22/-8.16	-9.26/-9.15	-9.32/-8.24	-8.42/-5.88	-7.77/-8.63	-8.52/-9.01	-10.97/-11.95	-11.6/-10.71	-11.77/-8.52	-7.76/-10.14	-10.68/-10.64	-6.74/-9.3	-7.81/-7.85	-10.35/-6.95	-6.33/-8.11	-9.27/-9.89	-8.88/-7.09	-5.7/-9.69	-10.94/-11.36	-10.97/-11.47	-10.28/-9.37	-10.39/-6.68
Θ(142.5°)	-11.71/-11.79	-8.93/-10.38	-10.59/-11.21	-9.37/-9.08	-8.65/-7.39	-9.6/-9.09	-8.53/-10.08	-10.1/-10.09	-10.51/-11.18	-10.9/-11.3	-11.6/-11.16	-10.74/-8.5	-6.89/-9.32	-10.32/-9.49	-11.8/-12.32	-8.16/-8.09	-7.48/-9.67	-10.41/-10.23	-8.1/-8.27	-5.77/-9.5	-11.6/-11.84	-12.43/-12.59	-12.32/-11.81	-10.62/-10.01
Θ(150°)	-8.8/-7.4	-10.65/-9.73	-10.24/-9.51	-8.87/-7.08	-8.88/-10.94	-11.29/-8.18	-6.73/-8.5	-10.61/-10.75	-10.85/-9.72	-9.82/-10.47	-10.82/-12.12	-11.55/-11.56	-11.96/-9.57	-7.03/-6.96	-10.85/-9.99	-9/-9.6	-11.12/-10.2	-9.46/-8.74	-7.86/-8.3	-9.91/-10.13	-10.56/-12.19	-11.36/-9.78	-10.45/-10.88	-10.76/-11.03
Θ(157.5°)	-8.08/-8.99	-10.69/-9.07	-8.61/-8.48	-10.46/-10.04	-6.94/-5.88	-5.89/-7.65	-8.44/-8.31	-9.4/-10.41	-11.1/-11.64	-10.5/-11.65	-11.19/-8.85	-8.61/-9.22	-10.67/-10.4	-7.61/-6.67	-6.68/-7.53	-9.41/-10.7	-9.29/-7.72	-8.58/-10.13	-9.59/-9.68	-9.86/-9.21	-9/-11.3	-12.77/-10.93	-10.4/-12.14	-12.45/-9.94
Θ(165°)	-9.15/-9.21	-9.36/-8.5	-7.66/-8.46	-9.99/-8.77	-7.02/-6.27	-6.54/-7.51	-9.02/-9.11	-8.98/-10.58	-11.08/-10.64	-10.78/-12.24	-11.89/-12.16	-12.99/-11.93	-10/-7.62	-6.62/-7.55	-8.28/-8.81	-9.44/-10.62	-10.64/-10.13	-9.93/-10.47	-11.14/-11.53	-11.02/-10.51	-9.5/-9.44	-10.69/-11.06	-11.17/-10.16	-8.78/-8.75
Θ(172.5°)	-9.37/-10.26	-9.82/-9.39	-9.17/-9.53	-9.54/-8.25	-7.92/-7.76	-8.56/-8.62	-8.69/-9.61	-9.72/-9.99	-10.14/-10.14	-10.6/-11.41	-12.54/-11.52	-11.38/-9.68	-7.91/-7.62	-7.58/-8.11	-8.9/-9.42	-10.03/-9.88	-9.84/-9.43	-9/-9.08	-9.56/-9.85	-9.49/-9.38	-10.26/-10.6	-10.78/-10.64	-9.97/-9.98	-9.48/-8.79
Θ(180°)	-10.06/-10.22	-10.23/-9.87	-9.34/-9.87	-9.72/-9.19	-9.71/-9.59	-9.63/-10.27	-10.38/-10.43	-10.6/-11.82	-11.95/-11.93	-12.28/-12.52	-12.13/-11.51	-11/-10.49	-9.9/-10.79	-11.43/-11.28	-11.03/-10.29	-9.94/-9.34	-9.76/-9.14	-8.29/-8.5	-8.59/-9.15	-9.89/-10.47	-10.72/-11.45	-12.03/-11.98	-12.31/-12.18	-12.23/-11.28
Freq(Hz)	5.785/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°)	-10.49/-10.66	-10.56/-11.44	-11.61/-10.87	-10.51/-10.37	-9.24/-8.66	-7.92/-7.29	-7.2/-7.19	-7.22/-7.5	-6.46/-6.43	-6.73/-6.76	-7.46/-8.6	-9.07/-9.51	-9.69/-9.68	-9.87/-9.74	-8.84/-8.49	-8.68/-8.33	-8.21/-7.62	-7.36/-7.56	-7.14/-6.99	-7.46/-7.14	-7.36/-7.6	-7.48/-7.88	-8.56/-9.13	-9.93/-10.27
Θ(7.5°)	-6.75/-7.61	-7.41/-7.12	-8.21/-8.38	-8.05/-8.35	-8.07/-7.63	-7.66/-7.54	-7.33/-6.85	-6.07/-4.92	-4.72/-4.62	-4.09/-4.01	-4.84/-5.82	-6.52/-6.96	-7.78/-8.84	-9.93/-10.57	-10.52/-9.83	-10.07/-9.84	-9.46/-7.8	-7.41/-7.95	-7.98/-7.47	-7.06/-6.94	-7.25/-7.47	-6.61/-6.48	-6.58/-6.32	-6.1/-6.33
Θ(15°)	-2.97/-3.84	-4.26/-4.79	-5.33/-6.84	-8.52/-10.19	-9.78/-9.49	-9.25/-9.09	-8.52/-8.15	-6.9/-6.05	-5.49/-4.3	-3.08/-2.55	-2.86/-3.55	-4.43/-5.05	-6.59/-6.39	-6.49/-6.91	-8/-7.9	-6.74/-6.49	-6.45/-5.79	-5.92/-6.85	-7.43/-7.25	-6.78/-6.55	-5.84/-4.47	-3.3/-2.76	-2.58/-2.71	-2.47/-2.46
Θ(22.5°)	-3.26/-3.19	-2.74/-2.53	-3.19/-5.45	-7.07/-7.49	-6.8/-6.42	-7.03/-7.32	-8.04/-7.4	-6.09/-4.8	-3.91/-3.2	-2.82/-1.61	-1.13/-1.79	-1.99/-2.34	-3.54/-4.86	-3.19/-3.91	-6.34/-5.93	-4.75/-3.68	-3.01/-2.59	-1.96/-2.46	-2.75/-3.03	-3.36/-3.44	-3.3/-3.61	-3.62/-3.1	-2.35/-1.77	-1.54/-2.46
Θ(30°)	-1.44/-1.61	-1.7/-2.57	-2.4/-3.28	-2.45/-1.85	-1.38/-1.5	-2.36/-3.63	-3.85/-3.3	-3.03/-2.85	-2.87/-3.64	-4.06/-3.56	-1.83/-1.38	-0.92/-0.85	-2.13/-4.01	-3.4/-3.7	-3.79/-2.89	-2.58/-1.18	-0.45/-0.18	-0.51/-0.4	-0.3/-0.48	-0.84/-1.67	-1.99/-2.33	-2.19/-1.66	-1.2/-0.93	-0.6/-0.65
Θ(37.5°)	0.67/-0.16	0.13/-0.19	-0.59/-1.17	0.17/0.52	0.64/-0.65	-1.85/-2.34	-2.17/-1.39	-1.37/-1.8	-1.79/-1.7	-1.94/-2.57	-1.78/-0.21	0.82/1.38	0.4/-0.44	-1.07/-1.03	-0.83/-0.3	0.29/1.34	0.61/0.32	0.85/1.85	2.34/1.36	0.24/-0.17	-0.46/-0.58	-0.52/-0.28	0.18/0.71	0.27/0.37
Θ(45°)	0.27/-0.66	-0.58/0.73	1.3/0.56	1.45/1.93	1.82/1.45	1.26/0.36	0.36/1.43	2.17/1.68	0.53/0.32	0.69/0.28	-0.1/0.7	1.6/2.02	2.17/1.24	0.52/37	1.99/1.03	2.41/3.19	2.48/1.53	0.95/1.87	2.44/2.06	1.93/1.96	1.97/1.33	1.45/1.36	0.67/0.79	1.41/1.07
Θ(52.5°)	1.42/0.29	-0.98/-0.65	1.69/2.4	2.45/1.78	1.98/2.91	2.01/0.15	0.66/1.81	2.65/2.76	2.15/1.02	0.54/1.1	2.02/2.51	2.77/2.62	2.23/0.68	0.85/2.78	3.27/2.71	3.4/3.01	2.41/1.93	0.33/1.18	2.4/2.2	1.71/2.44	2.59/1.6	1.51/1.88	1.66/2.31	2.23/2.27
Θ(60°)	2.54/1.67	1.45/-0.07	0.81/2.76	2.62/2.52	2.69/3.46	1.74/-0.13	1.01/1.75	2.61/3.89	3.72/2.18	1.58/2.79	3.33/4.17	4.05/2.92	1.82/0.35	0.11/1.85	2.95/3.16	3.77/3.03	2.34/2.35	0.25/0.05	1.28/0.98	1.31/2.27	2.28/2.48	3.02/3.33	2.42/3.48	3.84/3.49
Θ(67.5°)	3.16/2.34	2.23/1.81	0.83/2.81	2.48/2.81	3.04/3.17	1.51/1.15	2.33/2.15	3.144.51	4.07/3.18	3.22/4.25	4.11/4.41	4.04/2.23	1.32/0.16	0.69/1.89	2.09/3.03	4.22/2.84	2.18/2.79	0.33/-0.19	0.46/-0.08	1.12/1.85	2.39/3.36	3.39/3.75	2.94/2.88	4.01/3.67
Θ(75°)	3.11/1.86	2.33/2.79	1.34/2.41	1.95/2.56	2.75/2.76	1.66/1.96	2.49/2.38	3.19/3.72	3.59/3.77	3.67/3.72	3.87/3.56	3.02/1.88	0.91/0.68	0.41/-3.4	1.16/1.75	3.76/3.97	2.15/2.34	-0.17/-0.65	0.3/0.3	2.07/2.18	2.71/3.97	3.1/3.52	3.26/1.75	2.75/2.71
Θ(82.5°)	2.32/1.06	1.66/2.36	1.15/1.66	1.15/2.19	2.14/1.98	1.51/1.66	1.85/1.63	2.11/1.96	1.98/2.89	3.13/3.26	2.89/2.52	1.57/0.87	0.16/0.16	0.39/1.17	0.9/1.5	3/3.43	1.6/1.42	-0.83/-0.2	0.11/1.19	2.28/1.97	3.21/4.28	2.59/2.35	2.67/0.82	1.75/2.33
Θ(90°)	1.27/0.1	1.18/0.56	0.27/1.15	0.52/1.23	0.09/0.56	0.89/1.58	1.47/1.25	1.42/0.14	-0.26/1.23	2.21/2.05	1.55/1.6	0.18/0.35	-0.31/-0.43	-0.26/-0.47	-0.2/0.94	1.23/2.41	0.4/1.16	-0.83/-0.35	0.31/1.04	1.25/0.84	2.64/3.61	2.05/0.79	1.54/0.08	0.17/1.69
Θ(97.5°)	0.81/-0.74	-0.07/-0.87	-0.51/-0.55	-0.79/-0.06	-1.15/-0.81	-0.25/0.19	0.02/-0.06	0.02/-2.06	-1.99/-1.01	0.55/0.97	-0.40/-0.9	-0.81/-0.29	-0.95/-1.9	-1.22/-1.96	-1.19/-1.4	-1.14/0.84	-2.25/-0.39	-2.11/-1.56	-0.99/0.47	-0.55/-0.09	1.46/1.39	0.09/-0.34	0.29/-1.49	-1.58/1.36
Θ(105°)	0.04/-2.6	-1.34/-2.65	-1.73/-1.71	-2.24/-1.89	-2.88/-2.1	-0.76/-1.8	-1.71/-1.57	0.16/-0.93	-2.6/-2.67	-1.05/-0.58	-2.28/-1.08	-0.95/-1.64	-1.61/-2.11	-2.8/-4.15	-3.97/-3.38	-3.85/-3.05	-4.69/-3.06	-3.22/-3.17	-2.14/-0.39	-2.24/-0.8	-0.76/-1.12	-3.25/-1.88	-1.49/-3.05	-2.14/0.09
Θ(112.5°)	-1.38/-3.58	-4.44/-4.24	-4.18/-3.36	-3.04/-4.09	-5.84/-3.16	-2.26/-2.51	-2.22/-2.48	-1.19/-2.39	-3.58/-1.73	-1.28/-2.83	-4.8/-4.82	-3.36/-4.09	-5.02/-3.81	-4.79/-5.7	-4.78/-8.42	-6.52/-4.45	-5.53/-5.44	-5.85/-5.9	-4.57/-3.39	-4.69/-4.64	-3.65/-4.87	-4.49/-3.35	-2.67/-5.12	-3.38/-2.74
Θ(120°)	-3.28/-5.38	-6.08/-4.77	-6.94/-5.6	-4.72/-5.37	-7.23/-5.87	-3.84/-3.41	-2.33/-3.38	-3.22/-3.29	-4.04/-3.56	-2.52/-2.22	-2.13/-5.05	-5.57/-5.75	-6.06/-4.42	-7.76/-9.68	-6.34/-6.34	-7.67/-4.71	-5.69/-5.75	-6.62/-10.24	-8.7/-3.52	-4.97/-4.75	-5.1/-3.43	-2.64/-4.44	-4.48/-7.74	-4.95/-4.95
Θ(127																								



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Gain Result

Freq(Hz)	2.45G/Pol.	Phi/Ant.1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)		
Θ(0°)	-11.32-9.99	-8.52/-7.27	-6.21/-5.42	-4.86/-4.55	-3.44/-4.52	-2.11/-4.93	-0.71/-5.89	-0.61/-6.17	-1.98/-7.93	-1.84/-18.6	-19.1/-79	-19.29/-18.03	-12.86/-9.7	-7.72/-6.55	-5.81/-5.35	-4.93/-4.53	-3.91/-4.21	-4.9/-5.85	-6.62/-7.1	-7.64/-8.83	-11.11/-15.19	-17.56/-17.81	-16.97/-13.68			
Θ(7.5°)	-10.45/-9.33	-8.26/-7.2	-6.27/-5.51	-5.03/-4.78	-4.74/-6.8	-4.87/-5.25	-5.69/-5.95	-6.01/-6.12	-6.78/-8.24	-11.03/-15.83	-18.73/-17.44	-18.35/-18.4	-14.35/-10.21	-7.67/-6.22	-5.43/-4.92	-4.55/-4.27	-3.99/-3.79	-3.84/-4.31	-5.22/-6.51	-7.76/-8.72	-9.41/-10.48	-12.53/-16.63	-19/-18.61	-15.5/-12.23		
Θ(15°)	-11.1/-9.49	-8.19/-7.11	-6.27/-5.74	-5.61/-5.79	-6.08/-6.31	-6.61/-7.05	-7.49/-7.63	-7.27/-6.88	-6.97/-7.84	-10.16/-14.73	-18.5/-17.34	-18.37/-19	-18.47/-14.99	-10.45/-8.01	-6.77/-5.99	-5.39/-4.9	-4.58/-4.49	-4.68/-5.44	-6.75/-8.52	-10.81/-13.44	-15.86/-16.52	-17.34/-18.17	-17.4/-18.4	-18.93/-13.8		
Θ(22.5°)	-11.21/-8.91	-7.4/-6.34	-5.79/-5.73	-6.18/-7.04	-8/-8.66	-9.13/-9.7	-10.02/-9.81	-9.12/-8.35	-7.97/-8.61	-10.84/-16.25	-18.08/-19.06	-16.93/-16.83	-18.33/-16.98	-12.8/-9.93	-8.03/-6.74	-5.66/-4.84	-4.38/-4.42	-5.04/-6.27	-7.99/-10.07	-12.12/-14.1	-16.27/-19.38	-17.24/-19.37	-18.9/-18.12	-19.02/-15.19		
Θ(30°)	-9.41/-7.8	-6.56/-5.66	-5.31/-5.7	-6.89/-8.65	-10.21/-11.24	-12.1/-12.57	-12.21/-11.61	-10.87/-10.44	-10.56/-11.59	-14.01/-18.72	-18.3/-17.65	-18.02/-15.09	-13.26/-12.64	-12.33/-11.57	-9.73/-7.88	-6.21/-4.86	-4.03/-4	-4.8/-6.48	-8.63/-9.94	-9.56/-8.87	-8.9/-10.14	-12.54/-15.09	-16.82/-18.74	-16.66/-12.06		
Θ(37.5°)	-6.68/-6.2	-6.1/-6.66	-5.44/-6.03	-7.93/-10.5	-11.85/-12.31	-13.08/-12.53	-11.39/-10.76	-10.83/-11.53	-13.36/-17	-17.74/-18.8	-19.03/-17.97	-18.07/-15.85	-11.3/-9.19	-8.98/-9.61	-9.28/-7.9	-6.04/-4.1	-3.57/-3.79	-5.23/-7.85	-10.36/-13.0	-8.5/-7.67	-7.67/-8.46	-9.96/-11.76	-13.69/-15.56	-12.63/-8.53		
Θ(45°)	-5.39/-5.28	-6.11/-6.33	-6.03/-6.44	-8.6/-11.18	-10.75/-10.46	-10.8/-10.52	-10.45/-11.1	-12.35/-13.84	-16.51/-18.25	-17.81/-18.69	-18.48/-18.45	-19.44/-19.5	-13.3/-9.87	-8.67/-8.4	-7.88/-6.97	-5.59/-4.15	-3.38/-3.89	-6.01/-9.34	-10.39/-8.59	-7.48/-7.74	-8.63/-9.4	-9.72/-9.98	-11.24/-14.51	-12.83/-7.61		
Θ(52.5°)	-5.63/-5.43	-7.1/-8.31	-7.31/-6.8	-8.06/-8.94	-8.09/-8.12	-8.8/-9.34	-10.68/-13.03	-16.01/-18.21	-18.14/-17.74	-19.06/-18.23	-17.28/-14.82	-14.43/-15.78	-15.28/-12.51	-9.49/-7.25	-6.03/-5.57	-4.91/-3.87	-3.36/-4.21	-6.8/-9.98	-9.18/-7.73	-7.85/-8.91	-10.61/-12.48	-11.46/-9.3	-9.11/-11.42	-12.84/-8.29		
Θ(60°)	-5.88/-5.7	-7.97/-10.99	-9.07/-1.18	-7.17/-6.6	-5.79/-5.92	-6.47/-7.42	-9.38/-12.5	-17.68/-19.1	-18.83/-18.01	-18.28/-17.24	-16.55/-15.87	-14.78/-14.79	-16.26/-15.48	-10.01/-6.4	-5.25/-5.58	-5.61/-6.74	-4.29/-5.38	-8.78/-11.63	-9.31/-8.86	-10.93/-12.42	-12.75/-16.97	-18.91/-11.06	-9.01/-10.53	-11.66/-8.22		
Θ(67.5°)	-6/-6.4	-9.35/-12.03	-8.89/-6.99	-6.89/-6.09	-5.48/-5.76	-6.13/-6.73	-8.12/-10.57	-16.07/-17.97	-17.54/-16.74	-16.83/-17.69	-18.39/-19.04	-16.24/-14.06	-15.55/-13.7	-8.5/-6.02	-6.03/-7.53	-7.97/-7.1	-6.73/-8.38	-11.56/-9.68	-7.61/-8.93	-12.21/-10.22	-8.49/-11.17	-10.31/-12.81	-9.7/-12.66	-14.2/-8.24		
Θ(75°)	-6.83/-7.64	-12.38/-13.37	-7.74/-5.6	-5.45/-5.33	-5.32/-6.19	-7.44/-8.19	-8.44/-9.91	-15.4/-17.6	-17.55/-16.26	-19.18/-18.9	-18.54/-17.98	-13.44/-10.47	-10.71/-12.98	-12.52/-9.98	-9.33/-9.53	-9.12/-8.09	-6.91/-7.19	-8.34/-7.5	-6.54/-8.15	-12.21/-9.55	-7.31/-8.69	-18.23/-12.99	-9.18/-12.06	-18.66/-9.6		
Θ(82.5°)	-7.91/-8.7	-13.56/-14.2	-8.47/-5.91	-5.05/-6.49	-4.49/-5.09	-6.78/-8.51	-9.16/-10.82	-17.05/-17.78	-17.16/-16.25	-18.76/-18.82	-18.55/-17.16	-10.91/-9.01	-10.44/-18.12	-6.57/-6.57	-8.27/-8.69	-7.21/-7.25	-9.14/-9.91	-8.36/-9.52	-16.12/-11.56	-10.81/-11.84	-18/-18.07	-8.79/-12.9	-17.97/-10.51			
Θ(90°)	-9.01/-10.38	-16.36/-12.45	-7.72/-6.09	-5.39/-5.12	-4.8/-4.94	-6.55/-7.9	-7.24/-7.84	-11.9/-15.83	-19.05/-17.94	-17.79/-18.28	-19.01/-17.71	-13.68/-11.48	-13.88/-17.52	-12.66/-7.37	-5.61/-6.92	-11.41/-11.64	-8.47/-8.25	-12.32/-15.45	-9.92/-11.06	-17.96/-8.89	-6.33/-9.81	-17.07/-7.76	-6.33/-10.83	-18.18/-11.09		
Θ(97.5°)	-8.11/-9.15	-14.41/-13.32	-7.82/-6.21	-5.41/-5.08	-4.85/-4.86	-6.98/-10.76	-10.61/-10.88	-15.2/-17.27	-16.85/-17.23	-18.32/-19.19	-19.11/-19.15	-14.8/-12.41	-12.38/-15.36	-14.43/-8.49	-6.42/-8	-10.55/-10.39	-10.3/-13.42	-18.58/-9.4	-5.89/-7.76	-13.1/-7.26	-5.31/-8.57	-17.52/-8.23	-6.43/-11.35	-18.11/-9.77		
Θ(105°)	-8.81/-9.92	-10.48/-9.3	-6.71/-5.75	-5.7/-5.96	-6.37/-5.84	-9.59/-10.58	-15.19/-19.3	-18.68/-17.89	-18.8/-14.8	-18.65/-18.07	-18.6/-14.59	-13.92/-16.64	-11.48/-6.33	-5.81/-5.83	-14.21/-16.97	-12.36/-10.14	-9.32/-6.17	-4.75/-7.61	-18.49/-10.58	-8.58/-12.71	-14.98/-7.1	-5.75/-10.56	-17.44/-9.51			
Θ(112.5°)	-6.23/-7.9	-12.46/-11.78	-6.54/-6.2	-4.18/-4.24	-5.51/-6.46	-9.56/-11.95	-10.92/-12.25	-16.38/-18.16	-19.14/-18.68	-18.49/-18.31	-18.83/-18.39	-15.37/-11.79	-11.04/-12.52	-13.22/-11.56	-11.9/-7.3	-7.84/-6.72	-5.77/-6.41	-10.74/-13.95	-11.44/-14.88	-11.47/-9.52	-5.49/-9.93	-14.8/-8.15	-6.63/-10.01	-13.6/-7.4		
Θ(120°)	-5.53/-5.13	-7.11/-9.25	-6.93/-5.39	-5.31/-4.97	-4.82/-5.6	-7.33/-9.9	-12.26/-13.65	-16.5/-19.25	-19.69/-18.62	-18.88/-18.95	-18.86/-16.52	-18.71/-14.33	-14.81/-18.76	-11.89/-6.04	-4.1/-4	-5.6/-8.73	-11.63/-15.89	-17.33/-7.72	-4.84/-5.39	-7.34/-7.05	-7.54/-13.28	-18.42/-9.21	-7.16/-9.5	-14.63/-6.58		
Θ(127.5°)	-6.83/-5.75	-6.33/-7.19	-5.54/-4.38	-4.95/-6.24	-7.06/-7.79	-8.93/-10.33	-11.1/-11.49	-13.08/-16.78	-18.04/-18.2	-18.11/-17.87	-16.52/-18.22	-18.35/-16.15	-15.87/-11.65	-7.49/-6.04	-6.93/-10.2	-16.43/-12.06	-7.96/-7.03	-6.3/-4.53	-3.94/-5.8	-10.58/-14.94	-16.72/-18.97	-10.96/-7.24	-6.09/-6.64	-8.47/-8.53		
Θ(135°)	-4.63/-4.32	-5/-5.99	-5.65/-4.87	-5.42/-7.1	-8.91/-10.76	-12.64/-14.24	-15.69/-18.58	-18.69/-17.89	-17.67/-17.2	-17.14/-18.89	-18.09/-18.33	-16.71/-15.74	-15.97/-15.52	-12.93/-11.14	-10.25/-9.01	-7.1/-5.34	-4.41/-4.72	-5.78/-6.62	-8.05/-12.74	-18.33/-16.62	-16.65/-18.43	-13.13/-8.64	-7.18/-6.69	-6.3/-5.58		
Θ(142.5°)	-4.32/-3.67	-3.95/-4.25	-3.9/-3.57	-4.28/-6.39	-9.21/-11.79	-13.93/-14.48	-13.56/-12.83	-12.92/-12.37	-13.69/-15.66	-18.48/-18.46	-17.92/-18.47	-16.81/-16.39	-15.9/-13.14	-9.94/-7.95	-6.96/-6.59	-6.33/-5.84	-5.4/-5.67	-6.91/-9.28	-14.25/-18.78	-12.65/-9.43	-10.31/-16.82	-17.84/-12.73	-10.21/-9.49	-10.85/-11.44		
Θ(150°)	-7.03/-5.7	-5.24/-4.83	-4.3-2.9	-3.42/-4.68	-6.81/-9.45	-11.57/-12.57	-12.3/-11.97	-12.32/-13.01	-14.06/-16.3	-18.03/-18.28	-16.61/-18.04	-18.06/-18.36	-15.21/-11.49	-8.73/-7.18	-6.61/-6.58	-6.6/-6.28	-5.76/-5.76	-6.88/-9.93	-17.06/-19.17	-11.81/-9	-9.12/-12.04	-18.89/-18.1	-15.93/-13.65	-11.9/-9.34		
Θ(157.5°)	-11.96/-9.77	-8.24/-7.8	-6.12/-5.32	-5.16/-5.81	-7.31/-9.37	-11.4/-12.43	-12.29/-12.24	-12.73/-13.66	-14.96/-17.24	-18.41/-19.06	-16.73/-14.75	-12.93/-10.74	-8.88/-7.47	-6.53/-6.08	-6.1/-6.36	-6.5/-6.3	-6.08/-6.23	-7.3/-9.95	-15.59/-18.74	-16.18/-11.99	-10.74/-11.33	-13.94/-18.91	-18.34/-18.91	-17.28/-14.31		
Θ(165°)	-14.99/-12.37	-10.48/-9.3	-8.51/-7.89	-7.57/-7.64	-8.25/-9.45	-11.06/-12.52	-13.74/-14.4	-14.93/-15.37	-16.88/-18.27	-18.59/-16.62	-12.57/-10.31	-9.08/-8.23	-7.88/-7.88	-6.46/-6.57	-7.81/-7.78	-7.25/-6.78	-6.46/-6.57	-7.33/-9.12	-12.01/-15.87	-17.76/-15.18	-13.16/-12.85	-14.12/-16.81	-17.54/-19.44	-19.12/-17.76		
Θ(172.5°)	-10.42/-9.28	-8.75/-8.48	-8.35/-8.16	-7.98/-7.77	-7.17/-7.87	-8.19/-8.54	-9.11/-10.09	-11.64/-13.68	-16.74/-19.04	-18.75/-15.98	-13.08/-11.47	-10.62/-10.2	-10.39/-10.67	-10.59/-10.05	-9.38/-8.61	-7.86/-7.38	-7.22/-7.57	-8.47/-9.98	-12.03/-14.75	-17.48/-17.63	-16.55/-16.64	-17.75/-19.26	-18.96/-17.37	-14.76/-12.24		
Θ(180°)	-8.18/-7.27	-6.87/-6.65	-6.53/-6.58	-6.61/-6.53	-6.4/-6.37	-6.47/-6.76	-7.46/-8.77	-10.89/-13.15	-14.81/-15.87	-17.09/-18.9	-17.74/-18.52	-15.54/-14.29	-14.23/-14.08	-12.99/-11.74	-10.62/-9.84	-9.24/-9.04	-9.13/-9.71	-10.99/-12.8	-15.58/-18.56	-19.38/-18.63	-19.21/-18.17	-18.5/-17.8	-19.1/-16.22	-12.67/-9.88		
Freq(Hz)	2.45G/Pol.	Theta/Ant.1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-		
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)		
Θ(0°)	-5.98/-5.89	-5.83/-6.21	-7.16/-6.78	-10.99/-13.78	-17.03/-16.76	-18.71/-19.74	-14.53/-11.3	-10.06/-9.3	-8.9/-8.32	-7.34/-6.39	-5.79/-5.93	-6.03/-6.73	-7.61/-8.74	-9.81/-10.72	-11.75/-13.02	-14.9/-17.51	-18.09/-18.66	-15.58/-12.57	-10.3/-8.66	-7.72/-7.4	-7.18/-6.77	-6.04/-5.31	-4.84/-4.76	-4.95/-5.27		
Θ(7.5°)	-11.71/-11.45	-11.22/-11.83	-13.65/-16.61	-17.8/-15.21	-12.72/-11.06	-9.91/-8.44	-6.86/-5.75	-5.04/-4.64	-4.3/-3.82	-3.22/-2.62	-2.16/-2	-2.08/-2.36	-2.81/-3.36	-3.96/-4.55	-5.17/-5.79	-6.72/-8.2	-10.64/-14.34	-18.51/-18.75	-18.63/-19.14	-17.17/-16	-15.05/-13.88	-12.69/-11.58	-10.87/-10.58	-10.85/-11.44		
Θ(15°)	-14.41/-12.72	-11.81/-11.82	-11.92/-10.66	-8.48/-6.58	-5.45/-4.89	-4.57/-4.17	-3.71/-3.35	-3.13/-2.89	-2.47/-1.88	-1.17/-0.54	-0.59/-0.02	0.03/-0.15	-0.45/-0.94	-1.37/-1.79	-2.46/-3.2	-5.48/-7.92	-10.36/-12.08	-12.84/-13.73	-15.74/-17.85	-19.38/-17.59	-19.06/-18.75	-19.51/-17.73	-17.01/-16.2			
Θ(22.5°)	-8.84/-7.55	-6.65/-6.41	-6.25/-5.33	-3.92/-2.77	-2.23/-2.2	-2.43/-2.56	-2.62/-2.66	-2.6/-2.46	-2.1/-1.46	-0.550/-39	0.921/-15	1.191/-21	1.321/-36	1.190/-88	0.580/-29	-0.35/-1.61	-3.74/-6.53	-9.27/-10.28	-10.03/-10.7	-10.79/-11.94	-12.98/-13.4	-12.92/-12.13	-11.36/-10.99	-10.72/-10.57		
Θ(30°)	-5.88/-4.13	-2.93/-2.57	-2.63/-2.35	-1.48/-0.73	-0.62/-1.3	-1.85/-2.46	-2.75/-2.8	-2.71/-2.66	-2.55/-2.23	-1.44/-0.36	0.561/-12	1.551/-7	1.821/-93	1.961/-88	1.781/-61	1.07/-0.24	-2.7/-6	-8.03/-14.2	-6.68/-6.63	-7.89/-7.99	-7.87/-7.78	-8.01/-8.37	-8.44/-7.57			
Θ(37.5°)	-3.83/-1.8																									



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(30°)	-10.43/-8.39	-7.49/-8.16	-10.89/-8.7	-7.09/-7.19	-9.25/-8.34	-7.9/-7.75	-8.81/-9.22	-9.79/-11.63	-15.69/-17.54	-18.9/-14.85	-16.75/-17.2	-15.88/-17.51	-17.5/-15.09	-14.5/-17.78	-17.61/-13.81	-11.61/-12.95	-16.14/-15.5	-15.35/-15.71	-18.63/-17.93	-12.46/-8.35	-7.22/-8.99	-13.18/-13.01	-11.3/-11.44	-13.82/-14.11
Θ(37.5°)	-15.38/-12.46	-7.96/-8.71	-15.51/-9.41	-6.76/-7.1	-8.69/-7.8	-8.71/-10.85	-10.18/-9.15	-11.43/-16	-18.29/-19.17	-17.54/-15.56	-17.96/-17.93	-15.96/-14.69	-16.62/-16.02	-15.78/-18.71	-17.95/-18.34	-17.9/-15.18	-13.24/-13.67	-8.64/-8.7	-13.25/-11.2	-8.13/-8.69	-6.93/-7.57	-10.12/-13.74	-17.51/-19.08	-17.39/-13.1
Θ(45°)	-9.73/-10.35	-8.9/-10.48	-14.91/-11.62	-9.38/-9.93	-11.73/-11.06	-12.83/-12.02	-19.85/-17.98	-18.71/-18.06	-18.71/-18.06	-15.65/-12.92	-16.82/-15.92	-15.71/-15.73	-14.95/-17.22	-18.59/-19.43	-17.76/-10.97	-10.65/-9.08	-7.93/-6.38	-7.3/-8.69	-8.52/-14.38	-19.31/-18.55	-13.03/-8.88	-9.31/-12.27	-11.12/-8.32	
Θ(52.5°)	-6.91/-11.43	-9.05/-10.96	-14.54/-14.31	-13.48/-14.93	-16.72/-15.63	-15.39/-15.63	-12.55/-14.47	-17.47/-18.1	-19.06/-15.74	-18.21/-17.81	-14.3/-14.2	-14.79/-15.4	-14.73/-16.52	-17.75/-19.07	-16.58/-12.22	-13.25/-14.53	-7.97/-6.08	-5.16/-5.31	-6.69/-9.73	-7.23/-8.08	-12.88/-16.53	-15.44/-9.06	-8.08/-7.15	-8.86/-7.36
Θ(60°)	-6.96/-9.07	-11.56/-12.93	-13.56/-18.15	-18.29/-17.47	-18.64/-19.6	-18.08/-19.72	-15.18/-18.43	-18.2/-18.41	-17.22/-13	-18.31/-17.42	-14.61/-18.02	-18.5/-19.21	-16.33/-18.66	-15.78/-15.14	-13.58/-9.78	-5.78/-5.15	-4.95/-4.91	-6.01/-8.99	-5.14/-7.04	-10.5/-10.45	-18.42/-13.15	-10.4/-11.92	-8.57/-6.73	
Θ(67.5°)	-8.78/-10.15	-9.95/-9.13	-14.26/-16.07	-17.51/-18.97	-14.54/-18.76	-18.28/-17.86	-17.62/-19.05	-17.23/-17.67	-14.34/-12.48	-18.13/-19.48	-18.81/-15.93	-14.73/-18.8	-18.29/-16.18	-9.3/-9.47	-5.43/-5.06	-4.79/-4.84	-4.53/-10.06	-6.07/-10.18	-12.58/-13.56	-18.31/-18.22	-12.19/-13.91	-8.04/-9.87		
Θ(75°)	-10/-8.62	-9.57/-8.11	-11.71/-11.99	-10.74/-18.44	-14.25/-17.69	-18.93/-18.96	-19.29/-17.55	-19.25/-18.94	-13.64/-15.18	-17.75/-18.81	-18.55/-18.69	-17.49/-18.05	-17.12/-18.19	-18.68/-18.42	-12.99/-14.13	-9.76/-6.07	-6.91/-7.08	-7.13/-5.44	-4.67/-7.44	-5.43/-11.09	-12.9/-19.08	-17.62/-18.39	-11.2/-11.11	-12.82/-8.79
Θ(82.5°)	-10.63/-11.37	-9.39/-8.47	-9.43/-9.25	-9.15/-16.54	-10.28/-19.4	-19.04/-17.89	-19.06/-19.43	-19.37/-16.29	-13.29/-12.47	-18.11/-17.67	-17.32/-16.43	-18.92/-18.61	-14.64/-18.49	-19.08/-15.1	-17.71/-9.6	-9.59/-7.8	-7.81/-7.19	-5.89/-7.31	-5.03/-7.75	-4.41/-11.78	-11.64/-18.15	-17.17/-13.46	-9.24/-11.8	-10.15/-10.42
Θ(90°)	-11.17/-11.78	-8.51/-1.58	-7.86/-8.43	-9.59/-12.25	-11.06/-18.03	-18.26/-18.05	-17.72/-18.68	-19.99/-14.34	-14.74/-18.84	-19.06/-17.27	-18.48/-18.01	-18.29/-18.05	-18.55/-18.66	-17.75/-13.93	-13.94/-11.48	-10.06/-6.83	-8.39/-10.45	-8.75/-8.06	-8.33/-9.44	-5.16/-6.95	-8.77/-15.44	-16.21/-11.69	-8.78/-11.47	-11.88/-11.56
Θ(97.5°)	-10.58/-11.42	-7.91/-6.65	-9.29/-6.95	-7.78/-16.63	-13.04/-18.8	-15.73/-18.82	-18.91/-18.17	-16.82/-14.46	-18.04/-17.31	-17.97/-18.76	-18.71/-18.53	-17.02/-18.29	-18.63/-18.84	-16.6/-17.65	-11.37/-6.91	-15.3/-6.68	-5.19/-9.75	-15.97/-9.34	-6.07/-12.32	-10.29/-9.33	-9.69/-8.42	-17.75/-11.49	-10.47/-11.45	-11.55/-11.45
Θ(105°)	-10.76/-8.83	-8.12/-6.94	-8.46/-8.75	-9.1/-16.83	-12.15/-17.1	-17.78/-18.5	-18.94/-14.32	-15.1/-12.76	-18.65/-18.1	-18.29/-17.48	-16.62/-18.74	-18.67/-18.49	-16.62/-18.84	-19.29/-14.06	-19.36/-8.72	-7.66/-10.09	-7.37/-8.09	-10.59/-15.74	-9.21/-7.87	-8.67/-10.12	-12.19/-9.54	-17.53/-9.89	-11.3/-10.43	-12.3/-10.59
Θ(112.5°)	-12.53/-7.15	-7.21/-8.27	-7.53/-9.99	-11.18/-17.33	-12.87/-18.43	-17.74/-19.14	-17.71/-14.43	-13.62/-12.09	-19.18/-18.8	-18.24/-17.58	-17.65/-17.84	-17.77/-17.78	-19.17/-18.74	-19.02/-15.97	-12.47/-11.02	-10.97/-6.94	-6.83/-10.94	-8.79/-9.52	-6.95/-10.78	-9.96/-13.15	-19.36/-7.53	-12.72/-10.31	-13.71/-16.24	-11.76/-12.65
Θ(120°)	-9.28/-7.42	-8.61/-8.56	-8.75/-11.77	-15.05/-15.72	-18.29/-16.07	-19.18/-19.77	-15.55/-15.53	-14.98/-15.06	-19.31/-18.14	-17.42/-19.15	-19.02/-18.66	-18.92/-18.83	-17.47/-19.32	-17.72/-18.32	-12.51/-9.45	-14.27/-7.9	-6.17/-11.09	-10.73/-9.87	-6.59/-7.23	-8.99/-17.77	-12.9/-17.67	-18.72/-10.8	-18.77/-19.09	-12.35/-12.6
Θ(127.5°)	-10.06/-10.67	-11.93/-10.68	-10.4/-12.58	-18.07/-18.57	-18.44/-15.72	-17.57/-17.68	-15.54/-17.32	-16.71/-13.29	-17.11/-17.35	-19.04/-17.75	-18.9/-18.89	-17.83/-18.08	-14.51/-15.54	-18.56/-19.18	-16.66/-9.61	-9.57/-11.17	-8.87/-14.4	-9.99/-7.5	-7.75/-8.89	-17.54/-15.4	-12.27/-15.74	-19.04/-12.47	-14.13/-12.43	-10.51/-15.32
Θ(135°)	-10.31/-16.44	-12.66/-10.92	-17.73/-13.47	-16.88/-13.6	-16.49/-18.19	-11.17/-12.73	-13.67/-12.24	-15.4/-17.83	-13.67/-12.9	-15.4/-17.83	-17.61/-18.81	-18.04/-18.01	-18.12/-15.97	-13.04/-18.78	-15.47/-17.52	-10.49/-17.31	-8.52/-10.07	-18.75/-15.18	-17.4/-11.7	-12.78/-16.2	-16.52/-16.9	-16.36/-15.65	-13.68/-15.13	-16.27/-11.65
Θ(142.5°)	-19.09/-15.72	-15.57/-18.66	-18.41/-14.73	-16.6/-15.87	-12.38/-14.58	-15.45/-13.78	-11.74/-12.49	-15.64/-13.32	-12/-16.25	-18.11/-15.68	-15.12/-16.5	-18.31/-18.37	-18.1/-18.86	-18.44/-18.33	-14.53/-10.37	-17.08/-11.02	-10.36/-19.03	-16.99/-9.53	-14.53/-12.91	-9.06/-12.54	-18.12/-18.91	-16.83/-18.76	-17.17/-18.23	-17.81/-16.88
Θ(150°)	-17.34/-11.73	-10.96/-16.55	-16.83/-11.49	-10.88/-12.65	-9.73/-5.82	-11.67/-12.35	-10.51/-11	-11.78/-13.33	-13.19/-15.45	-18.76/-17.14	-18.58/-13.35	-9.38/-10.52	-17.65/-15.44	-17.64/-18.92	-18.24/-14.68	-13.87/-11.62	-12.16/-12.94	-12.89/-18.83	-19.05/-16.9	-17.55/-18.28	-18.69/-16.03	-13.86/-12.77	-16.13/-16.55	
Θ(157.5°)	-11.33/-8.45	-9.61/-11.89	-10.06/-8.39	-8.67/-11.18	-12.73/-10.84	-10.57/-10.29	-10.15/-10.29	-13.18/-13.17	-16.37/-14.17	-18.47/-18.56	-19.01/-19.16	-16.62/-18.65	-17.27/-13.78	-12.21/-16.2	-18.24/-15.11	-8/-10.61	-17.36/-16.28	-13.46/-17.54	-15.55/-15.59	-14.52/-18.24	-15.66/-14.68	-14.66/-15.77	-18.33/-16.53	
Θ(165°)	-10.61/-11.08	-12.03/-9.81	-7.3/-5.95	-8.3/-8.24	-11.23/-10.86	-8.51/-8.41	-8.89/-9.75	-11.38/-13.07	-13.98/-15.36	-18.18/-18.23	-18.71/-18.52	-17.19/-18.3	-16.92/-14.02	-12.66/-11.67	-11.57/-13.42	-16.19/-17.53	-17.49/-18.82	-16.85/-12.05	-11.12/-12.16	-13.44/-15.36	-18.91/-19.19	-18.86/-18.47	-17.2/-19.16	-18.13/-13.46
Θ(172.5°)	-11.58/-11.43	-10.13/-9.92	-8.66/-9.04	-9.06/-9.27	-9.46/-9.42	-8.77/-8.09	-8.81/-9.96	-10.74/-10.77	-13.6/-18.15	-18.2/-15.12	-14.4/-15.03	-13.83/-11.03	-8.96/-8.32	-8.89/-10.4	-13.31/-17.46	-17.33/-19.07	-13.95/-11.55	-11.1/-11.87	-14.63/-16.03	-13.71/-13.24	-15.97/-15.48	-14.49/-18.19	-16.83/-15.81	-18.12/-14.29
Θ(180°)	-12.57/-13.24	-11.74/-10.12	-9.73/-9.73	-9.99/-9.88	-10.21/-11.14	-11.47/-10.58	-9.5/-9.95	-11.67/-12.94	-14.09/-15.19	-15.43/-14.52	-15.85/-17.21	-14.74/-13.85	-15.32/-18.71	-18.83/-19.37	-17.08/-14.14	-13.54/-14.06	-14.59/-15.78	-18.9/-19.05	-18.83/-15.96	-14.87/-15.65	-16.09/-17.91	-18.98/-17.94	-18.79/-17.7	-16.14/-13.25
Freq(Hz)	5.3GPol	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°)	-9.23/-11.01	-12.71/-14.1	-15.34/-15.93	-17.16/-16.72	-17.71/-13.36	-13.1/-12.07	-10.04/-9.09	-8.61/-6.92	-6.37/-7.39	-7.19/-5.8	-6.1/-6.93	-7.51/-7.95	-8.36/-9.37	-10.67/-11.82	-13.57/-14.92	-15.45/-15.98	-16.74/-15.68	-14.66/-12.18	-10.24/-9.98	-10.49/-9.36	-9.56/-8.65	-8.18/-9.72	-9.5/-8.71	
Θ(7.5°)	-5.87/-7.3	-9.26/-9.83	-10.62/-13.44	-17.64/-17.82	-18.08/-17.73	-18.2/-18.97	-18.39/-14.67	-13.33/-14.29	-12.33/-11.89	-12.66/-12.17	-10.89/-11.9	-12.39/-11.98	-12.11/-12.61	-12.93/-13.69	-14.6/-14.61	-13.19/-13.14	-13/-12.45	-10.86/-9.49	-8.48/-8.09	-7.98/-7.23	-6/-5.4	-5.69/-6.06	-5.57/-6	-6.91/-6.14
Θ(15°)	-4.55/-5.58	-7.79/-8.32	-9.09/-10.88	-12.73/-13.7	-13.88/-14.38	-13.28/-11.81	-11.19/-10.17	-9.67/-10.76	-11.73/-10.84	-10.26/-11.65	-12.54/-10.46	-9.19/-9.28	-8.48/-7.39	-7.53/-7.84	-8.18/-8.81	-8.44/-8.92	-10.05/-9.84	-7.91/-7.9	-7.99/-8.36	-8.62/-8.12	-8.51/-8.49	-6.43/-5.56	-5.08/-3.81	-3.85/-4.59
Θ(22.5°)	-2.21/-2.74	-1.61/-5.59	-7.05/-13.33	-5.31/-9.52	-10.05/-10.59	-10.35/-9.73	-9.37/-9.31	-8.59/-6.7	-5.59/-5.86	-5.55/-7.2	-7.52/-8.59	-5.94/-6.01	-5.75/-5.84	-5.61/-6.06	-7.64/-6.89	-6.25/-6.26	-6.46/-6.72	-6.05/-5.28	-4.96/-5.11	-4.23/-3.03	-3.53/-3.01	-1.71/-9.96		
Θ(30°)	-0.86/-1.78	-3.14/-2.94	-3.2/-4.52	-5.54/-5.89	-5.45/-4.95	-5.47/-5.86	-4.59/-4.92	-3.82/-3	-3.11/-3.91	-3.82/-3.12	-3.56/-4.6	-4.93/-4.67	-4.44/-4.2	-3.33/-3.67	-3.97/-4.15	-6.19/-5.23	-3.4/-2.58	-2.71/-4.26	-6.67/-7.05	-4.35/-2.87	-3.87/-3.39	-1.48/-2.74	-2.46/-0.76	
Θ(37.5°)	-0.34/-0.62	-2.62/-2.34	-1.7/-2.13	-2.62/-2.7	-1.68/-2.15	-3.21/-4.3	-3.76/-2.72	-1.67/-1.66	-2.71/-3.6	-3.52/-3.54	-4.31/-3.75	-2.71/-3.85	-5.2/-3.82	-2.75/-2.09	-2.03/-1.93	-2.24/-2.55	-4.15/-3.02	-2.06/-2.47	-3.31/-3.81	-2.61/-1.23	-0.19/-0.82	0.930/09	-0.40/-0.72	-0.71/-0.28
Θ(45°)	1.340/35	-2.05/-2.29	-0.660/3	-0.850/01	-0.27/-1.91	-2.63/-2.38	-1.19/-1.3	-0.99/-1.2	-1.02/-0.85	-1.23/-1.29	-0.57/-0.38	-0.47/-0.4	-2.06/-3.17	-1.24/-0.45	-0.88/-1.18	-1.14/-0.51	-2.01/-1.97	-2.36/-3.48	-3.6/-2.1	-0.27/-0.72	0.590/39	1.341/59	1.280/92	0.451/18
Θ(52.5°)	1.320/69	-1.3/-2.82	-0.541/65	-0.681/71	0.25/-1.48	-0.28/-0.25	-1.44/-0.29	0.380/12	0.080	-0.01/-0.33	-1.23/-1.14	-0.340/73	-0.16/-0.97	0.651/26	0.110/2	0.360/45	-0.86/-0.88	-1.17/-3.43	-2.2/-1.51	-0.830/11	1.011/71	1.41/59	2.280/58	1.980/18
Θ(60°)	0.840/38	-0.02/-1.42	-0.921/93	1.62/59	1.88/-49.9	1.210/51	-1.420/74	1.380/09	-0.210/18	-0.02/-0.7	-0.67/-2.17	-2.280/36	-0.010/36	0.821/88	2.361/32	0.540/78	-0.22/-49.9	-0.81/-1.9	-1.28/-2.27	-2.52/-0.85	1.332/96	3.063/72	4.54/82	3.031/35
Θ(67.5°)	0.110/67	0.95/-0.45	-0.151/54	1.253/01	1.93/-0.13	1.41/-0.68	-1.951/07	1.090/13	0.560/52	0.430/44	0.560	-1.99/-1	-0.28/-0.52	0.852/37	2.191/6	1.490/85	-0.05/-0.66	-0.98/-1.29	-1.41/-3.08	-2.31/-0.61	1.973/29	3.344/64	5.264/07	2.920/94
Θ(75°)	-0.150/53	0.580/26	-0.10/98	0.640/3	1.160/17	1.12/-1.79	-1.330/47	0.550/61	1.620/72	-0.160/13	1.160/75	-0.01/-0.71	-1.24/-0.91	-0.351/7										



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(82°5')	-10.14/-13.19	-11.48/-16.45	-9.19/-11.1	-18.22/-14.11	-16.39/-17.91	-17.96/-18.75	-18.31/-19.45	-18.86/-17.97	-17.7/-17.7	-17.42/-17.55	-18.03/-18.55	-18.97/-18.08	-18.1/-18.39	-15.22/-17.75	-9.31/-11.59	-11.23/-7.16	-9.55/-8.95	-8.5/-6.63	-7.26/-7.32	-5.4/-10.56	-11.11/-18.22	-19.09/-14.34	-11.71/-13.71	-14.3/-15.63
Θ(90°)	-11.33/-14.64	-13.27/-11.77	-9.64/-9.44	-14.12/-14.69	-14.42/-18.37	-18.86/-17.75	-18.67/-15.47	-18.41/-18.94	-17.43/-18.95	-17.61/-17.92	-17.47/-18.6	-17.49/-18.5	-18.92/-18.35	-17.44/-18.88	-10.94/-9.98	-11.08/-7.37	-10.98/-11.53	-12.54/-9.03	-7.4/-10.16	-7.52/-14.11	-10.88/-17.27	-18.98/-13.96	-11.94/-11.86	-14.23/-14.77
Θ(97.5°)	-12.21/-12.74	-11.96/-10.82	-9.69/-10.77	-11.62/-12.32	-13.71/-19.32	-16.79/-17.99	-12.71/-14.23	-15.93/-18.1	-18.54/-19.24	-17.14/-17.62	-16.93/-18.96	-17.94/-18.23	-19.11/-17.62	-19.24/-14.92	-12.74/-9.3	-9.27/-8.68	-9.79/-11.57	-14.12/-17.61	-13.51/-12.03	-11.52/-13.03	-17.71/-13.99	-17.33/-12.22	-11.94/-16	-14.17/-16.27
Θ(105°)	-9.35/-14.48	-9.17/-11.67	-8.47/-9.55	-14.11/-13.89	-14.42/-18.2	-18.37/-18.87	-19.05/-16.58	-15.79/-18.7	-17.81/-18.23	-17.92/-17.59	-18.74/-18.77	-17.16/-19.04	-18.29/-18.19	-17.06/-18.45	-8.32/-11.79	-10.98/-6.78	-8.39/-13.37	-13.92/-13.49	-14.64/-19.33	-9.79/-12.65	-10.58/-11.9	-19.05/-11.52	-15.51/-18.5	-13.33/-17.97
Θ(112.5°)	-10.39/-12.2	-9.35/-9.78	-7.93/-10.33	-14.03/-12.72	-18.87/-18.76	-17.93/-19.95	-18.1/-17.63	-18.35/-18.26	-18.35/-18.78	-17.31/-18.84	-16.89/-16.92	-17.67/-18.47	-18.04/-18.09	-15.27/-18.24	-10.99/-7.8	-9.87/-8.97	-5.4/-9.08	-14.55/-10.18	-8.02/-12.82	-12.92/-18.65	-13.86/-10.14	-18.27/-17.47	-19.35/-17.62	-15.76/-13.73
Θ(120°)	-11.77/-10.47	-7.87/-9.75	-10.14/-12.07	-15.01/-15.59	-16.86/-18.69	-17.41/-18.93	-17.52/-16.6	-17.39/-18.61	-18.5/-19.33	-18.37/-18.7	-17.08/-17.55	-19.07/-17.76	-16.53/-17.39	-17.19/-8.62	-7.74/-9.2	-17.91/-12.29	-8.63/-9.21	-9.91/-17.52	-11.91/-17.77	-19.73/-12.02	-17.71/-12.02	-18.71/-18.92	-14.1/-11.63	
Θ(127.5°)	-11.91/-12.26	-8.33/-10.8	-10.13/-18.14	-18.72/-18.56	-15.71/-18.6	-18.92/-16.42	-18.93/-17.94	-14.37/-17.21	-18.81/-18.94	-17.73/-18.01	-16.79/-17.57	-15.07/-19.01	-19.31/-17.51	-18.73/-10.34	-14.35/-17.85	-9.33/-7	-11.62/-13.46	-12.08/-7.47	-9.39/-10.71	-15.25/-17.72	-11.09/-12.22	-18.33/-14.19	-14.85/-12.37	-19.17/-12
Θ(135°)	-18.4/-12.04	-9.21/-17.74	-14.63/-14.93	-18.14/-18.85	-17.5/-17.39	-18.63/-14.45	-16.46/-14.83	-12.43/-13.94	-18.74/-18.97	-18.12/-18.5	-19.17/-18.45	-11.59/-13.14	-18.76/-17.97	-15.64/-18.48	-15.93/-11.07	-18.59/-8.86	-12.93/-10.55	-16.48/-16.61	-17.8/-13.36	-13.37/-18.72	-19.16/-18.8	-16.07/-18.24	-17.07/-12.72	-17.2/-10.24
Θ(142.5°)	-16.53/-17.25	-16.01/-15.84	-12.66/-13.77	-18.66/-15.84	-15.09/-13.55	-15.94/-11.83	-12.75/-15.32	-14.88/-13.94	-17.55/-19.06	-18.26/-19.12	-19.27/-18.99	-15.3/-10.16	-12.32/-11.87	-18.23/-17.87	-18.84/-18.56	-10.33/-15.64	-14.71/-13.31	-18.34/-14.2	-10.8/-14.29	-10.6/-13.91	-16.74/-16.05	-18.03/-19.2	-18.89/-17.84	-16.97/-12.3
Θ(150°)	-9.07/-7.4	-13.53/-15.38	-11.97/-12.59	-15.55/-8.25	9.12/-15.75	-15.25/-9.1	-8.46/-13.22	-14.02/-13.42	-18.77/-18.22	-19.15/-19.19	-17.49/-18.69	-17.22/-18.97	-19.74/-13.14	-9.07/-11.9	-18.4/-18.05	-17.72/-18.43	-18.9/-15.88	-16.22/-16.17	-11.12/-11.66	-18.91/-18.05	-16.85/-19.27	-17.24/-12.72	-12.77/-16.25	-18.05/-16.87
Θ(157.5°)	-7.82/-9.42	-13.18/-9.14	-8.17/-8.56	-12.52/-10.76	-9.09/-9.41	-9.8/-10.93	-10.47/-11.01	-13.88/-13.69	-14.9/-18.5	-17.43/-19	-19.66/-16.83	-15.02/-14.73	-17.58/-19.33	-15.67/-10.82	-12.16/-17.12	-18.83/-18.4	-13.98/-10.34	-12.76/-18.35	-13.82/-14.14	-18.68/-17.59	-15.45/-18.79	-19.27/-14.11	-14.22/-18.49	-18.08/-11.02
Θ(165°)	-12.71/-12.86	-10.51/-7.84	-6.75/-8.44	-11.53/-10.81	-8.12/-7.49	-7.44/-7.57	-8.73/-9.52	-10.59/-13.61	-14.34/-13.4	-15.57/-19.03	-17.57/-17.88	-18.51/-18.51	-15.53/-9.83	-7.89/-9.6	-11.49/-12.32	-13.73/-17.27	-18.31/-19.73	-18.76/-18.32	-18.09/-18.05	-14.62/-13.17	-14.09/-15.36	-19.4/-18.9	-17.81/-16.52	-11.31/-10.68
Θ(172.5°)	-12.81/-13.03	-11.83/-10.78	-10.16/-10.32	-10.17/-8.6	-7.53/-7.58	-7.89/-8.16	-8.83/-10.84	-13.33/-15.67	-18.79/-17.93	-18.23/-18.05	-18.9/-15.76	-14.52/-13.27	-10.41/-9.53	-9.71/-11.06	-13.75/-16.17	-17.29/-17.42	-17.68/-17.68	-18.09/-18.85	-18.57/-18.37	-18.16/-18.01	-18.71/-17.99	-17.56/-17.85	-16.76/-14.76	-12.93/-12.08
Θ(180°)	-11.5/-11.4	-12.02/-11.18	-10.29/-11.1	-10.65/-10.53	-10.86/-10.62	-10.36/-11.65	-12.32/-12.19	-13.2/-15.79	-17.38/-17.82	-18.2/-19.11	-18.73/-16.2	-14.41/-12.3	-11.25/-12.59	-15.48/-17.48	-19.67/-18.9	-18/-17.13	-18.27/-17.42	-14.29/-13.45	-12.85/-12.35	-13.44/-14.25	-15.35/-17.91	-18.82/-18.8	-18.16/-17.56	-17.16/-14.77
Freq(Hz)	5.785GPol.	ThetaAnt.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-14.9/-15.21	-15.63/-17.39	-16.27/-15.96	-16.73/-15.83	-13.85/-13.79	-13.71/-12.78	-11.21/-11.34	-11.53/-11.67	-9.48/-9.62	-11.42/-10.16	-10.83/-12.56	-13.14/-13.12	-14.43/-16.28	-19.11/-19.02	-18.04/-18.07	-16.61/-15.27	-15.16/-14.79	-13.65/-12.93	-13.23/-13.35	-13.2/-13.12	-12.94/-13.43	-12.51/-11.84	-12.47/-12.99	-13.33/-14.12
Θ(7.5°)	-9.62/-11.61	-12.22/-12.91	-17.98/-19.21	-18.79/-18.71	-17.79/-18.61	-18.94/-19.09	-17.06/-15.62	-13.83/-12.27	-12.94/-12.55	-10.99/-11.11	-11.78/-11.15	-10.71/-11.15	-14.43/-16.91	-13.32/-12.69	-12.27/-12.06	-11.61/-11.37	-11.59/-10.85	-9.94/-9.62	-10.25/-10.09	-8.56/-7.48	-6.34/-7.22	-6.24/-7.99	-7.8/-8.61	
Θ(15°)	-5.03/-5.88	-5.7/-5.9	-8.23/-12.22	-15.37/-18.58	-17.74/-18.31	-17.92/-17.38	-16.98/-16.47	-15.85/-13.92	-13.99/-12.34	-11.21/-11.91	-12.86/-12.58	-13.07/-13.22	-13.37/-13.82	-14.1/-12.49	-10.14/-9.08	-8.18/-7.78	-8.32/-8.56	-8.68/-9.48	-9.76/-9.12	-8.07/-7.3	-6.42/-5.32	-4.12/-3.47	-3.17/-3.23	-3.22/-4
Θ(22.5°)	-4.68/-5.82	-5.33/-4.66	-6.67/-9.37	-8.56/-9.61	-11.05/-12.65	-16.1/-13.91	-12.06/-10.16	-8.96/-7.69	-5.39/-5.68	-6.01/-5.32	-6/-7.81	-7.17/-6.81	-8.94/-8.92	-6.77/-8.15	-8.66/-8.12	-6.99/-5.75	-5.76/-5.67	-6.33/-9.97	-7.64/-6.84	-6.78/-6.28	-4.77/-4.48	-3.47/-3.53	-3/-2.92	-2.33/-2.36
Θ(30°)	-2.18/-2.9	-4.28/-6.71	-7.08/-6.41	-4.22/-3.46	-3.2/-4.64	-6.67/-6.07	-5.4/-4.48	-3.34/-3.8	-4.96/-4.18	-8.29/-7.14	-5.47/-6.23	-4.96/-3.87	-5.94/-4.78	-4.74/-4.99	-4.85/-4.74	-5.44/-4.73	-4.09/-4.22	-5.91/-5.65	-4.72/-5.49	-5.17/-6.01	-5.41/-4.87	-3.12/-1.54	-1.34/-2.07	-2.78/-2.46
Θ(37.5°)	-1.32/-3.01	-2.25/-2.02	-3.13/-6.01	-2.88/-1.26	-1.75/-4.44	-4.48/-3.81	-2.99/-2.33	-1.99/-1.78	-2.02/-1.87	-2.08/-3.3	-4.23/-4.6	-2.77/-1.64	-2.47/-2.34	-1.7/-2.52	-1.56/-1.18	-4.32/-3.19	-2.65/-2.51	-2.83/-1.88	-1.29/-2.59	-4.42/-3.92	-2.65/-1.4	-1.38/-1.4	-0.170/-0.59	-0.64/-1.77
Θ(45°)	-0.93/-1.41	-3.05/-2.15	-0.64/-1.35	0.83/-0.05	-0.96/-0.89	-0.66/-2.08	-1.160/-0.8	0.56/-0.21	-1.64/-1.57	-0.48/-0.62	-2.56/-3.34	-3.79/-2.28	0.890/-48	-1.650/-9	0.31/-9.3	-1.53/-0.03	0.160/-25	-0.960/-2	0.46/-0.49	-0.280/-7	0.78/-0.33	-0.34/-0.64	-0.75/-0.35	0.930/-41
Θ(52.5°)	0.74/-0.31	3.85/-2.23	1.26/-1.38	1.89/-0.02	0.61/-1.27	0.2/-6.7	0.110/-3	0.24/-0.1	0.03/-0.45	-0.67/-0.95	1.930/-43	-1.12/-1.17	1.27/-1.36	1.49/-1.44	2.35/-0.14	0.93/-33	0.840/-38	-1.230/-38	1.56/-1.37	1.21/-2.46	2.07/-0.1	-1.18/-0.78	0.552/-17	2.65/-19
Θ(60°)	0.50/-0.1	-1.2/-2.82	0.41/-2.39	3.63/-1.61	0.34/-2.36	-0.82/-2.85	0.890/-53	0.31/-51	1.420/-55	0.47/-86	2.84/-2.5	1.16/-0.81	0.77/-163	-0.58/-1.32	2.47/-144	2.59/-2.47	0.830/-94	-0.98/-0.13	0.95/-0.4	-0.59/-1.3	0.791/-07	1.822/-28	2.74/-34	4.732/-52
Θ(67.5°)	-0.020	0/-1.24	0.67/-2.39	1.82/-1.98	1.54/-1.98	-1.98/-0.33	1.97/-1.18	1.45/-1.79	0.30/-46	1.922/-69	1.84/-146	0.67/-0.95	1.040/-54	-0.35/-1.52	1.97/-1.84	3.25/-2.55	0.19/-1.28	-1.220/-03	-0.37/-3.25	-1.490/-71	1.342/-57	2.74/-0.5	4.34/-55	4.622/-05
Θ(75°)	-0.56/-1.1	0.47/-0.02	-0.03/-1.74	1.39/-1.5	1.48/-0.82	-1.630/-51	2.34/-148	1.680/-9	-0.82/-1	2.652/-58	1.78/-0.07	-0.31/-1.18	-0.010/-86	-1.250/-44	1.160/-69	2.243/-37	-0.580/-33	-2.52/-0.11	-0.35/-3.11	0.35/-1.64	2.813/-1	1.583/-47	4.22/-81	2.740/-27
Θ(82.5°)	-1.79/-1.97	-0.640/-0.6	-0.870/-0.49	0.161/-95	1.07/-0.4	-0.950/-59	1.71/-123	1.1/-10.2	-1.74/-105	2.52/-2.39	1.16/-0.82	-0.58/-1.91	-0.25/-0.84	-1.890/-42	0.39/-0.34	0.822/-63	-2.16/-1.77	-3.740/-74	-1.45/-2.98	-0.260/-66	3.483/-81	0.972/-19	2.870/-12	0.731/-32
Θ(90°)	-2.34/-1.6	-1.64/-2.06	-1.17/-0.34	-1.420/-86	-0.9/-1.32	-0.690/-3	1.731/-07	0.79/-0.9	-2.450/-52	2.252/-07	0.32/-0.13	-0.75/-1.77	-1.14/-2.37	-2.31/-1.8	-1.38/-0.46	-1.761/-32	-4.47/-1.05	-3.560/-96	-1.65/-3.37	-2.85/-1.22	2.753/-23	1.330/-85	1.32/-2.78	-1.85/-20.4
Θ(97.5°)	-2.49/-5.98	-3.44/-3.52	-2.5/-2.67	-3.66/-9.2	-2.81/-2.79	-1.81/-10.2	0.710/-2	-0.14/-2.1	-2.91/-0.15	1.240/-79	-0.48/-1.4	-1.1/-1.56	-2.88/-3.35	-3.08/-3.44	-2.04/-3.57	-3.04/-0.45	-7.27/-2.35	-5.40/-2.9	-2.47/-2.11	-4.97/-1.42	1.31/-21	-1.54/-1.52	-0.83/-6.64	-4.65/-2.87
Θ(105°)	-2.48/-8.63	-6.18/-6.96	-4.56/-3.57	-6.47/-3.68	-5.26/-2.64	-1.74/-2.92	-6.12/-1.5	-0.22/-1.52	-3.78/-1.7	0.530/-48	-2.52/-2.19	-1.08/-3.15	-3.41/-3.17	-3.95/-5.02	-4.03/-3.89	-4.66/-3.21	-6.39/-3.72	-6.89/-1.95	-3.54/-1.46	-5.66/-1.25	-1.79/-2.47	-8.48/-4.99	-2.56/-9.26	-5.14/-3.67
Θ(112.5°)	-5.63/-13.52	-10.2/-9.91	-11/-7.1	-5.71/-5.52	-10.25/-3.61	-3.01/-3.37	-1.47/-1.79	-1.5/-3.36	-5.18/-1.51	-0.5/-1.67	-3.324/-3.5	-3.42/-3	-6.05/-3.03	-5.71/-7.29	-3.66/-8.34	-9.25/-4.32	-5.48/-6.85	-12.03/-5.77	-6.46/-6.23	-11.11/-9.53	-6.79/-9.76	-10.3/-8.98	-6.38/-12.13	-7.01/-11.74
Θ(120°)	-10.86/-13.82	-15.4/-12.52	-13.77/-12.44	-8.49/-6.65	-11.57/-7.14	-4.1/-2.82	-0.83/-1.74	-2.35/-2.95	-4.11/-13.4	-1.84/-2.05	-2.21/-4.37	-5.4/-5.95	-8.01/-5.17	-7.31/-11.25	-7.88/-7.42	-17.28/-6.13	-7.63/-12.16	-12.33/-14.8	-12.28/-9.92	-14.94/-19	-7.1/-1.46	-3.66/-8.92	-0.98/-17.7	-12.71/-17.02
Θ(127.5°)	-13.88/-12.99	-10.81/-17.63	-10.64/-14.04	-8.71/-6.48	-7.89/-5.17	-3.8/-1.32	-3.47/-3.68	-4.91/-5.67	-3.51/-1.79	-3.25/-4.27	-10.09/-11.03	-7.25/-12.29	-8.9/-16.37	-13.72/-6.31	-14.08/-18.61	-11.19/-15.06	-18.97/-5.85	-13.1						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(135°)	-14.09/-12	-12.18/-14	-14.4/-13.37	-14.95/-16.54	-14.77/-15.65	-17.91/-15.89	-13.64/-12.27	-12.01/-13.85	-14.55/-14.44	-14.76/-17.79	-17.55/-15.35	-15.05/-16.49	-17.94/-17.25	-16.94/-13.87	-18.12/-18.1	-13.81/-18.81	-17.95/-15.13	-11.84/-16.07	-16.94/-14.07	-10.87/-14.8	-18.45/-18.08	-18.67/-16.3	-18.1/-13.67	-14.21/-13.64	
Θ(142.5°)	-15.5/-15.05	-14.58/-15.08	-19.03/-18.23	-15.93/-18.3	-18.8/-19.93	-14.41/-15.5	-15.95/-14.96	-14.34/-14.96	-14.95/-14.89	-17.96/-17.32	-18.98/-19.55	-18.89/-18.52	-18.49/-18.69	-19.26/-19.59	-18.79/-17.68	-18.18/-18.4	-18.4/-18.04	-18.07/-17.38	-19.31/-18.12	-18.27/-18.04	-17.84/-17.6	-18.15/-17.79	-17.76/-15.97	-15.78/-14.03	
Θ(150°)	-19/-18.89	-18.41/-18.64	-18.98/-18.62	-18.99/-17.06	-18.01/-19.52	-17.29/-19.52	-17.54/-18.29	-17.96/-18.83	-18.31/-17.94	-18.53/-17.48	-17.99/-18.56	-18.95/-18.37	-18.96/-18.42	-18.43/-17.71	-18.29/-18.03	-18.36/-18.56	-17.62/-18.16	-17.59/-17.4	-18.69/-17.5	-17.61/-18.4	-18.18/-17.82	-19.21/-17.4	-19/-17.34	-17.27/-17.36	
Θ(157.5°)	-18.11/-18.95	-17.8/-18.67	-18.4/-19.01	-18.89/-18.11	-17.51/-15.86	-19.03/-18.72	-19.09/-18.87	-16.26/-14.58	-15.33/-18.88	-18.44/-17.53	-18.24/-18.16	-19.27/-18.82	-18.78/-18.48	-18.81/-18.46	-18.69/-18.18	-17.92/-18.61	-18.48/-18	-18.37/-16.99	-18.05/-18.96	-17.78/-17.25	-17.5/-19.08	-18.27/-17.99	-18.21/-19.15	-18.42/-18.1	
Θ(165°)	-17.21/-17.96	-19.23/-18.53	-18.4/-18.23	-17.44/-18.71	-18.37/-15.77	-19.16/-18.38	-18.85/-18.79	-18.06/-18.19	-18.32/-18.72	-18.96/-19.14	-18.5/-18.84	-18.51/-17.9	-18.51/-18.29	-18.14/-18.86	-18.26/-18.27	-18.79/-18.7	-17.67/-17.57	-18.73/-17.99	-19.16/-18.7	-18.64/-17.73	-18.88/-17.52	-19.07/-18.81	-18.09/-19.16	-19.08/-18.6	
Θ(172.5°)	-16.66/-18.86	-18.95/-19.19	-19.22/-17.45	-18.08/-16.66	-18.85/-17.73	-17.35/-19.24	-17.39/-19.28	-19.21/-18.04	-19.7/-18.78	-18.19/-18.7	-18.54/-18.97	-19.34/-17.78	-18.12/-19.03	-19.02/-17.71	-18.22/-18.88	-18.04/-18.46	-17.93/-17.43	-17.82/-18.79	-17.66/-18.49	-19.08/-18.63	-17.61/-17.47	-17.53/-18.61	-17.53/-18.89	-17.53/-18.89	
Θ(180°)	-17.84/-17.63	-18.19/-18.85	-18.2/-17.61	-18.14/-17.74	-19.12/-18.35	-18.4/-19.09	-18.02/-18.71	-18.22/-18.83	-17.8/-18.54	-19.22/-18.44	-17.58/-18.45	-18.87/-19.27	-18.68/-18.2	-18.03/-17.87	-19/-17.79	-17.77/-19.45	-18.73/-17.87	-18.8/-19.32	-18.42/-17.76	-18.48/-18.93	-17.79/-18.88	-18.85/-19.04	-18.17/-19.02	-17.82/-18.04	
Freq(Hz)	5.2GPol.	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°)	-14.33/-13.98	-13.73/-13.38	-12.99/-12.51	-12.03/-12.64	-14.72/-17.77	-16.82/-14.27	-13.57/-14.86	-18.32/-18.17	-18.66/-19.15	-18.8/-17.68	-18.15/-16.4	-14.91/-14.28	-13.5/-12.67	-12.35/-12.32	-12.39/-12.2	-12.25/-12.84	-14.08/-14.02	-13.09/-12.65	-14.22/-18.75	-17.8/-19.07	-18.33/-18.13	-18.84/-17.54	-19.16/-18.18	-16.98/-15.68	
Θ(7.5°)	-15.01/-14.78	-14.81/-13.6	-12.46/-11.39	-10.69/-10.66	-12.72/-16.88	-13.54/-16.46	-18.58/-17.09	-14.55/-16	-18.72/-16.66	-16.11/-14.72	-14.44/-13.5	-14.17/-17.14	-12.12/-11.72	-11.26/-11.07	-11.31/-12.3	-13.13/-12.8	-12.18/-12.13	-14.08/-19.26	-18.49/-14.15	-13.39/-16.09	-19.13/-15.81	-13.86/-13.47	-14.42/-15.46		
Θ(15°)	-11/-13.04	-12.98/-11.89	-11.3/-11.46	-12.9/-14.77	-17.2/-18.81	-18.86/-18.83	-17.4/-18.89	-17.87/-13.52	-16.22/-16.33	-14.25/-13.82	-15.17/-17.8	-14.71/-14.79	-13.94/-14.63	-16.17/-15.7	-17.41/-16.72	-15.05/-14.27	-13.52/-12.21	-12.32/-15.14	-18.69/-13.57	-11.93/-14.17	-17.95/-15.59	-11.29/-3.99	-9.18/-15.47		
Θ(22.5°)	-9.18/-10.22	-10.57/-10.55	-11.25/-13.38	-14.64/-13.29	-13.98/-16.35	-17.72/-18.06	-18.41/-18.16	-18.94/-16.47	-11.8/-10.58	-10.94/-11.98	-12.45/-12.88	-15.16/-18.54	-17.71/-14.82	-14.75/-16.84	-16.81/-16.58	-18.38/-17.77	-12.19/-9.89	-10.29/-11.93	-13.47/-14.72	-16.11/-14.74	-12.87/-12.87	-14.37/-16.55	-15.81/-13.01	-11.02/-9.32	
Θ(30°)	-10.57/-10.81	-11.42/-10.9	-12.59/-15.51	-15.37/-15.86	-17.56/-15.92	-16.02/-16.4	-17.32/-19.24	-18.34/-19.01	-14.55/-13.31	-12.24/-11.48	-11.68/-11.34	-11.39/-14.82	-17.69/-16.15	-14.78/-14.14	-13.93/-14.42	-15.07/-16.32	-14.14/-11.59	-10.81/-11.58	-13.58/-16.88	-18.73/-17.83	-14.06/-13.89	-15.93/-16.63	-13.17/-11.86	-12.94/-12.27	
Θ(37.5°)	-13.23/-11.77	-12.21/-11.97	-13.44/-15.65	-16.6/-19.21	-17.87/-11.97	-15.98/-13.94	-13.08/-14.26	-18.19/-17.49	-17.01/-15.66	-16.82/-13.26	-11.61/-11.06	-11.42/-14.02	-15.96/-15.48	-13.44/-15.43	-15.84/-13.58	-11.42/-11.65	-13.07/-12.5	-12.01/-11.67	-10.98/-12.14	-17.21/-18.69	-15.04/-13.84	-16.63/-17.43	-16.66/-14.83	-13.59/-13.27	
Θ(45°)	-12.55/-12.61	-14.32/-14.7	-15.61/-16.37	-18.82/-19.15	-19.22/-18.73	-15.73/-12.28	-10.95/-11.47	-13.02/-14.61	-16.6/-16.79	-15.26/-14.88	-13.16/-12.53	-12.12/-12.77	-13.43/-15.18	-16.55/-19.36	-17.77/-14.73	-13.14/-12.54	-11.93/-12.06	-13.55/-13.54	-13.34/-14.03	-17.39/-17.87	-18.38/-18.95	-18.71/-18.29	-17.97/-18.31	-13.97/-11.42	
Θ(52.5°)	-11.46/-12.08	-14.29/-14.87	-15.78/-15.61	-17.16/-16.81	-17.61/-18.2	-10.71/-19.21	-16.16/-18.2	-10.71/-15.98	-14.28/-13.43	-12.87/-11.59	-13.54/-13.76	-12.63/-12.67	-17.38/-17.95	-19.14/-18.79	-14.43/-13.37	-12.35/-12.21	-13.51/-15.62	-18.44/-17.73	-18.64/-18.2	-16.77/-18.3	-16.59/-18.9	-18.14/-17.67	-12.12/-10.53		
Θ(60°)	-11.66/-12.07	-13.91/-15.17	-17.03/-17.05	-15.73/-16.01	-15.18/-15.09	-13.9/-12.1	-11.65/-10.65	-8.95/-10.46	-15.09/-12.21	-12.48/-14.86	-13.07/-11.21	-12.33/-13.22	-11.61/-12.21	-16.99/-19.01	-18.43/-15.8	-14.4/-15.37	-14.61/-13.67	-12.11/-13.63	-17.17/-18.45	-18.93/-16.06	-18.66/-17.81	-17.21/-13.98	-14.43/-14.83	-11.19/-10.61	
Θ(67.5°)	-11.73/-11.52	-13.6/-15.21	-18.31/-18.85	-17.24/-14.43	-14.62/-15.21	-12.66/-11.61	-12.3/-12.94	-12.65/-11.73	-12.84/-13.12	-14.68/-13.91	-12.11/-12.74	-14.24/-12.46	-9.71/-11.79	-15.1/-15.88	-18.47/-18.17	-14.3/-15.92	-15.06/-13.12	-11.19/-12.28	-16.02/-17.57	-15.68/-13.09	-13.97/-17.45	-17.1/-14.05	-13.3/-12.68	-10.52/-11.49	
Θ(75°)	-13.73/-12	-12.77/-13.25	-15.83/-14.77	-17.26/-14.06	-14.3/-14.22	-13.1/-14.09	-12.93/-13.48	-13.52/-13.19	-15.12/-16.93	-14.09/-12.71	-15.71/-13.15	-11.13/-12.42	-13.36/-13.65	-18.28/-19.47	-14.36/-15.07	-15.04/-13.03	-11.93/-11.65	-16.25/-18.63	-13.51/-11.9	-13.66/-18.33	-16.84/-15.13	-14.67/-11.81	-10.52/-13.24		
Θ(82.5°)	-15.53/-13.36	-14.19/-13.75	-15.88/-17.06	-17.28/-14.89	-15.01/-14.71	-13.84/-13.92	-14.87/-15.04	-13.59/-13.94	-14.56/-13.61	-16.02/-14.71	-17.63/-14.57	-11.65/-14.62	-14.37/-15.97	-18.04/-18.72	-15.01/-15.99	-15.93/-13.68	-12.01/-12.23	-16.7/-16.66	-13.37/-11.9	-12.72/-16.84	-18.79/-15.04	-16.7/-13.27	-11.44/-14.25		
Θ(90°)	-18.25/-15.21	-14.49/-14.05	-14.39/-16.25	-17.75/-16.01	-15.7/-15.93	-14.96/-14.24	-15.06/-16.49	-15.36/-14.55	-14.45/-14.45	-15.92/-18.66	-17.8/-16.64	-18.37/-16.05	-15.9/-14.83	-14.35/-15.85	-18.36/-18.83	-18.97/-18.48	-16.89/-15.15	-13.01/-12.36	-16.34/-16.34	-15.16/-13.21	-12.14/-15.56	-18.44/-15.62	-17.47/-16.18	-13.85/-16.07	
Θ(97.5°)	-18.45/-15.25	-14.83/-15.31	-14.33/-14.47	-19.28/-17.2	-16.84/-17.53	-17.19/-15.58	-15.8/-17.69	-16.83/-14.92	-14.55/-15.24	-16.51/-18.18	-16.83/-18.42	-18.22/-19.63	-17.71/-18.3	-15.18/-18.04	-19.25/-17.94	-17.39/-18.75	-18.92/-18.78	-14.42/-15.24	-18.81/-17.19	-15.38/-14.87	-14.2/-12.72	-17.76/-17.34	-18.89/-19.13	-17.54/-17.62	
Θ(105°)	-18.79/-16.74	-15.56/-17.46	-14.75/-17.85	-18.94/-18.42	-18.93/-18.89	-19.39/-17.69	-17.64/-18.43	-18.19/-16.05	-14.14/-16.44	-17.37/-18.23	-18.69/-18.7	-17.88/-18.7	-19/-17.23	-16.68/-17.14	-17.84/-18.55	-18.71/-18.77	-19.05/-18.29	-16.99/-17.87	-18.76/-18.57	-14.91/-16.58	-17.91/-18.01	-18.51/-17.84	-18.93/-18.21	-17.91/-17.84	
Θ(112.5°)	-18.83/-17.23	-16.02/-17.98	-17.16/-19.45	-19.14/-19.12	-18.88/-16.95	-18.89/-18.29	-18.61/-18.49	-19.13/-17.46	-18.07/-17.1	-18.76/-19.1	-19.15/-18.94	-18.54/-18.61	-18.77/-18.09	-18.93/-18.15	-18.26/-18.49	-19.34/-18.65	-18.88/-19.48	-18.71/-17.81	-17.3/-18.28	-15.33/-18.2	-17.48/-17.95	-18.34/-18.85	-18.38/-18.29	-18.81/-18.99	
Θ(120°)	-18.84/-18.3	-15.83/-18.95	-18.12/-19.23	-18.02/-17.86	-17.92/-18.19	-19.04/-18.54	-19.28/-19.43	-18.65/-19.37	-18.92/-16.66	-19.37/-18.44	-18.57/-19.25	-18.04/-18.32	-18.05/-18.98	-17.88/-13.3	-18.17/-18.93	-17.73/-17.39	-18.15/-18.82	-19.22/-16.84	-18.25/-19.02	-17.91/-19.08	-19.16/-18.27	-18.65/-17.96	-18.07/-17.97	-17.38/-18.92	
Θ(127.5°)	-18.44/-17.96	-19.84/-18.74	-17.64/-19	-18.1/-19.31	-17.44/-18.33	-18.25/-18.21	-19/-18.09	-18.08/-18.18	-18.21/-19.05	-18.26/-18.09	-18.37/-19.4	-18.78/-18.19	-18.25/-17.3	-18.39/-17.77	-17.68/-18.7	-17.85/-18.28	-19.05/-17.83	-17.32/-17.98	-18.07/-17.33	-17.76/-17.55	-18.38/-18.94	-18.69/-17.67	-18.8/-19.02		
Θ(135°)	-17.19/-18.44	-17.72/-18.73	-17.56/-17.15	-19.07/-19.26	-17.38/-19.01	-18.49/-19.11	-17.76/-18.52	-18.66/-16.18	-18.41/-18.77	-18.51/-17.92	-18.99/-17.59	-18.37/-18.49	-18.26/-19.11	-19.02/-17.57	-19.03/-17.86	-18.96/-19.13	-18.46/-17.9	-17.57/-18.97	-18.84/-17.91	-18.81/-17.1	-18.31/-18.57	-17.98/-18.03	-19.03/-19.03	-18.95/-18.71	
Θ(142.5°)	-17.99/-18.4	-18.63/-18.22	-18.05/-18.25	-18.43/-17.55	-18.98/-18.35	-18.11/-18.74	-18.71/-17.88	-18.33/-17.99	-17.89/-17.77	-18.47/-17.9	-17.72/-17.75	-18.39/-19.13	-17.97/-18.28	-18.54/-18.24	-18.76/-19.06	-18.82/-18.91	-19.05/-17.88	-18.95/-18.12	-18.45/-18.98	-17.59/-18.81	-18.62/-18.36	-19.16/-18.38	-19.23/-18.61	-19.39/-17.94	
Θ(150°)	-19.41/-17.79	-17.37/-19.39	-17.82/-19.57	-17.4/-19.15	-17.27/-18.42	-19.01/-17.68	-19.05/-19.32	-18.42/-17.77	-18.71/-17.79	-17.79/-18.94	-19.01/-18.04	-19.8/-19.06	-18.58/-17.47	-18.47/-17.71	-16.96/-18.28	-18.59/-18.8	-18.37/-17.99	-17.4/-17.91	-18.59/-17.6	-18.76/-18.5	-18.36/-17.56	-17.65/-17.94	-18.36/-18.46	-19.12/-18.86	
Θ(157.5°)	-19.09/-18.05	-18.11/-18.74	-17.89/-19.07	-18.1/-19.07	-17.54/-18.53	-17.77/-17.68	-17.77/-17.68	-17.91/-18.51	-19.23/-18.69	-18.6/-18.12	-18.46/-17.95	-17.14/-18.23	-18.1/-18.52	-17.39/-18.46	-18.23/-19.15	-18.62/-18.81	-17.42/-18.87	-18.36/-17.54	-17.83/-19	-18.75/-18.45	-17.91/-17.61	-18.56/-18.95	-17.76/-18.64	-18.01/-18.75	-17.85/-18.1
Θ(165°)	-18.61/-18.19	-18.43/-19.53	-17.98/-17.39	-18.32/-17.97	-17.46/-17.83	-18.54/-18.19	-18.92/-18.2	-18.04/-18.45	-18.75/-18.74	-18.68/-18.42	-19.23/-18.93	-18.97/-19.15	-17.82/-19.31	-18.91/-18.6	-19.6/-19.42										



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Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(30°)	-17.17/-16.83	-16.16/-15.84	-16.23/-17.92	-18.6/-19.12	-18.78/-18.96	-16.04/-13.54	-11.72/-11.02	-9.66/-9.28	-9.16/-9.6	-10.46/-11.99	-14.42/-18.52	-17.19/-18.94	-18.13/-14.28	-11.82/-10.47	-9.87/-9.83	-10.31/-11.19	-12.6/-13.96	-14.83/-15.06	-14.5/-13.64	-12.92/-12.38	-12.24/-12.37	-12.99/-13.89	-14.85/-15.68	-16.49/-17.07
Θ(37.5°)	-15.9/-14.79	-13.59/-13.02	-13.21/-14.47	-16.87/-17.52	-18.86/-18.02	-17.41/-15.44	-12.79/-11.07	-9.97/-9.23	-8.8/-8.67	-9.15/-10.59	-13.61/-18.57	-18.31/-17.69	-18.29/-14.14	-12.27/-11.15	-10.77/-10.96	-11.52/-12.28	-14.1/-15.39	-15.54/-14.8	-13.65/-12.83	-12.44/-12.28	-12.21/-12.43	-13.13/-14.21	-15.31/-16.23	-16.7/-16.61
Θ(45°)	-17.17/-15.35	-13.54/-12.52	-12.46/-13.3	-12.46/-16.42	-17.68/-19.07	-17.83/-16.46	-13.22/-11.45	-10.39/-9.81	-9.25/-8.84	-8.89/-10.2	-12.96/-18.05	-19.11/-19.1	-18.71/-16.26	-13.67/-12.28	-11.75/-11.64	-12.09/-13.22	-15.94/-15.85	-15.34/-14.1	-13.04/-12.61	-12.77/-13.1	-13.45/-13.83	-14.65/-15.95	-17.33/-18.6	-18.8/-18.41
Θ(52.5°)	-18.99/-16.39	-13.86/-12.42	-12.18/-12.76	-13.29/-14.13	-16.27/-17.99	-18.36/-14.93	-12.55/-11.36	-10.67/-10.24	-9.79/-9.25	-9.15/-10.26	-13.56/-19.6	-18.92/-18.31	-17.69/-18.21	-15.68/-14.29	-13.55/-13.25	-13.95/-15.65	-17.35/-17.45	-16.32/-15.31	-14.6/-14.52	-14.99/-15.76	-16.34/-16.9	-17.82/-18.95	-18.71/-18.74	-18.71/-18.59
Θ(60°)	-18.82/-16.65	-14.86/-13.26	-12.76/-12.87	-12.78/-12.69	-13.49/-14.75	-14.81/-14.39	-12.22/-11.65	-11.25/-11.01	-10.64/-10.24	-10.03/-10.59	-12.86/-17.44	-18.83/-18.67	-18.18/-17.91	-18.1/-18.47	-16.53/-15.68	-16.31/-18.07	-18.31/-16.72	-15.71/-15.98	-16.72/-17.52	-18.51/-19.27	-17.51/-18.94	-17.94/-18.2	-18.13/-19.01	-18.33/-18.69
Θ(67.5°)	-17.65/-16.46	-16.46/-14.5	-13.56/-13.19	-12.69/-12.35	-12.82/-13.57	-13.86/-13.15	-12.55/-12.65	-12.79/-12.57	-12.13/-11.9	-11.7/-12.1	-14.39/-18.99	-19.28/-18.67	-18.44/-17.67	-18.58/-19.36	-16.82/-14.57	-18.71/-19.12	-18.28/-18.01	-16.62/-14.57	-17.03/-18.61	-17.82/-18.95	-17.48/-17.76	-17.48/-17.8	-19.11/-18.73	-19.06/-18.09
Θ(75°)	-17.9/-19.07	-16.55/-14.86	-14.12/-13.54	-13.03/-12.96	-13.57/-14.17	-13.98/-13.26	-12.96/-13.74	-14.54/-14.24	-13.47/-13.17	-13.26/-13.78	-15.69/-17.24	-18.2/-17.6	-17.75/-19.35	-19.09/-17.78	-19.13/-17.88	-18.12/-18.5	-16.15/-14.13	-13.4/-14.53	-17.4/-18.93	-17.88/-18.97	-18.97/-19.42	-18.49/-17.86	-18.54/-18.31	-17.33/-18.98
Θ(82.5°)	-19.44/-18.12	-16.09/-15.13	-14.88/-12.47	-13.54/-13.57	-14.08/-14.07	-13.78/-13.17	-13.12/-14.27	-14.93/-14.12	-12.97/-13.02	-13.64/-14.67	-17.17/-17.84	-17.86/-18.54	-18.8/-19.44	-19.02/-18.11	-18.96/-19.05	-18.92/-17.82	-17.28/-14.53	-13.84/-15.19	-18.84/-18.48	-18.26/-18.16	-18.32/-18.44	-19.11/-18.62	-18.76/-19.09	-17.92/-19
Θ(90°)	-18.04/-17.95	-18.79/-16.62	-16.1/-15.61	-14.8/-14.43	-14.83/-14.66	-14.22/-14.09	-14.18/-15.03	-15.34/-14.29	-13.35/-13.71	-15.38/-17.69	-18.19/-18.6	-18.73/-18.73	-18.44/-18.6	-17.75/-17.9	-18.92/-18.79	-19.1/-18.64	-17.54/-14.42	-13.61/-14.86	-18.74/-18.71	-18.89/-17.96	-18.37/-18.36	-18.18/-18.11	-17.65/-18.69	-18.19/-18.39
Θ(97.5°)	-18.48/-18.07	-18.2/-16.36	-15.7/-16.23	-16.39/-16.06	-15.55/-14.66	-13.75/-13.67	-13.88/-14.28	-14/-13.26	-12.87/-14.23	-18.17/-18.03	-18.1/-18.29	-19.16/-18.12	-18.68/-19.13	-18.25/-18.62	-17.97/-17.53	-18.15/-18.97	-17.44/-15.07	-14.48/-15.86	-19.27/-18.5	-18.37/-18.59	-18.03/-19.17	-17.62/-19	-18.67/-18.02	-18.6/-17.84
Θ(105°)	-18.92/-18.24	-18.57/-17.72	-18.84/-19.37	-18.68/-18.53	-16.03/-14.15	-13.26/-13.29	-12.79/-14.15	-13.59/-14.02	-13.91/-16.47	-19.04/-18.35	-17.84/-19.02	-19.29/-17.86	-18.09/-17.59	-18.35/-19.02	-18.61/-17.98	-17.77/-18.3	-18.97/-17.85	-17.71/-18.52	-17.35/-18.55	-17.43/-18.92	-18.08/-19.34	-18.79/-18.54	-19.17/-18.79	-17.42/-18.96
Θ(112.5°)	-19.1/-18.95	-17.92/-18.72	-18.79/-18.28	-17.96/-17.52	-15.69/-14.06	-13.47/-13.35	-13.58/-13.8	-13.92/-14.74	-17.42/-18.68	-19.06/-18.59	-18.71/-19.02	-17.83/-17.49	-18.53/-18.25	-19.04/-19.25	-18.98/-18.6	-17.77/-17.87	-19.17/-19.02	-18.41/-18.2	-19.29/-18.05	-18.49/-18.5	-17.67/-19.1	-18.69/-17.51	-18.98/-18.18	
Θ(120°)	-18.73/-19.46	-17.7/-18.8	-18.41/-17.07	-16.76/-16.93	-16.89/-16.21	-16.1/-16.3	-16.48/-16.73	-17.61/-17.47	-17.74/-17.43	-18.45/-15.15	-13.78/-14.1	-16.89/-17.94	-18.53/-18.93	-17.99/-18.97	-17.3/-18.45	-19.37/-17.28	-17.93/-19.01	-18.47/-19.42	-18.95/-18.65	-17.91/-19.2	-18.28/-18.77	-17.92/-18.36	-18.79/-18.65	-18.02/-18.02
Θ(127.5°)	-17.98/-17.94	-18.81/-18.72	-19.02/-18.36	-18.88/-18.85	-18.17/-18.31	-18.77/-18	-16.83/-16.3	-16.89/-18.3	-18.99/-18.16	-15.88/-13	-11.89/-13.39	-17.72/-18.57	-17.67/-18.67	-18.42/-19.47	-17.34/-17.08	-19.06/-18.9	-17.21/-19.18	-18.55/-18.53	-16.86/-15.3	-14.88/-15.8	-18.17/-18.32	-18.01/-18.51	-17.75/-17.43	
Θ(135°)	-17.95/-19.25	-17.27/-18.44	-17.71/-18.5	-18.06/-17.69	-18.4/-19.29	-19.05/-18.23	-17.27/-16.49	-16.48/-17.73	-18.79/-17.88	-16.79/-13.31	-12.3/-13.94	-18.33/-18.72	-19.02/-17.59	-18.39/-18.91	-17.54/-18.55	-18.73/-18.91	-18.39/-19.11	-18.42/-18.68	-18.81/-17.9	-17.29/-15.21	-16.91/-13.37	-19.05/-18.37	-19.32/-18.02	
Θ(142.5°)	-17.76/-18.63	-17.35/-17.8	-19.26/-17.97	-17.04/-16.8	-17.36/-18.24	-17.73/-19.05	-18.79/-18.44	-18.97/-18.34	-18.15/-19.08	-16.98/-14.14	-14/-16.32	-17.48/-17.76	-18.4/-17.56	-17.16/-19.45	-19.22/-18.32	-18/-18.72	-18.05/-18.59	-18.03/-18.65	-18.93/-18.05	-18.93/-19.32	-18.3/-18.66	-17.81/-18.93	-19.13/-18.66	-18.53/-18.51
Θ(150°)	-17.38/-18.88	-19/-18.95	-18.19/-18.16	-18.38/-18.83	-19.08/-17.41	-17.75/-17.9	-18.13/-18.03	-17.93/-18.38	-18.69/-17.7	-16.86/-15.15	-15.17/-17.06	-18.49/-18	-18/-18.68	-18.34/-17.68	-19.08/-18.54	-17.94/-19.02	-17.86/-18.44	-18.52/-18.45	-17.63/-19.09	-18.63/-17.82	-18.38/-18.36	-16.68/-18.31	-18.43/-18.93	-17.66/-17.62
Θ(157.5°)	-17.9/-18.94	-17.93/-17.53	-19.57/-17.46	-18.15/-18.5	-18.79/-18.61	-18.58/-17.56	-18.29/-17.94	-18.61/-18.01	-18.29/-18	-16.59/-16.03	-16.64/-18.07	-17.91/-17.43	-19.15/-18.88	-19.74/-15.83	-18.59/-17.22	-17.97/-17.93	-18.26/-18.81	-18.15/-17.84	-19/-17.37	-17.32/-18.66	-18.15/-17.64	-18.04/-17.08	-16.99/-17.33	-18.1/-19.38
Θ(165°)	-18.88/-18.16	-19.01/-18.4	-18.04/-18.15	-17.33/-18.65	-17.77/-18.71	-18.69/-17.95	-17.5/-17.41	-18.04/-18.35	-17.43/-17.07	-16.59/-16.47	-17.17/-18.6	-17.84/-18.77	-18.45/-18.72	-17.85/-19.13	-18.22/-17.75	-18.34/-18.64	-18.22/-18.27	-18.33/-18.75	-18.68/-17.75	-17.21/-18.83	-19.22/-18.48	-18.94/-17.4	-18.72/-16.83	-17.73/-19.38
Θ(172.5°)	-19.05/-18.57	-18.79/-19.21	-18.15/-17.5	-18.16/-18.09	-18.87/-18.81	-17.71/-17.56	-18.69/-18.42	-18.02/-18.31	-17.5/-17.32	-17.15/-17.37	-18.06/-18.15	-17.75/-18.25	-19.33/-17.35	-17.54/-18.56	-17.24/-19.13	-19.03/-19.3	-18.79/-19.22	-18.24/-17.98	-18.14/-18.05	-18.71/-18.87	-17.85/-18.33	-17.98/-18.35	-17.76/-18.92	-18.23/-18.59
Θ(180°)	-18.27/-17.78	-18.97/-19.01	-18.52/-17.17	-18.6/-18.38	-18.22/-17.67	-18.43/-18.53	-19.18/-17.91	-18.85/-18.76	-19.33/-19.04	-17.74/-19.14	-18.88/-18.66	-18.68/-17.76	-18.37/-17.95	-19.06/-18.91	-18.73/-17.14	-18.21/-18.59	-18.38/-18.1	-17.5/-17.96	-18.66/-18.71	-19.19/-17.81	-17.8/-18.33	-18.24/-19.26	-18.92/-18.33	-18.25/-19.35
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°)	-15.54/-15.86	-15.99/-15.8	-15.27/-14.84	-14.29/-14.12	-13.79/-14.11	-14.97/-16.08	-17.14/-18	-18.1/-18.33	-18.85/-18.8	-17.62/-18.47	-18.01/-17.76	-18.34/-17.5	-17.09/-16.87	-17.65/-18.26	-18.35/-18.38	-17.51/-17.87	-18.73/-18.31	-17.93/-18.7	-17.83/-17.85	-18.64/-18.15	-18.06/-18.49	-17.54/-16.77	-15.49/-14.84	-14.62/-14.86
Θ(7.5°)	-10.27/-10.58	-10.65/-10.12	-10.39/-10.36	-10.81/-11.36	-11.66/-12	-11.89/-11.15	-10.56/-10.28	-10.11/-10.05	-9.96/-9.79	-9.92/-10.02	-10.23/-9.95	-9.3/-8.24	-7.24/-6.46	-6.18/-6.21	-6.18/-6.21	-6.31/-6.26	-6.16/-6.14	-6.21/-6.3	-6.56/-7.1	-7.65/-8.1	-8.75/-9.02	-9.09/-9.15	-9.58/-9.81	-10.23/-10.55
Θ(15°)	-1.76/-1.96	-2.05/-2.12	-2.24/-2.33	-2.75/-3.2	-3.67/-4.2	-4.52/-4.68	-4.82/-4.74	-5.02/-5.45	-5.2/-5.42	-5.46/-5.14	-4.68/-3.96	-4.32/-2.75	-2.4/-2	-1.14/-1.15	-1.36/-1.57	-1.76/-1.79	-1.81/-1.96	-2.33/-2.67	-3.22/-3.7	-4.4/-2.2	-4.27/-4.06	-3.6/-3.06	-2.56/-2.04	-1.75/-1.75
Θ(22.5°)	0.44/0.5	0.38/0.29	0.24/0.15	-0.07/-0.2	-0.29/-0.62	-0.96/-1.15	-1.0/-8.6	-0.86/-0.98	-1.39/-1.96	-2.5/-2.59	-2.06/-1.53	-0.99/-0.22	0.55/0.97	1.03/1.04	1.23/-1.46	1.51/-3.6	1.04/0.7	0.39/0	-0.48/-1.12	-1.62/-1.74	-1.65/-1.38	-1.06/-0.79	-0.57/-0.29	-0.03/0.22
Θ(30°)	0.95/0.97	0.75/0.67	0.82/1.09	1.31/-1.42	1.16/0.48	-0.13/-0.22	0.18/0.66	0.91/0.97	0.95/1.07	1.05/0.79	0.52/0.05	-0.29/0	0.61/1.29	2.13/3.04	3.62/3.71	3.27/2.4	1.28/0.2	-0.56/-0.75	-0.8/-0.9	-1.05/-1.01	-0.52/-0.03	0.37/0.59	0.78/0.71	0.67/0.83
Θ(37.5°)	1.91/-77	1.57/-154	1.54/-165	1.86/-184	1.56/-129	1.22/-146	1.78/2	2.04/-11	2.22/-62	1.32/-123	2.72/-29	2.04/-77	1.42/-166	2.51/-301	2.94/-529	2.02/-128	0.52/0.11	0.35/0.19	1.41/-13	1.12/-132	1.69/2.04	2.11/-221	2.49/-68	2.46/-14
Θ(45°)	2.61/0.27	2.09/-246	2.53/-254	2.64/-266	2.69/-274	2.73/-26	2.38/-208	1.63/-144	1.82/-27	2.33/-232	2.06/-203	2.25/-13	1.22/-57	0.71/-11	1.28/-142	1.55/-164	1.59/-137	1.54/-247	3.14/-299	2.69/-295	3.32/-348	3.45/-639	4.05/-34	4.13/-27
Θ(52.5°)	2.02/-1.11	1.34/-2.1	2.73/-15	3.33/-36	3.43/-41	3.42/-329	3.04/-263	1.79/-81	0.67/-1	1.06/-1	1.01/-136	1.84/-128	0.43/-0.29	-0.70/-73	2.47/-279	2.11/-149	1.45/-187	2.17/-257	2.81/-249	2.05/-248	3.04/-33	3.47/-22	4.59/-4.78	4.43/-26
Θ(60°)	0.72/-0.43	0.08/-18	2.37/-298	3.32/-72	3.73/-69	3.76/-43	2.07/-82	2.06/-16	0.76/-14	2.09/-27	2.43/-254	2.45/-68	1.20/-71	0.44/-146	3.15/-559	2.62/-49	0.60/-99	1.38/-136	1.44/-126	1.12/-121	2.16/-235	2.41/-52	3.99/-13	3.65/-39
Θ(67.5°)	-0.71/-2.04	-1.87/-0.48	0.96/-1.75	2.38/-2.9	2.93/-02	3.04/-246	1.89/-204	1.61/-121	1.06/-148	2.66/-288	2.96/-284	2.42/-163	1.17/-62	0.46/-118	2.89/-349	2.61/-75	0.88/-108	1.29/0.61	0.29/0.17	0.20/-86	1.05/-133	1.27/-253	3.03/-09	2.61/-3
Θ(75°)	-2.16/-4.53	-4.5/-2.																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(75°)	-16.32/-15.61	-15.76/-18.19	-19.12/-14.33	-15.4/-18.7	-14.7/-14.67	-17.03/-17.59	-18.68/-18.62	-17.29/-14.24	-11.23/-10.52	-11.35/-10.63	-11.31/-12.86	-18.62/-18.71	-16.57/-16.05	-17.33/-13.92	-12.92/-13.95	-18.88/-18.44	-18.9/-18.5	-19.01/-17.64	-17.7/-18.64	-16.4/-16.09	-18.32/-17.67	-18.26/-18.35	-18.03/-17.08	-17.09/-17.9
Θ(82.5°)	-16.73/-14.77	-16.64/-18.49	-19.18/-15.01	-16.46/-18.51	-14.52/-14.34	-17.87/-18.74	-19.01/-17.45	-18.14/-14.13	-12.36/-13.13	-12.33/-11.1	-12.44/-14.42	-17.85/-19.27	-15.59/-18.39	-16.58/-14.92	-14.21/-13.92	-17.2/-18.1	-19.23/-18.84	-19.03/-17.53	-18.64/-18.19	-16.5/-16.09	-18.17/-18.41	-18.54/-18.41	-18.01/-18.6	-18.83/-16.65
Θ(90°)	-17.09/-15.45	-17.49/-18.49	-19.11/-17.25	-17.87/-18.51	-17.01/-15.6	-17.88/-18.66	-18.63/-18.42	-17.45/-17.05	-15.89/-11.47	-12.83/-14.51	-18.78/-16.68	-16.41/-18.98	-18.82/-16.9	-15.52/-18	-18.67/-17.17	-18.67/-18.46	-16.71/-17.99	-16.67/-16.89	-18.19/-18.45	-18.55/-18.75	-17.85/-17.1	-17.85/-17.1	-17.85/-17.1	-17.85/-17.1
Θ(97.5°)	-17.43/-16.79	-18.82/-17.71	-18.59/-19.02	-19.21/-18.46	-18.63/-17.69	-18.81/-18.29	-18.09/-18.06	-18.21/-18.83	-18.09/-18.13	-16.03/-12.56	-15.71/-18.09	-18.99/-19.01	-17.07/-17.99	-18.17/-17.91	-18.31/-18.27	-16.16/-17.59	-19.61/-19.21	-17.51/-17.51	-18.24/-18.13	-17.46/-17.11	-18.79/-17.48	-17.89/-18.81	-17.91/-18.1	-16.54/-17.79
Θ(105°)	-17.72/-17.7	-18.99/-18.87	-18.83/-18.91	-19.46/-17.79	-17.84/-18.19	-17.12/-16.59	-18.23/-18.61	-17.69/-18.58	-17.3/-19.13	-19.02/-16.8	-18.83/-19.28	-19.17/-17.5	-19.01/-18.12	-17.1/-19.05	-17.8/-18.74	-18.6/-18.8	-18.54/-19.23	-19.04/-18.97	-19.02/-18.4	-18.25/-18.33	-18.71/-17.77	-19.16/-18.08	-19.11/-17.66	-17.44/-18.45
Θ(112.5°)	-18.78/-19.04	-17.98/-18.35	-18.04/-18.8	-18.08/-19.21	-18.91/-18.31	-18.21/-18	-18.18/-18.9	-18.68/-18.9	-18.06/-18.47	-18.69/-18.66	-18.81/-18.68	-18.31/-18.7	-19.07/-18.62	-17.47/-18.04	-17.51/-18.81	-17.94/-19.03	-18.77/-18.35	-18.71/-17.84	-18.49/-18.53	-18.12/-17.78	-18.43/-17.63	-17.65/-19.11	-18.34/-17.85	-18.93/-18.58
Θ(120°)	-18.81/-18.96	-18.37/-18.54	-18.91/-18.55	-18.76/-18.28	-19.07/-18.19	-18.22/-18.35	-18.02/-18.37	-18.71/-18.35	-17.71/-17.93	-19.48/-18.97	-19.04/-18.22	-17.94/-18.84	-18.29/-18.26	-19.39/-18.51	-18.02/-17.93	-18.07/-18.07	-17.86/-19.27	-17.38/-17.87	-18.07/-17.86	-19.37/-17.94	-18.2/-18.01	-19.5/-18.94	-18.79/-18.99	-17.53/-17.78
Θ(127.5°)	-16.45/-17.98	-19.19/-17.74	-17.92/-17.97	-19.03/-18.67	-17.82/-17.45	-18.53/-18.37	-18.57/-18.87	-19.17/-17.62	-18.65/-18.05	-17.92/-18.97	-19.05/-18.89	-19.28/-17.97	-17.9/-17.56	-18.21/-17.92	-18.73/-18.61	-18.25/-18.68	-17.42/-17.82	-18.13/-16.66	-18.61/-18.54	-18.34/-19.26	-18.44/-18.88	-19.03/-17.75	-19.16/-18.57	-17.71/-18.68
Θ(135°)	-18.55/-18.26	-19.08/-17.67	-18.31/-18.09	-19.02/-18.84	-18.77/-17.45	-19.18/-21	-17.97/-17.94	-17.67/-18.91	-17.93/-18.08	-18.26/-18.88	-17.34/-19.01	-17.44/-18.59	-18.81/-18.08	-17.07/-18.05	-17.47/-18.61	-17.79/-18.87	-17.85/-18.74	-18.41/-18.44	-18.51/-18.01	-18.07/-18.68	-18.41/-18.38	-19.4/-19.06	-18.09/-18.16	-14.41/-18.02
Θ(142.5°)	-18.53/-18.63	-18.68/-17.92	-18.83/-17.41	-18.94/-18.99	-17.77/-18.74	-18.02/-18.93	-17.4/-18.02	-18.41/-18.82	-17.54/-17.92	-18.15/-18.63	-17.93/-18.76	-18.88/-18	-18.57/-18.58	-18.59/-18.01	-19.23/-18.9	-18.95/-17.93	-17.28/-17.64	-19.29/-17.36	-19.01/-19.31	-18.21/-18.5	-17.66/-18.66	-18.94/-17.11	-18.77/-18.46	-18.43/-18.76
Θ(150°)	-18.69/-18.64	-17.81/-18.95	-19.25/-18.78	-17.48/-18.73	-18.91/-18.89	-18.7/-18.9	-18.69/-18.12	-18.66/-17.97	-19.16/-17.74	-19.32/-18.1	-18.94/-19.2	-18.32/-18.83	-18.37/-18.5	-17.41/-17.65	-19.02/-17.78	-17.94/-17.81	-18.23/-18.58	-18.14/-18.3	-18.93/-18.23	-17.53/-18.03	-19.11/-17.24	-17.62/-18.98	-17.87/-18.28	-18.38/-19.22
Θ(157.5°)	-18.81/-18.54	-18.85/-18.4	-19.08/-18.12	-19.07/-18.88	-17.47/-19.29	-18.21/-18.51	-18.1/-18.05	-19.16/-18.81	-18.38/-18.24	-19.07/-18.33	-17.53/-17.12	-16.49/-19.28	-18.93/-17.59	-17.47/-18.33	-19.2/-18.7	-18.7/-17.72	-18.94/-18.66	-18.08/-17.9	-18.93/-18.53	-17.57/-19.15	-18.96/-19.29	-17.77/-18.81	-19.24/-18.39	-18.56/-19.06
Θ(165°)	-18.42/-18.27	-19.19/-18.46	-18.91/-17.92	-17.81/-18.05	-18.98/-19.17	-18.89/-18.94	-18.54/-17.73	-18.54/-18.3	-18.05/-18.47	-18.66/-18.02	-19.08/-18.18	-16.98/-17.88	-18.13/-17.14	-15.99/-19.27	-19.02/-18.74	-18.59/-18.33	-18.75/-18.31	-19.04/-18.35	-18.48/-18.98	-19.24/-18.46	-17.64/-18.89	-18.33/-18.57	-17.4/-17.78	-18.17/-19.26
Θ(172.5°)	-19.06/-17.95	-18.95/-17.04	-17.79/-18.18	-17.18/-19.27	-18.65/-17.8	-18.83/-17.77	-19.12/-18.85	-17.23/-19.22	-18.04/-19.16	-18.93/-18.9	-18.73/-18.92	-19.09/-17.79	-17.91/-18.46	-18.23/-17.82	-18.96/-17.94	-18.51/-18.84	-17.86/-18.52	-17.83/-19.24	-18.9/-17.36	-18.59/-18.69	-18.53/-18.01	-17.8/-18.83	-17.28/-18.9	-18.83/-18.29
Θ(180°)	-18.07/-18.08	-18.13/-18.8	-18.36/-17.18	-18.14/-18.92	-17.8/-17.8	-18.07/-18.56	-17.75/-19.18	-17.69/-19	-18.65/-17.59	-17.6/-19	-18.45/-18.78	-17.95/-18.43	-18.55/-18.38	-17.9/-18.52	-17.73/-18.08	-17.52/-18.98	-18.15/-18.37	-17.58/-18.67	-18.41/-18.02	-18.89/-19.3	-18.94/-17.73	-18.66/-18.32		
Freq(Hz)	5.6GPol.	PhiAnt.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)
Θ(0°)	-16.37/-15.78	-15.53/-15.22	-14.92/-14.36	-14.05/-14.37	-14.9/-15.98	-16.25/-16.93	-18.09/-19.06	-17.66/-19	-18.28/-18.67	-18.1/-18.01	-18.28/-18.67	-18.53/-18.69	-18.73/-18.19	-18.38/-18.3	-18.71/-19.32	-19.03/-18.46	-18.22/-18.44	-18.61/-18.33	-19.37/-18.77	-19.08/-19.13	-18.6/-18.02	-17.81/-16.03		
Θ(7.5°)	-7.85/-8.21	-8.82/-9.12	-9.44/-10.17	-10.83/-11.64	-12.54/-12.43	-12.76/-13.02	-12.4/-11.37	-10.41/-9.87	-9.26/-8.46	-7.61/-7.14	-7.29/-7.5	-7.63/-7.22	-6.69/-6.08	-5.5/-5.06	-4.9/-4.73	-4.79/-4.91	-5.17/-5.41	-5.52/-5.66	-5.7/-5.95	-6.43/-6.29	-7.21/-7.34	-7.45/-7.52	-7.55/-7.62	-7.96/-8
Θ(15°)	-1.77/-1.47	-1.29/-1.55	-2.02/-2.37	-2.21/-2.18	-2.09/-1.78	-2.03/-1.78	-1.47/-1.56	-1.58/-1.66	-1.83/-1.93	-1.85/-1.81	-1.59/-1.34	-1.26/-1.24	-1.18/-1	-0.56/-0.06	0.20/-19	-0.03/-0.43	-1.06/-1.75	-2.39/-3.03	-3.44/-4.02	-4.52/-5.25	-5.56/-6.68	-5.6/-5.31	-4.43/-3.54	-2.91/-2.27
Θ(22.5°)	-0.39/0.1	-0.85/0.84	0.66/0.51	0.61/0.74	0.89/0.9	0.91/0.8	0.67/0.59	0.78/0.84	0.77/0.8	0.82/0.89	1.14/1.67	1.96/1.94	2.05/2.38	2.51/2.41	2.21/2.14	2.14/2.02	2.56/2.09	1.74/-2.5	-0.56/-0.99	-1.74/-2.5	-3.15/-3.44	-3.26/-2.82	-2.02/-0.17	
Θ(30°)	1.57/1.57	1.72/1.86	2.17/2.43	2.45/2.18	1.85/1.76	1.86/1.96	2.25/2.68	2.96/2.81	2.35/1.88	1.73/1.51	1.34/1.31	1.21/1.42	2.18/2.67	2.84/3.22	3.74/4.13	4.13/4.49	2.71/2.17	2.05/2.02	1.82/1.37	1.17/1.36	1.62/1.62	1.63/1.76	1.89/1.83	1.76/1.69
Θ(37.5°)	2.89/2.48	2.54/2.94	3.45/3.74	3.72/3.54	3.24/2.74	2.01/1.61	1.88/2.56	3.17/3.35	3.41/3.39	3.55/3.55	3.12/2.23	1.26/1.25	1.58/2.34	3.58/4.13	3.94/3.61	3.07/2.25	1.72/1.62	1.55/1.43	1.31/1.44	1.68/1.94	2.32/4.5	2.67/3.25	3.79/4.07	3.89/4.48
Θ(45°)	2.91/2.32	2.38/2.82	3.53/4.26	4.65/4.58	4.01/2.97	2.02/1.74	1.91/2.08	2.42/4.48	2.75/5.52	3.97/4.11	2.69/2.55	1.74/1.28	1.64/2.22	1.99/1.64	1.63/2.07	2.28/2.12	2.46/2.85	2.91/2.76	2.79/3.2	3.74/3.2	4.33/3.79			
Θ(52.5°)	2.62/1.49	1.05/2	3.24/4.19	4.72/4.51	3.81/3.07	2.91/3.11	2.72/2.13	1.46/0.79	0.43/1.26	2.02/2.22	2.04/1.97	1.69/1.57	0.27/-0.68	-0.73/0.43	1.34/1.07	1.16/1.81	2.16/1.72	1.1/0.8	1.02/1.56	2.05/2.67	2.78/2.63	2.82/3.1	3.13/3.75	3.92/3.5
Θ(60°)	2.09/0.69	0.11/0.89	1.92/3.03	3.83/4.04	4.0/3.6	3.4/3.25	2.56/1.67	0.88/-0.09	-0.05/0.78	1.48/1.73	1.19/1.01	0.89/0.45	-0.65/-1.18	-1.5/-1.38	3.4/93	0.86/0.04	0.43/0.49	0.43/-0.26	-0.75/0.43	1.34/2.01	2.12/0.9	2.52/2.8	2.46/2.76	3.15/2.99
Θ(67.5°)	0.99/0.81	-2.27/-1.19	0.39/1.93	2.57/2.43	2.72/2.78	2.76/2.55	1.68/0.56	-0.12/-0.1	0.67/1.05	2.09/2.73	0.79/1.71	3.73/3.25	1.6/0.93	0.63/0.26	0.31/-1.21	-1.26/0.38	0.72/1.22	1.62/1.89	2.37/2.71	1.81/1.66	1.71/1.92			
Θ(75°)	-0.42/-2.67	-4.5/-3.12	-0.87/0.53	0.89/0.49	1.08/1.24	1.09/0.72	0.03/-1.14	-1.89/-0.93	0.33/0.43	1.37/2.05	1.52/1.3	1.03/-0.03	-0.6/-1.6	-2/-0.15	2.39/2.5	1.43/0.98	0.72/0.63	-0.21/-1.2	-2.01/-0.6	-0.28/0.25	0.21/0.7	0.91/1.65	0.49/0.01	-0.01/0.56
Θ(82.5°)	-2.3/-4.65	-7.42/-6.02	-2.96/-1.12	-1.16/-1.33	-0.62/-0.94	-1.55/-1.96	-2.4/-3.37	-3.54/-2.11	-0.38/-0.65	0.21/0.68	-0.33/-0.43	-0.73/-1.81	-1.63/-3.78	-3.52/-2.29	0.0/84	0.67/1.06	0.87/0.7	-0.85/-2.38	-2.8/-1.17	-0.99/-0.73	-1/-0.91	-0.42/0.5	-0.99/-2.45	-2.21/-1.51
Θ(90°)	-4.47/-6.79	-10.25/-9.22	-5.46/-3.17	-3.18/-3.67	-2.44/-2.76	-3.74/-3.99	-4.07/-5.35	-6.03/-4.95	-2.14/-2.74	-2.21/-2.05	-3.23/-3.41	-4.86/-4.39	-3.88/-6.63	-6.77/-4.71	-1.01/-0.31	0.21/0.06	-2.01/-4.3	-3.51/-3.06	-3.01/-2.91	-2.87/-2.92	-2.73/-1.62	-2.3/-3.83	-4.51/-4.52	
Θ(97.5°)	-7.44/-9.04	-11.71/-10.74	-7.59/-6.28	-6.56/-6.09	-5.27/-5.92	-7.33/-7.31	-7.69/-8.6	-8.55/-7.44	-4.19/-5.43	-4.07/-4.31	-5.46/-5.6	-7.37/-13	-5.35/-11.01	-7.35/-7.15	-5.32/-3.91	-3.69/-2.36	-1.84/-2.47	-5.09/-1.35	-5.21/-4.87	-5.34/-5.2	-5.15/-6.25	-4.88/-4.41	-4.78/-6.97	-6.3/-6.73
Θ(105°)	-8.71/-10.41	-13.98/-13.3	-9.35/-7.56	-7.09/-7.27	-6.66/-6.82	-9.25/-9.78	-10.12/-11.23	-10.88/-9.26	-6.13/-7.06	-6.23/-7.27	-7.37/-15.4	-11.56/-9.82	-8.08/-12.63	-11.65/-9.03	-8.98/-8.31	-7.57/-6.4	-5.23/-7.69	-9.96/-13.4	-10.92/-9.71	-10.07/-8.69	-8.36/-8.14	-6.4/-6.12	-7.38/-8.49	-8.12/-8.25
Θ(112.5°)	-11.07/-11.69	-14.24/-15.12	-12.56/-9.13	-8.47/-8.94	-10.67/-10.66	-10.42/-11.17	-13.86/-13.91	-15.55/-12.53	-11.1/9	-10.61/-9.7	-10.38/-12.67	-13.93/-13.57	-11.55/-15.95	-12.81/-9.37	-10.94/-12.41	-11.25/-10.98	-10.53/-12.99	-14.37/-18.05	-19.37/-18.62	-11.25/-9.82	-9.33/-9.03	-7.77/-8.44	-9.31/-10.55	-11.28/-11.05
Θ(120°)	-13.18/-14.9	-16.89/-17.74	-13.82/-12.56	-12.16/-12.11	-14.41/-13.63	-11.29/-10.15	-10.81/-12.83	-16.82/-15.49	-13.05/-11.37	-10.97/-9.93	-10													



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(127.5°)	-18.17/-17.92	-17.84/-18.34	-18.04/-18.93	-18.45/-18.64	-18.89/-18.6	-18.35/-18.71	-18.69/-17.66	-18.52/-18.1	-17.19/-18.48	-18.18/-18.42	-18.33/-17.63	-17.61/-17.38	-18.68/-17.85	-17.05/-17.78	-18.91/-17.27	-17.97/-17.65	-18.07/-18.92	-17.83/-19.23	-18.47/-19.19	-18.88/-17.96	-18.99/-19.42	-18.24/-18.35	-19.31/-17.88	-19.05/-18.34
Θ(135°)	-18.4/-18.21	-18.05/-18.35	-17.68/-19.1	-18.76/-18.56	-18.73/-17.89	-17.86/-17.9	-17.63/-17.62	-18.36/-17.86	-18.48/-17.89	-18.18/-18.69	-18.37/-17.22	-18.28/-18.81	-18.01/-18.68	-18.48/-19.2	-18.63/-17.39	-17.72/-17.71	-18.34/-17.12	-18.35/-18.36	-18.87/-19.04	-19/-18.78	-19.14/-18.39	-18.73/-19.18	-18.77/-19.11	-18.77/-17.43
Θ(142.5°)	-18.31/-18.08	-19.17/-18.99	-18.67/-18.1	-18.76/-18.17	-18.63/-18.74	-17.76/-18.8	-18.81/-19.17	-17.76/-18.8	-18.71/-17.6	-18.64/-17.63	-18.54/-17.81	-18.81/-17.69	-18.57/-17.72	-18.79/-19.11	-18.59/-18.44	-17.88/-17.79	-16.67/-17.33	-17.27/-18.44	-18.14/-18.63	-18.76/-18.63	-19/-17.77	-18.67/-18.87	-19.13/-18.88	-17.53/-19.08
Θ(150°)	-18.91/-17.68	-18.44/-18.15	-19.12/-17.84	-18.96/-18.37	-18.94/-18.17	-19.22/-18.07	-17.62/-17.54	-18.29/-18.26	-17.93/-18.41	-15.78/-17.97	-18.53/-18.75	-17.19/-18.34	-19.02/-17.34	-18.28/-18.45	-18.45/-18.67	-17.96/-18.5	-18.65/-18.4	-17.92/-18.16	-18.18/-17.77	-18.65/-19.17	-18.97/-18.63	-18.15/-17.96	-19.17/-18.01	-18.47/-18.19
Θ(157.5°)	-17.9/-18.8	-17.58/-17.32	-18.83/-18.51	-19.25/-18.63	-18.1/-18.128	-17.64/-18.07	-19.05/-19.27	-17.5/-18.45	-17.97/-19.31	-18.64/-15.82	-17.81/-17.49	-18.95/-19.19	-19.11/-15.67	-18.15/-18.61	-19.36/-19.05	-17.56/-17.66	-18.65/-18.39	-18.43/-18.92	-18.8/-18.99	-19.28/-18.78	-18.15/-18.64	-17.46/-18.91	-17.94/-18.11	-18.62/-19.31
Θ(165°)	-18.61/-18.94	-18.85/-17.15	-18.84/-18.84	-17.54/-18.75	-18.56/-18.6	-18.31/-18.21	-18.09/-17.63	-18.85/-17.15	-17.51/-18.65	-18.15/-18.45	-19.05/-18.34	-18.45/-18.86	-18.71/-17.42	-17.82/-17.92	-18.08/-17.73	-18/-17.95	-18.87/-18.58	-19.05/-19.23	-17.61/-18.74	-19.16/-19.33	-19.31/-18.77	-18.89/-19.04	-19.13/-16.68	
Θ(172.5°)	-18.07/-18.29	-19.36/-18.15	-18.93/-18.32	-18.18/-18.62	-18.53/-18.06	-18.44/-19.26	-19.02/-18.81	-17.94/-19.02	-17.25/-17.93	-17.16/-18.71	-17.06/-18.77	-17.84/-18.67	-18.05/-17.85	-18.32/-18.61	-17.82/-17.63	-17.98/-18.34	-17.54/-17.24	-18.03/-17.09	-18.32/-18.53	-18.64/-19.13	-18.21/-17.49	-18.95/-17.56	-19.31/-19.4	-18.33/-17.6
Θ(180°)	-19.09/-18.45	-19.22/-18.39	-18.67/-17.5	-18.37/-18.47	-18.09/-17.85	-18.43/-18.23	-18.8/-17.7	-18.46/-18.51	-18.22/-18.08	-18.8/-18.45	-18.16/-18.02	-18.32/-19.54	-18.94/-19.09	-17.56/-18.78	-18.94/-19.3	-17.66/-19.44	-18.02/-18.71	-17.8/-18.88	-18.92/-18.62	-17.68/-18.89	-18.95/-18.56	-18.59/-18.07	-19.07/-19.23	-17.86/-17.4
Freq(Hz)	2.45GPol.	Phi/Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-9.11/-8.1	-7.21/-6.3	-5.43/-4.89	-4.6/-4.49	-4.58/-4.82	-5.11/-5.43	-5.59/-5.84	-6.26/-6.76	-7.43/-8.32	-9.6/-11.4	-12.77/-13.5	-12.65/-11	-9.46/-8.06	-7.1/-6.63	-6.38/-6.16	-5.9/-5.52	-5.28/-5.23	-5.3/-5.28	-5.2/-5.37	-5.93/-6.88	-8.06/-9.41	-10.56/-11.06	-11.16/-10.88	-10.33/-9.68
Θ(7.5°)	-9.19/-8.4	-7.78/-7.02	-6.32/-5.86	-5.69/-5.66	-5.84/-6.12	-6.29/-6.63	-6.78/-6.96	-7.28/-7.73	-9.82/-11.25	-12.61/-13.45	-12.22/-10.49	-6.89/-6.96	-4.57/-3.78	-4.91/-4.87	-4.74/-4.64	-4.63/-4.75	-4.86/-4.97	-5.17/-5.59	-6.34/-7.37	-8.46/-9.43	-9.99/-10.27	-10.38/-10.98	-10.38/-9.92	
Θ(15°)	-9.58/-9.1	-8.79/-8.29	-7.66/-7.32	-7.22/-7.36	-7.71/-8.02	-8.42/-9.07	-9.76/-10.33	-10.86/-11.13	-11.06/-10.71	-10.72/-11.22	-12.03/-12.46	-12.04/-10.6	-8.68/-6.68	-4.92/-3.85	-3.43/-3.44	-3.7/-4.05	-4.52/-4.97	-5.29/-5.51	-5.81/-6.33	-7.15/-8.04	-8.89/-9.56	-9.87/-10.12	-10.4/-10.75	-10.84/-10.23
Θ(22.5°)	-9.85/-9.67	-9.62/-9.35	-8.86/-8.43	-8.25/-8.32	-8.63/-9.1	-10.11/-11.63	-13.69/-16.15	-19.17/-19.72	-18.42/-14.87	-12.51/-11.35	-11.07/-10.19	-10.31/-9.09	-7.5/-5.69	-4.13/-3.12	-2.72/-2.8	-3.37/-4.24	-5.2/-5.75	-5.99/-6.16	-6.51/-7.21	-8.05/-8.87	-9.49/-10.01	-10.35/-10.63	-11.11/-11.55	-11.41/-10.43
Θ(30°)	-11.47/-10.9	-10.36/-9.77	-9.14/-8.33	-8.29/-8.71	-6.95/-7.36	-8.4/-9.75	-10.75/-11.62	-14.31/-15.97	-17.91/-18.61	-17.57/-13.45	-11.44/-10.04	-8.78/-7.46	-6.59/-5.46	-4.57/-3.78	-3.34/-3.39	-4.21/-5.67	-7.2/-7.65	-7.45/-7.33	-7.73/-8.66	-9.89/-10.97	-11.57/-11.91	-12.31/-12.87	-13.61/-13.98	-13.29/-11.99
Θ(37.5°)	-15.82/-13.62	-11.49/-10.14	-9.06/-7.9	-6.58/-5.45	-4.94/-5.27	-6.54/-7.88	-8.38/-8.43	-9.11/-11.06	-15.65/-17.69	-18.13/-15.84	-13/-10.79	-8.48/-6.43	-5.32/-5.07	-5.19/-5.06	-4.76/-4.87	-5.94/-7.92	-9.84/-9.9	-9.2/-9.1	-9.88/-11.34	-13.07/-14.15	-14.36/-14.54	-15.31/-16.79	-18.23/-17.77	-19.11/-17.04
Θ(45°)	-18.11/-15.79	-15.25/-13.77	-9.14/-7.71	-5.98/-4.44	-3.71/-4.17	-5.85/-7.71	-7.92/-7.36	-7.75/-9.72	-14.3/-16.06	-18.94/-18.62	-17.36/-15.28	-13.09/-12.83	-12.03/-8.93	-9.71/-7.83	-9.59/-9.78	-8.17/-1.33	-8.33/-10.17	-10.36/-10.98	-10.48/-11.16	-13.17/-16.09	-18.07/-18.31	-17.4/-18.36	-17.1/-18.35	-17.75/-18.04
Θ(52.5°)	-19.07/-14.07	-11.16/-9.88	-8.9/-7.56	-5.85/-4.29	-3.75/-4.77	-7.54/-10.3	-8.99/-7.36	-9.91/-9.61	-13.08/-15.87	-16.93/-15.28	-14.09/-12.83	-12.03/-8.93	-9.71/-7.83	-9.59/-9.78	-8.17/-1.33	-8.33/-10.17	-10.36/-10.98	-10.48/-11.16	-13.17/-16.09	-18.07/-18.31	-17.4/-18.36	-17.1/-18.35	-17.75/-18.04	
Θ(60°)	-13.81/-11.14	-9.86/-9.53	-9.18/-8.48	-7.35/-6	-5.66/-7.28	-12.18/-14.64	-8.66/-6.14	-6.16/-7.78	-9.55/-10.67	-12.88/-16.05	-13.49/-12.43	-13.17/-9.46	-6.84/-6.73	-9.19/-12.05	-9.75/-8.47	-9.91/-11.92	-10.41/-9.18	-10.33/-13.93	-15.69/-14.99	-15.71/-17.12	-17.02/-16.17	-15.21/-14.71	-15.35/-18.92	-18.12/-18.22
Θ(67.5°)	-13.81/-11.74	-12.11/-12.65	-12.82/-12.61	-11.51/-9.54	-8.42/-9.53	-13.49/-12.24	-7.37/-5.47	-6.17/-8.4	-9.24/-9.31	-12.14/-16.95	-12.9/-15.57	-18.58/-9.66	-6.26/-6.42	-9.64/-12.02	-8.87/-6.1	-9.11/-11.9	-9.84/-9.11	-11.41/-15.65	-14.45/-12.02	-12.98/-15.98	-17.13/-16.17	-15.19/-15.77	-18.71/-18.5	-18.77/-14.45
Θ(75°)	-13.66/-15.43	-17.67/-17.39	-15.66/-14.12	-12.04/-9.49	-7.75/-5.8	-9.44/-10.85	-7.96/-6.01	-12.05/-16.8	-8.93/-7.77	-9.56/-16.26	-13.08/-11.56	-8.93/-7.77	-9.56/-16.26	-13.08/-11.56	-8.93/-7.77	-9.56/-16.26	-13.08/-11.56	-8.93/-7.77	-9.56/-16.26	-13.08/-11.56	-8.93/-7.77	-9.56/-16.26	-13.08/-11.56	-18.77/-14.45
Θ(82.5°)	-12.89/-15.05	-16.8/-15.8	-13.49/-11.65	-9.81/-7.76	-6.43/-6.36	-8.24/-10.16	-7.56/-5.39	-6.08/-9.56	-9.38/-7.42	-8.99/-17.9	-14.68/-13.46	-18.96/-12.89	-8.76/-9.56	-15.52/-17.73	-12.47/-9.36	-10.27/-10.19	-6.97/-6.18	-8.76/-13.34	-10.64/-9.4	-11.89/-18.06	-19.09/-18.79	-17.91/-18.14	-18.94/-18.72	-14.95/-12.42
Θ(90°)	-11.69/-13.46	-15.5/-14.73	-13.12/-11.69	-10.06/-7.89	-6.13/-5.59	-6.42/-7.26	-5.97/-4.76	-6.04/-11.94	-13.26/-8.82	-11.24/-18.54	-12.23/-9.65	-14.91/-15.47	-8.4/-7.8	-11.14/-19.08	-11.97/-7.52	-8.03/-10.06	-7.86/-6.61	-8.96/-17.51	-15.92/-12.39	-14.66/-18.25	-17.22/-15.96	-18.85/-17.22	-16.25/-12.41	
Θ(97.5°)	-13.63/-13.54	-18.12/-11.22	-10.54/-10.31	-8.48/-7.2	-5.13/-4.23	-4.84/-6.4	-6.9/-6.47	-8.64/-17.39	-10.88/-7.7	-11.13/-17.13	-13.31/-8.77	-16.16/-13.99	-7.83/-7.94	-12.1/-18.23	-10.28/-7.16	-7.99/-9.5	-7.16/-5.74	-7.32/-12.45	-12.96/-10.26	-11.05/-14.1	-16.96/-16.85	-16.93/-14.93	-17.18/-18.87	-17.83/-15.48
Θ(105°)	-12.05/-11.76	-11.11/-10.17	-9.7/-10.19	-10.57/-9.37	-7.66/-7.17	-8.49/-10.23	-7.9/-5.7	-6.63/-11.25	-10.27/-7.81	-10.67/-18.76	-11.96/-8.41	-13.26/-17.26	-8.65/-8.45	-12.84/-18.23	-10.13/-6.22	-5.9/-7.59	-7.38/-6.11	-7.49/-13.21	-16.26/-11.65	-11.79/-15.01	-18.97/-18.35	-14.86/-13.36	-15.86/-18.71	-14.9/-12.46
Θ(112.5°)	-11.31/-13.49	-15.25/-14.05	-11.93/-10.67	-9.09/-6.67	-4.96/-4.23	-4.38/-4.31	-3.6/-3.34	-5.42/-11.96	-14.64/-10.22	-11.99/-17.56	-10.06/-7.53	-13.64/-16.05	-9.94/-10.69	-15.21/-17.57	-13.19/-7.2	-6.35/-7.27	-6.49/-5.53	-6.49/-10.2	-13.96/-12.47	-13.06/-16.41	-18.79/-19.11	-19.44/-17.22	-18.59/-17.17	-11.95/-10.79
Θ(120°)	-18.11/-18.29	-19.09/-13.41	-9.71/-7.07	-5.21/-6.37	-2.73/-2.9	-4.25/-6.59	-8.3/-9.07	-13.76/-9.08	-13.86/-15.72	-9.87/-9.25	-9.22/-10.01	-10.04/-7.56	-8.09/-11.78	-13.71/-11.14	-10.77/-14.97	-18.63/-15.68	-14.01/-14.36	-15.12/-15.72	-15.37/-13.86	-16.86/-16.81	-17.71/-18.83			
Θ(127.5°)	-12.33/-10.4	-9.88/-10.5	-10.33/-9.43	-9.23/-9.01	-8.7/-9.54	-10.99/-9.16	-6.12/-4.56	-4.4/-7.6	-4.72/-5.09	-8.1/-19.9	-10.38/-8.36	-12.68/-17.73	-19.36/-12.55	-9.12/-7.36	-5.14/-4.03	-5.01/-7.3	-9.02/-8.28	-7.38/-8.19	-10.99/-15.54	-18.92/-17.4	-18.36/-18.29	-16.03/-13.08	-12.43/-16.31	-17.48/-16.57
Θ(135°)	-12.06/-11.29	-12.26/-15.82	-18.96/-18.62	-16.76/-9.72	-5.74/-7.32	-2.76/-2.17	-1.74/-1.73	-2.45/-3.97	-6.15/-8.82	-14/-14.04	-7.81/-6.14	-7.27/-15	-8.86/-7.17	-6.2/-5.95	-4.74/-4.01	-4.84/-7.04	-9.55/-9.45	-7.32/-6.5	-7.25/-8.75	-10.12/-11.03	-11.62/-13.51	-16.63/-18.22	-19/-18.65	-17.78/-15.68
Θ(142.5°)	-18.86/-19.26	-18.75/-13.33	-10.89/-8.16	-6.25/-4.43	-2.86/-1.97	-1.93/-2.61	-3.65/-4.89	-6.75/-9.58	-13.98/-19.01	-17.94/-10.58	-7.12/-6.51	-7.49/-8.38	-7.49/-5.74	-4.56/-3.9	-3.43/-3.16	-3.47/-4.42	-6.22/-6.84	-10.14/-10.41	-11.17/-13.04	-14.98/-15.12	-13.84/-13.51	-14.73/-17.09	-18.43/-17.53	-18.07/-17.93
Θ(150°)	-17.31/-11.07	-9.39/-7.77	-6.4/-5.31	-4.67/-4.44	-4.43/-4.83	-6.04/-8.41	-6.27/-17.06	-17.29/-15.05	-14.21/-15.61	-17.84/-13.36	-9.81/-8.55	-9.31/-11.41	-12.84/-10.66	-7.73/-5.84	-4.59/-3.94	-3.57/-3.51	-4.02/-5.02	-5.93/-6.47	-6.86/-7.64	-9.28/-11.98	-14.73/-15.32	-14.96/-15.96	-17.83/-16.39	-14.08/-12.93
Θ(157.5°)	-9.45/-8.41	-7.61/-7.06	-6.74/-6.67	-6.97/-7.91	-8.53/-12.08	-16.16/-18.78	-17.96/-12.69	-10.32/-9.49	-10.26/-12.81	-17.56/-17.77	-14.22/-12.61	-13.42/-16.97	-18.48/-18.46	-13.14/-10.18	-8.29/-7.09	-6.31/-6.08	-6.31/-6.47	-6.16/-6.55	-5.35/-5.51	-6.29/-7.64	-9.3/-11.23	-13.35/-16.18	-19.05/-17.85	-14.23/-11.08
Θ(165°)	-11.97/-11.53	-11.45/-11.61	-12.11/-13.03	-14.39/-16.35	-17.71/-16.62	-14.34/-12.21	-9.31/-9.69	-9.32/-9.64	-10.84/-13.74	-18.23/-17.43	-17.92/-13.83	-18.83/-17.83	-18.13/-19.43	-18.71/-14.83	-12.08/-10.3	-9.24/-9.07	-9.46/-9.5	-8.74/-9.7	-7.4/-7.42	-7.92/-8.7	-9.85/-11.53	-14/-17.84	-18.59/-18.58	-17.32/-13.2



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(180°)	-8.62/-9.02	-9.33/-9.24	-9.4/-9.83	-11.91/-14	-16.42/-19.22	-18.21/-19.13	-18.41/-19.18	-19.44/-18.83	-18.52/-18.38	-17.59/-19.06	-17.81/-19.31	-15.55/-13.95	-14.37/-16.8	-17.37/-18.96	-17.53/-17.8	-18.03/-19.12	-17.25/-18.92	-18.42/-19.12	-18.66/-17.98	-15/-12.24	-10.41/-9.43	-8.73/-8.33	-8.83/-9.19	-8.71/-8.57
Φ(120°)	-13.18/-13.91	-14.44/-14.57	-14.14/-14.04	-14.25/-14.49	-15.79/-19.34	-18.46/-17.41	-18.54/-18.75	-17.12/-16.54	-15.56/-13.43	-11.62/-11.1	-11.29/-10.96	-9.82/-9.02	-9.24/-10.39	-11.26/-11.11	-11.27/-12.68	-14.74/-16.72	-18.38/-18.53	-18.41/-18.78	-17.3/-13.57	-11.81/-10.91	-10.74/-10.8	-10.41/-10.21	-10.49/-10.48	-11.14/-12.39
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°)	-10.81/-9.63	-9.02/-9.31	-9.23/-9.32	-9.59/-9.27	-8.9/-9.27	-9.84/-10.27	-11.08/-12.32	-12.79/-12.62	-13.55/-15.3	-18.13/-19.18	-17.88/-10.8	-16.57/-13.9	-12.53/-14.2	-11.01/-9.87	-9.35/-8.67	-9.04/-9.5	-10.74/-12.14	-13.21/-13.35	-12.96/-12.89	-13.95/-14.53	-15.84/-15.81	-16.63/-16.58	-15.92/-12.54	
Θ(7.5°)	-12.43/-13.88	-10.67/-11.03	-10.09/-10.33	-10.17/-9.69	-9.38/-9.53	-9.43/-10.86	-12.22/-12.83	-12.31/-14.08	-19.4/-17.86	-16.02/-13.98	-12.79/-10.9	-10.08/-9.96	-10.79/-11.02	-10.4/-10.4	-9.84/-9.8	-9.71/-10.38	-11.73/-13.29	-14.35/-15.15	-18.03/-18.58	-18.96/-18.6	-18.99/-15.81	-13.11/-12.78	-12.04/-12.14	
Θ(15°)	-9.13/-11.02	-11.49/-10.79	-9.75/-9.96	-10.25/-10.86	-11.16/-10.41	-9.89/-9.27	-8.79/-9.13	-11.02/-11.33	-11.8/-11.76	-12.46/-13.48	-16.48/-18.68	-19.8/-14.86	-11.68/-10.66	-10.64/-11.5	-12.64/-12.36	-10.54/-9.75	-8.64/-8.37	-8.64/-8.67	-9.41/-10.12	-11.82/-12.84	-13.79/-15.1	-15.4/-14.08	-11.27/-5.52	-8.28/-9
Θ(22.5°)	-9.82/-10.35	-10.01/-9.22	-9.77/-10.3	-9.77/-10.4	-9.84/-10.04	-10.24/-8.38	-7.53/-9.21	-11.81/-12.4	-10.61/-9	-8.4/-9.11	-11.18/-14.45	-15.77/-13.29	-10.14/-8.38	-8.32/-9.52	-9.98/-8.49	-7.55/-5.66	-5.82/-5.16	-5.19/-5.5	-6.31/-8.19	-10.1/-11.25	-13.8/-17.53	-19.28/-17.83	-18.92/-15.3	-12.55/-10.66
Θ(30°)	-14.98/-12.28	-11.69/-12.59	-13.17/-12.97	-11.19/-9.09	-7.85/-8.92	-9.89/-8.57	-9.35/-13.4	-17.11/-10.11	-7.74/-8.19	-10.33/-13.17	-18.19/-18	-16.77/-15.84	-18.65/-16.26	-12.66/-13.34	-10.04/-6.02	-4.98/-4.52	-4.85/-4.87	-5.63/-5.71	-5.72/-6.86	-7.74/-8.21	-13.66/-13.3	-16.39/-17.48	-17.26/-14.26	
Θ(37.5°)	-14.42/-13.16	-18.55/-17.71	-12.69/-11.02	-11.25/-9.38	-8.04/-11.05	-12.13/-8.94	-10.83/-14.84	-11.24/-7.62	-6.67/-8.52	-11.81/-12.29	-11.37/-19.03	-15.9/-11.39	-13.1/-13.35	-10.76/-14.69	-10.87/-6.05	-4.81/-4.2	-3.78/-4.17	-5.47/-4.44	-7.28/-8.23	-9.51/-9.27	-8.47/-10.59	-12.85/-11.41	-12.07/-14.62	-16.17/-15.52
Θ(45°)	-15.52/-13.12	-14.04/-13.37	-10.65/-8.65	-10.99/-15.71	-11.77/-10.69	-8.16/-8.71	-10.35/-12.59	-10.74/-9.91	-12.29/-15.13	-12.59/-10.3	-8.3/-10.7	-14.69/-9.27	-8.85/-11.4	-10.44/-13.56	-14.18/-8.6	-6.37/-5.79	-6/-7.17	-8.61/-8.43	-8.17/-9.6	-12.46/-14.09	-13.44/-15.77	-18.34/-18	-15.14/-15.86	-16.48/-16.48
Θ(52.5°)	-18.13/-18.75	-19.06/-18.09	-18.52/-12.15	-11.24/-10.16	-7.62/-8.94	-8.46/-7.73	-6.36/-6.63	-7.8/-7.92	-11.14/-9.93	-9.51/-13.64	-11.19/-9.62	-10.21/-9.21	-10.24/-11.45	-9.61/-13.86	-13.49/-8.58	-8.62/-8.6	-8.48/-9.22	-11.53/-13.3	-18.32/-17.65	-17.83/-16.91	-17.3/-18.29	-16.86/-13.93	-12.08/-14.15	
Θ(60°)	-18.11/-16.59	-19.21/-17.5	-15.04/-11.17	-11.28/-11.25	-7.07/-6.22	-6.11/-7.42	-6.12/-5.33	-6.03/-4.78	-7.12/-5.53	-9.98/-16.42	-18.11/-15	-12.79/-8.99	-11.23/-8.2	-8.36/-10.97	-12.51/-11.6	-14.81/-13.91	-13.88/-12.94	-13.41/-15.1	-14.52/-18.79	-18.22/-18.11	-17.32/-14.65	-16.31/-14.79	-11.65/-14.58	-18.04/-12.84
Θ(67.5°)	-17.77/-18.32	-17.97/-17.65	-17.64/-14.63	-16.28/-9.83	-6.14/-6.11	-7/-8.15	-5.16/-4.87	-5.78/-4.2	-7.68/-9.56	-13.19/-13.89	-16.73/-18.22	-14.86/-9.18	-11.57/-7.05	-8.37/-10.08	-12.96/-14.4	-18.41/-13.47	-13.34/-15.85	-18.21/-19.28	-17.01/-17.86	-17.76/-18.22	-19.08/-17.55	-17.52/-14.45	-10.42/-11.6	-14.93/-13.15
Θ(75°)	-16.92/-16.55	-18.88/-18.74	-19.56/-15.64	-18.06/-10.37	-6.11/-6.13	-8.24/-11.65	-8.96/-6.7	-7.74/-6.23	-8.46/-9.04	-15.13/-11.18	-11.88/-11.51	-18.14/-9.21	-9.76/-8.37	-9.41/-10.5	-12.41/-14.35	-14.82/-18.4	-12.16/-19.83	-19.41/-18.39	-19.4/-19.22	-17.79/-18.06	-17.46/-17.64	-14.3/-13.66	-12.25/-14.07	-16.39/-14.71
Θ(82.5°)	-18.44/-18.76	-17.28/-18.59	-18.71/-14.13	-13.69/-10.41	-9.87/-9.95	-10.97/-11.34	-10.16/-7.39	-9.83/-9.17	-10.72/-13.16	-18.89/-10.11	-12.66/-10.93	-18.39/-9.6	-12.62/-8.84	-10.08/-10.75	-11.62/-10.08	-8.86/-13.31	-11.36/-18.34	-18.2/-18.27	-18.97/-18.88	-18.09/-16.23	-13.75/-13.47	-13.96/-14.45	-11.61/-11.22	-17.63/-14.29
Θ(90°)	-18.29/-13.06	-17.85/-15.68	-17.89/-14.81	-14.5/-12.25	-11.11/-9.13	-10.21/-12.58	-17.94/-13.1	-10.88/-9	-9.44/-11.79	-11.28/-16.78	-11.22/-11.97	-17.72/-9.48	-13.96/-8.83	-14.74/-11.2	-8.15/-6.49	-9.16/-18.12	-17.36/-14.61	-16.91/-12.64	-15.38/-15.11	-16.77/-13.24	-14.39/-15.86	-13.46/-12.81	-17.47/-14.88	
Θ(97.5°)	-15.82/-13.09	-18.32/-13.23	-16.26/-13.79	-12.14/-10.93	-13.92/-15.8	-12.96/-10.48	-17.24/-14.96	-14.08/-10.75	-7.78/-12.59	-9.05/-15.13	-10.03/-11.35	-18.5/-8.94	-13.64/-8.01	-9.49/-9.68	-9.84/-8.14	-7.18/-11.77	-19.36/-18.56	-18.48/-14.59	-15.32/-15.67	-15.14/-15.08	-14.48/-18.71	-17.14/-15.84	-18.65/-17.1	
Θ(105°)	-18.03/-18.22	-16.76/-10.04	-14.41/-18.41	-14.16/-10.06	-10.25/-11.72	-13.88/-12.37	-10.59/-10.69	-14.29/-13.83	-7.76/-7.84	-8.11/-14.24	-11.93/-14.46	-19.02/-9.86	-14.21/-8.28	-11.28/-11.65	-8.43/-7.96	-7.46/-9.99	-18.58/-13.84	-18.18/-17.02	-17.94/-10.7	-14.28/-12.55	-12.55/-18.06	-18.67/-18.87	-15.35/-13.65	-18.19/-17.74
Θ(112.5°)	-16.84/-18.07	-17.33/-14.57	-12.24/-11.15	-13.84/-10.66	-9.42/-9.3	-9.19/-12.85	-13.52/-11.53	-11.29/-13.47	-10.95/-11.96	-6.36/-17.99	-18.22/-11.21	-11.59/-6.56	-8.82/-10.42	-10.28/-7.97	-7.93/-16.1	-17.58/-14.18	-18.89/-16.79	-14.91/-11.85	-14.44/-13.1	-12.88/-18.59	-13.74/-18.35	-15.43/-18.04	-18.98/-14.24	
Θ(120°)	-18.96/-16.46	-16.94/-13.79	-12.34/-15.2	-11.92/-8.31	-10.85/-12.94	-9.16/-9.87	-8.57/-10.36	-12.55/-10.88	-16.92/-11.11	-12.12/-18.37	-12.77/-19.53	-18.2/-13.82	-7.67/-7.71	-9.52/-9.56	-8.24/-10.26	-13.63/-16.43	-16.96/-11.57	-18.38/-12.76	-9.62/-10.49	-10.45/-15.34	-16.04/-17.63	-18.14/-14.31	-13.95/-17.99	-19.25/-17.26
Θ(127.5°)	-18.1/-12.8	-13.72/-16.74	-9.82/-11.41	-15.77/-9.18	-6.7/-9.21	-9.14/-10.16	-6.95/-8.22	-9.54/-11.59	-13.93/-14.74	-12.01/-18.88	-12.64/-17.22	-15.59/-13.85	-7.94/-10.54	-8.9/-15.26	-19.35/-8.4	-12.11/-13.11	-7.84/-13.13	-19.35/-15.21	-10.31/-11.28	-9.62/-13.12	-17.05/-14.95	-16.13/-18.62	-16.02/-13.13	-12.77/-14.04
Θ(135°)	-17.87/-18.78	-16.67/-13.71	-16.31/-10.66	-9.31/-15.06	-11.2/-7.6	-6.98/-8.92	-11.26/-11.68	-11.82/-16.2	-18.85/-17.72	-14.61/-17.2	-18.18/-11.8	-13.72/-12.79	-11.10/-10.71	-16.76/-13.76	-8.15/-14.04	-19.36/-9.36	-6.88/-13.65	-18.91/-11.24	-7.79/-11.9	-12.07/-12.14	-17.8/-19.13	-18.56/-19.39	-18.7/-16.36	-12.08/-18.25
Θ(142.5°)	-18.05/-18.91	-18.71/-18.47	-15.34/-10.08	-11.81/-10.21	-8.85/-11.01	-18.8/-15.92	-13.03/-19.44	-15.51/-14.84	-17.86/-18.16	-16.76/-17.79	-15.84/-12.23	-11.13/-15.32	-7.34/-13.1	-18.29/-10.46	-16.28/-18.9	-13.36/-8.67	-8.61/-13.45	-17.64/-12.65	-9.67/-10.88	-11.97/-11.95	-14.1/-18.17	-19.29/-18.52	-19.06/-19.17	-16.73/-18.3
Θ(150°)	-18.77/-19.05	-18.77/-18.15	-14.86/-9.72	-11.98/-18.45	-15.52/-14.92	-17.96/-11.09	-9.58/-13.5	-19.02/-13	-9.37/-9.49	-12.14/-14.93	-17.27/-19.06	-19.17/-16.49	-16.44/-17.56	-12.53/-7.47	-9.26/-11.23	-7.76/-7.12	-10.52/-18.21	-18.51/-14.57	-11.29/-11.14	-11.92/-12.06	-12.93/-16.41	-19.17/-17.03	-14.75/-11.63	-11.96/-16.09
Θ(157.5°)	-16.81/-17.54	-16.07/-15.22	-15.15/-18.88	-18.36/-13.5	-9.84/-10.3	-17.79/-18.99	-13.84/-12.73	-15.81/-17.71	-15.52/-13.04	-11.14/-14.05	-16.34/-16.18	-11.2/-8.79	-11.88/-12.88	-7.35/-6.66	-9.32/-10.7	-8.83/-8.3	-9.08/-10.59	-11.68/-11.72	-7.71/-13.77	-11.96/-12.62	-12.53/-12.29	-14.21/-16.48	-17.15/-16.81	-17.64/-17.1
Θ(165°)	-13.77/-16.05	-17.93/-15.39	-18.61/-14.53	-9.07/-10.77	-15.74/-16.58	-15.13/-14.98	-17.26/-17.33	-19.24/-16.26	-16.61/-19.12	-18.82/-17.84	-18.38/-17.42	-18.19/-13.78	-10.82/-10.86	-11.71/-11.61	-10.94/-10.18	-10.10/-10.04	-10.04/-9.25	-9.01/-9.5	-11.68/-15.23	-16.41/-16.24	-15.03/-14.43	-12.87/-12.34	-13.64/-13.41	
Θ(172.5°)	-16.31/-19.19	-17.71/-18.15	-18.58/-18.49	-17.61/-18.63	-17.98/-18.76	-19.28/-17.83	-17.99/-15.27	-13.52/-12.32	-12.08/-12.54	-12.06/-11.92	-13.85/-18.32	-17.51/-16.38	-14.83/-14.27	-12.5/-11.06	-10.6/-9.35	-8.23/-7.66	-7.94/-8.09	-8.52/-8.26	-8.28/-8.76	-11.48/-15.28	-17.16/-16.05	-13.75/-12.94	-14.05/-15.19	-13.64/-14.43
Θ(180°)	-18.62/-18.64	-18.44/-19.19	-15.96/-14.76	-15.2/-15.01	-13.91/-13.45	-12.91/-12.71	-12.58/-13.02	-14.02/-16.05	-18.28/-19.14	-17.8/-17.14	-19.46/-17.62	-17.54/-19.29	-18.18/-18.82	-18.77/-16.5	-14.33/-12.05	-10.36/-9.51	-9.77/-8.65	-10.94/-11.81	-12.65/-12.38	-12.62/-12.44	-14.26/-18.24	-17.43/-17.97	-17.18/-18.21	-18.59/-17.93
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°)	-9.59/-10.21	-10.88/-11.41	-13.16/-15.48	-18.23/-17.49	-18.22/-19.12	-19.74/-17.06	-16.28/-14.04	-13.21/-12.78	-11.97/-11.66	-11.54/-11.18	-10.09/-9.4	-9.06/-10.34	-12.16/-12.97	-12.22/-12.38	-14.42/-15.59	-17.43/-17.44	-19.11/-18.95	-16.31/-13.38	-12.56/-13.17	-11.28/-9.67	-8.34/-7.88	-8.15/-8.03	-7.61/-7.86	-8.48/-8.94
Θ(7.5°)	-13.06/-13.63	-16.19/-18.17	-19.09/-19.23	-18.31/-17.33	-17.47/-17.29	-16.96/-13.83	-12.19/-10.11	-9.86/-9.23	-7.97/-8.76	-5.74/-5.41	-5.14/-5.04	-5.2/-5.99	-7.44/-7.98	-7.96/-8.45	-9.94/-11.02	-12.89/-16.25	-19.18/-19.07	-17.96/-18.57	-17.52/-15.25	-15.85/-15.77	-14.02/-14.23	-11.27/-11.86	-12.14/-11.87	-11.87/-12.78
Θ(15°)	-8.07/-8.																							



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ (15°)	-10.94/-11.12	-11.02/-11.61	-11.54/-10.77	-10.86/-10.04	-8.69/-8.16	-8.58/-8.57	-9.3/-9.8	-10.55/-12.33	-15.91/-17.79	-18.37/-18.83	-18.85/-14.27	-9.13/-7.54	-8.54/-10.31	-11.49/-13.35	-13.34/-12.06	-11/-9.18	-7.34/-6.07	-6.4/-7.59	-9.21/-9.5	-10.53/-10.29	-9.97/-11.15	-12.12/-13.17	-14.16/-14.06	-12.87/-12.33
Θ (22.5°)	-15.41/-14.15	-12.13/-13.09	-12.4/-12.03	-12.7/-11.25	-8.49/-7.47	-7.51/-8.45	-10.63/-11.37	-12.74/-14.55	-16.81/-16.05	-13.76/-13.07	-15.84/-18.4	-12.57/-9.04	-8.87/-9.8	-11.73/-13.21	-11.31/-9.72	-8.5/-6.75	-5.25/-5.09	-6.18/-7.33	-8.34/-8.66	-8.61/-7.6	-7.73/-9.55	-11.41/-13.64	-15.67/-16.72	-17.88/-18.1
Θ (30°)	-16.19/-15.95	-16.9/-16.01	-13.77/-12.5	-11.91/-11.86	-9.91/-7.84	-7.81/-9.23	-10.19/-12.66	-18.45/-17.64	-14.9/-12.85	-11.84/-12.64	-16.69/-17.64	-12.13/-11.13	-11.25/-9.62	-9.96/-11.21	-8.74/-7.02	-6.19/-5.8	-4.59/-3.98	-4.12/-4.9	-6.13/-7.11	-6.75/-7.6	-9.75/-12.95	-16.11/-16.46	-14.7/-14	-15.8/-18.63
Θ (37.5°)	-13.16/-17.02	-16.69/-15.72	-17.04/-14.32	-10.13/-8.9	-8.46/-7.88	-10.17/-11.04	-11.02/-15.29	-13.75/-9.02	-7.97/-9.59	-12.34/-14.33	-14.9/-18.18	-16.15/-18.87	-17.78/-12.86	-15.34/-13.13	-9.29/-5.83	-4.57/-3.58	-3.38/-3.74	-4.26/-5.93	-9.29/-11.25	-10.78/-13.28	-18.06/-17.99	-18.2/-17.68	-18.81/-19.21	-17.54/-13.29
Θ (45°)	-15.03/-19.15	-18.3/-19.16	-16.64/-12.07	-8.9/-9.23	-11.3/-10	-13.56/-11.3	-11.93/-15.55	-12.89/-13.25	-16.28/-18.71	-12.06/-10.12	-10.1/-13.89	-13.66/-14.83	-15.89/-12.86	-12.61/-13.9	-9.51/-7.02	-7.47/-6.82	-6.51/-6.2	-5.25/-6.51	-10.72/-10.72	-9.53/-12.29	-15.44/-17.79	-17.82/-16	-13.74/-15.42	-14.85/-14.53
Θ (52.5°)	-15.25/-18.02	-18.74/-18.62	-18/-15.22	-9.54/-9.78	-9.86/-7.42	-12.91/-9.05	-9.91/-8.75	-8.7/-12.8	-11.96/-13.02	-12.79/-14.72	-11.76/-12.99	-11.21/-10.62	-11.61/-8.99	-9.45/-10.82	-9.93/-10.03	-9/-7.96	-9.08/-10	-9.58/-12.38	-15.84/-11.59	-12.26/-15.53	-17.09/-19.02	-19.09/-15.13	-12.17/-11.35	-17.46/-17.23
Θ (60°)	-17.09/-18.1	-18/-17.63	-13.09/-11.7	-13.23/-13.09	-10.05/-4.56	-7.03/-9.05	-11.3/-6.19	-6.28/-6.49	-7.85/-13.04	-13.99/-17.86	-18.2/-17.11	-13.44/-11.08	-12.13/-9.89	-8.21/-10.46	-13.12/-12.19	-12.2/-14.09	-12.32/-12.48	-14.15/-18.8	-18.07/-18.66	-18.51/-18.91	-16.61/-18.21	-18.43/-16.97	-14.62/-11.46	-14.95/-18.65
Θ (67.5°)	-18.27/-18.74	-17.89/-19.24	-18.62/-14.78	-11.83/-10.01	-12.71/-6.02	-5.12/-4.46	-6.3/-6.21	-7.15/-5.45	-7.29/-12.59	-13.9/-13.9	-18.95/-13.56	-12.21/-16.47	-9.77/-9.39	-7.15/-12.7	-13.48/-18.12	-17.54/-18.48	-18.82/-18.16	-19.07/-18.8	-18.65/-18.37	-17.9/-18.16	-17.82/-17.72	-17.8/-19.18	-17.92/-15.99	-18.73/-19.15
Θ (75°)	-18.4/-18.15	-18.8/-17.97	-14.38/-18.22	-13.78/-9.17	-11.34/-7.43	-6.22/-7.34	-7.21/-7.17	-7.19/-7.23	-10.51/-13.13	-18.21/-11.32	-15.02/-10.64	-16.85/-19.33	-10.77/-8.88	-9.47/-15.51	-15.67/-18.44	-15.77/-13.35	-18.78/-18.15	-18.06/-18.24	-17.95/-18	-18.9/-17.49	-17.33/-18.03	-18.8/-18.08	-19.42/-17.32	-16.48/-18.99
Θ (82.5°)	-19.05/-17.08	-15.2/-18.24	-12.73/-14.87	-15.15/-10.15	-11.12/-9.38	-6.39/-8.06	-8.94/-9.71	-7.81/-6.15	-9.25/-8.52	-18.58/-13.94	-16.28/-9.65	-14.66/-17.77	-6.7/-11.78	-12.45/-19.11	-12.27/-12.63	-12.44/-11.8	-13.29/-17.39	-18.71/-18.97	-19.06/-17.95	-19.02/-15.91	-14.77/-17.49	-17.53/-19.02	-18.1/-18.69	-14.8/-18.58
Θ (90°)	-18.45/-18.79	-14.48/-18.99	-14.97/-18.19	-16.67/-9.71	-10.37/-13	-9.36/-9.33	-6.76/-11.37	-10.08/-8.78	-9.27/-7.29	-15.53/-15.56	-13.63/-8.42	-18.42/-14.1	-10.45/-12.88	-14.38/-18.9	-12.1/-7.97	-9.71/-11.44	-14.91/-18.87	-17.61/-18.35	-18.84/-18.94	-17.47/-13.05	-13.1/-18.87	-17.99/-18.05	-18.24/-18.76	-12.91/-17.82
Θ (97.5°)	-18.66/-18.69	-13.42/-18.37	-12.96/-16.89	-15.3/-9.71	-9.16/-11.21	-9.99/-10.64	-6.97/-10.42	-11.47/-9.98	-10.53/-7.18	-9.65/-15.02	-15.16/-11.34	-16.38/-11.57	-8.28/-15.2	-15.59/-12.97	-8.86/-8.09	-9.27/-11.17	-17.95/-18.73	-18.79/-18.16	-17.96/-17.98	-17.61/-18.5	-18.11/-18	-18.89/-16.51	-15.53/-17.52	-16.95/-17.39
Θ (105°)	-18.14/-17.96	-11.96/-18.58	-12.36/-13.54	-19.18/-13.63	-9.63/-10.9	-11.62/-14.15	-11.66/-12.55	-11.98/-8.8	-10.3/-7.24	-8.21/-17.27	-13.98/-10.25	-17.97/-12.22	-13.83/-10.02	-10.53/-11.51	-10.12/-8.19	-12.18/-14.75	-18.39/-18.74	-17.84/-17.81	-18.19/-18.9	-16.07/-17.23	-17.37/-17.91	-14.12/-13.83	-17.43/-18.7	-18.11/-18.56
Θ (112.5°)	-17.47/-16.13	-12.34/-18.32	-15.26/-12.4	-14.87/-14.5	-11.96/-10.74	-9.49/-8.94	-9.05/-11.17	-15.01/-10.8	-13.46/-10.92	-10.58/-17.89	-12.44/-14.65	-18.52/-10.57	-13.37/-10.2	-11.27/-11.04	-8.39/-10.24	-9.75/-15.04	-19.04/-17.58	-17.95/-17.27	-18.32/-15.37	-15.62/-18.83	-18.05/-18.05	-17.89/-15.57	-18.66/-15.95	-19.62/-18.03
Θ (120°)	-17.7/-15.86	-13.9/-15.97	-12.44/-11.79	-14.46/-12.08	-9.16/-8.99	-14/-8.92	-7.72/-6.25	-11.96/-11.88	-18.43/-13.16	-14.6/-19.11	-11.15/-18.64	-14.05/-13.38	-14.37/-6.96	-7.33/-16.18	-9.3/-10.28	-13.22/-16.04	-18.31/-18.43	-18.83/-18.62	-14.92/-16.59	-16.29/-18.08	-18.62/-18.59	-14.48/-14.36	-18.13/-14.09	-17.43/-18.42
Θ (127.5°)	-16.5/-16.63	-12.97/-14.29	-10/-12.29	-11.93/-12.56	-9.32/-7.61	-10.33/-11.01	-13.67/-9.3	-11.1/-10.25	-18.11/-18.22	-10.49/-13.49	-13.28/-16.19	-17.92/-17.2	-9.38/-10.66	-15.32/-14.26	-13.91/-10.15	-17.84/-16.91	-13.52/-16.04	-18.74/-18.65	-12.86/-13.54	-13.64/-14.95	-16.71/-19.41	-14.77/-12.32	-11.73/-11.29	-16.15/-13.9
Θ (135°)	-17.1/-18.15	-17.16/-17.88	-11.53/-8.77	-10.39/-10.58	-12.37/-9.93	-9.05/-6.21	-8.36/-13.03	-17.4/-17.53	-19.39/-19.14	-17.77/-16.35	-18.3/-13.94	-11.81/-17.65	-15.59/-17.91	-11.87/-12.82	-10.45/-11.74	-14.71/-13.83	-8.04/-12.89	-18.07/-15.99	-12.63/-9.9	-9.69/-11.49	-13.8/-14.96	-18.36/-19.13	-15.32/-15.95	-19.62/-18.03
Θ (142.5°)	-19.1/-18.29	-12.16/-13.91	-17.95/-18.93	-10.35/-10.05	-10.35/-7.89	-11.4/-15.57	-13.31/-15.1	-17.05/-15.89	-14.69/-18.45	-17.45/-19.02	-18.69/-18.57	-14.99/-15.29	-7.5/-16.38	-15.41/-13.39	-17.92/-17.97	-15.14/-8.27	-7.92/-14.18	-15.3/-16.62	-13.96/-12.1	-11.55/-13.21	-17.7/-18.52	-18.89/-18.99	-18.89/-18.82	-18.24/-18.7
Θ (150°)	-17.83/-15.59	-18.53/-13.04	-17.49/-14.36	-10.12/-11.2	-18.47/-15.34	-17.36/-15.5	-10.13/-10.76	-16/-18.84	-13.25/-10.82	-11.72/-13	-17.55/-19.25	-17.78/-17.82	-7.98/-13.9	-11.62/-8.78	-12.72/-10.92	-9.2/-10.33	-13.72/-12.83	-14.89/-13.2	-12.82/-12.8	-11.43/-11.58	-14.46/-18.95	-14.35/-14.67	-18.05/-16.16	-13.8/-14.79
Θ (157.5°)	-17.78/-18.79	-18.76/-17.82	-18.56/-16.42	-18.55/-18.84	-10.75/-7.15	-7.21/-10.58	-13.94/-12.13	-12.2/-16.86	-18.35/-15.87	-13.2/-15.64	-13.04/-9.44	-10.85/-15.38	-17.7/-11.65	-7.29/-7.37	-7.07/-6.78	-9.76/-12.83	-13.19/-11.07	-11.1/-11.76	-12.88/-12.75	-11.76/-9.86	-10.22/-16.92	-18.23/-16.92	-16.05/-17.56	-19.19/-18.72
Θ (165°)	-12.85/-12.76	-16.45/-18.82	-18.86/-17.33	-18.05/-14.61	-11.98/-10.49	-10.94/-14.4	-19.21/-17.7	-15.53/-17.2	-18.39/-16.9	-15.91/-18.04	-18.05/-18.4	-19.01/-17.31	-12.85/-11.03	-10.69/-11.51	-11.68/-11.76	-13.46/-14.34	-13.22/-11.6	-11.44/-12.52	-14.36/-15.59	-17.51/-16.22	-13.47/-12.15	-12.96/-14.42	-14.25/-13.04	-13.37/-13.85
Θ (172.5°)	-13.61/-16.84	-16.85/-16.9	-17.5/-17.77	-17.88/-16.85	-15.37/-15.83	-19.23/-18.94	-17.28/-16.81	-14.45/-12.56	-11.46/-11.46	-12.66/-15.25	-18.16/-17.28	-19.22/-13.63	-11.7/-12.27	-11.77/-10.86	-10.96/-11.43	-11.68/-11.94	-11.73/-10.37	-9.5/-9.42	-10.25/-10.78	-10.36/-10.21	-11.73/-13.07	-13.46/-12.93	-12.45/-13.51	-14.22/-12.61
Θ (180°)	-18.22/-18.97	-17.89/-18.51	-17.52/-17.99	-18.84/-17.52	-18.4/-17.57	-19.32/-17.8	-18.46/-18.3	-17.86/-18.08	-18.16/-17.78	-18.22/-18.35	-17.81/-18.28	-18.04/-17.63	-17.83/-18.67	-18.32/-15.04	-12.48/-11.97	-11.12/-10.6	-10.67/-10.31	-9.5/-9.94	-11.55/-14.02	-14.74/-15.77	-16.06/-15.71	-16.95/-16.62	-17.78/-19.04	-18.17/-18.29
Freq(Hz)	5.785GHz	Theta	Ant. 4	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ (0°)	-16.92/-17.09	-16.28/-16.32	-16.79/-15.08	-13.77/-14.12	-12.66/-10.52	-9.09/-8.41	-8.46/-8.84	-8.99/-9.35	-9.69/-9.78	-9.74/-10.95	-12.28/-12.31	-12.5/-13.76	-15.09/-14.43	-14.05/-13.31	-10.89/-10.12	-10.38/-10.32	-9.13/-8.03	-8.13/-8.12	-7.58/-7.36	-8.2/-8.2	-8.24/-8.54	-8.76/-9.99	-11.9/-13.03	-14.97/-15.93
Θ (7.5°)	-12.63/-13.82	-12.23/-10.45	-9.99/-9.71	-10.01/-10.73	-10.09/-9.49	-7.5/-6.98	-6.57/-6.21	-5.66/-4.81	-4.72/-4.58	-4.52/-4.66	-5.61/-7.23	-7.63/-8.33	-9.5/-11.86	-14.67/-18.92	-18.77/-16.82	-17.32/-17.27	-15.32/-12.65	-13.03/-13.17	-11.82/-10.43	-11.01/-12.48	-13.4/-14.46	-13.97/-12.95	-11.92/-11.44	-11.38/-11.86
Θ (15°)	-9.44/-10.72	-11.63/-11.67	-10.89/-11.11	-12.95/-13.65	-11.51/-10.66	-9.73/-9.55	-8.76/-7.6	-6.18/-5.18	-4.62/-3.98	-3.28/-2.71	-3.01/-3.58	-4.13/-4.71	-5.67/-6.6	-7.32/-9.42	-13.77/-12.98	-10.98/-10.51	-11.24/-11.3	-12.42/-15.3	-18.85/-18.53	-19.09/-17.44	-14.54/-11.7	-9.36/-7.97	-7.57/-7.65	-8.17/-8.98
Θ (22.5°)	-8.29/-8.19	-6.75/-6.06	-5.9/-7.53	-11.09/-10.96	-8.71/-7.48	-7.96/-9.26	-10.9/-10.24	-8.44/-6.79	-5.96/-5.08	-4.52/-3.22	-2.31/-2.31	-3.17/-4.6	-5.45/-6.03	-5.51/-5.84	-8.5/-8.34	-7.06/-6.69	-6.62/-6.04	-5.41/-5.55	-5.8/-6.22	-6.8/-7.65	-8.07/-8.23	-8.22/-8.14	-7.68/-6.93	-7.33/-7.99
Θ (30°)	-4.7/-5.44	-4.97/-4.78	-4.26/-4.19	-4.58/-4.92	-4/-3.52	-4.28/-4.94	-8.51/-7.97	-6.2/-5.18	-4.62/-4.54	-4.02/-3.6	-2.89/-2.14	-2.29/-3.09	-4.31/-6.36	-6.42/-6.11	-6.99/-5.81	-4.02/-2.54	-2.59/-3.32	-3.44/-2.76	-1.71/-0.81	-0.82/-1.89	-3.06/-4.63	-6.08/-6.03	-4.67/-3.25	-2.47/-3.2
Θ (37.5°)	-0.5/-1.17	-2.29/-3.69	-3.13/-0.77	-0.32/-1.11	-1.32/-1.86	-3.92/-6.84	-7.25/-6.52	-5.97/-5.15	-4.77/-4.56	-4.93/-5.47	-2.45/-0.25	0.58/-0.46	-0.42/-2.37	-3.36/-3.34	-4.62/-3.36	-0.24/-0.65	-1.04/-3.28	-2.12/-0.09	1.53/-1.72	1.33/-0.35	-0.98/-2.1	-2.42/-1.97	-2.28/-2.22	-1.35/-0.24
Θ (45°)	-0.99/-2.55	-3.59/-1.87	-1.01/-0.94	-0.72/-0.37	1.32/-1.22	0.41/-0.59	-1.4/-0.9	0.17/-0.65	0.46/-0.01	-0.22/-1.35	-0.64/-1.56	2.53/-2.42	0.92/-0.68	-0.47/-0.82	0.69/-0.96	2.84/-2.93	1.09/-1.43	-1.43/-0.07	1.03/-1.45	1.36/-0.62	0.81/-0.8	1.21/-1.1	-0.28/-0.88	-0.94/-0.94
Θ (52.5°)	-1.18/-2.23	-3.85/-5.24	-1.86/-0.67	0.45/-0.39	1.86/-2.2	1.51/-0.19	-1.41/-0.13	1.63/-2.38	1.76/-0.02	-0.31/-0.79	-0.29/-1.95	3.08/-3.15	0.46/-3.22	-0.82/-1.52	1.69/-2.6	3.44/-2.07	0.4/-0.28	-1.46/-1.22	0.08/-0.21					



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Freq(Hz)	2.45G
Ant. 1 Max Gain (dBi)	2.98
Ant. 2 Max Gain (dBi)	4.79
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/187.5
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/45/225
Max Gain (dBi)	4.79
DG [1SS] (dBi)	4.51
DG [1SS] (dBi) Revised	4.79
DG [2SS] (dBi)	4.79



Radiated Composite Gain Data of 2.4GHz_2TX-Ant1&2

Appendix A.2

DG 1SS Result

Freq(Hz)	2.450/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°)	-11.16/-10.27	-9.02/-8.32	-7.42/-6.54	-5.91/-5.57	-5.49/-5.65	-5.99/-6.47	-6.95/-7	-7.39/-7.54	-8.21/-9.33	-11.14/-13.28	-13.55/-13.82	-14.35/-14.02	-11.19/-9.12	-7.7/-6.91	-6.48/-6.21	-5.92/-5.61	-5.35/-5.08	-5.02/-5.26	-5.88/-6.82	-7.75/-7.82	-8.52/-9.37	-11.08/-13.87	-15.11/-15.28	-14.42/-12.75
Θ(7.5°)	-6/-5.66	-5.29/-4.87	-4.51/-4.15	-3.86/-3.67	-3.6/-3.65	-3.85/-4.26	-4.63/-4.88	-4.98/-5.15	-5.84/-7.05	-8.97/-11.5	-12.63/-11.87	-11.81/-11.49	-9.91/-7.88	-6.42/-5.48	-4.92/-4.54	-4.26/-3.99	-3.71/-3.44	-3.37/-3.58	-4.06/-4.69	-5.17/-5.41	-5.54/-5.84	-6.54/-7.77	-8.29/-8.28	-7.59/-6.62
Θ(15°)	-2.39/-2.24	-2.12/-1.99	-1.9/-1.87	-1.91/-2.06	-2.24/-2.36	-2.53/-2.68	-2.74/-2.65	-2.4/-2.16	-2.24/-2.72	-3.73/-5.23	-6.14/-5.86	-5.87/-5.69	-5.36/-4.51	-3.15/-2.18	-1.65/-1.37	-1.24/-1.17	-1.23/-1.36	-1.51/-1.81	-2.26/-2.73	-3.12/-3.36	-3.36/-3.14	-2.99/-2.94	-2.79/-2.97	-3.21/-2.7
Θ(22.5°)	-0.21/-0.1	-0.03/-0.04	0/-0.16	-0.51/-0.99	-1.49/-1.78	-2.01/-2.08	-1.99/-1.69	-1.18/-0.73	-0.53/-0.75	-1.4/-2.63	-3.07/-3.23	-2.79/-2.48	-2.27/-1.68	-0.64/-0.23	0.87/-1.27	1.49/-1.52	1.4/-1.12	0.74/-0.29	-0.16/-0.53	-0.74/-0.76	-0.7/-0.66	-0.18/-0.21	-0.13/-0.18	-0.52/-0.48
Θ(30°)	1.32/-1.3	1.33/-1.43	1.42/-1.2	0.73/-0.05	-0.54/-0.9	-1.13/-1.18	-0.98/-0.63	-0.16/-0.23	0.41/-0.29	-0.11/-0.81	-1.06/-1.21	-1.29/-0.76	-0.09/-0.54	1.19/-1.83	2.52/-3.1	3.49/-3.76	3.73/-3.49	3.04/-2.47	1.92/-1.71	1.88/-2.15	2.29/-2.25	2.06/-1.86	1.65/-1.29	1.12/-1.23
Θ(37.5°)	2.43/-2.27	2.07/-2.13	2.19/-2.06	1.54/-0.82	0.34/-0.03	-0.28/-0.24	0.08/-0.45	0.78/-1.01	1.01/-0.76	0.67/-0.37	-0.04/-0.28	-0.42/-0.04	1.01/-2	2.67/-2.32	2.87/-3.41	3.94/-2.7	4.36/-4.13	3.58/-2.84	2.24/-2.17	2.44/-2.62	2.73/-2.66	2.49/-2.21	1.83/-1.34	2.13/-2.37
Θ(45°)	2.75/-2.59	2.23/-2.18	2.36/-2.39	1.96/-1.36	1.17/-0.9	0.55/-0.5	0.62/-0.75	0.92/-1.1	1.21/-3	1.34/-1	0.55/-0.04	-0.37/-0.4	0.59/-1.7	2.62/-54	3.17/-3.66	4.08/-4	4.51/-4.29	3.69/-2.93	2.58/-2.7	2.78/-2.69	2.55/-2.53	2.58/-2.55	2.17/-1.39	2.01/-2.47
Θ(52.5°)	2.41/-2.38	1.89/-1.63	1.99/-2.32	2.16/-1.9	1.86/-1.61	1.32/-1.21	1.11/-0.96	0.87/-0.96	1.29/-1.57	1.46/-1.19	0.66/-0.37	0.01/-0.3	-0.04/-0.8	1.99/-3.15	3.41/-3.54	3.72/-4	4.15/-3.87	3.25/-2.6	2.76/-3.24	3.12/-2.83	2.53/-2.38	2.73/-2.08	2.91/-2.16	1.48/-1.93
Θ(60°)	1.71/-1.9	1.41/-0.91	1.42/-2.04	2.15/-2.18	2.21/-2.11	2.02/-1.92	1.63/-1.21	0.78/-0.81	1.06/-1.36	1.31/-0.94	0.31/-0.35	-0.71/-0.91	-0.98/-0.54	1.05/-2.64	3.51/-3.63	3.72/-3.34	2.31/-1.47	1.66/-1.77	1.55/-1.42	1.35/-0.87	0.86/-1.84	2.03/-1.3	0.61/-1.04	
Θ(67.5°)	0.3/-0.6	0.29/-0.2	1.17/-1.9	1.98/-1.98	1.94/-1.87	1.95/-1.94	1.71/-1.31	0.73/-0.76	1.03/-1.23	1.02/-0.23	-0.73/-1.46	-1.39/-1.19	-1.5/-1.04	0.71/-2.01	2.34/-1.95	1.77/-1.97	2.13/-1.63	0.55/-0.35	0.54/-0.31	-0.01/-0.6	0.98/-0.38	-0.37/-0.44	0.81/-0.34	-1.38/-0.5
Θ(75°)	-1.24/-1.21	-1.87/-1.33	0.56/-1.67	1.95/-1.85	1.67/-1.41	1.19/-1.14	1.25/-1.18	0.70/-7.1	0.79/-0.82	0.21/-0.39	-1.11/-1.66	-1.39/-1.3	-1.93/-2.61	-1.96/-0.76	-0.41/-0.5	-0.40/-0.2	0.59/-0.53	-0.22/-0.59	-0.51/-0.74	-1.16/-0.33	0.06/-0.93	-2.38/-1.29	-0.49/-1.62	-3.42/-2.12
Θ(82.5°)	-2.47/-2.25	-2.93/-2.29	-0.31/-0.98	1.52/-1.56	1.52/-1.35	0.84/-0.38	0.34/-0.19	-0.44/-0.31	-0.17/-0.11	-0.58/-1.16	-2.02/-2.79	-2.41/-2.68	-3.53/-4.79	-3.86/-1.73	-0.84/-0.99	-1.62/-1.46	-0.51/-0.44	-1.71/-1.3	-2.94/-2.89	-3.43/-1.9	-1.29/-2.81	-4.26/-2.58	-2.06/-3.76	-5.41/-3.72
Θ(90°)	-4.16/-3.89	-4.73/-3.21	-1.11/-0.12	0.74/-0.82	0.89/-0.91	0.35/-0.19	-0.05/-0.11	-0.73/-1.25	-0.99/-0.94	-1.33/-2.14	-3.42/-4.25	-3.91/-3.69	-4.37/-4.83	-3.61/-2.02	-1.71/-2.88	-4.79/-4.03	-1.92/-1.62	-3.75/-6.07	-4.98/-5.12	-5.91/-2.84	-2.03/-4.17	-6.55/-3.2	-2.43/-4.6	-7.22/-5.42
Θ(97.5°)	-4.65/-4.18	-4.93/-4.13	-1.97/-0.74	-0.04/-0.08	0.09/-0.14	-0.61/-1.78	-1.66/-1.46	-1.87/-1.82	-1.76/-2.2	-2.95/-3.74	-4.52/-4.86	-4.54/-4.82	-4.9/-5.79	-5.71/-4.39	-4.59/-6.49	-7.26/-5.51	-4.2/-5.04	-7.48/-5.44	-3.49/-4.31	-6.08/-3.51	-3.01/-5.88	-10.04/-5.53	-4.14/-6.44	-8.88/-5.95
Θ(105°)	-5.35/-5.08	-5.11/-4.03	-2.24/-1.22	-0.61/-0.56	-0.81/-0.7	-1.02/-1.99	-2.49/-2.61	-3.31/-3.68	-3.55/-3.54	-3.72/-3.96	-4.86/-5.68	-6.68/-6.31	-5.9/-6.24	-4.98/-4.02	-5.23/-8.25	-11.02/-10.52	-7.35/-6	-6.01/-4.26	-2.93/-4.47	-8.63/-6.21	-5.98/-10.77	-13.55/-6.96	-5.08/-6.71	-9.02/-6.05
Θ(112.5°)	-4.46/-4.72	-5.63/-4.82	-2.76/-1.71	-1.05/-0.82	-1.32/-2.07	-2.87/-3.95	-4.28/-4.25	-4.73/-4.52	-4.25/-4.08	-4.33/-5.37	-7.04/-7.38	-6.4/-4.86	-4.42/-5.18	-6.39/-7.77	-10.3/-9.99	-8.61/-5.7	-5.9/-5.78	-8.17/-8.57	-6.75/-8.39	-7.81/-4.95	-5.26/-10.13	-13.48/-8.97	-6.73/-7.42	-7.81/-5.17
Θ(120°)	-3.71/-3.61	-4.41/-4.76	-3.37/-2.54	-2.29/-2.01	-2/-2.36	-2.97/-3.8	-4.44/-4.61	-4.98/-5.34	-5.5/-5.63	-6.35/-7.29	-7.71/-7.28	-7.2/-6.35	-6.9/-8.49	-6.88/-4.73	-4.25/-4.43	-5.59/-7.77	-9.65/-11.91	-12.09/-6.17	-3.88/-4.57	-6.64/-6.83	-7.62/-12.46	-15.47/-9.76	-8.03/-7.23	-7.75/-5.04
Θ(127.5°)	-4.32/-3.75	-4.17/-4.53	-3.43/-2.63	-2.73/-3.25	-2.81/-4.35	-4.79/-5.14	-5.21/-5.28	-5.89/-7.01	-7.18/-7.07	-7.29/-7.87	-8.45/-8.61	-8.73/-7.91	-5.21/-5.92	-4.27/-4.23	-5.83/-8.56	-12.28/-10.79	-8.71/-8.08	-7.39/-5.38	-4.72/-6.58	-10.61/-13.03	-14.54/-14.81	-10.05/-8.14	-7.35/-6.18	-6.26/-5.46
Θ(135°)	-3.39/-3.19	-3.71/-4.44	-4.34/-3.83	-3.92/-4.46	-5.24/-6.21	-7.19/-7.85	-8.19/-8.67	-8.43/-8	-7.76/-7.85	-8.67/-10.15	-10.23/-9.92	-8.66/-7.99	-7.92/-7.95	-7.76/-8.39	-9.28/-8.94	-7.71/-6.55	-5.97/-5.9	-6.87/-7.64	-8.57/-11.68	-15.19/-14.02	-14.6/-15.26	-11.91/-8.71	-7.76/-6.69	-5.34/-4.19
Θ(142.5°)	-3.44/-2.87	-3.12/-3.51	-3.58/-3.65	-4.71/-5.14	-6.07/-6.1	-7.23/-7.43	-7.2/-6.96	-7.07/-7.44	-8.08/-9.65	-11.73/-11.87	-10.81/-10.23	-9.52/-9.58	-9.89/-9.5	-8.72/-7.97	-6.88/-6.12	-5.77/-5.53	-5.57/-6.35	-7.92/-9.69	-13.28/-15.84	-11.96/-9.64	-10.55/-14.53	-13.82/-10.87	-9.74/-9.5	-7.64/-5.22
Θ(150°)	-6.45/-4.9	-4.31/-3.99	-3.58/-3.33	-3.66/-4.49	-5.45/-6.14	-6.48/-6.54	-6.43/-6.54	-7.15/-7.98	-8.91/-10.18	-11.14/-11.3	-11.35/-11.32	-11.89/-12.78	-12.14/-10.34	-6.92/-5.84	-5.92/-5.62	-5.54/-5.62	-5.89/-6.78	-7.78/-10.35	-14.68/-16.07	-11.6/-9.7	-9.68/-10.5	-12.71/-11.97	-11.51/-11.53	-11.47/-9.09
Θ(157.5°)	-10.89/-8.61	-6.99/-5.99	-5.28/-4.86	-4.97/-5.56	-6.39/-7.15	-7.54/-7.48	-7.14/-7.03	-7.24/-7.76	-8.45/-9.65	-10.71/-11.65	-11.58/-11.64	-11.52/-10.69	-9.24/-7.82	-6.74/-6.18	-6.19/-6.55	-7.09/-7.6	-7.28/-7.46	-8.12/-9.69	-12.76/-14.74	-14.25/-11.21	-10.65/-10.89	-11.31/-12.72	-12.45/-12.93	-13.64/-12.78
Θ(165°)	-13.11/-10.79	-8.88/-7.63	-6.84/-6.42	-6.36/-6.62	-7.21/-7.99	-8.66/-8.97	-9.04/-8.95	-8.99/-9.28	-10.01/-10.98	-11.9/-12.09	-10.87/-10.14	-9.74/-8.92	-8.56/-8.79	-8.6/-8.55	-8.66/-8.43	-8.28/-8.58	-7.55/-6.81	-6.73/-7.55	-9.27/-11.68	-13.99/-13.61	-12.23/-12.41	-13.05/-13.59	-13.57/-14.67	-15.44/-14.82
Θ(172.5°)	-10.68/-9.26	-8.17/-7.48	-7.02/-6.74	-6.64/-6.59	-6.71/-7.08	-7.64/-8.1	-8.54/-9.15	-10.11/-11.37	-13/-14.29	-14.74/-13.9	-12.33/-11.05	-10.8/-10.16	-10.74/-10.72	-10.58/-10.45	-9.67/-9.26	-8.61/-8.33	-8.65/-9.59	-11.05/-13.23	-14.75/-15.28	-14.78/-14.5	-15.12/-15.35	-15.31/-15.12	-13.26/-11.81	
Θ(180°)	-8.96/-8.3	-7.5/-6.94	-6.63/-6.53	-6.5/-6.46	-6.42/-6.56	-6.9/-7.46	-8.41/-9.27	-11.15/-12.28	-13.73/-14.02	-14.58/-15.45	-15.01/-15.71	-13.66/-13.01	-13.2/-13	-12.44/-11.63	-10.55/-10.27	-9.73/-9.63	-9.5/-9.85	-10.75/-11.93	-13.65/-14.97	-15/-14.3	-14.02/-13.25	-13.43/-13.58	-14.93/-14.56	-12.13/-10.29
Freq(Hz)	2.450/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°)	-6.47/-6.44	-6.36/-6.58	-7.26/-8.47	-10.2/-12.41	-15.09/-15.02	-15.21/-16.26	-13.51/-11.16	-9.61/-8.94	-8.73/-8.61	-8.18/-7.65	-7.13/-6.85	-6.82/-7.15	-7.72/-8.55	-9.51/-10.41	-11.54/-12.47	-13.51/-14.58	-15.02/-15.32	-13.55/-12	-10.42/-8.76	-7.65/-7.1	-6.68/-6.23	-5.63/-5.13	-4.91/-5.04	-5.41/-5.83
Θ(7.5°)	-9/-8.93	-8.76/-9.06	-9.97/-11.42	-12.33/-11.83	-11.3/-10.55	-10.25/-9.09	-7.98/-6.55	-5.73/-5.32	-5.12/-4.98	-4.85/-4.31	-4.03/-3.69	-3.77/-4.21	-4.54/-5.01	-5.62/-5.82	-6.55/-7.05	-7.77/-8.73	-10.51/-12.83	-15.48/-15.28	-14.49/-13.86	-12.29/-11.16	-10.29/-9.52	-8.83/-8.23	-7.95/-7.95	-8.27/-8.74
Θ(15°)	-8.89/-8.09	-7.64/-7.6	-7.62/-7.12	-6.19/-5.38	-5.13/-5.37	-5.81/-5.43	-5.31/-4.6	-4.04/-3.63	-3.27/-2.97	-2.74/-2.4	-2.22/-2.05	-2.01/-2.22	-2.36/-2.76	-3.22/-3.68	-4.13/-5.16	-6.68/-8.78	-10.49/-11.81	-11.89/-11.63	-11.78/-11.84	-11.71/-10.77	-10.98/-10.52	-10.94/-10.34	-10.94/-10.34	
Θ(22.5°)	-5.44/-4.6	-4.03/-3.83	-3.66/-3.14	-2.41/-1.96	-2.04/-2.58	-3.37/-4.02	-4.22/-4.02	-3.56/-3.11	-2.68/-2.33	-2/-1.67	-1.18/-1.02	-0.99/-0.84	-0.75/-0.83	-0.94/-1.18	-1.54/-1.79	-2.21/-3.49	-5.16/-7.38	-9.32/-10.27	-10.33/-10.46	-10.13/-10.08	-10.11/-10.06	-9.77/-9.3	-8.62/-7.93	-7.2/-6.4
Θ(30°)	-3.35/-2.18	-1.37/-1.07	-1.03/-0.84	-0.4/-0.2	-0.54/-1.46	-2.61/-3.7	-4.31/-4.23	-3.67/-3.18	-2.87/-2.69	-2.45/-2.11	-1.58/-0.98	-0.46/-0.14	0.03/-0.1	-0.2/-0.3	-0.38/-0.52	-1.02/-2.26	-4.31/-7.16	-8.77/-8.27	-7.47/-7.77	-7.98/-8.22	-8.15/-8.2	-8.27/-8.12	-7.57/-6.81	-5.84/-4.63
Θ(37.5°)	-2/-0.59	0.36/-0.67	0.52/-0.4	0.54/-0.46	-0.2/-1.37	-2.68/-3.7	-4.21/-3.97	-3.3/-2.81	-2.7/-2.87	-3.02/-2.91	-2.45/-1.58	-0.54/-0.23	0.6/-0.7	0.57/-0.28	0.16/-0.05	-0.34/-1.5	-3.66/-6.27	-6.85/-5.94	-4.96/-4.97	-5.47/-6	-6.4/-6.44	-6.81/-7.04	-6.95/-5.91	-4.77/-3.48
Θ(4																								



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Freq(Hz)	2.45G
Ant. 3 Max Gain (dBi)	4.97
Ant. 4 Max Gain (dBi)	3.83
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/30/240
Ant. 4 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/352.5
Max Gain (dBi)	4.97
DG [1SS] (dBi)	4.66
DG [1SS] (dBi) Revised	4.97
DG [2SS] (dBi)	4.97



Radiated Composite Gain Data of 2.4GHz_2TX-Ant3&4

Appendix A.3

DG 1SS Result

Freq(Hz)	2450/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°)	-7.26/-6.78	-6.41/-5.97	-5.59/-5.31	-5.09/-4.98	-4.98/-5.1	-5.26/-5.44	-5.51/-5.65	-5.85/-5.98	-6.36/-6.9	-7.59/-8.55	-9.31/-9.69	-9.25/-8.38	-7.53/-6.72	-6.18/-6	-6.03/-6.17	-6.32/-6.34	-6.43/-6.68	-6.66/-6.63	-6.57/-6.56	-6.86/-7.8	-8.22/-8.68	-8.97/-8.9	-8.64/-8.34	-7.95/-7.57
Θ(7.5°)	-5.86/-5.63	-5.44/-5.12	-4.85/-4.76	-4.82/-4.97	-5.22/-5.5	-5.79/-6.02	-6.03/-6.02	-6.14/-6.23	-6.34/-6.44	-6.78/-7.2	-7.49/-7.44	-6.88/-6.01	-5.08/-4.13	-3.41/-2.96	-2.74/-2.61	-2.45/-2.22	-2.09/-2.02	-1.97/-1.96	-2.05/-2.31	-2.75/-3.34	-3.95/-4.53	-4.96/-5.29	-5.58/-5.87	-6.07/-6.05
Θ(15°)	-2.68/-2.53	-2.42/-2.24	-2.04/-1.96	-1.98/-2.07	-2.21/-2.27	-2.32/-2.4	-2.51/-2.63	-2.9/-3.09	-3.2/-3.23	-3.34/-3.58	-3.87/-3.92	-3.71/-3.1	-2.27/-1.31	-0.32/-0.43	0.91/1.19	1.33/1.39	1.36/1.25	1.18/1.05	0.84/0.5	0.03/-0.47	-0.95/-1.38	-1.7/-2.05	-2.38/-2.71	-2.9/-2.84
Θ(22.5°)	0.02/0.16	0.24/0.33	0.40/43	0.40/43	0.36/0.23	0.1/-0	-0.2/-0.44	-0.75/-1.12	-1.62/-1.85	-2.09/-1.88	-1.63/-1.51	-1.43/-1.24	-0.81/-0.15	0.64/1.56	2.44/3.12	3.56/3.77	3.72/3.5	3.17/2.9	2.66/2.39	2.04/1.57	1.07/0.6	0.22/-0.07	-0.28/-0.44	-0.58/-0.66
Θ(30°)	1.54/1.88	2.15/2.3	2.39/2.41	2.41/2.35	2.23/2.01	1.68/1.32	1.07/0.82	0.42/-0.14	-0.54/-0.78	-0.81/-0.29	0.15/0.66	1.25/1.95	2.66/3.36	4.04/4.66	4.32/4.43	4.23/7	3.87/3.38	2.99/2.58	2.08/1.5	0.89/0.38	0.07/-0.07	-0.09/-0.05	0.05/0.24	0.65/1.16
Θ(37.5°)	2.02/2.63	3.17/2.63	2.83/69	3.75/3.71	3.55/3.16	2.55/1.99	1.69/1.55	1.33/0.96	0.37/0.23	0.26/0.63	1.2/1.82	2.57/3.42	4.12/3.89	4.28/3.87	4.11/4.11	3.72/2.99	2.99/3.2	2.65/2.04	1.38/0.69	0.08/-0.31	-0.45/-0.4	-0.32/-0.2	0.01/0.47	0.84/1.48
Θ(45°)	2.05/1.84	2.65/3.1	3.33/3.46	3.58/3.31	4.06/3.45	2.53/1.68	1.34/1.35	1.31/1.11	0.75/0.71	0.91/1.25	1.64/1.94	2.49/3.38	3.4/3.88	3.32/3.54	3.8/3.83	3.44/3.45	2.5/2.57	1.8/0.92	0.03/-0.71	-1.09/-1.12	-0.91/-0.64	-0.42/-0.26	-0.01/0.42	1.01/1.54
Θ(52.5°)	1.81/2.8	2.75/3.24	3.53/64	3.69/4.32	3.87/2.97	1.71/0.68	0.67/0.99	1.11/1.01	0.92/1.04	1.29/1.48	1.79/1.84	2.08/2.89	3.59/3.14	3.19/3.42	3/3.11	3.46/2.65	2.68/1.85	0.79/-0.33	-1.29/-1.73	-1.66/-1.27	-0.81/-0.38	-0.07/0.13	0.2/0.42	0.83/1.3
Θ(60°)	1.59/2.55	3.31/2.92	3.17/3.22	3.51/3.47	2.74/1.53	-0.18/-1.05	-0.10/-62	0.82/0.74	0.84/1.11	1.03/0.66	0.79/0.7	0.45/1.31	2.37/2.91	2.87/2.8	3.31/3.56	3.15/2.4	1.8/1.01	-0.25/-1.6	-2.04/-1.82	-1.71/-1.51	-1.01/-0.53	-0.22/-0.1	-0.11/-0.32	0.09/0.58
Θ(67.5°)	1.01/1.8	2.42/2.83	2.18/2.98	2.58/1.94	1.07/-0.19	-1.75/-1.97	-0.84/-0.02	0.1/-0.07	0.29/0.79	0.58/-0.06	0.12/-0.57	-1.75/-0.27	1.12/1.67	1.42/1.42	2.25/2.58	2.16/1.38	0.81/-0.05	-1.56/-2.97	-2.44/-1.55	-1.37/-1.48	-1.23/-0.85	-0.62/-0.74	-1.05/-1.03	-0.81/0.15
Θ(75°)	-0.07/0.39	0.91/1.44	1.83/1.86	1.45/0.76	-0.01/-0.91	-2.1/-2.82	-1.89/-0.82	-0.56/-0.85	-0.35/0.27	-0.03/-1.09	-0.93/-1.34	-3.4/-3.43	-1.55/-0.8	-1.07/-0.81	0.46/0.95	0.7/0.2	0.01/-0.65	-2.16/-3.72	-3.09/-1.91	-1.72/-1.93	-1.82/-1.46	-1.26/-1.54	-1.53/-1.58	-1.28/-0.6
Θ(82.5°)	-1.45/-1.18	-0.59/0.16	0.79/1.05	0.79/0.22	-0.44/-1.24	-2.51/-3.59	-2.65/-1.37	-1.23/-2.29	-2.32/-1.61	-2.01/-3.49	-6.85/-6.13	-3.85/-2.89	-3.22/-2.83	-1.65/-0.85	-1.09/-1.32	-0.96/-1.51	-3.31/-4.89	-3.42/-2.29	-2.53/-3.25	-2.9/-2.57	-3.31/-4.89	-2.47/-2.71	-2.96/-2.9	-2.3/-1.66
Θ(90°)	-2.18/-1.95	-1.36/-0.51	0.1/0.23	-0.17/-0.88	-1.55/-2.3	-3.33/-3.93	-2.9/-1.6	-1.7/-3.73	-4.4/-2.92	-3.17/-4.28	-3.38/-3.59	-7.18/-9.68	-6.57/-4.95	-5.04/-5.82	-3.67/-2.05	-2.18/-2.77	-2.2/-2.23	-3.86/-6.63	-5.44/-3.55	-3.46/-3.8	-3.65/-3.35	-3.36/-3.51	-4.22/-4	-3.6/-2.61
Θ(97.5°)	-4.01/-3.35	-2.31/-1.24	-0.74/-0.88	-1.54/-2.21	-2.52/-2.72	-3.27/-3.87	-3.34/-2.35	-2.86/-5.53	-4.55/-3.34	-4.19/-5.44	-4.09/-4.49	-9.16/-10.51	-7.45/-6.36	-6.79/-7	-4.35/-3.35	-3.97/-4.5	-3.48/-3	-4.1/-6.41	-5.89/-3.87	-3.37/-3.84	-4.18/-4.01	-3.79/-4.1	-5.07/-5.63	-5.4/-4.74
Θ(105°)	-5.02/-4.38	-3.29/-2.15	-1.44/-1.49	-2.24/-3.17	-3.74/-4.33	-5.41/-6.16	-4.31/-2.54	-2.87/-5.49	-6.14/-5.01	-5.82/-7.83	-6.15/-5.39	-9.02/-12.5	-8.72/-8	-8.55/-8.56	-5.47/-3.86	-4.04/-5.16	-5.07/-4.26	-4.9/-7.4	-7.95/-5.39	-4.56/-5.06	-5.64/-5.4	-4.78/-4.58	-5.41/-6.22	-5.89/-5.16
Θ(112.5°)	-5.54/-5.77	-5.25/-4.09	-3.04/-2.6	-2.71/-2.94	-3.32/-3.95	-4.65/-4.24	-2.71/-1.82	-2.94/-6.59	-8.03/-5.88	-6.29/-8.27	-6.42/-6.04	-10.28/-11.81	-9.27/-9.92	-11.03/-10.63	-8.4/-5.45	-5.26/-6.15	-5.55/-4.47	-4.57/-6.31	-7.83/-6.67	-6.14/-6.74	-7.12/-10.08	-7.13/-6.97	-7.02/-6.88	-5.39/-5.21
Θ(120°)	-7.99/-7.92	-7.12/-5.63	-4.1/-2.97	-2.42/-2.29	-2.57/-3.43	-4.64/-5.63	-5.66/-5.53	-7.09/-9.1	-6.39/-4.68	-5.63/-10.58	-10.91/-8.85	-11.68/-12.19	-9.54/-9.61	-9.41/-8.95	-8.15/-6.3	-6.65/-9.28	-10.68/-8.7	-7.48/-8.61	-9.71/-8.81	-8.01/-8.83	-8.22/-8.23	-7.92/-7.19	-6.9/-7.46	-7.57/-7.93
Θ(127.5°)	-7.32/-6.18	-5.47/-5.33	-4.97/-4.49	-4.6/-5.16	-6.08/-7.83	-9.66/-8.53	-6.07/-4.85	-4.77/-4.66	-3.92/-3.86	-5.92/-11.49	-8.3/-7.32	-9.76/-12.61	-14.66/-11.94	-9.66/-7.65	-5.44/-4.1	-4.45/-6.07	-7.58/-7.22	-6.22/-6.18	-7.41/-9.33	-10.68/-10.74	-11.34/-11.39	-10.58/-9.06	-8.35/-9.39	-9.41/-9.97
Θ(135°)	-8.35/-7.6	-7.57/-8.37	-8.75/-8.5	-8.21/-6.22	-4.85/-4.27	-3.86/-3.12	-2.41/-2.12	-2.42/-3.2	-4.32/-5.82	-8.54/-9.3	-6.75/-6.08	-7.06/-8.43	-8.65/-8.11	-7.23/-7.03	-6.12/-4.75	-4.88/-6.4	-8.61/-9.17	-7.45/-6.15	-6.14/-6.96	-7.97/-8.74	-9.12/-9.95	-11.63/-12.32	-12.29/-11.72	-11.15/-10.13
Θ(142.5°)	-12.51/-12.32	-11.77/-9.73	-7.76/-6.11	-5.01/-4.04	-3.24/-2.83	-2.8/-3.12	-3.65/-4.41	-5.68/-7.61	-10.3/-12.84	-12.96/-9.58	-7.31/-6.78	-7.33/-7.95	-7.74/-6.97	-6.04/-5.51	-4.85/-4.2	-4.23/-5.06	-6.85/-9.43	-10.27/-10.02	-9.59/-10.29	-11.54/-12.19	-11.49/-11.07	-11.64/-13.01	-13.83/-13.2	-12.93/-12.52
Θ(150°)	-10.59/-9.3	-7.96/-6.85	-5.9/-5.09	-4.59/-4.47	-4.58/-5	-5.98/-7.73	-10.43/-13.43	-14.26/-13.55	-12.67/-12.64	-13.04/-10.65	-8.55/-7.75	-8.34/-9.93	-11.23/-10.46	-8.64/-7.01	-6.06/-5.32	-4.89/-4.87	-5.48/-6.51	-7.09/-7.64	-7.38/-7.56	-8.55/-10.43	-12.19/-12.52	-12.33/-13.12	-14.55/-14.22	-12.79/-11.59
Θ(157.5°)	-7.21/-6.31	-5.71/-5.38	-5.24/-5.29	-5.6/-6.32	-7.54/-9.32	-11.88/-13.84	-14.88/-12.66	-10.54/-9.96	-10.65/-11.94	-14.45/-14.87	-12.87/-12.08	-12.21/-14.45	-15.22/-15.67	-12.66/-10.32	-8.76/-7.91	-7.37/-7.08	-7.27/-7.49	-7.38/-6.91	-6.78/-6.67	-6.95/-7.71	-8.66/-9.69	-10.69/-11.84	-12.76/-12.15	-10.4/-8.49
Θ(165°)	-8.77/-8.24	-8.06/-8.13	-8.37/-8.92	-9.7/-10.79	-11.73/-11.87	-11.44/-10.96	-10.56/-10.03	-9.61/-10.21	-10.66/-12.84	-15.4/-14.58	-15.18/-15.56	-15.79/-15.15	-15.45/-16.25	-15.76/-13.79	-11.87/-10.37	-9.87/-9.33	-9.66/-9.74	-9.51/-8.78	-8.09/-8.24	-8.58/-9.42	-9.99/-11.3	-12.42/-13.67	-13.44/-12.91	-11.96/-9.74
Θ(172.5°)	-14.6/-14.55	-13.87/-14.22	-13.62/-14.13	-14.5/-13.04	-12.04/-11.34	-10.73/-9.68	-9.45/-9.7	-9.82/-10.84	-11.79/-13.12	-15.33/-15.68	-15.63/-15.74	-15.38/-15.59	-14.93/-15.09	-14/-12.46	-11.71/-10.56	-10.23/-10.27	-10.41/-10.48	-9.74/-10.18	-9.96/-10.41	-10.78/-11.36	-12.36/-13.32	-14.35/-15.13	-15.65/-15.55	-14.85/-14.26
Θ(180°)	-16.01/-14.24	-15/-14.65	-14.02/-13.41	-12.23/-11.54	-11.1/-10.58	-11/-11.04	-10.63/-11.8	-12.85/-14.63	-15.37/-14.94	-15.69/-15.33	-14.87/-15.31	-15/-15.28	-15.51/-14.55	-12.9/-11.62	-10.93/-10.71	-10.38/-10.46	-10.26/-9.76	-9.71/-10.04	-10.24/-10.69	-10.62/-11.32	-11.48/-11.62	-11.84/-12.11	-12.38/-13.22	-13.73/-14.75
Freq(Hz)	2450/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°)	-7.36/-8.2	-8.69/-8.83	-9.14/-9.58	-10.05/-10.3	-9.96/-9.5	-8.92/-8.04	-7.04/-6.32	-5.82/-5.7	-5.53/-5.54	-5.53/-5.39	-5.21/-5.14	-5.22/-5.39	-5.72/-6.27	-7/-7.75	-8.56/-9.36	-10.04/-10.36	-10.13/-9.51	-8.67/-7.95	-7.45/-7.07	-6.59/-6.13	-5.88/-5.86	-6.04/-6.28	-6.49/-6.78	-7.03/-7.19
Θ(7.5°)	-4.7/-5.23	-5.57/-6.1	-6.39/-6.82	-7.28/-7.69	-7.95/-8.32	-8.98/-9.75	-9.79/-9.34	-8.96/-8.9	-8.99/-9.13	-9.1/-8.98	-8.98/-9.05	-9.12/-9.13	-9.16/-9.46	-9.79/-9.86	-9.38/-8.43	-7.3/-6.37	-5.58/-4.99	-4.55/-4.25	-4.08/4	-3.91/-3.77	-3.72/-3.7	-3.78/-3.96	-4.18/-4.43	-4.4/-4.47
Θ(15°)	-2.79/-3.08	-3.41/-3.69	-4.13/-4.64	-4.96/-5.22	-5.43/-5.77	-6.39/-7.26	-8.19/-9	-9.8/-9.76	-10.4/-10.66	-11.08/-11.63	-11.96/-11.89	-10.55/-10.24	-9.83/-8.86	-7.84/-6.69	-5.53/-4.45	-3.49/-2.81	-2.41/-2.28	-2.3/-2.4	-2.48/-2.52	-2.5/-2.38	-2.2/-2.02	-1.87/-1.85	-1.96/-2.13	-2.3/-2.54
Θ(22.5°)	-1.1/-1.29	-1.64/-1.89	-2.19/-2.59	-2.97/-3.74	-4.66/-5.32	-6.26/-7.33	-8.2/-8.4	-7.93/-7.21	-6.61/-6.36	-6.46/-6.78	-7.15/-7.2	-6.69/-6.26	-5.98/-4.94	-4.01/-3.22	-2.52/-1.88	-1.35/-1.08	-1.11/-1.36	-1.72/-2.08	-2.28/-2.22	-2/-1.68	-1.34/-0.99	-0.75/-0.61	-0.57/-0.59	-0.73/-0.95
Θ(30°)	0.15/0.07	-0.04/-0.2	-0.41/-0.89	-1.47/-2.46	-3.9/-6.19	-8.48/-10.34	-10.05/-8.29	-7.05/-6.04	-5.06/-4.27	-3.65/-3.34	-3.45/-3.88	-3.41/-3.25	-2.74/-1.88	-1.24/-0.85	-0.58/-0.41	-0.32/-0.39	-0.78/-1.44	-2.18/-2.81	-2.99/-2.66	-2.1/-1.52	-1.07/-0.73	-0.52/-0.37	-0.22/-0.05	0.09/0.17
Θ(37.5°)	0.92/0.98	0.95/0.89	0.76/0.41	-0.36/-1.55	-3.62/-6.45	-9.42/-8.81	-6.27/-4.71	-4.12/-3.94	-3.58/-2.8	-1.88/-1.47	-1.78/-2.35	-2.08/-1.42	-0.84/0	0.42/0.47	0.36/0.22	0.12/-0.18	-0.97/-2.06	-3.13/-3.65	-3.38/-2.71	-2.01/-1.45	-1.11/-0.89	-0.77/-0.67	-0.48/-0.11	0.35/0.72
Θ(45°)	0.99/1.1	1.08/1.07	1.09/0.																					



Freq(Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 2 Max Gain (dBi)	4.19	4.19	3.89	3.93
Ant. 4 Max Gain (dBi)	4.89	5.1	5.26	5.05
Ant. 2 Polarization/θ(°)/Φ(°)	Phi/60/202.5	Phi/60/202.5	Phi/52.5/15	Phi/37.5/105
Ant. 4 Polarization/θ(°)/Φ(°)	Theta/67.5/150	Theta/67.5/157.5	Theta/75/157.5	Theta/67.5/157.5
Max Gain (dBi)	4.89	5.1	5.26	5.05
DG [1SS] (dBi)	3.07	3.06	3.37	3.2
DG [1SS] (dBi) Revised	4.89	5.1	5.26	5.05
DG [2SS] (dBi)	4.89	5.1	5.26	5.05

DG 1SS Result

Freq(Hz)	5.2GPol.	PhiL	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
DGI(dB)	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)		
Θ(0°)	-0.094/-10.08	-8.9/-8.43	-7.83/-7.53	-7.4/-7.14	-6.72/-6.26	-6.47/-6.87	-7.14/-7.76	-8.81/-9.23	-9.05/-9.09	-10.15/-10.7	-10.82/-10.11	-9.69/-10.58	-10.8/-10.27	-10.11/-9.38	-8.91/-8.1	-7.9/-7.77	-8.12/-8.37	-6.8/-6.86	-6.22/-8.19	-8.81/-10.12	-11.16/-12.51	-11.98/-12.27	-12.1/-11.83	-12.12/-10.96		
Θ(7.5°)	-8.73/-7.57	-7.01/-7.53	-8.43/-9.33	-9.66/-9.43	-8.92/-8.78	-9.27/-9.52	-9.81/-10.22	-10.71/-11.03	-12.44/-14.36	-14.97/-14.99	-14.37/-13.21	-10.84/-10.27	-9.78/-8.31	-7.05/-6.61	-6.19/-5.39	-4.99/-4.49	-4.66/-4.71	-5.09/-5.08	-5.19/-4.98	-4.93/-5.55	-6.32/-6.73	-6.28/-6.34	-7.46/-8.4	-9.18/-9.49		
Θ(15°)	-5.72/-5.28	-4.75/-5.17	-6.12/-6.54	-6.36/-5.8	-5.99/-6.08	-5.91/-6.49	-6.94/-6.88	-6.2/-5.4	-4.77/-4.38	-4.31/-4.9	-5.58/-5.78	-5.58/-5.41	-4.11/-2.84	-2.04/-2.08	-2.48/-3.1	-3.54/-3.33	-3.31/-3.12	-3.21/-3.46	-3.66/-3.6	-3.82/-4.5	-4.62/-4.72	-3.71/-3.69	-4.14/-4.9	-5.03/-5.25		
Θ(22.5°)	-4/-3.32	-3.29/-3.72	-4.13/-3.76	-3.79/-3.14	-2.92/-2.21	-1.77/-1.96	-2.52/-3.42	-4.35/-3.76	-3.04/-2.64	-2.41/-2.12	-2.05/-2.29	-2.46/-2.11	-1.04/-0.19	0.1/0.32	-0.66/-0.4	-0.09/-0.01	-0.48/-0.93	-1.11/-1.24	-1.38/-1.56	-1.79/-1.79	-1.34/-1.24	-1.82/-2.48	-3.23/-4.05	-4.6/-4.59		
Θ(30°)	-3.19/-2.95	-2.42/-2.11	-1.87/-1.8	-1.66/-0.68	-0.10/-0.5	0.2/0.32	-0.42/-1.66	-1.20/-1	0.7/0.24	-1.36/-2.72	-2.34/-1.89	-1.38/-1.29	-1.39/-0.54	0.150/-9	0.020/-61	0.970/-68	0.430/-3	0.21/-0.13	-0.27/-0.49	-0.85/-0.83	-0.75/-1.32	-2.09/-2.2	-1.59/-1.88	-2.5/-3.08		
Θ(37.5°)	-1.06/-1.21	-0.74/-0.45	-0.32/-0.35	-0.62/-0.43	-0.210/-51	1.48/-1.64	0.750/-18	1.071/-61	1.250/-46	-0.62/-0.9	-0.52/-0.86	-0.7/-0.64	-1.34/-0.81	0.40/-18	-0.170/-62	1.24/-52	1.771/-77	1.74/-93	1.93/-135	0.93/-123	1.160/-1	-0.87/-1.29	-1.14/-0.79	-0.77/-0.97		
Θ(45°)	0.420/-91	0.931/-01	0.43/-0.15	-0.61/-0	0.877/-102	0.876/-69	0.571/-22	1.78/-1	1.19/-104	0.930/-57	0.820/-68	-0.260/-08	0.220/-53	0.911/-26	-0.480/-49	0.780/-43	0.13/-0.33	-0.061/-15	1.74/-32	0.770/-98	1.0/-06	-1.03/-0.79	-0.54/-0.72	-0.370/-1		
Θ(52.5°)	0.81/-16	1.160/-8	0.180/-32	0.55/-13	1/-0.31	0.381/-68	2.55/-28	2.532/-23	2.262/-56	1.26/-0.33	0.240/-6	0.011/-16	1.081/-53	2.672/-39	1.51/-56	0.39/-0.58	-0.8/-1.12	-0.680/-16	0.920/-84	0.22/-0.04	0.27/-0.43	-1.39/-1.1	-0.220/-79	0.690/-8		
Θ(60°)	0.431/-13	1.240/-94	0.840/-85	0.410/-78	0.950/-54	0.631/-31	2.192/-47	2.022/-38	1.931/-93	1.42/-0.42	-0.93/-0.12	-0.21/-03	1.752/-52	2.031/-65	0.66/-0.25	-1.05/-1.84	-2.2/-1.45	-0.16/-0.01	-0.24/-0.35	-0.38/-0.26	-1.25/-1.49	-0.640/-09	0.430/-53			
Θ(67.5°)	-0.840/-24	0.520/-08	0.540/-65	0.420/-73	0.43/-0.42	-0.26/-1.2	2.132/-09	2.132/-09	0.690/-42	-0.050/-6	-1.63/-1.4	-0.620/-62	0.891/-5	2.72/-42	1.230/-9	-0.19/-1.03	-1.26/-1.72	-1.76/-1.54	-0.45/-0.4	-0.15/-0.38	-1.12/-1.14	-1.75/-2.36	-1.32/-0.34	0.12/-0.19		
Θ(75°)	-2.46/-1.81	-1.22/-1.27	-0.78/-0.29	-0.5/-0.49	-0.34/-0.62	-0.860/-11	0.650/-74	-0.340/-01	-0.8/-1.15	-1.55/-2.23	-2.59/-2.48	-2.73/-0.85	-0.630/-84	0.230/-8	-0.4/-0.1	-2.74/-3.48	-2.15/-2.86	-2.34/-1.52	-0.9/-0.78	-0.920/-95	-1.91/-233	-3.1/-2.85	-2.1/-2.84	-1.81/-1.97		
Θ(82.5°)	-4.1/-2.91	-2.95/-2.94	-1.75/-1.31	-1.12/-1.71	-2.34/-2.87	-2.3/-0.72	-0.210/-04	-1.6/-1.73	-2/-2.22	-2.65/-3.14	-4.14/-3.34	-4.47/-2.53	-2.8/-1.32	-2.02/-0.93	-2.18/-2.86	-4.29/-5.36	-3.52/-3.77	-2.91/-2.33	-1.89/-1.41	-1.37/-1.55	-3.7/-4.72	-4.4/-4.64	-4.01/-4.5	-3.83/-3.93		
Θ(90°)	-6.25/-4.99	-4.33/-3.78	-2.84/-2.44	-2.66/-2.73	-3.09/-3.64	-4.09/-2.71	-2.16/-1.36	-1.9/-2.08	-3.72/-3.36	-3.45/-5.08	-4.84/-4.52	-6.4/-1.7	-4.55/-3.6	-4.9/-3.33	-2.82/-3.01	-7.66/-2.8	-4.9/-5.26	-3.54/-2.89	-3.86/-1.92	-2.1/-3.17	-5.82/-7.06	-6.23/-6.69	-5.52/-5.98	-6.25/-5.94		
Θ(97.5°)	-8.17/-6.23	-5.86/-5.95	-4.83/-5.56	-4.02/-5.46	-6.61/-6.51	-4.69/-2.93	-3.94/-4.2	-4.57/-4.34	-4.28/-4.49	-4.32/-6.56	-5.59/-6.1	-8.73/-5.09	-5.42/-5.03	-6.43/-4.24	-4.42/-3.72	-6.81/-9.09	-8.37/-9.68	-5.29/-5.35	-6.43/-3.42	-4.25/-6.5	-7.21/-7.82	-6.49/-8.06	-8.38/-4.99	-9.05/-6.88		
Θ(105°)	-9.75/-9.11	-6.52/-5.41	-6.04/-5.58	-4.9/-5.21	-6.42/-6.64	-6.3/-4.7	-4.23/-3.81	-5.1/-1.61	-6.07/-5.55	-5.02/-4.9	-6.46/-9.31	-8.7/-6.94	-7.95/-6.33	-7.91/-6.85	-5.8/-5.1	-7.26/-9.22	-13.02/-9.11	-8.32/-7.25	-9.14/-5.45	-6.56/-9.96	-9.49/-11.46	-10.31/-10.43	-11.18/-11.69	-11.1/-9.2		
Θ(112.5°)	-9.83/-10.16	-7.85/-6.68	-6.81/-6.39	-5.86/-6.47	-7.5/-6.26	-6.86/-6.85	-5.98/-5.14	-5.11/-6.23	-8.57/-8.18	-5.2/-10.45	-8.04/-9.04	-9.73/-9.98	-7.45/-6.53	-6.64/-7.66	-8.53/-7.95	-9.45/-12.59	-12.56/-11.88	-11.86/-11.86	-10.65/-13.72	-12.63/-14.12	-11.54/-12.72	-12.75/-13.65	-13.31/-9.34			
Θ(120°)	-10.72/-10.93	-9.42/-9.97	-6.35/-3.72	-7.14/-6.94	-9/-8.14	-5.9/-6.09	-6.37/-7.01	-6.36/-6.39	-10.58/-10.7	-8.99/-11.81	-9.92/-12.21	-12.66/-10.48	-6.57/-6.83	-9.47/-8.64	-7.86/-8.74	-12.11/-11.21	-12.8/-12.25	-14.67/-13.9	-11.64/-13.5	-10.34/-12.88	-13.35/-15.23	-14.25/-13.53	-13.99/-13.69	-13.83/-11.97		
Θ(127.5°)	-11.82/-8.4	-9.16/-10.97	-9.85/-10.25	-8.52/-8.73	-7.16/-8.79	-7.44/-6.27	-5.3/-6.78	-7.61/-9.19	-8.85/-9.9	-11.36/-12.81	-10.99/-13.91	-10.91/-13.56	-7.5/-9.55	-9.21/-10.6	-13.57/-7.98	-11.14/-13	-7.79/-10.37	-10.58/-13.7	-11.46/-9.88	-6.95/-8.76	-11.55/-13.3	-13.78/-13.84	-13.81/-9.19	-9.67/-12.28		
Θ(135°)	-11.61/-1.25	-1.15/-10.29	-1.18/-10.11	-9.85/-11.01	-9.56/-7.96	-7.55/-7.28	-8.57/-8.29	-8.61/-10.99	-12.33/-10.59	-12.86/-12.57	-15.19/-11.18	-11.31/-10.85	-9.6/-9.18	-14.77/-12.26	-8.89/-13.4	-12.37/-10.85	-9.07/-12.3	-11.31/-10.97	-8.69/-9.88	-6.86/-9.36	-14.18/-15.91	-15.51/-13.47	-15.23/-11.9	-10.11/-12		
Θ(142.5°)	-13.98/-13.28	-12.97/-13.16	-13.61/-12.84	-11.76/-10.35	-9.42/-10.77	-12.91/-10.55	-10.83/-13.42	-10.76/-11.27	-13.21/-13.87	-14.9/-14.54	-14.28/-11.99	-10.92/-15.03	-10.05/-13.46	-16.26/-12.65	-15.21/-15.22	-10.93/-8.5	-10.51/-15.88	-14.58/-10.27	-10.11/-11.09	-12.15/-11.44	-12.23/-13.97	-14.21/-14.89	-15.45/-13.12	-13.12/-12.72		
Θ(150°)	-15.3/-15.94	-14.89/-15.19	-14.11/-11.85	-14.97/-12.43	-14.14/-14.11	-12.46/-10	-9.47/-13.83	-13.66/-10.25	-9.86/-11.26	-13.35/-13.61	-14.94/-15.47	-15.75/-13.92	-12.86/-15.61	-13.29/-0.91	-9.68/-10.29	-8.45/-7.78	-10.02/-14.96	-14.86/-12.22	-12.01/-11.64	-11.87/-10.95	-11.9/-12.54	-14.36/-13.55	-12.98/-15.12			
Θ(157.5°)	-14.44/-15.08	-15.46/-15.16	-14.53/-14.91	-15.21/-14.05	-11.25/-11.72	-15.26/-14.02	-12.39/-13.48	-13.65/-13.36	-11.59/-11.21	-11.16/-12.33	-15.42/-15.42	-11.26/-9.23	-11.6/-13.03	-9.02/-8.71	-10.47/-10.36	-10.22/-10.97	-11.64/-11.62	-12.55/-13.58	-14.94/-12.86	-11.86/-11.41	-11.38/-13.18	-14.15/-15.74	-14.15/-15.74	-12.98/-15.12		
Θ(165°)	-14.21/-14.81	-15.58/-15.87	-14.45/-12.96	-11.12/-10.2	-10.82/-12.07	-15.59/-15.64	-14.83/-14.5	-15.63/-15.24	-15.64/-14.2	-14.23/-15.35	-15.58/-15.23	-14.48/-15.32	-15.24/-12.12	-9.99/-10.14	-11.61/-13.08	-13.49/-12.76	-11.14/-10.6	-10.34/-10.13	-10.3/-10.47	-11.37/-12.72	-14.55/-13.1	-12.29/-11.74	-12.13/-13.33	-14.44/-14.61		
Θ(172.5°)	-13.45/-14.38	-15.25/-15.95	-15.99/-14.32	-15.45/-15.26	-15.56/-15.08	-14.93/-16.19	-15.19/-15.79	-14.37/-12.41	-11.68/-10.99	-11.07/-13.21	-13.33/-14.94	-16.08/-15.38	-14.76/-15.22	-10.57/-10.65	-10.8/-10.45	-10.5/-10.25	-9.35/-9.87	-8.39/-8.08	-8.6/-9.2	-9.66/-11.55	-13.31/-14.38	-14.29/-13.26	-13.18/-12.76	-12.25/-12.7		
Θ(180°)	-15.57/-15.24	-14.99/-16.02	-13.53/-13.92	-13.13/-12.19	-12.01/-11.43	-11.48/-12.21	-11.88/-12.4	-12.42/-12.98	-12.78/-12.88	-13.41/-14.36	-14.89/-15.76	-15.42/-15.11	-12.94/-12.06	-11.68/-10.63	-10.47/-10.95	-9.35/-9.99	-10.04/-10.28	-10.35/-10.27	-11.19/-11.84	-11.92/-13.71	-15.87/-15.81	-13.65/-15.97	-15.53/-14.99			
Freq(Hz)	5.2GPol.	ThetaL	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
DGI(dB)	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)		
Θ(0°)	-8.79/-8.81	-8.9/-1.4	-10.01/-9.86	-11.34/-12.18	-11.26/-13.98	-12.16/-10.25	-8.97/-9.6	-10.02/-9.53	-9.77/-10.32	-9.77/-8.58	-8.59/-8.7	-8.85/-8.75	-8.06/-8.21	-9.25/-9.75	-9.51/-10.19	-10.79/-11.55	-11.1/-10.67	-9.89/-9.92	-9.25/-9.81	-9.63/-9.33	-8.77/-8.07	-7.61/-7.7	-8.69/-8.8	-8.51/-8.9		
Θ(7.5°)	-10.4/-9.7	-9.38/-8.97	-10.09/-10.87	-9.65/-9.79	-11.29/-13.99	-12.68/-10.65	-9.6/-10.36	-10.08/-9.06	-9.72/-8.27	-8.51/-7.65	-6.39/-6.36	-7.1/-7.69	-7.40/-8.17	-7.78/-8.59	-8.44/-9.18	-10.48/-11.97	-12.07/-12.01	-11.47/-11.9	-12.37/-14.34	-9.87/-10.36	-9.76/-10.86	-11.37/-9.73	-8.65/-9.06	-10.13/-10.82		
Θ(15°)	-7.24/-7.97	-7.43/-6.54	-6.58/-7.26	-8.33/-9.48	-11.15/-12.38	-12.02/-11.48	-10.91/-11.4	-11.17/-9.8	-7.43/-7.17	-7.68/-7.62	-6.31/-5.3	-5.25/-6.06	-6.55/-5.99	-6.03/-6.81	-7.19/-7.7	-8.49/-9.47	-9.78/-10.03	-9.35/-8.38	-8.64/-9.93	-10.66/-8.99	-8.04/-8.72	-9.74/-8.33	-6.45/-5.83	-5.76/-6.23		
Θ(22.5°)	-5.03/-5.93	-5.74/-5.16	-4.92/-5.4	-5.86/-6.19	-7.78/-10.17	-10.83/-9.97	-9.58/-9.31	-8.77/-7.19	-4.98/-3.91	-3.62/-3.74	-3.73/-3.44	-3.6/-6.1	-5.59/-5.92	-6.39/-6.78	-6.48/-7.07	-9.17/-10.57	-8.81/-7.56	-7.66/-8.28	-8.35/-8.43	-8.79/-8.46	-7.32/-6.49	-6.58/-7.17	-6.92/-7.54	-4.94/-6.61		
Θ(30°)	-4.58/-4.46	-3.99/-3.37	-3.63/-3.47	-4.44/-5.13	-7.08/-8.55	-8.95/-8.44	-8.83/-9.51	-9.42/-8.89	-6.87/-5.85	-4.84/-4.1	-2.43/-2.35	-2.83/-3.88	-5.48/-6.82	-6.59/-6.22	-6.72/-7.37	-6.35/-6.57	-5.53/-5.66	-4.57/-5.14	-4.96/-4.76	-4.42/-4.14	-4.51/-4.99	-4.45/-4.03	-4.61/-4.9			
Θ(37.5°)	-3.35/-3.52	-3.24/-2.27	-2.37/-3.51	-3.94/-3.97	-3.9/-5.22	-6.07/-5.41	-4.67/-4.27	-4.63/-4.64	-5.02/-4.87	-4.28/-3.04	-2.05/-1.39	-0.8/-0.42	-0.64/-1.6	-2.71/-4.37	-4.28/-2.96	-2.74/-2.54	-2.26/-2.56	-2.85/-2.04	-0.97/-0.76	-1.57/-2.26	-2.77/-3.61	-4.94/-5.09	-4.52/-3.85	-3.47/-3.19		
Θ(45°)	-1.96/-2.77	-3.58/-2.8	-2.11/-2.25	-2.7/-2.07	-1.65/-5.08	-4.89/-4.75																				



Radiated Composite Gain Data of 5GHz_2TX

Appendix A.4

Θ(15°)	-1.98/-1.35	-1.36/-1.72	-1.98/-2.43	-2.72/-2.84	-3.26/-3.24	-3.84/-4.93	-5.38/-5.06	-5.85/-6.52	-6.71/-6.35	-6.36/-6.2	-5.93/-5.33	-3.98/-3.69	-3.9/-3.99	-3.83/-3.34	-2.84/-2.79	-2.89/-2.87	-2.56/-1.83	-1.34/-1.04	-1.06/-0.96	-1.14/-1.39	-1.65/-1.92	-2.16/-2.22	-2.39/-2.84	-3.1/-2.57
Θ(22.5°)	-0.20/-1.4	-0.26/-0.48	-0.74/-1.02	-0.92/-0.41	0.04/-0.12	-0.74/-2.03	-2.78/-2.58	-2.37/-2.58	-3.19/-2.84	-2.49/-2.23	-2.54/-3.21	-2.76/-1.77	-1.31/-1.36	-1.35/-1.18	-0.77/-0.5	-0.28/-0.08	0.43/-1.4	1.83/-0.9	1.95/-1.68	0.85/-0.42	0.28/-0.37	-1.31/-2.2	-2.2/-1.55	-1.12/-0.9
Θ(35°)	-0.39/-1	0.14/-0.49	-0.43/-0.03	0.13/-0.01	0.37/-0.59	0.05/-0.7	-0.83/-0.46	-0.61/-0.5	0.22/-0.73	0.37/-0.72	-1.49/-0.93	-0.94/-1.56	-0.93/-0.21	-0.07/-0.13	0.84/-1.89	2.39/-2.32	2.32/-13	1.47/-1.25	0.38/-0.37	-0.57/-0.19	-0.38/-0.95	-1.56/-1.61	-1.51/-1.42	-1.07/-0.62
Θ(37.5°)	-0.28/-0.49	0.55/-0.1	-0.21/-0.68	0.63/-0	0.43/-0.34	-0.01/-0.55	1.06/-1.33	1.54/-1.59	1.78/-1.56	0.63/-0.35	-0.84/-0.98	-0.69/-0.43	-1.7/-0.83	0.31/-0.82	1.15/-1.86	2.47/-0.7	3.09/-2.47	1.88/-1.42	1.11/-1.1	1.78/-1.97	1.42/-0.06	-1.44/-1.66	-1.09/-0.56	-1.13/-0.96
Θ(45°)	-0.15/-0.65	1.14/-0.68	0.28/-0.66	1.49/-1.04	0.87/-0.59	0.76/-1.76	1.74/-2.1	2.61/-2.33	1.83/-1.38	1.05/-0.51	0.16/-0.62	0.25/-0.26	0.68/-0.28	0.51/-0.8	1.21/-1.92	1.83/-1.07	0.41/-0.77	0.87/-0.55	1.21/-1.22	0.23/-0.25	-0.7/-0.72	-0.45/-0.02	-0.24/-0.34	
Θ(52.5°)	-0.28/-0.77	1.54/-1.25	1.16/-1.39	1.62/-0.61	0.86/-1.3	2.05/-2.96	2.27/-2.66	1.82/-1.73	2.11/-1.83	1.44/-0.3	0.51/-0.83	1.02/-1.58	1.29/-2.21	2.59/-1.74	0.80/-0.53	0.42/-0.26	-1.37/-2.64	-1.47/-0.18	0.06/-0.44	0.82/-0.37	-1.13/-1.9	-2.07/-1.33	0.12/-0.55	0.52/-0.03
Θ(60°)	0.19/-0.73	1.26/-1.31	1.63/-1.04	0.61/-0.53	1.96/-2.26	1.95/-2.79	2.38/-0.07	2.13/-2.73	2.22/-1.46	1.33/-0.26	-1.04/-0.07	0.57/-1.06	1.26/-2.49	3.18/-1.69	0.81/-0.9	-0.32/-1.4	-3.47/-5.13	4.63/-2.57	-0.79/-0.55	-1.18/-1.35	-1.17/-2.34	-3.1/-1.51	0.02/-1.15	0.61/-0.15
Θ(67.5°)	-0.77/-0.02	0.53/-0.72	0.72/-0.63	0.38/-0.93	0.87/-1.6	1.52/-2.37	1.44/-2.7	2.27/-1.3	1.47/-0.86	0.49/-0.52	-1.45/-0.57	-1.08/-0.4	1.84/-2.73	2.75/-1.15	0.06/-0.56	-1.33/-2.45	-4.36/-3.66	-3.93/-2.54	-1.67/-1.47	-1.05/-1.06	-1.58/-2.17	-2.89/-1.74	-0.98/-0.33	-0.53/-0.9
Θ(75°)	-1.98/-1.31	-0.31/-0.02	-0.71/-0.73	-0.7/-1.51	-1.24/-0.17	-0.47/-0.89	0.39/-1.17	0.85/-2.3	0.26/-0.09	-1.47/-1.4	-2.27/-1.16	-2.31/-1.9	-0.02/-1.35	1.62/-0.56	-0.24/-1.37	-2.11/-3.08	-4.79/-3.18	-3.49/-2.05	-0.88/-1.16	-0.75/-0.64	-1.89/-3.26	-3.56/-3.74	-3.45/-1.87	-1.96/-2.24
Θ(82.5°)	-3.87/-2.71	-1.76/-1.49	-1.86/-2.54	-2.79/-3.61	-3.52/-1.57	-2.03/-1.14	-1.28/-0.41	-1.02/-7	-1.37/-1.33	-3.33/-3.42	-3.56/-2.26	-4.12/-3.41	-0.61/-0.65	-0.17/-2.02	-1.17/-1.97	-2.14/-4.3	-4.61/-3.46	-3.67/-1.77	-0.86/-1.3	-0.71/-0.84	-2.78/-4.66	-4.66/-4.83	-5.32/-3.83	-4.38/-4.43
Θ(90°)	-5.55/-4.49	-3.28/-3.39	-2.72/-4.08	-4.35/-4.42	-6.43/-4.82	-5.75/-3.31	-2.22/-1.32	-2.31/-1.58	-1.66/-2.2	-4.52/-5.02	-4.28/-3.54	-5.87/-4.77	-3.06/-2.66	-2.58/-4.35	-3.31/-2.51	-3.37/-6.95	-6.06/-4.97	-4.59/-3.23	-2.18/-1.4	-1.07/-1.96	-3.09/-5.39	-8.37/-9.03	-6.96/-7.03	-6.05/-6.28
Θ(97.5°)	-7.16/-6.26	-4.54/-5.32	-5.18/-5.91	-6.22/-6.6	-7.52/-6.43	-8.17/-4.47	-2.9/-2.28	-4.26/-4.26	-1.38/-4.11	-4.94/-6.32	-5.76/-5.78	-7.17/-5.45	-4.73/-4.68	-4.55/-5.79	-3.74/-3.48	-6.85/-8.62	-1.07/-6.59	-5.58/-5.09	-4.28/-2.56	-2.59/-4.29	-6.77/-8.84	-10.16/-6.98	-9.28/-9.15	-8.29/-8.71
Θ(105°)	-9.14/-8.11	-6.02/-6.65	-6.4/-6.21	-7.99/-8.98	-9.02/-7.54	-8.52/-7.8	-5.96/-4	-5.6/-5.21	-4.73/-5.23	-4.27/-8.17	-7.36/-7.39	-8.51/-7.76	-7.29/-4.04	-6.52/-8.12	-4.75/-4.06	-6.72/-11.21	-14.34/-9.3	-7.43/-7.63	-8.45/-5.04	-4.71/-7.37	-9.98/-12.33	-10.57/-7.89	-11.78/-12.06	-10.16/-8.86
Θ(112.5°)	-11.22/-9.64	-6.82/-6.42	-7.52/-7.42	-8.74/-9.89	-9.37/-8.85	-8.14/-7.21	-6.81/-5.95	-6.93/-4.65	-8.51/-8.57	-6.45/-10.51	-7.57/-9	-9.74/-7.7	-7.25/-6.13	-7.36/-6.19	-6.23/-6.49	-6.69/-12.17	-13.31/-11.68	-13.15/-12.89	-13.03/-8.75	-9.8/-11.72	-12.51/-13.49	-13.48/-11.23	-14.79/-12.52	-11.35/-8.53
Θ(120°)	-11.25/-9.1	-9.33/-9.15	-9.8/-13	-9.19/-9.41	-9.36/-9.56	-8.74/-7.4	-7.52/-5.38	-8.96/-5.56	-9.88/-11.41	-10.46/-11.58	-7.73/-10.48	-9.1/-9.48	-7.47/-4.89	-6.36/-12.54	-8.13/-8.11	-10.64/-13.44	-12.38/-12.02	-14.73/-14.76	-11.57/-7.62	-9.7/-10.07	-10.44/-13.44	-14.65/-15.51	-16.4/-14.15	-11.79/-9.42
Θ(127.5°)	-11.24/-12	-13.02/-10.66	-7.57/-10.33	-12.67/-9.48	-7.39/-8.74	-10.65/-9.35	-8.3/-5.54	-8.1/-6.81	-11.28/-10.92	-10.03/-12.99	-10.44/-10.31	-12.99/-9.59	-6.84/-7.56	-8.75/-11.3	-15.52/-9.38	-14.98/-14.16	-10.2/-10.3	-10.92/-11.27	-8.67/-5.27	-7.78/-10.23	-11.42/-14.88	-14.82/-12.55	-13.11/-13.63	-12.55/-9.59
Θ(135°)	-0.13/-11.66	-14/-14.42	-11.6/-9.08	-10.3/-12.72	-12.04/-9.4	-7.39/-7.19	-8.47/-9.03	-10.41/-9.98	-9.8/-12.58	-11.42/-11.38	-14.07/-9.83	-9.84/-14.85	-9.9/-11.07	-10.45/-12.38	-8.74/-11.91	-12.53/-11.72	-8.33/-11.11	-10.43/-10.02	-11.29/-7.6	-6.11/-9.79	-14.23/-12.74	-13.47/-11.2	-12.65/-11.35	
Θ(142.5°)	-13.5/-12.93	-12.3/-12.84	-15.53/-14.74	-10.78/-9.94	-10.04/-9.77	-12.54/-12.28	-10.57/-10.79	-11.49/-11.44	-10.69/-13.12	-14.97/-15.39	-13.92/-13.58	-14.8/-12.4	-7.06/-10.05	-16.68/-10.14	-11.43/-15.81	-9.79/-12.23	-14/-12.56	-10.82/-12.14	-10.01/-12.2	-15.8/-14.37	-13.63/-15.81	-15.2/-14.11	-12.55/-14.11	
Θ(150°)	-15.98/-14.84	-14.62/-13.28	-14.92/-12.17	-11.17/-12.67	-13.57/-12.76	-15.76/-14.13	-11.1/-11.99	-15.17/-15.18	-11.34/-9.43	-10.3/-12.34	-15.15/-15.56	-15.5/-14.82	-15.67/-15.59	-11.3/-8.37	-11.58/-12.09	-9.15/-8.39	-12.08/-14.24	-10.03/-8.81	-9.92/-11.29	-9.19/-9.41	-11.65/-12.95	-13.3/-15.09	-15.57/-14.61	-13.64/-14.79
Θ(157.5°)	-14.77/-14.75	-15.79/-15.4	-12.93/-12.89	-15.61/-15.04	-10.36/-8.55	-10.35/-15.95	-15.33/-11.7	-11.71/-12.4	-11.82/-11.83	-11.5/-13.26	-13.44/-11.84	-11.68/-12.17	-14.82/-12.19	-8.01/-8.52	-9.72/-9.17	-9.75/-10.23	-11.69/-11.82	-10.52/-9.95	-11.82/-13.29	-13.33/-13.24	-12.58/-13.35	-15.12/-14.6	-13.8/-14.39	-15.18/-16.08
Θ(165°)	-12.94/-12.62	-13.73/-14.55	-15.42/-15.46	-14.93/-11.63	-10.09/-9.89	-12.29/-15.21	-14.45/-13.98	-14.94/-15.55	-13.73/-13.58	-14.46/-15.65	-15.2/-16.15	-15.61/-15.08	-12.18/-9.83	-9.99/-11.53	-12.16/-11.89	-12.32/-13.06	-13.76/-13.41	-11.85/-11.25	-11.15/-12.58	-13.89/-15.55	-14.8/-12.35	-11.71/-11.91	-12.81/-12.23	-12.88/-13.16
Θ(172.5°)	-14.03/-14.4	-15.02/-15.5	-14.62/-14.21	-14.56/-15.49	-15.34/-14.78	-15.16/-15.48	-14.4/-12.74	-12.77/-12.92	-12.55/-12.27	-11.33/-11.35	-13.43/-16.18	-14.73/-12.51	-12.43/-11.38	-11.01/-10.71	-10.46/-9.83	-9.64/-9.44	-9.95/-9.66	-9.55/-9.47	-9.35/-9.89	-10.06/-10.73	-11.26/-11.36	-11.41/-11.97	-12.78/-15.01	-14.78/-13.68
Θ(180°)	-15.07/-15.06	-15.28/-15.23	-15.09/-13.59	-13.97/-13.38	-13.83/-13.02	-12.86/-12.83	-12.52/-12.02	-14.33/-15.23	-14.62/-14.39	-15.51/-15.71	-15.28/-15.04	-15.13/-14.98	-15.21/-16.08	-15.49/-13.37	-12.24/-11.69	-10.33/-9.87	-9.51/-9.53	-9.43/-10.07	-10.54/-11.39	-12.01/-13.1	-13.85/-15.17	-14.98/-15.68	-15.16/-14.8	-16.14/-15.56
Freq(Hz)	5.66GPol.	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°)	-10.58/-11.48	-12.24/-13.19	-14.05/-14.54	-14.98/-14.29	-12.88/-11.95	-11.79/-11.31	-10.36/-10.08	-10.33/-10.71	-9.79/-9.37	-9.44/-10.17	-9.94/-9.61	-9.73/-9.98	-10.08/-9.95	-10.76/-11.92	-11.29/-11.19	-12.02/-11.68	-10.27/-9.42	-9.78/-10.1	-9.27/-8.58	-8.76/-8.55	-9.08/-8.59	-8.56/-8.81	-9.08/-9.15	-9.33/-9.49
Θ(7.5°)	-9.78/-9.79	-9.26/-9.01	-9.7/-11.4	-12.51/-12.9	-12.36/-11.54	-10.44/-9.45	-8.57/-7.99	-7.52/-7.1	-6.95/-6.31	-5.77/-5.93	-6.29/-7.24	-7.55/-7.68	-7.83/-9.21	-10.94/-12.46	-13.14/-13.12	-13.66/-13.29	-12.55/-12.85	-14.16/-15.59	-13.27/-12.22	-11.95/-12.06	-12.37/-12.06	-11.66/-11.7	-10.79/-9.82	-9.25/-9.79
Θ(15°)	-7.12/-6.61	-6.35/-7.1	-9.41/-10.76	-10.87/-10.45	-10.23/-10.1	-10.56/-10.81	-10.75/-10.07	-9.13/-8.63	-7.27/-5.65	-4.69/-4.14	-4.24/-4.52	-5.13/-5.72	-5.7/-6.66	-8.71/-10.2	-12.29/-13.49	-12.62/-12.4	-13.87/-15.67	-14.69/-15.28	-15.32/-13.25	-11.36/-9.47	-8.28/-1.79	-7.28/-7.23	-7.33/-7.46	
Θ(22.5°)	-6.23/-6.32	-5.46/-5.79	-7.47/-8.03	-8.31/-7.81	-6.86/-6.74	-7.38/-8.49	-9.05/-9.49	-8.16/-7.56	-7.57/-6.63	-4.94/-3.69	-3.07/-2.97	-3.23/-4.28	-5.47/-6.31	-5.31/-5.55	-6.97/-9.1	-10.55/-11.03	-8.03/-9.08	-10.75/-9.86	-6.43/-7.96	-7.75/-7.39	-7.02/-7.13	-6.43/-5.19	-4.23/-4.85	
Θ(30°)	-5.33/-5.47	-4.51/-4.3	-4.42/-4.66	-5.93/-6.9	-5.23/-4.9	-6.17/-7.96	-8.4/-7.85	-8.24/-8.82	-8.59/-6.32	-5.18/-4.08	-2.45/-2.14	-1.85/-1.48	-2.37/-4.84	-6.16/-7.21	-8.66/-8.62	-6.26/-4.34	-5.07/-5.38	-4.61/-3.04	-2.74/-3.04	-2.83/-3.06	-3.93/-4.91	-5.02/-4.89	-4.62/-4.89	-4.89/-4.66
Θ(37.5°)	-3.4/-4.28	-3.28/-3.23	-3.17/-3.48	-4.23/-1.52	-4.33/-4.35	-3.98/-5	-5.01/-5	-6.08/-6.6	-5.57/-4.51	-4.46/-4.05	-2.54/-3.1	-0.93/-0.51	-0.67/-1.67	-2.72/-3.48	-5.31/-6.62	-2.48/-0.69	-1.4/-3.22	-1.68/-0.71	-0.91/-1.99	-2.04/-1.76	-1.31/-1.6	-2.29/-2.38	-3/-3.52	-3.28/-3.14
Θ(45°)	-2.37/-3.31	-2.31/-2.51	-1.75/-2.57	-2.67/-3.32	-1.87/-1.17	-1.88/-2.27	-1.61/-1.67	-2.26/-2.37	-1.37/-0.86	-1.51/-2.6	-2.29/-1.04	-0.44/-0.03	0.2/-1.27	-2.6/-2.17	-1.32/-2.46	-0.88/-1.05	0.35/-1.8	-2.31/-1.09	-0.57/-1.15	-1.66/-1.02	-0.01/-0.21	-1.07/-1.31	-2.41/-3.43	-1.99/-1.35
Θ(52.5°)	-1.19/-1.98	-2.12/-1.24	-0.63/-1.64	-1.91/-2.08	-0.81/-0.3	-0.73/-2.79	-2.29/-1.35	-1.19/-0.05	-0.14/-1.44	-2.41/-3.17	-1.27/-0.6	0.79/-0.72	-0.11/-2.37	-2.46/-1.67	-0.62/-0.46	-0.32/-0.46	-0.87/-1.1	-1.04/-0.38	-0.67/-1.57	-1.83/-1.67	-1.23/-1.25	-1.09/-0.1	-0.79/-1.42	-2.04/-1.23
Θ(60°)	-1.13/-1.26	-1.38/-1.89	-1.2/-1.4	-0.98/-0.73	-0.29/-0.7	-0.81/-3.66	-2.43/-2.38	-1.26/-1.43	1.18/-1.31	-2.28/-1.57	0.72/-8.1	2.71/-2.4	1.44/-0.12	-1.41/-1.56	-1.23/-0.58	-0.4/-43	-1.37/-0.34	-0.74/-1.25	-0.73/-1.3	-0.82/-1.09	-0.99/-1.27	-1.31/-0.55	0.61/-0.62	-1.26/-0.57
Θ(67.5°)	-1.11/-1.95	-0.74/-2.48	-2.34/-1.59	-0.60/-28	0.41/-6.2	0.61/-6.2	0.65/-1.98	-1.72/-2.25	-0.12/-3.4	1.90/-3.6	-0.7/-0.05	2.53/-1.9	2.72/-0.02											



Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	6.36	4.57	4.89	5.17
Ant. 2 Max Gain (dBi)	5.4	5.83	5.14	6.96
Ant. 3 Max Gain (dBi)	5.3	3.39	3.55	3.31
Ant. 4 Max Gain (dBi)	3.14	4.9	3.21	4.91
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/82.5/37.5	Theta/90/255	Theta/75/30	Theta/75/30
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/15/300	Theta/15/300	Theta/15/307.5	Phi/15/15
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/202.5	Theta/67.5/202.5	Theta/60/37.5	Theta/52.5/262.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/75/337.5	Phi/75/255	Phi/90/307.5	Phi/22.5/330
Max Gain (dBi)	6.36	5.83	5.14	6.96
DG [1SS] (dBi)	5.03	5.29	4.75	7.36
DG [1SS] (dBi) Revised	6.36	5.83	5.14	7.36
DG [2SS] (dBi)	6.36	5.83	5.14	6.96
DG [4SS] (dBi)	6.36	5.83	5.14	6.96



Radiated Composite Gain Data of 6GHz

Appendix A.5

DG 1SS Result

Freq(Hz)	6.175GPol.	Phi-	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°)
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°)	1.43/-1.16	0.80/65	0.11/-0.13	-0.29/-0.52	-0.54/-0.08	-0.16/-0.52	0.14/0.08	0.11/-0.12	-0.17/-0.25	0.79/-1.42	1.75/-9.1	1.86/-1.77	1.71/-47	1.04/-045	0.08/-0.47	-0.47/-0.68	-0.66/-0.11	-0.98/-0.27	-0.75/-1.06	-1.21/-1.53	-0.91/-0.23	0.20/-29	0.76/-1.39	1.59/-65	
Θ(7.5°)	1.95/-1.61	1.39/-1.45	1.29/-1.09	0.90/-78	0.55/-0.41	-0.01/-0.82	-1.51/-1.45	-1.52/-0.28	-2.58/-2.36	-1.77/-1.18	-0.84/-0.26	-0.19/-0.18	-0.17/-0.13	0.37/-0.42	0.15/-0.18	0.04/-0.21	-0.10/-2	0.59/-69	0.33/-0.17	-0.37/-0.67	-0.05/-73	0.95/-1.02	1.33/-1.66	1.88/-2	
Θ(15°)	0.45/-1.13	1.26/-1.29	1.21/-25	1.29/-6	0.80/-93	0.34/-0.03	-0.17/-0.57	-0.99/-1.28	-1.86/-1.23	-1.58/-0.94	-0.41/-0.43	1.26/-1.74	2.14/-2.42	2.13/-53	0.82/-0.28	-0.31/-0.88	-1.37/-1.55	-1.75/-1.78	-0.89/-0.2	-0.02/-0.01	-0.37/-0.56	-0.66/-0.56	0.19/-29	0.27/-0.17	
Θ(22.5°)	2.33/-2.33	1.73/-1.55	1.48/-1.45	1.36/-1.03	1.11/-1.45	1.04/-45	0.58/-0.92	1/1.28	1.61/-25	1.11/-51	2.38/-0.24	3.48/-3.57	3.47/-3.01	2.68/-2.4	1.96/-1.58	0.74/-0.74	0.03/-0.31	0.56/-0.52	0.14/-0.58	0.86/-1.58	1.83/-1.27	0.56/-0.52	0.81/-0.62	0.91/-61	
Θ(30°)	3.45/-3.02	2.15/-2.2	2.28/-2.57	2.87/-2.69	2.45/-2.57	2.73/-2.8	2.46/-2.06	2.44/-2.23	1.83/-2.08	2.64/-2.97	3.34/-3.81	3.46/-3.33	3.06/-2.1	1.53/-1.51	1.74/-2.03	1.75/-2.37	2.72/-1.1	1.72/-1.75	2.4/-2.89	3.17/-2.78	2.51/-1.94	1.52/-2.26	2.39/-1.95	1.91/-2.48	
Θ(37.5°)	2.45/-2.38	1.40/-93	1.65/-2.58	2.69/-2.4	2.22/-1.88	1.72/-2.05	2.73/-1.7	3.77/-3.54	3.19/-2.85	2.44/-2.51	2.92/-3.46	3.11/-2.63	2.09/-1.3	1.11/-1.73	2.36/-2.33	1.74/-2.33	2.66/-2.31	1.98/-2.04	2.72/-3.1	3.73/-2.71	2.36/-1.98	1.21/-2.88	3.09/-2.89	2.91/-2.7	
Θ(45°)	1.44/-1.32	1.58/-1.26	1.82/-22	2.46/-2.44	2.35/-2.61	2.93/-2.83	2.65/-2.76	3.41/-3.55	3.33/-2.57	2.09/-2.4	2.31/-2.37	2.09/-1.36	1.21/-1.95	2.62/-86	2.56/-2.31	1.79/-1.74	2/-2.76	2.07/-2.67	3.72/-3.09	1.51/-82	2.48/-2.88	2.92/-2.92	32/-64		
Θ(52.5°)	1.45/-0.57	0.88/-1.17	0.48/-0.47	1.51/-1.8	1.63/-1.87	2.62/-2.67	2.17/-1.99	2.09/-1.99	2.49/-2.66	2.21/-2.6	2.32/-1.84	2.08/-2.5	2.35/-1.79	1.78/-2.45	2.64/-2.97	3.31/-2.96	2.67/-1.82	2.24/-2.57	2.38/-2.08	2.52/-2.26	1.86/-2.02	1.36/-0.85	1.05/-1.16	1.45/-1.92	
Θ(60°)	0.15/-0.07	-0.03/-0.61	-0.82/-1.58	-0.66/-0.1	-0.86/-0.37	0.51/-1.46	2.12/-2.65	3.17/-2.77	2.66/-2.93	2.48/-2.39	2.76/-2.33	2.32/-2.41	2.48/-3.15	3.94/-3.42	2.99/-2.87	2.92/-7	2.69/-2.68	1.72/-35	1.66/-1.03	1.99/-1.36	0.79/-1.14	1.22/-0.66	0.57/-0.57	1/1.26	
Θ(67.5°)	0.61/-0.63	0.26/-1.74	1.05/-0.39	-0.2/-0.1	-0.72/-0.1	1.01/-2.27	2.92/-4.38	4.39/-3.83	2.63/-2.24	2.91/-2.69	2.78/-1.92	2.18/-2.69	2.13/-47	4.35/-3.4	2.63/-1.92	2.09/-1.81	2.57/-2.71	2.82/-3.71	2.85/-1.25	1.46/-0.43	1.01/-1.44	1.72/-1.44	1.72/-1.44	1.65/-2.14	
Θ(75°)	1.12/-1.19	0.53/-1.82	2.25/-1.81	1.14/-0.91	0.55/-0.9	2.28/-2.85	2.94/-46	4.54/-2.21	2.71/-2.72	3.12/-8	2.32/-1.26	1.03/-1.82	1.83/-3.21	3.74/-3.18	2/1.05	0.89/-0.47	2.57/-3.22	3.83/-4.66	4.14/-2.82	2.38/-0.88	1.31/-2.14	2.56/-2	2.68/-3.58	2.55/-1.98	
Θ(82.5°)	-0.07/-1.37	0.67/-2.03	2.16/-0.92	1.29/-0.81	0.78/-1.09	2.33/-2.32	1.31/-3.1	3.48/-3.28	1.92/-1.84	2.03/-1.88	0.39/-0.42	0.78/-0.69	0.46/-1.96	2.41/-1.53	1.34/-0.04	-0.75/-0.91	2.49/-3.4	3.96/-4.35	2.31/-2.36	2.92/-0.02	2.44/-1.66	2.26/-2.51	2.64/-3	0.90/-2.33	
Θ(90°)	-2.1/-0.2	-0.17/-0.9	1.23/-0.49	-0.88/-0.47	-0.04/-0.28	1.97/-0.37	-1.24/-0.15	1.07/-1.92	1.48/-0.98	0.48/-0.66	-0.42/-2.4	-0.4/-0.11	-0.72/-1.11	0.20/-94	0.53/-1.28	-3.18/-2.03	2.23/-2.4	2.98/-2.83	1.62/-11	2.39/-0.44	1.39/-2.54	1.85/-1.25	1.16/-0.91	0.53/-2.25	
Θ(97.5°)	-2.53/-3.08	-1.87/-1.07	-0.01/-1.96	-3.08/-2.19	-0.46/-1.05	0.62/-1.39	-2.83/-1.45	-0.11/-0.36	-0.14/-0.64	-0.55/-0.57	-1.18/-2.31	-2.19/-1.66	-1.64/-2.2	-1.74/-0.59	-1.5/-2.89	-5.46/-3.54	1.36/-0.18	0.04/-0.29	-0.70/-1	0.05/-2.12	0.78/-1.38	0.57/-0.58	0.18/-0.14	-0.86/-2.69	
Θ(105°)	-3.53/-5.54	-0.93/-2.81	-1.72/-0.46	-3.78/-4.09	-3.6/-2.94	-0.82/-2.52	-5.14/-3.62	-1.38/-1.42	-1.72/-1.56	-0.81/-1.84	-2.61/-2.75	-2.73/-4.5	-2.91/-2.55	-3.71/-2.85	-3.24/-4.58	-6.29/-5.08	-2.71/-0.54	-3.77/-1.88	-5.17/-5.86	-2.34/-4.66	-2.38/-0.81	-1.73/-3.31	-2.64/-3	-2.85/-4.72	
Θ(112.5°)	-5.57/-4.9	-5.92/-4.08	-4.47/-5.35	-4.57/-4.54	-5.07/-4.56	-3.41/-5.84	-2.27/-3	-2.46/-3.21	-3.15/-2.61	-4.09/-3.74	-3.75/-4.17	-5.37/-5.02	-5.6/-5.08	-4.39/-4.77	-5.35/-6.04	-5.05/-7.2	-4.61/-3.78	-4.61/-3.78	-3.82/-5.24	-4.75/-2.86	-5.12/-2.86	-4.63/-4.6	-4.27/-4.77		
Θ(120°)	-7.04/-6.2	-9.62/-7.07	-6.49/-5.41	-7.4/-4.09	-6.97/-6.91	-5.63/-8.62	-7.38/-5.4	-3.21/-2.85	-3.95/-5.6	-5.53/-4.94	-7.86/-6.28	-5.54/-3.96	-6.21/-7.64	-6.39/-6.03	-6.67/-5.82	-7.48/-6.64	-5.07/-3.65	-6.06/-2.98	-3.89/-4.41	-3.29/-6.55	-3.81/-1.9	-3.82/-3.6	-4.35/-4.05	-5.41/-6.67	
Θ(127.5°)	-8.67/-9.18	-12.14/-8.23	-7.95/-9.79	-10.32/-7.35	-6.45/-7.61	-9.06/-10.12	-6.85/-6.35	-4.79/-5.55	-5.46/-6.15	-6.21/-7.91	-8.71/-5.78	-8.42/-5.74	-6.27/-8.04	-7.94/-6.48	-8.83/-8.37	-10.73/-9.01	-7.58/-6.21	-7.17/-6.43	-4.87/-5.17	-6.98/-5.71	-4.91/-6.74	-6.1/-3.72	-5.49/-5.16		
Θ(135°)	-8.47/-8.72	-9.35/-11.66	-10.32/-7.52	-9.11/-7.11	-9.27/-8.34	-8.87/-9.05	-6.86/-6.4	-7.55/-6.88	-5.8/-5.46	-9.89/-9.92	-7.46/-6.64	-8.26/-9.08	-8.4/-9.5	-10.66/-9.52	-6.86/-6.69	-9.38/-7.96	-10.87/-8.81	-10.3/-9.44	-4.91/-8.36	-8.44/-8.64	-6.06/-4.58	-3.91/-7.04	-7.17/-6.9	-8.85/-10.3	
Θ(142.5°)	-5.94/-6.78	-9.79/-9.75	-10.3/-11.67	-11.06/-9.2	-8.93/-9.18	-8.45/-8.15	-7.53/-6.6	-3.97/-5.82	-8.85/-6.88	-6.58/-7.74	-11.33/-9.08	-6.23/-6.09	-8.65/-7.62	-8.03/-8.53	-11.18/-10.82	-8.63/-9.6	-5.47/-7.36	-8.25/-7.69	-6.6/-8.19	-3.98/-5.06	-5.17/-5.86	-6.63/-6.04	-6.55/-7.98		
Θ(150°)	-7.89/-8.49	-10.71/-11.34	-11.78/-11.69	-11.54/-10.92	-9.67/-8.79	-10.68/-7.41	-6.91/-8.96	-6.43/-5.54	-7.5/-7.62	-9.78/-7.56	-6.18/-5.66	-6.53/-7.54	-8.02/-7.36	-10.07/-12.01	-12.25/-11.67	-11.54/-11.08	-9.32/-10.06	-6.84/-4.46	-5.01/-5.75	-7.01/-7.3	-7.22/-8.72	-6.95/-7.64	-7.71/-7.58	-4.75/-6.25	
Θ(157.5°)	-7.94/-9.03	-8.81/-11.68	-10.27/-9.76	-10.36/-10.71	-10.28/-9.82	-9.35/-9.73	-9.54/-8.08	-7.26/-6.97	-7.96/-7.69	-5.78/-5.67	-6.02/-8.7	-9.14/-9.53	-11.07/-12.13	-11.99/-9.97	-8.07/-10.33	-10.39/-9.3	-8.27/-9.67	-5.82/-9.14	-8.45/-4.94	-4.39/-5.2	-6.46/-6.85	-6.33/-7.09	-6.72/-5.49	-5.07/-6.26	
Θ(165°)	-9.39/-10.39	-9.77/-9.24	-10.93/-10.55	-9/-9.09	-9.85/-10.53	-9.82/-9.19	-7.16/-5.62	-4.94/-4.73	-4.88/-5.86	-5.8/-6	-6.9/-8.61	-9.96/-10.62	-10.7/-12.18	-12.28/-10.32	-7.87/-9.48	-10.52/-10.43	-10.94/-10.56	-10.26/-7.67	-4.75/-4.25	-5.52/-6.37	-6.46/-6.69	-7.25/-7.49	-8.42/-8.03	-8.08/-9.1	
Θ(172.5°)	-8.18/-8.94	-8.55/-10.18	-10.88/-10.43	-12.19/-10.3	-9.57/-8.96	-7.05/-5.07	-4.65/-4.71	-4.83/-5.19	-5.99/-7.08	-7.54/-7.11	-6.77/-6.99	-7.71/-8.49	-9.75/-11.77	-10.89/-12.34	-11.78/-11.77	-10.91/-9.26	-9.11/-7.87	-6.18/-5.85	-6.11/-6.77	-6.42/-6.82	-7.65/-8.62	-9.03/-9.43	-8.72/-8.4	-7.74/-7.35	
Θ(180°)	-7.92/-8.32	-9.9/-9.89	-9.22/-10.47	-10.05/-10.47	-9.96/-8.6	-8.16/-7.13	-6.26/-6.73	-7.11/-6.71	-6.98/-7.65	-6.89/-8.96	-8.21/-9.14	-9.2/-10.31	-10.26/-8.63	-9.07/-9.48	-11.02/-10.83	-11.03/-10.06	-9.37/-9.6	-9.86/-8.28	-6.99/-7.27	-8.02/-8.36	-7.55/-7.73	-7.79/-7.58	-7.14/-7.56	-8.41/-9.01	
Freq(Hz)	6.175GPol.	Theta-	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°)	-0.61/-0.42	-0.37/-0.74	-1.2/-0.97	0.05/-0.71	1.17/-1.46	1.49/-1.44	1.61/-53	0.94/-0.52	0.2/-0.35	-0.56/-0.5	-0.16/-0.11	0.30/-28	-0.04/-0.37	-0.73/-0.85	-0.63/-0.05	0.58/-1.34	1.79/-1.85	2.03/-2.01	1.84/-1.5	1.27/-1.04	0.46/-0.1	-0.45/-0.84	-0.8/-0.84	-0.78/-0.82	
Θ(7.5°)	-0.45/-1.07	-1.86/-2.34	-1.77/-1.41	0.91/-65	2.22/-29	2.21/-89	1.48/-1.44	1.15/-0.54	0.16/-0.26	0.13/-0.2	-0.34/-0.57	-0.54/-0.77	-1.02/-1.12	-1.73/-2.4	-2.69/-2.13	-0.75/-0.25	0.88/-1.29	1.97/-2.44	2.52/-58	2.31/-2.35	1.83/-1.1	0.41/-0.36	-0.52/-0.68	-0.45/-0.34	
Θ(15°)	0.04/-0.58	-0.42/-0.45	-0.37/-0.05	0.74/-1.12	1.41/-1.96	2.56/-2.68	2.47/-2.5	2.15/-1.89	2.03/-2	1.88/-1.83	1.61/-1.51	1.49/-1.44	1.2/-0.26	-2.24/-2.94	-3.06/-3.02	-1.71/-0.7	-0.14/-0.64	1.37/-1.97	2.52/-3.37	3.83/-81	3.83/-31	2.71/-7.9	1.22/-1.35	1.55/-1.09	
Θ(22.5°)	-0.08/-0.32	0.6/-0.47	0.29/-0.26	0.38/-0.93	1.65/-2.21	2.17/-2.57	2.51/-83	1.73/-1.35	2.05/-2.65	2.45/-2.19	1.38/-1.6	1.98/-1.75	0.55/-2.41	-3.73/-1.96	-1.36/-0.77	0.27/-0.9	1.72/-2.38	2.34/-2.67	2.89/-3.19	3.49/-3.63	3.45/-2.83	2.69/-2.1	1.40/-93	0.56/-0.01	
Θ(30°)	1.42/-1.47	1.26/-0.64	-0.64/-0.84	-0.08/-0.12	0.58/-0.84	0.67/-1.82	3.06/-3.16	2.66/-1.8	0.54/-1.6	1.52/-1.17	1.12/-1.43	2.77/-2.18	0.47/-1.09	-1.15/-0.46	1.02/-6	2.93/-21	3.02/-23	3.45/-86	3.12/-1.46	4.55/-3.81	2.94/-2.08	2.41/-47	0.65/-0.37	0.69/-1.56	
Θ(37.5°)	2.75/-1.92	1.52/-1.49	0.55/-0.69	-0.24/-0.24	1.79/-2.62	2.22/-1.85	2.81/-3.5	2.99/-2.17	0.97/-2.46	1.84/-2.12	2.72/-2.89	1.31/-0.24	-0.79/-1.6	-0.85/-0.89	1.62/-1.7	3.24/-0.08	3.51/-3.37	3.75/-3.63	3.57/-3.25	4.06/-3.79	3.25/-2.93	3.07/-2.47	1.93/-1.65	0.92/-41	
Θ(45°)	2.81/-2.15	1.26/-1.68	2.22/-1.94	2.23/-2.45	3.32/-2.88	1.95/-1.47</																			



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(22.5°)	3.56/3.44	3.04/2.91	3.57/3.93	3.88/3.43	2.96/2.39	1.55/1.17	0.69/0.51	0.95/0.8	0.35/0.97	2.05/2.38	2.01/1.92	1.93/1.59	1.25/0.86	0.90/94	1.29/1.16	0.89/0.82	0.77/1.13	1.16/0.8	0.94/0.77	0.27/0.69	1.41/1.87	2.17/2.12	2.57/3.19	3.59/3.51
Θ(30°)	3.17/3.07	3.43/3.47	3.31/3.19	2.94/2.44	2.29/2.33	2.18/1.95	1.31/3.7	1.64/2.18	2.5/2.3	2.86/3.32	2.79/2.41	2.47/2.07	1.24/1.1	1.63/1.68	1.31/1.77	2.28/2.49	2.39/2.02	2.66/3.04	3.03/3.2	3.06/2.16	2.18/2.78	3.07/2.81	2.8/2.66	2.8/3.18
Θ(37.5°)	3.2/2.16	2.24/2.71	3.2/3.62	3.26/2.89	2.75/3.06	2.73/2.03	2.45/2.47	2.49/2.3	2.32/3.16	3.42/2.95	1.91/1.77	1.99/1.5	0.84/0.73	1.31/1.21	1.06/1.81	2.39/3.71	2.89/1.94	1.72/2.56	3.29/3.26	2.9/2.56	4.08/2.48	3.54/3.29	3.9/3.5	3.11/3.3
Θ(45°)	2.14/2.31	0.99/0.59	1.66/2.39	2.06/1.34	1.61/2.4	2.94/2.2	2.21/2.56	2.85/4.5	2.78/2.37	2.54/2.68	2.43/1.64	0.91/0.86	1.33/1.33	1.58/1.16	1.13/1.02	-0.02/0.53	1.36/2.04	2.38/2.38	1.93/1.53	1.91/1.89	2.01/1.18	1.8/3.25	4.09/3.45	2.64/2.11
Θ(52.5°)	2.04/1.68	0.43/-0.35	0.95/2.07	1.76/1.65	1.93/1.77	2.28/2.28	1.21/0.16	0.67/1.66	1.39/1.58	1.84/1.03	0.57/0.95	0.44/1.42	1.88/2.14	2.29/1.08	-0.14/-0.16	-0.37/0.19	1.31/1.97	1.92/1.86	1.58/1.45	0.16/0.6	1.22/-0.12	1.55/1.84	1.81/2.03	2.74/1.8
Θ(60°)	0.53/-0.75	-0.55/-0.85	-0.86/-0.58	-0.5/-0.1	0.04/0.72	-0.07/1.17	1.14/-0.26	-0.48/0.43	0.71/0.95	0.34/0.73	0.92/0.95	1.4/0.5	1.8/2.14	1.5/0.66	0.66/0.8	1.03/1.47	1.59/1.96	1.28/0.94	1.19/0.33	-0.13/0.96	-0.02/-2.39	0.38/0.6	0.84/-0.06	0.54/0.51
Θ(67.5°)	0.85/1.03	-1.28/-1.21	-1.61/-1.5	-0.83/-1.23	-2.54/-0.94	-0.87/0.11	1.87/1.6	2.03/1.3	0.94/1.11	0.56/0.06	0.58/1.97	2.69/0.24	0.86/0.69	0.25/-0.66	0.96/2.07	1.48/1.17	1.61/1.82	1.72/0.39	0.51/-0.76	-0.13/0.54	-0.93/-2.24	0.75/0.82	0.97/0.33	0.44/-0.73
Θ(75°)	1.2/-0.48	1.25/0.99	0.64/0.37	1.43/0.02	-0.09/0.38	-0.85/0.6	3.23/2.66	3.76/1.93	1.53/1.33	0.16/0.4	0.71/7	2.87/1.27	-0.89/-1.41	-1.11/-1.72	0.66/2.16	1.48/1.07	0.32/1.18	2.27/0.93	1.49/0.63	2.54/1.75	0.81/1.04	1.31/0.87	2.68/1.9	0.93/-0.34
Θ(82.5°)	0.94/-0.39	0.64/1.73	2.06/0.43	1.21/-0.42	-0.15/0.75	0.84/1.72	2.23/1.6	2.98/1.98	1.31/1.46	-0.41/-0.49	1.19/1.36	1.47/-0.35	-0.74/-2.79	-3.58/-2.45	0.38/1.97	0.63/-0.1	-0.38/0.83	2.09/0.69	1.69/2.41	2.51/1.89	2.66/2.74	2.55/1.76	1.87/2.13	0.98/-0.94
Θ(90°)	0.27/1.01	-1.65/0.62	1.33/-0.23	0.15/-1.49	0.44/-1.59	1.13/1.16	0.18/-0.34	2.23/1.21	1.09/0.83	-0.53/-0.93	0.02/0.71	-0.19/-0.05	-1.13/-2.38	-3.23/-3.04	-1.34/0.67	-0.67/-1.17	-0.62/-0.03	1.28/-0.24	-0.02/-1.32	1.14/1.73	3.74/3.17	2.43/1.38	1.11/2.2	0.19/-2.25
Θ(97.5°)	-0.98/-3.22	-2.48/-1.27	-0.22/-2.31	-1.14/-2.67	-0.45/-1.9	0.28/-0.52	-1.84/-1.98	0.46/0.07	0.26/-0.29	-1.82/-1.7	-0.19/-0.39	-1.78/-1.71	-2.93/-3.19	-4.73/-3.77	-2.22/-1.04	-2.93/-3.31	-1.84/-2.06	-1.79/-3.53	-1.68/-3.09	-0.25/0.96	3.5/1.39	0.4/-0.75	-1.14/0.92	-1.3/-2.37
Θ(105°)	-2.75/-5.54	-2.9/-2.55	-1.88/-3.97	-3.7/-3.43	-2.73/-2.01	-2.49/-2.52	-4.91/-3	-1.01/-1.19	-0.3/-2	-3/-3.34	-1.73/-1.24	-1.62/-3.31	-4.51/-5.72	-6.49/-6.65	-4.02/-3.04	-3.72/-4.65	-4.76/-5.28	-5.39/-7.19	-3.12/-3.9	-2.34/-2.33	-0.46/-1.97	-2.16/-3.17	-2.91/-1.65	-3.87/-4.54
Θ(112.5°)	-5.01/-6.33	-5.79/-4.39	-3.88/-4.23	-7.23/-3.88	-4.94/-6.3	-4.59/-4.4	-5.83/-5.73	-2.95/-1.1	-1.14/-3.08	-3.9/-3.86	-4.15/-3.57	-3.9/-5.01	-5.29/-6.93	-8.12/-7.22	-5.81/-4.03	-4.3/-4.67	-5.85/-5.26	-6.94/-6.1	-5.28/-4.56	-3.47/-5.24	-2.91/-3.68	-2.43/-3.94	-3.47/-1.68	-4.61/-5.67
Θ(120°)	-6.23/-8.4	-9.22/-7.02	-5.87/-6.1	-7.55/-6.17	-6.02/-6.37	-5.86/-6.79	-5.47/-3.31	-3/-3.85	-3.72/-3.52	-5.69/-5.36	-5.74/-4.13	-4.91/-4.48	-6.43/-6.27	-8.96/-11.18	-8.11/-5.79	-7.1/-5.07	-8.18/-2.82	-6.22/-5.11	-7.5/-4.69	-4.1/-5.63	-3.12/-0.65	-2.77/-4.17	-3.91/-2.8	-5.43/-6.96
Θ(127.5°)	-9.79/-9.08	-11.73/-9.01	-7.62/-6.38	-9.47/-1.77	-8.82/-6.67	-7.28/-8.41	-9.37/-8.5	-6.74/-1.9	-4.65/-5.51	-7/-6.56	-8.62/-7.28	-8.48/-9.36	-7.7/-9.06	-7.73/-9.93	-8/-9.33	-7.7/8.36	-9.84/-7.76	-8.03/-8.93	-5.35/-5.81	-4.72/-6.6	-4.52/-7.33	-6.92/-4.53	-5.68/-6.03	
Θ(135°)	-11.48/-8.16	-12.09/-9.69	-10.05/-7.42	-9.27/-8.1	-8.58/-8.01	-10.72/-8.26	-7.31/-6.91	-6.84/-7.01	-7.58/-8.46	-7.13/-10.2	-9.25/-7.4	-7.3/-9.13	-9.19/-11.56	-10.11/-11.48	-10.79/-6.71	-7.92/-7.99	-10.13/-10.37	-8.87/-8.54	-12/-8.15	-9.51/-7.84	-7.47/-4.37	-4.84/-5.87	-3.39/-7.25	-8.95/-8.02
Θ(142.5°)	-7.37/-8.3	-12.36/-10.21	-8.91/-10.08	-9.57/-7.6	-7.62/-9.83	-8.56/-9.04	-10.25/-8.27	-6.95/-8.17	-6.01/-11.05	-10.03/-7.22	-6.07/-9.72	-6.48/-7.81	-10.01/-9.59	-9.89/-9.67	-9.68/-8.7	-9.73/-9.11	-9.86/-8.03	-5.98/-5.41	-8.22/-8.88	-8.6/-7.99	-5.61/-4.87	-4.97/-5.02	-8.25/-6.53	-5.14/-6.77
Θ(150°)	-8.21/-10.75	-12.19/-10.85	-11.13/-12.55	-10.06/-11.35	-10.04/-9.31	-7.81/-6.55	-8.54/-9.84	-9.72/-10.3	-7.54/-9.41	-8.73/-7.22	-7.39/-7.27	-6.41/-5.5	-7.33/-10.99	-9.71/-8.72	-11.19/-12.56	-11.98/-11.76	-11.19/-12.04	-10.09/-9.5	-5.16/-5.15	-11.16/-10.98	-11.4/-9.23	-8.74/-7.99	-8.74/-8.34	-5.97/-5.26
Θ(157.5°)	-8.73/-12.67	-11.97/-11.39	-11.23/-11.2	-10.95/-11.61	-9.48/-8.4	-8.58/-9.02	-8.18/-5.77	-6.31/-10.1	-8.52/-7.6	-7.36/-5.54	-5.47/-5.82	-8.37/-9.7	-8.82/-11.78	-12.31/-12.22	-10.66/-9.8	-11.96/-8.79	-9.05/-8.67	-7.87/-8.56	-7.99/-7.83	-7.75/-6.95	-7.18/-8.63	-9.48/-8.6	-7.05/-7.39	-10.01/-8.84
Θ(165°)	-8.44/-9.06	-10.13/-10.61	-12.33/-11.69	-10.65/-10.54	-10.2/-9.77	-8.36/-7.74	-7.28/-7.48	-6.65/-4.72	-3.52/-3.43	-5/-8.12	-11.05/-10.64	-11.51/-10.71	-9.22/-10.62	-12.71/-12.31	-12.44/-11.47	-9.62/-10.47	-11.1/-10.3	-9.11/-7.74	-6.94/-5.29	-5.35/-5.07	-6.6/-8.45	-9.34/-8.83	-8.26/-9.82	-12.09/-9.15
Θ(172.5°)	-9.22/-9.8	-11.18/-11.61	-11.27/-9.54	-9.81/-8.86	-7.85/-7.7	-7.61/-7.29	-7.63/-6.34	-5.08/-4.73	-4.59/-5.01	-5.79/-6.95	-7.58/-6.24	-6.47/-6.82	-6.95/-6.63	-6.46/-7.86	-10.26/-10.82	-12.84/-12.49	-11.36/-8.91	-7.85/-7.7	-6.95/-6.29	-6.23/-7.95	-9.81/-9.51	-9.55/-9.09	-8.26/-8.68	-8.79/-8.8
Θ(180°)	-8.53/-7.91	-8.01/-9.89	-10.61/-11.91	-11.96/-12.46	-12.37/-11.43	-10.15/-8.69	-7.8/-6.97	-6.63/-7.27	-9.13/-9.23	-8.82/-8.64	-8.15/-9.12	-9.67/-9.71	-10.6/-9.98	-10.48/-10.75	-11.73/-10.96	-10.06/-9.92	-10.28/-9.92	-9.17/-9.04	-9.3/-10.05	-8.41/-7.61	-7.41/-6.89	-6.71/-6.99	-6.6/-6.91	-7.69/-7.92
Freq(Pol)	6.995/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°)	-1.78/-2.5	-2.89/-3	-2.55/-1.84	-1.23/-0.2	0.72/1.25	1.88/2.07	2.37/2.36	2.41/2.11	1.62/1.3	0.88/0.52	0.1/-0.5	-0.76/-0.86	-1.32/-1.59	-1.82/-1.91	-1.8/-1.04	0.12/0.97	1.47/1.73	2.14/2.57	2.46/2.32	2.33/2.02	1.69/1.17	0.63/-0.05	-0.63/-1.08	-1.52/-1.53
Θ(7.5°)	0.24/0.12	-0.14/-0.26	0.21/1.15	1.6/2.04	1.94/1.98	2.23/2.42	2.5/2.35	1.96/1.65	1.34/1.39	1.28/1.35	0.92/0.01	-0.76/-1.82	-2.61/-3.31	-4.41/-3.95	-0.65/0.35	1.21/1.77	1.86/1.77	2.04/2.15	2.18/2.12	1.96/1.64	1.13/1.14	0.67/0.53	0.33/0.18	
Θ(15°)	-0.45/0.11	0.04/-0.18	0.27/0.42	0.96/1.54	1.93/2.12	2.36/2.96	3.36/3.39	3.4/2.94	2.25/1.86	1.6/2	1.86/1.13	0.02/-0.93	-2.24/-4.38	-6.39/-4.53	-0.11/0.92	1.95/2.51	2.21/2.88	2.61/2.3	1.92/1.94	1.58/1.29	10.34	0.17/0.38	-0.1/-0.44	
Θ(22.5°)	1.32/0.74	-0.45/-1.69	-2.06/-0.8	0.03/1.69	2.99/3.42	3.06/3.25	3.47/3.64	3.93/3.75	2.82/2.43	1.75/2.21	1.78/1.38	1.04/0.62	-0.59/-1.86	-2.63/-1.97	-0.25/1.34	2.19/2.75	3.33/3.26	3.33/3.2	3.12/3.03	2.81/2.6	2.51/2.28	2.02/1.32	1.44/1.19	1.13/1.52
Θ(30°)	0.67/0.65	-0.44/-1.74	-1.61/-0.06	0.21/0.8	1.96/2.87	3.16/2.99	2.88/2.95	3.07/3.31	2.93/3.58	3.25/3.08	1.96/1.47	1.27/0.73	-0.19/-2.06	-2.67/-2.62	-1.22/1.76	2.71/3.25	3.86/3.89	3.84/3.95	3.88/3.63	3.83/3.47	3.09/1.97	1.93/1.4	1.92/1.45	0.61/1.32
Θ(37.5°)	2.71/2.07	1.61/0.62	-0.19/0.66	1.25/1.47	0.65/1.03	2.05/2.67	2.97/2.92	2.86/3.03	2.36/3.41	3.72/3.3	2.04/1.65	0.88/-0.54	-2.27/-1.71	-2.67/-3.21	0.57/2.23	2.75/2.81	3.15/3.83	3.75/3.79	3.65/3.64	3.77/3.98	3.43/2.33	2.69/2.06	1.81/1.56	1.76/2.89
Θ(45°)	3.03/1.99	2.28/3.27	3.18/2.94	2.18/2.16	1.88/1.53	1.69/1.64	2.52/2.7	1.98/1.85	0.95/2.61	4.36/3.91	2.91/1.58	0.94/0.18	-1.51/-0.67	-1.35/-2.54	-0.22/2.24	2.6/3	3.02/3.37	3.72/3.56	3.22/4.2	2.92/3.39	2.61/1.44	3.63/3.09	2.94/2.51	2.72/2.09
Θ(52.5°)	1.54/1.15	2.44/3.55	3.79/4.35	3.47/3.3	1.73/1.85	1.57/1.05	1.42/3.2	2.17/1.8	0.88/1.13	3.29/4.16	3.81/1.59	1.2/0.78	0.48/-0.44	-0.47/-0.15	0.26/1.32	2.29/3.09	2.87/2.82	3.43/2.99	3.37/2.21	1.41/2.24	2.03/1.49	3.8/3.36	3.95/3.26	2.31/1.56
Θ(60°)	0.79/1.01	2.42/3.26	3.444/7.5	4.34/2.89	1.18/1.86	1.68/1.08	0.61/2.61	3.04/1.93	1.41/0.33	2.05/3.9	4.5/2.6	1.24/0.94	1.48/0.86	1.75/2.44	1.38/0.51	1.82/2.93	2.22/2.33	3.13/2.34	2.72/1.35	-0.23/1.21	1.64/1.18	2.98/2.71	3.26/2.72	2.23/0.87
Θ(67.5°)	-0.82/0.46	2.12/3.43	3.84/3.94	4.12/3.39	1.35/1.92	1.07/2.22	-0.06/1.07	1.77/2.06	1.3/0.47	1.73/4.06	3.55/2.51	0.43/0.68	0.71/1.28	3.15/2.6	1.96/1.76	1.55/1.81	1.97/1.59	3.17/0.47	0.83/0.29	-0.86/0.75	1.62/0.97	2.02/1.75	2.42/0.96	0.56/-0.55
Θ(75°)	-2.22/-1.35	1.35/3.11	3.73/3.82	3.77/2.22	1.85/2.11	0.88/-0.16	-0.2/-0.15	1.7/0.97	1.09/0.98	0.91/3.35	3.27/2.18	0.1/0.73	1.32/0.23	2.38/2.38	2.4/1.61	1.17/1.34	1.72/2.28	2.96/3.43	-1.16/-0.04	-0.39/1.23	1.88/1.57	1.61/1.01	0.87/0.16	0.6/0.38
Θ(82.5°)	-1.04/-2.3	-0.51/8.5	3.43/3.89	3.13/2.18	2.44/1.37	-0.12/-1.79	-1.51/-0.6	0.68/0.59	-0.39/0.18	0.61/														



Freq(Hz)	6.175GPol.		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°)	-6.07(-8.45)	-11.53(-12.65)	-16.92(-17.28)	-14.25(-12)	-11.27(-9.67)	-7.88(-6.83)	-5.35(-4.76)	-3.49(-2.65)	-2.17(-1.95)	-1.83(-1.92)	-2.46(-3.63)	-5.32(-6.13)	-6.43(-7.78)	-10.89(-14.54)	-14.29(-17.51)	-12.29(-12.16)	-12.52(-8.01)	-6.78(-6.2)	-5.95(-5.3)	-4.34(-3.81)	-3.46(-3.01)	-3.79(-3.43)	-5.39(-5.61)	-5.45(-6.06)
Θ(7.5°)	-7.31(-9.12)	-10.55(-11.56)	-14.04(-14.94)	-14.43(-12.48)	-10.88(-9.35)	-9.33(-8.4)	-7.24(-5.15)	-5.19(-4.08)	-4.04(-3.42)	-4.37(-4.72)	-5.22(-5.55)	-7.09(-9.4)	-8.39(-9.12)	-10.32(-12.32)	-18.06(-17.89)	-18.76(-15.26)	-15.42(-10.38)	-6.52(-5.51)	-5.53(-5.17)	-3.31(-2.47)	-2.72(-2.71)	-3.51(-4.96)	-6.03(-6.92)	-6.89(-7.02)
Θ(15°)	-6.91(-6.69)	-8.89(-12.61)	-16.06(-13.6)	-13.05(-14.18)	-14.48(-13.15)	-12.87(-12.64)	-10.61(-8.62)	-7.16(-4)	-6.58(-7.69)	-10.33(-12.97)	-13.52(-10.6)	-8.49(-8.86)	-10.11(-10.23)	-14.27(-17.66)	-17.25(-17.55)	-17.61(-18.44)	-18.24(-17.68)	-18.32(-17.92)	-9.95(-3.78)	-6.05(-4.87)	-5.32(-5.78)	-5.82(-5.4)	-4.34(-4.37)	-4.94(-7.7)
Θ(22.5°)	-4.2(-6.43)	-10.19(-13.02)	-16.86(-14.32)	-17.42(-16.17)	-14.12(-12.17)	-13.31(-13.67)	-12.67(-11.37)	-10.33(-10.7)	-10.36(-10.27)	-12.41(-14.87)	-13.83(-12.21)	-10.89(-9.76)	-9.3(-9.04)	-8.34(-9.18)	-10.01(-10.93)	-17.12(-15.1)	-18.85(-14.4)	-10.26(-9.35)	-9.58(-7.06)	-6.63(-5.13)	-5.39(-6.98)	-8.04(-6.79)	-5.02(-5.41)	-3.98(-3.58)
Θ(30°)	-5.89(-8.25)	-12.36(-16.3)	-18.21(-18.78)	-18.18(-18.75)	-18.35(-14.4)	-12.67(-10.24)	-13.46(-14.44)	-10.8(-13.05)	-17.64(-15.29)	-15.77(-13.45)	-11.68(-10.38)	-10.74(-8.86)	-8.72(-10.56)	-12.38(-14.2)	-13.59(-12.49)	-15.29(-11.73)	-11.36(-13.76)	-18.81(-12.62)	-7.86(-6.54)	-7.31(-6.27)	-5.09(-6.33)	-7.3(-5.13)	-4.77(-5.38)	-5.46(-5.97)
Θ(37.5°)	-7.45(-7.1)	-8.55(-15.1)	-19.25(-14.38)	-15.33(-18.31)	-17.09(-14.68)	-13.94(-11.98)	-11.05(-12.06)	-9.22(-14.94)	-14.24(-12.14)	-17.65(-13.44)	-8.81(-9.16)	-10.82(-11.12)	-11.72(-11.57)	-14.03(-13.44)	-10.13(-11.49)	-16.02(-18.78)	-12.96(-10.89)	-11.94(-9.54)	-5.97(-6.48)	-4.58(-7)	-7.99(-5.76)	-5.54(-6.82)	-4.18(-5.65)	-4.18(-6.85)
Θ(45°)	-1.19(-8.99)	-10.23(-14.37)	-16.46(-16.11)	-18.57(-18.32)	-14.61(-11.44)	-10.57(-10.64)	-14.1(-11.28)	-8.25(-12.21)	-15.65(-12.44)	-17.1(-14.22)	-10.97(-12.24)	-11.69(-11.97)	-7.71(-9.05)	-11.35(-9.49)	-11.12(-7.5)	-13.56(-13.13)	-16.94(-13.7)	-12.56(-9.79)	-6.87(-5.27)	-6.93(-5.59)	-6.34(-14)	-5.82(-5.45)	-5.49(-6.83)	-5.49(-6.83)
Θ(52.5°)	4.89(-7.47)	-13.06(-13.52)	-17.52(-19.07)	-17.87(-17.57)	-18.86(-19.25)	-17.01(-12)	-10.96(-12.79)	-9.98(-13.4)	-13.64(-14.15)	-18.17(-12.93)	-13.56(-18.23)	-17.96(-13.23)	-8.39(-15.46)	-17.4(-11.06)	-11.35(-11.63)	-11.11(-13.72)	-14.43(-16.13)	-15.76(-14.19)	-10.13(-10.43)	8.43(-8.54)	-8.26(-8.86)	-12.27(-9.5)	8.51(-7.31)	8.5(-5.4)
Θ(60°)	6.43(-5.21)	-9.09(-8.4)	-19.06(-17.26)	-19.17(-18.65)	-19.17(-15.33)	-12.76(-8.1)	-5.69(-6.18)	-5.04(-9.06)	-11.97(-18.47)	-18.47(-18.43)	-17.31(-19.47)	-17.06(-15.06)	-10.86(-12.1)	-11.53(-13.7)	-12.89(-12.34)	-16.05(-14.8)	-18.62(-14.25)	-17.33(-13.48)	-13.67(-13.74)	-9.81(-10.36)	-11.64(-11.16)	-10.69(-14.4)	-12.24(-10.78)	-10.28(-5.89)
Θ(67.5°)	-5.51(-7.49)	-8.48(-5.92)	-19.02(-19.76)	-18.55(-14.16)	-19.41(-16)	-6.39(-3.26)	-3.38(-2.33)	-2.93(-4.63)	-17.68(-18.36)	-19														



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(22.5°)	-5.39/-6.28	-10.44/-19.14	-17.03/-15.45	-14.61/-16.16	-18.22/-18.01	-18.53/-19.39	-17.78/-17.14	-16.78/-18.13	-19.22/-15.63	-10.12/-8.09	-8.58/-8.49	-8.41/-9.57	-10.73/-14.03	-16.18/-18.09	-16.66/-17.45	-17.94/-18.45	-19.3/-13.52	-14.9/-15.24	-11.45/-9.98	-9.28/-8.44	-7.76/-6.74	-6/-7.36	-8.19/-7.33	-5.88/-5.53	
Θ(30°)	-6.66/-10.65	-13.96/-15.59	-18.25/-14.17	-16.56/-17.19	-17.43/-14.12	-12.81/-14.4	-14.25/-16.11	-16.29/-14.08	-13.96/-12.71	-8.38/-7.09	-7.06/-7.73	-8.47/-7.57	-11.24/-14.71	-10.26/-10.07	-14.81/-13.5	-12.11/-13.61	-12.82/-12.87	-10.1/-8.86	-9.35/-7.23	-5.14/-6.28	-9.85/-8.44	-5.78/-7.04	-8.48/-8.82	-7.93/-6.4	
Θ(142.5°)	-7.39/-11.92	-11.22/-13.81	-18.07/-17.72	-16.91/-17.92	-18.86/-18.37	-18.61/-15.64	-15.24/-15.55	-19.15/-18.87	-16.82/-11.61	-6.89/-7.81	-10.41/-16.71	-12.08/-7.53	-9.9/-13.56	-8.73/-10.72	-13.89/-10.41	-16.41/-7.86	-10.92/-10.88	-13.9/-12.71	-8.88/-7.03	-5.77/-6.7	-4.23/-3.92	-4.51/-7.19	-5.65/-6.47	-6.23/-4.8	
Θ(45°)	-10.93/-10.97	-9.78/-16	-17.35/-18.66	-18.32/-19.15	-17.53/-12.44	-10.18/-18.74	-14.26/-13.31	-18.44/-18.06	-15.23/-18.76	-11.59/-15.11	-15.42/-10.86	-12.38/-13.89	-12.54/-13.29	-9.99/-11.28	-10.37/-8.99	-13.79/-14.32	-11.4/-12.81	-11.45/-10.5	-11.6/-11.3	-8.19/-6.79	-6.87/-9.54	-7.13/-5.66	-2.62/-5.55	-9.5/-10.08	
Θ(52.5°)	-10.54/-14.14	-12.43/-18.61	-17.03/-17.89	-16.92/-17.45	-17.4/-14.38	-10.28/-14.19	-17.39/-16.38	-17.99/-14.14	-15.07/-18.47	-14.62/-18.21	-17.88/-15.65	-15.96/-14.35	-12.42/-9.45	-8.06/-13.77	-17.23/-12.93	-16.28/-18.91	-12.41/-12.47	-10.82/-14.14	-10.81/-8.6	-11.98/-11.63	-9.92/-11.17	-6.46/-11.48	-8.82/-8.64	-5.26/-6.61	
Θ(60°)	-6.83/-11.89	-11.4/-16.66	-13.55/-15.69	-19.09/-18.17	-17.84/-12.2	-18.85/-7	-15.55/-16.38	-7.44/-10.64	-18.51/-14.61	-18.56/-19	-19.13/-18.86	-17.92/-18.44	-11.8/-74	-10.63/-14.44	-11.55/-10.98	-11.3/-12.66	-11.44/-9.52	-13.46/-10.2	-7.63/-7.83	-9.17/-12.2	-8.6/-9.77	-6.86/-4.72			
Θ(67.5°)	-4.63/-6.46	-10.83/-10.46	-18.59/-19.3	-17.64/-17.5	-17.9/-8.98	-6.81/-4.27	-2.23/-4.01	-4.42/-6.46	-17.82/-15.39	-13.13/-16.33	-18.42/-17.91	-14.63/-13.58	-7.88/-12.72	-12.99/-18.81	-19.3/-17.64	-15.98/-12.58	-11.22/-13	-15.94/-11.07	-15.15/-13.29	-10.43/-8.55	-9.9/-18.02	-12.65/-17.04	-14.43/-13.98	-7.37/-9.67	
Θ(75°)	-4.71/-8.69	-6.73/-5.86	-15.32/-18.6	-8.77/-16.37	-11.93/-9.71	-4.79/-2.59	-0.62/-4.2	-2.57/-6.99	-11.1/-10.8	-12.24/-10.45	-16.29/-18.63	-19.29/-15.51	-12.73/-16.39	-11.99/-13.82	-18.27/-18.03	-19.02/-11.1	-17.78/-16.41	-17.61/-12.07	-10.64/-16.27	-8.41/-13.58	-13.16/-12.82	-18.87/-17.64	-8.67/-13.14	-11.69/-9.43	
Θ(82.5°)	-4.18/-5.86	-9.63/-5.11	-9.14/-18.87	-9.44/-17.72	-11.84/-4.08	-3.68/-1.34	-1.37/-6.06	-4.23/-5.77	-8.83/-7.37	-8.33/-10.54	-11.59/-14.91	-18.69/-18.77	-11.35/-18.61	-18.42/-16.91	-17.33/-19.37	-17.53/-13.74	-17.76/-18.16	-16.04/-15.49	-10.76/-14.62	-14.54/-18.33	-10.21/-15.48	-12.77/-16.85	-12.51/-9.99	-8.27/-11.46	
Θ(90°)	-7.27/-7.51	-14.55/-4.78	-6.41/-16.52	-11.89/-19.58	-5.6/-7.91	-4.46/-2.4	-3.38/-7.09	-3.57/-4.42	-4.71/-5.89	-5.77/-8.88	-12.94/-16.79	-17.2/-11.51	-14.02/-13.42	-13.23/-15.28	-18.2/-18.79	-17.02/-13.28	-18.22/-19.35	-17.69/-17.41	-15.3/-12.54	-19.19/-15.84	-8.92/-17.73	-17.16/-17.86	-11.81/-7.78	-8.31/-12.89	
Θ(97.5°)	-6.32/-13.29	-19.17/-9.01	-5.79/-15.53	-9.65/-15.88	-5.49/-6.11	-4.39/-3.36	-5.44/-6.66	-6.32/-3.39	-3.97/-5.86	-6.81/-8.12	-10.49/-11.53	-18.8/-13.4	-19/-13.56	-18.48/-16.69	-19.27/-19.19	-19.03/-18.73	-19.35/-18.29	-19.12/-17.34	-15.99/-12.42	-18.26/-11.96	-7.85/-17.28	-13.3/-13.49	-11.28/-9.23	-12.09/-6.83	
Θ(105°)	-7.12/-15.83	-14.21/-10.71	-6.83/-16.15	-10.08/-9.97	-7.82/-6.78	-5.93/-7.1	-8.37/-9.44	-4.55/-3.34	-3.7/-5.36	-5.51/-8.99	-10.45/-13.55	-12.52/-16.14	-18.37/-19.06	-14.91/-17.42	-18.49/-18.37	-16.43/-17.54	-15.55/-17.96	-18.1/-18.7	-11.89/-19.27	-11.03/-12.58	-16.9/-11.79	-14.74/-11.66	-9.76/-13.67	-10.08/-13.88	-12.26/-7.54
Θ(112.5°)	-7.99/-7.61	-14.38/-12.15	-9.94/-11.96	-18.51/-6.39	-10.63/-19.18	-13.61/-10.01	-9.25/-8.2	-5.08/-3.8	-4.47/-6.36	-5.74/-9.22	-12.74/-14.61	-17.8/-17.88	-18.9/-13.88	-18.8/-13.29	-19.24/-18.58	-18.46/-17.95	-19.03/-18.74	-17.72/-18.04	-17.03/-18.64	-17.71/-10.39	-19.32/-18.02	-11.05/-10.91	-8.79/-6.71	-10.31/-8.05	
Θ(120°)	-8.4/-12.2	-17.41/-14.04	-14.03/-12.69	-18.29/-8.62	-14.68/-15.37	-18.05/-11.89	-9.1/-4.77	-5.4/-4.95	-6.35/-6.82	-5.84/-12.11	-14.13/-10.81	-17.77/-15.22	-18.54/-15.71	-17.85/-18.95	-17.1/-19.81	-17.82/-17.22	-18.97/-18.59	-19.73/-19.1	-17.81/-17.86	-18.54/-10.91	-18.67/-13.19	-17.82/-13.37	-9.47/-6.06	-9.86/-9.2	
Θ(127.5°)	-13.85/-15.71	-19.07/-17.75	-16.01/-9.13	-16.16/-9.59	-16.87/-14.25	-17.41/-12.86	-17.13/-10.66	-12.29/-7.32	-7.62/-8.41	-8.98/-12.03	-13.69/-17.97	-16.85/-19.25	-13.62/-19.09	-9.77/-12.87	-16.43/-17.54	-15.55/-17.96	-18.1/-18.7	-11.89/-19.27	-11.03/-12.58	-16.9/-11.79	-14.74/-11.66	-9.76/-13.67	-10.08/-13.88	-12.26/-7.54	
Θ(135°)	-16.61/-9.78	-17.6/-12.02	-17.58/-13.38	-18.67/-13.45	-18.61/-12.05	-14.67/-10.91	-13.6/-11.55	-11.08/-10.91	-10.35/-10.62	-6.45/-18.55	-18.8/-13.45	-17.79/-18.24	-14.11/-18.31	-18.18/-18.37	-13.5/-8.34	-18.31/-16.44	-16.26/-17.57	-10.97/-10.69	-16.27/-8.61	-18.56/-10.3	-9.18/-14.3	-8.86/-10.33	-4.82/-12.69	-18.13/-10.5	
Θ(142.5°)	-9.55/-8.45	-18.54/-14.28	-11.3/-18.14	-18.59/-10.5	-15.01/-13.3	-16.21/-15.85	-16.76/-10.96	-8.23/-18.06	-6.82/-17.8	-13.98/-12.63	-8.13/-15.56	-10.16/-11.27	-19.13/-13.73	-11.83/-13.13	-16.53/-17.91	-18.04/-11.88	-17.18/-12.82	-9.44/-7.22	-8.35/-13.49	-13.51/-16.84	-5.13/-3.14	-5.92/-7.04	-1.89/-6.61	-6.25/-9.4	
Θ(150°)	-8.61/-15.66	-18.1/-16.97	-17.06/-18.94	-18.67/-17.95	-15.49/-13.1	-10.48/-9.73	-13.44/-17.99	-14.52/-18.52	-16.88/-18.38	-9.58/-7.61	-14.99/-13.55	-9.35/-8.86	-12.75/-17.45	-14.44/-14.62	-18.26/-18.95	-16.94/-18.77	-14.71/-15.83	-6.94/-8.35	-19/-18.5	-18.7/-9.84	-9.6/-9.94	-9.54/-9.96	-6.85/-5.22		
Θ(157.5°)	-9.29/-17.58	-18.63/-17.81	-15.77/-17.93	-18.17/-18.1	-13.4/-11.43	-11.99/-13.27	-9.34/-7.1	-8.65/-18.39	-16/-18.75	-19.43/-12.22	-11.87/-12.66	-12.3/-13.83	-16.11/-18.74	-18.63/-17.76	-15.39/-12.18	-17.89/-14.15	-14.58/-11.6	-9.16/-13.91	-16.39/-12.53	-9.29/-8.93	-9.53/-11.07	-9.81/-7.86	-5.97/-6.28	-11.54/-9.42	
Θ(165°)	-16.22/-17.14	-18.63/-19.21	-18.98/-17.68	-18.71/-17.79	-18.04/-19.5	-14.03/-10.65	-7.63/-4.36	-10.1/-6.94	-8.66/-8.09	-9.34/-12.94	-15.82/-17.88	-17.81/-17.55	-14.43/-14.44	-18.45/-19.05	-18.5/-15.85	-10.82/-12.32	-13.43/-11.56	-11.38/-10.06	-7.94/-5.04	-4.65/-4.58	-8.8/-12.71	-16.57/-14.58	-11.48/-12.85	-19.52/-14.91	
Θ(172.5°)	-18.66/-17.58	-18.45/-19.08	-14.7/-11.81	-11.86/-9.84	-9.34/-2.85	-8.62/-8.31	-8.42/-8.62	-7.51/-6.92	-6.54/-6.38	-6.38/-6.39	-6.2/-5.81	-6.34/-7.04	-7.35/-6.94	-6.93/-8.62	-11.4/-14.72	-17.8/-18.09	-14.73/-14.92	-7/-6.96	-6.43/-6.46	-7.01/-9.47	-12.29/-13.45	-16.05/-14.88	-17.14/-17.03	-16.8/-17.88	
Θ(180°)	-12.4/-11.11	-10.14/-12.98	-14.93/-18.71	-18.47/-19.29	-18.43/-17.03	-14.76/-11.5	-9.55/-9.5	-9.6/-8.59	-8.99/-9.68	-9.8/-10.73	-10.36/-11.71	-10.9/-10.49	-12.77/-12.19	-17.09/-15.78	-17.83/-16.41	-14.25/-14.33	-11.44/-13.47	-12.45/-13.03	-15.87/-18.01	-13.49/-10.99	-10.89/-10.28	-10.58/-11.31	-11.85/-12.63	-12.87/-11.66	
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°)	-12.13/-12.28	-11.24/-10.55	-8.82/-8.18	-6.81/-8.37	-8.17/-8.43	-7.66/-8.85	-9.74/-11.03	-12.14/-14.73	-19.34/-17.91	-18.9/-17.53	-16.01/-13.84	-11.42/-9.89	-8.86/-7.46	-7.02/-6.18	-5.6/-5.2	-4.66/-5.19	-6.58/-7.27	-7.49/-7.84	-9.59/-11.09	-10.47/-12.19	-13.75/-15.53	-15.74/-17.61	-15.76/-15.38	-14.72/-13.05	
Θ(7.5°)	-4.88/-4.03	-3.98/-3.89	-3.34/-2.92	-3.42/-3.61	-4.62/-5.98	-6.26/-5.68	-7.82/-9.96	-10.2/-11.52	-12.48/-11.2	-11.56/-10.97	-10.45/-10.93	-9.86/-9.42	-8.85/-8.8	-9.42/-8.29	-8.89/-10.72	-9.29/-9.7	-9.86/-9.47	-10.75/-13.01	-11.3/-12.89	-14.55/-15.33	-17.82/-18.93	-19.07/-12.38	-9.91/-9.61	-6.02/-5.57	
Θ(15°)	-8.61/-5.98	-6.06/-6.17	-6.49/-7.14	-6.81/-6.68	-5.79/-6.95	-7.25/-6.07	-5.72/-7.26	-7.83/-8.44	-9.11/-7.19	-6.92/-6.42	-5.57/-6.93	-7.17/-8.24	-9.42/-10.46	-9.76/-8.63	-9.15/-9.13	-7.72/-6.84	-6.53/-5.26	-6.17/-7.89	-11.88/-15.51	-17.41/-17.78	-18.97/-18.24	-16.97/-12.28	-12.01/-11.3		
Θ(22.5°)	-2.23/-2.69	-3.91/-4.42	-3.86/-4.47	-5.7/-4.01	-3.21/-3.47	-4.46/-5.07	-5.11/-5.53	-4.88/-3.45	-4.31/-4.13	-4.87/-3.52	-2.92/-3.13	-3.07/-3.58	-4.81/-4.75	-3.6/-2.86	-1.89/-1.49	-2.22/-2.89	-2.61/-3.35	-3.54/-4.13	-5.01/-5.31	-7.02/-10.35	-10.42/-10.72	-9.6/-10.74	-7.38/-4.18	-3.15/-2.44	
Θ(30°)	-4.54/-6.5	-3.44/-2.72	-2.36/-2.6	-4.28/-4.54	-5.35/-4.91	-4.15/-4.5	-3.37/-3.33	-4.85/-3.14	-4.19/-3.25	-2.76/-3.03	-0.07/-0.78	-2.08/-4.38	-6.31/-6.75	-4.31/-2.65	-1.83/-0.77	-0.11/-1.08	0.740/0.02	-0.72/-0.82	-2.34/-3.19	-2.68/-2.45	-5.73/-4.88	-4.8/-5.77	-5.66/-4.81	-4.93/-4	
Θ(37.5°)	-0.29/-1.33	-1.34/-1.48	-3.57/-6.4	-6.29/-5.1	-4.2/-2.56	-1.37/-1.72	-2.45/-2.17	-3.49/-1.87	-2.18/-1.22	-0.870/0.09	-0.27/-0.79	-2.42/-5.2	-6.63/-4	-2.95/-3.51	-1.33/-1.17	0.61/-1.25	1.86/-1.47	-1.07/-1.6	-2.28/-2.09	-2.14/-3.02	-1.1/-2.45	-2.67/-2.54	-1.99/-0.35		
Θ(45°)	0.42/-0.37	-0.11/-19	1.62/-139	0.27/-0.55	-0.56/-2.15	-2.3/-3.09	-3.37/-2.53	-4.52/-4.06	-3.29/-1.13	-0.14/-0.2	0.37/-0.31	-0.42/-4.03	-6.08/-3.43	-3.23/-5.51	-2.38/-0.8	0.660/89	-1.15/-2.71	-4.36/-5.23	-3.11/-2.26	-1.94/-4.11	1.270/72	-2.60/-0.69	-1.71/-10.38		
Θ(52.5°)	-0.68/-1.26	0.52/-1.32	1.55/-2.75	2.95/-1.78	0.57/-1.64	2.52/-2.91	2.94/-0.65	2.07/-2.94	4.52/-2.3	-0.920/89	0.980/08	-0.46/-3.13	-1.39/-1.77	-1.83/-0.9	0.02/-0.01	-0.54/-0.02	0.23/-0.44	0.13/-2.12	-1.87/-3.97	-5.08/-2.72	2.39/-4.67	1.010/79	1.21/-49	-1.08/-129	
Θ(60°)	-2.27/-0.33	0.32/-1.44	1.87/-259	3.76/-25	-0.46/-0.99	-1.52/-2.23	-5.6/-2.68	-1.27/-1.36	2.26/-4.01	-1.051/-37	1.66/-1.33	1.02/-4.66	1.30/-7	1.41/-4	0.33/-1.17	-0.840/98	0.30/-43	1.05/-1.13	-1.49/-3.29	-2.97/-2.35	-1.91/-4.85	0.39/-1.08	0.120/88	-0.88/-219	
Θ(67.5°)	-6.7/-2.51	0.32/-3.8	4.5/-37	4.82/-59	0.33/-1.2	-1.91/-4.33	-7.07/-4.3	-0.29/-0.41	0.13/-2.63	0.352/-54	0.70/-3	0.37/-1.1	1.732/-08												



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(67.5°)	-5.72/-3.12	-1.04/0.92	1.09/1.53	-4.18/-4.98	-4.07/2.46	-2.78/-1.59	0.27/1.68	0.81/1.12	2.21/3.4	0.68/0.33	0/-0.08	0.45/1.59	1.62/2.9	2.15/1.65	0.38/0.71	1.48/0.41	1.72/0.9	0.71/0.92	0.04/-1.03	-1.99/-4.8	-3.49/-1.1	-0.79/-1.25	-2.35/-3.41	-2.84/-3.66
Θ(75°)	-3.58/-1.93	-0.98/0.6	1.52/0.23	-2.35/-3.41	-2.67/-2.43	-1.37/-0.84	-0.21/0.64	1.29/1	1.94/1.23	0.08/-0.01	-0.52/-1.23	-0.68/0.06	0.63/1.87	1.65/1.29	-0.1/-0.19	0.08/-1.89	1.08/0.35	0.48/1.58	1.77/1.32	0/-0.05	-2.21/0.26	-0.05/-0.17	-0.51/-1.47	-2.21/-2.7
Θ(82.5°)	-4.64/-2.27	-1.14/-0.45	0.23/-0.06	-1.51/-2.81	-2.91/-4.18	-1.82/-1.61	-2.03/0.24	0.53/0.77	1.22/0.45	-0.78/-0.93	-1.6/-2.52	-2.77/-1.57	-0.49/0.39	-0.19/0.06	-0.26/-1.43	-0.08/-0.16	0.44/0.33	-0.24/0.76	1.1/46	0.56/-3.72	-1.74/-0.26	-1.21/-2.43	-0.8/-0.5	-2.74/-3.17
Θ(90°)	-7.12/-4.64	-2.24/-1.7	-2.37/-2.84	-3.54/-3.66	-3.76/-5.22	-2.53/-5.79	-6.81/-3.84	-1.65/-0.84	-1.2/-2.15	-3.2/-3.32	-3.83/-4.54	-4.02/-2.88	-2.51/-2.66	-2.1/-0.05	-1.89/-3.6	-5.83/-6.01	-1.43/-1.28	-1.9/0.08	0.45/1.15	0.41/-2.69	-0.91/-0.42	-2.04/-4.8	-3.38/-2.37	-4.6/-4.4
Θ(97.5°)	-7.72/-6.78	-4.64/-4.03	-4.79/-4.8	-5.28/-6.3	-5.56/-6.71	-3.54/-8.2	-9.24/-6.34	-3.08/-2.74	-3.99/-4.62	-6.11/-5.45	-5.7/-6.34	-5.86/-5.55	-4.49/-3.92	-4.05/-1.59	-4.63/-5.99	-8.37/-9.26	-4.22/-3.9	-4.31/-1.11	-1.91/-1.15	-1.61/-4.54	-2.68/-3.06	-4.63/-7.76	-5.27/-4.08	-6.86/-5.93
Θ(105°)	-13.86/-11.09	-6.53/-5.2	-6.51/-6.91	-7.75/-9.75	-8/-8.61	-5.32/-9.21	-14.35/-7.94	-4.96/-5.12	-6.19/-6.28	-9.09/-7.32	-7.41/-7.42	-7.94/-9.57	-6.58/-9.61	-6.01/-4.56	-7.43/-7.25	-8.33/-11.04	-11.24/-9.65	-6.73/-3.1	-6.56/-5.29	-4.3/-8.16	-5.57/-6.65	-9.07/-16.77	-10.98/-9.03	-9.3/-7.65
Θ(112.5°)	-14.83/-10.32	-9.47/-9.6	-9.28/-8.53	-10.02/-10.58	-11.82/-8.41	-8.22/-14.35	-14.39/-8.73	-8.3/-8.6	-6.36/-7.36	-9.38/-9.06	-9.6/-11.11	-10.14/-9.91	-8.15/-9.16	-8.79/-6.52	-7.49/-9.54	-9.49/-11.71	-14.52/-14.19	-11.56/-7.92	-12.28/-9.17	-8.85/-14.39	-12.1/-9.55	-11.64/-15.75	-12.33/-9.15	-10.71/-10.03
Θ(120°)	-17.27/-13.5	-17.59/-10.7	-7.98/-8.22	-10.26/-13.75	-12.36/-13.27	-12.07/-12.27	-17.21/-10.99	-8.28/-8.24	-9.67/-11.35	-12.03/-12.61	-11.41/-13.27	-13.05/-11.23	-9.8/-10.86	-10.11/-8.7	-9.27/-10.22	-14.6/-16.7	-11.79/-8.79	-9/-6.21	-8.89/-8.17	-7.83/-11.13	-9.07/-6.42	-10.71/-11.68	-14.16/-14.34	-18.94/-12.43
Θ(127.5°)	-16.22/-14.99	-16.69/-14.55	-14.49/-13.41	-12.56/-12.39	-11.75/-11.17	-14.84/-18.31	-15.34/-10.1	-9.82/-11.16	-10.44/-12.13	-15.86/-17.24	-14.84/-13.19	-13.62/-12.57	-12.09/-10.97	-15.49/-14.93	-14.87/-16.11	-15.44/-12.58	-11.7/-8.83	-9.26/-10.85	-12.45/-9.22	-8.84/-9.51	-11.63/-19.24	-13.39/-8.57	-15.11/-15.58	
Θ(135°)	-15.44/-18.25	-17.86/-16.68	-15.1/-12.89	-14.06/-12.51	-14.79/-14.93	-14.19/-14.92	-18.82/-17.42	-13.97/-13.87	-12.66/-13.25	-15.71/-18.93	-17.52/-18.73	-19.27/-15.45	-13.94/-14.16	-16.26/-10.38	-12.34/-15.48	-14.84/-12.42	-18.52/-19.26	-17.25/-17.89	-12.08/-15.36	-18.57/-17.78	-14.28/-17.04	-11.82/-15.24	-15.24/-14.72	-18.47/-18.98
Θ(142.5°)	-17.51/-18.14	-18.12/-17.75	-18.58/-17.43	-16.74/-19.4	-17.47/-19.1	-15.17/-13.05	-14.28/-13.7	-12.3/-14.6	-16.77/-16.79	-19.12/-18.93	-18.82/-17.46	-15.27/-15.93	-17.46/-13.4	-13.54/-16.9	-18.33/-17.18	-19.2/-17.38	-9.98/-12.91	-15.24/-15.53	-15.38/-18.07	-18.23/-18.13	-16.16/-12.74	-16.5/-18.16	-17.91/-18.36	
Θ(150°)	-18.49/-17.89	-17.07/-17.95	-18.56/-18.54	-18.74/-19.18	-18.8/-18.26	-18.04/-16.85	-14.69/-13.02	-12.63/-14.63	-19.34/-18.94	-16.51/-18.2	-17.31/-17.54	-19.35/-18.16	-18.61/-15.82	-17.82/-17.91	-18.67/-18.38	-16.45/-16.68	-18.02/-17.92	-19.13/-14.32	-10.43/-10.68	-13.22/-14.5	-13.07/-14.57	-17.83/-18.12	-18.44/-19.09	-16.45/-15.71
Θ(157.5°)	-18.03/-16.63	-14.49/-15.18	-15.88/-19.17	-18.25/-18.59	-18.75/-17.44	-17.89/-19.13	-18.13/-18.51	-19.19/-17.65	-17.44/-17.58	-17.72/-18.93	-17.62/-18.38	-19.09/-18.13	-17.88/-17.83	-17.33/-14.65	-15.1/-17.53	-17.98/-18.63	-14.31/-13.67	-13.37/-15.08	-18.79/-18	-18.83/-17.99	-17.54/-19.27	-18.29/-18.52	-15.75/-12.21	-12.52/-16.35
Θ(165°)	-17.65/-18.35	-15.6/-16.29	-16.97/-18.49	-17.99/-18.89	-18.71/-17.51	-16.65/-14.47	-14.77/-17.15	-17.82/-19.15	-17.49/-18.36	-18.35/-17.73	-17.73/-18.15	-18.73/-18.53	-18.47/-18.72	-18.45/-17.31	-17.77/-18.34	-19.19/-19.05	-18.84/-18.62	-18.19/-15.82	-18.55/-18.88	-18.6/-16.32	-16.75/-18.57	-18.02/-18.59		
Θ(172.5°)	-18.81/-18	-18.29/-18.95	-18.71/-17.9	-18.96/-18.51	-18.16/-17.07	-15.96/-15.13	-15.82/-16.9	-18.48/-18.62	-17.85/-18.47	-19.05/-18.06	-17.66/-17.9	-18.05/-17.98	-17.79/-17.83	-17.68/-18.88	-16.54/-16.01	-16.28/-17.33	-18.79/-18.2	-18.28/-18.8	-17.47/-18.65	-17.32/-17.47	-18.15/-19.78	-17.11/-19.26	-18.61/-17.51	
Θ(180°)	-19.04/-19.06	-17.91/-18.98	-17.89/-19.23	-18.17/-17.92	-16.84/-16.53	-17.18/-17.87	-17.39/-16.97	-16.82/-17.13	-17.87/-18.24	-19.57/-18.66	-17.78/-18.75	-17.85/-19.15	-19.35/-18.22	-18.99/-19.18	-18.62/-18.05	-18.18/-16.52	-16.54/-17.15	-17.22/-15.09	-13.09/-12.73	-14.27/-16.99	-19.25/-18.72	-18.28/-19.27	-18.77/-17.82	-17.67/-18.51
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°)	-2.18/-3.41	-5.47/-8.49	-12.79/-12.37	-8.32/-5.21	-2.92/-1.15	0.24/1.36	2.12/2.64	3.0/2.7	3.34/3.37	3.26/2.94	2.43/1.65	0.65/-0.78	-2.55/-4.76	-7.53/-11.26	-12.72/-9.52	-6.28/-3.73	-1.71/-0.25	0.81/57	2.22/2.67	2.92/2.98	2.92/2.64	2.26/1.81	1.2/0.45	-0.46/-1.23
Θ(7.5°)	-4.71/-7.51	-12.16/-18.62	-14.48/-7.46	-4.18/-2.43	-1.2/-0.38	0.19/0.45	0.57/0.5	0.48/0.52	0.79/1.19	1.61/1.85	1.87/1.6	0.99/0	-1.41/-3.36	-6.33/-10.59	-15.98/-12.26	-7.21/-0.46	-1.59/0.11	1.34/2.54	3.46/4.22	4.65/4.87	4.8/4.3	3.72/3.08	2.25/1.15	-0.63/-2.52
Θ(15°)	-5.92/-8.47	-9.93/-10.76	-8.6/-6.06	-3.99/-2.49	-1.32/-0.21	0.4/0.59	0.24/0.22	-0.49/-0.11	0.62/1.43	1.99/2.18	2.22/2.26	1.93/0.77	-1.93/-6.1	-11.18/-12.46	-13.52/-13.25	-0.92/-5.43	-2.61/-0.44	1.32/8.5	3.98/4.6	5.15/3.7	5.4/5.01	4.35/4.46	2.17/0.95	-1.12/-3.46
Θ(22.5°)	-5.78/-5.31	-5.35/-7.1	-9.69/-10.1	-7.67/-4.46	-1.83/0.04	0.71/0.67	0.2/-0.54	-1.08/-0.82	0.14/1.15	1.93/2	1.67/1.27	0.52/-1.55	-5.54/-14.06	-18.71/-13.01	-9.98/-7.79	-6.14/-4.86	-3.01/-0.99	0.84/2.18	3.07/3.85	3.96/3.91	3.23/2.24	1.36/0.72	0.07/-0.78	-2.79/-5.07
Θ(30°)	-4.18/-4.22	-3.72/-6.79	-13.16/-16.9	-12.38/-8.51	-4.93/-2.57	-1.08/-0.96	-1.63/-2.44	-2.34/-1.32	-0.63/-0.78	-0.81/-0.2	0.13/-0.45	-1.18/-3.56	-9.43/-14.98	-13.22/-10.71	-9.21/-7.5	-7.22/-8.1	-6.67/-4.04	-1.82/-0.01	1.02/1.64	1.93/1.95	1.45/0.83	-0.05/-1.48	-3.2/-4.05	-18.02/-18.59
Θ(37.5°)	-2.66/-4.48	-4.87/-8.33	-13.98/-18.52	-12.65/-9.39	-5.24/-3.87	-3.36/-3.05	-3.65/-4.45	-1.28/-2.06	-3.16/-2.45	-1.26/-2.44	-1.39/-3.97	-12.68/-11.63	-9.71/-9.7	-11.86/-9.99	-7.71/-6.99	-5.87/-5.33	-2.38/-0.53	-0.05/0.14	0.03/-0.32	-0.67/-0.35	-0.34/-1.41	-3.68/-6.82	-6.67/-3.34	
Θ(45°)	-4.3/-5	-5.71/-7.78	-11.52/-18.58	-13.31/-8.31	-6.23/-7.05	-7.11/-5.83	-6.21/-3.77	-5.43/-2.94	-2.79/-4.4	-5.26/-3.58	-2.53/-3.34	-6.73/-11.7	-14.65/-11.82	-10.01/-9.89	-10.67/-9.14	-7.55/-7.94	-6.04/-4.74	-3.09/-0.95	0.08/-0.62	-1.26/-1.27	-1.37/-1.31	-1.24/-3.16	-5.73/-7.27	-6.17/-4.8
Θ(52.5°)	-4.71/-5.34	-7.05/-8.82	-13.34/-18.09	-18.56/-10.63	-10.21/-11.5	-10.29/-6.99	-6.57/-8.13	-7.45/-5.86	-6.25/-8.79	-9.15/-5.59	-4.38/-6.04	-10.24/-16.1	-15.73/-14.27	-16.31/-15.66	-13.55/-9.99	-9.3/-8.64	-6.71/-6.32	-6.02/-2.97	-1.73/-2.51	-2.87/-2.33	-2.48/-2.43	-1.82/-3.84	-6.89/-8.84	-6.26/-4.57
Θ(60°)	-5.62/-7.49	-8.31/-9.54	-16.64/-18.36	-17.76/-17.47	-19.3/-18.49	-13.04/-9.15	-18.9/-8.65	-11.2/-9.57	-10.41/-12.92	-13.96/-9.43	-8.38/-9.52	-13.94/-17.17	-16.81/-19.05	-17.71/-12.82	-12.25/-12.24	-8.47/-5.63	-4.87/-5.94	-4.9/-3.93	-4.95/-3.39	-4.73/-5.76	-1.89/-1.4	-6.56/-6.41		
Θ(67.5°)	-8.33/-9.65	-11.64/-13.96	-19.31/-18.48	-17.54/-19.21	-17.28/-18.72	-14.65/-11.11	-10.58/-10.77	-19.04/-15.14	-14.51/-18.94	-17.95/-13.95	-12.96/-15.94	-17.89/-18.28	-19.08/-17.49	-18.16/-18.88	-18.69/-18.93	-16.39/-15.66	-13.71/-10.09	-11.4/-9.75	-8.47/-9.23	-7.38/-5.86	-7.49/-8.96	-9.23/-10.22	-10.37/-11.55	-8.6/-8.28
Θ(75°)	-13.73/-12.44	-14.91/-14.66	-17.49/-14.19	-18.71/-18.35	-18.6/-18.89	-15.79/-14.82	-14.57/-12.52	-17.53/-18	-17.96/-18.18	-18.71/-18.56	-17.8/-18.11	-18.3/-18.28	-17.73/-17.76	-18.19/-19	-17.72/-19.13	-18.81/-18.81	-18.93/-12.44	-11.63/-12.52	-14.59/-17.97	-11.47/-7.83	-9.27/-11.07	-14.21/-19.3	-13.19/-13.26	-14.2/-13.35
Θ(82.5°)	-18.57/-17.11	-18.27/-15.17	-18.49/-18.65	-17.9/-19.01	-18.87/-18.24	-19/-19.52	-18.58/-13.92	-18.04/-18.84	-17.68/-19.16	-17.58/-18.18	-18.12/-18.57	-19.03/-17.17	-18.41/-17.34	-17.29/-18.21	-18.74/-18.9	-18.28/-18.75	-19.17/-17.06	-13.91/-12.43	-14.47/-17.89	-14.9/-18.05	-11.28/-12.23	-14.69/-18.99	-17.83/-16.31	-18.48/-17.89
Θ(90°)	-18.07/-15.34	-17.51/-16.33	-18.08/-18.2	-17.93/-18.47	-18.05/-18.42	-19.38/-17.73	-18.51/-17.24	-18.29/-18	-19.02/-17.58	-18.88/-19.26	-18.96/-16.48	-17.18/-18.42	-17.87/-17.41	-18.31/-17.95	-18.59/-18.52	-17.66/-17.92	-18.31/-18.33	-17.73/-14.33	-14.32/-17.45	-16.42/-17.41	-18.39/-16.52	-18.65/-19.31	-17.89/-16.56	-17.91/-16.7
Θ(97.5°)	-17.84/-17.91	-18.61/-18.78	-18.94/-18.54	-17.88/-18.77	-18.81/-19.23	-15.93/-13.54	-17.63/-18.1	-19.02/-18.16	-18.66/-18.98	-16.9/-18.39	-16/-15.38	-18.86/-17.99	-19.27/-18.97	-16.79/-18.35	-18.94/-18.72	-19.62/-18.55	-17.02/-18.32	-18.55/-15.06	-18.53/-17.08	-14.06/-13.36	-18.37/-17.63	-18.83/-18.88	-19.24/-17.38	-18.23/-19.13
Θ(105°)	-18.63/-17.79	-17.05/-18.72	-19.26/-19.18	-19.24/-18.53	-18.4/-18.86	-16.42/-15.34	-18.85/-18.94	-18.11/-18.26	-17.53/-18.86	-18.55/-16.59	-17.01/-14.56	-17.77/-19.08	-18.33/-18.62	-16.89/-19.48	-19.14/-18.57	-19.34/-18.25	-17.96/-19.16	-17.45/-12.84	-18.76/-19.19	-18.51/-15.63	-18.98/-18.71	-18.74/-18.44	-18.97/-17.38	-18.59/-17.72
Θ(112.5°)	-18.85/-18.42	-18.82/-18.8	-17.9/-17.36	-18.64/-18.66	-19.51/-18.33	-18.64/-18.66	-19.51/-18.33	-18.45/-18.91	-18.85/-18.5	-18.1/-18.15	-18.93/-18.84	-18.24/-18.53	-17.93/-19.23	-17.41/-17.63										



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(120°)	-13.6/-14.97	-15.43/-10.97	-8.51/-9.25	-12.32/-12.63	-11.35/-10.4	-17.5/-18.54	-14.2/-11.11	-10.9/-11.67	-10.92/-10.93	-14.24/-10.77	-9.96/-8.51	-8.78/-8.75	-11.43/-11.49	-11.85/-14.14	-15.09/-10.03	-9.11/-13.78	-15.68/-8.33	-8.89/-12	-15.51/-13.44	-9.66/-8.96	-9.21/-7.7	-10.42/-15.45	-14.65/-11.74	-11.94/-11.54
Θ(127.5°)	-19.36/-14.08	-16.93/-15.06	-10.2/-10.99	-12.22/-13.39	-14.85/-15.17	-14.07/-18.15	-18.24/-17.19	-13.26/-18.04	-11.32/-11.15	-10.57/-13.25	-12.27/-14.6	-14.43/-13.76	-15.84/-18.48	-13.12/-19.79	-10.4/-18.32	-10.78/-11.74	-15.23/-13.7	-14.97/-11.27	-11.91/-13.43	-13.1/-13.08	-9.39/-8.43	-13.16/-17.87	-17.8/-8.69	-16.37/-11.91
Θ(135°)	-18.45/-16.07	-15.46/-15.17	-12.5/-11.73	-17.21/-11.73	-18.71/-18.72	-17.93/-16.48	-14.79/-12.11	-14.09/-14.01	-11.48/-15.59	-17.99/-14.65	-12.54/-11.27	-12.25/-13.64	-13.67/-15.63	-12.5/-18.18	-18.03/-18.39	-9.65/-14.7	-17.46/-15.94	-15.88/-13.66	-18.55/-19.49	-19.29/-16.67	-19.29/-17.98	-11.57/-14.93	-16.61/-13.25	-16.56/-18.75
Θ(142.5°)	-16.75/-17.48	-18.53/-18.41	-14.38/-11.96	-15.67/-19.16	-18.16/-17.54	-19.65/-17.7	-17.4/-14.88	-13.04/-15.63	-12.98/-14.15	-17.27/-17.04	-18.38/-16.89	-17.67/-17.66	-17.81/-18.4	-18.45/-18.42	-17.34/-14.36	-12.32/-19.57	-18.61/-17.33	-14.58/-11.17	-17.09/-14.85	-17.94/-18.72	-15.76/-13.55	-13.39/-12.61	-17.1/-15.33	-16.96/-17.82
Θ(150°)	-18.25/-17.94	-18.36/-18.81	-17.92/-18.83	-17.97/-18.13	-17.91/-18.11	-18.38/-17.96	-19.16/-18.98	-18.57/-18.22	-18.47/-19.03	-18.7/-17.9	-18.75/-17.13	-16.91/-17.13	-18.87/-17.98	-16.11/-17.25	-17.78/-17.72	-19.03/-16.07	-18.76/-19.09	-17.44/-19.22	-19.43/-16.19	-18.21/-17.76	-18.68/-18.01	-19.34/-18.11	-16.83/-18.15	-18.16/-17.94
Θ(157.5°)	-16.49/-19.55	-17.62/-15.89	-17.2/-17.78	-16.65/-18.11	-18.26/-17.44	-17.89/-17.36	-17.89/-15.89	-15.28/-18.35	-17.77/-17.55	-19.25/-18.87	-18.25/-18.64	-18.86/-18.73	-17.66/-17.95	-17.85/-19.38	-17.64/-19.64	-18.99/-18.9	-18.56/-14.39	-17.88/-16.21	-15.42/-17.73	-19.23/-17.43	-17.88/-18.87	-18.88/-18.7	-18.19/-18.59	-18.15/-18.17
Θ(165°)	-14.57/-17.05	-17.75/-16.53	-18.77/-18.64	-18.14/-18.39	-18.1/-18.51	-17.92/-19.09	-18.88/-18.82	-18.45/-18.6	-18.58/-18.43	-18.85/-18.05	-18.33/-19.06	-18.92/-19.2	-18.98/-18.67	-18.99/-17.81	-18.83/-18.8	-18.52/-19.18	-18.28/-17.81	-17.4/-18.34	-17.47/-18.35	-17.24/-17.69	-18.55/-17.88	-18.23/-18.79	-17.75/-17.87	-18.27/-15.21
Θ(172.5°)	-17.96/-18.58	-18.63/-18.43	-19.05/-17.39	-17.24/-18.82	-18.49/-18.43	-18.23/-18.29	-19.4/-18.33	-18.62/-19.72	-17.48/-18.15	-19.03/-18.9	-18.54/-17.72	-17.81/-18.56	-18.64/-18.26	-17.96/-18.46	-18.09/-17.7	-18.96/-17.96	-18.95/-18.22	-18.97/-18.14	-18.56/-17.84	-17.8/-18.88	-18.12/-18.43	-18.55/-17.38	-17.44/-18.36	-18.88/-19.19
Θ(180°)	-17.85/-18.08	-17.98/-18.77	-18.14/-17.5	-17.41/-18.83	-18.32/-18.93	-17.86/-19.37	-18.11/-17.64	-17.41/-18.85	-18.98/-18.99	-18.44/-18.25	-17.86/-18.31	-18.11/-18.67	-17.38/-18.3	-18.27/-17.85	-18.02/-18.08	-18.1/-19.15	-18.2/-18.11	-17.21/-17.88	-17.17/-18.4	-18.93/-18.06	-18.65/-19.31	-18.08/-17.93	-18.97/-17.5	
Freq(Hz)	6.895GPdL	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°)	-1.02/-3.03	-5.7/-8.63	-10.39/-9.06	-5.78/-3	-0.94/-0.46	-1.59/-2.3	3.13/3.62	4.11	4.04/3.99	3.94/3.71	3.29/2.51	1.44/0.11	-1.47/-3.78	-6.74/-10.29	-11.25/-8.88	-5.5/-2.78	-0.78/0.72	1.86/2.82	3.44/3.87	4.05/4.19	4.23/4.14	3.87/3.45	2.65/1.7	1.10/2.26
Θ(7.5°)	-1.59/-4.23	-8.55/-16.12	-18.24/-10.7	-6.48/-3.43	-1.53/-0.03	1.28/2.35	3.13/3.88	4.43/4.66	4.7/4.62	4.55/4.3	3.67/2.79	1.59/0.03	-1.73/-4.29	-7.39/-9.38	-7.68/-5.47	-3.46/-1.64	-0.33/0.75	1.54/2.24	2.78/3.41	3.95/4.35	4.57/4.64	4.49/4.18	3.46/2.38	1.18/0.12
Θ(15°)	-3.42/-6.61	-12.42/-19.06	-12.79/-7.62	-4.55/-2.29	-0.92/0.09	1.1/63	2.58/3.6	4.36/4.74	4.88/4.79	4.64/4.1	3.21/86	0.52/-0.95	-2.95/-6.39	-13.29/-12.26	-6.63/-3.46	-1.98/-0.46	0.52/1.13	1.58/1.92	2.6/3.3	4.1/4.71	5.16/-1.4	4.93/4.36	3.47/2.34	1.01/-0.85
Θ(22.5°)	-6.34/-12.08	-18.38/-19.38	-15.6/-7.65	-3.84/-1.66	-0.46/0.29	0.45/0.8	3.25/3.52	3.41/3.08	2.63/2.14	1.39/-0.06	1.48/-2.92	-5.17/-9.51	-15.27/-14.19	-8.41/-4.29	-1.38/0.26	1.02/1.33	1.55/2.01	2.45/2.4	3.84/4.19	4.16/4.03	4.61/4.25	3.78/3.32	2.38/0.41	-2.03/-5.63
Θ(30°)	-7.09/-8.73	-16.01/-17.43	-18.19/-9.72	-5.82/-3.27	-1.86/-1.25	-1.18/-1.04	-0.74/0.21	0.93/0.96	1.04/1.3	1.54/1.21	0.4/-1.09	-3.55/-5.77	-6.94/-9.27	-14.64/-19.23	-8.74/-3.94	-1.86/-0.72	-0.6/-0.68	-0.52/0.29	1.51/2.4	2.95/3	2.71/1.75	0.42/-0.16	-0.28/-0.63	-2.33/-5.13
Θ(37.5°)	-5.86/-5.15	-7.47/-12.72	-19.7/-10.63	-6.8/-3.42	-4.84/-4.68	-3.83/-3.93	-3.21/-1.3	-1.03/-1.1	-1.39/-0.69	0.50/3.01	-1.51/-4.64	-7.84/-9.68	-10.99/-15.72	-18.69/-19.83	-8.24/-4.79	-2.99/-2.13	-2.23/-2.49	-2.68/-2.13	1.39/1.32	0.72/-0.25	-1.43/-1.37	-1.47/-3.01	-3.56/-4.6	
Θ(45°)	-5.78/-5.41	-5.46/-8.89	-14.87/-18.58	-10.78/-7.23	-7.03/-9.53	-4.96/-4.86	-3.95/-3.2	-3.14/-3.66	-4.13/-2.64	-0.83/-0.73	-2.16/-5.53	-9.71/-13.22	-13.42/-14.59	-18.21/-17.67	-11.33/-6.75	-4.22/-3.42	-3.48/-3.47	-3.41/-3.63	-2.35/-0.63	-0.64/-1.03	-1.67/-2.96	-3.32/-2.57	-1.87/-3.1	-5.65/-6.83
Θ(52.5°)	-7.52/-7.66	-6.88/-9.53	-12.11/-13.98	-15.45/-13.57	-11.21/-6.86	-6.25/-6.06	-4.15/-4.31	-6.17/-6.94	-7/5.61	-3.64/-2.47	-3.35/-6.08	-7.92/-10.57	-16.39/-18.14	-18.98/-18.81	-16.86/-9.9	-6.07/-5.39	-5.1/-4.76	-4.48/-5.16	-3.9/-2.8	-3.81/-4.02	-3.3/-3.52	-2.76/-3.06	-3.37/-4.53	-5.93/-7.83
Θ(60°)	-8.54/-10.24	-10.52/-13.63	-15.12/-16.22	-14.63/-17.84	-15.52/-8.48	-7.64/-7.31	-4.74/-8.18	-8.99/-8.01	-8.8/-8.68	-7.29/-5.31	-5.26/-7.7	-6.9/-9.47	-14.49/-18.98	-18.07/-18.36	-18.07/-14.66	-9.72/-9.51	-8.85/-9.17	-6.96/-6.98	-5.73/-5.31	-7.97/-8.18	-6.35/-5.99	-4.47/-5.05	-5.89/-7.24	-7.85/-7.3
Θ(67.5°)	-11.39/-13.01	-13.85/-18.22	-17.58/-15.97	-16.42/-17.69	-18.1/-11.6	-9.39/-10.35	-17.74/-8.09	-13.31/-9.64	-12.62/-14.14	-11.58/-8.66	-8.19/-9.54	-10.42/-10.93	-17.78/-16.65	-17.01/-17.07	-15.31/-13.02	-12.19/-14	-10.78/-11.44	-8.73/-8.38	-11.69/-11.44	-10.59/-9.5	-8.23/-9.09	-8.55/-10.3	-10.19/-8.14	
Θ(75°)	-17.52/-18.04	-16.32/-18.7	-18.28/-18.68	-17.74/-18.79	-19.01/-14.79	-12.63/-14.67	-12.01/-10.8	-15.71/-11.85	-15.3/-16.96	-14.46/-12.26	-12.34/-12.69	-12.03/-11.86	-13.49/-18.06	-18.45/-16.62	-19.02/-18.68	-19.1/-19.54	-19.41/-17.35	-15.52/-16.67	-13.32/-10.12	-12.52/-13.79	-14.09/-12.36	-11.96/-16.3	-13.9/-13.8	-12.88/-10.97
Θ(82.5°)	-18.92/-18.37	-17.77/-18.05	-18.48/-18.7	-17.79/-17.35	-16.4/-17.96	-17.21/-14.06	-16.5/-16.6	-18.71/-18.61	-17.08/-16.05	-15.31/-16.31	-15.37/-14.83	-17.18/-18.46	-19/-19.75	-19.3/-17.8	-18.0/-19.2	-17.94/-17.1	-18.42/-18.1	-18.09/-12.61	-13.26/-14.73	-16.97/-16.66	-17.97/-19.06	-17.09/-15.65	-15.52/-15.43	
Θ(90°)	-18.37/-19.19	-17.95/-18.62	-16.47/-18.84	-18.15/-17.49	-18.21/-19.27	-19.07/-18.99	-18.97/-19.1	-16.82/-16.39	-17.95/-18.59	-19.01/-19.07	-18.37/-17.3	-18.95/-18.02	-18.85/-18.9	-17.92/-18.54	-17.39/-18.47	-18.04/-17.52	-17.93/-19.04	-18.26/-17.9	-18.81/-15.75	-14.9/-15.74	-18.34/-16.93	-16.86/-18.29	-18.51/-18.63	-18.5/-18.37
Θ(97.5°)	-18.53/-17.49	-18.67/-18.82	-18.92/-18.16	-18.34/-17.61	-18.14/-18.75	-18.33/-18.56	-19.03/-18.41	-18.51/-15.47	-18.95/-19.01	-18.26/-19.29	-19.16/-18.19	-19.37/-18.89	-19.06/-18.76	-17.33/-18.91	-18.91/-18.5	-18.14/-17.41	-19.37/-18.62	-18.45/-15.08	-18.3/-18.25	-18.56/-19.58	-18.93/-18.78	-18.24/-17.03	-18.51/-18.29	-18.84/-18.16
Θ(105°)	-19.33/-17.74	-19.02/-18.59	-18.32/-17.69	-18.97/-18.61	-18.77/-17.64	-19.28/-18.26	-16.8/-18.22	-17.94/-17.38	-18.38/-17.99	-18.31/-17.95	-18.44/-17.22	-18.31/-18.58	-17.68/-19.04	-18.55/-17.53	-17.94/-17.91	-17.37/-18.18	-19.23/-18.38	-18.49/-17.3	-17.78/-17.09	-18.25/-18.26	-19.34/-19.12	-18.9/-18.66	-19.21/-18.64	-18.24/-18.58
Θ(112.5°)	-19.25/-18.19	-18.2/-18.87	-18.48/-18.75	-17.48/-17.9	-18.4/-18.85	-17.68/-17.13	-19.04/-18.57	-16.33/-17.87	-18.38/-18.85	-18.88/-17.66	-18.4/-17.1	-18.02/-18.37	-19.02/-18.69	-18.55/-18.7	-17.83/-18.08	-18.47/-18.16	-18.75/-18.2	-17.76/-17.53	-18.91/-18.86	-17.95/-17.68	-18.43/-18.08	-18.98/-17.26	-18.86/-18.24	-19.05/-18.92
Θ(120°)	-18.65/-18.34	-17.73/-18.06	-18.02/-18.67	-17.87/-18.69	-18.21/-18.15	-17.69/-18.68	-17.16/-19.09	-17.62/-17.8	-15.19/-17.3	-18.57/-17.66	-18/-18.53	-17.25/-19.09	-18.11/-17.68	-17.9/-17.9	-18.55/-18.57	-19.39/-18.1	-17.83/-18.2	-17.81/-17.93	-18.8/-19.14	-18.63/-16.59	-18.38/-17.86	-17.72/-18.8	-18.59/-17.63	-19.2/-17.82
Θ(127.5°)	-15.44/-18.84	-18.31/-18.98	-17.33/-19.97	-18.06/-18.58	-17.99/-16.88	-18.31/-18.98	-18.03/-17.62	-18.49/-17.52	-18.12/-18.2	-18.41/-17.84	-17.45/-18.3	-17.91/-19.24	-19.29/-19.83	-18.42/-19.12	-17.39/-18.83	-17.9/-18.75	-18.17/-18.78	-18.43/-18.21	-18.73/-18.6	-19.01/-18.59	-18.98/-18.18	-18.61/-17.9	-17.79/-18.84	-17.42/-19.13
Θ(135°)	-16.88/-17.83	-19.02/-18.61	-18.51/-18.69	-17.99/-19.05	-17.78/-17.61	-17.73/-18.23	-18.92/-16.69	-18.19/-19.21	-19.16/-18.51	-17.96/-17.48	-18.11/-18.9	-17.64/-18.89	-19.2/-17.77	-19.1/-18.16	-17.54/-19.04	-17.84/-19.46	-18.16/-17.58	-19.05/-17.78	-18.95/-19.07	-19.35/-18.76	-19.05/-14.43	-18.04/-17.64	-17.99/-19.05	-17.93/-17.7
Θ(142.5°)	-16.61/-18.14	-17.38/-17.95	-18.15/-18.81	-17.41/-18.66	-17.83/-18.71	-17.6/-19.1	-18.45/-19.07	-18.87/-18.15	-16.6/-17.56	-17.76/-17.86	-17.65/-18.36	-17.67/-18.9	-18.36/-19.07	-19/-18.01	-18.65/-19.34	-18.39/-19.54	-17.33/-18.29	-16.05/-18.05	-17.63/-18.57	-18.81/-18.29	-18.21/-15.55	-17.3/-19.23	-18.37/-18.39	-17.67/-17.94
Θ(150°)	-18.65/-17.89	-18.66/-18.99	-19.04/-19.15	-18.96/-18.12	-17.83/-19.12	-18.64/-18.38	-18.82/-18.44	-18.33/-19.04	-19.3/-18.44	-19.32/-18.26	-18.47/-18.26	-18.15/-19.37	-17.69/-18.9	-18.27/-17.71	-18.31/-18.06	-17.83/-17.7	-17.62/-18.77	-18.47/-18.43	-18.85/-19.13	-18.12/-18.37	-18.66/-16.98	-17.88/-18.15	-16.58/-17.04	-17.97/-18.69
Θ(157.5°)	-17.51/-17.53	-17.78/-19.06	-18.66/-19.05	-18.08/-18.34	-19/-15.06	-18.49/-18.84	-18.19/-18.72	-19.09/-19.33	-17.91/-17.7	-18.94/-18.13	-18.11/-17.7	-18.25/-17.77	-18.46/-18.78	-17.95/-18.59	-19.21/-18.43	-18.88/-17.67	-17.66							



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(165°)	-13.44/-14.31	-13.91/-14.16	-16.19/-19.19	-18.57/-18.63	-17.39/-17.6	-17.55/-18.43	-12.81/-8.91	-7.27/-6.68	-6.58/-7.72	-8.48/-8.36	-8.97/-11.03	-12.28/-12.48	-14.31/-17.93	-18.11/-17.66	-11.92/-17.38	-18.95/-13.58	-16.19/-17.5	-18.84/-13.75	-9.11/-17.98	-9.6/-9.63	-7.19/-17.06	-8.17/-9.73	-10.11/-9.08	-10.34/-12.19	
Θ(172.5°)	-8.56/-9.14	-8.73/-11.31	-13.87/-13.74	-17.86/-15.03	-12.93/-13.27	-10.33/-8.53	-7.42/-5.9	-5.17/-5.9	-7.6/-10.49	-12.09/-11.57	-11.44/-11.5	-12.49/-16.51	-18.71/-17.93	-18.53/-17.39	-18.06/-18.14	-15.83/-17.24	-19.21/-17.9	-15.24/-16.57	-16.33/-14.98	-10.86/-8.98	-8.79/-9.25	-9.68/-9.44	-8.71/-6.9	-8.02/-8.34	
Θ(180°)	-8.84/-9.66	-11.91/-10.74	-9.77/-12.07	-14.31/-16.53	-18.47/-16.17	-13.61/-9.24	-9.77/-9.86	-10.39/-9.68	-10.18/-12.72	-15.77/-15.77	-14.97/-15.92	-15.84/-14.69	-12.63/-11.56	-10.93/-11.92	-13.36/-14.44	-16.68/-17.4	-19.24/-19.08	-19.45/-13.33	-10.32/-10.23	-9.56/-8.57	-8.12/-9.71	-7.47/-3.6	-8.2/-8.92		
Freq(Hz)	6.175GPdL	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°)	-13.13/-13.58	-12.41/-11.97	-13.17/-13.7	-12.12/-12.31	-14.24/-14.81	-15.32/-16.36	-18.85/-17.52	-19.41/-18.88	-17.94/-18.33	-13.31/-13.96	-13.57/-12.04	-12.45/-11.17	-10.61/-10.94	-12.63/-11.62	-11.45/-12.94	-14.73/-15	-17.16/-19.39	-18.77/-18.51	-18.15/-17.98	-18.98/-18.07	-18.34/-17.85	-15.12/-15.36			
Θ(7.5°)	-8.66/-8.59	-8.71/-8.94	-8.43/-8.29	-8.49/-8.31	-9.18/-9.17	-8.97/-11.06	-15.12/-15	-14.65/-15.66	-18.64/-18.14	-17.52/-18.59	-17.46/-16.24	-11.99/-11.65	-11.23/-10.82	-11.83/-12.08	-13.06/-13.5	-13.49/-13.88	-14.29/-14.94	-13.84/-14.77	-15.57/-14.68	-14.66/-14.2	-13.79/-13.65	-12.94/-13.54	-12.5/-10.56	-9.68/-9.08	
Θ(15°)	-5.45/-5.77	-5.57/-4.84	-4.72/-5.24	-5.6/-6.29	-7.41/-8.32	-8.6/-9.46	-10.56/-10.62	-13.48/-14.17	-12.8/-13.8	-12.39/-10.91	-11.69/-10.23	-8.3/-8.75	-7.82/-4.99	-8.4/-7.85	-6.04/-5.46	-5.52/-7.09	-9.17/-8.55	-7.93/-9.82	-9.71/-7.94	-7.05/-7.72	-7.92/-6.88	-6.81/-7.88	-7.33/-6.51	-6.37/-5.28	
Θ(22.5°)	-2.87/-2.18	-1.93/-2.06	-2.45/-2.73	-3.3/-4.37	-4.31/-4.64	-6.62/-7.81	-9.23/-13.8	-15.91/-14.52	-11.31/-11.39	-12.46/-10.44	-6.62/-3.35	-2.72/-4.57	-5.68/-4.9	-4.41/-4.76	-6.3/-7.1	-5.97/-5.86	-6.17/-5.02	-5.16/-4.7	-4.61/-4.94	-6.2/-6.17	-6/-6.67	-4.97/-5.09	-5.79/-4.18		
Θ(30°)	-1.25/-1.34	-1.12/-1.18	-2.54/-3.23	-2.81/-3.62	-5.19/-5.43	-6.31/-6.54	-4.14/-3.93	-6.86/-10.99	-13.24/-9.14	-10.89/-12.06	-9.17/-3.74	-2.09/-2.21	-3.17/-5.44	-4.88/-4.67	-4.23/-2.53	-2.54/-4.43	-5.09/-4.56	-4.45/-3.54	-2.9/-2.26	-1.98/-2.4	-4.49/-5.41	-4.74/-6.84	-4.99/-3.04	-1.89/-1.41	
Θ(37.5°)	0.220/49	0.27/-0.44	-2.07/-3.31	-3.9/-3.45	-2.5/-1.36	-1.48/-3.27	-2.25/-0.64	-1.23/-2.98	-5.86/-4.75	-5.92/-9.44	-4.33/-3.01	-5.26/-6.48	-4.44/-4.74	-3.36/-5.1	-1.97/-2.61	-1.23/-1.09	-3.97/-4.99	-3.14/-2.25	-1.91/-2.95	-2.09/-2.08	-4.01/-4.54	-3.05/-2.68	-1.88/-1.06	-0.61/-0.13	
Θ(45°)	0.940/15	-1.31/-1.16	-0.59/-0.93	-1.91/-1.77	-0.97/-1.32	0.030/89	-0.061/15	1.31/-1.73	1.2/10.69	-0.76/-3.36	-0.92/-2.53	-0.36/-2.47	-1.11/-2.76	-0.59/-0.91	-0.910/68	1.280/84	-0.47/-2.47	-2.88/-3.1	-0.66/-3.11	-4.31/-2.14	-3.27/-3.91	-1.9/-1.62	0.2/0	-10.10/92	
Θ(52.5°)	1.470/9	0.46/-0.19	-0.61/-0.9	-0.54/-0.59	0.49/16	1.382/06	2.71/45	1.880/94	-0.423/08	1.51/-1.37	0.77/-2.27	1.32/-2.17	-1.77/-1.94	1.38/19	0.930/06	-0.46/-0.03	0.22/-1.02	-2.71/-1.85	-0.71/-1.94	-4.38/-3.33	-2.83/-3.06	-0.430/03	1.16/103	1.142/14	
Θ(60°)	1.71/16	1.410/73	-0.36/-0.45	-0.450/41	1.45/168	1.81/2	2.68/174	1.79/195	0.743/38	2.1/148	2.84/-1.28	-2.6/-7.28	-4.76/-2.59	2.7/48	4.36/336	2.15/-0.78	-2.2/-4.39	-2.76/-2.95	-3.44/-3.41	-3.53/-0.66	-1.94/-1.19	-0.010/06	1.65/18	1.882/15	
Θ(67.5°)	1.25/119	0.540/94	1.63/184	2.25/22	2.632/44	1.74/242	2.630/98	0.71/98	1.652/55	2.142/76	1.63/-0.97	-3.54/-5.82	-5.61/-2.23	2.735.3	4.993/24	1.95/0.1	-1.66/-2.91	-2.87/-4.47	-7.87/-6.88	-3.34/-4.95	-0.110/15	0.12/0.68	2.24/28	2.12/88	
Θ(75°)	1.220/64	-0.071/33	1.712/09	2.52/29	2.592/85	2/233	1.990/1	0.230/03	2.04/142	2.39/3.12	1.78/-0.99	-3.69/-4.55	-3.74/-3.2	-1.073/46	4.583/02	-0.49/-0.02	0.91/-2.72	-5.16/-6.3	-7.43/-3.65	-2.27/-3.4	-1.650/17	-0.07/-1.22	2.28/2	1.67/135	
Θ(82.5°)	10.12	-0.550/87	0.53/103	1.622/12	2.412/44	2.082/06	1.480/3	-0.35/-0.83	1.040/16	2.08/145	-0.12/-0.56	-4.5/-3.91	-4.06/-4.15	-3.030/58	3.24/185	-0.810/77	0.62/-5.67	-9.62/-7.07	-4.650/02	-1.08/-3.48	-1.25/-0.31	-0.79/-0.87	0.9/125	1.50/92	
Θ(90°)	0.470/2	-0.530/04	-0.580/16	-0.580/16	1.411/39	1.411/27	1.041/26	0.760/29	-0.88/-1.44	-0.94/-0.81	0.78/-0.8	-1.85/-2.12	-4.28/-5.36	-3.3/-3.67	-4.04/-2.38	1.260/96	-0.177/0.46	-0.22/-4.51	-1.82/-4.2	-3.370/74	-1.5/-3.7	-2.69/-1.48	-2.89/-1.64	0.390/32	0.280/84
Θ(97.5°)	-1.5/-0.85	-1.31/-1.43	-1.94/-0.99	0.360/58	0.580/72	0.360/21	0.07/-0.57	-2.18/-1.9	-2.19/-1.93	-1.77/-3.24	-2.92/-6.68	-8.21/-5.44	-6.76/-6.36	-4.08/-5.35	-0.6/-2.29	-5.5/-4.44	-1.27/-1.64	-8.66/-3.35	-3.43/-1.5	-3.46/-1.47	-3.31/-3.07	-5.03/-1.67	-1.81/-1.71	-0.53/-0.15	
Θ(105°)	-2.87/-2.18	-1.18/-1.93	-2.31/-2.11	-1.39/-0.16	0.22/-0.65	0.650/29	-1.07/-0.27	-2.07/-2.99	-3.44/-2.99	-5.52/-6.46	-4.54/-9.54	-13.58/-7.45	-9.07/-10.17	-8.14/-10.91	-7.45/-7.91	-11.86/-8.99	-5.49/-4.88	-11.16/-6.64	-7.35/-8.55	-8.03/-10.08	-4.81/-4.11	-8.8/-3.26	-2.96/-8.35	-1.99/-0.7	
Θ(112.5°)	-3.37/-2.69	-1.19/-1.48	-2.58/-2.85	-2.39/-1.28	-2.07/-1.45	-0.47/-0.11	-1.480/-1	-2.53/-5.02	-1.159/-4.43	-9.21/-6.03	-7.84/-9.11	-17.15/-10.48	-14.11/-18.1	-18.94/-16.08	-5.33/-4.32	-5.86/-4.49	-8.77/-18.67	-11.89/-11.5	-18.18/-18.11	-10.26/-18.73	-7.57/-21	-12.64/-3.03	-3.1/-3.99	-2.68/-3.21	
Θ(120°)	-2.3/-2.12	-2.56/-3.45	-4.63/-4.92	-2.92/-0.61	-0.44/-1.69	-0.71/-1.29	-3.46/-1.24	-2.9/-5.24	-4.67/-6.22	-9.21/-6.54	-7.43/-10.89	-17.81/-10.39	-10.88/-11.34	-12.12/-12.77	-8.07/-5	-7.11/-6.84	-10.03/-13.34	-17.01/-12.9	-13.58/-9.03	-15.3/-17.43	-9.82/-10.9	-13.55/-5.85	-4.76/-4.01	-2.67/-4.09	
Θ(127.5°)	-4.46/-4.18	-4.99/-6.09	-5.88/-4.57	-2.84/-2.3	-3.81/-1.96	-1.37/-1.43	-2.97/-1.59	-3.41/-3.86	-7.43/-6.16	-9.89/-11.2	-8/-15.29	-17.14/-13.2	-18.49/-18.51	-16.87/-18.39	-19.12/-16.73	-11.42/-9.11	-12.37/-11.72	-18.41/-11.05	-9.85/-12.72	-13.13/-14.62	-8.84/-17.04	-10.36/-9.21	-5.65/-6.11	-1.41/-4.81	
Θ(135°)	-7.23/-7.93	-6.42/-5.55	-5.02/-4.51	-4.41/-2.27	-3.84/-1.94	-3.24/-4.41	-3/-2.58	-3.83/-5.66	-5.92/-7.12	-8.11/-10.9	-9.88/-12.34	-12.41/-17.84	-13.97/-17.9	-13.15/-13.15	-7.14/-4.03	-10.66/-17	-9.11/-15.3	-18.94/-18.22	-18.96/-18.41	-9.76/-17.41	-16.51/-11.82	-5.08/-7.69	-9.81/-7.8		
Θ(142.5°)	-6.71/-5.8	-6.28/-5.14	-4.04/-3.7	-4.34/-4.41	-3.49/-3.24	-4.05/-3.6	-4.45/-6.07	-4.67/-5.64	-9.37/-8.22	-7.51/-11.03	-11.53/-19.33	-15.53/-11.13	-10.82/-16.87	-19.06/-17.89	-18.08/-15.12	-18.56/-16.27	-13.66/-12.36	-8.63/-10.63	-17.07/-12.3	-9.87/-17.85	-17.93/-11.86	-17.74/-10.16	-7.82/-8.98	-8.01/-7.93	
Θ(150°)	-6.73/-6.33	-4.91/-4.71	-6.22/-7.38	-5.52/-3.89	-4.18/-4.43	-4.19/-5.14	-6.58/-4.75	-4.77/-7.63	-10.29/-11.16	-10.55/-10.99	-10.92/-12.08	-9.24/-9.97	-11.03/-12.91	-14.15/-17.83	-15/-11.11	-12.93/-12.03	-12.32/-14.1	-16.16/-15.93	-17.24/-14.13	-12.64/-13.71	-14.48/-15.92	-12.52/-12.91	-11.33/-9.14	-9.23/-8.06	
Θ(157.5°)	-11.25/-10.01	-7.45/-6.92	-7.25/-6.1	-5.16/-5.27	-6.19/-5.36	-6.36/-5.59	-6.47/-6.04	-8.4/-11.32	-10.61/-11.14	-12.81/-13.74	-16.86/-18.58	-16.86/-18.58	-13.29/-19.18	-14.02/-12.44	-15.03/-17.78	-15.32/-12.67	-12.18/-11.86	-14.52/-18.27	-18.38/-17.56	-12.51/-12.59	-15.18/-19.21	-15.16/-10.77	-11.46/-11.67		
Θ(165°)	-9.41/-7.84	-6.42/-5.43	-4.6/-3.87	-4.18/-4.97	-4.94/-5.81	-7.58/-6.99	-6.37/-6.7	-6.62/-6.77	-8.94/-10.64	-11.98/-12.75	-12.04/-13.43	-13.01/-11.97	-12.75/-13.45	-12.2/-13.16	-13.72/-13.34	-15.18/-15.65	-17.4/-14.58	-11.86/-14.31	-15.15/-19.23	-17.88/-17.49	-17.64/-16.69	-17.92/-16.24	-14.56/-12.17	-11.93/-10.97	
Θ(172.5°)	-11.23/-9.21	-8.49/-7.87	-7.29/-6.87	-6.65/-6.21	-6.39/-6.27	-6.01/-6.49	-7.39/-6.16	-10.09/-14.43	-16.63/-14.46	-14.41/-17.72	-19.69/-14.66	-13.46/-13.62	-14.19/-13.42	-12.79/-14.86	-18.07/-16.19	-13.52/-12.03	-11.57/-10.56	-10.86/-13.49	-16.19/-19.03	-17.78/-17.38	-19.58/-18.11	-18.9/-18.42	-18.55/-15.41	-14.74/-13.97	
Θ(180°)	-11.36/-9.95	-9.49/-8.88	-7.59/-6.36	-6.65/-5.74	-5.61/-5.21	-6.01/-7.66	-8.41/-8.83	-9.91/-11.77	-16.02/-17.59	-18.77/-18.87	-18.14/-17.73	-18.23/-17.51	-14.01/-10.84	-9.9/-8.81	-6.87/-5.64	-5.66/-6.39	-6.87/-7.42	-8.53/-9.01	-9.28/-9.29	-9.27/-12.07	-15.25/-16.26	-17.77/-18.56	-17.49/-13.4	-12.79/-12.8	
Freq(Hz)	6.475GPdL	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°)	-14.92/-13.68	-18.18/-17.44	-18.72/-14.71	-18.41/-17.64	-17.94/-12.72	-12.82/-11.52	-17.10/-10.56	-10.9/-9.19	-8.96/-11.57	-13.05/-14.07	-15.51/-15.46	-13.91/-12.97	-12.81/-18.78	-17.11/-18.93	-18.64/-17.73	-12.93/-11.73	-9.83/-9.59	-10.28/-9.79	-9.07/-9.57	-9.81/-9.81	-10.69/-10.31	-13.73/-15.76			
Θ(7.5°)	-18.79/-18.68	-18.13/-18.16	-15.61/-14.6	-11.78/-9.97	-10.63/-8.57	-7.77/-12.1	-7.17/-6.7	-6.05/-6.25	-7.1/-9.8	-13.23/-15.4	-18.53/-17.83	-18.56/-17.78	-16.9/-18.36	-18.25/-17.22	-18.19/-19.26	-18.28/-18.74	-17.44/-18.94	-18.95/-13	-13.25/-14.67	-13.54/-14.58	-13.23/-15.2	-13.79/-13.33	-14.14/-16.15	-17.09/-18.89	
Θ(15°)	-15.72/-18.69	-17.45/-18.51	-12.75/-13.54	-12.95/-8.88	-10.39/-13.09	-8.78/-9.37	-8.79/-6.37	-5.39/-6.36	-6.96/-7.5	-11.66/-13	-13.31/-10.96	-11.6/-12.61	-15.64/-18.55	-18.16/-15.76	-16.55/-18.69	-18.46/-18.88	-19.31/-18.04	-19.09/-18.09	-17.48/-16.64						



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(15°)	-5.57/4.39	-3.01/2.65	-3.41/5.16	-6.39/-7.72	-9.29/-12.91	-16.73/-16.3	-17.16/-15.8	-13.97/-16.1	-17.68/-19.1	-18.52/-13.5	-12.48/-10.6	-10.47/-10.68	-9.7/-10.43	-11.67/-14.1	-17.44/-17.25	-18.5/-17.83	-15.59/-13.2	-10.74/-8.8	-9.11/-11.22	-13.74/-13.76	-19.11/18.94	-16.34/-15.9	-11.23/-8.64	-7.79/-6.32
Θ(22.5°)	-4/-3.41	-3.69/-4.87	-5.63/-4.83	-5.48/-5.97	-5.27/-6.54	-11.34/-12.27	-12/-10.5	-8.16/-9.91	-12.46/-11.57	-12.06/-8.13	-9.92/-8.42	-7.45/-5.68	-4.05/-4.81	-6.33/-7.54	-8.62/-8.72	-10.24/-12.42	-11.37/-10.03	-7.5/-5.56	-4.98/-6.02	-8.59/-12.22	-11.27/-9.95	-8.18/-8.85	-7.02/-6.12	-5.29/-4.29
Θ(30°)	-3.78/-3.69	-4.59/-4.16	-5.45/-4.31	-6.31/-3.93	-3.54/-1.71	-2.53/-4.52	-7.87/-2.51	-4.96/-4.59	-6.64/-3.64	-5.07/-6.89	-10.69/-8.14	-4.48/-2.6	-1.99/-3.63	-5.1/-8.06	-1.34/-7.15	-6.25/-6.11	-1.71/-3.26	-2.69/-2.46	-1.71/-1.85	-3.14/-4.94	-9.79/-4.09	-3.28/-3.9	-4.28/-3.61	
Θ(37.5°)	-2.13/-2.51	-2.21/-1.29	-0.64/-1.08	-1.44/-2.6	-4.04/-3.29	-2.5/-2.33	-3.15/-5.2	-2.6/-2.02	-5.25/-3.44	-3.22/-6.04	-4.88/-3.29	-3.89/-3.49	-3.29/-3.9	-5.87/-8.78	-4.63/-4.77	-5.22/-6.15	-4.95/-2.21	-0.71/-1.06	-1.65/-1.13	-1.04/-1.85	-3.11/-3.75	-1.04/-1.75	-2.51/-2.74	-1.76/-1.97
Θ(45°)	-0.23/-1.05	-0.59/-2.15	1.18/0.02	-1.25/-1.78	-1.95/-2.42	-2.8/-2.47	-1.33/-1.02	-1.44/-0.7	-3.34/-2.33	0.06/-1.52	-2.51/-3.12	-9.51/-2.61	-1.59/-1.21	-2.9/-3.46	-3.92/-1.09	-0.87/-1.61	-2.34/-1.54	0.79/1.09	0.26/-1.84	-0.95/-3.07	-1.96/-1.28	0.66/-0.81	-0.74/-0.61	0.3/-0.62
Θ(52.5°)	-0.67/-1.03	0.09/1.8	2.09/1.86	0.54/-1.36	-2.21/-2.08	-1.98/-1.1	-1.83/-1.05	-0.51/-2.31	1.25/-2.37	0.04/-3.11	-4.37/-0.93	-0.29/-1.51	-2.17/-2.25	-2.05/-1.49	-0.66/0.06	-2.10/-3.4	1.66/1.97	1.78/-0.2	-0.53/-0.5	1.03/-0.15	1.36/0.18	0.03/-0.47		
Θ(60°)	-0.78/-0.72	1.44/2.38	1.94/3.55	1.97/0.92	-1.28/-1.03	-0.33/-0.42	-0.78/0.21	0.85/-1.81	-0.12/-0.3	0.75/1.19	1.93/-0.97	-4.2/-2.97	-1.02/-1	0.21/1.31	0.32/-0.76	0.03/0.51	0.41/0.79	1.34/1.36	1.58/-1	-2.8/-0.15	0.08/0.71	0.39/1.27	1.62/0.53	1.05/-1.06
Θ(67.5°)	-0.38/0.16	1.53/-1.9	1.02/1.78	1.02/0.21	-0.07/-0.89	-0.02/-1.65	0.08/0.3	-0.5/-0.25	-0.87/0.43	0.25/-1.94	1.63/-2.7	-5.18/-4.96	-3.64/-2.18	1.6/2	0.6/-0.2	0.71/-0.04	0.02/-0.86	0.16/-1.77	-2.61/-3.78	-4.47/-0.54	0.01/1.28	0.45/2.03	1.32/0.79	-0.03/-0.99
Θ(75°)	-0.12/1.11	1.65/0.77	0.61/1.14	0.87/-0.31	-0.43/-0.69	0.34/1.73	1.83/-0.36	0.07/-0.48	-1.49/1.44	-1.37/1.45	1.69/-2.03	-4.42/-4.8	-4.35/-1.4	-0.39/2.04	1.45/-1.16	-1.84/-0.15	1.74/0.97	0.53/-2.59	-5.75/-4.28	-3.64/-0.42	0.06/1.68	0.51/1.68	0.19/1.2	-1.04/-0.16
Θ(82.5°)	-0.87/0.75	0.59/0.48	1.62/1.27	0.49/0.25	0.63/0.06	-0.05/0.35	0.42/-0.62	-1.63/0.39	-2.62/0.39	-2.44/0.31	-0.34/-2.41	-4.65/-4.07	-3.67/-5.27	-2.89/0.23	0.79/-1.99	-4.42/-0.19	1.86/-0.25	-0.25/-2.94	-3.05/-2.15	-1.92/-0.87	-0.59/1.6	0.35/1.12	-0.48/0.72	-0.98/-0.12
Θ(90°)	-0.92/0.37	0.26/0.27	1.76/1.1	-0.28/0.41	0.61/-0.25	-0.3/-1.65	0.54/-0.33	-2.17/0.15	-4.16/-1.05	-3.81/-1.8	-1.87/-2.14	-5.54/-4.98	-4.57/-5.96	-8.15/-3.16	-0.13/-1.98	-5.24/-1.99	0.64/-2.02	-3.66/-1.7	-1.79/-1.41	-2.03/-2.05	-1.89/-2.03	-0.36/-0.69	-1.95/-3.4	-0.97/0.07
Θ(97.5°)	-0.82/0.07	0.47/0.07	1.49/-0.14	-1.22/0.42	0.62/-1.15	-0.18/-4.49	-0.34/-1.66	-3.09/0.35	-8.75/-2.89	-4.58/-4.2	-2.88/-3.07	-9.95/-7	-6.44/-7.76	-7.73/-5.59	-1.75/-4.6	-8.57/-5.39	-0.44/-1.84	-3.5/-1.22	-3.04/-2.94	-5.35/-4.34	-3.31/-2.79	-1.73/-2.14	-1.54/0.1	-0.84/-0.51
Θ(105°)	-0.53/-0.47	-0.64/-1.28	-1.48/-1.8	-1.21/-1.14	-0.88/-0.84	-0.66/-4.71	-1.2/-4.76	-1.98/-2.55	-4.28/-5.15	-7.55/-5.4	-4.73/-6.84	-12.02/-11.37	-7.43/-10.04	-9.82/-6.5	-7.65/-10.48	-17.62/-11.5	-3.57/-4.1	-5.5/-4.36	-9.07/-7.04	-13.06/-7.66	-5.17/-4.77	-5.65/-3.88	-2.58/-1.94	-1.7/-0.93
Θ(112.5°)	-1.66/-2.35	-3.33/-2.92	-2.72/-2.62	-3.06/-2.44	-1.82/-1.4	-3.3/-2.37	-1.11/-2.58	-1.41/-1.505	-4.92/-5.29	-11.14/-7.93	-17.43/-15.75	-18.62/-16.03	-18.92/-17.94	-7.56/-6.79	-7.67/-6.23	-19.13/-10.92	-6.01/-11.35	-15.45/-11.6	-13.49/-13.96	-7.5/-6.13	-8.09/-6.59	-3.82/-4.16	-3.04/-2.18	
Θ(120°)	-4.47/-4.12	-4.78/-3.97	-2.43/-2.27	-2.98/-2.87	-2.37/-3.49	-3.8/-1.96	-3.27/-2.53	-2.22/-4.5	-1.77/-6.75	-8.91/-9.4	-9.95/-9.61	-17.71/-14.46	-14.98/-12.26	-19.33/-18.52	-9.45/-6	-10.93/-9.59	-12.88/-18.1	-18.62/-6.72	-11.82/-15.31	-15.99/-15.81	-14.27/-10.11	-9.61/-7.39	-5.93/-5.3	-5.19/-4.89
Θ(127.5°)	-6.01/-3	-2.38/-2.88	-2.78/-3.42	-3.73/-2.6	-2.9/-4.07	-3.2/-3.34	-3.94/-1.6	-3.32/-7.54	-8.66/-8.29	-8.37/-9.25	-10.65/-7	-15.49/-19.03	-18.78/-18.02	-16.84/-16.5	-18.23/-17.48	-13.92/-9.95	-9.99/-17.45	-13.61/-8.46	-11.11/-14.21	-15.65/-12.16	-19.44/-13.97	-9.93/-6.85	-7.64/-6.07	-4.84/-6.39
Θ(135°)	-6.45/-4.44	-5.51/-4.07	-5.4/-4	-2.88/-3.07	-3.84/-5.99	-3.13/-4.02	-4.17/-2.73	-4.12/-4.68	-8.78/-7.29	-8.58/-7.25	-10.71/-11.23	-9.53/-10	-16.36/-13.86	-10.5/-12.31	-12.5/-5.52	-4.14/-7.71	-9.92/-15.73	-15.2/-12.62	-18.81/-18.2	-17.49/-18.03	-17.11/-18.82	-9.23/-6.96	-8.11/-7.82	-4.66/-6.09
Θ(142.5°)	-7.83/-8.52	-8.25/-8.07	-5.67/-5.05	-4.03/-4.38	-3.39/-3.22	-4.06/-4.01	-5.82/-7.37	-8.02/-8.33	-7.13/-8.01	-11.21/-9.1	-13.28/-10.97	-13.71/-13.67	-18.49/-13.91	-12.88/-12.65	-10.74/-8.72	-13.71/-10.41	-7.57/-11.48	-18.27/-10.71	-15.11/-18.72	-17.81/-18.2	-12.91/-16.77	-12.02/-8.28	-9.11/-10.93	
Θ(150°)	-9.22/-7.48	-7.98/-7.24	-6.61/-6.61	-6.54/-4.4	-4.1/-4.65	-5.2/-5.83	-4.73/-5.98	-7.51/-7.1	-8.69/-14.72	-12.41/-12.09	-11.08/-9.88	-9.27/-9.47	-10.29/-11.41	-13.05/-15.36	-18.26/-16.05	-18.27/-16.02	-16.67/-18.68	-17.62/-17.84	-17.81/-18.25	-18.55/-16.53	-11.59/-16.26	-15.52/-14.95	-15.84/-12.56	-12.01/-8.56
Θ(157.5°)	-8.19/-8.71	-7/-6.73	-7.27/-7.9	-6.42/-5.68	-5.58/-5.3	-5.95/-6.83	-8.27/-8.28	-7.49/-6.73	-6.78/-9.27	-12.23/-15.1	-18.78/-18.06	-17.91/-18.32	-19.07/-18.47	-18.46/-17.61	-13.02/-11.01	-11.9/-12.35	-10.81/-11.49	-17.11/-19.3	-18.64/-18.37	-17.81/-17.41	-15.23/-17.37	-17.59/-12.86	-1.14/-10.03	-10.61/-8.4
Θ(165°)	-12.38/-10.11	-7.73/-6.5	-6.55/-6.7	-5.72/-5	-5.23/-5.74	-5.85/-6.63	-7.18/-8.09	-9.77/-11.4	-11.18/-9.35	-9.63/-13.31	-14.05/-13.9	-8.67/-9.15	-9.22/-14.3	-13.31/-13.88	-12.99/-16.49	-14.46/-13.93	-15.42/-12.76	-17.08/-17.98	-18.81/-19.03	-17.05/-17.96	-16.6/-12.37	-12.27/-15.41	-15.73/-16.94	
Θ(172.5°)	-8.3/-7.9	-7.61/-7.33	-6.25/-5.79	-5.49/-6	-7.5/-8.32	-9.6/-10.55	-10.55/-9.4	-8.67/-9.7	-10.75/-13.55	-15.12/-16.68	-17.59/-18.26	-14.92/-16.58	-12.72/-15.09	-13.39/-13.29	-12.48/-12.98	-13.28/-11.41	-10.31/-10.61	-11.01/-11.41	-14.27/-17.28	-18.32/-17.59	-18.44/-17.29	-17.1/-16.37	-13.17/-12.56	-10.9/-9.24
Θ(180°)	-11.73/-12.39	-10.73/-9.6	-10.76/-10.59	-8.9/-10.48	-10.63/-9.04	-9.28/-9.38	-8.89/-10.53	-14.95/-15.33	-15.49/-18.01	-17.57/-18.53	-18.24/-18.91	-17.76/-16.86	-13.04/-10.66	-9.46/-8.37	-7.79/-7.91	-8.36/-9.46	-10.49/-10.99	-12.2/-12.1	-10.15/-10.61	-12.47/-13.85	-14.56/-13.17	-15.67/-14.83	-13.08/-15.22	-12.3/-10.66
Freq(Hz)	6.995GPol.	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°)	-12.77/-14	-15.08/-14.12	-14.41/-14.53	-12.31/-12.49	-12.77/-10.26	-8.4/-8.34	-8.57/-7.5	-7.77/-7.8	-4.88/-9.08	-10.43/-10.56	-10.45/-10.4	-10.67/-12.56	-15.94/-15.44	-14.38/-14.1	-13.11/-11.4	-9.74/-9.92	-8.65/-8.26	-7.28/-7.05	-8.19/-8.4	-7.98/-7.33	-8.19/-8.74	-9.43/-10.03	-10.82/-12.6	
Θ(7.5°)	-7.4/-7.7	-8.16/-9.59	-10.94/-9.78	-10.71/-10.81	-10.51/-9.53	-9.14/-9.66	-8.75/-7.57	-7.77/-9.37	-10.51/-11.48	-10.73/-10.32	-13.81/-13.26	-12.11/-11.96	-13.58/-14.5	-12.39/-14.31	-18.97/-18.18	-17.71/-18.09	-17.36/-13.69	-11.31/-10.06	-10.28/-8.78	-7.36/-6.13	-6.06/-6.28	-6.74/-6.02	-5.81/-6.45	
Θ(15°)	-7.76/-8.85	-8.59/-9	-11.52/-12.3	-11.07/-10.94	-12.1/-11.62	-12.42/-14.22	-14.18/-14	-16.52/-10.87	-9.71/-12.95	-16.88/-16.62	-16.62/-16.97	-18.94/-17.23	-13.62/-11.43	-10.2/-10.8	-11.18/-10.67	-18.32/-17.92	-18.94/-19.09	-18.56/-16.34	-13.82/-14	-15.05/-17.84	-12.34/-8.59	-6.8/-5.59	-5/-4.52	-4.93/-6.03
Θ(22.5°)	-7.27/-7.47	-8.25/-8.07	-12.39/-14.37	-13.98/-15.64	-18.6/-19.68	-17.1/-19.11	-12.54/-11.51	-15.46/-11.36	-9.93/-13.1	-15.92/-15.25	-12.93/-15.23	-17.83/-17.16	-14.78/-11.3	-10.56/-18.7	-18.35/-18.93	-13.54/-12.67	-18.12/-18.5	-17.71/-17.07	-14.76/-17.44	-12.32/-13.54	-17.57/-10.65	-6.06/-4.94	-5.54/-5.73	-6.11/-6.48
Θ(30°)	-6.97/-8.5	-11.19/-18.2	-19.32/-17.29	-14.91/-17.69	-13.73/-14.10	-10.94/-13.91	-13.43/-12.53	-13.67/-10.59	-6.64/-5.06	-8.3/-17.74	-18.08/-18.77	-11.18/-12.31	-17.71/-15.32	-18.71/-18.1	-18.09/-19.23	-14.28/-14.31	-15.6/-16.25	-15.96/-17.14	-14.99/-13.72	-18.01/-13.33	-11.68/-14.48	-8.09/-6.71	-5.66/-7.47	-7.46/-6.78
Θ(37.5°)	-7.34/-8.32	-12.46/-15.36	-16.17/-16.12	-18.31/-17.98	-16.38/-17.53	-14.18/-10.33	-14.63/-9.84	-9.63/-8.2	-5.06/-5.52	-8.07/-8.22	-6.11/-13.81	-16.78/-16.76	-17.31/-19.46	-19.21/-17.56	-12.27/-10.81	-10.72/-7.67	-7.7/-10.55	-17.12/-11.71	-7.05/-8.9	-18.09/-12.68	-12.54/-15.07	-6.93/-6.34	-7.51/-7.12	-6.69/-6.32
Θ(45°)	-6.05/-7.39	-9.19/-8.85	-9.8/-16.62	-19.48/-19.2	-15.64/-18.66	-17.14/-15.01	-18.66/-18.73	-9.83/-9.74	-9.8/-7.46	-2.53/-4.33	-5.37/-12.34	-19.05/-15.14	-16.86/-18.36	-18.24/-15.18	-11.85/-8.27	-8.44/-12.39	-11.88/-16.61	-17.28/-16.82	-10.71/-12.36	-16.16/-10.36	-11.5/-14.76	-12.22/-14.22	-6.72/-6.02	-8.2/-7.4
Θ(52.5°)	-8.5/-8.58	-10.26/-8.57	-10.12/-15.53	-17.85/-18.54	-18.62/-17.2	-16.46/-13.2	-12.33/-6.43	-18.61/-12.44	-8.11/-8.91	-8.96/-5.25	-3.35/-6.41	-13.31/-14.49	-12.28/-15.83	-18.81/-17.08	-17.16/-13.08	-11.09/-16.47	-18.35/-19.26	-15.06/-9.01	-7.38/-12.28	-9.08/-8.93	-13.42/-18.25	-18.63/-14.77	-8.89/-8.47	-8.1/-9.51
Θ(60°)	-10.91/-11.54	-11.41/-9.74	-9.91/-16.29	-18.59/-16.62	-12.62/-12.43	-18.32/-9.84	-10.86/-14.22	-10.99/-16.38	-14.36/-12.72	-9.72/-17.16	-7.79/-5.98	-6.49/-12.47	-10.03/-11.73	-13.31/-18.55	-17.63/-15.62	-15.1/-13.77	-12.68/-9.82	-9.07/-9	-9.09/-8.09	-13.76/-18.37	-18.11/-18.55	-13.48/-10.27	-8.62/-12.16	
Θ(67.5°)	-10.11/-9.76	-9.25/-8.18	-11.16/-16.48	-17.88/-17.58	-14.83/-10.36	-16.12/-14.09	-15.62/-13.53	-10.33/-7.54	-14.68/-1															



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ (60°)	-18.39/-17.97	-17.96/-13.24	-13.51/-9.96	-14.36/-15.8	-12.9/-11.67	-15.74/-18.87	-18.55/-14.28	-11.65/-15.37	-18.71/-17.98	-18.65/-17.79	-15.64/-11.5	-12.92/-18	-18.74/-17.74	-18.66/-17.02	-15.12/-10.26	-8.77/-9.49	-11.66/-11	-10.86/-9.04	-10.12/-13.62	-10.92/-13.96	-18.07/-18.87	-18.48/-18.66	-18.54/-14.94	-18.63/-18.65
Θ (67.5°)	-19.12/-18.35	-18.12/-15.01	-16.45/-12.54	-14.47/-18.1	-19.06/-15.34	-19.29/-17.79	-17.68/-14.99	-13.36/-18.32	-18.02/-18.84	-19.56/-19.7	-15.18/-10.68	-14.43/-18.16	-16.18/-18.77	-18.24/-19.15	-16.54/-11.04	-10.07/-11.55	-14.11/-15.99	-16.25/-11.49	-9.98/-13.24	-11.28/-16.2	-18.87/-17.36	-17.34/-18.7	-19.01/-13.46	-19.3/-17.89
Θ (75°)	-18.63/-17.29	-18.41/-18.02	-16.83/-16.36	-15.67/-18.3	-17.96/-18.3	-19.35/-17.1	-17.08/-16.35	-17.55/-18.88	-17.89/-18.21	-18.89/-18.82	-19.26/-12.73	-13.06/-19.24	-16.77/-18.68	-18.57/-17.74	-17.3/-11.8	-12.04/-14.11	-16.21/-16.22	-17.89/-14.66	-11.39/-13.81	-10.28/-13.5	-18.48/-18.73	-17.63/-18.3	-18.71/-14.52	-17.29/-15.43
Θ (82.5°)	-18.7/-18.5	-18.76/-18.31	-17.3/-18.37	-18.79/-18.23	-18.62/-19.3	-19.17/-17.62	-18.19/-16.71	-17.89/-18.09	-16.52/-18.54	-18.84/-18.4	-18.23/-15.82	-18.57/-19.03	-18.61/-19.07	-18.17/-18.72	-16.8/-13.6	-14.55/-16.45	-16.95/-16.74	-17.68/-16.64	-11.97/-15.04	-12.29/-15.41	-18.79/-16.57	-17.86/-18.1	-18.99/-18.1	-17.37/-16.82
Θ (90°)	-18.23/-18.38	-19.22/-19.14	-19.26/-18.77	-18.63/-18.78	-18.79/-18.38	-17.38/-18.15	-18.74/-18.39	-18.97/-17.47	-17.25/-18.18	-18.02/-18.66	-19.4/-18.03	-19.25/-19.1	-18.37/-19.02	-18.02/-17.28	-15.88/-15.23	-18.59/-18.74	-17.82/-18.77	-17.27/-19.15	-13.51/-17.4	-16.08/-17.69	-18.75/-19.04	-18.77/-19.15	-18.8/-19.14	-17.59/-18.14
Θ (97.5°)	-18.73/-17.9	-18.24/-18.44	-17.61/-18.66	-17.99/-17.91	-18.9/-18.38	-18.75/-18.92	-18.57/-18.72	-18.17/-17.07	-18.07/-18.57	-18.21/-17.65	-16.69/-17.52	-17.87/-18.51	-19.29/-17.27	-18.07/-17.75	-16.48/-17.16	-18.75/-17.53	-17.93/-18.58	-18.55/-18.8	-17.29/-18.39	-18.66/-17.66	-18.03/-17.7	-18.48/-18.74	-18.32/-18.16	-18.58/-18.79
Θ (105°)	-18.92/-19.24	-18.15/-18.39	-17.59/-18.24	-18.12/-17.39	-18.03/-18.56	-19.11/-17.66	-17.58/-18.88	-18.58/-17.8	-18.27/-18.83	-17.44/-18.69	-16.85/-19.31	-17.71/-18.95	-18.49/-17.67	-19.25/-18.31	-18.37/-17.72	-18.05/-17.67	-18.71/-18.83	-18.89/-17.65	-18.24/-18.68	-18.92/-18.43	-18/-18.52	-17.83/-18.97	-17.85/-19.01	-18.69/-19.27
Θ (112.5°)	-17.7/-18.91	-17.02/-19.14	-18.14/-18.33	-18.56/-18.91	-18.02/-18.18	-18.66/-19.25	-17.67/-18.15	-18.59/-17.67	-18.41/-17.79	-18.1/-19.4	-18.51/-19.01	-18.84/-17.53	-17.33/-18.32	-18.7/-19.15	-17.33/-18.13	-18.29/-18.21	-19.05/-18.6	-18.47/-17.58	-18.25/-18.56	-17.67/-17.48	-18.3/-18.63	-19.08/-18.73	-18.07/-18.85	-18.85/-18.26
Θ (120°)	-16.22/-19.03	-18.52/-18.18	-18.18/-18.15	-18.66/-17.88	-18.38/-17.55	-19.14/-19.03	-17.81/-18.97	-17.78/-17.84	-17.37/-17.96	-18.65/-18.44	-17.81/-18.55	-18.27/-17.8	-18.97/-19.21	-19.14/-18.8	-17.62/-17.55	-16.93/-18.64	-16.77/-17.87	-19.01/-17.88	-18.64/-17.85	-18.81/-17.56	-18.51/-18.37	-18.96/-18.33		
Θ (127.5°)	-15.41/-18.24	-18.18/-18	-16.83/-19.18	-18.93/-18.07	-18.44/-18.47	-17.36/-18.29	-18.28/-17.45	-18.07/-18.51	-17.23/-18.5	-18/-19.43	-17.49/-18.08	-18.58/-18.19	-18.24/-18.7	-18.78/-18.4	-18.99/-19.67	-18.74/-18.39	-18.36/-18.49	-18.47/-17.88	-18.04/-17.65	-17.94/-17.4	-18.71/-18.9	-18.6/-17.67	-18.61/-17.74	-17.2/-16.38
Θ (135°)	-18.51/-17.59	-19.2/-18.89	-18.31/-18.4	-19.07/-18.25	-18.59/-19.24	-18.59/-18.11	-17.2/-18.16	-18.61/-18.36	-18.58/-19.16	-18.16/-18.14	-19.07/-19.4	-17.79/-18.14	-17.71/-17.92	-18.56/-18.72	-18.06/-16.32	-17.62/-17.04	-17.45/-17.47	-17.68/-18.79	-18.67/-17.71	-18.51/-18.47	-18.35/-18.3	-18.07/-17.84	-18.1/-18.45	-18.49/-18.71
Θ (142.5°)	-18.45/-18.84	-19.48/-18.45	-18.78/-16.22	-18.92/-16.6	-18.16/-18.93	-18.66/-17.3	-19.21/-19.9	-18.5/-18.29	-18.53/-18.36	-18.67/-18.48	-18.46/-18.91	-18.96/-16.62	-17.72/-17.81	-18.76/-19.07	-19.02/-17.88	-18.92/-18.42	-18.64/-17.94	-17.57/-18.13	-18.91/-19.05	-18.08/-18.32	-16.14/-17.87	-18.05/-18.99	-19.18/-17.97	-19.02/-18.95
Θ (150°)	-12.47/-18.27	-18.35/-17.55	-14.88/-13.68	-17.64/-17.7	-19.26/-17.41	-18.23/-16.72	-18.51/-17.87	-18.45/-18.77	-17.46/-18.07	-17.9/-19.07	-18.8/-18.89	-18.82/-17.53	-18.88/-17.52	-18.82/-19.32	-18.54/-17.8	-19.26/-18.06	-17.67/-17.12	-17.5/-18.47	-19.06/-18.05	-18.76/-19.6	-15.13/-17.69	-18.76/-18.75	-18.18/-17.64	-18.91/-12.65
Θ (157.5°)	-18.02/-18.13	-16.48/-18.63	-19.3/-19.22	-18.3/-18.62	-18.01/-18.09	-18.36/-18.97	-17.99/-18.97	-18.14/-19.1	-18.49/-18.73	-18.16/-19.13	-18.52/-18.8	-17.72/-18.8	-18.14/-18.3	-18.73/-18.07	-19.19/-18.32	-17.7/-17.19	-17.94/-18.33	-17.77/-18.8	-17.76/-18.33	-18.86/-14.41	-14.59/-18.4	-19.15/-18.97	-18.45/-18.65	
Θ (165°)	-14.37/-12.03	-17.62/-18.1	-15.1/-12.06	-13.24/-17.24	-19.19/-18.65	-18.71/-19	-17.26/-18.46	-18.1/-17.47	-17.89/-18.29	-18.91/-19.17	-19.05/-19.31	-18.14/-18.98	-16.56/-15.9	-16.89/-18.9	-18.32/-18.19	-17.46/-19.18	-19.18/-18.77	-18.92/-18.75	-17.46/-17.65	-19.6/-18.75	-18.97/-18.43	-17.46/-17.85	-18.41/-19.03	-16.11/-18.45
Θ (172.5°)	-19.01/-14.67	-13.79/-14.09	-16/-18.72	-17.65/-19.15	-18.81/-17.22	-16.23/-16.5	-17.41/-18.11	-17.14/-18.52	-18.55/-19.14	-18.83/-19.06	-19.07/-18	-16.83/-15.53	-14.67/-14.96	-17.14/-17.95	-18.46/-18.31	-17.81/-18.22	-19.17/-19.86	-18.7/-18.96	-19.05/-18.61	-17.09/-18.79	-18.52/-18.44	-18.97/-18.23	-18.13/-17.81	-18.59/-19.08
Θ (180°)	-16.5/-16.92	-18.53/-17.88	-18.68/-17.3	-17.22/-18.6	-18.47/-18.3	-17.54/-18.24	-19.19/-17.35	-18.81/-18.54	-18.4/-18.75	-18.07/-17.56	-18.18/-19.02	-18.66/-19.03	-18.46/-17.89	-18.3/-18.44	-19.1/-17.61	-18.86/-17.83	-19.27/-18.75	-18.56/-18.15	-18.3/-19.39	-18.27/-17.23	-18.21/-18.32	-18.31/-18.87	-18.79/-18.64	-17.7/-18
Freq(Hz)	6.475GPol.	Phi/Ant. 4	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-3.8/-4.68	-6.15/-3.84	-10.26/-11.1	-10.94/-10.96	-11.81/-12.55	-11.47/-9.9	-7.79/-8.6	-4.64/-3.56	-2.8/-2.42	-2.23/-2	-1.97/-1.24	-2.36/-2.51	-2.87/-3.57	-4.51/-5.95	-8.63/-11.75	-16.22/-18.12	-15.03/-11.52	-8.78/-6.54	-5.11/-3.95	-2.98/-2.38	-1.91/-1.52	-1.64/-1.93	-2.64/-3.2	-3.43/-5.36
Θ (7.5°)	-8.09/-1.7	-3.14/-9.8	-8.64/-9	-9.98/-9.81	-9.35/-8.79	-7.74/-7	-5.99/-4.89	-4.34/-3.09	-4.01/-3.46	-4.5/-5.16	-5.71/-6.23	-6.08/-5.62	-5.04/-4.81	-4.68/-4.79	-4.85/-5.29	-6.44/-7.83	-9.84/-1.08	-10.84/-9.05	-6.29/-4.51	-3.07/-2.02	-0.88/-0.07	0.30/-36	0.07/-0.15	-14.0/-13
Θ (15°)	-0.63/-1.25	-1.52/-1.57	-1.57/-1.15	-0.63/-0.18	0.01/-0.05	-0.03/-0.48	-0.7/-1.19	-1.88/-2.71	-4.14/-5.63	-6.34/-6.46	-5.42/-4.77	-4.24/-4.08	-3.41/-3.13	-3.61/-5.37	-8.29/-11.84	-12.19/-9.7	-6.7/-4.45	-3.22/-2.58	-2.17/-1.79	-1.22/-2.08	0.74/-1.51	1.972/-1.7	2.07/-1.67	1.190/-4.1
Θ (22.5°)	0.11/-0.56	1.29/-1	0.06/-0.82	-1.42/-1.28	-2.36/-1.77	-0.96/-0.52	-0.39/-0.25	0.09/-0.6	1.08/-1.13	0.980/-57	0.31/-0.18	-0.75/-1.17	-1.21/-1.58	-2.44/-2.99	-3.56/-3.77	-2.87/-0.48	1.252/-48	2.95/-2.6	1.73/-0.77	1.03/-1.61	1.61/-1.37	1.18/-1.51	2.012/-32	1.760/-69
Θ (30°)	0.830/-99	1.72/-75	1.10/-6	0.78/-21.39	1.962/-37	2.62/-11	1.962/-38	0.150/-18	1.01/-2	2.382/-04	1.571/-43	1.070/-153	-0.01/-0.64	-1.12/-1.59	-1.58/-2.09	-1.56/-0.46	0.711/-53	1.93/-18	1.360/-85	0.861/-63	2.021/-54	0.310/-7	0.350/-35	0.060/-69
Θ (37.5°)	1.68/-1.09	-0.72/-0.81	0.37/-1.78	2.763/-59	4.033/-93	3.192/-39	2.11/-83	1.82/-179	1.67/-1.98	1.81/-12	0.77/-1.33	1.620/-35	-1.68/-2.23	-1.26/-0.48	-0.17/-1.54	-2.15/-2.47	-2.43/-0.8	0.110/-62	0.330/-18	0.97/-1.21	0.950/-24	-0.690/-15	1.952/-35	1.220/-85
Θ (45°)	1.59/-1.3	-1.33/-1.13	0.260/-75	1.021/-74	2.232/-31	2.653/-31	3.753/-35	2.980/-35	2.48/-16	1.370/-94	0.120/-49	1.020/-49	-1.83/-1.1	0.090/-45	-0.02/-0.26	0.27/-0.48	-1.6/-0.37	1.192/-34	2.08/-15	2.082/-65	1.610/-32	-0.260/-41	0.160/-83	1.68/-56
Θ (52.5°)	0.34/-0.34	-0.520/-63	0.930/-51	1.022/-14	2.823/-08	3.593/-74	3.362/-19	0.540/-79	1.230/-76	1.06/-49	0.54/-0.07	0.53/-0.33	-0.41/-31	2.131/-85	-1.010/-61	0.71/-0.81	-1.15/-0.56	-0.11/-13	1.480/-79	0.241/-46	1.36/-161	2.41/-12	-1.39/-2.89	-2.26/-0.46
Θ (60°)	-2.48/-3.65	-2.08/-0.81	-2.49/-2.82	-0.350/-89	-0.070/-46	1.68/-2.08	0.950/-33	-0.28/-1.36	0.83/-1.63	1.371/-47	1.340/-1	0.670/-72	0.782/-02	2.82/-2.76	1.630/-68	1.230/-92	1.88/-1.25	0.560/-42	0.99/-0.38	-1.07/-0.13	-0.110/-22	2.03/-19	0.55/-0.46	-2.88/-2.54
Θ (67.5°)	0.31/-2.33	-2.36/-4.15	-5.14/-2.33	1.522/-61	-0.46/-1.33	-1.52/-0.27	0.160/-77	2.571/-39	2.143/-02	2.430/-56	0.091/-06	2.26/-152	1.32/-47	2.11/-188	0.731/-34	2.562/-47	4.072/-97	3.32/-165	0.82/-0.41	-0.70/-0.1	0.520/-7	2.662/-12	3.053/-66	1.420/-42
Θ (75°)	0.85/-0.92	-1.29/-1.7	-0.620/-76	2.393/-21	0.910/-76	-0.21/-0.67	1.330/-82	2.531/-97	2.132/-67	2.31/-029	-0.770/-96	2.91/-169	0.65/-1.1	0.42/-0.01	-1.41/-1.65	3.122/-32	3.793/-46	4.93/-0.1	1.81/-161	1.441/-58	2.552/-3	3.512/-47	3.623/-89	1.870/-25
Θ (82.5°)	0.16/-2.1	-1.69/-2.06	0.242/-22	1.931/-96	0.20/-26	-0.21/-0.4	1.29/-0.13	1.792/-14	1.29/-1.49	-2.030/-49	1.94/-0.17	-1.090/-49	-2.04/-2.43	-2.42/-1.44	1.68/-122	2.693/-63	4.422/-98	1.812/-48	1.881/-28	3.13/-11	3.962/-69	2.893/-36	1.24/-1.7	
Θ (90°)	0.5/-1.57	-0.92/-3.88	-2.790/-41	0.841/-41	0.62/-0.91	-2.130/-5	1.941/-86	0.16/-3.9	-1.180/-53	-0.48/-1.9	-2.37/-0.43	1.03/-1	-2.36/-2.52	-3.23/-0.71	-4.68/-0.84	-0.67/-0.59	0.762/-87	4.42/-91	0.69/-1.3	1.291/-33	3.593/-5	3.672/-51	2.182/-82	1.4/-1.91
Θ (97.5°)	-2.27/-4.02	-1.46/-3.68	-3.28/-2.33	-3.98/-1.39	-1.18/-1.36	-3.15/-1.28	-0.60/-0.02	-2.49/-5.57	-2.53/-2.15	-3.62/-5.05	-3.76/-1.9	-0.63/-3.69	-3.66/-5.16	-5.89/-10.73	-6.61/-2.87	-3.05/-2.73	-1.010/-26	2.080/-32	-2.51/-0.4	-0.41/-0.5	1.731/-03	0.59/-1.12	-1.020/-0.34	-1.49/-5.64
Θ (105°)	-4.8/-6.66	-2.16/-3.93	-4.21/-5.6	-10.33/-4.33	-4.33/-1.32	-4.02/-3.07	-4.35/-3.75	-3.96/-3.01	-4.48/-6.09	-6.23/-9.18	-7.95/-4.28	-3.01/-5.92	-5.94/-7.89	-6.32/-9.92	-6.52/-3.87	-4.04/-6.68	-2.81/-4.08	-3.11/-5.21	-2.79/-6.58	-3.81/-4.86				



Radiated Composite Gain Data of 6GHz

Appendix A.5

Θ(105°)	-17.7/-16	-18.05/-18.93	-18.62/-17.5	-18.98/-18.25	-18.68/-18.78	-18.54/-18.27	-18.07/-17.87	-16.84/-17.3	-18.76/-17.56	-18.66/-18.73	-18.63/-17.54	-18.47/-18.81	-18.85/-18.6	-18.9/-18.98	-16.13/-18.48	-19.69/-18.8	-17.53/-16.24	-19.08/-18.65	-19.04/-17.41	-18.1/-18.61	-18.4/-19.06	-17.69/-19.64	-18.47/-17.74	-17.95/-17.95
Θ(112.5°)	-18.24/-18.18	-18.17/-19.1	-17.8/-17.28	-18.87/-19.07	-17.94/-18.42	-18.68/-18.98	-18.25/-17.4	-17.14/-17.84	-18.75/-18.58	-18.59/-18.33	-18.48/-17.75	-18.52/-18.75	-17.22/-17.95	-18.52/-18.54	-14.57/-17.75	-14.88/-17.48	-17.75/-18.57	-19.33/-17.73	-18.65/-19.01	-16.02/-18.71	-17.82/-17.87	-17.39/-18.63	-19.08/-18.77	-18.9/-18.25
Θ(120°)	-18.7/-17.31	-18.34/-19.27	-18.06/-18.06	-17.32/-17.7	-18.67/-18.04	-17.39/-19.01	-17.87/-18.35	-17.96/-16.62	-18.77/-17.9	-17.66/-17.55	-18.08/-18.96	-18.56/-19.07	-19/-18.28	-18.9/-18.95	-18.14/-17.27	-17.61/-18.99	-17.61/-18.33	-17.66/-14.76	-18.9/-18.21	-16.41/-18.79	-18.44/-18.5	-18.22/-18.79	-18.97/-19.39	-18/-18.77
Θ(127.5°)	-18.77/-15.06	-17.83/-18.53	-18.39/-17.89	-17.82/-18.26	-18.78/-15.28	-17.73/-18.13	-18.62/-18.73	-18.38/-18.17	-18.68/-18.35	-19.06/-18.7	-18.15/-19.15	-18.16/-17.72	-18.69/-18.57	-18.48/-18.91	-17.94/-16.87	-18.79/-19.15	-18.83/-19.61	-19.2/-18.13	-18.49/-18.12	-18.28/-17.89	-18.06/-18.37	-17.39/-18.85	-17.33/-18.28	-18.17/-17.65
Θ(135°)	-19.06/-19	-18.51/-18.49	-19.12/-15.66	-18.67/-18.07	-19.1/-17.85	-17.55/-17.93	-18/-16.22	-17.17/-18.75	-18.99/-18.15	-18.77/-18.47	-18.1/-17.33	-17.93/-18.1	-17.8/-18.27	-18.96/-17.52	-18.34/-17.96	-14.18/-18.49	-16.47/-18.15	-18.07/-17.88	-18.79/-18.19	-19.01/-17.99	-17.94/-19.18	-18.98/-17.35	-17.15/-17.39	-17.74/-19.03
Θ(142.5°)	-17.55/-18.4	-19.03/-17.94	-18.28/-17.66	-18.34/-18.57	-16.23/-19.09	-18.3/-18.26	-18/-18.46	-18.92/-18.01	-18.53/-18.44	-19.04/-19.01	-17.55/-18.61	-18.76/-18.26	-18.39/-18.33	-18.59/-18.1	-18.25/-18.81	-18.26/-18.15	-18.13/-18.05	-18.01/-17.72	-18.31/-17.96	-18.56/-17.35	-17.85/-18.98	-13.96/-18.04	-17.64/-18.82	-18.73/-18.33
Θ(150°)	-17.2/-17.34	-19.24/-17.89	-18.44/-18.3	-17.8/-17.45	-17.7/-19.06	-16.39/-18.23	-18.92/-18.6	-18.23/-18.05	-18.82/-19.37	-19.01/-18.27	-17.79/-17.92	-18.46/-18.78	-19.06/-17.38	-18.47/-19.02	-18.95/-17.86	-17.85/-18.3	-17.7/-18.48	-18.57/-18.87	-17.54/-18.76	-18.37/-18.72	-18.61/-17.24	-18.14/-19.16	-19.08/-17.99	-17.69/-17.39
Θ(157.5°)	-14.79/-14.12	-17.15/-15.53	-16.72/-17.94	-18.74/-17.85	-17.66/-18.22	-18.17/-18.92	-18.74/-17.94	-17.79/-18.16	-17.27/-17.92	-18.08/-17.92	-19.63/-18.35	-18.72/-18.42	-18.73/-18.07	-17.72/-18.64	-18.16/-18.68	-17.7/-17.76	-19.07/-17.75	-18.65/-17.84	-18.53/-17.5	-18.7/-17.91	-18.88/-17.95	-17.64/-17.59	-18.18/-18.33	-18.35/-19.15
Θ(165°)	-14.5/-15.23	-18.45/-16.93	-12.88/-12.92	-16.22/-18.88	-17.91/-16.08	-16.61/-18.63	-18.74/-18.54	-18.45/-19.11	-18.61/-18.82	-18.68/-18.5	-18.57/-18.62	-18.91/-17.64	-18.41/-18.99	-17.07/-15.6	-16.85/-18.03	-18.8/-18.6	-18.95/-18.02	-16.66/-16.21	-17.41/-18.6	-18.3/-19.6	-18.01/-18.67	-19.06/-19.21	-15.41/-17.74	-17.14/-17.17
Θ(172.5°)	-18.86/-16.42	-16.12/-15.72	-15.37/-18.28	-18.8/-18.73	-16.4/-15.5	-16.27/-15.32	-16.78/-18.36	-18.09/-17.75	-18.84/-19.5	-18.16/-18.82	-18.03/-18.15	-18.9/-18.75	-18.16/-18.43	-17.63/-18.44	-17.65/-17.65	-16.92/-16.1	-15.86/-17.61	-18.14/-18.65	-18.19/-17.53	-18.99/-18.03	-18.87/-18.9	-17.15/-16.26	-17.77/-18.79	-18.62/-19.28
Θ(180°)	-17.94/-17.97	-18.62/-17.9	-17.81/-17.74	-18.64/-18.04	-17.96/-18.68	-18.34/-17.41	-18.42/-19.4	-17.83/-18.11	-19.24/-18.13	-17.67/-17.54	-18.3/-18.08	-18.91/-18.52	-18/-17.45	-17.95/-18.05	-18.22/-18.52	-17.9/-18.21	-18.79/-17.25	-17.95/-19.16	-18.51/-17.58	-18.67/-18.22	-17.69/-18.33	-17.36/-19.28	-18.95/-16.87	-17.84/-17.67
Freq(Hz)	6.995GPol.	Phi/Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-1.14/-1.26	-1.3/-1.54	-2.19/-3.29	-4.73/-6.49	-8.12/-9.93	-11.82/-13.51	-12.18/-10.13	-7.34/-5.47	-4.03/-2.8	-1.82/-1.09	-0.58/-0.09	0.10/0.28	0.43/0.17	-0.25/-0.99	-1.92/-2.93	-4.41/-5.96	-7.75/-9.41	-10.53/-11.06	-9.99/-7.86	-6.11/-5.09	-3.76/-2.78	-1.73/-1.17	-0.63/-0.37	-0.38/-0.79
Θ(7.5°)	1.42/0.9	0.34/-0.47	-1.65/-3.1	-4.55/-6.43	-8.45/-10.52	-12.67/-13.23	-11.69/-10.37	-9.13/-8.12	-7.68/-6.9	-6.77/-6.56	-6.14/-6.02	-5.78/-5.42	-5.06/-4.68	-4.61/-5.41	-7.22/-10.05	-13.74/-17.79	-17.84/-15.23	-9.56/-5.89	-3.32/-1.91	-1.02/-0.08	0.54/1.22	1.71/1.95	2.12/1.5	2.05/1.76
Θ(15°)	2.62/1.87	1.06/0.53	0.22/0.11	0.00/5	-0.23/-0.6	-1.08/-2.03	-3.15/-4.36	-5.9/-7.07	-8.22/-9.32	-10.28/-10.92	-11.49/-12.31	-13.59/-13.29	-11.69/-12	-12.01/-12.34	-11.79/-13.91	-6.84/-4.49	-3.34/-2.38	-1.5/-0.41	0.49/1.03	1.58/2.15	2.96/3.75	4.24/4.31	4.23/4.01	3.61/3.09
Θ(22.5°)	2.71/-1.98	1.76/-1.76	2.13/2.67	3.02/3.33	3.31/3.13	2.88/2.12	1.68/1.38	1.31/-1.29	0.95/0.18	-1.21/-3.08	-4.42/-5.65	-6.31/-6.92	-6.91/-6.57	-7.28/-8.83	-7.32/-5.18	-3.25/-1.92	-1.09/-0.66	-0.24/0.65	1.38/-1.79	1.77/-1.71	2.16/3.04	4.08/4.68	4.91/4.74	4.13/4.39
Θ(30°)	1.38/1.62	2.4/2.23	1.77/0.8	0.29/0.14	-0.03/0.27	1.03/-1.45	1.63/-1.73	2.26/2.77	3.11/2.81	1.77/-0.05	-1.53/-3.21	-4.71/-5.67	-5.64/-5.5	-5.68/-5.41	-3.55/-0.14	1.48/1.86	1.81/4	1.67/2.69	3.53/3.89	3.68/3.7	4.44/4.33	3.95/3.48	3.35/3.5	3.32/2.22
Θ(37.5°)	0.23/0.57	1.82/1.64	0.64/0.95	2.32/3.32	3.7/3.35	2.37/0.79	0.07/0.45	1.28/1.58	1.63/2.04	2.11/1.21	-0.52/-2.96	-5.06/-3.07	-0.6/0.32	-0.18/-0.41	-0.83/-1.18	-2.26/-1.4	-0.72/-1.29	-1.37/0.04	2.6/2.83	1.2/1.21	2.84/3.52	3.44/3.37	2.3/0.52	-0.28/0.12
Θ(45°)	1.27/0.9	-0.44/-0.77	-0.39/-1.42	2.41/2.78	2.46/1.72	0.98/0.47	1.13/2.03	2.42/-1.98	1.21/1	0.85/-0.36	-2.32/-4.27	-4.16/-2.2	0.18/0.59	0.63/-0.35	-2.3/-4.19	-3.66/0.28	2.52/2.81	1.67/0.84	1.48/2.44	1.89/0.72	1.48/1.1	-0.36/0.81	2.35/2.47	1.86/0.42
Θ(52.5°)	0.91/1.24	-1.26/-1.51	0.1/-1.53	1.55/1.76	2.62/2.49	1.95/-1.46	1.21/33	0.29/1.06	0.77/0.02	-0.87/-3.09	-4.62/-2.68	-1.68/-0.78	-0.32/-1.33	-2.18/-3.91	-3.77/-1.01	0.4/-1.86	2.02/2.96	1.81/0.1	0.65/-1.38	1.03/0.45	1.39/0.98	-0.24/1.04	0.37/-0.38	0.59/0.48
Θ(60°)	-2.5/-1.02	-2.66/-2.15	-1.26/-0.61	0.01/0.66	1.86/1.09	0.69/0.65	-0.04/-2.08	-4.91/-3.68	-1.05/-1.87	-1.93/-3.03	-3.73/-1.61	-1.08/-1.44	-0.67/-3.05	-3.98/-5.27	-1.71/1.03	1.81/1.7	0.65/1.15	-0.92/-1.08	-0.45/-0.07	-1.07/-0.1	-0.05/-0.42	-1.07/0.22	-1.11/-3.48	-2.92/-2.89
Θ(67.5°)	-5.2/-4.95	-4.97/-5.01	-7.63/-5.46	-1.26/-1.45	-1.56/-4.53	-1.66/-1.46	-1.3/0.32	-0.93/-2.28	0.6/-0.65	-2.45/-1.14	-0.58/0.31	-1.18/-1.71	-1.01/-1.71	-1.33/-2.01	1.21/2.15	0.54/-2.52	0.07/-1.06	-1.52/-2.34	-2.21/-1.24	-1.56/-2.36	-2.12/-1.96	-1.17/0.06	0.1/-0.09	-0.85/-4.96
Θ(75°)	-2.32/-5.8	-7.5/-6.97	-3.63/-0.8	1.68/-0.4	-2.59/-3.42	-0.86/-1.76	-2.71/1.65	2.06/1.35	1.32/0.81	-2.31/-0.37	0.8/0.78	-1.36/-3.46	-0.76/-5.08	-2/0.33	2.38/1.38	-1.54/-2.57	-0.67/-1.71	-1.52/-0.65	-1.01/-1.19	1.31/1.33	1.29/1.23	1.63/2.21	2.01/-2.59	
Θ(82.5°)	-0.95/-3.84	-5.29/-5.25	-1.55/-0.04	2.12/0.9	-2.16/0.37	0.26/-1.42	-1.89/0.83	0.95/1.97	0.94/0.07	-3.06/-0.08	0.95/0.41	-4.22/-3.48	-1.92/-4.09	-0.91/0.49	1.69/-0.11	-4.33/-4.59	-0.16/-2.09	-0.09/-1.43	-2.23/-0.33	-0.1/0.24	3.08/2.64	2.35/0.8	4.92/0.08	1.66/-3.15
Θ(90°)	-1.25/-5.01	-5.12/-4.78	-1.8/-1.31	0.93/0.19	-2.09/0.69	-0.51/-2.52	-2.44/-1.32	-1.8/-0.02	-0.47/-1.01	-3.38/-1.13	0.22/-0.16	-3.91/-5.92	-1.69/-4.37	-1.08/-0.51	-0.5/-2.18	-4.87/-9.1	-1.56/-1.9	0.16/-0.92	-3.73/-1.63	-0.34/0.29	3.4/2.79	2.39/0.99	-1.86/0.5	0.57/-5.52
Θ(97.5°)	-4.19/-6.53	-5.28/-5.97	-4.86/-3.97	-0.92/-1.79	-2.09/-0.93	-0.86/-2.76	-3.85/-4.63	-3.07/-1.76	-3.64/-3.77	-4.11/-2.12	-0.6/-1.66	-6.35/-4.75	-2.57/-5.15	-2.06/-3.04	-2.03/-5.18	-6.18/-7.49	-4.03/-2.03	-1.41/-4.01	-5.19/-2.89	-1.77/-2.54	1.47/0.59	0.13/-1.79	-3.99/-0.96	-1.17/-18.16
Θ(105°)	-6.04/-6.28	-6.29/-17.37	-7.71/-4.68	-2.81/-6.61	-1.71/-5.54	-2.45/-3.58	-4.88/-6.15	-3.96/-3.48	-4.14/-5.27	-7.27/-4.33	-4.06/-3.36	-10.31/-7.86	-5.12/-7.89	-5.27/-4.9	-3.38/-5.99	-7.71/-10.19	-6.71/-4.24	-5.17/-7.62	-7.33/-8.07	-5.56/-8.81	-3.26/-4.78	-3.35/-5.95	-5.25/-2.26	-2.93/-8.94
Θ(112.5°)	-10.25/-9.71	-7.83/-8.17	-9.56/-7.12	-7.53/-6.95	-4.05/-5.39	-4.89/-9.06	-8.88/-7.15	-7.4/-8.1	-4.92/-9.51	-9.64/-5.27	-6.38/-7.55	-12.75/-9.29	-6.61/-10.09	-6.73/-8.38	-6.02/-8.15	-9.92/-10.65	-9.32/-5.98	-5.79/-9.63	-9/-7.71	-6.79/-10.7	-6.45/-6.28	-4.63/-6.03	-6.89/-3.02	-4.53/-11.6
Θ(120°)	-10.19/-12.87	-10.31/-10.34	-9.28/-10.8	-9.14/-8.86	-8.78/-7.46	-5.81/-4.96	-11.45/-10.55	-6.47/-6.63	-9.62/-14.88	-10.95/-8	-8.46/-12.07	-12.43/-12.85	-7.52/-10.19	-9.75/-10.3	-8.52/-7.83	-10.46/-15.17	-14.32/-5.8	-6.27/-8.94	-14.29/-7.57	-6.73/-18.3	-7.02/-5.23	-4.91/-7.38	-10.43/-6.23	-7.95/-14.75
Θ(127.5°)	-12.74/-17.22	-11.37/-14.39	-8.63/-11.35	-15.19/-12.24	-8.79/-5.12	-11.35/-18.19	-15.32/-12.04	-9.55/-13.17	-10.83/-15.19	-12.84/-8.76	-11.08/-12.64	-14.92/-14.43	-10.29/-13.69	-12.59/-10.77	-11.99/-9.1	-13.23/-18.45	-18.88/-8.44	-12.2/-10.12	-18.55/-13.7	-9.93/-18.15	-13.3/-9.29	-11.58/-17.02	-14.14/-5.93	-7.09/-13.83
Θ(135°)	-16.22/-15.71	-18.8/-16.02	-10.76/-10	-15.76/-10.02	-8.29/-9.91	-12.52/-12.84	-10.79/-10.51	-7.34/-8.64	-18.34/-18.39	-13.75/-9.5	-13.02/-15.94	-13.84/-13.5	-10.96/-16.1	-17.15/-14.2	-14.11/-8.67	-10.51/-15.82	-18.57/-8.99	-13.01/-12.45	-18.35/-13.05	-8.51/-17.17	-18.23/-1.61	-9.12/-12.07	-8.4/-12.38	-10.36/-11.96
Θ(142.5°)	-11.98/-17.2	-14.07/-16.11	-18.47/-16.38	-10.8/-11.2	-11.06/-12.46	-11.67/-15.89	-12.01/-11.59	-12.83/-13.68	-17.92/-17.72	-15.95/-11.76	-12.87/-16.1	-18.39/-14.92	-14.73/-18.53	-19.01/-18.28	-11.36/-9.59	-18.42/-15.55	-13.02/-7.63	-9.71/-11.24	-18.36/-19.1	-8.78/-12.1	-17.7/-19.3	-16.1/-13.16	-18.79/-13.24	-8.77/-9
Θ(150°)	-13.28/-13.15	-14.96/-17.04	-18.38/-19.02	-18.03/-14.16	-11.89/-10.35	-10.5/-10.11	-9.94/-10.28	-11.59/-12.31	-18.43/-17.72	-14.12/-12.94	-15.64/-14.62	-18.67/-17.15	-18.31/-18.67	-15										



Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G	5.885G	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.72	4.19	4.77	3.94	4.55	4.94	4.52	4.63	4.06	4.29
Ant. 2 Max Gain (dBi)	3.77	3.18	4.16	4.53	4.08	4.88	4.48	3.96	4.03	4.42
Ant. 3 Max Gain (dBi)	4.56									
Ant. 1 Polarization/Θ(°)/Φ(°)	Theta/30/210	Theta/67.5/97.5	Theta/67.5/217.5	Theta/60/217.5	Theta/52.5/217.5	Theta/52.5/225	Theta/75/37.5	Theta/75/45	Theta/75/45	Theta/30/165
Ant. 2 Polarization/Θ(°)/Φ(°)	Theta/37.5/52.5	Theta/75/165	Theta/67.5/37.5	Theta/67.5/180	Theta/67.5/180	Theta/67.5/180	Theta/67.5/165	Theta/60/172.5	Theta/45/30	Theta/30/337.5
Ant. 3 Polarization/Θ(°)/Φ(°)	Theta/60/67.5									

