



Antenna Composite Gain Test Report

Equipment	ROG Rapture Tri-Band Gaming Router
Brand Name	ASUS
Model Name	GT-AX11000 Pro
Applicant	ASUSTeK COMPUTER INC. 1F., No. 15, Lide Rd., Beitou, Taipei City 112, Taiwan
Manufacturer (1)	Compal Networking(KunShan) CO., LTD No.520,Nan Bang RD., Economic & Technical Development Zone, KunShan,JiangSu,China
Manufacturer (2)	ARCADYAN TECHNOLOGY (VIETNAM) CO., LTD. Land plot No. D4-5-6, Thang Long Industrial Park (Vinh Phuc), Thien Ke Commune, Binh Xuyen District, Vinh Phuc Province, Vietnam
Sample Received	Feb. 15, 2022
Start Test Date	Mar. 14, 2022
Final Test Date	Mar. 14, 2022



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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
2G 5GL Ant1	1	PSA	RFDPA181125IMLB902	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~2A
2G 5GL Ant2	2	PSA	RFDPA181120IMLB902	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~2A
2G 5GL Ant3	3	PSA	RFDPA181105IMLB903	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~2A
2G 5GL Ant4	4	PSA	RFDPA181112IMLB902	Dipole	I-PEX	2.4GHz, 5GHz UNII 1~2A
5GH Ant1	1	PSA	RFDPA181118IM5B902	Dipole	I-PEX	5GHz UNII 2C~4
5GH Ant2	2	PSA	RFDPA181110IM5B902	Dipole	I-PEX	5GHz UNII 2C~4
5GH Ant3	3	PSA	RFDPA181116IM5B902	Dipole	I-PEX	5GHz UNII 2C~4
5GH Ant4	4	PSA	RFDPA181121IM5B902	Dipole	I-PEX	5GHz UNII 2C~4

Note:

For WLAN 2.4GHz:

Operation Mode (4TX/4RX)

2G 5GL Ant1~ Ant4 can be used as transmitting/receiving antenna.

2G 5GL Ant1~ Ant4 could transmit/receive simultaneously.

For WLAN 5GHz:

Operation Mode (4TX/4RX)

2G 5GL Ant1~ Ant4 can be used as transmitting/receiving antenna.

2G 5GL Ant1~ Ant4 could transmit/receive simultaneously.

The 2G 5GL Ant1~Ant4 operate in UNII 1, UNII 2A.

5GH Ant1~Ant4 can be used as transmitting/receiving antenna.

5GH Ant1~ Ant4 could transmit/receive simultaneously.

The 5GH Ant1~Ant4 operate in UNII 2C, UNII 3, UNII 4.

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



3. Testing Location

Testing Location		
☒	HWA YA	ADD : No.13-1 & 14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan R.O.C.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	Rex Liao	23.5-24.5 / 40-50	Mar. 14, 2022

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m*6m*6m

Characteristic: Fully Anechoic Chamber

4. Test Facility and Configuration

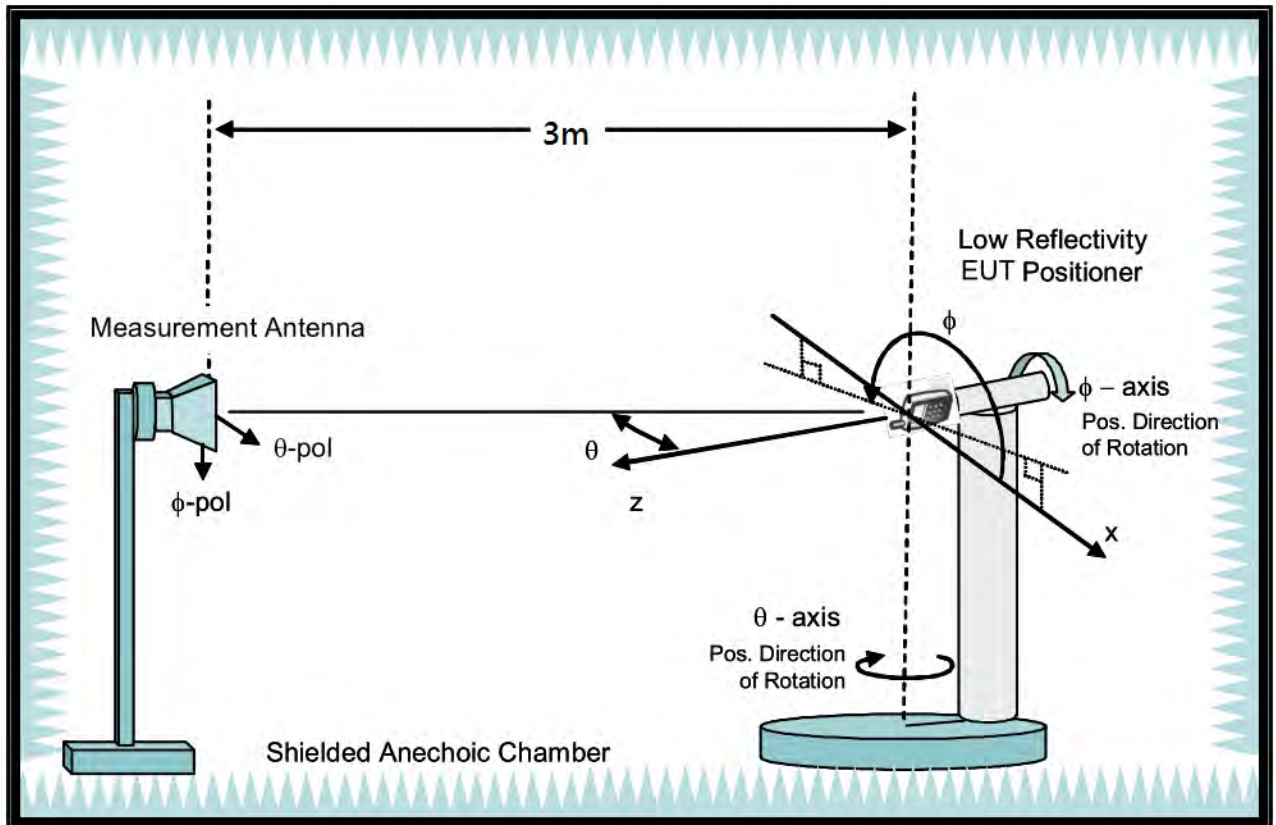
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Single Polarization Horn antenna calibrated according to ANSI C63.5.

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. 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 S21 value every 15 degree from 0 to 345 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 (ii), for all angles.
3. Composite antenna gain are examined for all angles to determine max gain and Phi/Theta position.

6. Summary of Test Result

For 2G 5GL:

Freq(Hz)	2.45G	5.2G	5.3G
Ant. 1 Max Gain (dBi)	2.85	2.75	3.44
Ant. 2 Max Gain (dBi)	1.57	2	1.89
Ant. 3 Max Gain (dBi)	3.93	2.48	2.45
Ant. 4 Max Gain (dBi)	1.86	3.61	3.56
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/180	Theta/90/210	Theta/90/165
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/225	Theta/90/30	Theta/75/180
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/75	Theta/90/135	Theta/90/150
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/330	Theta/90/15	Theta/90/270
Max Gain (dBi)	3.93	3.61	3.56
DG [1SS] (dBi)	7.6	6.89	6.99
DG [2SS] (dBi)	4.6	3.89	3.99
DG [4SS] (dBi)	1.77	1.03	1.12

Note:

- Each antenna max gain is the max value of measurement S21 of theta and phi through all measurement angles.
- The max gain is the max value of all antennas.
- Directional Gain (2SS) = Directional Gain (1SS) – 3dB. If directional gain is less than max gain, use max gain as directional gain.

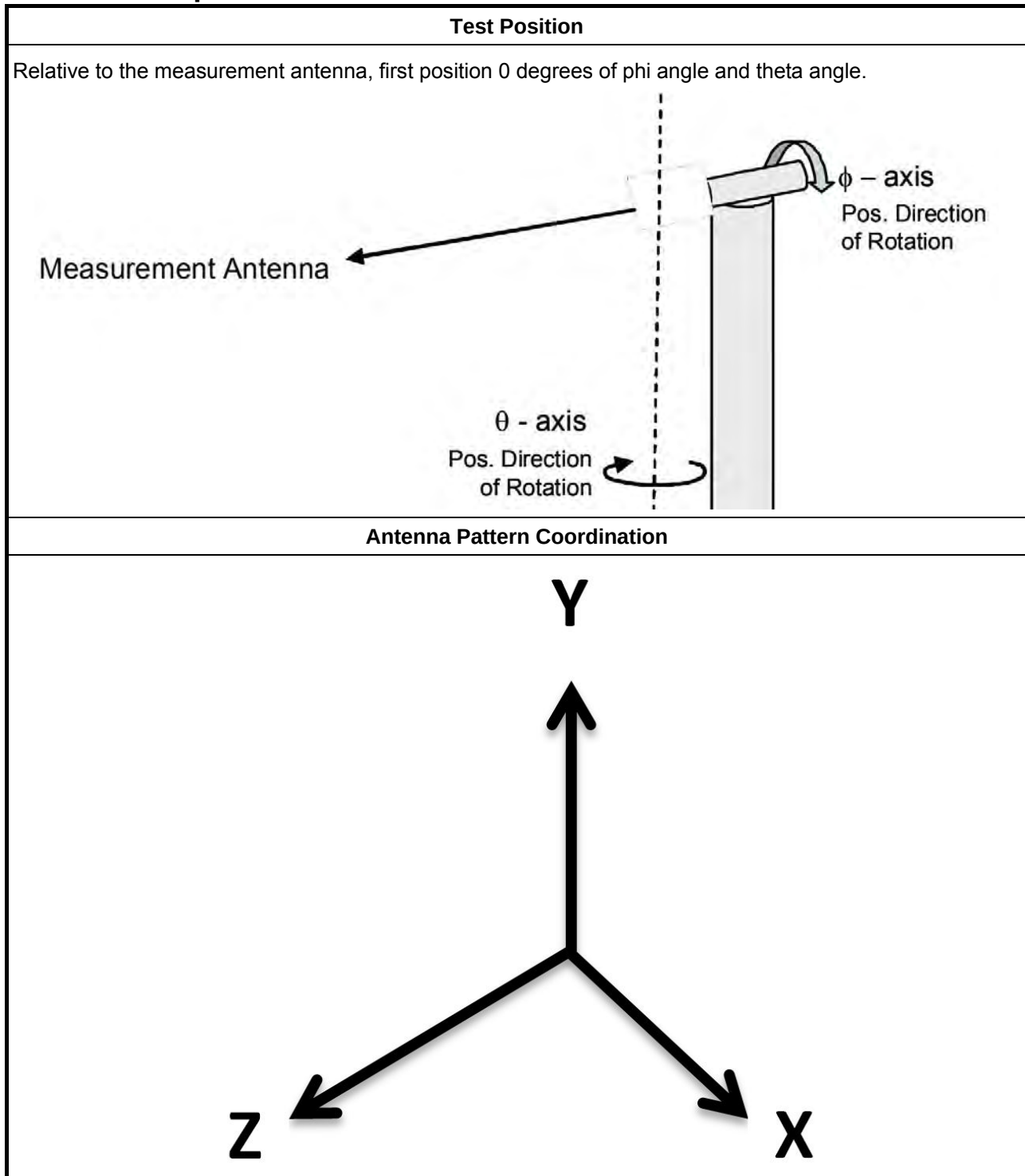
For 5GH:

Freq(Hz)	5.6G	5.785G	5.885G
Ant. 1 Max Gain (dBi)	3.67	3.02	3.98
Ant. 2 Max Gain (dBi)	2.68	2.31	1.93
Ant. 3 Max Gain (dBi)	2.74	1.84	1.99
Ant. 4 Max Gain (dBi)	3.61	2.51	3.44
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/240	Theta/90/240	Theta/90/240
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/105	Theta/75/105	Theta/75/90
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/120	Theta/90/105	Theta/105/105
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/315	Theta/105/270	Theta/90/315
Max Gain (dBi)	3.67	3.02	3.98
DG [1SS] (dBi)	6.61	5.94	6.25
DG [2SS] (dBi)	3.67	3.02	3.98
DG [4SS] (dBi)	0.88	0.23	0.57

Note:

- Each antenna max gain is the max value of measurement S21 of theta and phi through all measurement angles.
- The max gain is the max value of all antennas.
- Directional Gain (2SS) = Directional Gain (1SS) – 3dB. If directional gain is less than max gain, use max gain as directional gain.

7. Test Setup



Note:

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

**8. Test Equipment and Calibration Data**

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Aug. 04, 2021	Aug. 03, 2022
ENA Series Network Analyzer	AGILENT	E5071C	MY46419201	100kHz~8.5GHz	Feb. 21, 2022	Feb. 20, 2023
Test Software	SPORTON	SENSE-RDG	V1.0.6	-	N.C.R.	N.C.R.

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

NCR means Non-Calibration required.



9. Test Results

Please refer to the appendix.

Appendix A – Radiated Composite Gain of 2.4GHz and 5GHz UNII1, UNII 2A.....	Page 12
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Freq(Hz)	2.45G	5.2G	5.3G
Ant. 1 Max Gain (dBi)	2.85	2.75	3.44
Ant. 2 Max Gain (dBi)	1.57	2	1.89
Ant. 3 Max Gain (dBi)	3.93	2.48	2.45
Ant. 4 Max Gain (dBi)	1.86	3.61	3.56
Ant. 1 Polarization/Θ(°)/Φ(°)	Theta/60/180	Theta/90/210	Theta/90/165
Ant. 2 Polarization/Θ(°)/Φ(°)	Theta/90/225	Theta/90/30	Theta/75/180
Ant. 3 Polarization/Θ(°)/Φ(°)	Theta/90/75	Theta/90/135	Theta/90/150
Ant. 4 Polarization/Θ(°)/Φ(°)	Theta/60/330	Theta/90/15	Theta/90/270
Max Gain (dBi)	3.93	3.61	3.56
DG [1SS] (dBi)	7.6	6.89	6.99
DG [2SS] (dBi)	4.6	3.89	3.99
DG [4SS] (dBi)	1.77	1.03	1.12



DG 1SS Result

Freq(Hz)	2.45G	Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-7.97	-10.67	-10.24	-11.2	-12.45	-11.46	-11.29	-10.53	-9.18	-8.41	-7.11	-7.62	-11.34	-8.17	-8.79	-10.41	-11.18	-9.17	-8.24	-9.22	-8.68	-7.76	-8.08	-7.53
Θ(15°)	-8.36	-8.87	-7.66	-7.42	-10.09	-10.53	-6.58	-6.44	-6.73	-7.11	-6.75	-9.77	-11.23	-12.28	-11.13	-8.87	-9.16	-8.63	-7.85	-7.05	-6.8	-5.6	-5.45	-6.11
Θ(30°)	-7.41	-7.75	-8.83	-8.78	-9.16	-10.47	-6.87	-5.99	-8.81	-9.63	-10.78	-11.74	-9.46	-9.38	-8.85	-8.48	-8.92	-6.06	-6.2	-6.15	-6.04	-9.29	-6.69	-7.98
Θ(45°)	-7	-7.24	-7.47	-9.83	-8.48	-7.67	-8.22	-7.01	-4.87	-5.54	-8.71	-7.94	-10.55	-11.73	-9.89	-7.88	-7.47	-5.45	-6.17	-4.21	-6.35	-5.58	-5.18	-8.1
Θ(60°)	-8.15	-6.73	-8.43	-10.5	-10.38	-7.7	-4.38	-4.58	-4.73	-5.96	-8.46	-9.25	-8.3	-10.76	-10.5	-7.62	-8.56	-8.77	-7.95	-3.69	-8.85	-4.05	-4.71	-8.13
Θ(75°)	-5.55	-9.85	-10.94	-9.5	-5.9	-7.59	-3.44	-3.64	-2.14	-5.34	-8.99	-8.04	-7.71	-9.43	-10.73	-6.83	-8	-8.12	-7.46	-6.15	-6.06	-4.46	-6.45	-5.65
Θ(90°)	-10.27	-7.03	-7.73	-9.19	-5.15	-8.45	-3.8	-3.34	-2.83	-5.58	-6.79	-7.36	-8.89	-6.85	-7.33	-4.79	-6.27	-5.62	-10.62	-2.96	-7.03	-5.33	-5.66	-5.53
Θ(105°)	-11.25	-5.9	-7.79	-9.18	-8.59	-11.08	-4.26	-7.87	-2.51	-3.33	-6.75	-7.12	-9.05	-6.34	-6.62	-5.26	-8.17	-5.6	-8.95	-3.24	-6.92	-6.3	-6.26	-8.3
Θ(120°)	-8.52	-7.31	-8.32	-7.61	-7.16	-9.82	-6.03	-6.55	-4.24	-5.49	-4.52	-7.65	-4.51	-4.46	-9.27	-5.02	-9.61	-6.47	-4.84	-7.54	-5.98	-5.78	-6.61	-5.61
Θ(135°)	-5.18	-6.15	-7.07	-6.19	-4.75	-3.35	-4.42	-3.99	-6.89	-5.81	-5.32	-5.84	-5.54	-6.59	-7.99	-6.73	-4.93	-3.15	-2.53	-4.98	-5.5	-2.93	-4.98	-8.06
Θ(150°)	-5.22	-5.25	-4.95	-5.52	-4.98	-3.79	-1.78	-2.47	-5.58	-6.82	-7.52	-7.56	-5.44	-5.28	-5.81	-4.79	-3.23	-2.11	-0.88	-1.4	-3.39	-3.54	-2.58	-3.76
Θ(165°)	-5.86	-6.36	-6.26	-5.11	-4.2	-3.48	-3.49	-3.3	-3.18	-3.49	-3.72	-4.29	-4.91	-8.66	-8.17	-9.04	-4.75	-2.08	-1.11	-1.69	-3.99	-3.94	-3.37	-4.28
Θ(180°)	-8.29	-6.27	-4.99	-3.76	-2.68	-2.68	-2.54	-1.92	-2.07	-3.07	-5.55	-6.63	-9.46	-7.46	-8.07	-4.48	-2.98	-2.06	-2.12	-2.54	-2.81	-4.61	-4.51	-8.09
Freq(Hz)	2.45G	Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-8	-11.01	-8.27	-7.35	-9.54	-7.43	-8.01	-9.58	-10.19	-11.73	-10.19	-10.45	-10.98	-9.79	-8.99	-6.74	-7.42	-10.07	-9.95	-9.66	-9.37	-9.46	-11.14	-7.95
Θ(15°)	-1.76	0.09	-1.1	-2.8	-2.31	-3.27	-3.53	-4.73	-5.84	-4.69	-4.45	-3.94	-2.8	-4.74	-5.22	-3.93	-4.52	-4.74	-3.58	-3.64	-4.24	-2.76	-2.02	-1.13
Θ(30°)	1.99	1.7	1.4	1.92	2	1.25	-1.39	-1.71	0.95	1.09	0.14	0.41	1.57	1.22	0.5	0.15	-0.16	-0.38	-0.55	0.13	1.68	2.54	2.18	2.12
Θ(45°)	4.89	5.23	3.57	3.25	2.15	2.9	3.35	3.43	3.91	4.58	5.03	6.35	6.67	5.27	4.52	3.67	2.51	1.74	0.18	1.86	2.27	3.31	4.3	4.49
Θ(60°)	6.84	4.3	3.53	3.88	4.34	3.93	5.8	5.31	4.55	4.55	3.93	4.52	5.38	6.04	4.75	4.74	4.53	6.2	4.39	4.26	2.02	4.3	4.74	5.97
Θ(75°)	6.18	5.11	4.1	4.57	4.08	6.14	6.2	5.23	3.95	3.55	4.09	5.15	5.9	5.08	4.55	4.5	4.72	6.73	5.25	6.06	4.41	3.24	4.55	6.18
Θ(90°)	5.12	4.18	4.93	5.88	6.16	7.6	5.69	4.48	4.42	3.18	4.99	5.69	4.83	3.75	2.15	4.94	6.13	5.51	6.01	6.31	3.57	4.67	4.59	5.22
Θ(105°)	4.81	2.53	2.68	2.44	3.01	5.45	4.13	4.46	0.69	4.22	0.72	1.95	0.53	2.84	1.61	1.41	2.85	6.48	6.97	5.29	-1.03	1.39	-0.06	2.88
Θ(120°)	0.23	1.85	1.83	-0.14	-2.38	-0.58	-1.58	-0.54	0.05	-0.43	-0.09	3.05	2.07	-0.48	-0.91	-0.06	0.16	2.94	-0.74	1.37	-1.7	-0.06	-4	-1.2
Θ(135°)	0.44	2.26	1.83	0.16	0.12	-0.96	-2.99	-6.48	0.64	-2.19	2.27	2.42	1.59	-0.53	-1.64	-0.63	1.22	1.55	-0.39	-2.91	-1.58	-0.14	1.2	0.87
Θ(150°)	-1.24	0.55	-0.09	-1.97	-1.84	1.22	1.39	-0.2	-0.79	-1.82	-2.54	-4.81	-3.81	-1.88	-2.06	-1.44	-0.37	-4.97	-5.04	-1.87	-0.87	0.31	0.21	-0.17
Θ(165°)	-1.72	-0.37	-0.73	-1.54	-1.77	-1.25	-0.35	-0.2	-1.11	-1.97	-2.82	-5.01	-6.35	-6.43	-8.1	-8.1	-9.07	-7.72	-6.26	-5.8	-6.53	-7.81	-5.57	-4.89
Θ(180°)	-0.67	-0.73	-1.51	-2.86	-4.86	-7.29	-9.53	-8.37	-5.51	-4.06	-1.41	0.26	0.19	-0.47	-2.68	-5.84	-7.84	-10.1	-10.68	-7.19	-4.96	-3.6	-1.82	-1.39
Freq(Hz)	5.2G	Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-10.78	-9.52	-10.05	-8.83	-9.95	-10.16	-8.74	-9.23	-8.02	-7.99	-9.56	-8.85	-8.83	-10.21	-10.25	-10.26	-10.1	-8.64	-10.4	-11.05	-9.3	-10.19	-9.77	-9.7
Θ(15°)	-8.51	-8.84	-9.53	-12.74	-9.15	-7.04	-8.46	-11.26	-9.32	-10.33	-11.31	-10.9	-10.96	-11.27	-10.1	-8.8	-7.72	-8.39	-7.08	-10.88	-10.27	-10.53	-7.59	-10.28
Θ(30°)	-10.59	-12.11	-11.72	-11.84	-9.1	-10.8	-6.81	-9.68	-7.74	-6.48	-8.15	-6.28	-10.62	-9.74	-11.6	-10.02	-8.71	-9.06	-8.83	-8.99	-12.17	-10.32	-10.13	-9.86
Θ(45°)	-9.27	-12.25	-11.6	-10.37	-6.63	-8.82	-9.72	-3.89	-4.24	-5.63	-10.16	-7.74	-8.13	-9.4	-7.62	-9.36	-9.86	-12.88	-9.86	-9	-8.26	-6.93	-7.99	-6.92
Θ(60°)	-7	-10.66	-9.18	-9.35	-9.65	-7.95	-7.6	-6.3	-5.72	-8.57	-11.92	-8.26	-8.63	-10.3	-8.8	-11.61	-9.63	-6.73	-10.65	-9.18	-10.68	-8.72	-5.62	-8.42
Θ(75°)	-11.12	-12.27	-9.79	-9.59	-10.74	-8.75	-5.62	-5.87	-7.33	-8.13	-6.18	-11.09	-10.09	-11.35	-11.67	-9.17	-11.28	-10.75	-9.28	-8.34	-8.2	-6.84	-10.78	-11.26
Θ(90°)	-11.09	-8.33	-11.19	-9.84	-11.44	-6.24	-8.87	-3.42	-8.24	-7.56	-9.47	-8.64	-10.88	-9.12	-8.73	-11.06	-8.54	-8.2	-5.42	-8.31	-7.23	-8.69	-8.56	-8.71
Θ(105°)	-10.46	-10.16	-6.95	-5.46	-7.2	-7.42	-3.81	-6.71	-9.05	-6.7	-6.58	-9.76	-8.17	-7.06	-6.36	-4.99	-7.01	-8.13	-10.46	-9.95	-7.37	-10.13	-6.36	-9.93
Θ(120°)	-9.96	-6.46	-8.13	-7.41	-9.54	-11.25	-2.11	-6.76	-7.64	-8.75	-10.6	-10.07	-9.67	-8.26	-7.98	-8.18	-6.5	-7.28	-7	-7.05	-6.46	-12.42	-8.92	-6.97
Θ(135°)	-9.56	-6.88	-7.55	-6.34	-8.16	-9.06	-5.64	-5.9	-9.22	-8.74	-6.72	-7.28	-6.31	-9.64	-6.94	-4.42	-5.7	-8.15	-12.3	-8.76	-10.44	-8.07	-8.2	-9.69
Θ(150°)	-7.42	-6.64	-6.82	-7.38	-5.71	-7.11	-8.2	-4.67	-5.79	-7.72	-8.8	-10.18	-8.56	-5.36	-6.89	-7.69	-7.06	-4.8	-7.51	-8.2	-10.58	-6.12	-8.65	-9.28
Θ(165°)	-12.61	-11.61	-10.01	-5.98	-5.43	-7.5	-8.44	-6.19	-6.09	-8.97	-10.03	-7.33	-6.96	-8.32	-7.97	-6.86	-4.96	-5.78	-6.17	-3.93	-5.94	-6.63	-7.71	-9.63
Θ(180°)	-8.14	-7.08	-5.69	-4.63	-4.22	-5.5	-5.53	-5.79	-5.37	-6.32	-6.78	-9.24	-7.35	-6.9	-6.79	-7.09	-4.93	-5.17	-4.47	-5	-5.89	-8.73	-10.03	-9.74
Freq(Hz)	5.2G	Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-10.56	-9.65	-11.22	-10.39	-10.97	-9.48	-9.42	-9.52	-9.69	-11.32	-9.54	-9.04	-9.4	-10.34	-10.36	-10.76	-9.14	-9.65	-10.12	-9.59	-10.24	-9.78	-9.81	-11.28
Θ(15°)	-7.37	-7.3	-8.32	-8.37	-7.95	-8.04	-8.19	-6	-7.11	-7.06	-7.4	-5.69	-7.55	-7.76	-6.21	-6.76	-5.7	-5.29	-7.52	-10.55	-7.67	-6.48	-6.23	-5.63
Θ(30°)	-4.11	-3.51	-4.43	-4.41	-4.65	-4.84	-1.05	-2.9	-2.08	-1.38	-0.79	-1.79	-1.88	-1.98	-2.01	-1.46	-3.37	-1.84	-3.96	-6.55	-6.38	-7.61	-4.99	-4.35
Θ(45°)	0.61	-1.38	-0.43	-1.45	-1.45	0.21	-0.39	1.19	1.61	0.02	-0.65	1.25	-0.24	0.46	1.65	-0.87	-1.62	-1.71	-0.54	-2.14	-2.49	-0.21	1.62	0.48
Θ(60°)	3.1	0.73	-0.31	1.18	-1.54	-2.12	-0.85	-1.26	-0.5	2.23	0.17	0.7	4.08	-0.35	2.24	1.55	-0.75	-2.14	-1.15	-2.68	0.1	-1.43	1.82	0.52
Θ(75°)	5.19	3.35	3.74	3.83	0.84	1.95	2.47	0.79	2.54	5.28	4.65	4.33	5.28	4.15	3.71	2.16	2.69	1.39	2.88	1.38	-0.45	3.35	3.94	4.15
Θ(90°)	5.88	3.73	6.23	6.88	3.16	3.14	2.88	4.66	3.67	5.62	5.46	6.8	5.88	4.46	6.89	6.65	5.25	4.33	5.42	3.89	4.86			



$\Theta(180^\circ)$	-3.23	-4.15	-4.75	-3.16	-2.65	-5.96	-5.17	-6.08	-7.39	-7.37	-6.39	-5.2	-3.83	-4.13	-4.45	-5.58	-6.91	-6.85	-9.37	-9.39	-6.88	-7.31	-7.46	-4.92
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Gain Result

Freq(Hz)	2.45G	Pol.	Phi	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-10.86	-18.73	-18.13	-15.3	-19.12	-19.05	-17.68	-18.48	-17.81	-16.42	-14.09	-13.82	-15.34	-14.07	-12.7	-15.18	-18.37	-18.8	-18.4	-17.92	-18.24	-14.12	-13.37	-15
Θ(15°)	-10.31	-18	-17.2	-18.03	-18.23	-19.22	-18.07	-16.29	-18.78	-18.66	-18.17	-17.84	-16.52	-18.48	-18.56	-18.15	-18.2	-16.25	-13.22	-11.97	-14.38	-13.76	-10.41	-9.3
Θ(30°)	-6.98	-12.45	-17.84	-17.47	-15.24	-16.14	-13.74	-13.86	-18.21	-14.3	-14.4	-18.38	-15.29	-12.99	-16.64	-18.4	-19.06	-17.96	-15.02	-8.31	-7.91	-18.85	-9.55	-7.45
Θ(45°)	-15.1	-17.68	-18.62	-18.39	-16.07	-17.77	-16.85	-11.6	-18.23	-11.32	-10.01	-13.17	-18.17	-17.9	-19.06	-17.11	-18.1	-16.12	-17.35	-8.04	-10.43	-11.26	-5.66	-9.55
Θ(60°)	-13.97	-15.91	-18.35	-17.41	-17.02	-18.37	-17.16	-11.14	-18.04	-18.83	-13.91	-14.31	-15.9	-14.58	-17.64	-15.08	-12.27	-12.34	-17.74	-9.05	-18.22	-7	-10.81	-13.47
Θ(75°)	-14.35	-18.66	-18.55	-16.56	-10.95	-13.35	-10.29	-10.24	-13.78	-18.66	-11.72	-18.99	-12.43	-15.34	-18.01	-15.2	-13.57	-11.72	-19.12	-13.32	-18.03	-10.26	-18.1	-13.56
Θ(90°)	-13.38	-18.27	-17.71	-17.84	-8.52	-14.11	-8.29	-10.11	-11.79	-18.63	-9.86	-18.43	-11.71	-10.59	-17.71	-11.7	-12.67	-14.39	-18.19	-14.52	-13.72	-9.8	-12.95	-12.56
Θ(105°)	-16.22	-16.92	-15.4	-18.61	-11.59	-18.35	-7.65	-17.35	-10.24	-11.56	-14.75	-17.79	-19.2	-15.98	-13.66	-12.78	-14.36	-13.67	-18.82	-15.85	-13.26	-7.39	-10.77	-15.33
Θ(120°)	-14.1	-16.68	-19.45	-14.17	-18.45	-19.07	-18.22	-18.01	-11.77	-8.04	-8.75	-18.89	-7.94	-5.47	-18.05	-11.74	-11.69	-11.49	-9.33	-14.92	-14.24	-16.28	-11.27	-13.41
Θ(135°)	-12.65	-13.94	-13.53	-10.72	-16.32	-14.1	-18.23	-10.08	-10.2	-13.05	-8.02	-15.34	-12.27	-9.08	-13.75	-12.31	-17.23	-7.3	-5.9	-9.36	-8.55	-6.89	-8.92	-12.82
Θ(150°)	-17.67	-16.24	-15.06	-11.38	-12.24	-15.03	-12.64	-7.92	-8.2	-13.86	-12.51	-8.64	-9.88	-9.9	-10.89	-11.29	-14.36	-9.66	-5.6	-6.55	-10.17	-14.17	-18.79	-19.35
Θ(165°)	-10.91	-17.89	-18.58	-17.19	-13.62	-11.97	-7.91	-4.43	-3.26	-3.45	-4.65	-4.46	-5.6	-9.37	-7.95	-12.16	-8.78	-8.19	-8.76	-11.78	-18.59	-12.6	-8.96	-9.63
Θ(180°)	-18.72	-13.6	-12.5	-13.17	-10.92	-8	-6.64	-5.45	-5.84	-6.92	-8.17	-8.75	-16.83	-14.38	-16.52	-12.9	-11.88	-10.88	-7.93	-7.3	-8.63	-11.85	-10.88	-15.06
Freq(Hz)	2.45G	Pol.	Theta	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-15.39	-18.71	-15.75	-13.33	-18.53	-18.33	-18.86	-16.77	-18.7	-18.6	-18.52	-18.09	-18.51	-15.02	-16.56	-13.36	-12.01	-14.16	-16.07	-14.71	-14.19	-14.73	-16.83	-18.28
Θ(15°)	-7.1	-5.59	-7.48	-11.91	-10.31	-11.25	-11.49	-11.77	-11.64	-12.73	-12.35	-10.32	-11.63	-14.33	-10.38	-9.24	-9.69	-10.77	-10.41	-8.06	-8.19	-10.26	-10.57	-7.88
Θ(30°)	-2.5	-2.92	-3.37	-4.22	-4.31	-4.71	-4.89	-5.15	-5.22	-4.13	-2.65	-2.31	-2.68	-2.73	-2.3	-3.16	-4.25	-5.96	-6.95	-4.5	-2.77	-2.85	-2.33	-1.48
Θ(45°)	-0.16	-0.37	-2.56	-3.02	-4.62	-4.49	-2.94	-3.67	-4.77	-2.88	-1.32	0.65	0.25	-1.79	-1.15	-0.95	-3.09	-2.68	-3.57	-1.04	-0.72	-3.61	-2.34	-0.72
Θ(60°)	0.33	-4.34	-3.48	-4.52	-4.35	-2.26	-1.98	-1.72	-2.53	-3.29	-0.78	1.2	2.85	1.25	-1.7	-0.91	-1.98	1.53	0.14	-0.87	-5.28	-7.99	-5.74	-0.55
Θ(75°)	-2.58	-2.04	-2.52	-1.54	-4.69	-1.72	0.15	-1.2	0.13	-2.31	-0.3	1.64	2.2	0.21	-1.7	-0.91	-1.06	1.41	-2.16	-0.34	-2.3	-7.35	-6.62	-3.95
Θ(90°)	2.41	-1.04	-2.14	-2.54	-0.92	2.09	-2.44	-1.1	0.26	-3.25	-1.74	0.16	-1.22	-3.38	-3.01	-3.89	-1.9	-1.62	-1.59	2.46	-3.66	-2.9	-4.65	-0.87
Θ(105°)	-1.42	-5.93	-14.11	-10.1	-7.12	-0.3	-2.59	-1.32	-6.97	-1.1	-3.46	-3.45	-1.34	-3.52	-4.56	-4.06	-7.73	-1.15	-0.21	-1.05	-8.34	-5.53	-11.04	-1.15
Θ(120°)	-13.55	-3.42	-2.29	-3.3	-14.46	-6.59	-6.27	-5.19	-6.05	-3.99	-4.64	-2.75	-2.49	-7.61	-7.63	-6.47	-4.94	-1.13	-8.46	-4.2	-4.31	-4.97	-10.31	-5.06
Θ(135°)	-0.8	2.07	0.78	-2.96	-6.55	-5.52	-6.95	-10.74	-3.25	-3.93	-4.88	-6.68	-4.22	-7.66	-12.91	-13.14	-9.73	-5.96	-5.01	-6.37	-4.77	-8.2	-15.62	-6.88
Θ(150°)	-18.49	-11.74	-10.3	-13.32	-14.53	-7.65	-5.27	-5.55	-8.31	-9.92	-6.96	-8.26	-8.85	-4.63	-1.87	-2.61	-5.25	-12.74	-17.96	-9.81	-6.17	-5.77	-9.31	-10.8
Θ(165°)	-3.34	-4.23	-5.67	-6.98	-10.91	-10.88	-7.67	-5.13	-5	-6.69	-6.93	-8.22	-9.7	-9.45	-10.95	-12.67	-18.05	-19.42	-18.07	-15.8	-13.86	-11.46	-7.86	-5.02
Θ(180°)	-8.34	-6.91	-6.66	-6.87	-8.45	-10.34	-12.61	-14.18	-13.47	-11.49	-9.37	-8.32	-7.59	-7.52	-8.9	-11.09	-15.47	-14.29	-12.71	-15.14	-15.96	-13.13	-10.7	-11.14
Freq(Hz)	5.2G	Pol.	Phi	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-19.03	-18.37	-19.22	-17.55	-16.2	-17.14	-14.15	-14.61	-15.08	-13.82	-15.8	-15.58	-17.76	-18.47	-17.71	-18.09	-18.93	-14.63	-17.98	-17.89	-13.89	-19	-16.58	-18.41
Θ(15°)	-16.47	-14.61	-17.64	-18.98	-16.44	-12.02	-13.96	-17.98	-14.81	-16.18	-18.61	-18.04	-16	-18.65	-17.63	-17.35	-13.41	-18.87	-15.77	-16.62	-18.67	-17.79	-13.23	-16.42
Θ(30°)	-12.58	-18.28	-15.98	-18.41	-17.4	-17.3	-14.04	-18.76	-17.31	-19.19	-15.25	-14.52	-18.3	-18.93	-19.53	-15.24	-15.48	-18.81	-14.18	-14.05	-19.07	-14.16	-17.96	-16.7
Θ(45°)	-11.5	-19.03	-18.35	-18.53	-17.97	-11.72	-19.23	-13.61	-10.94	-17.98	-14.17	-17.49	-18.1	-18.62	-12.57	-17.34	-17.78	-18.83	-13.98	-14.11	-16.08	-16.84	-17	-8.83
Θ(60°)	-13.37	-15.13	-18.52	-19.25	-18.11	-14.82	-14.55	-13.92	-15.12	-12.83	-18.22	-17.9	-9.1	-18.95	-12.02	-17.25	-18.42	-13.73	-18.08	-11.42	-18.47	-18.38	-18.21	-19.26
Θ(75°)	-16.41	-18.5	-15.38	-17.22	-17.12	-18.56	-17.63	-14.69	-13.44	-12.33	-8.93	-15.9	-16.6	-18.99	-18.8	-10.72	-18.95	-18.2	-19.02	-19	-15.95	-18.7	-18.13	-16.83
Θ(90°)	-18.36	-18.34	-17.64	-18.18	-17.58	-13.59	-11.68	-13.61	-14.71	-11.06	-16.57	-14.29	-13.58	-18.41	-14.21	-14.14	-10.48	-18.18	-8.75	-11.83	-8.85	-16.97	-15.44	-18.36
Θ(105°)	-17.56	-17.25	-13.38	-10.34	-7.6	-17.7	-13.23	-13.2	-15.83	-12.55	-8.05	-16.45	-11.65	-12.85	-19.24	-19.44	-14.11	-18.6	-18.43	-18.69	-9.36	-19.29	-11.52	-15.22
Θ(120°)	-18.04	-16.04	-10.99	-12.4	-15.81	-17.61	-10.35	-9.61	-16.83	-14.69	-12.82	-19.24	-18.85	-11.26	-15.18	-18.53	-7.04	-16.13	-9.75	-10.08	-7.26	-16.32	-12.99	-5.82
Θ(135°)	-18.57	-6.81	-7.19	-10.18	-18.71	-13.03	-9.36	-11.07	-10.77	-14.7	-8.85	-13.27	-13.67	-16.03	-19.03	-14.81	-13.68	-10.29	-17.83	-18.83	-17.56	-8.83	-17.11	-10.26
Θ(150°)	-11.05	-15.65	-13.16	-12.5	-10.78	-18.62	-13.59	-5.46	-6.96	-11.6	-10.07	-17.16	-13.05	-6.79	-6.44	-9.63	-13.81	-8.7	-9.49	-16.7	-19.39	-16.55	-18.46	-11.38
Θ(165°)	-19.13	-17.81	-16.44	-10.67	-14.4	-13.98	-16.93	-18.7	-17.68	-17.65	-12.46	-8.87	-8.84	-8.92	-11.31	-13.22	-9.92	-11.43	-11.59	-11.12	-16.96	-18.73	-18.55	-17.45
Θ(180°)	-10.96	-12.06	-12.24	-10.86	-13.45	-14.03	-15.5	-18.06	-15.78	-12.71	-11.97	-13.37	-11.69	-9.47	-10.37	-13.29	-18.63	-18.06	-18.09	-18.83	-18.31	-16.81	-18.38	-13.28
Freq(Hz)	5.2G	Pol.	Theta	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-17.72	-17.69	-17.27	-17.57	-18.34	-18.63	-18.43	-17.48	-17.57	-19.02	-15.95	-18.34	-15.09	-18.03	-17.63	-15.58	-13.63	-14.89	-18.01	-18.31	-18.84	-16.12	-18.44	-18.85
Θ(15°)	-13.61	-13.4	-18.73	-18.39	-17.78	-18.89	-14.59	-11.91	-11.8	-13.52	-10.85	-8.38	-9.84	-12.9	-11.65	-9.19	-11.17	-9.92	-11.1	-16.28	-10.88	-10.49	-9.65	-11.46
Θ(30°)	-10.04	-10.32	-11.86	-16.1	-11.2	-13.09	-6.48	-8.61	-7.31	-7.71	-10.17	-14.74	-12.37	-8.83	-7.15	-6.03	-6.79	-8.98	-17.49	-12.25	-18.91	-17.81	-9.74	-14.59
Θ(45°)	-6.22	-15.48	-14.69	-18.17	-14.37	-16.89	-17.33	-7.34	-12.18	-16.42	-11.07	-11.09	-12.64	-11.43	-6.3	-9.78	-9.9	-12.81	-8.82	-9.94	-14.57	-9.9	-5.35	-10.14
Θ(60°)	-4.26	-7.97	-8.58	-6.53	-8.94	-18.56	-17.86	-19.1	-17.14	-12.03	-1													



Radiated Composite Gain of 2.4GHz and 5GHz UNII1, UNII 2A

Appendix A

Θ(135°)	-6.69	-6.28	-10.42	-10.9	-6.89	-10.3	-6.59	-8.84	-15.61	-17.45	-18.47	-7.73	-11.57	-18.74	-18.77	-9.64	-4.62	-9.24	-7.29	-9.31	-18.8	-8.71	-11.22	-17.48
Θ(150°)	-9.29	-4.73	-5.61	-8.99	-14.42	-11.9	-6.33	-5.64	-7.31	-7.27	-12.86	-12.93	-6.12	-7.13	-8.18	-6.5	-7.8	-9.16	-4.1	-3.81	-9.73	-16.49	-16.44	-19.32
Θ(165°)	-18.12	-13.24	-9.29	-8.36	-8.79	-11.47	-10.81	-8.98	-9.51	-9.66	-10.89	-15.11	-9.79	-15.49	-18.99	-19.16	-13.32	-8.92	-7.19	-7.44	-11.99	-15.12	-18.8	-19.32
Θ(180°)	-7.69	-7.82	-6.58	-5.02	-4.26	-4.34	-4.13	-5.78	-6.45	-7.28	-11.06	-12.6	-11.19	-11.57	-11.02	-7.26	-5.47	-4.91	-7.02	-7.53	-5.53	-7.83	-6.51	-8.78
Freq(Hz)	2.45G	Pol.	Theta	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.65	-18.73	-16.44	-17.03	-19.13	-15.07	-15.72	-17.95	-18.69	-18.02	-17.48	-19.43	-17.49	-18.27	-13.22	-13	-15.91	-17.48	-18.74	-18.42	-18.21	-14.74	-17.62	-13.36
Θ(15°)	-3.87	-3.41	-4.61	-8.47	-11.58	-14.42	-12.61	-9.69	-7.39	-5.11	-4.74	-6.7	-5.46	-7.45	-9.73	-11.38	-12.63	-9.81	-9.13	-13.79	-18.3	-8.65	-4.96	-2.35
Θ(30°)	-8.72	-10.18	-6.79	-4.08	-3.04	-4.51	-12.03	-9.27	-2.84	-2.77	-9.49	-9.36	-5.47	-6.4	-4.87	-6.94	-8	-5.7	-6.77	-6.75	-4.12	-4.41	-6.28	-8.36
Θ(45°)	1.11	1.26	-1.62	-0.95	-5.26	-0.86	-3.04	-4.72	-0.47	-1.87	-3.35	-2.28	-1.26	-1.81	-0.86	-1.54	-4.18	-5.38	-6.5	-5.08	-5.44	-4.09	-1.01	0.39
Θ(60°)	1.09	-1.33	-4.49	-1.15	-1.17	-3.32	0.44	0.84	-0.36	0.81	-0.27	-2.46	-2.03	-1.32	-1.34	0.24	-2.8	-0.48	-3.79	-2.62	-1.24	1.43	-0.24	-1.39
Θ(75°)	-2.76	-2.98	-2.61	-2.84	-3.55	-1.37	-1.6	-0.75	-2.27	-0.34	-0.05	0.37	-0.67	-0.06	-1.61	-2.07	0.55	0.08	-1.39	-1.09	-1.98	-6.77	-1.51	-0.57
Θ(90°)	-5.09	-2.76	0.09	-0.78	0.05	-0.82	0.66	-7.65	-4.63	-7.48	-0.53	-1.83	1.1	-2.78	-6.03	1.57	-2.18	-5.22	1.19	1.04	-2.62	-5.13	-1.98	-3.34
Θ(105°)	-1.47	-3.49	-3.21	-6.65	-1.47	-4.09	1	-0.81	-6.99	-4.07	-4.61	-12.6	-7.66	-6.05	-10.89	-2.9	-3.38	-1.95	1.23	1.28	-8.16	-5.43	-5.75	-15.34
Θ(120°)	-5.06	-10.97	-9.37	-12.28	-10.69	-19.5	-10	-4.09	-5.7	-14.44	-6.07	0.13	-1.16	-5.79	-4.08	-10.4	-2.85	-5.74	-13.48	-13.03	-11.08	-11.8	-13.21	-13.04
Θ(135°)	-9.64	-4.29	-2.38	-3.86	-4.02	-3.92	-5.6	-19.09	-5.1	-3.59	-5.21	-6.49	-6.56	-11.17	-4.79	-3.95	-2.89	-2.35	-8.2	-14.48	-9.61	-1.86	0.88	-1.41
Θ(150°)	-5.65	-0.8	-0.67	-3.15	-2.79	-0.12	0.08	-2.92	-7.73	-8.43	-7.21	-19.24	-18.52	-8.88	-12.64	-5.44	-2.23	-9.99	-7.79	-3.46	-8.5	-9.93	-7.34	-4.32
Θ(165°)	-7.23	-4.19	-5.83	-8.75	-9.17	-8.09	-6.71	-5.72	-5.65	-5.6	-10.5	-17.62	-13.76	-13.99	-15.78	-13.82	-14.95	-12.57	-8.77	-7.17	-8.19	-11.91	-9.63	-11.98
Θ(180°)	-3.04	-3.35	-4.72	-5.66	-8	-11.81	-15.44	-12.32	-6.42	-4.34	-2.51	-1.73	-2.4	-3.98	-7.48	-11.28	-12.5	-14.47	-17.92	-9.53	-5.92	-5.04	-3.87	-3.77
Freq(Hz)	5.2G	Pol.	Phi	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.13	-18.27	-18.26	-17.46	-18.44	-19.04	-14.11	-14.91	-13.15	-15.74	-17.86	-17.24	-18.51	-18.5	-19.03	-18.3	-17.1	-13.56	-16.27	-17.98	-15.62	-13.25	-15.83	-17.91
Θ(15°)	-17.26	-19.15	-18.17	-18.41	-13.06	-11.1	-15.57	-16.86	-14.33	-17.38	-18.4	-17.86	-18.02	-19.06	-18.2	-18.51	-18.83	-18.47	-18.19	-19.25	-13.48	-17.78	-15.72	-18.35
Θ(30°)	-19.08	-18.72	-18.97	-17.95	-10.94	-19.31	-10.42	-16.72	-12.64	-12.64	-18.88	-17.81	-12.94	-15.38	-18.2	-18.01	-17.34	-16.66	-18.11	-12.13	-18.17	-17.42	-19.29	-19.21
Θ(45°)	-18.81	-18.62	-19.04	-17.83	-14.29	-13.03	-14.74	-9.85	-9.89	-8.39	-18.82	-14.99	-19.24	-17.88	-17.87	-11.06	-12.99	-18.58	-18.34	-18.2	-18.09	-14.27	-10.92	-18.41
Θ(60°)	-15.46	-17.06	-16.19	-14.41	-11.54	-10.29	-15.68	-11.61	-16.53	-13.61	-14.7	-11.52	-17.52	-18.24	-12.8	-18.13	-14.75	-17.97	-14.65	-17.56	-15.49	-19.07	-9.06	-10.99
Θ(75°)	-17.33	-19.08	-14.22	-13.82	-17.89	-11.22	-14.55	-16.62	-14.13	-14.65	-14.26	-16.51	-17.93	-18.15	-15.29	-15.45	-16.08	-18.03	-16.41	-18.6	-18.71	-11.39	-14.65	-18.75
Θ(90°)	-17.27	-13.33	-17.7	-17.91	-17.07	-18.88	-12.91	-15.75	-14.03	-12.87	-18.59	-12.28	-17.68	-10.53	-14.29	-17.9	-18.42	-18.59	-17.25	-17.7	-16.9	-11.68	-17.77	-15.24
Θ(105°)	-18.33	-12.56	-8.14	-8.78	-15.3	-13.69	-10.2	-18.33	-13.6	-17.3	-11.65	-17.13	-13.2	-17.66	-9.37	-18.08	-14.8	-16.18	-17.4	-14.29	-16.78	-12.27	-17.16	-16.15
Θ(120°)	-18.96	-16.96	-12.05	-14.39	-16.2	-19.19	-18.25	-11.97	-11.51	-18.96	-11.53	-18.65	-16.17	-16.49	-11.77	-18.56	-18.32	-13.21	-15.64	-9.83	-14.45	-19.41	-15.42	-18.66
Θ(135°)	-13.69	-13.74	-19.32	-9.89	-10.58	-14.08	-18.99	-18.36	-17.9	-18.02	-18.55	-18.07	-15.02	-17.78	-18.69	-11.15	-11.57	-18.54	-17.77	-15.27	-15.59	-18.12	-10.96	-18.81
Θ(150°)	-15.47	-9.32	1.57	-8.21	-14.7	-13.83	-15.26	-15.16	-14.7	-10.79	-17.64	-18.76	-12.37	-16.9	-18.5	-14.09	-12.86	-14.85	-18.21	-15.4	-17.53	-17.64	-17.35	-15.58
Θ(165°)	-18.93	-18.38	-18.23	-10.7	-7.87	-9.09	-13.22	-13.69	-15.39	-18.8	-17.59	-16.44	-15.07	-18.36	-14.78	-13.83	-15.98	-17.56	-17.92	-18.45	-18.23	-19.05	-18.23	-18.98
Θ(180°)	-16.32	-14.98	-14.48	-14.4	-14.18	-15.92	-18.04	-17.52	-19.06	-17.71	-18.33	-18.77	-16.8	-18.76	-16.76	-17.43	-12.45	-15.84	-15.76	-18.3	-17.2	-18.69	-16.95	-16.3
Freq(Hz)	5.2G	Pol.	Theta	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-17.92	-14.75	-16.17	-15.93	-16.89	-15.87	-17.22	-18.04	-19.29	-17.72	-18.79	-16.43	-15.69	-13.18	-13.29	-15.66	-15.79	-16.45	-19.1	-16.98	-17.89	-18.5	-16.05	-16.33
Θ(15°)	-19.79	-19.38	-19.1	-18.07	-16.53	-14.9	-16.55	-18.06	-18.3	-9.93	-10.1	-11.45	-11.25	-9.21	-8.15	-16.69	-13.48	-14.42	-12.85	-13.3	-16.34	-18.18	-18.25	-16.15
Θ(30°)	-10.67	-13.16	-15.89	-13.99	-12.01	-14.3	-6.8	-9.54	-5.7	-8.94	-7.13	-7.61	-6.1	-6.09	-9.13	-4.78	-8.66	-10.67	-12.52	-10.06	-13.77	-17.28	-17.12	-9.68
Θ(45°)	-1.91	-5.3	-2.98	-3.42	-4.45	-3.73	-3.96	-3.45	-2.82	-1.99	-4.05	-2.13	-2.43	-2.37	-0.54	-4.1	-5.85	-3.55	-2.59	-6.63	-6.08	-5.24	-1.19	-2.59
Θ(60°)	-1.66	-5.01	-5.83	-8.54	-6.51	-4.53	-6.13	-4.3	-3.35	-2.03	-2.42	-4.05	-0.98	-4.36	-1.02	-2.9	-3.68	-3.31	-4.61	-6.8	-2.91	-7.91	-2.4	-3.61
Θ(75°)	0.75	-1.25	-3.15	-3.74	-4.47	-1.76	-3.2	-3.23	-2.3	1.92	-0.95	0.18	0.7	0.84	0.92	-2.35	-0.79	-5.06	-1.95	-2.48	-5.72	-0.94	-0.75	-0.99
Θ(90°)	-3.16	-4.36	2	1.17	-4.54	-3.13	-1.73	-2.75	-2.74	-5.84	-1.54	-0.53	-1.7	-3.19	-0.55	-5.2	-5.1	-3.71	-6.47	1.6	-0.16	-4.55	-2.45	-3.29
Θ(105°)	-7.59	-6.04	-4.04	-6.8	-7.61	-7.98	-2.49	-2.99	-1.84	-3.4	-3.04	-3.64	-2.5	1.05	-7.45	-3.8	-2.69	-6.32	-6.72	-4.36	-10.16	-18.16	-6.58	-11.98
Θ(120°)	-11.05	-9.38	-0.65	-3.53	-6.04	-10.38	-9.67	-7.35	-17.46	-5	-6.84	-9.43	-9.44	-6.9	-1.98	-8.15	-2.4	-17.63	-7.29	-1.09	-8.85	-3.4	-9.72	-7.93
Θ(135°)	-6.06	-4.56	-9.66	-13.79	-8.05	-8.57	-6.6	-5.66	-7.67	-13.24	-12.09	-3.43	-3.54	-8.8	-8.57	-9.63	-9.31	-11.06	-10.23	-18.01	-16.2	-17.79	-17.63	-17.19
Θ(150°)	-7.42	-7.33	-10.38	-8.32	-9.25	-9.32	-7.19	-3.8	-11.42	-6.05	-4.64	-2.94	-5.93	-7.43	-4.44	-6.64	-4.45	-11.99	-12.87	-9.59	-6.91	-12.91	-18.88	-8.53
Θ(165°)	-6.94	-9.79	-14.31	-12.45	-14.49	-16.58	-13.11	-10.13	-13.46	-13.83	-14.19	-14.45	-10.2	-8.77	-6.32	-13.24	-8.77	-11.43	-10.73	-17.06	-18.05	-9.48	-6.8	-7.19
Θ(180°)	-15	-18.5	-17.89	-18.09	-17.84	-18.9	-17.46	-19.37	-15.82	-13.31	-12.34	-17.67	-18.04	-13.76	-15.39	-19.13	-18.48	-16.86	-18.89	-18.76	-12.95	-17.76	-18.24	-16.69
Freq(Hz)	5.3G	Pol.	Phi	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.65	-17.11	-18.29	-15.57	-16.97	-14.89	-15.62	-15.65	-13.94	-13.75	-15.75	-15.85	-18.65	-19.02	-18.59	-17.49	-18.03	-18.64	-16.13	-14.13	-15.29	-18.09	-16.43	-18.34
Θ(15°)	-17.87	-18.49	-13.61																					



Radiated Composite Gain of 2.4GHz and 5GHz UNII1, UNII 2A

Appendix A

Θ(90°)	-0.78	-3.6	-1.81	0.9	3.01	3.93	-0.51	1.49	0.86	-2.99	-0.33	-0.82	-1.38	-0.12	-4.91	-5.06	2.35	2.71	1.16	-1.99	-2.08	0.81	-0.96	1.1
Θ(105°)	-0.67	-2.09	0.16	0.85	-2.4	0.01	-4.28	-0.28	-0.35	-0.43	-6.17	-5.87	-2.76	-0.79	-1.43	-6.21	-1.37	2.99	3.4	-0.21	-4.79	-4.73	-4.32	2.22
Θ(120°)	-1.85	-0.51	-3.39	-7.92	-11.88	-5.11	-5.5	-12.47	-6.01	-5.45	-8.29	-17.47	-7.01	-9.68	-11.47	-5.37	-9.48	-8.39	-5.56	-3.16	-6.79	-2.32	-10.94	-4.95
Θ(135°)	-10.21	-15.39	-12.96	-6.19	-8.33	-16.53	-10.42	-13.75	-7.63	-19.07	-5.04	-2.96	-2.29	-3.92	-11.13	-10.92	-2.75	-7.7	-12.11	-12.69	-10.73	-6.47	-7	-8.57
Θ(150°)	-5.83	-8.47	-10.02	-11.72	-8.19	-2.62	-3.57	-5.54	-3.89	-4.43	-7.45	-9.25	-8.9	-11.43	-11.68	-14.7	-13.84	-16.69	-12.16	-9.93	-7.05	-5.54	-7.91	-10.68
Θ(165°)	-8.79	-4.75	-3.3	-2.48	-1.56	-1.7	-2.1	-3.58	-5.59	-6.22	-7.29	-11.76	-17.49	-12.79	-16.13	-16.86	-14.65	-11.3	-8.78	-10.43	-13.83	-18.13	-14.7	-13.44
Θ(180°)	-6.56	-6.63	-6.54	-9.73	-11.93	-15.55	-16.8	-13.43	-13.12	-13.06	-8.29	-4.62	-4.1	-4.27	-5.91	-9.19	-10.83	-18.56	-19.09	-13.1	-9.51	-8.25	-6.75	-6.27
Freq(Hz)	5.2G	Pol.	Phi	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.85	-19.17	-18.27	-17.43	-17.94	-15.54	-17.46	-15.32	-13.89	-13.42	-12.92	-14.59	-13.83	-16.32	-18.33	-17.17	-19	-18.46	-18.68	-19.06	-18.26	-17.35	-17.04	-15.41
Θ(15°)	-12.24	-16.49	-18.65	-18.06	-17.39	-17.12	-16.24	-15.74	-14.39	-15.31	-18.22	-15.45	-18.41	-18.32	-16.62	-13.68	-8.66	-11.06	-13.15	-19.29	-18.38	-18.05	-18.15	-18.8
Θ(30°)	-17.84	-17.41	-19.11	-16.64	-17.39	-15.34	-18.96	-17.32	-13.55	-10.95	-10.74	-9.83	-17.64	-11.98	-15.48	-18.6	-10.64	-9.85	-10.94	-16.36	-17.07	-15.86	-17.93	-18.74
Θ(45°)	-14.16	-16.56	-18.22	-17.98	-12.57	-17.87	-19.1	-8.68	-11.56	-8.49	-14.9	-15.41	-11.5	-14.59	-18.56	-18	-15.22	-18.91	-14.61	-11.38	-9.06	-7.44	-11.75	-16.68
Θ(60°)	-11.17	-16.05	-17.74	-18.43	-16.31	-18.35	-19.07	-14.84	-8.48	-14.48	-17.14	-11.7	-18.25	-18.73	-18.04	-18.83	-14.75	-10.21	-18.55	-17.61	-15.03	-8.25	-11.5	-13.45
Θ(75°)	-18.63	-18.16	-17.8	-14.8	-17.05	-18.09	-11.19	-17.45	-10.54	-13.11	-12.07	-17.95	-12.69	-17.98	-18.38	-18.34	-18.56	-18.48	-10.45	-9.24	-12.5	-13.37	-17.86	-14.65
Θ(90°)	-14.77	-11.84	-14.82	-14.43	-17.88	-9.19	-18.07	-8.94	-15.81	-18.87	-15.27	-18.53	-18.89	-18.58	-13.09	-18.46	-16.95	-10.12	-8.78	-15.33	-16.5	-19.03	-11.96	-18.81
Θ(105°)	-14.15	-18.34	-15.29	-11.48	-18.14	-18.33	-8.83	-12.96	-12.95	-11.99	-16.13	-18.81	-15.2	-11.9	-17.27	-9.73	-18.73	-9.61	-12.95	-17.39	-12.26	-16.36	-9.65	-14.1
Θ(120°)	-17.83	-11.84	-18.4	-10.82	-14.72	-17.47	-5.02	-18.99	-8.35	-16.55	-19.27	-12.09	-10.94	-18.33	-12.6	-11.21	-11.65	-11.47	-10.66	-17	-18.36	-19.86	-18.91	-18.61
Θ(135°)	-17.94	-18.38	-18.92	-15.61	-18.66	-15.57	-7.11	-10.29	-16.66	-10.18	-17.15	-10.04	-8.04	-12.04	-16.82	-18.44	-13.58	-18.63	-19.31	-11.01	-19.23	-18.7	-19.42	-17.76
Θ(150°)	-16.28	-12.36	-16.33	-18.96	-11.9	-13.6	-17.85	-11.59	-12.99	-18.64	-18.11	-11.89	-15.69	-10.73	-17.38	-15.41	-19.32	-15.49	-12.09	-16.05	-12.88	-9.12	-12.41	-18.7
Θ(165°)	-17.89	-18.01	-17.5	-19.08	-16.46	-18.9	-13.62	-12.12	-11.26	-12.63	-17.73	-14.29	-16.01	-15.61	-15.41	-16.65	-12.06	-7.44	-6.87	-6.75	-10.69	-11.99	-10.84	-11.18
Θ(180°)	-18.25	-17.25	-17.75	-14.2	-9.46	-7.19	-6.63	-7.4	-10.9	-13.85	-14.16	-16.87	-14.65	-13.25	-14.28	-16.22	-12.27	-15.27	-11.75	-11.09	-10.94	-13.29	-17.91	-15.34
Freq(Hz)	5.2G	Pol.	Theta	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.86	-19.13	-17.42	-17.28	-17.15	-14.82	-18.83	-18.82	-19.65	-19.03	-18.27	-17.06	-15.94	-16.83	-17.63	-17.22	-15.47	-17.37	-16.31	-16.55	-18.22	-18.74	-18.26	-19.01
Θ(15°)	-12.44	-11.52	-14.52	-13.32	-12.02	-14.88	-19.47	-10.82	-14.1	-16.2	-17.59	-11.76	-17.74	-18.06	-14.07	-11.2	-8.94	-8.51	-13.46	-18.99	-18.02	-18.88	-13.67	-10.03
Θ(30°)	-8.68	-5.94	-6.69	-6.94	-9.67	-6.67	-6.07	-10.95	-7.39	-3.93	-2.89	-2.71	-5.12	-5.04	-6.08	-11.01	-10.6	-6.31	-7.21	-11.77	-9.07	-9.24	-9.23	-8.12
Θ(45°)	-3.22	-2.07	-5.38	-2.71	-4.22	-2.05	-3.48	-6.23	-3.46	-9.03	-8.99	-5.57	-5.53	-6.35	-4.51	-4.27	-3.81	-5.6	-5.44	-3.7	-7.17	-3.08	-2.88	-2.32
Θ(60°)	-1.24	-5.64	-3.6	-0.64	-6.14	-5.74	-2.75	-2.86	-1.58	0.36	-4.66	-2.14	-0.92	-3.22	-4.98	-2.85	-4.75	-4.14	-3.87	-2.92	-4.6	-3.36	-2.77	-1.56
Θ(75°)	1.46	-0.73	0.02	-0.99	-4.14	-2.08	-3.06	-4.2	-0.85	-0.56	-0.26	0.34	0.04	-0.64	-2.43	-1.06	-3.59	-2.85	-0.76	-4.58	-4.7	-2.65	0.8	-1.16
Θ(90°)	2.19	-2.54	-2.03	-1.13	-5.48	-8.47	-0.44	-2.85	-6.38	2.48	1.94	-1.42	2.46	-1.06	1.49	2.31	0.37	2.25	-0.68	-4.9	-6.17	-0.77	-0.11	1.49
Θ(105°)	0.79	-2.89	-1.26	-5.73	-9.01	-4.73	-0.72	-18.26	-4.2	-2.01	-2.15	-7.96	-8.13	-10.85	-4.52	-6.87	-18.9	-1.36	-1.68	-6	-10.73	-2.35	-2.04	-2.77
Θ(120°)	-6.24	-10.89	-11.85	-11.17	-7.79	-9.4	-11.9	-11.67	-8.78	-4.89	-2.5	-18.57	-10.56	-18.36	-11.81	-4.68	-16.98	-0.79	-4.35	-19.03	-2.68	-6.47	-3.74	-5.58
Θ(135°)	-4.82	-3.86	-7.86	-11.76	-11.98	-9.76	-4.21	-12.67	-10.68	-10.27	-2.42	-11.9	-9.24	-7.5	-7.57	-16.76	-7.61	-13.04	-16.96	-11.85	-11.7	-9.34	-8.02	-5.06
Θ(150°)	-8.83	-3.82	-5.38	-5.43	-5.25	-4.36	-2.71	-7.4	-14.45	-7.39	-7.15	-5.39	-15.58	-18.16	-15.21	-16.15	-8.91	-5.16	-5.42	-8.52	-8.31	-8.34	-7.56	-6
Θ(165°)	-3.07	-3.03	-2.55	-3.24	-5.94	-9.2	-10.31	-10.39	-14.17	-17.13	-16.1	-14.94	-13.93	-15.55	-16.02	-10.33	-10.54	-15.6	-17.22	-8.72	-8.33	-8.37	-5.02	-2.13
Θ(180°)	-7.47	-7.72	-7.86	-8.52	-5.6	-12.31	-14.82	-11.9	-16.11	-18.38	-18.23	-9.72	-9.25	-8.08	-9.52	-12.15	-12.75	-15.2	-14.29	-15.71	-14.35	-13.23	-12.13	-10.09
Freq(Hz)	5.3G	Pol.	Phi	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-15.43	-13.53	-18.06	-17.97	-17.94	-18.76	-19.03	-18.72	-18.63	-18.53	-17.49	-18.84	-18.16	-16.59	-18.98	-18.52	-17.75	-17.7	-18.11	-17.53	-17.96	-16.44	-18.73	-16.74
Θ(15°)	-15.81	-18.07	-16.94	-14.45	-18.23	-18.7	-18.39	-15.03	-15.48	-18.15	-14.6	-13.37	-18	-18.93	-19.48	-12.42	-10.87	-10.7	-16.46	-17.74	-16.64	-16.99	-18.65	-16.81
Θ(30°)	-17.42	-18.26	-17.8	-17.51	-18.29	-19.13	-17.01	-18.93	-11.82	-11.92	-14.8	-14.95	-13.13	-10.43	-16.02	-18.43	-8.33	-9.93	-16.67	-15.6	-17.46	-17.24	-19.1	-19.13
Θ(45°)	-17.66	-17.8	-17.35	-18.86	-14.92	-15.8	-17	-10.51	-8.07	-8.18	-13.11	-19.02	-16.34	-17.32	-17.82	-16.49	-18.48	-15.74	-17.42	-12.41	-10.77	-10.4	-18.03	-14.56
Θ(60°)	-16.14	-14.36	-17.83	-17.72	-11.94	-17.98	-19.17	-8.98	-8.73	-13.97	-19.14	-12.03	-18.57	-18.52	-16.24	-11.75	-12.73	-18.34	-12.49	-18.15	-12.57	-7.06	-11.18	-16.46
Θ(75°)	-17.51	-13.07	-18.31	-18.17	-18.75	-17.03	-17.8	-14.25	-14.3	-17.28	-15.23	-18.82	-11.1	-19.14	-18.97	-17	-16.78	-19.23	-11.12	-16	-17.23	-12.68	-12.47	-14.38
Θ(90°)	-18.13	-14.69	-15.7	-18.9	-16.82	-9.61	-12.86	-11.09	-18.84	-18.85	-17.08	-18.97	-18.54	-18.91	-18.62	-11.66	-12.72	-17.98	-10.07	-17.54	-11.69	-14.24	-12.33	-18.2
Θ(105°)	-12.02	-18.38	-18.03	-17.58	-17.89	-16.61	-8.67	-14.51	-10.93	-18.91	-11.67	-18.4	-11.6	-12.4	-16.63	-8.8	-19.08	-13.68	-17.7	-14.19	-17.83	-19.33	-18.94	-16.35
Θ(120°)	-17.86	-11.83	-14.85	-11.51	-18.44	-10.44	-7.95	-18.47	-12.38	-15.55	-18.43	-11.42	-15.6	-13.95	-16.74	-9.58	-13.61	-14.92	-13.58	-14.04	-18.36	-18.65	-18.98	-18.35
Θ(135°)	-18.16	-18.42	-18.47	-17.53	-19.15	-18.08	-7.6	-14.05	-17.84	-13.61	-16	-10.81	-7.91	-10.5	-18.29	-11.54	-14.05	-17.43	-18.49	-11.79	-18.81	-17.37	-18.29	-19.12
Θ(150°)	-14.08	-17.02	-18.07	-19.21	-16.93	-17.07	-19.1	-18.12	-14.91	-14.64	-14.42	-15.16	-18.68	-9.24	-15.7	-18.91	-16.51	-14.42	-14.42	-19.04	-17.89	-16.08	-18.2	-16.59
Θ(165°)	-16.67	-15.86	-11.89	-10.55	-10.28	-15.69	-14.78	-10.22	-9.15	-11.16	-18.05	-17.55	-18.3	-16.08	-15.16	-17.37	-10.38	-7.68	-7.01	-9.25	-13.07	-11.39	-11	-9.83
Θ(180°)	-18.34	-17.43	-18.85	-11.82	-6.13	-4																		



Θ(45°)	-19.09	-19.12	-15.35	-12.66	-8.45	-18.85	-12.06	-8.43	-8.89	-15.75	-17.65	-9.39	-10.92	-12.16	-9.1	-17.13	-18.7	-19.29	-17.33	-18.41	-17.14	-17.13	-18.92	-11.26
Θ(60°)	-12.61	-18.92	-10.71	-11.61	-18.69	-14.32	-8.63	-9.82	-9.54	-18.45	-18.81	-18.45	-17.41	-11.7	-18.36	-15.75	-15.18	-11.04	-16	-15.78	-18.41	-18.85	-10.3	-16.18
Θ(75°)	-16.38	-17.51	-16.25	-17.11	-15.2	-13.43	-6.89	-5.17	-16.28	-17.31	-14.81	-18.31	-18.46	-14.93	-18.8	-18.79	-16.02	-13.44	-18.15	-14.4	-11.53	-10.17	-17.03	-19.82
Θ(90°)	-18.6	-15.18	-19.28	-13.81	-17.34	-10.31	-19.26	-4.16	-14.73	-13.3	-12.62	-14.67	-18.58	-15.66	-18.23	-18.65	-14.58	-12.96	-13.75	-13.53	-13.28	-13.09	-14.16	-9.75
Θ(105°)	-16.47	-17.94	-18.36	-17.58	-15.88	-8.12	-7.95	-8.89	-19.2	-10.44	-18.15	-12.19	-17.97	-11.22	-8.5	-4.9	-8.01	-14.86	-18.41	-14.35	-17.92	-18.51	-12.81	-19.08
Θ(120°)	-11.4	-8.07	-17.58	-17.48	-15.59	-15.27	-4.71	-13.01	-14.41	-17.57	-17.31	-18.85	-19.22	-18.42	-18.15	-11.42	-18.52	-13	-19.19	-19.1	-13.7	-18.6	-13.59	-16.46
Θ(135°)	-13.4	-18.18	-14.88	-15.51	-11.94	-18.61	-16.45	-10.24	-17.86	-19.05	-10.33	-13.64	-14.6	-18.27	-5.56	-4.09	-8.94	-12.35	-18.45	-15.86	-14.26	-14.55	-12.08	-19.64
Θ(150°)	-12.08	-14.73	-18.65	-18.63	-10.18	-9.06	-11.43	-14.13	-15.42	-16.27	-16.07	-19.06	-18.51	-14.5	-15.16	-17.83	-9.19	-7.25	-17.38	-10.33	-18.11	-8.9	-12.26	-17.41
Θ(165°)	-18.61	-16.46	-12.96	-10.2	-9.75	-14.97	-14.51	-7.75	-7.59	-12.86	-17.7	-16.12	-13.93	-18.22	-15.12	-9.39	-7.91	-13.87	-17.14	-7.64	-6.88	-6.86	-10.6	-17.25
Θ(180°)	-12.94	-9.9	-6.44	-5.99	-6.27	-11.49	-10.51	-9.32	-5.71	-7.92	-9.19	-13.25	-11.43	-12.59	-11.25	-8.44	-5.43	-3.82	-3.75	-4.29	-6.53	-11.86	-12.39	-19.09
Freq(Hz)	5.2G	Pol.	Theta	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-13.09	-12.6	-18.21	-15.1	-15.77	-13.48	-10.34	-10.6	-10.16	-14.45	-11.36	-10.6	-14.99	-18.46	-17.9	-19.14	-15.97	-14.32	-12.6	-12.01	-12.01	-11.76	-12.14	-15.56
Θ(15°)	-10.29	-11.18	-9.04	-10.4	-11.31	-9.94	-9.43	-9.47	-10.27	-13.87	-18.26	-17.62	-18.95	-18.36	-17.84	-16.53	-14.35	-13.83	-18.25	-19.05	-11.59	-7.69	-9.96	-10.23
Θ(30°)	-11.37	-10.27	-9.84	-8	-10.02	-11.46	-9.25	-7.05	-14.07	-10.4	-8.91	-10.58	-9.92	-15.14	-10.39	-9.58	-12.58	-6.25	-6.71	-18.04	-10.79	-13.07	-10.01	-10.33
Θ(45°)	-15.64	-13.69	-6.53	-15.83	-10.86	-6.66	-6.52	-3.06	-2.3	-3.04	-4.54	-2.84	-7.4	-4.48	-7.95	-12.04	-14.67	-12.98	-12.38	-18.04	-8.42	-8.31	-11.05	-10.64
Θ(60°)	-5.18	-3.21	-8.28	-5.73	-9.07	-9.41	-6.69	-10.73	-12.56	-6.02	-5.62	-4.79	-2.74	-13.38	-5.85	-4.83	-10.71	-16.85	-10.55	-18.79	-7.16	-13.7	-5.34	-12.4
Θ(75°)	0.42	-1.49	-0.84	0.7	-2.52	-8.97	-3.71	-8.08	-9.3	-5.44	-7.02	-5.33	-4.69	-11.65	-7.12	-10.46	-8.22	-3.88	-3.58	-5.01	-3.73	0.51	0.18	0.35
Θ(90°)	2.36	3.61	0.83	3.21	0.21	-1.13	-4.39	1.07	-1.33	-2.9	-6.5	2.39	-5.91	-6.5	-0.69	1.84	-1.18	-1.03	2.52	0.08	0.94	1.59	2.72	1.43
Θ(105°)	1.17	-2.5	-0.78	-0.45	-3.95	-0.81	-0.13	0.21	-4.57	-5.29	-3.46	-5.05	-5.17	-4.69	2.6	2.72	0.08	-0.69	0.25	-4.38	-3.03	-0.43	1.07	0.49
Θ(120°)	-5.74	-4.16	-12.05	-7.33	-7.26	-17.99	-9.03	-3.18	-3.99	-6.2	-4.81	-2.31	0.39	-7.16	-3.03	-13.65	-9.8	-14.24	-6.61	-13.01	-8.81	-18.93	-7.6	-18.11
Θ(135°)	-13.19	-10.46	-3.32	-4.63	-17.43	-16.3	-4.3	-12.66	-13.41	-9.87	-5.69	-5.56	-9.97	-3.18	-11.28	-9.69	-17.07	-11.9	-13.34	-17.81	-12.53	-6.19	-7.67	-10.21
Θ(150°)	-4.28	-2.21	-3.89	-5.25	-7.39	-4.58	-4.64	-8.58	-16.84	-6.83	-18.29	-18.26	-11.42	-9.12	-8.78	-4.72	-5.67	-17.62	-6.67	-7.42	-10.36	-2.2	-2.08	-1.61
Θ(165°)	-0.22	-3.14	-3.07	-2.03	-8.04	-6.54	-6.57	-10.77	-14.32	-11.52	-7.43	-5.86	-5.92	-5.97	-5.57	-10.35	-4.45	-3.62	-4.29	-8.26	-4.19	-1.16	0.51	1.87
Θ(180°)	-3.36	-4.86	-7.85	-5.67	-3.88	-8.47	-14.57	-9.57	-12.67	-8.71	-4.56	-4.44	-5.03	-5.74	-8.71	-9.16	-9.71	-15.11	-17.89	-14.09	-11.63	-8	-5.99	-5.34
Freq(Hz)	5.3G	Pol.	Phi	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-13.64	-14.03	-11.33	-12.99	-14.09	-16.62	-19	-15.23	-19.3	-16.45	-18.36	-14.78	-16.84	-15.77	-15.63	-16.46	-18.46	-18.86	-18.79	-19.11	-17.96	-19.35	-19.14	-14.27
Θ(15°)	-14.34	-13.3	-13.93	-19.3	-18.47	-17.9	-19.01	-13.31	-18.58	-18.2	-16.17	-14.72	-14.03	-13.29	-10.81	-18.72	-17.02	-10.94	-11.23	-18.97	-16.04	-12.04	-15.92	-17.94
Θ(30°)	-16.13	-17.93	-18.17	-18.06	-19.19	-16.93	-14.93	-14.55	-19.53	-11.52	-13.76	-13.76	-16	-18.26	-18.01	-13.93	-14.34	-18.21	-18.12	-16.68	-17.9	-16.94	-12.38	-14.91
Θ(45°)	-17.91	-18.13	-18.93	-12.86	-7.33	-11.4	-17.67	-11.06	-9.21	-15.83	-15.87	-10.57	-12.1	-15.58	-11.78	-18.47	-19.02	-17.88	-17.78	-18.6	-18.09	-16.09	-17.02	-12.41
Θ(60°)	-11.87	-18.05	-17.33	-11.41	-13.96	-14.77	-9.6	-13.86	-11.59	-19.05	-18.55	-11.09	-15.58	-11.8	-19.05	-18.89	-17.85	-16.75	-18.82	-18.81	-18.28	-19	-17.68	-12.82
Θ(75°)	-16.08	-13.87	-14.71	-18.86	-19.11	-9.43	-9.96	-7.01	-18.15	-14.08	-17.75	-19.21	-15.87	-11.73	-17.41	-15.27	-18.09	-14.44	-14.91	-14.27	-18.84	-9.74	-16.11	-17.2
Θ(90°)	-17.46	-15.5	-18.59	-13.95	-18.43	-13.9	-17.84	-5.95	-16.77	-17.88	-12.65	-18.05	-17.55	-13.37	-13.26	-17.46	-13.16	-11.25	-7.35	-11.03	-12.77	-13.67	-15.7	-13.89
Θ(105°)	-11.12	-17.99	-17.96	-17.75	-15.75	-10.98	-8.58	-9.26	-15.97	-13.49	-15.61	-11.24	-14.77	-15.4	-7.96	-6.34	-10.68	-14.9	-15.89	-14.65	-19.38	-17.65	-14.37	-18.16
Θ(120°)	-15.24	-11.54	-13.85	-18.4	-19.09	-14.98	-6.66	-9.39	-12.05	-17.32	-18.07	-19.04	-14.3	-13.43	-19.02	-8.22	-18.95	-15.47	-19.18	-11.33	-16.15	-15.88	-10.38	-14.01
Θ(135°)	-12.33	-18.97	-13.6	-13.11	-18.82	-17.35	-13.99	-9.17	-18.4	-18.13	-16.74	-7.64	-17.91	-19.09	-13.86	-3.25	-15.63	-12.27	-19.01	-11.67	-12.91	-18.96	-8.58	-18.62
Θ(150°)	-13.29	-14.68	-15.95	-10.54	-18.41	-9.35	-10.54	-11.2	-18.97	-18.72	-14.88	-18.64	-13.07	-14	-12.81	-18.05	-6.7	-8.74	-19.39	-12.02	-13.23	-12.31	-13.33	-13.33
Θ(165°)	-18.03	-10.49	-11.09	-7.51	-8.35	-11.23	-16.96	-11.33	-9.16	-16.04	-18.57	-11.52	-12.72	-11.42	-10.31	-6.87	-7.63	-16.89	-12.45	-8.79	-8.7	-7.09	-11.84	-18.78
Θ(180°)	-11.59	-7.8	-6.19	-5.65	-6.72	-8.97	-9.41	-7.64	-7.92	-9.27	-11.06	-12.35	-14.05	-11.14	-10.49	-7.01	-6.08	-4.43	-4.15	-5.93	-7.81	-9.95	-16.06	-17.5
Freq(Hz)	5.3G	Pol.	Theta	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.2	-18.25	-18.53	-16.99	-14.37	-13.63	-13.48	-13.21	-16.78	-11.87	-15.13	-17.8	-19.12	-17.93	-18.45	-17.54	-17.54	-17.41	-17.15	-16.79	-16.47	-14.36	-19.14	-18.19
Θ(15°)	-11.89	-10.51	-8.47	-6.53	-10.26	-9.64	-8.56	-6.71	-5.56	-9.05	-9.67	-13.89	-19.39	-17.27	-17.12	-12.47	-12.14	-17.12	-18.3	-12.82	-9.39	-8.75	-9.47	-9.57
Θ(30°)	-6.21	-7.33	-3.62	-6.7	-10.36	-8.83	-8.76	-9.42	-6.65	-10.43	-8.79	-17.22	-10.6	-11.74	-9.69	-11.52	-8.41	-7.4	-8.33	-11.19	-13.9	-12.51	-10.34	-8.39
Θ(45°)	-10.61	-10.83	-8.14	-15.07	-14.85	-6.49	-8.08	-5.85	-3.57	-4.9	-5.02	-5.04	-9.01	-6.26	-7.73	-14.46	-18.99	-18.77	-19	-10.11	-9.13	-9.49	-15.89	-12.63
Θ(60°)	-9.6	-7.61	-9.03	-10.02	-10.87	-6.48	-10.19	-10.11	-18.55	-7.33	-6.02	-4.28	-4.84	-5.8	-3.87	-8.47	-9.11	-14.6	-10.89	-13.82	-5.4	-5.61	-9.19	-2.62
Θ(75°)	-0.4	-2.59	-0.19	-1.54	-2.88	-2.35	-4.97	-1.97	-7.21	-1.9	-2.46	-5.04	-1.34	-10.9	-12.59	-4.99	-7.19	-3.65	-0.94	-5.68	-1.8	0.59	2.27	0.69
Θ(90°)	1.04	2.97	1	2.5	-0.35	-0.62	-2.43	-1.52	-1.85	-1.71	-3.92	0.16	-2.75	-4.85	0.23	2.27	0.72	-0.46	3.56	-0.27	-0.87	-0.08	2.45	0.87
Θ(105°)	-1.16	-4.59	-2.24	-2.99	-10.39	-1.8	1.16	-1.35	-3.16	-3.01	-5.3	-7.67	-3.28	-4.94	1.05	1.27	-0.91	-2.21	0.54	-6.05	-2.57	-1.42	-0.3	0.51
Θ(120°)	-9.03	-4.6	-11.35	-17.97	-12.91	-14.37	-8.67	-6.1	-7.81	-6.71	-2.59	-3.39	0.82	-5.09	-4.94	-18.63	-13.4	-10.98	-4.65	-18.36	-15.37	-18.62	-11.86	-8.72
Θ(135°)	-12.62	-4.95	-8.33	-4.84	-18.74	-10.49	-8.73	-13.8	-18.13	-12.44	-9.4	-4.												



Freq(Hz)	5.6G	5.785G	5.885G
Ant. 1 Max Gain (dBi)	3.67	3.02	3.98
Ant. 2 Max Gain (dBi)	2.68	2.31	1.93
Ant. 3 Max Gain (dBi)	2.74	1.84	1.99
Ant. 4 Max Gain (dBi)	3.61	2.51	3.44
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/240	Theta/90/240	Theta/90/240
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/105	Theta/75/105	Theta/75/90
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/120	Theta/90/105	Theta/105/105
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/315	Theta/105/270	Theta/90/315
Max Gain (dBi)	3.67	3.02	3.98
DG [1SS] (dBi)	6.61	5.94	6.25
DG [2SS] (dBi)	3.67	3.02	3.98
DG [4SS] (dBi)	0.88	0.23	0.57



DG 1SS Result

Freq(Hz)	5.6G	Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-5.82	-5.54	-6.69	-6.23	-8.06	-9.68	-10.87	-11.33	-11.17	-8.38	-8.2	-6.82	-6.88	-6.42	-6.44	-6.44	-7.36	-8.92	-10.4	-12.1	-11.36	-11.73	-10.43	-8.44
Θ(15°)	-4.26	-5.07	-6.73	-8.1	-8.89	-10.71	-10.45	-10.56	-9.18	-6.98	-7.57	-4.51	-4.88	-4.56	-7.77	-9.58	-8.16	-10.79	-11.77	-12.6	-12.3	-9.39	-9.28	-5.55
Θ(30°)	-3.61	-7.21	-9.5	-11.07	-10.55	-11.5	-12.16	-10.86	-12.06	-10.84	-10.74	-6.56	-8.65	-9.31	-6.31	-7.17	-11.42	-11.66	-11.72	-12.43	-11.05	-8.51	-9.87	-6.74
Θ(45°)	-7.41	-9.13	-10.43	-12.71	-10.4	-10.86	-11.13	-10.08	-11.25	-10.42	-10.02	-8.5	-9.3	-10.83	-9.57	-7.78	-9.87	-9.01	-11.8	-11.16	-10	-9.8	-10.47	-10.85
Θ(60°)	-9.02	-7.73	-8.63	-9.44	-10.81	-10.81	-9.71	-7.65	-10.75	-8.25	-7.8	-8.9	-7.36	-8.27	-9.47	-10.23	-10.46	-10.46	-12.22	-11.75	-10.82	-8.28	-7.38	-8.3
Θ(75°)	-7.37	-10.34	-7.31	-6.77	-8.82	-8.65	-11.85	-9.85	-9.55	-10.43	-6.41	-7.16	-6.59	-10.97	-6.49	-11.9	-11.12	-11.85	-11.46	-10.27	-8.92	-9.89	-10.32	-6.85
Θ(90°)	-5.5	-7.18	-8.62	-8.42	-9.06	-11.77	-9.4	-10.99	-9.3	-9.66	-8.8	-9.14	-8.41	-11.79	-10.05	-8.44	-8.25	-11.9	-12.17	-10.69	-10.32	-6.44	-8.52	-8.75
Θ(105°)	-7.74	-7.37	-6.07	-7.36	-8.01	-11.09	-12.6	-11.93	-10.18	-7.98	-5.69	-8.52	-7.41	-8.25	-6.99	-4.39	-10.92	-11.83	-10.89	-10.87	-10.03	-9.4	-6.25	-8.15
Θ(120°)	-11.35	-6.52	-11.75	-10.03	-9.27	-11.02	-10.59	-11.73	-11.76	-9.98	-7.83	-12.06	-11.64	-9.95	-10.42	-12.34	-11.52	-10.93	-12.47	-12.41	-12.02	-10.61	-9.65	-8
Θ(135°)	-8.9	-9.34	-9.11	-9.91	-11.17	-12.31	-12.05	-10.76	-8.71	-9.36	-9.4	-11.63	-10.77	-8.74	-8.73	-10.62	-10.42	-11.74	-10.32	-9	-9.96	-9.42	-7.55	-7.96
Θ(150°)	-5.82	-9.36	-9.68	-11.46	-10.36	-11.92	-11.5	-9.51	-10.62	-8.07	-8.85	-8.49	-11.34	-9.01	-10.62	-9.16	-11.93	-10.19	-12.18	-9.67	-10.94	-8.71	-6.41	-8.29
Θ(165°)	-7.11	-8.39	-9.75	-10.58	-10.09	-10.93	-11.18	-9.6	-8.12	-9.84	-10.45	-6.2	-7.16	-8.89	-10.15	-11.06	-8.93	-9.28	-9.03	-10.03	-10.96	-8.1	-5.85	-5.06
Θ(180°)	-4.01	-5.24	-6.2	-6.76	-8.14	-9.43	-10.42	-8.81	-6.47	-6.19	-5.34	-5.95	-8.49	-6.87	-7.66	-9.6	-9.57	-10.38	-10.6	-7.65	-6.53	-7.07	-5.09	-4.56
Freq(Hz)	5.6G	Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-11.01	-11.07	-12.39	-10.81	-8.84	-7.66	-6.45	-6.39	-7.47	-6.83	-9.35	-9.78	-9.88	-11.69	-12.7	-11.17	-9.88	-7.54	-7.4	-5.87	-5.94	-6.58	-8.3	-10.51
Θ(15°)	-6.2	-6.02	-4.11	-5.62	-4.87	-4.67	-4.47	-4.59	-3.1	-4.55	-4.7	-5.89	-6.15	-8.69	-9.12	-8.35	-9.8	-8.81	-8.46	-8.49	-6.82	-7.58	-6.63	-6.14
Θ(30°)	-2.89	-1.52	-2.37	-2.75	-2.66	-2.24	-2.77	-1.64	-0.45	-1.15	-2.18	-0.27	-5.8	-4.55	-6.44	-3.17	-6.01	-5.12	-2.47	-3.68	-4.61	-3.93	-4.35	-2.3
Θ(45°)	-3.01	-1.22	-3.99	-3.76	-1.91	-3.95	-3.11	-2.28	-0.57	-4.38	-3.15	-3.57	-3.84	-4.05	-3.87	-2.04	-2.12	-0.11	-0.78	0.5	-0.06	-0.5	-3.12	-4.69
Θ(60°)	-2.8	-1.41	-4.32	0.27	-0.67	-0.02	1.23	1.91	1.18	-0.75	-1.98	-1.29	0.71	-6.12	-4.74	-2.18	0.13	-0.25	-0.99	-1.09	-1	-0.25	-3.95	-7.42
Θ(75°)	2.18	-0.09	1.25	4.18	3.68	4.41	4.73	4.83	5.29	5.3	2.58	2.68	4.56	0.79	2.01	3.7	4.79	3.56	4.33	2.71	3.08	3.81	1.18	0.61
Θ(90°)	5.84	3.37	2.84	4.06	4.88	3.27	3.77	3.69	5.68	5.5	4.43	4.58	6.35	2.74	4.77	5.51	5.81	5.29	6.61	5.21	4.94	5.79	4.01	1.84
Θ(105°)	4.29	2.25	1.65	2.46	1.83	-1.24	-0.97	0.83	4.34	3.18	2.38	2.92	3.65	0.97	1.1	3.9	2.93	1.31	1.98	0.17	3.23	2.05	2.05	-0.71
Θ(120°)	0.81	-1.39	-2.25	-0.16	-1.32	-3.96	-2.14	-8.2	-2.23	-0.6	-2.49	-2.22	-0.97	-4.2	-0.81	-0.92	0.34	0.46	-0.77	-6.4	-2.34	-1.87	-1.59	-4.21
Θ(135°)	-5.61	-9.21	-6.4	-6.67	-6.24	-5.71	-5.5	-3.97	-2.87	-5.21	-7.67	-8.09	-5.9	-9.95	-6.05	-7.12	-6.63	-5.76	-5.09	-7.01	-5.1	-9.89	-7.06	-7.85
Θ(150°)	-3.61	-3.81	-5.29	-6.19	-8.68	-5.92	-5.22	-3.78	-4.76	-5.26	-5.57	-2.14	-5.84	-5.32	-8.67	-6.84	-7.59	-4.43	-4.98	-5.12	-4.29	-5.22	-7.3	-7.16
Θ(165°)	-7.8	-7.3	-7.6	-6.6	-6.94	-9.41	-10.37	-9.61	-8.58	-4.84	-7.76	-7.32	-7.3	-6.7	-9.15	-6.01	-6.88	-6.04	-5.63	-5.17	-5.18	-6.2	-7.59	-6.97
Θ(180°)	-11.14	-8.83	-5.41	-5.02	-4.59	-4.32	-4.88	-4.41	-4.96	-7.41	-8.06	-9.18	-8.85	-9.34	-7.79	-6.8	-4.31	-5	-4.48	-4.61	-4.17	-5.59	-8.58	-10.46
Freq(Hz)	5.785G	Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-3.49	-3.17	-5.48	-5.58	-7.44	-10.42	-10.13	-9.63	-9.06	-6.04	-6.58	-5.9	-4.87	-5.44	-7.16	-8.3	-9.08	-10.35	-10.89	-9.5	-8.54	-7.7	-4.72	-4.15
Θ(15°)	-4.76	-4.24	-7.39	-9.94	-8.47	-11.23	-11.43	-9.71	-8.33	-8.01	-5.27	-7.64	-4.76	-4.01	-8.37	-11.73	-10.15	-11.57	-12.31	-11.47	-12.19	-10.37	-8.24	-6.02
Θ(30°)	-6.17	-6.58	-8.57	-11.52	-10.29	-12.07	-11.52	-10.39	-10.1	-11.72	-9.8	-6.86	-5.12	-7.32	-6.8	-7.49	-10.72	-12.31	-11.92	-10.83	-10.05	-9.04	-7.78	-7.07
Θ(45°)	-7.16	-6.24	-12.06	-12.62	-10.29	-11.81	-11.33	-9.95	-11.35	-6.81	-6.8	-7.15	-9.75	-10.69	-10.67	-7.48	-11.11	-10.71	-11.83	-10.28	-9.23	-9.44	-11.61	-8.77
Θ(60°)	-7.63	-7.7	-8.52	-10.09	-11.62	-12.21	-10.49	-8.88	-11.37	-8.3	-8.33	-7.39	-9.58	-7.2	-10.27	-9.55	-10.15	-10.87	-9.79	-12.19	-9.98	-9.27	-5.73	-8
Θ(75°)	-9.01	-9.18	-8.09	-7.18	-8.99	-11.26	-10.05	-12.04	-8.38	-10.08	-5.81	-7.14	-6.01	-10.52	-8.22	-8.5	-9.53	-11.18	-11.28	-10.16	-8.7	-8.88	-7.97	-5.42
Θ(90°)	-7.12	-7.9	-10.69	-7.49	-8.81	-9.53	-10.04	-12.03	-8.17	-8.18	-8.74	-8.83	-7.3	-7.83	-8.63	-11.7	-10.16	-9.62	-11.34	-11.43	-11.45	-8.83	-7.62	-9.22
Θ(105°)	-7.23	-6.6	-6.84	-8.9	-8.45	-9.77	-10.48	-12.19	-9.01	-7.73	-6.91	-8.62	-6.71	-10.26	-5.62	-3.4	-10.19	-10.31	-9.75	-12.09	-11.91	-8.74	-6.39	-8.63
Θ(120°)	-10.15	-5.21	-9.57	-10.37	-11.06	-10.69	-10.8	-10.34	-11.01	-9.36	-9.27	-11.98	-11.48	-7.23	-11	-8.82	-12.13	-8.71	-12.78	-11.62	-10.19	-8.14	-8.57	-6.52
Θ(135°)	-9.22	-9.69	-10.35	-8.01	-9.71	-10.36	-12.23	-10.59	-9.28	-6.79	-8.77	-11.71	-11.08	-8.2	-6.5	-7.44	-8.64	-9.62	-9.83	-8.22	-10.84	-9.36	-7.65	-6.61
Θ(150°)	-6.68	-7.85	-11.77	-11.73	-10.42	-12.24	-12.64	-11.64	-11.18	-8.04	-7.09	-9.53	-9.43	-10.11	-11.25	-9.5	-9.08	-11.64	-9.85	-11.35	-9.91	-8.22	-7.93	-8.98
Θ(165°)	-8.83	-9.27	-9.92	-8.71	-7.77	-10.32	-10.88	-9.97	-11.96	-8.93	-8.56	-6.73	-6.42	-6.53	-9.18	-10.82	-11.32	-9.96	-10.09	-9.83	-11.12	-9.71	-8.73	-5.81
Θ(180°)	-3.39	-5.12	-4.69	-5.6	-6.59	-7.69	-8.36	-9.77	-7.76	-6.81	-5.75	-5.75	-6.68	-5.63	-6.18	-6.65	-7.59	-7.48	-10.26	-10.46	-8.5	-7.31	-5.87	-4.7
Freq(Hz)	5.785G	Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dBi)	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-11.31	-9.56	-8.87	-6.73	-4.61	-4.05	-3.66	-4.16	-5.62	-7.39	-9.38	-12.25	-10.44	-11.2	-10.33	-8.61	-7.72	-6.64	-6.47	-7.45	-6.89	-7.31	-9.24	-10.86
Θ(15°)	-6.21	-8.44	-7.99	-6.88	-5.03	-3.95	-3.74	-4.28	-5.87	-5.77	-7.74	-5.84	-5.9	-7.58	-7.85	-7.24	-7.34	-5.75	-6.01	-6.38	-7.04	-6.24	-5.4	-5.35
Θ(30°)	-2.46	-2.98	-3.6	-3.08	-3.52	-1.82	-1.06	-1.59	-1.65	-1.49	-2.7	-2.37	-3.61	-5.75	-7.26	-5.39	-4	-3.29	-4.46	-3.82	-4.54	-5.2	-4.25	-4.13
Θ(45°)	-2.62	-1.31	-3.37	-3.6	-2.73	-0.12	0.68	0.89	-0.31	-2.6	-1.89	-2.15	-4.56	-7.14	-3.74	-2.1	-0.83	0.67	0.76	0.91	-0.71	-1.16	-3.85	-3.96
Θ(60°)	-0.49	-1.32	-3.91	-0.07	0.12	1.55	2.68	2.31	1.37	0.43	-0.67	-0.8	1.1	-4.66	-3.61	-1.23	1.64	0.9	0.57	-1.05	0.3	0.21	-2.6	-9.2
Θ(75°)	3.38	0.48	0.89	3.11	3.73	4.51	4.8	4.03	5.24	4.65	2.73	3.97	4.74	0.88	1.55	4.14	3.84	4.12	4.34	3.6	3.85	4.27	1.89	1.5
Θ(90°)	5.22	2.22	4.03	3.78	5.11	4.06	4.89	4.56																



Gain Result

Freq(Hz)	5.6G	Pol.	Phi	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)	
Θ(0°)	-11.94	-8.71	-12.38	-9.78	-12.3	-13.88	-16.1	-15.34	-14.02	-11.12	-12.18	-10.95	-10.78	-10.59	-10.09	-9.7	-10.73	-11.95	-12.63	-15.72	-16.48	-17.9	-19.19	-18.99	
Θ(15°)	-6.59	-11.08	-15.79	-11.83	-10.69	-14.98	-19.06	-18.54	-10.28	-9.47	-14.4	-12.43	-13.36	-11.36	-12.07	-14.98	-17.69	-18.27	-15.99	-18.91	-17.91	-12.93	-18.73	-12.1	
Θ(30°)	-6.13	-9.45	-17.88	-18.84	-16.55	-17.63	-18.23	-18.27	-18.97	-12.97	-18.74	-10.71	-19.45	-18.82	-15.41	-14.4	-15.51	-17.26	-18.73	-17.8	-17.89	-13.24	-16.32	-12.59	
Θ(45°)	-18.38	-15.66	-17.25	-18.35	-14.69	-18.27	-19.2	-18.52	-17.09	-15.19	-17.3	-14.28	-17.92	-16.56	-16	-18.59	-16.06	-18.49	-17.69	-18.24	-18.77	-12.68	-15.82	-18.68	
Θ(60°)	-10.72	-12.18	-17.91	-17.73	-18.88	-17.37	-16.8	-17.85	-18	-16.1	-13.91	-13.57	-17.99	-17.94	-18.89	-18.06	-18.04	-17.88	-18.3	-17.82	-15.43	-10.74	-19.04	-19.24	
Θ(75°)	-14.7	-12.78	-18.69	-17.25	-12.96	-14.64	-15.88	-14.44	-16.91	-18.19	-12.06	-12.75	-13.28	-18.42	-13.52	-18.14	-17.16	-18.36	-18.34	-17.72	-16.4	-17.19	-16.49	-18.17	
Θ(90°)	-12.35	-18.27	-12.56	-14.91	-18.8	-18.59	-17.98	-17.53	-15.92	-14.33	-11.69	-18.54	-11.41	-17.67	-17.78	-14.55	-12.93	-17.95	-17.87	-17.85	-18.26	-10.47	-11.18	-18.77	
Θ(105°)	-18.89	-15.85	-18.19	-15.73	-17.32	-17.77	-19.15	-16.78	-12.88	-10.8	-10.34	-14.77	-13.09	-16.22	-15.18	-12.47	-17.4	-17.04	-16.34	-17.24	-13.82	-16.83	-14.49	-16.62	
Θ(120°)	-18.33	-10.31	-18.79	-18.03	-18.64	-17.7	-18.91	-18.91	-17.81	-14.24	-11.33	-17.06	-14.89	-18.72	-17.77	-18.8	-17.31	-18.24	-19.08	-18.42	-17.93	-17.73	-18.22	-12.82	
Θ(135°)	-18.42	-9.62	-18.6	-18.94	-19.12	-18.19	-18.69	-15.06	-10.92	-14.11	-13.95	-17.74	-15.65	-18.18	-14.99	-16.32	-12.91	-16.81	-18.2	-17.7	-15.87	-11.07	-17.72	-18.33	
Θ(150°)	-13.16	-18.06	-13.71	-18.17	-18.29	-18.55	-14.84	-12.29	-13.33	-8.98	-8.82	-16.62	-17.33	-15.6	-18.24	-18.47	-18.73	-17.78	-18.83	-11.57	-18.3	-15.99	-14.73	-18.12	
Θ(165°)	-18.58	-17.95	-15.95	-18.12	-14.65	-14.99	-18.62	-19.06	-18.38	-18.82	-12.59	-7.57	-9.48	-14.01	-15.76	-18.75	-17.83	-18.08	-16.76	-16.27	-17.8	-12.55	-10.9	-13.24	
Θ(180°)	-18.43	-16.65	-18.54	-17.74	-17.82	-18.9	-16.04	-14.04	-12.13	-12.55	-11.93	-12.38	-15.36	-18.68	-18.78	-18.13	-16.09	-16.54	-17.29	-13.6	-12.38	-17.93	-17.14	-18.38	
Freq(Hz)	5.6G	Pol.	Theta	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)	
Θ(0°)	-14.9	-14.76	-18.83	-15.69	-14.54	-11.34	-11.2	-10.52	-11.06	-11.49	-12.53	-14.7	-13.93	-15.64	-18.59	-18.19	-18.03	-11.61	-12.78	-9.61	-8.38	-9.67	-11.36	-14.95	
Θ(15°)	-14.17	-12.98	-10.16	-18.8	-17.25	-18.35	-17.45	-17.74	-18.05	-17.62	-18.33	-14.33	-11.29	-13.82	-17.77	-11.97	-15.47	-18.01	-11.94	-10.61	-7.75	-8.86	-8.55	-8.29	
Θ(30°)	-10.87	-6.1	-7.91	-14.07	-11.93	-10.77	-11.12	-7.07	-10.28	-7.8	-9.53	-5.67	-9	-7.75	-11.79	-7.11	-6.85	-9.57	-5.53	-5.43	-7.39	-7.2	-10.1	-7.23	
Θ(45°)	-13.8	-6.23	-10.92	-12.61	-6.93	-9.74	-7.89	-7.72	-7.04	-11.11	-9.14	-7.1	-10.47	-11.75	-12.5	-10.64	-15.67	-7.79	-5.45	-6.93	-5.76	-6.55	-12.05	-13.64	
Θ(60°)	-9.19	-6.91	-17.89	-10.35	-18.98	-11.84	-10.7	-14.03	-15.27	-13.41	-13.22	-8.39	-1.91	-10.02	-6.2	-5.91	-1.36	-0.91	-2.04	-5.46	-4.35	-6.42	-13.89	-18.84	
Θ(75°)	-5.31	-4.65	-12.41	-4.33	-6.86	-5.4	-7.6	-8.14	-3.5	-1.51	-8.74	-3.57	0.94	-2.24	0.02	0.02	3.67	1.77	1.48	0.45	-0.22	0.56	-3.09	-6.25	
Θ(90°)	0.02	-2.81	-4.57	-6.38	-7.93	-6.84	-6.08	-7.76	-3.6	-5.09	-0.55	-2.04	2.04	-1.05	-1.53	-0.25	2.05	-0.15	2.02	2.12	1.97	0.72	-2.15	-3.92	
Θ(105°)	-1.31	-0.96	-11.45	-5.88	-6.28	-14.58	-13.43	-6.23	-1.27	-0.54	-3.04	-5.32	-2.07	-1.41	-9.65	-1.26	0.35	-3.14	-3.9	-2.05	0	-2.99	-2.77	-5.33	
Θ(120°)	-7.35	-3.77	-12.72	-11.74	-12.04	-9.29	-6.94	-8.92	-8.56	-6.4	-6.22	-8.12	-5.31	-16.65	-17.84	-9.32	-3.78	-5.48	-8.68	-12.24	-4.31	-11.85	-11.46	-14.47	
Θ(135°)	-16.63	-11.87	-11.14	-10.96	-8.8	-6.65	-15.81	-11.59	-7.5	-8.96	-12.26	-18.39	-16.06	-11.86	-14.5	-16.42	-11.44	-13.97	-14.82	-13.34	-9.84	-13.9	-17.69	-18.19	
Θ(150°)	-18.82	-14.58	-11.88	-11.7	-17.87	-14.94	-13.2	-9.43	-9.12	-13.67	-10.01	-10.73	-17.97	-10.95	-13.91	-14.48	-16.86	-11.59	-16.37	-9.79	-12.06	-10.64	-14.72	-18.01	
Θ(165°)	-17.23	-11.56	-11.03	-8.74	-7.89	-12.42	-17.09	-17.78	-18.02	-12.31	-9.82	-14.35	-14.05	-15.42	-16.92	-18.07	-19.33	-17.93	-18.53	-17.01	-14.53	-18.98	-18.86	-18.97	
Θ(180°)	-18.05	-13.96	-8.2	-8.57	-10.78	-12.5	-16.33	-15.66	-17.91	-17.41	-18.82	-17.13	-16.26	-14.58	-12.37	-11.99	-14.16	-16.77	-14.7	-14.63	-14.26	-15.5	-18.19	-18.25	
Freq(Hz)	5.785G	Pol.	Phi	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)	
Θ(0°)	-8.84	-5.85	-11.56	-8.47	-13.49	-16.89	-17.24	-12.69	-11.2	-7.68	-7.36	-6.78	-6.56	-7.63	-7.89	-9.97	-13	-15.57	-15.96	-13.82	-13.26	-11.84	-8.93	-8.48	
Θ(15°)	-9.72	-6.86	-11.37	-15.26	-10.05	-14.73	-17.9	-18.88	-15.13	-14.05	-10.32	-10.62	-10.95	-9.53	-11.07	-19.53	-17.79	-17.46	-17.44	-15.52	-17.57	-17.56	-18.51	-14.45	
Θ(30°)	-10.34	-8.06	-13.36	-16.22	-15.37	-18.97	-19.16	-17.03	-17.83	-18.35	-15.47	-14.79	-10.02	-18.13	-13.36	-12.42	-18.68	-18.38	-18.32	-17.62	-18.12	-17.87	-14.87	-15.6	
Θ(45°)	-17.85	-11.11	-18.23	-18.3	-18.05	-18.17	-18.3	-18.29	-15.03	-13.45	-15.89	-10.87	-18.22	-18.94	-18.63	-11.06	-17.86	-18.95	-17.6	-18.75	-18.66	-13.47	-17.55	-15.37	
Θ(60°)	-8.2	-12.4	-17.8	-17.24	-18.68	-17.87	-18.39	-17.8	-18.66	-14.03	-15.52	-11.76	-17.62	-18.39	-15.65	-17.79	-18.2	-14.4	-17.83	-15.08	-18.84	-16.02	-11.44	-10.37	-18.4
Θ(75°)	-18.44	-10.82	-18.03	-18.94	-13.32	-17.15	-15.21	-16.86	-11.62	-18.14	-9.84	-17.6	-12.59	-18.82	-17.1	-17.85	-18.59	-13.99	-18.79	-13.94	-12.7	-13.31	-13.21	-13.45	
Θ(90°)	-14.94	-18.54	-17.29	-13.56	-18.74	-18.31	-18.78	-18.48	-18.61	-18.76	-15.94	-17.24	-11.68	-13.64	-12.39	-17.24	-18.48	-14.37	-14.8	-18.12	-18.13	-12.81	-10.81	-14.23	
Θ(105°)	-18.28	-11.32	-17.21	-13.47	-18.74	-15.38	-13.43	-17.48	-11.32	-11.8	-8.26	-10.81	-10.56	-17.87	-17.51	-8.3	-17.26	-12.17	-12.88	-18.21	-18.18	-18.62	-13.01	-17.69	
Θ(120°)	-18.1	-8.91	-18.11	-18.34	-15.53	-16.84	-13.53	-18.78	-18.15	-11.66	-16.52	-17.41	-18.48	-16.27	-18.11	-17.51	-16.52	-13	-18.55	-16.97	-12.94	-14.76	-18.59	-9.64	
Θ(135°)	-14.98	-17.31	-17.73	-18.7	-17.8	-14.42	-17.76	-17.84	-13.24	-11.42	-17.95	-19.39	-19.08	-18.04	-11.31	-11.24	-11.03	-16.44	-16.52	-12.34	-14.01	-10.16	-16.11	-9.54	
Θ(150°)	-12.15	-14.88	-16.98	-17.63	-18.08	-18	-18.54	-17.24	-14.07	-8.93	-7.95	-19.05	-13.88	-17.08	-18.88	-17.91	-14.53	-16.36	-16.29	-15.12	-12.87	-17.69	-17.89	-16.91	
Θ(165°)	-18.16	-17.79	-18.87	-17.04	-13.15	-15.68	-17.54	-18.56	-18.84	-13.17	-8.96	-8.43	-10.15	-10.08	-14	-17.33	-17.87	-15.99	-19.14	-13.33	-16.87	-17.57	-13.83	-10.39	
Θ(180°)	-8.7	-18.49	-18.78	-18.85	-18.48	-15.13	-11.57	-12.68	-9.84	-8.91	-9.21	-10.14	-10.51	-16.97	-17.71	-18.6	-18.49	-15.03	-15.54	-16.33	-14.22	-17.42	-18.61	-13.83	
Freq(Hz)	5.785G	Pol.	Theta	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)	
Θ(0°)	-17.21	-13.59	-14.37	-11.04	-8.34	-7.04	-7.11	-7.45	-9.61	-10.75	-14.05	-18.21	-15.35	-14.56	-12.39	-11.91	-11.8	-7.78	-7.65	-11.57	-8.78	-12.09	-12.53	-15.34	
Θ(15°)	-7.9	-17.56	-14.56	-15.47	-14.64	-11.32	-14.17	-18.02	-18.9	-18.73	-18.04	-13.06	-15.03	-13.61	-9.62	-9.8	-11.3	-9.22	-7.74	-9.1	-9.96	-8.06	-8.73	-7.1	
Θ(30°)	-5.84	-9.41	-14.48	-16.18	-18.57	-13.07	-9.7	-12.31	-10.27	-11.56	-11.68	-8.47	-6.55	-8.17	-11.3	-7.99	-6.24	-4.87	-8.42	-7.2	-8.5	-10.94	-10.35	-7.51	
Θ(45°)	-9.11	-6.97	-8.72	-11.21	-10.5	-10.39	-4.69	-5.14	-6.2	-10.01	-6.99	-6.28	-12.57	-18.65	-8.62	-8.28	-4.57	-5.51	-3.77	-4.7	-6.26	-6			



Radiated Composite Gain of 5GHz UNII 2C, UNII 3, UNII 4

Appendix B

Θ(60°)	-8.7	-6.02	-6.24	-4.65	-6.27	-6.39	-2.92	-2.35	-6.87	-5.9	-5.19	-8.3	-15.67	-10.83	-14.33	-11.21	-13.32	-19.03	-18.44	-17.98	-15.98	-8.37	-5.48	-11.17
Θ(75°)	-0.44	-4.09	-0.68	0.23	0.82	-0.34	-0.14	0.47	0.55	-0.32	-2.18	-7.71	-5.61	-7.64	-12.82	-5.18	-7.3	-11.11	-2.09	-4.62	-4.5	-5.15	-6.21	-2.47
Θ(90°)	0.06	-1.23	-1.17	1.51	1.44	1.12	-0.65	1.99	2.74	1.47	-1.4	-2.27	-3.78	-3.45	-6.04	-1.36	-2.35	-0.04	1.29	-5.69	-2.56	-0.35	-0.56	-2.67
Θ(105°)	-3.33	-3.6	-1.22	-2.82	-2.28	-0.94	-1.58	-1.82	0.86	0.02	-2.56	-0.75	-3.11	-4.64	-7.65	-6.21	-10.29	-10.6	-11.18	-8.97	-5.35	-2.46	-3.27	-4.88
Θ(120°)	-8.22	-19.1	-5.61	-9.97	-6.64	-16.55	-9.75	-16.01	-4.96	-1.75	-7.71	-7.57	-7.85	-4.92	-8.49	-16.22	-8.37	-4.5	-8.56	-10.06	-9.82	-7.52	-8.53	-13.93
Θ(135°)	-13.89	-15.92	-18.49	-10.38	-11.7	-11.92	-10.78	-12.58	-11.95	-13.81	-14.7	-9.98	-5.39	-17.3	-16.76	-17.95	-9.95	-18.36	-12.48	-13.02	-14.27	-17.42	-9.83	-12.68
Θ(150°)	-5.66	-5.73	-8.44	-12.04	-13.32	-12.55	-9.28	-8.79	-12.87	-7.7	-11.15	-9.41	-11.76	-17.81	-11.17	-14.21	-18.07	-12.36	-10.15	-9.48	-7.09	-7.34	-10.68	-8.48
Θ(165°)	-8.74	-12.19	-12.49	-13.35	-18.08	-15.44	-13.25	-10.82	-14.84	-8.14	-18.92	-10.78	-13.59	-15.39	-14.08	-11.29	-8.83	-7.85	-7.98	-10.22	-9.35	-9.74	-11.02	-6.52
Θ(180°)	-15.31	-18.49	-16.4	-15.99	-14.79	-14.51	-13.26	-9.75	-8.36	-18.04	-11.96	-12.93	-14.39	-12.58	-15.69	-12.08	-11.6	-11.74	-10.8	-11.28	-9.79	-10.83	-11.4	-12.44
Freq(Hz)	5.785G	Pol.	Phi	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-7.53	-7.97	-8.08	-10.04	-11.64	-15.26	-17.66	-18.43	-18.14	-13.14	-15.61	-17.42	-10.82	-8.95	-12.93	-15.71	-15.76	-18.87	-18.55	-17.86	-14.11	-15.86	-8.81	-8.58
Θ(15°)	-13.3	-14.44	-17.79	-15.38	-17.33	-18.71	-18.9	-18.65	-15.15	-18.81	-15.89	-17.78	-15.03	-16.01	-14.62	-18.24	-18.28	-18.73	-18.44	-18.21	-18.64	-14.12	-13.24	-14.92
Θ(30°)	-18.82	-18.3	-18.33	-16.29	-14.89	-17.81	-18.11	-17.43	-14.73	-18.62	-18.45	-13.54	-10.33	-9.15	-12.8	-9.26	-12.73	-18.51	-19.05	-18.39	-18.73	-18.4	-14.41	-13.7
Θ(45°)	-13.17	-17.96	-18.8	-18.68	-16.85	-18.09	-18.61	-18.44	-18.96	-14.36	-15.06	-13.41	-19.11	-18.27	-18.99	-17.77	-18.06	-18.5	-16.65	-11.76	-13.36	-17.82	-16.77	-14.22
Θ(60°)	-14.98	-16.27	-17.83	-14.98	-18.19	-18.72	-17.28	-18.82	-17.65	-16.7	-13.17	-18.65	-16.24	-14.82	-17.48	-10.48	-18.74	-14.47	-17.98	-19.35	-17.78	-18.56	-17.52	-16.26
Θ(75°)	-18.95	-17.86	-16.35	-13.49	-18.41	-18.07	-17.25	-18.84	-18.5	-17.88	-14.35	-11.45	-12.79	-12.42	-13.65	-17.27	-18.34	-18.57	-14.21	-18.56	-14.71	-11.43	-10.5	-12.22
Θ(90°)	-14.23	-12.04	-18.21	-17.93	-14.34	-18.49	-18.67	-18.49	-11.21	-14.75	-18.78	-18.5	-13.96	-19.05	-18.5	-18.33	-15.16	-18.25	-17.94	-15.78	-17.72	-16.54	-13.09	-13.25
Θ(105°)	-11.64	-14.33	-12.33	-15.17	-15.49	-15.24	-17.78	-19.13	-13.45	-18.37	-12.78	-14.94	-12.88	-13.44	-16.5	-16.35	-17.66	-19.07	-16.6	-19.08	-17.01	-15.03	-11.4	-18.24
Θ(120°)	-18.29	-12.73	-14.98	-18.12	-16.6	-18.34	-17.69	-17.83	-17.28	-18.67	-18.21	-19.04	-17.93	-10.36	-15.44	-17.66	-19.32	-17.63	-18.56	-18.19	-18.6	-11.96	-12.41	-13.7
Θ(135°)	-16	-17.19	-18.35	-14.53	-17.96	-15.61	-17.73	-18.34	-12.5	-18.31	-13.6	-18.34	-17.67	-15.69	-18.97	-18.06	-18.23	-16.68	-18.97	-18.33	-16.63	-17.69	-10.65	-12
Θ(150°)	-14.31	-13.47	-17.45	-17.34	-15.38	-17.85	-18.72	-16.46	-17.97	-16.44	-14.81	-18	-17.98	-18.95	-18.6	-17.91	-18.45	-18.43	-18.85	-18.62	-16.31	-11.51	-13.88	-18.94
Θ(165°)	-18.24	-13.25	-13.71	-12.67	-12.5	-13.52	-17.35	-17.6	-19	-18.43	-18.92	-18.78	-18.25	-18.24	-15.85	-17.77	-17.08	-12.99	-13.67	-18.48	-18.7	-15.11	-13.42	-13.64
Θ(180°)	-9.88	-9.41	-8.03	-8.05	-7.53	-9.56	-11.8	-16.39	-18.3	-18.46	-18.52	-15.31	-14.91	-13.7	-10.46	-10.14	-10.34	-12.85	-17.1	-18.43	-17.61	-14.19	-12.42	-9.55
Freq(Hz)	5.785G	Pol.	Theta	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-18.9	-18.63	-15.29	-12.6	-10.36	-9.13	-8.76	-9.64	-8.84	-10.81	-15.04	-18.65	-18.19	-18.84	-19.22	-15.95	-13.71	-13.18	-11.97	-10.74	-11.6	-11.63	-14.9	-19.2
Θ(15°)	-17.18	-13.23	-11.83	-12.06	-10.91	-10.42	-9.03	-8.77	-11.69	-10.77	-12.42	-8.35	-9.96	-18.64	-18.76	-18.11	-18.57	-16.95	-18.15	-17.74	-18.75	-19.28	-18.94	-17.73
Θ(30°)	-10.67	-10.65	-9.13	-9.17	-7.66	-6.24	-5.59	-5.06	-6.98	-4.93	-6.05	-11.08	-9.44	-11.39	-13.95	-9.75	-12.34	-12.78	-12.69	-14.81	-17.83	-12.8	-9.4	-12.51
Θ(45°)	-13.51	-11.23	-12.59	-9.37	-18.08	-9.16	-8.26	-6.97	-7.06	-7.05	-6.31	-9.66	-7.92	-8.07	-6.96	-6.57	-3.95	-2.85	-4.67	-3.26	-3.4	-6.02	-11.86	-10.18
Θ(60°)	-5.41	-7.95	-6.35	-3.15	-7.37	-1.87	-1.36	-2	-4.04	-4.34	-5.15	-7.02	-8.2	-10.04	-13.66	-12.8	-9.43	-13.41	-15.05	-17.98	-11.72	-7.78	-6.92	-10.94
Θ(75°)	-2.27	-2.47	-2.15	-0.55	-3.02	1.16	1.32	-1.06	1.12	-0.66	-3.01	-2.96	-1.89	-5.58	-13.08	-4.97	-5.46	-6.38	-1.96	-4.94	-5.54	-4.24	-6.81	-1.22
Θ(90°)	-0.04	-2.95	-1.61	0.29	0.41	1.24	0.49	1.84	0.5	-0.03	-0.67	-0.43	-4.12	-1.57	-9.75	-1.12	-0.92	0.05	0.19	-4.94	-2.34	-1.27	-1.9	-4.89
Θ(105°)	-9.09	-3.2	-5.35	-3.24	-5.21	0.16	-1.16	0.82	-1.9	-4.83	-4.72	-1.61	-1.2	-5.58	-5.3	-4.37	-4.77	-9.47	-7.26	-6.99	-6.86	-4.29	-3.07	-7.83
Θ(120°)	-10.01	-11.98	-6.24	-10.92	-10.25	-14.44	-6.94	-11.7	-9.84	-1.77	-9.75	-7.47	-6.69	-3.95	-7.93	-15.58	-8.5	-5.21	-12.14	-9.73	-9.76	-8.01	-7.75	-19
Θ(135°)	-17.42	-19.29	-13.08	-8.25	-7.88	-7.79	-9.43	-11.62	-8.76	-8.91	-18.87	-11.58	-9.36	-17.2	-19.17	-18.45	-9.67	-18.85	-12.21	-11.54	-19.35	-13.6	-7.68	-10.76
Θ(150°)	-3.63	-10.51	-10.32	-13.7	-11.24	-9.49	-9.2	-9.02	-13.22	-8.51	-10.15	-7.07	-8.92	-14.9	-12.96	-15.07	-17.82	-11.83	-10.44	-11.05	-8.45	-8.29	-7.85	-8.87
Θ(165°)	-7.48	-8.4	-14.83	-18.8	-13.5	-10.09	-8.87	-8.33	-9.47	-8.06	-16.24	-11.53	-12.1	-17.18	-18.43	-11.64	-10.19	-9.6	-9.42	-9.85	-9.42	-12.03	-9.93	-6.83
Θ(180°)	-14.03	-15.39	-17.62	-18.11	-15.31	-14.82	-11.58	-9.26	-8.29	-14.84	-8.93	-10.25	-15.34	-13.85	-18.98	-18.43	-15.23	-11.53	-10.75	-9.72	-8.6	-8.24	-9.87	-11.01
Freq(Hz)	5.885G	Pol.	Phi	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-9.8	-8.93	-9.05	-8.51	-10.94	-13.71	-16.99	-18.19	-17.67	-18.23	-10.56	-8.75	-7.85	-13.3	-8.51	-9.94	-13.52	-18.77	-18.01	-17.16	-18.12	-12.07	-11.5	-10.43
Θ(15°)	-13.78	-16.6	-16.99	-17.65	-18.29	-18.16	-18.24	-18.32	-18.64	-15.29	-18.04	-14.84	-11.2	-12.31	-19.07	-17.28	-18.63	-17.84	-18.58	-17.9	-18.44	-18.69	-15.18	-16.79
Θ(30°)	-19.02	-18.05	-17.82	-12.04	-12.48	-18.14	-15.33	-17.56	-17.06	-18.03	-17.22	-14.48	-10.33	-11.3	-12.18	-10.77	-11.76	-15.76	-18.05	-16.68	-17.65	-17.46	-15.29	-12.37
Θ(45°)	-14.36	-18.37	-17.53	-17.56	-17.58	-17.91	-18.83	-18.27	-17.95	-16.26	-12.62	-11.83	-14.9	-15.58	-13.22	-18.22	-17.39	-18.58	-18.33	-12.43	-12.46	-18.9	-15.56	-12.11
Θ(60°)	-17.61	-18.54	-16.5	-15.98	-18.22	-18.7	-18.79	-19.09	-18.33	-19.22	-15.78	-18.03	-17.31	-13.11	-17.82	-14.53	-14.87	-14.61	-18.81	-18.01	-19.28	-17.39	-17.23	-14.86
Θ(75°)	-18.13	-18.32	-15.19	-17.42	-18.66	-18.31	-17.59	-17.98	-18.28	-14.1	-14.42	-15.76	-11.84	-15.11	-18.79	-18.28	-18.64	-17.82	-15.65	-17.47	-17.39	-9.98	-10.11	-13.45
Θ(90°)	-14.11	-16.89	-17.94	-19.3	-13.91	-18.65	-18.19	-17.87	-18.95	-12.94	-17.62	-18.33	-11.29	-17.53	-18.01	-14.14	-12.77	-18.13	-13.53	-17.08	-18.37	-18.21	-13.93	-11.36
Θ(105°)	-10.82	-12.96	-15.1	-16.9	-15.13	-16.52	-18.89	-18.02	-12.27	-18.25	-14.16	-11.25	-18.58	-12.69	-16.17	-16.4	-17.98	-17.55	-18.47	-19.28	-19.08	-14.75	-9.85	-17.95
Θ(120°)	-18.39	-17.19	-18.83	-17.74	-18.22	-17.6	-14.44	-19.26	-15.72	-18.56	-16.35	-18.86	-17.86	-12.58	-16.01	-18.91	-18.55	-18.96	-18.82	-17.89	-17.53	-13.57	-15.75	-16.25
Θ(135°)	-16.13	-15.4	-18.29	-16.9	-17.85	-13.47	-13.68	-19.26	-16.5	-18.12	-17.62	-18.47	-17.44	-18.25	-17.61	-14.93	-17.32	-14.48	-15.82	-17.51	-13.27	-11.37	-8.85	-14.73



Θ(15°)	-14.27	-12.93	-13.49	-18.66	-18.68	-18.21	-18.59	-17.64	-15.55	-10.72	-9.14	-19.26	-12.55	-11.15	-18.65	-17.83	-18.13	-17.52	-19.22	-18.44	-18.19	-18.43	-19.08	-14.76
Θ(30°)	-14.03	-16.36	-15.7	-18.99	-17.57	-17.89	-17.75	-18.4	-18.01	-18.6	-17.17	-15.45	-17.7	-14.59	-18.91	-17.17	-18.15	-18.13	-18.22	-17.79	-17.9	-14.51	-16	-17.84
Θ(45°)	-17.47	-13.91	-17.96	-18.52	-18.35	-16.3	-14.36	-13.03	-17.87	-16.44	-9.99	-16.66	-18.15	-17.61	-17.98	-16.72	-18.36	-18.35	-18.9	-18.16	-15.45	-16.22	-18.01	-17.36
Θ(60°)	-18.66	-15.82	-17.69	-19.25	-18.49	-17.53	-13.35	-8.96	-15.26	-17.26	-18.87	-17.64	-17.48	-17.83	-17.01	-18.23	-18.07	-18.84	-17.57	-18.32	-17.8	-17.74	-16.96	-17.43
Θ(75°)	-17.46	-18.53	-16.45	-18.7	-18.81	-18.2	-13.83	-17.63	-16.68	-18.24	-18.8	-18.24	-16.31	-18.26	-12.48	-17.71	-11.21	-18.5	-18.35	-18.46	-17.32	-18.23	-18.71	-17.46
Θ(90°)	-15.91	-18.72	-13.73	-17.77	-18.46	-16.79	-17.32	-17.84	-11.29	-12.51	-11.97	-12.77	-15.84	-14.33	-17.56	-17.03	-15.28	-15.18	-18.46	-17.4	-18.85	-17.74	-15.12	-17.11
Θ(105°)	-18.91	-18.41	-18.37	-15.6	-13.87	-15.33	-17.93	-19.05	-18.81	-9.56	-15.54	-16.94	-17.9	-15.91	-8.36	-10.79	-15.44	-18.52	-18.27	-17.09	-17.99	-15.58	-15.87	-18.37
Θ(120°)	-15.9	-12.62	-17.38	-17.92	-19.28	-14.64	-18.39	-12.45	-18.23	-14.85	-13.28	-17.5	-18.21	-12.05	-16.17	-11.54	-18.77	-12.11	-18.67	-18.76	-18.93	-12.65	-19.21	-11.42
Θ(135°)	-16.81	-13.24	-12.47	-13.4	-11.63	-17.06	-19.08	-13.05	-18.63	-10.61	-15.38	-17.19	-17.06	-9.75	-16.18	-17.63	-17.34	-17.28	-13.55	-12.07	-19.07	-18.15	-17.9	-12.97
Θ(150°)	-13.65	-13.21	-18.09	-18.23	-18.41	-18.65	-18.38	-18.21	-19.24	-17.73	-16.96	-14.44	-12.6	-18.28	-14.4	-11.08	-12.29	-17.48	-12.08	-18.67	-18.46	-18.21	-18.09	-18.42
Θ(165°)	-19.27	-18.92	-17.98	-18.75	-18.78	-18.8	-16.04	-12.2	-16.33	-16.67	-16.3	-16.84	-18.33	-12.64	-13.06	-13.95	-16.6	-17.27	-14.15	-14.12	-17.67	-18.6	-18.89	-12.99
Θ(180°)	-10.95	-12.59	-10.43	-13.28	-14.71	-15.09	-18.33	-17.6	-18.25	-18.07	-14.27	-11.74	-10.68	-7.78	-8.55	-9.13	-11.21	-9.78	-14.95	-19.03	-17.77	-16.72	-11.62	-13.04
Freq(Hz)	5.785G	Pol.	Theta	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-17.89	-16.53	-15.95	-15.34	-11.19	-14.89	-13.48	-14.53	-18.42	-17.31	-18.09	-17.57	-18.62	-16.93	-17.12	-15.21	-14.86	-15.19	-17.35	-16.02	-17.31	-17.57	-18.88	-19.2
Θ(15°)	-16.32	-17.42	-19.41	-17.63	-18.69	-19.02	-18.01	-18.39	-17.13	-17.31	-19.03	-12.88	-9.63	-9.43	-12.45	-10.34	-11.11	-12.28	-14.09	-12.24	-12.93	-14.52	-9.8	-12.87
Θ(30°)	-9.8	-8.03	-10.3	-7.44	-12.3	-8.26	-8.2	-7.44	-6.73	-6.56	-7.65	-8.87	-18.05	-11.78	-14.08	-12.86	-7.62	-11.16	-8.08	-6.78	-6.79	-14	-14.69	-14.84
Θ(45°)	-8.49	-4.46	-7.49	-7.92	-5.91	-3.84	-4.97	-3.97	-5.18	-11.91	-8.18	-5.71	-10.62	-12.63	-17.24	-9.12	-9.09	-6.81	-9.14	-6.65	-13.03	-18.97	-13.25	-9.8
Θ(60°)	-8.69	-7.3	-18.23	-10.64	-8.6	-8.93	-5.43	-5.09	-7.22	-5.98	-18.46	-6.05	-3.91	-7.97	-12.18	-4.51	-2.28	-5.6	-3.49	-4.87	-6.16	-5.49	-8.77	-18.62
Θ(75°)	-0.42	-8.22	-5.78	-6.71	-1.81	-3.65	-2.23	-3.87	-1.81	-1.98	-7.35	-0.42	-3.97	-5.26	-1.46	2.17	0.88	0.72	2.02	0.03	0.71	0.82	-1.32	-8.2
Θ(90°)	-0.66	-6.51	0.77	-1.76	1.48	-3.89	-0.96	-0.15	2	-0.65	-2.41	2.4	1.48	-1.19	0.48	1.52	0.84	1.38	1.05	0.58	0.01	2.28	-1.03	-1.92
Θ(105°)	-1.97	-2.72	-3.23	-2.83	-1.79	-9.66	-7.92	-8.61	-2.04	-0.74	-7.27	-0.08	-2.94	-7.72	-4.93	-2.21	-1.26	-0.77	2.51	-2.11	-0.53	0.37	-3.31	-3.99
Θ(120°)	-5.39	-8.08	-2.72	-3.11	-1.58	-6.85	-18.51	-15.56	-9.53	-9.72	-5.84	-2.03	-8.08	-5.51	-4.6	-2.4	-3.82	-7.93	-3.08	-10.64	-13.52	-2.84	-9.37	-14.96
Θ(135°)	-18.58	-15.94	-9.07	-13.13	-9.25	-15.32	-11.39	-13.16	-13.69	-12.73	-16.44	-14.26	-18.23	-18.54	-9.63	-8.8	-17.91	-8.72	-16.22	-11.66	-13.08	-9.64	-12.01	-18.78
Θ(150°)	-9.85	-6.12	-15.27	-18.18	-12.4	-9.28	-14.21	-10.48	-13.95	-15.8	-8.01	-7.35	-12.94	-14.4	-11.11	-10.14	-7.59	-4.44	-4.15	-8.23	-9.03	-10.67	-15.87	-18.01
Θ(165°)	-16.36	-9.82	-17.23	-15.01	-14.87	-13.16	-18.8	-16.59	-7.22	-10.77	-17.99	-14.52	-11.56	-18.24	-11.56	-11.13	-12.8	-13.06	-17.81	-17.52	-17.67	-15.92	-16.24	-19.25
Θ(180°)	-13.29	-14.19	-17.67	-18.96	-16.36	-9.99	-7.18	-8.55	-10.01	-9.66	-9.95	-11.97	-13.41	-18.86	-18.02	-17.82	-16.8	-12.25	-7.54	-7.39	-8.69	-8.8	-13.69	-13.35
Freq(Hz)	5.885G	Pol.	Phi	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-13.53	-11.51	-13.07	-16.77	-19.19	-17.46	-17.47	-14.35	-11.49	-19.05	-11.75	-16.64	-16.91	-15.66	-18.18	-17.86	-18.59	-18.41	-18.77	-17.45	-19.1	-18.49	-12.84	-18.52
Θ(15°)	-9.7	-18.36	-11.06	-13.94	-18.19	-17.78	-18.57	-18.45	-13.57	-7.65	-10.61	-11.97	-9.41	-10.89	-18.43	-18.1	-18.93	-19.08	-18.62	-18.16	-18.71	-18.17	-17.84	-17.65
Θ(30°)	-11.2	-13.25	-15.75	-18.57	-18.21	-18.12	-17.05	-18.66	-17	-18.48	-15.2	-18.57	-14.15	-15.68	-17.79	-17.24	-18.51	-17.94	-18.16	-18.99	-18.62	-19.01	-15.57	-14.27
Θ(45°)	-17.64	-17.34	-18.48	-18.84	-16.94	-14.54	-17.82	-12.02	-18.98	-16.14	-10.87	-18.31	-16.13	-17.75	-17.73	-18.53	-18.8	-18.09	-18.6	-17.65	-19.39	-18.35	-15.49	-16.61
Θ(60°)	-12.62	-15.26	-17.9	-17.95	-17.17	-18.35	-15.85	-9.56	-14.06	-15.18	-17.35	-18.61	-18.44	-16.66	-17.87	-18.89	-18.39	-18.58	-18.86	-17.5	-17.26	-19.14	-17.81	-17.52
Θ(75°)	-17.89	-13.17	-17.99	-16.01	-18.2	-17.74	-18.51	-19.07	-15.83	-14.62	-14.08	-17.78	-18.11	-18.71	-11.91	-18.18	-13.31	-16.42	-17.31	-18.39	-17.9	-17.86	-18.31	-18.83
Θ(90°)	-10.61	-19.24	-19.19	-17.15	-17.07	-16.55	-17.93	-18.32	-13.49	-10.56	-10.06	-12.95	-18.22	-14.77	-12.62	-15.1	-18.03	-19.06	-17.94	-18.34	-18.17	-17.99	-10.94	-18.74
Θ(105°)	-17.94	-18.04	-19.35	-19.14	-13.57	-14.61	-18.29	-18.88	-15.21	-11.85	-14.73	-18.74	-16.87	-15.21	-9.67	-9.38	-15.28	-16.89	-18.07	-16.08	-17.91	-13.82	-17.92	-18.6
Θ(120°)	-14.97	-18.28	-18.31	-17.94	-18.7	-17.07	-18.74	-15.28	-18.04	-13.67	-12.9	-18.92	-16.2	-13.74	-17.2	-13.06	-18.08	-12.08	-17.94	-18.04	-18.14	-13.27	-18.24	-13.07
Θ(135°)	-17.1	-12.61	-18.55	-13.64	-14.78	-18.41	-18.62	-14.1	-13.85	-10.95	-12.63	-17.77	-17.9	-9.73	-17.22	-16.3	-17.71	-16.33	-14.93	-16.03	-18.45	-18.34	-19.07	-11.47
Θ(150°)	-18.24	-12.64	-19.16	-18.39	-17.3	-18.69	-17.83	-18.04	-17.57	-18.33	-18.86	-13.92	-13.96	-16.76	-14.5	-10.19	-10.57	-15.79	-12.95	-17.98	-18.34	-18.65	-18.98	-17.93
Θ(165°)	-19.34	-19.32	-18.65	-16.53	-18.55	-16.05	-16.12	-16.21	-14.07	-18.13	-16.56	-18.17	-18.07	-11.22	-11.59	-17.62	-18.68	-15.09	-15.78	-18.47	-18.65	-19.05	-19.14	-12.87
Θ(180°)	-9.79	-14.85	-11.28	-13.49	-11.74	-14.57	-15.4	-17.13	-15.25	-13.83	-13.92	-11.31	-8.74	-8.12	-7.99	-9.6	-11.22	-12.71	-14.25	-16.18	-15.43	-13.93	-10.59	-11.66
Freq(Hz)	5.885G	Pol.	Theta	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-19.29	-16.43	-15.49	-13.16	-14.18	-14.54	-15.35	-17.21	-17.57	-18.07	-17.35	-17.61	-18.44	-17.98	-18.26	-18.74	-17.51	-17.78	-16.74	-18.2	-18.02	-18.48	-18.66	-18.6
Θ(15°)	-13.64	-16.11	-15.64	-16.28	-17.75	-17	-16.72	-16.43	-12.34	-13.24	-12.92	-11.86	-8.36	-10.84	-13.99	-9.88	-11.66	-13.46	-10.83	-15.85	-11.65	-11.78	-11.65	-7.52
Θ(30°)	-8.65	-9.78	-12.56	-7.38	-11.35	-9.8	-8.62	-7.84	-5.13	-7.93	-9.9	-10.29	-12.87	-14.06	-11.45	-10.05	-11.22	-10.79	-9.07	-6.78	-9.64	-8.96	-11.89	-12.08
Θ(45°)	-8.05	-4.7	-7.2	-4.79	-4.7	-2.95	-2.37	-3.38	-2.99	-7.16	-9.11	-7.71	-8.97	-14.74	-17.66	-7.63	-7.17	-6.45	-6.07	-5.54	-5.47	-11.23	-15.67	-14.41
Θ(60°)	-11.63	-5.97	-15.59	-18.21	-9.89	-8.74	-8.32	-4.4	-6.86	-5.85	-13.43	-6.35	-3.25	-6.47	-8.52	-4.23	-1.92	-3.78	-2.3	-3.99	-7.28	-6.43	-16.41	-8.12
Θ(75°)	-1.76	-8.14	-7.25	-6.69	-3.64	-3.58	-3.27	-4.94	-1.7	-3.07	-5.63	-0.43	-4.3	-9.07	-2.18	1.97	0.62	0.35	1.01	-0.24	-1.42	2.23	-2.42	-6
Θ(90°)	0.88	-3.37	-0.61	-2.23	1.71	-3.27	-2.13	0.03	1.58	-0.87	-0.87	2.4	1.43	-2.93	0.44	1.88	0.71	2.03	0.78	2				



Total Gain Data

Freq(Hz)	2.4G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-9.55	-15.71	-13.77	-11.19	-15.80	-15.66	-15.22	-14.53	-15.22	-14.36	-12.75	-12.44	-13.63	-11.51	-12.10	-11.17	-11.11	-12.88	-14.07	-13.01	-12.75	-11.40	-11.75	-13.33
Θ(15°)	-5.40	-5.35	-7.04	-10.96	-9.66	-10.61	-10.63	-10.46	-10.87	-11.74	-11.34	-9.61	-10.41	-12.92	-9.77	-8.71	-9.12	-9.69	-8.58	-6.58	-7.25	-8.66	-7.48	-5.52
Θ(30°)	-1.18	-2.46	-3.22	-4.02	-3.97	-4.41	-4.36	-4.60	-5.01	-3.73	-2.37	-2.20	-2.45	-2.34	-2.14	-3.03	-4.11	-5.69	-6.32	-2.99	-1.61	-2.74	-1.58	-0.50
Θ(45°)	-0.02	-0.29	-2.45	-2.90	-4.32	-4.29	-2.77	-3.02	-4.58	-2.30	-0.77	0.83	0.31	-1.68	-1.08	-0.85	-2.96	-2.49	-3.39	-0.25	-0.28	-2.92	-0.68	-0.19
Θ(60°)	0.49	-4.05	-3.34	-4.30	-4.12	-2.15	-1.85	-1.25	-2.41	-3.17	-0.57	1.32	2.91	1.36	-1.59	-0.75	-1.59	1.70	0.21	-0.26	-5.06	-4.46	-4.56	-0.33
Θ(75°)	-2.30	-1.95	-2.41	-1.41	-3.77	-1.43	0.53	-0.69	0.30	-2.21	0.00	1.68	2.35	0.33	-1.60	-0.75	-0.82	1.62	-2.07	-0.13	-2.19	-5.56	-6.32	-3.50
Θ(90°)	2.52	-0.96	-2.02	-2.41	-0.22	2.19	-1.44	-0.59	0.52	-3.13	-1.12	0.22	-0.85	-2.62	-2.87	-3.22	-1.55	-1.40	-1.50	2.55	-3.25	-2.09	-4.05	-0.59
Θ(105°)	-1.28	-5.60	-11.70	-9.53	-5.79	-0.23	-1.41	-1.21	-5.29	-0.73	-3.15	-3.29	-1.27	-3.28	-4.06	-3.51	-6.88	-0.91	-0.15	-0.91	-7.13	-3.35	-7.89	-0.99
Θ(120°)	-10.81	-3.22	-2.21	-2.96	-13.00	-6.35	-6.00	-4.97	-5.02	-2.55	-3.22	-2.65	-1.40	-3.40	-7.25	-5.34	-4.11	-0.75	-5.86	-3.85	-3.89	-4.66	-7.75	-4.47
Θ(135°)	-0.53	2.18	0.94	-2.29	-6.11	-4.96	-6.64	-7.39	-2.45	-3.43	-3.16	-6.13	-3.59	-5.30	-10.30	-9.69	-9.02	-3.57	-2.42	-4.60	-3.25	-4.49	-8.08	-5.89
Θ(150°)	-15.05	-10.42	-9.05	-9.23	-10.23	-6.92	-4.54	-3.56	-5.24	-8.45	-5.89	-5.44	-6.32	-3.50	-1.36	-2.06	-4.75	-7.92	-5.35	-4.87	-4.71	-5.18	-8.85	-10.23
Θ(165°)	-2.64	-4.05	-5.45	-6.58	-9.05	-8.38	-4.78	-1.76	-1.03	-1.76	-2.63	-2.93	-4.17	-6.40	-6.19	-9.40	-8.29	-7.87	-8.28	-10.33	-12.60	-8.98	-5.36	-3.73
Θ(180°)	-7.96	-6.07	-5.65	-5.96	-6.50	-6.00	-5.66	-4.90	-5.15	-5.62	-5.72	-5.52	-7.10	-6.71	-8.21	-8.89	-10.30	-9.25	-6.68	-6.64	-7.89	-9.43	-7.78	-9.66
Freq(Hz)	5.2G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-15.32	-15.01	-15.13	-14.55	-14.13	-14.81	-12.77	-12.80	-13.14	-12.67	-12.86	-13.75	-13.21	-15.23	-14.66	-13.65	-12.51	-11.75	-14.98	-15.08	-12.68	-14.32	-14.40	-15.61
Θ(15°)	-11.80	-10.95	-15.14	-15.66	-14.05	-11.21	-11.25	-10.95	-10.04	-11.64	-10.18	-7.93	-8.90	-11.88	-10.67	-8.57	-9.14	-9.40	-9.83	-13.44	-10.21	-9.75	-8.07	-10.26
Θ(30°)	-8.12	-9.68	-10.44	-14.09	-10.27	-11.69	-5.78	-8.21	-6.90	-7.41	-9.00	-11.62	-11.38	-8.43	-6.91	-5.54	-6.24	-8.55	-12.52	-10.05	-15.98	-12.60	-9.13	-12.51
Θ(45°)	-5.09	-13.89	-13.14	-15.34	-12.80	-10.57	-15.17	-6.42	-8.51	-14.12	-9.34	-10.19	-11.55	-10.67	-5.38	-9.08	-9.24	-11.84	-7.66	-8.53	-12.25	-9.10	-5.06	-6.43
Θ(60°)	-3.76	-7.21	-8.16	-6.30	-8.44	-13.29	-12.89	-12.77	-13.00	-9.40	-13.46	-13.08	-2.35	-7.39	-3.42	-7.86	-9.56	-12.53	-11.77	-9.77	-10.33	-7.43	-6.79	-7.87
Θ(75°)	-9.21	-9.51	-5.99	-6.00	-11.22	-5.08	-4.10	-5.61	-3.14	-0.16	1.28	-2.99	0.09	-0.54	-2.30	-3.31	-2.27	-7.01	-7.47	-6.86	-13.24	-11.28	-15.46	-7.11
Θ(90°)	-3.69	-12.42	-0.40	-0.39	-2.62	-0.52	-6.20	-1.24	0.10	2.23	1.57	2.18	2.25	2.27	2.84	1.76	1.78	-6.53	0.52	-7.26	-0.17	-0.02	-1.44	-4.08
Θ(105°)	-9.73	-12.75	-1.80	-8.63	-3.25	-3.84	-1.17	-0.95	-0.19	0.42	0.39	-0.68	-1.91	-1.14	-2.09	-4.93	1.98	-2.59	-0.03	-1.42	-2.19	0.96	-7.01	-3.42
Θ(120°)	-7.82	-14.03	-4.36	-6.13	-4.29	-1.01	-7.62	-5.28	-8.30	-4.98	-6.09	-9.12	-5.73	-6.79	-6.68	-12.32	-1.40	-12.72	-6.63	-7.90	-3.58	-6.93	-2.43	-3.46
Θ(135°)	-12.96	-3.80	-5.83	-4.08	-8.68	-12.04	-5.69	-5.24	-2.68	-9.11	-7.97	-5.23	-4.50	-3.68	-6.65	-9.19	-4.63	-6.88	-12.68	-5.48	-8.77	-4.53	-9.54	-9.62
Θ(150°)	-6.35	-10.34	-5.69	-8.09	-5.96	-15.92	-6.38	-2.11	-2.43	-5.63	0.25	-3.76	-2.20	-2.43	-2.17	-1.00	-2.71	-4.73	-7.81	-2.34	-1.81	-7.31	-8.65	-7.78
Θ(165°)	-6.79	-4.48	-8.23	-9.04	-7.83	-6.96	-5.10	-2.92	-4.15	-3.93	-1.69	-1.00	-2.80	-3.86	-4.30	-5.60	-5.81	-10.57	-6.62	-8.36	-8.79	-7.42	-10.31	-9.09
Θ(180°)	-9.66	-11.06	-9.59	-9.23	-10.83	-10.67	-9.51	-8.07	-7.96	-9.61	-10.57	-12.40	-10.15	-8.90	-9.70	-11.28	-15.64	-11.86	-10.88	-11.31	-8.25	-10.92	-15.76	-10.75
Freq(Hz)	5.3G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-12.70	-13.27	-13.99	-11.97	-11.98	-9.89	-12.76	-12.82	-11.64	-13.28	-15.52	-13.36	-13.30	-14.43	-14.14	-15.12	-13.48	-15.41	-14.77	-15.28	-15.47	-13.81	-14.69	-14.27
Θ(15°)	-9.68	-9.12	-10.02	-11.43	-9.88	-13.13	-13.25	-8.76	-9.07	-9.42	-6.72	-5.67	-6.97	-10.14	-14.62	-14.41	-13.36	-10.18	-8.73	-11.55	-15.00	-11.47	-9.49	-7.69
Θ(30°)	-4.76	-4.63	-9.52	-11.14	-11.75	-6.52	-3.72	-5.25	-7.90	-6.64	-10.30	-6.45	-4.62	-5.73	-13.00	-10.62	-6.70	-1.72	-9.16	-4.30	-7.67	-10.33	-13.82	-11.65
Θ(45°)	-5.64	-8.70	-14.39	-11.35	-7.41	-12.11	-9.89	-6.10	-5.68	-9.51	-13.11	-9.36	-12.37	-9.18	-8.11	-8.37	-6.63	-9.51	-7.64	-8.80	-9.74	-9.55	-8.11	-5.21
Θ(60°)	-4.90	-4.82	-5.28	-6.01	-6.25	-12.52	-10.20	-15.85	-7.14	-10.94	-7.07	-4.77	-7.26	-5.66	-3.72	-8.11	-7.96	-9.54	-11.73	-10.34	-14.85	-7.16	-6.64	-7.91
Θ(75°)	-8.85	-4.46	-7.29	-6.83	-7.92	-3.18	-4.96	-5.23	-3.07	-1.59	-0.24	-0.14	-0.65	0.24	1.45	-2.41	-1.41	-4.16	-2.60	-3.59	-8.17	-7.74	-11.16	-7.56
Θ(90°)	-4.61	-6.18	0.13	0.88	-1.47	-1.69	-4.62	-0.67	-2.64	1.91	2.30	3.66	2.01	1.91	-0.77	-0.71	1.12	-3.30	0.93	-3.04	-1.89	-1.00	-0.12	-3.85
Θ(105°)	-12.13	-12.39	-4.93	-5.20	-4.80	-5.88	-1.18	-0.43	-2.01	0.36	-3.03	-0.86	-5.41	0.29	-1.25	-3.42	-1.47	-7.16	-1.26	-2.95	-1.52	1.41	-4.72	-2.51
Θ(120°)	-9.41	-15.16	-4.47	-2.96	-6.87	-3.39	-5.62	-3.86	-7.35	-7.27	-6.66	-6.37	-6.96	-9.58	-7.59	-8.65	-7.69	-11.29	-4.66	-9.40	-8.63	-8.00	-6.32	-8.23
Θ(135°)	-15.42	-9.37	-9.06	-8.26	-16.10	-13.16	-2.67	-5.63	-6.20	-9.98	-4.63	-8.68	-5.25	-4.56	-8.32	-10.18	-7.13	-11.47	-10.33	-6.11	-7.33	-5.64	-11.41	-9.43
Θ(150°)	-10.43	-8.49	-4.32	-4.56	-8.66	-13.83	-7.35	-3.33	-5.18	-2.30	-1.78	-5.48	-6.06	-5.02	-3.12	-1.48	-2.64	-7.74	-11.45	-4.38	-3.15	-9.31	-10.37	-8.54
Θ(165°)	-8.12	-5.11	-6.18	-8.59	-6.47	-8.51	-6.77	-4.52	-4.18	-2.04	-1.28	-3.22	-6.56	-6.36	-4.86	-4.95	-4.97	-8.21	-6.12	-8.22	-11.32	-10.33	-12.05	-13.65
Θ(180°)	-9.94	-8.60	-9.83	-8.70	-8.24	-8.56	-8.87	-10.57	-9.90	-10.97	-10.84	-11.19	-10.63	-9.92	-9.33	-10.03	-15.28	-15.00	-13.52	-10.63	-8.38	-12.60	-11.77	-11.20
Freq(Hz)	2.45G	Pol.	Total	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-14.31	-15.25	-12.80	-14.54	-15.67	-13.48	-13.81	-13.69	-11.67	-11.17	-11.90	-13.77	-13.96	-15.35	-12.26	-11.91	-14.35	-13.11	-11.75	-14.52	-13.71	-11.27	-14.09	-9.90
Θ(15°)	-3.64	-2.92	-3.38	-6.57	-9.97	-12.90	-7.93	-5.33	-4.09	-2.97	-2.98	-6.07	-5.03	-7.02	-8.65	-8.26	-10.19	-9.31	-8.63	-8.22	-6.36	-2.95	-2.58	-1.63
Θ(30°)	-8.14	-9.20	-6.44	-3.94	-2.91	-4.35	-9.10	-5.32	-1.88	-2.55	-8.93	-8.82	-5.25	-6.16	-4.27	-5.22	-6.79	-5.12	-5.76	-5.31	-2.98	-3.23	-4.74	-8.03
Θ(45°)	1.38	1.44	-1.34	-0.88	-4.82	-0.26	-2.69	-4.07	-0.08	-1.77	-3.14	-2.17	-1.18	-1.67	-0.73	-1.45	-3.23	-4.53	-5.45	-3.66	-3.83	-2.75	-0.68	0.45
Θ(60°)	1.20	-0.91	-3.95	-1.03	-1.01	-2.73	1.35	1.11	0.54	1.07	-0.12	-2.37	-1.63	-1.24	-1.17	0.56	-2.40	-0.40	-2.99	-1.16	-0.74	1.82	0.36	-1.32
Θ(75°)	-2.45	-2.85	-2.46	-2.55	-1.99	-1.00	0.83	0.13	-0.51	0.01	0.13	0.59	-0.35	0.22	-1.54	-0.92	0.88	0.41	-0.78	-0				

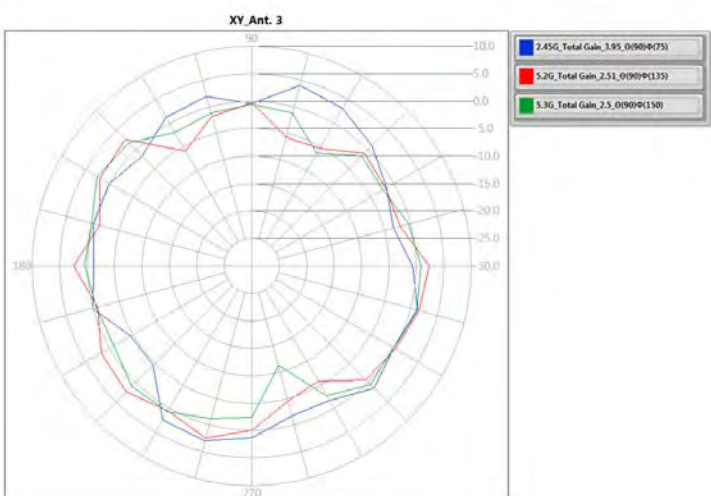
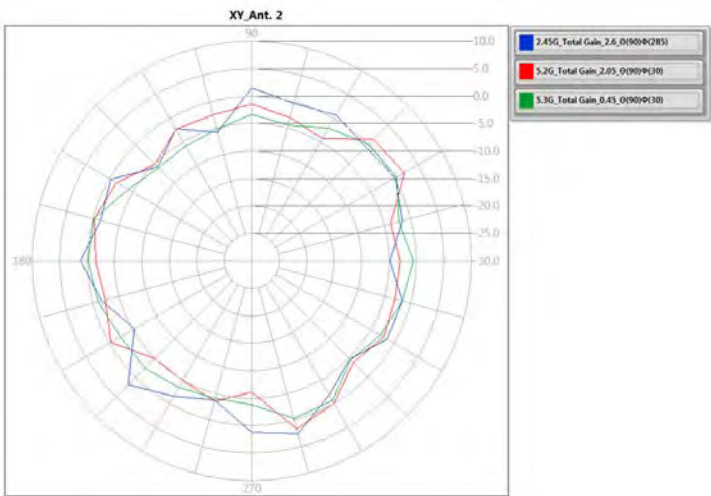
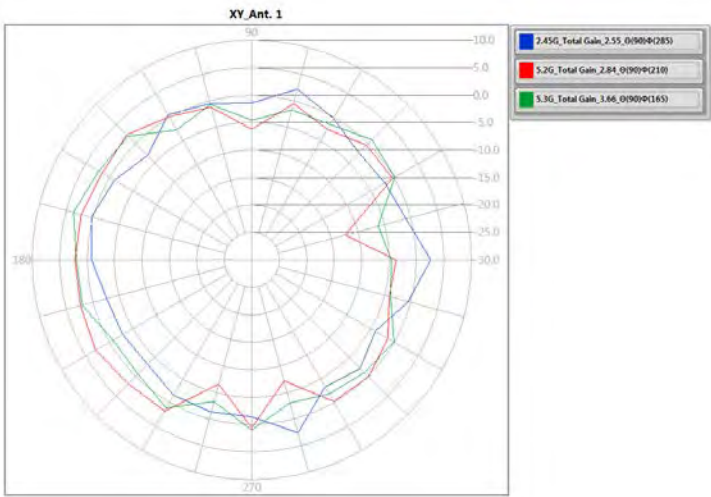


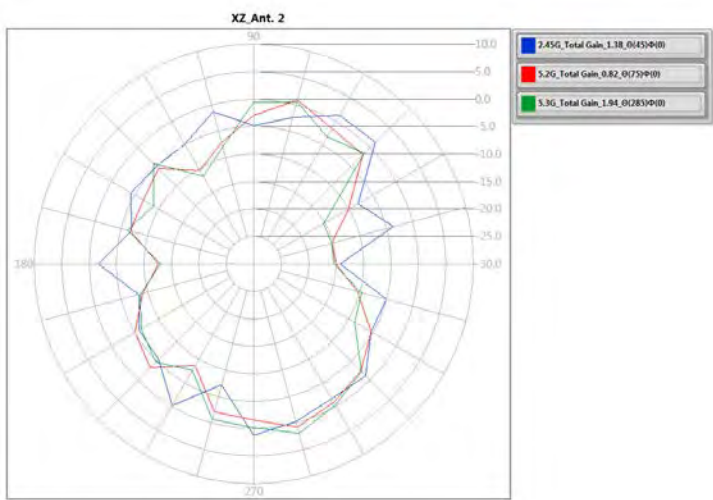
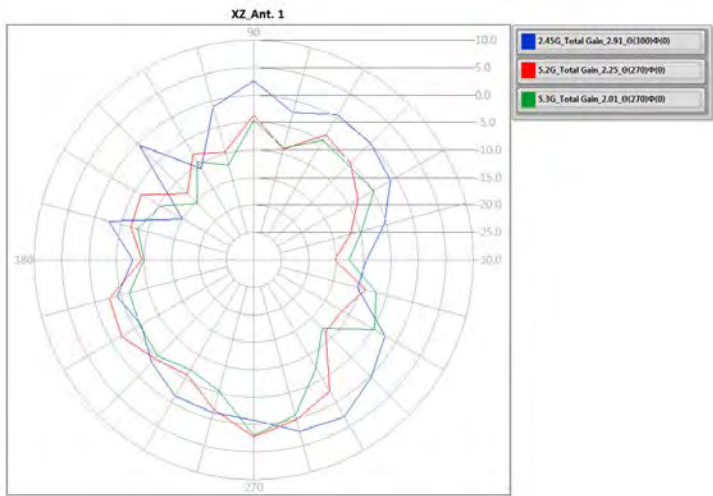
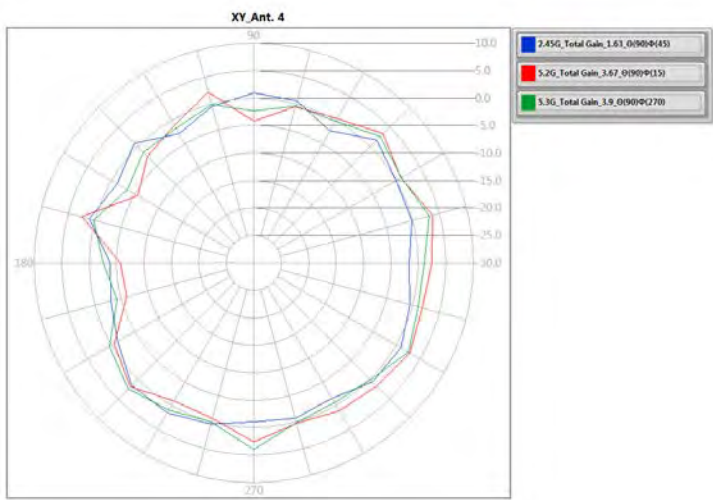
Antenna Pattern of 2.4GHz and 5GHz UNII1, UNII 2A

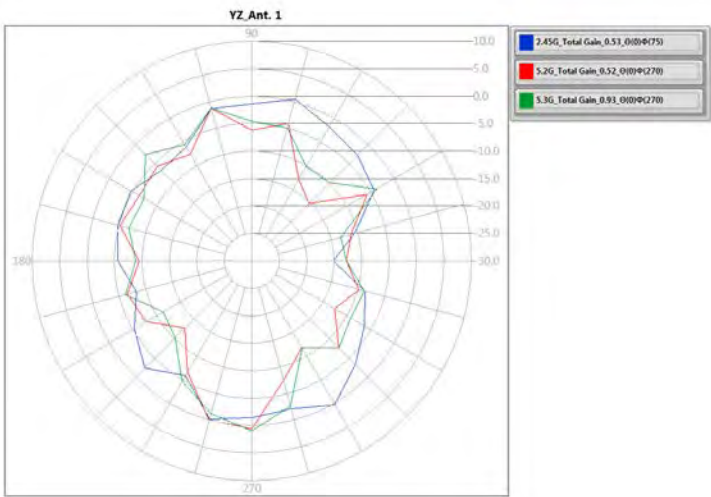
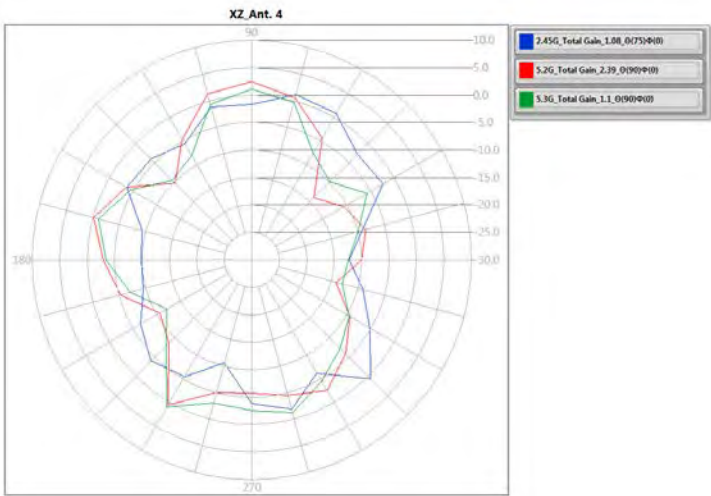
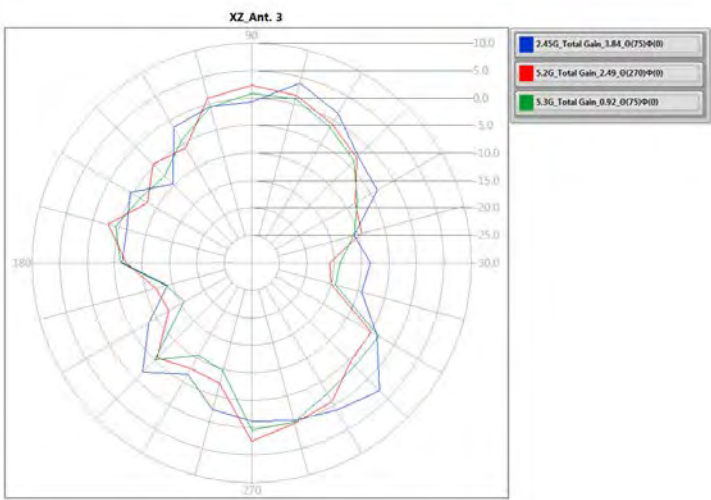
Appendix C

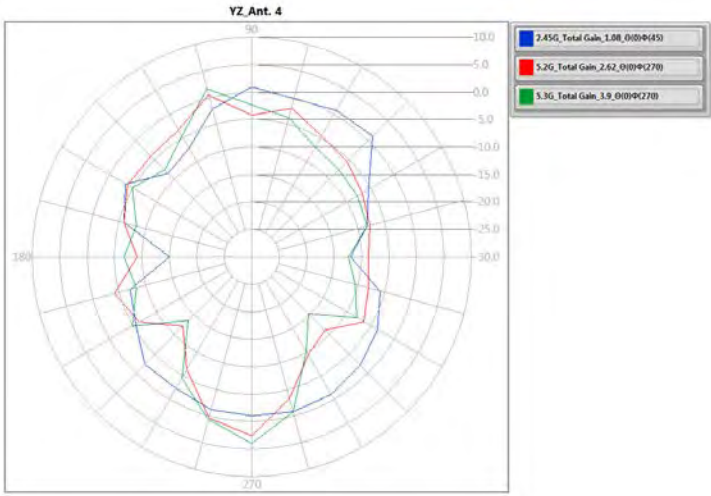
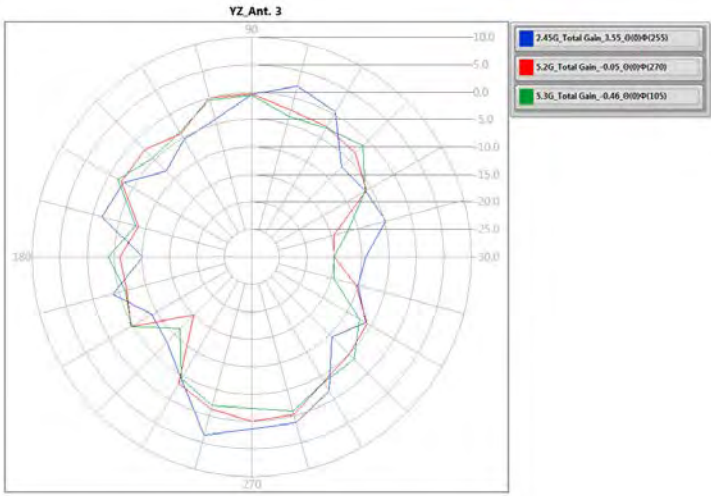
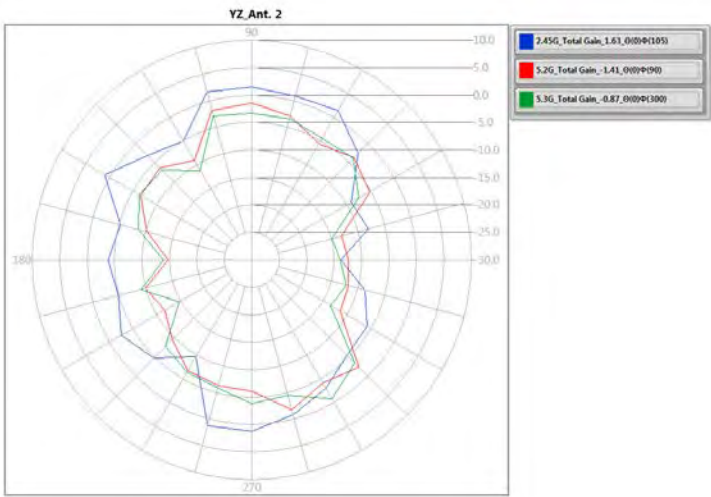
Θ(135°)	-9.70	-13.74	-11.89	-5.63	-7.83	-8.34	-7.92	-7.97	-7.28	-11.60	-4.06	-2.37	-1.85	-3.44	-9.15	-10.16	-2.06	-4.53	-8.06	-8.82	-5.73	-4.59	-6.55	-8.10
Θ(150°)	-4.41	-8.00	-8.61	-7.56	-5.20	-2.13	-2.97	-5.32	-3.75	-4.18	-6.37	-8.80	-8.36	-10.72	-10.96	-9.46	-6.36	-7.76	-9.00	-6.68	-4.20	-2.12	-1.98	-3.55
Θ(165°)	-6.47	-4.20	-2.98	-1.96	-1.26	-1.01	-1.79	-3.46	-5.21	-5.97	-7.01	-10.62	-14.16	-11.84	-13.62	-13.54	-10.51	-6.98	-3.84	-3.30	-4.24	-5.65	-6.80	-6.88
Θ(180°)	-6.31	-5.86	-5.03	-6.75	-6.10	-8.82	-10.12	-6.22	-5.68	-6.73	-6.62	-4.04	-3.93	-3.80	-5.27	-5.66	-5.55	-6.23	-5.65	-6.26	-5.53	-5.69	-5.79	-5.94
Freq(Hz)	5.2G	Pol.	Total	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-15.84	-16.14	-14.81	-14.34	-14.52	-12.15	-15.08	-13.72	-12.87	-12.37	-11.81	-12.64	-11.75	-13.56	-14.96	-14.18	-13.88	-14.87	-14.32	-14.62	-15.23	-14.98	-14.60	-13.84
Θ(15°)	-9.33	-10.32	-13.10	-12.06	-10.91	-12.85	-14.55	-9.61	-11.23	-12.72	-14.88	-10.21	-15.05	-15.18	-12.15	-9.26	-5.79	-6.59	-10.29	-16.13	-15.19	-15.43	-12.35	-9.49
Θ(30°)	-8.18	-5.64	-6.45	-6.50	-8.99	-6.12	-5.85	-10.05	-6.45	-3.14	-2.23	-1.94	-4.88	-4.24	-5.61	-10.31	-7.61	-4.72	-5.68	-10.47	-8.43	-8.38	-8.68	-7.76
Θ(45°)	-2.88	-1.92	-5.16	-2.58	-3.63	-1.94	-3.36	-4.27	-2.83	-5.74	-8.00	-5.14	-4.55	-5.74	-4.34	-4.09	-3.51	-5.40	-4.94	-3.02	-5.00	-1.72	-2.35	-2.16
Θ(60°)	-0.82	-5.26	-3.44	-0.57	-5.74	-5.51	-2.65	-2.59	-0.77	0.50	-4.42	-1.68	-0.84	-3.10	-4.77	-2.74	-4.34	-3.18	-3.72	-2.77	-4.22	-2.14	-2.22	-1.29
Θ(75°)	1.50	-0.65	0.09	-0.81	-3.92	-1.97	-2.44	-4.00	-0.41	-0.33	0.02	0.40	0.27	-0.56	-2.32	-0.98	-3.45	-2.73	-0.32	-3.30	-4.03	-2.30	0.86	-0.97
Θ(90°)	2.28	-2.06	-1.81	-0.93	-5.24	-5.80	-0.37	-1.89	-5.91	2.51	2.02	-1.34	2.49	-0.98	1.64	2.35	0.45	2.49	-0.05	-4.52	-5.79	-0.71	0.16	1.53
Θ(105°)	0.93	-2.77	-1.09	-4.71	-8.51	-4.54	-0.10	-11.84	-3.66	-1.59	-1.98	-7.62	-7.35	-8.33	-4.30	-5.06	-15.80	-0.75	-1.37	-5.70	-8.42	-2.18	-1.35	-2.46
Θ(120°)	-5.95	-8.33	-10.98	-7.98	-6.99	-8.77	-4.21	-10.93	-5.55	-4.60	-2.41	-11.21	-7.74	-15.33	-9.18	-3.81	-10.53	-0.43	-3.44	-14.89	-2.56	-6.28	-3.61	-5.37
Θ(135°)	-4.61	-3.71	-7.53	-10.26	-11.14	-8.75	-2.41	-8.31	-9.70	-7.21	-2.28	-7.86	-5.59	-6.19	-7.08	-14.51	-6.63	-11.98	-14.97	-8.40	-10.99	-8.86	-7.72	-4.83
Θ(150°)	-8.11	-3.25	-5.04	-5.24	-4.40	-3.87	-2.58	-6.00	-10.65	-7.08	-6.82	-4.51	-12.62	-10.01	-13.15	-12.75	-8.53	-4.78	-4.57	-7.81	-7.01	-5.70	-6.33	-5.77
Θ(165°)	-2.93	-2.89	-2.41	-3.13	-5.57	-8.76	-8.65	-8.16	-9.47	-11.31	-13.83	-11.59	-11.84	-12.57	-12.69	-9.42	-8.22	-6.82	-6.49	-4.61	-6.34	-6.80	-4.01	-1.62
Θ(180°)	-7.12	-7.26	-7.44	-7.48	-4.10	-6.03	-6.02	-6.08	-9.76	-12.54	-12.72	-8.95	-8.15	-6.93	-8.27	-10.71	-9.49	-12.22	-9.83	-9.80	-9.31	-10.25	-11.11	-8.96
Freq(Hz)	5.3G	Pol.	Total	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-13.90	-12.33	-15.39	-14.86	-15.32	-14.19	-14.98	-15.61	-15.59	-15.72	-14.71	-15.82	-15.54	-14.40	-15.84	-15.15	-14.41	-12.28	-12.99	-14.44	-14.90	-14.55	-15.43	-14.31
Θ(15°)	-10.70	-12.75	-11.54	-9.98	-10.91	-10.02	-11.87	-11.43	-10.31	-11.62	-10.81	-9.86	-14.22	-15.06	-14.24	-9.58	-7.45	-9.63	-14.47	-15.01	-14.52	-12.94	-10.98	-11.45
Θ(30°)	-7.82	-7.49	-7.67	-5.64	-9.09	-9.54	-6.16	-8.12	-5.87	-4.53	-3.25	-4.55	-3.27	-4.27	-6.88	-6.75	-4.75	-6.77	-7.29	-6.71	-8.72	-9.22	-9.39	-9.54
Θ(45°)	-3.70	-3.92	-1.99	-5.79	-4.21	-2.21	-1.39	-3.32	-0.15	-3.64	-6.74	-6.98	-3.49	-4.95	-4.88	-4.08	-3.07	-3.51	-3.64	-3.72	-3.64	-1.24	-2.58	-2.43
Θ(60°)	-1.57	-2.96	-2.80	0.00	-2.43	-2.81	-2.92	-1.01	-0.57	-0.82	-2.44	-1.99	-2.60	-3.35	0.33	-0.62	-3.83	-3.31	-3.69	-1.50	-2.86	-1.58	-1.09	-1.48
Θ(75°)	0.92	-0.43	0.35	-4.60	-3.10	-1.05	-3.55	-0.30	-1.63	-1.54	1.65	1.06	-0.01	-0.26	-1.31	-0.20	-3.18	-0.97	-0.90	-5.83	-5.61	-0.58	-2.62	-0.60
Θ(90°)	0.77	-0.42	-2.43	-1.80	-6.27	-1.28	-0.59	-1.22	-1.96	1.62	2.50	0.16	0.38	-0.70	-0.99	0.99	0.59	-1.20	-2.49	-11.23	-2.73	0.53	-0.22	1.12
Θ(105°)	-0.68	-1.20	-0.37	-5.10	-9.82	-3.70	-0.46	-9.88	-6.67	-2.00	-0.66	-11.04	-9.67	-7.46	-7.68	-5.49	-11.80	-2.67	-1.99	-7.49	-8.74	-0.85	-5.20	-2.12
Θ(120°)	-4.28	-8.98	-8.85	-7.71	-7.73	-5.46	-3.77	-12.16	-3.15	-4.27	-3.60	-9.85	-10.52	-10.60	-10.39	-3.37	-12.10	-3.48	-4.44	-11.06	-2.96	-6.71	-5.92	-7.30
Θ(135°)	-7.52	-2.94	-5.64	-7.16	-14.65	-6.60	-4.59	-7.31	-12.26	-7.79	-2.39	-6.96	-5.18	-9.56	-11.41	-10.45	-5.94	-10.77	-11.43	-9.99	-14.25	-9.70	-8.64	-9.13
Θ(150°)	-6.51	-6.72	-6.21	-7.40	-4.24	-4.39	-1.81	-6.38	-12.67	-8.88	-5.56	-4.01	-15.81	-7.84	-13.37	-15.76	-10.30	-4.92	-4.69	-9.59	-4.62	-9.97	-5.79	-2.70
Θ(165°)	-4.37	-3.50	-3.35	-2.17	-2.31	-5.30	-8.16	-7.19	-7.44	-9.31	-12.80	-12.94	-13.86	-11.95	-11.26	-9.24	-7.18	-7.28	-6.15	-6.24	-8.82	-5.93	-3.98	-1.92
Θ(180°)	-6.15	-6.18	-6.48	-5.52	-2.97	-5.52	-3.89	-6.15	-10.34	-9.96	-13.08	-10.67	-5.99	-6.25	-6.87	-8.20	-9.74	-7.65	-9.26	-9.59	-10.36	-10.64	-11.16	-9.27
Freq(Hz)	2.45G	Pol.	Total	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-12.29	-13.53	-12.55	-13.25	-13.00	-12.81	-11.95	-10.80	-10.80	-13.89	-11.23	-9.93	-15.57	-10.90	-10.80	-13.34	-12.09	-12.00	-11.77	-12.01	-11.15	-13.49	-13.93	-10.60
Θ(15°)	-9.10	-6.27	-6.57	-6.72	-6.10	-6.00	-8.20	-12.90	-13.83	-10.52	-10.41	-9.80	-9.09	-9.53	-10.21	-7.27	-5.93	-6.43	-5.81	-6.56	-7.66	-6.91	-6.99	-8.66
Θ(30°)	-2.35	-2.96	-3.61	-3.86	-3.87	-3.64	-5.42	-3.89	-3.19	-3.67	-4.22	-6.71	-5.12	-4.67	-4.16	-4.18	-4.19	-3.51	-3.62	-3.80	-2.88	-1.65	-2.27	-2.55
Θ(45°)	-2.77	-1.24	-1.12	-3.12	-2.58	-1.60	1.08	0.94	-0.14	0.95	-0.88	-1.23	0.52	-1.54	-4.38	-3.16	-3.10	-1.59	-2.02	-1.84	-2.86	-0.45	-0.64	-2.47
Θ(60°)	0.77	-0.88	-0.40	0.26	0.60	0.13	0.78	-2.94	-3.37	-3.34	-8.01	-5.59	-6.25	-1.93	-3.50	-3.59	-2.07	-0.32	-1.06	0.38	-2.72	0.73	1.91	1.36
Θ(75°)	1.08	-0.38	0.24	1.21	0.67	-0.44	-0.17	-1.66	-4.18	-1.19	-2.23	-1.88	-1.90	-3.27	-1.03	-1.78	-2.73	0.78	-0.80	0.10	-1.09	1.32	1.83	0.39
Θ(90°)	-1.70	-0.20	-0.04	1.63	-2.28	0.42	0.93	-0.57	-2.87	0.77	-1.29	0.96	-3.84	-3.06	-1.37	1.50	1.53	0.40	-1.11	-0.64	-1.50	0.54	1.00	-0.58
Θ(105°)	-1.20	-2.32	-1.33	-1.87	-1.98	1.29	-2.17	-3.57	-5.27	-1.90	-5.39	0.91	-10.57	-2.44	-2.19	-5.00	-1.06	1.25	-1.22	-1.73	-5.75	-2.93	-4.21	-6.38
Θ(120°)	-5.57	-4.51	-3.00	-3.32	-2.02	-2.05	-7.14	-5.40	-4.12	-3.43	-3.50	-0.23	-5.51	-3.39	-5.30	-3.34	-7.10	0.43	-2.41	-1.60	-7.62	-6.25	-5.36	-5.57
Θ(135°)	-4.05	-4.79	-6.62	-10.58	-3.26	-3.19	-8.56	-7.52	-4.67	-6.86	-0.34	0.06	-4.09	-4.29	-3.96	-2.45	-5.34	-2.66	-2.43	-5.11	-6.19	-8.07	-3.44	-4.24
Θ(150°)	-3.64	-4.06	-6.16	-7.20	-7.14	-4.06	-3.47	-6.07	-7.77	-9.15	-12.45	-9.49	-6.59	-6.91	-8.72	-11.47	-5.63	-3.49	-5.56	-8.15	-4.80	-1.74	0.21	-0.80
Θ(165°)	-9.26	-7.58	-9.21	-9.38	-6.62	-5.50	-5.92	-8.59	-11.86	-12.12	-7.62	-6.73	-9.62	-13.11	-12.91	-10.88	-7.84	-5.76	-7.04	-8.61	-9.15	-8.12	-6.26	-7.94
Θ(180°)	-9.87	-10.92	-13.90	-12.52	-14.65	-14.08	-15.09	-15.83	-14.40	-14.10	-11.80	-10.68	-11.19	-10.60	-12.43	-14.45	-13.06	-11.07	-12.43	-11.96	-14.43	-12.81	-10.27	-10.08
Freq(Hz)	5.2G	Pol.	Total	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-9.95	-8.11	-10.42	-8.69	-10.89	-10.64	-8.72	-9.55	-8.70	-10.81	-10.21	-8.52	-9.77	-11.84	-11.00	-11.90	-10.31	-10.58	-10.08	-9.95	-9.95	-10.45	-9.98	-10.75
Θ(15°)	-8.49	-8.16	-6.73	-9.92	-9.59	-8.24	-7.73	-9.00	-9.66	-12.03	-13.14	-14.05	-14.10	-12.73	-11.79	-10.34	-12.81	-9.86	-8.00	-12.60	-10.17	-6.68	-6.79	

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 $\Theta(0-180)\Phi(270)$











Total Gain Data

Freq(Hz)	5.6G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-10.16	-7.75	-11.49	-8.79	-10.27	-9.42	-9.98	-9.28	-9.28	-8.29	-9.34	-9.42	-9.07	-9.41	-9.52	-9.12	-9.99	-8.77	-9.69	-8.66	-7.75	-9.06	-10.70	-13.51
Θ(15°)	-5.89	-8.92	-9.11	-11.03	-9.82	-13.34	-15.17	-15.11	-9.61	-8.85	-12.92	-10.27	-9.19	-9.41	-11.03	-10.21	-13.43	-15.13	-10.50	-10.01	-7.35	-7.42	-8.15	-6.78
Θ(30°)	-4.87	-4.45	-7.49	-12.82	-10.64	-9.96	-10.35	-6.75	-9.73	-6.65	-9.04	-4.49	-8.63	-7.42	-10.22	-6.37	-6.30	-8.89	-5.33	-5.19	-7.02	-6.23	-9.17	-6.12
Θ(45°)	-12.50	-5.76	-10.01	-11.58	-6.26	-9.17	-7.58	-7.37	-6.63	-9.68	-8.52	-6.34	-9.75	-10.51	-10.90	-9.99	-12.85	-7.44	-5.20	-6.62	-5.55	-5.60	-10.53	-12.46
Θ(60°)	-6.88	-5.78	-14.89	-9.62	-15.92	-10.77	-9.75	-12.52	-13.41	-11.54	-10.54	-7.24	-1.80	-9.37	-5.97	-5.65	-1.27	-0.82	-1.94	-5.21	-4.02	-5.05	-12.73	-16.03
Θ(75°)	-4.84	-4.03	-11.49	-4.11	-5.91	-4.91	-7.00	-7.23	-3.31	-1.42	-7.08	-3.07	1.10	-2.14	0.21	0.09	3.71	1.81	1.53	0.52	-0.12	0.63	-2.90	-5.98
Θ(90°)	0.26	-2.69	-3.93	-5.81	-7.59	-6.56	-5.81	-7.32	-3.35	-4.60	-0.23	-1.94	2.23	-0.96	-1.43	-0.09	2.19	-0.08	2.06	2.16	2.01	1.04	-1.64	-3.78
Θ(105°)	-1.23	-0.82	-10.62	-5.45	-5.95	-12.88	-12.40	-5.86	-0.98	-0.15	-2.30	-4.85	-1.74	-1.27	-8.58	-0.94	0.42	-2.97	-3.66	-1.92	0.18	-2.81	-2.49	-5.02
Θ(120°)	-7.02	-2.90	-11.76	-10.82	-11.18	-8.70	-6.67	-8.51	-8.07	-5.74	-5.05	-7.60	-4.86	-14.55	-14.79	-8.86	-3.59	-5.26	-8.30	-11.30	-4.13	-10.85	-10.63	-10.56
Θ(135°)	-14.42	-7.59	-10.42	-10.32	-9.32	-6.36	-14.01	-9.98	-5.87	-7.80	-10.01	-15.04	-12.84	-10.95	-11.73	-13.36	-9.10	-12.15	-13.18	-11.98	-8.87	-9.25	-14.69	-15.25
Θ(150°)	-12.12	-12.97	-9.69	-10.82	-15.06	-13.37	-10.93	-7.62	-7.72	-7.71	-6.36	-9.73	-14.63	-9.67	-12.55	-13.02	-14.68	-10.65	-14.42	-7.58	-11.13	-9.53	-11.71	-15.05
Θ(165°)	-14.84	-10.66	-9.82	-8.27	-7.06	-10.51	-14.78	-15.36	-15.19	-11.43	-7.98	-6.74	-8.18	-11.65	-13.29	-15.39	-15.51	-14.99	-14.55	-13.61	-12.85	-11.66	-10.26	-12.21
Θ(180°)	-15.23	-12.09	-7.82	-8.07	-10.00	-11.60	-13.17	-11.76	-11.11	-11.32	-11.12	-11.13	-12.78	-13.15	-11.48	-11.04	-12.01	-13.64	-12.79	-11.07	-10.21	-13.54	-14.62	-15.30
Freq(Hz)	5.785G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-8.25	-5.17	-9.73	-6.56	-7.18	-6.61	-6.71	-6.31	-7.32	-5.94	-6.52	-6.48	-6.02	-6.83	-6.57	-7.82	-9.35	-7.11	-7.05	-9.54	-7.46	-8.95	-7.36	-7.67
Θ(15°)	-5.71	-6.51	-9.67	-12.35	-8.75	-9.69	-12.64	-15.42	-13.61	-12.78	-9.64	-8.66	-9.52	-8.10	-7.27	-9.36	-10.42	-8.61	-7.30	-8.21	-9.27	-7.60	-8.30	-6.37
Θ(30°)	-4.52	-5.67	-10.87	-13.19	-13.67	-12.08	-9.23	-11.05	-9.57	-10.73	-10.16	-7.56	-4.94	-7.75	-9.20	-6.65	-6.00	-4.68	-8.00	-6.82	-8.05	-10.14	-9.04	-6.88
Θ(45°)	-8.57	-5.55	-8.26	-10.43	-9.80	-9.72	-4.50	-4.93	-5.67	-8.39	-6.46	-4.98	-11.52	-15.78	-8.21	-6.44	-4.37	-5.32	-3.59	-4.53	-6.02	-5.28	-9.04	-13.87
Θ(60°)	-3.71	-5.96	-11.13	-6.63	-7.54	-8.10	-7.76	-10.17	-9.17	-8.99	-7.16	-7.53	-2.63	-10.08	-7.16	-5.49	-1.03	0.28	-2.02	-2.84	-0.57	-2.97	-6.79	-15.47
Θ(75°)	-1.83	-5.72	-10.46	-6.33	-5.12	-6.15	-8.55	-8.42	-4.02	-4.12	-6.32	-3.64	2.53	-2.01	-1.46	0.71	2.64	2.94	0.55	1.46	0.91	1.31	-0.93	-6.32
Θ(90°)	-0.20	-4.91	-3.92	-5.96	-7.44	-8.05	-5.62	-8.14	-1.39	-3.47	-1.28	-3.43	0.64	-2.61	-5.34	0.74	3.05	1.79	-0.73	1.19	-0.70	-0.59	-0.61	-6.49
Θ(105°)	-1.24	-2.24	-12.41	-5.88	-4.95	-10.09	-8.19	-5.04	-0.34	-2.48	-3.63	-4.68	1.11	-2.67	-13.72	-3.44	-1.83	-0.74	-1.69	0.19	0.60	-0.46	-1.56	-7.65
Θ(120°)	-4.87	-0.95	-10.89	-14.04	-10.00	-11.70	-8.45	-10.61	-9.01	-6.13	-5.11	-12.80	-6.34	-9.52	-11.40	-4.61	-2.82	-5.57	-9.49	-5.66	-4.12	-9.52	-5.00	-8.43
Θ(135°)	-13.53	-10.89	-14.32	-15.74	-9.72	-3.93	-9.78	-8.94	-7.39	-10.69	-11.25	-16.03	-9.48	-10.41	-10.40	-7.62	-6.61	-10.07	-14.29	-9.07	-4.92	-9.00	-13.75	-8.94
Θ(150°)	-10.40	-10.68	-10.52	-9.46	-14.98	-10.98	-11.98	-9.96	-10.66	-5.77	-3.71	-13.16	-11.28	-9.85	-11.26	-13.71	-13.13	-12.74	-14.18	-8.46	-5.74	-10.51	-13.09	-14.59
Θ(165°)	-10.11	-8.95	-11.32	-9.10	-7.82	-12.92	-15.06	-14.88	-15.06	-7.69	-6.83	-8.05	-9.18	-9.35	-12.70	-14.82	-14.91	-14.11	-15.47	-12.32	-11.98	-14.62	-10.24	-8.96
Θ(180°)	-9.13	-10.98	-6.66	-7.33	-8.46	-8.88	-9.29	-10.60	-9.40	-8.41	-8.63	-9.05	-8.89	-9.88	-8.50	-8.76	-10.05	-10.54	-12.44	-9.35	-11.73	-12.06	-15.50	-12.62
Freq(Hz)	5.885G	Pol.	Total	Ant. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-5.18	-9.93	-6.05	-8.84	-7.31	-7.00	-7.41	-7.82	-7.11	-7.92	-8.48	-8.32	-8.07	-6.32	-7.70	-7.40	-7.89	-8.00	-7.70	-9.15	-9.84	-7.52	-7.72	-8.58
Θ(15°)	-5.23	-4.48	-9.61	-9.10	-8.14	-7.18	-9.91	-15.79	-14.80	-14.85	-10.45	-7.94	-8.81	-8.63	-8.60	-8.41	-8.04	-6.31	-7.70	-8.36	-10.06	-8.82	-9.72	-8.99
Θ(30°)	-4.71	-7.05	-11.05	-14.37	-15.56	-11.51	-9.60	-10.31	-10.69	-14.04	-7.39	-8.60	-5.51	-11.57	-7.47	-8.53	-7.62	-3.31	-4.57	-5.65	-7.82	-9.38	-8.59	-8.38
Θ(45°)	-6.97	-8.23	-8.37	-12.50	-9.60	-8.30	-3.90	-5.01	-5.49	-5.75	-7.65	-6.09	-10.89	-11.00	-9.82	-7.14	-5.38	-3.54	-4.96	-4.40	-8.74	-5.60	-7.56	-11.35
Θ(60°)	-6.20	-6.53	-11.49	-4.88	-6.78	-5.79	-9.40	-6.25	-7.45	-6.96	-6.37	-5.96	-3.47	-8.16	-8.88	-2.72	-0.54	-0.38	-1.73	-2.86	-0.59	-2.87	-5.52	-13.86
Θ(75°)	-3.44	-5.61	-11.73	-5.31	-7.57	-7.28	-5.95	-13.64	-5.35	-6.69	-6.09	-4.18	2.71	-3.85	-2.30	1.94	3.40	2.47	-0.17	0.71	1.70	1.26	-1.59	-8.92
Θ(90°)	0.12	-4.25	-3.60	-5.07	-7.49	-6.94	-6.26	-7.42	-2.34	-2.81	-2.18	-5.09	0.29	-2.24	-3.67	-0.68	4.01	1.87	0.08	1.84	1.55	-0.12	-2.04	-4.39
Θ(105°)	-2.97	-2.71	-10.48	-6.12	-5.21	-10.24	-8.84	-5.27	-1.43	-2.18	-4.10	-4.87	0.28	-3.35	-7.86	-4.70	-0.54	-0.39	-3.41	0.90	1.65	0.25	-2.14	-8.14
Θ(120°)	-5.84	-1.32	-10.52	-13.80	-10.17	-12.49	-8.67	-10.71	-9.96	-6.16	-4.56	-15.35	-7.06	-8.19	-12.54	-4.38	-4.20	-5.76	-10.61	-4.24	-3.05	-7.97	-2.47	-9.90
Θ(135°)	-13.08	-8.00	-10.82	-11.16	-11.04	-3.56	-10.66	-9.98	-8.13	-10.85	-11.61	-14.84	-10.48	-10.92	-11.48	-10.21	-4.86	-9.73	-15.61	-7.14	-4.81	-9.91	-13.72	-10.69
Θ(150°)	-9.10	-8.88	-9.05	-10.00	-14.33	-12.03	-14.87	-9.29	-8.88	-3.79	-3.58	-11.21	-9.89	-6.84	-11.34	-14.92	-12.90	-9.80	-9.62	-6.27	-3.35	-8.71	-15.26	-12.58
Θ(165°)	-12.39	-8.34	-10.11	-9.25	-7.94	-9.65	-16.04	-15.17	-15.08	-7.82	-7.48	-8.14	-10.02	-7.84	-11.91	-13.79	-13.77	-13.45	-13.96	-11.25	-9.17	-12.64	-11.57	-9.27
Θ(180°)	-9.45	-9.15	-6.32	-6.05	-7.25	-7.88	-8.35	-8.16	-7.35	-7.09	-7.22	-7.36	-7.84	-8.03	-7.26	-7.90	-8.44	-9.10	-9.33	-6.71	-8.34	-11.55	-12.84	-10.84
Freq(Hz)	5.6G	Pol.	Total	Ant. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ(0°)	-10.57	-9.87	-10.95	-11.46	-10.76	-11.90	-9.84	-9.79	-9.96	-8.79	-10.15	-8.51	-9.62	-10.71	-10.71	-10.30	-8.27	-8.39	-8.84	-8.43	-8.33	-9.65	-9.96	-11.09
Θ(15°)	-4.60	-5.66	-4.90	-5.76	-6.42	-5.74	-5.81	-6.50	-6.73	-5.97	-6.09	-6.50	-4.73	-6.52	-11.48	-11.10	-8.91	-10.93	-14.16	-15.87	-14.96	-13.45	-9.48	-7.25
Θ(30°)	-4.75	-5.96	-7.59	-7.02	-6.46	-8.15	-9.35	-8.75	-7.60	-6.57	-7.03	-6.24	-12.13	-11.99	-7.81	-10.06	-15.44	-14.88	-14.17	-10.06	-8.60	-8.28	-7.07	-5.96
Θ(45°)	-3.35	-3.32	-5.91	-14.66	-8.09	-7.71	-7.93	-4.95	-5.19	-11.88	-8.94	-10.59	-6.88	-10.57	-6.21	-2.50	-4.97	-3.56	-5.93	-2.03	-5.97	-6.47	-4.59	-5.22
Θ(60°)	-8.89	-6.86	-4.38	-1.24	-0.99	-1.35	-0.33	0.18	1.08	-1.76	-2.16	-4.73	-2.87	-7.22	-10.45	-12.37	-8.06	-8.63	-11.15	-7.21	-4.80	-4.76	-4.36	-6.24
Θ(75°)	-5.63	-7.48	-2.89	1.64	1.03	2.33	2.26	2.78	2.48	1.53	0.71	-1.34	-0											



Antenna Pattern of 5GHz UNII 2C, UNII 3, UNII 4

Appendix D

Θ (135°)	-12.65	-14.18	-11.13	-9.63	-10.84	-10.95	-10.01	-11.07	-11.15	-12.42	-11.99	-9.08	-5.14	-14.84	-14.48	-15.41	-9.27	-15.44	-11.38	-10.86	-10.64	-14.03	-6.92	-10.01
Θ (150°)	-4.94	-4.99	-7.31	-11.16	-12.04	-11.67	-8.81	-8.24	-11.96	-7.08	-10.41	-8.98	-11.01	-14.80	-10.32	-12.66	-15.21	-11.20	-9.53	-8.90	-6.68	-6.25	-7.50	-8.08
Θ (165°)	-8.21	-10.49	-11.57	-11.90	-15.19	-12.98	-11.84	-10.10	-12.59	-7.74	-15.67	-9.63	-12.27	-13.86	-12.53	-10.52	-8.32	-7.04	-7.02	-9.04	-8.84	-9.09	-8.24	-4.93
Θ (180°)	-7.82	-8.17	-8.43	-7.56	-7.26	-9.08	-10.63	-9.17	-7.62	-15.14	-11.22	-11.17	-12.54	-10.85	-10.08	-9.27	-9.38	-9.97	-10.19	-10.52	-9.15	-9.29	-8.00	-6.90
Freq(Hz)	5.785G	Pol.	Total	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ (0°)	-7.22	-7.61	-7.32	-8.12	-7.94	-8.18	-8.23	-9.10	-8.36	-8.81	-12.31	-14.98	-10.09	-8.53	-12.01	-12.82	-11.60	-12.14	-11.11	-9.97	-9.67	-10.24	-7.85	-8.22
Θ (15°)	-11.81	-10.78	-10.85	-10.40	-10.02	-9.82	-8.60	-8.35	-10.07	-10.14	-10.81	-7.88	-8.78	-14.12	-13.20	-15.16	-15.41	-14.74	-15.28	-14.96	-15.68	-12.96	-12.20	-13.09
Θ (30°)	-10.05	-9.96	-8.64	-8.40	-6.91	-5.95	-5.35	-4.82	-6.31	-4.75	-5.81	-9.13	-6.85	-7.12	-10.33	-6.49	-9.52	-11.75	-11.79	-13.23	-15.25	-11.74	-8.21	-10.05
Θ (45°)	-10.33	-10.39	-11.66	-8.89	-14.41	-8.64	-7.88	-6.67	-6.79	-6.31	-5.77	-8.13	-7.60	-7.67	-6.70	-6.25	-3.78	-2.73	-4.40	-2.69	-2.98	-5.74	-10.64	-8.74
Θ (60°)	-4.96	-7.35	-6.05	-2.87	-7.02	-1.78	-1.25	-1.91	-3.85	-4.09	-4.51	-6.73	-7.57	-8.79	-12.15	-8.48	-8.95	-10.90	-13.26	-15.60	-10.76	-7.43	-6.56	-9.82
Θ (75°)	-2.18	-2.35	-1.99	-0.33	-2.90	1.21	1.38	-0.99	1.17	-0.58	-2.70	-2.38	-1.55	-4.76	-10.35	-4.72	-5.24	-6.13	-1.71	-4.76	-5.04	-3.48	-5.26	-0.89
Θ (90°)	0.12	-2.45	-1.52	0.35	0.55	1.29	0.54	1.88	0.78	0.11	-0.60	-0.36	-3.69	-1.49	-9.21	-1.04	-0.76	0.11	0.26	-4.60	-2.22	-1.14	-1.58	-4.30
Θ (105°)	-7.17	-2.88	-4.56	-2.97	-4.82	0.28	-1.07	0.86	-1.61	-4.64	-4.09	-1.41	-0.91	-4.92	-4.98	-4.10	-4.55	-9.02	-6.78	-6.73	-6.46	-3.94	-2.47	-7.45
Θ (120°)	-9.41	-9.33	-5.70	-10.16	-9.34	-12.96	-6.59	-10.75	-9.12	-1.68	-9.17	-7.18	-6.38	-3.06	-7.22	-13.49	-8.15	-4.97	-11.25	-9.15	-9.23	-6.54	-6.47	-12.58
Θ (135°)	-13.64	-15.10	-11.95	-7.33	-7.47	-7.13	-8.83	-10.78	-7.23	-8.44	-12.47	-10.75	-8.76	-13.37	-16.06	-15.24	-9.10	-14.62	-11.38	-10.71	-14.77	-12.17	-5.91	-8.33
Θ (150°)	-3.27	-8.73	-9.55	-12.14	-9.82	-8.90	-8.74	-8.30	-11.97	-7.86	-8.87	-6.73	-8.41	-13.46	-11.91	-13.25	-15.11	-10.97	-9.85	-10.35	-7.79	-6.60	-6.88	-8.46
Θ (165°)	-7.13	-7.17	-11.22	-11.72	-9.96	-8.46	-8.29	-7.84	-9.01	-7.68	-14.37	-10.78	-11.16	-14.67	-13.94	-10.69	-9.38	-7.96	-8.03	-9.29	-8.94	-10.29	-8.32	-6.01
Θ (180°)	-8.47	-8.43	-7.58	-7.64	-6.86	-8.43	-8.68	-8.49	-7.88	-13.27	-8.48	-9.07	-12.11	-10.76	-9.89	-9.54	-9.12	-9.13	-9.84	-9.17	-8.09	-7.26	-7.95	-7.21
Freq(Hz)	5.885G	Pol.	Total	Ant. 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ (0°)	-9.21	-8.41	-8.58	-7.91	-8.76	-9.51	-8.27	-8.70	-7.63	-8.54	-8.83	-7.97	-7.44	-12.31	-8.06	-9.24	-10.48	-11.15	-9.47	-9.47	-9.94	-8.44	-9.41	-9.24
Θ (15°)	-12.52	-13.63	-13.41	-10.88	-9.05	-7.86	-8.36	-6.63	-9.40	-8.37	-10.72	-10.65	-8.10	-9.60	-14.71	-14.81	-14.38	-12.51	-15.08	-15.48	-15.05	-15.73	-13.48	-13.04
Θ (30°)	-10.15	-8.14	-8.90	-6.93	-5.53	-5.50	-3.60	-3.61	-5.27	-4.26	-8.71	-7.45	-6.96	-8.61	-10.18	-9.18	-9.73	-14.00	-15.01	-15.32	-14.67	-12.53	-10.06	-8.49
Θ (45°)	-9.59	-11.04	-11.61	-8.53	-8.54	-6.89	-5.97	-4.75	-5.47	-11.82	-6.85	-6.44	-8.52	-9.49	-7.10	-4.60	-4.63	-3.57	-2.54	-2.78	-3.39	-5.04	-10.69	-8.18
Θ (60°)	-3.31	-5.53	-8.26	-2.62	-2.21	-1.14	0.45	-5.63	-2.96	-2.44	-6.72	-7.21	-8.26	-7.51	-8.70	-7.25	-8.38	-10.55	-12.83	-15.03	-11.32	-6.45	-6.94	-7.56
Θ (75°)	-3.97	-2.52	-1.52	-1.98	-1.09	1.02	0.61	0.76	0.70	-0.41	-3.85	-2.33	-2.09	-6.06	-8.76	-5.85	-4.25	-7.06	-0.87	-5.70	-4.62	-2.54	-4.09	-1.76
Θ (90°)	0.68	-3.38	-3.45	-0.89	0.64	0.52	0.23	1.21	2.00	1.92	-2.94	-0.31	-4.50	-1.23	-9.99	-1.70	-1.42	-1.09	1.38	-6.57	-3.25	-1.28	-1.59	-4.26
Θ (105°)	-6.41	-3.35	-8.61	-4.46	-1.17	-0.00	-0.33	2.03	-0.76	-4.40	-3.86	0.19	-2.44	-5.72	-7.40	-2.46	-5.24	-8.71	-7.53	-8.04	-6.61	-5.68	-2.98	-4.98
Θ (120°)	-10.48	-7.09	-7.96	-10.63	-14.67	-8.50	-3.84	-9.83	-7.55	-1.43	-5.68	-5.75	-8.24	-3.44	-8.35	-11.90	-9.09	-5.37	-11.71	-7.60	-8.88	-9.21	-5.03	-8.82
Θ (135°)	-14.29	-13.69	-11.28	-8.63	-7.74	-9.04	-10.22	-9.65	-7.84	-9.81	-14.30	-12.39	-9.24	-13.31	-13.32	-13.15	-8.57	-11.66	-8.95	-11.82	-12.06	-9.88	-5.43	-9.72
Θ (150°)	-3.97	-9.54	-8.23	-10.52	-8.87	-9.04	-6.94	-5.91	-8.48	-8.36	-7.52	-6.80	-9.01	-10.54	-10.53	-11.96	-15.31	-10.76	-12.68	-12.30	-10.50	-5.68	-5.04	-7.33
Θ (165°)	-6.10	-8.75	-11.84	-10.23	-9.10	-8.10	-8.31	-7.95	-9.66	-6.07	-12.26	-12.05	-11.00	-15.08	-15.35	-11.23	-8.38	-8.37	-9.59	-9.71	-9.91	-10.36	-6.36	-4.85
Θ (180°)	-8.08	-9.05	-7.83	-8.46	-7.43	-8.73	-9.05	-9.09	-8.76	-13.30	-6.83	-8.95	-14.44	-11.79	-9.01	-9.11	-9.52	-9.48	-10.38	-9.85	-9.11	-8.83	-8.62	-8.32
Freq(Hz)	5.6G	Pol.	Total	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ (0°)	-12.19	-13.33	-12.44	-10.45	-12.59	-14.14	-12.49	-13.83	-14.20	-12.61	-14.59	-11.91	-11.73	-12.27	-11.79	-11.05	-14.19	-14.95	-14.00	-12.66	-14.85	-13.15	-14.88	-12.23
Θ (15°)	-11.29	-11.73	-12.34	-13.40	-14.33	-13.55	-13.84	-11.32	-8.81	-13.08	-13.91	-11.04	-15.19	-11.70	-11.15	-15.20	-12.98	-10.56	-12.54	-12.56	-11.34	-13.77	-13.11	-9.65
Θ (30°)	-9.61	-6.10	-7.16	-7.84	-7.03	-6.70	-10.14	-10.16	-4.66	-6.23	-7.96	-5.39	-12.96	-10.74	-13.33	-10.62	-13.37	-10.86	-6.43	-11.39	-10.13	-8.43	-13.95	-6.31
Θ (45°)	-7.53	-6.81	-9.93	-5.05	-8.61	-9.12	-7.72	-6.36	-3.88	-10.09	-9.26	-6.98	-10.50	-13.01	-12.18	-8.57	-8.30	-10.11	-12.48	-9.41	-6.66	-9.14	-8.02	-11.75
Θ (60°)	-7.50	-8.06	-15.49	-8.77	-7.65	-7.00	-7.29	-4.10	-4.89	-7.97	-14.78	-6.83	-4.52	-11.26	-9.72	-4.71	-3.78	-4.31	-3.91	-3.11	-6.39	-4.93	-13.04	-11.89
Θ (75°)	-2.62	-8.25	-5.26	-6.02	-7.47	-4.94	-2.33	-3.21	-3.64	-2.89	-5.18	-1.32	-1.65	-5.10	-0.31	2.61	1.69	1.97	1.61	-0.72	-0.54	0.62	-0.82	-9.24
Θ (90°)	0.90	-6.02	-1.99	-1.74	-0.22	-4.58	-3.36	-1.06	0.22	0.99	-3.53	1.99	2.11	-4.86	1.53	3.10	2.44	0.85	2.10	0.56	0.95	3.66	-0.20	-5.86
Θ (105°)	0.51	-5.72	-1.80	-2.30	-2.07	-8.24	-9.11	-6.85	-3.88	-4.97	-6.28	-0.63	-1.14	-6.98	-1.93	0.54	-1.75	-2.87	1.47	-4.02	-1.39	-1.36	-0.90	-11.17
Θ (120°)	-1.15	-5.61	-4.08	-0.55	-0.95	-6.34	-10.95	-15.13	-8.35	-8.21	-5.60	-5.11	-9.86	-8.58	-6.47	-5.39	-10.15	-3.72	-4.59	-15.92	-7.81	-4.38	-7.62	-11.04
Θ (135°)	-11.08	-13.95	-6.18	-9.14	-11.06	-14.91	-12.63	-8.06	-9.14	-9.49	-12.09	-14.60	-14.23	-9.56	-8.99	-14.21	-14.98	-8.42	-12.76	-11.17	-8.96	-13.27	-13.54	-13.59
Θ (150°)	-6.76	-8.74	-13.24	-11.03	-11.73	-12.92	-15.55	-10.77	-11.58	-12.78	-14.25	-7.05	-12.33	-9.76	-13.30	-7.33	-9.12	-7.21	-5.13	-9.33	-7.97	-14.52	-15.45	-14.74
Θ (165°)	-10.69	-13.76	-14.16	-11.52	-11.14	-15.04	-14.52	-13.57	-8.64	-9.55	-13.99	-15.41	-11.11	-8.44	-11.09	-9.76	-7.73	-10.02	-11.07	-14.74	-15.54	-13.66	-11.72	-10.31
Θ (180°)	-9.27	-12.88	-12.56	-12.63	-11.25	-9.06	-8.45	-9.32	-10.03	-8.39	-9.07	-10.34	-10.61	-9.43	-10.78	-12.62	-11.39	-9.28	-9.06	-9.06	-8.58	-8.06	-10.03	-11.31
Freq(Hz)	5.785G	Pol.	Total	Ant. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)	Φ(15°)	Φ(30°)	Φ(45°)	Φ(60°)	Φ(75°)	Φ(90°)	Φ(105°)	Φ(120°)	Φ(135°)	Φ(150°)	Φ(165°)	Φ(180°)	Φ(195°)	Φ(210°)	Φ(225°)	Φ(240°)	Φ(255°)	Φ(270°)	Φ(285°)	Φ(300°)	Φ(315°)	Φ(330°)	Φ(345°)
Θ (0°)	-11.79	-13.35	-13.87	-13.49	-10.34	-13.30	-10.78	-12.09	-13.36	-11.19	-14.14	-11.54	-11.72	-12.62	-14.63	-13.48	-13.47	-13.32	-14.72	-14.10	-14.50	-12.59	-15.60	-11.84
Θ (15°)	-12.16	-11.61	-12.50	-15.10	-15.67	-15.59	-15.28	-14.99</																

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 $\Theta(0-180)\Phi(270)$

