

Antenna Composite Gain Test Report

Equipment	WiFi 7 Outdoor AP
Brand Name	Adtran
Model Name	SDG-9712oYYYYYYY(Y can be 0-9, a-z, A-Z, blank, "+" or "-" or "#")
Applicant	Adtran 901 Explorer Boulevard, Huntsville, Alabama, United States,35806-2807
Manufacturer	XAVi Technologies Corporation 22F., No.69, Sec. 2, Guangfu Rd., Sanchong Dist., New Taipei City 241, Taiwan (R.O.C.)
Standard	KDB 662911 D03 v01
Sample Received	Nov. 04, 2024
Start Test Date	Nov. 08, 2024
Final Test Date	Nov. 08, 2024


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

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



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History of this test report

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1. Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant. Type	Connector	Modes of Operation
2G5G Ant1	1	Galtronics	60-3763-03-1	PCB	I-PEX	2.4GHz, 5GHz
2G5G Ant2	2	Galtronics	60-3764-03-2	PCB	I-PEX	2.4GHz, 5GHz
2G5G Ant3	3	Galtronics	60-3763-03-1	PCB	I-PEX	2.4GHz, 5GHz
2G5G Ant4	4	Galtronics	60-3765-03-2	PCB	I-PEX	2.4GHz, 5GHz
5G Ant5	5	Galtronics	60-2917-03	PCB	I-PEX	5GHz
SM-DFS Ant1	1	Galtronics	60-3763-03-2	PCB	I-PEX	SM-DFS

Note:

2.4GHz Operation Mode (4TX/4RX)

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

5GHz Operation Mode (4TX/4RX)

2G5G Ant1~2G5G Ant4 and 5G Ant5 could transmit/receive simultaneously.

SM-DFS Operation Mode

SM-DFS Ant1 could transmit/receive.

2. Test Frequency

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

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



3. Testing Location

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%	08/Nov/2024

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Accessories

Accessories				
Mounting Bracket	Brand Name	N/A	Model Name	N/A
Grounding Lug Cable	Brand Name	N/A	Model Name	N/A

Reminder: Regarding to more detail and other information, please refer to user manual.

5. Test Facility and Configuration

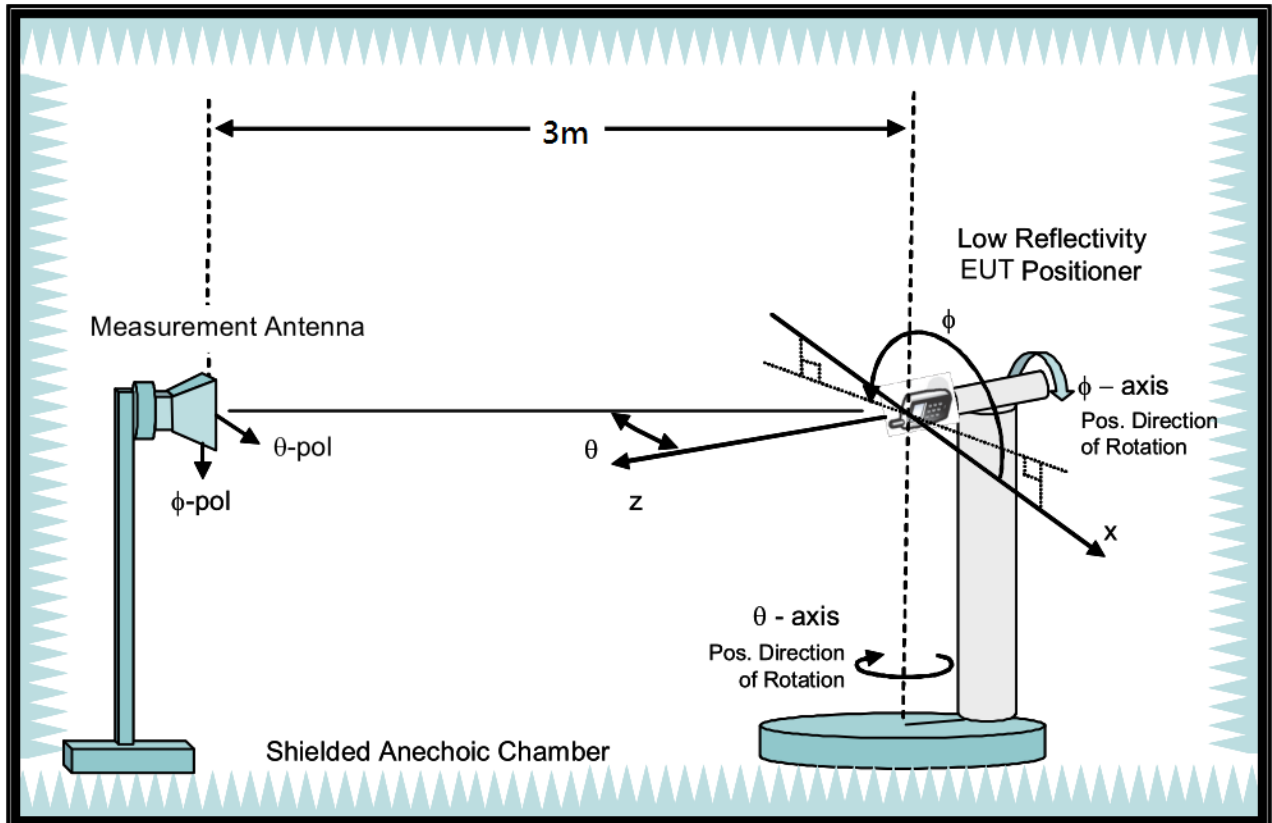
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Dual Polarization Horn antenna

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

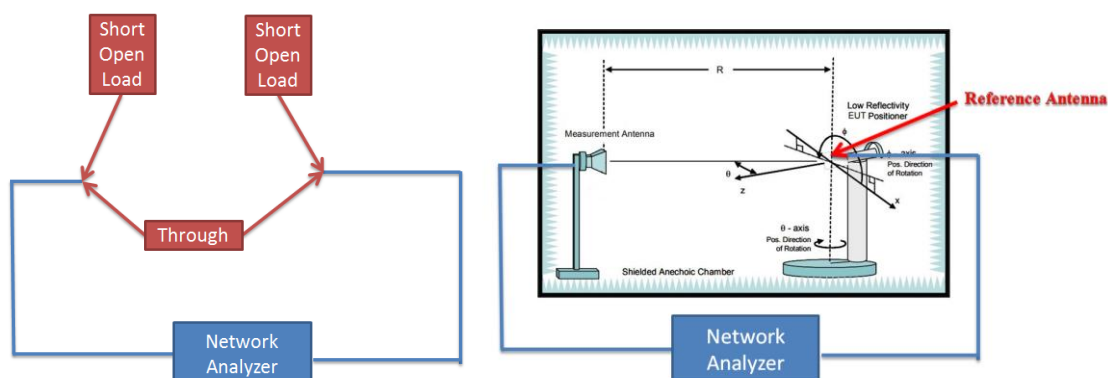
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



6. Reference Calibration

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

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



Frequency (MHz)	2400	2450	2500	5150	5200	5300	5600	5750	5800	5900	6000	6500	7000	7200
G(theta) reading (dB)	-33.55	-33.38	-32.91	-32.29	-32.48	-32.25	-32.33	-32.85	-32.67	-33.37	-32.53	-33.75	-34.72	-35.33
G(phi) reading (dB)	-33.11	-32.68	-32.48	-32.45	-32.85	-31.35	-32.76	-32.68	-32.57	-32.81	-32.85	-33.62	-34.33	-35.29
Reference gain (dBi)	10.3	10.3	10.1	11.1	11.3	11.7	12.1	11.5	11.2	11.1	11.3	11	11.1	10.5
Factor(theta) (dB)	43.85	43.68	43.01	43.39	43.78	43.95	44.43	44.35	43.87	44.47	43.83	44.75	45.82	45.83
Factor(phi) (dB)	43.41	42.98	42.58	43.55	44.15	43.05	44.86	44.18	43.77	43.91	44.15	44.62	45.43	45.79

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.

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



7. 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 8 tables.

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

8. Measured Values and Calculation of Maximum Gain Positions

Combination-A

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	3.68	6.55	6.39	7.1	6.22
Ant. 2 (dBi)	1.61	-6.35	-7.39	-17.82	-13.24
Ant. 3 (dBi)	-0.02	6.31	6.6	6.33	5.81
Ant. 4 (dBi)	0.48	-4.66	-5.27	-9.91	-8.51
DG [1SS] (dBi)	7.58	8.4	8.29	7.58	7.22
Polarization	Phi	Phi	Phi	Phi	Phi
$\Theta (^{\circ})$	15	90	90	90	90
$\Phi (^{\circ})$	135	255	255	262.5	262.5

DG_1SS max value position calculation

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(3.68/20)}$	$10^{(6.55/20)}$	$10^{(6.39/20)}$	$10^{(7.1/20)}$	$10^{(6.22/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(1.61/20)}$	$10^{(-6.35/20)}$	$10^{(-7.39/20)}$	$10^{(-17.82/20)}$	$10^{(-13.24/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(-0.02/20)}$	$10^{(6.31/20)}$	$10^{(6.6/20)}$	$10^{(6.33/20)}$	$10^{(5.81/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(0.48/20)}$	$10^{(-4.66/20)}$	$10^{(-5.27/20)}$	$10^{(-9.91/20)}$	$10^{(-8.51/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.528	2.126	2.087	2.265	2.046
Ant. 2 [$10^{(G/20)}$] value	1.204	0.481	0.427	0.129	0.218
Ant. 3 [$10^{(G/20)}$] value	0.998	2.068	2.138	2.073	1.952
Ant. 4 [$10^{(G/20)}$] value	1.057	0.585	0.545	0.32	0.375
Sum All Antenna [Amax]	4.786	5.26	5.197	4.785	4.592
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	7.58	8.4	8.29	7.58	7.22

Combination-B
DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	6.55	7.12	7.1	6.26
Ant. 2 (dBi)	-6.35	-10.08	-17.82	-12.92
Ant. 3 (dBi)	6.31	6.94	6.33	5.66
Ant. 5 (dBi)	-2.44	-4.04	-4.37	-10.9
DG [1SS] (dBi)	8.68	8.68	8.08	7.02
Polarization	Phi	Phi	Phi	Phi
Θ (°)	90	90	90	90
Φ (°)	255	262.5	262.5	270

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG_1SS max value position calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(6.55/20)}$	$10^{(7.12/20)}$	$10^{(7.1/20)}$	$10^{(6.26/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-6.35/20)}$	$10^{(-10.08/20)}$	$10^{(-17.82/20)}$	$10^{(-12.92/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(6.31/20)}$	$10^{(6.94/20)}$	$10^{(6.33/20)}$	$10^{(5.66/20)}$
Ant. 5 [$10^{(G/20)}$]	$10^{(-2.44/20)}$	$10^{(-4.04/20)}$	$10^{(-4.37/20)}$	$10^{(-10.9/20)}$
Ant. 1 [$10^{(G/20)}$] value	2.126	2.27	2.265	2.056
Ant. 2 [$10^{(G/20)}$] value	0.481	0.313	0.129	0.226
Ant. 3 [$10^{(G/20)}$] value	2.068	2.223	2.073	1.919
Ant. 5 [$10^{(G/20)}$] value	0.755	0.628	0.605	0.285
Sum All Antenna [Amax]	5.43	5.435	5.07	4.486
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	8.68	8.68	8.08	7.02

Combination-C
DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	6.55	-8.16	-1.29	-3.29
Ant. 2 (dBi)	-6.35	4.97	3.63	3.84
Ant. 4 (dBi)	-4.66	3.48	2.96	3.66
Ant. 5 (dBi)	-2.44	-11.45	-10.75	-9.29
DG [1SS] (dBi)	5.9	5.85	6.19	6.25
Polarization	Phi	Phi	Phi	Phi
Θ (°)	90	37.5	60	60
Φ (°)	255	180	7.5	7.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG_1SS max value position calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(6.55/20)}$	$10^{(-8.16/20)}$	$10^{(-1.29/20)}$	$10^{(-3.29/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-6.35/20)}$	$10^{(4.97/20)}$	$10^{(3.63/20)}$	$10^{(3.84/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-4.66/20)}$	$10^{(3.48/20)}$	$10^{(2.96/20)}$	$10^{(3.66/20)}$
Ant. 5 [$10^{(G/20)}$]	$10^{(-2.44/20)}$	$10^{(-11.45/20)}$	$10^{(-10.75/20)}$	$10^{(-9.29/20)}$
Ant. 1 [$10^{(G/20)}$] value	2.126	0.391	0.862	0.685
Ant. 2 [$10^{(G/20)}$] value	0.481	1.772	1.519	1.556
Ant. 4 [$10^{(G/20)}$] value	0.585	1.493	1.406	1.524
Ant. 5 [$10^{(G/20)}$] value	0.755	0.268	0.29	0.343
Sum All Antenna [Amax]	3.947	3.923	4.077	4.108
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	5.9	5.85	6.19	6.25

Combination-D
DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	6.55	6.39	7.1	6.22
Ant. 3 (dBi)	6.31	6.6	6.33	5.81
Ant. 4 (dBi)	-4.66	-5.27	-9.91	-8.51
Ant. 5 (dBi)	-2.44	-3.58	-4.37	-12.2
DG [1SS] (dBi)	8.84	8.68	8.4	7.27
Polarization	Phi	Phi	Phi	Phi
Θ (°)	90	90	90	90
Φ (°)	255	255	262.5	262.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG_1SS max value position calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(6.55/20)}$	$10^{(6.39/20)}$	$10^{(7.1/20)}$	$10^{(6.22/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(6.31/20)}$	$10^{(6.6/20)}$	$10^{(6.33/20)}$	$10^{(5.81/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-4.66/20)}$	$10^{(-5.27/20)}$	$10^{(-9.91/20)}$	$10^{(-8.51/20)}$
Ant. 5 [$10^{(G/20)}$]	$10^{(-2.44/20)}$	$10^{(-3.58/20)}$	$10^{(-4.37/20)}$	$10^{(-12.2/20)}$
Ant. 1 [$10^{(G/20)}$] value	2.126	2.087	2.265	2.046
Ant. 3 [$10^{(G/20)}$] value	2.068	2.138	2.073	1.952
Ant. 4 [$10^{(G/20)}$] value	0.585	0.545	0.32	0.375
Ant. 5 [$10^{(G/20)}$] value	0.755	0.662	0.605	0.245
Sum All Antenna [Amax]	5.533	5.432	5.261	4.619
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	8.84	8.68	8.4	7.27

Combination-E
DG_1SS max value position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 2 (dBi)	-6.35	1.74	5.55	-0.87
Ant. 3 (dBi)	6.31	-8.49	-5.69	1.63
Ant. 4 (dBi)	-4.66	5.89	3.51	-2.94
Ant. 5 (dBi)	-2.44	-7.42	-8.59	1.35
DG [1SS] (dBi)	5.78	6.01	6.62	6
Polarization	Phi	Phi	Phi	Theta
$\Theta (^{\circ})$	90	45	45	30
$\Phi (^{\circ})$	255	22.5	202.5	142.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG_1SS max value position calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 2 [$10^{(G/20)}$]	$10^{(-6.35/20)}$	$10^{(1.74/20)}$	$10^{(5.55/20)}$	$10^{(-0.87/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(6.31/20)}$	$10^{(-8.49/20)}$	$10^{(-5.69/20)}$	$10^{(1.63/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-4.66/20)}$	$10^{(5.89/20)}$	$10^{(3.51/20)}$	$10^{(-2.94/20)}$
Ant. 5 [$10^{(G/20)}$]	$10^{(-2.44/20)}$	$10^{(-7.42/20)}$	$10^{(-8.59/20)}$	$10^{(1.35/20)}$
Ant. 2 [$10^{(G/20)}$] value	0.481	1.222	1.895	0.905
Ant. 3 [$10^{(G/20)}$] value	2.068	0.376	0.519	1.206
Ant. 4 [$10^{(G/20)}$] value	0.585	1.97	1.498	0.713
Ant. 5 [$10^{(G/20)}$] value	0.755	0.426	0.372	1.168
Sum All Antenna [Amax]	3.889	3.994	4.284	3.992
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	5.78	6.01	6.62	6

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

9. Summary of Test Result

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26
Ant. 2 Max Gain (dBi)	5.41	5.48	5.33	5.66	4.49
Ant. 3 Max Gain (dBi)	4.46	6.6	6.94	6.33	5.81
Ant. 4 Max Gain (dBi)	4.93	5.86	5.91	5.78	5.79
Ant. 5 Max Gain (dBi)	-	3.66	3.76	4.22	4.02
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/292.5	Phi/97.5/277.5	Phi/90/262.5	Phi/97.5/285	Phi/90/270
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/180	Phi/37.5/202.5	Phi/37.5/195	Phi/45/195	Phi/45/202.5
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/97.5	Phi/90/270	Phi/90/262.5	Phi/90/262.5	Phi/90/262.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/352.5	Phi/45/22.5	Phi/45/30	Phi/52.5/22.5	Phi/52.5/30
Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	-	Phi/22.5/97.5	Phi/30/90	Theta/97.5/7.5	Theta/60/22.5
Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26
DG [1SS] (dBi) 4T1S Combination-A	7.58	8.4	8.29	7.58	7.22
DG [1SS] (dBi) 4T1S Combination-B	-	8.68	8.68	8.08	7.02
DG [1SS] (dBi) 4T1S Combination-C	-	5.9	5.85	6.19	6.25
DG [1SS] (dBi) 4T1S Combination-D	-	8.84	8.68	8.4	7.27
DG [1SS] (dBi) 4T1S Combination-E	-	5.78	6.01	6.62	6
DG [2SS] (dBi)	6.32	6.69	7.12	7.23	6.26
DG [4SS] (dBi)	6.32	6.69	7.12	7.23	6.26

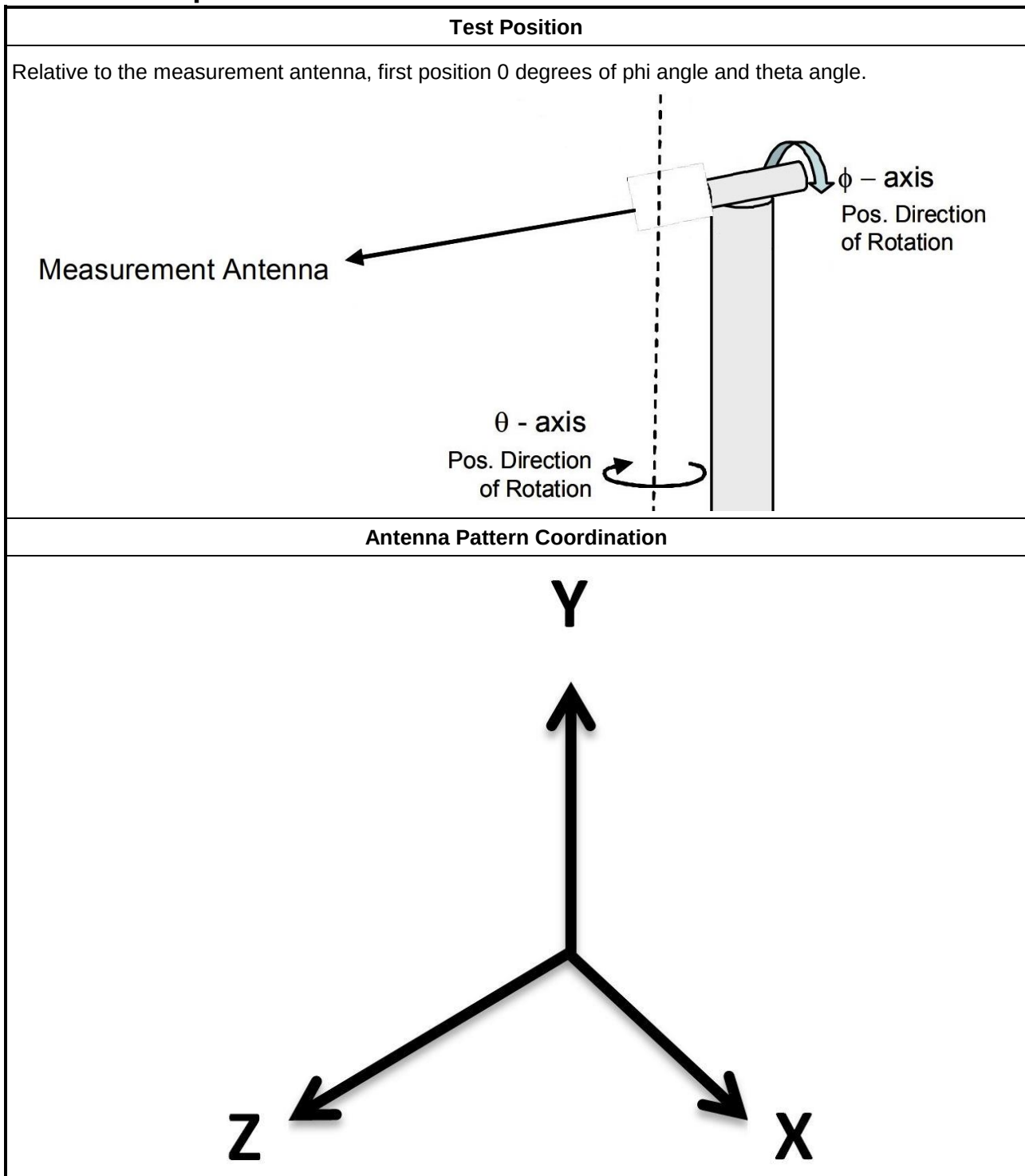
SM-DFS

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.08	4.48	4.54	4.18	3.9
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/150	Phi/52.5/187.5	Phi/52.5/202.5	Phi/105/180	Phi/105/157.5

Note:

- Antenna max gain is the max value of each individual antenna through all measurement angles.
- The max gain is the max value of all antennas.
- Directional Gain (2SS) = Directional Gain (1SS) – 3dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)
- Directional Gain (4SS) = Directional Gain (1SS) – 6dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)

10. Test Setup



Note:

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



11. 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, 2023	Dec. 19, 2024
Dual Polarization Horn Antenna	Sporton	S0209DP	S0209DP-001	2GHz~9GHz	N.C.R.	N.C.R.
ENA Series Network Analyzer	AGILENT	E5071C	MY46419477	100kHz~8.5GHz	Jul. 30, 2024	Jul. 29, 2025
VNA Calibration Kit	TS RF	TS85033E-F	-	DC~9GHz	N.C.R.	N.C.R.
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	N.C.R.	N.C.R.
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	N.C.R.	N.C.R.

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

NCR means Non-Calibration required.



12. Test Results

Please refer to the appendix.

Appendix A – Radiated Composite Gain of 2.4GHz/5GHz/SM-DFS.....	Page 18
Appendix B – Antenna Pattern of 2.4GHz/5GHz/SM-DFS.....	Page 59
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————THE END————



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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26
Ant. 2 Max Gain (dBi)	5.41	5.48	5.33	5.66	4.49
Ant. 3 Max Gain (dBi)	4.46	6.6	6.94	6.33	5.81
Ant. 4 Max Gain (dBi)	4.93	5.86	5.91	5.78	5.79
Ant. 5 Max Gain (dBi)		3.66	3.76	4.22	4.02
Ant. 1 Polarization/Θ(°)/Φ(°)	Phi/30/292.5	Phi/97.5/277.5	Phi/90/262.5	Phi/97.5/285	Phi/90/270
Ant. 2 Polarization/Θ(°)/Φ(°)	Phi/22.5/180	Phi/37.5/202.5	Phi/37.5/195	Phi/45/195	Phi/45/202.5
Ant. 3 Polarization/Θ(°)/Φ(°)	Phi/30/97.5	Phi/90/270	Phi/90/262.5	Phi/90/262.5	Phi/90/262.5
Ant. 4 Polarization/Θ(°)/Φ(°)	Phi/37.5/352.5	Phi/45/22.5	Phi/45/30	Phi/52.5/22.5	Phi/52.5/30
Ant. 5 Polarization/Θ(°)/Φ(°)		Phi/22.5/97.5	Phi/30/90	Theta/97.5/7.5	Theta/60/22.5
Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26

[illegible]



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(22.5°)	-11.3/-8.79	-7.65/-6.5	-6.66/-4.68	-2.26/-0.94	-0.65/-0.43	-0.24/-0.46	-1.15/-2.15	-3.66/-5.08	-5.83/-4.32	-2.43/-2.15	-3.43/-5.89	-9.99/-10.96	-7.53/-4.83	-3.49/-1.97	-0.18/-1.2	2.21/2.84	3.26/3.4	3.46/3.62	3.76/3.83	3.66/3.09	2.29/0.96	-0.93/-3.08	-5.37/-7.82	-9.71/-11.83
Θ(30°)	-7.33/-6.83	-5.2/-6.29	-7/-8.01	-8.37/-8.9	-9.79/-9.68	-9.86/-9.67	-10.59/-11.4	-9.66/-6.06	-8.25/-9.69	-8.04/-5.02	-4.11/-6.02	-9.47/-11.3	-8.11/-5.15	-4.35/-3.41	-1.37/0.3	1.08/1.07	0.69/0.17	-0.16/-0.4	-0.37/-0.2	-0.06/-0.24	-0.72/-1.41	-2.36/-4.76	-9.3/-9.76	-6.84/-6.44
Θ(142.5°)	-4.37/-6.17	-8.46/-8.66	-10.83/-12.98	-12.38/-9.15	-8.93/-11.42	-12.63/-13.11	-14.64/-18.03	-17.76/-14.17	-10.33/-8.3	-6.88/-3.9	-3.25/-4.69	-10.51/-11.17	-8.16/-6.45	-6.8/-5.93	-3.18/-1.56	-1.83/-2.67	-4.1/-5.61	-8.59/-9.04	-7.74/-8.89	-12.88/-16.24	-11.19/-6.68	-6.64/-10.87	-12.24/-9.77	-5.24/-16.34
Θ(45°)	-2.6/-7.28	-17.53/-17.88	-18.59/-8.92	-4.03/-2.57	-3.46/-3.73	-4.6/-5.14	-4.79/-4.95	-5.96/-7.55	9.32/-6.83	-4.77/-2.79	-2.2/-3.81	-8.19/-15.86	-14.39/-13.56	-13.33/-5.8	-1.49/-0.53	-1.47/-1.78	-1.31/-1.52	-0.91/0.95	1.59/0.58	-1.3/-1.66	-0.6/0.1	-1.29/-3.06	-4/-4.07	-2.43/-1.42
Θ(52.5°)	-1.71/-8.87	-14.95/-12.82	-7.66/-3.48	-1.93/-2.52	-1.13/-0.5	-0.57/-1.26	-0.73/-0.69	-1.8/-3.55	-6.63/-5.91	-3.81/-3.16	-3.33/-4.24	-9.18/-18.68	-17.82/-11.33	-10.76/-5.25	-0.37/-0.77	-1.56/0.12	0.21/-0.73	0.33/1.87	1.76/-0.25	-1.53/-0.53	0.71/1.23	0.77/-0.19	-0.73/-0.45	0.27/0.12
Θ(60°)	-3.94/-11.02	-8.98/-5.32	-4.89/-3.98	-1.18/-0.44	1.34/2.14	1.77/1.75	2.22/-9.1	0.15/-2.6	-5.98/-6.42	-3.97/-3.06	-5.24/-7.52	-1.76/-6.16	-14.76/-10.96	-8.63/-2.41	1.24/-0.24	-0.97/1.34	1.12/-0.01	0.66/0.15	-2.40/-1.39	-1.33/0.94	0.11/0.02	0.35/0.88	1.06/-0.9	
Θ(67.5°)	-6.91/-18.04	-10.02/-7.98	-6.84/-2.52	0.19/0.76	2.07/2.36	2.12/2.24	2.81/3.24	2/-1.51	-6.05/-7.65	-4.2/-3.07	-7.22/-11.2	-11.89/-11.2	-9.11/-8.05	-3.45/-0.36	0.66/-1.58	-1.45/-1.73	1.25/0.65	1.93/1.83	-0.35/-0.93	0.29/0.97	1.16/0.11	-0.84/-0.1	-0.01/-0.2	0.8/-0.67
Θ(75°)	-8.27/-16.03	-18.2/-11.92	-6.21/-2.63	0.21/-1.2	1.93/2.65	2.42/-1.39	0.61/-0.08	-0.04/-0.69	-2.46/-5.03	-5.09/-3.98	-6.33/-11.56	-12.12/-7.82	-9.36/-5.27	-0.31/-0.68	1.31/-1.44	-1.77/-2.33	1.22/-1.33	4.82/5.44	3.45/2.51	1.92/-0.06	-0.2/-0.07	-0.53/-1.17	-1.76/-0.19	1.13/-0.61
Θ(82.5°)	-8.51/-19.2	-11.07/-9.95	-6.29/-2.21	0.99/1.89	1.72/1.89	2.35/4.44	3.19/-1.43	-1.48/-1.91	-2.41/-4.35	-5.34/-5.12	-7.33/-13.24	-15.86/-7.99	-6.44/-3.77	0.63/0.84	0.89/-3.13	-0.59/2.22	0.72/7.5	6.63/6.84	4.95/4.5	3.18/-1.27	-3.91/-1.36	-0.66/-1.84	-4.01/-2.43	-1.73/-3.75
Θ(90°)	-7.8/-16.09	-6.59/-7.85	-7.04/-2.52	-0.17/0.05	-0.81/-0.73	1.49/1.93	1.27/1.1	-0.32/-2.13	-2.99/-4.04	-5.49/-5.91	-8.5/-10.35	-18.36/-11.24	-6.61/-7.99	0.25/1.33	0.35/-2.28	-2.42/0.66	-1.19/1.89	6.397.12	6.166/5.4	6.192/8.7	-2.74/-1.54	-1.08/-2.97	7.89/-6.19	-2.22/-3.4
Θ(97.5°)	-13.67/-18.39	-10.38/-8.98	-5.87/-3.72	-1.87/-3.07	-5.06/-3.14	-2.23/-1.6	-2.68/-3.92	-1.32/-2.35	-2.04/-3.35	-3.35/-6.64	-12.27/-19.19	-17.63/-10.76	-11.99/-7.18	0.3/-0.49	0.06/-2.64	-1.92/-0.3	-5.85/0.5	4.72/5.77	5.796/7.4	6.62/6.62	-0.57/-2.83	-2.74/-4.56	-1.07/-1.79	-9.38/-6.41
Θ(105°)	-16.67/-18.55	-17.54/-8.95	-8.87/-10.06	-8.02/-5.11	-8.51/-10.02	-7.52/-3.88	-3.43/-7.46	-2.6/-3.33	-3.25/-5.77	-5.64/-7.86	-10.07/-16.83	-17.42/-9.25	-14.71/-16.4	-2.93/-1.66	-0.51/-1.89	-2.68/-2.41	-9.31/-5.11	1.44/3.51	4.576/2.7	6.025/0.3	0.673/0.33	-5.52/-10.92	-1.153/-4.34	-1.28/-6.47
Θ(112.5°)	-18.36/-15.21	-17.94/-16.28	-14.65/-17.96	-13.96/-8.85	-10.54/-14.03	-18.82/-8.16	-5.16/-8.17	-2.52/-5.49	-5.66/-7.83	-8.59/-10.24	-11.9/-18.92	-16.15/-12.92	-8.37/-6.24	-2.52/-2.18	-4.93/-4.17	-6.56/-4.5	-10.46/-10.46	-0.87/-0.57	2.59/4.47	4.734/2.7	-0.81/-6.13	-7.88/-18.04	-12.44/-10.58	-4.77/-7.59
Θ(120°)	-8.88/-18.03	-15.19/-18.14	-18.31/-14.26	-12.7/-15.07	-13.69/-10.49	-12.37/-12.84	-12.83/-8.69	-5.14/-7.77	-8.15/-9.43	-11.37/-13.59	-14.93/-13.89	-18.36/-14.36	-11.96/-8.78	-5.37/-2.94	-3.29/-3.43	-8.18/-5.76	-6.37/-17.74	-7.38/-8.76	-1.32/-1.93	3.32/2.76	-2.22/-17.76	-8.09/-10.95	-8.84/-9.61	-9.38/-6.41
Θ(127.5°)	-9.97/-18.52	-17.07/-15.91	-12.55/-13.05	-18.36/-10.23	-10.11/-10.79	-19.13/-18.23	-11.92/-9.99	-12.52/-8.95	-10.33/-8.02	-12.18/-18.62	-13.73/-12.7	-17.38/-18.61	-15.41/-17.2	-10.05/-3.64	-2.75/-7.74	-11.01/-6.33	-3.6/-9.36	-12.7/-19.27	-8.91/-2.31	-0.31/-1.87	-6.86/-19.27	-11.01/-10.49	-18.62/-9.8	-9.12/-8.4
Θ(135°)	-14.56/-16.32	-18.16/-19.88	-15.47/-11.02	-9.99/-11.31	-12.39/-13.9	-17.15/-18.1	-13.95/-11.27	-11.77/-16.01	-11.39/-11.56	-14.31/-19.02	-17.27/-13.52	-18.6/-17.9	-18.02/-15.7	-15.87/-6.27	-6.73/-12.63	-13.15/-8.24	-4.27/-8.17	-10.59/-7.35	-6.44/-3.24	-0.91/-3.24	-10.49/-17.12	-14.18/-16.7	-18.58/-14.4	-15.02/-16.89
Θ(142.5°)	-18.97/-10.03	-17.64/-16.16	-13.26/-14.5	-12.27/-14.39	-14.82/-16.28	-15.04/-17.47	-18.34/-10.96	-8.6/-8.96	-14.2/-17.8	-17.01/-18.4	-18.61/-12.52	-13.45/-16.78	-19.23/-16.67	-16.24/-13.17	-12.16/-15.04	-16.34/-9.11	-7.53/-11.77	-9.5/-5.79	-4.86/-4.52	-3.89/-5.77	-14.02/-18.48	-14.58/-19.42	-12.66/-9.95	-14.83/-16.34
Θ(150°)	-18.97/-17.65	-14.04/-17.24	-15.73/-13.72	-17.15/-14.68	-14.82/-19.08	-18.51/-14.87	-11.35/-11.03	-15.03/-18.54	-17.5/-14.98	-19.04/-18.84	-13.02/-11.87	-11.81/-11.46	-16.31/-15.55	-12.36/-13.06	-16.2/-16.52	-15.96/-15.82	-15.49/-16.86	-13.04/-8.75	-7.06/-7.51	-9.79/-10.97	-9.34/-9.31	-9.37/-11.87	-15.81/-15.02	-14.96/-17.75
Θ(157.5°)	-18.08/-19.4	-18.93/-17.32	-16.72/-16.53	-17.59/-17.81	-19.16/-15.37	-12.57/-12.63	-12.41/-12.65	-11.5/-10.31	-10.22/-12.84	-18.45/-18.6	-17.46/-19.03	-19.16/-19.19	-15.44/-10.07	-7.83/-7.23	-8.94/-13.57	-13.63/-9.76	-8.81/-10.5	-13.69/-14.8	-12.51/-9.9	-9.46/-11.34	-17.5/-18	-13.62/-10.78	-12.33/-15.22	-18.64/-18.48
Θ(165°)	-17.59/-17.57	-18.98/-16.53	-14.02/-12.17	-10.05/-8.69	-8.26/-8.91	-10.94/-14.9	-18.48/-18.37	-17.34/-18.18	-18.93/-16.9	-15.56/-15.26	-18.24/-18.87	-14.68/-13.41	-13.11/-14.9	-9.37/-8.63	-6.69/-12.32	-15.21/-16.04	-18.45/-18.13	-18.26/-18.75	-13.3/-11.64	-11.16/-12.05	-12.47/-9.96	-8.2/-8.28	-9.47/-13.19	-18.87/-18.48
Θ(172.5°)	-18.69/-17.57	-18.44/-16.11	-16.39/-19.76	-18.42/-17.53	-14.01/-10.28	-8.26/-7.13	-6.52/-5.75	-5.51/-5.5	-5.91/-6.53	-7.7/-8.83	-10.1/-11.72	-13.59/-15.1	-16.13/-15.29	-14.27/-14.74	-14.64/-14.46	-14.21/-14	-14.73/-17.26	-19.08/-18.79	-17.71/-16.9	-17.11/-14.8	-13.15/-11.6	-10.75/-11	-12.92/-15.06	-16.33/-16.12
Θ(180°)	-19.15/-19.06	-17.78/-16.9	-14.91/-13.74	-12.71/-12.2	-12.47/-12.56	-12.09/-12.05	-12.52/-14.16	-15.91/-15.75	-14.92/-15.24	-15.91/-16.72	-16.92/-17.69	-19.72/-18.43	-17.89/-17.97	-16.91/-13.88	-11.19/-9.54	-8.71/-7.88	-7.28/-6.75	-6.48/-6.19	-5.66/-5.61	-5.36/-5.34	-5.65/-6.32	-7.21/-8.75	-10.22/-12.14	-15.77/-19.25
Freq(Hz)	5.3GPol	ThetaAnt.1	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	3.12/93	2.53/713	0.59/-0.82	-2.55/-4.96	-8.64/-15.13	-17.99/-15.64	-9.66/-6.47	-3.91/-1.89	-0.52/0.46	1.04/1.33	1.46/1.5	1.83/2.12	2.11/92	1.39/0.63	-0.24/-1.16	-2.25/-3.95	-6.03/-8.71	-13.13/-17.85	-14.61/-8.98	-4.87/-2.54	-0.92/0.19	0.97/1.68	2.22/2.82	3.16/3.06
Θ(7.5°)	1.84/1.78	1.83/-167	1.16/0.33	-0.53/-1.45	-2.99/-5.63	-8.87/-13.92	-18.04/-15.23	-8.69/-4.5	-1.52/0.3	1.52/0.8	2.26/2.29	2.61/2.88	2.91/3.21	1.22/-0.3	-2.33/-4.6	-7.35/-11.07	-14.27/-13.77	-10.47/-9.12	-5.97/-4.15	-2.25/-0.93	-0.30/0.3	0.22/0.53	1.11/1.89	2.25/2.06
Θ(15°)	1.36/0.42	0.09/0.36	0.03/-1.01	-1.87/-2.69	-6.82/-7.71	-10.29/-10.15	-7.46/-5.94	-4.84/-3.94	-2.74/-1.42	-0.10/0.87	1.69/2.53	3.153.2	2.91/1.99	0.67/-0.51	-1.34/-1.82	-2.16/-2.76	-3.35/-3.83	-4.44/-5.26	-5.85/-6.06	-5.34/-4.64	-3.88/-3.46	-3.31/-3.55	-3.17/-1.43	0.39/1.47
Θ(22.5°)	0.74/1.15	0.33/-1.1	-2.94/-4.32	-5.73/-8.58	-14.95/-15.98	-9.98/-6.2	-1.86/-1.73	-2/-2.88	-3.54/-2.49	-0.47/-1.15	2.15/2.46	2.13/1.55	1.02/0.6	0.14/-0.21	-0.82/-2.01	-3.6/-4.99	-6.47/-7.69	-8.48/-8.4	-7.47/-6.06	-5.4/-4.05	-2.48/-2.01	-2.79/-4.46	-4.83/-1.23	
Θ(30°)	-2.85/-2.22	-2.93/-4.86	-7.12/-7.56	-8.43/-12.73	-19.21/-16.66	-11.93/-9.04	-6.5/-5.28	-4.33/-4.4	-4.93/-6.38	-8.59/-9.87	-5.92/-8.21	-1.15/0.03	0.99/1.3	0.78/0.26	-0.21/-1.02	-2.5/-4.55	-7.14/-9.92	-12.82/-13.16	-10.54/-7.8	-6.81/-6.97	-6.76/-6.12	-5.77/-4.87	-4.65/-6.63	-5.16/-9.33
Θ(37.5°)	-8.21/-6.05	-6.11/-12.71	-19.09/-16.57	-17.18/-18.65	-16.83/-18.81	-18.17/-14.35	-9.52/-6.69	-5.21/-6.01	-9.33/-16.9	-14.2/-17.1	-17.85/-8.08	-4.7/-2.22	-0.6/-0.23	-0.76/-1.13	-1.58/-2.52	-4.06/-6.01	-10.17/-18.29	-15.07/-8.89	-7.11/-7.43	-7.75/-7.38	-9.44/-15.53	-14.81/-14.4	-16.65/-14.66	-10.89/-8.62
Θ(45°)	-14.35/-18.23	-18.42/-18.13	-13.63/-15.59	-14.83/-16.58	-18.32/-16.88	-14.25/-11.17	-10.13/-7.59	-5.52/-4.5	-5.03/-8.52	-18.62/-17.28	-19.06/-11.53	-6.55/-5.23	-4/-2.14	-1.58/-2.3	-2.88/-3.36	-4.85/-7.64	-14.66/-12.3	-6.55/-4.99	-5.87/-7.19	-6.86/-6.15	-8.3/-16.65	-12.21/-7.12	-6.98/-9.24	-10.11/-10.62
Θ(52.5°)	-8.45/-9.14	-14.81/-11.91	-9.63/-9.14	-7.41/-8.23	-5.41/-7.6	-10.71/-10.85	-10.26/-8.35	-5.65/-6.26	-4.36/-6.37	-11.18/-17.36	-17.84/-10.42	-6.42/-9.48	-4.06/-3.22	-4/-5.53	-5.56/-6.65	-11.07/-14.86	-11.33/-5.24	-3.03/-3.95	-7.43/-11.83	-10.43/-6.34	-5.61/-11.42	-15.57/-5.64	-4.12/-5.46	-5.36/-6.03
Θ(60°)	-4.58/-8.37	-18.82/-7.73	-6.09/-5.63	-4.59/-3.06	-1.45/-4.41	-12.94/-15.28	-14.14/-10.04	-6.68/-6.44	-6.12/-7.02	-5.93/-6.53	-11.02/-10.52	-5.76/-4.23	-3.44/-4.01	-5.14/-6.95	-9.61/-14.9	-18.38/-14.14	-10.34/-8.02	-7.27/-9.53	-16.1/-18.86	-18.31/-10.65	-5.95/-5.45	-13/-7.63	-3.31/-3.25	-2.61/-2.4
Θ(67.5°)	-5.52/-7.27	-18.88/-8.2	-5.62/-4.37	-3.14/-1.2	-2.87/-8.24	-18.46/-14.9	-16.06/-12.28	-7.84/-9.16	-10.84/-10.81	-7.93/-4.65	-7.97/-7.8	-6.81/-4.96	-3.53/-5.52	-5.73/-11.61	-17.77/-19.08	-16.07/-8.82	-9.14/-12.09	-17.93/-18.97	-18.58/-16.49	-15.92/-18.79	-8.24/-6.88	-13.62/-12.67	-4.6/-3.36	-7.38/-4.67
Θ(75°)	-10.85/-13.08																							



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(75°)	-6.67/-6.47	-9.74/-16.07	-10.19/-5.84	-11.34/-6.61	-3.77/-2.79	-0.81/-0.48	-1.26/-0.4	2.05/1.37	0.48/-0.53	-2.15/-9.02	-10.46/-18.21	-11.97/-11.21	-7.54/-5.48	-3.57/-1.78	-1.35/-0.3	-5.39/-0.24	3.42/3.81	2.35/3.11	2.17/0.4	-1.61/-3.58	-0.91/-1.7	-4.71/-5.14	-2.12/-0.08	-0.06/-1.72
Θ(82.5°)	-8.56/-9.5	-13.55/-17.05	-16.56/-9.7	-13.78/-5.58	-2.56/0.52	2.34/2.27	2.13/1.82	0.64/-1.1	0.75/0.06	-5.98/-9.05	-10.02/-13.52	-11.59/-10.25	-2.93/-4.43	-2.05/0.4	-1.68/-2.94	-10.71/-0.6	3.05/3.58	4.14/6.05	5.35/3.22	0.27/-3.05	-0.79/-0.61	-3.48/-5.3	-3.49/-1.71	-1/-1.52
Θ(90°)	-8.04/-6.46	-11.81/-17.31	-18.51/-9.29	-7.92/-3.31	-1.36/-1.04	0/0-16	0.78/2.31	2.41/0.52	0.11/58	-3.96/-8.89	-9.71/-9.28	-16.68/-11.21	-3.74/-2.03	-2.98/0.62	-0.72/-3.71	-6.02/-0.55	0.71/1.78	3.06/6.22	6.26/5.41	3.72/0.37	-1.72/1.06	-2/7.83	-3.45/-1.99	-3.04/-4.78
Θ(97.5°)	-7.09/-6.54	-11.06/-18.85	-13.63/-5.57	-6.56/-4.52	-6.35/-2.4	-4.87/-3.52	-1.48/0.13	2/2.85	-3.05/-0.69	-5.15/-6.92	-10.84/-14.52	-18.84/-10.55	-4.5/-1.5	-5.96/1.06	-1.35/-4.53	-3.51/-2.31	-2.01/-2.42	1.55/5.4	5.68/6.14	5.51/2.61	-1.33/-0.34	-2.86/-14.32	-6.02/-4.91	-3.83/-4.9
Θ(105°)	-5.37/-16.45	-6.41/-18.8	-11.13/-9.95	-8.27/-9.08	-8.91/-7.5	-11.74/-5.49	-4.47/-2.98	0.47/-1.93	-5.39/-5.33	-7.39/-5.46	-8.41/-13.13	-16.91/-11.09	-6.62/-2.69	-8.21/-1.06	-1.68/-2.56	-1.93/-2.32	-5.2/-8.38	-1.89/-2.64	2.62/0.3	4.51/3.96	-2.68/-0.33	-9.06/-14.4	-4.96/-3.61	-2.39/-5.48
Θ(112.5°)	-6.73/-14.93	-10.32/-18.41	-13.72/-8.74	-17.68/-8.71	-9.64/-13.03	-8.4/-7.7	-9.52/-4.7	-0.79/-3.1	-4.75/-8.12	-9.67/-6.86	-9.53/-14.57	-15.14/-12.73	-7.54/-7.3	-5.53/-1.89	-2.41/-7.04	-3.15/-4.83	-7.11/-12.91	-7.36/0.05	1.32/3.59	4.14/3.81	-3.67/-7.53	-8.59/-17.85	-13.01/-3.83	-1.71/-8.8
Θ(120°)	-7.72/-11.23	-15.43/-18.73	-12.33/-13.34	-14.21/-11.52	-14.86/-17.98	-15.41/-10.93	-9.96/-4.6	-2.6/-5.26	-7.05/-15.56	-15.31/-7.74	-9.01/-9.67	-13.56/-10.3	-7.44/-5.8	-6.67/-5.75	-3.35/-9.07	-5.66/-8.43	-5.83/-4.56	-17.22/-8.75	-5.85/0.61	2.21/1.88	-2.23/-18.35	-8.69/-19.27	-6.01/-5.49	-5.62/-14.6
Θ(127.5°)	-13.67/-14.48	-18.52/-15.5	-18.84/-12.84	-11.92/-18.55	-17.78/-14.76	-17.61/-12.62	-8.93/-7.39	-9.04/-9.25	-14.51/-18.1	-12.42/-10.55	-9.29/-11.72	-18.38/-13.7	-13.06/-8.52	-9.42/-8.15	-3.39/-7.15	-18.84/-12.7	-6.98/-5.88	-10.91/-9.59	-7.82/-2.21	0.02/-2.68	-9.51/-14.69	-16.64/-18.43	-7.58/-5.2	-7.01/-8.62
Θ(135°)	-18.23/-17.1	-18.87/-18.58	-16.34/-14.77	-14.86/-14.14	-15.88/-17.81	-18.74/-18.23	-13.01/-18.57	-17.48/-17.89	-18.79/-11.55	-10.81/-9.67	-12.35/-19.02	-17.58/-7.76	-7/10.54	-3.82/-6.73	-12.31/-10.63	-6.68/-6.67	-15.75/-8.88	-5.4/-2.92	-1.42/-2.27	-8.41/-17.58	-16.32/-15.35	-8.47/-6.56	-9.68/-18.69	
Θ(142.5°)	-18.02/-18.85	-18.01/-15.89	-18.37/-16.2	-15.39/-15.68	-14.46/-16.74	-19.14/-16.85	-15.73/-16.91	-19.49/-17.18	-19.66/-18.49	-18.22/-15.08	-11.14/-9.78	-14.87/-18.27	-17.69/-13.94	-16.68/-14.11	-10.07/-12.98	-18.75/-11.75	-8.82/-13.91	-13.17/-6.91	-5.05/-4.62	-4.5/-5.89	-12.16/-15.91	-18.33/-18.8	-13.19/-13.83	-18.28/-17.99
Θ(150°)	-18.29/-15.64	-14.87/-19.35	-18.72/-15.67	-12.46/-14.54	-19.33/-18.57	-18.18/-19.05	-18.46/-18.1	-17.85/-12.33	-11.27/-11.75	-12.16/-10.59	-8.2/-9.41	-16.95/-17.93	-12.9/-16.25	-17.96/-18.22	-15.22/-12.34	-13.66/-17.86	-18.59/-15.05	-16.34/-14.18	-9.08/-8.02	-6.9/-8.91	-4.97/-5.55	-6.62/-17.53	-17.36/-13.04	-12.64/-18.02
Θ(157.5°)	-17.74/-18.71	-17.81/-17.64	-14.95/-17.63	-18.93/-18.46	-18.91/-17.03	-17.17/-18.77	-17.71/-18.43	-19.06/-18.02	-18.54/-18.4	-19.31/-18.11	-17.91/-18.08	-17.55/-12.94	-13.65/-18.87	-18.56/-14.75	-11.2/-8.81	-8.52/-11.54	-13.77/-9.07	-7.48/-8.1	-11.54/-18.95	-14.41/-10.27	-12.88/-18.34	-18.77/-17.88	-18.98/-18.25	
Θ(165°)	-19.12/-18.94	-18.31/-17.95	-18.48/-18.66	-18.36/-17.85	-17.9/-19.13	-17.87/-13.62	-11.45/-10.95	-12.75/-14.07	-12.67/-11.29	-11.66/-14.18	-15.82/-13.09	-10.61/-8.64	-8.18/-8.92	-9.95/-10.48	-10.34/-8.43	-7.75/-8.99	-10.56/-11.55	-12.5/-15.34	-18.71/-18.14	-14.38/-11.69	-11.62/-11.77	-12.19/-13.61	-14.84/-16.89	-17.91/-17.12
Θ(172.5°)	-18.58/-18.02	-18.92/-19.22	-19.41/-17.67	-17.35/-13.54	-11.01/-9.48	-9.85/-11.87	-16.67/-18.77	-18.96/-17	-15.99/-16.99	-18.25/-18.13	-18.05/-16.49	-13.59/-11.8	-11.68/-11.44	-11.38/-12.02	-13.15/-14.13	-16/-15.95	-14.59/-13.01	-12.38/-12.23	-13.21/-13.77	-12.59/-11.72	-10.94/-9.28	-8.22/-8.77	-11.14/-15.3	-19.01/-18.19
Θ(180°)	-13.56/-13.15	-14.71/-16.35	-17.1/-18.19	-18.41/-18.64	-17.65/-13.16	-11.03/-10.23	-10.16/-9.65	-8.79/-8.64	-8.66/-8.6	-8.42/-8.42	-9.15/-10.14	-11.62/-13.01	-13.72/-15.5	-17.94/-17.78	-17.68/-19.16	-18.89/-15.93	-12.51/-9.84	-8.99/-8.83	-8.22/-8.13	-8.99/-9.28	-9.25/-9.62	-10.3/-11.21	-12.86/-16.56	-18.34/-16.44
Freq(Hz)	5.785GPol.	ThetaAnt. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)
Θ(0°)	4.04/4.03	4.434.56	4.17/3.51	2.63/1.42	0.04/-1.63	-3.79/-3.72	-11.13/-12.21	-9.75/-6.31	-3.46/-0.99	0.69/1.78	2.61/3.19	3.67/4.16	4.36/4.42	4.27/4.1	3.49/2.89	2.11/1.09	-0.36/-2.46	-5.02/-9.09	-16.99/-17.37	-9.14/-4.88	-2.03/-0.34	0.89/1.97	3.17/3.99	4.22/4.23
Θ(7.5°)	3.51/3.4	3.783.78	3.2/3.19	1.24/-0.38	-2.07/-1.63	-7.95/-14.52	-19.22/-12.31	-7.37/4.03	-1.75/-0.35	0.842/1.6	3.22/3.79	4.06/4.23	4.34/2.2	4.21/4.04	3.56/3.03	1.95/0.59	-0.96/-2.79	-5.31/-8.42	-11.17/-9.98	-7.12/-3.91	-2.03/-0.57	0.54/1.39	2.32/2.22	3.94/3.91
Θ(15°)	2.832/89	2.922/34	1.38/0.68	-0.46/-2.6	-4.73/-11.1	-15.61/-15.28	-8.25/-5.15	-3.1/-1.8	-0.75/-0.32	0.11/0.77	1.49/2.27	2.89/3.1	2.76/2.38	2.16/1.96	1.72/2.27	0.47/-0.98	-3.57/-7.26	-10.24/-17.25	-10.85/-6.47	-3.54/-2.01	-1.04/-0.42	-0.32/-0.09	0.91/1.88	2.652/5.55
Θ(22.5°)	2.892/41	1.71/0.61	-0.58/-0.5	-0.17/-1.61	-3.69/-7.52	-16.06/-13.79	-8.32/-5.07	-3.47/-1.97	-0.69/-0.05	0.09/-0.59	-1.48/-0.97	0.23/0.76	0.12/-0.51	-0.18/-1.27	2.17/2.41	1.77/0.31	-1.6/-3.83	-5.5/-6.63	-7.99/-7.42	-6.4/-5.69	-4/-3.02	-2.61/-2.36	-1.30/5.7	2.412/7.5
Θ(30°)	1.86/1.53	0.04/-1.5	-1.9/-0.18	0.04/-1.77	-4.79/-9.35	-17.59/-15.91	-9.84/-8.54	-7.83/-6.01	-3.57/-1.41	0.32/0.46	-1.21/-2.39	-0.64/-0.52	0.06/0.02	2.822/7.1	1.78/0.56	-0.17/-0.89	-2.84/-6.76	-13.11/-18.47	-13/-7.67	-5.98/-4.91	-4.22/-8.46	-4.79/-2.71	0.12/1.31	
Θ(37.5°)	-2.14/-2.71	-0.48/-9.37	-5.88/-3.21	-3.98/-7.71	-15.19/-18.39	-17.81/-14.29	-17.04/-17.97	-15.81/-12.01	-10.01/-5.71	-1.60/4.8	-0.61/-2.23	-0.88/0.48	-0.58/-0.1	-5.31/-63	0.88/0.92	0.58/-0.1	-0.49/-1.87	-5.37/-11.92	-17.01/-8.67	-6.56/-7.08	-5.52/-3.18	-3.03/-5.24	-8.37/-7.49	-4.13/-2.18
Θ(45°)	-7.29/-5.52	-6.03/-9.56	-17.55/-14.11	-15.56/-16.66	-18.92/-18.02	-14.68/-10.62	-10.29/-12.04	-13.09/-10.12	-6.97/-6.2	-4.07/-0.72	-0.87/-4.12	-4.87/-1.37	0.21/0.89	1.03/0.38	-0.74/-0.54	-2.65/-4.4	-3.6/-4.59	-9.06/-11.1	-8.14/-6.82	-7.5/-8.99	-11.75/-10.13	-5.93/-6.9	-9.63/-10.33	-12.9/-8.78
Θ(52.5°)	-9.95/-9.25	-3.81/-3.46	-8.29/-13.4	-11.71/-14.18	-16.78/-9.81	-5.75/-5.23	-8.53/-15.61	-11.75/-9.18	-6.06/-4.66	-4.07/-1.49	-1.9/-4.73	-4.51/-4.22	-1.06/0.52	-0.73/-1.92	-2.7/-4.57	-12.51/-6.72	-4.69/-7.27	-8.65/-7	-6.49/-7.66	-9.18/-11.52	-17.18/-15.63	-7.74/-5.55	-6.85/-6.4	-13.43/-14.8
Θ(60°)	-10.11/-6.38	-0.81/-2.58	-9.18/-13.04	-14.22/-11.9	-10.65/-8.3	-8.64/-11.84	-18.71/-10.7	-7.03/-7.73	-5.54/-8.21	-2.46/-1.42	-1.79/-4.51	-1.42/-1.13	-2.76/-4.37	-1.76/-10.54	-12.76/-5.31	-5.91/-8.95	-8.71/-7.71	-11.06/-14.89	-12.08/-13.65	-19.67/-17.62	-8.27/-4.31	-5.97/-3.67	-5.34/-3.54	
Θ(67.5°)	-11.57/-6.69	-2.59/-9.84	-18.61/-17.89	-11.71/-7.44	-10.55/-12.14	-10.16/-14.16	-18.31/-10.14	-9.08/-8.13	-10.98/-5.36	-2.77/-1.36	-2.47/-3.14	-7.11/-4.01	-3.1/-6.09	-9.01/-15.67	-11.38/-15.12	-7.44/-4.32	-7.4/-7.78	-13.81/-10.84	-14.41/-16.71	-12.92/-8.57	-7.74/-9.64	-7.46/-4.19	-5.88/-5.26	-4.5/-10.71
Θ(75°)	-17.43/-10.16	-7.04/-13.43	-16.36/-13.18	-8.72/-7.05	-10.19/-13.18	-7.62/-7.74	-17.85/-10.64	-8.94/-9.33	-4.86/-1.26	-2.49/-2.22	-12.99/-18.9	-14.7/-14.12	-9.97/-6.45	-5.46/-4.21	-12.48/-11.63	-11.57/-15.37	-16.57/-9.96	-8.25/-9.08	-10.33/-8.01	-7.91/-8.17	-6.11/-8.54			
Θ(82.5°)	-10.18/-8.72	-10.5/-8.06	-9.74/-19	-10.3/-8.32	-10.52/-13.32	-13.53/-12.28	-4.72/-9.99	-7.2/-15.4	-1.88/-11.88	-7.54/-5.38	4.1/-3.59	-4.47/-2.21	-1.64/-5.57	-17.63/-17.68	-12.23/-8.49	-8.05/-6.49	-3.99/-5.53	-18.06/-7	-9.41/-15.38	-15.91/-10.78	-10.44/-11.28	-10.38/-11.11	-8.01/-10.26	-6.62/-18.21
Θ(90°)	-9.57/-7.4	-12.31/-8.16	-10.75/-17.89	-15.13/-14.43	-10.83/-7.5	-9.92/-12.59	-6.78/-7.39	-9.32/-14.79	-15.32/-14.72	-12.74/-14.68	-13.28/-7.21	-7.38/-3.54	-3.4/-5.31	-10.47/-12.19	-13.71/-7.04	-7.12/-10.26	-7.82/-8.11	-11.65/-4.9	-6.69/-14.99	-12.63/-13.67	-16.87/-11.46	-8.26/-11.97	-15.21/-9.27	-6.68/-18.83
Θ(97.5°)	-5.69/-10.91	-18.43/-10.46	-12.6/-12.56	-18.53/-14.38	-7.13/-9.76	-15.21/-13.37	-8/-9.83	-17.62/-18.1	-17.51/-17.05	-19.41/-16.76	-19.11/-15.48	-14.45/-6.4	-9.68/-7.63	-13.18/-12.81	-10.77/-9.93	-6.66/-8.82	-6.92/-7.07	-6.87/-13.21	-13.2/-16.61	-10.83/-11.5	-6/-8.01	-16.34/-12.84	-8.16/-13.77	
Θ(105°)	-8.4/-5.51	-17.28/-9.32	-8.88/-7.84	-11.9/-15.38	-6.89/-14.29	-18.01/-18.16	-16.5/-12.16	-16.33/-18.63	-13.64/-12.76	-16.8/-15.41	-17.31/-17.68	-13.62/-15.32	-9.94/-11.89	-7.59/-12.02	-9.09/-6.73	-6.4/-7.17	-16.82/-7.95	-13.72/-9.1	-8.75/-11.2	-14.82/-18.02	-12.79/-9			
Θ(112.5°)	-5.38/-7.54	-10.24/-10.51	-11.02/-12.87	-15.54/-18.95	-18.13/-16.63	-18.75/-17.89	-17.79/-15.2	-18.16/-12.49	-8.63/-9.51	-13.16/-19.17	-17.06/-17.64	-17.98/-13.41	-12.37/-13.65	-11.39/-18.58	-9.33/-9.96	-6.33/-19.24	-8.87/-4.42	-6.35/-2.83	-6.44/-13.4	-18.34/-5.1	-7.25/-18.88	-18.88/-17.39	-12.14/-10.66	-11.25/-9.74
Θ(120°)	-8.31/-12.75	-10.41/-7.26	-7.53/-12.45	-16.38/-17.87	-17.62/-18.48	-12.84/-18.16	-18.83/-18	-13.29/-8.97	-9.23/-8.65	-8.6/-12.23	-11.95/-11.67	-17.2/-16.54	-8.09/-12.3	-5.68/-9.95	-6.64/-7.56	-10.24/-10.12	-17/7.64	-9.24/-5.36	-6.67/-13.4	-18.1/-8.86	-6.78/-11.91	-17.79/-16.31	-18.12/-13.86	-9.72/-8.



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(120°)	-2.76/3.38	-3.16/-3.27	-5.37/-5.04	-5.45/-6.55	-7.14/-8.67	-14.14/-18.91	-11.78/-12.48	-14.03/-18.1	-13.72/-10.26	-8.22/-8.11	-5.5/-5.56	-4.76/-7.35	-10.29/-10.05	-10.95/-14.11	-17.99/-13.9	-11.33/-14.18	-15.8/-11.05	-8.14/-9.56	-15.33/-10.13	-9.28/-11.38	-17.77/-11.12	-9.57/-7.4	-6.88/-5.13	-4.19/-2.14
Θ(127.5°)	-4.56/-4.5	-6.13/-6.24	-6.32/-6.7	-6.81/-8.15	-10.01/-11.68	-15.62/-13.81	-10.87/-12.24	-18.42/-17.82	-14.12/-13.9	-11.96/-11.12	-8.36/-6.29	-8.1/-8.72	-10.95/-15.71	-13.91/-14.77	-13.86/-13.13	-13.6/-12.61	-10.63/-17.85	-17.91/-17.56	-18.25/-11.9	-14.62/-14.02	-17.04/-13.29	-10.79/-10.89	-8.79/-7.15	-5.62/-2.49
Θ(135°)	-6.88/-5.42	-7.19/-10.4	-10.16/-8.3	-7.27/-8.57	-10.51/-11.39	-16.07/-15.87	-13.25/-13.83	-18.4/-18.36	-13.53/-11.24	-11.78/-8.69	-6.35/-9.74	-11.39/-7.88	-17.75/-18.95	-18.65/-16.72	-13.95/-16.61	-12.17/-13.87	-17.78/-18.95	-16.97/-18.12	-18.48/-18.63	-17.78/-18.59	-14.19/-16.95	-13.63/-18.08	-16.01/-9.17	-8.17/-4.46
Θ(142.5°)	-11.1/-8.44	-6.8/-8.98	-12.37/-11.03	-9.01/-7.84	-9.36/-12.25	-15/-15.31	-17.91/-17.23	-16.96/-19.36	-19/-17.07	-15.23/-12.08	-10.84/-8.69	-10.02/-17.85	-12.95/-11	-14.51/-19.27	-17.91/-18.1	-13.47/-14.94	-17.94/-16.51	-17.59/-17.19	-19.19/-17.23	-18.18/-18.97	-17.67/-16.39	-15.74/-18.15	-18.24/-10.81	-8.11/-9.64
Θ(150°)	-12.07/-14.12	-12.89/-13.85	-12.46/-11.65	-10.24/-9.65	-10.86/-15.22	-17.18/-15.23	-12.88/-12.65	-12.79/-14.55	-16.88/-18.66	-18.59/-17.43	-13.1/-12.7	-15.44/-18.96	-18.44/-18.52	-16.05/-14.63	-15.29/-14.57	-11.65/-12.27	-18.16/-18.69	-18.87/-18.65	-18.77/-18.63	-18.93/-18.87	-18.96/-18.35	-19.04/-13.19	-9.71/-8.16	-7.37/-8.61
Θ(157.5°)	-10.08/-12.01	-11.45/-11.45	-10.21/-11.34	-12.68/-13.75	-15.9/-17.43	-18.27/-19.11	-18.21/-14.67	-15.52/-14.52	-13.34/-12.04	-11.29/-11.44	-14.09/-16.58	-13.32/-11.7	-15.16/-12.76	-13.59/-13.77	-13.57/-14.17	-17.57/-18.65	-18.13/-19.28	-17.4/-16.33	-17.03/-19.06	-19.28/-17.83	-18.71/-18.58	-18.1/-15.94	-14.76/-11.5	-8.69/-8.62
Θ(165°)	-10.13/-10.05	-9.77/-10.17	-11/-11.3	-13.31/-17.28	-17.82/-17.95	-16.84/-15.51	-14.6/-12.95	-12.68/-12.92	-13.3/-14.3	-15.66/-16.57	-15.89/-13.58	-13.79/-18.34	-18.56/-18.04	-15.97/-15.6	-15.57/-15.59	-15.38/-16.88	-18.03/-17.92	-17.31/-15.56	-15.93/-18	-18.22/-18.12	-19.22/-18.04	-18.56/-17.38	-16.03/-13.44	-11.73/-10.11
Θ(172.5°)	-14.55/-17.52	-18.97/-18.08	-19.08/-19.13	-18.55/-17.28	-18.52/-18.46	-19.1/-18.27	-17.17/-17.93	-17.84/-17.62	-16.85/-16.87	-17.05/-17.81	-17.77/-18.13	-18.08/-17.95	-18.07/-18.92	-17.58/-19.18	-19.16/-18.53	-18.7/-17.24	-19.12/-18.23	-19.24/-18.55	-18.09/-18.48	-18.61/-18.59	-18.57/-18.29	-18.46/-17.02	-16.28/-14.47	-12.59/-11.81
Θ(180°)	-18.93/-19.14	-17.39/-15.07	-14.88/-14.66	-14.45/-14.4	-14.71/-14.8	-14.65/-15.12	-15.79/-16.01	-17.46/-18.2	-18.12/-17.72	-18.74/-19	-19.68/-18.2	-18.79/-18.73	-18.34/-18.67	-17.79/-19.72	-18.8/-17.83	-18.01/-17.67	-16.79/-19.07	-18.7/-17.99	-19.16/-17.11	-17.83/-17.35	-18.71/-18.69	-17.96/-17.39	-17.33/-19.02	
Freq(Hz)	5.2GPol.	ThetaAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-13.8/-17.49	-18.63/-17.04	-12.38/-9.33	-6.92/-5.05	-3.64/-2.61	-1.98/-1.4	-0.88/-0.7	-0.33/-0.26	-0.54/-1	-1.57/-2.57	-3.56/-5.09	-6.9/-9.56	-13.85/-17.42	-18.52/-13.9	-8.83/-5.96	-4.2/-3.26	-2.45/-1.95	-1.24/-1.1	-1.03/-1.24	-1.34/-1.8	-2.41/-3.09	-4.08/-5.35	-7.33/-10.25	
Θ(7.5°)	-15.94/-19	-18.61/-14.49	-11.37/-8.93	-6.73/-4.93	-3.65/-2.76	-1.96/-1.13	-0.99/-0.92	-0.62/-0.96	-1.43/-2.07	-2.66/-3.03	-4.19/-5.26	-6.57/-8.71	-11.41/-15.16	-17.98/-16.87	-11.42/-7.79	-5.42/-4.22	-3.31/-2.43	-1.5/-0.65	-0.11/0.23	0.33/0.31	0.24/-0.19	-0.93/-1.91	-3.33/-5.11	-7.57/-10.71
Θ(15°)	-16.61/-18.86	-17.33/-13.13	-11.17/-8.87	-6.89/-5.5	-4.34/-2.9	-1.63/-1.12	-0.91/-0.3	-0.56/-1.17	-2.06/-3.01	-3.7/-4.46	-5.43/-6.39	-7.13/-8.08	-9.02/-10.05	-10.89/-12.58	-12.52/-10.36	-8.3/-6.08	-4.78/-3.81	-2.31/-1.43	-1.02/-0.67	-0.43/-0.54	-0.87/-1.33	-2.01/-2.8	-3.9/-5.57	-7.42/-10.38
Θ(22.5°)	-18.82/-17.78	-14.29/-12.3	-10.7/-9.6	-8.02/-6.52	-5.83/-3.06	-1.56/-4.04	-0.65/0.82	0.77/-0.15	-1.11/-1.8	-2.28/-3.61	-4.92/-6.36	-8.07/-8.53	-8.36/-6.87	-6.15/-4.88	-5.47/-4.58	-2.77/-3.44	-2.98/-2.22	-1.77/-1.72	-1.72/-1.88	-2.37/-2.96	-3.54/-4.4	-5.05/-5.52	-6.25/-6.98	-8.74/-12.56
Θ(30°)	-18.49/-18.47	-15.59/-13.99	-12.25/-10.08	-8.84/-7.38	-6.47/-4.63	-2.9/-0.68	0.66/1.4	1.57/1.15	0.29/-0.74	-1.41/-2.24	-3.51/-5.24	-6.98/-8.64	-8.77/-7.33	-6.04/-5.26	-3.62/-2.15	-0.85/-0.02	0.25/0.35	0.4/-0.58	-1.4/-3.11	-4.24/-4.58	-5/-5.53	-5.97/-6.62	-6.76/-7.24	-9.18/-13.39
Θ(37.5°)	-18.11/-18.69	-18.26/-16.14	-11.46/-7.52	-5.37/-4.46	-4.57/-4.46	-2.73/-1.52	-0.36/0.6	1.49/1.52	0.54/-0.7	-0.88/-1.43	-3.18/-1.65	-9.32/-11.16	-12.12/-11.66	-8.61/-5.44	-2.15/-0.35	0.92/1.28	1.02/0.72	0.59/0.36	-0.88/-3.33	-5.53/-4.81	-3.95/-3.82	-4.2/-4.82	-5.8/-7.33	-10.14/-14.18
Θ(45°)	-17.17/-18.35	-18.95/-15.23	-8.83/-5.35	-4.31/-4.5	-3.85/-2.7	-0.87/-0.05	-0.29/0.66	1.39/-1.99	1.49/0.04	-0.81/-1.44	-3.45/-6.51	-10.59/-13.97	-14.53/-13.29	-12.58/-8.16	-3.85/-0.98	0.29/0.87	0.85/0.64	0.31/-1.54	-1.73/-2.2	-4.07/-5.49	-3.77/-3.43	-4.04/-4.92	-5.77/-8.11	-11.27/-14.14
Θ(52.5°)	-18.33/-19.22	-18.85/-15.5	-7.58/-4.83	-4.47/-4.64	-3.69/-1.82	-0.29/0.33	0.37/0.28	0.95/1.81	1.79/0.09	-0.94/-1.71	-3.53/-8.54	-14.48/-15.99	-12.4/-10.52	-10.06/-8.32	-5.51/-3.32	-1.8/-0.39	0.62/0.64	-0.4/-1.76	-1.84/-0.49	-1.14/-3.67	-4.75/-4.08	-5.25/-6.3	-6.63/-9.72	-14.25/-16.79
Θ(60°)	-18.76/-18.45	-17.79/-13.17	-7.06/-8.55	-6.03/-5.44	-3.94/-2.02	-0.88/-0.48	-1.38/-2.14	-1.44/-0.35	-0.48/-1.62	-3.12/-2.81	-3.84/-8.17	-11.43/-13.46	-12.86/-8.68	-7.35/-4.88	-9.1/-7.95	-5.18/-1.78	0.12/0.53	-0.12/-1.75	-2.06/-0.68	-0.74/-2.91	-5.5/-5.6	-7.05/-10.3	-8.84/-12.56	-18.79/-18.54
Θ(67.5°)	-18.58/-18.33	-18.52/-11.9	-7.49/-7.53	-6.87/-5.86	-5.84/-4.06	-2.68/-2.34	-3.63/-2.98	-1.77/0.02	1.03/-0.53	-7.03/-4.72	-5.68/-7.87	-10.77/-13.85	-16.48/-9.34	-7.68/-8.24	-9.88/-11.26	-9.9/-14.4	-1.95/-1.46	-3.07/-4.77	-4.34/-3.18	-2.84/-4.5	-7.35/-6.69	-7.51/-11.06	-9.22/-13.66	-18.91/-18.81
Θ(75°)	-18.16/-18.68	-18.3/-13.57	-9.43/-8.94	-7.34/-5.76	-6.48/-5.5	-3.76/-2.93	-3.46/-2.4	-0.15/0.61	-0.68/-4.14	-5.63/-4.94	-6.69/-8.09	-8.58/-12.14	-17.69/-11	-8.77/-8.75	-9.64/-13	-12.88/-9.05	-5.84/-3.87	-4.86/-7.92	-9.16/-6.62	-5.46/-7.23	-9.51/-9.46	-8.69/-16.84	-10.24/-15.05	-18.75/-18.26
Θ(82.5°)	-18.02/-16.96	-19.09/-19.29	-10.87/-9.47	-7.69/-6.46	-6.76/-7.33	-7.3/-8.01	-8.04/-5.6	-2.88/-1.29	-2.74/-5.7	-5.45/-3.6	-9.5/-8.88	-10.61/-12.58	-14.07/-13.26	-12.52/-10.94	-10.95/-13.34	-12.71/-8.18	-7.17/-5.36	-5.62/-8.75	-8.97/-6.94	-6.72/-7.62	-10.66/-11.83	-9.82/-16.32	-14.34/-14.81	-17.7/-18.75
Θ(90°)	-18.12/-17.81	-18.38/-18.12	-14.93/-12.58	-8.71/-6.06	-7.94/-10.58	-14.11/-8.65	-5.29/-5.61	-4.9/-5.52	-5.69/-6.21	-6.46/-6.14	-11.41/-11.32	-13.45/-17.16	-13.4/-13.37	-18.21/-15.83	-14.27/-14.38	-12.24/-6.34	-4.16/-4.54	-5.25/-5.57	-7.04/-7.48	-7.83/-9.66	-11/-12.23	-12.2/-16.51	-17.79/-17.65	-19.17/-18.4
Θ(97.5°)	-18.07/-17.7	-18.78/-17.11	-11.86/-13.8	-9.7/-7.88	-12.09/-19.01	-12.62/-11.01	-9.64/-7.2	-6.09/-6.31	-6.29/-5.99	-7.5/-6.66	-9.91/-10.1	-17.17/-18.25	-15.88/-18.29	-18.1/-16.21	-13.77/-12.24	-11.48/-6.43	-4.51/-5.26	-6.19/-5.36	-6.5/-6.63	-9.54/-12.79	-13.64/-10.17	-14.34/-16.46	-16.88/-16.37	-19.26/-18.7
Θ(105°)	-17.45/-18.27	-18.45/-17.81	-17.31/-14.77	-13.62/-11.37	-16.34/-18.72	-17.69/-17.52	-12.8/-9.74	-9.14/-6.53	-7.14/-6.28	-9.63/-7.07	-9.41/-10.5	-14.95/-19.09	-19.18/-17.62	-16.1/-15.84	-12.17/-8.42	-10.75/-10.91	-7.14/-8.5	-6.35/-8.83	-6.87/-7.07	-8.4/-18.5	-15.26/-11.03	-13.67/-15.84	-17.01/-17.85	-18.72/-18.03
Θ(112.5°)	-18.33/-18.44	-18.08/-17.86	-17.82/-16.03	-14.52/-16.88	-18.71/-18.44	-17.43/-17.62	-17.75/-15.42	-11.86/-7.4	-9.25/-9.75	-11.81/-10.16	-19.35/-14.03	-15.43/-18	-18.95/-17.98	-17.6/-15.3	-11.07/-7.49	-11.42/-18.09	-12.32/-6.36	-8.81/-12.67	-9.66/-9.14	-10.37/-18.17	-15.63/-12.76	-15.46/-18.62	-19.38/-18.27	-17.91/-16.03
Θ(120°)	-17.52/-17.88	-17.35/-18.3	-17.87/-15.26	-17.36/-17.13	-18.47/-17.72	-17.89/-18.9	-18.33/-17.42	-17.49/-16.37	-16.29/-13.29	-13.74/-11.02	-16.78/-16.22	-17.44/-18	-19.45/-19.94	-18.35/-19.26	-14.88/-12.03	-13.26/-13.97	-17.13/-11.74	-10.55/-14.8	-11.42/-9.62	-12.73/-18.46	-13.73/-13.68	-18.32/-17.8	-18.58/-17.51	-16.2/-15.03
Θ(127.5°)	-14.79/-13.53	-19.37/-14.95	-14.98/-17.57	-17.91/-17.96	-17.99/-17.59	-18.42/-18.27	-17.87/-17.28	-18.85/-18.64	-19.28/-18.12	-16.36/-18.88	-18.2/-17.07	-19.35/-18.8	-19.06/-16.57	-18.54/-17.62	-18.28/-15.66	-18.65/-10.23	-14.45/-18.25	-14.73/-14.25	-15.05/-12.62	-16.34/-18.4	-18.81/-18.05	-18.46/-18.32	-18.79/-18.27	-14.73/-12.29
Θ(135°)	-16/-15.14	-18.29/-17.73	-17.11/-18.4	-17.62/-18.8	-19.2/-18.3	-19.4/-17.75	-18.13/-14.24	-18.95/-17.88	-17.8/-17.6	-18.07/-16.02	-14.15/-15.38	-18.44/-17.6	-19.1/-14.54	-17.39/-15.54	-18.48/-13.58	-18.18/-14.28	-15.23/-18.16	-17.49/-14.29	-16.4/-17.16	-14.73/-18.48	-18.91/-18.94	-18.41/-17.58	-17.49/-17.97	-14.73/-14.12
Θ(142.5°)	-18.55/-17.7	-18.8/-15.53	-14/-15.12	-16.83/-17.79	-17.83/-18.6	-18.67/-18.47	-17.15/-16.34	-17.39/-19.05	-16.49/-18.18	-15.93/-14.28	-16.67/-15.05	-13.33/-15.96	-12.34/-14.29	-18.19/-18.59	-19.2/-14.54	-17.78/-18.49	-18.24/-11.58	-12.69/-17.75	-17.74/-18.69	-19.16/-18.68	-16.1/-14.28	-18.68/-19.03	-18.22/-18.39	-16.79/-17.74
Θ(150°)	-19.13/-18.81	-17.78/-18.83	-15.32/-17.92	-18.32/-18.88	-17.43/-18.53	-13.42/-13.65	-13.84/-16.23	-18.53/-18.57	-18.87/-18.67	-17.43/-15	-14.3/-15.88	-19.02/-17.7	-17.02/-17.66	-15.71/-12.64	-12.94/-15.09	-11.81/-11.3	-15.36/-17.98	-15.69/-16.65	-17.11/-19.06	-19.05/-19.04	-18.8/-15.9	-15.22/-19.1	-18.42/-13.26	-14.21/-19.05
Θ(157.5°)	-18.33/-19.49	-18.7/-18.32	-17.87/-18.01	-18.88/-17.89	-19.07/-19.05	-17.6/-18.45	-17.71/-17.89	-18.01/-18.4	-18.41/-16.76	-14.81/-15.12	-16.74/-18.59	-15.78/-10.41	-9.8/-13.98	-15.8/-16.15	-14.57/-16.1	-19.29/-17.46	-18.74/-19.02	-18.26/-17.34	-17.29/-19.27	-19/-18.17	-17.89/-17.67	-16.5/-15.61	-16.34/-15.71	-16.89/-18.16
Θ(165°)	-17.18/-18.27	-18.18																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(165°)	-8.84/-8.11	-8.02/-9.28	-10.1/-11.55	-14.58/-17.21	-17.84/-18.37	-17.3/-16.87	-15.06/-13.46	-12.23/-12.45	-13.54/-14.06	-15.59/-16.01	-15.93/-16.01	-17.27/-19	-18.25/-17.36	-15.18/-15.27	-17.25/-18.94	-17.75/-17.91	-18.06/-18	-18.85/-18.59	-17.98/-18.24	-17.9/-17.56	-18.42/-16.82	-16.44/-13.72	-10/-8.14	-7.22/-6.68
Θ(172.5°)	-13.04/-11.94	-12.14/-12.45	-14.27/-14.71	-16.12/-17.72	-18.08/-18.37	-17.61/-17.95	-17.97/-17.83	-18.04/-18.22	-18.47/-18.15	-18.37/-17.88	-18.04/-17.98	-18.1/-18.39	-18.08/-17.88	-18.79/-17.02	-18.27/-17.25	-18.39/-18.02	-18.41/-17.78	-18.73/-18.71	-18.8/-17.89	-18.04/-16.51	-15.03/-15.45	-14.9/-15.47	-14.86/-13.69	-13.23/-12.82
Θ(180°)	-17.44/-18.5	-18.27/-17.91	-18.52/-18.53	-19.33/-18.86	-18.57/-17.62	-16.49/-16.05	-15.75/-16.55	-15.77/-17.6	-15.22/-14.41	-17.47/-14.91	-16.21/-17.49	-18.98/-19.3	-18.42/-18.01	-17.76/-19.03	-18.26/-18.02	-18.03/-17.91	-16.99/-18.22	-19.92/-17.81	-18.21/-18.31	-18.18/-19.05	-18.62/-18.24	-17.83/-19.17	-18.17/-17.99	-17.7/-18.4
Freq(Hz)	5.6GPol	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°)	-10.97/-13.54	-15.58/-12.64	-10.22/-7.92	-6.14/-4.94	-4.04/-3.61	-3.34/-3.2	-3.53/-3.36	-5.35/-5.6	-6.56/-7.35	-8.65/-10.42	-11.82/-10.54	-11.26/-10.37	-8.51/-6.84	-1.68/-1.41	-1.07/-0.78	-0.7/-0.78	-1.75/-2.41	-3.32/-4.82	-6.33/-6.46	-10.91/-16	-1.75/-2.55	-3.32/-4.82	-6.33/-6.46	-10.91/-16
Θ(7.5°)	-14.26/-12.47	-10.27/-8.28	-6.99/-5.94	-4.7/-3.57	-2.69/-1.96	-1.57/-1.27	-0.84/-0.75	-0.77/-0.87	-0.81/-1.21	-1.49/-2.2	-2.98/-4.21	-5.68/-7.81	-10.95/-14.41	-16.14/-13.79	-10.83/-8.42	-6.13/-4.17	-3.14/-2.55	-2.4/-2.4	-2.33/-2.39	-2.79/-3.2	-3.43/-3.96	-4.73/-5.72	-6.86/-7.98	-9.85/-11.82
Θ(15°)	-16.83/-13.38	-11.2/-9.43	-8.32/-6.91	-6.07/-5.15	-4.35/-3.67	-2.63/-1.59	-0.74/-0.07	-0.16/-0.01	-0.17/-0.47	-0.71/-1.54	-2.68/-4.21	-5.8/-7.82	-10.97/-16.04	-18.97/-17.69	-13.27/-9.79	-6.61/-4.33	-3.41/-2.36	-2.28/-2.56	-3.01/-3.8	-4.58/-5.33	-5.41/-5.39	-6.27/-7.72	-9.17/-11.22	-14.36/-15.33
Θ(22.5°)	-17.39/-15.15	-12.73/-9.79	-6.78/-5.21	-4/-3.88	-5.38/-5.69	-4.36/-2.8	-0.91/-0.23	0.510.49	-0.08/-0.91	-1.95/-3.69	-5.09/-6.73	-8.41/-9.81	-11.66/-12.76	-13.62/-15.03	-18.12/-17.46	-12.66/-8.19	-6.81/-3.96	-3.27/-3.03	-3.34/-2.2	-4.64/-4.19	-3.56/-3.37	-3.95/-4.88	-6.88/-10.29	-14.26/-18.09
Θ(30°)	-19.34/-13.27	-9.86/-7.18	-5/-3.42	-3.16/-2.83	-2.32/-2.48	-0.94/-0.44	1.121.62	1.591.48	1.020.22	-0.71/-2.2	4.3/-6.96	8.69/-11.22	-12.15/-10.3	-7.82/-6.87	-6.96/-7.22	-7.88/-7.67	-8.19/-6.38	-4.26/-3.32	-3.15/-3.76	-3.78/-2.74	-1.55/-0.87	-0.84/-2.21	-5.63/-10.81	-15.36/-19.27
Θ(37.5°)	-18.2/-15.83	-10.12/-9.75	-5.96/-3.91	-3.23/-2.28	-2.12/-1.34	-0.18/-0.02	1.981.69	0.960.28	0.01/-0.59	-1.11/-2.53	-4.03/-6.2	-7.74/-9.76	-15.15/-11.02	-7.58/-5.48	-3.69/-2.5	-2.2/-2.19	-2.84/-3.95	-3.52/-2.81	-2.72/-3.62	-3.71/-2.47	-1.35/-0.58	-0.85/-2.77	-6.85/-12.77	-18.71/-18.52
Θ(45°)	-16.63/-18.38	-11.31/-7.99	-5.53/-3.55	-2.56/-2.35	-3.89/-4.7	-2.25/-2.67	2.262.21	1.250.23	0.002	-0.77/-2.74	-4.92/-8.12	-9.84/-11.32	-16.63/-17.25	-11.16/-6.45	-3.28/-1.64	-1.17/-0.98	-2.16/-3.23	-2.87/-1.4	-1.09/-2.7	-4.41/-2.73	-1.43/-1.44	-1.91/-3.23	-5.25/-8.79	-13.82/-16.05
Θ(52.5°)	-13.65/-18.35	-16.4/-12.26	-6.7/-3.16	-2.5/-3.66	-6.27/-4.87	-1.95/-1.03	2.542.52	1.931.86	2.332.33	0.1/-2.66	-6.82/-11.69	-16.59/-17.53	-18.03/-18.5	-13.66/-7.71	-4.72/-3.53	-2.23/-1.49	-1.57/-2.49	-1.85/-0.47	-0.15/-2.06	-5.97/-3.89	-2.2/-2.41	-3.75/-5.1	-5.72/-7.78	-12.19/-14.73
Θ(60°)	-10.9/-14.49	-18.59/-11.81	-4.73/-2.54	-3.77/-6	-5.82/-5.23	-0.95/-0.73	1.010.11	-0.191.1	1.372.04	0.16/-3.39	-5.71/-8.25	-12.39/-18.37	-17.39/-15.26	-15.92/-13.62	-10.16/-6.24	-5.31/-2.08	-0.77/-1.36	-2.66/-2.25	-1.71/-2.56	-6.18/-6.7	-3.71/-2.76	-5.74/-7.27	-9.47/-9.77	-9.27/-11.84
Θ(67.5°)	-9.86/-12.72	-17.43/-11.84	-5.46/-4.76	-6.86/-6.68	-4.36/-4.91	-4.02/-3.29	-3.97/-3.72	-1.66/-0.29	-0.68/-1.12	-4.56/-9.05	-6.37/-7.08	-8.71/-11.99	-15.66/-14.4	-14.61/-18.42	-17.91/-16.31	-7.13/-2.68	-1.68/-2.55	-3.39/-3.43	-3.52/-4.21	-8.25/-8.91	-6.55/-7.7	-7.36/-9.13	-9.08/-11.36	-13/-12.13
Θ(75°)	-10.07/-12.63	-17.81/-14.29	-7.53/-7.79	-8.15/-6.62	-7.19/-10.85	-7.38/-1	1.111.88	2.512.15	0.67/-2.44	-9.24/-13.9	-7.7/-7.67	-6.34/-9.82	-10.6/-17.87	-11.59/-12.94	-13.01/-18.9	-13.65/-5.08	-2.69/-3.92	-4.83/-4.89	-4.66/-4.74	-8.58/-10.86	-9.68/-9.24	-11.5/-12.5	-12.12/-12.97	-15.95/-11.85
Θ(82.5°)	-12.55/-17.97	-18.39/-15.92	-11.25/-10.15	-10.11/-6.69	-9.02/-12.47	-8.12/-8.39	-2.03/-2.17	-0.640.86	-0.1/-2.97	-10.19/-6.59	-6.16/-6.72	-5.62/-8.81	-10.24/-10.65	-14.18/-12.2	-9.55/-12.97	-14.54/-7.42	-2.49/-4.41	-5.75/-5.22	-5.63/-5.02	-10.82/-12.76	-13.62/-11.8	-13.84/-13.77	-15.92/-14.53	-18.48/-12.68
Θ(90°)	-16.37/-18.03	-14.27/-18.72	-14.3/-12.3	-11.9/-8.51	-9.03/-12.4	-14.21/-5.82	-4.58/-4.94	-2.35/-2.17	-2.52/-4.65	-7.72/-6.15	-5.32/-6.72	-5.1/-8.31	-10.17/-18.12	-15.87/-14.15	-10.51/-6.69	-11.74/-4.75	-4.84/-2.35	-5.51/-6.37	-8.2/-6.03	-10.22/-12.49	-16.34/-18.71	-18.33/-18.84	-18.89/-19.09	-18.69/-17.81
Θ(97.5°)	-17.23/-14.9	-16.53/-18.35	-14.64/-11.67	-9.26/-8.02	-9.8/-18.85	-10.06/-7.92	-5.76/-2.79	-1.32/-1.29	-2.58/-6.21	-7.86/-6.78	-6.68/-6.19	-7.83/-10.56	-15.22/-18.36	-18.32/-15.14	-10.5/-10.7	-9.88/-5.17	-2.67/-3.57	-5.46/-7.13	-10.51/-10.02	-11.97/-18.12	-19.25/-17.77	-18.62/-15.14	-18.35/-18.47	-18.19/-16.62
Θ(105°)	-17.42/-13.38	-14.33/-11.91	-14.43/-11.76	-10.56/-10.52	-13.2/-18.62	-14.66/-15.75	-9.99/-5.06	-2.73/-2.36	-2.84/-6.48	-8.21/-7.8	-7.21/-8.55	-10.47/-13.17	-18.7/-18.07	-18.65/-13.6	-11.68/-9.96	-12.44/-8.57	-4.15/-5.5	-6.78/-6.28	-10.19/-14.69	-14.61/-14.22	-18.91/-18.25	-18.86/-17.11	-17.61/-13.91	-19/-17.71
Θ(112.5°)	-17.38/-16.93	-14.59/-10.39	-12.18/-11.53	-13.32/-11.76	-15.33/-18.13	-18.22/-18.49	-10.25/-6.82	-7.38/-3.47	-4.38/-3.87	-11.38/-9.17	-11.59/-11.46	-15.29/-14.46	-16.74/-18.81	-17.72/-17.74	-12.8/-5.7	-13.06/-13.2	-8.17/-8.66	-15.85/-15.15	-15.15/-16.42	-16.15/-16.27	-18.94/-16.96	-18.57/-15.01	-18.58/-17.94	-17.65/-16.25
Θ(120°)	-19.13/-19.1	-13.72/-13.13	-12.99/-11.66	-15.45/-18.65	-18.02/-18.35	-17.64/-18.05	-13.78/-15.45	-13.51/-6.62	-8.85/-10.88	-15.88/-10.9	-15.76/-15.48	-18/-18.77	-18.13/-18.39	-18.69/-18.74	-14.04/-15.09	-12.49/-17.27	-12.57/-7.28	-9.13/-10.43	-14.17/-16.34	-12.89/-18.41	-18.85/-17.8	-18.24/-18.77	-19.3/-19.33	-18.44/-19.07
Θ(127.5°)	-18.43/-18.62	-13.75/-14.88	-14.78/-13.25	-16.33/-17.72	-16.48/-19	-16.84/-18.65	-18.42/-15.48	-11.53/-16.98	-17.65/-17.91	-17.48/-13.02	-12.65/-12.64	-18.05/-18.03	-18.88/-18.01	-18.98/-18.97	-18.49/-17.16	-16.57/-13.61	-11.12/-9.54	-14.04/-13.11	-11.99/-12.66	-15.04/-17.2	-18.65/-18.7	-18.26/-18.53	-18.41/-18.17	-17.13/-18.32
Θ(135°)	-18.76/-16.87	-16.15/-14.48	-18.8/-16.99	-16.46/-16.03	-17.13/-18.9	-16.26/-18.3	-18.58/-18.2	-17.5/-19.16	-17.89/-19.23	-16.67/-15.89	-11.4/-11.91	-18.51/-17.69	-18.57/-18.52	-18.86/-19	-18.79/-19.12	-15.01/-12.08	-17.09/-18.38	-18.85/-18.4	-13.9/-12.61	-12.7/-19.13	-17.91/-17.35	-19.95/-17.46	-17.46/-18.47	-18.78/-18.48
Θ(142.5°)	-18.58/-18.78	-16.92/-15.66	-17.29/-16.14	-11.86/-14.04	-16.27/-18.31	-18.16/-18.64	-18.99/-17.77	-17.44/-18.06	-17.76/-16.12	-16.93/-15.62	-13.47/-14.3	-11.88/-13.94	-18.52/-16.27	-18.98/-18.97	-17.47/-18.3	-19.08/-19	-14.96/-17.47	-18.44/-12.41	-15.19/-17.12	-18.56/-17.73	-14.76/-18.25	-19.31/-15.26	-18.04/-19.12	-18.09/-19.02
Θ(150°)	-18.06/-18.49	-17.43/-17.5	-15.56/-14.21	-15.34/-13.51	-18.43/-14.42	-14.59/-16.48	-19.06/-17.39	-18.85/-19.04	-18.45/-16.67	-14.72/-15.16	-10.94/-10.15	-15.69/-18.25	-14.54/-12.65	-18.64/-16.09	-18.11/-18.12	-15.61/-15.11	-17.87/-18.77	-14.73/-14.31	-17.81/-18.44	-19.09/-18.67	-19.11/-15.15	-18.8/-18.84	-17.45/-17.74	-18.92/-18.19
Θ(157.5°)	-17.84/-18.63	-18.52/-17.18	-15.46/-17.05	-17.14/-19.27	-17.26/-18.81	-18.41/-17.93	-18.68/-18.59	-19.25/-19.4	-17.07/-15.33	-12.89/-10.94	-10.79/-13.3	-12.89/-10.94	-10.42/-13.57	-18.19/-14.28	-12.13/-8.6	-16.26/-16.19	-18.26/-18.49	-18.35/-18.79	-16.85/-16.55	-18.26/-18.34	-16.96/-15.53	-17.09/-16.75		
Θ(165°)	-18.67/-18.85	-17.94/-18.86	-17.64/-17	-18.85/-18.53	-17.67/-15.98	-18.55/-17.89	-18.61/-18.91	-18.18/-17.63	-16.77/-14.8	-13.05/-13.23	-15.74/-18.19	-18.23/-17.27	-16.84/-18.1	-14.3/-12.28	-12.33/-15.36	-18.32/-18.72	-18.34/-18.84	-19.24/-17.43	-19.56/-18.24	-18.09/-18.7	-18.65/-17.66	-18.04/-17.56	-19.16/-17.75	-18.78/-18.01
Θ(172.5°)	-18.8/-17.88	-19.03/-17.59	-18.11/-18.12	-18.34/-18.44	-18.23/-19.06	-18.62/-19.36	-17.17/-18.17	-18.56/-17.97	-17.79/-18.17	-17.44/-19.02	-17.32/-17.35	-16.13/-16.08	-15.31/-14.8	-17.35/-18.71	-18.43/-17.34	-17.82/-15.68	-14.86/-14.27	-14.62/-16.78	-18.49/-17.92	-17.21/-18.07	-19/-17.81	-17.74/-18.21	-18.57/-17.87	-18.59/-19.11
Θ(180°)	-17.84/-18.41	-18.7/-19.1	-17.15/-16.9	-18.12/-18.09	-18.4/-18.14	-17.42/-16.12	-13.73/-12.61	-13.48/-13.65	-14.72/-15.09	-14.08/-14.09	-13.54/-14.41	-15.15/-16.31	-18.37/-18.18	-17.93/-18.25	-18.32/-19.02	-18.73/-18.87	-17.4/-18.11	-18.98/-17.53	-17.67/-17.37	-17.61/-17.92	-18.54/-17.98	-17.38/-17.62	-18.54/-17.98	-18.81/-18.42
Freq(Hz)	5.785GPol	PhiAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	2.2/-2.7	-2.39/-3.96	4.43/-4.46	4.87/-5.88	7.33/-9.23	-11.44/-13.55	-14.06/-13.48	-12.27/-9.66	8.58/-7.28	3.49/-3.69	-3.99/-3.66	-3.99/-3.67	3.39/-3.67	-3.88/-3.05	-3.93/-4.29	-4.72/-5.26	6.06/-7.88	10.03/-10.86	-13.42/-14.93	-15.41/-13.62	-11.38/-9.36	-7.63/-6.59	-4.81/-0.48	-3.03/-2.46
Θ(7.5°)	-2.39/-2.03	-3.13/-4.02	-4.31/-4.68	-5.1/-5.77	-5.95/-6.78	-7.22/-8.95	-10.17/-12.6	-14.86/-14.77	-13.07/-9.87	-7.56/-5.5	-5.41/-3.53													



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(15°)	-0.55/0.2	-0.17/-0.29	-0.85/-1.37	-1.89/-2.67	-3.65/-5.73	-8.49/-12.43	-14.33/-17.9	-8.66/-5.22	-3.54/-2.31	-1.34/-0.68	0.02/0.66	1.03/1.16	1.24/1.14	0.71/-0.37	-0.95/-1.97	-3.45/-5.37	-8.14/-11.07	-16.04/19.12	-19.86/-15.05	-11.95/-9.61	-7.69/-6	-4.48/-3.09	-2.05/-1.15	-0.66/-0.27
Θ(22.5°)	-1.02/-0.48	-1.16/-0.85	-1.4/-1.91	-3.02/-4	-5.8/-7.13	-12.1/-18.37	-18.5/-11.68	-6.18/-3.66	-1.81/-0.72	0.20/0.1	1.22/1.86	2.05/1.87	1.67/1.27	1/0.05	-1.56/-3.17	-5.62/-8.41	-12.57/-18.31	-18.92/-18.66	-14.5/-11.49	-9.42/-7.69	-6.43/-5.32	-4.17/-3.12	-2.08/-1.39	-0.91/-0.61
Θ(35°)	-1.29/-1.27	-0.84/-0.84	-1.19/-1.5	-1.99/-2.24	-3.71/-6.79	-9.48/-13.92	-16.46/-12.32	-7.93/-4.48	-2.76/-1.15	0.39/1.35	1.83/1.99	2.32/0.3	1.92/1.39	0.62/-0.63	-2.60/-4.91	-8.28/-13.02	-18.37/-18.91	-16.71/-14.25	-12.8/-10.78	-8.73/-6.68	-5.03/-4.41	-3.49/-2.94	-2.25/-1.65	-1.17/-0.93
Θ(37.5°)	-1.71/-1.15	-1.46/-1.4	-0.98/-1.53	-1.58/-1.99	-3.14/-14.16	-5.96/-8.89	-13.14/-12.3	-9.22/-6.53	-3.86/-2.31	-0.98/0.5	1.19/1.97	2.29/2.13	1.61/1.03	0.24/-1.17	-3.49/-6.24	-10.06/-12.12	-11.87/-11.05	-10.53/-10.02	-10.25/-9.5	-8.18/-6.37	-5.01/-3.88	-3.12/-2.49	-2.04/-1.59	-1.19/-0.95
Θ(45°)	-2.31/-1.56	-1.04/-0.4	-0.41/-0.93	-1.26/-2.04	-2.99/-3.72	-8.21/-10.65	-12.2/-13.62	-13.74/-9.9	-7.06/-4.92	-2.87/-1.01	-0.59/1.23	1.18/1.45	1.23/0.37	-0.82/-2.77	-5.48/-7.81	-9.55/-9.17	-8.43/-8.03	-8.14/-8.37	-9.44/-9.84	-9.11/-7.33	-5.56/-4.23	-3.29/-2.45	-1.78/-1.5	-1.3/-1.19
Θ(52.5°)	-3.9/-3.18	-2.68/-2.55	-2.31/-2.23	-2.33/-2.59	-4.15/-6.18	-9.23/-12.99	-14.48/-13.2	-13.87/-12.92	-9.15/-6.63	-5/-3.43	-1.87/-0.61	0.31/0.04	-0.51/-1.94	-4.03/-6.7	-9.11/-9.49	-8.45/-7.21	-6.77/-6.58	-7.02/-7.96	-9.29/-10.62	-11.24/-9.57	-7.13/-5.06	-3.75/-2.85	-2.12/-1.97	-2.12/-2.31
Θ(60°)	-6.45/-5.6	-4.65/-2.59	-2.26/-2.13	-3.48/-5.43	-7.97/-8.76	-11.51/-9.65	-10.88/-11.64	-12.37/-13.91	-10.71/-8.98	-7.33/-5.21	-3.68/-2.37	-0.97/-0.82	-1.51/-3.29	-6.87/-9.6	-9.85/-9.56	-8.69/-7.75	-7.37/-7.08	-7.3/-7.93	-8.85/-10.43	-12.51/-13.03	-10.56/-7.85	-6/-4.55	-3.35/-2.92	-3.2/-3.78
Θ(67.5°)	-8.25/-9.12	-8.48/-5.62	-4.82/-3.1	-5.48/-7.84	-9.68/-9.12	-7.8/-7.81	-9.12/-10.71	-12.57/-15	-15.04/-15.3	-10.25/-8.95	-7.43/-4.84	-3.25/-3.18	-4.58/-3.38	-14.22/-14.29	-11.47/-10.29	-10.54/-10.18	-9.35/-8.61	-8.38/-8.23	-8.27/-9.47	-12.35/-16.06	-15.86/-12.68	-9.41/-6.65	-4.87/-4.42	-4.88/-5.72
Θ(75°)	-13.65/-16.16	-11.18/-6.96	-5.15/-5.64	-8.41/-12.46	-9.51/-6.69	-6.87/-7.26	-7.99/-9.5	-13.5/-16.24	-14.71/-14.95	-19.36/-18.64	-13.31/-7.48	-4.98/-3.82	-5.56/-9.54	-13.23/-9.14	-7.03/-9.09	-11.23/-12.3	-11.05/-9.79	-8.41/-7.23	-6.73/-8.31	-10.57/-14.58	-15.26/-14.26	-11.35/-8.4	-6.76/-6.66	-7.67/-8.71
Θ(82.5°)	-14.13/-16.33	-17.74/-12.28	-8.85/-9.81	-12.35/-10.61	-6.3/-5.86	-6.78/-7.33	-7.25/-8.83	-10.55/-12.59	-11.69/-13.87	-13.74/-17.56	-19.12/-8.62	-5.15/-5.15	-8.4/-14.69	-14.69/-12.14	-12.49/-16.34	-17.98/-18.15	-15.36/-13.28	-9.92/-7.5	-7.01/-8.12	-10.58/-13.58	-15.72/-15.52	-13.29/-10.38	-9.02/-9.79	-12.71/-17.74
Θ(90°)	-14.13/-13.96	-14.87/-9.82	-7.64/-9.37	-13.18/-9.29	-7.19/-8.39	-9.23/-9.37	-10.06/-13.4	-14.71/-13.33	-10.35/-12.13	-15.09/-18.23	-18.69/-9.42	-6.65/-5.9	-8.28/-10.84	-10.91/-10.95	-10.97/-18.24	-18.76/-18.54	-17.69/-17.22	-9.11/-6.6	-7.39/-7.55	-10.36/-13.06	-12.97/-11.39	-9.2/-7.58	-3.27/-8.67	-13.25/-18.54
Θ(97.5°)	-10.59/-9.97	-12.47/-10.99	-9.2/-10.45	-12.99/-9.18	-7.46/-7.67	-9.64/-13.3	-18.28/-18.83	-18.51/-18.7	-12.85/-13.31	-15.13/-17.59	-11.58/-8.03	-7.06/-7.27	-8.77/-12.39	-16.92/-19.06	-17.1/-13.1	-18.12/-15.85	-9.22/-6.75	-6.68/-8.19	-10.16/-12.38	-12.81/-11.45	-9.69/-8.44	-7.7/-8.33	-11.02/-15.79	
Θ(105°)	-15.06/-13.89	-18.75/-19.28	-18.3/-18.51	-18.14/-17.72	-15.56/-16.17	-18/-17.91	-18.32/-14.05	-12.35/-11.15	-10.26/-9.12	-10.53/-19.04	-18.47/-13.61	-9.73/-10.09	-9.99/-11.39	-15.52/-16.19	-11.11/-8.73	-8.18/-9.25	-11.45/-12.2	-9.54/-7.97	-9/-10.02	-11.41/-17.66	-19.03/-17.35	-11.89/-8.4	-6.42/-6.84	-9.12/-14.13
Θ(112.5°)	-12.72/-10.31	-12.27/-11.79	-11.43/-12	-12.83/-17.36	-17.93/-18.7	-18.87/-18.63	-18.65/-15.56	-13.59/-11.91	-11.88/-12.56	-12.95/-18.82	-14.7/-10.56	-9.29/-9.62	-10.71/-12.29	-16.88/-19.06	-17.93/-13.13	-10.72/-10.72	-13.72/-13.55	-10.14/-6.88	-8.72/-10.09	-12.13/-15.06	-17.8/-17.57	-14.16/-19.29	-8.36/-9.13	-13.05/-18.85
Θ(120°)	-10.79/-9.4	-8.18/-9.24	-10.05/-11.15	-14.5/-17.86	-18.5/-18.6	-17.07/-17.12	-14.66/-12.07	-10.29/-9.18	-9.29/-9.82	-9.74/-15.62	-18.92/-12.99	-12.72/-17.44	-18.83/-12.68	-12.41/-14.39	-18.48/-15.98	-10.85/-9.34	-11.04/-13.11	-12.48/-10.76	-9.94/-9.73	-11.58/-12.98	-13.11/-10.66	-10.14/-11.54	-17.69/-16.58	
Θ(127.5°)	-10.71/-7.45	-5.77/-6.35	-8.55/-9.54	-13.1/-16.57	-17.18/-14.32	-13.08/-13.28	-13.53/-13.06	-10.4/-12.88	-11.46/-9.73	-10.25/-13.94	-18.07/-18.22	-18.31/-13.21	-9.12/-7.28	-8.09/-10.57	-15.13/-19.3	-13.79/-13.83	-15.85/-12.4	-10.85/-9.13	-7.99/-8.36	-9.63/-12.17	-14.87/-16.25	-15.65/-14.97	-14.73/-15.96	-17.8/-14.77
Θ(135°)	-9.15/-10.72	-9.39/-9.05	-8.55/-10.28	-17.52/-18.73	-17.93/-18.62	-15.89/-17.85	-18.41/-18.58	-18.22/-16.35	-14.76/-14.07	-18.93/-17.5	-15.51/-15.98	-17.23/-11.77	-7.57/-6.21	-6.7/-9.48	-12.21/-11.55	-12.33/-12.78	-13.93/-15.72	-16.6/-14.93	-12.52/-12.3	-13.19/-14.62	-15.94/-17.04	-16.23/-14.3	-12.87/-12.82	-12.71/-11.3
Θ(142.5°)	-8.52/-18.13	-17.9/-19.09	-18.59/-18.85	-15.59/-14.31	-16.01/-18.14	-15.89/-19.12	-17.88/-18.74	-18.99/-15.04	-15.31/-18.12	-19.16/-13.4	-13.8/-11.69	-9.61/-8.04	-8.83/-10.34	-10.48/-9.59	-9.33/-10.76	-11.98/-13.67	-11.43/-11.28	-10.83/-11.79	-13.11/-15.45	-17.83/-17.95	-18.02/-16.52	-14.46/-14.16	-15.76/-18.77	
Θ(150°)	-17.53/-15.75	-13.07/-12.54	-13.1/-12.71	-12.88/-13.05	-13.44/-15.95	-17.37/-19.01	-17.85/-18.96	-18.68/-17.65	-16.15/-14.5	-12.17/-10.14	-8.59/-8.15	-6.87/-6.56	-7.59/-9.47	-14.99/-17.93	-16.12/-11.27	-9.79/-9.84	-10.61/-12.05	-11.19/-12.05	-14.63/-14.14	-14.85/-15.07	-14.37/-16.34	-16.59/-16.47	-14.4/-15.19	-15.08/-17.71
Θ(157.5°)	-18.72/-18.89	-14.62/-13.67	-12.83/-11.77	-11.36/-12.07	-14.49/-16.66	-19.13/-18.04	-17.53/-17.3	-18.83/-16.61	-13.19/-9.97	-8.15/-6.93	-6.36/-6.05	-5.33/-7.38	-7.69/-12.64	-14.25/-18.76	-18.17/-13.01	-12.39/-13.38	-11.83/-11.94	-11.73/-14.24	-11.44/-11.58	-12.09/-12.17	-12.36/-12.75	-11.8/-13.41	-12.26/-13.01	-15.45/-18.84
Θ(165°)	-15.3/-16.37	-18.14/-18.07	-17.35/-18.32	-18.08/-17.42	-18.52/-18.32	-19.04/-18.46	-18.06/-18.44	-18.69/-17.16	-14.65/-12.1	-10.45/-9.73	-7.99/-7.99	-7.22/-9.31	-9.03/-8.45	-10.77/-13.46	-18.84/-18.64	-18.8/-16.85	-15.58/-14.42	-14.91/-14.96	-15.44/-15.58	-16.03/-17.21	-16.26/-15.15	-13.99/-13.68	-13.54/-15.21	-15.85/-15.79
Θ(172.5°)	-10.76/-11.17	-12.27/-14.15	-15.59/-18.88	-16.38/-17.18	-17.91/-17.31	-17.13/-17.71	-17.22/-18.55	-18.15/-18.22	-18.1/-18.89	-16.39/-18.84	-14.16/-15.84	-14.49/-12.74	-13.51/-15.31	-14.14/-68	-15.71/-16.39	-15.16/-16	-15.1/-15.12	-14.35/-12.87	-14.28/-12.51	-12.34/-11.99	-11.41/-10.6	-10.02/-10.6	-10.98/-10.93	-10.34/-9.37
Θ(180°)	-11.46/-11.63	-11.96/-12.12	-12.86/-13.76	-15.29/-15.18	-15.83/-15.55	-15.61/-14.66	-14.26/-13.79	-14.13/-15.12	-16.48/-17.5	-17.44/-16.59	-16.27/-15.61	-15.08/-13.96	-13.96/-13.21	-13.47/-14.07	-13.42/-14.6	-14.73/-14.47	-14.68/-14.55	-14/-13.53	-12.62/-11.97	-11.58/-11.17	-10.64/-10.29	-10.22/-10.09	-10.54/-10.16	-9.74/-10.15
Freq(Hz)	5.2GPol.	Phi/Ant.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-7.6/-10.78	-13.74/-18.9	-17.61/-14.12	-8.22/-5.68	-3.55/-2.08	-1.13/0.34	0.24/1.84	2.11/85	1.99/1.77	1.82/1.61	1.5/0.36	-0.68/-2.08	-3.83/-7.02	-12.12/-18.72	-18.36/-12.11	-8.59/-4.9	-2.95/-1.69	-0.30/0.52	1.19/1.14	1.12/1.29	1.22/0.97	0.70/0.22	-0.91/-2.49	-4.02/-5.97
Θ(7.5°)	-4.55/-7.28	-9.59/-10.96	-13.12/-11.47	-9.38/-7.09	-5.09/-3.08	-1.75/-0.65	0.19/0.5	0.52/0.7	0.58/0.17	-0.11/0.85	-2.2/-3.26	-5.4/-12.22	-12.41/-14.11	-14.61/-10.89	-8.25/-5.78	-7.78/-2.49	-1.76/-0.61	0.75/1.51	2.03/2.25	2.16/2.24	2.47/2.38	2.12/1.67	0.81/-0.03	-1.37/-3.54
Θ(15°)	-4.62/-6.66	-8.15/-9.16	-11.23/-10.39	-7.45/-4.17	-2.52/-0.67	-0.81/1.86	2.55/2.97	3.06/2.96	2.79/2.45	-0.86/-3.35	-7.1/-12.73	-18.06/-14.51	-10.02/-7.04	-5.34/-4.06	-3.49/-2.13	-1.21/-0.26	0.95/1.73	2.29/2.58	2.74/2.98	3.23/3.27	3.16/2.58	1.62/0.78	-0.66/-2.2	
Θ(22.5°)	-7.97/-9.45	-10.68/-15.47	-16.78/-15.66	-8.08/-3.53	-1.75/-0.41	0.54/1	1.22/1.49	1.74/2.03	2.39/2.25	1.34/-0.22	-1.57/-1.74	-9.7/-17.5	-17.76/-10.15	-9.63/-8.43	-8.28/-6.63	-4.84/-3.17	-1.83/-0.59	0.41/0.8	1.51/1.86	2.18/2.53	2.71/2.71	2.57/2.05	1.26/0.04	-2.1/-3.98
Θ(30°)	-11/-15.88	-12.6/-10.82	-16.64/-18.5	-8.33/-4.83	-4.42/4.31	-4.19/4.59	-5.18/-5.7	-5.04/-7.8	-3.53/-2.19	-1.81/-2.51	-3.73/-6.21	-9.62/-16.63	-17.71/-10.39	-8.01/-6.89	-9.77/-9.37	-8.67/-6.81	-4.61/-3.06	-1.45/-0.28	-0.05/0.07	0.62/0.84	0.95/0.98	0.65/0.43	0.07/-1.02	-2.87/-6.5
Θ(37.5°)	-9.08/-12.59	-13.41/-14.12	-17.57/-19.02	-12.03/-9.25	-7.89/-7	-9.02/-15.14	-17.94/-18.17	-17.22/-18.22	-14.71/-12.22	-9.26/-7.18	-7.7/-96	-9.26/-10.44	-13.59/-10.39	-10.99/-10.7	-11.55/-14.01	-9.28/-8.68	-9.26/-9.83	-7.06/-4.09	-3.31/-3.74	-3.51/-2.5	-1.91/-1.83	-1.73/-1.8	-2.72/-3.19	-3.61/-5.7
Θ(45°)	-7/-12.51	-14.1/-15.47	-17.92/-18.57	-16.69/-10.48	-9.39/-11.98	-17.82/-8.67	-5.4/-3.6	-4.13/-5.53	-7.55/-10.82	-12.46/-11.43	-9.31/-8.6	-8.1/-8.13	-10.65/-10.2	-8.14/-5.73	-5.15/-7.96	-8.33/-8.9	-10.77/-13.07	-11.3/-10.73	-14.34/-16.77	-10.31/-6.15	-4.5/-4.23	-4.07/-5.08	-5.8/-5.14	-3.81/-3.67
Θ(52.5°)	-9.02/-16.1	-16.75/-17.61	-13.78/-13.4	-18.71/-7.33	-6.86/-9.31	-6.71/-2.44	-0.85/-0.4	-1.04/-2.15	-2.92/-4.33	-5.76/-10.6	-10.28/-8.63	-7.33/-7.49	-7.49/-6.39	-8.04/-10.41	-10.72/-13.8	-18.71/-63	-16.9/-15.47	-10.42/-11.18	-13.69/-12.68	-7.7/-6.59	-7.53/-8.46	-6.95/-4.1	-4.89/-5.67	
Θ(60°)	-6.79/-16.03	-15.29/-15.41	-15.01/-10.54	-8.86/-2.11	-2.64/-5.25	-4.43/-0.25	-0.55/0.23	-0.46/-1.46	-2.09/-4.93	-4.36/-4.37	-11.48/-7.64	-9.23/-8.18	-7.34/-6.15	-9.09/-6.65	-6.81/-9.02	-6.21/-								



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(52°)	-3.69/6.06	-9.96/16.86	-12.54/-10.82	-12.54/-11.66	-8.52/-7.16	-6.31/6.86	-7.9/-12.7	-16.29/-9.31	-5.18/-2.92	-4.84/-8.83	-12.43/-8.5	-8.22/-11	-12.9/-18.54	-17.99/-8.67	-4.99/6.32	-13.47/-10.6	-4.69/-3.84	-7.11/-10.9	-13.43/-7.56	-3.64/-3.99	-7.2/6.25	-3.44/-1.95	-1.44/-3.56	-4.09/-2.41
Θ(60°)	-4.8/-6.21	-11.79/-18.04	-11.61/-12.36	-10.53/-6.08	-5.78/-6.47	-5.03/-4.56	-4.6/-5.8	-13.14/-18.06	-13.4/-4.67	-3.8/-5.82	-8.6/-7.31	-5.34/-7.5	-10.37/-13.57	-17.92/-8.92	-3.77/-5.05	-11.38/-13	-6.33/-4.4	-4.51/-5.14	-6.86/-11.08	-6.92/-4.16	-5.14/-6.5	-4.14/-1.44	0/-1.48	-3.12/-3.51
Θ(67.5°)	-2.51/-4.29	-11.63/-18.4	-12.78/-12.63	-6.51/-3.63	-3.28/-3.77	-6.26/-6.4	-5.86/-7.26	-14.62/-15.93	-11.94/-10.71	-8.76/-9.6	-12.61/-7.27	-4.36/-7.93	-8/-18.9	-17.97/-10.92	-6.48/-5.86	-11.21/-13.46	-10.27/-5.02	-2.99/-3.05	-4.39/-9.21	-0.97/-8.43	-4.84/-6.02	-5.02/-3.02	-1.2/-2.38	-4.61/-3.79
Θ(75°)	-1.82/-3.79	-12.05/-17.94	-14.63/-14.69	-5.4/-3.09	-3.47/-6.36	-17.99/-8.47	-5.97/-6.04	-7.91/-8.92	-17.83/-19.04	-11.38/-16.69	-19.16/-11.14	-3.62/-8.98	-8.71/-18.06	-14.98/-15.9	-7/-6.43	-11.1/-10.26	-17.56/-9.08	-5.42/-3.76	-3.95/-6.12	-7.87/-5.14	-3.8/-7.57	-11.42/-5.08	-1.13/-2.29	-4.46/-4.02
Θ(82.5°)	-2.58/-3.52	-8.77/-17.5	-18.75/-10.59	-5.97/-4.75	-3.65/-19.14	-5.04/-3.05	-5.01/-8.58	-8.15/-6.01	-9.01/-15.36	-10.58/-11.08	-10.26/-14.05	-5.48/-13.22	-13.22/-15.03	-18.15/-18.33	-13.51/-11.2	-17.98/-17.7	-9.62/-6.21	-5.22/-4.72	-4.15/-5.27	-1.18/-8.22	-10.55/-10.41	-3.4/-4.01	-7.54/-5.92	
Θ(90°)	-6.49/-5.76	-8.69/-17.95	-18.15/-5.71	-5.18/-4.74	-8.41/-11.54	-6.33/-9.11	-9.45/-8.33	-10.18/-18.2	-11.6/-9.87	-11.06/-7.95	-5.63/-17.45	-6.69/-19.41	-13.15/-19.13	-19.23/-16.41	-8.9/-6.56	-10.46/-13.27	-10.93/-7.62	-7.37/-3.92	-2.8/-2.77	-1.10/-5.55	-4.46/-10.71	-1.17/-4.32	-7.35/-10.2	
Θ(97.5°)	-7.8/-9.2	-11.9/-17.31	-9/-6.74	-7.43/-8.12	-11.75/-9.74	-11.47/-11.29	-11.09/-11.82	-7.6/-11.95	-14.12/-9.7	-8.61/-7.4	-8.69/-17.85	-18.14/-12.01	-14.88/-16.94	-17.62/-13.38	-10.03/-7.19	-15.77/-14.11	-6.54/-5.74	-6.47/-5.19	-7.11/-4.82	-4.52/-5.08	-3.81/-2.15	-2.52/-5.47	-9.1/-6.13	-7.49/-9.05
Θ(105°)	-9.29/-12.41	-12.58/-14.19	-8.54/-7.67	-9.2/-13.72	-11.88/-8.88	-13.58/-12.83	-9.92/-11.59	-14.03/-12.03	-16.88/-15.18	-10.01/-9.9	-12.81/-16.34	-17.93/-15	-18.02/-18.82	-19.11/-11.7	-6.62/-6.15	-16.67/-17.76	-8.79/-3.52	-3.8/-5.03	-5.92/-5.65	-5.17/-7.18	-6.34/-5.27	-5.24/-6.25	-14.33/-9.04	-8.77/-8.42
Θ(112.5°)	-15.58/-11.54	-10.98/-11.05	-13.95/-14.69	-18.19/-17.37	-14.76/-10.36	-10.03/-14.56	-15.64/-14.07	-13.67/-14.07	-16.66/-18.68	-9.55/-8.58	-15.47/-14.93	-17.08/-15.02	-19.21/-13.4	-18.81/-9.59	-7.64/-10.26	-18.88/-17.95	-9.46/-3.15	-2.44/-4.46	-5.57/-5.43	-4.36/-7.2	-9.36/-6.12	-5.39/-5.88	-11.9/-9.79	-11.35/-11.41
Θ(120°)	-13.54/-18.31	-11.98/-10.23	-11.01/-13.55	-18.95/-14.36	-18.33/-16.31	-13.36/-11.56	-18.21/-17.48	-14.15/-15.43	-11.97/-16.51	-9.99/-9.12	-14.32/-12.12	-16.18/-14.9	-18.35/-11.88	-14.41/-13.18	-12.8/-17.54	-19.25/-15.35	-12.44/-3.15	-1.43/-4.14	-6.44/-6.29	-4.74/-5.78	-13.3/-9.18	-5.76/-5.8	-11.14/-10.78	-14.4/-11.35
Θ(127.5°)	-11.04/-17.59	-18.28/-13.47	-10.79/-17.02	-18.14/-18.5	-17.96/-13.47	-18.35/-18.05	-12.45/-11.6	-16.03/-16.22	-18.47/-17.91	-10.58/-17.96	-17.89/-11.67	-18.92/-12.26	-9.67/-12.05	-17.71/-17.85	-14.06/-11.56	-12.06/-4.09	-1.28/-3.03	-5.7/-5.12	-11.5/-6.37	-8.77/-15.95	-11.59/-9.7	-18.84/-18.2	-19.25/-18.12	-13.71/-13.21
Θ(135°)	-11.23/-13.78	-10.67/-15.98	-14.78/-18.23	-19.28/-17.7	-18.1/-18.96	-17.83/-18.47	-16.34/-18.73	-16.28/-16.57	-18.75/-15.71	-10.11/-14.64	-14.04/-11.73	-15/-9.85	-15.29/-6.14	-7.08/-12.97	-18.09/-15.66	-12.22/-10.87	-10.49/-7.43	-4.05/-3.55	-5.69/-7.09	-5.63/-5.55	-16.82/-12.96	-10.55/-18.8	-18.96/-18.95	-13.11/-8.01
Θ(142.5°)	-14.89/-17.07	-16.49/-12.56	-11.1/-13.35	-17.59/-17.94	-18.32/-16.76	-18.11/-18.11	-14.15/-14.64	-18.91/-17.28	-18.01/-18.02	-19.24/-12.82	-7.64/-12.09	-9.21/-6.45	-4.75/-4.2	-8.36/-12.32	-16.46/-19.21	-16.6/-16.2	-9.79/-6.98	-6.02/-5.77	-6.71/-9.53	-10.5/-8.5	-9.84/-13.43	-17.33/-19.26	-18.04/-19.15	-18.38/-13.79
Θ(150°)	-18.52/-18.69	-17.82/-18.92	-18.18/-14.31	-13.57/-18.44	-17.95/-17.25	-18.95/-18.74	-17.75/-12.61	-10.48/-13.5	-16.36/-13.18	-11.34/-10.77	-17.01/-6.21	-18.22/-10.08	-7.01/-6.21	-18.44/-18.55	-15.37/-17.09	-18.23/-13.13	-8.94/-8	-7.5/-8.95	-13.48/-16.57	-14.89/-15.39	-15.2/-10.75	-19.25/-18.12	-13.71/-13.21	
Θ(157.5°)	-16.89/-12.48	-12.48/-14.12	-16.05/-12.54	-12.34/-17.43	-19.02/-18.25	-14.82/-14.69	-18.21/-17.47	-11.6/-8.69	-8.38/-9.89	-14.32/-10.73	-12.82/-8.25	-8.5/-11.61	-9.59/-9.84	-14.54/-17.2	-16.29/-18.78	-18.71/-18.61	-17.64/-12.29	-9.41/-8.08	-7.77/-7.31	-7.94/-10.98	-17.85/-18.47	-18.03/-17.16	-16.78/-18.08	-19.08/-18.55
Θ(165°)	-11.57/-11.59	-13.07/-15.09	-15.9/-14.45	-12.7/-12.82	-14.12/-14.13	-14.69/-15.31	-15.75/-14.58	-10.06/-7.5	-5.72/-5.3	-6.19/-7.03	-7.32/-8.13	-9.78/-12.26	-13.92/-14.36	-17.17/-17.6	-18.38/-18.57	-16.26/-14.03	-12.22/-10.38	-9.05/-8.96	-8.47/-9.03	-11.43/-11.8	-11.42/-12.68	-17.09/-18.73	-15.22/-12.62	-12.59/-11.92
Θ(172.5°)	-12.12/-10.81	-10.23/-10.77	-11.53/-13.67	-14.22/-14.73	-14.62/-13.65	-13.73/-15.34	-17.86/-18.99	-15.09/-12.23	-11.07/-11.17	-10.55/-9.07	-8.54/-8.03	-8.89/-9.1	-8.31/-9.64	-10.91/-14	-15.92/-15.32	-14.98/-14.44	-13.46/-12.4	-12.05/-11.99	-11.57/-9.8	-9.2/-11.76	-14.81/-15.4	-12.37/-9.46	-9.62/-12.99	-18.46/-18.41
Θ(180°)	-8.7/-6.85	-9.32/-8.77	-9.07/-10.45	-11.03/-10.8	-10.88/-11.08	-11.63/-12.28	-12.02/-11.12	-11.13/-12.27	-10.8/-9.96	-9.68/-9.74	-9.63/-10.4	-10.82/-10.92	-11.82/-12.66	-12.64/-12.2	-12.24/-10.3	-9.72/-9.57	-9.24/-8.64	-8.84/-8.79	-9.19/-10.92	-13.98/-13.27	-11.09/-10.76	-10.55/-11.63	-15.22/-18.51	-15.03/-10.06
Freq(Hz)	5.6GPol.	Phi/Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)°Φ(7.5°)	Φ(15°)°Φ(22.5°)	Φ(30°)°Φ(37.5°)	Φ(45°)°Φ(52.5°)	Φ(60°)°Φ(67.5°)	Φ(75°)°Φ(82.5°)	Φ(90°)°Φ(97.5°)	Φ(105°)°Φ(112.5°)	Φ(120°)°Φ(127.5°)	Φ(135°)°Φ(142.5°)	Φ(150°)°Φ(157.5°)	Φ(165°)°Φ(172.5°)	Φ(180°)°Φ(187.5°)	Φ(195°)°Φ(202.5°)	Φ(210°)°Φ(217.5°)	Φ(225°)°Φ(232.5°)	Φ(240°)°Φ(247.5°)	Φ(255°)°Φ(262.5°)	Φ(270°)°Φ(277.5°)	Φ(285°)°Φ(292.5°)	Φ(300°)°Φ(307.5°)	Φ(315°)°Φ(322.5°)	Φ(330°)°Φ(337.5°)	Φ(345°)°Φ(352.5°)
Θ(0°)	-13.19/-19	-10.67/-16.21	-2.49/-0.14	1.35/2.22	3.01/3.95	4.55/4.85	5.06/5.15	5.16/4.91	4.23/3.95	3.09/2.08	1.01/-0.47	-2.57/-5.86	-12.66/-18.51	-10.62/-5.52	2.42/4.92	1.13/2.68	3.63/4.12	4.25/4.54	5.05/4.66	5.24/5.2	0.01/-1.68	-3.59/-6.63		
Θ(7.5°)	-10.92/-18.24	-13.09/-6.44	-2.92/-0.64	0.69/1.45	2.51/3.38	3.71/3.88	3.87/4.08	4.29/4.17	3.74/3.05	2.17/1.14	-0.11/-1.98	-4.35/-8.66	-17.32/-18.91	-9.05/-4.62	-2.23/-0.41	1.18/2.27	2.83/3.11	3.41/3.67	4.4/1	3.97/3.8	3.61/2.95	1.88/0.88	0.28/-0.62	-2.12/-5.26
Θ(15°)	-7.28/-18.5	-13.28/-7.55	-4.69/-2.99	-1.59/-0.41	0.73/1.21	1.51/1.62	1.54/1.75	1.81/1.53	1.26/0.55	-0.17/-0.85	-1.86/-3.46	-6.28/-10.64	-15.26/-13.38	-8.64/-5.13	-2.24/-0.43	0.61/1.61	2.36/2.45	2.45/2.53	2.58/2.6	2.72/2.57	2.53/2.38	1.77/0.55	-0.87/-1.23	-1.83/-4.17
Θ(22.5°)	-6.55/-12.92	-12.82/-10.58	-7.62/-6.86	-4.58/-1.63	0.63/1.85	2.61/3.14	3.43/3.59	3.54/3.57	3.63/3.25	1.89/-0.24	-2.52/-3.36	-6.28/-12.27	-18.10/-8.7	-7.25/-4.15	-1.54/0.31	1.68/2.6	3.26/3.56	3.58/3.51	3.63/3.61	3.51/3.51	3.26/3.1	6.93/1.7	0.49/-0.81	-2.31/-4.23
Θ(30°)	-7.49/-10.04	-8.34/-7.44	-8.58/-9.91	-4.59/-1.24	0.45/1.03	0.93/0.72	0.81/0.92	0.95/1.35	2.12/2.83	2.92/1.7	-0.99/-4.8	-7.72/-11.49	-13.07/-9.38	-5.39/-3.24	-1.84/-0.41	0.71/1.71	2.29/2.75	2.62/2.66	2.86/2.93	3.13/4.8	3.68/3.76	3.05/2.7	0.69/0.03	-1.69/-4.56
Θ(37.5°)	-5.32/-7.87	-7.47/-7.18	-5.96/-4.55	-3.14/-2.91	-4.28/-5.24	-5.68/-6.01	-6.25/-7.17	-6.55/-8.95	-7.26/-4.46	-2.29/-1.35	-3.2/-5.99	-8.24/-13.98	-13.77/-8.93	-5.99/-6.29	-6.52/-2.42	-0.43/-2.31	-1.55/-1.12	-1.09/-0.54	0.01/0.72	1.61/1.85	1.98/2.14	2.13/1.34	-0.61/-2.92	-3.53/-4.43
Θ(45°)	-5.56/-7.15	-8.47/-6.04	-3.59/-3.31	-3.58/-9.32	-11.11/-9.3	-18.68/-13.54	-18.68/-18.09	-18.57/-18.15	-13.56/-10.73	-12.74/-10.38	-6.08/-5.66	-8/-11.85	-12.42/-8.37	-5.33/-5.69	-6.79/-7.97	-8.79/-10.3	-9.35/-7.66	-7.19/-7.15	-6.23/-3.36	-1.63/-1.51	-10.70/-5	-3.5/-2.71	-4.02/-4.12	
Θ(52.5°)	-12.58/-7.54	-9.93/-10.63	-8.91/-11.18	-15.24/-13.14	-12.18/-8.6	-5.62/-4.55	-2.79/-2.01	-3.56/-5.85	-6.32/-7.91	-11.37/-17.72	-14.16/-7.52	-8.38/-13.98	-10.64/-5.82	-3.28/-4.08	-6.38/-7.44	-9.4/-11.85	-11.65/-8.78	-7.37/-10.01	-18.48/-14.94	-6.97/-5.13	-5.41/-4.45	-3.85/-3.03	-1.6/-2.5	-6.24/-14.4
Θ(60°)	-8.36/-8.41	-18.55/-10.91	-11.97/-16.61	-17.97/-10.93	-2.7/-0.92	-2.43/-2.99	-0.82/-0.83	-2.11/-3.06	-2.55/-2.94	-5.59/-9.66	-18/-10.3	-11.11/-14.22	-7.88/-4.54	-4.82/-6.76	-8.1/-7.59	-12.96/-18.99	-17.91/-18.29	-8.39/-3.59	-4.27/-10.47	-10.87/-5.88	-7.81/-11.3	-7.48/-4.11	-2.02/-3.6	-9.02/-12.21
Θ(67.5°)	-16.99/-9.61	-11.45/-13.01	-12.94/-18.65	-12.37/-2.19	-0.91/-3.76	-0.562/-6.1	3.37/2.68	2.22/-5.2	0.22/-3.31	-5.19/-6.11	-18.02/-9.61	-16.19/-16.86	-6.49/-6.02	-11.58/-19.2	-11.11/-11.97	-11.86/-9.46	-3.68/-4.13	-3.19/0.51	0.55/-3.52	-5.86/-2.76	-2.84/-8.03	-11.47/-7.36	-2.97/-2.27	-8.77/-18.98
Θ(75°)	-10.43/-6.02	-8.41/-9.17	-10.57/-10.62	-5.92/-2.98	-6.43/-1.12	-2.15/-2.5	-0.49/-1.34	-1.26/-0.15	-0.8/-0.06	-4.09/-8.21	-15.59/-9.2	-11.5/-18.36	-17.77/-8.81	-18.71/-14.55	-12.71/-10.11	-4.94/0.39	2.68/3.32	1.86/3.46	4.02/1.9	-0.52/-0.23	-0.42/-8.66	-5.83/-6.1	-2.23/-1.5	-6.11/-15.61
Θ(82.5°)	-8.18/-8.94	-12.5/-9.62	-10.79/-6.93	-6.26/-5.41	-4.50/-48	-0.062/-4.1	4.44/5.9	3.61/45	1.34/-1.19	-4.09/-13.37	-11.75/-10.12	-10.03/-15.74	-17.96/-15.48	-17.18/-12.66	-9.29/-6.52	-0.363/-15	4.054/8.8	4.885/3	5.754/41	3.182/7.8	1.55/-1.5	-3.48/-4.61	-3.42/-3.33	-6.51/-11.97
Θ(90°)	-8.6/-10.12	-7.8/-6.99	-9.58/-7.84	-7.68/-10.92	-5.23/-3.66	-0.263/-3.5	3.41/3.3	3.821/99	0.71/-1.82	-3.87/-14.52	-9.35/-16.79	-9/-14.65	-14.31/-12.68	-10.25/-13.12	-11.03/-5.33	-0.792/8.8	4.165/53	6.27/6.33	6.175/36	4.13/6.31	2.65/-1.04	-4.06/-4.23	-4.13/-4.91	-5.67/-12.96
Θ(97.5°)	-6.59/-14.12	-11.46/-10.14	-10.24/-8.97	-12.24/-9.61	-8.34/-9.9	-0.041/-0.5	-0.24/-0.36	1.17/1.33	-0.17/-1.43	-7.17/-8.79	-10.24/-18.05	-10.15/-11.88	-10.02/-10.44	-11.11/-13.66	-9.79/-6.39	-2.64/0.71	2.454/6.7	5.745/71	5.464/74	3.673/34	1.02/-1.64	-4.6/-3.91	-4.99/-5.88	-5.08/-5.48</



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(105°)	-9.99/-13.63	-10.89/-9.44	-10.94/-14.17	-15.89/-11.89	-9.15/-10.11	-14.74/-15.12	-11.73/-7.79	-6/-5.03	-8.33/-17.56	-14.14/-16.45	-9.2/-14.55	-18.45/-17.42	-18.47/-11.35	-13.33/-14.48	-13.97/-14.25	-14.16/-18.87	-16.01/-8.16	-5.98/-7.1	-3.57/-3.18	-4.51/-6.93	-7.17/-6.99	-13.26/-17.89	-16.47/-15.63	-18.55/-15.77
Θ(112.5°)	-12.16/-12.31	-10.44/-9.44	-11.42/-18.17	-13.45/-10.05	-11.61/-12.14	-16.31/-16.56	-18.77/-12.72	-8.57/-7.8	-10.43/-14.04	-16.14/-18.9	-12.73/-12.56	-17.43/-17.06	-13.46/-11.35	-12.72/-12.11	-10.47/-14.99	-19.08/-16.83	-11.03/-7.4	-6.24/-6.02	-3.2/-3.71	-7.28/-7.2	-7.33/-8.56	-15.34/-18.57	-18.31/-13.08	-13.53/-17.8
Θ(120°)	-15.28/-12.55	-11.38/-9.68	-11.46/-17.32	-18.24/-11.36	-13.89/-12.2	-16.75/-11.3	-17.47/-18.15	-11.74/-16.4	-11.78/-17.8	-10.23/-14.6	-18.08/-12.49	-15.87/-18.29	-12.75/-14.52	-18.09/-19.02	-10.31/-11.29	-18/-16.71	-10.37/-9.14	-8.53/-6.31	-3.58/-4.18	-7.77/-10.81	-7.53/-9.02	-13.54/-9.57	-16.1/-19.1	-18.93/-18.36
Θ(127.5°)	-9.83/-17.97	-17.12/-8.62	-12.25/-18.68	-18.83/-16.62	-18.61/-14.42	-19/-18.41	-17.63/-16.42	-17.65/-13.87	-18.47/-13.52	-18.13/-12.91	-14.06/-17.18	-9.37/-14.93	-10.64/-8.29	-17.1/-17.49	-18.72/-18.79	-14.67/-15.13	-13.9/-6.64	-6.28/-7.22	-6.17/-6.28	-7.53/-12.11	-15.66/-12.79	-11.02/-10.85	-17.53/-17.41	-15.66/-10.07
Θ(135°)	-11.33/-15.32	-11.77/-17.42	-19.14/-18.59	-19.04/-18.57	-17.85/-17.87	-18.33/-18.93	-18/-18.81	-19.6/-16.94	-18.02/-17.14	-10.75/-11.21	-13.98/-17.72	-9.24/-10.57	-12.19/-8.26	-13.73/-19.29	-18.63/-17.53	-15.38/-12.04	-14.28/-8.41	-5.28/-7.19	-8.08/-7.08	-7.83/-11.28	-17.44/-17.92	-19.11/-15.72	-19.11/-12.86	-11.89/-12.1
Θ(142.5°)	-13.88/-17.81	-17.4/-12.64	-13.28/-17.7	-18.39/-17.78	-18.48/-18.63	-18.66/-18.86	-14.18/-14.81	-18.43/-19.15	-18.93/-18.42	-18.09/-12.83	-9.24/-13.63	-7.45/-14.81	-8.32/-7.01	-8.25/-8.29	-16.01/-9.49	-9.98/-12.58	-19.01/-12.9	-9.32/-9.51	-10.85/-9.62	-9.01/-13.8	-15.22/-16.68	-18.64/-18.02	-16.68/-19.21	-17.25/-12.14
Θ(150°)	-15.43/-18.55	-16.68/-12.38	-13.23/-18.92	-18.77/-18.94	-18.37/-18.91	-18.48/-18.89	-18.73/-19.06	-15.67/-14.53	-14.95/-12.41	-11.18/-10.52	-11.38/-7.78	-7.24/-14.4	-6.28/-5.33	-10.69/-12.78	-15.44/-18.52	-19.27/-17.19	-17.79/-18.73	-13.14/-10.16	-10.45/-12.23	-13.44/-13.46	-17.09/-18.15	-18.28/-17.02	-18.13/-17.74	-18.59/-12.74
Θ(157.5°)	-18.71/-19.08	-17.6/-18.1	-18.83/-14.29	-14.46/-15.88	-19.31/-18.62	-19.02/-16.92	-18.58/-17.44	-13.26/-11.54	-11.62/-15.15	-17.8/-12.21	-7.56/-6.22	-8.58/-11.76	-7.86/-7.51	-11.85/-14.03	-18.44/-17.25	-11.38/-12.04	-17.95/-15.39	-10.23/-9.64	-11.37/-15.25	-17.8/-17.72	-18.73/-18.24	-18.5/-18.45	-18.66/-11.72	-9.55/-10.97
Θ(165°)	-13.99/-15.32	-18.24/-19.29	-18.28/-18.4	-12.65/-11.05	-12.22/-14.82	-18.54/-18.51	-18.73/-18.52	-14.51/-10.05	-8.02/-6.86	-6.61/-8.25	-9.32/-9.23	-9.27/-9.83	-9.04/-10.13	-14.38/-18.34	-19.36/-18.98	-18.21/-17.62	-14.1/-10.4	-9.39/-9.63	-10.39/-11.88	-15.62/-19.33	-17.27/-18.26	-16.85/-18.4	-17.27/-15.77	-13.6/-13.71
Θ(172.5°)	-18.11/-16.65	-13.66/-13.61	-13.37/-15.64	-18.73/-19.18	-18.76/-14.73	-12.49/-13.04	-14.84/-17.9	-17.72/-14.77	-11.92/-10.38	-9.44/-8.41	-7.28/-7.01	-7.6/-7.2	-7.7/-9.07	-10.84/-11.77	-12.26/-12.16	-12.56/-12.48	-12.02/-11.74	-12.98/-14.48	-16.48/-18.46	-15.97/-16.41	-17.94/-18.92	-19.31/-14.16	-10.86/-10.33	-15.56/-18.73
Θ(180°)	-11.53/-10.72	-10.64/-11.3	-11.58/-11.6	-12.49/-13.83	-14.53/-15.75	-15.97/-17.08	-16.53/-14.66	-13.03/-11.88	-10.78/-9.72	-8.78/-8.06	-7.94/-8.08	-8.78/-9.13	-9.02/-9.26	-11.41/-12.47	-13.65/-14.38	-14.91/-16.4	-17.91/-18.7	-18.45/-17.51	-15.33/-13.84	-16.56/-16	-11.72/-9.56	-9.58/-11.38	-14.66/-18.29	-18.85/-15.01
Freq(Hz)	2.45G/Pol	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°)	4.194-22	4.073/7.1	3.162/3.8	1.40/17	-1.3/-3.51	-6.56/-11.46	-18.76/-16.89	-9.33/-5.34	-2.64/-0.76	0.76/1.89	2.73/3.1	3.66/3.81	3.82/3.8	3.73/3.47	3/2.3	1.32/0.03	-1.72/-4.08	-7.78/-13.12	-17.43/-15.28	-8.78/-5.17	-2.68/-0.83	0.62/1.75	2.53/3.06	3.45/3.79
Θ(7.5°)	4.644/7.9	4.74/43	4.023/32	2.33/1.04	-0.69/-3.1	-6.27/-11.34	-17.9/-14.48	-1.9/-0.24	1.02/0.05	2.64/3.05	3.3/3.4	3.41/3.37	3.3/3.1	2.73/2.22	1.52/0.49	-1.13/-3.32	-6.15/-10.75	-18.02/-14.84	-8.76/-5.04	-2.6/-0.66	0.83/1.94	2.75/3.33	3.79/4.12	
Θ(15°)	4.774/8.4	4.84/61	4.25/3.64	2.81/1.64	0.12/-2.15	-5.09/-9.39	-16.74/-15.01	-8.57/-4.81	-2.44/-0.81	0.48/1.5	2.172/6.4	2.852/9.3	2.973/0.4	3.1/3.01	2.722/2.4	1.61/0.51	-1.45/-3.53	-6.78/-10.89	-16.67/-13.41	-8.26/-4.73	-2.24/-0.35	1.142/2.9	3.133/3.78	4.27/4.65
Θ(22.5°)	4.69/6.4	4.51/4.09	3.71/3.35	2.77/1.93	0.57/-1.41	-4.36/-8.49	-15.08/-15.4	-8.36/-6.49	-2.38/-1.07	-0.21/0.35	0.94/1.39	1.66/1.82	2.092/4.28	2.542/2.99	1.78/1.23	0.41/0.81	-2.35/-4.87	-7.93/-12.18	-13.81/-10.73	-6.56/-3.78	-1.75/-0.08	1.332/4.2	3.273/3.88	4.37/4.7
Θ(30°)	4.74/5.1	4.093/5.6	3.173/3.66	2.16/1.52	0.72/-1.02	-3.59/-7.73	-15.08/-19.04	-11.86/-6.97	-3.93/-1.9	-0.61/-0.17	-0.03/0.29	0.78/0.95	1.19/1.65	2.05/1.8	1.51/1.05	-0.42/-1.78	-3.72/-6.18	-9.71/-12.86	-11.44/-7.8	-4.96/-2.74	1.01/0.4	1.562/57	3.434/0.6	4.514/8.2
Θ(37.5°)	4.54/1.7	3.652/8.3	1.97/1.22	0.73/0.42	-0.3/-1.4	-3.56/-6.99	-12.88/-19.17	-15.06/-8.22	-4.67/-2.94	-1.83/-0.87	-0.82/-0.88	0.08/0.58	0.89/1.41	1.27/0.88	0.63/-0.08	-1.43/-3.02	-4.94/-7.61	-11.13/-13.19	-9.98/-6.61	-4.04/-2.13	-0.52/0.85	1.992/9.4	3.784/3.8	4.744/9.3
Θ(45°)	3.73/2.38	2.69/2	1.11/0.53	0/0.81	-2.12/-2.29	-3.84/-6.72	-11.84/-18.66	-17.22/-10.54	-7.4/-3.76	-2.39/-1.85	-0.92/-0.98	-0.28/0.46	0.71/1.34	1.27/1	0.88/0.07	-1.55/-2.87	-4.84/-8.29	-12.95/-13.91	-9.74/-6.43	-4.13/-2.29	-0.57/1.01	2.27/3.21	3.934/3.9	4.54/4.5
Θ(52.5°)	2.592/1.21	1.63/0.81	0.15/-0.73	-1.54/-1.87	-2.46/-3.39	-4.91/-7.28	-11.51/-17.46	-17.12/-10.35	-7.15/-5.45	-2.94/-2.62	-1.75/-0.57	0.45/-1.45	1.37/1.04	0.33/-0.14	-0.41/-2.25	-1.63/-2.73	-5.24/-9.09	-14.47/-13.34	-9.15/-6.35	-4.23/-2.22	-0.34/-1.26	2.49/2.34	3.693/9.2	3.893/7.7
Θ(60°)	1.31/1.08	0.64/0.08	-0.46/-1.33	-1.69/-1.91	-2.99/-4.41	-6.55/-9.67	-14.42/-15.1	-11.79/-9.54	-5.74/-3.94	-3.83/-2.35	-2.48/-0.99	-0.26/1.1	1.16/1.08	0.2/-0.48	-0.96/-1.69	-1.57/-2.4	-4.71/-7.83	-12.56/-13.5	-9.14/-6.26	-4.11/-2.11	-0.36/-1.11	2.142/7.8	3.13/1.9	3.082/8.6
Θ(67.5°)	-0.95/-1.24	-1.39/-1.08	-1.57/-2.08	-2.87/-4.18	-4.39/-5.39	-7.31/-11.3	-18.63/-15.1	-7.97/-5.85	-5.05/-2.61	-2.44/-2.1	-1.75/-0.64	0.55/1.44	0.96/1.02	-1.56/-2.3	-2.36/-2.4	-1.51/-1.95	-3.67/-6.35	-10.62/-11.88	-8.04/-5.59	-3.78/-2.01	-0.35/1.05	2.2/5.4	2.62/3.4	1.82/1.34
Θ(75°)	-3.81/-3.37	-2.87/-1.86	-2.05/-2.59	-4.55/-5.74	-6.81/-9.24	-12.69/-17.87	-18.89/-16.5	-9.23/-5.05	-3.71/-3.86	-2.17/-2.52	-1.33/-2.05	-0.79/1.24	0.10/0.19	-1.43/-2.49	-2.19/-2.09	-1/-1.31	-3.05/-5.96	-10.77/-12.23	-8.5/-6.17	-4.38/-2.27	-0.28/1.29	2.182/47	2.11/1.3	0.16/-0.85
Θ(82.5°)	-7.15/-6.34	-4.61/-3.21	-2.88/-4.78	-8.32/-9.39	-12.2/-18.16	-18.99/-18	-18/-16.88	-11.21/-5.83	-2.93/-3.47	-3.24/-3.35	-2.19/-1.12	0.62/0.92	0.48/-1.29	-2.76/-3.4	-2.58/-2.68	-1.87/-2.56	-4.9/-8.7	-15.46/-17.67	-11.32/-7.69	-4.67/-2.14	-0.08/-1.36	2.04/2.01	1.29/0.19	-1.54/-3.14
Θ(90°)	-11.71/-61.3	-7.09/-4.84	-3.4/-5.95	-10.23/-10.08	-18.04/-18.3	-18.95/-18.69	-17.98/-17.43	-13.81/-8.23	-3.94/-2.69	-3.63/-3.22	-3.84/-2.2	-0.58/0.21	0.22/-1.28	-2.73/-3.67	-3.44/-3.51	-2.87/-3.07	-5.2/-8.11	-13.43/-17.95	-13.48/-8.55	-5.35/-2.35	-1.31/0.19	0.94/1.16	0.66/-2.08	-2.2/-4.95
Θ(97.5°)	-12.67/-17.59	-9.25/-6.48	-4.95/-7.78	-11.94/-15.87	-18.48/-18.76	-17.29/-14.95	-14.63/-9.84	-3.92/-3.03	-3.39/-3.25	-4.16/-2.79	-1.42/-0.67	-0.61/-2.07	-2.9/-3.6	-3.56/-3.95	-5.66/-3.95	-16.52/-11.32	-8.27/-5.98	-3.4/-1.51	-0.19/0.37	-0.28/1.29	2.182/47	2.11/1.3	0.16/-0.85	
Θ(105°)	-12.55/-18.68	-11.96/-8.26	-6.18/-8.18	-9.42/-11.14	-8.53/-12.05	-19.48/-17.69	-13.72/-12.02	-12.63/-10.31	-6.06/-4.21	-4.03/-3.81	-3.93/-3.1	-1.92/-0.5	-0.34/-0.67	-1.79/-2.96	-4.4/-3.7	-5.44/-6.17	-7.22/-9.67	-13.49/-18.08	-19.16/-15.25	-11.61/-8.24	-5.05/-2.88	-1.46/-1.11	-1.42/-2.29	-3.51/-6.42
Θ(112.5°)	-11.59/-17.97	-15.17/-10.92	-8.22/-9.04	-8.4/-9.84	-7.37/1.97	-15.41/-17.21	-14.71/-13.55	-14.76/-14.07	-6.23/-4.99	-4.77/-4.82	-4.89/-3.55	-2.73/-1.49	-1.56/-2.32	-3.07/-3.55	-4.54/-5.37	-6.71/-6.69	-9.71/-12	-13.26/-12.72	-18.69/-17.79	-13.17/-10.11	-7.61/-5.14	-3.47/-2.74	-2.31/-2.68	-3.71/-6.61
Θ(120°)	-8.19/-10.58	-16.69/-19.52	-12.98/-13.66	-9.71/-11.91	-8.29/-7.88	-9.83/-11.56	-12.13/-13.67	-16.74/-11.48	-7.34/-6.05	-5.36/-5.28	-5.08/-4.77	-2.77/-2.64	-2.02/-2.15	-2.36/-2.71	-3.32/-4.68	-5.88/-7.46	-9.07/-10.49	-12.38/-16.63	-17.38/-18.03	-15.1/-13.6	-10.56/-7.16	-5.3/-3.87	-3.52/-3.71	-4.73/-6.35
Θ(127.5°)	-7.38/-9.46	-17.11/-18.76	-18.33/-18.57	-13.46/-14.64	-12.04/-6.43	-7.15/-7.48	-8.78/-11.33	-12.96/-9.08	-6.8/-5.71	-5.04/-5.36	-5.6/-5.97	-5.18/-4.64	-2.97/-3.93	-3.56/-3.69	-4.13/-5.44	-7.31/-9.53	-12.32/-15.17	-18.89/-19.06	-18.39/-17.6	-16.68/-19.11	-13.13/-6.63	-7.13/-5.71	-5.22/-4.44	-4.64/-4.92
Θ(135°)	-10.29/-11.98	-19.22/-18.64	-17.38/-18.43	-17.67/-14.59	-14.12/-11.27	-9.01/-8.32	-9.45/-11.69	-11.28/-8.59	-6.49/-5.09	-4.94/-5.72	-6.5/-7.89	-7.25/-11.3	-5.91/-9.44	-3.89/-3.09	-3.24/-3.89	-5.92/-6.8	-10.88/-12.37	-13.86/-16.05	-18.57/-18.09	-18.53/-18.77	-15.29/-11	-8.62/-7.81	-6.94/-6.32	-6.2/-6.45
Θ(142.5°)	-13.07/-12.78	-15.47/-13.81	-16.18/-19.65	-16.86/-12.2	-10.64/-9.87	-10.45/-11.25	-12.51/-13.43	-13.25/-13.03	-8.18/-7.32	-7.79/-8.42	-9.55/-12.1	-11.27/-10.34	-9.03/-6.73	-5.42/-4.33	-4.18/-5.29	-7.18/-9.53	-10.82/-10.72	-11.33/-12.35	-13.81/-16.27	-19.36/-17.74	-18.52/-15.11	-13.41/-12.62	-11.82/-11.29	-9.83/-9.72
Θ(150°)	-13.66/-13.47	-15.85/-14.57	-14.6/-17.85	-17.87/-19.42	-15.23/-13.87	-12.62/-13.78	-15.04/-15.64	-15.05/-13.92	-12.93/-12.31	-11.59/-10.61	-10.83/-12.09	-11.19/-9.43	-8.36/-6.44	-5.32/-5.29	-5.62/-6.86	-8.06/-8.7	-9.15/-9.32							



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(157.5°)	-15.81/-16.74	-15.36/-15.19	-14.53/-15.82	-17.49/-19.67	-19/-17.65	-18.39/-18.06	-15.08/-14.46	-16.04/-18.81	-17.63/-17.67	-18.63/-18.52	-18.22/-18.72	-18.92/-17.44	-19.17/-17.32	-18.02/-17.28	-13.94/-11.41	-9.75/-10.65	-15.16/-17.97	-18.68/-17.5	-19.07/-14.51	-14.04/-17.01	-18/-17.81	-18.85/-19.17	-18.13/-17.86	-14.48/-13
Θ(165°)	-17.84/-18.11	-18.79/-17.97	-18.82/-19.04	-18.22/-18.61	-19.17/-18.55	-19.24/-18.72	-18.64/-19.48	-18.43/-17.42	-18.19/-17.86	-19.25/-18.14	-17.8/-18.48	-18.17/-18.16	-19.06/-17.78	-17.21/-16.86	-13.65/-13.3	-15.14/-16.4	-16.72/-18.23	-17.48/-19.03	-17.88/-18.46	-18.7/-17.92	-18.59/-18.96	-19.09/-19.17	-18.48/-18.16	-18.08/-15.97
Θ(172.5°)	-16.1/-16.01	-17/-18.59	-19/-17.75	-19.23/-18.31	-15.84/-15.94	-16.99/-16.03	-16.55/-18.06	-17.82/-18.9	-18.94/-17.9	-17.63/-17.86	-18.66/-18.49	-18.11/-18.25	-17.67/-14.87	-12.43/-11.27	-11.5/-12.81	-15.12/-18.1	-18.66/-18.69	-18.71/-18.3	-18.67/-18.13	-16.51/-15.92	-15.14/-14.41	-15.31/-15.73	-15.02/-13.65	
Θ(180°)	-17.66/-19.39	-18.84/-16.66	-14.85/-14.59	-14.57/-14.68	-16.4/-17.84	-16.73/-15.46	-15.05/-18.03	-17.27/-19.01	-18.64/-19.23	-18.82/-18.04	-18.54/-18.63	-17.3/-15.68	-15.22/-16.2	-18.13/-14.98	-13.79/-13.83	-16.21/-19.19	-18.39/-16.71	-15.04/-18.34	-18.51/-17.84	-18.13/-18.12	-18.07/-18.08	-17.56/-18.57	-17.42/-18.87	-18.12/-17.65
Freq(Hz)	5.3GPol.	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°)	-2.51/-2.22	-2.32/-2.4	-2.63/-2.99	-3.82/-5.05	-6.22/-7.27	-7.67/-8.26	-9.59/-10.65	-10.73/-10.47	-10.87/-10.57	-9.82/-9.21	-9.34/-9.42	-9.01/-8.3	-7.09/-5.7	-4.44/-3.36	-2.93/-2.93	-2.87/-3.26	-4.64/-5.74	-7.36/-8.78	-10.44/-10.97	-10.55/-8.46	-6.23/-4.51	-3.27/-1.96	-0.89/0	0.53/0.5
Θ(7.5°)	-14.09/-17.26	-18.39/-18.81	-18.82/-17.43	-15.34/-14.53	-13.88/-11.33	-9.36/-8.72	-9.38/-10.4	-10.26/-9.49	-8.33/-6.08	-4.03/-2.54	-1.57/-0.48	0.360/78	0.94/1.01	0.98/1	0.960/55	-0.4/-0.23	-3.71/-4.64	-5.85/-7.51	-9.61/-11.85	-13.12/-12.89	-11.55/-10.33	-9.23/-8.22	-6.93/-5.8	-5.33/-5.65
Θ(15°)	-4.86/-5.83	-8.2/-11.54	-13.95/-13.11	-12.15/-12.78	-14.53/-17.31	-17.72/-14.08	-11.88/-11.08	-10.41/-7.98	-6.03/-4.49	-2.88/-1.32	1.52/1.87	1.96/1.84	1.72/1.75	1.73/1.09	-0.03/-1.84	-3.91/-5.66	-6.7/-8.57	-10.38/-11.1	-11.22/-10.29	-9.25/-8.42	-7.39/-6.28	-5.74/-5.91	-6.07/-7.21	
Θ(22.5°)	-3.37/-4.41	-5.84/-6.81	-8.11/-10.86	-13.07/-11.51	-10.7/-10.42	-11.96/-14.95	-16.29/-13.42	-10.99/-7.59	-5.22/-4.1	-3.1/-69	-0.430/89	1.66/1.72	1.210/2	-0.25/-0.48	-0.49/-1.06	-2.36/-4.1	-7.57/-9.72	-11.74/-15.45	-16.29/-13.1	-10.1/-7.26	-5.51/-4.38	-3.37/-1.89	-0.78/-0.72	-1.11/-2.24
Θ(30°)	-2.34/-2.27	-2.02/-1.79	-2/-2.23	-3.04/-4.98	-6.49/-7.63	-9.64/-6.11	-18.95/-14.7	-10.85/-8.43	-5.42/-3.72	-2.95/-2.73	-2.1/-0.29	1.23/1.64	1.470/68	-0.36/-1.45	-2.47/-3.4	-3.86/-7.17	-13.52/-17.78	-18/-18.73	-17.96/-15.54	-10.49/-7.39	-5.42/-4.29	-3.75/-2.5	-1.1/-0.49	-0.83/-1.94
Θ(37.5°)	2.05/2.53	3.594/5.3	4.57/3.88	3.1/1.69	-0.34/-3.37	-6.17/-12.62	-11.24/-7.05	-5.92/-6.62	-5.19/-3	-1.31/-1.16	-0.42/-6.68	3.18/3.69	3.482/57	1.13/-0.49	-2.35/-3.77	-4.96/-7.14	-13.28/-17.66	-13.18/-11.8	-17.21/-18.38	-14.9/-11.06	-6.03/-5.45	-4.53/-3.91	-3.84/-3.57	-1.66/-2.4
Θ(45°)	4.354/3.35	5.05/5.89	5.91/5.09	4.152/97	1.6/0.61	-3.68/-7.71	-7.38/-3.18	-1.86/-2.9	-3.81/-2.4	-0.75/-0.46	-0.58/1.17	3.31/4.11	4.023/11	1.69/-0.04	-1.82/-2.56	-3.34/-5.07	-8.84/-11.19	-11.13/-10.08	-11.14/-13	-13.55/-12.04	-10.43/-8.93	-7.23/-3.9	-1.01/0.62	1.45/1.93
Θ(52.5°)	4.734/3.93	5.15/5.37	5.27/4.26	3.162/27	1.13/-1.41	-5.15/-12.13	-12.38/-15.4	-1.75/-1.96	-3.18/-2.23	-1.55/-1.97	-1.61/0.91	2.52/3.05	2.64/1.61	0.23/-0.8	-1.4/-1.59	-1.54/-2.82	-5.96/-7.69	-6.68/-6.52	-7.78/-9.76	-11.45/-11.27	-9.66/-8.21	-6.16/-3.53	-1.58/0.08	2.073/77
Θ(60°)	3.64/1.9	3.73/5.2	3.62/3.21	1.971/0.5	-1.01/-4.03	-8.77/-15.66	-16.74/-5.53	-2.22/-2.53	-4.49/-3.09	-2.2/-2.72	-2.91/0.1	1.762/07	1.650/96	0.25/-0.11	-0.32/-0.91	-1.02/-2.08	-4.17/-5.28	-5.67/-6.93	-7.24/-6.76	-6.03/-5.45	-4.84/-3.57	-3.06/-1.11	1.16/3.24	
Θ(67.5°)	1.80/82	-0.37/-1.36	3.26/1.84	-0.96/-1.45	-2.13/-4.97	-10.04/-14.08	-12.57/-6.6	-2.95/-2	-5.3/-5.35	-2.55/-1.8	-0.66/0.77	0.57/-0.03	-0.48/-0.7	-0.78/-0.49	-0.81/-1.79	-1.86/-2.19	-3.93/-4.16	-5.4/-7.5	-7.86/-6.73	-5.41/-3.9	-2.06/-0.89	-0.43/-1.6	-3.15/-2.39	-0.41/1.47
Θ(75°)	-0.42/-3.28	-4.11/-0.1	2.92/0.71	-2.83/-2.52	-0.8/-2.53	-7.94/-18.04	-18.01/-9.98	-5.9/-3.04	-4.08/-5.93	-3.19/-1.38	0.04/1.2	1.120/82	0.32/-0.56	-1.04/-1.11	-1.3/-2.57	-2.35/-2.26	-3.61/-3.37	-4.68/-6.66	-9.03/-6.36	-7.79/-3.61	-1.64/0.02	0.71/-0.68	-2.94/-3.65	-2.69/-0.77
Θ(82.5°)	-2.36/-1.9	-6.07/-0.42	1.09/-2.44	-4.07/-2	-1.03/-5.11	-13.32/-14.98	-14.44/-7.26	-3.41/-5.95	-6.21/-6.41	-1.94/-0.27	1.79/1.31	-0.26/-0.32	-0.38/-1.08	-1.88/-2.18	-3.1/-4.29	-3.73/-2.21	-3.39/-3.34	-5.63/-8.88	-8.94/-8.88	-10.25/-5.58	-2.32/0.05	0.79/-0.09	-1.21/-2.65	-4.16/-2.74
Θ(90°)	-4.28/-5.23	-4.13/-0.44	0.28/-2.91	-4.44/-3.48	-4.28/-9.99	-8.98/-13.1	-14.67/-12.14	-5.96/-3.83	-8.22/-3.55	-2.19/-0.49	1.56/1.58	-0.33/-0.22	0.38/-0.99	-2.33/-2.93	-3.85/-5.07	-3.73/-3.37	-4.83/-4.36	-5.27/-10.34	-10.24/-10.01	-18.24/-8.38	-4.51/-1.18	0.28/-0.29	-0.81/-2.19	-4.75/-3.73
Θ(97.5°)	-7.16/-3.44	-5.32/-3.61	-2.49/-3.63	-5.1/-6.74	-7.39/-6.83	-10.79/-13.65	-12.52/-13.57	-8.75/-5.07	-7.99/-3.98	-1.19/-0.49	0.230/44	-0.72/-0.79	0.07/-0.44	-2.9/-4.99	-6.47/-5.07	-3.82/-5.86	-6.38/-6.05	-6.61/-10.79	-15.41/-16.77	-19.03/-12.94	-6.13/-2.52	-1.47/-1.58	-4.43/-3.26	-5.44/-5.39
Θ(105°)	-9.46/-2.91	-6.12/-6.94	-3.43/-3.82	-7.33/-10.7	-8.19/-6.34	-11.99/-13.12	-12.44/-13.67	-11.64/-7.76	-9.05/-6.26	-1.61/-0.78	-0.76/-0.44	-0.32/-2.1	-4.81/-6.13	-4.73/-9.66	-4.62/-5.25	-8.22/-10.79	-9.47/-11.53	-11.79/-17.48	-14.43/-9.85	-9.88/-5.15	-2.85/-3.14	-3.56/-3.97	-8.08/-10.25	
Θ(112.5°)	-10.78/-7.29	-8.71/-8.68	-5.22/-6.33	-11.4/-13.7	-9.99/-6.31	-13.23/-13.61	-13.68/-15.89	-12.23/-10.87	-8.42/-5.16	-3.13/-1.35	-1.93/-2.28	-0.83/-1.28	-3.21/-4.68	-5.83/-8.08	-12.44/-8.76	-6.89/-8.49	-10.5/-12.9	-13.67/-13.15	-11.89/-18.47	-13.62/-9.06	-7.91/-6.11	-5.7/-6.85	-6.25/-4.52	-6.24/-10.94
Θ(120°)	-6.56/-9.96	-16.82/-13.36	-7.59/-5.19	-8.08/-13.17	-13.57/-10.72	-9.53/-11.15	-17.93/-13.54	-12.54/-10.82	-7.9/-7.1	-4.26/-2.32	-2.94/-0.3	-3.05/-3.29	-5.08/-5.98	-6.56/-9.84	-16.44/-12.64	-10.7/-9.87	-10.08/-11.46	-13.87/-11.67	-12.59/-16.59	-12.29/-8.94	-7.62/-8.39	-9.01/-7.49	-17.15/-8.36	-7.82/-8.7
Θ(127.5°)	-6.58/-10.84	-19.36/-14.23	-11.08/-8.89	-6.38/-8.44	-18.24/-17.78	-13.41/-17.44	-18.57/-15.8	-16.2/-10.96	-7.07/-7.24	-5.17/-4.33	-5.13/-5.25	-4.24/-5.85	-9.74/-8.15	-5.84/-8.46	-16.21/-15.01	-15.01/-13.73	-13.13/-11.21	-12.62/-9.61	-11.51/-17.95	-15.18/9	-6.59/-6.38	-6.57/-7.76	-10.89/-12.72	-13.15/-9.6
Θ(135°)	-7.83/-10.77	-16.82/-18.12	-12.87/-9.96	-9/-8.2	-9.79/-11.51	-16.52/-19.26	-18.37/-19.25	-17.36/-9.72	-9.15/-8.67	-7.33/-7.6	-7.48/-7.13	-5.54/-5.12	-6.12/-7.35	-7.83/-8.37	-13.06/-18.49	-15.11/-16.04	-18.82/-18.63	-12.42/-11.14	-14.7/-18.82	-12.35/-8.37	-8.27/-7.63	-6.5/-6.62	-11.68/-17.19	-12.75/-10.08
Θ(142.5°)	-9.08/-10.6	-11.69/-14.28	-17.46/-17.7	-15.15/-13.95	-12.82/-11.97	-11.7/-15.4	-17.91/-19.28	-15.93/-13.13	-14.24/-15.56	-12.95/-10.66	-9.92/-13.1	-11.65/-13.44	-8.48/-1.72	-8.92/-13.77	-16.35/-12.82	-19.07/-19.17	-19.18/-16.84	-16.49/-18.13	-18.82/-17.7	-13.69/-11.1	-10.45/-8.53	-7.71/-7.5	-12.33/-12	-14.1/-10.27
Θ(150°)	-11.08/-15.17	-13.37/-12.76	-13.62/-14.25	-16.21/-14.78	-13.61/-15.14	-16.26/-18.18	-17.37/-17.47	-16/-15.2	-11.68/-10.97	-11.52/-12.73	-15.05/-16.46	-12.18/-12.46	-13.61/-13.44	-18.31/-19.11	-18.57/-19.08	-18.42/-18.85	-18.59/-19.15	-17.79/-14.05	-10.49/-6.56	-13.58/-18.25	-15.51/-12.08	-11.36/-8.59		
Θ(157.5°)	-18.26/-18.31	-15.29/-13.41	-14.39/-15.01	-15.01/-15.51	-15.08/-15.19	-16.16/-18.27	-18.66/-17.87	-15.16/-13.14	-14.01/-13.67	-12.45/-11.47	-12.18/-12.19	-12.18/-12.65	-13.24/-13.26	-14.76/-17	-18.41/-16.78	-15.6/-18.68	-18.38/-18.57	-18.91/-18.29	-19.04/-18.7	-18.06/-19.13	-16.67/-15.92	-14.41/-14.34	-15.99/-16.99	-16.98/-16.68
Θ(165°)	-17.8/-17.73	-15.6/-15.5	-18.92/-18.47	-18.66/-18.3	-18.37/-17.96	-18.09/-17.64	-18.7/-18.96	-14.85/-12.59	-10.54/-9.55	-9.08/-8.61	-9.17/-10.18	-10.63/-12.08	-16.09/-19.01	-18.33/-17.06	-17.87/-18.55	-17.66/-18.72	-19.25/-18.83	-18.34/-18.9	-18.22/-19.24	-19.24/-17.15	-13.33/-11.9	-12.84/-15.59	-18.05/-17.86	-17.23/-18.84
Θ(172.5°)	-18.9/-18.81	-15.26/-13.47	-14.89/-18.15	-19.8/-18.35	-18.94/-18.36	-18.35/-18.63	-17.88/-18.52	-18.81/-17.44	-18.61/-18.48	-18.16/-17.44	-18.6/-18.72	-18.47/-17.2	-14.55/-13	-12.31/-13.19	-15.55/-19.22	-17.46/-17.35	-17.5/-17.73	-19.46/-17.93	-19.25/-18.23	-18.84/-18.2	-19.61/-18.99	-18.43/-19.3	-17.33/-18.73	-17.45/-17.89
Θ(180°)	-18.19/-18.34	-18.12/-16.68	-17.56/-17.82	-18.45/-17.83	-18.57/-17.22	-18.67/-18.25	-17.81/-16.53	-15.99/-14.71	-14.29/-12.85	-12.47/-12.12	-12.63/-13.85	-15.11/-15.41	-15.45/-16.53	-17.17/-18.78	-18.72/-19.25	-18.4/-17.63	-17.72/-18.3	-19.58/-19.05	-18.99/-17.11	-18.24/-17.33	-17.89/-18.59	-19.15/-18.13	-17.48/-18.43	
Freq(Hz)	5.3GPol.	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°)	-10.36/-11.55	-11.83/-11.61	-10.79/-9.33	-7.78/-7.42	-7.36/-6.96	-6.37/-6.58	-7.62/-7.97	-9.23/-9.94	-10.21/-10.61	-10.77/-10.28	-9.99/-9.26	-8.82/-8.98	-9.53/-10.57	-11.7/-12.5	-12.44/-9.37	-6.19/-4.16	-3.45/-2.92	-2.37/-1.61	-1.32/-0.87	-0.84/-0.77	-0.78/-1.2	-1.84/-2.59	-3.44/-4.75	-6.59/-8.74
Θ(7.5°)	-8.98/-8.68	-8.42/-7.98																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(0°)	1.63/1.73	1.75/1.6	1.21/0.67	0.37/0.56	-2.16/-3.74	-5.27/-6.85	-9.14/-11.17	-12.43/-10.48	-8.51/6.47	-4.86/-1.33	-1.85/-0.86	-0.23/0.25	0.75/1.03	1.21/1.53	1.51/0.99	0.15/+0.65	-1.48/-2.39	-4.13/-6.2	-9.37/-12.22	-12.73/-10.18	-7.33/-4.77	-2.74/-1.25	-0.25/0.52	1.1/1.51
Θ(15°)	-2.02/-2.03	-2.03/-2		-1.75/-1.6	-1.49/-1.57	-2.23/-2.65	-3.13/-3.71	-5.33/-7.17	-10.3/-10.44	-7.69/-5.09	-2.89/-1.33	1.19/1.23	0.98/0.58	0.05/-0.37	-1.07/-1.87	-2.77/-3.86	-5.25/-6.67	-8.64/-11.2	-15.2/-16.88	-13.63/-10.28	-7.91/-5.73	-3.93/-2.37	-1.28/-0.51	0.0/46
Θ(7.5°)	-3.4/-3.34	-3.6/-3.85	-3.81/-4.73	-5.93/-6.26	-6.63/-7.04	-6.4/-6.19	-6.54/-7.69	-12.58/-6.65	-6.17/-0.83	0.61/1.19	1.98/0.67	-0.37/-1.36	-1.54/-1.66	-1.73/-2.01	-3.4/-65	-6.43/-7.25	-9.29/-9.84	-13.4/-18.92	-17.34/-17.04	-12.13/-9.6	-7.92/-6.42	-5.35/-4.49	-3.65/-3.11	
Θ(22.5°)	-0.99/-1.73	-2.79/-4.29	-5.27/-6.44	-8.41/-12.64	-16.33/-18.26	-17.34/-14.05	-11.45/-11.92	-14.96/-19.08	-14.13/-6.99	-3.08/0.42	0.74/1.4	1.21/0.9	1.01/1.39	1.59/1.69	1.59/0.86	-0.72/-2.73	-5.03/-7.38	-9.89/-11.77	-14.32/-15.13	-14.65/-13.71	-13.19/-12.08	-10.49/-8.68	-6.98/-5.58	-3.59/-2.48
Θ(30°)	-3.68/-5	-6.48/-7.7	-11/-13.17	-11.53/-9.93	-9.31/-9.4	-10.12/-10.86	-10.5/-12.02	-16.47/-19.24	-12.04/-7.88	-4.27/-1.13	0.72/1.63	1.86/1.57	2.08/1.18	3.76/3.79	3.14/2.03	0.57/-1.6	-4.55/-7.01	-9.41/-12.09	-12.91/-11.7	-11.1/-9.62	-9.7/-8.99	-8.38/-7.05	-5.3/-3.13	-1.66/-1.26
Θ(37.5°)	-3.83/-1.86	-0.68/-0.21	0.55/1.27	1.12/0.09	-0.96/-2.71	-5.44/-1.18	-6.28/-6.84	-10.08/-14.26	-11.12/-7.98	-6.32/-3.42	-0.21/25	1.21/31	2.36/3.58	3.79/3.34	2.46/1.15	-0.48/-3.39	-7.42/-10.93	-12.73/-18.83	-17.78/-16.39	-13.53/-11.69	-9.91/-8.4	-7.33/-6.59	-5.12/-4.62	-4.35/-5.15
Θ(45°)	2.34/2.58	2.88/3.55	4.63/4.81	3.92/7	1.33/-0.86	-4.47/-7.55	-6.34/-4.88	-5.32/-7.16	-8.65/-10.62	-10.33/-6.25	-1.43/0.38	0.04/-0.14	1.27/2.64	2.83/1.88	0.17/-1.13	-2.23/-6.13	-11.38/-8.43	-7.33/-9.55	-13.93/-18.08	-17.94/-16.82	-10.84/-8.67	-9.16/-7.65	-5.55/-4.55	-4.2/-2.49
Θ(52.5°)	3.96/4.06	4.65/7.2	5.79/4.72	3.29/1.9	0.85/-0.29	-2.55/-5.8	-7.42/-6.39	-6.03/-6.71	-8.37/-9.54	-11.15/-4.18	0.1/1.01	0.93/1.44	2.19/2.39	1.31/-0.89	-2.6/-2.66	-4.49/-7.1	-8.55/-6.05	-5.53/-6.38	-7.43/-11.02	-16.98/-15.05	-11.83/-10.7	-10.2/-6.88	-4.4/-3.03	-1.25/-1.23
Θ(60°)	3.24/3.66	4.77/4.91	3.49/2.09	1.77/1.21	-0.69/-2.58	-5.22/-8.84	-6.71/-5.99	-6/-8.16	-11.37/-7.4	-7.82/-4.4	0.43/1.69	1.62/1.93	2.73/2.8	1.12/-2.09	-4.42/-3.63	-3.66/-3.82	-6.12/-6.23	-4.68/-5.74	-9.08/-12.9	-16.05/-16.59	-14.23/-11.78	-7.77/-5.05	-3.5/-1.89	0.73/2.93
Θ(67.5°)	0.71/66	2.42/1.45	-0.69/-1.37	-0.03/-0.67	-4.44/-7.29	-7.75/-7.45	-6.69/-5.84	-5.65/-8.01	-15.56/-3.3	-2.18/-2.31	0.39/1.79	2.67/3.41	4.02/3.28	0.2/-3.86	-6.27/-4.05	-2.57/-2.51	-4.18/-6.78	-6.41/-8.89	-11.14/-12.6	-12.43/-10.1	-7.4/-4.93	-2/-2.17	4.55/-3.94	-0.22/0.1
Θ(75°)	-1.16/0.47	-0.49/-2.36	-1.32/-2.33	-1.32/-1.25	-3.99/-8.57	-8.17/-11.38	-14.63/-11.47	-9.81/-9.26	-13.35/-4.2	-0.32/-1.28	-0.51/2.04	3.13/2.9	3.55/3.81	1.02/-3.43	-6.34/-3.85	-1.69/-1.42	-2.38/-5.87	-7.33/-11.04	-12.71/-12.29	-13.39/-7.28	-3.85/-1.84	0.32/-1.11	-5.59/-5.38	-2.35/-1.03
Θ(82.5°)	-0.9/-1.82	-5.98/-1.39	-0.03/-2.79	-3.01/-1.84	-4.33/-10.31	-13.82/-13.17	-11.46/-11.11	-12.14/-17.26	-11.39/-3.82	-0.84/-1.89	-1.51/6.1	2.64/1.9	3.12/2.72	0.65/-5.55	-7.92/-3.19	-1.22/-0.73	-1.68/-4.83	-8.23/-10.38	-13.72/-13.5	-14.61/-7.04	-4.76/-2.06	0.41/-1.77	-6.93/-6.1	-5.82/-4.58
Θ(90°)	-1.95/-3.56	-6.09/-0.78	0.09/-4.29	-3.11/-1.83	-3.9/-6.9	-8.99/-13.39	-14.6/-15.21	-11.31/-14.13	-11.74/-2.62	-1.11/-1.45	-2.30/39	2.86/1.35	1.33/13	1.81/-3.57	-6.8/-3.3	-1.38/-0.51	-0.8/-4.67	-8.28/-8.51	-11.9/-13.8	-17.94/-11.5	-8.48/-2.58	0.1/-1.95	-4.2/-4.68	-8.43/-6.49
Θ(97.5°)	-4.23/-6.89	-4.88/-1.37	-2.88/-8.05	-6.3/-3.15	-4.68/-6.59	-12.47/-18.94	-12.47/-18.94	-14.17/-12.51	-11.46/-1.81	-1.55/-3.4	-2.91/-0.33	1.18/-0.96	0.2/32	0.83/-5.62	-7.14/-3.82	-3.16/-1.2	-1.93/-6.82	-8.09/-9.26	-11.66/-15.73	-18.87/-19.37	-12.22/-3.15	-1.39/-3.47	-3.81/-4.42	-9.23/-8.38
Θ(105°)	-6.34/-6.98	-4.57/-1.91	-2.52/-7.11	-6.22/-6.18	-6.23/-5.45	-13.33/-14.94	-14.54/-19.08	-18.83/-11.58	-12.95/-3.88	-2.14/-4.46	-3.48/-1.11	0.49/-0.89	-1.55/62	0.5/-4.15	-6.47/-6.23	-5.09/-3.07	-3.88/-8.69	-7.64/-9.62	-14.05/-17.81	-16.45/-12.08	-9.95/-5.86	-5.67/-5.28	-3.75/-5.58	-9.69/-7.49
Θ(112.5°)	-8.63/-7.9	-5.19/-4.12	-4.61/-8.38	-13.01/-8.23	-7.28/-8.02	-12.58/-11.97	-16.7/-18.8	-18.76/-9.98	-8.57/-2.91	-3.31/-7.59	-4.58/-1.28	-1.52/-1.81	-0.44/-0.4	-2.23/-5.64	-8.99/-12.39	-9.63/-5.3	-6.08/-6.01	-6.62/-8.76	-13.22/-18.56	-13.21/-5.23	-7.16/-8.32	-6.4/-6.69	-6.52/-7.4	-9.2/-8.46
Θ(120°)	-6.69/-6.96	-8.02/-6.29	-7.3/-8.92	-14.03/-10.51	-8.73/-8.57	-10.27/-16.2	-18.75/-18.98	-14.47/-7.67	-6.62/-4.39	-5.54/-9.98	-5.48/-2.73	-2.94/-3.6	-2.71/-1.84	-2.52/-4.65	-8.12/-18.65	-11.11/-7.36	-8.57/-5.01	-6.64/-7.45	-11.38/-18.49	-14.53/-6.26	-6.85/-7.64	-8.18/-9.1	-9.61/-10.45	-7.64/-6.6
Θ(127.5°)	-11.38/-10.25	-13.69/-11.02	-10.23/-9.97	-8.66/-13.07	-9.84/-10.65	-15.04/-18.01	-13.18/-13.61	-13.94/-7.2	-7.17/-6.54	-5.66/-6.94	-6.6/-5.01	-4.74/-6.94	-11.49/-18.36	-12.61/-11.87	-9.38/-7.17	-10.95/-13.09	-12.64/-19.05	-13.35/-11.72	-9.49/-6.72	-7.67/-8.85	-9.75/-10.66	-11.52/-11.46		
Θ(135°)	-8.56/-10.04	-14.71/-13.91	-10.58/-10.22	-9.32/-8.61	-12.85/-18.63	-16.45/-15.67	-14.63/-15.06	-14.68/-8.82	-9.74/-9.27	-10.14/-14.09	-9.33/-5.23	-4.06/-5.05	-5.87/-7.24	-12.33/-14.24	-14.38/-12.09	-12.46/-11.59	-14.48/-17.41	-17.78/-18.21	-13.41/-13.13	-9.7/-7.34	-6.38/-7.02	-11.07/-17.68	-11.19/-9.9	
Θ(142.5°)	-10.71/-9.54	-14.89/-17.87	-17.85/-15.22	-12.74/-11.99	-11.28/-13.29	-13.77/-12.51	-15.44/-19.24	-13.39/-13.68	-18.01/-15.82	-13.04/-14.24	-12.21/-8.04	-6.67/-6.49	-7.02/-8.05	-9.45/-10.46	-14.51/-19.27	-12.19/-14.19	-16.02/-9.23	-11.91/-18.23	-17.61/-17.57	-17.06/-13.01	-10.03/-11.88	-11.7/-13.95	-19.25/-16.67	-12.07/-10.53
Θ(150°)	-11.71/-11.91	-12.83/-16.49	-18.28/-17.21	-15.58/-14.51	-15.94/-17.11	-16.24/-18.88	-18.88/-18.4	-17.68/-19.18	-19.3/-19.32	-13.6/-12.18	-16.29/-15.28	-12.81/-12.87	-13.77/-13.36	-12.4/-16.17	-17.81/-14.24	-17.95/-18.89	-16.29/-14.83	-18.35/-17.91	-19.13/-18.49	-17.92/-17.88	-11.25/-8.34	-10.11/-16.69	-18.67/-12.99	-10.26/-10.26
Θ(157.5°)	-17.48/-18.93	-18.37/-18.15	-16.49/-15.5	-15.11/-15.07	-15.91/-16.59	-17.47/-17.7	-17.8/-16.51	-13.79/-12.58	-11.77/-13.11	-12.84/-14.18	-15.53/-14.24	-12.96/-12.77	-15.62/-17.25	-17.65/-15.31	-13.36/-13.55	-15.58/-13.92	-13.33/-16.24	-18.12/-17.46	-17.81/-18.9	-18.59/-18.44	-17.48/-16.78	-18.13/-16.07	-15.55/-18.63	-18.59/-18.1
Θ(165°)	-16.8/-16.94	-17.94/-15.99	-16.22/-18.68	-19.31/-17.96	-17.98/-18.49	-18.89/-17.84	-17.35/-14.07	-12.9/-13.41	-15.79/-18.31	-17.54/-15.6	-13.89/-12.37	-12.06/-11.71	-12.28/-13.74	-16.85/-17.15	-17.75/-17.1	-18.14/-17.9	-18.64/-18.86	-17.73/-19.28	-18.02/-19.78	-18.02/-19.04	-17.7/-16.8	-13.75/-13.7	-16.83/-18.55	-18.67/-19.15
Θ(172.5°)	-18.27/-16.63	-16.2/-18.98	-18.57/-18.34	-18/-19.16	-18.61/-18.05	-14.71/-13.9	-15.54/-17.51	-17.42/-18.51	-18.39/-17.64	-18.9/-18.75	-17.49/-18.17	-19.04/-18.02	-16.34/-15.9	-15.82/-16.24	-16.3/-17.51	-18.58/-17.96	-18.02/-17.58	-17.35/-19.08	-18.23/-18.65	-18.62/-17.59	-18.18/-17.62	-17.73/-18.69	-18.32/-17.72	-17.79/-18.94
Θ(180°)	-17.71/-19	-18.13/-19.48	-17.17/-15.92	-18.39/-18.33	-18.98/-18.33	-15.67/-15.8	-15.35/-15.07	-14.8/-14.77	-14.03/-13.17	-12.68/-13	-14.07/-15.61	-15.51/-14.94	-16.01/-16.39	-18.26/-18.7	-18.51/-18.58	-17.88/-19.1	-17.8/-18.42	-18.28/-18.19	-17.59/-18.21	-18.58/-18.19	-17.48/-17.94	-18.41/-18.99	-17.42/-19.16	
Freq(Hz)	5.785/Pol	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°)	-8.63/-11.59	-13.48/-11.02	-7.86/-5.32	-3.26/-1.9	-1.15/-0.53	0.11/0.36	0.63/0.71	0.64/0.22	-0.15/-0.68	-1.43/-2.23	-2.96/-3.89	-9.46/-11.71	-12.86/-10.5	-7.38/-5.37	-3.66/-1.66	-0.46/0.47	0.64/1.38	1.64/2.22	2.62.58	2.26/1.9	1.46/0.63	-0.51/-2.31	-4.55/-7.07	
Θ(7.5°)	-19.7/-9.81	-8.91/-8.09	-4.62/-5.9	-5.45/-4.11	-3.12/-1.91	-0.91/0.07	0.91/1.63	2.21/2.32	2.33/-1.96	1.34/0.31	-0.87/-2.4	-12.86/-17.4	-16.86/-11.77	-7.94/-5.64	-4.58/-3.91	-2.55/-0.84	-0.58/-0.25	-0.26/-0.02	0.33/0.68	0.31/-0.05	-0.71/-1.5	-2.64/-3.94	-5.53/-7.16	
Θ(15°)	-12.64/-10.97	-8.96/-7.17	-5.75/-4.92	-4.14/-4.14	-4.74/-5.97	-6.4/-6.68	-4.89/-2.12	-0.04/1.36	2.03/2.32	2.25/-1.45	0.01/-1.98	-4.92/-9.24	-14.72/-18.35	-18.12/-12.95	-9.04/-6.41	-4.4/-3.24	-3.46/-2.52	-1.76/-1.13	-0.79/-0.71	-0.22/-0.22	-0.96/-1.42	-2.43/-3.56	-5.22/-6.91	-8.59/-6.68
Θ(22.5°)	-14.68/-9.5	-6.92/-5.65	-4.4/-3.08	-2.1/-1.32	-0.73/-1.46	-2.57/-4.87	-8.26/-10.59	-7.18/-3.27	-1.12/0.28	0.79/0.21	-1.56/-3.77	-7.66/-12.22	-18.19/-18.51	-12.2/-7.28	-4.6/-3.27	-1.89/-0.62	-0.11/-0.56	-1/-0.43	0.14/-0.29	-1.03/-1.85	-3.02/-4.76	-6.18/-8.12	-10.57/-11.89	-16.39/-18.9
Θ(30°)	-11.54/-8.45	-5.45/-2.72	-1.19/-0.63	-0.6/-0.37	-0.31/-0.96	-1.99/-4.18	-6.92/-3.98	-2.53/-2.4	-2.63/-2.94	-3.84/-5.26	-6.72/-8.73	-14.06/-15.9	-8.4/-5.25	-3.9/-3.25	-1.95/-1.1	-1.13/-1.54	-1.31/-1.04	-1.52/-3.3	-3.9/-3.45	-3.86/-4.08	-5.16/-6.95	-6.83/-9.58	-13.22/-16.79	
Θ(37.5°)	-9.92/-5.54	-1.71/0.23	0.48/0	-0.07/0.34	0.66/0.44	0.09/-1.28	-4.39/-8.82	-7.47/-2.56	-1.11/-2.27	-4.53/-7.3	-8.84/-7.86	-7.83/-10.93	-15.34/-11.86	-7.66/-5.32	-3.94/-3.48	-3.67/-3.49	-2.89/-3.36	-5.26/-5.63	-5.88/-4.75	-3.39/-2.49	-2.55/-3.29	-4.51/-6.3	-7.14/-8.9	-11.76/-13
Θ(45°)	-9.39/-6.13	-1.47/0.02	-0.22/-0.65	-0.02/0.88	1.68/2.3	1.96/0.08	-1.56/-2.79	-4.24/-4.39	-3.64/-5.46	-7.71/-9.58	-11.44/-9.34	-13.59/-14.36	-11.45/-9.25	-8.25/-6.4	-5.11/-5.19	-5.05/-6.34	-9.93/-6.09	-3.75/-3.3	-3.71/-6.32	-4.56/-6.08	-7.24/-9.25	-10.3/-13.52	-10.26/-9.58	
Θ(52.5°)	-10.21/-5.53	-3.02/-3.4	-4.88/-4.09	-2.27/-0.81	0.07/1.46	2.12/-1.28	-0.6/-2.21	-3.87/-3.71	-4.39/-6.83	-8.39/-4.8	-5.37/-7.99													



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(45°)	-11.49/-18.8	-13.65/-9.22	-5.59/-4.24	-3.25/-2.06	-0.150/37	0.23/-0.66	-2.23/-4.59	-6.94/-6.5	-5.94/-7.7	-9.02/-10.95	-8.04/-10.78	-12.98/-16.19	-9.8/-10.9	-18.93/-18.47	-17.42/-12.29	-12.17/-17.01	-14.64/-16.34	-15.51/-15.3	-18.04/-14.23	-9.32/-11.52	-15.75/-9.84	-7.75/-9.68	-12.4/-17.4	-16.23/-8.99
Θ(52.5°)	-15.31/-17.91	-11.8/-10.19	-9.53/-9.59	-9.06/-6.49	-5.06/-5.3	-8.75/-14.08	-17.78/-17.3	-8.05/-3.88	-4.3/-7.74	-11.51/-14.61	-11.42/-11.27	-13.85/-17.62	-14.39/-14.67	-19.02/-17.36	-11.71/-12.63	-16.98/-19.17	-15.81/-11.27	-8.18/-6.1	-8.28/-14.67	-10.9/-7.3	-7.87/-11.42	-9.96/-8.5	-11.95/-18	-18.78/-12.56
Θ(60°)	-19.02/-17.95	-14.96/-14.08	-13.82/-19	-17.97/-13.19	-10.29/-6.04	-4.88/-4.95	-4.01/-3.64	-1.8/-1.72	-2.23/-2.4	-5.02/-6.64	-8.85/-11.96	-16.48/-16.85	-16.32/-15.83	-16.9/-12.07	-7.12/-12.94	-9.25/-11.46	-12.96/-11.08	-8.38/-7.31	-8.14/-9.18	-10.65/-10.08	-6.85/-7.28	-11.48/-14.84	-12.58/-18.48	-17.5/-18.9
Θ(67.5°)	-16.72/-16.74	-17.49/-17.56	-18.39/-16.86	-12.14/-8.05	-5.57/-3.18	-2.66/-3.65	-5.65/-5.85	-4.03/-1.73	-1.24/-4.07	-9.21/-10.49	-10.13/-13.25	-15.76/-14.92	-18.28/-17.11	-16.05/-9.46	-9.33/-8.21	-7.48/-9.86	-10.24/-8.19	-7.63/-9.69	-9.1/-5.95	-5.76/-10.34	-10.05/-7.53	-7.78/-10.48	-15.23/-17.23	-18.99/-17.58
Θ(75°)	-17.14/-19.26	-18.61/-18.81	-13.22/-11.39	-11.91/-7.38	-4.92/-5.8	-9.56/-14.4	-18.4/-17.68	-13.21/-6.52	-4.52/-5.18	-9.34/-15.7	-15.42/-12.7	-18.4/-13.26	-13.38/-16.72	-9.29/-8	-9.8/-17.4	-18.44/-18.2	-11.04/-5.22	-7.68/-10.7	-5.24/-9.67	-9.86/-7.03	-7.5/-7.4	-13.1/-17.96	-18.06/-19.18	
Θ(82.5°)	-13.78/-17.83	-18.81/-18.83	-18.03/-19.12	-17.02/-16.29	-18.95/-12.82	-11.16/-16.4	-12.39/-9.1	-11.62/-13.69	-9.31/-7.26	-9.86/-11.5	-10.4/-13.26	-13.95/-17	-10.81/-17.65	-17.81/-12.72	-8.73/-10.28	-14.8/-19.52	-15.84/-8.89	-8.78/-6.01	-5.19/-7.37	-4.03/-4.61	-8.61/-7.56	-11.32/-9.55	-10.13/-19.4	-18.79/-17.78
Θ(90°)	-13.71/-13.88	-15.06/-10.93	-11.74/-14.25	-12.56/-19	-9.61/-8.56	-12.33/-18.02	-18.22/-9.18	-5.92/-8.53	-17.43/-14.38	-9.68/-7.41	-8.84/-11.58	-9.37/-10.19	-9.71/-18.52	-11.64/-17.59	-12.96/-12.15	-18.3/-11.87	-8.83/-4.26	-2.44/-5.62	-8.14/-11.09	-7.56/-8.09	-9.4/-8.7	-11.77/-11.65	-9.98/-16.32	-18.34/-18.4
Θ(97.5°)	-14.97/-11.59	-10.43/-8.52	-9.15/-13.78	-11.6/-13.92	-13.06/-13.16	-19.2/-17.44	-19.03/-13.73	-6.64/-8.99	-18.85/-15.18	-7.76/-5.12	-5.39/-9.85	-8.88/-9.39	-9.46/-16.5	-12.09/-18.63	-16.44/-18.39	-17.27/-18.08	-7.9/-7.21	-3.43/-5.4	-7.98/-13.2	-10.81/-13.36	-13.21/-12.41	-18.04/-13.55	-13.83/-17.44	-15.99/-16.55
Θ(105°)	-12.81/-8.32	-8.91/-6.12	-6.92/-10.16	-13.72/-16.21	-12.72/-12.45	-10.56/-11.68	-16.09/-16.56	-9.75/-8.01	-12.97/-11.27	-6.9/-3.56	-9.1/-9.18	-8.88/-17.45	-9.6/-19.11	-18.64/-18.68	-19.22/-18.71	-13.96/-7.52	-6.22/-12.11	-13.88/-11.49	-18.91/-14.51	-14.57/-10.63	-14.82/-17.56	-17.45/-15.84	-14.52/-11.73	
Θ(112.5°)	-10.42/-7.73	-5.79/-6.46	-8.31/-9.45	-7.89/-6.12	-5.76/-4.1	-6.53/-8.21	-9.02/-12.42	-15.42/-8.08	-10.01/-7.53	-6.97/-4.9	-4.14/-7.92	-8.82/-9.38	-10.27/-11.61	-9.18/-15.19	-13.12/-13.28	-15.22/-11.82	-9.99/-6.91	-5.47/-8.06	-7.99/-9.42	-14.2/-18.59	-16.4/-17.68	-19.4/-16.65	-18.1/-17.64	-15.92/-11.45
Θ(120°)	-10.65/-7.82	-5.91/-5.01	-5.91/-5.81	-5.48/-6.05	-4.47/-1.29	-3.39/-4.14	-5.19/-10.61	-17.8/-13.88	-6.93/-4.06	-5.95/-5.95	-5.1/-8.88	-9.29/-11.71	-12.55/-10.93	-9.29/-16.96	-12.44/-15.24	-17.26/-15.66	-8.87/-2.57	-4.27/-9.5	-18.78/-10.98	-8.94/-11.64	-7.43/-12.47	-13.9/-17.48	-13.9/-17.48	
Θ(127.5°)	-12.2/-9.35	-6.3/-4.74	-3.44/-4.15	-2.54/-2.19	-1.71/-2.24	-4.63/-6.25	-3.88/-3.67	-7.62/-14.43	-9.28/-4.72	-5.11/-3.71	-6.21/-9.11	-12.61/-13.27	-16.74/-14.36	-18.01/-11.98	-11.99/-17.81	-11.91/-14.86	-15.82/-18.84	-11.79/-11.5	-11.71/-8.4	-7.85/-7.35	-9.97/-14.37	-17.33/-17.08	-18.21/-17.93	-14.19/-13.22
Θ(135°)	-13.09/-10.58	-5.2/-4.63	-3.96/-2.77	-1.51/-0.94	1.32/-0.77	-5.89/-7.83	-3.2/-1.66	-2.91/-5.72	-9.58/-8.18	-7.96/-7.79	-6.31/-7.47	-12.49/-14.59	-18.78/-16.73	-13.33/-15.95	-18.41/-18.4	-15.64/-16.71	-11.86/-12.99	-13.65/-18.13	-18.45/-17.07	-10.35/-6.97	-8.46/-14.82	-14.4/-10.66	-13.73/-18.99	-18.43/-18.44
Θ(142.5°)	-12.54/-13.62	-6.82/-4.52	-4.27/-2.48	-2.53/-1.19	-0.95/-2.31	-3.47/-1.29	-4.18/-8.32	-1.71/-10.24	-12.6/-13.27	-12.57/-12.25	-10.71/-8.46	-6.42/-5.06	-4.48/-4.45	-4.24/-2.97	-1.75/-0.99	-0.86/-6.78	-0.78/-0.87	-1.36/-2.34	-3.43/-3.63	-4.06/-5.31	-7.5/-10.43	-14.57/-18.86	-18.2/-13.34	-3.47/-3.27
Θ(150°)	-16.11/-15.12	-10.18/-6.98	-5.03/-3.88	-2.4/-2.76	-3.14/-4.32	-7.82/-5.27	-1.66/-1.03	-1.98/-4.32	-8.25/-13.1	-16.29/-10.71	-18.54/-18.9	-17.77/-18.81	-17.76/-17.08	-16.63/-18.69	-16.67/-10.56	-8.56/-8.69	-11.89/-17.08	-18.92/-17.89	-12.64/-7.98	-5.54/-5.38	-5.53/-6.61	-11.73/-15.37	-17.36/-18.13	
Θ(157.5°)	-15.29/-10.74	-7.57/-5.91	-4.29/-4.06	-4.04/-4.01	-5.08/-6.83	-7/-5.27	-3.59/-2.33	-2.32/-3.57	-5.23/-6.46	-6.56/-7.34	-10.12/-14.05	-17.37/-17.16	-15.43/-15.74	-16.18/-17.22	-14.25/-10.25	-8.28/-7.82	-8.87/-13.1	-18.27/-18.11	-17.89/-12.33	-6.82/-5.59	-6.17/-7.28	-8.04/-8.46	-9.81/-12.04	-15.85/-18.96
Θ(165°)	-18.08/-16.05	-11.01/-9.18	-8.03/-7.22	-7/-7.85	-9.14/-11.33	-12.78/-10.52	-6.5/-5.48	-2.82/-3.44	-4.67/-5.88	-16.94/-16.46	-15.09/-17.42	-18.26/-17.12	-18.26/-17.72	-19.07/-17.82	-15.26/-14.21	-14.05/-15.13	-16.56/-16.35	-15.77/-15.59	-11.82/-8.55	-7.02/-7.82	-9.99/-11.14	-11.38/-11.55	-12.11/-13.24	-15.84/-17.7
Θ(172.5°)	-18.29/-18.92	-19.49/-18.02	-17.88/-16.04	-13.64/-12.48	-11.63/-10.05	-7.84/-5.61	-5.24/-7.8	-1.86/-6.4	-9.17/-12.51	-16.75/-17.92	-17.17/-16.81	-18.08/-18.88	-18.86/-18.29	-18.64/-19.26	-15.14/-18.55	-14.10/-14.62	-15.14/-18.55	-17.63/-14.68	-12.75/-12.12	-11.46/-10.18	-12.68/-12.09	-14.23/-17.07	-19.01/-18.34	
Θ(180°)	-18.68/-18.2	-18.39/-19.58	-15.7/-13.2	-11.78/-10.84	-10.68/-10.67	-10.08/-9.33	-9.83/-14.61	-19.12/-17.91	-16.43/-14.03	-14.13/-14.23	-14.44/-16.21	-18.92/-18.05	-17.72/-17.85	-17.91/-18.9	-18.12/-19.2	-16.19/-13.89	-12.76/-11.88	-16.92/-18.61	-17.21/-17.63	-18.75/-19.32	-17.81/-18.88	-18.15/-18.97	-17.89/-18.08	
Freq(Hz)	5.2GPol	ThetaAnt. 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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°)	-3.49/-2.48	-1.67/-1.31	-1.26/-1.42	-1.87/-2.28	-2.76/-3.74	-4.96/-6.4	-7.95/-9.65	-14.82/-18.75	-18.86/-12.52	-9.06/-7.26	-6.52/-5.83	-4.92/-3.59	-2.63/-2.02	-1.64/-1.39	-1.36/-1.52	-1.97/-2.48	-2.93/-3.59	-2.97/-5.63	-7.76/-10.23	-13.6/-16.96	-15.8/-12.75	-9.86/-7.69	-5.76/-4.64	-4.08/-3.5
Θ(7.5°)	-2.55/-1.92	-1.52/-1.53	-1.47/-1.58	-2.06/-3.01	-4.18/-8.32	-7.74/-10.24	-12.6/-13.27	-12.57/-12.25	-10.71/-8.46	-6.42/-5.06	-4.48/-4.45	-4.24/-2.97	-1.75/-0.99	-0.86/-6.78	-0.78/-0.87	-1.36/-2.34	-3.43/-3.63	-4.06/-5.31	-7.5/-10.43	-14.57/-18.86	-18.2/-13.34	-3.47/-3.27	-5.28/-3.99	-3.44/-3.27
Θ(15°)	-0.060/43	0.470/14	-0.17/-0.46	-1.12/-2.26	-3.44/-4.85	-6.44/-9.04	-10.24/-16.2	-18.6/-13.75	-9.42/-6.99	-4.67/-2.29	-1.84/-1.87	-2.39/-2.28	-1.27/-0.23	-0.14/-0.22	-0.520/-8.5	-8.22/-3.2	-10.41/-2.09	-13.51/-15.72	-16.69/-13.73	-10.59/-7.72	-5.1/-3.6	-2.76/-2.22		
Θ(22.5°)	0.99/1.63	1.55/1.3	0.87/-0.23	-1.21/-1.98	-2.68/-3.79	-5.73/-9.98	-12.35/-13.24	-11.41/-8.76	-6.03/-4.18	-2.88/-1.41	-0.260/2	-0.11/-0.5	0.080/7.9	0.890/5.6	0.13/-0.48	-1.16/-2.1	-4.2/-5.48	-7.01/-8.36	-9.52/-12.42	-17.15/-14.1	-11.72/-11.48	-9.53/-6.28	-3.76/-2.69	-2.61/-1.87
Θ(30°)	0.871/19	0.770/27	-0.43/-6.08	-1.51/-1.62	-2.04/-3.26	-5.04/-8.1	-15.14/-18.87	-9.13/-4.65	-4.71/-2.55	-1.220/-4.3	0.50/8.7	0.510/0.5	0.75/1.01	0.58/-0.13	-1.04/-2.34	-4.41/-6.33	-7.69/-7.65	-6.74/-7.21	-10.99/-18.61	-15.52/-9.68	-7.19/-8.51	-3.65/-2.02	-1.63/-6.0	
Θ(37.5°)	1.221/41	0.83/-0.12	-0.58/-0.14	0.420/18	-0.28/-1.33	-3.61/-6.57	-11.66/-15.13	-8.78/-5.54	-3.39/-2.54	-2.52/-1.04	0.19/-0.16	-0.43/-0.6	-1.09/-0.41	0.05/-1.14	-2.98/-3.91	-5.75/-8.11	-10.27/-8.18	-7.33/-8.54	-8.71/-7.32	-6.99/-8.77	-13.55/-12.63	-7.36/-4.65	-3.3/-2.17	-2.10/-11
Θ(45°)	0.420/84	0.810/77	0.520/97	0.630/14	-1.03/-1.83	-4.16/-7.56	-10.54/-11.11	-9.36/-6.15	-3.74/-2.7	-3.85/-4.83	-2.38/-1.44	-2.35/-2.72	-3.17/-2.6	-2.51/-5.52	-7.43/-8	-10.62/-9.4	-11.18/-13.41	-14.27/-13.38	-13.54/-14.03	-8.63/-5.71	-5.75/-5.44	-4.87/-4.09	-3.24/-3.03	-3.59/-1.67
Θ(52.5°)	-0.49/-0.07	-0.84/-0.33	-0.6/-8.02	-1.6/-2.64	-4.85/-6.5	-6.81/-8.48	-7.41/-9.04	-12.77/-8.31	-7.14/-7.09	-10.46/-13.29	-6.62/-8.46	-5.03/-4.42	-6.19/-5.27	-10.19/-63	-7.08/-7.19	-5.43/-7.13	-11.42/-18.65	-17.56/-16.04	-16.16/-15.39	-18.02/-13.1	-6.71/-4.54	-2.8/-2.35	-3.31/-3.47	-4.47/-1.32
Θ(60°)	-1.28/-1.08	-2.58/-1.98	-3.71/-3.62	-5.82/-9.46	-7.39/-5.01	-2.97/-2.63	-4.49/-10.25	-14.63/-5.85	-6.15/-7.02	-6.01/-4.79	-2.89/-2.17	-2.99/-2.58	-2.49/-2.95	-8.51/-4.57	-4.12/-4.54	-9.94/-16.7	-17.43/-12.36	-12.49/-12.86	-11.45/-11.82	-9.64/-5.24	-2.58/-2.21	-2.33/-2.7	-6.06/-3.12	
Θ(67.5°)	-4.02/-3.47	-7.64/-11.74	-18.42/-19.02	-11.34/-4	-0.8/-0.31	-1.44/-2.88	-3.99/-5.11	-12.84/-12.37	-4.92/-3.63	-2.68/-0.91	-0.032/10	10.52	0.14/-1.26	-2.34/-1.69	-2.76/-5.11	-4.74/-7.21	-11.03/-19.02	-14.15/-12.62	-13.71/-14.02	-10.99/-8.81	-8.55/-5.45	-2.66/-2.35	-3.32/-3.73	-6.75/-8.85
Θ(75°)	-8.31/-7.57	-9.75/-10.23	-9.72/-6.89	-2.41/0.01	0.59/-0.75	-3.11/-5.33	-5.34/-5.03	-6.82/-14.37	-9.7/-3.96	-1.53/-0.37	-0.42/-0.02	0.730/8.7	0.67/-0.67	-2.25/-0.94	-3.3/-4.9	-7.12/-9.91	-19.19/-13.61	-10.79/-8.65	-10.25/-14.46	-11.57/-7.67	-6.48/-5.95	-2.65/-2.26	-4.22/-4.28	-7.98/-7.27
Θ(82.5°)	-6.14/-3.67	-0.76/-0.24	-0.25/-0.01	0.81/0.2	-0.81/-5.79	-11.68/-8.82	-7.45/-9.38	-14/-17.07	-18.24/-13.85	-4.62/-1.26	-1.31/-2.8	0.220/6.5	-0.22/-0.63	-1.4/-3.03	-6.67/-12.89	-16.84/-17.89	-19.05/-10.84	-9.79/-12	-7.85/-8.63	-9.23/-5.18	-4.13/-3.35	-2.57/-2.16	-1.74/-1.72	-6.61/-4.7
Θ(90°)	-2.15/-0.57	1.61/1.11	0.07/-0.12	0.81/-1.38	-4.89/-8.54	-6.99/-4.69	-3.67/-5.01	-11.46/-18	-16.5/-10.19	-8.98/-7.06	-4.72/-4.78	-1.1/-2.6	-1.94/-2.2	-2.19/-3.33	-8.6/-9.73	-16.16/-18.84	-16.21/-8.87	-8.61/-11.42	-5.38/-7.81	-6.99/-2.78	-2.54/-2.92	-2.5/-2.2	-1/-0.41	-2.95/-4.71
Θ(97.5°)	0.440/31	2.380/8																						



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Θ(97.5°)	-15.47/-11.96	-8.35/-10.3	-18.13/-18.32	-12.29/-14	-12.96/-13.27	-15.28/-18.94	-15.29/-11.97	-6.62/-8.03	-19.25/-14.73	-10.53/-15.61	-13.15/-8.14	-16.96/-12.4	-12.92/-15.27	-17.41/-18.42	-11.54/-12.02	-13.21/-11.88	-12.68/-2.96	-3.29/-7.61	-11.96/-12.26	-9.71/-14.35	-7.83/-16.36	-12/-11.69	-16.24/-15.37	-18.68/-18.37
Θ(105°)	-15.36/-10.59	-7.43/-11.78	-17.83/-16.06	-14.77/-13.87	-18.7/-16.34	-15.46/-12.88	-13.61/-16.01	-9.94/-13.2	-17.1/-11.91	-13.3/-14.75	-12.11/-6.48	-10.31/-10.48	-13.85/-12.74	-14.54/-12.38	-15.48/-15.73	-13.2/-18.42	-13.28/-5.15	-5.3/-10.89	-14.13/-17.58	-15.9/-18.61	-17.25/-12.91	-19.04/-12.68	-13.23/-17.72	-14.96/-19.28
Θ(112.5°)	-13.9/-9.76	-8.6/-10.44	-18.49/-16.72	-12.07/-11.2	-14.5/-9.76	-10.77/-10.27	-12.97/-18.22	-13.16/-9.83	-11.73/-10.28	-8.41/-13.33	-19.45/-8.29	-10.53/-14.15	-10.94/-14.13	-11.32/-14.21	-11.24/-14.01	-16.01/-14.43	-6.46/-3.41	-2.62/-8.58	-12.55/-9.04	-8.73/-17.99	-18.1/-17.31	-17.45/-13.48	-19.16/-16.48	-12.24/-18.99
Θ(120°)	-14.53/-6.35	-7.31/-9.27	-13.35/-10.17	-9.01/-5.64	-5.37/-5.66	-10.22/-12.18	-11.44/-12.96	-18.02/-9.8	-6.88/-8.09	-7.78/-7.39	-8.54/-7.53	-13.78/-11.34	-12.55/-12.53	-13.52/-17.91	-13.69/-17.54	-12.37/-15.49	-18.31/-4.73	-6.31/-17.41	-13.38/-5.53	-6.07/-14.77	-11.68/-16.8	-16.62/-14.97	-18.94/-17.56	-14.36/-18
Θ(127.5°)	-9.53/-11.33	-7.4/-7.16	-4.76/-3.88	-3.92/-4.67	-2.88/-3.68	-6.14/-11.8	-9.16/-7.61	-9.82/-14.29	-8.05/-5.99	-5.66/-6.78	-8.52/-10.6	-9.87/-18.93	-11.67/-15.91	-10.04/-18.82	-12.91/-18.29	-10.84/-10.75	-18.18/-18.28	-9.77/-11.04	-15.14/-14.74	-14.03/-11.66	-10.96/-13.82	-18.74/-14.27	-14.93/-18.32	-18.54/-12.95
Θ(135°)	-13.36/-7.94	-6.41/-7.24	-5.26/-4.45	-2.29/-1.3	-0.94/-1.98	-5.62/-8.19	-6.01/-4.24	-4.93/-8.23	-8.44/-4.8	-4.38/-6.04	-6.68/-9.75	-9.19/-14.99	-11.57/-18.44	-18.19/-15.11	-17.88/-18.68	-18.59/-16.13	-11.19/-18.55	-10.8/-19.49	-18.32/-17.01	-8.73/-8.15	-9.29/-13.59	-11.18/-15.27	-17.73/-17.84	-18.31/-15.89
Θ(142.5°)	-17.72/-9.69	-7.29/-7.56	-5.03/-4.47	-2.51/-0.52	-0.21/-3.04	-9/-6.38	-2.56/-2.32	-4.51/-6.95	-9.27/-8.62	-6.9/-6.66	-9.2/-11.83	-16.47/-18.29	-18.9/-17.9	-18.64/-18.21	-15.87/-14.01	-15.47/-17.86	-17.21/-11.89	-14.44/-18.39	-17.23/-18.29	-12.42/-7.98	-5.51/-7.68	-5.6/-5.81	-9.82/-15.04	-17.84/-18.4
Θ(150°)	-16.03/-9.87	-7.05/-6.62	-4.58/-2.34	-1.81/-1.35	-1.58/-4.57	-7.91/-7.34	-4.1/-2.03	-1.9/-3.33	-6.38/-10.82	-14.02/-13.7	-11.86/-12.17	-12.92/-15	-16.34/-17.9	-18.64/-16.11	-11.91/-11.63	-17.98/-10.29	-4.31/-3.55	-7.15/-15.03	-17.87/-13.99	-8.53/-5.75	-4.6/-4.9	-4.93/-5.79	-7.57/-8.95	-12.83/-16.42
Θ(157.5°)	-18.42/-16.97	-11.6/-8.67	-6.43/-4.11	-3.21/-4.4	-6.62/-6.69	-5.31/-4.97	-4.6/-3.23	-2.41/-3.07	-4.65/-5.85	-7.97/-12.04	-17.8/-17.46	-15.69/-16.75	-18.18/-17.75	-16.26/-16.89	-17.94/-14.45	-9.43/-6.4	-6.92/-13.48	-18.55/-17.65	-19.59/-11.53	-8.59/-6.67	-5.36/-5.85	-7.02/-7.78	-8.96/-11.17	-18.29/-19.16
Θ(165°)	-18.54/-18.6	-12.71/-10.19	-8.93/-7.74	-7.32/-8.5	-9.69/-8.16	-8.14/-7.98	-4.58/-2.77	-2.79/-4.22	-5.83/-6.63	-7.44/-7.97	-8.78/-10.13	-12.81/-14.73	-13.79/-12.63	-12.59/-13.05	-12.59/-13.96	-15.89/-17.88	-18.29/-17.71	-19.02/-17.6	-17.36/-14.82	-12.2/-10.37	-8.76/-8.52	-9.68/-10.01	-10.53/-13.41	-17.96/-18.45
Θ(172.5°)	-19.15/-18.34	-17.31/-14.59	-14.47/-16	-18.08/-14.74	-10.21/-9.17	-10.14/-9.86	-7.37/-5.27	-4.97/-6.1	-7.54/-8.62	-10.88/-13.69	-17.49/-18.72	-18.62/-19.48	-19.19/-18.78	-17.56/-17.57	-18.29/-18.68	-19.13/-18.58	-14.98/-12.92	-15.28/-19.08	-19.17/-18.93	-16.24/-14.57	-15.37/-16.58	-16.14/-15.59	-17.37/-17.89	-17.86/-18.05
Θ(180°)	-19.02/-16.4	-15.27/-15.93	-16.96/-16.8	-15.64/-14.91	-14.84/-14.78	-13.67/-13.56	-15.6/-17.84	-18.31/-17.98	-18.22/-17.67	-18.61/-16.64	-16.69/-18.51	-19.67/-17.89	-18.25/-18.83	-18.29/-18.01	-18.84/-15.18	-13.29/-12.39	-13.91/-12.42	-10.86/-10.44	-11.05/-11.53	-11.76/-12.35	-12.74/-13.58	-15.98/-17.86	-18.19/-19.18	
Freq(Hz)	5.6GPol.	ThetaAnt. 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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°)	-2.01/-1.95	-1.77/-1.86	-2.14/-2.37	-2.9/-3.48	-4.48/-5.79	-6.57/-3.4	-9.43/-11.22	-9.56/-6.97	-6.13/-6.26	-5.74/-4.88	-3.6/-2.72	-2.27/-1.83	-1.35/-0.96	-1.22/-2.04	-2.66/-2.94	-2.25/-2.13	-3.81/-4.68	-5.68/-6.6	-6.84/-7.03	-7.65/-7.82	-7.4/-6.2	-4.96/-4.2	-3.4/-3.08	-2.87/-2.43
Θ(7.5°)	-1.35/-1.27	-1.3/-1.54	-2.05/-2.62	-3.15/-3.91	-4.96/-7.32	-10.19/-10.96	-12.2/-12.98	-10.54/-7.8	-5.31/-4.58	-4.64/-4.45	-3.63/-3.01	-2.93/-2.66	-1.83/-1.36	-1.54/-1.5	-1.08/-0.85	-0.94/-1.21	-1.7/-2.24	-3.44/-4.59	-6.53/-8.32	-10.03/-9.96	-8.41/-6.86	-5.32/-4.07	-3.38/-2.98	-2.71/-2.43
Θ(15°)	-1.27/-1.21	-2.7/-2.95	-3.02/-3.27	-4.12/-5.19	-6.16/-7.26	-8.53/-8.95	-8.98/-9.4	-8.72/-8.28	-7.2/-5.46	-3.95/-3.06	-2.59/-2.24	-2.23/-2.45	-1.38/-1.04	-0.71/-0.45	0.130.35	-0.17/-1	-1.89/-2.32	-3.37/-4.55	-6.42/-9.44	-11.47/-9.45	-6.49/-4.4	-2.93/-2.02	-1.57/-1.58	-1.24/-2.06
Θ(22.5°)	-2.54/-4.48	-5.39/-5.31	-5.38/-5.5	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59	-5.12/-4.59
Θ(30°)	-1.76/-3.88	-4.64/-3.96	-3.35/-2.44	-1.38/-0.62	-1.6/-3.98	-6.22/-6.78	-8.9/-13.85	-7.32/-3.52	-2.5/-1.97	-1.76/-2.09	-0.41/-1.95	2.61/-2.56	2.63/-2.24	1.41/-1.15	0.57/-0.14	-0.8/-1.3	-1.5/-0.93	-1.52/-3.25	-5.57/-7.63	-10.18/-14.26	-14.05/-11.9	-9.87/-7.36	-5.3/-3.78	-1.55/-0.5
Θ(37.5°)	-1.47/-2.11	-1.46/-0.21	0.69/-1.18	1.67/-1.44	0.75/-0.96	-3.43/-6.01	-9.25/-3.72	-4.99/-3.65	-2.6/-1.46	0.110.13	-0.42/-1.11	2.22/-1.92	1.52/-0.7	-0.16/-0.4	-0.9/-1.03	-2.45/-3.82	-5.37/-6.53	-7.36/-7.1	-7.35/-7.99	-9.16/-12.69	-15.59/-11.17	-8.21/-7.07	-7.6/-8.95	-3.63/-1.95
Θ(45°)	0.92/-0.85	0.430.74	1.732.75	2.65/-1.66	-0.22/-3.59	-7.97/-10.19	-9.37/-7.54	-5.92/-3.77	-2.07/-1.9	-2.18/-1.13	-1.34/-1.03	0.660.92	-0.12/-1.12	-1.69/-1.76	-2.62/-2.91	-3.33/-6.55	-4.74/-5.28	-8.93/-11.83	-8.22/-6.42	-6.78/-4.44	-7.51/-5.81	-6.37/-5.6	-1.73/-1.21	
Θ(52.5°)	1.36/-2.52	2.53/-2.03	2.83/-2.55	1.48/-0.86	-5.76/-14.82	-16.91/-10.62	-9.11/-8.08	-7.64/-8.12	-7.48/-4.57	-4.98/-5.49	-4.29/-4.97	-3.66/-3.77	-4.92/-7.66	-6.98/-6.39	-5.51/-6.47	-6.73/-5.05	-6.13/-9.61	-7.1/-6.01	-10.15/-18.16	-8.32/-5.24	-3.84/-3.02	-5.26/-5.52	-5.38/-3.81	-3.28/-1.03
Θ(60°)	1.86/-2.23	2.32/-1.4	2.98/-1.68	-1.21/-1.74	-16.25/-19.22	-8.25/-4.53	-4/-4.54	-5.16/-7.73	-14.68/-8.35	-5.75/-6.15	-5.61/-6.14	-3.98/-1.88	-2.62/-2.62	-2.4/-2.92	-5.08/-4.87	-5.47/-6.53	-16/-14.88	-13.86/-12.25	-13.01/-12.44	-10.13/-6.97	-4.66/-2.59	-2.94/-4.64	-3.53/-2.01	-1.59/-0.2
Θ(67.5°)	1.54/-0.37	0.49/-0.46	-0.29/-4.88	-10.72/-9.74	-5.99/-6.58	-9.56/-5.75	-2.5/-2.68	-5.16/-6.42	-10.27/-5.03	0.020.85	0.9/-0.26	0.21/-4.29	1.732.26	0.020.84	-2.55/-3.01	-6.04/-10.96	-12/-15.45	-18.16/-15.98	-13.25/-11.54	-10.38/-6.75	-6.61/-4.88	-2.69/-2.29	-2.59/-2.13	-2.66/-0.33
Θ(75°)	0.61/-1.57	-3.61/-5.29	3.94/-7.4	-3.73/-1.84	-1.03/-3.84	-10.68/-15.98	-8.93/-6.69	-8.81/-6.77	-10.25/-4.1	-0.40.26	1.950.82	0.912.29	2.26/-1.71	0.42/-1.02	-1.27/-2.64	-7.14/-9	-8.27/-13.42	-16.14/-18.26	-9.28/-10.4	-8.69/-5.78	-5.44/-4.18	-2.94/-3.44	-1.44/-1.52	-2.72/-1.42
Θ(82.5°)	-1.97/-1.95	-4.27/-4.02	-0.47/-0.32	0.70/-63	-2.26/-6.84	-13.14/-19.25	-9.99/-10.58	-18.2/-17.66	-18.33/-6.25	-1.31/-1.2	-0.71/-3.33	-1.63/-1.42	0.580.82	0.99/-1.48	-5.17/-8.21	-13.08/-6.52	-5.92/-11.01	-7.3/-11.4	-4.92/-7.54	-4.88/-2.8	-2.05/-3.7	-2.51/-3.75	-3.02/-1.7	-2.25/-2.63
Θ(90°)	0.18/-2.12	0.470.78	2.13/-1.55	0.74/-0.39	-4.97/-8.76	-15.7/-15.96	-8.18/-11.2	-18.14/-9.78	-10.51/-8.47	-7.43/-4.93	-3.62/-3.34	-2.270.74	0.35/-0.27	0.75/-1.71	-4.95/-10.95	-7.46/-9.89	-11.56/-10.49	-7.61/-13.56	-2.32/-6.59	-3.26/-0.98	-1.31/-1.8	-2.09/-2.51	-1.27/-0.84	-1.43/-3.72
Θ(97.5°)	1.27/-2.22	2.51.87	1.40.48	-0.96/-5.36	-5.2/-5.48	-8.13/-13.51	-8.92/-12.26	-18.1/-9.75	-8.22/-4.91	-5.62/-6.16	-4.67/-2.2	-2.160.18	-0.90.82	-1.8/-0.96	-4.69/-4.75	-7.34/-17.9	-18.58/-7.23	-7.85/-12.18	-3.32/-8.47	-3.65/-1.43	-2.14/-1.81	-2.35/-0.64	0.430.63	1.97/-0.19
Θ(105°)	1.93/-3.7	1.94/-1.35	0.04/-2.4	-6.31/-4.86	-3.09/-1.48	-5.94/-18.87	-10.65/-12.03	-17.97/-7.47	-6.29/-8.01	-5.64/-1.43	0.37/-0.07	-0.99/-1.05	1.13/-0.05	1.17/-0.64	-0.79/-5.89	-3.3/-8.89	-18.74/-12.73	-14.04/-10.31	-4.61/-19.01	-5.45/-4.38	-3.2/-4.57	-2.630.01	0.650.64	2.48/-2.32
Θ(112.5°)	-0.29/-1.87	-0.79/-2.08	-4.46/-3.64	-0.680.18	-2.39/-4.75	-11.23/-15.48	-14.52/-18.84	-12.38/-10.22	-6.21/-4.99	-3.61/-2.82	0.07/-1.54	0.98/-0.7	0.48/-1.46	-0.64/-3.04	-4.51/-7.54	-10.81/-10.32	-11.89/-11.8	-19.1/-11.2	-7.78/-13.25	-3.4/-8.16	-4.91/-6.58	-2.240.27	0.290.56	1.080.74
Θ(120°)	-0.22/-1.02	-1.69/-1.78	-3.47/-0.93	0.060.39	-1.75/-5	-14.14/-18.56	-17.58/-11.38	-11.64/-12.35	-5.63/-3.53	-3.12/-3.38	-1.04/-0.54	-0.29/-2.85	-2.38/-7.93	-4.96/-5.7	-6.39/-9.61	-15.25/-18.93	-11.81/-19.4	-18.52/-8.5	-12.25/-8.58	-4.94/-4.33	-4.47/-8.85	-1.64/-1.01	0.42/-1.8	2.47/-1.31
Θ(127.5°)	0.69/-1.18	1.15/-1.77	2.91/-73	0.46/-1.32	-3.42/-5.46	-9.53/-12.59	-18.82/-17.22	-18.42/-18.94	-9.82/-3.82	-2.47/-1.79	-3.21/-2.86	-2.72/-5.49	-6.29/-10.22	-12.48/-10.63	-14.42/-13.95	-18.71/-19.05	-16.81/-18.16	-12.66/-15.09	-17.68/-16.83	-10.51/-8.28	-9.55/-9.28	-3.86/-3.62	-3.41/-1.83	-0.33/-0.11
Θ(135°)	2.14/-3.13	2.59/-2.04	1.740.58	-0.93/-1.76	-2.79/-7.58	-14.32/-19.19	-17.92/-16.08	-13.24/-13.47	-12.26/-7.64	-5.15/-1.7	-1.61/-3.51	-6.78/-6.34	-6.56/-8	-13.89/-16.84	-18.08/-17.09	-17.65/-14.63	-19.01/-18.83	-17.87/-18.98	-11.71/-18.69	-12.76/-11.04	-10.07/-7.06	-5.56/-4.21	-1.88/-3.05	-3.79/-1.75
Θ(142.5°)	1.912.74	1.04/-0.4	-1.15/-1.24	-1.21/-1.28	-2.79/-5.93	-12.24/-18.21	-18.22/-13.05	-8.59/-9.83	-16.83/-18.09	-12.92/-11.61	-6.08/-4.15	-6.27/-7.07	-17.86/-12.36	-12.08/-14.06	-16.24/-18.47	-15.74/-11.35	-11.3/-13.58	-12.89/-18.92	-18.05/-18.68	-14.13/-11.83	-4.59/-11.74	-3.06/-1.01	0.14/-0.19	0.560.93
Θ(150°)	-0.39/-1.22	0.870.08	0.590.21																					



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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.08	4.48	4.54	4.18	3.9
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/150	Phi/52.5/187.5	Phi/52.5/202.5	Phi/105/180	Phi/105/157.5

Gain Result

Freq(Hz)	2.45GPol.	PhilAnt. 1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)								
Θ(0°)	-3.57/-3.58	-3.87/-4.39	-4.81/-5.25	-5.79/-6.61	-7.63/-9.4	-11.05/-12.13	-12.25/-12.31	-10.08/-9.45	-7.11/-5.57	-4.53/-3.77	-3.32/-3.21	-3.04/-3.15	-2.82/-2.94	-3.32/-3.87	-4.42/-2.58	-5.91/-6.7	-7.68/-8.58	-9.93/-12.54	-15.73/-18.6	-18.47/-14.58	-11.41/-9.19	-7.75/-6.63	-5.75/-5.05	-4.49/-4.09								
Θ(7.5°)	2.26/-2.71	-3.49/-4.42	-5.41/-6.36	-7.36/-8.66	-11.12/-13.97	-16.78/-16.48	-15.05/-12.72	-10.76/-9.91	-7.84/-6.62	-5.61/-5.23	-4.29/-4.2	-4.36/-4.29	-4.08/-4.25	-4.65/-5.19	-5.41/-6.13	-6.42/-6.66	-7.58/-7.54	-9.19/-9.94	-10.39/-10.19	-9.58/-8.52	-7.57/-6.51	-5.67/-4.79	-4.16/-3.6	-3.18/-2.94								
Θ(15°)	-2.68/-3.37	-4.33/-5.66	-6.54/-8.03	-10.04/-13.39	-18.11/-18.98	-14.81/-11.09	-9.26/-7.45	-7.26/-6.1	-5.45/-4.82	-4.31/-3.96	-3.65/-3.53	-5.87/-6.68	-6.95/-4.83	-6.76/-6.52	-6.34/-6.59	-6.25/-6.2	-6.76/-7.7	-9.29/-10.26	-8.94/-6.77	-4.59/-3.12	-2.25/-1.97	-2.02/-2.18	-2.33/-2.25	-2.17/-2.18								
Θ(22.5°)	-3.73/-4.28	-6.21/-7.56	-9.74/-13.65	-17.45/-19.07	-14.16/-10.18	-7.89/-6.7	-5.67/-5.87	-5.36/-5.01	-4.16/-3.51	-2.71/-2.1	-1.71/-1.46	-1.61/-2.32	-3.41/-5.19	-7.39/-8.26	-6.76/-5.56	-4.05/-3.95	-3.95/-5.45	-7.33/-10.12	-9.86/-6.3	-4.04/-0.98	-0.50/-0.3	-0.71/-1.38	-2.07/-2.55									
Θ(30°)	-7.42/-6.92	-6.21/-6.44	-7.07/-7.88	-8.63/-9.84	-10.93/-10.68	-8.08/-6.69	-6.27/-5.57	-4.84/-4.28	-3.63/-2.98	-2.09/-2.76	-0.67/-0.1	-0.05/-0.32	-1.29/-3.02	-5.9/-0.5	-6.99/-4.92	-3.21/-2.84	-2.85/-3.71	-5.59/-5.89	-10.87/-8.07	-4.07/-1.22	0.62/-1.4	1.71/-1.3	0.11/-1.25	-2.87/-4.52								
Θ(37.5°)	-8.87/-8.28	-8.47/-7.24	-2.27/-3.41	-4.39/-6.11	-8.21/-9.88	-8.17/-7.55	-6.23/-5.27	-4.46/-3.83	-3.16/-3.27	-1.59/-0.48	0.470/-0.2	1.151/-0.9	0.111/-1.81	-4.92/-8.07	-8.07/-5.46	-4.32/-3.79	-4/-4.43	-5.89/-8.23	-9.71/-8.67	-5.07/-2.66	-0.37/-1.1	1.64/-1.21	0.11/-1.41	-3.72/-6.94								
Θ(45°)	-4.17/-4.44	-5/-3.85	-2.51/-2.51	-3.51/-5.18	-7.27/-8.48	-8.22/-7.04	-5.51/-4.88	-6.62/-5.04	-5.23/-4.95	-2.88/-1.57	-0.230/-0.76	1.241/-33	0.77/-0.81	-6.82/-7.44	-9.96/-7.42	-6.92/-6.93	-7.79/-8.74	-10.22/-10.83	-9.39/-7.12	-5.08/-3.06	-1.43/-0.12	0.420/-0.3	0.32/-2.8	-4.64/-6.97								
Θ(52.5°)	-0.570/-0.2	-0.33/-1.28	-1.4/-1.1	-2.41/-6.33	-8.83/-8.41	-7.55/-5.88	-5.02/-4.44	-4.53/-4.91	-5.88/-6.02	-3.97/-2.38	-0.840/-47	0.981/03	0.59/-1.04	-3.96/-8.05	-10.72/-9.09	-11.82/-12.16	-12.58/-13.73	-18.75/-18.03	-10.99/-9.66	-4.65/-3.41	-2.74/-2.46	-2.76/-3.78	-5.99/-6.55	-5.96/-4.6								
Θ(60°)	0.511/-1.59	1.2/-0.16	-0.27/-0.76	-0.44/-8.8	-9.27/-7.83	-6.59/-6.49	-4.3/-3.1	-2.61/-2.73	-3.55/-4.64	-4.74/-3.59	-1.930/-0.3	0.620/-7	0.24/-1.31	-2.77/-6.98	-10.25/-9.47	-11.68/-9.39	-7.84/-8.2	-10.89/-17.54	-13.84/-7.74	-5.28/-4.56	-4.25/-4.72	-6.7/-9.5	-12.76/-11.38	-7.34/-2.76								
Θ(67.5°)	0.251/-77	0.96/-0.58	-0.56/-1.74	-5.43/-11.37	-9.43/-10.17	-12.48/-11.44	-7.38/-4.01	-1.89/-1.13	-1.3/-2.78	-3.84/-2.29	-1.16/-0.08	-0.270/-85	-1.31/-2.05	-3.77/-6.44	-9.1/-6.94	-4.92/-5.53	-9.38/-18.52	-10.48/-7.18	-6.46/-6.1	-3.2/-3.6	-7.76/-18.9	-10.11/-6.72	-6.1/-2.52									
Θ(75°)	0.872/-2	0.63/-1.5	-1.9/-3.1	-7.43/-17.2	-12.7/-13.38	-16.65/-16.22	-12.22/-5.07	-1.85/-0.62	-0.4/-1.42	-3.34/-2.99	-1.66/-3.7	-1.42/-1.97	-1.4/-1.11	-1.66/-4.74	-8.59/-10.46	-13.74/-4.92	-2.92/-5.34	-7.25/-18.44	-14.96/-5.33	-9.52/-11.19	-9.29/-7.95	-9.45/-11.72	-9.86/-7.93	-4.35/-2.24								
Θ(82.5°)	0.352/-0.1	0.5/-2.19	-3.35/-3.87	-8.58/-18.4	-15.41/-11.52	-11.31/-17.78	-13.63/-4.92	-0.98/-0.17	-0.35/-0.42	-1.1/-0.41	0.80/-35	0.47/-1.05	-0.69/-1.44	-4.16/-8.32	-9.59/-6.87	-4.93/-2.81	-2.08/-3.74	-8.91/-8.62	-8.71/-6.7	-8.85/-4.76	-3.51/-2.57	-4.8/-1.5	-2.57/-1.24	-2.87/-2.77								
Θ(90°)	-0.740/-77	-0.63/-3.23	-3.99/-4.95	-10.31/-18.84	-12.97/-9.39	-10.25/-17.05	-14.62/-5.17	-0.41/-0.6	0.50/-35	0.410/-6	1.81/-46	0.08/-1.04	-1.96/-1.61	-3.29/-4.46	-3.97/-4.06	-6.77/-2.91	-2.5/-4.1	-9.36/-16.32	-11.8/-9.6	-13.91/-7.91	-1.46/-6.51	-2.52/-3.32	-3.57/-3.25									
Θ(97.5°)	-1.870/-84	-2.93/-6.7	-4.79/-5.67	-9.26/-16.48	-9.72/-1.74	-9.01/-14.38	-13.03/-5.12	-0.21/-59	0.650/-28	1.372/-15	3.182/-33	0.930/-49	0.90/-38	-0.89/-0.51	-0.84/-3.4	-6.33/-1.4	-1.9/-2.18	-7.27/-18.27	-7.87/-5.45	-7.69/-6.75	-4.57/-3.02	-4.72/-5.8	-2.9/-1.85	-3.3/-4.12								
Θ(105°)	-3.01/-1.89	-4.72/-11.49	-7.12/-6.53	-8.72/-13.03	-8.59/-5.48	-6.67/-9.13	-9.64/-4.34	0.021/-87	1.060/-35	1.728/-68	3.623/-19	1.771/-24	1.691/-36	-0.79/-0.48	0.64/-1.95	-6.55/-2.66	-6.28/-18.42	-4.72/-7.89	-9.32/-16.83	-11.36/-8.25	-8.54/-5.53	-6.93/-6.5	-6.5/-5.3									
Θ(112.5°)	-4.37/-2.38	-4.3/-10.66	-17.05/-4.13	-11.35/-13.73	-9.16/-5.55	-5.65/-8.13	-8.25/-3.86	-0.121/-17	0.420/-73	2.832/-66	2.392/-67	2.159/-91	0.781/-88	1.04/-2.33	-6.12/-2.54	-0.59/-3.43	-9.43/-10.47	-5.59/-3.78	-4.42/-5.49	-4.78/-4.33	-6.94/-12.32	-7.34/-6.6	-9.17/-7.24									
Θ(120°)	-12.07/-6.3	-5.9/-8.36	-12.31/-15.54	-10.64/-10.67	-9.64/-6.31	-4.97/-5.81	-6.96/-4.9	-1.86/-0.62	-0.320/-24	3.23/-65	3.843/-39	2.572/-77	2.170/-6	0.41/-74	1.8/-21.1	-9.82/-8.71	-6.74/-9.96	-18.6/-13.76	-7.78/-6.15	-7.24/-7.89	-8.85/-8.18	-9.63/-13.78	-11.94/-9.82	-14.1/-18.31								
Θ(127.5°)	-16.87/-16.19	-11.48/-8.94	-7.44/-11.07	-7.44/-6.7	-8.63/-7.25	-5.56/-5.17	-5.06/-3.34	-1.72/-0.73	0.692/-39	3.122/-73	2.882/-61	2.442/-22	0.28/-0.31	1.25/-1.62	-0.06/-4.04	-6.56/-4.96	-4.41/-6.02	-10.76/-18.2	-11.33/-8.29	-6.86/-5.79	-5.16/-5.84	-9.02/-18.8	-10.97/-6.5	-6.59/-12.69								
Θ(135°)	-11.61/-15.63	-10.89/-7.69	-6.21/-7.54	-7.45/-6.3	-6.99/-6.8	-6.32/-6.2	-5.52/-5.06	-3.51/-1.66	0.241/-33	1.110/-85	1.751/-86	1.741/-37	-0.59/-2.2	1.34/-63	1.820/-65	-4.41/-2.79	-3.45/-4.45	-6.44/-8.99	-12.2/-12.85	-9.39/-6.56	-5.35/-5.9	-8.95/-14.31	-10.23/-6.4	-5.8/-12.6								
Θ(142.5°)	-12.28/-18.06	-11.57/-8.1	-5.53/-3.9	-6.95/-1.72	-6.99/-6.1	-5.24/-4.77	-3.97/-5.34	-2.9/-1.71	-1.74/-2.09	-2.27/-1.08	0.460/-75	-0.09/-1.73	-2.62/-0.26	0.892/-52	2.41/-36	-0.13/-2.1	-3.51/-1.44	-5.29/-7.08	-9.61/-12.29	-10.54/-11.13	-5.6/-5.24	-6.28/-8.58	-9.99/-8.6	-7.19/-9.04								
Θ(150°)	-10.64/-18.01	-17.57/-12.69	-9.78/-7.81	-7.92/-9.34	-10.16/-10.34	-8.43/-6.43	-4.79/-4.24	-3.98/-4.59	-5.21/-3.97	-3.67/-1.97	-0.58/-0.69	-1.48/-3.19	-3.33/-0.79	0.66/-1.44	1.350/-16	-0.32/-2.65	-4.54/-6.59	-9.02/-12.98	-17.88/-17.33	-14.08/-11.19	-9.61/-9.6	-10.32/-12.12	-13.47/-12.91	-12.55/-10.7								
Θ(157.5°)	-10.55/-15.54	-14.74/-13.32	-14.59/-14.18	-13.71/-13.84	-14.22/-13.89	-11.36/-9.96	-8.54/-8.19	-8.29/-8.79	-8.02/-6.32	-4.12/-3.35	-2.29/-4.71	-6.61/-6.23	-3.33/-1.36	-0.67/-0.58	-0.79/-1.62	-2.64/-3.34	-5.13/-7.14	-10.46/-15.93	-18.58/-12.66	-9.42/-8.53	-8.98/-11.09	-15.13/-17.91	-14.77/-13.73	-11.45/-10.26								
Θ(165°)	-14.32/-18.87	-18.26/-18.09	-17.95/-17.41	-17.79/-18.58	-19.33/-17.76	-18.04/-15.93	-13.85/-12.51	-8.56/-9.33	-7.8/-6.41	-5.78/-5.95	-5.95/-6.63	-7.63/-8.66	-7.41/-3.86	-2.9/-2.7	-2.55/-3.25	-3.82/-5.38	-6.64/-9.4	-12.76/-17.8	-18.26/-15.45	-13.03/-12	-12.05/-13.03	-14.13/-15.37	-14.62/-12.92	-11.37/-10.48								
Θ(172.5°)	-18.71/-18.53	-19.15/-16.87	-14.36/-12.47	-13.56/-13.47	-13.21/-13.61	-10.66/-13.2	-10.40/-10.89	-9.64/-9.83	-8.68/-8.96	-9.35/-11.23	-13.42/-15.82	-18.25/-12.83	-10.14/-8.16	-7.6/-7.55	-7.23/-7.33	-8.48/-9.75	-12.46/-14.31	-18.56/-17.96	-19.75/-16.91	-14.71/-14.53	-18.86/-16.61	-18.68/-18.54	-19.08/-14.49	-13.53/-13.32								
Θ(180°)	-18.71/-15.33	-13.27/-12.16	-11.25/-11.76	-12.34/-11.96	-11.48/-10.81	-10.41/-10.63	-12.01/-10.84	-10.54/-10.45	-11.53/-11.43	-17.5/-18.41	-17.5/-18.41	-17.5/-18.41	-18.41/-18.81	-13.49/-13.76	-13.92/-13.99	-16.17/-15.81	-18.28/-18.3	-18.18/-18.55	-19.12/-18.63	-17.35/-17.4	-18.39/-16.77	-19.71/-21.21	-19.68/-18.09	-17.76/-17.71								
Freq(Hz)	2.45GPol.	ThetaAnt. 1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)								
Θ(0°)	-1.856/-18.38	-17.77/-15.25	-12.06/-9.83	-8.19/-6.6	-4.98/-4.11	-3.81/-3.73	-3.82/-6.41	-5.08/-5.91	-6.39/-6.46	-6.79/-7.11	-7.63/-8.72	-10.28/-12.54	-14.93/-16.69	-16.43/-13.67	-11.48/-9.75	-8.25/-7.44	-6.58/-6.64	-5.33/-5.94	-4.94/-5.05	-4.88/-4.87	-5.51/-6.29	-7.42/-8.75	-10.18/-11.57	-13.4/-15.8								
Θ(7.5°)	-11.93/-10.22	-8.53/-7.04	-5.59/-6.66	-4.46/-4.6	-3.01/-2.82	-2.65/-2.75	-4.56/-5.59	-5.92/-6.49	-7.18/-29	-8.65/-10.39	-12.59/-16.55	-18.65/-19.01	-17.32/-17.87	-18.16/-15.86	-13.89/-11.25	-10.58/-11.8	-7.57/-6.33	-6.17/-5.92	-6.07/-5.81	-6.01/-6.35	-6.97/-7.89	-9.29/-10.78	-12.52/-13.3									
Θ(15°)	-7.4/-6.55	-5.62/-4.62	-3.62/-2.78	-2.23/-1.8	-1.66/-1.6	-1.73/-1.94	-2.81/-3.06	-4.12/-4.87	-5.74/-6.82	-7.9/-9.9	-9.66/-10.91	-12.32/-16.55	-15.94/-17.42	-17.29/-18.28	-18.76/-18.66	-18.57/-12.6	-10.51/-7.12	-6/-3.7	-4.17/-4.52	-5.19/-5.62	-7.46/-9.32	-10.73/-12.15	-12.61/-12.22	-11.42/-10.36								
Θ(22.5°)	-5.86/-4.94	-3.68/-2.87	-2.07/-1.58	-1.36/-1.32	-1.51/-1.83	-1.96/-2.86	-3.09/-3.95	-4.56/-4.89	-5.49/-6.08	-7.05/-9.3	-1.11/-10.82	-12.79/-14.95	-16.71/-16.06	-15.87/-16.8	-17.93/-17.93	-18.75/-12.13	-7.27/-7.47	-2.17/-1.21	-0.65/-0.87	-1.61/-2.99	-5.13/-6.69	-14.6/-18.19	-16.8/-11.11	-1.86/-6.81								
Θ(30°)	-3.32/-3.49	-3.34/-2.78	-2.08/-1.67	-1.43/-1.48	-1.76/-1.86	-1.55/-1.65	-1.99/-2.69	-3.27/-4.49	-5.56/-6.36	-6.57/-7.33	-7.17/-9.72	-8.81/-12.52	-15.88/-16.39	-14.44/-13.25	-14.04/-18.02	-18.74/-11.65	-6.08/-3.36	-1.210/-17	0.230/-31	-0.22/-1.16	-3.02/-5.95	-10.71/-15.63	-11.14/-7.38	-5.26/-4.26								
Θ(37.5°)	-2.33/-1.5	-4.93/-0.53	-3.59/-2.81	-2.53/-2.71	-2.06/-1.81	-1.37/-1.4	-1.34/-1.87	-2.89/-3.82	-5.16/-7.4	-7.59/-7.35	-6.58/-6.93	-8.63/-11.95	-17.94/-17.38	-12.85/-10.2	-10.22/-11.74	-11.64/-9.64	-5.89/-3.08	-1.7/-0.8	-0.63/-0.88	-1.37/-1.56	-4.28/-1.78	-11.75/-13.41	-8.66/-5.24	-2.44/-2.67								
Θ(45°)	-2.45/-3.87	-5.73/-6.29	-5.36/-4.4	-2.32/-4.59	-3.94/-2.76	-1.04/-0.44																										



Radiated Composite Gain Data of SM-DFS

Appendix A.2

Θ(22.5°)	0.36/-0.17	-0.82/-0.98	-0.71/-0.73	-1.25/-1.35	-1.86/-2.88	-3.67/-4.67	-6.4/-8.89	-13.59/-18.36	-14.24/-7.13	-2.98/-0.91	0.03/0.96	1.83/2.13	2.52/49	1.96/148	0.81/0.13	0.02/-0.01	-0.58/-0.58	-0.95/-1.89	-3.8/-6.72	-9.33/-7.92	-5.18/-2.26	-1.93/-0.47	1/17.9	2.81/7.9
Θ(30°)	-2.67/-2.95	-3.89/-3.3	-3.09/-3.08	-2.97/-2.11	-2.3/-2.89	-3.83/-4.19	-4.97/-6.89	-9.77/-13.83	-12.21/-6.46	-0.88/-0.42	1.61/93	2.08/2.2	2.52/62	2.06/197	2/1.86	1.32/0.59	-0.55/-1.64	-2.67/-3.46	-3.58/-3.09	-2.77/-3.03	-2.22/-0.78	0.04/-0.25	-0.45/0.21	6.07/0.25
Θ(142.5°)	-6.31/-5.52	-5.17/-6.34	-6.54/-5.13	-2.9/-2.11	-2.64/-3.21	-4.04/-4.86	-6.05/-7.56	-11.84/-5.68	-2.31/-0.16	1.16/2.24	2.57/2.49	2.89/3.1	2.93/2.11	1.63/1.25	0.58/-0.57	-1.7/-2.68	-3.23/-4.65	-6.68/-1.72	-5.91/-4.38	-3.89/-3.29	-2.46/-2.06	-3.32/-5.21	-5.21/-4.18	
Θ(45°)	-5.42/-3.29	-3.98/-4.84	-7.81/-5.96	-3.33/-2.67	-3.3/-3.31	-4.31/-7.63	-11.19/-10.41	-10.04/-13	-17.82/-11.76	-4.46/-1.98	0.18/1.92	3.19/3.44	2.83/12	3.04/1.47	0.56/0.88	0.22/-1.5	-3.24/-4.54	-5.48/-5.58	-6.05/-6.94	-7.69/-6.85	-4.46/-3.09	-4/-6.93	-9.25/-8.26	-8.91/-11.68
Θ(52.5°)	-3.84/-3.32	-2.65/-3.99	-6.28/-6.28	-9.21/-9.4	-6.9/-6.05	-6.07/-9.36	-18.45/-10.45	-4.59/-5.33	-4.99/-11.47	-9.71/-3.2	0.06/1.16	3.34/0.42	3.34/3.96	4.33/4.54	2.93/0.97	-1.08/-5.02	-8.13/-8.5	-7.8/-9.03	-11.01/-11.32	-9.98/-6.97	-5.39/-5.53	-5.69/-5.51	-5.45/-6.09	-5.44/-5.37
Θ(60°)	-4.44/-4.36	-3.7/-3.05	-4.33/-5.08	-7.86/-12.8	-8.79/-7.46	-5.59/-5.55	-7.91/-9.59	-6.94/-4.33	-0.81/-3.31	-13.97/-8.97	-3.2/-0.53	1.99/3.53	3.04/2.96	2.98/1.9	-2.29/-1.67	-1.52/-3.29	-5.74/-6.63	-10.23/-15.98	-15.38/-18.3	-18.9/-16.89	-8.05/-7.1	-8.19/-7.62	-4.82/-3.51	-3.69/-2.47
Θ(67.5°)	-5.75/-5.24	-5.27/-2.62	-1.44/-0.99	-3.54/-8.15	-7.1/-7.81	-5.48/-4	-6.12/-11.01	-10.66/-7.17	-3.74/-3.81	-3.57/-4.55	-3.48/-1.69	0.332/0.3	1.89/1.53	2.92/45	0.26/-0.24	-2.07/-5.09	-6.68/-10.42	-17.45/-13.88	-8.87/-13.49	-17.18/-16.07	-13.55/-14	-10.27/-6.92	-5.98/-3.6	-4.34/-5.6
Θ(75°)	-4.47/-4.36	-4.38/-1.86	-0.45/-0.26	-2.5/-3.86	-5.57/-8.59	-7.68/-8.81	-7.45/-5.15	-6.91/-15.98	-6.15/-1.01	-0.16/-1.95	-4.06/-3.49	-2.50/56	2.06/-1.28	0.94/-0.84	-1.23/0.08	-1.46/-2.12	-4/-8.33	-17.69/-10.04	-5.71/-12.05	-16.55/-18.51	-17.01/-17.13	-11.88/-7.94	-6.5/-4.06	-3.92/-5.55
Θ(82.5°)	-4.76/-3.43	-1.55/-2.74	-2.54/-1.81	-4.29/-3.94	-4.54/-5.87	-10.29/-17.91	-6.86/-2.67	-2.66/-8.73	-5.9/-0.33	0.73/0.72	0.46/-0.87	-1.66/-1.1	-0.58/1.26	1.24/1.8	1.01/1.11	-2.55/-2.05	-5.86/-6.07	-8.95/-11.96	-3.95/-7.29	-18.54/-14.94	-12.04/-6.06	-6.61/-4.93	-3.87/-5.75	
Θ(90°)	-2.22/-2.68	-3.57/-3.86	-2.81/-4.01	-8.61/-5.79	-5.42/-6.52	-12.9/-15.49	-8.23/-3.37	-3.54/-6.9	-16.15/-7.7	-0.12/-1.44	1.27/1.25	0.44/0.61	0.38/1.76	0.95/1.82	0.79/1.52	-2.17/-3	-7.41/-6.76	-12.13/-11.7	-5.9/-11.42	-17.4/-13.52	-9.21/-11.54	-17.01/-8.12	-6.82/-4.24	-2.44/-5.38
Θ(97.5°)	-3.92/-5.68	-5.92/-4.72	-7.2/-16.21	-11.17/-11.31	-6.07/-7.42	-9.74/-8.45	-7.07/-2.54	-3.47/-7.77	-7.1/-11.45	-5.31/-1.69	1.49/2.97	2.71/1.99	2.76/2.58	2.21/0.88	0.4/0.42	-4.15/-3.48	-7.67/-4.99	-8.78/-18.13	-9.29/-11.23	-13.69/-10.65	-12.99/-8.56	-8.49/-7.47	-5.71/-4.48	-3.44/-6.03
Θ(105°)	-7.68/-7.3	-7.16/-8.34	-13.33/-13.3	-10.22/-11.81	-7.21/-8.25	-8.06/-5.29	-7.76/-3.83	-3.55/-9.33	-6.2/-6.61	-11.5/-7.5	-0.42/65	3.42/3.51	3.33/42	2.68/2.33	0.44/0.42	-5.31/-14.89	-6.75/-3.22	-5.31/-14.89	-14.8/-13.3	-13.9/-17.84	-18.85/-8	-7.51/-4.22	-3.1/-6.32	-5.27/-4.54
Θ(112.5°)	-14.55/-11.45	-17.9/-10.53	-14.33/-18.63	-16.92/-12.32	-8.41/-8.79	-5.95/-4.5	-9.45/-4.53	-4.13/-7.4	-2.59/-2.19	-4.86/-7.62	-4.06/-0.29	0.39/1.78	1.62/1.12	0.89/-0.28	-5.59/-4.6	-8.41/-6.98	-17.09/-5.14	-6.75/-9.63	-18.25/-18.23	-11.05/-17.6	-12.47/-8.05	-7.34/-13.11	-8.26/-5.19	-5.61/-11.42
Θ(120°)	-10.28/-14.66	-18.82/-13.27	-13.78/-18.22	-18.02/-19.94	-13.22/-9.38	-8.39/-6.41	-13.45/-7.34	-6.76/-6.2	-2.49/-0.83	-0.69/-2.51	-3.53/-4.23	-2.69/-2.07	0.07/-1.26	-3/-6.55	-3.93/-2.23	-6.82/-7.34	-18.72/-9.37	-10.81/-12.37	-13.08/-18.23	-16.08/-16.23	-12.33/-13.75	-17.26/-8.75	-9.37/-10.46	-15.06/-12.29
Θ(127.5°)	-18.51/-13.27	-12.84/-14.07	-17.84/-15.96	-18.39/-15.98	-11.82/-9.93	-9/-15.31	-15.33/-7.29	-6.23/-5.91	-1.02/0.89	1.02/1.88	0.94/-0.04	-0.01/-0.42	-0.15/-0.48	1.21/0.87	0.54/-0.24	-5.98/-11.93	-8.62/-6.96	-8.24/-5.35	-6.62/-12.91	-19.11/-14.39	-9.58/-13.25	-17.73/-18.4	-18.18/-18.02	-18.01/-16.88
Θ(135°)	-11.75/-15.18	-19.35/-18.1	-15.51/-16.18	-18.32/-14.16	-17.11/-15.21	-13.5/-15.7	-15.19/-7.91	-5.27/-3.07	-0.03/-1.09	2.36/3.21	2.12/2.46	1.73/1.19	0.47/-1.9	-1.25/-2.86	-3.4/-2.65	-5.96/-8	-11.57/-7.89	-17.48/-16.87	-15.15/-18.51	-12.21/-14.16	-18.95/-14.82	-12.06/-11.7	-14.19/-18.53	-17.38/-12.26
Θ(142.5°)	-17.33/-18.6	-17.52/-18.66	-12.84/-12.16	-12.68/-13.82	-15.67/-17.43	-17.76/-13.62	-10.08/-3.72	-4.87/-3.66	-1.59/0.39	1.98/2.69	3.04/0.35	2.79/2.32	1.3/0.02	-0.65/-2.95	-4.18/-5.76	-8.75/-13.11	-8.46/-6.73	-10.53/-9.35	-11.95/-17.42	-15.21/-12.63	-11.7/-15.83	-18.78/-18.28	-18.18/-17.44	-17.71/-18.06
Θ(150°)	-16.65/-12.15	-11.02/-10.45	-10.65/-9.88	-11.63/-14.5	-12.46/-14.16	-17.13/-16.85	-14.73/-10.47	-7.41/-5	-2.78/-0.71	1.33/2.13	2.22/2.38	2.15/1.09	-0.13/-0.25	-0.5/-0.87	-1.12/-2.72	-2.76/-12.41	-2.89/-3.16	-4.98/-6	-6.65/-9.17	-12.38/-13.8	-12.83/-13.62	-17.17/-14.7	-15.99/-11.46	-10.44/-13.13
Θ(157.5°)	-16.44/-14.19	-12.84/-12.23	-9.56/-7.84	-8.12/-8.27	-7.44/-7.46	-8.54/-9.86	-10.79/-9.62	-7.25/-4.47	-2.32/-0.5	0.55/1.26	1.73/1.46	0.42/0	0.57/0.14	-0.61/-0.31	-0.18/-0.54	-1.26/-2.56	-4.28/-5.91	-8.82/-14.31	-18.53/-18.5	-17.42/-18.95	-19.16/-13.89	-13.02/-14.21	-17.34/-18.22	-17.62/-17.89
Θ(165°)	-8.74/-10.89	-12.79/-12.18	-10.55/-9.39	-9.27/-9.37	-10.03/-11.02	-12.05/-12.14	-12.67/-10.74	-10.08/-7.88	-5.64/-4.1	-2.9/-2.23	-1.61/-1.26	-1.09/-0.46	-0.25/-0.9	-2.2/-2.42	-2.01/-2.43	-4.23/-6.74	-10.32/-10.87	-11.1/-11.68	-14.89/-17.41	-17.77/-17.32	-14.39/-13.5	-18.05/-17.34	-18.81/-14.4	-13.61/-12.47
Θ(172.5°)	-13.83/-15.61	-15.26/-12.99	-10.59/-9.27	-8.79/-8.5	-8.59/-8.7	-8.87/-9.95	-9.15/-9.28	-9.6/-9.88	-9.01/-7.81	-7.01/-6.35	-5.66/-7.59	-6.75/-7.49	-7.86/-8.33	-7.76/-6.78	-6.6/-6.72	-7.51/-8.4	-9.4/-10.48	-12.54/-13.45	-14.31/-15.37	-13.7/-18.85	-18.12/-17.15	-16.79/-17.33	-18.37/-17.57	-18.31/-17.77
Θ(180°)	-14.73/-16.48	-18.46/-18	-15.82/-14.73	-15.27/-14.43	-14.81/-15.57	-16.3/-16.25	-16.98/-18.59	-18.42/-18.34	-18.14/-18.6	-18.81/-18.79	-18.69/-18.58	-18.03/-16.85	-16.85/-15.05	-11.78/-10.19	-9.26/-8.73	-8.93/-9.57	-9.88/-11.96	-15.11/-17.36	-17.71/-19.88	-18.06/-16.82	-18.71/-15.89	-14.72/-12.89	-12.55/-12.75	-12.31/-11.73
Freq(Hz)	5.3GPol	ThetaAnt.1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-10.31/-14.22	-18.42/-16.13	-11.89/-8.49	-6.2/-4.57	-3.24/-2.17	-1.2/-0.57	-0.19/0.17	0.02/-0.21	-0.10/-0.32	-1.01/-2.04	-3.18/-4.53	-7.95/-10.5	-11.1/-14.99	-17.48/-17.28	-17.29/-19.13	-5.8/-3.66	-2.36/-1.54	-1.56/-1.66	-0.87/0.12	0.35/0.43	0.86/0.66	0.21/-0.78	-1.83/-2.83	-3.82/-5.78
Θ(7.5°)	-11.19/-10.48	-12.85/-10.93	-8.82/-6.26	-4.77/-3.88	-2.69/-2.03	-1.93/-2.24	-1.65/-1.05	-0.94/-1.28	-1.97/-2.08	-1.83/-2.18	-3.12/-4.02	-5.06/-6.42	-10.02/-14.26	-16.24/-14.46	-13.23/-10.38	-7.27/-5.28	-3.25/-2.95	-1.86/-1.35	-0.39/0.22	0.37/0.3	0/-0.13	-0.33/-0.97	-2.8/-4.6	-5.55/-7.2
Θ(15°)	-11.16/-11.46	-9.09/-8.67	-7.66/-5.67	-4.91/-4.27	-3.3/-3.22	-3.36/-2.65	-3.58/-2.73	-1.77/-1.35	-1.88/-1.41	-2.21/-3.33	-4.58/-5.49	-7.02/-8.21	-9.35/-9.91	-11.66/-10.97	-6.67/-4.17	-2.15/-0.62	0.59/0.91	1.42/0.7	2.63/2.66	2.06/1.61	1.59/1	-0.64/-3.29	-5.33/-7.84	
Θ(22.5°)	-9.23/-12.21	-8.69/-7.08	-6.08/-5.79	-5.84/-6.2	-6.09/-6.9	-7.84/-10.12	-9.88/-7.51	-6.03/-4.87	-3.99/-3.57	-2.73/-2.9	-3.9/-4.62	-5.08/-4.54	-4.99/-6.25	-7.59/-9.3	-11.99/-5.93	-4.55/-3.34	-2.72/-1.62	-0.79/0.16	1.04/1.52	2.05/2.24	1.99/1.76	1.46/0.76	-0.22/-1.99	-3.51/-5.92
Θ(30°)	-9.45/-9.92	-8.68/-7.36	-8/-8.58	-7.72/-6.98	-7.19/-7.75	-7.32/-7.69	-8.41/-9.22	-8.87/-7.67	-6.9/-5.65	-4.85/-4.7	-5.99/-7.81	-7.97/-7.14	-6.38/-6.81	-9.92/-15.41	-8.32/-4.23	-2.84/-3.77	-1.94/-1.18	-0.10/32	0.32/0.57	1.32/2.44	2.76/1.96	0.81/-0.22	-1.07/-3.56	-5.5/-6.2
Θ(37.5°)	-17.47/-10.52	-8.56/-9.02	-12.82/-17.41	-11.04/-7.44	-4.81/-1.86	-0.11/0.1	-0.85/-3.11	-7.02/-13.76	-15.67/-10.88	-8.48/-7.39	-7.67/-9.44	-15.21/-18.92	-13.77/-12.34	-16.22/-9.49	-3.79/-1.48	-0.73/-0.77	-1.38/-1.12	0.29/0.65	0.05/-0.75	-1.69/-1.88	-0.50/-42	-0.37/-1.71	-3.05/-7.39	-14.53/-12.18
Θ(45°)	-9.49/-10.28	-9.02/-9.83	-15.48/-18.15	-13.6/-7.06	-3/-0.14	0.92/0.53	-0.26/-1.24	-3.32/-8.31	-17.82/-13.73	-9.19/-10.37	-8.82/-6.73	-9.43/-13.94	-14.84/-14.98	-12.29/-7.79	-3.59/-1.57	-1/-3.01	-6.08/-5.51	-3.17/-2.38	-2.87/-4.45	-5.41/-5.04	-4.72/-2.65	-2.24/-6.69	-5.92/-8.13	-13.64/-15.97
Θ(52.5°)	-4.11/-8.02	-16.37/-18.18	-18.6/-17.44	-12.07/-7.91	-4.87/-5.08	-5.43/-6.06	-6.3/-6.1	-5.51/-6.78	-11.41/-18.71	-11.63/-9.78	-5.18/-3.74	-5.42/-9.22	-9.83/-10.99	-7.01/-4.1	-2.56/-1.03	-0.41/-0.23	-5.84/-5.73	-4.18/-5.34	-6.87/-7.21	-6.03/-4.69	-7.96/-9.94	-8.61/-10.39	-16.12/-19.01	-8.74/-5.91
Θ(60°)	-4.06/-6.3	-17.51/-15.14	-18.65/-12.55	-9.75/-5.4	-8.33/-8.62	-7.71/-12.01	-18.61/-17.25	-13.26/-11.3	-11.43/-18.64	-19.06/-11.98	-8.28/-6.26	-5.04/-8.45	-12.22/-13.61	-12.5/-5.72	-3.71/-2.75	-7.55/-6.33	-7.32/-9.35	-15.02/-13.89	-9.64/-6.64	-11.96/-14.77	-7.81/-8.11	-11.82/-12.87	-6.59/-3.73	
Θ(67.5°)	-4.87/-7.01	-18.3/-12.13	-18.42/-10.22	-4.16/-2.6	-3.6/-2.15	-1.75/-2.95	-5.36/-7.36	-9.86/-11.08	-12.84/-18.08	-18.48/-12.59	-9.52/-9.55	-8.93/-15.39	-17.61/-17.84	-18.06/-8.29	-6.74/-0.73	-1.49/-7.41	-7.71/-14.12	-12.4/-10.08	-12.94/-16.87	-13.15/-18.14	-12.86/-8.14	-4.25/-6.62	-8.57/-10.74	-5.44/-2.02
Θ(75°)	-6.83/-9.09	-18.27/-10.25	-10.84/-9.93	-5.33/-6.1	-4.97/-3.39	-4.04/-5.25	-6.39/-7.15	-6.97/-10.02	-15.27/-18.24	-18.48/-16.35	-12.23/-16.55	-14.98/-18.69	-14.36/-14.											



Radiated Composite Gain Data of SM-DFS

Appendix A.2

Θ (75°)	-2.95/-3.55	-1.82/0.01	1.46/-0.24	-4.04/-12.52	-11.95/-8.22	-8.6/-10.8	-8.44/-7.34	-6.13/-3.1	-0.65/-2.97	-8.09/-9.92	-2.15/0.35	0.99/-1.76	2.65/2.67	2.38/-1.45	-0.81/-4.13	-3.45/-6.03	-2.51/-5.58	-9.32/-14.75	-9.66/-15.3	-12.85/-13.87	-19.17/-14.51	-8.52/-6.26	-6.31/-4.83	-4.78/-3.87
Θ (82.5°)	-4.77/-6.21	-0.64/0.62	-0.48/0.44	-2.56/-11.13	-7.99/-6.79	-7.64/-9.76	-10.71/-19.01	-18.08/-10.08	-3.53/-1.34	-2.21/-1.71	-1.19/-1.11	-0.6/0.2	0.68/0.26	1.29/-2.27	0.39/-0.81	-1.99/-3.56	-1.26/-5.6	-10.43/-18.19	-8.7/-14.83	-10.94/-8.78	-11.03/-17.63	-15.19/-8.52	-7.68/-4.85	-3.77/-3.5
Θ (90°)	-9.71/-5.12	-2.26/-1.41	-2.13/-2.18	-6.77/-8.7	-7.09/-10.47	-14.48/-15.7	-11.5/-13.95	-8.1/-10.21	-11.12/-3.49	-1.41/0.62	0.83/0.32	-1.19/0.03	0.06/0.88	2.09/-0.74	1.54/-1.23	-2.61/-6.71	-1.78/-7.28	-6.88/-14.66	-11.37/-14.1	-18.79/-13.08	-6.46/-11.28	-18.65/-10.6	-6.67/-4.92	-4.28/-5.49
Θ (97.5°)	-12.22/-7.38	-5.62/-6.68	-6.63/-6.67	-13.01/-6.79	-8.38/-15.37	-14.96/-14.03	-10.12/-17.88	-7.65/-5.59	-12.11/-8.02	-1.05/2.41	2.36/2.85	2.34/0.54	1.43/0.68	1.63/-1.79	1.04/-1.12	-3.7/-10.86	-5.11/-6.14	-3.85/-10.78	-14.44/-16.12	-18.46/-15.15	-10.97/-9.14	-13.75/-10.8	-6.64/-5.51	-5.46/-7.78
Θ (105°)	-15.5/-12.27	-9.63/-8.47	-10.54/-10.06	-11.08/-7.88	-6.59/-16.35	-13.21/-18.74	-12.42/-16.72	-9.55/-4.61	-4.5/-11.46	-5.68/0.2	2.58/3.9	3.16/-2.41	2.51/2.51	1.25/0.88	-0.51/-1.69	-1.83/-18.98	-4.95/-4.92	-3.81/-7.72	-18.3/-15.46	-12.2/-18.35	-17.59/-10.42	-12.21/-6.76	-11.86/-6.79	-7.68/-11.92
Θ (112.5°)	-12.11/-13.67	-8.68/-18.65	-12.03/-16.9	-10.55/-8.59	-9.2/-16.76	-17.78/-18.57	-14.46/-17.62	-10.21/-2.77	-1.42/-3.81	-6.49/-2.76	1.12/9.2	3.64/2.28	2.67/-1.65	0.8/-0.14	-4.75/-3.18	-6.92/-10.92	-6.03/-9.84	-7.31/-7.27	-14.56/-18.38	-14.93/-18.86	-14.51/-9.5	-11.69/-11.1	-5.1/-6.54	-18.14/-16.01
Θ (120°)	-18/-17.43	-10.67/-15.41	-18.05/-17.88	-9.98/-10.64	-10.87/-7.66	-12.18/-18.99	-12.77/-8.58	-7.31/-1.12	-0.36/-1.39	-4.28/-5.05	-1.99/0.78	0.91/0.21	-0.15/0.32	-1.38/-3.46	-10.96/-2.73	-3.38/-15.5	-6.53/-9.23	-13.09/-10.27	-18.57/-19.34	-10.28/-15.4	-9.61/-11.45	-13.68/-12.83	-11.31/-18.41	-16.98/-18.85
Θ (127.5°)	-12.75/-9.72	-11.11/-16.32	-15.93/-17.98	-12.54/-12.62	-11.13/-14.84	-18.28/-13.7	-7.83/-8.65	-7.51/-2.3	0.57/0.5	0.47/-0.01	-0.44/-0.77	-0.6/0.2	-0.65/-0.22	-1.03/0.21	-2.79/-1.18	-2.99/-9.83	-11.9/-8.47	-9.82/-16.83	-12.67/-18.28	-14.29/-14.07	-18.05/-18.62	-16.18/-18.23	-18.48/-18.03	
Θ (135°)	-12.48/-18.94	-14.5/-18.78	-17.98/-17.5	-12.43/-13.04	-19.39/-18.01	-14.94/-11.62	-9.16/-8.34	-6.24/-1.05	1.17/0.09	1.67/0.99	1.01/0.44	-0.12/0.13	0.56/0.55	-0.53/-2.19	-4.51/-7.72	-5.09/-5.13	-5.5/-9.27	-8.79/-16.55	-17.5/-19.1	-14.79/-12.85	-18.26/-18.32	-12.4/-10.4	-13.48/-17.61	-17.95/-12.96
Θ (142.5°)	-17.74/-16.52	-11.37/-15.65	-18.07/-17.92	-15.05/-15.42	-12.5/-14.12	-12.81/-10.78	-9.72/-9.5	-6.07/-2.44	0.25/0.86	1.11/5.6	1.55/-1.26	1.55/0.47	0.28/-0.34	-2.17/-3.4	-5.6/-6.29	-10.25/-18.72	-17.15/-10.33	-9.67/-11.37	-10.29/-10.65	-13.28/-16.6	-18.25/-18.01	-18.52/-18.1	-9.95/-8.63	-16.54/-13.88
Θ (150°)	-11.8/-15.96	-14.58/-16.65	-14.82/-14.63	-13.18/-17.28	-18.75/-13.17	-10.21/-9.11	-7.6/-5.76	-3.31/-0.96	0.41/0.93	1.54/2.44	2.48/2.49	2.28/-1.27	0.07/-1.84	-3.86/-5.53	-4.61/-3.73	-5.18/-5.8	-7.22/-6.37	-5.99/-9.68	-18.15/-17.34	-17.74/-17.84	-18.19/-12.76	-11.96/-17.92	-16.61/-11.21	-13.72/-13.22
Θ (157.5°)	-12.51/-18.52	-19.63/-11.16	-9.8/-10.39	-10.12/-9.64	-10.4/-11.52	-11.69/-10.77	-9.61/-8.58	-7.3/-6.61	-5.37/-3.02	-1.25/-0.75	-0.4/0.11	0.82/-0.29	-1.68/-1.41	-1.39/-3.57	-5.44/-3.3	-2.88/-4.69	-6.18/-7.25	-9.31/-13.4	-18.76/-18.62	-18.8/-18.88	-17.4/-10.88	-9.51/-12.86	-15.64/-14.85	-17.91/-17.69
Θ (165°)	-15.84/-18.78	-13.99/-12.9	-12.21/-11.97	-11.97/-11.88	-12.48/-12.75	-13.12/-12.61	-12.32/-10.91	-9.15/-7.4	-6.19/-4.95	-3.42/-1.99	-1.25/-0.79	-1.14/-2.75	-3.22/-1.97	-2.41/-4.94	-6.68/-6.77	-7.42/-8.27	-9.74/-11.37	-15.88/-18.19	-17.76/-17.5	-17.69/-16.56	-14.86/-16.58	-17.63/-18.96	-12.96/-11.07	-10.96/-13.21
Θ (172.5°)	-18.14/-18.92	-17.89/-18.72	-18.39/-17.39	-17.7/-17.22	-17.18/-17.67	-18.23/-18.09	-18.57/-16.36	-12.6/-10.6	-8.96/-7.28	-6.44/-6.96	-7.06/-6.28	-5.42/-5.2	-5.66/-6.77	-9.04/-10.64	-12.11/-12.73	-13.42/-13.21	-15.33/-19.24	-17.4/-15.79	-17.06/-18.07	-19.11/-17.45	-18.98/-16.39	-14.84/-15.93	-16.9/-17.64	-16.54/-16.66
Θ (180°)	-16.35/-14.54	-14.59/-15.05	-15.83/-15.89	-15.05/-14.54	-14.14/-13.64	-12.87/-11.46	-10.89/-11.34	-11.96/-12.24	-12.76/-12.49	-10.68/-10.25	-10.84/-11.24	-10.5/-11.44	-13.94/-18.3	-17.1/-16.31	-17.35/-18.35	-18.83/-16.68	-17.6/-17.86	-18.81/-17.88	-18.28/-18.33	-18.64/-18.9	-18.65/-18.03	-19.19/-18.29	-17.9/-17.8	-18.43/-18.38
Freq(Hz)	5.785GPol.	Theta Ant. 1	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ (0°)	-18.61/-18.23	-10.34/-6.27	-3.84/-2.26	-0.75/0.46	1.18/-1.83	2.42/6.7	2.75/2.88	2.75/2.5	2.14/-1.54	0.77/-0.51	-1.95/-3.82	-6.2/-10.58	-17.91/-18.67	-11.38/-7.33	-4.24/-1.83	-0.07/0.13	1.52/2.23	1.97/2.14	2.61/2.81	1.72/-1.05	1.11/0.88	-0.11/-1.76	-3.75/-5.44	-8.19/-13.63
Θ (7.5°)	-9.86/-14.01	-18.62/-16.02	-10.31/-7.57	-4.88/-2.94	-1.78/-0.49	0.56/-1.25	1.76/2.23	2.28/2.29	1.78/-1.19	0.78/-0.21	-2/-4.68	-8/-13.72	-18.37/-12.81	-7.95/-4.7	-2.92/-1.78	-0.59/0.66	1.51/-1.8	2.42/2.45	2.96/3	2.44/-1.92	1.46/-1.32	0.73/-0.61	-2.64/-4.46	-7.15/-10.82
Θ (15°)	-4.11/-5.66	-9.21/-15.97	-18.19/-14.03	-9.04/-6.42	-5.01/-4.09	-3.17/-1.58	-0.72/0	0.35/0.46	0.37/0.31	-0.07/-1.06	-2.33/-4.04	-7.94/-14.74	-17.71/-9.93	-6.58/-4.82	-3.66/-3.2	-2.44/-1.71	-1.36/-1.21	-0.36/-0.24	0.37/0.75	0.79/0.28	-0.38/-0.28	-0.48/-1.24	-2.88/-3.99	-5.53/-10.02
Θ (22.5°)	-2.74/-2.96	-4.29/-8.61	-17.76/-18.76	-12.92/-9.63	-7.36/-4.47	-1.84/-0.01	1.32/19	2.45/2.09	1.38/0.41	-1.37/-4.57	-7.4/-10.2	-18.65/-18.03	-9.92/-7.21	-6.18/-5.79	-4.87/-3.9	-3.2/-2.71	-4.12/-4.49	-2.68/-1.21	0.01/-1.08	1.92/2.13	1.52/-1	1.18/-1.08	-0.16/-2.2	-3.62/-3.68
Θ (30°)	-4.44/-4.72	-6.22/-10.92	-17.26/-18.44	-9.65/-5.74	-5.08/-4.88	-3.82/-4.27	-5.47/-5.39	-3.61/-1.56	-0.71/-1.33	-3.07/-6.25	-9.93/-15.93	-18.62/-17.14	-12.26/-9.99	-10.25/-10.1	-7.31/-6.47	-6.95/-6.73	-7.8/-4.63	-2.05/-0.23	0.51/-	1.17/0.79	0.43/0.51	0.85/-1.27	1.07/-0.54	-2.9/-3.91
Θ (37.5°)	-8.93/-7.89	-8.25/-18.23	-14.55/-8.21	-3.78/-1.87	-1.69/-2.35	-4.45/-9.79	-17.79/-12.99	-7.02/-4.5	-4.8/-5.05	-4.1/-3.75	-9.05/-16.88	-10.05/-12.7	-18.75/-16.65	-17.79/-18.62	-11.45/-6.08	-3.51/-3.63	-4.6/-4.32	-4.04/-2.03	-0.42/0.16	-0.11/-0.74	0.01/0.85	1.32/0.25	-0.33/-2.26	-3.67/-5.11
Θ (45°)	-8.63/-12.86	-17.69/-17.41	-14.19/-7.59	-4.17/-4.28	-4.26/-4.99	-5.95/-9.91	-14.59/-11.47	-8.81/-10.63	-14.07/-10.39	-9.36/-5.73	-5.02/-12.18	-15.07/-10.51	-12.76/-12.34	-15.54/-16.65	-11.05/-6.29	-4.57/-5.34	-5.95/-7.91	-7.14/-4.81	-3.42/-4.37	-6.24/-6.33	-3.7/-1.7	-1.13/-0.37	-2.21/-7.28	-8.3/-6.58
Θ (52.5°)	-13.68/-10.21	-8.2/-10.12	-14.26/-13.84	-14.35/-8.01	-4.19/-3.64	-3.67/-4.48	-4.68/-4.74	-5.49/-7.82	-10.12/-11.46	-13.25/-18.19	-7.55/-9.45	-17.45/-10.22	-10.1/-10.03	-14.13/-13.21	-5.4/-2.58	-2.71/-4.24	-5.08/-7.72	-8.48/-7.77	-9.31/-10.01	-14.6/-18.08	-8.55/-3.89	-4.75/-6.17	-6.29/-11.77	-18.51/-14.11
Θ (60°)	-17.08/-6.74	-4.94/-11.72	-14.55/-11.79	-6.26/-4.32	-3.6/-2.94	-4.64/-5.24	-4.53/-3.13	-3.12/-7.45	-12.52/-16.17	-13.35/-10.38	-15.05/-8.33	-11.79/-16.28	-13.35/-16.14	-16.89/-18.77	-8.96/-4.24	-4.85/-5.68	-6.66/-9.13	-9.51/-8.64	-9.69/-12.25	-19.23/-17.21	-9.58/-8.7	-5.81/-9.99	-16.74/-18.82	-9.7/-15.1
Θ (67.5°)	-14.86/-5.45	-3.07/-12.12	-13.81/-9.1	-2.52/-1.35	-3.16/-8.48	-18.21/-17.35	-15.85/-11.97	-10.95/-11.96	-11.1/-13.85	-17.47/-17.72	-18.55/-10.26	-9.19/-11.75	-14.59/-18.96	-11.27/-11.97	-13.86/-12.81	-13.22/-7.66	-9.19/-9.79	-13.58/-18.55	-13.65/-8.49	-12.22/-13.63	-11.31/-12.53	-7.98/-14.15	-8.47/-8.95	-5.16/-10.88
Θ (75°)	-16.8/-5.89	-3.23/-9.71	-17.88/-6.4	-4.36/-4.97	-8.99/-19.11	-11.51/-6.56	-6.7/-8.93	-18.05/-12.06	-14.82/-16.36	-15.58/-14.22	-15.62/-12.93	-11.31/-10.42	-10.69/-18.93	-11.94/-8.19	-15.77/-18.71	-11.68/-9.48	-11.93/-8.94	-10.64/-13.31	-15.67/-8.44	-6.29/-8.17	-5.73/-7.83	-6.85/-10.58	-9.06/-8.01	-6.82/-8.73
Θ (82.5°)	-18.18/-6.54	-3.89/-5	-11.95/-18.29	-14.19/-7.01	-9.05/-12.38	-18.41/-10.26	-8.98/-18.77	-9.32/-8.12	-7.22/-6.8	-10.47/-8.86	-7.84/-10.65	-17.37/-8.37	-8.27/-15.1	-12.58/-9.89	-12.96/-9.44	-6.59/-16.92	-10.04/-7.51	-9.56/-17.9	-9.37/-4.95	-2.95/-1.83	-1.27/-4.45	-8.06/-15.6	-12.98/-9.99	-10.53/-16.22
Θ (90°)	-18.34/-5.83	-4.68/-4.41	-7.83/-14.96	-15.17/-8.37	-7.71/-9.23	-7.75/-3.69	-3.65/-7.75	-11.29/-7.67	-5.28/-4.32	-4.78/-5.12	-4.77/-6.16	-11.74/-12.51	-9.81/-13.53	-15.02/-12.42	-14.21/-10.91	-7.4/-13.13	-9.83/-6.76	-10.77/-11.48	-5.14/-3.31	-4.93/-3.94	-1.19/-2.64	-5.46/-9.89	-17.68/-15.6	-18.08/-10.9
Θ (97.5°)	-12.23/-7.75	-5.37/-5.04	-6.73/-7.63	-8.89/-4.33	-4.89/-10.6	-10.77/-5.88	-5/-4.97	-3.48/-4.09	-5.47/-3.79	-3.9/-2.41	-2.38/-4.99	-12.18/-11.85	-12.44/-18.79	-16.19/-18.64	-16.81/-11.96	-17.35/-11.91	-9.26/-9.65	-16.59/-11.73	-7.22/-4.77	-7/-6.14	-2.06/-3.14	-6.32/-8.92	-7.64/-9.1	-14.25/-10.15
Θ (105°)	-16.87/-6.74	-5.4/-7.53	-5.79/-6.24	-7.19/-4.74	-4.57/-14.96	-13.98/-8.19	-7.18/-5.74	-1.29/-1.19	-4.94/-5.34	-2.91/-2.43	-2.65/-4.42	-11.15/-12.63	-12/-16.92	-17.63/-18.42	-18.75/-15.09	-18.89/-15.07	-14.72/-16.74	-14.99/-10.65	-7.05/-9.69	-13.42/-4.91	-4.55/-4.83	-10.59/-13.99	-8.91/-7.38	-12.97/-8.34
Θ (112.5°)	-8.83/-7.86	-5.68/-9.89	-7.7/-8.39	-10.71/-7.57	-9.39/-9.83	-8.9/-9.51	-11.8/-5.33	-0.79/0.42	-1.13/-4.96	-4.04/-3.96	-5.39/-5.14	-6.73/-9.54	-7.89/-9.93	-10.62/-14.31	-13.78/-17.05	-18.4/-8.36	-10.37/-9	-9.98/-11.54	-14.16/-14.47	-15.19/-6.54	-8.86/-7.9	-13.2/-8.54	-9.72/-10.49	-10.06/-12.23
Θ (120°)	-9.79/-17.67	-9.86/-14.88	-11.01/-15.62	-12.79/-11.41	-7.71/-9.41	-12.13/-19.24	-9.93/-3.55	-0.67/0.51	0.94/-1.15	-4.49/-4.56	-3.55/-2.93	-4.02/-8.11	-7.13/-8.65	-9.9/-13.11	-11.42/-5.99	-10.13/-14.24	-14.39/-7.33	-6.04/-7.8	-18.29					



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Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26
Ant. 2 Max Gain (dBi)	5.41	5.48	5.33	5.66	4.49
Ant. 3 Max Gain (dBi)	4.46	6.6	6.94	6.33	5.81
Ant. 4 Max Gain (dBi)	4.93	5.86	5.91	5.78	5.79
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/30/292.5	Phi/97.5/277.5	Phi/90/262.5	Phi/97.5/285	Phi/90/270
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/180	Phi/37.5/202.5	Phi/37.5/195	Phi/45/195	Phi/45/202.5
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/30/97.5	Phi/90/270	Phi/90/262.5	Phi/90/262.5	Phi/90/262.5
Ant. 4 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/352.5	Phi/45/22.5	Phi/45/30	Phi/52.5/22.5	Phi/52.5/30
Max Gain (dBi)	6.32	6.69	7.12	7.23	6.26
DG [1SS] (dBi)	7.58	8.4	8.29	7.58	7.22
DG [2SS] (dBi)	6.32	6.69	7.12	7.23	6.26
DG [4SS] (dBi)	6.32	6.69	7.12	7.23	6.26



Radiated Composite Gain Data of Combination A

Appendix A.3

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°)	5.43/4.86	5.6/6.18	6.47/6.51	6.87/6.67	6.48/6.33	5.71/5.02	3.92/3.85	4.67/6.5	6.24/6.81	6.9/7.3	7.027/0.6	6.46/6.09	5.34/5.18	5.72/6.24	6.66/8.4	7.057/1.	6.58/6.35	5.85/5.06	4.25/4.52	5.41/6.17	6.77/7.07	7.27/7.31	7.12/6.8	6.32/5.75
Θ(7.5°)	5.58/5.43	5.87/6.26	6.747/1.9	7.33/6.94	6.75/6.64	5.83/5.46	4.34/4.77	5.46/6.37	6.867/3.6	7.587/3.3	7.41/6.62	6.18/5.58	4.96/4.7	5.62/6.24	6.97/0.4	7.287/2.3	6.88/6.59	6.01/5.14	4.49/4.45	5.01/5.71	6.32/6.75	7.037/1.3	7.1/6.8	6.35/5.84
Θ(15°)	5.77/6.11	6.25/6.75	7.127/3.9	7.327/2.3	7.09/6.74	6.35/5.87	5.03/5.27	6.02/6.64	7/7.39	7.587/2.4	7.02/6.73	5.92/5.4	4.65/4.9	5.76/6.36	6.687/2.3	7.247/1.3	6.77/6.31	5.64/4.92	4.32/4.32	4.82/5.75	6.35/6.81	7.137/2.4	7.13/6.84	6.41/6.02
Θ(22.5°)	6.22/6.33	6.697/0.2	7.217/3.9	7.517/5.3	7.347/1.2	6.78/6.03	5.48/5.54	6.14/6.39	6.99/6.99	7.19/6.31	6.44/6.36	5.82/5.3	4.94/4.83	6.23/6.62	7/7	6.88/6.62	6.25/6.3	4.91/4.36	4.1/4.52	5.17/5.87	6.56/6.93	7.077/1.2	7.03/6.78	6.47/6.24
Θ(30°)	6.82/6.83	6.957/0.1	7.217/3.7	7.437/4.8	7.57/1.4	6.99/6.28	5.51/5.29	5.48/6.08	6.54/6.67	7.25/9.9	5.47/4.75	5.49/8.37	3.75/5.15	5.71/6.15	6.46/7.2	6.17/5.96	5.18/4.67	3.88/3.39	3.57/4.46	5.37/6.02	6.4/6.76	6.86/6.93	6.88/6.72	6.61/6.62
Θ(37.5°)	6.84/6.84	6.55/6.4	6.52/6.48	6.847/0.2	6.97/6.83	6.46/5.95	5.09/4.37	4.48/4.97	5.72/6	6.14/6.41	4.49/4.71	4.44/4.3	4.36/4.63	5.55/9.1	5.97/6.03	5.67/5.24	4.64/3.92	3.24/2.84	3.27/4.19	5.28/6.03	6.47/6.68	6.82/6.76	6.8/6.74	6.72/6.84
Θ(45°)	6.54/6.42	6.12/6.16	6.04/6.03	6.16/6.17	6.27/6.2	6.01/5.14	4.7/4.14	3.81/4.29	4.9/5.48	5.27/4.9	4.58/5.68	3.07/3.48	3.51/4.33	4.81/4.94	5.16/5.33	4.98/4.61	4.15/3.6	3.16/3.2	2.75/3.43	4.55/5.39	5.96/6.4	6.4/6.49	6.47/6.42	6.43/6.64
Θ(52.5°)	5.55/2.9	5.17/5.15	5.24/5.21	5.26/5.4	5.49/5.23	4.6/4.16	3.65/3.09	2.97/4.09	4.29/4.58	4.3/3.73	3.29/3.34	2.7/3.55	3.84/0.7	3.97/4.24	4.22/4.1	4.24/4.35	4.34/4.03	3.42/2.97	2.63/0.1	3.89/4.79	5.47/6.01	6.25/6.16	5.92/5.48	5.74/5.95
Θ(60°)	54/59	4.44/4.34	4.44/0.4	4.34/4.6	4.23/4.12	3.82/3.29	2.88/2.42	3.32/3.55	3.08/2.76	1.9/2.31	1.46/2.22	3.07/3.29	3.19/3.01	2.87/3.06	3.37/4.17	4.24/3.94	4/3.02	2.86/3.01	3.63/4.5	5.15/5.39	5.45/5.27	4.78/4.72	5.07/5.39	
Θ(67.5°)	4.06/3.92	3.59/3.71	2.94/2.78	2.69/3.35	4.39/4.4	4.07/3.69	3.13/3.09	3.42/3.62	3.57/3.78	3.36/1.65	0.56/0.45	0.68/1.65	2.08/2.23	1.71/1.62	1.78/2.33	3.53/4.06	4.69/4.56	4.34/3.78	3.36/3.49	3.92/4.42	4.71/4.91	4.55/4.12	3.28/3.61	4.47/4.78
Θ(75°)	2.7/3	3.072/66	2.68/2.11	1.54/2.41	3.23/3	3.1/2.82	2.63/2.58	2.98/3.22	3.18/2.76	2.03/0.8	-0.2/0.41	-0.10/6.5	1.23/1.09	1.41/2.19	3.72/4.62	4.92/4.85	4.27/3.5	3.86/3.91	4.15/4.5	4.71/4.76	4.49/4.31	3.41/2.66	3.43/3.52	
Θ(82.5°)	1.88/2.34	2.23/2.12	1.55/1.33	1.52/4.44	2.05/2.02	1.81/1.27	1.23/1.31	2.07/2.42	2.43/2.37	1.52/0.31	-0.22/-1.63	-0.46/0.18	0.32/-0.82	-1.32/-1.14	0.58/2.19	3.29/3.78	4.52/3.89	3.23/2.91	3.41/3.49	3.97/4.26	4.42/4.39	3.92/3.33	2.6/2.08	1.97/2.4
Θ(90°)	0.97/1.56	1.87/1.31	0.81/0.46	0.15/1.04	1.35/0.56	-0.29/-1.02	-1.18/-1.05	-0.12/0.54	0.81/0.97	1.27/0.33	-1.17/-2.21	-1.35/-0.61	-0/-1.42	-2.51/-2.27	-0.21/7.1	3.24/3.17	3.38/3.74	3.12/2.67	3.2/3.17	3.99/4.18	4.15/3.99	3.1/2.16	1.29/1.07	1.33/1.59
Θ(97.5°)	-0.04/-0.09	0.54/-0.09	-0.19/-1.36	-1.39/-1.25	-1.09/-2.49	-3.08/-2.81	-3.03/-2.93	-2.27/-0.91	-0.05/-0.2	0.16/-1.13	-2.32/-3.03	-2.62/-1.73	-0.97/-1.3	-3.75/-2.17	-0.21/4.8	1.91/2.03	2.27/2.2	2.13/1.72	2.78/3.38	3.6/3.3	2.82/2.59	1.39/0.85	0.66/0.6	
Θ(105°)	-0.51/-0.4	-0.2/-0.59	-0.1/-1.27	-2.33/-2.58	-2.42/-4.65	-4.9/-3.45	-2.68/-2.41	-2.71/-2.12	-0.64/-1.17	-1.31/-1.87	-3.79/-3.89	-3.81/-2.29	-0.79/-1.6	-3.25/-3.23	-1.22/-0.63	-0.5/-0.44	-0.95/-0.35	-0.08/0.45	1.06/1.92	2.39/2.45	2.58/2.64	2.18/1.59	0.87/0.19	-0.27/-0.34
Θ(112.5°)	-0.66/-0.29	-0.48/-1.12	-1.26/-1.77	-1.38/-1.56	-1.95/-2.72	-2.71/-2.82	-2.09/-2.75	-3.22/-2.92	-1.23/-2.51	-3.11/4.08	-5.27/4.54	-4.02/-2.71	-1.89/-3.35	-3.86/-2.77	-1.42/4.14	-1.23/-2.14	-2.96/-2.28	-1.42/-0.52	0.29/0.82	1.45/1.4	1.51/1.69	1.45/0.62	0.28/-0.71	-1.32/-0.65
Θ(120°)	-1.76/-1	-1.45/-1.81	-2.12/-3.22	-2.94/-2.5	-2.58/-2.43	-3.56/-3.7	-3.78/-4.76	-6.17/-4.76	-3.57/-3.99	-4.27/-5.27	-6.82/-5.9	-4.65/-4.37	-1.7/-2.52	-3.58/-3.72	-2.1/-1.31	-2.18/-2.34	-3.42/-3.11	-2.52/-1.94	-0.69/0.27	0.78/0.83	0.97/0.91	0.17/-0.84	-1.64/-2.24	-2.72/-1.95
Θ(127.5°)	-3.01/-2.87	-3.54/-3.7	-4.33/-4.16	-6.95/-5.38	-4.65/-3.76	-3.82/3.29	-3.58/-3.66	-3.65/-2.77	-2.37/-3.14	-3.93/-4.76	-6.88/-5.11	-4.86/-5.02	-4.47/-3.95	-3.47/-2.75	-1.75/-1.78	-2.99/-3.38	-4.71/-5.57	-4.59/-2.84	-1.31/0.07	0.61/0.37	-0.06/-1.04	-2.18/-3.05	-3.31/-2.24	-1.93/-2.07
Θ(135°)	-4.31/4.86	-6.34/5.83	-6.24/-7.94	-8.55/-5.21	-4.36/-3.84	-4.16/4.3	-3.89/3.32	-2.47/-1.97	-2.32/-2.81	-3.27/4.55	-5.49/-5.03	-5.32/-5.04	-5.59/-3.75	-2.86/-1.75	-1.5/-0.95	-2.49/-2.93	-4.26/-4.1	-3.74/-2.91	-2.02/-0.94	-0.46/-0.56	-0.91/-1.54	-2.66/-4.26	-4.37/-3.41	-2.71/-2.87
Θ(142.5°)	-5.74/-5.96	-6.65/-5.73	-5.74/-6.78	-7.16/-5.05	-3.76/-3.87	-5.05/-5.77	-5.01/-4.33	-4.41/-4.22	-4.5/-4.9	-5.68/-7.76	-7.99/-8.3	-7.67/-7.14	-6.89/-3.68	-2.61/-1.78	-1.48/-1.83	-2.17/-3.1	-4.18/-4.41	-3.94/-3.36	-2.99/-2.45	-2.06/-1.96	-2.82/-4.22	-6.03/-6.89	-6.88/-5.65	-4.91/-4.85
Θ(150°)	-7.27/-6.95	-7.24/-7.23	-6.38/-6.56	-7.25/-6.05	-4.25/-6.05	-6.73/-6.47	-6.47/-6.92	-7.34/-8.04	-6.81/-9.8	-9.75/-9.62	-9.48/-9.74	-8.96/-7.49	-6.74/-4.23	-2.82/-2.76	-2.27/-1.96	-2.18/-2.64	-3.72/-4.35	-4.08/-3.61	-3.33/-3.34	-3.37/-3.01	-6.7/-7.1	-7.39/-6.4	-6.45/-6.35	
Θ(157.5°)	-8.36/-8.49	-9.1/-10.2	-9.92/-9.09	-8.64/-9.03	-9.34/-8.45	-8.45/-8.31	-8.63/-8.81	-9.25/-9.26	-9.91/-9.48	-8.92/-8.22	-8.34/-8.76	-8.94/-8.05	-7.22/-5.24	-4.1/-4.51	-4.78/-5.05	-4.93/-5.68	-6.07/-6.1	-5.98/-5.31	-4.97/-4.53	-4.17/-4.24	-4.54/-5.64	-6.93/-7.68	-7.66/-7.82	-7.75/-7.67
Θ(165°)	-8.95/-8.95	-8.74/-8.99	-9.52/-10.43	-11.32/-10.96	-10.78/-9.94	-9.42/-8.89	-8.83/-8.71	-8.87/-8.61	-8.39/-8.34	-8.87/-9.45	-10.24/-10.31	-10.17/-9.48	-7.95/-7.79	-8.08/-7.74	-8.3/-9.05	-9.43/-4.99	-9.36/-8.53	-7.52/-7.26	-7.46/-7.72	-8.05/-8.69	-9.53/-9.92	-10.08/-10.13	-9.86/-9.28	
Θ(172.5°)	-10.11/-9.9	-9.75/-9.22	-9.22/-9.71	-10.28/-11.77	-10.08/-9.14	-9.21/-8.74	-8.36/-8.31	-8.54/-8.73	-9.38/-10.49	-10.33/-10.96	-11.68/-11.9	-11.81/-11.9	-11.98/-10.54	-10.65/-10	-9.39/-9.68	-8.73/-9.39	-9.01/-8.54	-8.9/-9.14	-9.01/-9.72	-9.49/-9.74	-10.08/-10.19	-10.86/-10.9	-10.08/-10.19	
Θ(180°)	-10.61/-11.29	-11.08/-11.82	-11.92/-11.24	-10.64/-10.64	-10.12/-10.08	-9.69/-9.34	-9.03/-8.7	-8.67/-8.54	-8.37/-8.99	-8.98/-9.52	-9.18/-9.24	-9.47/-9.62	-9.42/-10.08	-10.5/-9.63	-9.01/-8.8	-7.93/-7.51	-8.02/-8.23	-8.38/-9.29	-9.11/-9.03	-9.21/-9.64	-10.29/-10.4	-11.08/-11.04	-11.13/-10.62	-10.61/-10.09
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°)	3.43/3.22	4.1/4.84	5.37/5.81	6.09/6.29	6.37/6.28	6.03/5.48	4.73/4.45	4.38/4.94	5.4/5.63	5.78/5.86	5.65/5.43	5.24/4.72	4.11/3.51	4.36/4.91	5.69/5.83	6.24/6.34	6.45/6.09	5.31/5.01	4.23/4.86	4.27/4.9	5.4/5.71	5.84/5.82	5.59/5.22	4.7/4.17
Θ(7.5°)	3.19/3.11	4.17/4.98	5.34/5.79	6.13/6.6	6.66/6.34	6.33/5.66	5.24/4.28	4.52/5.28	5.55/5.85	6.02/5.94	5.68/5.38	5.15/4.54	3.98/3.86	4.34/4.89	5.4/5.63	5.78/5.78	5.68/5.39	5.02/4.51	3.92/3.7	4.18/4.85	5.33/5.66	5.81/5.75	5.47/5.07	4.55/3.81
Θ(15°)	2.85/3.17	3.98/4.58	5.4/5.86	6.24/6.49	6.61/6.45	6.5/4	5.05/4.46	4.75/5.15	5.66/5.84	5.96/5.84	5.77/5.62	5.28/4.78	4.18/3.78	4.1/4.44	4.95/5.22	5.37/5.27	5.17/5.06	4.74/4.48	4.25/4.29	4.55/4.92	5.35/5.68	5.75/5.78	5.61/5.25	4.83/3.91
Θ(22.5°)	3.22/8.7	3.22/4.21	4.77/5.31	5.61/6.88	5.97/5.82	5.34/5.05	4.74/4.45	4.78/4.92	5.4/5.53	5.95/7.1	5.69/5.58	5.14/4.1	3.94/4.18	4.41/4.75	4.73/4.78	4.65/4.6	4.61/4.51	4.83/4.7	4.53/4.45	4.39/4.63	4.97/5.33	5.43/5.48	5.4/5.1	4.59/3.77
Θ(30°)	2.96/2.13	2.43/0.2	3.64/4.23	4.74/6.16	5.31/5.31	4.79/4.42	4.27/4.04	4.03/4.41	4.86/5.04	5.46/5.24	5.11/4.92	4.78/4.14	3.92/3.9	4.24/4.1	3.97/3.66	3.81/3.49	3.88/3.97	4.24/4.37	4.07/3.84	3.75/3.86	4.15/4.47	4.83/4.99	4.98/4.7	4.19/3.49
Θ(37.5°)	1.89/1.6	1.25/1.53	2.42/2.32	3.79/4.38	4.72/4.86	4.46/4.16	3.92/3.82	3.4/3.4	3.69/3.86	4.17/4.44	4.16/4.21	4.03/3.7	3.18/3.77	3.76/3.67	3.52/3.99	2.41/2.5	2.99/3.4	3.65/3.67	3.36/3.01	2.79/2.87	3.16/3.68	2.34/4.46	4.54/4.19	3.52/2.74
Θ(45°)	0.74/0.36	0.36/1.1	1.72/2.39	3.03/3.3	3.61/3.87	3.42/3.4	3.12/2.9	2.49/2.28	2.23/2.57	2.78/3.06	3.06/3.28	2.95/2.71	2.72/2.95	3.12/6.1	2.28/1.59	1.51/1.83	2.31/2.5	2.63/2.5	1.99/1.79	1.58/1.8				



Radiated Composite Gain Data of Combination A

Appendix A.3

Θ (15°)	0.890/7	-0.06/-0.59	-0.69/0.54	1.82/61	2.75/299	3.46/3.93	4/3.99	4.06/4.4	4.85/5.14	5.25/5.04	4.36/3.23	1.98/1.46	2.28/3.23	4.24/5	5.59/5.93	5.96/5.9	5.81/5.58	5.33/5.02	4.67/4.42	4.44/4.48	4.42/4.13	3.93/3.49	2.85/1.99	0.94/0.38
Θ (22.5°)	1.81/1.51	0.78/0.02	-0.8/-0.11	1.36/2.67	3.04/3.22	3.01/2.5	2.17/2.28	2.57/3.32	4.2/4.91	5.5/5.56	5.06/4.31	3.41/3.35	3.75/4	4.32/4.71	4.97/5.02	4.82/4.59	4.29/4	4.06/4.6	5.11/5.43	5.55/5.48	5.17/4.91	4.62/3.9	3.18/2.45	
Θ (35°)	3.08/2.89	2.82/1.98	0.99/1.05	1.18/1.06	0.69/0.16	-0.94/-2.89	-4.09/-3.47	-1.47/0.63	2.37/3.32	4.21/4.89	4.97/4.72	4.44/4.3	5.06/5.07	4.83/4.45	4.36/4.34	4.4/3.81	2.86/2.15	1.75/1.18	1.44/1.94	2.89/3.79	4.34/3.56	4.44/4.46	4.12/4.1	3.99/3.46
Θ (37.5°)	4.61/4.6	4.6/4.78	3.83/2.55	2.31/2.17	1.47/-0.27	-2.27/-5.65	-7.54/-6.31	-4.34/-2.29	0.26/1.92	3.38/4.77	5.59/6.07	5.74/5.8	6.06/6.01	5.65/1.3	4.54/4.2	3.47/2.1	0.09/-1.43	-2.3/-2.65	-2.84/-2.59	-1.99/-0.4	1.55/2.27	2.37/3.1	4.18/4.49	4.36/3.8
Θ (45°)	5.49/5.01	5.1/5.33	4.49/4	3.44/2.96	1.99/0.61	-1.87/-3.08	-1.82/0.17	0.85/0.83	0.9/2.2	3.28/4.47	5.38/6.03	6.1/5.43	5.15/5.08	5.17/5.61	5.61/4.82	4.05/2.27	1.84/0.25	-0.48/-0.12	-0.02/-0.26	-0.36/0.57	2.22/3.16	3.23/3.84	4.88/5.6	5.6/5.04
Θ (52.5°)	6.23/5.47	5.38/5.03	5.48/4.97	3.89/3.56	2.74/1.92	0.66/-0.2	0.54/0.21	2.86/3.2	3.12/3.71	4.23/4.27	4.63/5.7	4.92/3.73	3.43/3.56	3.7/4.49	5.4/5	4.15/4	2.71/1.11	-0.2/-1.85	-1.72/0.13	1.7/2.44	2.84/3.91	5.37/6.12	6.35/6.36	
Θ (60°)	5.19/4.59	4.93/5.16	4.87/4.73	5.22/4.94	4.07/2.76	1.92/2.19	2.93/3.75	3.9/3.63	3.13/3.43	4.02/4.24	3.28/4.21	4.14/3.1	2.97/2.59	2.53/3.98	4.82/4.2	3.98/4.25	3.65/2.09	0.53/0.65	0.36/-0.37	-0.2/0.75	2.39/2.92	2.56/2.84	4.65/5.93	5.72/5.21
Θ (67.5°)	4.02/2.97	3.54/4.22	4.46/5.09	5.48/5	4.23/3.32	3.33/3.44	3.92/4.82	5.21/5.28	4.21/3.3	3.47/3.91	2.25/2.78	2.35/2.16	2.71/1.88	1.48/2.91	3.77/3.52	3.76/4.9	4.86/4.09	3.01/3.2	3.16/3.01	2.83/2.84	3.48/3.73	3.69/3.75	4.34/5.23	5.24/4.88
Θ (75°)	2.97/1.81	2.04/3.8	4.38/4.78	4.83/4.77	4.84/4.73	3.49/1.62	0.99/1.43	3.05/4.43	4.9/4.14	3.16/3.31	2.64/2.5	2.28/2.61	2.91/2.92	2.48/2.66	3.62/3.36	3.72/5.32	5.42/5.46	5.84/5.95	5.66/5.15	4.59/4.03	4.35/4.38	4.33/4.14	3.66/4.01	3.84/3.91
Θ (82.5°)	2.54/0.92	1.97/3.59	4.18/4.04	4.27/4.36	4.79/3.44	2.34/4.14	4.36/3.86	2.76/2.42	2.74/3.24	2.87/3.02	2.68/2.92	1.51/2.31	2.84/2.1	2.56/2.69	2.63/1.94	3.72/5.78	5.92/6.74	7.74/7.54	6.6/6.13	5.24/4.13	4.07/4.37	4.49/4.52	3.89/3.21	2.28/2.62
Θ (90°)	2.47/0.93	2.34/3.34	3.5/3.32	3.44/3.7	2.68/0.51	2.66/3.31	2.43/2.11	2.79/1.84	0.91/1.39	1.98/1.71	1.94/2.59	1.78/1.14	2.97/0.68	2.14/2.09	2.13/1.31	2.64/4.78	5.28/6.76	7.82/8.15	7.29/6.8	6.17/5.04	3.9/4.36	4.31/3.9	2.62/1.68	2.02/2.66
Θ (97.5°)	-0.29/0.5	-0.28/1.65	2.82/2.6	2.71/8.4	-0.32/-1.5	0.83/0.12	0.25/-1.01	1.15/2.72	0.75/-0.41	1.04/0.6	-0.01/0.61	1.09/1.03	1.13/0.75	1.99/0.51	1.41/1.27	2.06/3.18	3.32/5.42	7.13/6.18	6.31/6.28	6.08/5.26	3.48/3.19	2.92/1.69	0.4/1.1	1.76/1.46
Θ (105°)	-1.68/0.51	-1.08/0.32	1.37/0.31	-0.38/-0.62	-3.25/-3.7	-0.79/-0.79	-0.25/-2.25	-0.9/1.54	0.69/-0.09	-0.3/-0.19	-0.13/-0.25	0.26/0.46	-0.36/-0.5	-0.09/-1.21	0.02/0.49	1.61/1.83	0.77/1.8	4.72/5.48	4.91/5.03	5.38/5.33	3.14/1.54	1.3/-0.95	-1.37/0.22	1.35/0.21
Θ (112.5°)	-2.59/-0.64	-2.06/-2.92	-1.56/-2.67	-3.44/-3.45	-5.01/-1.57	-4.29/-3.25	-2.44/-3.47	-0.7/0.53	-0.27/-0.57	-1.21/-0.31	-1.39/-1.77	-0.97/-1.6	-2.06/-1.73	-1.34/-3.08	-2.98/-1.29	2.82/3.35	3.82/3.97	2.19/2.14	2.82/3.35	2.42/0.55	-0.66/-4.52	-3.5/-0.65	0.81/-0.67	
Θ (120°)	-1.49/-2.86	-2.85/-3.9	-3.19/-1.95	-3.35/-6.11	-6.99/-5.55	-5.28/-7.44	-8.31/5.18	-2.19/-2.05	-1.85/-2.13	-3.06/-2.14	-2.16/-1.34	-1.87/-2.58	-3.98/-2.98	-2.54/-3.22	-4.7/-1.84	-3.13/-3.12	-3.59/-3.43	-1.14/-1.78	-0.44/0.95	2.32/3.21	0.75/1.16	-3.47/-2.9	-2.58/-0.57	
Θ (127.5°)	-2.3/-4.77	-6.7/-5.11	-4.96/-4.1	-3.58/-4.26	-7.07/-7.3	-9.28/-10.4	-8.13/-6.79	-6.88/-3.73	-3.2/-4.05	-3.6/-4.13	-3.81/-1.81	-2.46/-4.33	-4.52/-5.2	-3.95/-1.83	-4.27/-4.16	-5.1/-4.42	-3.84/-7.38	-5.04/-5.09	-4.62/-2.07	-0.41/0.46	-0.2/-1.99	-1.94/-3.5	-5.32/-2.75	-2.88/-1.91
Θ (135°)	-4.49/-3.47	-7.53/-8.27	-5.49/-4.58	-3.78/-4.19	-4.72/-7.85	-10.95/-10.34	-7.69/-6.54	-6.81/6.75	-5.92/-5.73	-5.44/-5.87	-5.2/-3.37	-4.68/-3.75	-3.91/-5.59	-6.28/-4.74	-6.7/-7.65	-5.44/-4.27	-5.47/-8.35	-6.91/-5.47	-6.5/-6.4	-1.26/-1.06	-3.2/-3.5	-8.34/-5.88	-7.53/-7.22	-4.74/-4.8
Θ (142.5°)	-5.83/-5.66	-6.26/-8.18	-8.8/-9.07	-7.18/-8.24	-9.04/-9.71	-11.32/-10.11	-7.79/-6.93	-7.99/-8.81	-9.1/-7.76	-6.44/-5.17	-6.78/-10.08	-7.65/-5.22	-5.74/-7.7	-9.8/-9.83	-8.47/-1.01	-6.75/-8.32	-6.61/-6.81	-6.21/-4.91	-3.75/-4.73	-8.64/-7.85	-6.22/-8.1	-7.09/-5.48	-6.34/-5.75	
Θ (150°)	-8.36/-9.34	-8.06/-8.98	-8.07/-8.81	-9.98/-8.53	-7.61/-9.12	-10.37/-10.14	-8.18/-7.24	-9.32/-10.58	-10.25/-9.66	-9.92/-9.64	-7.56/-7.07	-8.28/-9.05	-9.25/-8.7	-7.52/-7.96	-9.08/-9.92	-10.7/-8.9	-6.01/-6.01	-8.11/-8.93	-7.67/-7.54	-7.42/-6.9	-6.01/-6.71	-7.9/-9.15	-9.35/-6.47	-5.26/-5.56
Θ (157.5°)	-7.69/-9.56	-9.12/-8.18	-8.06/-8.62	-9.99/-10.53	-11.32/-10.63	-10.02/-9.4	-9.01/-8.39	-6.94/-5.85	-6.73/-7.94	-8.47/-8	-8.37/-9.42	-9.5/-8.31	-8.45/-6.92	-5.82/-6	-7.33/-8.81	-8.75/-5.59	-6.42/-6.38	-7.71/-8.98	-9.57/-9.41	-8.99/-10.18	-11.95/-11.44	-9.9/-8.3	-8.2/-8.82	-8.37/-7.8
Θ (165°)	-8.55/-9.1	-9.11/-9.13	-8.99/-9.21	-9.04/-8.92	-8.29/-8.88	-9.62/-9.53	-9.08/-8	-6.51/-6.29	-6.18/-6.08	-6.09/-6.53	-7.46/-8.01	-7.93/-8.55	-9.08/-8.4	-6.79/-6.16	-7.17/-7.65	-8.04/-8.41	-9.35/-9.48	-10.65/-11.97	-10.62/-10.26	-10.22/-10.08	-9.34/-7.54	-7.17/-8.22	-8.8/-8.73	-9.04/-8.99
Θ (172.5°)	-11.3/-12.02	-11.36/-10.29	-10.61/-12.47	-12.87/-12.41	-11.29/-9.57	-8.57/-7.49	-6.57/-6.08	-5.81/-5.48	-6.3/-6.61	-8.37/-7.43	-6.52/-6.65	-7.09/-7.79	-7.51/-7.67	-7.99/-9.06	-10.06/-10.07	-10.95/-11.24	-10.5/-9.03	-8.3/-7.81	-7.98/-8.92	-9.72/-10.87	-10.5/-9.68			
Θ (180°)	-12.77/-12.68	-11.74/-10.25	-9.56/-8.99	-8.19/-7.42	-7.63/-7.67	-7.49/-7.47	-7.31/-7.31	-7.97/-7.62	-7.86/-8.13	-8.95/-9.3	-9.26/-9.28	-9.33/-9	-9.23/-9.33	-9.07/-8.37	-7.82/-7.81	-7.36/-7.12	-6.49/-6.09	-6.09/-5.97	-5.97/-5.47	-4.87/-4.27	-4.66/-5.32	-6.15/-6.66	-7.17/-8.26	-9.09/-10.87
Freq(Hz)	5.3GPol.	Theta/-	Phi/-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
DG(dB)	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	3.61/2.42	3.38/3.13	3.04/2.82	2.72/2.29	1.7/1.02	0.88/0.58	0.82/0.7	0.56/0.59	1.12/2.04	2.65/3.09	3.44/3.63	3.83/3.71	3.7/3.36	3.27	2.61/2.78	3.09/3.18	2.93/2.44	2.01/1.69	1.35/1.62	1.87/2.57	3.39/3.91	4.09/4.37	4.62/4.68	4.55/4.16
Θ (7.5°)	3.66/3.17	3.16/3.07	3.16/3.03	2.93/2.76	2.13/1.19	0.47/-0.25	-1.17/-1.21	-0.84/0.07	1.62/2.86	3.62/4.11	4.27/4.37	4.25/4.15	3.88/3.41	3.2/2.6	2.42/1.3	2.26/2.49	2.62/5.2	2.53/2.62	2.61/2.51	2.83/3.1	3.13/3.28	3.79/4.34	4.42/3.96	
Θ (15°)	3.43/2.91	2.79/3.04	2.99/2.72	2.49/2.49	2.26/1.8	1.35/1.15	1.1/0.93	1.09/1.53	2.38/3.17	3.67/4.03	4.4/4.73	4.83/4.53	4.07/3.41	2.98/2.54	2.18/1.92	1.67/2.22	2.69/2.69	2.57/2.36	2.17/1.92	1.72/1.21	0.85/0.84	0.98/1.43	2.13/2.97	3.35/3.62
Θ (22.5°)	3.14/3.47	2.98/2.67	2.59/2.77	2.63/1.95	0.87/0.86	1.46/2.26	2.91/3.5	3.84/3.99	4.05/3.93	3.88/3.85	4.21/4.5	4.32/3.99	3.28/2.58	1.93/1.55	1.39/1.6	1.56/1.52	1.41/1.48	1.28/1.17	1.19/1.39	1.36/1.26	0.83/0.6	1.24/1.92	2.1/1.1	0.53/2.14
Θ (30°)	0.97/1.18	1.26/1.52	1.89/2.57	2.45/1.31	0.41/0.3	1.39/2.84	3.75/3.98	4.14/3.82	3.48/3.42	3.34/3.03	3.24/3.1	2.98/2.5	2.23/1.69	0.9/0.51	0.75/0.78	0.91/1.22	1.57/1.66	0.96/0.34	0.65/1.27	1.52/1.17	0.37/-0.23	0.26/0.97	1.35/0.81	-0.17/0.34
Θ (37.5°)	-0.94/-0.81	-1/-1.88	-0.62/1.12	1.43/0.87	1.02/1.95	3.07/3.99	4.36/4.21	3.93/3.31	2.49/1.37	1.38/0.79	-0.4/-0.56	-0.4/-0.53	-0.54/-1.62	-0.26/-0.65	0.59/1.05	1.15/1.63	1.64/0.79	0.15/0.26	1.18/1.87	2.02/1.49	-0.03/-1.14	-0.29/0.17	-0.28/-0.97	-1.37/-0.92
Θ (45°)	-1.78/-3.82	-5.42/-4.55	-1.6/-0.17	-0.5/-0.92	1/2.5	3.7/4.58	4.69/4.24	3.89/4.29	4.28/3.02	0.29/-0.57	-1.72/-2.2	-2.82/-0.47	-3.84/-3.47	-3.08/-1.4	0.66/1.07	0.45/0.83	1.42/2.03	2/1.35	1.63/2.58	2.52/1.77	0.41/-0.81	0.81/1.9	1.34/-0.4	-1.47/-1.04
Θ (52.5°)	-1.94/-3.44	-7.9/-8.46	-3.76/-1.98	-1.04/-0.18	1.81/3	4.12/4.91	4.95/4.08	3.43/4.03	4.61/3.9	1.53/-1.15	-1.83/-1.39	-2.49/-4.02	-4.54/-4.54	-4.38/-3.24	-0.77/-0.41	-1.92/0.65	2.38/3.37	2.49/1.45	1.16/1.89	2.27/1.89	1.28/0.45	0.95/2.65	2.61/0.34	-1.25/-0.89
Θ (60°)	-1.64/-4.53	-2.06/-7.23	-3.59/-2.55	-0.49/-1.9	2.87/2.73	3.78/3.65	2.64/2.09	2.52/2.76	1.84/0.43	-1.1/-1.22	-1.03/-2.57	-4.26/-4.27	-4.62/-4.01	-2.35/-2.57	-7.57/-1.42	1.81/2.67	2.11/1.41	1.08/0.86	1.08/1.44	1.27/0.8	0.71/2.26	3.21/4.49	-0.23/-0.06	
Θ (67.5°)	-1.62/-3.78	-10.21/-6.33	-2.88/-2.33	0.54/2.83	2.47/1.31	-0.15/0.46	1.02/1.15	1.12/0.88	0.26/-0.47	-1.08/-0.43	-1.88/-1.35	-0.99/-3	-3.7/-5.55	-4.97/-5.23	-5.4/-5.22	-5.46/-2.05	0.17/0.78	1.21/1.54	1.33/0.29	-0.2/-0.01	0.61/0.39	0.41/0.91	2.06/0.4	-1.88/-1.6
Θ (75°)	-3.14/-4.98	-8.97/-7.06	-4.22/-3.18	0.29/2.3	1.84/0.11	-1.22/0.88	2.19/2.27	2.02/1.39	-0.55/-1.7	-2.07/-2.16	-2.4/-3.13	-0.71/-3.03	-3.71/-6.66	-5.76/-8.26	-5.81/-5.61	-4.69/-2.47	-3.71/-2.56	0.42/1.27	0.71/0.41	-0.17/0.03	-0.39/-1.03	-1.05/-0.67	1.3/-0.09	-2.5/-2.41



Radiated Composite Gain Data of Combination A

Appendix A.3

Θ(52.5°)	5.55/5.62	5.4/5.33	4.12/4.14	4.01/3.24	2.75/1.47	0.11/-0.05	0.59/0.95	0.63/0.38	0/-0.43	-0.03/-1.69	2.83/4.23	4.33/2.96	2.45/3.59	5.24/5.01	3.68/3.69	2.48/0.61	1.09/1.51	0.56/-0.17	-0.05/0.63	0.82/0.77	0.92/1.81	2.29/2.21	1.6/1.4	1.8/3.42
Θ(60°)	6.05/6.06	5.73/4.81	2.38/2.67	3.34/3.49	3.41/3.03	2.22/1.76	1.88/1.65	0.76/0.46	0.63/1.6	0.69/1.51	2.79/3.72	4.62/3.14	3.5/3.65	4.4/3.8	2.15/3.65	3.03/2.38	2.48/1.94	1.16/-0.61	-2.92/-2.58	-0.2/0.54	0.06/1.04	2.79/3.25	2.51/2.37	3.52/5.34
Θ(67.5°)	5.35/5.53	4.54/2.94	1.15/2.07	1.83/3.44	2.95/1.7	1.99/3.81	4.59/4.33	4.08/3.48	2.14/2.91	2.74/0.64	1.9/2.82	3.83/3.63	4.64/2.96	2.45/0.69	0.27/2.69	2.31/3.74	4.06/2.45	1.33/0.53	-0.9/-2.17	-1.15/0.53	1.73/1.67	3.36/3.36	2.3/2.9	3.9/5.27
Θ(75°)	4.27/5.15	3.57/1.44	1.46/1.92	1.33/3.58	2.97/1.6	2.46/2.38	1.01/1.27	3.26/4.15	3.91/4.06	4.11/0.88	0.67/1.92	3.38/2.99	4.6/4.06	1.37/0.16	0.28/1.96	2.43/4.69	5.61/4.15	3.09/4.02	3.48/1.9	1.1/2.11	3.38/3.4	3.87/3.1	1.93/3.33	4.43/4.52
Θ(82.5°)	3.61/3.81	1.79/2.41	1.75/0.85	0.82/3.47	3/1.95	2.59/3.42	4.1/4	2.86/2.81	2.64/3.86	3.14/-0.26	0.47/1.72	2.81/2.12	4.82/3.8	1.92/0.56	-0.45/0.94	1.85/5.28	5.52/5.05	5.08/6.35	5.66/4.54	3.15/3.14	4.01/4.11	4.45/2.52	0.93/2.8	3.61/3.74
Θ(90°)	3.17/3.31	2.16/2.42	1.46/0.46	0.8/2.46	2.13/0.73	1.17/2.73	3.34/3.81	4.37/1.81	1.72/3.04	1.86/-0.41	0.22/1.64	2.03/1.55	3.48/4.64	2.6/0.67	-0.44/0.57	2.62/5.34	5.58/5.07	5.42/7.22	6.96/6.24	4.87/3.66	2.97/4.12	4.34/2.2	1.7/2.81	2.33/2.11
Θ(97.5°)	2.33/1.62	1.61/1.37	0.12/-0.43	-0.35/1.1	-0.72/-0.49	-0.61/0.48	0.69/1.29	3.73/1.46	-0.08/1.42	-0.14/-0.7	-0.08/-0.47	0.41/0.93	2.95/4.61	1.19/0.28	-1.28/-0.48	1.85/3.98	4.22/3.48	5.13/7.02	6.62/6.36	5.71/3.4	2.03/2.79	2.72/0.11	0.72/1.9	1.53/1.87
Θ(105°)	1.79/-0.57	2.05/1.01	0.63/-1.24	-1.62/-1.44	-1.99/-3.08	-4.17/-1.3	-1.63/-0.25	1.74/1.78	-0.87/0.56	-0.65/-0.72	-0.06/-0.86	-0.15/0.18	1.43/2.79	0.79/0.02	-1.8/-0.9	0.86/2.12	2.29/1.78	3.73/4.66	3.82/4.25	4.52/3.59	0.29/0.94	-1.44/-0.91	1.05/1.81	1.75/2.32
Θ(112.5°)	0.2/-0.82	0.31/-0.65	-1.25/-1.73	-5.09/-2.24	-3.65/-7.43	-3.74/-2.62	-4.98/-1.89	1.09/0.64	0.07/-0.19	-1.27/-2.32	-0.87/-0.7	-1.19/-0.37	0.14/-0.19	-0.05/-1.18	-3.32/-4.64	-0.78/-0.72	-0/1.01	1.31/2.68	2.04/3.27	3.86/4.33	0.24/-1.19	-2.04/-2.33	-1.55/1.04	1.81/-0.11
Θ(120°)	-0.76/-1.4	-1.89/-2.37	-2.9/-3.3	-4.81/-4.33	-5.14/-7.69	-8.79/-5.22	-4.83/-3.46	-1.94/-0.71	-0.59/-1.72	-3.23/-2.38	-1.08/-0.66	-2.12/-1.79	-1.48/-1.47	-1.29/-2.81	-3.08/-6.36	-2.1/-2.41	-2.28/1.36	-1.96/-1.99	-1.67/0.75	1.66/2.63	1.29/-3.24	-3.42/-3.8	-0.95/-0.55	0.48/-0.75
Θ(127.5°)	-3.92/-2.47	-4.07/-4.83	-5.57/-4.55	-3.93/-7.23	-7.09/-7.28	-11.63/-8.57	-4.33/-4.56	-5.03/-2.94	-3.39/-4.77	-3.76/-4.08	-2.3/-2.44	-3.8/-3.82	-4.35/-2.68	-3.36/-5.4	-2.93/-3.82	-6.19/-5.48	-3.87/-1.28	-4.61/-6.55	-4.24/-1.9	0.19/-0.47	-1.78/-1.87	-4.06/-4.91	-2.5/-0.62	-0.48/-1.29
Θ(135°)	-5.15/-4.08	-4.22/-4.86	-5.36/-5.47	-5.88/-5.72	-8.3/-10.64	-11.08/-11.94	-9.64/-6.77	-5.99/-5.78	-6.96/-6.13	-6.33/-5.31	-2.64/-3.2	-3.69/-2.48	-3.13/-5.85	-3.8/-4.85	-7.18/-4.77	-5.3/-4.59	-6.62/-7.53	-5.26/-3.65	-1.65/-0.97	-2.57/-4.76	-3.93/-4.62	-4.27/-2.72	-3.19/-5.6	
Θ(142.5°)	-8.46/-6.7	-7.69/-7.98	-8.7/-7.83	-7.01/-8.52	-7.57/-8.54	-11.17/-9.88	-8.95/-10.62	-10.04/-8.59	-8.72/-7.7	-7.27/-7.53	-5.61/-4.5	-4.01/-4.49	-6.65/-6.66	-8.14/-8.43	-8.28/-9.19	-8.16/-6.88	-6.75/-6.3	-7.1/-7.17	-5.94/-5.46	-4.59/-3.56	-4.66/-6.52	-9.93/-10.97	-9.76/-7.82	-6.85/-7.7
Θ(150°)	-9.05/-9.94	-6.88/-9.2	-10.55/-10.35	-8.86/-8.11	-9.59/-9.99	-11.13/-12.59	-12.2/-9.71	-8.82/-8.89	-8.95/-8.31	-6.33/-5.64	-6.9/-6.44	-7.27/-7.82	-8.39/-9.12	-8.29/-9.07	-9.33/-8.97	-10.81/-9.65	-8.46/-6.93	-7.51/-8.05	-6.67/-6.13	-6.65/-6.85	-4/-1.94	-3.71/-9.6	-9.89/-6.48	-5.7/-7.16
Θ(157.5°)	-9.3/-10.95	-10.32/-9.38	-7.95/-9.7	-9.91/-9.72	-10.17/-11.21	-11.8/-10.54	-8.95/-7.61	-6.37/-5.76	-6.63/-8.8	-9.56/-8.59	-8.55/-9	-8.64/-7.06	-7.88/-9.57	-9.97/-9.94	-8.5/-7.78	-7.74/-6.19	-5.64/-6.06	-7.87/-8.41	-8.3/-7.5	-7.81/-10.07	-9.86/-8.94	-10.62/-10.76	-7.99/-6.95	-6.85/-7.38
Θ(165°)	-9.41/-9.65	-10.26/-9.81	-9.91/-11.04	-11.7/-11.66	-12.14/-12.36	-11.58/-10.21	-8.1/-5.88	-5.37/-5.42	-5.59/-5.99	-6.89/-8.29	-8.81/-7.86	-7.43/-6.85	-6.81/-6.66	-7.31/-7.19	-8.4/-7.35	-7.27/-7.69	-7.84/-8.29	-8.94/-11.56	-12.47/-12.03	-10.48/-10.38	-10.25/-9.64	-9.02/-7.96	-8.1/-8.11	-8.19/-8.83
Θ(172.5°)	-10.25/-10.1	-10.09/-11.11	-11.83/-11.28	-10.92/-10.37	-9.46/-9.25	-8.65/-9.15	-9.95/-10.24	-9.56/-9.2	-9.21/-10.07	-11.22/-11.64	-11.67/-11.65	-10.53/-9.76	-9.06/-8.25	-7.67/-7.74	-7.76/-8.37	-9.09/-9.45	-9.29/-9.05	-8.63/-8.75	-8.91/-10.11	-10.61/-9.86	-9.16/-7.83	-7.64/-8.45	-9.15/-10	-11.02/-10.84
Θ(180°)	-10.85/-11.02	-11.21/-12.04	-11.78/-10.79	-10.74/-10.01	-9.39/-8	-7.46/-6.65	-6.39/-6.43	-5.92/-5.94	-5.72/-5.93	-5.72/-5.98	-6.72/-7.78	-8.42/-8.33	-8.56/-9.52	-10.02/-10.04	-10.19/-10.58	-10.42/-9.76	-8.9/-7.71	-7.43/-7.64	-7.6/-7.59	-7.94/-7.99	-7.88/-8.71	-9.15/-9.7	-10.57/-12.19	-12.08/-12.02
Freq(Hz)	5.785GPol.	Theta/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	5.84/5.39	5.4/5.56	5.66/5.67	5.52/5.15	4.53/3.81	3.01/1.85	0.59/0.32	1.04/2.21	3.17/4.12	5.92/5.22	5.57/5.71	5.86/0.1	5.92/5.99	5.92/6	5.85/5.81	5.47/5.29	4.89/4.16	3.38/2.2	5.14/5.76	5.96/1.33	5.14/5.76	6.3/6.6	6.88/6.86	6.57/6.08
Θ(7.5°)	5.82/5.75	6.11/6.14	5.95/5.59	5.14/4.55	3.94/3.47	2.58/1.72	0.94/1.59	2.83/4.05	5.23/5.72	6.15/6.49	6.66/6.6	6.32/5.9	5.48/5.24	5.17/5.19	5.04/4.85	4.32/3.66	2.96/2.49	1.49/0.5	-0.18/0.74	2/3.21	3.99/4.62	4.99/5.29	5.5/5.79	6.14/6.16
Θ(15°)	4.55/5.94	5.42/5.38	5.37/5.19	4.78/3.85	2.61/1.16	-0.54/-1.25	-0.06/1.15	2.74/2.9	5.39/5.95	6.29/6.55	6.59/6.49	6.11/5.48	4.94/4.53	4.31/3.99	3.74/3.45	3.08/2.45	1.23/0.34	-0.83/-1.19	-0.68/0.03	1.37/2.69	3.63/3.91	3.8/3.75	3.72/3.71	4.19/4.8
Θ(22.5°)	3.54/2.1	4.45/4.37	4.07/4.42	4.72/4.18	3.53/2.05	0.24/-0.45	-0.22/0.49	2/3.57	4.89/5.75	5.99/5.81	5.36/4.99	4.64/4.24	3.41/2.36	2.23/2.94	3.57/3.71	3.71/3.59	3.38/2.78	2.34/2.3	1.72/1.13	0.85/1.49	2.48/2.78	2.77/2.45	2.04/2.04	2.48/3.04
Θ(30°)	3.16/3.99	3.97/3.64	3.88/4.31	4.43/3.89	3.36/2.36	1/0.68	0.68/0.6	1.72/3.1	4.21/5.06	5.78/5.75	4.67/3.28	3.35/3.61	2.66/1.46	1.94/2.83	3.68/3.89	3.91/3.52	3.2/3.01	2.61/1.67	0.04/-1.36	-1.29/0.76	1.95/2.86	3.02/2.35	1.4/1.31	1.41/1.94
Θ(37.5°)	1.6/2.46	2.79/2.35	2.74/3.44	3.87/3.2	2.27/1.45	1.35/1.05	0.37/-0.16	-0.04/1.55	1.95/2.59	3.75/4.15	3.12/1.41	0.85/0.82	-0.42/-0.52	0.35/1.54	2.05/2.28	2.47/2.05	1.72/0.9	-0.87/-1.96	-1.84/-0.31	0.5/1.01	1.77/2.7	2.52/0.96	-0.33/-0.48	0.41/-1.4
Θ(45°)	-0.95/1.42	2.16/1.84	1.27/2.27	2.65/2.16	2/1.39	0.92/0.18	1.07/1.64	1.51/1.52	1.19/0.47	0.33/1.87	1.27/-0.8	-1.82/-1.17	-1.64/-2.04	-1.45/-1.41	-0.34/1.01	0.95/1.03	1.31/-0.19	-3.39/-0.87	-1.44/1.56	0.92/0.37	-0.78/-1.27	-0.28/-0.9	-0.8/-0.76	-0.88/-0.68
Θ(52.5°)	-2.43/-0.81	1.05/1.65	1.38/1.81	1.79/0.93	0.44/0.99	1.21/1.85	2.02/1.77	2.38/2.86	2.01/1.56	0.68/2.23	1.13/-1.97	-3.22/-3.28	-1.67/-1.89	-2.86/-1.8	-1.12/-1.88	-2.54/0.9	1.4/-0.88	-1.76/1.37	2.74/2.06	0.78/-0.42	-2.32/-4.08	-2.79/-1.64	-1.69/-1.84	-2.54/-2.17
Θ(60°)	-4.21/-1.98	0.77/0.65	0.05/-0.03	-1.46/-2.88	-1.95/-0.31	0.68/1.96	1.95/2.23	2.32/2.57	3.24/3.18	1.79/1.8	2.02/-0.36	-3.87/-4.59	-1.25/-2.8	-4.76/-3.9	-3.31/-5.73	-4.35/0.88	1.08/0.08	0.62/0.32	0.55/0.93	0.74/-0.31	-2.37/-4.11	-3.95/-2.23	-2.81/-1.33	-1.14/-3.11
Θ(67.5°)	-5.91/-3.46	-1.48/-3.86	-3.31/-3.27	-4.78/-4.11	-4.25/-3.09	-1.57/-0.94	-1.6/-1.11	-0.39/0.46	0.85/1.87	1.21/-0.93	0.83/0.27	-4.15/-1.54	-1.96/-5.27	-6.15/-7.48	-7.02/-8.54	-2.5/0.14	0.63/1.14	0.65/0.35	-0.5/0.12	0.67/0.59	-0.45/-2.56	-2.75/-1.87	-3.52/-3.8	-2.84/-5.01
Θ(75°)	-10.6/-5.71	-3.72/-6.36	-3.35/-3.27	-5.02/-2.86	-2.12/-2.01	-3.56/-1.12	2.12/1.94	0.37/1.31	1.63/0.07	-0.58/-2.74	-1.44/0.38	-3.62/-0.76	-1.15/-3.71	-7/-9.44	-9.69/-9.74	-4.24/-2.01	0.44/1.06	-1.49/0.19	0.65/-0	-0.58/0.17	-0.96/-2.57	-3.23/-2.55	-5.02/-5.63	-3.64/-4.96
Θ(82.5°)	-9.73/-6.36	-7.85/-5.33	-2.65/-6.01	-4.4/-2.86	-1.51/-3.47	-2.43/0.08	1.79/1.76	-0.05/0.07	1.23/0.42	-2.39/-4.67	-2.05/-2.13	-3.23/-1.66	-2.45/-4.1	-8.02/-10.24	-8.47/-7.9	-5.28/-2.51	0.51/-0.37	-3.32/0.44	1.28/-0.35	-1.53/-0.07	-1.41/-3.75	-4.52/-4.41	-6.64/-7.94	-4.43/-10.3
Θ(90°)	-8.21/-7.23	-8.12/-4.11	-3.45/-5.87	-7.28/-4.28	-1.59/-0.9	-2.14/-2.71	-0.64/-0.73	-1.25/-3.3	-2.54/-1.33	-2.99/-6.68	-4.36/-3.9	-4/-3.02	-3.95/-2.57	-5.4/-8.31	-10.1/-6.94	-5.75/-3.53	-1.04/-2.92	-3.34/-0.01	1.19/0.25	-1.4/-1.97	-1.75/-3.91	-4.41/-3.89	-8.23/-7.04	-4.29/-11.36
Θ(97.5°)	-5.04/-7.99	-8.11/-5.46	-5.78/-5.73	-8.1/-3.83	-1.52/-3.04	-5.88/-5.69	-1.96/-0.84	-1.6/-1.42	-2.31/-4.45	-7.89/-7.35	-4.84/-6.56	-6.9/-5.75	-8.6/-3.68	-7.9/-8.37	-7.27/-7.73	-6.17/-3	-2.66/-3.64	-1.61/-1.98	-0.92/-0.57	-1.7/-4.16	-1.54/-3.49	-5.46/-4.09	-7.79/-8.28	-7.42/-10.14
Θ(105°)	-6.73/-5.48	-6.58/-4.47	-4.91/-4.63	-5.99/-5.97	-2.96/-6.85	-8.89/-9.74	-6.14/-3.52	-2.43/-2.2	-2.69/-4.02	-6.58/-9.61	-5.68/-7.13	-8.77/-8.47	-11.79/-8.37	-8.18/-9.14	-7.1/-6.4	-6.8/-7.43	-3.88/-1.63	-1.78/-2.1	-2.96/-1.27	-2.73/-2.33	-2.2/-4.49	-7.95/-8.66	-7.93/-7.27	-11.98/-7.28
Θ(112.5°)	-5.83/-6.71	-5.73/-4.49	-5.2/-8.18	-8.03/-7.28	-7.85/-9.64	-11.77/-10.8	-10.59/-7.79	-5.58/-3.61	-3.2/-															



Freq(Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	6.69	7.12	7.23	6.26
Ant. 2 Max Gain (dBi)	5.48	5.33	5.66	4.49
Ant. 3 Max Gain (dBi)	6.6	6.94	6.33	5.81
Ant. 5 Max Gain (dBi)	3.66	3.76	4.22	4.02
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/97.5/277.5	Phi/90/262.5	Phi/97.5/285	Phi/90/270
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/202.5	Phi/37.5/195	Phi/45/195	Phi/45/202.5
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/90/270	Phi/90/262.5	Phi/90/262.5	Phi/90/262.5
Ant. 5 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/97.5	Phi/30/90	Theta/97.5/7.5	Theta/60/22.5
Max Gain (dBi)	6.69	7.12	7.23	6.26
DG [1SS] (dBi)	8.68	8.68	8.08	7.02
DG [2SS] (dBi)	6.69	7.12	7.23	6.26
DG [4SS] (dBi)	6.69	7.12	7.23	6.26



Radiated Composite Gain Data of Combination B

Appendix A.4

DG 1SS Result

Freq(Hz)	5.2GPol.	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(15°)	1.25/1.09	1.04/1.09	1.64/2.52	3.21/3.69	4.14/4.43	4.57/4.77	4.46/4.64	4.48/4.44	3.23/2.98	3.87/3.6	3.37/2.8	2.34/2.39	2.21/1.85	1.41/1.16	1.46/2.3	2.86/3.29	3.83/4.27	4.69/4.84	4.81/4.62	4.52/4.8	4.93/4.66	4.18/3.54	2.69/1.83	1.33/1.03		
Θ(7.5°)	1.30/83	0.99/1.5	1.78/2.45	3.25/3.93	4.22/4.42	4.53/4.79	4.99/5.08	4.9/4.8	4.64/4.21	3.84/3.35	2.49/1.75	0.87/0.69	0.46/0.53	0.45/1.38	2.43/3.43	4.17/4.54	4.73/5.02	5.2/5.16	4.96/4.63	4.54/5.48	4.83/4.77	4.51/4.08	3.36/2.89	2.41/1.86		
Θ(15°)	-0.45/-0.82	-0.18/0.59	1.15/1.71	2.6/3.48	3.86/4.18	4.51/4.92	5.37/5.69	5.92/6.02	6.07/5.94	5.59/4.97	4.04/2.67	0.85/-0.35	-0.84/-0.85	-0.11/-1.19	2.49/3.37	4.03/4.68	5.07/5.36	5.66/5.99	5.1/4.83	5.12/5.52	5.58/5.52	4.99/4.48	3.77/3	1.94/1.09		
Θ(22.5°)	-1.33/-2.4	-1.77/-1.3	-0.37/-0.06	1.26/2.51	3.1/3.61	3.94/3.97	4.3/5.01	5/5.35	5.73/5.88	5.65/5.22	4.83/73	2.33/1.33	1.12/1.21	0.85/1.48	2.23/02	3.66/4.29	4.62/4.78	4.95/5.12	5.27/5.43	5.5/5.64	5.74/5.48	5.07/4.35	3.13/1.82	0.99/0.26		
Θ(30°)	0.48/-2.48	-3.08/-1.46	-1.45/-1.08	0.35/1.09	1.14/1.3	1.28/1.05	0.64/0.31	1.32/2.21	3.18/3.81	4.12/4.3	4.21/3.87	3.33/2.47	2.25/2.31	1.87/2.65	3.55/3.83	3.94/3.96	3.74/3.28	3.17/3.27	3.19/3.12	3.22/3.33	3.53/3.76	3.82/3.58	2.78/1.59	1.48/1.34		
Θ(37.5°)	1.31/-0.64	-1.67/-2.05	-1.78/-1.21	0.56/2.26	3.06/2.99	2.31/1.13	-0.11/-0.49	-0.13/0.02	0.83/1.45	2.89/3.95	4.04/3.39	2.74/2.5	2.91/2.57	1.81/2.38	3.42/3.73	3.13/1.94	0.59/-0.23	-0.05/0.19	-0.32/-1.71	-3.16/-1.99	-0.05/-1.48	2.22/2.69	2.73/2.47	2.61/2.49		
Θ(45°)	0.9/-1.24	-0.94/-0.66	-0.71/-0.16	1.35/2.8	3.25/2.59	1.71/1.46	1.01/1.07	0.7/0.87	1.48/1.34	1.91/2.96	3.42/88	2.01/1.64	2.17/1.81	1.37/2.78	3.97/3.46	2.04/0.8	0.2/-0.78	-1.11/-1.41	-2.6/-3.37	-2.16/-0.93	3.14/2.77	3.04/3.42	3.04/3.18			
Θ(52.5°)	0.13/-1.5	-0.99/-0.7	-0.48/0.04	0.36/1.76	1.31/1.23	1.58/1.2	0.47/0.98	2.36/3.29	3.53/3.07	2.9/2.7	2.85/2.43	1.29/1.13	0.71/-0.27	-0.85/1.47	3.15/2.42	1.19/1.03	1.02/0.81	0.6/0.11	-1.15/-2.98	-1.61/0.22	1.84/1.9	2.04/2.44	3.25/4.05	3.46/2.18		
Θ(60°)	0.12/-1.51	-0.91/0.12	-0.46/-0.59	0.62/2.18	1.88/2.77	3.38/3.91	3.93/4.31	4.34/4.14	4.18/2.36	3.63/3.57	1.43/1.55	0.77/0.88	0.93/-0.44	-1.45/-1.42	3.07/1.99	2.25/2.19	2.1/2.28	1.05/-0.02	-0.03/-0.02	0.21/0.44	1.86/2.32	1.64/1.07	2.09/3.29	3.32/1.72		
Θ(67.5°)	-1.06/-1.82	-0.53/0.16	-1.55/0.27	2.99/3.74	3.55/3.41	4.13/4.58	4.23/4.3	4.59/5.49	5.05/3.2	2.22/1.98	-1.15/-0.45	0.01/0.77	-1.89/-0.2	0.91/76	3.27/3.58	3.57/3.79	3.15/2.9	3.33/3.88	3.6/2.22	2.34/2.72	2.75/1.99	1.84/2.69	2.52/1.1			
Θ(75°)	-0.48/-1.74	-1.07/0.1	0.09/1.94	3.19/3.82	3.61/3.5	2.83/1.62	0.81/-0.34	0.64/3.27	4.75/4.13	1.48/0.48	-1.14/-1.4	-0.8/-0.31	0.16/0.62	-0.1/-0.44	0.64/1.18	2.73/3.46	3.84/98	6.01/6.17	5.75/2.22	4.98/3.39	2.71/3.09	2.96/2.55	1.37/1.56	1.34/0.55		
Θ(82.5°)	-0.68/-1.19	-0.75/0.7	1.48/2.15	2.67/2.32	1.51/1.43	1.74/2.41	2.97/2.79	0.76/0.4	2.17/2.57	0.56/-0.39	-1.16/-0.42	-0.22/-1.37	-0.35/-0.72	0.18/1.09	1.51/0.54	2.53/3.52	4.42/6.96	7.67/7.51	7.22/6.79	6.16/4.38	3.11/2.62	1.67/1.73	1/1.3	1.2/-0.77		
Θ(90°)	-0.93/-1.79	-0.33/0.98	1.41/0.54	1.65/1.26	0.56/-0.86	0.66/1.21	0.86/1.63	2.54/0.75	-1.01/-1.21	-0.61/-1.93	-2.3/-1.24	-0.06/-1.46	-0.74/-3.32	0.81/0.68	1.08/0.07	1.23/3.26	4.51/7.51	8.88/7.93	7.38/7.11	6.78/5.21	3.52/3.12	1.53/1.08	0.26/0.11	0.88/-0.02		
Θ(97.5°)	-2.28/-1.34	0.06/0.65	1.38/-0.24	0.54/0.29	-1.98/-3.57	-1.74/-1.37	-1.51/-1.33	1.09/1.08	-2.34/-4.6	-3.04/-3.11	-2.97/-2.25	-0.95/-1.73	-4.15/-2.09	0.48/-0.96	0.56/-0.33	0.89/1.19	3.09/6.56	7.56/7.47	6.8/4	6.22/4.96	2.36/1.12	0.38/0.38	-0.84/-1.69	0.72/-0.81		
Θ(105°)	-2.51/-1.52	-1.17/-1.06	-0.08/-2.35	-2.55/-1.82	-2.73/-5.14	-3.09/-3.36	-2.55/-3.17	-1.06/0.72	-1.22/-2.51	-3.18/-2.15	-1.95/-2.16	-1.44/-2.38	-1.25/-2.38	-1.23/-0.38	-0.01/-0.37	5.45/5.61	5.36/5.5	4.94/5.41	2.32/0.25	-1/2.71	-3.85/-1.69	-1/2.71	-3.85/-1.69	-1/2.71		
Θ(112.5°)	-1.66/-0.6	-1.09/-0.327	-3.56/-3.31	-2.78/-1.8	-2.73/-3.9	-3.59/-4.32	-3.66/-4.07	-2.36/-0.65	-1.72/-2.27	-3.25/-2.5	-3.77/-2.27	-2.99/-4.34	-5.01/-4.21	-2.96/-3.75	-3.83/-1.99	-1.86/-1.07	-2.57/0.54	3.36/3.07	3.84/4.14	3.75/2.63	0.93/-1.83	-4.32/-4.15	-4.32/-5.52	-1.4/-1.07		
Θ(120°)	-2.99/-2.4	-1.82/-2.21	-2.61/-1.98	-2.03/-2.94	-2.49/-2.19	-3.14/-4.35	-4.78/-5.42	-3.88/-3.8	-2.36/-2.54	-4.64/-4.03	-3.25/-3.02	-3.38/-5.39	-5.37/-3.98	-3.6/-4.71	-3.81/-2.72	-3.4/-3.71	-3.52/-0.61	1.11/-1.14	-0.99/1.69	2.64/1.25	-0.57/-2.49	-1.97/-4.54	-5.3/-5.61	-2.61/-1.09		
Θ(127.5°)	-5.18/-4.68	-3.78/-2.89	-1.85/-1.38	-1.32/-1.7	-2.08/-2.66	-4.41/-5.26	-3.37/-2.69	-4.2/-5.57	-5.36/-6.1	-5.34/-4.58	-4.56/-3.25	-5.31/-5.05	-6.09/-6.24	-5.88/-2.13	-3.51/-5.57	-5/-3.96	-3.64/-7.59	-4.64/-6.57	-5.36/-0.94	0.19/0.11	-1.95/-5.21	-3.95/-4.69	-6.99/-4.12	-4.05/-4.47		
Θ(135°)	-6.88/-5.1	-3.92/-4.7	-4.26/-2.68	-0.95/-0.1	0.18/-2.7	-5.72/-5.27	-3.23/-0.27	-3.05/-4.91	-7.82/-6.47	-6.01/-5.71	-3.96/-3.87	-6.54/-6.14	-6/-4.07	-7.26/-5.8	-7.63/-7.4	-5.77/3.93	-3.71/-3.78	-7.42/-7.43	-8.04/-5.99	-2.1/-1.35	-2.89/-6.64	-5.66/-7.1	-10.05/-7.62	-5.71/-6.53		
Θ(142.5°)	-7.13/-6.87	-4.34/-4.24	-4.42/-3.24	-2.08/-1.14	-1.49/-3.52	-5.23/-6.04	-5.88/-4.58	-3.73/-5.07	-8.54/-9.56	-9.59/-8	-6.31/-4.92	-5.98/-10.6	-9.63/-6.95	-7.65/-4.32	-8.33/-9.3	-8.08/-6.18	-6.07/7.09	-7.3/-6.63	-6.32/-5.95	-5.12/-5.35	-8.2/-8.35	-6.52/-7.06	-8.57/-7.82	-6.25/-7.34		
Θ(150°)	-9.51/-10.08	-7.78/-7.77	-3.82/-3.72	-3.83/-3.26	-3.04/-4.59	-7.6/-6.46	-3.49/-2.72	-3.92/-5.83	-7.14/-8.37	-11.04/-11.61	-9.37/-8	-9.05/-10.12	-9.4/-8.65	-7.81/-8.08	-8.78/-9.63	-11.15/-6.77	-3.61/-4.09	-7.53/-8.48	-7.97/-7.95	-7.28/-5.86	-5.19/-6.21	-6.09/-6.95	-8.57/-7.14	-6.5/-7.77		
Θ(157.5°)	-7.8/-7.6	-6.86/-5.95	-4.8/-4.83	-5.06/-5.51	-6.34/-7.48	-6.93/-5.9	-4.62/-3.21	-3.25/-3.48	-4.12/-4.93	-6.07/-6.47	-8.11/9.67	-10.71/9.78	-8.44/-7.29	-6.28/-6.49	-6.7/-6.58	-5.95/-4.44	-3.72/-5.27	-6.95/-7.98	-9.09/-8.36	-6.15/-5.59	-7.66/-7.95	-7.99/-7.51	-8/-7.55	-7.85/-8.81		
Θ(165°)	-9.18/-8.76	-7.38/-7.68	-6.48/-5.3	-5.45/-5.99	-6.46/-7.17	-7.74/-7.47	-5.88/-3.71	-3.06/-3.23	-4.47/-5.86	-7.21/-8.82	-11.04/10.88	-11.02/-11.18	-9.84/-8.62	-6.99/-6.5	-6.43/-6.44	-6.58/7.15	-8.24/-9.73	-10.22/-10.43	-8.62/-7.11	-6.28/-6.14	-7.04/-7.34	-7.36/-7.21	-7.69/-8.08	-7.84/-9.21		
Θ(172.5°)	-11.01/-11.92	-12.24/-12.18	-11.63/-11.04	-10.49/-9.65	-10.38/-8.4	-6.67/-4.81	-3.71/-3.39	-3.31/-4.16	-5.76/-7.52	-8.71/-10.61	-10.53/-10.84	-10.28/-9.32	-8.59/-8.85	-8.01/-8.05	-8.09/-8.07	-7.87/-7.31	-7.84/-7.97	-9.05/-10.19	-10.71/-10.72	-9.3/-8.36	-7.75/-6.92	-6.51/-6.67	-8.07/-9.7	-9.54/-10.28		
Θ(180°)	-12.64/-12.51	-12.22/-11.97	-10.16/-8.23	-6.83/-6.05	-5.74/-5.72	-5.21/-5.17	-5.54/-6.84	-8.31/-8.63	-8.59/-8.13	-8.87/-9.52	-9.84/-10.38	-11.15/-10.7	-10.46/-10.33	-9.88/-9.5	-8.59/-8.99	-7.92/-6.55	-5.75/-5.2	-5.34/-6.18	-6.15/-5.98	-5.87/-5.65	-5.78/-5.69	-5.73/-6.25	-7.38/-9.23	-10.4/-11.28		
Freq(Hz)	5.2GPol.	Theta-	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°)	4.01/4.08	4.13/3.93	4.04/3.76	3.45/2.9	2.6/1.94	1.47/1.26	1.44/1.39	0.92/0.61	0.68/1.3	2.02/2.66	3.11/3.4	3.75/3.79	3.88/3.79	3.71/3.8	3.94/3.95	3.69/3.23	2.62/2.04	1.84/1.41	1.29/0.93	0.31/0.17	1.03/2.12	3.21/3.88	4.17/4.33	4.42/4.48		
Θ(7.5°)	3.63/3.66	3.77/3.65	3.61/3.57	3.12/3.53	2.03/1.19	0.35/-0.33	-0.54/-0.64	-0.21/0.01	1.05/2.13	3.08/4	4.52/4.8	4.73/4.75	4.56/4.3	4.03/73	3.72/3.76	3.57/2.96	2.24/1.97	1.96/1.95	1.72/1.25	0.46/0.09	0.51/4.3	2.48/3.03	3/2.74	2.78/3.19		
Θ(15°)	3.87/4.17	3.98/3.54	3.22/3.2	2.88/2.24	1.69/1.12	0.69/0.13	-0.28/-0.47	-1.05/-0.79	0.78/2.12	3.42/4.45	5.156/-4.11	5.29/5.07	4.94/4.84	4.62/4.39	4.26/4.22	3.57/3.1	2.38/1.87	1.25/0.71	0.42/0.33	0.29/-0.06	-0.11/0.49	1.08/1.7	2.19/2.39	2.45/2.54		
Θ(22.5°)	3.76/3.86	3.43/3.05	2.84/2.47	2.02/1.34	1.05/1.22	0.95/0.46	0.87/1.12	1.6/1.83	2.41/3.15	3.98/4.71	5.25/5.39	5.01/4.68	4.65/5.02	5.03/4.9	4.33/3.83	3.14/2.71	2.01/1.78	1.31/0.79	0.53/0.15	-0.39/-0.14	0.26/0.04	0.27/1.39	2.73/3.54	3.54/3.07		
Θ(30°)	3.16/3.26	2.64/1.74	1.39/1.167	1.06/0.27	-0.63/-1.57	-1.01/0.01	1.05/0.55	1.8/2.4	2.72/3.18	3.49/3.79	4.04/3.97	3.75/3.41	3.40/3.78	4.04/3.95	3.49/2.8	1.73/2.02	1.									



Radiated Composite Gain Data of Combination B

Appendix A.4

Θ(22.5°)	-0.52/-2.07	-1.52/-0.59	0.79/-1.49	2.44/-3.77	4.95/6.4	5.92/5.9	5.85/5.9	6.06/6.1	5.84/99	4.01/2.72	1.42/0.23	-0.47/-0.99	-1.57/-2.76	-2.03/0.12	2.36/4.05	5.16/5.95	6.27/6.33	6.06/5.83	5.91/5.82	5.6/5.5	5.37/5.24	4.83/4.15	3.32/2.66	2.32/-1.19
Θ(30°)	0.24/-0.52	-0.79/0.41	0.91/0.42	1.25/2.77	3.77/4.16	3.94/3.94	3.91/3.58	3.84/4.63	5.34/5.49	4.91/3.99	2.63/1.6	1.11/0.96	0.12/-0.57	-0.37/-1.48	3.24/4.29	4.64/4.76	4.76/5.03	5.09/5	4.75/4.51	4.8/5.17	5.32/5.41	5.23/4.71	3.55/2.69	1.28/0.33
Θ(37.5°)	0.44/0.36	0.57/1.4	1.99/1.45	0.90/85	0.72/1.31	1.44/1.24	0.53/0.32	0.40/55	2.01/3.51	3.78/3.48	2.85/2.11	1.57/1.44	1.56/1.98	2.39/3.05	3.69/3.97	4.24/0.8	3.69/3.02	1.88/1.3	1.25/1.73	2.49/3.27	3.83/4.17	3.99/2.94	1.55/1.06	0.16/-0.51
Θ(45°)	1.02/2.07	1.78/1.84	1.58/0.94	1.5/-1.69	1.78/1.9	1.94/1.36	0.44/-0.15	-0.36/-0.37	0.03/1.51	2.15/1.89	2.33/2.17	1.52/0.71	0.99/2.57	3.09/3.42	4.06/3.49	2.94/1.91	0.48/-0.59	-1.65/-1.9	-1.22/-0.17	0.09/-0.37	0.41/1.29	2.07/2.39	1.53/1.13	0.79/0.37
Θ(52.5°)	1/1.73	1.73/1.64	0.77/0.48	1.42/1.97	1.37/1.5	1.69/1.05	1.05/1.12	1.08/1.1	1.45/1.68	1.97/1.46	0.64/1.43	0.46/-1.71	0.04/2.13	3.13/3.13	3.06/2.69	1.55/2	2.37/1.77	0.09/-1.65	-2.81/-2.61	-0.21/-1.6	1.54/1.97	2.44/2.85	2.34/1.34	0.67/-0.12
Θ(60°)	3.24/3.67	0.88/0.16	-0.31/1.21	1.56/1.34	2.36/2.92	2.59/2.15	2.91/3.14	2.68/2.16	2.94/3.29	2.34/1.41	0.19/0.81	-0.04/-1.9	-0.76/0.64	1.7/0.83	2.47/3.26	1.96/3.1	3.42/1.23	-1.16/-0.87	-1.24/-2.23	-2.16/-0.59	1.09/0.92	1.74/3.03	3.43/2.63	1.22/0.96
Θ(67.5°)	1.79/2.45	0.86/-0.41	-0.51/1.09	1.85/3.15	3.45/2.54	3.82/5.28	5.49/4.76	4.39/4.47	4.44/0.6	2.27/1.17	-2.08/-0.7	-1.95/-1.85	0.73/-0.13	-1.51/-2.24	1.93/2.14	1.97/4.43	4.08/1.96	0.68/1.95	1.86/-0.33	-0.91/4.4	2.94/2.1	0.78/1.79	2.77/2.9	1.39/0.58
Θ(75°)	1.74/2.61	0.36/-0.21	-0.6/-1.32	2.65/2.59	1.56/2.65	3.09/2.9	2.39/2.29	2.87/3.21	4.67/4.9	3.19/-0.12	-2.67/-3.16	-2.67/-3.26	-0.16/-0.27	-2.46/-1.83	0.11/0.8	1.17/4.43	5.3/4.76	4.37/5.71	5.87/4.89	3.59/3.33	4.05/2.86	1.83/1.24	2.55/3.18	2.47/1.77
Θ(82.5°)	1.25/1.59	0.47/-0.17	-0.93/0.87	1.2/0.99	1.4/2.22	3.27/4.6	5.23/4.47	3.28/3.26	2.67/3.14	1.33/-2.49	-3.35/-2.64	-2.71/-2.34	0.22/-0.58	-0.59/-1.1	-1.18/-0.23	1.25/4.54	4.93/5.39	7.03/7.36	6.58/6.16	5.71/4.37	4.48/3.13	2.82/1.78	1.43/2.62	2.27/1.7
Θ(90°)	0.62/1.01	1.04/0.56	-0.99/0.09	0.41/0.21	1.33/1.75	2.18/3.3	3.66/4.45	4.71/2.12	2.43/1.55	0.71/-2.03	-2.21/2.34	-1.84/-3.2	-0.79/-0.32	-0.34/-0.12	-0.93/-0.6	0.74/1.5	5.04/5.98	7.54/8.08	7.44/7.39	6.82/5.32	4.02/2.75	1.88/1.4	0.49/1.75	1.95/0.37
Θ(97.5°)	1.08/0.37	0.56/-0.58	-2.25/-1.02	-0.15/-0.45	-1.7/-1.56	-0.28/-0.34	0.26/1.92	3.94/3.12	0.96/0.05	-0.43/-1.52	-2.86/-2.38	-3.28/-2.68	-0.77/-1.49	-0.8/-0.1	-1.76/-0.26	0.41/2.77	3.01/5.24	6.91/7.19	6.82/7.24	7.26/5.14	2.71/1.15	0.92/0.11	-1.29/0.25	0.83/0.92
Θ(105°)	0.75/0.23	-0.03/-2.03	-2.99/-1.5	-1.34/-1.4	-3.28/-4.66	-2.23/-1.78	-1.44/0.7	2.58/1.77	-0.04/0.03	-1.36/-1.33	-2.71/-2.76	-3.22/-4.29	-1.87/-3.75	-1.99/-1.69	-2.43/-1.3	0.01/-0.8	-0.34/2.79	5.13/5.23	4.91/5.65	5.83/4.7	0.57/0.48	-2.55/-3.16	-1.6/0.33	1.14/0.33
Θ(112.5°)	0.17/0.09	-0.8/-1.95	-2.95/-1.95	-1.7/-2.76	-5.27/-7.46	-3.53/-1.72	-3.32/-1.73	0.57/1.16	-0.25/-1.93	-1.8/-1.91	-4.34/-3.17	-4.43/-4.53	-4.44/-4.35	-2.49/-3.88	-2.09/-2.87	-2.16/-2.63	-1.13/1.03	3.43/3.07	3.35/4.81	4.98/4.31	1.01/-2.36	-3.55/-3.54	-2.72/-1.3	0.73/-0.58
Θ(120°)	-3.22/-0.61	-0.92/-2.34	-3.48/-2.61	-2.32/-1.9	-4.22/-5.69	-8.04/-5.35	-4.92/-3.76	-2.63/-0.51	-0.81/-2.56	-2.94/-2.16	-2.25/-2.16	-4.88/-5.03	-5.21/-5.5	-5.13/-4.96	-3.24/-3.31	-3.2/-0.01	-1.56/-3.99	-0.56/2.28	3.66/2.43	1.21/-3.19	-3.89/-6.22	-1.5/-1.26	-1.18/-2.22	
Θ(127.5°)	-4.02/-4.06	-3.17/-2.74	-2.43/-2.45	-2.62/-3.66	-3.48/-3.49	-6.43/-7.98	-4.21/-3.09	-3.79/-4.33	-0.03/-3.87	-4.01/-4.42	-3.85/-4.56	-4.36/-5.74	-5.61/-4.95	-6.01/-5.94	-2.59/-2.8	-5.35/-4.23	-5.32/-4.25	-3.36/-4.99	-4.74/-1.53	0.72/0.2	-4.74/-1.53	-5.35/-6.25	-4.8/-2.71	-2.19/-1.68
Θ(135°)	-5.1/-4.59	-3.17/-2.92	-2.52/-2.52	-2.05/-2.58	-3.12/-4.01	-7.01/-7.97	-4.52/-1.53	-2.17/-4.95	-5.78/-4.34	-3.32/-3.36	-4.25/-3.56	-4.81/-5.12	-6.27/-5.13	-7.01/-7.3	-5.86/-6.09	-5.71/-3.26	-3.79/-6.47	-5.15/-5.97	-5.99/-2.7	0.45/-0.15	-2.14/-3.92	-5.78/-7.22	-6.24/-4.4	-3.05/-3.59
Θ(142.5°)	-9.14/-6.69	-5.26/-3.55	-3.18/-4.25	-2.26/-1.76	-1.73/-3.62	-9.05/-6.15	-3.3/-3.6	-4.8/-5.04	-6.03/-6.41	-5.54/-4.92	-4.54/-5.05	-6.9/-9.55	-10.97/-7.84	-8.9/-10.99	-8.97/-8.06	-7.79/-6.44	-6.53/-6.44	-5.8/-4.6	-3.98/-3.35	-3.2/-2.84	-3.77/-3.62	-5.27/-6.73	-5.76/-6.66	-8.63/-8.8
Θ(150°)	-8.67/-6.74	-5.45/-5.69	-5.46/-4.18	-3.29/-2.28	-3.02/-4.32	-6.09/-6.46	-4.93/-3.13	-3.22/-4.39	-5.64/-6.94	-7.58/-7.67	-6.5/-6.21	-7.51/-7.89	-9.48/-9.86	-10.1/-10.65	-9.15/-8.33	-6.24/-8.71	-6.64/-5.31	-4.67/-3.45	-2.15/-1.81	-2.92/-5.79	-6.69/-5.69	-6.69/-5.69	-6.69/-5.69	-6.69/-5.69
Θ(157.5°)	-8.66/-9.21	-8.34/-6.21	-4.98/-4.79	-4.39/-5.48	-6.67/-6.5	-5.66/-5.19	-4.7/-3.91	-3.01/-3.45	-4.84/-6.24	-7.37/-8.08	-9.37/-9.84	-9.27/-8.18	-8.26/-7.5	-6.9/-8.16	-9.22/-8.66	-7.39/-5.7	-4/-4.95	-6.92/-7.91	-8.34/-6.83	-4.72/-5.4	-5.67/-6.09	-6.49/-7.11	-7.07/-6.09	-6.62/-7.52
Θ(165°)	-8.84/-8.75	-7.36/-6.55	-5.96/-5.83	-6.24/-6.99	-7.91/-8.24	-8.35/-7.93	-4.4/-2.53	-2.38/-3.59	-4.18/-4.3	-5.65/-7.42	-8.32/-8.01	-8.08/-7.84	-6.61/-6.32	-6.54/-6.63	-6.19/-6.14	-6.49/-7.93	-8.83/-8.53	-9.42/-12.45	-12.15/-9.99	-8.32/-7.59	-7.22/-6.31	-6.11/-5.66	-5.56/-6.38	-7.94/-7.78
Θ(172.5°)	-10.97/-10.35	-10.31/-9.46	-10.18/-10.41	-10.89/-9.01	-6.72/-6.03	-6.34/-6.34	-5.18/-3.78	-3.55/-3.91	-4.76/-5.97	-8/-9	-10.69/-10.9	-11.07/-10.82	-10.18/-9.48	-8.69/-8.08	-8.19/-8.61	-8.5/-8.51	-8.07/-7.56	-8.48/-9.35	-10.93/-12.18	-10.49/-7.84	-6.63/-6.52	-6.61/-7.26	-8.78/-9.73	-10.63/-10.4
Θ(180°)	-11.54/-12.06	-11.65/-11.67	-11.25/-10.46	-10.19/15	-8.92/-8.56	-7.41/-6.46	-6.35/-6.77	-7.08/-7.42	-7.84/-7.77	-7.88/-7.79	-8.25/-9.16	-10.01/-10.4	-11.05/-10.77	-10.57/-10.66	-9.33/-8.39	-7.61/-6.47	-5.47/-5.15	-5.74/-5.34	-5.26/-4.93	-5.13/-5.71	-5.85/-6.47	-7.5/-6.53	-9.52/-9.91	-10.54/-11.97
Freq(Hz)	5.6GPol.	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°)	7.37/0.32	6.89/6.61	6.33/6.04	5.52/4.88	3.92/2.6	1.37/0.07	-1.57/-2.51	-0.72/1.51	3.08/4.11	4.97/6.76	6.34/6.74	7.97/7.24	7.47/7.62	7.53/7.13	6.65/6.2	5.88/5.35	4.48/3.29	1.79/-0.06	1.14/2.53	3.64/4.65	5.45/6.26	6.95/7.41	7.56/7.49	
Θ(7.5°)	7.31/7.41	7.4/7.24	6.77/6.18	5.52/4.88	3.87/2.39	0.69/-0.74	-1.75/-1.75	-0.21/1.94	3.75/4.76	5.62/6.36	6.88/7.17	7.27/7.32	7.33/7.16	6.86/6.64	6.36/5.99	5.52/4.96	4.2/85	1.43/0.28	-0.37/-0.37	0.33/1.61	2.93/3.99	4.75/5.45	6.04/6.6	7.01/7.22
Θ(15°)	6.42/6.66	6.67/6.35	5.87/5.21	4.12/3.07	1.71/0.18	-0.28/0.04	0.61/28	2.07/2.93	3.73/4.44	5.25/6.1	6.31/6.63	6.84/6.91	6.95/6.79	6.35/6.09	5.59/5.7	4.94/0.66	2.82/1.76	0.35/-0.3	-0.84/-2.01	-1.95/-0.77	0.82/2.23	3.39/4.21	4.95/5.53	5.88/6.39
Θ(22.5°)	4.94/4.71	4.48/4.2	3.84/4.42	3.04/2.66	1.53/-0.33	-1.61/-1.16	0.19/1.13	2.84/4.34	5.09/5.25	5.26/5.52	5.92/6.1	6.05/5.99	6.17/6.39	6.44/6.09	5.54/6.86	4.24/3.85	3.32/2.92	2.1/0.9	-0.95/-2.89	-4.18/-3.56	-1.32/0.07	1.94/2.81	3.52/4.48	5.02/5.46
Θ(30°)	3.51/3.63	3.14/2.56	2.63/3.9	3.73/3.78	2.73/1.01	0.26/0.26	-0.58/-1.12	0.54/2.56	4.01/5.11	5.73/5.68	5.45/5.68	5.6/5.16	4.95/5.61	5.87/5.7	5.15/4.5	4.17/3.93	3.34/2.93	2.22/0.85	-0.73/-1.23	-1.91/-1.92	-0.03/1.85	2.74/2.91	2.21/4.7	1.85/3.26
Θ(37.5°)	1.71/1.94	1.8/0.53	1.06/2.79	3.23/3.15	2.31/1.16	0.28/-0.2	-0.6/0.16	0.29/0.45	0.99/2.96	4.83/5.03	4.33/4.01	3.78/2.74	1.99/3.01	3.51/3.03	3.44/4.19	3.74/3.24	2.26/0.44	-1.82/-2.72	-1.05/-0.39	-0.47/0.84	-0.43/1.33	2.37/1.97	-0.02/-1.12	-0.03/-1.32
Θ(45°)	0.37/0.86	1.16/1.6	2.78/3.46	3.14/1.81	-0.01/-1.84	-2.31/-0.32	1.48/2.15	1.86/0.84	1.02/1.45	2.23/3.09	2.21/0.92	1.19/0.9	2.05/0.8	1.39/1.57	2.42/2.66	2.16/0.65	1.13/0.65	0.59/-0.09	-0.65/-0.15	0.13/-0.07	0.62/0.28	-1.08/-2.32	-2.58/-0.64	
Θ(52.5°)	2.19/2.34	2.23/2.89	3.57/3.13	1.5/0.73	-3.95/-4.32	-1.99/0.93	2.2/11	1.84/1.37	2.28/3.07	1.47/1.02	0.61/-1.18	-1.96/-1.39	-0.44/-1.95	-1.68/-0.39	0.22/-1.46	-0.62/1.51	1.09/-1.05	-0.84/0.3	0.79/-0.25	-0.49/0.01	0.33/0.11	-0.87/-0.99	-1.38/-1.23	-1.81/0.01
Θ(60°)	1.86/1.75	2.04/4.6	3.82/2.96	0.41/-2.7	-4.05/-3.27	-0.78/1.57	1.77/0.64	0.08/1.24	1.12/2.83	2.66/0.85	0.53/-0.3	-2.31/-0.66	0.11/-0.46	-1.04/-0.8	0.46/0.59	0.26/-0.84	-1.76/-1.28	-1.34/-0.47	0.76/0.15	0.07/0.78	-0.78/-0.5	0.35/0.19		
Θ(67.5°)	1.08/0.31	0.71/62	1.67/0.24	-3.41/-1.53	0.04/-0.43	-2.34/-1.06	-0.46/-0.42	-0.36/0.61	-0.31/48	2.68/2.23	2.5/57	0.69/2.64	2.19/1.64	-1.51/-0.93	-2.96/-4.69	-2.05/-0.96	0.34/0.67	-1.06/-3.02	-4.18/-3.76	-2.7/-0.63	-0.08/-0.53	-0.46/-0.42	-1.09/-1.74	-0.77/0.96
Θ(75°)	-0.07/-1.35	-2.53/-1.82	0.05/-1.29	-0.59/1.04	1.75/-0.88	-4.89/-2.71	1.02/1.67	2.01/1.64	-0.56/-0.54	0.38/0.21	2.41/1.11	1.01/2.82	2.65/1.27	-1.46/-1.12	-3.4/-4.89	-5.38/-2	0.23/-0.93	-3.81/-3.93	-2.53/-4.45	-4.47/-0.94	0.17/-1.1	-1.71/-1.46	-1.26/-1.74	-2.25/-1.1
Θ(82.5°)	-2.5/-2.85	-4.54/-1.38	0.8/0.05	-0.51/0.88	0.35/-0.65	-4.08/-0.91	0.84/-0.01	-1.47/-1.11	-2.53/-2.59	-1.11/-0.2	0.78/-0.65	0.26/1.34	0.93/-0.87	-0.98										



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Freq(Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	6.69	7.12	7.23	6.26
Ant. 2 Max Gain (dBi)	5.48	5.33	5.66	4.49
Ant. 4 Max Gain (dBi)	5.86	5.91	5.78	5.79
Ant. 5 Max Gain (dBi)	3.66	3.76	4.22	4.02
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/97.5/277.5	Phi/90/262.5	Phi/97.5/285	Phi/90/270
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/202.5	Phi/37.5/195	Phi/45/195	Phi/45/202.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/22.5	Phi/45/30	Phi/52.5/22.5	Phi/52.5/30
Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/97.5	Phi/30/90	Theta/97.5/7.5	Theta/60/22.5
Max Gain (dBi)	6.69	7.12	7.23	6.26
DG [1SS] (dBi)	5.9	5.85	6.19	6.25
DG [2SS] (dBi)	6.69	7.12	7.23	6.26
DG [4SS] (dBi)	6.69	7.12	7.23	6.26



Radiated Composite Gain Data of Combination C

Appendix A.5

DG 1SS Result

Freq(Hz)	5.2GPol.	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°)	1.041.3	1.561.69	2.252.56	2.842.93	2.82.69	2.422.22	1.971.58	1.331.56	1.391.09	0.980.77	0.460.16	-0.060.34	0.620.96	1.321.61	1.882.26	2.622.4	3.231.61	3.994.15	4.154.18	3.943.39	2.792.29	2.252.54	2.953.4	3.73.33	2.481.72	1.611.36
Θ(7.5°)	0.620.93	1.532	2.152.37	2.772.96	2.942.78	2.512.49	2.512.58	2.552.49	2.412.13	22	1.711.52	1.522.27	2.863.2	3.183.44	3.744.06	4.284.27	4.133.96	3.412.84	1.961.41	1.31.46	1.731.73	1.430.99	0.330.09	-0.110.1		
Θ(15°)	0.20.13	0.771.48	1.961.81	1.751.94	2.152.09	1.941.82	2.052.38	2.913.35	3.653.84	3.863.85	3.693.34	2.762.82	3.163.1	3.143.56	4.154.41	4.594.7	4.614.4	4.123.41	2.251.66	2.122.79	3.022.85	2.592.32	2.051.51	0.670.18		
Θ(22.5°)	0.62-0.02	0.511.18	1.881.68	1.360.88	0.670.88	1.381.21	1.322.13	2.253.05	3.744.19	4.384.61	4.794.68	4.464.36	4.323.79	3.443.69	3.994.15	4.154.18	3.943.39	2.792.29	2.252.54	2.953.4	3.73.33	2.481.72	1.611.36			
Θ(30°)	2.851.52	1.052.03	2.312.37	2.091.58	0.810.01	-0.62-0.73	-1.03-1.57	-0.371.45	2.943.74	4.064.45	4.64.93	5.095.03	5.024.64	3.954.16	4.714.64	4.363.82	3.021.83	0.830.62	0.37-0.02	0.180.93	1.682.44	2.922.9	2.431.57	22.47		
Θ(37.5°)	4.653.91	3.814.13	4.494.44	4.594.94	4.713.62	2.41.17	-0.010.2	0.91.46	4.283.16	4.455.19	5.393.33	5.385.46	5.825.37	4.264.27	4.684.55	3.321.66	0.190.54	-0.96-1.74	-3.24-5.13	-7.43-5.16	-2.120.3	1.372.24	2.792.77	3.193.81		
Θ(45°)	4.944.23	4.695.23	5.265.18	5.625.73	5.244.09	2.91.17	0.030.49	1.091.74	2.613.09	4.165.12	5.154.9	4.754.83	5.424.81	3.753.95	4.394.05	2.570.88	0.12-0.27	-0.66-1.32	-2.54-3.24	-3.02-2.61	-0.681.51	2.673.05	4.074.72	4.865.13		
Θ(52.5°)	4.564.44	4.865.01	4.614.15	4.324.35	3.382.6	1.64-0.78	-2.96-1.42	1.723.47	3.823.55	4.194.81	4.684.56	4.184.34	3.862.53	1.832.99	4.333.65	2.362.29	2.362.21	1.981.39	-0.61.254	-1.204.5	1.491.81	2.263.12	4.215.16	5.425.27		
Θ(60°)	3.23.6	4.044.65	4.223.37	3.321.1	2.623.12	2.671.4	0.922.22	3.413.9	4.113.65	4.24.34	3.23.17	3.533.88	3.692.02	1.393.07	4.553.41	3.143.3	2.812.62	2.120.59	-1.3-1.67	-0.021.84	3.023.03	2.272.18	3.484.65	4.883.86		
Θ(67.5°)	2.72.22	2.133.07	3.43.68	3.63.27	3.563.49	2.641.61	1.911.71	2.94.42	4.262.82	2.552.18	11.39	2.42.48	1.981.46	1.142.03	2.732.18	3.13.53	2.662.51	2.241.41	0.250.9	2.012.42	3.163.55	3.525.04	3.444.24	3.993.22		
Θ(75°)	2.781.04	0.632.77	43.82	3.363.4	3.722.94	1.01-0.96	-2.07-2.67	-1.032.34	3.282.68	1.941.58	0.670.76	1.612.43	2.362.37	2.061.56	20.78	1.672.5	1.451.89	3.713.61	1.620.87	2.482.25	2.243.38	3.693.19	2.592.8	2.212.23		
Θ(82.5°)	1.780.61	0.632.69	3.863.13	3.032.79	1.890.87	0.16-0.73	-0.170.56	-0.44-0.63	1.351.51	1.231.91	1.81.24	1.351.33	1.581.44	2.092.28	1.56-1.04	0.951.6	0.713.63	4.823.98	2.722.4	2.971.87	1.32.83	3.130.08	2.652.29	1.631.16		
Θ(90°)	0.210.47	1.272.24	3.122.2	2.461.04	0.51-0.44	-1.14-2.33	-2.5-0.69	1.640.43	-2.52-1.72	0.20.82	1.481.47	1.31.22	1.560.07	2.542.15	0.81.56	0.161.7	0.724.26	5.94.17	2.652.66	3.462.31	0.632.04	2.53	2.341.04	1.381.01		
Θ(97.5°)	-0.830.89	1.350.77	2.241.3	1.08-0.33	-1.99-1.73	-4.78-4.85	-4.14-4.08	0.440.44	-3.07-2.57	-0.46-0.2	0.740.89	10.78	-0.620.26	1.59-0.19	-0.4-2.15	-0.5-0.56	-0.793.22	4.343.52	2.622.81	3.072.35	-0.17-0.14	0.852.36	1.63-0.32	1.120.69		
Θ(105°)	-1.321.07	0.711-0.07	1.05-0.05	-1.6-1.87	-2.09-1.35	-7.86-0.62	-4.26-5.16	-2.71-0.11	-2.18-1.92	-0.730.27	0.810.44	1.090.75	-0.09-1.03	-1.07-1.44	-1.05-1.94	-0.91-0.59	0.713.63	4.823.98	2.722.4	2.971.87	1.32.83	3.130.08	2.652.29	1.631.16		
Θ(112.5°)	-1.63-0.69	0.641.47	-1.03-1.86	-2.99-2.05	-2.28-2.79	-6.25-5.85	-3.71-5.45	-3.62-1.21	-2.42-1.38	-0.86-0.37	0.09-0.36	0.41-0.93	-2.271.197	-0.63-1.97	-3.24-2.58	-3.04-2.87	0.81-4.27	1.071.04	0.721.84	2.211.07	-2.091.56	-2.43-2.13	-2.17-1.33	-1.14-1.33		
Θ(120°)	-1.09-2.1	-2.33-1.99	-1.94-0.79	-1.23-2.93	-2.56-1.16	-3.43-4.47	-4.8-6.12	-5.8-7.37	-3.48-2.05	-1.93-1.69	-0.58-1.73	-1.04-2.51	-4.13-2.84	-1.91-3.61	-4.29-4.11	-4.82-4.74	-4.62-2.77	-1.16-3.75	-3.72-0.15	1.6-0.39	-2.26-5.66	-3.31-3.62	-4.08-4.22	-3.01-1.52		
Θ(127.5°)	-3.32-3.57	-3.92-2.94	-1.26-1.84	-1.22-0.52	-1.46-2.2	-4.56-6.71	-3.69-2.57	-6.39-8.79	-4.93-3.58	-3.08-2.29	-2.76-2.55	-3.86-4.81	-6.43-5.53	-4.2-2.03	-3.48-7.27	-6.77-5.2	-4.53-11.11	-6.41-6.94	-6.52-2.37	-0.95-0.81	-2.97-6.01	-3.9-4.62	-7.86-5.39	-4.38-3.5		
Θ(135°)	-4.65-3.94	-3.61-4.32	-3.75-1.92	-0.810.28	0.51-1.86	-6.38-7.79	-4.53-3.14	-4.21-4.42	-5.94-5.26	-4.93-3.68	-2.13-3.02	-4.59-4.24	-5.71-7.38	-6.03-4.95	-7.11-8.02	-9.07-6.69	-4.79-7.16	-6.31-6.21	-7.97-6.21	-2.1-1.52	-3.31-7.29	-5.61-5.93	-9.61-7.74	-5.83-6.52		
Θ(142.5°)	-6.78-6.36	-4.04-4.2	-4.57-3.26	-2.611.61	-1.75-3.01	-4.86-6.18	-6.3-5.05	-4.21-5.48	-9.15-11.33	-9.49-6.35	-5.63-5.84	-6.55-9.87	-8.32-6.74	-8.01-9.82	-9.42-10.94	-10.45-7.88	-6.97-7.43	-6.55-5.93	-4.46-4.53	-6.95-5.89	-4.14-5.68	-6.77-6.05	-6.78-7.4			
Θ(150°)	-8.48-9.6	-7.22-5.93	-4.32-3.54	-3.07-3.05	-3.58-5.32	-8.01-6.47	-3.86-3.13	-4.05-6.68	-6.27-7.06	-9.09-9.38	-7.33-7.16	-7.75-8.92	-10.2-11.09	-9.41-8.5	-8.72-10.92	-11.21-7.92	-5.58-5.75	-8.2-8.48	-8.04-7.85	-7.63-6.13	-4.93-4.9	-5.46-7.7	-8.87-7.73	-7.07-6.46		
Θ(157.5°)	-8.87-8.03	-6.91-5.96	-4.44-4.19	-4.01-4.22	-5.41-6.92	-6.95-6.39	-4.96-3.72	-3.32-3.39	-3.63-4.17	-5.4-5.34	-7.17-7.38	-8.42-8.14	-7.4-7.46	-7.12-7.3	-7.74-7.21	-6.84-5.68	-5.61-7.98	-10.19-10.87	-10.75-8.82	-6.46-5.34	-6.14-6.93	-6.67-6.16	-6.74-7.77	-7.89-9.01		
Θ(165°)	-9.28-8.92	-7.48-6.93	-6.75-5.74	-5.44-6	-6.24-7.14	-7.71-7.61	-4.61-4.88	-4.63-4.47	-4.7-5.3	-5.67-6.89	-8.7-9.2	-9.75-11.77	-11.62-10.07	-8.14-7.53	-8.06-8.51	-9.29-9.77	-10.83-11.67	-11.58-10.66	-8.47-6.97	-6.25-6.07	-5.92-6.26	-7.38-8.17	-8.85-9.34			
Θ(172.5°)	-10.98-12.2	-12.4-11.96	-11.56-10.86	-10.66-9.96	-10.27-8.62	-6.79-5.27	-4.03-3.63	-3.54-4.23	-5.85-7.72	-9.34-9.5	-9.19-18	-9.98-10.23	-10.51-11.17	-10.85-11.28	-11.49-11.66	-11.05-9.99	-10.26-10.59	-11.84-12.69	-12.27-11.46	-10.71-10.17	-9.4-8.48	-7.53-7.27	-8.62-10.69	-10.38-9.86		
Θ(180°)	-12.55-12.82	-12.08-11.7	-10.61-9.28	-8.15-7.58	-7.29-7.46	-6.95-7.05	-7.11-8.34	-9.62-9.99	-9.51-8.52	-8.88-9.06	-9.43-9.97	-11.41-11.76	-12.7-12.45	-11.92-11.06	-9.78-9.62	-8.3-7.23	-6.46-5.95	-5.9-6.66	-7.11-7.47	-7.61-7.36	-7.72-7.59	-7.89-8.46	-9.19-11.17	-12.06-12.57		
Freq(Hz)	5.2GPol.	Theta-	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°)
Θ(0°)	1.261.36	1.110.81	0.990.96	0.660.19	-0.35-0.96	-1.37-1.21	-0.51-0.26	-0.220.07	0.20.87	1.551.72	1.741.78	1.621.14	1.080.76	0.60.83	1.171.21	1.020.75	0.460.39	0.851.03	1.321.45	1.371.46	1.922.38	2.873.12	3.152.77	2.131.65		
Θ(7.5°)	0.750.96	0.930.8	0.941.2	1.160.72	0.13-0.61	-1.15-1.44	-1.24-0.63	0.360.95	1.520.07	2.733.31	3.423.25	2.742.22	1.751.18	0.670.64	1.141.57	1.020.25	0.781.36	1.451.12	0.570.39	0.691.2	1.741.96	1.951.63	1.120.78			
Θ(15°)	0.341.14	1.391.25	1.25-1.58	1.641.32	0.840.48	0.460.53	1.011.52	1.581.93	2.32-7.5	3.444.01	4.284.08	3.422.65	2.232.19	2.122.19	2.392.55	2.251.75	1.020.83	0.710.53	0.330.2	0.22-0.14	-0.35-0.06	0.110.26	0.390.17	-0.51-0.94		
Θ(22.5°)	0.221.29	1.892.09	2.011.42	0.990.94	1.241.98	2.552.87	3.473.76	3.83.65	3.673.86	4.124.46	4.674.35	3.492.82	2.953.47	3.733.79	3.323	2.522.07	1.41.36	1.050.76	0.650.63	0.470.74	1.080.88	0.781.16	1.371.03	-0.17-1.03		
Θ(30°)	-0.490.53	0.870.4	0.040.52	0.771.26	1.992.32	2.132.67	3.373.73	4.324.19	3.793.72	3.774.13	4.414.11	3.274.23	2.452.93	3.182.98	2.542.3	2.332	1.250.9	0.910.8	1.090.78	0.15-0.39	-0.38-0.28	-0.18-0.21	0.190.11	-1.06-1.59		
Θ(37.5°)	-1.19-0.76	-1.26-1.69	-0.381.3	2.382.89	3.33.26	3.132.93	2.883.4	4.234.22	3.753.15	2.823.43	3.833.07	1.911.02	0.710.86	0.840.77	1.331.43	1.110.59	0.070.23	1.011.36	1.190.9	0.660.3	-0.75-1.37	-1.42-1.55	-1.82-2.37	-3.26-2.09		
Θ(45°)	-0.51-0.74	-1.89-1.39	0.471.99	2.52.62	2.833.33	3.473.26	3.133.46	4.14.61	4.74.21	2.142.08	0.68-0.71	-1.2-0.89	-1.44-2.39	-1.26-0.35	-0.050.7	0.870.91	0.940.94	0.810.72	1.041.09	1.20.62	0.010.39	0.27-0.65	-1.85-1.74</			



Radiated Composite Gain Data of Combination C

Appendix A.5

Θ(22.5°)	0.25/-0.39	-0.06/0.36	1.05/1.2	1.37/1.99	2.54/2.89	2.83/2.42	2.11/2.41	2.81/2.88	2.38/1.96	1.92/2.09	2.45/2.76	3.13/0.6	2.51/1.08	0.65/1.32	2.46/3.44	3.95/4.2	3.93/3.51	2.91/2.45	2.44/2.24	2.07/2.06	2.28/2.43	2.33/2.09	1.78/1.87	2.21/1.56
Θ(30°)	0.69/0.43	-0.3/0.3	0.91/0.56	0.48/1.35	1.86/1.83	1.24/1.22	1.17/0.71	1.13/2.05	2.74/2.79	2.32/2.46	2.88/3.9	4.44/7.2	4.13/1.5	2.71/3.48	4.36/4.64	4.14/3.38	2.42/2.09	1.79/1.28	0.86/0.35	0.88/1.72	2.36/2.87	3.35/3.18	2.54/1.94	1.21/0.84
Θ(37.5°)	1.67/2.19	2.42/3.53	4.29/4.02	3.41/2.96	2.6/2.4	1.7/0.92	0.3/0.61	0.83/0.64	1.92/3.24	3.31/3.19	3.86/4.48	4.74/5.01	5.19/5.36	5.44/5.8	5.89/5.26	4.64/3.9	2.39/0.68	-1.18/-2.49	-2.75/-2.12	-2.09/-0.26	1.34/2.27	2.31/3.38	0.59/1.12	0.33/-0.39
Θ(45°)	3.53/4.57	4.71/5.07	5/4.82	5.08/5.24	4.81/4.03	3.13/2.08	1.49/1.41	1.54/1.34	1.37/2.29	3.23/2.91	3.38/4.06	4.22/4.03	4.5/5.6	5.8/5.9	6.15/5.3	4.34/3.12	0.87/-0.95	-2.15/-3.13	-3.33/-3.04	-3.69/-3.71	-1.92/-0.26	0.53/0.51	0.43/1.52	1.66/1.32
Θ(52.5°)	4.85/4.97	5.68/6.17	5.51/5.01	5.38/5.23	4.21/3.25	2.10/3.36	-0.39/-0.04	0.54/1.08	1.57/2.21	2.86/2.86	2.76/3.3	2.77/2.08	3.44/4.74	4.98/4.53	4.41/4	3.08/3.53	3.67/2.69	0.24/-1.7	-1.87/-2.55	-1.63/-0.35	0.28/0.61	1.14/1.94	2.14/2.34	3/3.78
Θ(60°)	5.86/6.19	5.22/4.65	3.92/4.64	4.96/4.34	3.07/2.1	1.39/0.64	0.97/1.87	2.05/1.51	1.93/2.65	2.43/2.47	2.96/3.53	3.12/2.3	2.67/3.26	3.99/2.9	3.75/4.25	3.96/5.2	5.05/2.86	-0.29/-1.91	-2.78/-2.84	-2.91/-2.3	0.57/1.46	1.96/2.79	3.31/3.67	3.92/4.67
Θ(67.5°)	4.73/4.9	3.78/3.07	2.61/3.6	3.92/3.69	3.08/2.21	2/2.53	2.71/2.52	2.56/3.04	2.51/3.7	3.05/2.37	1.97/2.99	3.16/3.42	3.84/2.97	2.22/1.12	3.09/3.62	3.95/5.28	4.12/1.56	-0.19/-0.99	-1.31/-2.13	-1.69/0.27	2.54/3.23	2.74/2.94	2.81/2.84	3.26/4.12
Θ(75°)	4.04/4.05	2.25/2.2	2.45/3.53	3.75/3.42	2.96/1.61	-0.59/-0.4	-0.58/-0.43	1.03/1.87	3.02/3.51	4.14/2.3	1.64/1.4	2.55/2.91	3.81/3.33	2.25/1.05	1.46/2.23	2.22/3.97	3.77/2.63	2.06/2.42	2.3/2.43	2.04/2.06	3.59/3.45	3.3/2.69	2.39/2.48	3.27/4.17
Θ(82.5°)	3.04/3.06	2.01/2.36	2.09/2.32	2.47/2.7	2.34/-0.11	0.38/0.93	0.87/-0.08	-1.06/0.33	1.46/2.29	2.35/1.72	0.87/1.97	2.54/3.01	4.23/3.63	3.04/0.76	-0.75/0.37	0.61/2.98	1.9/1.9	4.32/3.89	2.22/7.5	2.91/1.96	3.29/3.32	3.96/3.01	1.33/2.12	2.41/3.15
Θ(90°)	2.08/2.39	1.71/2.38	1.77/0.98	1.89/2.39	1.69/0.57	-0.48/-1.73	-1.20/5.2	1.59/1.08	-0.36/1.05	1.88/1.76	1.22/2.18	2.63/2.3	3.27/3.53	2.78/1.42	-0.4/-0.79	-0.54/2.42	2.22/2.36	4.12/4.4	3.34/0.1	3.55/2.11	1.57/2.26	3.01/2.36	0.78/1.97	1.66/1.51
Θ(97.5°)	1.61/1.7	1.63/1.42	-0/-0.34	1.04/0.78	-1.2/-0.75	-4.3/-6.87	-4.15/-1.32	1.36/1.16	-2.33/0.54	1.74/1.13	0.75/1.99	1.04/1.39	2.26/1.98	1.99/1.48	-1.27/-0.82	-0.44/1.53	0.33/1.64	3.46/3.49	2.82/3.71	4.07/1.96	-0.21/0.54	2.03/0.72	-0.33/0.57	-0.04/0.66
Θ(105°)	1.04/0.8	0.83/0.37	-0.24/-0.79	-0.55/-0.14	-2/-2.13	-6.63/5.53	-4.22/4.15	0.35/-0.32	-1.35/0.61	1.04/0.82	0.21/4.8	0.59/0.39	0.7/0.67	1.26/0.45	-2.17/-1.49	-0.33/-1.37	-2.5/-0.9	1.27/1.32	0.88/2.13	3.01/2.72	-1.87/1.83	-2.55/-2.17	-0.39/0.11	-0.19/-0.57
Θ(112.5°)	0.29/0.3	-0.3/-0.6	-1.79/-2.05	-1.98/-1.74	-2.57/-4.73	-7.23/-2.71	-4.35/-5.96	-2/-0.27	-0.62/-0.21	0.87/0.37	-1.29/0.29	-0.38/-0.32	-0.79/-0.07	0.48/-1.62	-2.14/-3.98	-2.42/-2.72	-1.52/-1.6	0.31/-0.85	-0.88/2.07	3.11/2.84	-1.21/-5.07	-4.1/-1.86	-1.24/-1.52	0.08/-0.52
Θ(120°)	-1.86/0.2	-1.53/-1.69	-1.94/-1.43	-2.19/-2.05	-2.47/-3.88	-6.5/-6.5	-5.58/-4.99	-4.57/-1.81	-0.81/-0.89	-0.41/0.08	-0.52/0.16	-0.82/-0.44	-1.19/-1.63	-1.89/-2.76	-4.37/-5.22	-3.34/-4.46	-2.62/-0.83	-3.98/-7.73	-4.3/-1.18	2.34/1.3	-0.77/-6.54	-4.63/-4.48	-1.37/-1.73	-1.81/-2.06
Θ(127.5°)	-2.49/-2.94	-2.16/-2.53	-1.82/-1.48	-1.31/2.84	-3.31/-2.89	-5.48/-8.96	-5.09/-3.29	-5.05/-5.37	-3.72/-1.88	-1.77/2.09	-1.89/-2.07	-1.55/-2.28	-3.07/-4.64	-3.75/-3.8	-2.46/-4.73	-6.6/-4.58	-3.72/-5.14	-6.78/-7.06	-5.5/-3.61	-1.33/-1.8	-3.5/-4.88	-5.5/-5.19	-4.95/-3.89	-3.85/-2.56
Θ(135°)	-4.17/-3.66	-3.43/-3.58	-2.5/-1.79	-1.55/-1.37	-2.64/-4.57	-6.97/-8.25	-5/-2.59	-3.8/-5.33	-4.93/-3.02	-2.25/-2.83	-2.71/-1.72	-2.73/-3.57	-5.57/-5.06	-5.35/-4.89	-5.23/-7.74	-9.37/-5.54	-3.86/-6.66	-7.6/-7.09	-6.76/-4.7	-1.08/-1.27	-3.91/-4.96	-5.25/-5.21	-4.9/-6.46	-4.61/-3.98
Θ(142.5°)	-6.4/-5.06	-4.81/-3.9	-3.75/-4.23	-2.51/-1.88	-1.87/-4.1	-8.07/-6.51	-4.15/-4.37	-5.17/-5.28	-7.25/-6.49	-4.6/-3.52	-2.95/-2.75	-3.83/-6.08	-8.25/-9.91	-8.8/-7.84	-7.97/-6.52	-6.54/-8.29	-7.83/-6.09	-5/-4.81	-3.9/-3.39	-4.02/-3.84	-4.38/-6.4	-7.18/-8.24	-9.54/-7.24	-9.52/-7.83
Θ(150°)	-6.03/-5.18	-4.26/-5.13	-5.13/-3.81	-3.07/-2.22	-2.91/-4.87	-6.69/-6.34	-4.78/-3.94	-3.86/-4.12	-5.58/-6.88	-6.41/-5.83	-5.25/-4.9	-5.96/-6.19	-7.22/-8.48	-9.81/-10.18	-7.85/-6.85	-8.67/-7.28	-4.99/-4.03	-7.18/-9.43	-7.82/-6.87	-8.2/-4.68	-2.31/-1.56	-2.66/-5.68	-6.7/-4.98	-5.6/-5.77
Θ(157.5°)	-8.78/-9.13	-8.36/-6.83	-5.4/-4.64	-4.35/-5.9	-7.11/-6.33	-5.32/-5.49	-5.37/-5.11	-4.54/-5.29	-7.3/-5.66	-6.06/-7.29	-9.25/-9.86	-9.63/-9.83	-9.4/-8.76	-8.69/-9.42	-9.32/-8.94	-7.74/-7.01	-6.06/-7.23	-8.22/-8.09	-9.21/-7.37	-6.62/-7.01	-6.05/-5.65	-6.42/-7.03	-7.03/-6.88	-7.61/-7.13
Θ(165°)	-8.94/-8.46	-6.77/-5.91	-5.59/-5.74	-6.11/-6.95	-7.93/-8.13	-8.39/-7.99	-5.02/-3.49	-3.26/-4.37	-5.12/-5.28	-6.17/-6.82	-6.93/-6.96	-6.64/-6.39	-5.78/-5.96	-6.53/-7.38	-7.55/-7.83	-8.36/-9.18	-9.83/-10.5	-10.82/-12.17	-12.31/-10.49	-8.46/-7.67	-7.1/-6.06	-5.62/-5.34	-5.38/-6.26	-7.92/-7.83
Θ(172.5°)	-10.6/-9.87	-9.72/-9.3	-10.29/-10.71	-11.76/-9.89	-7.16/-6.41	-6.22/-6.08	-5.39/-4.72	-4.93/-5.47	-6.12/-6.98	-8.47/-9.89	-10.76/-10.9	-10.42/-10.87	-10.78/-10.55	-10.71/-10.89	-11.45/-11.96	-12.27/-12.1	-10.38/-9.02	-9.64/-11.22	-11.77/-12.43	-10.71/-8.82	-7.79/-7.56	-7.05/-7.39	-8.52/-9.85	-10.63/-10.43
Θ(180°)	-11.54/-12.1	-11.49/-11.52	-11.37/-11.31	-11.87/-11.12	-11.32/-10.94	-9.61/-8.81	-8.43/-8.32	-8.06/-8.12	-8.02/-7.81	-7.6/-7.27	-7.72/-8.82	-10.16/-11.53	-12.74/-12.32	-11.61/-12.58	-11.9/-10.26	-9.38/-9.98	-7.08/-6.75	-7.23/-6.55	-6.16/-5.88	-5.93/-6.16	-6.43/-6.88	-7.36/-6.58	-9.51/-10.26	-10.68/-11.77
Freq(Hz)	5.6GPol.	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°)	4.12/3.55	3.25/3.13	3.15/3.42	3.57/3.44	3.04/2.43	2.07/1.72	1.32/1.45	2.33/2.23	3.77/4.03	4.23/4.54	4.68/4.7	4.54/4.4	4.25/4.04	3.57/3.2	3.23/3.35	3.67/3.89	3.84/3.48	3.02/2.4	2.63/3.59	4.36/4.77	5.07/5.3	5.51/5.72	5.82/5.65	5.34/8
Θ(7.5°)	3.89/3.96	4.02/3.98	3.72/3.33	3.21/3.99	2.5/1.82	1.01/0.77	0.98/1.97	3.02/4.15	4.96/5.36	5.61/5.74	5.83/5.64	5.14/4.62	4.07/3.32	2.78/2.79	3.13/3.42	3.49/3.43	3.3/3.07	2.68/2.38	2.38/2.55	2.84/3.25	3.76/4.07	4.31/4.57	4.74/4.73	4.45/4.24
Θ(15°)	3.27/3.68	3.74/3.45	2.96/2.39	1.29/0.59	-0.2/-0.65	-0.14/1	1.15/2.31	3.18/3.76	4.24/4.72	5.14/5.37	5.4/5.21	4.82/4.22	3.63/2.95	2.31/2.23	2.83/2.33	3.23/3.02	2.64/2.3	1.67/1.81	1.71/1.13	0.57/0.73	1.21/1.67	2.08/2.48	2.85/2.88	2.71/3.08
Θ(22.5°)	2.56/2.69	2.95/3.02	2.77/2.22	1.58/1.2	0.35/-0.31	-0.17/1.01	2.22/4.1	3.38/4.26	4.61/4.42	4.23/4.23	4.42/4.4	3.93/3.1	2.62/2.8	3.43/3.97	4.31/4.18	3.82/3.72	3.58/3.42	2.75/1.82	0.64/-0.51	-1.35/-1.3	-0.64/-0.13	0.13/0.65	1.07/1.56	2.12/2.7
Θ(30°)	1.45/1.98	2.35/2.57	2.72/2.97	3.02/3.47	2.88/1.84	1.57/1.75	1.21/0.41	1.59/3.2	4.33/5.07	4.98/4.26	3.71/3.96	3.74/2.66	1.59/2.43	4.15/1.2	5.27/4.95	4.53/4.39	3.83/3.4	2.82/1.74	0.55/0.03	0.12/0.46	1.14/1.44	1.30/0.98	-0.0/-0.92	-0.57/1.04
Θ(37.5°)	-0.9/0.2	1.72/2.12	2.22/3.14	3.49/4.07	4.24/4.21	3.99/3.57	2.78/1.76	0.82/1.7	2.78/4.36	3.27/2.56	2.82/2.04	0.63/1.86	3.33/4.15	4.77/5.13	4.64/3.92	2.75/1.14	0.28/-0.3	0.23/0.75	1.09/1.08	0.91/1.5	1.57/0.29	-2.25/-3.73	-2.56/-1.06	
Θ(45°)	-0.99/-0.59	0.97/1.94	2.62/3.53	4.11/4.4	3.85/3.33	3.58/4.21	4.33/6.6	2.77/2.13	2.38/2.6	3.14/3.85	2.88/0.89	1.1/1.52	0.44/0.17	1.53/2.49	3.33/3.69	3.25/2.71	1.57/0.36	-0.21/1.19	1.36/0.06	-0.38/0.74	0.81/0.46	-0.71/-1.26	-3.14/-5	-4.05/-1.76
Θ(52.5°)	0.95/1.28	1.57/1.59	2.26/3.05	2.85/2.1	0.66/1.18	3.01/4.88	5.12/4.1	2.87/2.77	3.52/3.67	2.05/2.15	1.38/-1.44	-2.42/-1.84	-1.07/-2.35	-1.49/-2.09	0.02/-0.24	0.48/1.17	0.19/-1.3	1.32/64	1.88/0.22	-0.34/0.34	0.8/-0.5	-1.83/-1.3	-1.49/-1.24	-2.14/-1.09
Θ(60°)	1.15/0.92	0.63/1.5	2.32/2.59	0.59/-1.11	-1.83/-0.08	2.66/4.38	4.56/3.71	2.57/2.32	2.61/2.27	2.99/1.5	1.72/-0.59	-3.29/-1.87	-1.32/-1.05	-1.33/-1.35	-2.94/-4.75	-0.74/0.83	0.07/0.26	0.67/1.21	1.18/0.6	-1.01/-0.76	0.8/-0.44	-0.96/-0.31	-0.41/0.08	0.52/-0.18
Θ(67.5°)	0.24/-1.86	-0.41/0.22	0.56/-0.78	-2.23/-0.58	0.36/-0.61	-1.58/0.1	1.31/2.22	1.22/2.03	1.71/3.67	3.88/2.41	3.26/1.14	-0.01/2.22	0.67/1.29	-1.51/-1.11	-3.89/-4.02	-1.05/0.01	1.3/0.95	-0.88/-0.49	-0.02/-0.05	-1.95/-1.13	-0.04/-0.37	-0.14/0.87	0.12/-0.42	-0.37/0.66
Θ(75°)	-0.74/-3.17	-3.91/-2.8	-0.57/-1.37	0.72/2.25	2.1/0.43	-1.95/0.49	2.35/1.88	0.61/1.74	1.1/1.94	2.39/1.12	2.84/1.73	0.91/1.53	1.63/0.79	-1.32/-0.96	-3.17/-4.26	-3.9/-0.57	1.68/0.28	-2.67/-1.62	0.34/-0.43	-2.42/-1.53	-0.24/-0.4	-0.87/-0.51	-0.18/-0.79	-1.79/-1.05
Θ(82.5°)	-3.87/-4.65	-4.95/-2.01	0.79/0.88	1.02/1.55	0.89/-2.67	-4.25/-2.53	-0.2/-0.47	-1.27/-1.99	-1.52/0.02	0.44/0.1	1.2/0.04													



Sporton International Inc.



Radiated Composite Gain Data of Combination C

Appendix A.5

Θ(22.5°)	-12.06/-13.36	-8.63/-6.74	-4.33/-2.74	-1.71/-0.12	0.74/-0.06	1.13/-1.11	1.21/-1.5	1.41/-0.67	-0.67/-3.52	-7.47/-12.6	-14.59/-15.03	-13.99/-11.93	-12.18/-16.83	-14.68/-6.86	-2.25/-0.63	2.67/-3.88	4.48/-4.61	4.47/-4.18	3.85/-3.35	2.79/-2.18	1.48/-0.38	-1.51/-3.76	-6.02/-6.52	-5.55/-7.03
Θ(30°)	-5.99/-8.02	-12.51/-7.29	-5.02/-6.4	-6.28/-3.73	-2.74/-2.98	-4.59/-5.81	-5.23/-4.21	-2.97/-1.79	-0.92/-1.45	-3.94/-8.93	-17.86/-17.35	-12.83/-9.28	-8.89/-13.4	-18.12/-10.26	-4.47/-0.9	1.22/-15	2.39/-2.33	2.53/-2.7	2.64/-2.25	1.96/-1.74	1.34/-0.29	-1.12/-3.13	-5.14/-6.19	-7.65/-4.73
Θ(142.5°)	-7.37/-7.73	-11.84/-7.81	-6.51/-11.1	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	-15.66/-18.24	
Θ(45°)	-9.88/-6.87	-6.36/-6.53	-11.45/-19.25	-10.54/-7.46	-3.8/-2.41	-1.56/-1.09	-1.83/-3.02	-3.6/-4.58	-5.31/-4.81	-3.32/-5.07	-10.85/-18.88	-19.3/-16.63	-18.39/-15.89	-13.67/-14.92	-5.34/-1.55	-1.68/-2.53	-1.47/-1.02	-1.72/-2.7	-2.37/-1.83	-2.92/-5.44	-7.78/-10.03	-15.66/-16.58	-12.76/-7.87	-5.86/-9.16
Θ(52.5°)	-3.58/-6.86	-4.51/-4.27	-9.44/-9.35	-5.29/-3.1	-2.48/-1	-0.33/-0.16	0.17/-0.36	0.18/-0.37	-1.48/-3.76	-4.36/-6.86	-15.52/-17.86	-17.71/-18.31	-15.08/-7.7	-5.56/-5.57	-3.89/-2.64	-4.46/-0.99	1.49/-1.7	0.12/-0.29	0.78/-0.68	-0.18/-0.69	0.08/-0.33	-1.05/-2.82	-4.12/-4.97	-3.95/-2.55
Θ(60°)	-1.61/-1.29	-3.84/-7.54	-11.88/-4.76	-3.79/-2.8	-1.28/-0.35	-0.46/-0.36	0.82/-0.22	-0.19/-0.13	0.44/-1.33	-5.23/-4.14	-9.9/-18.92	-18.35/-16.98	-18.33/-9.52	-4.99/-6.55	-2.69/-0.07	-2.51/-32	3.27/-1.96	-0.92/-1.85	-2.26/-2.68	-3.72/-3.86	-1.27/-0.6	-0.1/-28	-1.18/-0.64	-2.23/-3.36
Θ(67.5°)	-2.5/-3.4	-6.17/-8.28	-10.8/-3.66	-2.55/-2.85	-2.23/-2.08	-1.40/-8.1	1.68/-1.4	0.01/-1.13	-0.19/-0.35	-4.63/-7.35	-14.64/-17.82	-18.94/-13.77	-9.64/-4.11	-3.55/-4.02	-0.83/-0.67	-3.49/-1.74	2.96/-1.66	0.97/-0.8	-1.27/-4.82	-6.29/-3.64	0.33/-1.2	-0.87/-3.04	-2.48/-0.63	-1.24/-3.46
Θ(75°)	-6.09/-5.36	-10.63/-12.95	-13.38/-5.43	-4.08/-4.59	-3.35/-2.92	-0.96/-0.34	0.71/-0.36	-0.1/-0.97	-1.52/-1.32	-4.11/-6.84	-10.04/-18.75	-17.5/-18.73	-8.66/-5.24	-3.04/-0.45	-0.68/-1.69	-6.29/-1.61	3.08/-2.86	3.84/-5.42	4.3/-2.1	0.3/-1.58	0.52/-0.87	-1.58/-4.7	-2.91/-0.42	-0.97/-2.19
Θ(82.5°)	-8.1/-1.14	-10.3/-15.67	-13.53/-4.27	-5.82/-6.41	-2.95/-0.33	2.14/-0.02	2.93/-1.9	0.39/-0.07	0.3/-1.4	-6.73/-7.76	-13.42/-17.97	-14.18/-13.71	-4.55/-4.8	0.22/-0.96	-0.7/-3.08	-4.06/-1.26	2.18/-94	5.71/-15	5.82/-4.36	2.42/-2.33	-1.10/-5.2	-0.98/-4.07	-4.07/-1.76	-2.25/-2.82
Θ(90°)	-9.95/-8.07	-13.6/-13.62	-11.15/-5.89	-7.03/-6.31	-1.54/-1.37	-0.3/-0.26	0.51/-6.2	1.13/-0.52	0.16/-0.22	-4.67/-7.32	-11.51/-14.23	-13.57/-16.44	-6.77/-4.13	-0.93/-2.26	0.36/-2.13	-3.34/-0.36	0.13/-148	5.257/-1	6.796/-51	6/-2	-4.24/-0.62	-1.06/-4.34	-5.52/-3.14	-4.04/-5.69
Θ(97.5°)	-7.4/-8.3	-11.33/-16.79	-12.29/-7.7	-5.43/-5.1	-6.35/-3.52	-3.83/-5.55	-3.44/-0.42	0.6/-1.13	-1.07/-1.28	-4.1/-5.49	-14.41/-13.16	-18.17/-16.17	-6.68/-5.3	-1.51/-2.33	-3.62/-1.19	-2.5/-0.13	4.085/-92	5.95/-71	7.23/-4.29	-3.82/-2.96	-2.7/-1.11	-8.37/-16.45	-11.45/-5.35	-4.84/-12.03
Θ(105°)	-6.1/-10.97	-12.95/-18.63	-12.24/-9.69	-10.06/-7.45	-8.25/-4.51	-6.06/-5.37	-6.51/-2.77	0.25/-3.01	-2.92/-2.75	-4.27/-3.47	-11.31/-13.01	-18.06/-18.17	-10.46/-9.69	-4.96/-0.67	-1.74/-1.11	-1.783/-4.91	0.913/-35	4.16/-05	6.764/-95	-2.7/-1.71	-8.37/-16.45	-11.45/-5.35	-4.84/-12.03	
Θ(112.5°)	-7.5/-12.54	-15.64/-18.21	-16.94/-12.32	-15.46/-13.09	-11.16/-12.69	-9.12/-3.98	-7.96/-4.76	-1.26/-3.59	-4.71/-7.97	-7.07/-5.85	-10.86/-12.34	-16.49/-11.9	-11.34/-9.26	-5.44/-2.34	-3.07/-4.05	-3/-8.23	-9.16/-17.32	-2.93/-12	2.365/-16	5.584/-67	-1.58/-12.93	-9.43/-9.76	-8.92/-7.94	-4.32/-9.33
Θ(120°)	-13.45/-12.32	-18.18/-17.6	-16.8/-11.5	-12.2/-12.95	-14.3/-16.92	-16.56/-10.3	-10.47/-5.83	-3.6/-4.49	-6.75/-11.81	-10.43/-7.89	-8.85/-9.5	-11.87/-11.1	-7.57/-7.84	-7.7/-5.21	-4.58/-5.71	-7.08/-8.59	-5.25/-9.79	-14.53/-10.97	-2.94/-208	3/-0.7	-17.1/-19.16	-6.28/-13.23	-5.34/-5.73	-8.97/-13.72
Θ(127.5°)	-15.31/-16.32	-17.27/-17.51	-16.74/-15.79	-11.93/-11.39	-11.79/-14.24	-13.1/-15.51	-10.83/-7.47	-7.29/-7.53	-9.32/-10.64	-16.13/-13.77	-12.52/-13.05	-14.95/-9.81	-11.98/-8.69	-10.81/-5.26	-2.22/-5.64	-1.683/-7.01	-4.4/-6.55	-12.57/-10.65	-5.88/-1.67	0.55/-1.52	-9.16/-13.98	-8.85/-12.41	-1.701/-9.51	-11.47/-10.89
Θ(135°)	-19.29/-18.67	-17.96/-18.97	-15.85/-10.15	-10.55/-12.55	-13.39/-16.96	-17.39/-17.59	-12.45/-7.52	-7.78/-12.82	-12.58/-14.09	-14.3/-11.72	-11.97/-9.56	-16.05/-14.77	-18.87/-8.98	-9.77/-7.74	-3.83/-10.2	-17.33/-7.29	-3.64/-6.12	-11.31/-6.91	-5.52/-2.22	-0.36/-2.84	-13.52/-14.23	-12.97/-14.94	-10.67/-11.83	-12.93/-18.57
Θ(142.5°)	-17.91/-19.17	-18.45/-12.05	-15.45/-18.57	-15.18/-16.81	-15.64/-16.48	-18.42/-16.72	-14.02/-13.98	-12.62/-11.89	-16.51/-18.66	-17.92/-15.13	-9.86/-8.81	-14.83/-19.22	-18.18/-13.1	-15.87/-16.66	-9.9/-11.1	-14.12/-8.79	-7.15/-11.35	-8.18/-4.01	-2.56/-3.29	-3.06/-6.1	-14.48/-10.85	-15.51/-18.23	-11.55/-11.66	-18.37/-19.72
Θ(150°)	-18.79/-13.74	-13.91/-17.37	-17.7/-17.65	-12.77/-12.26	-13.93/-14.12	-11.77/-19.97	-11.33/-13.55	-14.55/-13.13	-13.56/-14.16	-13.61/-11.81	-9.44/-11.42	-16.91/-11.16	-13.31/-12.91	-17.92/-19.76	-15.74/-12.16	-9.97/-13.13	-18.65/-18.2	-18.28/-12.36	-7.12/-6.72	-9.03/-8.53	-4.99/-3.57	-6.41/-14.34	-18.62/-15.22	-15.89/-17.79
Θ(157.5°)	-18.98/-18.1	-18.85/-19.23	-16.94/-18.2	-17.39/-19.46	-16.85/-14.09	-12.15/-11.72	-12.09/-14.93	-16.79/-19.42	-17.24/-15.11	-18.89/-18.62	-18.59/-18.5	-16.87/-14.52	-14.08/-12.2	-10.69/-11.08	-11.34/-11.16	-12.2/-17.27	-13.52/-8.3	-7.42/-8.12	-8.82/-9.1	-10.02/-15.71	-18.69/-13.61	-11.89/-14.64	-17.85/-17.5	-19.01/-18.61
Θ(165°)	-18.14/-18.49	-18.57/-15.1	-12.9/-12.68	-12.28/-11.99	-12.81/-16.37	-19.06/-17.99	-12.74/-11.5	-13.8/-18.03	-15.71/-13.23	-15.02/-19.16	-17.79/-13.46	-10.19/-8.22	-7.91/-8.93	-8.87/-9.55	-9.08/-8.56	-9.49/-11.65	-12.76/-12.67	-13.14/-18.41	-18.99/-15.01	-11.81/-10.97	-11.26/-9.99	-8.12/-9.72	-9.77/-12.52	-18.2/-19.22
Θ(172.5°)	-18.29/-18.49	-19.45/-17.39	-18.56/-18.02	-18.1/-13.37	-10.22/-8.51	-7.81/-7.84	-8.83/-9.4	-9.8/-9.49	-9.75/-11.06	-12.86/-14.06	-14.14/-14.12	-13.66/-13.02	-12.64/-13.17	-13.62/-14.17	-14.91/-17.9	-17.42/-14.73	-14.87/-12.38	-12.04/-13.45	-16.05/-18.38	-15.31/-11.7	-8.27/-7.92	-7.33/-7.87	-10.31/-14.2	-18.31/-17.94
Θ(180°)	-15.73/-18.85	-18.91/-19.47	-16.14/-15.84	-19.06/-17.87	-18.45/-17.82	-14.65/-12.83	-11.4/-10.65	-10.87/-10.02	-10.08/-10.08	-9.82/-9.69	-10.26/-11.69	-13.32/-16.3	-19.27/-17.6	-17.18/-19.14	-16.41/-12.87	-10.1/-8.81	-7.73/-7.34	-7.22/-6.93	-6.71/-6.38	-6.41/-6.56	-6.92/-7.72	-8.68/-9.98	-11.34/-12.33	-13.82/-15.61
Freq(Hz)	5.6GPol	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°)	5.09/-9.5	4.864/-26	3.54/-7.6	1.760/-47	-1.38/-3.77	-6.28/-8.97	-9.55/-7.59	-4.15/-2.05	0.021/-55	2.67/-45	3.964/-3	4.624/-95	5.115/-06	4.694/-07	3.272/-51	1.540/-37	-1.42/-3.69	-7.07/-13.49	-15.08/-7.49	-3.37/-1.18	0.10/-99	2.03/-25	4.28/-12	5.525/-41
Θ(7.5°)	4.554/-49	4.44/-95	3.05/-202	0.62/-802	-3.14/-6.37	-11.32/-18.11	-17.05/-8.69	-4.51/-1.88	-0.071/-34	2.54/-555	4.254/-72	4.855/-01	4.984/-77	4.34/-3.72	2.811/-78	0.46/-1.17	-3.61/-6.48	-8.7/-8.94	-6.31/-3.84	-1.91/-0.31	0.87/-162	2.23/-02	3.77/-49	4.784/-83
Θ(15°)	4.014/-24	4.093/-36	2.126/-36	-2.43/-56	-10.95/-18.73	-14.13/-8.24	-5.06/-13.1	-0.83/-0.03	0.550/-81	1.071/-72	2.583/-29	3.73/-9	3.765/-57	3.232/-83	2.321/-34	-0.14/-2.74	-5.98/-11.54	-18.78/-12.78	-8.22/-6.07	-4.21/-2.94	-2.26/-1.75	-0.88/-19	1.332/-24	2.683/-56
Θ(22.5°)	3.553/-71	3.482/-41	0.38/-1.93	-5.46/-8.33	-11.49/-17.31	-13.67/-8.31	-4.76/-3.11	-1.52/-0.57	0.120/-24	0.571/-14	1.310/-73	0.61/-42	2.623/-36	3.382/-74	1.720/-58	-1.3/-3.58	-6.51/-9.82	-13.5/-12.4	-9.03/-7.01	-5.57/-4.33	-3.78/-3.42	-2.18/-0	1.342/-96	
Θ(30°)	0.961/-55	0.8/-1.46	-3.82/-5.53	-7.01/-7.36	-9.07/-14.93	-17.91/-17.68	-19.02/-15.89	-13.17/-17.8	-4.44/-1.47	-0.59/-1.21	-2.08/-0.96	-0.46/-1.74	-3.37/-6.09	2.073/-27	3.252/-64	1.981/-31	-0.1/-2.49	-6.05/-12.35	-17.89/-10.51	-6.94/-5.32	-3.74/-2.35	-2.05/-3.29	-3.54/-3.29	-2.84/-0.25
Θ(37.5°)	-6.08/-4.95	-5.51/-10.48	-17.88/-12.7	-12.61/-13.55	-14.7/-18.89	-19.27/-18.1	-16.86/-17.93	-18.32/-18	-14/-4.66	-0.76/-4.07	-2.15/-2.06	-1.52/-2.82	-3.67/-6.09	1.15/-1.52	1.89/-1.82	1.11/-0.13	-1.69/-4.63	-9.29/-18.26	-11.65/-7.6	-5.68/-4.89	-4.59/-3.6	-2.89/-4.17	-6.37/-6.08	-4.63/-4.49
Θ(45°)	-15.28/-18.5	-12.46/-9.86	-9.82/-11.5	-14.29/-19	-18.18/-19.09	-12.52/-6.61	-7.7/-8.44	-10.69/-18.75	-18.23/-11.22	-3.57/-0.57	-3.83/-4.21	-3.61/-3.61	-2.9/-1.11	-0.28/-0.53	-1.07/-0.61	-1.81/-1.52	-2.23/-6.26	-18.74/-12.85	-9.85/-12.43	-14.36/-11.28	-9.9/-9.96	-7.22/-7.81	-11.89/-18.25	-16.25/-10.93
Θ(52.5°)	-6.03/-6.63	-5.38/-4.28	-6.92/-9.75	-13.27/-16.63	-17.14/-10.7	-6.12/-4.22	-4.82/-7.38	-10.59/-10.83	-6.61/-5.45	-3.94/-1.64	-2.73/-4.49	-5.75/-5.5	-2.24/-1.84	-1.89/-1.9	-3.52/-7.23	-7.88/-7.27	-11.52/-18.02	-9.97/-9.49	-8.87/-11.54	-13.49/-14.96	-14.66/-18.14	-10.72/-5.95	-6.67/-8.28	-13.7/-11.1
Θ(60°)	-6.67/-6.29	-4.99/-3.05	-6.47/-6.25	-8.14/-7.68	-8.48/-8.71	-8.51/-8.25	-9.15/-9.18	-9.69/-8.04	-3.88/-1.35	-1.92/-4.81	-8.93/-6.43	-4.38/-3.65	-3.45/-4.56	-7.09/-15.87	-7.95/-9.49	-7.15/-6.77	-5.93/-7.42	-10.4/-14.48	-17.58/-15.13	-10.91/-16.16	-9.44/-4.35	-5.52/-5.94	-5.97/-10.3	
Θ(67.5°)	-8.62/-12.92	-7/-3.92	-6.73/-5.37	-6.2/-4.22	-5.27/-8.48	-17.79/-18.87	-16.64/-12.03	-10.09/-7.78	-5.14/-1.71	-0.58/-0.94	-1.99/-7.35	-1.73/-4.31	-3.89/-3.32	-8.38/-9	-11.47/-15.62	-5.79/-4.88	-5.21/-5.26	-9.24/-16.43	-19.11/-18.07	-15.85/-12.5	-9.56/-10.39	-10.45/-4.76	-5.32/-6.94	-5.57/-6.23
Θ(75°)	-9.48/-13.78	-15.31/-6.94	-6.34/-4.68	-3.87/-3.68	-5.83/-11.75	-19.19/-14.51	-12.39/-15.88	-18.97/-12.79																



Radiated Composite Gain Data of Combination C

Appendix A.5

Θ(67.5°)	1.44/1.97	2.23/2.5	1.40/6.6	-0.69/-5.37	-7.68/-6.22	-7.52/-11.92	-13.97/-10.72	-7.15/-2.73	-0.24/0.17	-0.51/-0.51	-0.42/-0.18	0.65/-1.36	1.76/-0.33	-4.27/-7.87	-5.76/-4.8	-3.79/-2.89	-3.92/-6.91	-12.04/-13	-12.86/-11.36	-7.72/-5.31	-4.94/-4.8	-3.92/-3.9	-0.17/2.4	1.45/-0.19
Θ(75°)	1.18/1.63	1.822/2.06	1.34/0.21	-1.56/-3.55	-4.82/-7.63	-11.2/-15.57	-18.93/-18.88	-10.39/-4.41	-0.78/0.72	0/-0.46	-1.03/-0.82	-0.35/0.17	1.35/0.21	-2.52/-6.96	-12.19/-9.07	-7.01/-5.16	-5.34/-9.14	-10.99/-12.32	-13.59/-12.08	-8.03/-5.16	-3.6/-5.06	-4.81/-4.51	-1.44/-1.64	0.76/-0.33
Θ(82.5°)	1.622/2.02	1.872/0.9	1.470/6.3	-0.36/-2.12	-5.25/-7.08	-7.5/-13.83	-17.88/-17.04	-18.6/-7.87	-2.82/-1.58	-1.82/-1.12	-0.9/-0.12	-0.38/-0.55	-0.03/-1.23	-2.55/-5.77	-11.92/-12.57	-9.2/-7.44	-7.2/-7.16	-7.98/-10	-13.31/-11.89	-8.99/-7.84	-5.27/-7.02	-5.74/-3.39	-1.40/-7.5	0.58/0.17
Θ(90°)	0.781/2.9	0.910/46	-0.08/-0.53	-0.73/-2.94	-6.39/-6.67	-11.05/-14.18	-14.48/-13.56	-9.75/-11.7	-9.06/-6.03	-3.76/-3.67	-1.84/-0.95	-0.79/-1.32	-1.29/-2.91	-2.99/-3.96	-8.88/-14.73	-10.57/-8.13	-6.37/-6.03	-6.35/-9.35	-14.67/-12.2	-8.84/-7.69	-5.96/-7.81	-6.97/-3.33	-2.59/-1.43	-0.29/0.24
Θ(97.5°)	0.28/0.71	0.46/-0.41	-0.33/-1	-1.66/-3.02	-5.71/-8.49	-10.91/-9.11	-14.55/-17.14	-8.83/-7.3	-11.06/-9.59	-8.54/-6.89	-4/-2.37	-2.32/-2.83	-5.33/-4.92	-4.33/-7.91	-8.63/-10.47	-11.13/-8.79	-6.06/-6.63	-7.15/-8.96	-11.91/-11.82	-9.01/-9.06	-10.26/-10.7	-7.08/-3.35	-2.38/-2.23	-0.36/0.19
Θ(105°)	-0.03/-0.18	-0.81/-1.73	-1.3/-1.53	-2.48/-2.83	-4.8/-10.9	-12.23/-13.36	-12.58/-16.61	-14.42/-6.29	-8.86/-6.51	-7.69/-7	-4.18/-3.4	-2.31/-3.82	-7.23/-6.56	-6.5/-10.08	-9.73/-7.66	-9.17/-8.63	-7.61/-7.84	-12.53/-9.66	-8.47/-10.09	-10.95/-13.1	-6.96/-4.01	-2.56/-3.03	-1.21/0.25	
Θ(112.5°)	-0.95/-1.85	-2.56/-3.62	-3.67/-4.63	-5.28/-4.57	-6.28/-10.99	-13.24/-14.47	-12.09/-13.96	-12.6/-9.8	-9.93/-6.98	-6.07/-6.1	-4.96/-4.33	-4.43/-7.51	-8.68/-8.38	-11.34/-15.06	-10.09/-11.29	-10.22/-9.93	-10.52/-8.12	-6.99/-10.26	-11.48/-8.77	-8.72/-14.07	-11.39/-12.19	-6.07/-5.05	-3.75/-3.34	-2.02/-0.21
Θ(120°)	-2.76/-3.38	-3.16/-3.94	-5.37/-5.04	-5.45/-6.55	-7.14/-8.67	-14.14/-18.91	-11.78/-12.48	-14.03/-18.1	-13.72/-12.06	-8.22/-8.11	-5.5/-5.56	-4.76/-7.35	-10.29/-10.05	-10.95/-14.11	-17.99/-13.9	-11.33/-14.1	-15.81/-10.5	-8.14/-9.56	-15.33/-10.13	-9.28/-11.38	-17.77/-11.12	-9.57/-7.4	-6.88/-5.13	-4.19/-2.14
Θ(127.5°)	-4.56/-4.5	-6.13/-6.27	-6.32/-6.7	-6.81/-8.15	-10.01/-11.98	-15.62/-13.81	-10.87/-12.24	-18.42/-17.82	-14.12/-13.9	-11.96/-11.12	-8.36/-6.29	-8.1/-8.72	-10.95/-15.71	-13.91/-10.74	-13.86/-13.13	-13.6/-12.61	-10.63/-17.85	-17.91/-17.56	-18.25/-11.97	-14.62/-14.02	-17.04/-13.29	-10.79/-10.89	-8.79/-7.15	-5.62/-4.29
Θ(135°)	-6.88/-5.42	-7.19/-10.4	-10.16/-8.3	-7.27/-7.58	-7.58/-11.39	-16.07/-15.87	-13.25/-13.83	-18.41/-18.36	-13.53/-11.24	-11.78/-8.69	-6.35/-9.74	-11.39/-7.88	-11.76/-18.62	-17.75/-18.95	-18.66/-14.37	-13.95/-10.76	-12.17/-13.87	-16.97/-18.12	-18.48/-18.63	-17.78/-18.59	-14.19/-16.95	-13.63/-18.08	-16.01/-9.17	-8.17/-8.46
Θ(142.5°)	-11.1/-8.44	-6.8/-8.98	-12.37/-11.03	-9.01/-7.48	-10.36/-12.25	-15/-13.1	-17.91/-17.23	-16.96/-19.36	-19/-17.07	-15.23/-12.08	-10.84/-8.69	-10.02/-17.85	-12.95/-11	-14.51/-19.27	-17.91/-18.1	-13.47/-14.94	-17.94/-16.51	-17.59/-17.19	-19.19/-17.23	-18.18/-18.97	-17.67/-16.39	-15.74/-18.15	-18.24/-16.4	-8.11/-6.94
Θ(150°)	-12.07/-14.12	-12.89/-13.85	-12.46/-11.65	-10.24/-9.65	-10.86/-15.22	-17.18/-15.23	-12.88/-12.65	-12.79/-14.55	-16.88/-18.6	-18.59/-17.13	-13.1/-12.7	-15.44/-18.96	-16.71/-16.62	-18.44/-18.52	-16.05/-14.63	-15.29/-14.57	-11.65/-12.27	-18.16/-18.69	-18.87/-18.65	-18.17/-18.63	-18.93/-18.87	-15.98/-18.35	-19.04/-13.19	-9.31/-7.86
Θ(157.5°)	-10.08/-12.01	-11.45/-11.45	-10.21/-11.34	-12.68/-13.75	-15.9/-17.43	-18.27/-19.11	-18.21/-14.67	-15.52/-14.52	-13.34/-12.04	-11.29/-11.44	-14.09/-16.58	-13.32/-11.7	-11.16/-12.76	-13.59/-13.77	-13.57/-14.17	-17.57/-18.65	-18.13/-19.28	-17.4/-16.33	-17.03/-19.06	-19.28/-17.83	-18.71/-18.58	-18.1/-15.94	-14.76/-11.5	-8.69/-8.62
Θ(165°)	-10.13/-10.05	-9.77/-10.17	-11.1/-11.3	-13.31/-17.28	-17.82/-17.95	-16.64/-15.51	-14.6/-19.53	-12.68/-12.92	-13.3/-14.3	-15.66/-16.57	-15.89/-13.58	-13.79/-18.34	-18.56/-19.04	-15.97/-15.6	-15.77/-16.15	-15.38/-17.82	-18.03/-17.92	-17.31/-15.56	-15.93/-18	-18.22/-18.12	-19.22/-18.04	-18.56/-17.48	-16.03/-13.44	-11.73/-10.11
Θ(172.5°)	-14.55/-17.02	-18.97/-18.08	-19.08/-19.13	-18.51/-17.28	-18.52/-18.46	-19.1/-18.27	-17.17/-19.93	-17.84/-17.62	-16.85/-16.87	-17.05/-17.91	-17.77/-18.13	-18.08/-17.95	-18.07/-18.92	-17.58/-19.18	-19.16/-18.53	-18.7/-17.24	-19.12/-18.23	-19.24/-18.55	-18.09/-18.43	-18.61/-18.59	-18.67/-18.29	-18.46/-17.02	-18.28/-14.47	-12.59/-11.81
Θ(180°)	-18.93/-19.14	-17.39/-15.57	-14.88/-14.66	-14.45/-14.4	-14.71/-14.8	-14.65/-15.12	-15.79/-16.01	-17.46/-18.2	-18.12/-17.72	-18.74/-19	-19.68/-18.2	-18.79/-18.73	-18.3/-18.46	-18.34/-18.87	-17.79/-19.72	-18.8/-17.83	-18.01/-17.67	-16.79/-19.07	-18.7/-17.99	-19.16/-17.11	-17.83/-17.35	-18.71/-18.69	-17.96/-17.39	-17.33/-19.02
Freq(Hz)	5.2GPol	ThetaAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-13.81/-17.49	-18.63/-17.04	-12.38/-9.33	-6.92/-5.05	-3.64/-2.61	-1.98/-1.41	-0.88/-0.7	-0.33/-0.26	-0.54/-1	-1.57/-2.57	-3.56/-5.09	-6.9/-9.56	-13.55/-17.42	-18.52/-13.9	-8.83/-5.96	-4.2/-3.26	-2.45/-1.95	-1.24/-1.16	-0.77/-0.83	-1.03/-1.24	-1.34/-1.8	-2.41/-3.09	-4.08/-5.35	-7.33/-10.25
Θ(7.5°)	-15.94/-19	-18.61/-14.49	-11.37/-8.93	-6.73/-4.93	-3.65/-2.76	-1.96/-1.31	-0.99/-0.92	-0.62/-0.96	-1.43/-2.07	-2.66/-3.03	-4.19/-5.26	-6.57/-8.71	-11.41/-15.16	-17.98/-16.72	-11.42/-7.79	-5.42/-4.22	-3.31/-2.43	-1.5/-0.65	-0.11/0.23	0.30/0.31	0.24/-0.19	-0.93/-1.91	-3.33/-5.11	-7.57/-10.71
Θ(15°)	-16.61/-18.86	-17.33/-13.13	-11.17/-8.87	-6.89/-5.5	-4.34/-2.9	-1.63/-1.12	-0.91/-0.3	-0.56/-1.17	-2.06/-3.01	-3.74/-4.66	-5.43/-6.39	-7.13/-8.08	-9.02/-10.05	-10.89/-12.58	-12.52/-10.35	-8.43/-6.08	-4.78/-3.81	-2.31/-1.43	-1.02/-0.67	-0.43/-0.54	-0.87/-1.33	-2.01/-2.8	-3.9/-5.57	-7.42/-10.38
Θ(22.5°)	-18.82/-17.78	-14.29/-12.3	-10.7/-9.6	-8.02/-6.52	-5.18/-3.06	-1.56/-0.44	0.65/0.82	0.77/-0.15	-1.11/-1.8	-2.28/-3.61	-4.92/-6.36	-8.07/-8.53	-8.36/-6.87	-6.15/-4.88	-5.47/-4.59	-4.27/-3.44	-2.98/-2.22	-1.77/-1.72	-1.72/-1.88	-2.37/-2.96	-3.54/-4.4	-5.05/-5.52	-6.25/-6.98	-8.74/-12.56
Θ(30°)	-18.49/-18.47	-15.59/-13.97	-12.25/-10.08	-8.84/-7.38	-6.47/-4.63	-2.9/-6.68	0.66/1.4	1.57/1.15	0.29/0.74	-1.41/-2.24	-3.51/-5.24	-6.98/-8.64	-8.77/-7.33	-6.04/-5.26	-3.62/-2.15	-0.85/-0.02	0.25/0.35	0.04/-0.58	-1.4/-3.11	-4.24/-5.48	-5/-5.53	-5.97/-6.62	-6.76/-7.24	-9.19/-13.19
Θ(37.5°)	-18.11/-18.69	-18.26/-16.44	-11.46/-7.52	-5.37/-4.66	-4.57/-4.46	-2.73/-1.52	-0.36/0.76	1.49/-1.52	0.54/-0.7	-0.88/-1.43	-3.18/-6.15	-9.32/-11.84	-12.12/-11.66	-8.61/-5.43	-2.15/-0.35	0.92/1.28	1.02/0.72	0.59/0.36	-0.88/-3.33	-3.53/-4.81	-3.95/-3.82	-4.24/-8.2	-5.81/-7.33	-10.14/-14.18
Θ(45°)	-17.17/-18.35	-18.95/-15.23	-8.83/-5.35	-4.31/-4.5	-3.85/-2.7	-0.87/-0.05	0.29/0.66	1.39/1.99	1.49/0.04	-0.81/-1.44	-3.45/-6.51	-10.59/-13.97	-14.53/-13.29	-12.58/-8.16	-3.85/-0.98	0.29/0.87	0.85/0.64	-0.31/-1.54	-1.73/-2.2	-4.07/-5.49	-3.77/-3.43	-4.04/-4.92	-5.77/-8.13	-11.27/-14.44
Θ(52.5°)	-18.33/-19.22	-18.85/-15.5	-7.58/-8.43	-4.47/-4.64	-3.69/-1.82	-0.29/0.33	0.37/0.28	0.95/-1.81	1.79/0.09	-0.94/-1.71	-3.53/-5.84	-14.48/-15.99	-12.4/-10.52	-10.06/-8.32	-5.51/-3.32	-1.8/-0.39	0.62/0.64	-0.41/-7.6	-1.84/-4.09	-1.14/-3.67	-4.75/-5.08	-5.25/-6.3	-6.63/-9.72	-14.25/-16.79
Θ(60°)	-18.76/-18.45	-17.79/-13.17	-7.06/-5.85	-6.03/-4.54	-3.94/-2.02	-0.88/-0.48	-1.38/-2.14	-1.44/-0.05	0.48/-1.62	-3.84/-8.17	-11.43/-15.46	-12.86/-6.68	-7.35/-8.48	-9.17/-9.5	-8.11/-7.78	0.12/0.63	0.20/0.54	-0.12/-1.75	-2.06/-0.68	-0.74/-2.91	-4.55/-4.56	-7.05/-10.3	-8.84/-12.56	-18.79/-16.54
Θ(67.5°)	-18.58/-18.33	-18.52/-11.9	-7.49/-7.53	-6.87/-5.86	-5.68/-4.06	-2.68/-2.34	-3.36/-2.98	-1.17/0.32	-1.03/-5.03	-7.03/-4.72	-5.68/-7.87	-17.73/-13.85	-18.46/-9.34	-7.68/-8.24	-9.88/-11.26	-9.79/-4.4	-1.95/-1.46	-3.07/-4.77	-4.34/-3.18	-2.84/-4.5	-7.35/-6.69	-7.51/-11.06	-9.22/-13.66	-18.9/-18.81
Θ(75°)	-18.16/-16.68	-18.3/-13.57	-9.43/-8.94	-7.34/-5.76	-6.48/-5.5	-3.76/-2.93	-3.46/-2.4	-0.15/0.61	-0.68/-4.14	-5.63/-4.94	-6.69/-8.09	-8.58/-12.14	-17.69/-11	-8.77/-8.75	-9.64/-13	-12.88/-9.05	-5.84/-3.87	-4.86/-7.92	-9.16/-6.62	-5.46/-7.23	-9.51/-9.46	-8.69/-18.64	-10.24/-15.05	-18.75/-18.26
Θ(82.5°)	-18.02/-16.96	-19.09/-19.22	-10.87/-9.47	-7.69/-6.76	-6.76/-7.33	-7.3/-8.01	-8.04/-5.06	-2.88/-2.19	-2.74/-5.7	-5.4/-5.36	-9.5/-8.88	-10.61/-12.58	-14.07/-13.26	-12.52/-10.94	-10.95/-13.34	-12.71/-8.84	-7.17/-5.36	-5.62/-7.85	-8.97/-6.94	-6.72/-7.62	-10.66/-11.83	-9.82/-16.32	-14.34/-14.81	-17.7/-18.75
Θ(90°)	-18.12/-17.81	-18.38/-18.12	-14.93/-12.58	-8.71/-6.06	-7.94/-10.58	-14.11/-6.65	-7.29/-5.61	-4.9/-5.52	-5.9/-6.21	-6.46/-6.14	-11.14/-11.32	-13.45/-17.16	-13.4/-13.37	-18.21/-15.83	-14.27/-14.38	-12.24/-6.34	-4.16/-5.44	-5.25/-5.57	-7.04/-7.48	-7.83/-9.66	-11.1/-12.23	-12.2/-16.51	-17.79/-17.65	-19.17/-18.4
Θ(97.5°)	-18.07/-17.7	-18.78/-17.1	-17.86/-13.8	-9.17/-8.88	-12.09/-19.01	-12.62/-11.01	-9.64/-7.2	-6.09/-6.31	-6.29/-5.69	-7.5/-6.66	-9.91/-10.1	-17.7/-18.25	-15.8/-18.29	-18.1/-16.21	-13.77/-12.24	-11.48/-6.43	-4.51/-5.26	-6.19/-5.36	-6.5/-6.63	-9.54/-12.79	-13.64/-10.17	-14.43/-16.46	-16.88/-13.37	-19.26/-18.7
Θ(105°)	-17.45/-18.27	-18.45/-17.81	-17.31/-14.77	-13.62/-11.37	-16.34/-18.72	-17.69/-17.52	-12.8/-9.74	-9.14/-6.53	-7.14/-6.28	-9.63/-7.07	-9.41/-10.5	-14.95/-19.09	-19.18/-17.62	-16.1/-15.84	-12.17/-8.42	-10.75/-10.91	-7.1/-14.85	-6.35/-8.83	-6.67/-7.07	-8.4/-18.5	-15.26/-11.03	-13.67/-15.84	-17.01/-17.85	-18.72/-18.03
Θ(112.5°)	-18.33/-18.44	-18.08/-17.86	-17.82/-16.03	-14.52/-16.88	-18.71/-18.44	-17.43/-17.62	-17.73/-15.2	-11.86/-7.74	-9.25/-9.75	-11.81/-10.16	-19.35/-14.03	-15.43/-18	-18.95/-17.98	-17.6/-15.3	-11.07/-7.49	-11.42/-18.09	-12.32/-6.3							



Radiated Composite Gain Data of Combination C

Appendix A.5

Θ(120°)	-2.82/-1.24	-1.81/-2.63	-2.25/-3.37	-3.84/-5.38	-9.08/-13.22	-17.5/-12.99	-8.54/-13.19	-12.65/-11.47	-9.09/-5.17	-4.52/-4.36	-4.47/-3.43	-5.1/-7.38	-12.21/-10.45	-8.66/-10.49	-12/-10.46	-10.63/-13.22	-9.65/-6.7	-12.71/-17.35	-17.08/-10.62	-8.76/-7.25	-8.71/-9.04	-13.4/-7.04	-3.24/-3.03	-2.8/-2.26
Θ(127.5°)	-3.87/-3.85	-3/-3.98	-4.32/-5.21	-7.34/-9.84	-11.27/-10.61	-17.86/-14.89	-10.57/-11.58	-16.89/-11.68	-13.82/-9.12	-6.56/-5.44	-5.31/-5.33	-6.17/-8.32	-11.19/-14.92	-17.87/-17.15	-10.51/-10.12	-13.78/-15.59	-14.21/-15.99	-18.19/-18.67	-18.35/-18.36	-11.71/-11.62	-10.75/-13.51	-16.12/-10.16	-6.07/-5.51	-3.62/-2.3
Θ(135°)	-4.72/-5.7	-4.83/-4.75	-5.19/-6.53	-9.89/-12.31	-16.99/-19.01	-19.09/-17.05	-13.42/-12.41	-16.82/-17.66	-13.51/-10.03	-7.87/-8.45	-6.12/-5.18	-7.17/-7.49	-8.82/-13.43	-15.22/-16.4	-19.13/-11.77	-10.19/-10.17	-15.08/-19.23	-15.78/-14.08	-18.43/-18.91	-13.53/-10.89	-8.79/-9.58	-16.25/-10.44	-8.02/-7.29	-4.34/-2.8
Θ(142.5°)	-10.13/-9.94	-7.51/-6.3	-7.13/-8.2	-8.2/-9.34	-12.24/-14.81	-18.52/-18.35	-18.89/-18.97	-18.92/-18.21	-14.53/-13.14	-11.25/-6.57	-8.89/-9.09	-7.44/-11.46	-16.1/-11.66	-12.57/-17.88	-18.46/-17.48	-13.71/-9.6	-12.16/-17.64	-19.23/-17.55	-17.99/-18.54	-18.07/-16.41	-14.25/-11.25	-13/-17.06	-15.18/-16.41	-13.73/-10.61
Θ(150°)	-9.07/-11.41	-10.03/-10.15	-13.07/-12.7	-13.06/-10.17	-11.22/-12.51	-17.82/-17.67	-18.37/-16.37	-15.15/-14.35	-12.88/-10.34	-10.18/-12.31	-13.16/-9.1	-8.93/-13.75	-16.99/-15.3	-17.33/-17.9	-18.91/-18.78	-17.15/-17.92	-13.96/-11.76	-14.13/-17.69	-17.83/-18.5	-18.53/-17.84	-18.41/-18.05	-15.72/-14.19	-13.27/-10.68	-9.15/-8.28
Θ(157.5°)	-8.86/-10.34	-11.42/-10.33	-10.36/-10.92	-12.05/-14.55	-16.96/-16.34	-19.07/-19.12	-18.73/-18.2	-16.49/-15.46	-15.32/-15.8	-12.91/-10.47	-10.08/-11.14	-13.36/-13.85	-13.31/-14.02	-15.6/-18.6	-18.94/-19.1	-18.84/-19.21	-13.02/-16.23	-19.09/-17.89	-19.16/-18.72	-17.78/-17.58	-14.73/-15.92	-18.63/-15.29	-11.46/-8.42	-6.34/-6.36
Θ(165°)	-8.84/-8.11	-8.02/-9.28	-10.1/-11.55	-14.58/-17.21	-17.84/-18.93	-17.3/-16.87	-15.06/-13.46	-12.23/-12.45	-13.54/-14.06	-15.59/-16.01	-15.93/-16.01	-17.27/-19	-18.25/-17.36	-15.18/-15.27	-17.25/-18.94	-17.75/-17.91	-18.06/-18.1	-18.85/-18.59	-17.98/-18.24	-17.9/-17.56	-18.42/-16.82	-16.44/-13.72	-10/-8.14	-7.22/-6.68
Θ(172.5°)	-13.04/-11.94	-12.14/-12.95	-14.27/-14.71	-16.12/-17.72	-18.08/-18.37	-17.61/-17.95	-17.97/-17.83	-18.04/-18.22	-18.47/-18.15	-18.37/-18.97	-18.04/-17.98	-18.1/-18.39	-18.08/-17.83	-18.79/-18.07	-18.27/-17.25	-18.39/-18.02	-18.41/-17.78	-18.73/-18.71	-18.18/-17.89	-18.04/-16.51	-15.03/-15.45	-14.9/-15.47	-14.86/-13.69	-13.23/-12.82
Θ(180°)	-17.44/-18.5	-18.27/-17.71	-18.52/-18.53	-19.33/-18.86	-18.57/-17.62	-16.49/-16.05	-16.15/-16.55	-15.71/-15.7	-15.22/-14.41	-14.37/-14.91	-16.21/-17.49	-18.98/-19.3	-18.42/-18.01	-17.76/-19.03	-18.26/-18.02	-18.03/-17.91	-16.99/-18.22	-19.92/-17.81	-18.21/-18.31	-18.18/-19.05	-18.62/-18.24	-17.83/-19.19	-18.11/-17.99	-17.7/-18.4
Freq(Hz)	5.6GPol.	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°)	-10.97/-13.54	-15.58/-13.64	-10.22/-9.92	-6.14/-4.94	-4.04/-3.61	-3.34/-3.2	-3.22/-3.24	-3.53/-3.36	-3.72/-4.02	-5.35/-5.6	-6.56/-7.35	-8.65/-10.42	-11.82/-12.04	-11.26/-10.37	-8.51/-6.84	-5.18/-3.77	-2.69/-2.27	-1.68/-1.41	-1.07/-0.8	-0.77/-0.8	-0.9/-1.16	-1.75/-2.41	-3.32/-4.92	-6.33/-8.46
Θ(7.5°)	-14.26/-12.47	-10.27/-8.68	-6.99/-5.94	-4.7/-3.57	-2.69/-1.96	-1.57/-1.27	-0.84/-0.75	-0.77/-0.84	-0.81/-1.21	-1.49/-2.2	-2.98/-4.19	-5.68/-7.81	-10.95/-14.41	-16.14/-13.79	-10.83/-8.42	-6.13/-4.17	-3.14/-2.55	-2.4/-2.4	-2.33/-2.39	-3.43/-3.96	-4.73/-6.72	-8.86/-9.88	-9.85/-11.82	
Θ(15°)	-16.83/-13.38	-11.2/-9.43	-8.32/-6.91	-6.07/-5.15	-4.35/-3.67	-2.63/-1.59	-0.74/-0.07	-0.16/-0.01	-0.17/-0.47	-0.71/-1.54	-2.68/-4.21	-5.8/-7.82	-10.97/-16.04	-18.97/-17.69	-13.27/-9.79	-6.61/-4.33	-3.41/-2.36	-2.28/-2.56	-3.01/-3.8	-4.58/-5.33	-5.41/-5.39	-6.27/-7.72	-9.17/-11.22	-14.36/-15.33
Θ(22.5°)	-17.39/-15.15	-12.73/-9.79	-6.78/-5.21	-4/-3.88	-5.38/-5.69	-4.36/-2.8	0.01/-0.23	0.510/-49	-0.08/-0.91	-1.95/-6.39	-5.09/-6.73	-8.41/-9.81	-11.66/-12.76	-13.62/-15.03	-18.12/-17.46	-12.66/-8.19	-5.81/-3.96	-3.27/-3.03	-3.3/-4.22	-4.64/-4.19	-3.56/-3.37	-3.95/-4.88	-6.88/-10.29	-14.26/-18.09
Θ(30°)	-19.34/-13.27	-9.86/-7.18	5/-3.42	-3.16/-2.83	-3.23/-2.48	-0.940/-44	1.121/62	1.591/48	1.020/22	-0.71/-2.2	-4.3/-6.96	-8.69/-11.22	-12.15/-10.13	-7.82/-6.87	-6.96/-7.22	-7.88/-7.67	-8.19/-6.38	-4.26/-3.32	-3.15/-3.76	-3.78/-2.74	-1.55/-0.87	-0.84/-2.21	-5.63/-10.81	-15.36/-19.27
Θ(37.5°)	-18.2/-15.83	-10.12/-7.95	-5.96/-3.91	-3.23/-2.28	-2.12/-1.34	-0.181/-0.2	1.981/69	0.960/28	0.01/-0.59	-1.11/-2.53	-4.03/-6.2	-7.74/-9.76	-12.15/-11.02	-7.58/-5.48	-3.69/-2.5	-2.2/-2.19	-2.84/-3.95	-3.52/-2.81	-2.72/-3.62	-3.71/-2.42	-1.35/-0.58	-0.85/-2.77	-6.85/-12.77	-18.71/-18.52
Θ(45°)	-16.63/-18.38	-11.31/-7.99	-5.53/-3.55	-2.56/-2.35	-3.89/-1.7	-2.250/-67	2.262/21	1.250/23	0.002	-0.77/-2.4	-4.92/-8.12	-9.84/-11.2	-16.83/-17.25	-11.16/-6.45	-3.28/-1.94	-1.17/-0.98	-2.16/-3.23	-2.87/-1.4	-1.09/-2.7	-4.41/-2.73	-1.43/-1.44	-1.91/-3.23	-5.25/-8.79	-13.82/-16.05
Θ(52.5°)	-13.65/-18.35	-16.4/-12.26	-6.7/-3.16	-2.5/-3.66	-6.27/-4.87	-1.951/03	2.542/52	1.931/86	2.332/33	0.1/-2.66	-6.82/-11.69	-16.59/-17.53	-18.93/-18.5	-13.66/-7.1	-4.72/-3.53	-2.23/-4.19	-1.57/-2.49	-1.85/-0.47	-0.15/-2.06	-5.97/-3.89	-2.2/-2.41	-3.75/-5.1	-6.72/-7.78	-12.19/-14.73
Θ(60°)	-10.9/-14.49	-18.59/-11.81	-4.73/-2.54	-3.77/-6	-5.82/-5.3	-0.950/73	1.010/11	-0.191/-1	1.372/04	0.16/-3.39	-5.71/-8.25	-12.39/-18.37	-17.39/-15.26	-15.92/-13.62	-10.16/-8.24	-5.31/-2.08	-0.77/-1.36	-2.66/-2.25	-1.71/-2.56	-6.18/-6.7	-3.74/-4.26	-5.74/-7.27	-6.94/-7.97	-9.27/-11.84
Θ(67.5°)	-9.86/-12.72	-17.43/-11.84	-5.46/-4.76	-6.86/-6.68	-4.36/-4.91	-4.02/-3.29	-3.97/-3.72	-1.66/-0.29	-0.68/-1.12	-4.56/-0.95	-6.37/-7.08	-8.71/-11.99	-15.66/-14.4	-14.61/-18.42	-17.91/-16.31	-7.13/-2.68	-1.68/-2.53	-3.39/-3.43	-3.52/-4.21	-8.25/-8.91	-6.55/-6.7	-7.36/-9.13	-9.08/-11.36	-13/-12.13
Θ(75°)	-10.07/-12.63	-17.81/-14.29	-7.53/-7.79	-8.15/-6.62	-7.19/-10.85	-7.38/-1	1.111/88	2.512/15	0.67/-2.44	-9.24/-13.9	-7.71/-7.67	-6.34/-9.82	-10.61/-8.77	-11.59/-12.92	-13.65/-10.8	-2.69/-3.92	-4.83/-4.89	-4.66/-4.74	-8.58/-10.86	-9.88/-9.24	-11.5/-12.5	-12.12/-12.97	-15.95/-11.85	
Θ(82.5°)	-12.55/-17.97	-18.39/-15.92	-11.25/-10.15	-10.11/-9.69	-9.02/-12.47	-8.12/-3.89	-2.53/-2.17	0.640/86	-0.1/-2.97	-10.19/-6.59	-6.16/-6.72	-5.62/-8.81	-10.24/-18.05	-14.18/-12.2	-9.25/-12.97	-14.54/-7.2	-2.49/-4.41	-5.75/-5.22	-5.63/-5.02	-10.82/-12.76	-13.62/-11.8	-13.62/-11.8	-13.62/-11.8	-14.88/-12.68
Θ(90°)	-16.37/-18.03	-14.27/-18.72	-13.4/-12.3	-11.9/-8.51	-9.03/-12	-14.21/-5.82	-4.08/-4.39	-2.35/-2.17	-2.52/-4.85	-7.72/-6.15	-5.32/-6.72	-5.1/-8.31	-10.17/-18.12	-15.87/-14.15	-10.51/-6.69	-11.74/-7.45	-1.84/-2.35	-5.51/-6.37	-8.2/-6.03	-10.22/-18.49	-16.34/-18.71	-18.33/-18.84	-18.89/-19.09	-18.69/-17.81
Θ(97.5°)	-17.23/-14.9	-16.53/-13.91	-14.64/-11.67	-9.26/-8.02	-9.8/-18.85	-10.06/-19.2	-5.76/-2.79	-1.32/-1.29	-2.58/-6.21	-7.86/-6.78	6.68/-6.19	-7.83/-10.56	-15.22/-18.66	-18.32/-15.4	-10.5/-10.7	-9.88/-5.17	-2.67/-3.57	-5.46/-7.13	-10.51/-10.02	-11.97/-18.12	-19.25/-17.77	-18.62/-15.11	-18.35/-18.47	-19.18/-18.62
Θ(105°)	-17.42/-13.38	-18.33/-11.91	-14.43/-11.76	-10.56/-10.52	-13.2/-18.62	-14.66/-15.75	-9.99/-5.06	-2.73/-2.36	-2.84/-6.48	-8.41/-7.8	-7.21/-8.55	-10.47/-13.17	-17.8/-18.07	-18.65/-13.6	-11.68/-7.96	-12.44/-8.57	-4.15/-5.5	-6.78/-6.28	-10.19/-14.69	-14.61/-14.22	-18.91/-18.25	-18.62/-15.14	-17.61/-19.31	-19.17/-19.1
Θ(112.5°)	-18.73/-16.93	-14.59/-10.39	-12.18/-11.53	-13.32/-11.76	-15.33/-18.83	-18.22/-18.49	-10.25/-6.82	-7.38/-3.47	-4.33/-3.87	-11.38/-9.17	-11.59/-11.46	-15.29/-14.44	-16.74/-18.81	-17.72/-17.74	-12.8/57	-13.06/-13.2	-8.17/-8.66	-7.85/-8.15	-15.51/-16.42	-16.15/-16.42	-18.94/-16.96	-18.57/-15.01	-18.58/-17.94	-17.65/-16.25
Θ(120°)	-19.13/-19.1	-13.72/-13.13	-12.99/-11.66	-15.45/-18.65	-18.48/-19.35	-17.84/-18.05	-13.78/-15.48	-13.51/-6.62	-8.85/-10.88	-15.88/-10.9	-15.76/-15.48	-18/-18.77	-18.13/-18.39	-18.69/-18.74	-14.04/-15.09	-12.49/-17.27	-12.57/-7.28	-9.13/-10.43	-14.17/-16.34	-12.89/-18.41	-18.85/-17.8	-18.24/-18.77	-19.3/-13.37	-18.44/-19.02
Θ(127.5°)	-18.43/-18.62	-13.75/-14.88	-14.78/-13.25	-16.32/-17.72	-16.48/-19.1	-18.41/-18.65	-18.42/-15.48	-11.53/-16.98	-17.48/-13.02	-12.65/-12.64	-18.85/-18.03	-18.88/-18.01	-18.98/-18.97	-18.49/-17.16	-16.57/-16.31	-11.12/-9.54	-14.04/-13.11	-11.99/-12.56	-15.04/-17.5	-18.65/-18.7	-16.28/-18.53	-18.41/-18.17	-17.13/-13.92	
Θ(135°)	-18.76/-16.87	-16.15/-14.48	-18.8/-16.99	-16.46/-16.03	-17.13/-18.19	-16.26/-18.3	-18.58/-18.2	-17.5/-19.16	-17.89/-19.23	-16.57/-15.89	-11.4/-11.91	-18.15/-17.69	-18.57/-18.52	-18.86/-19	-18.79/-19.2	-15.01/-12.08	-17.08/-18.38	-18.85/-18.4	-13.9/-12.61	-12.7/-19.13	-17.91/-17.35	-19.59/-17.46	-17.46/-18.47	-18.78/-18.48
Θ(142.5°)	-18.58/-18.78	-16.92/-15.66	-17.29/-16.14	-11.86/-14.04	-16.27/-18.31	-18.16/-18.64	-18.99/-17.77	-17.44/-18.06	-17.76/-16.12	-16.93/-15.62	-13.47/-13.4	-11.88/-13.94	-18.52/-16.27	-18.98/-18.97	-17.47/-18.3	-19.08/-19	-14.96/-17.47	-18.44/-12.41	-15.19/-17.12	-18.56/-17.73	-14.76/-18.25	-19.31/-18.26	-18.04/-19.12	-18.09/-19.02
Θ(150°)	-18.06/-18.49	-17.43/-17.6	-15.56/-14.21	-15.34/-13.51	-18.43/-14.42	-14.59/-16.48	-19.06/-17.39	-18.85/-19.04	-18.45/-16.67	-14.72/-14.16	-10.94/-10.15	-15.69/-18.25	-14.54/-16.25	-18.64/-16.09	-18.11/-18.21	-15.61/-15.11	-17.87/-18.77	-14.73/-14.31	-17.81/-18.44	-18.09/-18.67	-18.11/-15.9	-18.8/-18.88	-17.45/-17.74	-18.92/-18.19
Θ(157.5°)	-17.84/-18.63	-18.52/-17.18	-15.46/-17.05	-17.41/-19.27	-17.26/-18.81	-18.41/-17.93	-18.86/-18.59	-18.25/-19.4	-17.07/-15.33	-12.89/-10.94	-10.79/-13.3	-17.96/-12.97	-10.42/-13.57	-18.19/-14.28	-12/-13.86	-18.19/-19.01	-17.29/-14.69	-14.36/-16.19	-18.26/-18.49	-18.35/-18.79	-16.8/-15.65	-18.2/-18.34	-16.96/-15.53	-17.09/-16.57
Θ(165°)	-18.67/-18.85	-17.94/-18.86	-17.64/-17	-18.85/-18.53	-17.67/-15.																			