



Antenna Composite Gain Test Report

Equipment	Wireless Access Point
Brand Name	ARISTA
Model Name	C-460
Applicant	Arista Networks, Inc. 5453 Great America Parkway, Santa Clara, CA 95054 USA
Manufacturer	Arista Networks, Inc. 5453 Great America Parkway, Santa Clara, CA 95054 USA
Standard	KDB 662911 D03 v01
Sample Received	Sep. 25, 2023
Start Test Date	Jan. 14, 2024
Final Test Date	Jan. 14, 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
6G Ant1	1	WHAYU	C393-510253-A	Dipole	I-Pex	6G
6G Ant2	2	WHAYU	C393-510253-A	Dipole	I-Pex	6G
6G Ant3	3	WHAYU	C393-510253-A	Dipole	I-Pex	6G
6G Ant4	4	WHAYU	C393-510253-A	Dipole	I-Pex	6G
2G 5GAnt1	1	WHAYU	C393-510253-A	PIFA	I-Pex	2.4G+5G
2G 5GAnt2	2	WHAYU	C393-510253-A	PIFA	I-Pex	2.4G+5G
2G 5GAnt3	3	WHAYU	C393-510253-A	PIFA	I-Pex	2.4G+5G
2G 5GAnt4	4	WHAYU	C393-510253-A	PIFA	I-Pex	2.4G+5G

Note:

6GHz Operation Mode (4TX/4RX)

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

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

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

2. Test Frequency

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

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



3. Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Wen 33rd.St.	ADD:	No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
	TEL: 886-3-318-0787	FAX: 886-3-318-0287		
Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	ViviJiang	24~24.5°C / 40~55%	14/Jan/2024

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

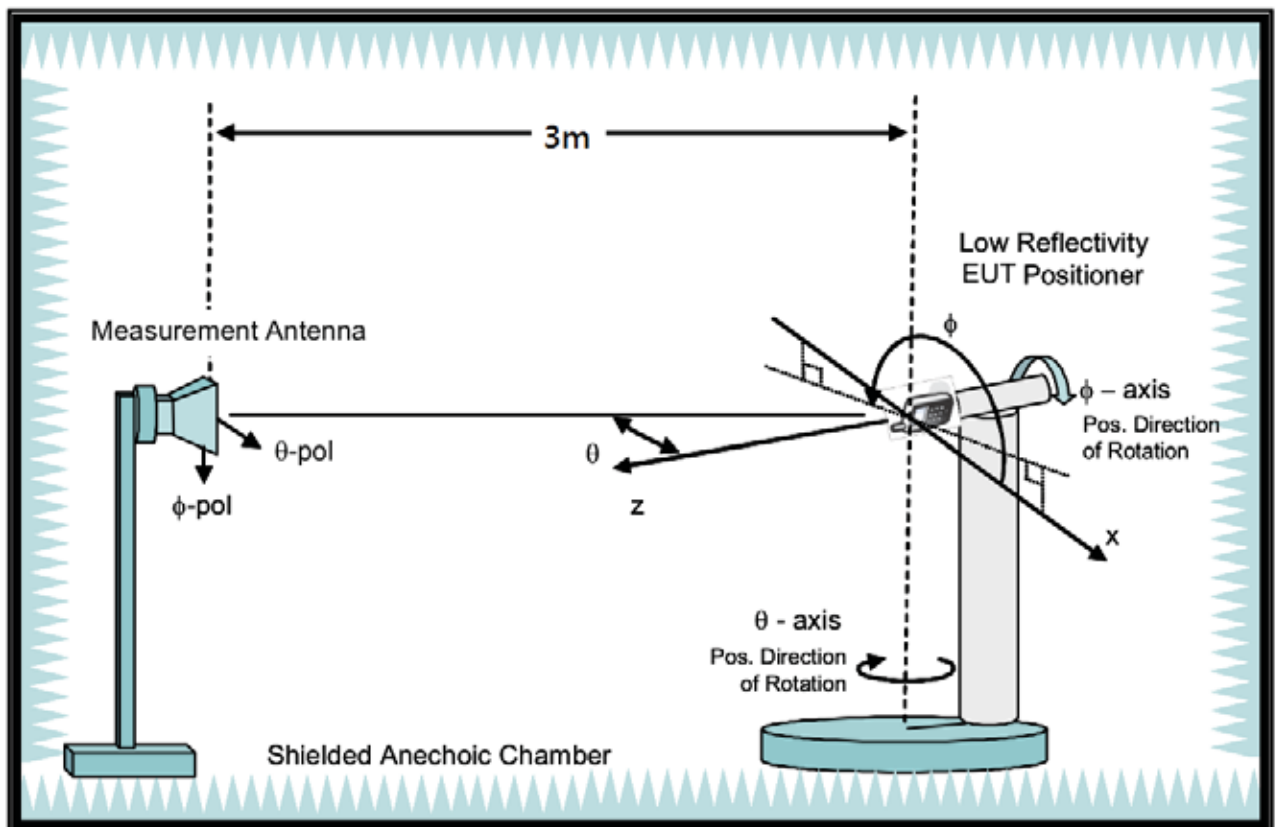
Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

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

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

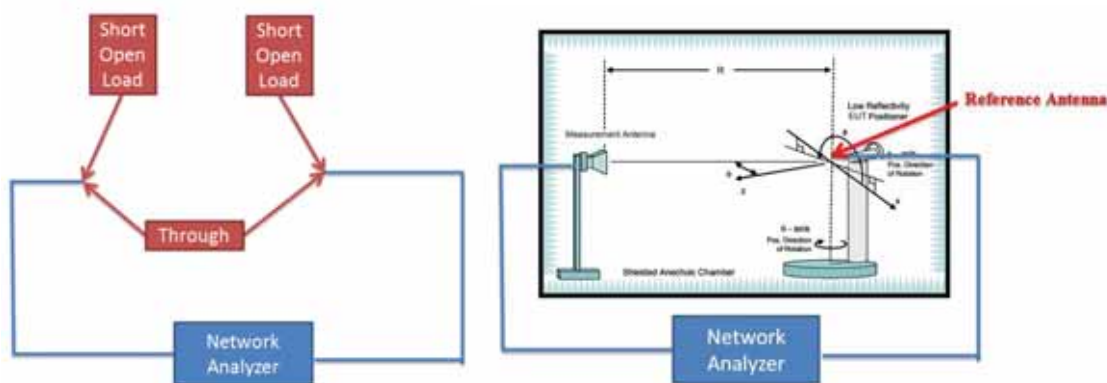
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



5. Reference Calibration

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

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



Frequency (MHz)	2400	2450	2500	5150	5200	5300	5600	5750	5800	5900	6000	6500	7000	7200
G(theta) reading (dB)	-33.75	-33.64	-32.91	-32.21	-32.45	-32.33	-32.57	-32.94	-32.78	-33.35	-32.91	-33.81	-34.54	-35.64
G(phi) reading (dB)	-33.19	-32.12	-32.48	-32.51	-32.64	-31.68	-32.24	-32.45	-32.45	-32.85	-32.45	-33.62	-34.48	-35.24
Reference gain (dBi)	10	10.4	10.6	12.3	12.5	13.3	13.3	13.2	13.1	13	13.2	12.4	11.8	11.1
Factor(theta) (dB)	43.75	44.04	43.51	44.51	44.95	45.63	45.87	46.14	45.88	46.35	46.11	46.21	46.34	46.74
Factor(phi) (dB)	43.19	42.52	43.08	44.81	45.14	44.98	45.54	45.65	45.55	45.85	45.65	46.02	46.28	46.34

Note:

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

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

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

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



6. Test Method

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

DG steps:

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

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



7. Measured Values and Calculation of Maximum Gain Positions

DG_1SS max value position

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 (dBi)	-0.39	0.94	-2.94	3.83	3.92
Ant. 2 (dBi)	1.93	0.77	-0.74	0.03	-0.41
Ant. 3 (dBi)	0.64	1.94	3.02	1.61	2.08
Ant. 4 (dBi))	-4.57	3.73	4.04	3.62	4.31
DG [1SS] (dBi)	5.74	7.95	7.31	8.43	8.69
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	67.5	82.5	75	82.5	75
$\Phi(^{\circ})$	180	45	52.5	37.5	37.5

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

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	1.71	0.42	2.43	-1.21
Ant. 2 (dBi)	-0.33	2.09	2.45	3.94
Ant. 3 (dBi)	3.71	3.58	0.65	-1.67
Ant. 4 (dBi))	1.59	-0.01	-3.64	0.28
DG [1SS] (dBi)	7.81	7.66	6.82	6.65
Polarization	Phi	Phi	Phi	Phi
$\Theta(^{\circ})$	30	37.5	15	0
$\Phi(^{\circ})$	82.5	262.5	345	0

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



DG_1SS max value position calculation

Frequency (Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 [$10^{(G/20)}$]	$10^{(-0.39/20)}$	$10^{(0.94/20)}$	$10^{(-2.94/20)}$	$10^{(3.83/20)}$	$10^{(3.92/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(1.93/20)}$	$10^{(0.77/20)}$	$10^{(-0.74/20)}$	$10^{(0.03/20)}$	$10^{(-0.41/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(0.64/20)}$	$10^{(1.94/20)}$	$10^{(3.02/20)}$	$10^{(1.61/20)}$	$10^{(2.08/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(-4.57/20)}$	$10^{(3.73/20)}$	$10^{(4.04/20)}$	$10^{(3.62/20)}$	$10^{(4.31/20)}$
Ant. 1 [$10^{(G/20)}$] value	0.956	1.114	0.713	1.554	1.57
Ant. 2 [$10^{(G/20)}$] value	1.249	1.093	0.918	1.003	0.954
Ant. 3 [$10^{(G/20)}$] value	1.076	1.25	1.416	1.204	1.271
Ant. 4 [$10^{(G/20)}$] value	0.591	1.536	1.592	1.517	1.642
Sum All Antenna [Amax]	3.872	4.994	4.639	5.278	5.437
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	5.74	7.95	7.31	8.43	8.69

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [$10^{(G/20)}$]	$10^{(1.71/20)}$	$10^{(0.42/20)}$	$10^{(2.43/20)}$	$10^{(-1.21/20)}$
Ant. 2 [$10^{(G/20)}$]	$10^{(-0.33/20)}$	$10^{(2.09/20)}$	$10^{(2.45/20)}$	$10^{(3.94/20)}$
Ant. 3 [$10^{(G/20)}$]	$10^{(3.71/20)}$	$10^{(3.58/20)}$	$10^{(0.65/20)}$	$10^{(-1.67/20)}$
Ant. 4 [$10^{(G/20)}$]	$10^{(1.59/20)}$	$10^{(-0.01/20)}$	$10^{(-3.64/20)}$	$10^{(0.28/20)}$
Ant. 1 [$10^{(G/20)}$] value	1.218	1.05	1.323	0.87
Ant. 2 [$10^{(G/20)}$] value	0.963	1.272	1.326	1.574
Ant. 3 [$10^{(G/20)}$] value	1.533	1.51	1.078	0.825
Ant. 4 [$10^{(G/20)}$] value	1.201	0.999	0.658	1.033
Sum All Antenna [Amax]	4.914	4.831	4.384	4.302
DG [$10 \cdot \log(A_{max}^2/N_{ant})$]	7.81	7.66	6.82	6.65

Note:

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

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



8. Summary of Test Result

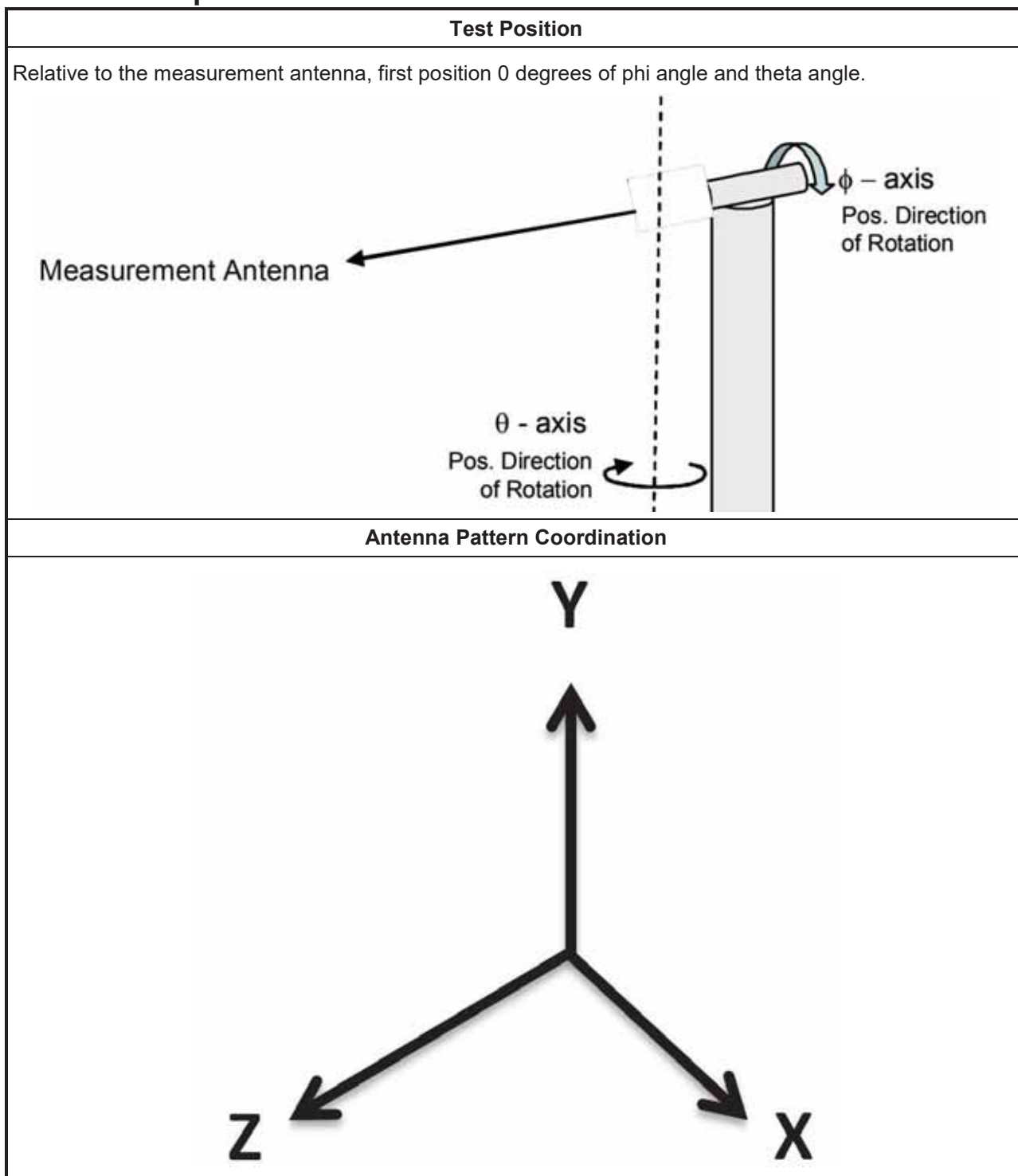
Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.52	5.01	4.18	4.47	4.79
Ant. 2 Max Gain (dBi)	2.26	4.71	4.72	4.48	5.01
Ant. 3 Max Gain (dBi)	2.81	3.56	3.49	5.25	4.23
Ant. 4 Max Gain (dBi)	2.36	5.14	4.59	4.41	4.31
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/157.5	Theta/75/0	Theta/75/0	Theta/75/352.5	Theta/75/0
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/172.5	Theta/75/217.5	Theta/75/217.5	Theta/45/97.5	Theta/75/225
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/232.5	Theta/67.5/142.5	Theta/60/142.5	Theta/67.5/135	Theta/67.5/135
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/67.5/255	Theta/75/30	Theta/82.5/30	Theta/75/30	Theta/75/37.5
Max Gain (dBi)	2.81	5.14	4.72	5.25	5.01
DG [1SS] (dBi)	5.74	7.95	7.31	8.43	8.69
DG [2SS] (dBi)	2.81	5.14	4.72	5.43	5.69
DG [4SS] (dBi)	2.81	5.14	4.72	5.25	5.01

Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.41	4.44	4.06	3.96
Ant. 2 Max Gain (dBi)	5.42	4.8	4.15	4.72
Ant. 3 Max Gain (dBi)	5.35	5.01	5.61	4.45
Ant. 4 Max Gain (dBi)	4.2	3.99	4.51	5.75
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/22.5/225	Phi/7.5/315	Phi/7.5/307.5	Phi/37.5/120
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/217.5	Phi/30/225	Phi/7.5/30	Phi/15/30
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/315	Phi/30/300	Phi/37.5/285	Theta/45/45
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/240	Phi/37.5/217.5	Phi/37.5/210	Phi/37.5/202.5
Max Gain (dBi)	5.42	5.01	5.61	5.75
DG [1SS] (dBi)	7.81	7.66	6.82	6.65
DG [2SS] (dBi)	5.42	5.01	5.61	5.75
DG [4SS] (dBi)	5.42	5.01	5.61	5.75

Note:

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

9. Test Setup



Note:

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

**10. Test Equipment and Calibration Data**

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1543	1GHz~18GHz	May 11, 2023	May 10, 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. 28, 2023	Jul. 27, 2024
VNA Calibration Kit	TS RF	TS85033E-F	-	DC~9GHz	N.C.R.	N.C.R.
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	N.C.R.	N.C.R.
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	N.C.R.	N.C.R.

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

NCR means Non-Calibration required.



11. Test Results

Please refer to the appendix.

Appendix A – Radiated Composite Gain of 2.4GHz/5GHz/6GHz.....Page 15

Appendix B – Radiated Composite Gain of 2.4GHz/5GHz/6GHz.....Page 40

Appendix C – Test Photos.....Page 53

————THE END————



Radiated Composite Gain Data of 2.4GHz/5GHz

Appendix A.1

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.52	5.01	4.18	4.47	4.79
Ant. 2 Max Gain (dBi)	2.26	4.71	4.72	4.48	5.01
Ant. 3 Max Gain (dBi)	2.81	3.56	3.49	5.25	4.23
Ant. 4 Max Gain (dBi)	2.36	5.14	4.59	4.41	4.31
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/52.5/157.5	Theta/75/0	Theta/75/0	Theta/75/352.5	Theta/75/0
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/67.5/172.5	Theta/75/217.5	Theta/75/217.5	Theta/45/97.5	Theta/75/225
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/77.5/232.5	Theta/67.5/142.5	Theta/60/142.5	Theta/67.5/135	Theta/67.5/135
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/67.5/255	Theta/75/30	Theta/82.5/30	Theta/75/30	Theta/75/37.5
Max Gain (dBi)	2.81	5.14	4.72	5.25	5.01
DG [1SS] (dBi)	5.74	7.95	7.31	8.43	8.69
DG [2SS] (dBi)	2.81	5.14	4.72	5.43	5.69
DG [4SS] (dBi)	2.81	5.14	4.72	5.25	5.01

Appendix A.1

Gain Result

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Radiated Composite Gain Data of 6GHz

Appendix A.2

Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.41	4.44	4.06	3.96
Ant. 2 Max Gain (dBi)	5.42	4.8	4.15	4.72
Ant. 3 Max Gain (dBi)	5.35	5.01	5.61	4.45
Ant. 4 Max Gain (dBi)	4.2	3.99	4.51	5.75
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/22.5/225	Phi/7.5/315	Phi/7.5/307.5	Phi/37.5/120
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/30/217.5	Phi/30/225	Phi/7.5/30	Phi/15/30
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/30/315	Phi/30/300	Phi/37.5/285	Theta/45/45
Ant. 4 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/240	Phi/37.5/217.5	Phi/37.5/210	Phi/37.5/202.5
Max Gain (dBi)	5.42	5.01	5.61	5.75
DG [1SS] (dBi)	7.81	7.66	6.82	6.65
DG [2SS] (dBi)	5.42	5.01	5.61	5.75
DG [4SS] (dBi)	5.42	5.01	5.61	5.75



Radiated Composite Gain Data of 6GHz

Appendix A.2

(H22.5)	5.514	4.844.45	4.093.62	3.263.48	4.235.18	5.596.2	4.574.04	3.893.51	3.573.82	4.526.27	5.695.54	5.084.25	3.533.01	2.862.29	2.763.89	4.74.97	4.794.6	4.574.5	4.284.13	3.933.41	3.593.94	3.844.08	4.354.78	5.445.84
(H30°)	5.914.82	4.13.78	3.434.06	4.764.82	5.035.71	5.945.28	4.554.14	3.592.86	3.443.6	4.074.12	3.993.21	2.252.12	3.433.67	2.862.28	3.24.3	5.186.14	5.945.21	4.754.58	4.414.39	4.464.47	4.294.13	3.743.51	4.335.44	6.366.57
(H37.5)	4.963.9	2.761.67	0.052.41	4.344.59	4.755.62	5.794.72	4.114.18	3.862.95	3.294.53	3.943.09	3.73.15	2.993.47	3.473.15	3.915.49	5.571.48	3.864.9	4.893.62	3.844.89	4.714.35	4.774.61	3.972.58	4.384.46	6.255.51	
(H42.5)	3.592.48	1.642.18	1.941.03	1.091.54	2.533.17	1.652.67	2.102.43	2.592.17	2.593.3	3.453.17	3.552.6	2.874.09	4.073.57	3.814.11	4.354.07	3.163.51	3.832.71	3.514.28	4.293.47	3.733.95	4.483.76	3.273.79	4.835.04	4.993.79
(H48°)	41.89	3.243.11	-0.210.69	0.390.96	0.031.01	2.582.59	1.781.87	3.252.6	3.262.44	1.040.71	0.941.74	1.514.75	6.633.91	0.680.88	1.543.13	3.482.35	2.633.31	1.552.44	1.991.81	1.451.11	1.271.43	2.824.03	4.594.65	3.854.23
(H57.5)	5.193.2	1.269.69	0.741.0.42	-0.521.27	2.492.15	2.52.19	1.535.25	2.521.7	2.693.36	2.130.81	1.136.26	1.782.49	3.122.45	0.970.82	1.832.8	3.342.71	2.692.1	2.041.75	0.250.61	-0.570.72	1.171.49	3.513.94	4.465.11	4.864.94
(H57.5)	6.054.19	1.582.31	1.451.66	-1.271.58	3.131.6	5.041.53	1.592.44	1.133.47	3.053.63	2.231.12	1.37.24	2.213.17	3.421.91	1.341.42	0.842.53	2.733.33	2.831.87	3.32.34	0.360.2	0.091.89	1.062.08	2.953.77	3.574.58	4.725.72
(H82.5)	5.192.84	1.352.26	1.851.36	-1.671.89	2.423.23	0.962.21	2.811.71	0.644.98	3.082.85	1.251.34	1.91.36	2.625.84	3.750.95	0.741.23	0.71.31	2.243.51	3.371.7	3.512.48	0.892.58	0.971.91	2.863.70	2.810.25	4.245.4	
(H90°)	3.881.02	0.940.69	1.161.184	-1.531.44	1.851.158	-1.772.68	2.523.62	-0.462.58	2.881.92	0.445.78	0.892.43	2.242.04	2.881.16	-0.191.33	-0.633.04	0.422.21	2.262	2.691.39	0.351.435	-0.510.46	0.680.24	0.791.33	0.270.76	2.810.85
(H97.5)	1.781.82	0.331.103	4.491.238	-0.281.02	5.041.115	0.561.17	1.393.51	1.063.97	0.721.56	0.221.45	0.020.57	0.241.31	2.041.58	1.423.257	0.981.27	0.891.837	0.110.61	1.981.168	2.341.46	-2.641.67	1.521.198	-1.531.19	1.520.47	
(H105°)	0.411.02	0.402.926	3.171.37	-4.381.15	1.565.67	0.491.19	3.712.38	2.161.46	2.711.102	1.941.091	1.310.77	0.191.98	0.712.38	3.936.051	3.371.332	1.241.16	-4.591.18	4.875.458	6.593.637	0.972.354	3.291.429	3.881.15	0.161.92	
(H112.5)	0.311.771	2.261.333	5.771.551	-0.384.02	-1.751.238	3.141.349	5.361.327	3.881.154	-1.751.326	4.111.188	1.141.264	-1.431.78	2.282.38	4.336.258	6.445.47	4.651.61	1.591.19	3.621.5	7.791.41	-0.681.333	4.749.477	3.211.379	0.041.038	2.571.69
(H117.5)	2.761.938	4.541.613	7.611.739	-0.201.32	4.571.45	4.471.45	4.141.24	5.861.286	-2.121.034	4.951.379	3.251.207	-4.251.328	3.591.31	2.321.408	4.461.492	7.511.492	5.241.035	-5.591.408	-7.861.24	-4.691.107	4.611.38	5.591.455	8.213.658	5.321.34
(H127.5)	4.917.27	-7.601.1241	8.141.834	-0.851.484	-8.591.484	7.781.593	-5.991.474	-4.511.405	-2.931.37	5.341.557	4.723.277	3.761.715	-3.844.02	-1.711.47	8.321.35	6.261.551	7.118.59	-10.561.82	-8.391.94	-8.441.1084	-5.331.408	-4.111.1083	-7.681.81	-4.312.58
(H135°)	5.567.759	9.591.059	7.961.93	-11.141.832	-0.561.679	7.054.614	-6.491.683	-4.871.711	-4.231.417	5.821.452	-5.951.768	-6.461.541	4.741.46	-4.351.8	-4.381.63	-3.331.18	-8.841.1027	-10.231.659	-7.041.25	-7.481.473	-7.991.433	-6.561.82	-5.961.785	-5.215.69
(H142.5)	0.281.021	-12.141.9	-8.891.1058	-0.317.96	-8.871.969	0.951.767	-5.241.69	-7.231.786	-7.991.589	-7.001.692	-7.431.61	-7.431.618	-3.51.411	-3.251.44	-7.121.486	-4.391.729	-0.881.1022	-8.91.51	-10.061.48	-8.041.834	-8.14.85	-1.581.1079	-7.217.28	-8.314.24
(H150°)	7.218.46	-8.711.77	6.271.1121	-11.121.602	-10.101.709	-0.351.677	-6.161.391	-7.431.754	-11.101.918	-8.41.64	-8.331.71	-5.881.055	-5.131.403	-5.461.337	-11.631.107	-12.121.188	-10.991.1105	-11.861.124	-10.691.74	-10.671.1144	-12.51.1071	-12.061.1135	-8.631.94	
(H157.5)	0.981.0131	6.631.838	-0.371.1131	-11.031.1046	-10.021.1015	8.141.686	4.461.47	-7.471.632	-5.611.518	-7.831.655	-7.061.586	-7.361.658	-5.711.433	-5.781.886	-10.221.1131	-11.831.1211	-12.281.1182	-12.211.1233	-9.941.15	-8.611.739	-8.021.98	-10.961.98	6.431.748	-6.401.36
(H165°)	0.231.9175	3.381.1024	6.291.868	-0.961.138	-11.831.1185	1.672.746	-7.691.721	6.321.655	-7.531.75	-7.241.71	-5.981.611	-10.591.112	-10.121.298	-10.341.79	-8.081.1022	-11.611.1208	-11.611.1224	-11.671.1204	-11.591.1187	-11.741.1146	-11.471.1086	-10.261.986	-11.261.1044	
(H172.5)	-11.831.1123	-11.111.1233	-12.891.1155	-11.321.1019	-10.101.947	0.191.924	-0.011.88	-8.621.821	-7.721.744	6.271.85	-6.091.103	-10.121.126	-12.631.1196	-11.911.1217	-11.141.1022	-11.171.1127	-10.191.1075	-10.151.1002	-10.061.1071	-10.641.1152	-12.331.1035	-11.491.1126	-10.531.1043	-10.051.1145
(H180°)	-10.581.1131	-11.311.1132	-11.761.1038	-10.521.1065	-11.211.1117	-10.331.1053	-10.381.1033	-8.841.1059	-11.111.107	-10.551.1028	-11.891.1149	-11.411.1238	-10.911.1082	-9.361.924	-8.671.1035	-10.811.1148	-11.961.1075	-10.571.1056	-10.881.1044	-10.021.1026	-10.171.1046	-10.171.1046	-10.271.1091	
FileNo	6.0950P4	Theta	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ
(H27°/φ07.5°)	φ15°/φ02.5°)	φ07°/φ07.5°)	φ45°/φ02.5°)	φ010°/φ07.5°)	φ07°/φ082.5°)	φ90°/φ097.5°)	φ15°/φ091.25°)	φ10°/φ127.5°)	φ15°/φ142.5°)	φ15°/φ157.5°)	φ15°/φ172.5°)	φ15°/φ187.5°)	φ15°/φ202.5°)	φ15°/φ217.5°)	φ225°/φ022.5°)	φ240°/φ047.5°)	φ255°/φ062.5°)	φ270°/φ077.5°)	φ285°/φ092.5°)	φ300°/φ107.5°)	φ315°/φ122.5°)	φ330°/φ137.5°)	φ345°/φ152.5°)	
(H37.5°)	3.793.7	3.431.76	4.324.76	4.955.16	5.616.05	6.358.4	6.368.04	5.685.15	4.263.5	3.073.42	3.824.35	4.724.91	4.834.65	4.254.03	3.871.04	4.324.79	5.245.75	6.088.34	6.326.21	5.815.28	4.633.64	3.133.3	3.443.49	3.773.84
(H47.5°)	4.714.38	3.753.93	4.481.74	4.134.81	5.071.62	6.076.11	5.571.95	4.123	2.042.16	2.245.05	3.260.97	4.073.34	3.853.94	4.241.38	4.791.52	5.591.6	6.146.21	6.155.33	5.361.78	4.093.31	3.183.78	4.264.63	4.474.94	4.874.98
(H57.5°)	4.342.75	3.953	3.652.98	3.163.38	3.734.24	4.486.77	6.158.38	5.751.03	4.02.99	2.781.35	2.982.50	4.455.33	5.485.19	4.393.95	4.061.44	4.528.36	4.993.72	3.353.38	3.323.61	3.313.38	4.144.74	4.594.38		
(H67.5°)	5.684.81	3.461.96	2.413.75	5.185.65	5.154.10	3.793.99	3.483.31	3.773.82	3.823.32	2.963.02	2.650.63	3.674.01	4.414.46	4.554.72	4.243.27	2.952.32	3.984.09	3.753.56	3.523.61	3.773.89	3.512.29	3.182.65	3.984.32	4.815.7
(H77.5°)	5.531.2	3.272.62	2.243.23	4.465.71	6.235.63	5.274.59	4.421.17	3.731.68	3.973.71	3.152.61	2.863.86	3.814.11	4.233.37	2.421.56	1.981.69	-0.1081.3	3.214.23	4.534.44	4.834.83	4.771.84	2.272.61	2.962.72	3.381.32	5.095.66
(H87.5°)	4.431.5	2.983.51	3.443.14	4.235.31	5.394.46	4.764.25	3.694.05	4.013.3	3.531.37	2.633.13	3.134.84	5.065.33	4.674.13	3.992.4	3.981.29	0.592.15	3.970.92	4.635.05	54.25	3.893.34	2.712.43	4.484.55	4.944.14	4.343.35
(H97.5°)	3.943.35	2.143.55	3.552.56	3.844.16	3.953.68	3.964.51	3.493.12	3.732.97	1.711	1.220.35	0.535.46	3.754.97	4.603.48	3.092.58	0.981.47	-0.892.06	1.762.54	3.611.71	4.293.423	4.041.44	1.191.46	2.693.37	2.981.76	1.542.72
(H107.5°)	1.767.49	1.282.35	2.781.24	0.672.6	3.492.82	2.352.63	2.091.92	2.231.68	0.681.032	0.331.18	0.732.43	3.753.82	3.212.41	1.610.86	1.470.14	0.982.13	1.712.16	0.921.06	2.843.14	3.311.58	-0.011.85	1.990.04	0.550.2	1.152.43
(H117.5°)	0.301.07	1.040.95	1.641.04	-0.751.61	2.192.04	1.211.91	2.033.31	0.250.51	0.451.224	-0.020.16	0.141	2.723.94	1.041.47	0.80.44	-1.351.548	-2.071.62	-0.471.4	-0.791.08	-1.770.68	-0.721.179	-0.671.63	-1.021.042	6.421.04	1.530.09
(H127.5°)	-1.191.218	1.031.01	-1.051.084	-1.61.84	-1.82.27	2.311.32	-0.041.166	-0.061.597	-5.91.386	-0.981.229	-1.011.031	1.151.13	-0.021.46	0.331.151	-3.91.118	-2.151.31	-3.071.1	-2.671.93	-3.511.433	-1.381.424	-2.361.26	-3.561.228	-1.171.144	0.513.15
(H137.5°)	-0.214.35	0.531.168	-2.471.191	-0.861.237	-4.761.47	0.691.274	-0.430.8	-2.111.622	-5.141.54	-3.21.631	-3.521.065	-3.281.452	-2.41.625	-3.341.391	-7.771.269	-3.291.458	-3.561.123	-2.951.15	-4.441.34	-3.461.377	-3.331.13	-4.231.16	-3.114.18	-2.051.14
(H147.5°)	-4.361.628	-4.621.41	-1.071.149	-5.191.37	-5.791.454	-2.881.218	-3.461.42	-0.241.651	-4.631.37	-1.661.49	-1.661.259	-4.151.727	-3.692.551	-3.711.691	-7.11.713	-3.451.45	-4.221.804	-4.021.296	-5.541.49	-5.011.392	-4.591.749	-6.611.491	-6.531.615	-4.741.13
(H157.5°)	-1.591.12	8.261.241	-1.911.233	-6.781.658	-5.611.64	5.811.15	-7.521.396	-1.591.07	9.051.511	3.121.579	6.861.185	-5.211.64	-5.411.49	-7.311.129	-6.171.69	-4.461.425	-3.311.196	-6.181.459	-5.461.286	-7.361.198	-8.261.778	8.261.778	8.261.778	8.261.778
(H167.5°)	-10.741.581	6.041.274	-4.781.485	-7.941.61	-6.771.805	6.841.709	-7.661.63	6.061.111	-7.891.655	-4.671.68	6.291.451	-5.671.62	-8.01.613	-7.331.878	-8.951.9	7.281.833	-6.371.42	-6.211.74	-7.747.04	-8.591.16	-6.861.87	-7.011.74	-11.291.707	

[illegible]



Radiated Composite Gain Data of 6GHz

Appendix A.2

(H22.5)	0.30-0.96	-2.42/-4.41	4.95/9.75	-8.86/3.43	-2.82/-0.53	0.96/1.72	2.28/2.11	1.49/1.15	1.07/0.87	0.57/0.6	0.31/1.03	4.4/-0.96	-14.92/14.22	-12.71/14.2	-11.81/-6.43	4.13/-2.89	2.23/-1.58	-1.28/1.08	-0.69/0.05	0.38/0.6	-0.05/-1.2	2.41/2.74	-0.44	0.97/1.32
(H30*)	0.87/3.23	-3.43/-3.8	4.2/-2.1	4.52/-2.2	-0.9/-0.42	0.26/0.22	1.15/1.22	-0.23/-1.52	0.23/1.32	0.09/-0.9	0.3/-2.94	-7.39/-12.24	6.88/9.6	-13.1/-18.4	-13.89/-7.99	4.83/-2.77	2.22/-2.72	2.82/-1.78	0.38/1.63	1.61/0.97	0.43/0	0.14/0.45	0.25/-0.5	0.37/0.6
(H37.5)	1.71/11.27	-6.88/-9.57	-11.09/-18.01	-19.15/-12.52	-11.03/-8.98	1.47/1.39	0.35/-0.95	0.06/-1.1	0.31/-1.86	-1.25/-0.08	1.41/-4.63	-6.33/-4.99	-9.28/11.55	-10.62/-11.7	-16.31/-17.5	-7.89/-3.69	1.31/-5.93	-4.93/0.63	0.81/1.35	1.56/1.9	2.33/1.66	1.86/2.67	2.04/0.96	-0.43/-1.1
(H42.5)	5.31/-12.16	-15.03/-10.93	-14.02/-18.1	-18.93/-17.15	-7.28/-3.25	1.12/0.93	2.43/-2.02	0.45/0.4	-0.02/1.25	0.48/-1.35	1.9/-1.58	-5.44/-6.66	-7.71/-10.71	-7.54/-6.83	-10.51/-10.05	9.55/-1.52	4.16/-4.82	6.64/-1.56	0.13/0.88	1.31/1.43	2.56/1.3	0.44/-0.22	0.11/1.1	-0.25/-0.44
(H45.5)	7.71/11.27	-16.88/-9.57	-11.09/-18.01	-19.15/-12.52	-11.03/-8.98	1.47/1.39	0.35/-0.95	0.06/-1.1	0.31/-1.86	-1.25/-0.08	1.41/-4.63	-6.33/-4.99	-9.28/11.55	-10.62/-11.7	-16.31/-17.5	-7.89/-3.69	1.31/-5.93	-4.93/0.63	0.81/1.35	1.56/1.9	2.33/1.66	1.86/2.67	2.04/0.96	-0.43/-1.1
(H48.5)	11.29/-12.95	-16.45/-9.84	-12.59/-18.75	-18.07/-18.04	-5.53/-0.8	5.53/-0.8	0.36/-1.05	-0.05/-2.1	0.34/-0.49	-0.45/-2.35	1.41/-4.65	-1.65/-2.08	-1.71/-3.02	-7.87/-13.95	-18.45/-8.54	5.19/-8.11	7.95/-4.49	6.04/-4.49	3.22/-2.78	0.66/-2.23	2.88/-1.95	1.24/-2.79	0.33/0.6	-2.68/-0.54
(H57*)	5.52/-8.38	-17.59/-4.64	-12.02/-18.81	-15.71/-12.31	-7.31/-10.88	5.96/-1.84	-11.72/-3.53	-0.64/-1.16	-0.38/1.3	1.77/-2.24	2.48/-4.05	3.34/-0.1	-4.88/-4.32	-6.75	-18.79/-9.63	5.46/1.28	7.61/-4.32	-5.33/-3.41	-4.83/0.66	2.11/-2.67	-1.57/-0.57	2.56/-0.97	0.31/-0.43	0.97/-0.88
(H62.5)	2.07/-6.62	-13.89/-4.89	4.71/-18.36	-18.78/5.53	-4.99/-8.31	7.76/1.34	-1.25/-0.96	0.73/-0.59	-0.93/0.45	1.61/-0.96	2.01/1.4	3.45/-6.53	4.41/-2.99	-10.51/-6	-17.94/-14.6	6.44/-8.95	8.19/-6.49	3.89/-2.68	6.13/-4	-1.59/-0.96	6.28/0.09	1.99/0.51	-1.09/-0.25	1.76/-2.29
(H82.5)	1.85/-7.03	9.61/-4.08	7.5/-18.25	-16.88/-3.67	-4.66/-0.05	8.0/-4	-1.57/-1.28	-1.48/-0.91	0.87/-1.07	0.54/-1.09	-1.48/-3	5.55/-52	7.56/-13.85	-16.16/-11	-18.02/-14.18	18.71/-10.17	-18.19/-4.85	2.45/-2.75	5.53/-23	2.19/-0.48	9.99/-1.35	1.29/-4.77	-3.12/1.2	1.50/-2.9
(H98*)	1.628/9.68	4.48/-7.13	6.21/-7.77	-12.04/-4.22	4.31/-5.53	-0.56/1.19	-1.19/1.36	-3.45/-1.21	-1.16/-2.79	-1.71/-18	3.34/-12	4.13/-4.48	-10.13/-19	-15.02/-12.18	-16.75/-16.46	-16.84/-12.72	-10.99/-8.04	4.21/1.53	-4.88/-8.81	-4.88/-1.73	0.7/1.1	0.61/0.2	5.11/2.86	6.02/-5.44
(H98.5)	3.89/-9.95	8.99/-10.95	-16.59/-15.25	-17.94/-14	7.12/7.25	1.22/1.30	2.82/-2.57	4.62/-9.1	2.71/5.58	2.65/-1.82	4.54/-4.72	0.89/-1.46	7.28/-16.06	-15.32/-10.82	-11.56/-11.68	15.44/-7.2	8.33/-17	7.61/6.63	7.25/6.87	2.22/6.97	2.44/-4.76	5.99/-5.96	-1.86/-10.28	2.71/-1.9
(H102.5)	4.57/10.97	8.76/11.19	-15.91/-16.35	-16.19/-17.77	0.90/0.93	1.165/1.74	4.07/-14	5.35/-19.5	4.92/-17.67	4.27/-16.77	7.92/5.25	8.25/-11.32	-18.88/-19.66	-16.99/-15.44	-14.71/-14.68	1.941/-2.95	0.22/0.92	1.24/-6.85	12.36/10.33	8.81/-7.42	4.46/-4.74	3.11/-4.44	2.71/-1.9	
(H112.5)	11.69/-17.73	4.86/-10.99	12.44/-15.32	-11.54/10.53	8.01/-18.33	3.99/-6.57	4.35/-3.76	7.91/-77	9.44/-23	-7.47/-18.6	7.89/-10.05	10.32/-10.13	-13.07/-16.69	-19.43/-12.93	-19.23/-10.12	14.47/-6.69	12.21/-0.14	-10.69/-11.3	10.02/-10.94	8.08/-4.74	5.54/-4.93	0.71/1.69	4.52/-3.97	
(H122.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H127.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H132.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H142.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H147.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H152.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H157.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H162.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H167.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H172.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H177.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H182.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H187.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H192.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H197.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H202.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H207.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H212.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H217.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52
(H222.5)	-14.32/-17.83	-11.33/-12.59	-13.29/-14.52	-13.29/-14.52	-13.29/-14.52																			



Radiated Composite Gain Data of 6GHz

Appendix A.2

(#87)S	0.8891.3	1.189-1.21	0.1808.6	2.791.42	0.0707.04	3.759.43	-5.384.91	-4.769.75	-7.869-10.82	-8.971-6.77	2.949.44	0.060.33	-0.180.13	0.131.98	1.889.52	2.822.37	1.050.13	0.759-1.38	-3.571-11.39	-13.586.83	-7.259.74	-13.684.27	-2.619.9	-1.450.51	
(#87)S	0.5891.26	0.739-1.58	0.1308.28	1.370.54	0.0708.68	5.420.434	-2.794-5.86	-8.757-9.89	-8.739-16.02	-10.484-17	5.714-42.7	-1.010.44	-0.890.11	-0.261.11	1.131.92	2.171.19	0.4509.08	1.4149.29	-1.4112-32	-7.871-17.9	-7.898-11.78	-12.447-4.88	3.581-17.4	2.312-14	
(#82)S	-2.250.23	-0.759-2.48	0.5500.26	0.710.65	-0.131-29	-8.960.835	-2.380-7.72	-9.569-8.93	-10.599-18.18	-10.209-13	-8.470-37.7	-1.641-44	-2.210.36	-0.5500.27	0.450-12	1.320-125	-2.572-235	1.1604.58	0.389-13.19	-8.759-9.09	-4.91-15.78	-10.84-7.9	-8.970-2.89	-4.273-0.86	
(#87)S	4.759-2.45	2.563-3.4	1.6810.66	-6.411-4.46	-0.711-57	0.0161.62	-4.964-3.74	-6.781-11.5	-12.891-17.5	9.520-13.8	-11.059-8.33	-3.333-2.81	-2.593-0.21	-2.399-0.82	-1.620-1.58	0.371-1.91	5.320-37	0.271-1.5	-0.8111-37	-10.74-33	5.820-19.26	-15.560-11.6	7.446-4.7	5.526-4.7	
(#87)S	-7.593-5.31	-4.153-4.7	2.359-2.77	-1.843-3.92	-1.772-7.72	7.099-8.8	4.476-5.8	7.714-15.52	-16.599-17.22	-10.371-20.07	-13.949-8.53	-4.254-8.3	-3.194-3.1	-2.689-4.3	2.314-142	8.833-57.7	6.884-9.04	-12.7-17.3	8.288-18.06	-15.41-15.58	-8.999-0.07	-4.061-7.81			
(#105)S	-10.34-8.84	-4.841-4.69	5.221-5.26	4.234-6.5	-6.11-4.8	4.120-10.71	-10.34-9.49	-10.1-15.85	-15.899-18.5	-14.339-17.35	-12.680-11.52	4.747-6.29	4.276-8.64	6.11-5.58	4.566-6	5.937-47	8.771-7.74	-6.217-4.6	-16.210-14.92	-10.009-12.29	-15.949-19.23	-17.999-13.43	-12.829-8.99	-8.450-11.01	
(#112)S	-13.839-9.73	-5.471-6.2	-7.183-10.3	-7.111-9.32	-8.71-7.89	8.219-13	-11.939-15.18	-16.699-11.23	-18.539-17.42	-13.259-18.64	-16.2-10.3	-10.039-0.7	-6.537-9.4	-6.136-11.41	6.531-6.4	6.133-5.26	6.889-8.49	-5.777-8.87	-15.7139-14.92	-18.499-19.01	-17.639-16.27	-16.369-13.11	-11.377-10.71	-11.529-13.73	
(#120)S	-10.929-9.32	5.500-10.78	-11.859-12.68	-13.749-11.91	8.059-11.23	-13.539-8.84	9.759-11.89	-16.749-11.95	-14.269-17.89	-15.519-11.16	-18.379-18.87	6.311-23	-11.839-10.16	8.889-6.36	8.289-6.27	-10.729-6.08	6.489-14.93	8.859-5.91	-11.249-16.39	-18.439-11.11	-8.869-19	-18.239-10.71	-11.989-15.59	-11.989-19.25	
(#127)S	9.239-8.94	8.520-12.97	-15.049-14.22	-12.501-17.12	-11.549-12.11	-13.539-11.61	-12.459-17.98	-16.719-15.5	-16.419-16.8	-16.719-13.92	-17.389-14.78	-10.489-14.12	-9.979-14.21	-17.379-12.26	-11.689-8.92	-18.939-97	-13.589-18.69	-13.579-15.43	-6.849-17.82	-17.589-9.91	-16.299-18.25	-11.249-18.41	-16.789-18.74	-17.599-12.58	
(#135)S	8.889-13.1	-11.709-11.86	-17.129-13.82	-13.679-17.96	-16.019-17.19	-17.089-11.82	-10.449-12.77	-17.259-17.78	-17.019-11.79	-16.899-16.25	-10.899-16.55	-14.349-12.03	-12.749-9.56	-11.869-11.15	14.419-19.63	-16.789-11.48	7.289-16.11	-16.769-12.17	-7.5139-13	-13.549-18.71	-16.819-18.52	-10.539-18.58	-16.079-12.85	-13.539-12.57	
(#142)S	12.8599-7.98	-16.029-14.31	-15.539-13.59	-18.729-17.83	-17.589-16.05	15.019-14.52	-12.219-15.35	-17.389-15.75	-13.869-11.13	-16.719-11.97	-16.919-12.98	-14.549-16.93	-15.219-12.37	-17.049-12.03	13.849-16.93	-14.369-16.93	-14.489-15.97	-16.079-18.79	-16.849-16.87	-16.849-12.22	-15.369-17.87	-14.919-14.13	-17.259-12.93	-17.259-12.93	
(#150)S	-16.989-16.87	-18.989-17.63	12.789-11.87	-12.949-13.42	-16.029-16.5	18.329-13.8	8.749-16.5	-10.829-16.25	-10.899-16.58	15.549-17.48	18.739-18.3	-16.699-14.96	-15.759-17.18	-14.369-15.4	-16.779-16.96	-17.889-17.83	-16.849-14.18	-14.479-17.34	-17.5299-11.15	-16.829-15.15	18.889-18.24	-17.729-17.77	-15.419-18.1		
(#157)S	-17.789-16.98	-14.839-13.11	11.569-13.12	-12.4699-10.78	19.049-16.15	18.079-16.16	12.819-10.53	-11.639-15.45	-18.169-16.96	-14.419-13.81	17.449-16.95	-18.379-14.2	-14.139-14	-13.829-16.89	-13.869-17.29	18.969-17.33	-13.569-18.94	-17.779-13.92	-129-15.9	-14.689-12.97	-14.879-18.05	17.989-16.19	-16.519-15.36	-16.739-16.58	
(#164)S	-17.219-12.34	-13.239-15.03	-17.869-17.03	-17.809-17.87	-11.949-14.36	-13.479-13.03	-11.659-11.46	-11.959-13.67	-18.069-16.02	-17.889-16.84	16.359-18.1	-19.217-17.98	-18.369-18.19	-17.879-15.4	-16.829-15.14	-14.369-16.78	-17.739-16.98	-17.669-16.05	-16.959-17.16	-16.789-18.07	-14.719-17.49	-16.819-17.02	-17.779-15.01		
(#172)S	-14.729-13.03	-12.219-14.13	-17.369-17.80	-18.599-15.91	-17.929-12.58	-13.719-15.52	-17.049-16.74	-17.749-17.18	-16.959-18.48	-14.839-16.28	-16.989-16.96	-17.589-17.4	-16.849-17.81	-17.899-18.48	-19.239-17.82	-15.569-13.82	-13.689-13.59	-14.869-17.29	-17.869-18.1	-17.719-18.37	-18.149-18.27	-16.329-17.15			
(#180)S	-17.259-18.23	-16.059-17.35	-17.719-17.86	-15.989-12.72	-12.219-12.12	-13.649-16.51	-14.619-16.76	-17.389-16.84	-16.659-18.76	-18.439-18.91	-18.669-16.95	-18.849-18.74	-19.219-18.02	-19.019-18.91	-18.269-18.08	-19.729-16.77	-16.539-16.31	-16.019-17.68	-18.989-18.69	-16.659-18.12	-18.719-17.33	-17.849-18.92	-17.769-18.19	-18.889-18.81	
Freq(kHz)	6.17509.94	Thetadeg	2																						
Gain	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	
(#157)S	0.099-0.86	-2.139-4.65	5.688-8.71	-12.979-18.11	-10.289-11.85	8.279-8.84	4.059-5.58	-1.540-7.42	0.269-0.61	0.737-1.22	1.241-0.5	0.740-0.3	0.341-0.8	2.2-3.84	0.718-93	-14.039-16.77	-17.369-15.08	6.614-0.5	-2.621-4.38	-0.0209-1.6	1.061-1.34	2.102-1.28	1.951-1.8	1.450-1.4	
(#17)S	4.729-2.08	-7.599-10.83	-7.599-10.83	-16.079-18.15	-13.939-12.18	6.489-4.26	2.559-0.33	0.180-0.86	1.651-0.52	1.952-3.66	1.449-1.8	1.310-4.8	0.411-0.3	-3.399-5.33	8.459-12.78	-16.789-15.59	4.9114-0.26	-2.261-3.38	-0.0209-1.6	8.939-9.96	1.302-1.24	3.899-3.94	8.790-3		
(#17)S	-1.814-0.45	-7.871-17.12	-10.029-13.27	-8.679-9.3	-4.802-3.75	2.651-0.63	0.720-0.3	2.893-1	3.193-2.2	3.5749-1	2.419-1.8	1.480-1.7	-0.772-1.41	-3.819-5.44	8.529-13.43	4.8414-0.75	2.841-2.5	-0.803-0.43	1.3201-98	2.7813-13	3.143-17	2.762-0.2	0.860-0.7		
(#22)S	0.689-2.89	-2.969-2.96	-1.0279-12.65	-7.4439-12.7	-2.189-16.77	1.7099-9.93	0.702-0.33	2.893-1	3.193-2.2	3.5749-1	2.419-1.8	1.480-1.7	-0.772-1.41	-3.819-5.44	8.529-13.43	4.8414-0.75	2.841-2.5	-0.803-0.43	1.3201-98	2.7813-13	3.143-17	2.762-0.2	0.860-0.7		
(#37)S	0.272-3.3	6.559-6.97	8.189-7.39	6.684-9.1	2.572-0.23	2.531-10.8	1.222-4.5	2.441-77	1.571-64	1.462-1	2.761-98	1.082-22	0.641-37	2.642-3.42	4.799-11.1	5.539-2.89	1.799-2.87	4.2529-17	0.0112-62	2.9529-17	2.5213-14	3.833-62	3.493-15	2.016-15	
(#37)S	2.259-23.1	-5.419-22.1	6.589-5.31	9.334-9.1	2.559-0.9	1.1189-1.89	2.7019-3	2.0159-3	1.3819-2	1.1369-56	8.959-64	3.269-15.2	2.799-4.9	4.689-4.07	1.869-10.5	4.759-67	4.459-5.29	4.3849-4.9	1.73029-13	1.5329-2.69	3.8629-2.89	2.5829-22	5.189-17		
(#43)S	4.349-14.8	4.889-11	7.459-54	-11.389-14.93	-4.370-13	9.989-18	-1.5509-17	1.5319-36	1.7609-57	0.739-10.8	-1.259-17	1.8429-3	4.639-49	4.389-57	11.649-15.72	-14.689-12.47	4.799-87	5.9749-81	0.9519-02	1.27129-19	0.7701-1	4.139-02	0.6989-85	0.2419-22	
(#52)S	3.339-12.4	0.329-16.89	11.699-63	8.199-10.6	9.799-10.6	7.729-12.02	-1.549-12.02	0.6119-14	2.599-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07	2.989-2.07		
(#57)S	4.5399-13.7	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63	17.789-12.63		
(#57)S	7.779-9.69	-17.729-13.1	-13.529-12.36	-10.8219-17.5	-17.729-14.91	6.349-11.08	-4.129-9.32	-4.5149-5.6	-3.8179-3.87	-5.529-6.89	7.529-4.99	3.269-15.2	-12.8419-14.1	-13.369-16.9	17.699-14.06	16.969-13.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	12.6419-15.1	
(#75)S	-12.369-11.24	-16.549-14.84	-13.059-16.16	-12.029-13.67	-18.299-14.1	5.009-16.96	9.879-7.34	7.579-0.27	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74		
(#82)S	-12.369-11.24	-16.549-14.84	-13.059-16.16	-12.029-13.67	-18.299-14.1	5.009-16.96	9.879-7.34	7.579-0.27	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74	5.329-3.74		
(#87)S	-17.259-18.23	-16.059-17.35	-17.719-17.86	-15.989-12.72	-12.219-12.12	-13.649-16.51	-14.619-16.76	-17.389-16.84	-16.659-18.76	-18.439-18.91	-18.669-16.95	-18.849-18.74	-19.219-18.02	-19.019-18.91	-18.269-18.08	-19.729-16.77	-16.539-16.31	-16.019-17.68	-18.989-18.69	-16.659-18.12	-18.719-17.33	-17.849-18.92	-17.769-18.19	-18.889-18.81	
Gain	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	(#157)(#162)S	(#157)(#167)S	
(#157)S	0.099-0.86	-2.139-4.65	5.688-8.71	-12.979-18.11	-10.289-11.85	8.279-8.84	4.059-5.58	-1.540-7.42	0.269-0.61	0.737-1.22	1.241-0.5	0.740-0.3	0.341-0.8	2.2-3.84	0.718-93	-14.									



Radiated Composite Gain Data of 6GHz

Appendix A.2

φ ₁ (172.5°)	-16.64+16.1	-15.27+14.27	-14.94+16.32	-18.21+17.47	-18.09+18.44	-18.77+18.89	-18.85+18.96	-17.75+16.33	-13.82+13.37	-16.41+18.75	-17.87+16.82	-15.57+15.5	-14.57+14.1	-15.39+18.5	-18.19+18.99	-18.81+18.87	-17.59+15.47	-14.79+15.32	-17.07+18.16	-17.31+17.48	-18.79+18.38	-19.09+18.17	-19.03+18.65	-17.83+18.87
φ ₁ (180°)	-17.77+18.86	-18.14+18.9	-18.26+18.3	-19.22+18.29	-17.47+18.83	-13.62+13.78	-13.41+12.67	-12.85+14.56	-18.39+18.54	-18.87+19.13	-17.99+19.13	-17.79+18.23	-18.51+18.66	-18.79+17.71	-18.83+18.36	-17.41+18.47	-13.52+13.2	-12.19+11.56	-10.84+18.09	-11.88+13.81	-15.07+15.21	-15.99+18.36	-18.52+18.55	-18.69+18.33
φ ₁ (180°)	6.175594	Theta=3.3	φ ₁ (172.5°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)
Gain	φ ₁ (172.5°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)	φ ₁ (180°)
φ ₁ (172.5°)	0.7771-94	2.393+13	3.540+33	3.540+33	2.625+1	2.191+32	0.121+23	-2.954+32	-7.70+11.49	-14.91+11.72	7.91+5.25	-3.02+8.03	0.981+2	2.462+55	3.593+3	3.710+18	3.152+86	2.281+5	0.220+53	-2.32+3.62	-6.40+8.6	-6.86+7.99	-3.33+2.23	-1.49+9.19
φ ₁ (172.5°)	0.521+52	2.942+58	3.083+22	3.032+69	2.322+94	1.710+6	1.181+1	-2.35+33	-5.99+6.66	-11.59+5.55	6.37+34	-1.540+7	1.272+17	2.773	3.123+23	3.242+7	1.991+67	1.328+59	-6.81+97	-3.59+6.67	-8.43+14	-12.02+18	6.17+14.48	-1.59+6.06
φ ₁ (172.5°)	1.221+92	2.682+55	3.513	3.012+77	1.640+77	0.35+0.22	-1.52+51	2.943+98	5.39+67	7.39+73	6.11+37	-2.73+8.06	0.541+49	2.232+57	2.52+44	2.321+71	1.080+53	0.65+51	-1.88+37	-5.91+6.34	-13.11+18.45	-12.89+7.42	-4.77+3.21	-1.81+24
φ ₁ (22.5°)	1.424	3.34	3.212+83	2.221+44	0.28+84	1.56+225	-3.44+5.4	-6.83+7.34	-6.9+5.6	-6.53+51	-6.14+4	-2.43+1.25	-0.52+81	1.682+4	1.962+58	2.174	1.621+17	0.533+37	-1.38+29	-4.87+36	-10.72+17.06	-14.76+7.69	-4.47+2.6	-1.53+45
φ ₁ (22.5°)	1.932+96	3.23+22	2.531+66	1.376+3	-4.93+322	-4.98+4.25	-5.96+8.7	-11.73+22	-11.11+28	-10.02+8.82	-6.9+64	-2.78+189	0.177+26	1.239+37	11.17	1.531+68	1.196+24	-4.41+93	-1.02+58	-4.69+6.86	-8.84+16.6	-10.52+4.95	-8.83+2.68	-1.30+34
φ ₁ (27.5°)	1.422+73	3.37+34	2.532+29	2.142+66	1.630+26	2.471+26	1.411+49	-15.81+17.9	-14.15+11.97	-14.26+12.48	-10.23+49	-1.53+114	-0.001+97	1.992+22	6.071+32	6.71+60	6.39+51	5.57+80	4.829+79	9.10+12.57	8.2+5	3.95+2.68	2.99+3	1.89+38
φ ₁ (42.5°)	1.862+94	6.39+14	3.66+15	3.03+31	3.742+31	2.127+107	1.88+59	-15.99+16.75	-18.53+18.77	8.48+10.38	-2.42+10.27	4.72+38	-0.75+189	1.710+39	6.070+156	2.54+198	1.797+34	3.88+44	4.18+5.21	0.07+12.15	0.8+81	-1.98+3.56	1.58+38	1.98+38
φ ₁ (42.5°)	0.642+33	2.481+89	2.952+37	3.343+14	2.981+69	0.853+33	-3.547+15	-17.89+16.64	-16.71+13.2	-10.43+6.05	-15.94+1.51	1.94+1.75	1.42+6	1.85+7.43	-1.29+1.24	0.82+2.88	4.1+5.76	5.97+5.69	-6.92+7.36	-7.54+13.71	-8.42+4.52	-6.3+3.47	-4.70+5.2	-1.47+5.2
φ ₁ (42.5°)	1.740+19	0.350+96	1.581+8	1.140+86	0.370+58	2.56+52	-5.49+7.98	-18.06+13.2	-8.26+11.46	-15.27+7.6	7.26+11+7	0.297+52	0.861+19	5.83+33	3.12+27	-1.72+44	-0.87+87	-8.57+10.25	-6.67+7.46	-7.65+14.27	-11.31+10.23	-11.45+2+38	-6.83+6.81	-4.92+6.1
φ ₁ (42.5°)	0.263+2	2.93+22	0.622+3	-0.861+38	-3.071+72	1.31+6.8	-1.76+2.45	-11.51+8.6	8.21+13.9	-14.78+6.46	6.34+6.8	-3.73+17.9	-3.25+24	-1.52+74	8.77+106	7.91+745	13.67+48	-12.18+86	-11.31+10.5	-14.98+74	-3.74+122	-13.13+18.08	-16.51+9.38	-6.89+2.8
φ ₁ (42.5°)	1.784+5.78	-8.09+6.22	-3.061+34	-3.71+34	-5.54+39	-3.8+6.2	-0.381+7.79	-9.76+10.1	-11.82+10.64	-12.9+16.26	-8.83+11.08	-11.13+4.31	-3.96+13	-6.96+142	-9.2+8.46	0.07+24.6	-4.48+41	-4.41+1.51	-8.91+13.73	-17.589+68	-11.58+12.7	-15.38+18.7	-18.02+12.2	-10.28+9
φ ₁ (82.5°)	1.11+17.18	-15.59+8.27	-4.3+6.59	-6.69+5.8	-6.89+5.26	-5.3+7.4	-10.15+18.87	-12.74+14.85	-18.08+12.16	-14.57+18.55	-11.64+17.8	-18.9+18	-5.23+7.5	-11.5+8.2	-13.39+13.03	-11.31+5.45	-6.34+8.05	-6.07+5.57	-10.49+5.67	-17.39+12.15	-18.89+14.16	-15.78+16.58	-14.74+12.84	-14.62+11.63
φ ₁ (82.5°)	-14.88+15.87	-18.54+10.12	-4.8+1.89	-8.847+19	-9.7+34	-7.49+9.4	-0.841+19.2	-12.71+37	-18.31+11.04	-12.51+19.26	-12.68+18.62	-17.96+11.51	-7.41+19	-17.97+12.2	-14.83+17.86	-18.57+10.8	-15.83+8.9	-10.01+13.76	-13.83+18.45	-18.22+18.92	-18.69+12.46	-18.5+17.8	-18.33+12.9	-16.47+10.62
φ ₁ (87.5°)	-18.31+14.48	-18.41+1.61	8.73+1.56	-10.16+18.35	-11.71+10.31	-11.41+13.82	-12.82+18.18	-18.59+18.64	-18.11+13.06	-15.28+19.17	-13.64+17.31	-18.71+13.8	-12.26+19.06	-18.08+18.51	-19.11+15.34	-8.36+9.32	-11.25+14.71	-13.69+18.52	-17.71+19.35	-18.52+18.16	-18.46+18.56	-18.45+18.56	-18.73+12.56	-18.87+18.14
φ ₁ (87.5°)	-16.59+12.5	-18.29+14.52	-12.76+10.15	-13.01+18.59	-15.44+13.92	-13.98+18.06	-13.44+13.94	-13.82+14.55	-18.66+14.44	-19.04+17.92	-16.06+18.6	-18.81+17.9	-17.27+13.1	-14.94+16.14	-18.98+12.52	-17.93+12.58	-14.71+17.88	-18.44+18.2	-16.81+183	-16.59+18.17	-15.52+14.14	-18.38+18.16	-17.12+18.33	-17.12+18.33
φ ₁ (112.5°)	-15.15+15.5	-17.01+17.72	-18.11+18.49	-19.19+18.69	-18.08+19.02	-16.82+18.33	-14.12+16.74	-11.65+13.71	-10.99+19.08	-18.88+18.46	-18.81+17.9	-17.27+13.1	-14.94+16.14	-18.98+12.52	-17.93+12.58	-14.71+17.88	-18.44+18.2	-16.81+183	-16.59+18.17	-15.52+14.14	-18.38+18.16	-17.12+18.33	-17.12+18.33	-17.12+18.33
φ ₁ (112.5°)	-16.12+18.22	-18.26+18.25	-19.27+18.65	-18.18+18.53	-18.85+18.1	-13.79+18.14	-11.09+19.49	-18.24+14.17	-15.54+19.12	-18.52+18.26	-17.16+18.46	-13.31+23.3	-19.15+13.19	-17.17+18.1	-19.03+8.38	-11.58+18.54	-13.77+18.7	-18.59+17.12	-15.15+18.23	-18.34+12.76	-17.1+17.3	-13.51+14.62	-18.43+13.93	-18.43+13.93
φ ₁ (127.5°)	-16.83+18.34	-18.83+18.38	-17.74+16.6	-16.35+18.07	-19.37+19.29	-17.72+18.63	-11.58+18.1	-19.37+18.3	-18.62+15.43	-18.98+15.5	-19.2+16	-17.72+18.9	-18.56+11.38	-18.83+18.31	-19.1+8.76	-14.84+17.57	-18.15+18.23	-18.42+17.83	-19.18+18.1	-18.41+18.31	-17.67+15.97	-17.13+18.23	-18.69+18.19	-18.69+18.19
φ ₁ (132.5°)	-16.44+17.77	-18.49+18.62	-13.83+12.52	-11.91+15.22	-16.74+19.08	-18.52+17.99	-11.91+17.4	-12.04+16.16	-17.61+17.14	-15.21+15.58	-17.84+12.22	-15.49+18.42	-14.12+14.07	-18.12+18.22	-18.53+18.57	-15.85+18.63	-16.12+15.57	-15.44+17.61	-16.26+18.49	-18.65+18.76	-18.94+17.48	-18.99+15.45	-19.74+17.93	-19.74+17.93
φ ₁ (142.5°)	-18.17+19.3	-18.70+17.72	-13.21+14.05	-18.82+18.63	-18.11+17.7	-18.44+13.87	-12.87+13.04	-17.39+19.22	-14.49+13.26	-18.47+17.44	-17.14+12.4	-15.84+15.41	-12.31+16.47	-18.32+18.27	-17.07+14.54	-18.34+18.41	-17.87+17.91	-18.43+17.99	-18.17+18.08	-15.21+17.45	-18.00+18.45	-17.11+15.26	-17.31+15.76	-17.31+15.76
φ ₁ (157.5°)	-18.59+18.06	-17.39+18.73	-18.24+18.64	-18.39+18.21	-19.6+18.13	-18.85+17.68	-18.26+18.41	-13.12+11.44	-12.17+13.78	-18.08+17.45	-18.88+14.5	-14.22+12.52	-12.88+14.27	-17.17+18.18	-18.65+17.14	-14.88+17.47	-18.85+18.24	-18.27+18.78	-17.36+18.75	-18.74+19.22	-18.55+19.23	-18.75+17.41	-18.85+17.41	-18.85+17.41
φ ₁ (157.5°)	-18.59+17.68	-18.24+18.78	-17.73+17.8	-18.41+18.78	-18.34+17.03	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8	-18.41+18.78	-17.73+17.8
φ ₁ (157.5°)	1.422+73	3.37+34	2.532+29	2.142+66	1.630+26	2.471+26	1.411+49	-15.81+17.9	-14.15+11.97	-14.26+12.48	-10.23+49	-1.53+114	-0.001+97	1.992+22	6.071+32	6.71+60	6.39+51	5.57+80	4.829+79	9.10+12.57	8.2+5	3.95+2.68	2.99+3	1.89+38
φ ₁ (172.5°)	0.521+52	2.942+58	3.083+22	3.032+69	2.322+94	1.710+6	1.181+1	-2.35+33	-5.99+6.66	-11.59+5.55	6.37+34	-1.540+7	1.272+17	2.773	3.123+23	3.242+7	1.991+67	1.328+59	-6.81+97	-3.59+6.67	-8.43+14	-12.02+18	6.17+14.48	-1.59+6.06
φ ₁ (172.5°)	1.221+92	2.682+55	3.513	3.012+77	1.640+77	0.35+0.22	-1.52+51	2.943+98	5.39+67	7.39+73	6.11+37	-2.73+8.06	0.541+49	2.232+57	2.52+44	2.321+71	1.080+53	0.65+51	-1.88+37	-5.91+6.34	-13.11+18.45	-12.89+7.42	-4.77+3.21	-1.81+24
φ ₁ (22.5°)	1.424	3.34	3.212+83	2.221+44	0.28+84	1.56+225	-3.44+5.4	-6.83+7.34	-6.9+5.6	-6.53+51	-6.14+4	-2.43+1.25	-0.52+81	1.682+4	1.962+58	2.174	1.621+17	0.533+37	-1.38+29	-4.87+36	-10.72+17.06	-14.76+7.69	-4.47+2.6	-1.53+45
φ ₁ (22.5°)	1.932+96	3.23+22	2.531+66	1.376+3	-4.93+322	-4.98+4.25	-5.96+8.7	-11.73+22	-11.11+28	-10.02+8.82	-6.9+64	-2.78+189	0.177+26	1.239+37	11.17	1.531+68	1.196+24	-4.41+93	-1.02+58	-4.69+6.86	-8.84+16.6	-10.52+4.95	-8.83+2.68	-1.30+34
φ ₁ (27.5°)	1.422+73	3.37+34	2.532+29	2.142+66	1.630+26	2.471+26	1.411+49	-15.81+17.9	-14.15+11.97	-14.26+12.48	-10.23+49	-1.53+114	-0.001+97	1.992+22	6.071+32	6.71+60	6.39+51	5.57+80	4.829+79	9.10+12.57	8.2+5	3.95+2.68	2.99+3	1.89+38
φ ₁ (42.5°)	1.862+94	6.39+14	3.66+15	3.03+31	3.742+31	2.127+107	1.88+59	-15.99+16.75	-18.53+18.77	8.48+10.38	-2.42+10.27	4.72+38	-0.75+189	1.710+39	6.070+156	2.54+198	1.797+34	3.88+44	4.18+5.21	0.07+12.15	0.8+81	-1.98+3.56	1.58+38	1.98+38
φ ₁ (42.5°)	0.642+33	2.481+89	2.952+37	3.343+14	2.981+69	0.853+33	-3.547+15	-17.89+16.64	-16.71+13.2	-10.43+6.05	-15.94+1.51	1.94												



Radiated Composite Gain Data of 6GHz

Appendix A.2

(H22.5)	6.79079	0.29<0.32	0.88<0.72	0.20<0.6	0.02<1.66	2.75<2.96	-3.13<3.36	-4.08<6.04	-8.37<14.94	-17.96<16.2	8.84<6.71	4.93<2.23	-0.24<0.57	0.98<1.75	1.65<0.57	-1.19<2.69	2.18<2.55	-3.24<2.54	-1.61<1.4	-2.69<5.88	-0.77<1.78	-13.16<11.61	-10.85<4.3	-2.53<0.5
(H30.7)	2.72224	1.60<0.3	5.16<1.5	0.58<1.26	2.02<0.67	0.16<2.81	3.11<0.81	-6.19<4.49	-13.59<19.49	-18.79<16.26	-12.57<4.72	4.79<2.42	-1.83<1.31	-0.46<0.32	-1.26<2.81	4.27<1.48	3.34<1.68	-1.51<1.85	-1.33<0.34	-1.27<0.45	-6.49<0.49	-7.28<2.22	-12.95<5.55	-6.84<1.86
(H37.5)	2.96515	1.64<0.52	2.33<0.96	1.74<0.25	2.62<0.47	0.68<2.04	-5.16<0.25	-1.93<15.45	-13.03<13.28	-14.26<13.34	-11.27<0.44	-1.17<0.51	0.95<1.32	0.80<0.21	-1.45<4.37	6.71<0.76	5.39<2.99	-1.88<1.53	0.82<1.41	2.44<4.34	5.95<4.21	6.88<4.05	5.91<2.27	0.85<2.54
(H42.5)	1.99<1.05	1.17<0.28	2.72<0.79	2.72<1.79	1.03<0.67	0.21<3.28	6.44<1.96	-10.18<1.14	-14.69<13.21	9.72<10.46	9.94<4.59	3.28<0.31	0.76<0.24	0.76<0.66	-1.57<0.65	6.73<4.95	7.11<3.82	3.81<1.66	-2.05<3.27	2.89<5	-8.65<4.7	8.19<7	3.81<0.96	0.28<1.56
(H47.5)	-6.41<1.46	-1.40<0.35	1.73<0.36	2.20<0.82	-1.51<1.6	-1.74<1.38	-6.07<0.97	-10.18<16.2	-11.15<8.83	8.65<14.25	8.94<5.45	4.62<1.78	0.31<0.34	-1.31<1.84	-1.53<3.58	6.29<2.88	-6.48<2.79	4.20<1.94	4.23<4.44	5.98<1.15	-8.38<1.15	-13.10<10.45	-4.14<1.13	-4.44<1.3
(H52.5)	2.39<2.64	-2.34<0.59	0.01	0.71<1.56	-2.67<2.71	3.397<5.58	-9.48<11.69	-12.49<18.32	-10.99<4.69	-6.81<7.4	5.99<3.39	-6.71<4.82	-1.84<0.26	-1.5<4.57	3.4<1.38	6.15<0.91	-10.43<3.59	-6.97<1.52	8.12<8.5	7.18<7.68	-9.97<4.84	-14.73<11.08	2.74<2.20	2.48<4.47
(H57.5)	4.93<0.75	-2.81<2	-3.08<2.65	-4.81<4.96	-3.83<4.91	-7.42<9.1	-11.91<16.88	-15.91<17.79	-18.91<6.63	-6.52<5.36	-4.95<3.83	-4.65<7.49	-4.38<2.18	2.89<1.4	6.55<4.47	6.06<10.14	-14.91<6.71	-9.98<11.28	-12.91<19.32	-8.09<6.84	-13.4<8.5	-14.91<8.7	-4.83<4.82	-4.77<5.52
(H57.5)	6.91<6.46	-5.47<4.17	-4.85<3.79	-6.89<6.75	-8.91<8.52	-10.88<16.32	-18.53<15.13	-12.65<18.83	-16.88<13.89	-8.32<6.24	8.33<6.74	0.34<0.67	5.82<8.49	6.19<7.11	8.93<4.89	6.19<12.3	-11.77<12.92	-11.77<12.92	-15.58<16.29	-10.02<13.52	-11.77<11.58	-12.91<12.47	-6.83<4.78	-10.12<15.15
(H62.5)	8.97<1.45	-11.59<7.51	5.27<4.34	8.59<4.93	9.04<13.72	-15.53<11.72	-18.19<11	8.54<16.6	-11.99<16.16	-14.29<14.44	-12.34<11.4	-12.76<13.34	-7.40<10.88	9.98<6.17	8.99<4.22	7.35<10.15	-18.84<14.15	-14.28<15.15	-15.53<18.86	-10.36<16.3	-18<10.26	-13.07<15.2	-13.64<16.36	-12.54<16.39
(H67.5)	-15.09<19.18	-16.2<5.31	8.2<6.4	-11.15<17.37	-11.47<17.24	-16.93<16.84	-18.86<16.89	-7.38<18.22	-12.24<14.72	-15.07<11.58	-15.91<19.5	-15.24<18.12	-11.54<14.38	-15.53<16.88	14.93<10.52	4.62<8.52	-14.44<18.08	-18.48<15.19	-15.11<18.4	-12.21<18.7	-16.48<16.78	-16.38<15.15	-16.48<16.89	-11.07<15.78
(H67.5)	10.47<11.57	13.71<15.55	8.93<10.61	15.89<15.46	14.89<18.43	18.71<15.52	10.36<15.54	12.16<16	10.19<11.77	17.15<11.77	14.62<16.15	18.17<18.7	18.71<19.58	16.55<19.26	13.14<14.81	9.19<10.78	10.30<11.73	-16.98<19.33	-13.19<18	16.91<19.89	16.71<17.7	14.66<19.28	12.59<15.55	
(H67.5)	18.84<12.23	14.17<14.74	17.71<18.27	17.78<17.95	17.96<18.52	18.42<13.58	18.47<17.79	18.94<18.33	18.51<15.55	17.69<17.92	18.71<19.27	17.28<16.98	18.57<17.91	18.99<18.07	18.71<18.27	17.26<18.95	-18.35<19.73	16.58<19.14	18.93<14.14	18.93<14.14	18.93<14.14	18.93<14.14	18.93<14.14	18.93<14.14
(H72.5)	18.93<12.74	16.18<13.23	15.53<19.09	17.81<18.94	17.23<15.77	19.18<18	17.27<14.47	15.31<19.34	12.65<19.14	15.16<18.51	17.99<16.58	18.94<17.87	18.34<17.97	14.89<17.25	16.12<19.32	9.79<18.97	16.51<19.2	15.21<17.23	16.31<19.26	18.99<17.49	-18.53<18.89	10.27<18.95	15.63<16.16	18.97<18.52
(H72.5)	17.93<18.96	-17.39<18.02	-15.53<13.23	-16.78<17	-18.93<12.1	-18.95<17.27	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92	-18.79<12.92
(H72.5)	17.67<17.46	-15.87<18.97	-10.45<10.15	-13.39<16.01	-17.64<18.26	-18.47<18.72	-18.16<11.26	-7.84<12.32	-18.19<16	-12.75<11.17	-16.47<14.5	-14.04<16.36	-18.22<13.98	-18.99<16.28	-17.89<18.17	-18.67<18.48	-15.08<19.17	-18.26<18.45	-17.18<18.51	-17.52<16.89	-17.44<17.83	-17.55<18.36	-18.61<18.93	
(H72.5)	15.44<14.23	-16.19<13.38	-12.86<10.87	-12.17<18.12	-17.85<18.89	-19.22<18.68	-19.11<11.06	-15.33<18.24	-17.91<10.48	-12.48<15.45	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3	-15.14<16.3
(H72.5)	12.07<13.13	-17.89<14.82	-15.44<15.51	-15.95<16.48	-18.79<18.19	-19.15<18.1	-11.02<12.47	-18.57<18.24	-18.24<13.36	-18.11<12.18	-14.79<8.62	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52	-13.26<11.52
(H72.5)	18.19<19.06	-18.02<17.82	-18.78<18.43	-18.15<18.74	-18.89<18.85	-17.27<17.17	-18.91<18.43	-13.26<15.15	-14.28<14.76	-14.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85
(H72.5)	18.29<17.56	-19.02<17.82	-18.85<14.74	-18.43<18.86	-18.89<18.85	-17.27<17.17	-18.91<18.43	-13.26<15.15	-14.28<14.76	-14.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85	-16.24<11.85
(H72.5)	15.21<15.46	-12.77<14.88	-13.17<14.78	-13.49<16.3	-19.17<17.58	-18.89<18.03	-18.95<19.17	-17.21<15.55	-18.98<14.41	-11.11<15.2	-14.79<11.28	-15.98<11.4	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1	-18.91<18.1
(H72.5)	15.44<15.07	-14.89<13.51	-14.84<14.36	-14.91<14.33	-15.44<19.12	-18.17<17.83	-18.67<18.74	-17.66<19.37	-18.84<18.21	-15.19<13.11	-14.95<15.48	-14.94<15.48	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14	-15.44<19.14
(H72.5)	15.71<15.29	-11.06<13.32	-14.21<14.42	-13.91<14.67	-16.15<18	-15.66<18.13	-18.76<18.13	-18.15<15.46	-14.77<17.93	-17.51<17.93	-16.11<11.49	-16.07<12.49	-16.17<17.3	-19.17<10.26	-15.43<15.92	-16.98<17.68	-17.91<18.17	-17.73<18.53	-18.18<18.14	-17.02<18.94	-19.04<17.44	-15.43<13.04	-13.44<15.17	
Freq(Hz)	6.99592Ph	Phset 3	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Gain	(H70.7<H7.5)	(H75.7<H22.5)	(H45.7<H27.5)	(H45.7<H27.5)	(H45.7<H27.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)	(H75.7<H22.5)
(H70.7)	1.67<1.35	6.13<0.37	-12.85<16.34	-17.31<11	4.07<4.61	3.48<1.18	-1.14<18.16	8.46<12.2	1.68<1.65	1.85<0.33	1.68<1.24	0.72<0.32	-1.22<3.21	4.81<1.26	10.31<13.55	12.69<8.86	6.29<3.53	-1.72<0.32	0.52<1.27	1.83<4.89	2.78<8.17	2.52<4	2.03<1.31	6.89<3.39
(H70.7)	1.32<1.18	5.45<0.24	-14.96<18.1	-17.82<19.6	6.23<4.43	1.88<0.6	0.29<1.02	1.68<2.41	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78	2.62<0.78
(H70.7)	3.54<0.96	8.4<0.48	8.64<0.99	8.16<1.74	5.97<0.56	3.54<1.1	1.59<1.83	0.32<1.43	1.83<0.33	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73	2.93<0.73
(H72.5)	1.47<0.28	-3.86<4.87	4.49<1.76	6.81<0.83	-4.33<0.25	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71	1.63<0.71
(H72.5)	1.48<1.73	7.25<0.78	8.22<5.07	4.47<0.36	2.29<1.41	0.04<0.65	0.27<1.04	1.31<0.23	2.64<0.32	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53	3.37<0.53
(H72.5)	1.58<0.62	-11.12<08	-19.03<18.58	-11.55<16.72	-3.43<08	1.29<1.37	1.16<0.34	0.21<0.14	1.75<0.22	3.10<1.2	2.31<0.78	1.28<0.94	-4.85<4.61	8.33<5.54	4.37<0.38	-19.26<19.15	-10.78<4.35	-1.91<0.88	2.94<3.7	4.43<3.7	3.18<3.3	3.87<3.5	3.96<3.48	3.45<1.88
(H72.5)	2.59<0.49	-13.53<19.11	-15.71<15.15	-7.44<13.3	-2.86<2.44	1.29<1.07	0.38<0.53	0.98<1.02	0.24<0.27	2.84<0.96	0.92<0.63	1.03<1.65	-4.48<4.82	1.51<0.18	-1.41<3.63	-1.47<1.78	-14.09<5.81	-2.90<2.92	0.92<3.73	3.63<0.1	3.29<3.26	2.88<2.76	1.72<0.43	
(H82.5)	2.67<1.74	-8.08<8.52	-15.15<16.3	-7.3<4.52	-4.86<3.99	-3.48<0.4	0.57<1.28	1.33<0.86	0.92<1.19	0.89<1.32	0.51<0.44	-1.34<1.27	-3.57<4.45	-4.73<4.49	4.14<7.17	-								



Radiated Composite Gain Data of 6GHz

Appendix A.2

(H17)	-16.09-18.41	-11.19-18.04	-14.94-17.94	-17.92-16.7	-16.08-18.1	8.27-17.47	-2.99-16.68	-3.34-16.04	-7.63-13	1.98-1	-4.07-16	-3.80-13	-3.9-18	-6.98-17	-19.36-18.37	-17.52-11.31	-18.32-10.28	-18.49-13.3	-18.54-17.91	-7.06-4.43	-6.57-15.4	2.31-13.8	4.49-16.28	-16.31-17.87
(H82)	-17.72-18.15	-12.11-18.16	-12.04-14.3	-18.12-14	-18.01-16.26	-13.35-13.68	6.01-184	-10.21-16.2	-14.16-13.7	-3.37-10.48	6.94-12.35	3.76-15.5	-8.04-18.88	-15.02-17.86	-15.71-10.48	-17.59-10.75	-13.64-16.3	-12.27-17.65	-10.33-18.84	8.2-5.72	-7.1-7.52	4.19-14.46	6.19-13.72	-10.02-17.08
(H17)	-17.47-17.95	-12.02-18.81	-12.18-13.48	-19.01-12.12	-17.52-13.74	-13.31-15.15	-16.83-11.87	-6.47-10.23	6.49-16.55	-6.67-10.87	6.82-10.67	-10.74-16	-14.84-14.41	-8.97-11.82	-10.88-13.6	-6.73-17.69	-16.06-19.33	-12.51-10.31	-10.78-7.96	-101-7.34	-7.59-14.4	6.84-18.86	-19.04-19.27	
(H87)	-18.89-15.97	-12.94-17.1	-13.39-13.67	-16.97-18.23	-13.86-10.12	-12.64-11.02	-9.96-7.36	-7.52-10.87	-3.71-7.56	-9.44-16.59	9.10-13.5	-5.98-12.3	-10.84-11.17	-8.39-11.23	-18.69-18.1	-11.02-17.76	-11.54-15.37	-15.42-14.73	-14.39-13.18	-10-11.32	-16.02-10.81	8.87-15.94	-12.27-17.47	-17.78-16.12
(H105)	-17.71-16.83	-13.11-16.24	-16.91-18.28	-13.91-18.43	-17.97-15.87	-17.88-13.08	-10.27-7.75	-7.1-5.1	-6.59-4.86	-8.81-9.25	-14.41-16.51	-12.04-17.62	-14.78-17.16	-14.84-12.24	-13.15-18.43	-15.29-13.1	-7.46-18.83	-9.96-18.46	-11.16-18.35	-17.57-19.14	-18.09-12.02	-16.42-17.15	-18.16-16.12	
(H125)	-18.89-15.21	-13.25-18.17	-12.17-17.88	-12.17-17.26	-16.95-18.24	-14.65-14.61	-11.84-15.03	-12.19-16.93	-7.98-14.7	8.24-8.77	-17.63-17.38	-14.01-16.9	-17.88-11.1	6.29-14.55	-8.07-19.39	-7.88-16.78	-11.71-11.9	-17.82-18.04	-13.32-16.22	-10.12-12.29	-17.39-14.74	-18.31-13.16	-11.56-15.56	-16.94-19.98
(H143)	-17.24-15.74	-15.19-15.14	-14.18-19.08	-16.91-17.37	-18.26-19.31	-15.94-15.03	-11.21-18.03	-12.67-19.59	-15.34-18.3	-16.88-10.58	-15.38-16.55	-13.31-18.78	-15.30-15.1	-13.39-18.3	-13.92-17.44	-9.36-17.36	-15.09-18.88	-15.13-17.93	-13.92-14.17	-13.93-14.13	-17.93-18.53	-15.13-17.93	-18.89-18.1	
(H17)	-14.71-17.9	-18.51-18.24	-18.42-19.06	-17.92-18.01	-18.43-16.85	-14.19-15.11	-14.22-16.03	-13.66-12.45	-14.21-12.59	-12.18-13.18	-17.72-18.14	-12.04-12.19	-14.05-13	-14.16-17.23	-13.91-13.39	-15.51-17.27	-13.05-11.48	-19.41-17.17	-17.97-15.14	-18.19-17.31	-14.76-18.86	-15.42-18.35	-18.85-18.17	
(H18)	-13.83-19.27	-17.11-18.19	-18.76-16.75	-18.26-18.58	-18.01-16.12	-18.63-15.34	-16.45-15.92	-16.27-17.17	-11.12-12.37	-17.10-17.34	-13.08-14.16	-14.68-18.84	-16.38-16.14	-16.19-12.83	-16.11-12.2	-12.53-17.1	-15.85-18.41	-12.51-17.7	-14.18-18.38	-11.29-17.98	-11.62-17.52	-18.48-16.46	-16.71-17.12	
(H142)	-17.51-18.04	-18.16-18.46	-18.68-15.98	-18.98-16.26	-18.93-17.14	-14.16-17.15	-12.19-16.88	-19.51-17.51	-17.41-14.73	-8.25-17.37	-15.95-13.88	-18.17-13.9	-7.21-14.05	-11.66-17.96	-12.04-11.61	-17.4-14.86	-16.21-12.42	-11.63-12.1	-19.31-18.08	-18.98-18.83	-18.91-18.88	-16.38-18.52	-17.88-17.17	-17.31-17.41
(H157)	-14.21-16.05	-15.01-19.35	-18.51-15.38	-17.33-11.17	-17.59-17.13	-15.54-14.12	-13.37-18.99	-10.27-16.12	-16.11-17.7	-12.25-16.87	-11.21-10.68	-16.76-16.23	-13.19-11.58	-12.33-19.7	-11.86-14.55	-15.02-14.4	-7.51-11.95	-14.56-16.25	-18.08-18.02	-18.89-18.12	-16.25-13.07	-17.13-19.06	-14.36-18.12	
(H157)	-16.98-16.38	-18.29-18.38	-19.01-18.57	-18.36-14.14	-14.73-12.04	-13.22-10.17	-14.16-17.3	-12.79-18.42	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	-11.24-17.76	
(H157)	-16.91-16.16	-17.31-14.14	-17.12-14.12	-13.15-12.58	-17.89-16.16	-17.79-14.17	-11.34-19.9	-11.84-19.4	-9.07-11.45	-11.79-12.12	-13.42-14.12	-13.14-15.4	-13.11-19.18	-14.09-19.37	-17.31-16.76	-12.57-10.54	-17.74-12.17	-17.74-12.17	-14.39-14.14	-16.10-17.14	-18.4-19.4	-16.69-14.91	-12.52-13.08	
(H172)	-12.41-15.25	-18.16-18.66	-14.36-13.41	-15.34-16.54	-11.96-12.18	-13.79-13.77	-11.54-19.51	-15.41-18.59	-18.58-18.94	-19-19.75	-17.91-18.7	-12.54-17.14	-9.63-10.5	-10.23-19.76	-15.13-13.29	-12.23-12.51	-17.24-16.29	-17.24-16.29	-15.99-17.16	-19.79-17.93	-15.95-15.92	-16.21-17.82	-18.11-17.13	-13.93-13.93
(H17)	-17.88-17.1	-16.16-16.29	-16.45-15.33	-15.89-15.97	-15.31-15.26	-15.06-14.21	-15.09-14.04	-14.01-14.56	-16.17-15.6	-15.01-13.31	-12.25-14.14	-10.9-10.75	-11.11-12.48	-14.71-17.88	-18.22-18.99	-17.85-18.91	-18.22-17.15	-19.06-18.23	-19.02-17.46	-17.53-16.16	-16.16-18.72	-18.66-19.08	-14.34-18.28	-18.22-18.07
FreeNo	6.475294	PhsetA.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	(H17)(H27)	(H15)(H22.5)	(H17)(H27.5)	(H45)(H25.2)	(H17)(H27.5)	(H15)(H28.2)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)	(H17)(H27.5)
(H17)	-1.95-12.2	-4.31-16.3	0.831-28	1.641-177	1.841-62	1.296-194	0.545-104	-7.18-139	-3.66-5.82	-8.89-111	-13.39-9.91	-6.71-42.1	-2.16-147	0.631-36	1.872-11	2.142-1	2.031-68	1.080-44	-4.43-1.88	-3.39-3.36	-7.44-8.9	-10.85-12.2	-10.48-17.2	4.82-13.2
(H82)	2.21-11.8	-0.06-105	0.711-89	0.891-68	0.510-105	0.814-16	3.271-81	-4.86-159	8.65-13.8	-14.01-11.6	5.547-7.9	5.4-3.7	2.310-109	-0.65-12	1.01-138	1.981-86	1.981-86	1.71-134	2.741-14	-1.92-1.26	-4.34-6.91	-11.87-17.1	4.59-12.5	
(H105)	0.860-35	0.930-17	0.941-29	1.591-38	1.281-17	0.661-1	0.891-36	3.98-132	7.34-84.7	8.99-7.38	4.22-52	3.010-109	0.341-18	1.072-11	1.431-37	1.529-136	0.591-35	0.31-44	4.69-17.3	8.79-14.9	8.57-7.27	0.98-13.3	1.64-12.9	
(H125)	0.719-12.5	-0.03-161	1.611-23	2.211-15	1.241-108	0.761-1	1.121-121	6.29-177	16.51-152	5.74-134	2.29-128	1.371-17	1.382-38	2.291-79	1.933-11	2.911-31	1.911-31	0.211-14	5.37-15.9	6.91-17.4	6.99-8.87	7.25-19.1	4.78-14.8	2.31-15
(H143)	0.169-10.9	-0.02-132	1.7121-1	2.4021-1	2.958-1	3.261-35	6.19-123	-4.42-159	-7.97-115	-16.59-71.68	-4.14-16	3.5-15	-1.99-10	2.861-28	3.323-28	2.947-122	0.96-104	4.09-16.4	5.29-17.6	5.71-15	4.98-14	3.98-16.8	3.97-19.2	
(H157)	0.080-52	0.401-12	0.335-156	1.082-13	2.891-37	0.111-163	-1.671-177	3.69-157	-13.76-12.58	-12.91-1142	8.96-174	3.771-139	0.767-12	1.811-88	3.719-19	2.862-77	3.992-45	1.55-101	2.964-47	4.75-14.49	6.99-17.8	16.87-16.02	0.061-39.9	-1.02-16
(H157)	0.186-126	2.251-38	2.251-38	-0.88-132	0.32-136	-3.28-135	-1.05-173	-4.61-174	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	-17.11-17.78	
(H82)	0.518-16	1.022-33	2.111-12	-13.2-166	-0.18-126	-1.9-116	-1.05-113	-0.68-126	-17.62-13.32	-15.53-18.63	-14.31-101	-1.97-104	1.191-29	0.935-11	0.401-14	1.513-15	1.210-4	3.611-103	-4.97-16.7	17.93-10.36	-18.93-14.96	-13.01-13.62	-4.08-13.17	2.01-163
(H87)	0.519-16	0.902-31	2.222-86	1.761-42	1.303-26	2.633-10	-3.50-125	-5.42-183	-8.36-1021	-16.88-18.96	-19-113	-1.14-116	-3.311-198	-2.32-14	0.510-12	-1.51-108	-10.15-161	-17.73-19.47	-4.70-17.42	-7.16-18.58	-18.91-13.56	-13.01-13.62	6.14-10.35	3.02-128
(H142)	0.411-12	-1.451-13	1.712-17	0.020-19	1.22-106	0.941-46	4.591-153	-8.56-123	-7.25-12.29	-17.94-18.17	-17.69-10.15	-11.52-113	-2.06-175	0.711-24	2.082-14	1.941-69	1.091-133	-1.62-125	-2.084-78	-7-16.59	-16.53-11.31	-12.25-17.78	4.44-14.48	0.29-133
(H143)	0.37-132	-2.6-11.2	1.632-16	6.22-1	2.32-16	0.68-197	-3.19-141	-8.36-131	-2.68-103	-19.27-18.77	-18.21-1734	6.56-143	-1.74-187	1.210-83	-1.39-111	3.181-72	1.121-131	4.481-244	-14-13.52	-6.49-15.68	-10.51-11.55	-11.51-7.95	4.45-10.43	-1.17-128
(H82)	0.17-13.54	-3.51-18.63	0.540-58	-1.09-102	0.07-176	0.541-238	-5.06-118	-6.48-174	-1.21-183	-19.34-110.7	-17.85-161	-10.3-129	-1.21-102	1.06-104	-3.22-102	3.672-75	1.691-68	0.072-12	-13.03-281	-7.62-18.91	-12.49-17.16	-12.75-19.08	4.27-16.36	-3.15-129
(H143)	-1.48-14.46	-4.39-12.6	0.461-59	-1.391-43	-0.461-236	1.57-141	-4.57-185	-11.01-209	-2.9-165	-17.39-18.94	-3.9-154	-3.23-52	-2.61-121	-0.02-164	-1.74-124	1.872-21	0.98-152	-4.3-101	-1.59-143	-1.36-1464	-141-1125	-10.71-18.1	5.41-10.5	
(H157)	0.396-133	6.17-11.6	2.071-231	-3.55-194	-2.36-131	2.481-856	9.611-146	-10.88-132	6.29-1132	-17.79-12.12	-11.76-134	5.671-129	-3.94-141	-2.15-142	-17.4-152	1.853-138	0.251-338	-2.48-119	-5.047-13	-10.29-12.97	-14.84-19.09	-13.47-15.02	-13.83-19.09	8.29-143
(H105)	-0.89-17	8.72-16.58	4.421-133	4.82-133	3.59-135	2.341-1057	-16.01-145	-15.14-104	-16.66-16.16	-18.72-18.06	-15.62-15.67	-6.59-123	-2.99-153	-4.82-165	-11.96-17.21	5.214-148	-4.72-15.08	7.671-1573	6.02-10.38	-12.13-16.35	-17.46-18.83	-16.02-17.02	-18.02-18.61	6.93-163
(H125)	0.47-14.77	8.39-17.6	5.59-152	-7.71-15.06	5.37-136	7.241-10.82	-17.54-12.02	-17.58-11.04	-11.21-17.36	-17.68-13.69	-10.09-13.81	-17.01-17.34	-1.98-17.34	-6.44-6.41	-12.69-16.69	-4.88-16.69	-6.41-13.11	-6.24-18.15	8.24-11.82	-17.18-17.76	-19.28-11.68	-11.17-17.22	9.82-13.23	8.12-12.8
(H143)	-10.421-7.84	-17.72-10.29	8.77-18.92	-10.59-15.6	-6.49-17.98	-1.01-11.08	-16.35-18.13	-14.38-12.18	-18.18-18.57	-18.08-18.28	-12.55-10.63	-14.22-18.86	-3.41-16.25	-5.84-11.16	-10.84-12.61	8.4-134	8.631-10.8	2.961-196	9.44-12.5	-11.2-12.58	-14.61-11.04	-15.14-18.2	-18.11-17.48	3.61-102
(H17)	0.131-17.03	-13.55-12.89	8.71-14.97	-12.38-17.89	-12.76-13.14	6.647-184	-14.73-18.75	-18.55-15.12	9.39-18.42	-14.88-18.14	-11.34-73	-14.28-17.36	6.331											



Radiated Composite Gain Data of 6GHz

Appendix A.2

φ(120°)	-18.03/-18.03	-19.01/-15.17	-17.49/-16.86	-17.30/-16.86	-17.18/-18.89	-18.97/-16.76	-15.03/-15.53	-13.17/-11.86	-12.41/-11.47	-16.29/-14.08	-15.12/-17.9	-12.16/-18.9	-11.30/-6.92	-6.71/-11.8	-9/-15.61	-10.19/-4.68	-10.82/-17.68	-13.00/-18.79	-18.26/-6.74	-17.08/-16.49	-19.19/-17.61	-16.94/-13.91	-18.28/-17.72	-13.75/-17.87
φ(127.5°)	-17.50/-18.99	-18.21/-16.06	-18.13/-17.94	-15.79/-14.98	-15.84/-18.36	-17.68/-18.77	-12.71/-18.84	-15.40/-4.72	8.60/-11.76	-18.01/-16.84	-11.44/-6.86	-7.81/-17	-15.60/-11.65	-11.60/-16.82	-13.93/-9.66	-15.66/-18.01	-17.08/-17.86	-11.36/-16.68	-13.95/-15.07	-17.17/-15.63	-13.27/-18.48	-14.91/-16	-18.31/-14.45	
φ(135°)	-15.49/-18.96	-14.95/-15.98	-18.11/-18.91	-15.46/-11.4	-12.56/-16.93	-18.44/-18.8	-16.55/-18.9	-16.79/-12.78	-11.37/-14.43	-18.30/-14.52	-9.36/-11.31	-11.99/-15	-10.31/-12.09	-9.79/-6.96	-8.27/-11.83	-15.79/-6.68	-15.62/-14.24	-14.52/-19.82	-15.91/-17.94	-12.27/-17.72	-16.31/-9.32	-17.76/-18.28	-14.61/-18.37	
φ(142.5°)	-15.77/-18.01	-18.17/-16.1	-16.28/-18.68	-18.55/-14.14	-13.43/-16.42	-18.97/-19.22	-17.98/-19.15	-18.28/-12.53	-14.71/-18.82	-19.18/-19	-17.34/-18.4	-9.27/-10.6	-13.89/-13.55	-15.84/-10.61	-13.76/-18.59	-16.37/-17.44	-19.2/-14.87	-17.96/-18.29	-17.71/-17.76	-14.94/-12.32	-13.99/-17.08	-18.89/-17.66	-18.66/-11.63	
φ(150°)	-17.67/-18.86	-18.44/-18.31	-17.52/-17.87	-17.19/-14.08	-13.15/-15.84	-17.73/-15.56	-13.44/-17.49	-19.04/-17.39	-17.58/-17.36	-18.19/-19.14	-16.25/-11.56	-12.66/-10.74	-12.82/-19.01	-17.35/-18.12	-18.1/-16.24	-14.29/-16.6	-10.03/-18.88	-18.31/-18.79	-19.35/-17.78	-17.83/-14.13	-13.78/-16.24	-18.37/-14.19	-13.82/-15.52	
φ(157.5°)	-18.3/-18.86	-17.82/-18.19	-19.05/-18.89	-17.77/-16.29	-12.51/-10.58	-10.48/-12.33	-16.37/-17.31	-18.02/-18.14	-18.61/-18.04	-12.98/-6.65	-11.31/-10.54	-10.38/-17.91	-18.69/-17.23	-14.03/-11.36	-12.15/-17.92	-18.71/-16.5	-13.94/-14.58	-17.85/-18.81	-18.26/-19.26	-17.83/-17.73	-19.47/-18.27	-17.89/-19.93	-16.36/-14.6	
φ(165°)	-16.47/-17.26	-18.40/-17.91	-18.91/-18.77	-18.07/-18.73	-18.38/-18.21	-19.03/-19.02	-14.74/-18.15	-18.91/-18.1	-17.69/-17.63	-18.16/-15.69	-12.43/-10.1	-11.28/-14.15	-18.01/-18.97	-16.03/-13.77	-18.52/-16.07	-17.79/-18.67	-16.29/-19.67	-18.75/-19.2	-16.75/-19.2	-18.01/-18.36	-18.71/-15.45	-14.07/-15.55	-14.46/-11.63	
φ(172.5°)	-17.55/-18.13	-18.11/-18.14	-17.9/-18.63	-17.79/-18.54	-18.22/-17.8	-19.08/-18.75	-18.97/-17.81	-15.96/-12.54	-10.24/-8.57	-6.34/-10.34	-10.52/-10.06	-10.35/-13.15	-19.1/-17.91	-18.89/-18.02	-17.85/-18.59	-15.9/-13.51	-13.09/-13.71	-15.31/-15.3	-16.46/-17.86	-19.43/-18.5	-18.49/-17.82	-18.12/-18.88	-17.9/-17.83	
φ(180°)	-18.24/-17.27	-17.51/-19.28	-18.92/-18.98	-18.54/-17.81	-18.81/-19.01	-18.5/-16.88	-16.45/-14.36	-12.3/-11.38	-11.94/-13.27	-15.18/-17.42	-17.94/-17.65	-16.87/-17.57	-18.81/-19.15	-19.04/-18.46	-18.27/-18.84	-19.29/-18.49	-18.47/-19.03	-19.17/-19.29	-15.89/-14.41	-15.89/-14.38	-14.48/-18.01	-18.4/-18.58	-18.37/-18.91	
φ(180°)	6.995/6.94	Phase 4	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	
Gain	φ(180°/φ(17.5°)	φ(15°/φ(122.5°)	φ(30°/φ(93.75°)	φ(45°/φ(63.75°)	φ(60°/φ(45°)	φ(75°/φ(30°)	φ(90°/φ(15°)	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(180°/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(362.5°)
φ(0°)	0.281/0.1	1.591/94	2.450/53	2.420/3	2.11/73	1.356/14	-0.03/-0.79	-2.25/-4.19	-6.95/-10.71	-18.76/-17.76	-10.26/-5.91	-3.42/-1.72	-0.23/0.94	1.752/-17	2.51/26	2.61/69	2.51/22	1.310/3	-0.38/-1.71	-3.16/-5.23	-8.17/-13.12	-13.29/-10.25	6.57/-4.19	2.02/-2.72
φ(7.5°)	0.681/1	1.82/-18	2.492/53	2.602/75	2.742/56	2.211/8	0.871/-19	-1.84/-3.92	-6.55/-9.86	-11.8/-8.66	-5.51/-3.36	-2.27/-1.78	-1.11/10.5	-0.57/-0.26	0.130/-49	1.04/-11	1.44/-22	0.95/-42	-0.38/-1.48	-2.56/-3.36	-10.47/-14.73	-15.65/-10.2	6.82/-3.06	-1.25/0.04
φ(15°)	-1.14/-0.22	0.53/0.78	0.23/-0.97	-1.50/-2.21	-2.09/-1.54	-1.38/-1.23	-1.54/-4.44	-4/-6.5	-10.25/-15.4	-18.83/-13.93	-6.98/-3.26	-1.78/-1.36	-1.56/-1.87	-1.39/-0.74	0.140/-44	0.68/0.56	-0.09/-0.74	-1.63/-2.44	-4.49/-4.46	-8.49/-13.82	-15/-14.67	-14.15/-13.1	-10.16/-4.48	-3.89/-1.88
φ(22.5°)	-0.25/0.3	0.48/0.52	-0.16/-0.77	-0.94/-1.14	-1.84/-3.39	-4.72/-5.13	-6.24/-0.22	-7.92/-10.6	-12.22/-12.4	-12.29/-12.2	-8.8/-1.49	0.01/0.07	-0.3/-0.1	1.03/-1.96	2.62/2.91	3.02/2.35	0.22/-2.08	-3.47/-4.36	-5.36/-5.58	-5.61/-6.89	-8.63/-14.27	-18.56/-14.98	4.89/-5.91	-3.84/-1.81
φ(30°)	0.20/-17	0.29/-29	2.02/1.76	1.37/1.05	-0.47/-2.56	-3.42/-4.08	-3.09/-4.23	-7.84/-13.5	-18.02/-19.68	-11.29/-9.12	-7.89/-4	-1.15/-0.41	0.47/2.21	3.87/4.32	4.12/3.24	2.72/2.09	0.18/-1.86	-3.91/-7.89	-9.74/-2.25	-5.73/-5.92	-8.97/-18.77	-10.05/-5.07	-2.08/-1.49	-2.15/-4.94
φ(37.5°)	0.23/-2.55	-0.24/0.38	3.86/0.59	2.31/1.56	1.11/0.9	0.06/-1.51	-3.98/-4.88	-11.9/-12.56	-11.9/-12.71	-12.73/-8.24	-8.02/-5.45	-1.80/-3.1	0.13/-17	4.28/5.75	5.12/3.66	2.66/1.7	0.32/-1.03	-2.27/-0.62	-11.42/-9.68	-11.04/-13.31	-19.19/-19.22	-15.03/-8.87	-6.53/-4.44	-7.71/3.14
φ(45°)	0.07/-2.06	0.44/2.95	2.77/0.66	3.73/2.27	0.19/0.68	5.37/-1.03	-3.22/-5.62	-11.86/-15.74	-17.5/-16.8	-14.29/-10.64	-7.35/-5.25	-4.9/-1.76	0.22/0.1	1.67/2.75	1.89/3.53	2.66/2.95	1.48/0.54	-0.39/-3.34	-5.69/-7.49	-14.59/-18.29	-15.91/-15.21	-15.54/-12.52	-3.51/-1.28	4.67/-1.41
φ(52.5°)	0.94/-1.74	0.11/2.22	0.03/1.88	-0.25/-2.12	1.63/-1.18	1.19/1.51	3.18/-2.28	-16.24/-14.8	-12.86/-12.43	-9.29/-8.65	-4.54/-1.6	1.34/2.3	0.51/-0.89	-0.89/1.75	1.21/1.97	0.96/-1.98	2.74/2.38	-0.88/-4.46	-12.91/-17.27	-17.85/-9.45	-12.86/-14.44	-1.75/0.85	2.69/-4.48	
φ(60°)	1.79/0.41	0.4/-0.89	5.13/0.63	1.98/0.4	6.14/-2.68	1.98/2.47	3.01/0.63	-7.42/-11.33	-10.28/-10.19	-12.86/-13.88	-9.27/-8.61	0.91/-1.71	2.21/-1.53	-1.38/-2.37	6.59/-2.144	6.51/-1.74	-0.46/-3.39	-6.34/-10.03	-11.59/1.32	-13.97/-6.46	-13.97/-7.53	-4.53/0.59	-3.84/-1.48	
φ(67.5°)	0.89/0.35	-0.7/-0.12	1.24/0.73	0.44/-1.56	0.03/-1.13	2.41/-6.84	0.99/-9.76	7.5/-6.12	8.6/-67	14.98/-17.58	17.83/-8.91	3.63/-4.94	1.4/-4.5	-0.25/0.16	1.83/3.27	1.74/-2.29	7.99/-3.51	-3.36/-5.19	-10.23/-10.28	-12.39/-11.44	-14.14/-11.24	4.39/-1.34	5/-1.4	
φ(75°)	-0.89/-1.43	-0.67/-0.74	1.46/2.72	0.96/-0.99	-0.34/-2.23	4.72/-4.89	-6.94/-4.3	-13.79/-4.3	-7.65/-9.36	-10.53/-17.54	-16.26/-8.77	-9.98/-5.98	0.94/-0.58	0.27/-1.44	1.42/0.1	1.38/-6.76	-0.62/-0.49	-0.37/-2.94	-3.68/-3.2	-7.34/-6.6	-11.49/-15.53	-17.72/9.44	0.39/-3.6	5.17/3.73
φ(82.5°)	0.76/0.45	-1.39/-3.1	1.68/-5.03	1.59/-3.33	-0.22/-7.2	5.48/-3.61	-3.78/-5.77	-11.19/-4.2	-3.11/-12.08	-11.11/-2.25	7.36/-3.41	-5.11/-1.83	0.41/0.7	-0.46/-1.33	0.84/-1.56	0.86/1.59	0.47/-1.14	-4.43/-0.43	-4.57/-5.46	-7.74/-8.1	-13.49/-18.33	-14.27/-17.1	7.26/-4.71	6.29/-8.88
φ(90°)	-1.67/-0.43	-3.32/-4.47	-2.53/-0.19	-0.69/-4.47	-2.08/-4	0.98/0.72	-5.77/0.85	-10.60/-12.33	-1.03/-15.21	-8.62/-9.77	8.43/-4.79	-7/-33	-0.81/-197	-0.34/-2.38	-3.32/-1.87	-1.64/0.89	-0.96/-2.46	-6.46/-5.99	-3.88/-3.37	-8.58/-10.24	-10.79/-17.52	-17.09/-9.57	-11.74/5.32	-6.01/-4.34
φ(97.5°)	-3.87/-0.94	-6.6/-5.54	-3.73/-0.68	-1.11/-14.83	-4.02/-6.68	0.39/-8.17	-8.18/-8.35	-13.61/-8.84	-2.41/-13.6	-14.02/-6.83	-8.48/-17.7	-6.41/-6.43	-2.54/-3.99	-2.38/-6.41	-5.89/-4.43	-4.24/-3.04	-2.42/-7.01	-10.42/-15.22	-11.3/-3.7	-9.6/-6.89	-14.15/-14.44	-17.11/-10.65	-13.62/-6.42	-7.93/-2.1
φ(105°)	-7.71/12	-7.58/-0.43	-4.88/-3.18	-1.92/-4.71	-5.76/-7.89	-9.72/-7.8	-14.02/-11.62	-10.80/-18.28	-7.23/-12.23	-10.29/-12.04	-5.81/-10.08	-6.53/-4.1	-5.34/-23	-4.78/-3.82	-4.73/-6.84	-5.47/-3.58	-9.29/-14.01	-7.74/-18.7	-18.41/-10.85	-11.42/-13.84	-18.92/-10.83	-18.18/-7.8	-11.63/-6.69	-12.26/-3.73
φ(112.5°)	-6.33/-0.69	-5.9/-2.5	-5.56/-4.38	-3.37/-12.2	-5.7/-5.71	-6.47/-7.23	-18.71/-15.48	-10.49/-17.76	-8.71/-13.88	-15.84/-10.66	-6.75/-12.77	-3.87/-13	-0.03/-10.51	-3.56/-16.81	-7.08/-7.43	-6.97/-4.72	-10.49/-17.58	-9.86/-11.1	-8.47/-11.09	-14.12/-13.71	-10.67/-18.93	-13.45/-10.54	-18.12/-13.43	-15.14/-38
φ(120°)	-6.33/-0.47	-6.71/-8.88	-8.44/-8.64	-6.95/-8.64	-5.71/-13.53	-7.85/-11	-12.69/-18.76	-9.13/-14.77	-4.16/-17.24	-18.89/-19.64	-10.52/-13.4	-8.79/-19	-13.01/-15.6	-14.81/-14.94	-17.92/-9.85	-8.55/-8.68	-10.37/-12.38	-15.54/-11.9	-16.73/-12	-19.45/-18.65	-8.19/-13.2	-17.71/-18.6	-13.71/-8.29	-13.71/-8.29
φ(127.5°)	-15.61/-17.21	-12.49/-18.16	-14.01/-12.15	-9.61/-12.56	-7.88/-4.09	-15.53/-10.33	-18.88/-18.43	-11.75/-11.67	-8.62/-10.53	-19.04/-19.18	-10.30/-19.03	-15.24/-68	-14.56/-40.7	-3.87/-11.7	-13.60/-16.71	-8.83/-13.1	-18.87/-19.13	-18.11/-17.6	-18.77/-11.08	-19.24/-17.26	-16.68/-17.07	-17.17/-18.86	-12.37/-12.27	-10.91/-14.5
φ(135°)	-18.61/-5.22	-12.69/-17.5	-14.64/-12.69	-15.33/-14.22	-11.77/-10.7	-18.63/-9.32	-13.84/-19.53	-11.61/-10.71	-18.79/-16.65	-17.33/-15.02	-16.08/-14.94	-5.36/-16.65	-7.79/-9.53	-18.65/-64	-7.71/-19.07	-18.17/-14.35	-18.72/-15.62	-18.88/-11.6	-16.26/-18.36	-8.4/-15.42	-16.83/-16.74	-16.68/-15.42	-11.52/-13.76	-19.37/39
φ(142.5°)	-14.63/-1.67	-13.75/-18.12	-15.75/-14.11	-18.55/-12.82	-12.98/-14.48	-10.08/-15.74	-14.05/-12.8	-18.65/-17.62	-17.73/-14.47	-18.78/-13.18	-13.72/-18	-15.44/-16.29	-14.1/-17	-17.5/-8.43	-13.95/-14.25	-18.56/-17.81	-12.89/-18.63	-18.37/-15.77	-12.28/-6.65	-11.32/-13.08	-15.91/-17.83	-14.27/-18.47	-15.11/-12.44	-14.67/-12.1
φ(150°)	-17.61/-18.27	-18.05/-18.16	-12.55/-12.22	-18.28/-17.04	-16.91/-17.06	-17.52/-12.94	-17.37/-18.07	-18.54/-16.41	-12.95/-18.1	-13.78/-18.25	-12.67/-13.72	-8.65/-16.48	-19.25/-19.12	-17.37/-15.24	-18.61/-18.31	-18.14/-15.77	-16.97/-16.09	-11.87/-13.58	-15.25/-17.15	-14.02/-19.32	-17.85/-19.71	-18.83/-14.84	-18.83/-14.84	
φ(157.5°)	-12.62/-17.54	-16.28/-11.27	-11.09/-14.37	-18.11/-18.47	-16.36/-12.57	-12.15/-12.69	-15.31/-16.9	-16.98/-16.03	-16.96/-14.89	-15.06/-13.42	-15.63/-18.18	-10.56/-18.42	-17.51/-13.1	-18.94/-16.82	-19.32/-17.85	-18.87/-18.16	-18.86/-16.67	-15.82/-16.9	-15.88/-18.27	-18.24/-18.74	-19.27/-13.92	-13.21/-18.17	-18.23/-13.37	-14.01/-10.46
φ(165°)	-18.48/-17.81	-16.33/-14.46	-13.51/-15.63	-19.01/-18.91	-19.36/-15.99	-14.4/-12.63	-14.27/-17.1	-18.3/-14.53	-13.01/-13.27	-18.18/-18.13	-17.48/-14.82	-14.25/-13.97	-15.80/-16.37	-14.88/-14.95	-14.93/-14.45	-13.78/-13.75	-13							



Appendix B.1

[illegible]



Antenna Pattern of 2.4GHz/5GHz

Appendix B.1

(H22.5)	4.9615.11	-4.66-3.67	-3.05-3.85	-5.1717.19	-5.96-3.75	-2.70-3.10	4.12-4.78	-4.10-3.12	-2.01-0.55	0.210.80	1.071.24	2.041.84	1.822.28	2.1721.11	1.981.83	1.670.87	4.19-14.22	-2.31-1.83	-1.58-2.33	-3.15-2.81	-1.57-0.82	-0.110.48	4.12-13.83	2.72-5.80
(H37.5)	0.7912.07	-2.19-2.68	-3.36-3.53	-3.7110.54	-8.89-9.27	8.90-9.13	6.27-6.55	-4.55-4.01	-3.19-0.90	0.40-1.13	-1.32-1.47	4.34-3.17	0.05-1.18	0.07-0.09	0.01-0.16	0.75-1.65	2.37-1.14	-1.02-0.33	0.58-0.38	-1.13-0.37	0.20-1.16	0.358.84	1.021.24	1.20-1.43
(H07.5)	4.86-0.66	-0.26-0.56	-1.47-1.64	-4.69-6.26	-6.44-11.31	8.98-9.73	6.53-6.09	-5.79-5.94	-3.26-1.83	-1.40-2.13	-1.17-0.96	1.51-0.66	-0.00-0.23	0.51-1.00	1.05-0.56	-0.29-0.98	2.46-1.86	-8.95-1.16	0.92-0.27	-1.54-0.41	0.14-0.38	0.09-1.83	3.66-0.57	2.13-1.36
(H82.5)	2.24-2.13	1.00-0.60	1.13-1.46	-4.93-4.80	-2.81-5.39	-10.74-7.53	5.99-4.46	-8.71-3.40	-2.43-1.19	-1.07-0.47	0.55-1.39	0.67-0.89	1.69-1.73	1.25-2.31	2.06-1.79	2.33-0.57	0.58-1.73	1.41-1.40	-0.29-0.31	-0.59-1.36	0.18-1.44	3.20-0.62	1.54-1.19	0.04-1.00
(H07.5)	2.20-1.25	0.78-1.01	0.89-1.52	-1.88-1.75	-0.27-0.30	-1.23-1.08	0.64-0.98	6.24-1.85	-2.82-0.50	-0.13-0.07	0.84-1.10	1.73-2.04	2.70-1.64	1.06-0.75	1.39-0.84	1.08-1.83	-0.85-0.02	1.14-1.46	-2.86-2.77	-1.36-0.00	3.86-1.26	1.82-0.52	1.29-0.73	3.08-2.26
(H87.5)	0.52-0.34	0.73-0.72	0.37-1.41	0.65-1.79	4.19-4.40	-5.64-3.49	-5.72-1.24	4.04-2.74	-2.86-0.65	-0.89-1.22	2.43-2.14	1.74-1.33	0.52-1.42	1.81-1.56	2.39-1.41	-0.92-0.98	0.39-0.17	-0.37-0.65	-3.30-4.41	-3.33-3.23	-2.72-1.41	1.74-1.69	4.19-1.39	1.52-0.02
(H07.5)	3.91-2.98	2.26-1.11	1.46-1.58	0.39-0.41	-2.02-2.67	3.30-3.55	-4.30-5.08	3.17-4.79	-1.61-1.29	-0.20-2.46	2.23-1.52	-0.35-0.38	0.16-0.37	1.20-1.77	1.45-0.20	-0.46-0.21	0.97-0.73	-1.08-0.30	-2.36-3.24	-4.49-6.40	-0.78-0.99	-0.57-0.43	-0.33-0.20	2.72-0.88
(H75.5)	0.55-0.55	2.84-1.14	2.89-0.51	1.61-1.02	-2.41-10.86	2.30-3.78	2.80-3.42	-3.46-3.37	-2.07-0.65	-0.16-1.71	0.97-0.37	-1.63-0.48	0.61-0.13	-0.15-1.55	1.19-1.28	0.83-0.58	-1.83-0.34	-1.20-0.89	-0.52-0.40	-6.86-6.08	-0.51-0.29	-1.19-1.39	1.00-1.20	3.85-0.98
(H82.5)	0.23-0.55	1.33-0.98	2.47-1.15	0.96-0.43	-4.09-11.43	2.91-2.56	3.34-3.43	3.71-1.14	-0.50-0.71	0.55-0.28	0.45-1.21	-0.77-0.25	0.26-0.57	-0.67-0.72	0.49-1.31	-2.04-0.32	-2.35-0.35	-1.23-0.15	-0.66-1.25	0.94-1.38	0.51-0.52	-0.39-0.71	0.24-0.44	3.02-0.83
(H87.5)	1.77-0.62	-1.17-0.63	0.65-0.92	-0.14-1.07	-4.90-6.10	3.63-2.29	-2.67-0.43	-2.41-0.89	1.01-2.21	1.79-1.50	2.04-0.19	-3.69-1.13	0.37-1.37	-1.97-1.58	-0.71-1.82	1.87-1.24	-3.20-3.51	-0.59-0.01	1.41-0.08	-7.73-0.74	-1.54-0.54	-0.98-1.25	-0.90-0.19	4.12-0.19
(H07.5)	0.57-1.46	-4.86-4.37	2.27-0.74	2.57-1.67	5.37-0.51	4.03-2.56	2.83-1.94	2.27-1.75	0.13-0.33	2.51-0.48	1.33-1.09	3.91-1.48	1.66-1.34	2.32-1.14	0.89-1.98	3.07-1.48	3.74-1.79	0.19-0.24	-1.05-0.18	4.20-0.15	2.01-2.21	-1.07-1.02	2.27-0.26	2.27-0.26
(H07.5)	2.98-4.65	5.89-0.13	2.74-0.59	-5.26-1.04	-4.04-0.54	3.09-1.45	3.89-1.34	0.87-1.14	0.20-1.14	3.86-2.07	3.89-0.39	1.28-1.22	-0.69-1.39	2.44-0.30	2.89-0.21	3.58-1.93	1.59-1.78	-1.44-0.34	-0.80-1.28	0.83-10.75	4.55-0.49	3.84-1.18	-2.48-0.98	
(H112.5)	3.69-0.39	2.32-1.18	1.48-1.82	4.79-11.31	5.98-2.13	2.19-2.97	4.24-3.80	2.34-0.21	3.37-1.78	6.21-2.41	3.26-0.02	3.18-1.39	2.59-2.72	3.02-1.93	2.43-2.38	6.39-1.14	3.51-16.65	-0.57-0.89	-5.04-1.15	-7.72-15.33	12.01-12.02	5.52-1.40	5.02-0.40	2.16-1.37
(H07.5)	4.77-3.78	3.79-3.68	3.07-3.45	-12.41-14.13	-0.30-10.14	5.02-1.41	2.93-0.73	4.09-0.53	-5.40-5.45	-5.59-7.73	2.04-1.15	3.81-4.61	3.93-1.50	2.51-1.43	4.64-2.49	3.84-1.29	3.77-0.63	-10.29-10.34	-7.31-9.14	-8.71-15.52	-15.50-4.72	1.17-1.22	4.45-0.74	2.74-0.75
(H127.5)	4.19-6.42	-3.34-5.50	8.62-13.59	-18.59-15.05	9.90-13.53	-7.64-6.32	0.91-17.89	8.44-8.04	8.74-6.29	4.44-1.14	1.24-3.35	-3.36-4.56	-0.57-0.36	-4.30-3.72	-4.40-5.46	8.67-7.62	7.87-9.11	-14.95-0.00	-6.67-2.44	-13.89-14.85	8.13-12.61	9.33-9.47	9.43-9.59	-4.59-9.79
(H127.5)	-4.22-6.94	-4.52-7.72	-13.12-15.73	-15.36-12.81	-11.03-15.31	-7.65-6.31	-10.91-8.68	-10.05-8.03	8.26-7.69	4.44-4.04	6.28-3.48	2.04-3.41	-5.98-4.03	-3.51-2.86	-4.81-3.83	5.74-9.34	-13.50-10.14	-0.56-0.50	-13.28-9.46	-14.89-15.04	-11.30-12.59	-12.45-14.30	-17.71-1.78	-5.04-0.52
(H142.5)	-0.56-0.93	-1.57-13.59	-10.06-11.37	-11.33-10.11	-12.94-13.97	-11.24-12.02	-10.04-0.48	-12.56-0.97	-0.67-1.60	-4.67-4.25	-6.65-6.61	-4.76-4.25	-10.80-10.03	-14.51-17.42	-6.36-4.46	6.56-10.14	-13.10-11.55	-0.63-1.60	-8.93-0.49	-9.36-10.45	-11.89-10.07	-8.91-7.42	-4.29-8.80	-10.37-11.06
(H157.5)	-13.73-12.36	8.65-10.24	-11.37-10.30	-13.87-14.58	-11.83-8.89	-0.47-14.79	9.39-8.63	-11.48-10.40	-5.95-5.91	-6.16-5.69	-5.41-5.60	-7.03-6.84	-0.29-0.66	-7.57-12.17	-0.11-1.33	-4.97-10.48	-8.91-17.33	-10.70-14.94	-7.90-8.64	-13.40-13.00	-13.47-13.65	-11.32-9.69	8.61-10.94	0.02-10.99
(H157.5)	-15.10-14.78	-12.66-10.29	8.19-10.44	4.80-8.66	-0.67-7.72	-8.67-9.83	6.40-5.55	-5.74-5.96	-6.91-5.94	-4.55-4.91	-6.55-6.69	-6.62-7.80	-6.26-7.08	-8.53-9.61	-6.86-10.44	8.95-10.10	4.78-7.50	-8.55-11.15	-13.32-10.98	-12.72-13.31	-10.89-9.33	-11.41-12.38	-15.70-14.55	-15.49-10.86
(H157.5)	-10.10-13.09	-11.77-11.49	-11.34-11.47	-15.64-13.34	-9.53-8.01	-0.86-9.79	9.08-6.41	-8.85-11.02	-13.30-11.70	0.26-10.14	-10.60-10.60	-10.47-0.87	-10.07-12.92	-10.53-9.94	-11.85-13.19	-4.86-7.38	-0.86-12.27	-15.51-14.79	-10.56-11.07	-13.83-15.00	-10.76-11.49	-15.79-14.89	-15.36-14.28	
(H172.5)	-10.16-10.36	-10.16-10.18	-10.80-11.18	-12.17-12.92	-10.76-12.85	-13.86-14.52	-13.31-10.98	-0.61-10.06	-10.15-9.64	0.76-12.00	-14.36-15.63	-12.17-11.47	-12.08-13.96	-13.25-13.35	-15.29-14.94	-12.59-10.46	-0.89-8.57	-0.07-11.72	-13.21-14.94	-10.65-10.28	-10.90-9.54	8.80-8.38	8.32-8.41	0.88-10.04
(H172.5)	-15.47-15.65	-15.56-15.08	-15.80-18.01	-15.46-14.74	-15.04-14.57	-15.03-13.77	-14.25-13.81	-10.32-10.93	-10.16-10.51	-8.93-9.81	-9.88-10.47	-8.66-8.34	-0.64-7.98	8.71-11.11	-10.31-14.32	-14.10-15.22	-14.63-15.46	-14.53-15.46	-14.27-15.03	-14.71-15.36	-12.47-14.16	-13.14-15.42	-15.61-14.20	
Frequency	2.45GHz	TableA.2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Gain	0°(H27°W27.5°)	0°(H57°W27.5°)	0°(H87°W27.5°)	0°(H117°W27.5°)	0°(H147°W27.5°)	0°(H177°W27.5°)	0°(H207°W27.5°)	0°(H237°W27.5°)	0°(H267°W27.5°)	0°(H297°W27.5°)	0°(H327°W27.5°)	0°(H357°W27.5°)	0°(H387°W27.5°)	0°(H417°W27.5°)	0°(H447°W27.5°)	0°(H477°W27.5°)	0°(H507°W27.5°)	0°(H537°W27.5°)	0°(H567°W27.5°)	0°(H597°W27.5°)	0°(H627°W27.5°)	0°(H657°W27.5°)	0°(H687°W27.5°)	0°(H717°W27.5°)
(H27.5)	-1.67-1.75	-1.72-1.68	-1.84-1.72	-2.23-1.98	-1.49-1.23	1.32-1.66	-1.58-1.29	-1.23-1.39	-1.81-2.35	2.70-2.94	3.03-3.25	2.67-2.38	2.10-1.57	-1.61-1.18	-2.53-3.36	3.48-2.84	-1.62-1.19	-0.69-1.11	-1.50-1.78	-1.64-1.58	-1.72-1.97	2.20-1.94	-1.91-1.52	-1.81-1.89
(H37.5)	2.31-2.32	2.59-2.43	2.34-2.45	-2.46-2.19	-1.96-1.06	-1.01-1.29	-1.36-1.13	-0.87-0.74	-0.68-1.15	-1.60-2.09	-2.26-2.27	-2.49-2.32	-2.80-2.78	-3.23-2.51	-1.29-1.75	-2.29-1.75	-1.26-1.15	-1.18-1.26	-1.67-1.91	-2.29-2.57	2.47-2.59	2.69-2.58	2.49-2.37	2.49-2.31
(H47.5)	2.33-2.10	2.22-2.37	2.44-2.51	-2.41-1.85	-1.29-0.54	0.27-1.03	0.57-0.45	0.29-0.08	0.33-0.69	1.37-1.79	2.10-2.35	2.10-1.86	-1.72-1.48	-1.61-1.15	1.27-1.65	0.68-0.62	-0.47-0.04	-0.44-0.62	-1.02-1.39	2.07-2.47	2.68-2.75	3.33-3.43	2.22-2.39	2.22-2.39
(H57.5)	1.32-1.22	-1.21-1.27	-1.37-1.59	-1.77-1.56	-1.07-1.30	0.16-0.02	-0.26-0.23	-0.09-0.17	0.36-0.25	0.99-1.82	2.49-0.00	-3.24-3.23	-3.29-3.11	-2.62-2.20	1.75-2.12	0.99-0.08	-0.57-0.35	-0.94-1.11	-0.36-1.09	-1.63-1.59	2.97-2.99	2.57-1.77	-1.77-1.52	
(H67.5)	0.53-0.65	-0.46-0.25	-0.72-0.38	-0.76-1.11	-0.57-0.20	0.54-0.60	0.29-0.17	0.29-0.24	0.19-0.30	0.30-1.90	3.27-1.38	-4.08-4.57	-3.27-3.01	2.75-2.40	2.22-1.91	-1.41-0.90	0.03-0.13	-0.29-0.33	-1.29-1.47	0.39-0.33	-1.29-1.47	2.29-2.87	2.24-1.72	-1.03-0.87
(H77.5)	0.43-0.32	-0.16-0.04	0.06-0.02	-0.23-0.34	-0.16-0.51	1.13-1.25	0.97-0.55	0.28-0.24	-0.84-1.12	-0.86-0.75	1.13-2.56	-3.73-4.45	-4.63-4.32	3.71-3.15	2.74-2.77	2.56-2.40	2.43-2.59	-2.56-2.97	-1.84-1.30	-0.66-0.61	-1.32-0.67	3.22-2.68	-1.73-0.87	-0.32-0.11
(H87.5)	0.11-0.15	0.10-0.15	0.12-0.06	0.07-0.17	0.38-0.79	1.34-1.54	2.08-0.68	0.31-0.22	-0.61-1.19	-1.04-1.14	0.98-1.54	2.08-2.44	-2.72-2.92	-2.99-2.00	-2.11-1.57	-1.22-1.16	-1.27-1.44	-1.66-1.81	-1.97-1.80	-1.29-0.87	-1.28-0.80	4.32-3.26	0.21-0.48	
(H82.5)	0.40-0.47	0.35-0.11	-0.04-0.03	0.30-0.62	0.80-0.86	1.02-1.17	1.02-0.47	-0.01-0.05	-0.03-0.23	-0.22-0.01	0.31-0.95	-1.09-0.99	-1.18-1.99	-2.49-2.22	-1.75-1.36	-1.10-1.00	-0.84-0.40	-0.42-1.09	-1.56-1.42	-1.02-0.77	-1.29-0.99	-4.82-3.98	-3.21-0.98	0.00-1.04
(H107.5)	0.17-0.32	0.35-0.22	0.36-0.61	0.73-0.78	0.60-0.54	0.60-0.42	0.61-0.42	0.01-0.10	0.71-0.66	0.21-1.2	0.25-0.43	0.05-0.43	-0.06-0.56	-0.54-1.19	2.10-2.47	-1.77-0.33	0.53-1.13	-1.23-0.61	-1.00-0.61	-1.06-0.52	-0.46-0.38	-4.14-0.69	-4.74-0.63	
(H87.5)	-1.00-0.27	-0.40-0.27	0.94-1.26	0.97-0.59	0.45-0.29	0.20-0.22	0.52-0.61	0.42-0.55	1.11-0.81	0.23-0.42	0.51-1.15	1.72-0.48	2.38-0.56	-0.43-0.57	-0.38-2.26	2.30-1.39	0.25-1.16	0.25-0.26	-0.89-1.21	-1.77-1.13	-1.52-1.38	-4.79-1.30	-1.08-0.54	0.49-0.93
(H107.5)	-1.34-0.84	-0.81-0.36	0.75-1.16	0.84-0.37	0.07-0.26	0.12-0.21	0.21-0.21	0.00-0.59	0.62-0.65	0.23-0.16	0.65-0.10	-0.60-0.84	-1.63-3.37	2.50-1.54	-0.54-0.54	-0.48-0								



Antenna Pattern of 2.4GHz/5GHz

Appendix B.1

(#87.5)	0.644/0.57	1.167/4	1.586/96	1.582/96	3.282/99	3.020/30	2.872/20	2.782/88	-0.422/0.1	1.739/338	0.611/0.92	-1.239/336	-0.600/56	2.242/55	3.189/99	3.991/89	0.148/0.5	-1.851/666	-6.153/66	-4.712/34	-1.952/249	-1.322/32	-1.644/0.92	-0.310/3
(#107.5)	-1.250/30	1.550/93	0.810/77	0.540/42	1.231/65	1.133/60	1.532/24	1.651/19	1.950/39	-0.190/87	0.599/12	-0.421/45	-0.760/37	1.020/57	3.904/60	4.163/69	0.287/16	-1.193/87	-3.912/45	-3.951/14	2.300/23	2.153/35	-1.771/12	-0.204/74
(#82.5)	-1.027/16	1.259/64	1.391/62	0.270/17	0.603/75	1.001/21	-1.061/98	1.289/20	1.039/96	-1.811/05	0.026/03	-1.354/01	-1.694/06	-0.880/08	0.413/56	2.743/56	3.300/66	-0.385/255	-1.100/64	-1.711/204	2.146/340	1.220/42	-2.311/81	-1.889/175
(#97.5)	-3.331/-16	-1.111/54	1.111/38	0.133/74	-0.761/13	2.181/09	3.130/54	0.330/-13	-0.142/-46	-1.370/-46	0.421/-10	-0.892/24	-2.481/-14	0.031/-19	1.130/69	0.652/11	2.571/-36	-4.114/84	1.020/84	-1.101/-28	3.360/54	2.355/57	-3.951/-19	-3.103/53
(#87.5)	-4.243/61	-3.122/20	0.881/60	0.881/60	-4.411/44	-1.711/40	-3.281/85	-2.551/-42	-1.542/-25	-2.481/-14	-1.370/-46	2.821/-102	-0.330/-12	-0.721/28	-3.071/281	1.630/70	0.622/11	1.692/51	-0.113/32	-0.232/51	-4.411/788	3.300/-63	-4.681/42	-0.084/69
(#105)	-0.581/29	-4.89/-26	0.491/06	-0.821/-36	2.59/-24	3.451/94	2.843/-35	3.591/382	-3.271/-258	2.10/-48	-0.611/52	-3.811/43	-6.161/42	-3.691/69	-0.54/-21	6.181/91	-0.021/42	-1.747/264	-2.631/-55	-6.36/-40	-4.38/-12	-3.62/-82	-4.701/82	-4.681/61
(#112.5)	-2.592/28	-5.06/-49	0.880/-02	-0.911/281	-2.201/-51	3.301/-55	-0.911/-30	-4.511/36	-5.101/-33	-4.721/102	-6.131/57	-0.961/479	-10.951/47	-6.591/423	-6.071/49	6.391/426	-6.491/-101	-1.101/473	-4.991/63	-8.951/26	-6.301/64	-6.451/-16	-4.701/82	-4.681/61
(#127.5)	-3.121/32	-3.111/58	2.721/-1	-2.781/58	-3.021/23	2.271/249	6.121/41	6.491/497	6.431/707	6.721/1205	6.591/45	-6.781/501	-8.851/40	-7.911/79	-10.181/64	6.031/52	-10.249/88	-6.881/56	-7.007/103	-11.591/68	-7.471/85	-10.031/86	-4.081/57	-6.391/42
(#127.5)	-5.641/40	-3.501/42	4.891/35	2.751/28	3.491/39	3.261/59	6.481/457	7.211/25	5.991/-13	6.591/95	7.781/38	-7.011/10	-11.031/47	-4.751/124	-10.431/58	5.571/45	-11.471/123	-10.581/59	-11.451/42	-13.207/91	-10.441/623	-4.531/76	-6.501/65	-6.391/42
(#137.5)	-7.301/44	-6.461/49	-3.501/59	-3.021/291	-3.361/48	7.811/58	6.311/76	7.261/62	6.431/127	-7.161/107	-11.551/567	-15.791/102	-8.221/1502	-1.451/61	3.671/28	6.481/1020	-10.881/62	6.381/1032	-7.481/156	-12.731/499	-4.441/125	-4.8201/63	-6.801/49	-6.801/49
(#142.5)	-1.541/74	6.111/47	4.771/49	5.101/-29	3.401/44	4.061/429	6.491/529	6.851/536	5.551/-61	10.011/1164	6.591/1224	8.831/1224	15.101/1065	7.341/765	8.461/1257	-11.521/1032	-12.381/1032	6.591/1032	-10.807/26	-14.691/153	-11.081/758	-4.691/153	-6.731/44	
(#107.5)	4.821/47	4.211/42	4.171/41	4.611/48	4.541/44	4.541/44	4.161/108	4.541/44	4.541/44	4.641/93	10.941/1281	-15.101/69	1.481/69	7.031/129	1.410/87	6.961/36	-1.131/1514	-10.591/164	-16.961/12	9.831/85	10.851/85	4.591/25	-4.591/25	
(#157.5)	6.821/64	6.841/62	6.891/67	6.831/74	-7.7141/06	6.821/76	6.911/80	7.391/54	6.411/721	6.911/54	7.481/691	-14.411/183	-15.501/139	-10.021/150	11.021/132	22.211/448	-13.361/110	-11.511/148	-12.841/84	-8.191/120	7.091/20	9.191/147	-11.621/10	9.341/53
(#177.5)	-7.211/27	-6.821/48	-10.541/-10	8.131/108	-10.171/56	8.981/43	9.911/15	4.291/56	4.361/20	-13.711/417	-15.121/417	-12.561/143	-12.301/143	-12.301/143	6.381/43	2.741/289	-7.901/52	-3.981/72	-11.841/124	-9.571/89	-10.791/87	-10.261/158	9.781/63	-9.781/63
(#172.5)	-9.821/62	6.951/-10.8	8.921/74	-7.981/13	-7.391/16	6.511/727	-7.171/671	-3.451/81	-6.841/77	-12.681/1405	-11.641/62	-8.651/891	-10.501/1028	-10.741/129	-13.021/182	-13.781/129	-11.481/1248	-10.471/183	-10.871/110	-9.591/249	-8.581/108	-12.121/153	-10.810/93	-8.221/15
(#182.5)	-0.561/672	-6.631/63	6.861/64	-6.021/67	-5.531/576	6.881/63	-6.221/58	4.321/681	-12.611/335	-12.691/123	-13.061/1454	-15.051/1251	-9.081/72	-7.341/73	-6.501/613	6.841/78	-7.621/77	-7.711/79	-7.381/605	-7.881/83	-8.081/748	-2.951/32	-7.441/73	-7.441/73
FreeRad	5.7850/94	TableRad.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)	(#107.5/107.5)
(#87.5)	0.241/96	6.061/24	0.251/49	4.521/49	0.671/57	0.181/24	0.010/01	-0.331/43	-0.531/46	0.621/45	0.591/-101	-1.411/13	-0.541/30	-1.221/137	0.611/64	1.011/67	4.181/11	0.1591/48	0.021/49	1.111/30	2.861/36	6.441/24	1.591/25	1.591/25
(#127.5)	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35	0.721/35
(#127.5)	0.521/04	0.020/1	0.291/47	0.021/02	0.0701/79	0.0711/98	1.491/16	1.191/14	1.901/35	1.191/16	1.281/37	0.8301/0	0.0201/0	0.021/17	0.951/21	2.741/35	0.391/29	2.911/19	1.371/148	1.951/13	5.241/61	4.361/381	2.731/70	2.731/70
(#222.5)	0.161/01	0.241/182	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22	0.5601/22
(#107.5)	-0.181/01	1.371/28	2.2021/27	2.391/77	2.4321/47	2.121/76	2.3521/69	2.241/77	1.701/33	2.721/88	3.101/63	1.9921/30	0.051/04	0.111/77	0.641/30	0.591/107	2.341/174	2.521/42	5.341/47	7.231/139	9.991/05	8.531/48	2.801/30	3.381/20
(#107.5)	-0.691/08	0.841/20	1.7321/61	2.5421/34	2.7931/39	3.1821/91	3.471/39	3.9021/88	2.891/05	2.761/36	3.8621/63	2.7001/39	0.051/1	0.0101/69	-0.3501/67	0.361/60	-1.111/224	-0.5921/22	6.261/126	6.391/16	-10.801/329	4.231/135	-3.291/30	-3.291/30
(#107.5)	-0.831/02	1.201/43	2.6921/88	2.4021/29	2.3301/20	4.181/13	3.471/17	4.1721/88	2.5721/58	1.8321/85	1.3311/45	1.581/42	0.071/12	1.1621/48	2.5821/59	1.891/102	1.221/10	0.841/108	-0.9931/66	-4.221/469	-6.971/536	4.591/42	-1.371/33	-0.691/49
(#107.5)	-0.401/03	0.4021/1	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03	3.4031/03
(#107.5)	-0.391/06	1.361/01	3.731/01	4.061/12	3.9841/26	4.3701/69	3.0521/22	3.1911/48	1.0501/22	0.181/83	2.031/33	0.201/-17	-1.9701/86	0.021/12	-0.641/11	0.311/016	0.281/81	-0.231/42	-1.7161/53	-3.991/422	-4.811/546	-0.861/54	-1.501/84	2.281/16
(#107.5)	-1.231/02	2.221/05	3.0301/02	2.4321/07	2.2101/51	4.1401/21	2.1911/70	1.421/05	0.261/82	-1.9801/26	1.8601/73	2.1321/36	2.9601/69	0.821/05	0.291/14	0.391/06	0.821/05	-0.291/14	-4.631/504	-2.481/487	-2.481/487	-2.481/487	-2.481/487	-2.481/487
(#107.5)	-2.001/26	1.801/85	2.4201/47	1.5521/31	1.571/92	3.3521/38	1.001/421	0.641/-14	2.081/184	0.111/11	0.141/022	-0.621/104	-0.431/35	1.701/148	2.841/58	5.081/14	3.751/74	-1.391/481	-5.941/481	-3.191/749	-1.291/432	-3.121/43	-2.351/14	-0.471/16
(#82.5)	-0.841/02	0.1601/33	1.701/46	1.8121/58	1.6501/40	2.011/16	-0.281/106	0.281/106	1.991/173	0.641/102	0.261/73	0.161/02	-0.461/08	0.991/133	2.1921/96	3.501/41	1.951/74	-0.561/497	-2.151/134	-1.181/609	-1.561/492	-1.411/134	-1.291/132	1.411/134
(#98.5)	-3.281/64	-1.691/-16	0.1901/33	1.381/53	1.401/68	0.0601/43	0.581/-18	-1.421/-186	0.821/-120	-1.791/-128	3.181/-134	-2.441/-81	-1.6121/120	0.231/-386	0.571/17	3.131/17	3.5001/08	-7.931/92	-2.081/46	-1.581/14	3.391/20	6.491/340	4.771/336	0.841/28
(#87.5)	-3.391/70	-3.311/72	-1.1161/17	0.7501/80	0.861/-187	-0.601/-128	-1.461/217	2.181/-180	-0.341/-197	2.251/231	-4.681/-399	-4.441/32	-1.101/282	-0.861/105	0.781/31	2.051/120	0.6841/48	-1.501/55	-4.241/302	-5.481/16	-4.861/16	7.731/450	-4.971/636	2.121/34
(#102.5)	-4.501/42	-3.891/-26	1.501/10	0.0301/48	-1.021/335	-1.021/335	-2.631/287	-4.151/-198	-3.441/-47	-2.781/81	0.251/734	-1.511/68	-0.1301/20	-0.591/433	-2.001/200	-4.491/32	1.471/255	-0.521/373	-0.021/465	-7.881/459	6.391/-118	4.541/147	-4.171/103	-3.181/43
(#112.5)	-5.221/52	-5.301/-45	-1.841/16	0.021/402	-1.501/-381	2.121/410	1.121/364	-5.641/-68	-5.911/-68	-5.591/87	-14.671/238	-10.641/30	-0.341/738	-7.291/97	1.711/253	-0.101/1032	-8.101/51	-7.601/140	-12.121/591	-5.391/143	7.541/144	-5.391/145	-6.811/69	-6.811/69
(#127.5)	-4.731/82	-5.931/23	3.331/-16	-1.021/-32	-2.371/-46	2.741/303	-7.161/51	7.321/67	6.711/104	7.741/-138	6.711/64	-9.461/66	-11.501/21	-10.091/81	9.391/68	6.431/-189	6.891/-138	9.901/-150	-14.891/102	-12.101/63	9.951/24	-10.281/30	-5.991/35	-4.251/63
(#127.5)	-4.501/52	-6.221/12	4.891/17	2.831/29	3.381/-75	2.281/-39	7.201/13	8.231/-118	8.291/-123	7.841/59	4.701/86	0.001/40	-14.591/40	5.271/35	4.921/67	6.041/248	9.501/169	-1.551/169	-1.551/169	-1.551/169	-1.551/169	-1.551/169	-1.551/169	-1.551/169
(#127.5)	-7.311/58	-9.291/43	4.471/27	-1.161/25	-3.821/32	-4.591/61	8.191/233	8.941/145	-10.671/21	8.871/10														



Antenna Pattern of 2.4GHz/5GHz

Appendix B.1

(H1125)	6.00-4.54	-5.40-9.51	9.93-10.40	-6.26-0.03	-4.69-5.58	8.18-9.21	-7.78-6.14	-5.51-7.36	-4.51-4.44	-8.41-5.25	-6.88-10.45	9.34-6.94	-5.28-4.22	-7.31-7.17	-7.59-5.93	-3.53-5.21	-4.60-6.45	-10.28-6.51	-2.38-6.81	-5.59-3.81	-2.57-4.03	-7.25-9.80	-6.78-8.82	-8.42-6.18
(H120)	4.53-5.55	-5.50-9.59	9.17-10.70	-6.40-8.60	-7.21-5.18	-4.86-6.44	-13.20-9.02	-3.44-3.22	-4.94-4.16	-7.21-10.66	-6.70-9.43	-7.89-9.91	-10.24-3.30	-6.09-9.40	-7.23-6.87	-4.84-5.58	-5.57-7.77	-6.80-4.10	-1.91-6.27	-13.46-6.71	-4.49-7.22	-8.07-8.73	-6.38-12.02	-10.26-6.02
(H125)	5.50-10.60	-12.60-10.21	-12.34-14.70	-12.52-15.40	-15.60-11.62	-10.69-4.85	-8.58-6.14	-7.91-9.39	-5.50-12.09	-12.99-11.57	-10.42-12.68	-13.82-13.49	-6.95-7.57	-14.60-10.03	9.32-11.94	-14.20-9.51	-5.27-11.38	-15.15-14.19	-1.86-6.24	-12.71-10.05	-4.83-8.31	-12.63-6.94	-13.41-12.58	-9.26-6.38
(H130)	4.38-11.52	-13.00-10.34	-11.60-15.02	-9.95-7.90	-6.16-6.33	-6.07-6.89	-9.18-9.39	-6.80-9.82	-7.08-7.81	-8.08-9.21	-8.31-9.62	-10.88-13.83	-9.10-9.33	-13.17-14.73	-13.30-13.50	-11.90-6.02	-7.26-11.91	-11.00-9.39	-3.07-4.66	-6.37-10.85	-6.92-5.92	-8.78-9.06	-8.84-9.96	-6.30-7.68
(H150)	4.50-6.68	-10.01-14.01	-12.30-12.32	-12.54-13.95	-11.85-10.95	-11.04-11.96	-11.97-10.38	-10.95-11.16	-11.27-13.17	-13.46-12.13	-11.04-17.57	-15.93-15.08	-15.02-12.61	-8.49-7.91	-9.50-9.40	-7.22-8.20	-10.53-12.21	-10.59-17.30	-6.04-9.94	-8.16-14.37	-15.94-12.58	-12.28-15.81	-15.13-11.83	-8.84-6.16
(H157)	-4.42-7.17	8.40-12.63	-15.49-15.61	-12.56-10.06	9.30-10.80	-12.58-10.34	9.23-9.65	-10.38-9.46	-10.16-9.63	-10.67-11.63	-10.45-12.85	-11.17-10.85	-15.02-12.61	-9.59-5.94	-7.88-9.43	-11.48-12.59	-14.34-13.39	-10.47-7.78	-6.10-7.06	-10.18-12.53	-12.52-14.69	-11.47-10.29	-4.38-7.47	-7.89-10.16
(H165)	-10.59-12.97	-11.21-11.21	-12.05-14.05	-13.83-12.99	-9.99-9.22	-8.70-11.06	-12.39-11.07	-10.19-9.86	-9.88-10.54	-12.60-14.25	-12.29-10.69	-10.37-12.33	-15.74-11.08	-9.78-8.82	-9.00-11.43	-12.33-11.73	-11.14-12.28	-12.82-10.61	-8.43-8.08	-8.41-9.46	-9.96-9.16	-7.39-8.68	-6.82-7.55	-8.72-11.99
(H172)	-12.32-10.69	9.99-9.12	-11.52-13.39	-14.00-13.27	-14.60-13.65	-14.60-13.65	-15.28-15.34	-14.40-15.42	-11.48-10.77	-11.94-12.78	-12.55-12.22	-12.58-12.22	-12.68-12.73	-12.40-11.31	-10.21-11.45	-10.57-15.61	-15.33-10.18	-13.43-10.18	-10.59-10.31	-9.82-8.43	-10.27-9.17	-8.70-12.95	-7.67-10.93	-8.20-10.96
(H175)	-7.19-7.20	-8.21-8.01	-10.89-8.89	-8.72-8.97	-10.15-10.16	-9.34-8.44	-8.01-7.70	-7.62-8.26	-8.01-8.31	-8.53-8.97	-8.11-8.75	-5.84-5.20	-4.88-4.67	-4.84-4.78	-5.26-5.18	-5.61-5.61	-5.72-5.63	-5.27-5.15	-5.26-5.74	-4.98-6.25	-6.88-7.38	-7.90-7.88	-7.36-7.58	-7.59-8.53
Freqlist	5.05096	TestAnt 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)	(H170/175)
(H170)	-4.02-4.13	-4.01-3.81	-3.85-3.16	-2.88-3.10	-3.49-3.91	-4.16-4.16	-3.76-9.91	-3.78-4.12	-4.15-4.13	-3.84-3.78	-4.05-4.32	-4.63-5.20	-5.70-5.66	-5.91-6.17	-4.17-7.01	-7.37-4.02	-6.01-8.80	-7.90-9.02	-8.80-5.45	-8.43-7.47	-6.98-6.47	-6.80-6.40	-5.96-6.45	-4.98-6.57
(H175)	-1.98-6.74	-11.67-12.33	-14.51-15.36	-14.26-13.68	-13.79-12.49	-10.40-11.12	-6.58-7.09	-5.69-6.21	-4.35-3.32	-2.26-2.73	-2.26-2.73	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74	-2.53-2.74
(H175)	-1.30-0.67	-7.64-7.58	-6.61-6.17	-5.58-6.02	-1.60-1.21	-1.05-1.08	-1.73-2.47	-1.39-3.08	-2.64-1.29	-4.10-2.33	-6.70-1.13	-9.60-2.72	-12.22-3.77	-15.99-6.58	-15.99-6.58	-13.48-8.85	-10.61-11.44	-1.26-1.68	-1.78-1.90	-2.30-2.13	-1.78-1.73	-1.76-1.73	-1.76-1.73	-1.76-1.73
(H22)	4.51-5.68	-4.86-4.22	-3.77-2.92	-1.46-1.05	0.87-0.83	0.60-0.68	-0.40-1.54	-2.48-1.09	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48	-0.40-5.48
(H25)	-0.50-0.85	-5.80-3.72	-3.37-3.02	-1.68-0.14	0.64-0.06	1.69-2.52	3.29-3.16	2.41-1.49	1.10-1.97	2.74-2.08	8.80-0.02	-0.09-0.68	-1.38-1.06	-0.50-0.39	0.79-1.25	1.69-1.50	0.22-0.71	-0.36-0.53	0.72-0.56	0.60-0.26	-0.36-0.23	-0.93-0.24	-7.83-12.58	-8.56-6.78
(H37)	-1.22-0.81	-3.80-1.76	-1.10-1.29	-1.40-0.51	0.67-1.32	2.25-0.42	4.40-3.74	3.89-3.78	3.95-2.91	8.00-0.08	0.57-0.24	-0.48-0.29	0.77-0.25	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50	2.89-1.50
(H37)	-1.10-0.97	-5.50-1.77	-0.49-1.17	-2.68-1.78	0.00-0.37	0.84-2.39	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46	3.92-4.46
(H52)	-4.48-6.40	-5.60-3.40	-1.30-1.80	-0.98-1.99	3.58-2.87	2.52-2.71	2.77-3.95	4.28-2.87	1.91-2.01	2.91-1.96	4.84-2.34	3.79-1.29	0.06-0.65	1.80-2.09	1.70-2.05	1.69-2.01	1.80-2.09	1.80-2.09	1.80-2.09	1.80-2.09	1.80-2.09	1.80-2.09	1.80-2.09	1.80-2.09
(H57)	-2.91-3.98	-4.83-1.36	1.22-0.55	-0.98-2.36	3.67-2.16	2.44-1.18	-1.37-1.25	-4.10-3.83	2.82-0.48	4.43-3.63	2.31-0.81	0.44-2.20	-0.78-0.60	1.77-1.96	0.54-2.32	2.46-0.30	1.27-2.19	1.01-2.18	-0.46-0.73	-1.92-0.75	-2.73-5.65	-5.71-4.58	-2.74-3.24	-5.16-3.10
(H67)	-0.30-0.22	-0.82-1.72	1.32-0.60	2.98-1.77	2.41-2.06	3.30-2.34	1.81-2.46	2.89-1.42	-0.93-0.84	0.50-1.31	0.62-1.21	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17	2.01-0.17
(H75)	0.50-1.86	1.82-0.64	2.71-2.26	0.18-2.96	2.73-2.54	3.75-3.17	3.45-3.46	3.54-3.46	1.60-3.07	5.14-2.99	0.78-1.89	-1.86-2.53	-0.53-0.50	-1.67-5.49	-1.33-0.86	2.71-0.01	-0.28-1.10	2.06-2.10	2.47-1.32	0.60-1.12	0.96-0.75	-1.15-0.49	-4.16-5.52	-3.20-2.16
(H82)	-1.55-1.66	-0.90-1.81	0.81-1.87	0.89-2.14	1.28-0.73	2.25-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18	2.83-2.18
(H85)	4.57-9.19	-3.24-1.00	-1.89-4.27	-0.19-0.95	-0.38-1.46	0.66-0.01	1.03-2.45	0.78-0.78	-0.50-0.66	0.58-1.40	-1.57-4.22	-9.61-6.00	-2.01-1.41	-7.79-11.96	-3.78-6.13	0.57-1.07	-0.37-0.22	1.17-0.93	1.61-1.48	0.10-0.86	2.20-1.35	0.25-1.36	-0.68-6.49	-1.91-1.43
(H87)	4.57-9.19	-3.24-1.00	-1.89-4.27	-0.19-0.95	-0.38-1.46	0.66-0.01	1.03-2.45	0.78-0.78	-0.50-0.66	0.58-1.40	-1.57-4.22	-9.61-6.00	-2.01-1.41	-7.79-11.96	-3.78-6.13	0.57-1.07	-0.37-0.22	1.17-0.93	1.61-1.48	0.10-0.86	2.20-1.35	0.25-1.36	-0.68-6.49	-1.91-1.43
(H90)	4.70-2.94	-5.69-6.69	-4.09-4.99	-2.56-1.94	-2.98-3.69	-4.96-7.07	3.58-1.53	2.96-4.05	-4.55-3.36	2.26-2.72	6.27-6.03	-1.78-0.72	-4.26-3.67	-6.40-5.94	-3.77-3.98	-4.90-3.32	-4.64-5.15	-2.69-3.61	-5.40-5.55	-6.90-5.61	-1.27-2.04	-1.97-2.04	-3.41-4.78	-4.90-6.49
(H102)	7.73-4.14	-4.15-13.13	-5.51-9.25	-4.51-13.82	-3.75-6.13	-8.20-10.91	-5.18-12.31	-2.80-4.28	-6.27-6.39	-1.69-6.86	-10.53-9.51	-3.88-9.38	-8.40-9.39	-7.95-9.34	-4.02-4.73	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67	-5.81-4.67
(H107)	3.20-5.27	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22	5.80-4.22
(H127)	9.32-9.86	-11.75-10.74	8.97-6.70	0.51-7.55	-11.81-9.32	-4.28-6.59	-11.77-7.85	-7.32-5.68	-7.89-9.59	-10.97-9.67	-7.07-7.97	-11.52-7.97	-9.99-9.89	-8.50-15.96	-13.40-17.47	6.81-9.54	-3.95-9.56	-12.07-9.41	-12.94-9.23	-15.14-9.87	-14.03-8.93	-4.82-7.95	-9.90-9.89	-7.47-9.92
(H130)	5.20-6.74	-11.20-13.71	-13.01-9.68	-10.90-13.71	-15.37-10.91	-8.39-6.46	-0.68-10.06	-10.72-9.21	-12.91-10.59	-10.90-9.50	-11.70-13.48	-10.90-9.50	-12.46-10.12	-8.29-12.04	-11.01-9.56	-12.70-9.42	-15.02-9.17	-15.02-9.17	-15.02-9.17	-15.02-9.17	-15.02-9.17	-15.02-9.17	-15.02-9.17	-15.02-9.17
(H142)	-0.62-0.19	-12.30-13.05	-10.51-12.24	-12.38-12.18	-10.78-9.87	-7.48-6.72	-8.21-6.57	-4.12-4.73	-12.28-15.19	-8.48-11.44	-14.14-15.27	-14.86-10.50	-9.73-10.54	-10.91-12.89	-13.48-12.35	-13.69-13.43	-4.86-11.10	-12.93-9.32	-1.89-2.47	-11.98-12.70	-6.26-5.80	-11.85-12.02	-12.24-11.05	-13.88-9.81
(H150)	4.12-0.34	-1.20-1.20	-15.67-15.65	-11.81-10.28	-11.71-15.25	-10.07-15.25	-12.68-12.77	-15.36-15.24	-11.34-8.87	-6.48-6.14	-6.83-7.84	-6.84-8.82	-12.16-14.34	-13.91-14.42	-11.01-11.05	-13.97-9.88	-10.88-12.58	-10.28-9.65	-7.93-7.57	-10.78-11.51	-11.71-13.43	-14.88-15.11	-12.41-10.34	-13.36-13.34
(H157)	5.12-6.65	-6.30-6.18	-11.70-14.08	-15.80-15.67	-13.07-13.05	-12.31-13.12	-10.71-9.66	-9.78-12.39	-11.10-13.56	-15.12-10.30	-11.11-12.07	-12.32-12.91	-10.82-8.68	-7.60-9.80	-10.78-9.86	-11.50-15.61	-14.27-10.53	-9.60-9.18	-12.46-15.96	-13.18-10.53	-11.04-9.39	-8.83-8.08	-6.81-6.28	-7.91-9.83
(H165)	-10.45-15.81	-14.90-12.79	-11.15-9.93	-10.44-9.92	-8.94-7.22	-6.21-7.25	-2.85-6.91	-9.15-8.67	-11.57-10.39	-11.64-10.80	-14.03-10.53	-9.40-12.55	-8.44-10.22	-11.88-13.36	-14.48-13.95	-14.11-12.58	-12.27-10.37	-11.92-12.71	-11.40-13.45	-12.74-12.82	-12.60-12.88	-8.81-8.20	-7.19-8.63	-7.19-8.63
(H172)	5.12-6.65	-7.51-8.39	-8.56-10.26	-10.44-10.26	-8.83-9.76	-10.68-11.95	-12.49-12.55	-10.75-10.40	-10.57-11.68	-10.75-10.64	-15.27-11.61	-13.80-11.93	-11.21-11.45	-11.91-15.40	-15.80									

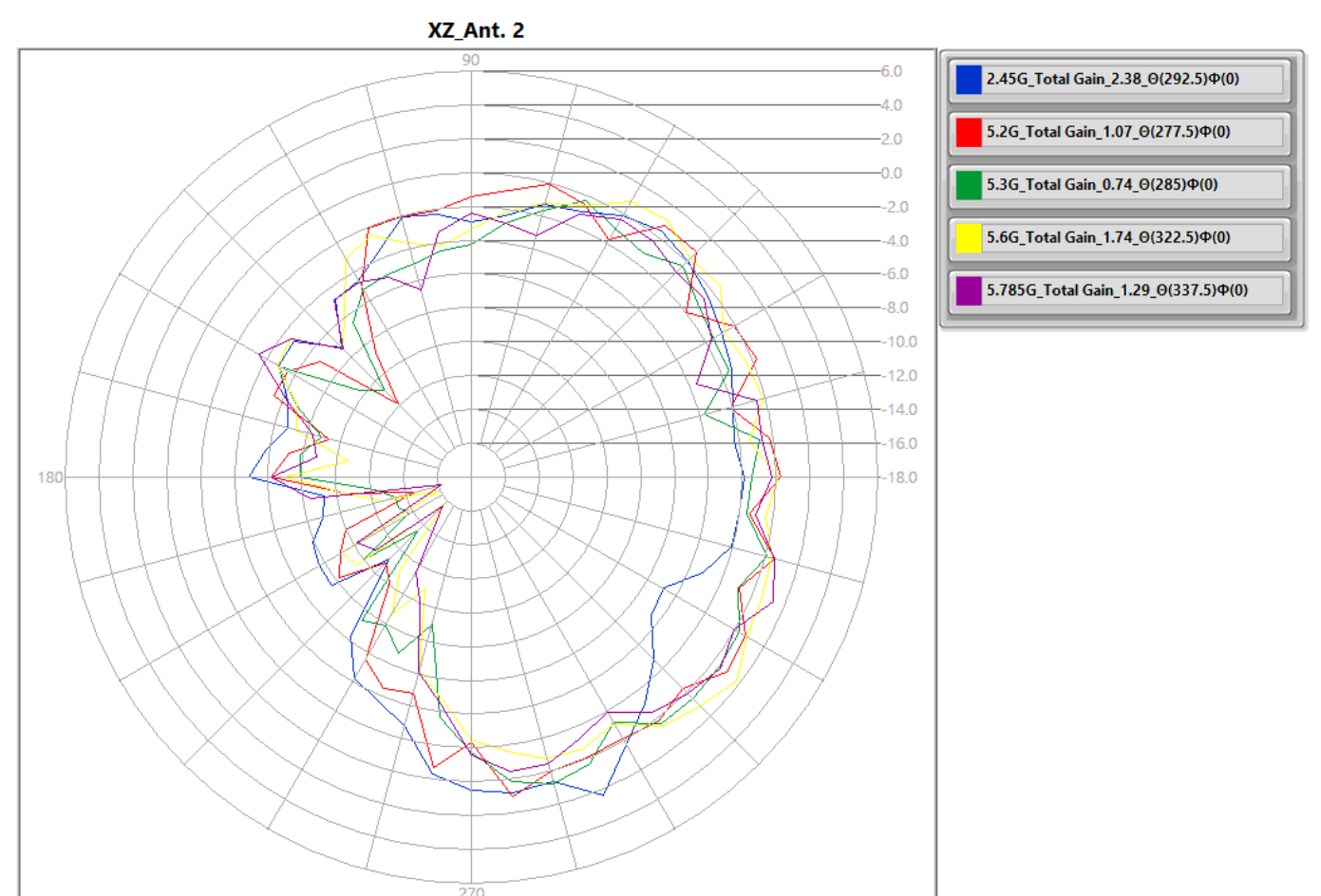
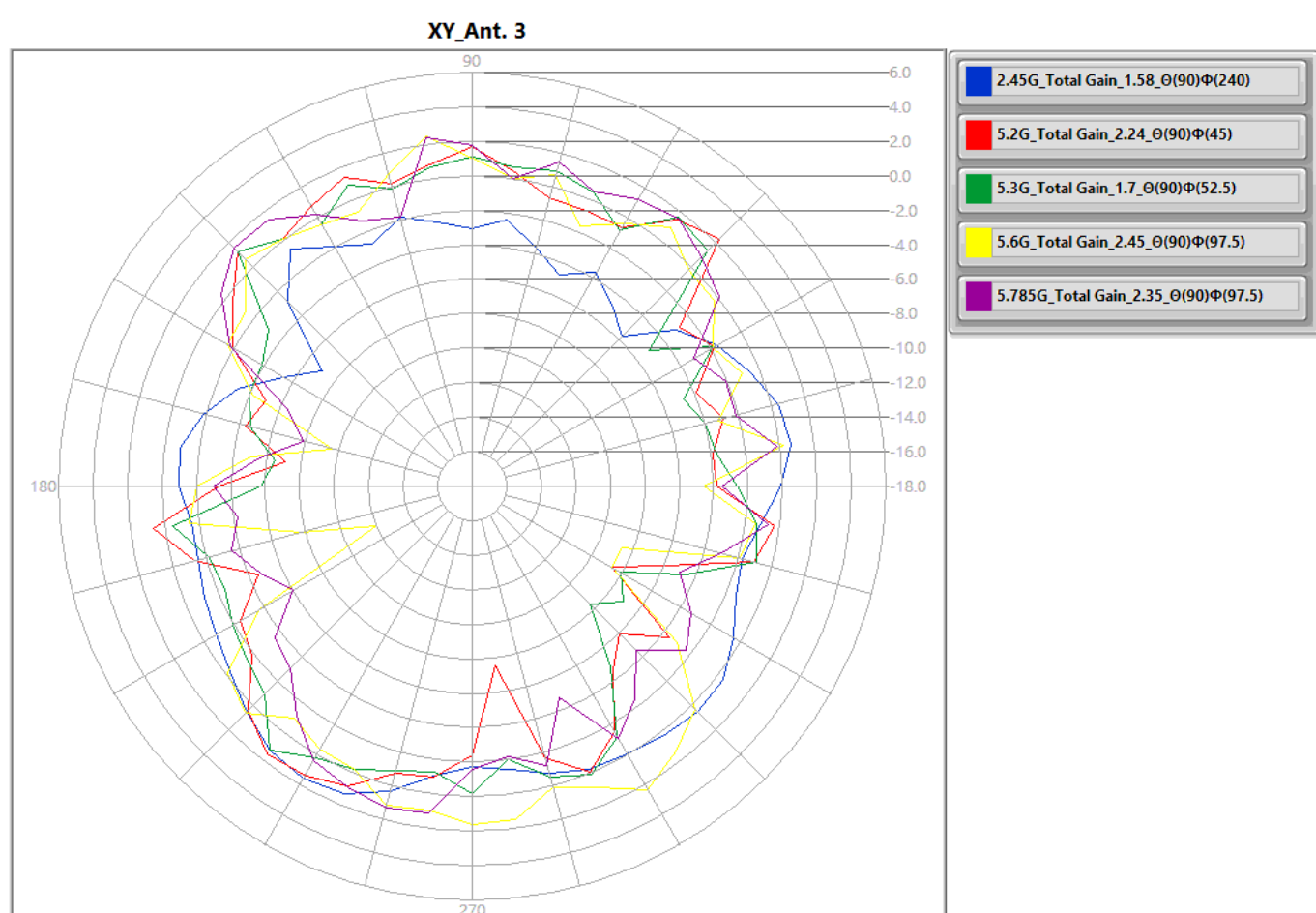
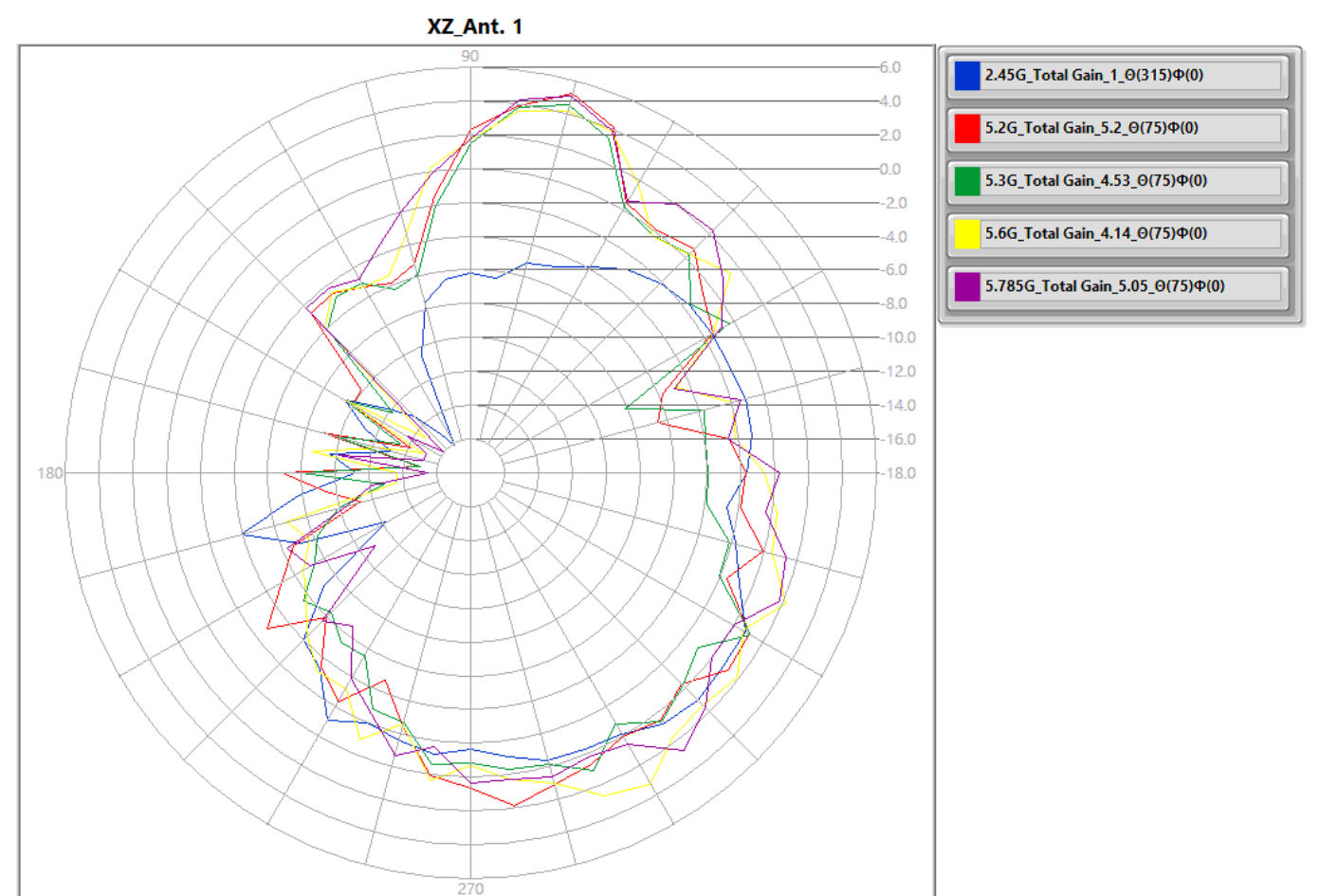
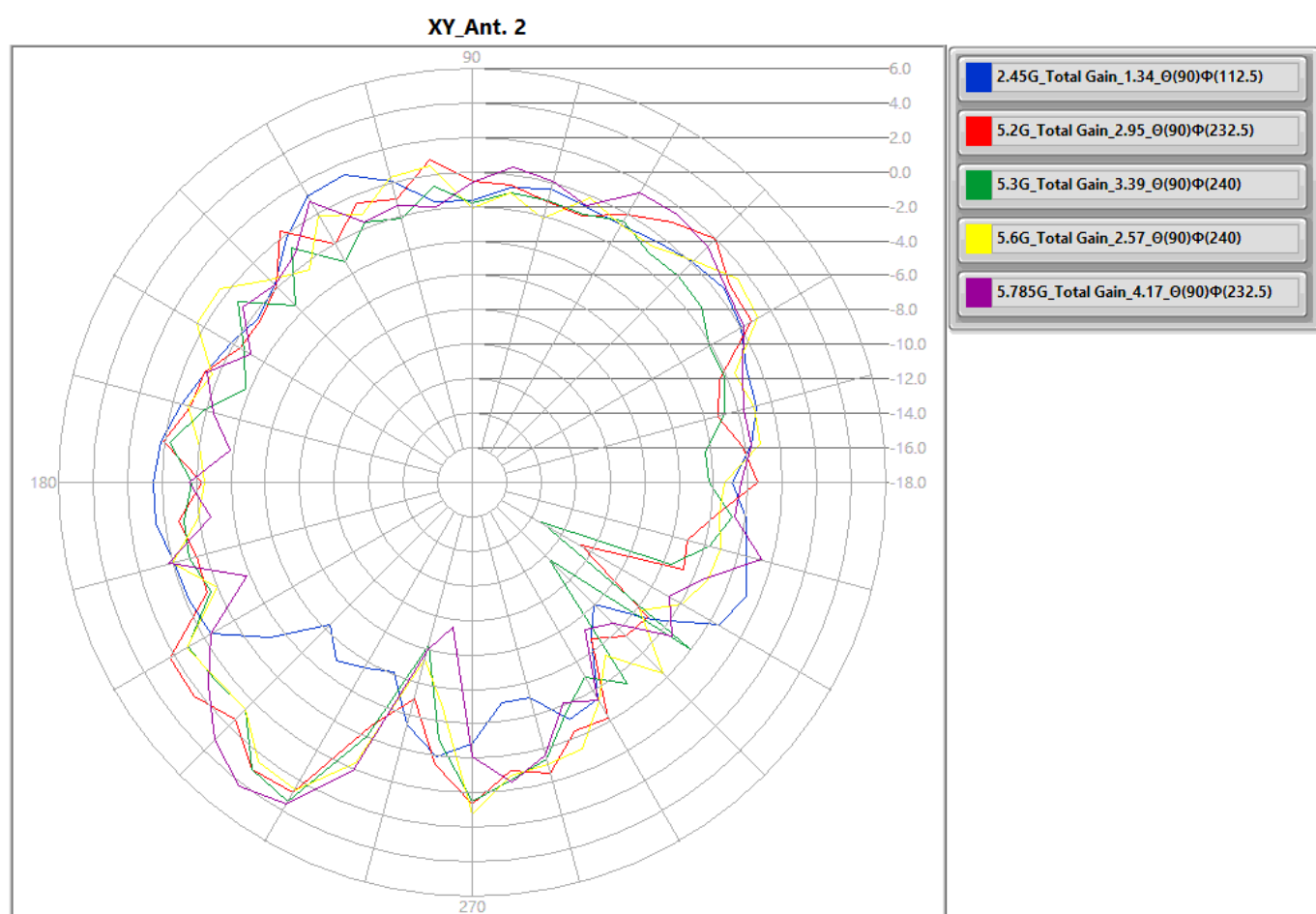
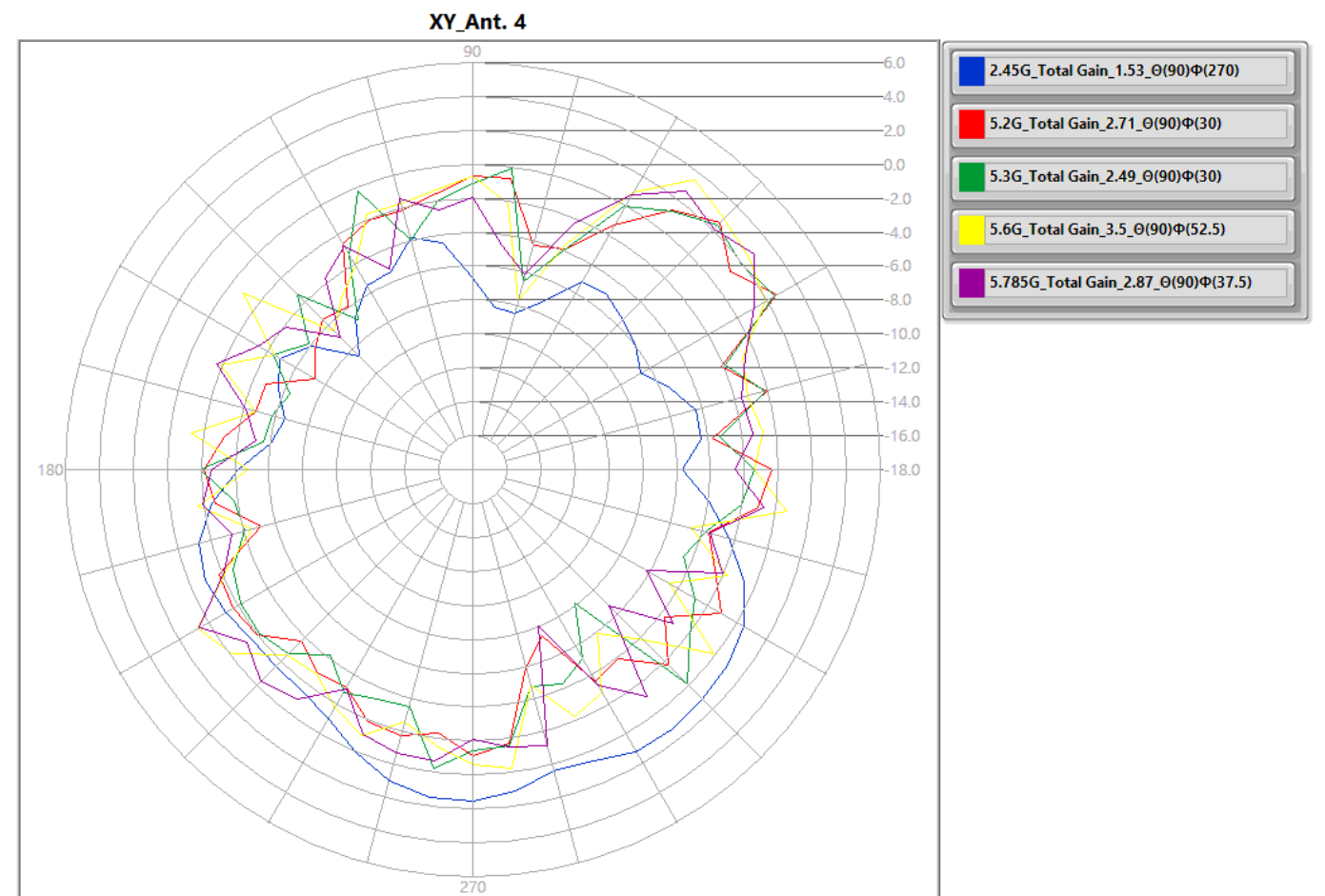
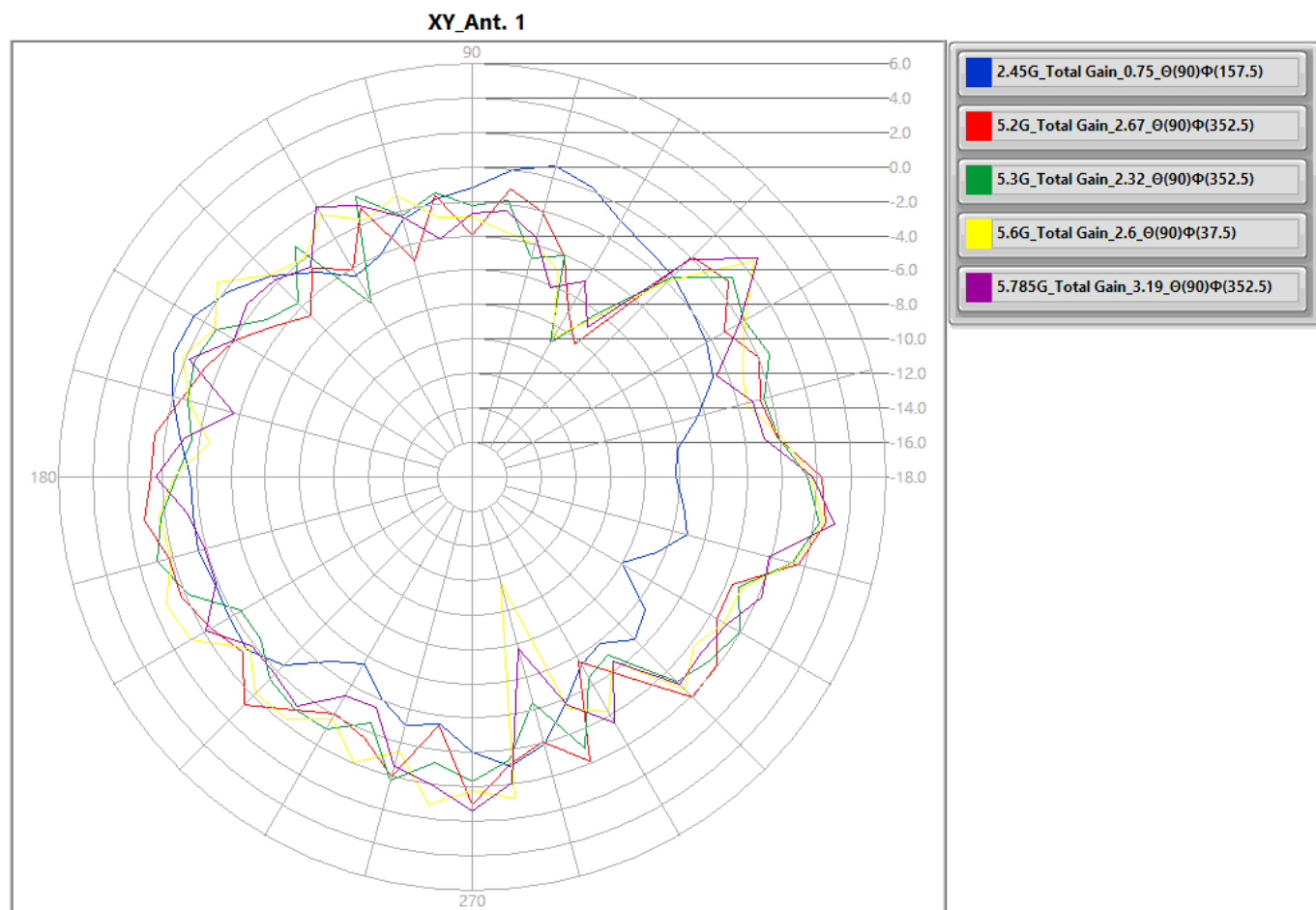


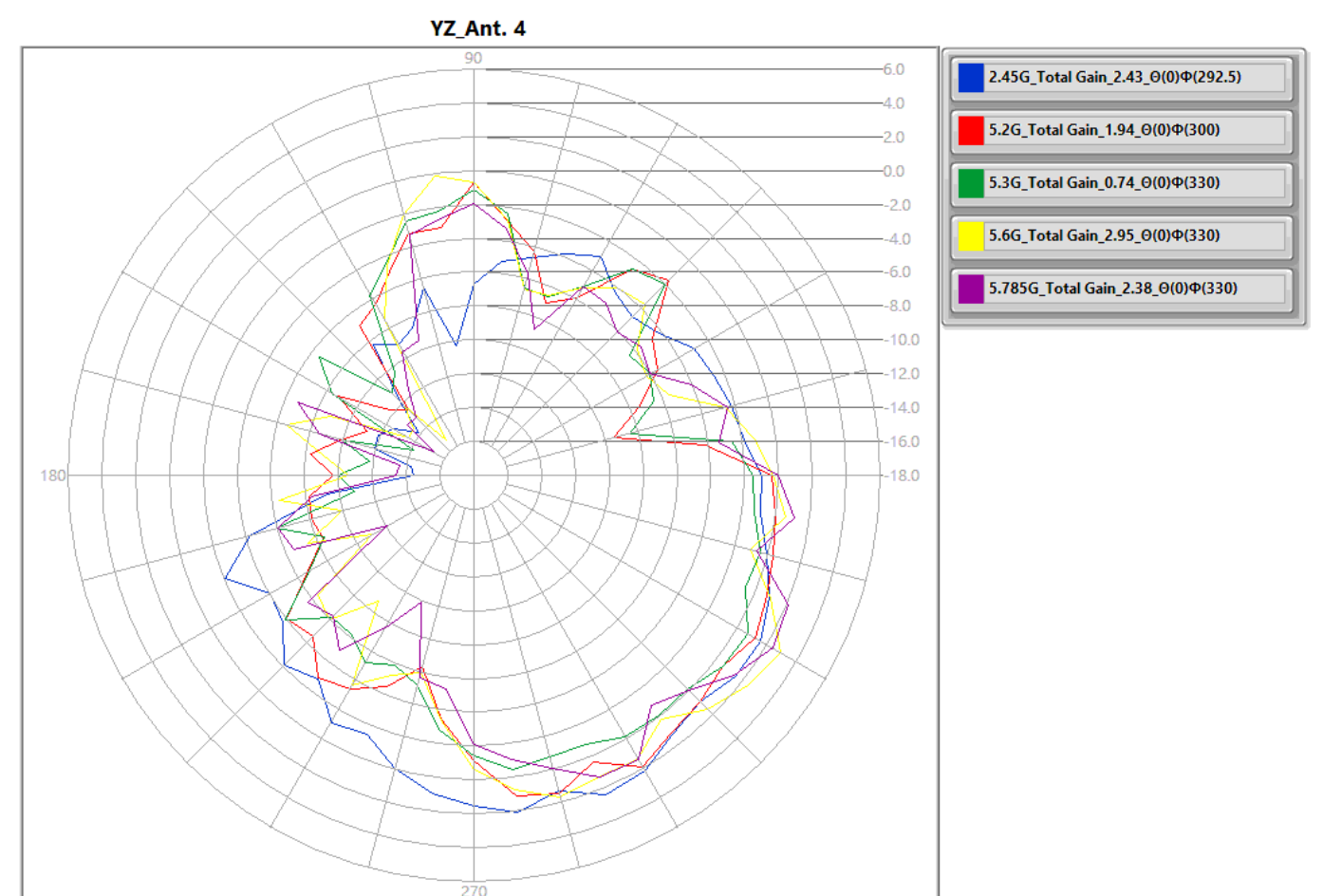
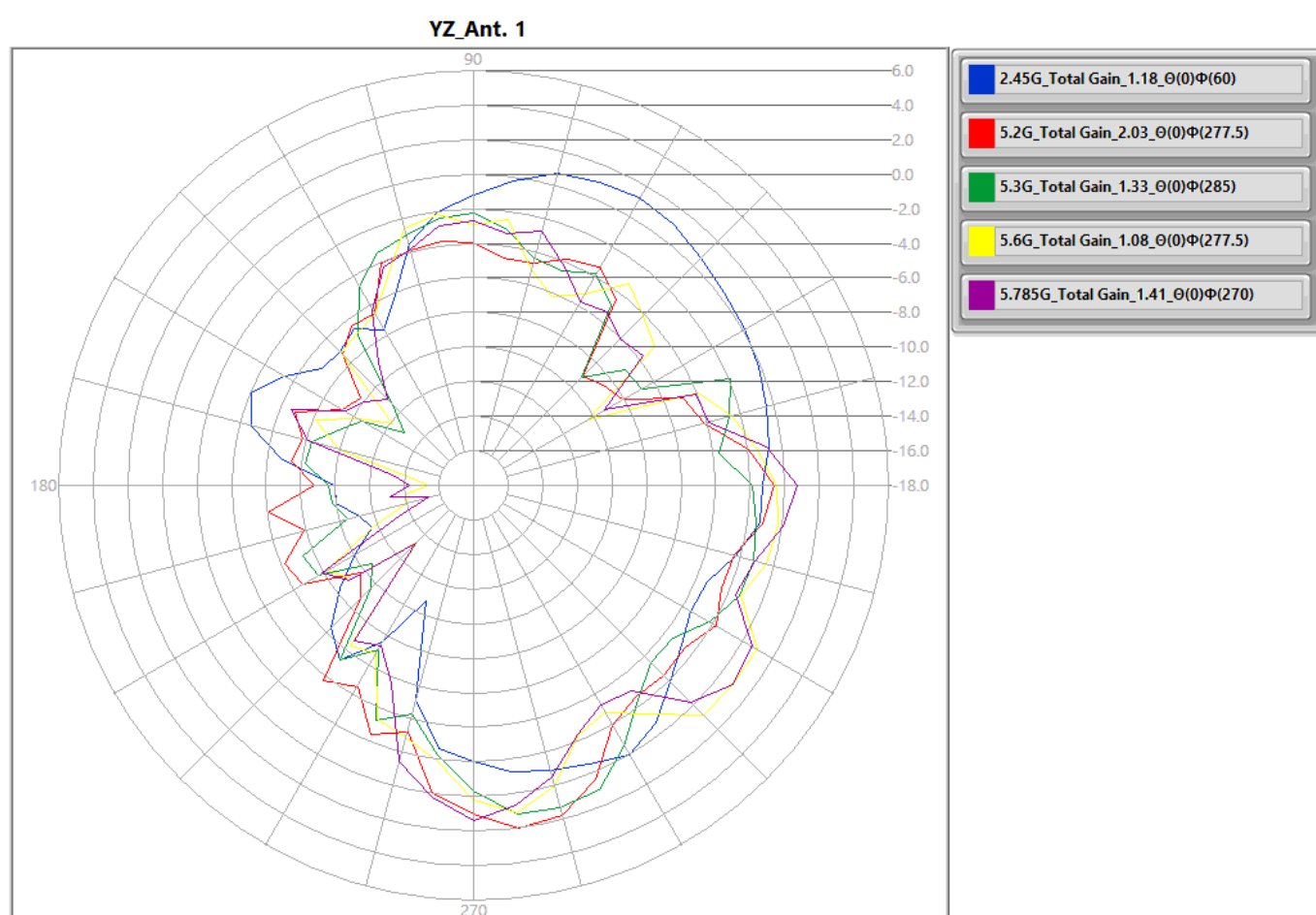
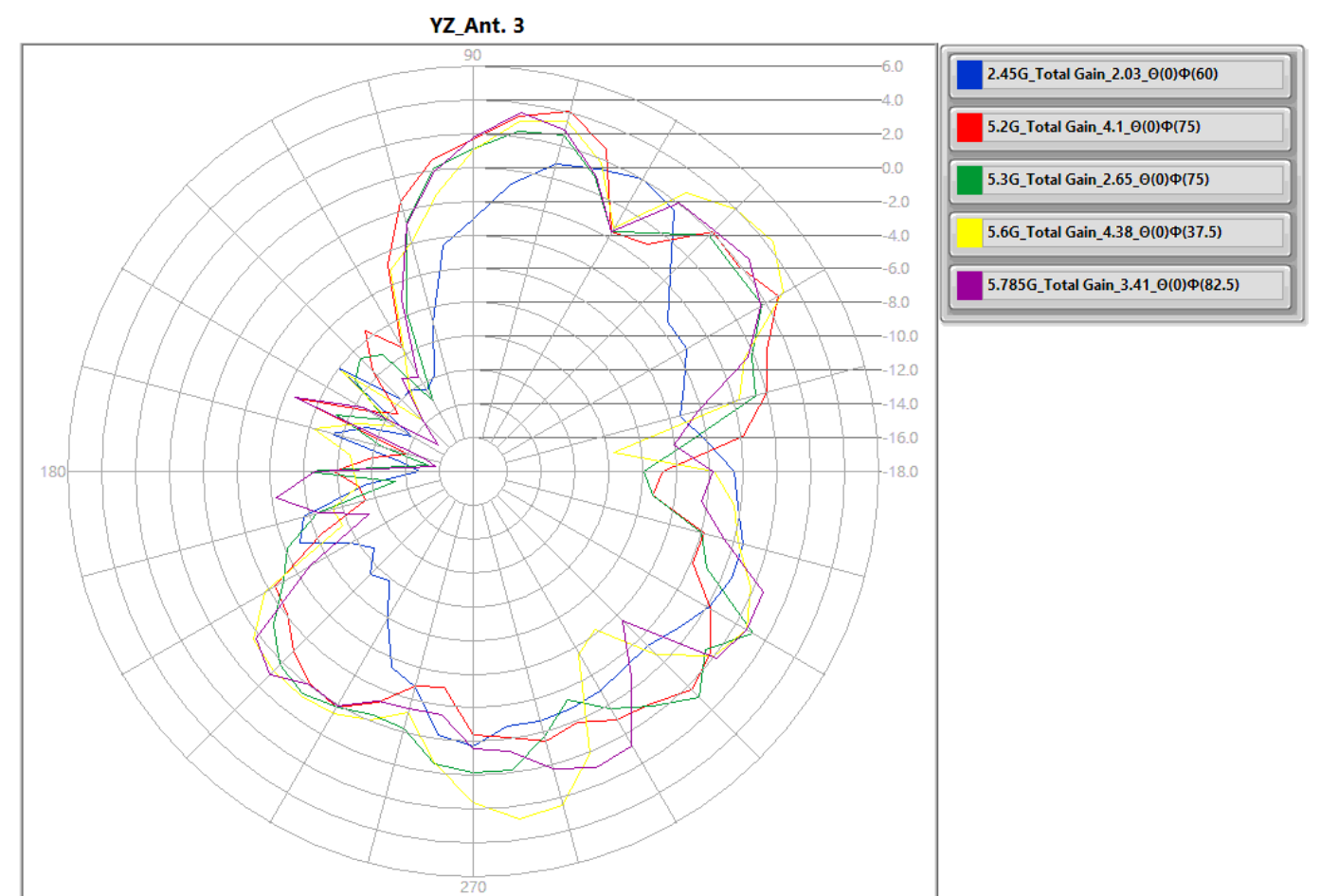
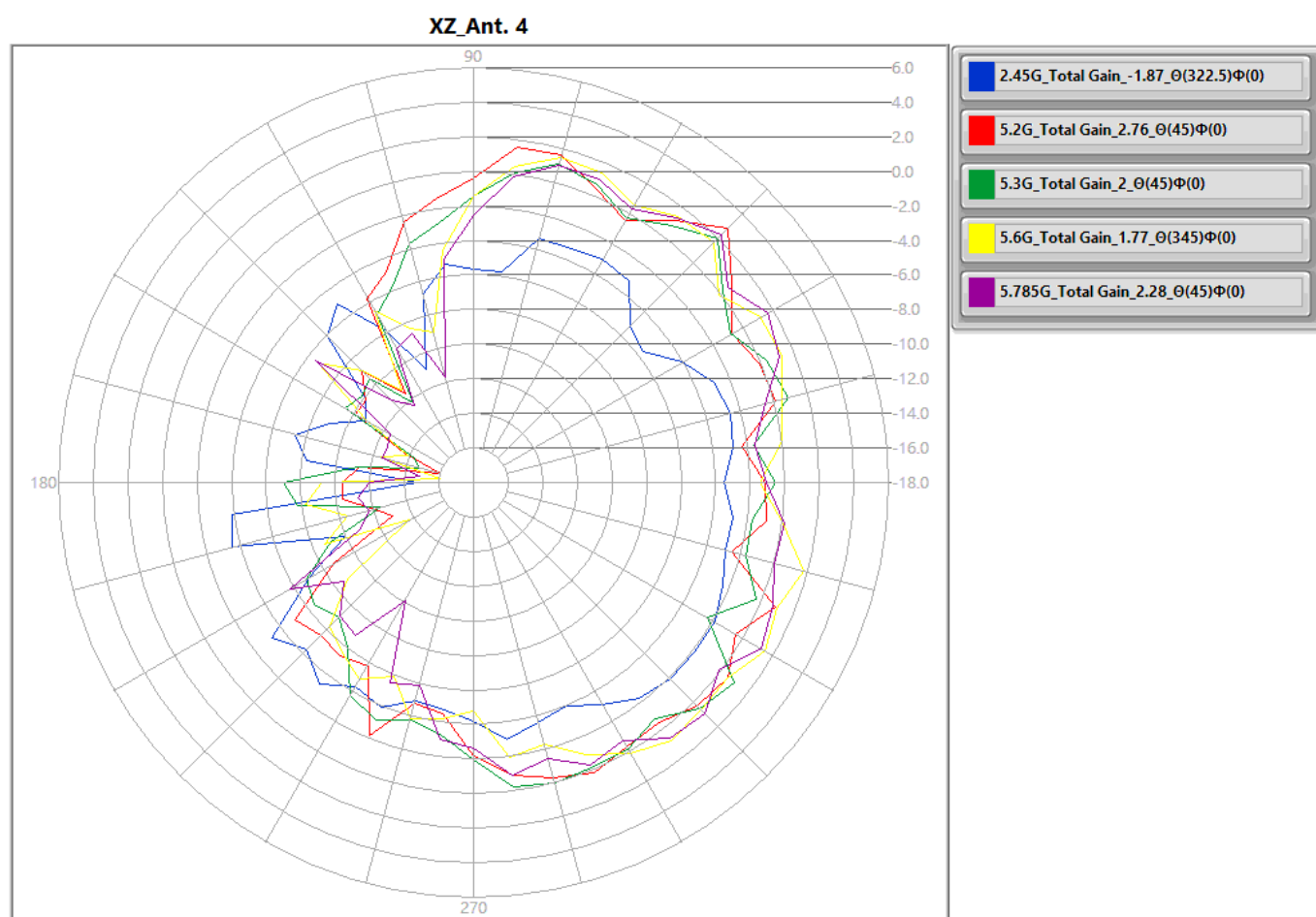
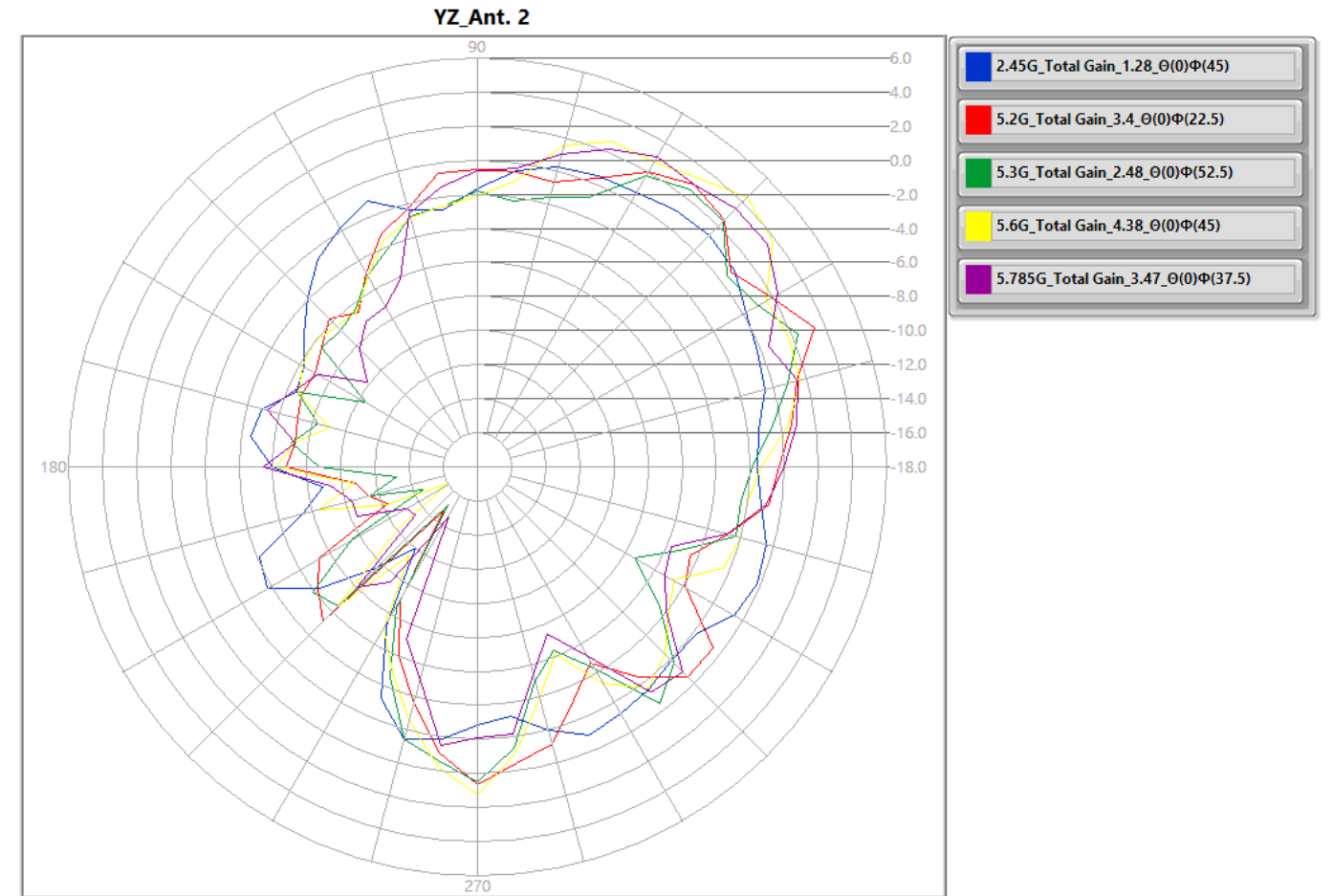
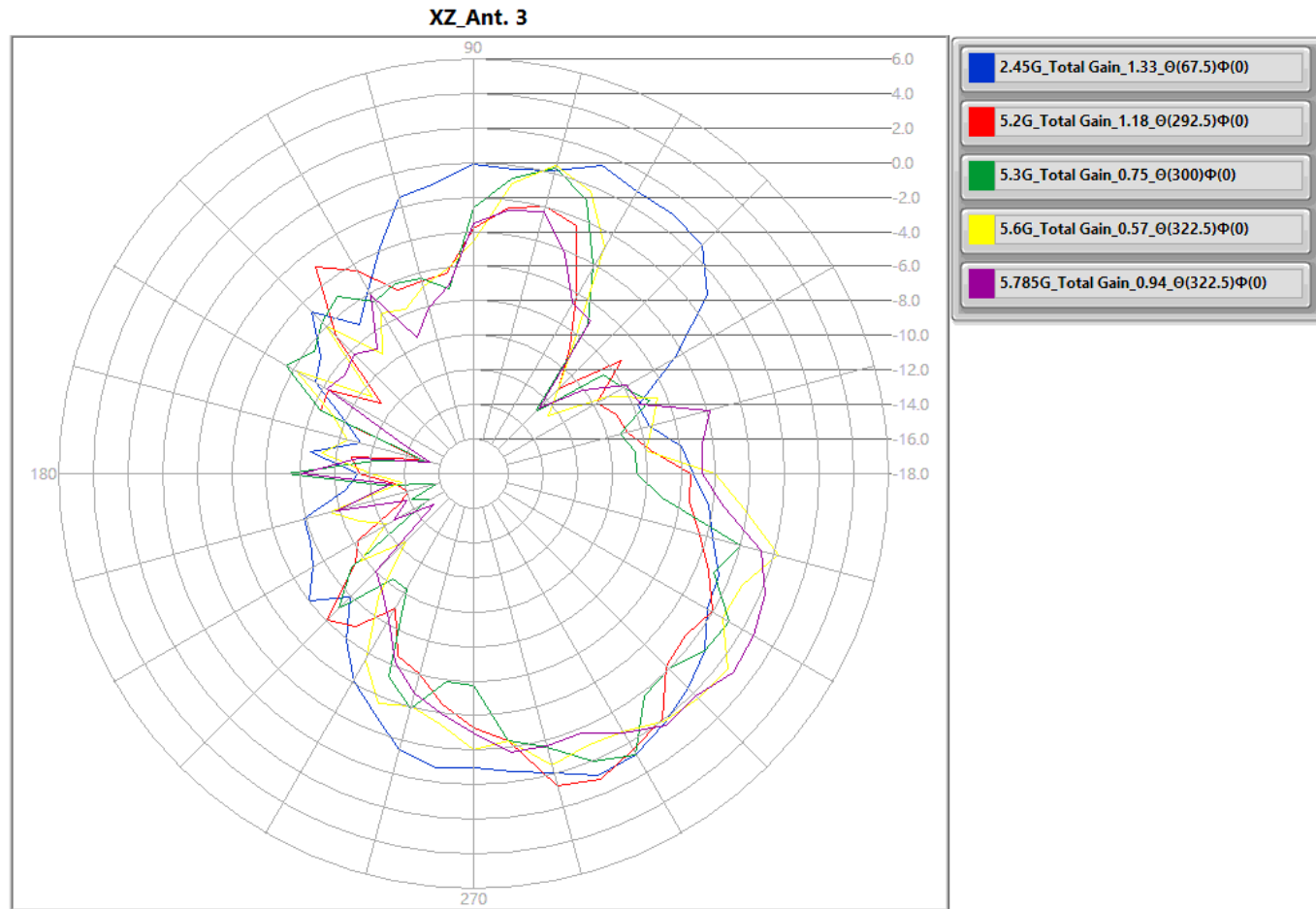
Antenna Pattern of 2.4GHz/5GHz

Appendix B.1

φ(165°)	-15.80/-13.99	-13.09/-12.35	-13.32/-12.45	-8.24/-5.71	-8.06/-9.49	-11.67/-11.49	-8.88/-8.84	-4.94/-7.32	-8.95/-9.07	-7.92/-8.47	-6.16/-11.26	-12.19/-11.07	-12.10/-12.28	-9.99/-8.34	-8.51/-8.17	-7.80/-8.58	-9.98/-9.92	-8.22/-8.75	-8.04/-8.23	-11.09/-12.19	-12.04/-11.58	-11.99/-12.81	-11.88/-12.99	-13.79/-15.76
φ(172.5°)	-11.32/-11.01	-11.22/-11.17	-10.25/-10.38	-14.06/-11.19	-10.25/-10.48	-8.74/-8.14	-4.23/-8.76	-9.49/-9.96	-11.89/-12.36	-13.87/-14.14	-14.55/-13.69	-11.79/-10.62	-10.33/-10.01	-8.32/-8.12	-6.74/-8.44	-4.38/-9.80	-8.28/-7.51	-7.19/-7.23	-8.16/-9.89	-12.12/-12.76	-13.47/-13.54	-14.03/-14.88	-13.84/-12.46	-11.29/-11.26
φ(180°)	-10.40/-9.80	-9.59/-9.66	-8.69/-8.66	-6.19/-10.30	-10.15/-10.12	-8.64/-8.16	-6.69/-8.86	-6.69/-9.54	-8.91/-8.41	-8.52/-8.17	-7.90/-7.72	-7.59/-8.02	-8.77/-8.82	-7.22/-6.85	-7.35/-7.92	-8.17/-7.86	-8.04/-8.13	-8.70/-8.14	-11.27/-10.65	-10.14/-10.22	-11.06/-11.37	-11.14/-11.07	-11.69/-12.67	-12.36/-10.83
Freq(Hz)	5.35GHz	Total Loss		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	φ(7°)φ(27.5°)	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°)
φ(7°)	0.54/-0.95	-1.02/-1.18	-1.39/-1.55	-1.51/-1.44	-1.69/-2.06	2.09/-1.94	-1.52/-1.20	-1.16/-1.21	-1.24/-1.23	0.98/-0.95	0.88/-0.85	0.80/-1.15	-1.14/-1.63	-1.88/-1.64	-1.51/-2.39	2.65/-2.68	-2.80/-2.74	-2.56/-2.27	-2.26/-1.92	-1.47/-1.07	0.88/-0.85	0.71/-0.31	-0.33/-0.72	0.90/-0.61
φ(7.5°)	-1.64/-1.88	-2.47/-2.89	3.41/-4.08	-4.78/-4.53	-4.82/-4.91	4.35/-3.67	-2.67/-1.90	-1.63/-1.39	-1.03/-0.75	0.64/-1.06	-1.23/-1.21	-1.34/-1.54	-1.72/-2.18	-2.65/-2.35	-2.32/-2.56	2.43/-2.06	-2.33/-2.15	-1.78/-1.55	-1.28/-1.07	0.86/-0.91	0.46/-0.89	-1.02/-0.95	-1.33/-1.72	2.65/-2.00
φ(8°)	0.84/-1.4	0.94/-0.9	0.34/-0.22	-0.64/-1.44	-2.98/-6.16	-7.37/-8.20	-8.45/-8.40	-7.16/-5.26	-3.90/-2.65	-2.69/-3.41	-0.11/-0.32	-3.33/-2.49	-1.70/-1.18	-0.97/-0.99	-1.04/-1.17	-1.45/-1.23	-1.22/-1.07	-0.62/-0.45	-0.46/-0.13	0.20/-0.45	0.59/-0.29	0.06/-0.21	-1.00/-1.40	-0.55/-0.10
φ(22.5°)	0.37/-1.34	-2.97/-3.87	-4.87/-4.59	-3.08/-1.46	-1.20/-2.45	-4.03/-4.73	-5.20/-5.62	-7.80/-7.34	-6.80/-5.95	-7.00/-6.85	-5.51/-7.10	-4.70/-2.68	-3.53/-1.19	-1.25/-0.81	-0.81/-0.81	-0.83/-0.98	-1.60/-2.03	-1.00/-1.16	-0.64/-0.94	0.37/-0.98	1.07/-1.17	0.88/-1.14	-0.88/-0.58	0.42/-0.76
φ(25°)	0.89/-0.91	0.66/-0.76	0.67/-0.5	0.71/-0.11	-1.80/-2.99	3.16/-3.98	0.01/-0.41	0.60/-0.46	0.65/-0.42	0.46/-0.61	0.55/-0.27	-1.57/-0.89	-2.40/-1.94	-0.70/-0.31	0.72/-0.07	0.27/-0.78	0.33/-0.94	1.38/-1.17	0.74/-0.32	1.46/-0.94	0.91/-1.18	1.79/-2.25	-0.67/-0.94	0.44/-0.75
φ(27.5°)	0.27/-1.54	1.42/-0.94	1.65/-0.98	1.94/-1.19	0.77/-0.81	-4.25/-6.30	0.35/-0.74	0.88/-0.93	0.22/-0.72	0.95/-0.69	0.48/-0.37	0.54/-0.58	0.98/-0.96	0.71/-0.44	0.23/-0.11	0.63/-0.42	0.75/-0.89	1.22/-0.91	1.45/-1.43	0.97/-0.93	1.75/-0.28	0.71/-1.10	-0.36/-1.47	-0.26/-1.27
φ(30°)	0.002/-0.74	1.43/-0.59	1.37/-0.22	0.90/-1.38	1.73/-0.96	-1.52/-0.71	-2.04/-0.58	-4.46/-3.82	-8.57/-5.85	-7.08/-7.16	-6.06/-4.92	-7.35/-7.42	-3.78/-0.08	0.46/-0.10	-1.35/-1.11	-0.31/-0.60	1.45/-0.87	1.09/-0.92	-0.61/-0.56	-1.19/-0.92	0.92/-0.91	0.52/-0.71	0.91/-0.40	1.04/-0.60
φ(32.5°)	0.74/-2.23	2.09/-1.74	2.42/-2.37	2.40/-2.96	2.49/-1.96	0.01/-0.38	0.27/-0.58	-0.46/-3.82	-8.46/-3.82	-8.57/-5.85	-7.08/-7.16	-6.06/-4.92	-7.35/-7.42	-3.78/-0.08	0.46/-0.10	-1.35/-1.11	-0.31/-0.60	1.45/-0.87	1.09/-0.92	-0.61/-0.56	-1.19/-0.92	0.92/-0.91	0.52/-0.71	0.91/-0.40
φ(35°)	-0.28/-0.78	2.17/-1.77	1.81/-1.40	0.46/-0.38	-0.40/-1.00	0.07/-0.78	-1.11/-0.37	-10.14/-3.35	-5.15/-5.35	-8.26/-6.42	-6.94/-6.06	-2.74/-0.43	-16.10/-32	-0.93/-1.36	-0.31/-0.98	0.75/-0.32	-0.92/-0.38	-1.38/-1.45	-1.03/-1.01	-2.70/-4.00	0.49/-0.65	0.84/-1.38	-0.15/-0.29	0.28/-0.16
φ(37.5°)	0.62/-0.67	1.59/-1.91	3.65/-0.65	2.94/-2.00	0.67/-1.19	-0.60/-3.78	4.60/-4.72	-10.53/-4.45	-5.25/-3.77	-8.57/-6.21	-6.34/-5.45	-3.14/-1.68	-0.11/-0.23	-2.98/-2.55	-1.26/-0.33	0.05/-1.54	-0.69/-1.28	-0.83/-0.95	-0.75/-0.02	-1.74/-4.22	-1.67/-1.34	-2.07/-0.45	-1.96/-0.60	0.43/-0.00
φ(40°)	1.14/-0.33	-0.19/-1.91	2.49/-1.93	2.39/-1.23	-0.19/-3.84	-3.90/-5.08	-1.12/-0.21	-0.03/-0.24	-3.84/-4.85	-3.37/-5.79	-4.42/-6.32	-5.71/-6.57	-1.97/-3.81	-4.11/-2.70	-2.19/-2.14	2.66/-4.26	-0.83/-3.33	-3.52/-0.24	-1.43/-1.82	-4.75/-4.31	-5.14/-6.07	-0.18/-1.91	0.89/-4.59	-3.79/-0.20
φ(42.5°)	0.09/-1.34	-0.30/-0.71	4.67/-0.49	3.78/-0.18	-0.13/-3.84	-3.90/-5.05	-1.23/-0.17	-0.69/-0.57	-4.60/-4.44	-4.30/-5.12	-5.12/-6.63	-6.83/-6.05	-0.22/-0.48	-2.25/-2.55	-0.65/-0.42	2.36/-2.92	-0.22/-2.65	-0.99/-0.63	-0.49/-0.72	-2.17/-3.17	-4.71/-4.64	1.01/-0.19	-1.32/-0.47	-0.42/-0.30
φ(45°)	-0.84/-0.98	-1.66/-4.75	0.06/-0.69	0.25/-2.32	-0.91/-4.05	4.69/-4.03	2.28/-2.95	-0.96/-1.17	-4.47/-1.75	-4.07/-5.30	-3.89/-2.09	-4.89/-5.11	-3.26/-5.08	-4.44/-5.72	-3.63/-2.62	4.48/-5.00	-0.62/-0.43	-0.08/-2.79	-2.81/-3.85	-0.13/-6.64	-5.04/-12.94	-3.42/-6.70	-3.79/-7.35	-7.62/-6.44
φ(47.5°)	-0.70/-0.93	-0.43/-0.33	-0.49/-3.47	-1.42/-3.17	-2.81/-5.08	4.61/-2.91	-2.64/-3.89	-4.50/-7.56	6.26/-5.67	6.81/-6.51	-0.09/-0.66	-3.79/-3.85	-4.13/-3.95	-5.09/-3.55	-3.82/-4.92	-0.83/-4.62	-0.56/-2.42	-1.16/-3.77	-10.31/-10.71	-7.67/-11.40	-4.56/-12.78	-7.78/-13.74	-10.62/-6.06	
φ(112.5°)	6.72/-0.54	-5.89/-8.94	-4.18/-1.26	-1.98/-1.38	-7.49/-7.99	-10.56/-4.43	-4.45/-4.19	-5.14/-6.95	-5.92/-7.92	-5.62/-6.83	-1.39/-6.68	-0.65/-6.13	-3.16/-5.40	-4.69/-5.68	-7.05/-4.18	3.92/-4.61	-5.42/-6.75	-5.61/-6.73	-5.65/-7.49	-10.48/-13.55	-11.49/-10.48	0.87/-1.19	-10.51/-11.5	0.56/-0.22
φ(120°)	4.79/-8.68	-11.83/-12.69	8.28/-5.20	-1.99/-2.15	-8.90/-8.68	-2.77/-5.80	-5.72/-10.02	-6.39/-7.67	-7.38/-6.55	-6.02/-7.48	-7.04/-11.30	-7.10/-6.72	-3.63/-8.86	-5.01/-3.94	-5.62/-5.99	5.61/-6.39	-5.94/-5.98	-5.24/-5.99	-8.87/-10.70	-11.63/-9.85	-11.02/-13.36	-10.71/-10.85	-9.86/-11.75	
φ(127.5°)	-12.24/-8.52	-14.52/-14.10	-10.28/-6.02	-3.35/-4.97	-1.90/-11.65	-6.79/-13.21	-10.33/-13.87	-12.15/-12.82	-7.34/-9.79	9.47/-8.94	8.62/-8.24	-6.27/-7.32	-0.64/-6.36	-6.07/-5.74	-9.04/-8.38	-7.45/-9.48	-10.37/-6.86	-5.35/-6.35	-6.13/-6.87	-7.71/-10.24	-11.91/-11.58	-6.73/-10.36	-15.48/-11.49	-6.45/-12.46
φ(135°)	-0.56/-7.03	-11.12/-7.64	4.76/-3.77	6.91/-12.82	-9.77/-8.61	-12.46/-10.36	-11.20/-13.99	-8.90/-10.47	-9.32/-8.93	-10.87/-8.87	8.84/-5.08	-5.47/-6.35	-8.62/-6.97	-4.70/-4.17	-6.83/-10.96	-5.94/-7.15	-4.27/-6.03	-2.77/-6.12	-7.08/-12.16	-8.89/-8.89	8.47/-9.22	-10.31/-10.71		
φ(142.5°)	-8.63/-8.34	-7.07/-0.72	-10.43/-6.61	-14.82/-15.68	-10.96/-12.46	-8.22/-4.84	6.51/-14.55	-12.53/-13.96	-8.75/-7.38	-11.79/-9.38	-8.65/-8.23	-7.35/-6.92	6.36/-4.51	-7.07/-6.02	-5.19/-4.75	6.93/-10.48	-10.83/-7.76	-7.89/-6.46	-3.96/-2.34	-9.59/-15.09	-11.34/-10.93	-8.44/-5.52	-6.87/-10.77	-15.40/-8.35
φ(150°)	-5.99/-6.02	-6.64/-6.75	8.73/-9.11	-10.93/-11.98	-6.45/-10.11	-10.35/-6.82	-8.32/-14.82	-8.59/-10.39	-13.71/-9.52	-9.64/-6.52	-7.94/-10.99	-10.28/-8.63	-6.88/-6.02	-8.82/-8.84	-8.32/-7.96	-10.22/-12.83	-12.74/-8.88	-8.33/-8.20	-6.74/-6.93	-8.15/-14.87	-15.35/-13.21	-10.67/-11.68	-10.60/-10.05	-12.79/-11.63
φ(157.5°)	-14.29/-12.16	-10.49/-9.27	9.98/-10.99	-12.33/-11.53	-10.16/-10.60	-7.46/-9.44	-14.16/-14.62	-6.22/-6.63	7.91/-6.75	-11.47/-15.76	-10.59/-12.58	-10.59/-9.91	-9.80/-7.95	-8.49/-6.98	-8.65/-8.27	8.99/-9.30	-9.91/-1.98	-13.74/-9.55	-8.41/-6.68	-13.73/-13.97	-10.98/-9.37	-7.63/-10.90	-15.52/-16.22	
φ(165°)	-14.76/-13.18	-10.79/-9.65	10.02/-12.31	-10.87/-8.42	-7.71/-10.58	-9.16/-10.63	9.82/-8.90	9.24/-9.73	6.61/-7.24	-6.82/-5.67	4.96/-6.72	-11.48/-12.31	-12.42/-13.59	-9.72/-9.41	9.94/-10.34	10.98/-9.29	-7.28/-9.27	-5.91/-7.17	-10.48/-14.10	-15.29/-11.98	-16.15/-9.88	-8.78/-11.90	-15.17/-11.28	
φ(172.5°)	-11.28/-9.71	8.79/-11.45	13.68/-14.26	-15.68/-14.82	-13.68/-13.16	9.15/-13.20	-11.78/-11.77	-12.14/-12.52	-12.88/-13.98	-10.61/-12.55	-11.71/-10.82	9.89/-8.74	7.74/-7.87	8.62/-8.25	-9.37/-9.74	9.64/-8.69	8.91/-8.17	-9.88/-10.34	-10.89/-11.59	-13.71/-11.53	-11.61/-11.57	-12.01/-11.95	-12.03/-12.07	-12.55/-10.67
φ(180°)	-7.01/-6.49	-6.02/-6.47	-7.29/-7.85	-7.69/-7.07	-7.24/-8.08	-8.70/-9.33	-9.59/-9.61	-8.99/-9.23	-8.48/-8.39	-7.49/-7.44	7.47/-7.71	7.19/-7.21	-6.78/-6.77	-7.05/-6.75	-6.82/-6.85	7.22/-7.27	7.69/-6.08	-8.59/-9.35	-9.23/-9.30	-8.85/-8.56	-7.24/-7.84	-7.85/-7.94	-8.16/-8.30	-7.98/-7.52
Freq(Hz)	5.95GHz	Total Loss		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	φ(7°)φ(27.5°)	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°)
φ(7°)	-1.46/-1.57	-0.98/-1.15	-1.14/-0.86	-0.79/-0.88	-0.46/-0.21	0.13/-0.05	0.29/-0.01	0.24/-0.03	0.08/-0.10	0.03/-0.11	0.11/-0.06	0.16/-0.84	0.41/-0.03	0.03/-0.06	-0.25/-0.55	0.31/-1.36	-0.63/-0.53	-0.25/-0.32	-0.40/-0.33	-0.63/-0.84	-0.62/-0.53	-0.76/-1.28	-1.23/-1.68	-1.07/-0.88
φ(7.5°)	-0.40/-0.57	-0.53/-0.41	-0.09/-0.53	-0.27/-0.52	-0.95/-0.98	-0.67/-0.62	-1.28/-1.33	-1.54/-2.07	-1.78/-1.80	-1.74/-1.46	-1.18/-0.78	-0.44/-0.16	0.05/-0.27	-0.04/-0.04	0.16/-0.56	0.24/-0.04	0.33/-0.71	0.61/-0.25	0.61/-0.78	0.80/-0.88	0.98/-0.82	0.63/-0.56	0.00/-0.25	0.77/-0.35
φ(8°)	0.25/-0.29	0.02/-0.57	-1.31/-1.21	-1.36/-0.43	-0.66/-5.37	-1.40/-1.37	-2.61/-2.16	-2.69/-3.94	-5.06/-2.40	-1.14/-1.14	-1.36/-0.02	0.65/-1.24	1.19/-1.73	1.86/-1.66	1.14/-0.68	-1.01/-0.80	-1.19/-1.36	-1.07/-0.42	-0.77/-0.07	1.20/-1.12	-0.25/-0.47	1.20/-0.19	1.36/-0.96	
φ(22.5°)	1.30/-0.92	0.36/-1.07	0.03/-0.08	-0.58/-0.49	-1.58/-2.70	5.05/-6.48	5.53/-3.94	-3.58/-3.57	-7.72/-8.04	-4.60/-2.79	1.76/-1.31	-0.97/-1.02	0.98/-1.30	0.70/-0.48	0.85/-1.07	1.29/-1.68	1.86/-1.63	1.62/-1.44						

E1(XY plane) – $\Theta(90)\Phi(0-360)$
E2(XZ plane) – $\Theta(0-180)\Phi(0)$ and $\Theta(0-180)\Phi(180)$
E3(YZ plane) – $\Theta(0-180)\Phi(90)$ and $\Theta(0-180)\Phi(270)$







Antenna Pattern of 6GHz

Appendix B.2

(H10°)	5.02032	3.09308	3.23938	3.50375	3.71050	3.20292	2.60234	2.42270	2.60201	1.91026	3.26925	3.32929	3.15023	3.45086	3.84367	3.01235	1.64680	0.36050	1.19181	2.14251	3.06322	3.18037	3.29915	3.07011
(H22.5°)	3.69376	3.90411	4.45648	4.79478	4.27045	2.89263	2.30201	3.37037	3.48033	4.06463	4.43948	4.76402	3.18328	4.08463	5.06531	5.06482	4.31929	2.42233	2.85359	4.04389	3.57378	4.10405	4.17734	3.96377
(H37.5°)	4.78451	4.25934	4.42647	4.80489	4.06265	1.83232	3.30551	2.90215	2.14221	2.04273	3.64542	2.83218	1.559169	2.05501	4.74561	5.26479	3.87274	1.93163	2.28692	3.37035	3.23048	3.99472	4.48406	4.92055
(H45°)	3.31437	4.45298	1.92048	2.30355	3.56033	2.65186	2.71244	2.34190	1.66164	1.46187	2.89267	1.98136	0.70290	1.60213	3.21930	3.20128	2.80232	2.25196	1.62017	2.32027	3.19336	2.85326	3.82342	2.67268
(H52.5°)	6.45438	3.35015	0.27842	1.42106	0.78333	3.41141	-0.14016	1.46196	0.80117	-1.59707	0.96266	2.76170	0.077120	2.11233	1.35312	3.03236	0.30095	1.28062	1.44122	0.05033	0.44103	0.88133	1.19194	0.84061
(H58°)	-0.98625	0.411123	0.24018	3.15232	0.13143	0.87109	-0.98081	-0.62038	-0.789219	3.841246	0.45132	1.40704	0.280205	0.98024	3.862169	3.21036	1.13039	-0.11166	-0.96135	-3.61073	-0.26407	0.59089	1.61191	0.27128
(H57°)	0.01761	1.29167	0.34081	2.83162	0.73601	-1.46133	-1.69138	-2.359301	3.39738	-1.64618	0.85077	0.28635	0.34269	2.02258	2.88247	1.05530	1.16420	-1.71605	-0.20947	-3.00062	1.34402	1.35129	-0.86924	
(H75°)	-0.12148	0.81115	0.09534	1.56670	0.13084	2.71436	-1.39210	-0.57147	-3.691349	3.035338	3.751296	0.07089	0.02036	0.05117	1.27271	2.27155	0.55504	1.59834	-0.24736	-3.861427	-3.661452	3.642425	-1.861294	
(H82.5°)	-1.69582	4.46528	2.82022	0.89611	-0.03767	3.991349	-1.671245	4.031635	5.655589	4.389338	4.01447	6.52025	-1.13005	-0.17033	0.63002	1.47117	2.480225	1.25810	0.28748	-6.89117	-3.15718	4.25711	-1.51223	-3.795282
(H85°)	4.459239	2.094480	1.559560	-0.259126	0.259143	5.589542	4.793126	5.489195	8.071845	5.584146	4.171243	2.23179	-1.24424	-1.781536	1.536146	0.207183	4.571535	0.221134	0.289468	9.316426	4.420758	5.125352	-4.131978	-5.664172
(H87.5°)	3.241651	3.526509	2.86257	-1.34246	1.529259	6.68634	6.125436	8.371120	10.959191	8.001446	6.811696	3.26194	-2.91237	2.98740	2.76132	2.291554	3.529183	3.24468	11.26436	11.26436	7.23731	7.37921	5.98818	-4.23462
(H105°)	0.533659	4.675255	5.639501	3.89459	4.771484	7.897748	6.93841	4.289124	11.889105	11.726133	9.83170	5.87524	3.87545	4.326102	4.13577	5.72745	7.621749	-4.594846	-13.569140	9.4231108	11.0661179	9.721859	9.989584	-7.63947
(H112.5°)	0.429497	5.167295	7.31943	4.75461	-7.54664	7.81497	-10.191324	-13.781035	-15.771487	-10.480108	-11.46847	6.73743	4.22763	0.541771	4.609594	5.899536	5.470481	-9.154133	-13.859192	-15.210567	-12.971303	-13.47011	9.5011615	-10.7519180
(H120°)	-10.202687	5.701919	-11.06117	-12.196110	-7.865848	-12.34471	-3.346183	-14.701110	-11.381336	-12.51578	-8.631128	4.480713	-10.16947	8.320793	-7.909585	-10.020588	-8.0591338	-8.37568	-10.4891165	-15.633101	9.3501096	-13.515469	-11.2201440	-14.241362
(H127.5°)	-8.804680	4.3201197	-13.5111267	-11.121522	8.8201019	-12.161087	-11.3501488	-15.4713394	8.6881333	-13.6110141	-8.9961147	4.138429	8.661047	-12.511011	-10.830481	-12.549238	-8.6591338	-8.37568	-10.4891165	-15.633101	9.3501096	-13.515469	-11.2201440	-14.241362
(H135°)	-8.869427	4.686106	-12.661233	-12.231377	-11.831213	-14.541004	-10.021089	-15.021359	-10.6961076	-13.171011	-8.64064	-9.760174	-11.73840	-10.74976	-11.3401498	-6.689108	-7.239148	-13.27074	6.511344	-12.940158	-15.131397	-11.9201126	-12.9501158	-11.671040
(H142.5°)	-10.260168	4.126134	-10.000123	-15.960101	-10.260126	-15.5401357	-11.2701358	-15.210125	-12.671120	-15.1101555	-14.860168	6.829159	-12.861138	-14.291138	-12.830129	-10.001493	-12.3801395	-10.570126	-15.950166	-14.291141	-13.890143	-14.020123	-13.5001276	-11.671040
(H150°)	-10.719128	4.126134	-11.661396	-11.410123	-13.860139	-13.460182	-8.24749	-10.320158	-15.5601256	-11.620176	-14.8801518	-14.5001221	-11.250135	-12.1101384	-14.9301377	-14.7401515	-15.2501398	-13.2601290	-13.0801514	-15.260184	-14.8901515	-14.8401538	-15.2501335	-15.5601168
(H157.5°)	-12.220133	-13.110127	-10.670150	-11.640187	-14.7901424	-13.2101233	-11.500140	-10.8701342	-15.130159	-13.010160	-13.4101537	-12.8401837	-12.7501212	-12.0501291	-13.6101472	-13.5101462	-11.1801389	-13.3101103	-13.2101541	-15.3301637	-13.270187	-10.7101117	-15.1701117	
(H165°)	-11.510129	-11.580162	-14.560148	-14.830157	-14.1601283	-11.9701129	-9.750169	-10.3501078	-13.540158	-15.3601372	-14.1701236	-14.4101424	-14.1601450	-14.4501481	-14.2901433	-13.1401834	-14.7101559	-14.8501552	-14.3001419	-15.4501506	-15.4401424	-12.9201480	-14.0301716	
(H172.5°)	-12.380167	-11.1001271	-14.780184	-16.1501534	-15.0501395	-11.8101170	-12.4301342	-14.9601518	-14.8701512	-15.4901422	-15.1601530	-14.2401423	-15.0401443	-14.5601481	-14.2601515	-14.4801471	-14.0301294	-13.2701334	-13.2801445	-15.0601508	-15.3601545	-15.1501535	-15.0301382	
(H180°)	-13.6801472	-14.4801478	-15.0401486	-13.6801479	-11.3801131	-12.1801380	-14.4701449	-14.7201484	-14.0601448	-15.7001525	-15.4301587	-16.0001592	-15.9101477	-15.9301557	-15.5001488	-15.5001488	-14.4201431	-14.3801466	-15.5301575	-15.7301531	-15.2801380	-14.0401548	-15.3201579	-15.3101451
Freq(Hz)	6.47595Pst	TableLst.2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)	0.01570(27.5°)
(H10°)	2.47024	2.89267	2.89267	2.79239	2.47222	1.56178	1.57138	1.56178	1.45084	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178	1.56178
(H22.5°)	1.62188	1.93203	2.06214	2.19551	1.89139	1.58915	1.771186	1.98913	2.20038	2.38581	2.44027	2.33154	1.67179	1.59140	1.34145	1.41113	1.32141	1.19129	1.24116	1.55179	1.55179	1.55179	1.55179	1.55179
(H37.5°)	2.94032	3.43584	4.09815	4.10391	3.44919	2.88509	2.40191	1.80221	2.39032	2.52031	3.47051	3.87036	3.64030	3.14918	2.84231	1.39011	1.28911	0.58143	1.78917	2.59238	2.83037	3.02250	2.91249	
(H45°)	3.98032	3.51079	3.98036	4.01072	3.50932	3.90357	3.23292	1.750147	1.691127	1.370181	2.90121	2.36242	2.00255	2.86032	3.48038	3.50315	2.74235	1.98911	0.84043	0.95141	2.75037	4.12548	2.59039	3.26292
(H52.5°)	3.48034	3.02293	2.62047	2.72289	2.28018	2.98923	2.86234	1.30117	1.89248	2.01134	1.32016	1.65176	1.57012	1.73022	3.02422	4.95429	3.48071	2.42018	1.12679	1.42783	3.71915	4.22802	4.20804	3.66079
(H57.5°)	2.00236	0.86023	0.16064	1.93037	3.27202	0.19012	1.78022	2.59258	1.97078	0.08078	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022	2.37022
(H58°)	1.29155	0.27182	-0.23018	0.59246	3.70032	0.34127	-0.80032	2.89358	2.22039	-0.05154	2.15209	0.50743	1.86032	2.76034	3.45919	2.12216	0.76820	1.00215	1.70913	1.19018	0.38145	1.48048	-0.080492	-0.42048
(H58.5°)	0.54182	-3.00023	-0.43018	-0.48045	2.94209	0.26152	-3.00016	2.70210	2.16022	-1.26012	2.70210	1.55185	2.26022	2.89202	2.18029	2.06010	0.08001	0.58016	1.02075	0.32014	-0.22014	0.91044	0.91044	0.91044
(H60°)	0.43438	-3.60014	-1.40034	-0.04148	0.88026	0.38017	-2.41015	-2.540187	1.36016	-3.59012	0.250120	-0.60170	2.48026	1.90136	2.88038	3.39033	3.11089	-0.430189	-1.910136	-1.950138	-1.410162	0.580176	-1.810144	-0.04178
(H67.5°)	-1.270124	0.70162	0.760169	1.49041	0.800168	-0.980120	0.52016	-3.860105	-0.320163	-0.430164	-1.410128	1.950138	1.370121	2.72035	4.11032	5.10046	0.11023	-5.160150	-4.130181	-1.510134	-1.280187	-1.660125	-1.040118	-0.26117
(H70°)	-0.74019	2.40287	1.560130	2.34123	1.270134	-0.220177	-0.00234	-1.660161	-4.110120	-6.870163	-6.590163	-3.750147	-0.070127	0.600129	1.470129	3.590129	1.660129	0.81001	-3.480148	-8.940134	-2.810121	-3.300136	-1.630138	-0.67036
(H82.5°)	-1.290158	1.59210	0.28128	2.160108	0.350142	1.920137	-2.66014	-0.370153	8.830185	-6.580145	-4.440188	-1.260171	-1.330174	1.740129	1.930129	2.590129	-1.040158	-0.450179	-4.080174	-7.470162	-5.670149	-6.240130	-2.510143	-4.590142
(H85°)	-1.950129	0.24038	-1.420149	1.080153	-1.210183	3.380198	-4.070181	-15.2501246	8.440194	-12.490186	5.440130	-4.060154	-3.640156	0.060118	1.360156	-1.840121	-0.780116	-4.600133	-8.0001437	-5.250128	6.300168	-3.980144	-5.530149	
(H87.5°)	-3.180158	2.830156	3.260158	-0.640162	-4.110141	6.560149	-0.520181	8.630152	-7.250169	6.580163	-4.950163	-6.730158	-6.390161	-1.650188	1.690188	0.290124	-3.260125	-6.270152	-9.570172	-6.670194	-6.280198	-6.280198	-6.280198	-6.280198
(H90°)	-0.710141	-5.440132	3.940134	-3.270153	-5.530141	11.734182	6.918149	-10.260153	9															



Antenna Pattern of 6GHz

Appendix B.2

(H08°)	1.69321	1.70044	1.65184	1.26158	2.68278	1.88125	1.27041	2.17039	2.22193	2.13190	0.31185	-1.54032	0.94103	0.989104	-4.81281	0.69026	1.31032	0.88040	0.08075	1.05122	1.21240	1.70263	2.98161	0.75068
(H07°)	0.75200	0.498175	0.48048	-1.22049	0.95117	0.03038	-0.57094	1.59286	2.59237	2.88233	0.07104	0.06033	-2.17128	-1.04245	-7.77042	-3.30049	0.27251	-4.26129	-1.02106	0.80305	0.07164	1.00178	1.42644	-0.56174
(H06°)	-0.25016	-0.315936	-0.29330	-3.06127	-0.68067	-1.36172	-0.80040	1.17026	2.66254	2.61037	1.10213	0.28001	-2.01649	-0.76038	-4.97459	-5.80155	-1.47084	-2.91076	-1.43081	0.886089	-1.79012	-0.41012	-0.52120	-0.67146
(H05°)	-1.81184	-0.67164	-4.40517	-4.03237	-3.45036	-1.82106	0.00054	0.57245	2.47172	1.45141	-0.94507	-3.98086	-3.00949	-7.23016	-6.41146	-8.52019	-1.38005	-1.94026	-3.16055	0.511429	-5.89024	-1.57187	-3.89172	-3.80403
(H04°)	-3.269236	-5.898421	-6.04642	-6.16457	-6.80156	-6.18109	0.00020	-0.13044	0.99117	0.530406	-6.83011	-3.41436	-15.10647	-8.811005	-11.99331	-1.430113	-1.78050	-4.22004	-0.74336	-8.888442	-4.13483	-8.899358	-5.27047	
(H03°)	-4.531948	-5.389544	-8.250783	-7.68837	-9.146576	-2.40161	-1.20129	-1.94129	-4.19032	-2.09020	-3.19054	-10.85419	-6.95800	-14.86978	-11.661448	-10.93100	-0.559371	-4.98045	-4.37116	-4.88454	-15.16658	-6.82176	-7.27078	-6.52076
(H02°)	-6.989419	-6.971108	-11.581120	-9.29937	-8.25648	-4.21284	-3.51936	-3.57147	-3.96011	-4.904378	-2.67123	-6.898148	-6.079105	-11.011507	-11.141365	-8.621298	-10.380653	-6.027038	-6.80770	-12.571319	-14.000459	-8.130489	-4.980721	-8.91451
(H01°)	-8.986166	-8.061330	-14.911491	-11.38936	-10.221841	-8.91830	-7.930767	-6.494525	-6.740580	-6.038478	-4.245474	-5.841833	-6.97016	-12.009114	-8.471537	-12.781030	-10.92089	-15.989135	-14.650140	-10.607773	-12.180422	-7.88049	-3.71171	-10.421297
(H00°)	-8.644104	-10.691346	-15.261428	-10.84064	-8.501258	-11.46103	-10.367179	-8.850951	-7.470766	-6.950438	-4.399456	-5.16705	-12.180143	-12.181132	-14.281442	-15.09454	-12.781526	-17.30496	-16.831164	-13.9162	-8.13014	-6.13012	-12.291162	-8.03077
(H00°)	-8.499138	-11.651387	-15.231046	-10.22010	-8.100126	-14.691258	-9.869471	-11.33058	-10.89084	-12.33916	-8.989787	-6.08640	-12.710105	-15.961136	-10.880105	-10.941474	-15.210285	-15.540474	-8.618429	-8.693158	-9.180727	-12.299811	-12.150498	-14.761494
(H00°)	-11.571033	-17.281449	-26.971000	-9.781240	-12.260150	-14.130438	-10.10436	-10.10125	-10.36935	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155	-11.420155
(H00°)	-14.640136	-14.640136	-14.731033	-14.731033	-16.840156	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511	-16.871511
(H00°)	-12.680169	-13.870156	-15.590156	-15.720156	-16.710149	-15.690147	-14.570130	-10.840126	-12.130126	-13.460118	-14.940118	-12.780127	-8.91012	-14.030135	-14.960155	-15.380148	-13.480132	-15.040143	-15.380148	-14.030132	-15.380148	-14.030132	-15.380148	-14.030132
(H00°)	-10.690169	-14.000147	-14.760167	-15.210146	-13.030181	-11.050117	-10.590117	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116	-10.420116
(H00°)	-13.2801407	-13.9601451	-14.560156	-14.300124	-11.8801103	-11.1501175	-11.310140	-10.810132	-10.360124	-11.010134	-14.260132	-9.000133	-13.70049	-8.070148	-14.000124	-13.930157	-15.360156	-14.510144	-15.620148	-15.030155	-15.060137	-12.250132	-14.520134	-10.900132
(H00°)	-10.880155	-11.640127	-13.210142	-14.6601432	-14.690154	-15.810152	-15.810152	-14.680148	-15.2901431	-13.980126	-10.310114	-13.570182	-10.840172	-8.230192	-15.770157	-15.840161	-14.930136	-14.580146	-15.960136	-14.580146	-15.960136	-12.520128	-11.440187	-8.380194
(H00°)	-16.150165	-14.0801241	-12.270133	-14.1801474	-14.7801334	-12.2501238	-12.260183	-11.5401296	-14.1801449	-14.780165	-14.9801578	-14.4401463	-13.4701266	-14.5801487	-13.7701180	-12.3401280	-12.410128	-11.2101601	-9.960101	-10.830121	-13.060134	-13.320143	-13.230139	-14.8101564
Freq(Hz)	6.47500P	Table01.3																						
Gain	0°(H0°V01°)	0°(H0°V02°)	0°(H0°V03°)	0°(H0°V04°)	0°(H0°V05°)	0°(H0°V06°)	0°(H0°V07°)	0°(H0°V08°)	0°(H0°V09°)	0°(H0°V10°)	0°(H0°V11°)	0°(H0°V12°)	0°(H0°V13°)	0°(H0°V14°)	0°(H0°V15°)	0°(H0°V16°)	0°(H0°V17°)	0°(H0°V18°)	0°(H0°V19°)	0°(H0°V20°)	0°(H0°V21°)	0°(H0°V22°)	0°(H0°V23°)	
(H1°)	1.49149	1.133073	0.88133	1.40131	1.48157	1.74212	2.41256	2.54280	2.97322	2.99300	3.16934	3.13004	2.89288	3.00283	2.21195	2.07184	1.81161	1.75167	1.89156	1.65156	1.73181	1.93196	1.99169	1.67151
(H2°)	1.492184	2.26157	1.18116	1.44123	1.00108	1.13127	1.28124	1.310140	1.26115	1.09105	1.37133	1.78019	1.81178	1.87216	2.03161	1.59131	1.90183	2.08231	2.73028	2.90308	3.46030	3.74078	3.75507	3.47027
(H3°)	2.84218	1.75146	1.24146	1.79183	1.89193	2.09224	2.37133	2.72023	2.86229	2.70232	2.07102	2.01027	1.93187	2.06191	2.21052	2.18014	2.31033	3.06033	3.91034	3.91034	3.91034	3.91034	3.91034	3.91034
(H22°)	3.05224	1.67154	1.19012	1.40219	2.49283	3.12041	3.76043	4.60043	4.44416	3.76037	2.81185	0.73018	0.02009	0.57115	1.10011	1.29162	1.74242	2.78040	3.56421	4.98471	4.45400	3.89070	3.42044	3.28039
(H32°)	3.43244	1.35070	0.85158	2.26291	3.35027	4.12012	3.60427	4.17078	3.83039	4.07153	2.90125	1.50115	0.68062	0.88026	1.29013	0.88065	1.86024	3.41035	4.84013	4.54013	5.20496	4.59431	3.82048	3.28039
(H37°)	3.39285	2.59182	2.18011	2.18028	3.04282	3.85085	2.16032	3.13278	3.14343	3.83037	3.03318	3.17241	1.66119	0.70077	1.38018	-1.850120	-0.26076	3.10084	5.04841	4.60217	4.98048	3.97441	4.50394	3.57047
(H38°)	3.06012	1.68025	0.90026	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004	2.40004
(H39°)	3.01205	0.30018	1.37012	1.45013	1.92013	2.27013	1.83018	0.80085	3.40204	2.22015	0.99016	0.99016	1.60165	0.91036	0.91036	2.81034	2.81034	2.81034	2.81034	2.81034	2.81034	2.81034	2.81034	2.81034
(H40°)	1.22036	-1.360271	0.59052	-0.59013	0.080143	2.04014	0.96007	0.04012	2.41040	2.24012	0.220165	-1.81002	0.25019	0.510149	-4.760100	-4.320187	-1.750170	1.280154	0.510123	2.190151	2.190151	2.190151	2.190151	2.190151
(H47°)	0.880176	2.630191	1.510153	-1.580176	-1.160196	0.170135	-0.610152	-0.000120	2.270127	2.740196	-1.290162	-0.890128	-1.680192	-3.270150	-2.740150	0.724035	-3.230128	-2.700132	-0.870154	-0.150123	0.880126	0.840127	2.540178	-0.390176
(H48°)	0.910427	3.060289	0.330382	-4.420330	-2.610288	1.610120	-1.740136	0.060190	2.980134	2.720164	1.140106	-3.160103	-0.910479	-5.200140	-4.310486	-7.600147	3.210111	-4.170154	-1.710104	0.280163	0.090136	-1.450128	0.990136	-2.150102
(H52°)	-0.740127	-4.250140	-4.430142	-8.290149	-4.280145	-6.820125	-8.270125	-1.780104	-0.880135	3.060123	1.890150	-0.120131	-1.290161	-0.760121	-6.870162	-8.670162	-4.230139	-1.490145	-3.740157	0.240117	-1.190142	-0.410122	-0.240122	-3.250154
(H57°)	-1.312415	-5.260147	-6.000145	-10.940145	-7.150169	-2.940124	-1.190167	-1.310121	1.220188	0.610170	-0.260120	-4.230138	-2.980165	-11.960140	-4.880134	-8.980158	-3.690178	-3.740196	-8.200134	-0.130143	-4.290143	-7.090154	-2.190150	-0.430125
(H58°)	-0.740153	-6.300162	-6.110179	-13.070143	-8.500171	-2.940124	-1.190167	-1.310121	1.220188	0.610170	-0.260120	-4.230138	-2.980165	-11.960140	-4.880134	-8.980158	-3.690178	-3.740196	-8.200134	-0.130143	-4.290143	-7.090154	-2.190150	-0.430125
(H59°)	-0.790151	-7.890174	-10.540138	-16.590170	-6.710167	-0.950126	-4.890137	-7.350142	-2.340167	-3.750127	-1.780168	-8.690152	-9.250172	-10.890142	-8.080134	-11.530142	-4.780170	-10.890138	-13.910145	-6.180137	-13.730183	-7.930160	-6.530176	-7.700133
(H102°)	-4.430170	-10.140138	-12.550142	-16.120162	-9.120162	-0.560168	-5.180168	-8.970168	-1.800139	-5.450145	-4.780168	-11.410138	-4.710169	-10.910158	-8.030163	-13.940163	-15.430141	-11.500136	-10.560136	-8.750161	-11.110138	-10.720110	-11.410138	-10.720110
(H103°)	-6.250171	-12.280128	-12.310128	-16.080132	-11.710164	-1.240138	-10.200139	-6.360163	-5.140123	-5.890164	-4.470161	-4.180166	-13.070141	-15.520139	-12.310149	-12.310149	-10.330139	-10.760148	-6.780162	-11.880134	-10.470168	-6.680111	-11.330141	-10.470168
(H121°)	-4.590117	-15.990135	-14.440163	-14.890140	-15.190146	-11.800114	-10.200119	-8.090184	-6.780167	-6.770163	-10.810172	-6.930162	-14.090148	-12.390164	-12.140132	-12.140132	-14.670142	-14.670142	-13.240157	-8.490134	-6.070131	-11.870112	-11.870112	-11.870112
(H122°)	-11.860125	-13.940149	-13.5401387	-14.590152	-15.320175	-11.670133	-10.240155	-10.720160	-9.160116	-8.110142	-10.270133	-9.950151	-11.240127	-13.230123	-11.450152	-8.780162	-13.910148	-15.060165	-10.900142	-15.840156	-12.560163	-11.960165	-11.840169	-10.800123
(H142°)	-11.270178	-11.880143	-14.120147	-14.960151	-14.960151	-14.810138	-10.100119	-11.4201																



Antenna Pattern of 6GHz

Appendix B.2

φ(112.5°)	φ(75-10.64)	-0.08-7.38	6.75-6.57	-5.65-5.94	-8.87-6.74	5.62-8.13	-8.22-8.74	-4.36-5.40	-6.48-4.31	-10.00-14.91	6.12-3.27	-10.70-3.22	-4.44-8.30	-4.83-7.18	-6.66-7.25	7.75-2.74	-5.01-15.04	-7.26-12.76	-9.16-10.27	-11.26-7.69	-10.16-4.27	-10.72-11.48	-11.90-7.23	-4.86-11.49
φ(120°)	-10.70-10.66	-11.71-8.88	4.32-10.10	-8.15-4.78	9.32-10.02	6.63-8.82	-8.52-8.41	-7.57-6.11	-6.21-8.73	-13.21-13.12	-15.63-8.44	-7.88-11.18	6.29-12.26	5.39-7.03	-11.45-7.65	6.41-2.80	3.21-8.84	-5.90-4.18	-13.04-14.14	-13.18-11.85	-11.42-9.35	-12.07-12.41	-12.57-13.78	-5.90-7.23
φ(142.5°)	-9.78-10.06	-15.08-11.62	-12.12-10.10	-8.56-11.65	-6.67-8.79	-6.59-8.87	-11.77-8.87	-7.93-14.35	-14.34-12.50	-14.78-12.94	-7.80-7.21	-13.41-11.97	-15.28-6.77	-4.72-11.54	-8.20-4.96	6.39-9.01	5.99-8.22	-15.11-9.99	-7.90-6.39	6.78-13.87	-13.01-15.20	-15.73-14.74	-12.61-9.57	-15.18-13.20
φ(135°)	-10.35-13.76	-15.64-15.01	-15.97-12.59	-7.62-10.44	-14.91-9.87	8.87-9.25	-10.30-15.75	-10.78-15.71	-10.85-7.48	8.96-9.75	-11.20-9.94	-11.97-10.23	-15.56-14.14	6.83-14.51	9.21-9.88	-11.03-6.79	7.26-11.16	-13.90-15.88	-11.57-10.89	-12.46-12.98	-15.54-14.01	-10.75-15.40	-15.23-12.59	-12.38-10.33
φ(190°)	-11.58-8.20	8.42-11.99	-15.31-12.76	-10.40-12.12	-15.12-15.33	-14.48-12.85	8.50-8.48	-12.25-15.12	-15.81-14.53	-11.42-11.96	8.99-8.82	-14.83-13.12	7.12-7.47	-12.20-8.89	-10.37-12.83	-13.41-8.81	7.21-11.17	-12.73-14.64	-13.96-14.41	-15.97-14.12	-13.75-12.83	-14.94-14.67	-15.46-14.28	-12.34-14.76
φ(157.5°)	-11.46-12.56	-14.53-15.48	-15.32-13.63	-12.81-11.05	8.72-8.35	-7.51-8.18	6.04-6.52	-7.68-11.77	-13.63-11.03	-7.01-5.04	5.91-4.22	-4.86-7.18	-10.51-10.51	-11.34-12.57	-11.65-13.40	-15.39-15.10	-13.20-13.70	-14.50-14.80	-14.23-15.73	-12.47-13.01	-14.53-14.41	-15.24-15.31	-15.81-12.58	-10.89-10.92
φ(172.5°)	-15.19-15.22	-15.19-15.22	-11.99-8.87	8.17-8.74	8.41-9.20	-10.57-11.80	-10.47-10.16	-13.78-15.43	-14.16-11.57	8.96-10.13	-11.45-12.32	-11.02-8.61	8.56-7.18	-13.09-9.88	-13.00-12.28	-11.51-11.25	-10.25-13.20	-13.86-14.07	-15.01-14.85	-13.30-12.92	-14.54-14.27	-14.16-13.88	-11.70-11.15	-10.89-10.92
φ(180°)	-15.58-13.28	-12.55-14.22	-13.17-12.88	-13.36-13.58	-12.45-11.45	-11.16-11.48	-12.58-12.36	-12.86-12.84	-13.81-13.50	-12.51-11.68	-11.17-10.51	8.89-8.40	8.44-8.69	8.75-8.57	8.91-8.16	7.71-7.37	7.59-8.71	8.50-11.58	-12.88-12.74	-13.18-13.55	-13.62-15.46	-15.55-15.15	-15.08-14.94	-14.50-13.73
FreePath	6.95259dA	TabAnt4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gain	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)	φ(157°/φ127.5°)
φ(1°)	1.880.88	1.891.12	1.481.66	1.380.92	2.011.92	1.801.77	1.862.02	2.031.94	1.821.86	2.142.31	2.212.04	2.232.42	2.402.43	2.462.46	2.312.26	2.282.11	1.881.71	1.461.12	0.920.85	0.820.86	0.740.84	0.460.34	0.340.35	0.280.25
φ(7.5°)	1.481.14	1.331.21	1.401.34	1.281.19	1.910.87	0.380.19	0.310.27	0.18-0.88	-1.18-1.21	0.78-0.51	0.16-0.03	0.25-0.44	0.72-0.14	1.401.64	1.681.75	1.781.80	2.082.09	2.142.16	2.072.12	2.292.33	2.312.35	2.382.32	2.182.15	1.921.15
φ(15°)	1.311.14	0.850.90	1.061.41	1.812.01	2.072.20	2.282.02	1.901.50	1.170.82	0.580.27	0.10-0.24	0.57-0.44	0.881.63	1.992.33	2.482.55	1.901.67	1.371.48	1.571.24	0.73-0.10	-0.52-0.90	-0.90-0.43	0.080.65	1.281.48	1.521.85	1.831.87
φ(22.5°)	0.860.79	0.590.84	1.702.27	2.362.11	2.262.43	2.432.03	1.44-0.70	0.00-0.09	0.75-1.64	2.04-1.82	1.32-0.57	0.380.97	2.052.48	2.381.85	1.982.38	2.943.39	3.052.66	1.03-0.84	-2.04-1.56	-0.89-0.02	0.071.28	2.010.26	2.242.16	1.941.66
φ(30°)	0.850.79	0.730.86	1.632.22	2.480.00	3.050.80	3.850.32	2.881.89	1.34-1.31	1.25-0.73	0.30-0.29	0.73-0.84	-1.50-0.26	1.001.50	0.931.68	2.793.54	3.450.59	3.362.27	0.84-0.31	-1.73-0.34	-2.17-1.50	-1.30-0.30	0.27-0.60	1.521.63	0.870.24
φ(37.5°)	0.712.13	1.680.81	0.693.72	1.262.50	3.453.22	2.541.23	1.001.88	2.892.15	2.001.00	-1.40-1.31	1.19-0.41	1.201.37	0.771.94	2.362.16	3.794.43	3.033.03	3.563.26	2.821.51	0.31-1.14	-1.22-1.31	-2.98-3.06	2.11-0.45	1.301.66	1.861.74
φ(45°)	3.223.40	3.043.10	2.881.48	-0.90-1.12	0.881.32	0.871.02	1.001.60	0.76-0.34	0.31-0.35	-0.87-1.18	-3.35-4.28	-2.57-0.16	1.462.32	1.76-0.25	4.52-1.48	1.833.10	3.61-0.75	1.51-0.43	-0.32-1.11	-0.89-0.02	-3.91-0.59	3.30-0.79	0.821.35	1.502.06
φ(52.5°)	1.963.15	2.143.22	2.361.16	-1.22-0.59	0.281.41	0.61-0.13	1.011.74	0.87-0.30	-0.21-0.46	-3.94-4.42	-3.53-1.19	3.11-0.83	2.391.76	0.84-0.57	5.05-1.09	1.56-0.24	2.881.42	-1.22-0.92	-2.37-0.45	-1.17-1.64	-5.26-0.37	2.86-0.91	-0.63-0.81	1.641.66
φ(60°)	0.750.46	1.092.83	2.372.89	1.861.46	1.781.29	0.501.21	-1.57-1.25	-0.26-1.05	-1.17-0.86	-0.53-1.81	-0.02-4.77	-0.53-0.00	-0.76-0.52	-1.72-0.23	0.57-0.69	-1.33-0.73	1.04-0.29	-1.58-0.25	-1.33-0.41	-1.80-4.07	4.03-0.47	3.11-1.36	-1.58-1.25	0.04-0.21
φ(67.5°)	-0.24-0.25	-0.921.34	1.792.71	1.071.04	1.36-0.15	0.57-1.54	-1.08-1.83	-4.571.27	-4.78-3.82	1.072.17	-1.22-0.25	-0.89-0.60	1.181.29	2.132.29	2.071.73	1.03-0.17	-1.30-1.40	-1.29-0.37	-1.75-0.48	-5.83-1.71	4.69-2.60	2.21-1.16	-0.48-0.23	-0.48-0.23
φ(75°)	-0.05-1.07	-2.31-0.45	1.682.22	0.362.67	2.050.89	1.709-0.50	-0.43-1.28	-2.22-0.41	-0.77-1.21	2.18-1.58	-4.35-1.23	-2.02-1.97	0.15-1.36	1.70-1.42	-1.14-1.15	3.23-1.86	1.16-1.45	0.11-1.59	-0.46-0.21	-2.52-0.49	-4.66-0.89	0.03-1.47	-2.26-2.94	-0.85-1.11
φ(82.5°)	-0.54-1.42	-3.38-1.74	0.600.63	-0.982.18	0.960.61	0.15-0.50	-2.25-1.28	-3.37-0.26	-0.30-1.23	1.02-1.55	-0.90-1.46	-1.40-1.18	-0.651.08	1.38-0.76	2.97-0.79	3.89-0.08	2.07-1.76	0.78-1.00	-0.28-0.42	-3.71-0.24	-5.49-12.32	0.23-0.29	-4.55-0.67	-2.83-1.95
φ(90°)	-1.35-4.28	-4.24-3.15	0.39-0.51	-1.301.86	-0.36-0.25	-1.34-3.01	-3.13-3.85	-8.73-1.89	-2.58-5.11	2.85-0.45	-4.46-2.04	-2.23-4.24	-1.88-1.11	0.29-4.29	4.63-2.47	2.26-2.25	1.24-0.44	-1.35-2.36	-2.99-3.29	-5.08-7.64	-7.04-10.99	9.24-8.97	8.31-8.67	4.80-2.73
φ(97.5°)	2.88-0.68	6.45-4.91	1.971.27	-3.43-0.74	-2.23-2.99	-2.26-0.31	6.01-0.71	8.93-3.40	5.63-10.03	-4.96-0.34	-10.81-3.86	2.64-1.74	-2.50-4.33	-1.79-1.39	5.57-0.23	0.94-0.27	0.68-0.22	3.76-0.20	4.84-6.13	7.01-11.88	12.62-8.28	-10.27-12.05	-10.80-7.15	-7.33-3.24
φ(105°)	0.557-1.20	7.97-6.29	4.29-3.35	-4.071.29	-4.071.29	-2.72-0.82	6.54-0.46	9.57-0.46	9.37-11.87	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72	-10.68-11.72
φ(112.5°)	0.23-0.70	8.84-6.86	5.60-1.51	-7.37-0.43	-4.38-0.73	4.75-0.58	14.51-11.83	8.39-5.53	7.58-1.47	12.46-12.17	4.23-0.84	5.11-0.80	3.93-0.48	6.11-0.19	6.42-0.47	4.70-0.48	8.59-0.03	-0.78-1.59	8.82-0.86	12.73-13.78	12.19-13.74	8.36-1.92	8.12-0.12	-7.74-0.80
φ(120°)	0.757-1.72	8.99-11.28	7.21-7.72	9.47-1.17	5.61-0.81	7.99-10.45	-14.59-13.32	8.98-0.52	9.22-11.55	13.98-12.73	11.15-7.30	8.77-0.86	7.48-11.66	5.09-0.58	7.79-11.55	8.04-1.34	9.08-0.98	6.45-1.52	8.76-1.71	8.01-11.52	15.19-10.12	12.64-12.74	14.31-11.04	7.99-10.35
φ(127.5°)	7.89-0.40	-0.16-11.69	8.14-10.44	-11.47-1.21	-11.26-11.51	8.36-1.76	-12.37-10.42	9.79-0.42	8.44-13.77	8.73-8.82	9.16-0.68	-12.86-10.87	-3.97-1.37	6.52-10.33	-15.37-10.93	7.83-10.95	9.87-15.64	-15.96-11.13	-15.30-10.71	-15.71-10.29	-10.10-12.38	-15.33-14.88	0.78-0.63	-10.87-11.32
φ(135°)	8.74-0.24	-13.86-8.51	-10.48-10.47	-0.27-0.53	-12.21-14.29	8.82-0.81	8.34-10.95	-10.82-13.44	8.74-14.18	-14.08-0.60	-12.82-12.85	8.55-8.41	-13.28-8.23	-10.59-10.32	8.60-8.73	7.48-0.73	-10.88-0.53	-10.72-12.87	-10.39-10.38	-10.77-9.98	-10.30-11.54	-11.50-12.11	-10.57-12.17	-10.51-12.47
φ(142.5°)	-11.04-10.38	-14.58-12.16	-12.15-11.63	-11.02-8.85	-13.20-12.15	8.84-7.34	-7.18-8.83	-10.48-13.73	-15.38-13.89	-14.43-13.63	-8.51-11.71	-11.88-10.80	-8.23-0.86	-7.86-10.38	-12.74-12.06	-10.48-11.41	-14.20-13.18	-12.66-15.38	-13.42-12.73	-11.88-11.81	-11.48-11.54	6.48-14.58	-14.07-10.66	-8.76-13.73
φ(150°)	-10.18-15.32	-13.20-12.13	-11.45-11.48	-12.08-8.87	8.39-12.21	-14.80-13.87	-10.92-12.54	-14.23-12.41	-14.57-12.91	-12.81-13.97	-10.27-10.57	-13.27-14.29	-12.78-12.96	-11.81-10.30	-12.45-10.12	-8.43-9.69	-10.74-15.45	-15.95-15.55	-15.48-14.38	-15.29-15.12	-15.83-12.83	-15.82-11.29	-10.71-10.89	-10.89-10.89
φ(157.5°)	-10.56-12.77	-11.38-10.34	-13.05-14.33	-14.10-14.91	-14.10-14.34	-11.16-10.84	-8.21-8.95	-12.07-14.83	-13.52-13.58	-10.16-11.28	-15.16-13.16	-12.20-11.66	-13.21-10.99	-8.89-11.42	-14.48-13.88	-15.03-15.28	-15.05-13.86	-15.10-15.48	-14.74-15.22	-14.02-13.92	-15.48-15.08	-14.96-15.06	-13.98-10.58	-11.87-10.80
φ(165°)	-12.51-11.12	-10.48-13.22	-12.89-12.97	-14.12-14.91	-14.88-13.71	-14.31-14.85	-15.72-15.06	-15.52-16.06	-15.34-13.72	-14.16-13.98	-10.94-8.78	-10.24-11.13	-15.09-11.32	-11.69-13.40	-11.60-11.02	-6.79-11.60	-10.56-11.13	-13.13-14.38	-14.63-15.02	-15.24-15.86	-14.29-12.48	-10.16-12.39	-11.58-11.63	-10.89-11.63
φ(172.5°)	-15.19-13.47	-13.20-13.73	-14.61-13.85	-15.76-15.64	-15.48-15.83	-15.46-15.13	-12.37-11.81	-8.47-8.31	8.36-10.47	-11.58-12.32	-14.51-15.54	-15.83-15.99	-13.87-11.57	-11.24-11.06	-10.54-10.59	-10.88-11.45	-12.12-12.41	-13.54-13.29	-12.93-15.89	-15.53-15.46				

E1(XY plane) – $\Theta(90)\Phi(0-360)$
E2(XZ plane) – $\Theta(0-180)\Phi(0)$ and $\Theta(0-180)\Phi(180)$
E3(YZ plane) – $\Theta(0-180)\Phi(90)$ and $\Theta(0-180)\Phi(270)$

