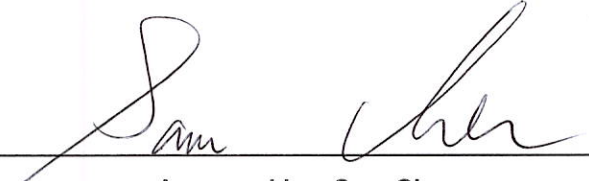




# Antenna Composite Gain Test Report

|                 |                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| FCC ID          | NKRATTCGW450                                                                                                                       |
| Equipment       | 5G Residential Gateway                                                                                                             |
| Brand Name      | WNC                                                                                                                                |
| Model Name      | CGW450-400                                                                                                                         |
| Applicant       | Wistron NeWeb Corp.<br>20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C                                         |
| Manufacturer    | NEWEB VIET NAM CO., LTD.<br>Land Lot CN01, Dong Van III Industrial zone, Dong Van Ward, Duy<br>Tien Town, Ha Nam Province, VietNam |
| Sample Received | Aug. 01, 2022                                                                                                                      |
| Start Test Date | Aug. 09, 2022                                                                                                                      |
| Final Test Date | Aug. 09, 2022                                                                                                                      |



Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**  
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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## History of this test report

[illegible]

## 1. Operation Mode and Antenna Information

| Antenna Position | RF Port |      | Brand Name | Model Name | Ant. Type | Connector | Modes of Operation     |
|------------------|---------|------|------------|------------|-----------|-----------|------------------------|
|                  | 2.4GHz  | 5GHz |            |            |           |           |                        |
| 2G5G Ant1        | 1       | 1    | WNC        | 48XKAC42   | Dipole    | I-PEX     | 2.4GHz & 5GHz UNII 1~3 |
| 2G5G Ant2        | 2       | 2    | WNC        | 48XKAC3F   | Dipole    | I-PEX     | 2.4GHz & 5GHz UNII 1~3 |
| 2G5G Ant3        | 3       | 3    | WNC        | 48XKAC45   | Dipole    | I-PEX     | 2.4GHz & 5GHz UNII 1~3 |
| 2G5G Ant4        | 4       | 4    | WNC        | 48XKAC46   | Dipole    | I-PEX     | 2.4GHz & 5GHz UNII 1~3 |

Note:

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

2G5G Ant 1~4 can be used as transmitting/receiving antenna.

2G5G Ant 1~4 could transmit/receive simultaneously.

## 2. Description for two FCC ID (NKR-ATTCGW450&NKRATTTCGW450)

| Description           | FCC ID (NKR-ATTCGW450) of Previously Devices | FCC ID (NKRATTTCGW450) of New Application |
|-----------------------|----------------------------------------------|-------------------------------------------|
| 6GHz UNII5-8 function | With                                         | Without                                   |

Note : The device (FCC ID:NKRATTTCGW450) almost same as the previously device (FCC ID:NKR-ATTCGW450), except above difference. After the Spot check for 2.4GHz and 5GHz, the DG of FCC ID:NKR-ATTCGW450 is also available for FCC ID:NKRATTTCGW450.

## 3. 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                 |



#### 4. Testing Location

| Testing Location                              |        |                                                                                            |
|-----------------------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sporton International Inc. Hsinhua Laboratory |        |                                                                                            |
| <input checked="" type="checkbox"/>           | 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<br>(°C / %) | Test Date     |
|----------------|---------------|---------------|------------------------------|---------------|
| Radiated       | 05CH03-HY     | Rex Liao      | 23-24 / 40-50                | Aug. 09, 2022 |

Note:

Testing Site Information

Brand Name: TDK

Dimension: 11m\*6m\*6m

Characteristic: Fully Anechoic Chamber

## 5. Test Facility and Configuration

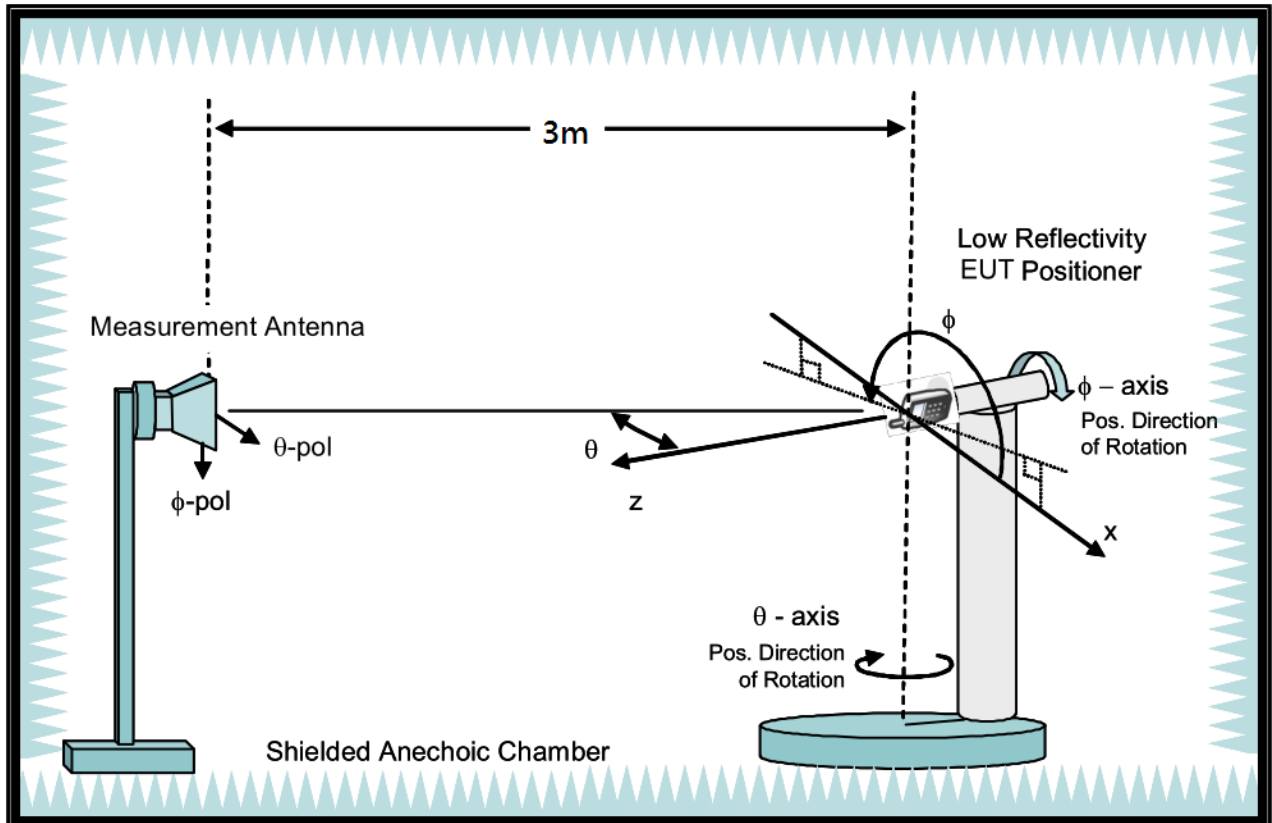
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

Measurement antenna: Dual Polarization Horn antenna

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

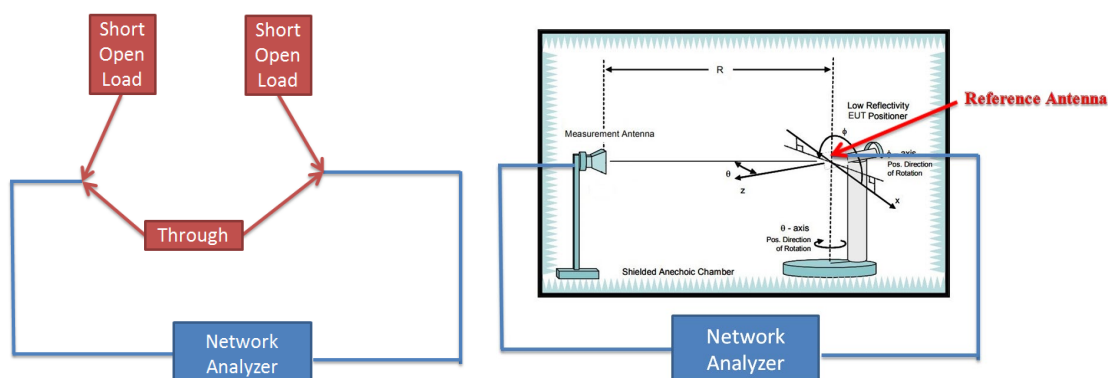
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



## 6. Reference Calibration

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

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



| Frequency (MHz)      | 2400  | 2450  | 2500  | 5150  | 5200  | 5300  | 5600  | 5750  | 5800  | 5900  | 6000  | 6500  | 7000  | 7500  |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| G reading (dB)       | -31.4 | -31.4 | -31.3 | -31.3 | -31   | -30.7 | -30.1 | -30.5 | -30.5 | -30.8 | -31.3 | -32.8 | -34.4 | -35.4 |
| Reference gain (dBi) | 10.2  | 10.4  | 10.6  | 12.4  | 12.8  | 13.4  | 13.4  | 13.3  | 13.3  | 13.1  | 13.2  | 12.3  | 11.7  | 11.1  |
| Factor (dB)          | 41.34 | 41.55 | 41.68 | 43.24 | 43.56 | 43.68 | 43.79 | 43.91 | 43.99 | 44.43 | 44.49 | 45.24 | 46.12 | 46.31 |

Note:

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

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

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

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

## 7. Test Method

EUT set on multi-axis positioner and adjust EUT's physical center to measurement reference center. Measurement antenna set at phi polarization and 1.5 meter height. Port 1 of Network analyzer connect to antenna 1 of EUT. Record G value every 10 degree from 0 to 350 degree on Phi angle and 0 to 180 on theta angle of multi-axis positioner. Then set measurement antenna to theta polarization and repeat process. Repeat process to each antenna of EUT.

DG steps:

1. Each Phi and Theta polarization antenna gain are measured for all test angles.
2. Composite Phi and Theta antenna gain are computed, using formula in KDB662911 D01 d) (i) and e) (ii), for all angles.
3. Composite antenna gain are examined for all angles to determine max gain and Phi/Theta position. Max gain and phi/theta position are listed in section 8 tables.

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

## 8. Measured Values and Calculation of Maximum Gain Positions

### DG\_1SS max value position

| Frequency (Hz)     | 2.45G | 5.2G   | 5.3G   | 5.6G   | 5.785G |
|--------------------|-------|--------|--------|--------|--------|
| Ant. 1 (dBi)       | 4.48  | 4.76   | 4.19   | 1.59   | 2.86   |
| Ant. 2 (dBi)       | -6.14 | -10.61 | -12.12 | -12.36 | -13.3  |
| Ant. 3 (dBi)       | 1.92  | 1.13   | -0.04  | 4.16   | 4.1    |
| Ant. 4 (dBi)       | -3.39 | -1.86  | 1.42   | -0.97  | -0.23  |
| DG [1SS] (dBi)     | 6.22  | 5.96   | 6.11   | 5.91   | 6.41   |
| Polarization       | Theta | Theta  | Theta  | Theta  | Theta  |
| $\Theta(^{\circ})$ | 70    | 80     | 90     | 80     | 90     |
| $\Phi(^{\circ})$   | 90    | 80     | 80     | 100    | 90     |

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

### DG\_1SS max value position calculation

| Frequency (Hz)                            | 2.45G             | 5.2G               | 5.3G               | 5.6G               | 5.785G            |
|-------------------------------------------|-------------------|--------------------|--------------------|--------------------|-------------------|
| Ant. 1 [ $10^{(G/20)}$ ]                  | $10^{(4.48/20)}$  | $10^{(4.76/20)}$   | $10^{(4.19/20)}$   | $10^{(1.59/20)}$   | $10^{(2.86/20)}$  |
| Ant. 2 [ $10^{(G/20)}$ ]                  | $10^{(-6.14/20)}$ | $10^{(-10.61/20)}$ | $10^{(-12.12/20)}$ | $10^{(-12.36/20)}$ | $10^{(-13.3/20)}$ |
| Ant. 3 [ $10^{(G/20)}$ ]                  | $10^{(1.92/20)}$  | $10^{(1.13/20)}$   | $10^{(-0.04/20)}$  | $10^{(4.16/20)}$   | $10^{(4.1/20)}$   |
| Ant. 4 [ $10^{(G/20)}$ ]                  | $10^{(-3.39/20)}$ | $10^{(-1.86/20)}$  | $10^{(1.42/20)}$   | $10^{(-0.97/20)}$  | $10^{(-0.23/20)}$ |
| Ant. 1 [ $10^{(G/20)}$ ] value            | 1.675             | 1.73               | 1.62               | 1.201              | 1.39              |
| Ant. 2 [ $10^{(G/20)}$ ] value            | 0.493             | 0.295              | 0.248              | 0.241              | 0.216             |
| Ant. 3 [ $10^{(G/20)}$ ] value            | 1.247             | 1.139              | 0.995              | 1.614              | 1.603             |
| Ant. 4 [ $10^{(G/20)}$ ] value            | 0.677             | 0.807              | 1.178              | 0.894              | 0.974             |
| Sum All Antenna [Amax]                    | 4.092             | 3.971              | 4.041              | 3.951              | 4.183             |
| DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ] | 6.22              | 5.96               | 6.11               | 5.91               | 6.41              |

Note:

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

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

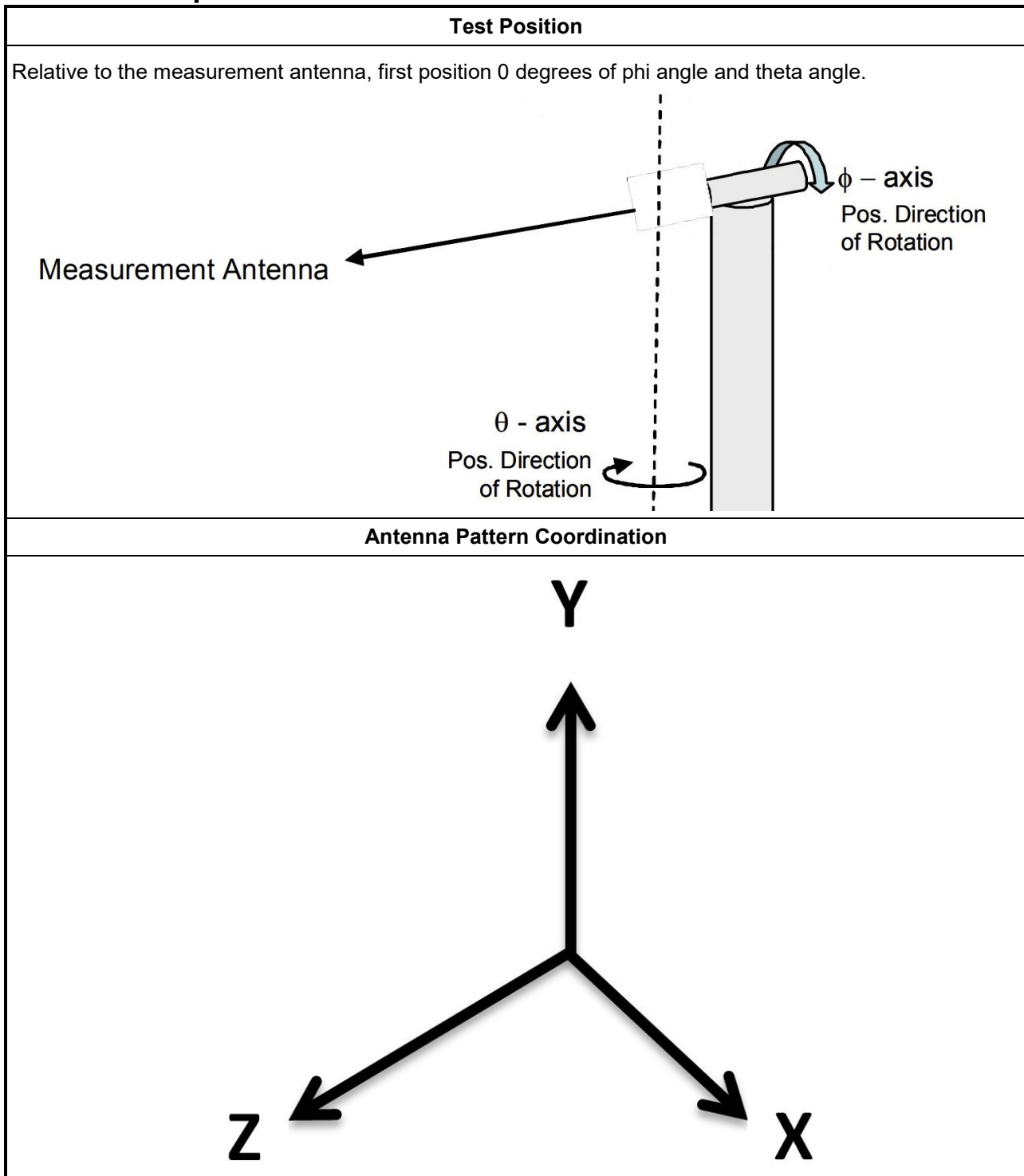
## 9. Summary of Test Result

| Frequency (Hz)                                         | 2.45G       | 5.2G          | 5.3G          | 5.6G          | 5.785G        |
|--------------------------------------------------------|-------------|---------------|---------------|---------------|---------------|
| Ant. 1 Max Gain (dBi)                                  | 4.48        | 4.76          | 4.98          | 5.04          | 4.67          |
| Ant. 2 Max Gain (dBi)                                  | 3.97        | 2.47          | 3.56          | 5.02          | 5.63          |
| Ant. 3 Max Gain (dBi)                                  | 3.69        | 3.02          | 3.54          | 4.16          | 4.1           |
| Ant. 4 Max Gain (dBi)                                  | 2.02        | 2.2           | 3.17          | 4.01          | 3.22          |
| Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Theta/70/90 | Theta/80/80   | Theta/80/70   | Theta/90/70   | Theta/90/80   |
| Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/20/80   | Phi/80/80     | Phi/40/80     | Phi/80/100    | Phi/80/100    |
| Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Theta/60/80 | Theta/80/90   | Theta/90/100  | Theta/80/100  | Theta/90/90   |
| Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/50/90   | Theta/100/130 | Theta/110/130 | Theta/100/140 | Theta/100/150 |
| Max Gain (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |
| DG [1SS] (dBi)                                         | 6.22        | 5.96          | 6.11          | 5.91          | 6.41          |
| DG [2SS] (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |
| DG [4SS] (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |

Note:

1. Antenna max gain is the max value of each individual antenna through all measurement angles. Each antenna max gain is the max value of measurement G of theta and phi through all measurement angles.
2. The max gain is the max value of all antennas.
3. Directional Gain (2SS) = Directional Gain (1SS) – 3dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)
4. Directional Gain (4SS) = Directional Gain (1SS) – 6dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)
5. The test results quote FCC ID: NKR-ATT CGW450. The difference is removing the 6GHz hardware from FCC ID: NKRATT CGW450.

## 10. Test Setup



Note:

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

**11. Test Equipment and Calibration Data**

| Instrument                        | Brand       | Model No.  | Serial No.      | Characteristics  | Calibration Date | Calibration Due Date |
|-----------------------------------|-------------|------------|-----------------|------------------|------------------|----------------------|
| Horn Antenna                      | SCHWARZBECK | BBHA9120D  | BBHA 9120D-1543 | 1GHz~18GHz       | May. 31, 2022    | May. 30, 2023        |
| Dual Polarization<br>Horn Antenna | Sporton     | S0209DP    | S0209DP-001     | 2GHz~9GHz        | N.C.R.           | N.C.R.               |
| ENA Series Network<br>Analyzer    | AGILENT     | E5071C     | MY46419201      | 100kHz~8.5GHz    | Feb. 21, 2022    | Feb. 20, 2023        |
| VNA Calibration Kit               | TS RF       | TS85033E-F | -               | DC~9GHz          | N.C.R.           | N.C.R.               |
| Multi-axis positioner             | Sporton     | MAPS01     | MAPS01-001      | Theta / Phi axis | N.C.R.           | N.C.R.               |
| Test Software                     | SPORTON     | SENSE-RDG  | V1.0.8          | -                | N.C.R.           | N.C.R.               |

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

NCR means Non-Calibration required.



## **12. Test Results**

Please refer to the appendix.

|                                           |         |
|-------------------------------------------|---------|
| Appendix A – Radiated Composite Gain..... | Page 13 |
| Appendix B – Antenna Pattern.....         | Page 24 |
| Appendix C – Test Photos.....             | Page 30 |



| Freq(Hz)                                               | 2.45G       | 5.2G          | 5.3G          | 5.6G          | 5.785G        |
|--------------------------------------------------------|-------------|---------------|---------------|---------------|---------------|
| Ant. 1 Max Gain (dBi)                                  | 4.48        | 4.76          | 4.98          | 5.04          | 4.67          |
| Ant. 2 Max Gain (dBi)                                  | 3.97        | 2.47          | 3.56          | 5.02          | 5.63          |
| Ant. 3 Max Gain (dBi)                                  | 3.69        | 3.02          | 3.54          | 4.16          | 4.1           |
| Ant. 4 Max Gain (dBi)                                  | 2.02        | 2.2           | 3.17          | 4.01          | 3.22          |
| Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Theta/70/90 | Theta/80/80   | Theta/80/70   | Theta/90/70   | Theta/90/80   |
| Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/20/80   | Phi/80/80     | Phi/40/80     | Phi/80/100    | Phi/80/100    |
| Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Theta/60/80 | Theta/80/90   | Theta/90/100  | Theta/80/100  | Theta/90/90   |
| Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/50/90   | Theta/100/130 | Theta/110/130 | Theta/100/140 | Theta/100/150 |
| Max Gain (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |
| DG [1SS] (dBi)                                         | 6.22        | 5.96          | 6.11          | 5.91          | 6.41          |
| DG [2SS] (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |
| DG [4SS] (dBi)                                         | 4.48        | 4.76          | 4.98          | 5.04          | 5.63          |



Radiated Composite Gain Data

Appendix A

DG 1SS Result

| Freq(Hz)    | 2.45GPol.       | Phi-             | Phi-             | Phi-             | Phi-             | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               |                    |
|-------------|-----------------|------------------|------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| DG(dB)      | Phi(0°)Phi(10°) | Phi(20°)Phi(30°) | Phi(40°)Phi(50°) | Phi(60°)Phi(70°) | Phi(80°)Phi(90°) | Phi(100°)Phi(110°) | Phi(120°)Phi(130°) | Phi(140°)Phi(150°) | Phi(160°)Phi(170°) | Phi(180°)Phi(190°) | Phi(200°)Phi(210°) | Phi(220°)Phi(230°) | Phi(240°)Phi(250°) | Phi(260°)Phi(270°) | Phi(280°)Phi(290°) | Phi(300°)Phi(310°) | Phi(320°)Phi(330°) | Phi(340°)Phi(350°) |
| Theta(°)    | -0.260/3.7      | 1.11/1.76        | 2.24/2.48        | 2.63/2.69        | 2.33/1.86        | 1.51/1.37          | 0.81/1.52          | 1.55/1.45          | 0.23/-0.61         | -0.79/-0.18        | 1.69/1.52          | 2.06/2.39          | 2.67/2.61          | 2.34/1.83          | 1.69/1.84          | 1.74/1.61          | 1.22/0.63          | 0.13/-0.39         |
| Theta(10°)  | -1.02/-0.58     | 0.26/1.01        | 1.46/2.02        | 2.39/2.63        | 2.51/2.24        | 2.05/2.3           | 2.24/2.02          | 1.88/1.44          | 0.73/-0.08         | -0.51/0.2          | 1.07/1.99          | 2.52/2.98          | 2.91/2.75          | 2.41/1.75          | 1.51/1.34          | 1.29/1.17          | 0.7/0.1            | -0.69/-1.2         |
| Theta(20°)  | -1.4/-1.32      | -1.5/-1.24       | -0.73/0.57       | 1.71/2.39        | 2.64/2.77        | 2.73/2.87          | 2.83/2.84          | 2.75/2.44          | 1.64/0.71          | -0.64/-1.93        | -1.61/0.02         | 1.64/2.81          | 3.24/3.32          | 2.89/2.21          | 1.57/1.09          | 1.08/0.87          | 0.54/-0.22         | -0.89/-1.5         |
| Theta(30°)  | -0.79/-1.15     | -1.68/-2.46      | -2.34/-1.19      | 0.45/1.83        | 2.58/2.84        | 2.79/2.78          | 2.88/3.15          | 3.35/3.23          | 2.71/1.7           | 0.3/-1.39          | -2.26/-1.68        | -0.21/1.58         | 2.68/3.09          | 2.76/1.97          | 1.23/1.09          | 1.10/0.88          | 0.28/-0.54         | -1.25/-1.2         |
| Theta(40°)  | -1.06/-1.53     | -2.52/-3.05      | -2.27/-1.08      | 0.41/2.04        | 3.01/3.36        | 3.25/3.03          | 3.22/3.66          | 4.12/4.32          | 4.05/3.25          | 1.99/1.11          | 1.15/0.89          | 0.67/0.75          | 1.27/1.79          | 1.71/0.96          | 0.43/0.06          | 0.21/-0.09         | -1.15/-1.79        | -1.98/-1.39        |
| Theta(50°)  | -0.75/-2.09     | -3.16/-2.78      | -1.18/0.36       | 1.91/3.34        | 4.24/5.5         | 4.16/3.41          | 3.46/3.94          | 4.99/5.13          | 4.45/3.06          | 1.83/1.62          | 2.13/2.49          | 2.1/36             | 1.03/1.11          | 0.78/0.3           | -0.19/-0.16        | -0.02/-0.84        | -1.71/-1.49        | -0.91/-0.41        |
| Theta(60°)  | -1.25/-3.87     | -6.76/-6.03      | -2.32/0.12       | 1.89/3.25        | 4.33/4.55        | 3.62/3.3           | 1.57/3.48          | 5.01/4.97          | 3.9/2.13           | -0.11/-1.61        | -0.29/1.43         | -2.33/2.02         | 1.74/1.71          | -1.73/2.17         | -1.42/-1.89        | -2.47/-1.85        | -1.08/-0.89        |                    |
| Theta(70°)  | -4/-3.7         | -3.44/-0.99      | 1.66/3.55        | 4.21/4.27        | 4.44/4.5         | 3.11/2.17          | 1.91/3.32          | 4.23/6.2           | 2.37/0.75          | -1.53/-3.8         | -3.35/-1.04        | 0.61/0.87          | 0.77/1.16          | 1.53/1.09          | -1.46/-3.31        | -2.41/-2.9         | -3.76/-3.66        | -3.62/-4.18        |
| Theta(80°)  | -3.36/-2.91     | -1.15/-1.27      | 3.35/4.52        | 4.45/3.18        | 2.65/2.84        | 1.30/2.7           | 1.67/3.11          | 3.31/2.36          | 0.73/-1.63         | -3.34/-4.62        | -5.06/-4.59        | -3.42/-2.7         | -2.16/-1.51        | -1.09/-1.03        | -1.63/-2.37        | -3.27/-4.25        | -5.06/-4.91        | -4.78/-4.23        |
| Theta(90°)  | -4.04/-3.58     | -0.32/2.29       | 3.64/4.15        | 3.54/2.56        | -0.05/-0.96      | 1.54/2.38          | 2.14/2.64          | 3.41/3.17          | 2.63/1.25          | -2.67/-4.56        | -6.69/-5.04        | -3.33/-2.29        | -1.49/-2.47        | -0.31/-3.34        | -1.37/-0.82        | -1.39/-2.36        | -3.01/-3.34        | -3.38/-3.69        |
| Theta(100°) | -4.48/-4.1      | -1.39/0.8        | 1.78/1.85        | 0.77/0.18        | 1.83/0.8         | 3.42/3.56          | 4.12/3.68          | 2.54/1.39          | 0.92/0.61          | -0.54/-3.03        | -5.6/-5.57         | -2.76/-1.15        | -0.64/-1.1         | -2.06/-1.53        | -1.43/-0.69        | -0.38/-1.39        | -1.92/-2.36        | -3.09/-4.04        |
| Theta(110°) | -1.61/-1.52     | -1.27/-1.25      | -0.77/-0.66      | -1.08/-0.26      | 2.07/3.48        | 3.42/2.39          | 2.52/2.61          | 1.94/1.31          | 0.92/0.84          | 0.82/0.56          | -0.86/-2.55        | -2.75/-2.27        | -1.9/-1.32         | -0.25/-0.32        | -2.02/-2.98        | -3.24/-2.88        | -2.67/-2.34        | -2.74/-2.65        |
| Theta(120°) | -1.9/-0.82      | -1.09/-1.76      | -1.73/-0.77      | 0.41/0.37        | 0.72/1.41        | 1.23/2.07          | 0.41/0.37          | 2.43/2.73          | 1.76/-0.31         | -1.65/-1.58        | -2.64/-3.56        | -4.28/-4.24        | -4.29/-3.1         | -1.37/-0.82        | -1.39/-2.36        | -3.01/-3.34        | -3.38/-3.69        |                    |
| Theta(130°) | -3.9/-2.18      | -1.5/-1.39       | 0.31/1.4         | 1.26/-0.02       | -0.39/0.13       | -1.16/-3.82        | -3.72/-0.53        | 1.13/1.35          | 0.61/0.17          | 0.59/0.02          | -1.76/-3.74        | -5.05/-5.06        | -5.75/-6.8         | -5.45/-5.52        | -6.06/-4.09        | -3.11/-3.28        | -4.56/-6.25        | -6.87/-6.31        |
| Theta(140°) | -3.76/-3.05     | -2.8/-2.48       | -0.83/0.52       | 0.63/-0.36       | -1.41/-1.61      | -3.01/-5.15        | -7.14/-6.23        | -3.53/-3.65        | -3.38/-3.75        | -3.38/-3.75        | -4.89/-7.93        | -9/-8.65           | -9.68/-7.86        | -6.58/-5.36        | -4.31/-6.62        | -3.54/-3.8         |                    |                    |
| Theta(150°) | -2.9/-3.18      | -3.14/-2.77      | -1.11/-0.17      | -0.52/-1.97      | -4/-4.24         | -4.14/-3.93        | -3.26/-3.48        | -3.21/-2.49        | -1.87/-1.85        | -2.99/-4.35        | -5.16/-6.79        | -8.71/-9.01        | -7.35/-6.03        | -5.13/-5.28        | -6.87/-9.4         | -9.65/-6.87        | -4.91/-3.58        | -2.94/-3.09        |
| Theta(160°) | -4.94/-5.55     | -6.11/-5.51      | -4.81/-4.11      | -4.9/-7.46       | -9.01/-9.1       | -4.99/-5.37        | -3.23/-4.24        | -4/-3.9            | -3.99/-4.58        | -4.99/-5.59        | -6.51/-7.18        | -7.29/-6.69        | -6.08/-5.82        | -6.24/-6.91        | -8.09/-9.03        | -8.45/-7.18        | -6.31/-5.37        | -5.04/-5.23        |
| Theta(170°) | -9.54/-8.92     | -7.98/-7.71      | -7.58/-8.01      | -8.99/-10.39     | -11.24/-9.19     | -8.28/-6.59        | -5.91/-5.41        | -5.51/-5.58        | -5.68/-6.24        | -6.83/-7.24        | -7.37/-7.61        | -8/-8.2            | -8.69/-9.65        | -9.5/-9.42         | -9.42/-9.03        | -9.51/-10.14       | -11.43/-10.91      | -10.77/-10.78      |
| Theta(180°) | -7.74/-7.47     | -7.88/-8.53      | -8.7/-9.29       | -9.57/-9.59      | -8.81/-7.7       | -6.98/-6.88        | -6.92/-7           | -7.5/-7.99         | -7.66/-7.99        | -8.18/-8.39        | -8.74/-8.97        | -9.48/-9.22        | -9.11/-9.35        | -9.42/-9.69        | -9.77/-9.89        | -10.47/-10.18      | -9.12/-8.57        | -8.67/-7.92        |
| Freq(Hz)    | 2.45GPol.       | Theta-           | Phi-             | Phi-             | Phi-             | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               |
| DG(dB)      | Phi(0°)Phi(10°) | Phi(20°)Phi(30°) | Phi(40°)Phi(50°) | Phi(60°)Phi(70°) | Phi(80°)Phi(90°) | Phi(100°)Phi(110°) | Phi(120°)Phi(130°) | Phi(140°)Phi(150°) | Phi(160°)Phi(170°) | Phi(180°)Phi(190°) | Phi(200°)Phi(210°) | Phi(220°)Phi(230°) | Phi(240°)Phi(250°) | Phi(260°)Phi(270°) | Phi(280°)Phi(290°) | Phi(300°)Phi(310°) | Phi(320°)Phi(330°) | Phi(340°)Phi(350°) |
| Theta(0°)   | 0.82/0.91       | 0.64/0.72        | 0.59/0.22        | -0.33/-0.87      | -1.13/-1.45      | 0.69/0.38          | 0.69/1.16          | 1.59/1.8           | 0.27/-0.06         | -1.75/-1.19        | 0.67/-1.19         | 0.27/-0.06         | -0.67/-1.19        | 1.13/1.62          | 1.13/1.62          | 1.13/1.62          | 1.13/1.62          | 1.13/1.62          |
| Theta(10°)  | 0.13/0.53       | 1.01/1.22        | 0.98/0.5         | 0.09/-0.71       | -1.26/-1.26      | -0.39/0.23         | 0.92/1.38          | 1.82/1.97          | 2.14/1.87          | 1.29/0.98          | 0.72/0.51          | 0.26/-0.29         | -0.92/-1.27        | -1.66/-1.92        | -1/-0.16           | 0.3/0.49           | 0.7/0.56           | 0.2/-0.06          |
| Theta(20°)  | -0.17/0.34      | 0.84/1.12        | 1.23/0.87        | 0.44/-0.12       | -0.52/-0.23      | 0.41/0.09          | 1.27/1.51          | 1.63/1.24          | 1.28/1.28          | 1.27/1.51          | 1.63/1.24          | 0.49/-0.3          | -1.32/-1.84        | -2.39/-2.86        | -2.02/-1.52        | -0.92/-0.78        | -0.86/-1           | -0.85/-0.42        |
| Theta(30°)  | 0.38/0.57       | 0.62/1.02        | 1.19/1.52        | 1.48/1.33        | 1.34/1.49        | 2/2.17             | 2.3/2.25           | 1.86/1.53          | 1.06/0.39          | -0.04/0.47         | 0.8/0.74           | 0.52/-0.42         | -1.51/-2.58        | -3.53/-3.97        | -3.59/-2.77        | -2.18/-1.7         | -1.12/-0.75        | -0.43/0.11         |
| Theta(40°)  | 0.73/1.6        | 2.04/2.08        | 2.31/2.59        | 2.98/3.34        | 3.53/5.1         | 3.54/3.53          | 3.27/3.03          | 2.51/83            | 1.18/0.42          | 0.01/-0.14         | -0.1/-0.37         | 0.14/-1.79         | -2.98/-3.96        | -4.94/-5.04        | -4.28/-3.04        | -0.27/-0.56        | -0.61/-0.36        |                    |
| Theta(50°)  | 1.76/2.74       | 3.26/3.33        | 3.17/3           | 3.44/4.25        | 4.57/4.32        | 4.09/4.08          | 4.01/3.69          | 3.19/2.38          | 1.42/0.8           | 0.57/0.34          | -0.26/-1.21        | -2/-3.35           | -3.8/-4.05         | -5.11/-5.86        | -4.8/-3.54         | -2.29/-1.18        | -0.76/-0.67        | -0.57/-0.49        |
| Theta(60°)  | 2.25/2.72       | 2.86/2.81        | 1.74/1.26        | 2.53/4.39        | 5.44/5.54        | 4.94/3.84          | 3.23/2.85          | 2.78/1.82          | 0.57/0.08          | 0.38/0.96          | 1.05/0.8           | -0.58/-3           | -4/-3.47           | -4.55/-5.76        | -5.81/-3.92        | -2.44/-1.79        | -1.68/-0.84        | 0.33/1.23          |
| Theta(70°)  | 1.55/2.7        | 3.09/3.13        | 2.33/2.08        | 3.59/4.98        | 6.16/6.22        | 5.03/4.2           | 2.51/2.53          | 2.85/1.82          | 0.34/-0.73         | -1.54/-0.75        | -0.09/-0.1         | -0.84/-2.76        | -2.98/-2.53        | -3.95/-5.91        | -5.01/-2.09        | -0.67/-1.22        | -2.65/-2.5         | -0.77/0.26         |
| Theta(80°)  | 0.11/1.9        | 2.93/1.9         | 2.83/2.34        | 3.44/4.3         | 4.93/4.86        | 3.65/1.99          | 1.82/2.85          | 2.58/1.4           | -0.54/-2.61        | -3.02/-2.6         | -2.1/-1.35         | -1.56/-2.69        | -2.6/-2.25         | -2.7/-4.78         | -6.04/-2.44        | -0.29/-0.46        | -1.96/-3.72        | -2.17/-0.69        |
| Theta(90°)  | 0.6/0.73        | 1.38/1.61        | 1.55/1.85        | 2.52/69          | 3.25/3.55        | 2.84/2.05          | 2.17/2.76          | 2.63/1.55          | -0.04/-1.38        | -2.08/-2.26        | -2.55/-2.78        | -3.6/-4.71         | -4.38/-3.28        | -3.48/-4.79        | -6.11/-3.69        | -2.2/-2.46         | -2.68/-2.6         | -1.4/0.27          |
| Theta(100°) | -1.18/-2.37     | -2.67/-1.84      | -1.17/0.23       | 0.42/-2.11       | -2.14/0.66       | -5.71/-0.41        | 1.57/1.78          | 1.82/2.13          | -1.49/-2.18        | -3.08/-4.46        | -5.2/-5.6          | -7.47/-6.44        | -5.2/-5.6          | -3.87/-2.94        | -2.05/-2.49        | -2.61/-2.18        | -1.71/-1.07        |                    |
| Theta(110°) | -4.33/-5.62     | -7.06/-5.58      | -3.52/-0.43      | 0.65/-1.15       | -3.3/-0.19       | 1.31/1.18          | 0.96/0.36          | -0.77/-1.34        | -1.36/-1.82        | -2.43/-2.73        | -3.44/-3.09        | -4.14/-6.18        | -5.85/-5.77        | -4.96/-4.85        | -2.34/-0.75        | -0.52/-1.03        | -3.03/-4.64        | -4.59/-4.64        |
| Theta(120°) | -7.81/-7.29     | -4.88/-2.26      | -1.12/0.62       | 2.18/1.75        | 0.45/0.16        | 2.42/2.35          | 0.73/-1.38         | -3.65/-3.94        | -2.86/-2.83        | -5.16/-5.84        | -5.38/-4.07        | -3.28/-4.31        | -6.34/-8.58        | -4.78/-2.3         | -2.14/-3.05        | -4.38/-6.42        | -6.71/-7.04        |                    |
| Theta(130°) | -5.72/-5.49     | -6.41/-6.58      | -4.81/-3.99      | -2.68/-2.13      | -1.27/0.65       | 2.04/2.01          | -4.62/-2.09        | -5.92/-5.84        | -4.44/-3.23        | -3.57/-3.53        | -3.21/-2.63        | -3.78/-6.05        | -3.32/-3.51        | -3.57/-3.53        | -3.21/-2.63        | -6.83/-9.15        | -7.23/-7.03        |                    |
| Theta(140°) | -6.61/-7.33     | -7.37/-5.64      | -3.71/-3.38      | -3.71/-3.83      | -2.71/-0.99      | 0.18/0.66          | 0.09/-0.79         | -1.78/-2.64        | -4/-5.4            | -5.75/-5.86        | -6.67/-7.09        | -6.75/-5.29        | -4.73/-5.28        | -7.13/-7.59        | -8.54/-9.4         | -9.8/-8.62         | -7.29/-6.14        | -5.33/-5.09        |
| Theta(150°) | -6.52/-6.98     | -7.45/-8.34      | -9.02/-9.29      | -8.21/-6.35      | -4.47/-4.35      | -3.02/-2.99        | -3.53/-3.63        | -3.95/-4.57        | -4.99/-5.77        | -5.96/-6.9         | -7.39/-6.76        | -6.05/-0.68        | -6.45/-7.89        | -8.11/-6.66        | -5.81/-5.45        | -5.94/-6.22        | -3.8/-5.67         | -5.97/-6.93        |
| Theta(160°) | -7.98/-7.17     | -6.64/-6.79      | -7.82/-8.51      | -7.27/-4.96      | -5/-5.44         | -3.23/-3.68        | -3.68/-4.24        | -5.66/-5.78        | -6.8/-8            | -6.46/-6.47        | -9.34/-9.32        | -4.74/-5.1         | -6.45/-7.89        | -8.11/-6.66        | -5.81/-5.45        | -5.94/-6.22        | -3.8/-5.67         | -5.97/-6.93        |
| Theta(170°) | -7.43/-8.08     | -9.4/-10.48      | -10.44/-9.65     | -8.67/-7.39      | -5.73/-5.12      | -5.31/-5.72        | -6.05/-6.63        | -5.19/-4.12        | -3.92/-3.94        | -4.53/-5.14        | -6.14/-7.04        | -7.61/-7.46        | -7.04/-6.77        | -7.03/-7.94        | -9.22/-9.51        | -9.19/-8.5         | -7.72/-7.18        | -6.93/-7.01        |
| Theta(180°) | -7.29/-7.12     | -7.26/-7.63      | -7.6/-8.49       | -8.2/-8.33       | -8.48/-8.63      | -8.19/-8.05        | -8.83/-8.49        | -7.51/-7.04        | -6.12/-6.07        | -6.11/-5.93        | -6.01/-5.67        | -5.79/-6.06        | -7.21/-8.1         | -9.52/-10.08       | -10.24/-9.92       | -9.55/-8.51        | -8.09/-7.49        | -7.4/-6.98         |
| Freq(Hz)    | 5.2GPol.        | Phi-             | Phi-             | Phi-             | Phi-             | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               | Phi-               |
| DG(dB)      | Phi(0°)Phi(10°) | Phi(20°)Phi(30°) | Phi(40°)Phi(50°) | Phi(60°)Phi(70°) | Phi(80°)Phi(90°) | Phi(100°)Phi(110°) | Phi(120°)Phi(130°) | Phi(140°)Phi(150°) | Phi(160°)Phi(170°) | Phi(180°)Phi(190°) | Phi(200°)Phi(210°) | Phi(220°)Phi(230°) | Phi(240°)Phi(250°) | Phi(260°)Phi(270°) | Phi(280°)Phi(290°) | Phi(300°)Phi(310°) | Phi(320°)Phi(330°) | Phi(340°)Phi(350°) |
| Theta(0°)   | -5.59/-5.92     | -4.04/-3.58      | -2.68/-1.66      | -1.03/-0.4       | -0.03/-0.1       | 0.31/0.18          | 0.24/0.09          | -0.64/-1.41        | -2.27/-3.59        | -5.44/-6.15        | -4.63/-2.76        | -1.91/-1.41        | -1.23/-0.62        | -0.04/0.35         | 0.66/0.57          | 0.31/-0.16         | -1.12/-2.09        | -3.26/-4.51        |
| Theta(10°)  | -4.11/-4.46     | -5.09/-3.33      | -2.83/-1.96      | -1.32/-0.74      | -0.43/-0.39      | -0.57/-0.73        | -3.45/-0.83        | -3.22/-2.49        | -1.28/-1.97        | -3.45/-3.83        | 0.47/0.65          | 0.09/0.36          | 0.29/-0.8          | -0.09/0.36         | 0.72/0.67          | 0.29/0.8           | -1.65/-2.62        |                    |
| Theta(20°)  | -7.21/-6.46     | -4.12/-2.84      | -1.73/-1.67      | -1.31/-1.13      | -0.78/-0.31      | -0.51/-1.45        | -1.72/-0.89        | -0.27/-0.49        | -1.21/-1.8         | -3.12/-5.79        | -6.6/-5.65         | -4.45/-3.03        | -1.94/-0.51        | 0.19/0.84          | 0.81/0.49          | 0.45/0.19          | -0.6/-1.8          | -3.52/-5.71        |
| Theta(30°)  | -8.35/-6.2      | -4.25/-2.14      | -0.44/-0.39      | -0.48/-1.16      | -1.01/-0.37      | -0.51/-1.6         | -2.02/-1.01        | -0.91/-1.61        | -3.65/-6.95        | -9.36/-11.43       | -9.62/-7.61        | -6.05/-4.32        | -2.56/-1.25        |                    |                    |                    |                    |                    |



Radiated Composite Gain Data

Appendix A

|          |               |               |               |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Θ(60°)   | -2.48/-0.66   | 1.09/1.51     | 1.05/0.07     | 1.48/0.99     | 1.72/0.54     | -0.27/0.54      | 1.6/1.01        | 0.06/0.35       | -0.3/-2.91      | -2.79/-3.47     | -3.9/-4.37      | -3.48/-4.01     | -4.08/-8.09     | -10.73/-6.32    | -7.09/-10.63    | -10.65/-8.7     | -7.09/-5.46     | -3.48/-2.99     |
| Θ(70°)   | -0.92/0.52    | 1.55/-1.39    | 1.51/2.08     | 3.94/3.56     | 2.72/2.19     | 2.65/3.24       | 4.72/3.6        | 2.92/3.78       | 2.03/-0.72      | -2.84/-3.9      | -4.23/-4.27     | -3.7/-5.87      | -6.49/-6.17     | -9.23/-8.28     | -6.87/-9.88     | -10.52/-10.6    | -6.94/-4.13     | -3.29/-2.21     |
| Θ(80°)   | -1.65/-1.17   | -0.05         | 1.12/1.84     | 4.03/4.09     | 5.42/4.18     | 3.17/3.92       | 3.58/4.17       | 4.02/2.91       | 2.82/1.71       | 0.06/-1.51      | -3.68/-6.59     | -4.59/-5.05     | -4.09/-6.67     | -6.57/-7.25     | -6.81/-7.57     | -10.59/-6.26    | -6.47/-6.84     | -4.65/-3.19     |
| Θ(90°)   | -5.72/-4.71   | -1.42/0.64    | 1.22/2.41     | 2.73/3.09     | 6.11/5.2      | 5.05/4.33       | 3.29/4.26       | 4.05/3.7        | 2.18/-0.55      | -2.16/-2.89     | -3.53/-5.87     | -6.22/-3.57     | -4.24/-4.97     | -6.44/-4.82     | -3.36/-6.34     | -6.9/-8.79      | -8.07/-6.5      | -5.11/-5.19     |
| Θ(100°)  | -3.94/-2.45   | -0.03/-0.08   | 0.17/2.47     | 1.7/-1.55     | 3.13/3.69     | 3.96/4.22       | 3.54/4.85       | 4.62/2.58       | -0.18/0.6       | -0.06/-1.65     | -4.39/-4.44     | -5.61/-4.27     | -5.21/-5.44     | -5.7/-7.18      | -8.77/-5.73     | -7.58/-8.11     | -9.83/-7.45     | -3.99/-3.51     |
| Θ(110°)  | -5.03/-2.83   | -2.23/-3.67   | -0.45/-1.61   | -0.05/-2.72   | 1.47/1.45     | 1.39/2.17       | 2.54/3.43       | 2.3/-3.41       | -2.43/-0.21     | -0.34/-1.31     | -0.96/-3.41     | -4.19/-8.5      | -6.64/-7.46     | -4.28/-7.57     | -9.32/-11.73    | -7.64/-9.29     | -8.06/-4.24     | -3.26/-4.8      |
| Θ(120°)  | -7.13/-6.34   | -7.8/-3.94    | -1.89/-3.28   | -6.5/-7.92    | -1.18/-0.66   | 1.75/-1.39      | 0.63/-1.68      | 0.33/-2.37      | -4.12/-2.2      | -2.24/-2.49     | -2.99/-2.03     | -3.18/-3.9      | -7.53/-7.65     | -6.57/-7.59     | -11.96/-10.27   | -11.55/-8.68    | -6.93/-7.92     | -8.5/-9.21      |
| Θ(130°)  | -5.54/-4.74   | -5.36/-4.56   | -5.27/-6.26   | -7.18/-5.86   | -8.77/-3.99   | 0.9/-0.95       | -1.23/0.57      | -0.51/-0.74     | -4.18/-3.15     | -3.4/-3.66      | -3.54/-4.74     | -4.15/-2.39     | -9.66/-6.07     | -6.52/-6.18     | -10.33/-10.61   | -6.76/-10.07    | -6.36/-4.41     | -7.75/-7        |
| Θ(140°)  | -8.22/-7.29   | -6.06/-7.59   | -8.77/-8.06   | -6.36/-8.3    | -7.61/-2.85   | -0.85/-1.8      | -2.66/-2.77     | -4.77/-3.83     | -8/-8.79        | -7.35/-7.89     | -9.18/-8.39     | -3.98/-6.57     | -9.41/-5.99     | -4.27/-8.05     | -6.86/-11.46    | -10.26/-6.2     | -5.61/-7.69     | -9.56/-10.83    |
| Θ(150°)  | -8.41/-7.02   | -7.04/-8.08   | -8.37/-5.76   | -4.89/-5.13   | -4.3/-4.37    | -4.94/-5.42     | -5.82/-4.25     | -4.09/-5.51     | -9.15/-10.08    | -7.54/-7.24     | -8.9/-8.75      | -5.72/-4.3      | -4.35/-9.42     | -9.85/-6.47     | -6.25/-10.24    | -7.08/-6.46     | -10.44/-12.5    | -12.42/-9.35    |
| Θ(160°)  | -6.95/-6.86   | -6.44/-6.49   | -5.48/-4.82   | -4.54/-5.17   | -5.16/-5.44   | -6.16/-6.85     | -7.63/-7.47     | -7.57/-7.07     | -6.94/-8.62     | -10.13/-10.92   | -9.61/-6.48     | -5.66/-6.42     | -8.82/-11.11    | -10.92/-8.76    | -10.23/-11.41   | -10.12/-8.62    | -8.75/-8.85     | -7.83/-7.61     |
| Θ(170°)  | -5.45/-6.44   | -8.02/-9.45   | -9.96/-9.23   | -7.85/-6.39   | -5.29/-5.41   | -6.84/-8.26     | -8.05/-7.01     | -7.78/-8.72     | -8.9/-8.7       | -8.62/-7.26     | -7.35/-7.62     | -7.82/-9.13     | -9.1/-9.29      | -11.53/-11.68   | -9.75/-9.69     | -9.71/-9.26     | -9.47/-8.44     | -6.96/-5.89     |
| Θ(180°)  | -7.29/-7.42   | -7.42/-7.84   | -9.19/-10.07  | -9.86/-9.96   | -10.57/-10.78 | -10.92/-8.81    | -8.32/-8.95     | -9.09/-9.42     | -8.98/-9.4      | -10.29/-10.32   | -9.44/-8.28     | -7.87/-7.56     | -8.55/-9.2      | -10.81/-10.38   | -9.33/-8.89     | -8.21/-8.19     | -8.33/-7.74     | -7.11/-6.96     |
| Freq(Hz) | 5.6G/Pol.     | Phi-          | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| DG(dB)   | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -3.21/-3.84   | -3.71/-3.53   | -3.64/-3.01   | -2.6/-1.75    | -0.72/0.04    | 0.12/0.27       | 0.43/0.25       | -0.28/-0.2      | -0.98/-2.01     | -3.01/-2.93     | -2.89/-2.92     | -2.99/-3.15     | -3.31/-1.97     | -1.5/-0.62      | -0.44/-0.03     | -0.04/-0.25     | -0.34/-0.83     | -1.85/-2.47     |
| Θ(10°)   | -2.65/-3.74   | -3.32/-3.02   | -3.56/-3.05   | -3.34/-3.83   | -4.08/-3.23   | -2.16/-1.51     | -0.84/-0.99     | -1.4/-2.45      | -4.22/-4.17     | -4.26/-3.8      | -2.75/-2.1      | -2.48/-1.96     | -1.71/-0.94     | -0.27/0.67      | 1.04/-1.42      | 1.05/0.94       | 0.39/-0.31      | -0.99/-2.27     |
| Θ(20°)   | -5.18/-5.71   | -2.9/-1.24    | -0.22/0.08    | 0.17/-0.67    | -1.98/-2.75   | -2.38/-1.57     | -1.32/-0.33     | -0.3/-0.42      | -1.52/-2.06     | -2.03/-2.06     | -1.89/-1.88     | -1.23/-1.11     | -1.36/-1.36     | -0.31/0.5       | 1.04/0.58       | 0.08/-0.23      | -0.88/-1.63     | -2.77/-3.73     |
| Θ(30°)   | -6.47/-6.05   | -4.12/-2.34   | -0.6/0.52     | 0.75/-1.04    | 0.45/-0.91    | -1.56/-0.95     | 0.39/-1.63      | 1.1/-0.5        | -1.67/-2.17     | -1.7/-1.24      | -1.85/-1.95     | -1.72/-0.94     | -0.99/-0.39     | -0.33/-0.22     | 0.72/0.23       | -0.84/-0.97     | -1.91/-3.37     | -4.26/-5.48     |
| Θ(40°)   | -7.51/-8.19   | -7.48/-4.26   | -2.26/-0.61   | 1.17/-1.61    | 1.5/0.86      | 1.15/-1.38      | -0.06/-1.04     | 1.29/-0.02      | -1.45/-2.23     | -3.83/-7.6      | -7.12/-6.45     | -5.48/-3.63     | -2.1/-0.09      | -0.46/-1.44     | -0.82/-1.88     | -3.04/-3.74     | -5.75/-4.83     | -5.95/-9.67     |
| Θ(50°)   | -9.3/-7.19    | -4.93/-3.18   | -0.66/0.74    | 2.43/3.39     | 3.05/0.93     | -2.55/-5.42     | 2.15/-2.19      | 1.31/0.76       | -0.97/-3.89     | -1.52/-5.42     | -2.29/-1.9      | -4.88/-2.98     | -2.3/-2.19      | -2.58/-4.16     | -3.28/-3.38     | -5.9/-8.11      |                 |                 |
| Θ(60°)   | -10.48/-7.38  | -6.93/-6.58   | -2.44/0.64    | 2.32/3.28     | 2.45/-1.13    | 2.69/3.8        | 0.8/0.53        | 0.59/-1.34      | 1.55/-0.04      | -2.35/-2.92     | -2.91/-2.2      | -1.94/-2.54     | -2.61/-2.31     | -0.68/-2.16     | -2.21/-2.97     | -4.59/-4.22     | -3.48/-4.46     | -8.99/-10.37    |
| Θ(70°)   | -6.27/-5.59   | -6.62/-7.52   | -5.02/-2.38   | -0.03/2.32    | 1.31/-0.1     | 1.28/-1.99      | 0.05/-1.26      | 1.59/2.4        | 1.69/-1.38      | -4.76/-5.22     | -4.26/-5.72     | -4.61/-3.09     | -2.61/-2.23     | -3.02/-3.59     | -2.81/-2.85     | -4.98/-3.67     | -4.17/-10.51    | -10.53/-7.52    |
| Θ(80°)   | -7.79/-8.96   | -5.77/-1.35   | -1.13/-1.27   | 2.27/2.58     | 0.45/2.82     | 2.28/0.58       | 0.38/0.66       | -1.88/-5.73     | -5.62/-4.65     | -2.59/-4.27     | -3.63/-4.48     | -5.86/-5.25     | -2.89/-4.27     | -10.28/-8.4     |                 |                 |                 |                 |
| Θ(90°)   | -6.97/-6.63   | -4.35/-3.05   | -2.9/-1.53    | 1.01/2.42     | 3.74/3.57     | 2.84/2.08       | 0.16/-1.12      | 1.85/0.02       | -2.29/-2.91     | -3.43/-5.19     | -5.62/-4.75     | -4.74/-4.31     | -2.37/-3.62     | -5.73/-4.09     | -2.76/-5.2      | -5.43/-5.33     | -10.85/-10.33   | -11.84/-8.92    |
| Θ(100°)  | -12.47/-9.25  | -3.49/-1.47   | -0.97/-0.28   | -1.26/-1.27   | 1.46/2.26     | 4.16/-0.49      | -0.54/-0.06     | -0.45/0.23      | -4.47/-1.01     | -3.71/-7.53     | -7.89/-6.01     | -7.24/-6.41     | -4.33/-3.24     | -4.26/-3.81     | -2.42/-5.9      | -3.78/-4.95     | -1.91/-9.78     | -8.43/-9.21     |
| Θ(110°)  | -9.87/-8.58   | -6.43/-7.58   | -8.41/-1.76   | -1.76/-0.83   | 0.74/-0.84    | -2.96/-4.63     | -6.5/-6.06      | -1.36/-3.56     | 0.82/-2.2       | -5.96/-4.85     | -5.58/-5.6      | -6.95/-8.23     | -12.3/-10.54    | -6.95/-8.23     |                 |                 |                 |                 |
| Θ(120°)  | -5.11/-3.83   | -3.97/-6.48   | -7.66/-4.31   | -1.6/0.5      | -1.06/-1.28   | -0.69/0.63      | 2.79/-1.59      | -4.08/-2.9      | -2.82/-1.13     | -1.35/-3.25     | -1.94/-3.74     | -5.36/-6.38     | -9.98/-6.8      | -6.42/-6.34     | -9.24/-6.99     | -5.37/-11.11    | -6.53/-5.7      | -9.51/-11.21    |
| Θ(130°)  | -9.53/-7.53   | -9.03/-7.12   | -3.02/-1.36   | -1.44/0.49    | -0.35/-1.29   | 0.75/0.32       | 2.51/0.54       | -5.95/-5.52     | -3.05/-2.78     | -4.55/-5.89     | -3.36/-2.18     | -5.21/-7.67     | -8.19/-8.29     | -7.51/-8.16     | -5.97/-8.46     | -7.32/-6.58     | -6.56/-4.75     | -4.18/-5.72     |
| Θ(140°)  | -9.21/-1.82   | -11.97/-6.72  | -5.03/-3.49   | -2.02/-3.52   | -4.74/-2.19   | -1.73/-0.94     | -6.58/-5.32     | -4.81/-5.34     | -7.59/-8.08     | -6.89/-8.76     | -5.74/-7.81     | -5.72/-7.64     | -8.76/-9.74     | -12.16/-9.75    | -8.48/-7.2      | -6.74/-6.64     |                 |                 |
| Θ(150°)  | -10.26/-10.52 | -9.41/-7.8    | -5.48/-5.02   | -8.7/-7.05    | -5.01/-5.85   | -6.92/-9.47     | -1.91/-6.13     | -6.54/-7.09     | -6.99/-8.1      | -9.52/-9.09     | -7.68/-3.89     | -5.61/-11.32    | -11.56/-11.37   | -10.54/-10.01   | -7.75/-9.35     | -8.83/-8.13     | -8.76/-7.96     | -7.69/-9.67     |
| Θ(160°)  | -7.17/-8.85   | -8.25/-8.09   | -8.85/-6.12   | -3.11/-2.19   | -3.61/-4.77   | -5.02/-4.34     | -4.37/-6.27     | -7.82/-8.41     | -6.82/-5.31     | -3.61/-4.45     | -6.19/-7.53     | -8.86/-10.07    | -11.4/-9.87     | -7.74/-7.9      | -9.85/-9.65     | -7.95/-6.13     | -5.15/-5.4      |                 |
| Θ(170°)  | -9.93/-9.9    | -9.86/-10.15  | -8.36/-7.39   | -6.56/-7.42   | -8.66/-11.09  | -10.34/-9.54    | -9.07/-8.21     | -7.69/-8.92     | -8.96/-7.92     | -6.5/-6.19      | -8.34/-10.1     | -11.37/-12.31   | -11.49/-9.47    | -7.95/-8.24     | -8.4/-8.18      | -7.91/-8.21     | -8.98/-10.38    | -10.92/-10.5    |
| Θ(180°)  | -7.88/-7.41   | -6.83/-6.63   | -7.54/-8.07   | -8.59/-8.66   | -9.14/-8.33   | -8.24/-8.33     | -7.98/-8.33     | -9.27/-8.5      | -8.9/-9.48      | -8.93/-9.42     | -8.72/-9.25     | -11.02/-11.12   | -9.68/-9.84     | -10.94/-10.57   | -10.34/-8.21    | -8.57/-8.51     | -9.09/-8.31     |                 |
| Freq(Hz) | 5.6G/Pol.     | Theta-        | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| DG(dB)   | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -0.79/-0.3    | 0.24/0.47     | 0.19/-0.07    | -0.54/-1.26   | -1.81/-2.56   | -3.12/-4.05     | -4.07/-3.83     | -3.37/-2.69     | -2.18/-1.22     | -0.56/0.03      | 0.51/0.27       | 0.15/0.4        | -0.36/-0.56     | -1.2/-2.31      | -2.92/-3.3      | -2.87/-3.06     | -2.98/-2.72     | -2.08/-1.37     |
| Θ(10°)   | -1.39/-0.6    | -0.24/-0.19   | -0.02/0.42    | 0.32/0.39     | 0.12/-1.17    | -2.15/-2.98     | -3.23/-3.17     | -2.31/-1.54     | -0.98/-0.64     | -0.44/-0.26     | 0.12/-0.05      | 0.11/-0.88      | -1.47/-2.02     | -2.75/-3.21     | -3.91/-5.41     | -3.9/-3.44      | -3.51/-2.71     | -1.99/-0.03     |
| Θ(20°)   | 0.8/0.81      | 0.94/0.97     | 0.57/-0.11    | -0.76/-0.95   | -0.32/0.61    | -1.43/-2.23     | -1.89/-1.51     | -0.57/0.34      | 0.43/-0.18      | -0.79/-0.8      | -1.03/-0.03     | 0.36/-0.33      | -2.38/-4.34     | -4.15/-3.43     | -4.09/-4.41     | -4.85/-5.03     | -3.8/-2.76      | -0.96/0.01      |
| Θ(30°)   | 0.54/-1.15    | 1.34/2.06     | 2.25/-1.62    | -0.55/-2.94   | -1.68/-0.46   | -0.56/-0.88     | -0.61/-0.54     | -0.12/-0.94     | -2.89/-3.91     | -6.17/-5.19     | -5.25/-1.49     | -0.52/0.2       | -1.17/-3.49     | -6.17/-5.74     | -4.38/-4.45     | -3.83/-2.46     | -1.59/-1.03     | -0.72/-0.57     |
| Θ(40°)   | -0.1/-0.58    | -0.89/-0.94   | 0.64/-1.66    | 1.58/0.46     | -1.95/-1.2    | -0.36/-0.51     | -0.56/0.26      | 0.83/0.51       | -1.95/-1.2      | -1.93/-2.38     | -2.78/-2.71     | -2.45/-2.11     | -3.38/-5.39     | -6.86/-6.38     | -4.35/-3.96     | -3.92/-2.74     | -1.20/-1.5      | -0.09/0.04      |
| Θ(50°)   | 0.34/-0.19    | 0.21/-17      | 1.54/2        | 3.05/3        | 3.26/2.61     | 1.94/-1.48      | 1.77/-1.68      | 1.51/0.33       | -0.84/-2.16     | -2.59/-3        | -3.81/-3.06     | -2.76/-3.46     | -3.71/-6.35     | -7.62/-4.45     | -4.84/-1.68     | -2.55/-6.09     | -2.66/-0.65     | -0.37/0.46      |
| Θ(60°)   | 0.38/0.42     | 1.92/38       | 2.63/3.14     | 2.64/2.21     | 2.14/3.31     | 2.62/-1.58      | 3.56/3.45       | 1.62/-2.22      | -4.47/-4.13     | -0.65/-2.9      | -4.62/-3.77     | -5.33/-6.67     | -7.81/-3.81     | -5.53/-6.67     | -7.81/-3.81     | -5.18/-7.1      | -3.88/-2.14     | -0.8/-0.47      |
| Θ(70°)   | -3.09/-2.43   | 0.78/2.56     | 2.34/2.23     | 0.05/0.54     | 2.55/2.31     | 2.26/0.62       | 3.98/2.11       | 0.79/-1.28      | 0.43/-0.06      | 0.05/-0.9       | -2.76/-2.81     | -3.38/-4.3      | -3.15/-7.31     | -9.89/-8.33     | -9.34/-4.78     | -6.18/-7.6      | -3.3/-1.89      | -2.18/-3.01     |
| Θ(80°)   | -0.87/-0.2    | 0.91/-1.68    | 1.51/2.87     | 4.23/3.59     | 1.763/67      | 5.91/2.73       | 3.01/2.94       | 4.25/3.83       | 1.93/-1.19      | 0.11/-1.19      | -2.37/-3.07     | -2.67/-2.93     | -4.28/-4.59     | -6.87/-4.91     | -6.99/-5.41     | -4.98/-9.24     | -5.28/-4.11     | -3.03/-2.48     |
| Θ(90°)   | -1.74/-2.28   | -3.67/-1.76   | 0.61/3.36     | 4.44/5.6      | 3.3/3         | 3.78/3.28       | 3.41/0.56       | 2.39/3.67       | 0.56/0.64       | -1.64/-3.4      | -3.94/-5.01     | -3.65/-2.94     | -4.27/-3.84     | -5.38/-5.51     | -8.54/-7.23     | -3.56/-2.04     | -2.56/-3.54     |                 |
| Θ(100°)  | -8.1/-6.86    | -6.02/-2.73   | -0.04/0.22    | 1.7/0.06      | -1.19/2.78    | 3.94/4.51       | 3.13/4.34       | 4.13/4.48       | 2.18/-2.02      | -0.44/0.59      | -0.56/-6.16     | -5.6/-1.27      | -4.3/-2.79      | -6.48/-6.29     | -5.27/-5.89     | -6.69/-7.45     | -3.31/-2.61     | -3.06/-4.38     |
| Θ(110°)  | -5.47/-5.64   | -3.48/-1.58   | -1.46/0.08    | 0.93/-0.58    | 1.49/2.66     | 2.76/3.44       | 2.37/-1.09      | -0.16/-2.57     | 1.01/-1.24      | -2.55/-6        |                 |                 |                 |                 |                 |                 |                 |                 |



# Radiated Composite Gain Data

# Appendix A

## Gain Result

| Freq(Hz) | 2.45GPol.     | PhiAnt. 1     | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -11.14/-9.52  | -8.34/-7.43   | -7.34/-7.19   | -7.41/-7.71   | -8.57/-9.06   | -10.18/-11.79  | -13.27/-13.12  | -13.34/-15.03  | -17.68/-18.28  | -9.39/-7.73    | -7.07/-6.86    | -12.39/-13.57  | -12.21/-13.57  | -13.29/-12.81  | -13.29/-12.81  | -13.29/-12.81  | -13.29/-12.81  | -13.29/-12.81  |
| Θ(10°)   | -17.3/-18.81  | -16.19/-12.8  | -11.51/-9.71  | -8.67/-14.21  | -7.43/-7.59   | -8.44/-9.99    | -11.72/-13.37  | -13.09/-11.78  | -11.99/-13.19  | -15.47/-13.33  | -10/-7.8       | -6.65/-6.15    | -6.47/-7.34    | -8.31/-9.5     | -11.09/-11.81  | -13.24/-13.6   | -14.01/-16.21  | -17.69/-18.34  |
| Θ(20°)   | -11.48/-13.51 | -18.62/-19.13 | -18.87/-14.21 | -10.11/-8.09  | -7.08/-6.64   | -7.86/-8.83    | -10.03/-9.85   | -8.25/-6.94    | -7.03/-8.32    | -11.13/-18.53  | -18.34/-11.74  | -7.92/-6.15    | -6.03/-6.84    | -8.96/-11.44   | -13.61/-16.6   | -16.47/-16.5   | -14.68/-13.59  | -12.17/-11.56  |
| Θ(30°)   | -9.36/-10.51  | -12.01/-14.88 | -18.25/-18.07 | -13.63/-9.05  | -7.26/-7.24   | -8.43/-9.8     | -9.5/-7.48     | -4.85/-3.31    | -2.71/-3       | -4.59/-7.75    | -15.17/-17.52  | -11.61/-7.55   | -6.61/-7.37    | -9.53/-12.39   | -14.51/-14.96  | -16.71/-17.6   | -14.3/-12.42   | -11.44/-9.52   |
| Θ(40°)   | -13.16/-12.94 | -12.79/-12.68 | -12/-11.9     | -10.47/-7.86  | -6.97/-7.4    | -9.82/-12.16   | -9.61/-5.71    | -3.1/-1.58     | -0.9/-1.05     | -1.71/-3.07    | -5.6/-10.92    | -17.5/-13.39   | -8.64/-8.05    | -10.07/-13.14  | -15.31/-18     | -18.83/-18.84  | -17.45/-15.15  | -14.47/-14.16  |
| Θ(50°)   | -17.23/-19.12 | -18.24/-15.15 | -10.58/-7.64  | -6.83/-6.3    | -6.16/-7.36   | -10.82/-18.62  | -11.12/-4.67   | -1.65/-0.3     | -0.06/-0.34    | -1.02/-2.13    | -4.42/-8.36    | -16.58/-14.85  | -8.2/-7.31     | -9.83/-12.02   | -13.84/-18.5   | -17.54/-17.64  | -18.08/-18.03  | -19.17/-18.41  |
| Θ(60°)   | -9.58/-11.83  | -17.74/-16.99 | -8.75/-5.86   | -6.04/-7.95   | -6.58/-9.4    | -11.18/-15.64  | -15.29/-6.42   | -2.4/-0.91     | -0.7/-1.15     | -1.92/-2.81    | -3.39/-4.63    | -7/-12.52      | -11.5/-8.8     | -9.35/-10.28   | -13.77/-19.26  | -17.17/-16.21  | -14.69/-11.76  | -14.69/-11.76  |
| Θ(70°)   | -6.85/-6.67   | -13.11/-10.75 | -5.64/-3.64   | -4.62/-6.67   | -11.71/-13.12 | -17.07/-13.6   | -11.38/-7.08   | -3.65/-2.38    | -2.55/-3.12    | -3.77/-3.82    | -3.31/-3.57    | -5.65/-12.09   | -18.33/-10.9   | -9.46/-9.3     | -14.61/-17.33  | -10.72/-11.92  | -15.6/-11.76   | -7.83/-6.89    |
| Θ(80°)   | -5.28/-6.87   | -9.23/-8.36   | -5.98/-5.69   | -8.85/-19.18  | -17.31/-14.64 | -18.11/-19.07  | -13.76/-8.98   | -5.67/-4       | -4.19/-5.76    | -7.79/-9.15    | -8.97/-8.8     | -10.45/-16.86  | -18.48/-14.2   | -11.72/-13.25  | -17.83/-10.89  | -8.26/-9.61    | -9.39/-7.42    | -5.5/-7.7      |
| Θ(90°)   | -7.12/-8.43   | -6.89/-4.45   | -3.7/-6.04    | -14.53/-18.45 | -18.99/-14.98 | -13.65/-17.08  | -18.48/-18     | -7.85/-3.56    | -2.7/-4.14     | -6.7/-8.33     | -8.4/-9.57     | -15.5/-17.93   | -11.65/-11.97  | -14.9/-18.05   | -12.82/-9.18   | -9.25/-7.58    | -4.83/-4.08    | -4.33/-5.08    |
| Θ(100°)  | -10.15/-8.55  | -6.35/-4.66   | -4.25/-7.04   | -11.27/-9.67  | -13.04/-17.61 | -13.52/-14.08  | -12.06/-10.75  | -7.87/-4.1     | -2.66/-3.14    | -4.43/-5.95    | -6.94/-9.06    | -13.99/-13.09  | -12.55/-15.69  | -18.17/-13.05  | -9.31/-8.64    | -9.98/-7.33    | -4.55/-4.43    | -6.33/-8.6     |
| Θ(110°)  | -5.75/-4.08   | -4.11/-5.83   | -5.63/-6.02   | 6.7/-7.47     | -12.46/-18.53 | -13.76/-8.98   | -12.35/-10.01  | -8/-4.63       | -3.23/-2.85    | -3.18/-3.48    | -4.54/-6.17    | -8.45/-8.66    | -11.03/-15.96  | -18.43/-18.19  | -15.05/-14.4   | -15.2/-8.96    | -5.26/-4.96    | -6.36/-4.04    |
| Θ(120°)  | -5.49/-3.25   | -3.78/-6.96   | -7.88/-6.24   | -6.92/-8.53   | -12.35/-15.79 | -16.64/-17.93  | -13.37/-9.46   | -10.06/-9.68   | -7.33/-6.75    | -4.83/-4.15    | -4.5/-6.73     | -9.47/-13.26   | -17.52/-19.35  | -17.13/-15.88  | -12.12/-9.04   | -9.67/-12.77   | -14.04/-12.84  | -12.37/-9.38   |
| Θ(130°)  | -9.02/-7.49   | -9.09/-15.31  | -8.63/-5.54   | -6.93/-14.69  | -17.75/-8.38  | -7.77/-11.06   | -17.77/-13.55  | -9.91/-9.04    | -9.37/-9.48    | -7.73/-6.88    | -7.5/-12.28    | -18.05/-17.59  | -15.42/-16.95  | -18.82/-17.69  | -14.64/-10.17  | -9.03/-10.53   | -12.84/-12.64  | -11.99/-10.46  |
| Θ(140°)  | -8.61/-9.53   | -12.48/-17.46 | -11.47/-7.23  | -7.71/-12.67  | -15.68/-9.18  | -6.94/-7.48    | -12.15/-17.83  | -17.83/-18.67  | -17.81/-18.67  | -18.34/-18.16  | -16.5/-11.79   | -10.18/-9.38   | -9.99/-12.13   | -13.49/-11.93  | -12.8/-14.59   | -16.35/-15.92  | -13.37/-10.77  | -8.69/-8.07    |
| Θ(150°)  | -10.33/-15.14 | -19.01/-16.83 | -10.43/-7.7   | -8.43/-12.8   | -18.22/-11.39 | -8.26/-14.84   | -12.82/-13.74  | -17.13/-14.96  | -11.7/-10.52   | -9.7/-10.16    | -12.81/-17.92  | -17.06/-13.36  | -9.7/-10.16    | -12.81/-17.92  | -17.06/-13.36  | -9.7/-10.16    | -12.81/-17.92  | -17.06/-13.36  |
| Θ(160°)  | -14.16/-17.65 | -17.33/-12.48 | -10.25/-9.4   | -11.55/-17.56 | -17.97/-12.53 | -8.58/-7.09    | -7.23/-8.59    | -10.81/-11.86  | -12.89/-13.87  | -14.34/-14.54  | -17.99/-19.08  | -14.55/-11.07  | -9.38/-9.71    | -13.47/-17.04  | -18.17/-15.14  | -11.68/-9.56   | -9.25/-9.27    | -10.32/-12.42  |
| Θ(170°)  | -18.19/-13.5  | -17.17/-12.34 | -12.01/-13.5  | -16.3/-17.83  | -19.01/-12.35 | -9.45/-7.81    | -7.05/-7.14    | -8/-8.51       | -9.47/-11.57   | -13.67/-16.05  | -16.31/-14.95  | -13.78/-13.49  | -15.62/-18.24  | -18.04/-16.01  | -13.54/-11.79  | -11.99/-13.76  | -17.07/-17.45  | -18.92/-18.12  |
| Θ(180°)  | -12.1/-12.16  | -13.55/-16.2  | -17.66/-18.81 | -18.98/-17.21 | -14.25/-10.95 | -10.27/-9.47   | -9.04/-9.04    | -9.71/-10.58   | -11.15/-12.33  | -13.88/-14.27  | -15.62/-16.71  | -19.14/-18.88  | -18.16/-19.29  | -17.77/-17.88  | -16.36/-17.51  | -17.12/-14.66  | -12.49/-11.04  | -10.82/-10.66  |
| Freq(Hz) | 2.45GPol.     | ThetaAnt. 1   | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -9.63/-9.64   | -10/-10.46    | -11.91/-14.27 | -14.69/-14.5  | -11.18/-11.09 | -10.99/-10.28  | -9.8/-44       | -8.84/-9.12    | -10.27/-11.21  | -11.14/-11.39  | -14.07/-14.68  | -11.06/-9.78   | -8.89/-8.1     | -8.55/-9.03    | -8.55/-9.03    | -8.55/-9.03    | -8.55/-9.03    | -8.55/-9.03    |
| Θ(10°)   | -11.25/-10.02 | -9.02/-8.35   | -8.76/-10.52  | -11.12/-11.89 | -11.58/-11.49 | -10.92/-10.9   | -10.64/-10.6   | -9.61/-9.34    | -8.65/-9.02    | -10.02/-11     | -12.06/-13.16  | -15.26/-17.35  | -17.61/-15.07  | -12.81/-12.41  | -12.51/-12.74  | -13.37/-13.8   | -13.22/-13.13  | -12.64/-12.22  |
| Θ(20°)   | -14.29/-12.3  | -10.6/-8.84   | -8.02/-8.02   | -8.05/-8.14   | -8.17/-8.23   | -8.26/-8.47    | -9.32/-11.12   | -13.91/-17.63  | -17.06/-15.41  | -14.23/-13.07  | -12.92/-14.94  | -18.26/-19.23  | -13.38/-12.82  | -11.09/-11.46  | -13.98/-19.45  | -17.94/-17.99  | -18.09/-18.52  | -18.87/-16.62  |
| Θ(30°)   | -8.91/-9.24   | -10/-9.18     | -8.9/-9.47    | -6.84/-6.52   | -6.5/-6.3     | -8.9/-12.93    | -18.46/-17.56  | -18.62/-18.1   | -17.39/-18.25  | -15.96/-11.88  | -12.91/-11.96  | -17.07/-17.92  | -14.81/-11.11  | -9.37/-9.23    | -9.85/-9.97    | -9.85/-9.97    | -9.85/-9.97    | -9.85/-9.97    |
| Θ(40°)   | -3.84/-3.79   | -4.36/-5.12   | -5.41/-5.05   | -4.28/-3.53   | -2.84/-2.03   | -1.21/-0.52    | 0.030/0.34     | -0.1/-1.05     | -2.45/-3.81    | -5.56/-7.66    | -9.99/-12.75   | -18.19/-18.39  | -19.47/-16.07  | -17.1/-19.19   | -16.97/-12.34  | -9.3/-7.7      | -6.83/-6.56    | -5.69/-4.8     |
| Θ(50°)   | -2.83/-3.09   | -3.5/-4       | -3.71/-2.39   | -0.920/-1     | 0.450/0.8     | 1.52/6.8       | 3.67/6.34      | 2.711/0.5      | -0.91/-2.78    | -4.37/-5.6     | -6.67/-8.59    | -13.5/-17.68   | -14.44/-11.66  | -14.86/-18.72  | -13.5/-10.11   | -9.34/-8.62    | -4.77/-4.46    | -4.24/-3.27    |
| Θ(60°)   | -2.05/-3.32   | -4.22/-5.09   | -5.11/-1.73   | 1.61/3.35     | 3.66/3.37     | 3.21/3.01      | 3.64/3.37      | 3.1/1.24       | -0.98/-2.62    | -4.34/-4.74    | -8.36/-15.86   | -18.39/-12.22  | -12.12/-9.9    | -5.91/-4.93    | -7.34/-3.46    | -2.16/-1.96    | -2.16/-1.96    | -2.16/-1.96    |
| Θ(70°)   | -2.77/-3.09   | -3.11/-3.68   | -5.9/-2.69    | 2.06/3.47     | 4.334/4.8     | 4.003/9.2      | 3.67/2.53      | 1.65/-0.48     | -2.54/-4.26    | -6.04/-5.85    | -5.03/-5.44    | -8.14/-17.24   | -14.08/-8.15   | -7.08/-8.53    | -4.78/-3.29    | -3.67/-4.02    | -3.5/-3.03     | -3.5/-3.03     |
| Θ(80°)   | -2.67/-1.89   | -1.14/-0.63   | -2.16/-2.9    | 0.421/7.5     | 3.234/3.2     | 4.3/3.45       | 2.24/1.63      | -0.69/-3.66    | -6.7/-8.19     | -8.22/-6.38    | -5.44/-5.99    | -8.38/-16.34   | -12.41/-7.07   | -6.06/-8.31    | -12.32/-7.99   | -4.64/-3.82    | -4.13/-5.33    | -5.18/-3.56    |
| Θ(90°)   | -1.47/-1.84   | -1.49/-0.64   | -1.42/-1.88   | -0.87/-0.37   | 2.054/1.2     | 4.272/7.3      | 0.27/-1.32     | -2.75/-4.98    | -7.12/-8.03    | -6.94/-5.6     | -5.43/-6.69    | -8.46/-14.08   | -16.24/-10.06  | -9.06/-13.84   | -17.06/-7.22   | -4.58/-4.29    | -3.9/-3.59     | -3.15/-2.06    |
| Θ(100°)  | -2.37/-4.3    | -4.5/-3       | -2.42/-0.9    | -1.17/-6.16   | -3.45/-1.2    | 1.570/9.5      | -1.4/-3.02     | -3.03/-3.11    | -3.45/-4.12    | -4.76/-5.07    | -6.34/-8.17    | -11.42/-18.04  | -15.7/-12.96   | -13.53/-17.85  | -11.42/-6.59   | -3.72/-2.67    | -2.94/-2.88    | -2.58/-2.37    |
| Θ(110°)  | -6.28/-11.02  | -14.63/-11.99 | -10.19/-3.95  | -2.35/-5.55   | -12.08/-4.23  | -0.78/-0.19    | -1.97/-5.18    | -6.08/-4.22    | -2.79/-2.45    | -3.29/-4.56    | -6.87/-8.24    | -14.81/-17.4   | -11.04/-10.3   | -9.57/-10.23   | -8.43/-5.31    | -2.97/-1.73    | -2.33/-4.39    | -5.09/-4.96    |
| Θ(120°)  | -17.54/-15.91 | -16.29/-13.21 | -9.96/-5.7    | -1.92/-1.83   | -4.86/-4.08   | -0.430/0.36    | 0.22/-3.27     | -5.15/-4.97    | -2.88/-1.81    | 2.3/-5         | -7.98/-11.24   | -10.15/-6.38   | -6.4/-8.12     | -9.68/-15.16   | -13.21/-8.98   | -6.44/-5.39    | -6.5/-10.76    | -19.18/-18.64  |
| Θ(130°)  | -9.46/-7.83   | -12.63/-17.2  | -8.63/-8.19   | -4.83/-3.5    | -3.32/-1.4    | -1.136/-0.37   | -0.95/-1.16    | -2.8/-3.47     | -4.1/-4.71     | -5.86/-5.83    | -4.58/-4.64    | -9.81/-10.37   | -19.12/-11.32  | -8.31/-7.94    | -8.28/-8.48    | -9.81/-11.14   | -13.5/-15.23   | -16.35/-15.03  |
| Θ(140°)  | -10.6/-13.4   | -18.68/-13.6  | -7.74/-6.39   | -6.02/-5.54   | -3.72/-2.07   | -1.17/-0.81    | -1.51/-2.43    | -3.36/-3.03    | -5.32/-6.6     | -7.24/-7.64    | -8.83/-13.27   | -14.71/-10.52  | -8.05/-7.15    | -8.94/-12.39   | -17.84/-19.36  | -14.41/-11.86  | -8.72/-6.82    | -6.69/-7.91    |
| Θ(150°)  | -9.69/-11.94  | -15.51/-19.06 | -18.25/-15.78 | -10.04/-6.4   | -4.18/-2.9    | -2.73/-3.29    | -4.15/-3.68    | -6.37/-7.16    | -8.39/-10.15   | -11.64/-13.46  | -13.74/-10.42  | -9.03/-9.72    | -11.99/-16.27  | -15.8/-13.87   | -12.55/-10.78  | -10.13/-10.86  | -11.4/-9.53    | -8.84/-9       |
| Θ(160°)  | -9.84/-9.5    | -9.69/-11.08  | -15.32/-19.04 | -13.66/-8.74  | -6.82/-6.07   | -7.62/-9.61    | -12.82/-14.98  | -15.86/-17.15  | -18.03/-18.31  | -9.39/-9.56    | -13.32/-10.9   | -13.41/-14.55  | -9.86/-9.58    | -11.21/-14.43  | -13.22/-10.9   | -17.96/-18.3   | -18.98/-18.02  | -14.99/-11.8   |
| Θ(170°)  | -13.84/-15.56 | -17.6/-19.18  | -18.84/-16.5  | -12.24/-9.76  | -8.21/-8.55   | -10.29/-13.92  | -17.06/-19.22  | -18.39/-12.65  | -11.29/-8.86   | -9.4/-9.32     | -9.82/-10.36   | -9.79/-9.29    | -9.29/-8.8     | -8.89/-11.05   | -13.93/-17.53  | -18.42/-16.28  | -14.02/-13.23  | -13.35/-13.47  |
| Θ(180°)  | -14.97/-13.81 | -12.51/-11.41 | -10.31/-10.31 | -9.91/-9.7    | -9.84/-10.92  | -11.94/-13.84  | -17.6/-18.23   | -18.13/-18.71  | -15.57/-14.23  | -14.16/-12.06  | -11.86/-10.18  | -9.27/-8.42    | -8.6/-9.17     | -10.23/-11.74  | -13.45/-15.28  | -17.31/-16.7   | -16.91/-15.55  | -15.53/-14.44  |
| Freq(Hz) | 5.2GPol.      | PhiAnt. 1     | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -10.12/-9.8   | -10.15/-11.88 | -13.51/-14.74 | -16.14/-16.34 | -16.55/-18.07 | -18.64/-17.91  | -15.18/-13.22  | -14.62/-12.97  | -10.35/-9.54   | -10.02/-12.09  | -10.8/-9.36    | -10.36/-12.91  | -16.87/-18.59  | -18.97/-18.88  | -15.55/-13.07  | -12.24/-9.97   | -10            |                |



# Radiated Composite Gain Data

# Appendix A

|          |               |               |               |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Θ(60°)   | -14.5/-13.42  | -10.15/-6.66  | -4.37/-3.66   | 0.57/-0.16    | 1.020/37      | -3.73/-0.35     | -0.82/-2        | -2.75/-3.2      | -6.71/-17.65    | -18.62/-18.28   | -13.09/-11.86   | -8.74/-14.46    | -16.52/-17.27   | -18.99/-11.67   | -15.7/-18.82    | -17.23/-18.37   | -18.89/-17.31   | -13.06/-13.09   |
| Θ(70°)   | -9.85/-8.44   | -6.81/-4.86   | -3.24/-2.69   | 2.06/2.69     | 1.69/2.3      | 0.95/-1.44      | 1.52/-1.39      | 0.93/-1.07      | -1.17/-6.66     | -17.63/-15.19   | -15.25/-16.7    | -12.85/-15.91   | -18.8/-18.66    | -14.79/-14.25   | -18.85/-19.18   | -18.44/-19.08   | -11.55/-10.09   | -18.92/-11.33   |
| Θ(80°)   | -8.03/-10.11  | -6.42/-2.99   | -3.56/-3.26   | 1.77/4.98     | 4.38/2.32     | 1.81/65         | 0.62/0.77       | -0.04/0.68      | -0.89/-4.18     | -7.52/-9.79     | -13.79/-13.54   | -9.13/-12.17    | -18.7/-18.94    | -18.43/-12.52   | -18.41/-19.54   | -19.35/-12.38   | -13.27/-18.76   | -12.49/-9.08    |
| Θ(90°)   | -17.69/-18.18 | -10.51/-8.86  | -7.49/-3.54   | -2.09/0.59    | 4.19/3.38     | 2.05/0.75       | -0.19/0.11      | -1.19/-0.05     | -0.11/-2        | -4.77/-6.98     | -12.01/-18.26   | -12.86/-10.46   | -9.77/-10.75    | -17.84/-16.75   | -13.6/-16.4     | -18.25/-15.48   | -15.63/-14.62   | -14.17/-12.51   |
| Θ(100°)  | -11.3/-11.69  | -5.78/-7.18   | -6.11/-2.31   | -1.94/-4.83   | -0.73/-1.7    | 1.59/0.56       | -0.74/-1.49     | 0/-1.15         | -3.15/-4.28     | -3.82/-5.8      | -6.47/-6.79     | -9.4/-8.16      | -11.65/-11.68   | -14.11/-18.93   | -12.96/-8.48    | -13.13/-11.16   | -18.09/-18.85   | -10.32/-8.64    |
| Θ(110°)  | -14.22/-9.19  | -6.74/-9.31   | -5.77/-4.37   | -5.58/-5.9    | -1.09/-0.13   | -1.56/-2.66     | -2.82/-4.1      | -5.99/-9.3      | -8.33/-5.46     | -18.36/-18.95   | -6.65/-7.44     | -7.43/-13.96    | -12.33/-18.19   | -18.33/-13.96   | -16.73/-8.94    | -14.27/-18.05   | -17.16/-19.09   | -11.06/-16.2    |
| Θ(120°)  | -18.44/-16.81 | -18.42/-16.35 | -12.31/-15.85 | -14.78/-18.91 | -4.27/-2.82   | -3.75/-6.01     | -1.63/-1.1      | -2.24/-4.61     | -6.38/-7.15     | -7.17/-7.97     | -6.76/-4.71     | -6.18/-7.67     | -18.89/-12.84   | -13.89/-12.58   | -18.32/-16.68   | -17.79/-15.95   | -17.43/-16.62   | -18.33/-15.97   |
| Θ(130°)  | -12.82/-10.21 | -15.44/-12.34 | -8.23/-10.52  | -8.15/-14.57  | -12.31/-9.7   | -11/-10.22      | -5.25/-1.28     | -1.75/-3.83     | -8.82/-9.86     | -11.29/-10.25   | -8.59/-10.71    | -7.89/-5.4      | -18.64/-18.69   | -13.51/-8.37    | -11.68/-14.12   | -11.87/-16.27   | -14.03/-10.81   | -9.85/-17.69    |
| Θ(140°)  | -19.13/-19.09 | -12.55/-13.71 | -18.14/-10.88 | -7.31/-9.27   | -18.9/-12.13  | -12.62/-10.78   | -6.88/-4.7      | -4.46/-8.3      | -19.12/-17.37   | -17.9/-18.93    | -16.78/-9.63    | -6.09/-9.23     | -17.47/-10.8    | -6.1/-17.26     | -15.26/-19.2    | -18.23/-14.3    | -17.16/-19.09   | -14.28/-18.76   |
| Θ(150°)  | -18.12/-16.61 | -13.9/-11     | -8.29/-7.64   | -8.06/-11.07  | -17.47/-16.86 | -12.72/-9.46    | -6.46/-4.36     | -3.91/-6.22     | -10.45/-15.22   | -18.23/-18.66   | -14.09/-13.48   | -5.59/-2.59     | -5.56/-17.88    | -16.67/-19.15   | -17.88/-15.66   | -11.41/-12.41   | -18.3/-18.94    | -17.82/-18.89   |
| Θ(160°)  | -17.91/-19.48 | -17.04/-17.5  | -14.93/-12.14 | -9.63/-9.98   | -10.8/-10.29  | -10.87/-12.35   | -13.5/-12.66    | -11.88/-10.24   | -10.07/-12.29   | -16.39/-19.14   | -14.17/-9.26    | -7.47/-9.28     | -12.49/-17.42   | -18.45/-17.17   | -15.18/-15.93   | -17.79/-15.81   | -11.72/-9.6     | -10.15/-16.72   |
| Θ(170°)  | -7.99/-9.67   | -12.11/-16.84 | -17.45/-16.08 | -12.54/-11.09 | -11.33/-12.58 | -15.28/-18.38   | -18.03/-18.09   | -17/-13.72      | -12.41/-9.86    | -18.49/-18.89   | -173/-13.72     | -8.96/-9.15     | -9.23/-9.62     | -11.95/-13.75   | -18.5/-16.22    | -11.43/-11.73   | -9.69/-8.27     | -7.26/-7.71     |
| Θ(180°)  | -11.54/-11.2  | -11.41/-12.55 | -15.92/-16.46 | -16.83/-14.56 | -14.7/-14.18  | -15.18/-13.35   | -13.68/-14.77   | -14/-13         | -12.49/-14.82   | -17.07/-16.89   | -13.05/-11.2    | -10.5/-10.49    | -11.31/-13.25   | -18.93/-19.18   | -15.19/-14.41   | -14.97/-14.46   | -14.42/-11.47   | -12.02/-11      |
| Freq(Hz) | 5.6GPol.      | PhiAnt. 1     | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -5.25/-6.24   | -7.71/-8.98   | -11.6/-13.4   | -19.2/-18.79  | -17.36/-14.35 | -11.63/-9.64    | -8.7/-8.19      | -6.79/-5.23     | -4.49/-6.26     | -6.91/-5.93     | -6.57/-8.71     | -11.24/-13.3    | -19.07/-17.61   | -18.99/-15.46   | -14.07/-9.53    | -7.29/-7.07     | -6.17/-5.57     | -5.44/-5.98     |
| Θ(10°)   | -6.93/-7.2    | -12.82/-9.53  | -10.71/-11.3  | -14.46/-18.17 | -18.26/-18.74 | -14.8/-12.38    | -10.02/-7.8     | -6.99/-7.42     | -9.27/-6.77     | -6.37/-7.54     | -9.33/-9.61     | -7.22/-7.84     | -17.99/-19.65   | -17.15/-13.07   | -10.22/-7.7     | -7.65/-6.7      | -14.03/-10.81   | -7.65/-7.49     |
| Θ(20°)   | -4.17/-4.17   | -3.96/-4.44   | -4.37/-5.13   | -4.77/-10.28  | -13.46/-18.45 | -16.65/-11.57   | -8.49/-8.07     | -10.03/-7.51    | -18/-10.84      | -5.68/-6.12     | -5.49/-7.83     | -8.7/-10.84     | -13.39/-17.42   | -11.84/-11.03   | -13.85/-12.47   | -11.84/-11.21   | -10.08/-9.54    | -8.14/-4.6      |
| Θ(30°)   | -6.95/-9.85   | -9.77/-9.65   | -9.06/-9.65   | -13.56/-12.18 | -12.71/-15.25 | -14.9/-10.32    | -10.5/-10.24    | -11.14/-9.83    | -7.86/-5.9      | -3.84/-3.6      | -4.38/-4.96     | -4.85/-6.81     | -11.4/-14.57    | -18.19/-18.78   | -16.76/-15.27   | -15.21/-18.7    | -12.36/-9.41    | -5.97/-5.87     |
| Θ(40°)   | -16.54/-14.58 | -9.98/-9.57   | -10.52/-11.19 | -12.27/-18.49 | -17.12/-18.74 | -15.11/-11.65   | -13.16/-10.95   | -10.82/-10.23   | -6.82/-7.43     | -5.94/-8.26     | -9.42/-8.87     | -9.52/-9.23     | -9.55/-10.27    | -14.82/-18.49   | -18.07/-14.92   | -17.12/-18.74   | -15.15/-8.95    | -10.37/-11.45   |
| Θ(50°)   | -13.8/-12.68  | -8.1/-6.39    | -4.77/-5.86   | -4.14/-6.91   | -18.88/-16.96 | -14.93/-13.54   | -18.58/-16.79   | -13.43/-8.78    | -3.62/-4.63     | -12.36/-9.71    | -13.4/-17.65    | -17.91/-17.79   | -18.11/-18.61   | -13.81/-13.72   | -18.11/-17.79   | -18.11/-17.79   | -9.09/-8.27     | -11.32/-12.5    |
| Θ(60°)   | -18.13/-12.25 | -10.33/-10.38 | -6.39/-6.79   | -6.38/-5.59   | -18.42/-15.08 | -17.49/-14.07   | -19.74/-9.72    | -5.1/-7.21      | -7.27/-5.76     | -4.51/-2.86     | -3.1/-4.86      | -6.81/-8.32     | -10.79/-14.29   | -13.44/-18.38   | -18.4/-18.71    | -18/-12.92      | -9.79/-11.79    | -15.33/-16.04   |
| Θ(70°)   | -9.11/-8.14   | -8.71/-10.68  | -11.86/-10.86 | -15.6/-8.44   | -17.54/-18.14 | -18.95/-18.54   | -12.53/-6.37    | -4.81/-6.64     | -3.4/-2.09      | -4.84/-8.59     | -8.47/-14.24    | -15.33/-17.25   | -16.68/-13.33   | -18.37/-18.88   | -17.44/-15.66   | -18.52/-16.99   | -9.9/-16.49     | -18.07/-11.47   |
| Θ(80°)   | -10.57/-11.48 | -14.95/-9.96  | -6.07/-7.54   | -11.94/-7.35  | -15.82/-13.53 | -10.39/-14.96   | -6.39/-9.42     | -9.77/-8.63     | -3.56/-2.34     | -5.05/-9.61     | -12.67/-10.67   | -8.88/-12.66    | -19.25/-15.36   | -16.33/-19.06   | -18.98/-17.62   | -14.5/-17.67    | -16.12/-16.46   | -10.59/-8.55    |
| Θ(90°)   | -14.61/-11.33 | -8.86/-10.64  | -6.72/-7.24   | -12.03/-11.5  | -9.12/-6.73   | -8.04/-17.75    | -15.18/-11.14   | -5.85/-4.1      | -3.72/-3.54     | -5.22/-7.64     | -13.18/-10.84   | -13.19/-17.56   | -17.68/-14.88   | -15.76/-13.72   | -17.05/-13.67   | -15.76/-13.25   | -19.23/-17.98   | -16.66/-12.61   |
| Θ(100°)  | -18.18/-14.04 | -9.32/-5.76   | -4.08/-11.04  | -11.24/-18.95 | -7.08/-6.8    | -8.95/-13.96    | -4.6/-6.96      | -8.29/-4.78     | -6.28/-7.66     | -8.71/-9.43     | -11.78/-14.28   | -15.36/-10.86   | -19.31/-18.32   | -16.92/-17.88   | -12.49/-16.14   | -13.13/-10.44   | -16.78/-18.89   | -15.32/-13.18   |
| Θ(110°)  | -18.6/-15.44  | -15.2/-16.37  | -18.26/-10.88 | -11.16/-8.43  | -5.89/-15.54  | -15.68/-15.79   | -6.38/-12.09    | -17.75/-19.26   | -16.28/-10.98   | -8.54/-9.34     | -9.52/-11.44    | -13.71/-13.22   | -12.95/-18.73   | -16.67/-16.69   | -16.37/-9.26    | -19.04/-13.92   | -14.65/-18      |                 |
| Θ(120°)  | -17.85/-18.11 | -18.84/-13.37 | -7.16/-7.55   | -8.84/-6.39   | -8.61/-14.19  | -10.58/-4.96    | -3.53/-10.93    | -13.85/-17.33   | -12.58/-7.02    | -6.4/-7.78      | -7.95/-19.01    | -18.44/-12.07   | -16.65/-18.47   | -18.05/-14.25   | -16.35/-18.63   |                 |                 |                 |
| Θ(130°)  | -15.23/-17.88 | -18.48/-14.71 | -9.75/-5.17   | -3.82/-5.18   | -13.1/-9.41   | -3.39/-6.2      | -3.32/-3.98     | -6.24/-7.5      | -8.34/-8.13     | -7.99/-11.21    | -9.08/-6.54     | -9.27/-18.2     | -17.69/-17.4    | -16.28/-12.72   | -13.48/-18.73   | -18.56/-18.42   | -18.45/-14.95   | -9.22/-9.33     |
| Θ(140°)  | -18.28/-17    | -17.09/-17.52 | -18.6/-14.17  | -9.41/-7.7    | -14.99/-9.69  | -3.83/-4.56     | -8.25/-9.7      | -12.53/-14.69   | -13.75/-10.24   | -10.71/-10.81   | -12.82/-12.07   | -18.65/-18.9    | -11.48/-8.19    | -12.3/-18.03    | -18.1/-18.41    | -18.51/-18.55   | -17.71/-18.39   | -19.15/-19      |
| Θ(150°)  | -17.48/-13.9  | -16.29/-16.48 | -15.01/-15.78 | -15.24/-16.2  | -18.85/-17.4  | -10.14/-8.19    | -10.21/-11.22   | -11.28/-12.41   | -13.18/-13.33   | -11.58/-18.26   | -12.45/-14.88   | -17.87/-18.21   | -12.45/-17.65   | -19.03/-13.94   | -18.29/-14.39   | -14.4/-16.07    |                 |                 |
| Θ(160°)  | -17.72/-13.33 | -15.07/-13.44 | -18.93/-18.07 | -13.66/-13.01 | -15.85/-10.66 | -7.33/-5.54     | -5.44/-6.89     | -8.38/-10.38    | -11.26/-8.65    | -8.95/-8.66     | -6.95/-6.23     | -6.96/-8.49     | -11.69/-14.88   | -18.08/-18.55   | -16.02/-17.4    | -18.72/-15.49   | -14.96/-14.4    | -11.35/-11.93   |
| Θ(170°)  | -11.5/-12.5   | -13.96/-18.01 | -18.01/-17.85 | -18.98/-18.28 | -18.63/-19.02 | -19.79/-16.31   | -14.15/-12.63   | -10.88/-11.85   | -12.15/-10.4    | -9.72/-10.19    | -13.39/-13.48   | -14.24/-18.01   | -15.84/-16.11   | -15.75/-17.07   | -18.62/-18.14   | -14.55/-13.94   | -12.77/-14.94   | -15.2/-14.37    |
| Θ(180°)  | -14.4/-11.75  | -10.74/-10.08 | -10.39/-10.12 | -11.12/-35    | -13.95/-14.35 | -13.1/-12.95    | -11.73/-11.87   | -11.75/-11.5    | -13.82/-13.3    | -17.83/-14.51   | -17.96/-18.66   | -17.76/-19.33   | -17.41/-16.74   | -18.43/-17.52   | -18.56/-14.87   |                 |                 |                 |
| Freq(Hz) | 5.6GPol.      | ThetaAnt. 1   | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -18.12/-14.46 | -10.97/-8.23  | -7.78/-7.09   | -6.91/-6.22   | -6.78/-5.53   | -6.7/-8.06      | -10.3/-13.57    | -15.32/-18.46   | -12.64/-9.29    | -7.65/-7.27     | -6.59/-4.97     | -8.13/-9.82     | -4.24/-5.2      | -6.76/-8.13     | -8.13/-9.82     | -11.48/-15      | -17.46/-18.95   |                 |
| Θ(10°)   | -13.94/-11.11 | -8.94/-7.3    | -5.71/-4.21   | -3.7/-2.62    | -2.55/-3.6    | -4.62/-3.63     | -7.54/-9.87     | -11.91/-14.58   | -18.93/-17.93   | -18.9/-18.99    | -12.84/-11.07   | -9.01/-8.15     | -7.22/-7.79     | -7.4/-8.63      | -11.98/-13.02   | -16.46/-16.68   | -18.62/-16.92   | -17.1/-19.09    |
| Θ(20°)   | -18.7/-19.74  | -17.42/-12.81 | -7.86/-5.75   | -3.63/-2.03   | -0.10/-29     | -0.87/-2.82     | -6.4/-7.73      | -9.66/-9.14     | -11.61/-13.45   | -12.78/-14.94   | -17.18/-18.09   | -13.21/-9.97    | -8.79/-9.39     | -10.94/-11.67   | -16.37/-18.05   | -17.14/-18.97   | -18.19/-18.43   | -18.62/-17.58   |
| Θ(30°)   | -13.91/-11.57 | -10.6/-5.94   | -4.28/-4.74   | -3.96/-4.57   | -2.23/-0.92   | -0.97/-3.69     | -6.43/-6.71     | -4.34/-4.98     | -8.36/-11.73    | -12.98/-12.21   | -14.89/-18.83   | -19.11/-18.85   | -13.86/-10.45   | -11.65/-19.39   | -17.71/-19.06   | -17.68/-16.08   | -18.29/-18.33   | -17.35/-18.86   |
| Θ(40°)   | -18.92/-18.17 | -16.74/-12.51 | -6.73/-3.31   | -1.48/-0.97   | -3.56/-5.02   | -3.35/-4.9      | -3.58/-1.53     | -2.32/-4.54     | -8.1/-12.32     | -18.28/-18.43   | -18.32/-17.84   | -19.31/-18.44   | -16.57/-15.9    | -12.43/-12.46   | -17.04/-17.82   | -11.02/-11.51   | -14.18/-15.64   | -18.75/-18.34   |
| Θ(50°)   | -10.73/-18.58 | -18.51/-12.04 | -5.96/-2.04   | 0.46/-1.27    | 1.72/0.27     | -0.94/-2.12     | -0.18/0.03      | 0.28/-0.43      | -3.24/-6.36     | -9.61/-12.1     | -14.17/-13.42   | -14.03/-16.65   | -14.55/-14.07   | -18.76/-17.97   | -18.01/-9.68    | -8.59/-17.1     | -15.36/-18.55   | -18.78/-14.78   |
| Θ(60°)   | -5.99/-10.47  | -8.16/-11.23  | -8.77/-0.65   | 0.73/0.99     | 1.85/0.53     | -2.32/-1.55     | -0.46/-0.46     | -0.99/-0.78     | -3.66/-4.65     | -9.26/-12.77    | -11.73/-11.52   | -12.46/-18.12   | -18.95/-16.81   | -11.69/-15.16   | -18.85/-16.81   | -12.97/-14.24   | -17.31/-18.38   | -12.19/-11.2    |
| Θ(70°)   | -19.03/-17.15 | -8.63/-4.66   | -5.52/-6.23   | -1.44/-0.22   | 0.85/-0.54    | -4.13/-3.7      | -1.4/-4.1       | -5.63/-8.16     | -9.31/-12.49    | -17.9/-12.23    | -12.71/-14.43   | -16.41/-13.92   | -15.74/-18.74   | -18.93/-13.3    | -13.17/-18.49   | -15.91/-10.79   | -14.29/-10.87   |                 |
| Θ(80°)   | -6.95/-8.32   | -8.13/-3.27   | -1.83/0.71    | 2.31/-1.75    | 1.59/-0.31    | 2.23/0.67       | 1.81/0.3        | -0.77/-4.23     | -11.55/-18.2    |                 |                 |                 |                 |                 |                 |                 |                 |                 |

|          |               |               |               |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Θ(160°)  | -9.43/-11.75  | -15.72/-17.49 | -16.32/-12.07 | -9.66/-9.25   | -10.81/-15.28 | -17.85/-15.15   | -11.24/-10.7    | -11.31/-12.67   | -14.13/-15.69   | -16.37/-18.11   | -18.14/-17.81   | -17.32/-13.44   | -11.97/-12.01   | -12.87/-13.75   | -14.97/-13.68   | -13.05/-11.05   | -9.18/-8.09     | -7.77/-8.18     |
| Θ(170°)  | -14.43/-14.57 | -13.19/-12.28 | -11.89/-11.7  | -12.96/-14.82 | -18.05/-17.26 | -18.43/-12.81   | -10.11/-9.61    | -9.62/-10.82    | -12.33/-15.08   | -18.18/-18      | -18.71/-18.52   | -18.34/-19      | -18.14/-19.4    | -18.7/-17.73    | -17.72/-17.81   | -18.96/-17.7    | -19.23/-17.83   | -16.34/-15.34   |
| Θ(180°)  | -13.58/-13.21 | -13.43/-13.62 | -14.12/-16    | -15.67/-16    | -15.82/-15.06 | -13.71/-12.82   | -12.76/-12.24   | -12.67/-12.85   | -13.66/-14.86   | -16.33/-14.86   | -16.91/-17.95   | -18.24/-17.91   | -16.92/-16.64   | -16.33/-14.86   | -14.84/-14.45   | -15.31/-16.78   | -15.98/-15.98   | -15.75/-14.48   |
| Freq(Hz) | 2.45GPol.     | Theta/Ant. 2  | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | 2.48/2.34     | 2.06/-1.4     | 2.37/-4.78    | 2.62/-1.01    | 2.37/-4.78    | 2.62/-1.11      | 2.62/-1.11      | 2.52/-2.78      | 2.52/-2.78      | 1.64/0.72       | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      | 0.42/-1.93      |
| Θ(10°)   | 2.22/2.24     | 1.79/-1.17    | 0/-1.3        | -1.3/-6.21    | -1.3/-6.21    | -9.23/-10.34    | -7.48/-4.91     | -2.82/-1.36     | 0.02/-1.16      | 1.92/-2.48      | 2.63/-2.56      | 2.17/-1.45      | 0.51/-0.76      | -2.82/-5.51     | -9.41/-12.05    | -7.95/-4.65     | 0.74/-1.55      | 1.95/-2.22      |
| Θ(20°)   | 2.17/2.14     | 1.81/-1.24    | 0.45/-1.18    | -3.22/-6.12   | -9/-9.8       | -7.62/-5.14     | -3.35/-1.92     | -0.60/-66       | 1.75/-2.33      | 2.74/-2.14      | 1.12/-0.11      | -2.11/-3.35     | -10.13/-13.95   | -8.21/-4.19     | -1.92/-0.11     | 1.05/-1.77      | 2.16/-2.34      | 1.81/-2.02      |
| Θ(30°)   | 1.54/-1.42    | 1.46/-1.32    | 1.47/-4.07    | -6.95/-9.31   | -4.78/-2.69   | -1.15/-0.25     | 1.23/-1.87      | 1.87/-1.05      | 2.17/-2.18      | 1.87/-1.05      | -1.84/-1.40     | -8.07/-4.21     | -1.88/-0.18     | 0.85/-1.53      | 1.81/-0.82      | 1.81/-0.82      | 1.81/-0.82      | 1.81/-0.82      |
| Θ(40°)   | 0.02/0.24     | 0.74/-1.27    | 1.63/-3       | 0.02/-2.31    | -6.06/-10.42  | -10.92/-8.05    | -5.51/-3.35     | -1.43/-0.08     | 1.01/-1.55      | 1.81/-1.66      | 1.15/-0.06      | -1.69/-4.01     | -6.53/-9.41     | -13.74/-14.24   | -10.2/-6.12     | -3.38/-1.6      | -0.25/-0.29     | 0.23/-0.02      |
| Θ(50°)   | -1.94/-1.42   | -0.58/-0.37   | 0.98/0.57     | -0.74/-3.15   | -7.68/-15.74  | -17.22/-10.73   | -6.57/-4.26     | -2.14/-0.81     | 0.07/-1.05      | 1.51/-51        | 0.88/-0.19      | -1.55/-3.55     | -6.63/-9.74     | -12.92/-15.03   | -12.6/-8.58     | -5.2/-2.82      | -1.86/-1.54     | -1.76/-2.09     |
| Θ(60°)   | -6.47/-5.92   | -4.52/-2.66   | -2.19/-3.64   | -6.52/-10.56  | -11.61/-11.48 | -1.56/-11.38    | -8.27/-7.46     | -4.44/-2.64     | -0.32/-0.17     | 0.32/-0.45      | -1.33/-16.34    | -0.41/-1.49     | -3.74/-1.08     | -19.04/-11.62   | -6.89/-4.46     | -3.85/-4.23     | -5.15/-6.01     | -5.15/-6.01     |
| Θ(70°)   | -13.91/-11.89 | -9.97/-7.27   | -5.88/-7.96   | -12.53/-13.54 | -8.34/-6.14   | -6.78/-9.44     | -12.31/-11.22   | -6.94/-4.51     | -3.46/-2.98     | -2.86/-2.32     | -1.89/-1.64     | -1.78/-2.23     | -4.18/-7.08     | -12.44/-17.38   | -14.34/-8.08    | -5.67/-6.06     | -7.1/-8.36      | -10.22/-12.34   |
| Θ(80°)   | -19.76/-14.61 | -11.96/-10.61 | -7.6/-6.84    | -7.49/-7.3    | -5.91/-5.66   | -7.23/-10.95    | -18.97/-17.48   | -10.27/-7.48    | -7.04/-6.72     | -5.48/-4.66     | -3.97/-3.57     | -3.45/-3.57     | -4.91/-6.85     | -10.17/-14.01   | -10.56/-6.38    | -4.79/-5.43     | -7.54/-11.28    | -15.93/-18.67   |
| Θ(90°)   | -18.55/-18.85 | -16.67/-16.94 | -17.61/-13.17 | -9.03/-7.86   | -6.43/-6.91   | -9.58/-14.48    | -4.79/-13.17    | -8.5/-7.52      | -7.51/-5.87     | -6.25/-4.6      | -4.74/-4.53     | -5.27/-6.04     | -12.5/-6.19     | -14.74/-10.9    | -8.3/-7.83      | -9.58/-13.95    | -19.02/-18.2    | -19.02/-18.2    |
| Θ(100°)  | -14.34/-16.49 | -17.2/-15.96  | -17.49/-17.39 | -16.45/-18.52 | -16.84/-12.49 | -14.76/-17.83   | -16.54/-10.26   | -7.25/-7.53     | -8.24/-7.1      | -7.39/-7.67     | -7.43/-8.37     | -8.56/-7.3      | -7.66/-9.96     | -12.15/-18.12   | -18.99/-17.94   | -12.48/-9.92    | -11.05/-13.58   | -17.37/-16.21   |
| Θ(110°)  | -12.98/-15.08 | -15.29/-11.88 | -11.98/-12.74 | -11.09/-12.42 | -15.91/-10.98 | -10.97/-16.05   | -17.81/-13.42   | -11.47/-13.87   | -14.8/-12.33    | -10.59/-9.59    | -11.15/-13.08   | -13.79/-17.72   | -18.94/-15.79   | -13.64/-13.96   | -12.27/-10.77   | -9.45/-8.24     | -9.5/-11.87     | -13.21/-13.17   |
| Θ(120°)  | -17.45/-17.47 | -12.31/-8.02  | -7.28/-4.73   | -6.86/-7.19   | -9.44/-9.53   | -8.72/-10.81    | -16.65/-10.57   | -12.94/-16.44   | -10.17/-8.38    | -9/-11.09       | -14.91/-16      | -16.51/-18.52   | -13.36/-13.62   | -11.69/-13.18   | -9.33/-10.83    | -11.69/-13.7    | -15.46/-18.95   | -15.46/-18.95   |
| Θ(130°)  | -12.67/-16.49 | -18.75/-17.57 | -14.25/-10.71 | -18.42/-18.23 | -17.31/-12.49 | -9.8/-11.24     | -19.62/-18.24   | -15.86/-17.85   | -19.12/-17.41   | -14.07/-12.07   | -10.97/-9.69    | -8.92/-8.28     | -10.01/-17.04   | -15.11/-8.39    | -7.22/-8.51     | -11.64/-15.28   | -15.97/-14.39   | -12.03/-11.52   |
| Θ(140°)  | -18.25/-18.09 | -17.53/-17.89 | -18.33/-17.61 | -15.77/-16.02 | -15.13/-12.88 | -10.87/-10.53   | -12.58/-15.11   | -16.36/-16.99   | -17.91/-19      | -17.71/-18.02   | -17.61/-16.07   | -14.41/-13.06   | -13.13/-16.91   | -16.91/-10.64   | -10.02/-12.61   | -17.42/-14.25   | -11.82/-10.26   | -13.83/-16.17   |
| Θ(150°)  | -8.8/-8.38    | -8.5/-8.38    | -11.78/-14.84 | -17.68/-19.45 | -16.85/-19.45 | -13.88/-18.05   | -12.91/-14.96   | -15.15/-15.3    | -15.03/-13.29   | -16.84/-13.62   | -12.35/-13.64   | -16.55/-15.73   | -13.19/-11.79   | -11.02/-10.05   | -11.02/-10.05   | -11.02/-10.05   | -11.02/-10.05   | -11.02/-10.05   |
| Θ(160°)  | -16.25/-12.55 | -11.44/-11.05 | -11.75/-13.81 | -17.74/-18.13 | -19/-17.26    | -16.94/-17.65   | -17.42/-18.68   | -16.03/-16.43   | -18.82/-18.37   | -18.44/-18.66   | -17.58/-17.66   | -17.79/-16.15   | -15.06/-16.01   | -18.2/-14.7     | -13.3/-11.67    | -12.07/-12.62   | -14.12/-17.23   | -17.5/-18.57    |
| Θ(170°)  | -13.08/-13.68 | -15.85/-18.4  | -19.15/-17.75 | -18.31/-17.64 | -14.43/-13.42 | -14.32/-15.58   | -17.92/-17.89   | -16.3/-13.79    | -11.99/-11.38   | -11.55/-11.22   | -11.74/-13.14   | -16.88/-18.74   | -18.22/-17.57   | -18.22/-15.33   | -12.97/-11.53   | -11.3/-11.07    | -10.98/-11.3    | -10.98/-11.3    |
| Θ(180°)  | -10.78/-10.83 | -11.09/-11.8  | -11.83/-12.59 | -13.14/-13.4  | -13.98/-15.16 | -14.5/-12.51    | -17.67/-16.49   | -14.5/-12.51    | -10.98/-10.61   | -9.77/-9.35     | -9.47/-10.07    | -10.72/-11.73   | -13.53/-15.29   | -18.3/-16.71    | -14.5/-12.81    | -12.2/-11.1     | -9.78/-9.5      | -9.78/-9.5      |
| Freq(Hz) | 5.2GPol.      | Phi/Ant. 2    | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -15.81/-18.4  | -14.92/-9.71  | -6.81/-2.46   | -6.81/-2.46   | -0.70/-1.23   | -0.13/-0.51     | -0.76/-1.42     | -1.92/-8.73     | -14.92/-18.8    | -1.92/-9.04     | -0.28/-1.2      | -5.47/-3.25     | -0.23/-0.25     | -0.23/-0.25     | -0.23/-0.25     | -0.23/-0.25     | -0.23/-0.25     | -0.23/-0.25     |
| Θ(10°)   | -13.44/-13.92 | -11.46/-1.96  | -5.81/-3.97   | -2.78/-2.06   | -1.31/-0.84   | -0.84/-0.65     | -0.73/-1.16     | -1.96/-3.08     | -5.34/-8.61     | -14.68/-17.91   | -12.99/-7.92    | -5.23/-3.48     | -1.97/-1.06     | -0.28/-0.01     | -0.25/-0.36     | -1.27/-1.9      | -2.93/-4.62     | -6.94/-9.36     |
| Θ(20°)   | -15.27/-11.12 | -7.02/-4.81   | -3.02/-1.72   | -1.02/-0.53   | -0.10/-0.19   | -0.29/-0.45     | 0.4/-0.57       | -1.12/-2.38     | -4.43/-7.57     | -12.21/-18.96   | -13.5/-7.93     | -4.81/-2.23     | -0.73/-0.6      | 0.73/-0.73      | 0.29/-0.23      | -0.66/-1.24     | -2.87/-5.25     | -8.53/-12.83    |
| Θ(30°)   | -10.96/-8.22  | -5.28/-3.42   | -1.78/-0.78   | 0.30/-77      | 0.65/-31      | 0.20/-41        | -0.21/-0.52     | -2.28/-4.41     | -7.54/-12.42    | -10.29/-6.08    | -4.49/-3        | -1.64/-0.39     | 0.38/-0.3       | -0.25/-0.8      | -0.89/-1.46     | -3.13/-6.07     | -9.9/-12.29     | -9.9/-12.29     |
| Θ(40°)   | -16.36/-9.73  | -6.18/-4.39   | -3.08/-1.77   | -1.05/-0.7    | 0.76/-87      | 0.92/-43        | -0.39/-2.23     | -4.26/-6.54     | -8.25/-9.89     | -14.83/-19.04   | -11.22/-6.82    | -4.78/-3.6      | 0.42/-91        | 0.42/-91        | 0.42/-91        | 0.42/-91        | 0.42/-91        | 0.42/-91        |
| Θ(50°)   | -17.7/-12.5   | -9.99/-7.19   | -3.95/-1.63   | -0.72/-0.87   | -1.52/-0.61   | 1.45/-1.96      | -0.01/-1.53     | -2.77/-5.54     | -7.59/-10.05    | -15.39/-18.96   | -17.08/-8.55    | -4.89/-2.7      | -1.32/-0.08     | 0.53/-0.09      | -0.73/-1.9      | -2.12/-2.36     | -5.5/-1.4       | -18.71/-16.03   |
| Θ(60°)   | -19.13/-18.27 | -19.57/-11.83 | -5.96/-2.7    | -0.74/-3.75   | -1.74/-0.61   | 1.36/-81        | -0.4/-0.9       | -0.74/-3.75     | -19.16/-18.69   | -13.48/-9.19    | -5.58/-1.29     | -2.53/-2.61     | -2.21/-1.34     | -1.09/-16.17    | -1.68/-19.63    | -1.68/-19.63    | -1.68/-19.63    | -1.68/-19.63    |
| Θ(70°)   | -11.22/-15.77 | -14.58/-10.42 | -8.35/-5.44   | -1.47/-0.06   | 0.61/-0.8     | 0.54/-0.01      | 0.24/-0.18      | -1.57/-3.43     | -6.81/-9.95     | -14.05/-19.29   | -14.34/-10.28   | -6.61/-5.68     | -3.27/-2.45     | -2.96/-3.11     | -5.1/-2.69      | -5.01/-7.87     | -8.35/-11.36    | -18.32/-14.33   |
| Θ(80°)   | -12.47/-10.94 | -8.4/-6.72    | -4.62/-2.02   | -0.71/-1.32   | 1.81/-03      | -1/-3.77        | -4.56/-3.93     | -4.38/-6.61     | -9.69/-12.12    | -8.48/-8.08     | -7.5/-8.75      | -3.36/-1.95     | -3.02/-6.35     | -3.84/-3.31     | -5.7/-6.32      | -9.81/-11.77    | -13.73/-11.72   | -13.73/-11.72   |
| Θ(90°)   | -19.45/-17.06 | -18.16/-13.51 | -14.74/-13.46 | -7.7/-3.46    | -2.47/-1.68   | -0.65/-1.09     | -5.34/-7.38     | -8.8/-9.24      | -8.25/-7.39     | -7.09/-6.38     | -3.67/-3.09     | -3.8/-5.13      | -4.2/-6.74      | -12.63/-13.52   | -12.32/-11.62   | -12.32/-11.62   | -12.32/-11.62   | -12.32/-11.62   |
| Θ(100°)  | -14.92/-16.53 | -18.08/-16.54 | -12.2/-9.46   | -6.19/-4.32   | -3.6/-2.5     | -3.14/-4.15     | -4.76/-4.95     | -7.19/-7.49     | -8.2/-10.34     | -12.43/-11.84   | -9.47/-9.05     | -9.48/-7.7      | -6.86/-4.32     | -2.79/-4.23     | -4.13/-4.42     | -4.66/-7.69     | -13.16/-17.98   | -14.84/-11.79   |
| Θ(110°)  | -18.78/-15.11 | -8.1/-10.11   | -13.43/-8.41  | -4.16/-6.23   | -6.74/-6.98   | -7.11/-8.35     | -5.33/-3.14     | -6.22/-12.41    | -17.89/-17.21   | -17.61/-17.8    | -10.51/-6.88    | -10.51/-6.58    | -8.02/-4.68     | -4.32/-5.77     | -11.02/-6.27    | -17.6/-13.34    | -18.74/-18.93   | -17.03/-13.91   |
| Θ(120°)  | -17.49/-12.07 | -8.8/-11.48   | -18.34/-13.65 | -5.64/-7.35   | -5.64/-7.35   | -5.64/-7.35     | -5.64/-7.35     | -17.88/-16.4    | -13.62/-17.04   | -13.26/-17.04   | -12.72/-16.3    | -13.26/-17.04   | -10.25/-9.52    | -13.26/-16.3    | -13.28/-16.28   | -15.99/-19.27   | -15.29/-16.3    | -15.29/-16.3    |
| Θ(130°)  | -12.06/-12.23 | -11.76/-13.75 | -11.84/-9.4   | -9.55/-11.63  | -12.04/-7.88  | -3.76/-5.73     | -9.02/-9.87     | -16.15/-16.35   | -18.66/-17.77   | -18.44/-14.47   | -11.52/-14.54   | -11.26/-12.9    | -8.46/-14.99    | -15.67/-17.55   | -9.23/-10.6     | -13.29/-17.29   | -12.91/-17.83   | -13.46/-12.17   |
| Θ(140°)  | -10.76/-10.23 | -10.94/-11.95 | -11.2/-10.06  | -17.36/-19.31 | -18.31/-6.65  | -6.27/-1.53     | -9.98/-11.3     | -14.31/-16.97   | -14.62/-14.08   | -14.18/-9.76    | -8.97/-11.21    | -12.49/-10.07   | -11.35/-9.52    | -11.7/-14.16    | -8.09/-8.37     | -18.07/-17.97   | -17.15/-18.37   | -15.04/-16.35   |
| Θ(150°)  | -16.82/-19.26 | -18.9/-18.27  | -17.52/-18.14 | -14.77/-12.09 | -12.86/-13.11 | -15.95/-13.22   | -13.26/-17.89   | -19.18/-17.75   | -15.95/-13.22   | -16.23/-16.39   | -18.23/-17.64   | -18.23/-16.12   | -15.47/-14.14   | -18.92/-17.79   | -18.92/-17.79   | -18.92/-17.79   | -18.92/-17.79   | -18.92/-17.79   |
| Θ(160°)  | -19.1/-18.34  | -16.05/-15.11 | -13.27/-12.85 | -13.16/-14.81 | -17.33/-16.24 | -18.73/-17.42   | -18.04/-18.13   | -17.5/-17.61    | -18.79/-18.81   | -19.28/-18.79   | -17.33/-17.33   | -18.95/-18.95   | -17.83/-18.83   | -15.63/-16.1    | -18.63/-18.27   | -18.21/-18.35   | -17.24/-18.34   | -17.9/-17.83    |
| Θ(170°)  | -17.22/-14.6  | -14.07/-14.67 | -16.74/-17.72 | -18.08/-18.91 | -17.5/-17.58  | -15.62/-16.69   | -18.13/-18.61   | -15.58/-15.41   | -17.08/-19.61   | -19.08/-18.11   | -15.66/-13.3    | -13.66/-15.43   | -18.82/-17.19   | -17.21/-18.02   | -17.55/-18.31   | -18.3/-17.67    | -18.96/-19.22   | -18.96/-19.22   |
| Θ(180°)  | -18.69/-17.24 | -16.29/-15.7  | -15.85/-15.14 | -14.44/-15.51 | -15.13/-15.68 | -18.89/-18.29   | -18.89/-18.01   | -17.57/-18.99   | -18.85/-18.42   | -18.3/-18.73    | -18.71/-18.79   | -17.45/-17.84   | -19.15/-17.62   | -19.64/-17.86   | -18.17/-17.92   | -19.19/-17.84   | -18.32/-18.47   | -18.32/-18.     |



# Radiated Composite Gain Data

# Appendix A

|          |               |               |               |               |               |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(50°)   | -15.79/-14.55 | -14.44/-12.95 | -8.44/-5.29   | -1.36/2.05    | 3.9/9.8       | 3.14/2.5       | 2.03/0.64      | -1.01/-3.79    | -6.65/-7.23    | -9.97/-14.11   | -10.21/-6.8    | -4.81/-2.5     | -0.64/-0.59    | 0.6/0.9        | -0.26/-0.36    | -1.04/-3.93    | -5.87/-7.12    | -10.31/-12.55  |
| Θ(60°)   | -18.06/-16.76 | -13.64/-10.28 | -5.73/-3.02   | -1.9/0.19     | 2.55/3.65     | 4.47/3.78      | 1.33/1.1       | 0.36/-1.33     | -3.47/-5.91    | -8.71/-11.92   | -19.21/-8.41   | -4.3/-2.06     | -1.05/-0.75    | -0.65/-0.89    | -1.26/-2.02    | -5.56/-4.87    | -5.11/-9.64    | -16.62/-17.69  |
| Θ(70°)   | -18.35/-16.06 | -18.69/-16.38 | -8.9/-4.91    | -2.39/-0.43   | 1.85/3.53     | 4.74/3.32      | 2.19/0.97      | 0.65/-0.26     | -3.55/-10.32   | -14.17/-7.81   | -5.06/-2.52    | -2.22/-1.73    | -1.81/-2.19    | -1.54/-6.4     | -5.21/-6.12    | -11.88/-19.37  | -18.74/-18.99  | -18.89/-16.99  |
| Θ(80°)   | -12.66/-16.27 | -11.47/-8.31  | -7.52/-6.91   | -0.06/0.9     | 0.29/4.14     | 5.02/2.59      | 2.37/1.14      | -1.44/-1.8     | -3.77/-7.05    | -9.31/-8.96    | -9.37/-10.19   | -8.01/-4.75    | -1.96/-2.15    | -3.32/-2.79    | -4.02/-5.75    | -6.35/-9.68    | -13.81/-17.56  | -12.29/-10.08  |
| Θ(90°)   | -13.07/-14.38 | -12.23/-9.36  | -11.14/-9.36  | -5.73/-1.59   | 1.55/3.23     | 4.53/3.78      | 0.93/-1.23     | -2.25/-4.55    | -6.7/-9.13     | -12.42/-12.64  | -9.56/-9.05    | -6.95/-6.29    | -1.59/-1.32    | -4.64/-2.41    | -5.07/-6.59    | -5.86/-5.98    | -18.99/-16.66  | -17.75/-16.44  |
| Θ(100°)  | -18.9/-19.13  | -10.47/-9.92  | -12.37/-10.65 | -8.19/-4.69   | 0.21/5.8      | 1.46/0.43      | -12.35/-13.78  | -10.25/-6.99   | -8.65/-6.21    | -7.71/-9.89    | -12.35/-13.78  | -3.63/-4.59    | -9.3/-7.95     | -3.06/-2.28    | -4.13/-3.3     | -6.38/-7.85    | -17.39/-17.06  | -18.89/-16.99  |
| Θ(110°)  | -15.68/-18.21 | -15.27/-13.96 | -13.21/-8.85  | -10.09/-5.57  | -0.6/-2.07    | -4.26/-1.18    | -2.18/-4.19    | -4.62/-8.32    | -12.38/-18.1   | -18.08/-18.57  | -14.94/-10.13  | -9.4/-7.81     | -5.64/-4.23    | -7.24/-4.75    | -7.86/-9.6     | -11.88/-14.65  | -17.46/-17.38  | -18.3/-18.01   |
| Θ(120°)  | -8.94/-8.1    | -6.86/-9.49   | -16.73/-12.03 | -7.34/-3.14   | -2.06/-5.1    | -4.8/-1.46     | -2.06/-6.43    | -11.41/-14.56  | -18.52/-17.39  | -13.42/-16.41  | -10.02/-10.07  | -11.05/-8.17   | -10.64/-10.05  | -8.34/-8.98    | -17.88/-18.54  | -10.89/-18.06  | -19.26/-14.87  | -15.18/-15.02  |
| Θ(130°)  | -11.55/-10.97 | -13.31/-16.35 | -18.83/-12.69 | -13.97/-5.31  | -3.63/-5.47   | -4.79/-5.47    | -5.42/-8.92    | -15.9/-13.4    | -14.92/-18.81  | -13.09/-9.16   | -8.2/-11.67    | -8.84/-7.65    | -15.42/-13.56  | -13.08/-11.01  | -14.71/-12.71  | -12.48/-14.48  | -13.06/-16.67  | -13.69/-14.45  |
| Θ(140°)  | -16.39/-18.49 | -18.66/-15.14 | -8.91/-6.53   | -10.32/-17.1  | -17.28/-7.67  | -6.21/-7.97    | -8.26/-13.61   | -17.48/-11.32  | -9.94/-19.12   | -18.69/-8.84   | -9.48/-11.73   | -13.66/-12.21  | -9.3/-15.39    | -12.53/-12.51  | -12.93/-14.74  | -18.26/-16.26  | -17.62/-18.37  | -18.88/-15.73  |
| Θ(150°)  | -18.63/-19.12 | -18.16/-16.38 | -11.39/-9.81  | -13.13/-14.79 | -12.21/-8.48  | -7.21/-7.05    | -7.53/-12.68   | -18.99/-13.65  | -16.11/-18.89  | -18.19/-13.48  | -10.24/-9.62   | -12.49/-19.04  | -18.28/-19.25  | -18.61/-14.86  | -18.07/-18.71  | -17.49/-15.95  | -18.37/-18.57  | -18.46/-19     |
| Θ(160°)  | -17.6/-18.76  | -18.27/-18.2  | -18.03/-13.1  | -10.24/-7.51  | -7.74/-9.3    | -13.15/-16.87  | -17.89/-18.59  | -17.97/-18.49  | -18.31/-18.26  | -13.67/-11.33  | -10.93/-13.26  | -17.95/-15.82  | -13.18/-13.89  | -15.17/-15.51  | -16/-18.33     | -18.95/-19.69  | -18.63/-18.53  | -17.09/-17.17  |
| Θ(170°)  | -17.86/-17.2  | -18.66/-18.35 | -17.17/-12.78 | -10.36/-10.68 | -13.07/-18.09 | -17.9/-18.47   | -18.98/-18.08  | -18.05/-18.74  | -16.91/-14.67  | -13.52/-13.37  | -15.87/-18.07  | -19.1/-17.49   | -17.15/-14.61  | -14.38/-15     | -16.57/-15.31  | -14.02/-15.2   | -16.36/-19.3   | -18.29/-17.18  |
| Θ(180°)  | -17.87/-18.58 | -16.98/-18.35 | -17.39/-19.18 | -18.88/-19.1  | -19.38/-15.42 | -14.12/-12.52  | -13.4/-13.29   | -12.4/-11.62   | -13.3/-12.48   | -12.51/-13.43  | -15.92/-16.22  | -16.15/-14.89  | -15.19/-14.28  | -13.71/-14.33  | -13.85/-12.13  | -13.35/-12.83  | -14.72/-17.99  | -18.48/-18.99  |
| Freq(Hz) | 5.6GPol.      | ThetaAnt. 2   | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -0.97/-0.56   | -0.81/-1.06   | -1.7/-2.85    | -4.13/-6.21   | -8.34/-11.23  | -11.64/-10.89  | -8.08/-5.47    | -3.68/-2.39    | -1.21/-0.15    | -0.10/-0.1     | -0.0/-0.67     | -1.52/-2.59    | -4.36/-6.27    | -8.94/-11.98   | -12.92/-10.59  | -7.51/-4.94    | -3.73/-2.26    | -1.38/-0.95    |
| Θ(10°)   | 0.05/0.13     | 0.01/-0.7     | -1.48/-2.63   | -4.17/-5.96   | -8.04/-11.25  | -13.91/-14.8   | -5.97/-0.44    | -2.3/-1.35     | -5.97/-0.44    | -1.23/-2.33    | -7.03/-4.96    | -6.12/-7.98    | -5.45/-7.06    | -9.28/-11.18   | -13.05/-11.5   | -7.81/-6       | -4.43/-3.47    | -2.64/-1.55    |
| Θ(20°)   | -1.06/-1.49   | -2.05/-2.23   | -3.1/-3.82    | -5.07/-7.83   | -11.26/-16.36 | -18.12/-18.88  | -13.54/-9.84   | -6.12/-3.81    | -1.38/-0.69    | -1.06/-1.14    | -1.7/-2.16     | -2.5/-3.74     | -5.45/-7.06    | -9.28/-11.18   | -13.05/-11.5   | -7.81/-6       | -4.43/-3.47    | -2.64/-1.55    |
| Θ(30°)   | -1.02/-1.29   | -2.15/-2.89   | -3.73/-5.64   | -8.39/-10.37  | -18.49/-18.69 | -19.09/-13.57  | -9.59/-7.77    | -5.46/-4.9     | -3.88/-2.8     | -3.65/-3.37    | -2.38/-1.43    | -1.27/-2.25    | -4.15/-5.49    | -8.89/-15.39   | -16.5/-11.77   | -9.79/-7.55    | -4.92/-4.14    | -3/-1.5        |
| Θ(40°)   | -2.24/-1.97   | -2.85/-3.43   | -3.67/-4.5    | -5.28/-8.35   | -13.92/-16.12 | -12.19/-16.12  | -12.19/-16.12  | -4.68/-7.15    | -7.49/-3.73    | -2.84/-1.37    | -18.83/-17.91  | -1.16/-2.17    | -2.56/-2.9     | -7.39/-4.42    | -2.82/-1.52    | -2.82/-1.52    | -2.76/-2.1     | -2.76/-2.1     |
| Θ(50°)   | -7.15/-8.11   | -8.79/-8.81   | -8.49/-8.2    | -6.25/-6.83   | -9.54/-10.51  | -11.09/-11.64  | -9.22/-12.2    | -10.56/-9.01   | -5.42/-4.72    | -3/-1.91       | -1.88/-1.68    | -1.32/-1.27    | -2.99/-7.7     | -14.64/-18.07  | -17.21/-16.02  | -10.63/-9.6    | -9.13/-7.13    | -5.76/-6.05    |
| Θ(60°)   | -6.86/-6.34   | -6.21/-6.25   | -8.31/-10.81  | -13.11/-14.75 | -17.21/-11.36 | -10.82/-14.06  | -5.89/-8.26    | -9.59/-7.64    | -5.45/-4.32    | -3.64/-2.24    | -2.31/-1.56    | -4.22/-8.77    | -16.08/-17.83  | -19.17/-11.8   | -11.96/-12.68  | -8.41/-8.74    | -9.21/-8.23    | -9.21/-8.23    |
| Θ(70°)   | -13.44/-11.59 | -9.03/-8.39   | -9.45/-12.88  | -14.79/-13.05 | -12.16/-12.04 | -8.71/-17.81   | -4.87/-10.69   | -11.43/-11.35  | -8.35/-5.59    | -4.71/-3.92    | -4.21/-4.62    | -15.9/-18.71   | -17.74/-12.09  | -13.91/-13.87  | -11.74/-12.61  | -10.61/-12.72  | -10.61/-12.72  | -10.61/-12.72  |
| Θ(80°)   | -16.84/-10.63 | -9/-10.33     | -13.09/-16.89 | -14.6/-17.89  | -17.77/-18.1  | -12.36/-17.1   | -15.17/-17.42  | -18.89/-18.95  | -9.05/-6.49    | -6.14/-5.92    | -6.57/-7.98    | -7.27/-7.42    | -6.11/-10.43   | -16.91/-14.89  | -17.92/-18.28  | -15.83/-18.45  | -16.85/-15.12  | -18.7/-18.27   |
| Θ(90°)   | -10.27/-12.25 | -15.3/-17.83  | -15.96/-14.69 | -11.21/-11.37 | -10.56/-13.64 | -12.15/-18.5   | -16.59/-16.04  | -16.32/-18.18  | -18.68/-15.22  | -6.66/-4.67    | -5.25/-10.7    | -8.78/-6.61    | -5.7/-6.29     | -16.61/-14.12  | -18.06/-16.87  | -18.09/-17.29  | -16.41/-17.96  | -14.56/-14.4   |
| Θ(100°)  | -18.28/-18.56 | -17.42/-17.64 | -18.09/-11.61 | -10.43/-14.98 | -17.99/-16.16 | -17.02/-12.29  | -18.1/-17.71   | -14.28/-16.59  | -12.49/-16.14  | -8.72/-7.3     | -5.91/-9.6     | -13.98/-10.72  | -12.49/-10.72  | -15.24/-11.94  | -12.78/-13.52  | -17.83/-16.85  | -18.12/-15.41  | -13.63/-17.76  |
| Θ(110°)  | -18.48/-18.25 | -17.79/-18.61 | -14.18/-18.6  | -17.94/-15.65 | -8.89/-11.56  | -14.55/-14.9   | -11.62/-13.11  | -10.69/-13.25  | -18.46/-12.89  | -7.26/-7.67    | -8.33/-15.14   | -15.61/-14.26  | -12.19/-14.36  | -13.1/-11.53   | -9.97/-14.62   | -18.14/-11     | -16.76/-18.85  | -19.38/-17.36  |
| Θ(120°)  | -16.15/-17.23 | -17.67/-14.64 | -18.76/-13.05 | -7.65/-10.67  | -16.67/-17.12 | -8.91/-7.95    | -6.9/-11.72    | -14.23/-14.53  | -18.54/-17.74  | -14.3/-10.35   | -8.86/-14.57   | -17.75/-13.62  | -18.38/-13.68  | -17.16/-10.4   | -14.33/-16.09  | -15.31/-16.09  | -18.5/-17.72   | -19.13/-17.76  |
| Θ(130°)  | -19.32/-18.61 | -18.87/-17.93 | -18.72/-15.17 | -10.46/-12.15 | -14.17/-16.7  | -17.39/-16.32  | -12.58/-9.82   | -10.35/-14.27  | -12.25/-12.44  | -19.09/-9.49   | -10.79/-11.83  | -12/-12.65     | -12.23/-13.61  | -13.05/-12.11  | -12.14/-16.19  | -16.41/-18     | -19.09/-17.32  | -13.98/-14.87  |
| Θ(140°)  | -15.44/-18.05 | -19.25/-18.93 | -19.48/-18.28 | -18.25/-17.87 | -12.77/-14.24 | -14.32/-12.45  | -11.26/-13.73  | -10.82/-16.9   | -11.48/-10.51  | -16.76/-16.32  | -17.47/-14.11  | -15.61/-12.92  | -15.03/-15.21  | -11.23/-15.27  | -17.47/-14.11  | -15.91/-15.47  | -17.87/-16.73  | -18.43/-18.77  |
| Θ(150°)  | -11.63/-14.99 | -17.31/-15.26 | -13.38/-14.71 | -15.02/-15.68 | -17.23/-18.9  | -17.58/-12.23  | -10.73/-13.59  | -11.49/-8.75   | -10.27/-13.95  | -18.37/-14.8   | -18.2/-18.99   | -17.03/-17.3   | -12.93/-14.35  | -19.01/-13.62  | -15.93/-16.93  | -18.83/-16.71  | -13.95/-15.27  | -16.57/-15.05  |
| Θ(160°)  | -9.93/-12.33  | -16.74/-18.69 | -18.18/-17.89 | -16.26/-18.75 | -17.98/-18.38 | -18.63/-18.52  | -17.94/-17.81  | -12.3/-9.41    | -9.87/-13.72   | -17.52/-12.76  | -13.68/-18.66  | -17.22/-18.11  | -18.35/-16.14  | -13.27/-12.21  | -15.4/-17.88   | -17.93/-17.5   | -19.33/-18.71  | -18.67/-11.29  |
| Θ(170°)  | -17.42/-18.69 | -11.23/-8.93  | -10.4/-11.94  | -16.96/-18.3  | -17.81/-14.29 | -15.99/-16.82  | -18.67/-17.99  | -16.68/-13.18  | -10.13/-9.06   | -9.13/-9.44    | -11.27/-12.15  | -12.71/-12.15  | -11.95/-14.12  | -16.22/-19.24  | -18.04/-17.58  | -18.06/-18.38  | -18.06/-18.38  | -18.06/-18.38  |
| Θ(180°)  | -17.81/-18.73 | -18.19/-18.29 | -16.04/-14.75 | -12.93/-12.15 | -11.06/-11.14 | -11.33/-13.62  | -14.61/-16.86  | -17.17/-16.37  | -17.94/-18.1   | -15.14/-13.15  | -11.68/-11.09  | -11.16/-13.02  | -13.23/-16.26  | -16.29/-17.24  | -16.04/-17.78  | -14.08/-12.77  | -15.15/-16.49  | -15.85/-17.27  |
| Freq(Hz) | 5.785GPol.    | PhiAnt. 2     | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -13.68/-17.73 | -16.41/-9.42  | -5.9/-3.55    | -1.51/-0.6    | 0.21/0.58     | 0.85/0.5       | 0.03/-0.7      | -2.17/-4.09    | -6.71/-11.64   | -17.97/-16.97  | -9.53/-6.15    | -3.49/-2.51    | -1.47/-0.91    | -0.59/0.02     | -0.04/-0.81    | -1.41/-1.81    | -2.94/-4.14    | -6.56/-9.52    |
| Θ(10°)   | -18.46/-12.66 | -8.57/-5.68   | -3.93/-2.79   | -1.53/-0.84   | -0.48/-0.88   | -0.87/-1.01    | -1.6/-2.38     | -3.22/-4.99    | -6.47/-8.31    | -10.06/-10.93  | -10.2/-8.85    | -7.29/-5.49    | -3.84/-2.21    | -0.95/-0.04    | 0.24/0.37      | -0.1/-1.07     | -2.51/-4.85    | -8.71/-17.07   |
| Θ(20°)   | -18.7/-9.82   | -6.39/-3.73   | -1.8/-0.84    | -3.41/-5.02   | -1.02/-1.34   | -2.04/-2.6     | -2.81/-3.75    | -1.37/-1.75    | -10.74/-13.18  | -12.26/-10.71  | -1.72/0.01     | -7.23/-5.56    | -4.31/-3.41    | -0.25/-0.33    | -0.99/-1.87    | -3.21/-5.33    | -9.17/-18.02   | -9.17/-18.02   |
| Θ(30°)   | -19.32/-16.64 | -7.5/-6.34    | -1.91/-0.98   | -0.78/-1.23   | -1.56/-1.95   | -2.26/-2.06    | -2.02/-2.75    | -4.67/-7.13    | -9.6/-9.51     | -10.92/-16.44  | -16.41/-8.11   | -4.05/-2.67    | -2.46/-2.3     | -1.83/-1.47    | -1.13/-0.61    | -0.75/-1.39    | -2.17/-3.98    | -8.68/-10.83   |
| Θ(40°)   | -9.04/-5.61   | -4.19/-3.26   | -1.75/0.32    | 1.38/0.84     | 0.54/1.64     | 2.58/2.46      | 0.68/-1.91     | -4.56/-7.29    | -9.79/-11      | -12.02/-19.17  | -17.51/-8.72   | -5.07/-3.31    | -1.74/-1.13    | -0.27/0.23     | -0.91/-1.2     | -1.13/-2.37    | -6.86/-11.78   | -13.57/-11.13  |
| Θ(50°)   | -11.01/-9.23  | -8.97/-8.16   | -6.62/-2.39   | 1.04/2.04     | 3.31/3.99     | 4.54/4.82      | 3.55/-0.22     | -5.31/-6.55    | -8.55/-11.66   | -4.37/-0.9     | -12.91/-9.08   | -4.02/0.26     | -0.11/0.57     | -0.95/-5.71    | -12.26/-15.21  | -0.95/-5.71    | -18.83/-16.38  | -18.83/-16.38  |
| Θ(60°)   | -18.12/-18.18 | -17.92/-9.59  | -7.71/-5.86   | -3.88/0.89    | 44.09         | 3.45/3.56      | 3.12/1.12      | -1.9/-5.53     | -7.37/-9.71    | -9.55/-10.05   | -12.13/-5.74   | -2.96/-1.29    | 0.5/0.6        | 0.02/0.51      | -2.32/-0.68    | -1.48/-9.67    | -16.38/-19.3   | -14.55/-15.06  |
| Θ(70°)   | -11.78/-13.21 | -15.57/-12.84 | -7.39/-4.79   | -2.85/-1.18   | 4.21/4.69     | 5.51/4.39      | 2.3            |                |                |                |                |                |                |                |                |                |                |                |



# Radiated Composite Gain Data

# Appendix A

|          |               |               |               |               |               |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(150°)  | -17.49/-17.64 | -14.38/-13.38 | -13.38/-13.24 | -13.17/-11.51 | -9.47/-8.94   | -9.67/-11.63   | -15.86/-18.43  | -18.92/-19.08  | -17.79/-17.01  | -13.82/-12.46  | -11.12/-9.79   | -9.45/-10.68   | -13.63/-16.34  | -17.37/-15.61  | -14.02/-13.56  | -15.61/-18.63  | -18.67/-18.47  | -18.51/-18.82  |
| Θ(160°)  | -15.73/-14.46 | -13.87/-13.28 | -11.77/-10.07 | -8.53/-7.29   | -6.48/-6.49   | -6.42/-7.31    | -7.73/-9.21    | -11.07/-12.52  | -13.02/-13.04  | -12.37/-12.5   | -14.45/-15.67  | -18.27/-18.11  | -15.44/-13.98  | -13.4/-12.81   | -12.6/-12.61   | -13.7/-14.07   | -13.51/-12.99  | -12.99/-12.87  |
| Θ(170°)  | -12.01/-11.85 | -11.71/-11.83 | -11.78/-11.55 | -12.81/-12.17 | -12.42/-11.96 | -11.71/-10.35  | -8.6/-8.72     | -11.71/-10.35  | -10.74/-12.5   | -11.46/-11.74  | -17.85/-18.55  | -17.51/-14.91  | -12.93/-12.23  | -11.46/-11.67  | -11.92/-12.18  | -12.65/-13.02  | -12.36/-12.11  | -11.48/-11.87  |
| Θ(180°)  | -12.42/-12.51 | -13.48/-15.13 | -16.4/-19.43  | -18.51/-19.19 | -19.25/-16.65 | -13.89/-11.97  | -11.06/-10.73  | -10.23/-10.35  | -10.45/-11.84  | -12.98/-14.84  | -14.99/-14.11  | -14.6/-16.04   | -18.02/-18.9   | -18.38/-17.6   | -15.88/-14.22  | -14.27/-13.66  | -13.47/-14.07  | -14.26/-13.41  |
| Freq(Hz) | 5.2GPol.      | PhiAnt. 3     | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -6.64/-6.89   | -7.47/-7.6    | -7.99/-8.56   | -10.11/-11.32 | -12.84/-13.79 | -12.76/-11.08  | -9.51/-8.66    | -7.53/-6.84    | -7.01/-7.79    | -7.61/-6.98    | -7.41/-9.21    | -10.76/-12.15  | -14.04/-13.52  | -12.18/-11.39  | -11.09/-11.88  | -10.44/-10.06  | -9.98/-9.97    | -8.09/-9.08    |
| Θ(10°)   | -5.79/-6.51   | -7.27/-8.87   | -11.97/-16.05 | -18.49/-18.24 | -16.61/-14.75 | -13.92/-14.71  | -14.42/-11     | -7.38/-5.14    | -3.78/-3.26    | -3.69/-4.1     | -4.36/-4.4     | -4.99/-5.98    | -7.91/-10.01   | -11.92/-13.6   | -11.87/-8.87   | -6.92/-5.81    | -4.96/-5.09    | -4.9/-4.95     |
| Θ(20°)   | -16.17/-15.91 | -12.81/-11.31 | -10.47/-12.42 | -15.07/-18.22 | -19.21/-11.58 | -9.48/-10.92   | -10.77/-7.35   | -3.05/-3.82    | -4.75/-7.16    | -9.9/-10.69    | -10.3/-9.77    | -12.14/-14.33  | -17.42/-16.21  | -11.23/-7.94   | -6.21/-5.77    | -6.86/-8.74    | -10.62/-13.15  | -10.62/-13.15  |
| Θ(30°)   | -13.89/-14.11 | -12.7/-12.13  | -11.03/-10.18 | -10.82/-16.39 | -15.19/-8.15  | -6.16/-10.07   | -13.41/-7.61   | -5.17/-5.22    | -8.33/-13.36   | -15.18/-15.73  | -18.53/-19.04  | -18.84/-15.57  | -13.85/-16.76  | -17.82/-18.19  | -15.42/-10.55  | -9.74/-12.03   | -17.31/-17.49  | -15.35/-13.07  |
| Θ(40°)   | -6.99/-6.85   | -7.08/-6.53   | -7.47/-8.88   | -8.08/-8.07   | -16.01/-10.14 | -6.63/-14.63   | -9.56/-6.31    | -5.35/-7.1     | -8.08/-7.32    | -6.9/-8.39     | -9.2/-11.26    | -19.22/-17.7   | -16.79/-18.7   | -18.55/-19.18  | -16.83/-14.91  | -15.51/-12.99  | -11/-9.49      | -8.06/-8.09    |
| Θ(50°)   | -11.59/-10.66 | -10.58/-9.29  | -8.78/-11.34  | -13.91/-8.15  | -12.77/-13.83 | -9.75/-14.2    | -5.81/-7.54    | -18.58/-16.17  | -16.77/-18.72  | -18.97/-17.69  | -13.8/-9.79    | -13.91/-18.84  | -18.56/-16.9   | -18.91/-17.21  | -14.79/-10.94  | -13.57/-16.28  | -15.02/-15.09  | -14.86/-11.91  |
| Θ(60°)   | -9.18/-10.46  | -13.07/-15.02 | -13.84/-18.33 | -15.76/-11.11 | -12.78/-18.97 | -15.93/-10.1   | -8.89/-15.94   | -9.11/-8.22    | -12.99/-12.75  | -13.5/-11.74   | -14.49/-17.81  | -18.58/-17.36  | -18.8/-18.31   | -17.62/-17.45  | -16.29/-15.06  | -17.97/-16.67  | -18.92/-18.64  | -11.81/-8.59   |
| Θ(70°)   | -10.23/-11.96 | -11.35/-8.43  | -6.17/-11.19  | -15.51/-9.43  | -8.44/-12.32  | -9.48/-8.03    | -6.96/-6.79    | -11.55/-17.39  | -12.91/-12.46  | -13.76/-18.21  | -18.9/-19.65   | -17.71/-19.02  | -19.02/-18.69  | -18.52/-18.77  | -13.75/-15.18  | -16.51/-19.2   | -14.72/-10.82  | -8.16/-8.58    |
| Θ(80°)   | -11.56/-10.91 | -7.19/-6.01   | -6.11/-8.41   | -14.56/-15.99 | -11.41/-10.29 | -10.07/-12.23  | -15.32/-17.56  | -16.02/-17.39  | -15.07/-12.16  | -18.96/-18.26  | -17.85/-11.97  | -17.89/-17.97  | -19.11/-15.96  | -18.96/-18.86  | -17.85/-11.95  | -12.64/-12.74  | -12.38/-14.82  | -12.38/-14.82  |
| Θ(90°)   | -17.37/-11.35 | -8.94/-10.16  | -6.77/-6.58   | -7.63/-9.4    | -9.02/-10.7   | -10.89/-12.28  | -14.47/-11.3   | -7.78/-9.92    | -12.51/-9.52   | -13.36/-17.98  | -18.43/-19.05  | -16.62/-17.97  | -18.93/-14.43  | -14.6/-17.87   | -14.18/-12.71  | -14.31/-17.84  | -12.17/-10.98  | -10.74/-11.43  |
| Θ(100°)  | -18.13/-18.77 | -18.01/-9.25  | -4.3/-5.05    | -4.87/-4.67   | -8.71/-8.61   | -10.66/-10.26  | -14.52/-9.42   | -13.62/-10.91  | -7.67/-7.1     | -8.74/-13.95   | -12.75/-16.51  | -18.01/-17.64  | -17.58/-15.73  | -18.08/-16.28  | -13.23/-14.07  | -17.36/-15.98  | -17.46/-11.71  | -9.98/-10.23   |
| Θ(110°)  | -6.05/-8.05   | -9.97/-9.3    | -9.47/-13.67  | -5.72/-4.75   | -8.98/-10.8   | -13.33/-8.24   | -18.17/-13.58  | -8.99/-10.74   | -11.41/-10.18  | -10.44/-12.12  | -14.55/-13.51  | -12.76/-10.94  | -18.98/-15.54  | -15.13/-16.58  | -14.11/-17.36  | -10.88/-8.33   | -10.88/-8.33   | -10.88/-8.33   |
| Θ(120°)  | -8.69/-7.65   | -10.4/-18.77  | -17.37/-18.74 | -10.14/-5.46  | -11.81/-19.01 | -15.11/-8.99   | -9.87/-14.97   | -16.75/-15.19  | -11.32/-9.11   | -10.49/-8.87   | -8.56/-11.71   | -10.68/-14.53  | -12.93/-13.84  | -15.11/-16.62  | -15.37/-11.47  | -10.16/-7.4    | -7.76/-12.63   | -18.85/-11.95  |
| Θ(130°)  | -10.91/-8.3   | -8.78/-7.77   | -9.59/-13.69  | -7.72/-7.17   | -14.66/-18.14 | -17.26/-9.47   | -8.53/-17.68   | -9.98/-13.74   | -10.1/-11.26   | -18.52/-18.93  | -14.27/-10.62  | -18.58/-19.39  | -11.98/-18.4   | -17.91/-17.31  | -18.13/-9.26   | -10.32/-8.14   | -6.42/-9.53    | -14.63/-10.11  |
| Θ(140°)  | -6.19/-7.92   | -8.29/-10.06  | -12.89/-10.67 | -18.28/-17.16 | -17.28/-12.99 | -17.21/-15.15  | -16.75/-11.97  | -18.98/-16.13  | -16.27/-16.31  | -9.46/-12.9    | -15.44/-17.76  | -13.82/-17.99  | -16.59/-15.13  | -17.31/-16     | -15.9/-11.26   | -7.52/-10.97   | -10.95/-8.43   | -10.95/-8.43   |
| Θ(150°)  | -10.05/-10.43 | -15.55/-19.37 | -17.96/-16.14 | -16.25/-15.58 | -14.18/-14.87 | -16.79/-17.72  | -14.52/-12.36  | -14.51/-16.15  | -18.99/-18.59  | -18.16/-15.21  | -13.25/-13.91  | -18.29/-18.35  | -18.5/-17.69   | -13.93/-18.57  | -18.3/-13.26   | -13.74/-18.38  | -18.29/-11.99  | -12.32/-12.75  |
| Θ(160°)  | -14.85/-19.12 | -18.84/-19.26 | -16.38/-16.92 | -16.48/-15.68 | -14.76/-14.55 | -15.2/-17.19   | -19.18/-17.95  | -14.98/-15.12  | -18.24/-19.26  | -16.69/-15.13  | -15.73/-18.12  | -16.25/-14.49  | -18.09/-18.94  | -17.7/-18.62   | -18.83/-18.81  | -18.55/-18.84  | -18.25/-14.11  | -11.6/-11.97   |
| Θ(170°)  | -15.83/-15.17 | -14.88/-15.12 | -16.22/-17.73 | -16.02/-15.54 | -13.6/-14.42  | -18.73/-18.12  | -18.86/-18.69  | -18.73/-18.12  | -17.99/-18.43  | -18.47/-18.01  | -11.97/-11.84  | -13.05/-13.63  | -18.7/-18      | -17.5/-18.02   | -13.61/-14.01  | -14.18/-14.58  | -14.18/-14.58  | -14.18/-14.58  |
| Θ(180°)  | -12.15/-13.51 | -15.67/-14.93 | -13.45/-13.66 | -14.71/-16.26 | -16.97/-19.22 | -17.91/-19.17  | -17.99/-18     | -17.92/-18.22  | -16.5/-15.06   | -14.04/-16.01  | -16.39/-16.63  | -17.95/-18.99  | -18.81/-17.31  | -17.54/-18     | -18.45/-18.79  | -19.22/-18.62  | -17.69/-14.93  | -13.97/-12.46  |
| Freq(Hz) | 5.2GPol.      | ThetaAnt. 3   | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -15.31/-18.48 | -18.25/-16.03 | -14.15/-13.3  | -11.62/-9.01  | -8.08/-7.87   | -8.01/-8.83    | -9.6/-9.86     | -11.48/-14.37  | -19.04/-19.03  | -15.2/-12.85   | -11.21/-9.7    | -9.71/-9.54    | -8.2/-7.91     | -7.62/-7.74    | -8.4/-8.97     | -9.43/-9.08    | -8.72/-9.99    | -11.34/-12.61  |
| Θ(10°)   | -10.75/-9.13  | -7.52/-6.5    | -5.17/-5.25   | -5.47/-6.06   | -6.83/-6.87   | -6.27/-5.53    | -4.69/-5.47    | -5.12/-6.62    | -8.64/-10.27   | -10.75/-13.57  | -16.1/-15.21   | -13.7/-12.89   | -13.18/-12.23  | -11.18/-11.16  | -11.88/-12.15  | -13.96/-17.73  | -17.25/-18.17  | -15.17/-12.67  |
| Θ(20°)   | -18.02/-18.42 | -18.92/-19.04 | -13.75/-9.27  | -6.55/-4.09   | -3.55/-4.23   | -5.07/-4.33    | -7.35/-3.73    | -16.19/-18.69  | -9.64/-7.78    | -10.39/-16.2   | -15.38/-16.13  | -12.62/-14.09  | -17.36/-18.32  | -15.02/-16.2   | -12.02/-14.09  | -13.76/-18.17  | -18.88/-19.28  | -18.88/-19.28  |
| Θ(30°)   | -12.08/-9.41  | -8.17/-7.26   | -7.72/-12.03  | -18.22/-6.77  | -2.97/-2.54   | -4.78/-6.7     | -6.28/-7.46    | -9.1/-12.5     | -15/-17.06     | -17.39/-19.24  | -14.92/-12.77  | -14.98/-16.28  | -10.04/-8.36   | -10.58/-16.93  | -16.71/-11.36  | -11.69/-15.3   | -19.12/-17.55  | -18.52/-16.52  |
| Θ(40°)   | -18.76/-18.42 | -16.65/-12.04 | -9/-10.7      | -9.62/-18.32  | -4.73/-2.8    | -6.71/-9.52    | -5.01/-5.44    | -8.84/-11.42   | -10.81/-12.39  | -12.45/-14.03  | -19.29/-15.4   | -11.39/-18.7   | -15.03/-10.53  | -13.21/-19.38  | -11.75/-13.44  | -15.8/-14.84   | -18.04/-18.71  | -18.68/-18.74  |
| Θ(50°)   | -15.02/-12.1  | -12.53/-19.25 | -12.87/-9.67  | -14.26/-15.1  | -4.13/-1.79   | -17.26/-16.42  | -16.33/-19.25  | -18.73/-17.25  | -16.33/-19.25  | -18.73/-17.25  | -16.33/-19.25  | -18.73/-17.25  | -16.33/-19.25  | -18.73/-17.25  | -16.33/-19.25  | -18.73/-17.25  | -16.33/-19.25  | -18.73/-17.25  |
| Θ(60°)   | -7.37/-5.24   | -5.63/-9.07   | -7.74/-2.09   | -2.24/-4.49   | -5.54/-2.11   | -0.58/-1.24    | -1.1/-5.09     | -4.24/-3.02    | -2.65/-4.94    | -7.96/-17.84   | -18.14/-17.96  | -13.61/-19.11  | -12.86/-12.58  | -17.39/-18.06  | -10.13/-18.43  | -9.88/-14.93   | -18.09/-18.27  | -12.36/-10.71  |
| Θ(70°)   | -3.91/-2.24   | -2.04/-3.26   | -2.74/-2.29   | -2.74/-3.68   | -6.25/-0.4    | 0.20/-9.4      | 0.49/-1.98     | -2.87/-2.02    | -3.81/-1.73    | -4.77/-18.36   | -11.11/-10.69  | -18.74/-13.5   | -15.63/-17.2   | -9.72/-17.6    | -12.31/-19.1   | -17.98/-15.6   | -13.02/-12.7   | -13.02/-12.7   |
| Θ(80°)   | -3.25/-1.98   | -1.85/-1.38   | -1.16/-2.58   | -1.42/-0.31   | 1.13/-0.02    | 1.92/-3        | 0.57/-1.63     | -2.75/-6.67    | -9.31/-9.45    | -4.95/-18.43   | -12.53/-14.54  | -6.81/-8.4     | -17.59/-14.54  | -10.58/-18.43  | -17.59/-14.54  | -10.58/-18.43  | -17.59/-14.54  | -10.58/-18.43  |
| Θ(90°)   | -4.84/-2.78   | -2.41/-1.75   | -2.75/-2.73   | -4.03/-2.85   | -1.89/-0.25   | 1.65/-0.3      | -3.26/-5.96    | -3.3/-1.62     | -3.48/-6.27    | -12.06/-12.69  | -12.21/-12.59  | -12.84/-12.11  | -17.9/-10.76   | -8.05/-7.65    | -9.84/-16.14   | -13.04/-18.99  | -18.43/-18.58  | -9.01/-5.11    |
| Θ(100°)  | -3.05/-2.3    | -2.22/-3.62   | -5.64/-4.14   | -10.86/-8.51  | -3.76/-2.18   | 0.73/-3.15     | -3.89/-3.7     | -2.36/-5.71    | -8.12/-7.43    | -9.4/-6.27     | -9.7/-10.66    | -12.48/-13.98  | -8.79/-12.98   | -7.35/-7.4     | -17.48/-17.21  | -15.61/-19.1   | -16.67/-8.48   | -4.23/-3.01    |
| Θ(110°)  | -6.71/-8.85   | -9.15/-6.7    | -4.07/-5.91   | -13.28/-11.41 | -3.86/-3.65   | -2.16/-6.74    | -5.13/-2.95    | -3.25/-17.99   | -4.77/-5.03    | -6.01/-3.33    | -5.78/-13.53   | -18.08/-18.1   | -8.23/-12.6    | -7.85/-10.43   | -16.82/-19.11  | -12.21/-14.16  | -7.66/-5.02    | -7.66/-5.02    |
| Θ(120°)  | -11.42/-19.92 | -9.53/-6.44   | -7.39/-16.78  | -16.02/-13.76 | -10.46/-5.97  | -10.27/-5.93   | -10.72/-8.25   | -9.34/-13.37   | -15.78/-14.56  | -17.77/-12.39  | -18.69/-15.41  | -13.84/-15.57  | -16.03/-17.33  | -16.03/-17.33  | -16.03/-17.33  | -16.03/-17.33  | -16.03/-17.33  | -16.03/-17.33  |
| Θ(130°)  | -12.61/-11.18 | -12.5/-18.86  | -18.61/-14.13 | -13.89/-15.4  | -18.71/-19.2  | -5.68/-9.62    | -16.07/-17.26  | -10.19/-7.62   | -15.57/-11.2   | -14.3/-18.15   | -12.21/-11.06  | -17.99/-16.01  | -15.36/-10.55  | -6.68/-8.75    | -17.09/-12.2   | -10.17/-12.61  | -10.15/-7.65   | -14.28/-15.14  |
| Θ(140°)  | -17.46/-12.4  | -17.53/-17.1  | -16.82/-13.01 | -15.42/-19.12 | -17.97/-11.97 | -11.11/-11.92  | -14.76/-13.44  | -18.04/-11.55  | -10.93/-18.28  | -15.02/-17.22  | -18.3/-17.17   | -19.32/-18.57  | -14.87/-10.11  | -11.88/-14.13  | -18.16/-9.57   | -8.89/-12.19   | -17.81/-16.72  | -17.81/-16.72  |
| Θ(150°)  | -18.87/-15.5  | -16.45/-18.7  | -17.03/-18.48 | -18.17/-14.12 | -17.97/-14.33 | -18.16/-18.98  | -18.44/-16.64  | -18.77/-18.22  | -18.56/-18.13  | -12.98/-11     | -17.91/-18.52  | -11.55/-12.32  | -13.5/-12.87   | -16.03/-8.31   | -10.81/-15.64  | -15.69/-19.24  | -15.69/-19.24  | -15.69/-19.24  |
| Θ(160°)  | -17.87/-15.75 | -14.14/-13.35 | -13.22/-14.22 | -15.54/-12.74 | -12.53/-16.05 | -12.21/-9.99   | -9.37/-12.01   | -13.5/-14.1    |                |                |                |                |                |                |                |                |                |                |



# Radiated Composite Gain Data

# Appendix A

|          |               |               |               |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Θ(40°)   | -4.29/-5.69   | -8.18/-10.39  | -7.94/-4.77   | -3.33/-2.88   | -1.07/-1.02   | -1.49/-0.38     | -0.82/-1.1      | -3.17/-3.73     | -4.35/-4.58     | -5.73/-9.59     | -12.72/-13.08   | -18.74/-19.2    | -11.82/-8.87    | -16.44/-10.72   | -4.27/-3.92     | -9.93/-11.19    | -6.4/-2.65      | -2.25/-2.79     |
| Θ(50°)   | -4.44/-3.29   | -2.51/-2.61   | -4.46/-4.78   | -1.21/-0.11   | 1.88/0.13     | 0.01/-0.91      | -1.89/0.31      | -2.84/-6.2      | -10.42/-9.21    | -10.05/-12.57   | -17.02/-14.16   | -14.03/-18.14   | -12.1/-15.12    | -10.81/-5.09    | -7.27/-4.65     | -8.65/-16.43    | -4.96/-1.97     | -3.23/-3.33     |
| Θ(60°)   | -2.46/-2.23   | -0.70/0.6     | 0.3/-2.2      | -2.13/-0.34   | 0.05/2.23     | 1.97/-0.11      | 1.62/-1.54      | -10.54/-4.67    | -6.21/-13.94    | -18.27/-13.36   | -7.05/-6.68     | -13.11/-18.33   | -16.01/-10.14   | -12.59/-6.8     | -16.01/-8.72    | -6.17/-4.25     | -3.32/-2.71     |                 |
| Θ(70°)   | -3.66/-4.19   | -2.73/-1.45   | -0.73/-5.18   | -6.3/-4.32    | -0.13/-0.53   | 1.31/37         | 0.75/-6.79      | -7.53/-1.28     | -2.13/-3.9      | -3.52/-6.72     | -7.9/-7.09      | -8.37/-11.58    | -6.92/-16.11    | -19.39/-15.82   | -18.42/-10.13   | -12.36/-12.17   | -4.69/-4.48     | -5.35/-5.39     |
| Θ(80°)   | -1.24/-0.79   | -0.94/-1.4    | -2.28/-3.01   | -2.31/-3.4    | -2.42/0.36    |                 | 4.16/0.52       | -2.91/-2.2      | -1.1/-0.11      | -4.09/-4.28     | -4.29/-6.36     | -7.09/-6.11     | -5.48/-6.87     | -9.04/-9.47     | -13.01/-9.75    | -9.84/-18.57    | -5.49/-7.7      | -10.07/-5.94    |
| Θ(90°)   | -1.5/-2.16    | -5.36/-5.32   | -3.65/-2.83   | -4.85/-6.18   | -4.01/1.85    | 1.81/1.72       | 0.38/-2.49      | -3.18/-1.04     | -0.3/-4.66      | -2.19/-0.93     | -4.51/-4.86     | -8.11/-8.81     | -9.32/-6.29     | -3.05/-8.56     | -9.27/-6.31     | -8.11/-7.88     | -3.5/-3.99      | -4.56/-4.01     |
| Θ(100°)  | -7.8/-8.99    | -10.56/-3.01  | -1.02/-4.76   | -1.84/-7.02   | -18.47/-0.57  | 2.96/2.74       | -6.81/-1.88     | -4.59/-0.57     | -5.34/-17.27    | -7.63/-3.9      | -5.03/-11.95    | -9.75/-0.43     | -2.78/-3.51     | -7.43/-18.28    | -6.14/-8.45     | -8.01/-9.48     | -4.32/-3.15     | -4.56/-5.38     |
| Θ(110°)  | -6.58/-8.2    | -4.78/-2.27   | -4.19/-3.85   | -4.67/-18.15  | -6.99/-1.35   | -1.81/-0.49     | -5.3/-6.18      | -6.26/-6.13     | -5.29/-18.01    | -5.04/-1.95     | -13.01/-12.6    | -6.54/-11.91    | -6.76/-9.18     | -6.78/-17.38    | -8.6/-9.86      | -18.4/-10.71    | -7.47/-5.9      | -9.06/-6.08     |
| Θ(120°)  | -7.35/-6.29   | -6.49/-5.67   | -3.5/-6.29    | -14.04/-7.44  | -8.12/-16.27  | -2.58/-1.48     | -5.94/-5.07     | -1.52/-12.32    | -12.53/-11.37   | -16.37/-5.66    | -4.13/-7.81     | -7.8/-4.18      | -9.7/-12.53     | -5.6/-19.85     | -17.92/-8.79    | -6.67/-18.16    | -7.35/-8.62     | -11.34/-8.32    |
| Θ(130°)  | -11.93/-7.6   | -5.04/-4.35   | -6.74/-12.35  | -16.62/-6.53  | -7.36/-10.25  | -4.21/-6.15     | -16.38/-8.4     | -11.45/-5.92    | -9.13/-6.51     | -6.52/-10.66    | -9.9/-14.38     | -5.27/-5.67     | -13.34/-5.41    | -5.45/-13.88    | -8.93/-10.11    | -4.9/-8.07      | -7.63/-7.52     | -12.09/-18.95   |
| Θ(140°)  | -4.83/-5.47   | -6.25/-18.7   | -17.25/-18.54 | -15.57/-7.37  | -7.66/-12.23  | -10.38/-9.35    | -11.38/-8.29    | -17.67/-8.78    | -10.28/-0.92    | -4.35/-11.26    | -14.48/-9.72    | -8.27/-12.82    | -6.2/-9.58      | -11.1/-11.61    | -10.67/-15.58   | -6.42/-6.42     | -4.29/-3.82     | -10.4/-11.4     |
| Θ(150°)  | -7.87/-4.9    | -6.17/-6.76   | -10.85/-19.06 | -14.8/-9.19   | -7.75/-6.73   | -9.94/-13       | -4.24/-4.5      | -8.49/-14.56    | -16.24/-14.19   | -15.34/-15.33   | -9.94/-13       | -11.7/-13.72    | -11.57/-10.91   | -8.13/-8.92     | -10.31/-12.42   | -6.15/-6.59     | -10.95/-13.02   | -18.88/-12.46   |
| Θ(160°)  | -18.06/-18.39 | -18.87/-12.88 | -10.1/-9.84   | -9.75/-8.2    | -5.72/-5.39   | -6.13/-8.64     | -11.73/-15.22   | -18.42/-17.99   | -18.86/-17.52   | -11.68/-11.6    | -10.28/-9.81    | -14.46/-18.58   | -15.81/-17.95   | -18.41/-13.46   | -11.39/-12.35   | -17.35/-12.97   | -13.06/-19.36   | -17.36/-17.59   |
| Θ(170°)  | -11.23/-12.54 | -12.95/-11.9  | -11.38/-10.77 | -10.5/-7.86   | -6.73/-6.68   | -6.05/-6.58     | -7.6/-8.31      | -10.78/-13.21   | -13.37/-14.73   | -16.22/-11.74   | -18.53/-18.2    | -15.95/-15.39   | -14.34/-14.9    | -18.57/-17.85   | -14.85/-16.63   | -18.11/-16.75   | -13.37/-13.4    | -11.51/-11.41   |
| Θ(180°)  | -17.68/-16.68 | -17.29/-16.78 | -18.43/-18.79 | -19.07/-18.35 | -19.31/-18.3  | -18.21/-18.23   | -18.33/-15.46   | -13.41/-13.08   | -11.23/-11.39   | -10.65/-11.34   | -12.16/-13.24   | -12.15/-13.58   | -14.17/-15.47   | -18.15/-18.24   | -14.67/-11.84   | -13.67/-18.45   | -18.63/-17.6    | -17.47/-15.45   |
| Freq(Hz) | 5.785GPol.    | PhiAnt. 3     | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -4.00/-4.39   | -4.99/-5.62   | -7.88/-9.85   | -11.81/-16.1  | -17.95/-14.2  | -9.63/-6.92     | -5.5/-3.96      | -3.67/-3.15     | -2.9/-2.99      | -1.96/-16.31    | -8.76/-5.3      | -8.26/-11.97    | -16.96/-16.31   | -8.76/-3.71     | -12.93/-11.39   | -6.76/-5.33     | -5.52/-4.43     | -3.89/-3.33     |
| Θ(10°)   | -5.71/-6.57   | -7.25/-8.9    | -10.11/-13.17 | -16/-15.63    | -15.59/-10.83 | -7.96/-7.29     | -8.26/-10.02    | -10.38/-9.18    | -7.35/-5.6      | -5.47/-5.65     | -5.76/-5.45     | -5.94/-7.9      | -11.03/-13.5    | -14.92/-9.6     | -5.75/-3.85     | -2.57/-2.37     | -2.82/-2.65     | -3.23/-4.2      |
| Θ(20°)   | -12.19/-13.02 | -13.16/-15.11 | -14.63/-14.57 | -12.21/-11.75 | -18.15/-19.37 | -10.12/-5.89    | -12.97/-18.41   | -8.42/-3.76     | -1.2/-0.12      | 0.22/0.25       | -0.05/-1.05     | -2.41/-4        | -7.85/-14.16    | -17.54/-9.44    | -4.85/-3.97     | -4.27/-8.41     | -6.5/-0.84      | -9.19/-11.54    |
| Θ(30°)   | -19.2/-17.64  | -12.51/-7.45  | -5.47/-1.12   | -11.83/-9.45  | -8.27/-13.48  | -16.69/-12.25   | -18.99/-3.98    | -16.69/-12.25   | -4.03/-5.83     | -6.88/-7.59     | -7.56/-5.91     | -5.31/-7.46     | -10.96/-13.06   | -10.55/-12.42   | -9.07/-6.76     | -11.68/-15.05   | -17.68/-18.46   |                 |
| Θ(40°)   | -13.83/-10.77 | -9.73/-6.41   | -4.47/-3.87   | -5.2/-11.55   | -18.48/-11.96 | -11.35/-11.43   | -6.87/-1.68     | -0.17/-2.13     | -4.05/-4.84     | -6.03/-6.55     | -7.92/-12.71    | -12.08/-11.49   | -10.21/-10.49   | -18.88/-19.29   | -18.56/-17.87   | -10.05/-10.29   | -11.27/-12.14   | -18.49/-18.24   |
| Θ(50°)   | -16.54/-9.86  | -12.47/-18.34 | -8.22/-8.62   | -5.09/-11.2   | -6.25/-11.29  | -8.12/-5.24     | -10.07/-6.26    | -11.81/-17.91   | -10.67/-9.63    | -7.19/-8.96     | -9.28/-13.99    | -13.83/-12.83   | -16.19/-18.96   | -11.93/-15.35   | -18.48/-16.62   | -7.88/-6.83     | -5.4/-7.79      | -11.34/-13.93   |
| Θ(60°)   | -14.63/-6.72  | -6.09/-12.48  | -14.11/-15.36 | -11.86/-17.27 | -4.24/-9.52   | -6.89/-6.68     | -6.54/-5.53     | -13.48/-10.23   | -8.68/-6.24     | -10.33/-15.61   | -11.64/-9.14    | -17.94/-13.01   | -16.33/-18.6    | -17.81/-18.57   | -18.81/-16.58   | -8.83/-11.59    | -13.82/-11.94   |                 |
| Θ(70°)   | -14.16/-18.25 | -16.11/-11.43 | -16.84/-8.99  | -8.22/-15.94  | -6.33/-13.6   | -10.35/-7.26    | -6.05/-8.22     | -10.62/-4.22    | -4.06/-9.89     | -12.08/-14.32   | -12.46/-14.18   | -16.23/-18.93   | -16.06/-11.86   | -18.47/-18.82   | -18.68/-10.51   | -12.09/-8.53    | -17.52/-18.3    | -18.26/-14.09   |
| Θ(80°)   | -18.59/-18.83 | -8.61/-4.94   | -10.77/-10.04 | -12.32/-18.62 | -12.21/-7.37  | -13.26/-13.25   | -17.66/-11.96   | -3.79/-5.62     | -13.17/-10.6    | -9.68/-6.9      | -8.95/-18.47    | -17.96/-15.54   | -17.5/-13.53    | -15.7/-19.29    | -8.39/-10.75    | -7.68/-8.38     | -16.13/-8.4     | -7.33/-18.63    |
| Θ(90°)   | -11.93/-10.19 | -14.95/-18.78 | -8.74/-15.71  | -5.3/-17.64   | -18.17/-3.54  | -18.02/-8.16    | -16.64/-16.04   | -7.19/-13.09    | -7.38/-7.91     | -14.64/-9.88    | -6.88/-10.3     | -12.76/-15.17   | -16.21/-17.96   | -13.78/-17.63   | -19.1/-17.63    | -7.63/-18.03    | -11.83/-12.45   | -18.6/-17.3     |
| Θ(100°)  | -12.28/-8.78  | -5.27/-6.64   | -5.27/-5.74   | -5.1/-11.29   | -8.65/-6.29   | -18.28/-18.22   | -8.47/-17.82    | -9.73/-2.74     | -0.85/-1.21     | -2.42/-9.28     | -18.82/-9.97    | -16.88/-13.43   | -16.01/-14.22   | -18.68/-13.43   | -19.29/-12.47   | -16.11/-13.41   | -9.72/-14.81    |                 |
| Θ(110°)  | -10.26/-7.97  | -5.81/-7.33   | -6.92/-4.64   | -7.51/-8.28   | -13.24/-8.77  | -17.47/-13.63   | -6.82/-9.32     | -8.05/-4.36     | -5.66/-7.61     | -6.93/-9.05     | -13.46/-7.25    | -16.72/-13.89   | -12.62/-15.17   | -10.92/-15.45   | -19.39/-15.54   | -17.41/-12.03   | -13.85/-13.49   |                 |
| Θ(120°)  | -5.87/-5.66   | -4.34/-7.61   | -11.85/-7.28  | -10.81/-13.79 | -11.4/-18.36  | -17.78/-17.66   | -9.95/-11.07    | -4.98/-1.31     | -4.24/-4.55     | -1.09/-2.19     | -5.08/-7.32     | -13.63/-9.97    | -17.48/-13.36   | -17.98/-14.03   | -7.71/-17.09    | -17.78/-9.8     | -6.18/-6.91     | -17.8/-12.42    |
| Θ(130°)  | -18.44/-10.86 | -9.8/-7.62    | -2.48/-5.76   | -12.78/-12.43 | -3.63/-7.43   | -10.45/-10.58   | -9.85/-3.39     | -4.77/-5.52     | -14.82/-8.73    | -11.16/-15.5    | -13.46/-13.78   | -10.1/-13.04    | -11.54/-14.21   | -5.02/-7.73     | -5.49/-5.03     | -4.71/-5.12     | -7.9/-14.18     |                 |
| Θ(140°)  | -15.53/-17.54 | -9.46/-4.96   | -6.02/-4.79   | -8.72/-15.43  | -14.11/-9.33  | -8.41/-3.76     | -2.34/-2.55     | -5.99/-6.27     | -11.72/-8.17    | -4.12/-5.2      | -7.67/-12.2     | -14.97/-15.38   | -9.03/-17.22    | -16.08/-17.53   | -19/-13.2       | -11.83/-6.43    | -6.36/-6.86     | -5.66/-7.82     |
| Θ(150°)  | -15.59/-10.88 | -11.09/-11.68 | -13.18/-16.88 | -18.38/-7.62  | -5.58/-13.43  | -10.29/-3.83    | -4.31/-10.9     | -16.31/-18.6    | -16.49/-18.63   | -18.17/-8.14    | -4.23/-2.91     | -6.22/-18.66    | -11.28/-13.74   | -18.01/-13.66   | -7.06/-9.64     | -10.1/-18.62    | -14.1/-10.52    | -14.45/-18.28   |
| Θ(160°)  | -9.12/-10.17  | -9.17/-9.2    | -6.96/-3.52   | -1.64/-0.85   | -2.09/-5.32   | -6.54/-5.05     | -6.16/-8.44     | -10.96/-18.01   | -16.88/-14.02   | -10.83/-10.66   | -16.86/-17.6    | -18.56/-18.96   | -16.86/-17.6    | -18.56/-18.18   | -10.29/-10.41   | -16.11/-13.41   | -4.01/-6.46     |                 |
| Θ(170°)  | -14.08/-11.38 | -8.82/-6.19   | -5.71/-7.24   | -8.21/-8.08   | -8.08/-8.3    | -12.98/-18.13   | -17.95/-18.35   | -15.03/-13.71   | -14.65/-18.09   | -18.76/-10.69   | -12.76/-15.8    | -18.83/-17.46   | -13.78/-12.13   | -14.11/-18.73   | -18.41/-11.85   | -10.52/-9.96    | -10.39/-11.5    | -13.47/-14.31   |
| Θ(180°)  | -15.9/-17.79  | -18.53/-18.36 | -18.35/-19.04 | -17.69/-19.16 | -17.44/-17.27 | -17.37/-16.89   | -14.21/-11.82   | -11.32/-12.57   | -12.9/-14.25    | -19.16/-18.99   | -19.34/-18.43   | -18.07/-19.35   | -17.55/-18.18   | -18.58/-17.83   | -18.33/-18.95   | -17.32/-17.81   | -18.39/-16.02   | -13.82/-14.34   |
| Freq(Hz) | 5.785GPol.    | ThetaAnt. 3   | -             | -             | -             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ(0°)    | -15.06/-11.85 | -10.18/-8.12  | -7.81/-5.72   | -4.38/-3.58   | -3.48/-4.04   | -4/-5.36        | -6.68/-9.1      | -11.92/-16.45   | -15.22/-13.23   | -11.36/-8.3     | -6.58/-5.93     | -5/-3.85        | -3.36/-2.99     | -3.17/-3.99     | -4.88/-5.6      | -6.98/-8.36     | -11.51/-14.68   | -17.12/-18.17   |
| Θ(10°)   | -8.96/-7.35   | -6.03/-4.61   | -4.93/-4.59   | -3.58/-2.10   | -2.98/-3.02   | -4.13/-6.43     | -9.81/-9.35     | -10.02/-10.1    | -13.31/-10.53   | -11.74/-17.06   | -18.52/-17.87   | -14.05/-10.29   | -6.5/-4.49      | -4.45/-5.87     | -7.04/-9.91     | -13.55/-15.27   | -13.97/-10.7    |                 |
| Θ(20°)   | -8.05/-7.15   | -5.84/-4.7    | -5.49/-6.69   | -7.43/-5.88   | -4.14/-4.26   | -6.82/-13.22    | -15.5/-10.13    | -7.71/-6.59     | -7.47/-7.04     | -8.05/-8.53     | -7.49/-8.12     | -8.87/-11.03    | -14.18/-11.49   | -5.74/-2.46     | -1.8/-2.35      | -4.19/-6.72     | -11.96/-15.96   | -14.25/-12.01   |
| Θ(30°)   | -12.06/-12.71 | -9.68/-6.41   | -3.67/-1.34   | -1.13/-3.03   | -6.49/-5.89   | -6.74/-10       | -5.24/-2.61     | -1.93/-4.82     | -9.39/-13.46    | -10.61/-8.66    | -13.43/-15.37   | -8.71/-8.19     | -5.97/-1.4      | -7.97/-2.29     | -2.09/-3.91     | -5.92/-6.44     | -6.25/-7.33     | -7.9/-10.08     |
| Θ(40°)   | -1.68/-2.64   | -3.33/-2.36   | -1.69/-3.45   | -4.2/-4.8     | -11.72/-3.58  | -2.65/-1.16     | -3.02/-7.22     | -1.69/-3.61     | -7.23/-8.69     | -9.69/-8.62     | -8.56/-14.17    | -10.59/-10.9    | -6.45/-14.17    | -11.89/-5.05    | -7.48/-8.94     | -9.14/-11.59    | -7.24/-4.09     | -1.79/-1.04     |
| Θ(50°)   | -1.39/-2.82   | -3.39/-0.89   | 1.11/0.05     | -5.52/-2.94   | -4.31/-1.49   | 0.08/-1.7       | -2.96/-2.35     | -2.16/-1.79     | -3.65/-6.5      | -6.86/-7.65     | -9.4/-11.58     | -13.65/-8.32    | -3.06/-4.93     | -14.02/-10.22   | -12.88/-10.93   | -12.35/-17.43   | -9.63/-5.71     | -3.58/-2.44     |
| Θ(60°)   | -4.85/-6.73   | -5.29/-0.53   | 1.72/1        | -4.65/-2.22   | -1.35/-1.5    | 0.63/-0.02      | -0.55/0.53      | -3.26/-5.36     | -2.36/-3.81     | -5.95/-4.33     | -11.29/-7.67    | -3.34/-4.58     | -12.63/-14.22   | -17.81/-10.3    | -8.69/-12.57    | -9.99/-4.98     | -7.12/-9.07     |                 |
| Θ(70°)   | -6.88/-7.85   | -12.82/-5.76  | -3.15/-2.4    |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |



# Radiated Composite Gain Data

# Appendix A

|          |               |               |               |               |               |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(140°)  | -19.04/-12.75 | -15.66/-15.68 | -12.74/-9.1   | -7.92/-7.99   | -8.27/-8.82   | -9.5/-6.38     | -7.37/-14.94   | -18.84/-18.45  | -14.68/-13.8   | -11.82/-16.45  | -19.02/-17.58  | -18.38/-19.3   | -17.17/-16.19  | -14.91/-10.94  | -10.89/-12.05  | -14.94/-18.82  | -17.7/-18.69   | -18.38/-18.92  |
| Θ(150°)  | -12.96/-11.25 | -11.26/-10.43 | -9.99/-9.45   | -7.43/-6.48   | -7.89/-10.35  | -8.38/-5.78    | -6.94/-13.43   | -18.94/-18.96  | -18.04/-17.94  | -19.33/-18.56  | -18.28/-15.82  | -13.46/-18.54  | -13.83/-11.15  | -13.77/-17.72  | -17.18/-19.03  | -18.07/-19.1   | -19.34/-18.01  | -17.91/-14.81  |
| Θ(160°)  | -18.57/-18.15 | -17.51/-17.93 | -18.26/-11.91 | -9.23/-9.58   | -12.16/-13.61 | -10.82/-9.22   | -18.26/-13.61  | -15.27/-15.38  | -18.17/-18.24  | -16.95/-12.27  | -10.16/-12.98  | -18.36/-19.33  | -18.06/-18.63  | -11.39/-18.47  | -18.54/-17.31  | -16.63/-14.04  | -15.06/-11.51  |                |
| Θ(170°)  | -14.89/-12.46 | -12.36/-11.72 | -10.86/-11.63 | -11.45/-13.41 | -13.1/-12.34  | -10.99/-9.36   | -8.58/-7.97    | -7.92/-8.42    | -10.23/-11.6   | -11.64/-12.63  | -16.82/-17.86  | -18.9/-17.98   | -14.8/-13.44   | -12.22/-13.83  | -15.26/-17.18  | -18.76/-18.79  | -17.95/-19.07  | -19.13/-17.52  |
| Θ(180°)  | -11.49/-11.88 | -11.86/-11.81 | -12/-12.39    | -12.2/-12.91  | -12.72/-12.87 | -13.68/-14.23  | -15.92/-17.94  | -19.38/-18.56  | -18.79/-18.91  | -17.94/-18.48  | -18.84/-19.1   | -18.07/-17.44  | -18.21/-17.55  | -17.12/-15.56  | -13.92/-13.29  | -12.6/-12.25   | -12.63/-13.32  | -13.2/-13.14   |
| Freq(Hz) | 5.2GPol.      | ThetaAnt. 4   | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -4.03/-3.77   | -4.09/-4.48   | -5.07/-6.25   | -7.79/-9.49   | -12.25/-15.58 | -15.58/-12.18  | -9.28/-7.52    | -6.09/-4.5     | -3.79/-3.45    | -2.91/-2.96    | -3.37/-4.14    | -5.05/-6.05    | -7.42/-9.07    | -11.66/-15.85  | -15.05/-12.11  | -8.85/-7.05    | -5.68/-5.22    | -4.52/-4.2     |
| Θ(10°)   | -3.66/-3.43   | -3.74/-3.78   | -3.97/-5.31   | -6.67/-9.41   | -14.02/-18    | -18.55/-13.47  | -10.52/-9.73   | -9.21/-8.26    | -8.35/-8.74    | -8.79/-8.92    | -14.53/-11.07  | -8.96/-8.47    | -8.44/-6.43    | -13.98/-15.59  | -15.41/-4.42   | -6.63/-4.43    | -3.93/-3.83    |                |
| Θ(20°)   | -7.87/-1.11   | -6.89/-6.73   | -6.76/-7.48   | -8.74/-10.15  | -13.39/-17.94 | -18.02/-13.3   | -12.13/-13.84  | -17.07/-18.52  | -18.06/-19.22  | -18.31/-18.53  | -14.57/-11.43  | -9.99/-8.72    | -9.07/-11.57   | -16.96/-17.42  | -17.3/-14.6    | -15.06/-14.74  | -13.63/-11.33  | -9.99/-8.72    |
| Θ(30°)   | -4.59/-4.3    | -4.31/-1.48   | -5.1/-6.28    | -7.49/-8.79   | -14.27/-18.57 | -17.66/-17.46  | -18.86/-17.84  | -19.27/-17.17  | -18.05/-18.6   | -19.19/-15.36  | -11.53/-9.75   | -9.24/-9.62    | -9.17/-9.48    | -14.76/-18.56  | -11.16/-10.76  | -12.3/-12.67   | -14.74/-13.12  | -8.12/-5.41    |
| Θ(40°)   | -3.57/-3.8    | -2.87/-2.56   | -3.41/-4.68   | -5.77/-8.02   | -13.86/-18.08 | -18.31/-18.21  | -15.2/-15.5    | -17.44/-18.54  | -18.3/-16.33   | -12.52/-9.4    | -8.1/-10.98    | -12.63/-11.98  | -18.35/-14.39  | -9.86/-9.22    | -10.43/-11.79  | -13.37/-11.45  | -6.1/-4.22     |                |
| Θ(50°)   | -8.26/-6.63   | -4.49/-3.54   | -3.66/-4.62   | -6.12/-9.59   | -14.78/-10.16 | -11.58/-17.12  | -13.88/-12.97  | -9.57/-11.75   | -17.53/-18.06  | -13.01/-10.7   | -10.04/-8.82   | -7.37/-7.39    | -11.69/-12.25  | -18.71/-12.7   | -10.33/-11.1   | -7.79/-5.52    | -8.04/-8.44    | -7.51/-7.45    |
| Θ(60°)   | -7.8/-5.6     | -4.12/-3.59   | -3.51/-4.3    | -4.67/-8.43   | -11.5/-8.95   | -9.23/-10.23   | -11.61/-7.07   | -6.67/-8.43    | -9.67/-12.11   | -12.59/-13.7   | -16.96/-17.4   | -12.43/-9.15   | -9.77/-13.28   | -18.39/-17.77  | -12.22/-10.1   | -9.07/-7.23    | -9.12/-13.66   | -12.3/-10.29   |
| Θ(70°)   | -8.8/-6.76    | -5.88/-4.52   | -3.6/-2.95    | -1.68/-4.06   | -4.24/-8.84   | -9.63/-7.3     | -11.88/-15.98  | -9.4/-5.76     | -8.63/-8.23    | -8.36/-10.48   | -12.33/-16.14  | -14.43/-13.15  | -15.89/-12.53  | -13.06/-11.64  | -9.09/-11.01   | -8.76/-7.75    | -6.39/-6.47    |                |
| Θ(80°)   | -17.79/-18.53 | -10.03/-3.64  | -2.2/-2.56    | -3.61/-3.74   | -1.86/-7.42   | -9.52/-7.26    | -5.22/-3.19    | -4.96/-8.18    | -7.81/-7.34    | -11.56/-15.93  | -15.38/-7.24   | -7.25/-7.68    | -7.8/-17.92    | -18.78/-9.61   | -12.59/-11.58  | -13.82/-9.92   | -9.89/-13.75   | -15.16/-17.4   |
| Θ(90°)   | -11.65/-9.6   | -5.16/-2.76   | -3.34/-4.85   | -7.23/-1.24   | -0.88/-2.89   | -5.6/-4.33     | -1.84/-3.73    | -6/-7.92       | -10.92/-15.28  | -18.16/-11.1   | -9.8/-11.27    | -18.35/-11.9   | -11.41/-7.44   | -10.54/-11.14  | -9.22/-12.66   | -13.73/-10.74  | -18.42/-17.27  | -10.43/-11.89  |
| Θ(100°)  | -17.32/-11.35 | -7.38/-7.42   | -7.33/-6.47   | -4.08/-1.2    | -3.05/-4.64   | -3.39/-1.97    | 0.92/2         | 0.89/-1.75     | -2.49/-2.28    | -3.08/-6.93    | -12.55/-18.78  | -18.72/-15.47  | -14.99/-16.5   | -8.22/-15.47   | -11.74/-12.15  | -11.09/-11.95  | -18.62/-13.86  |                |
| Θ(110°)  | -14.86/-14.44 | -14.54/-18.89 | -13.14/-4.64  | -3.95/-6.3    | -5.49/-7.38   | -6.51/-4.79    | -2.82/-0.12    | -2.01/-5.03    | -5.09/-3.7     | -4/-4.95       | -12.03/-11     | -7.34/-8.91    | -10.82/-18.39  | -10.94/-13.6   | -18.01/-17.3   | -13.48/-12.2   | -15.06/-9.46   | -10.94/-16.73  |
| Θ(120°)  | -18.36/-19.2  | -18.57/-15.78 | -8.11/-4.51   | -8.81/-10.09  | -5.2/-8.42    | -4.8/-5.16     | -7.27/-5.56    | -6.4/-7.41     | -5.24/-3.06    | -3.03/-3.38    | -8.82/-8.99    | -8.62/-18.99   | -18.26/-18.03  | -18.14/-13.66  | -17.03/-17.3   | -17.15/-12.08  | -12.24/-12.17  | -16.58/-13.86  |
| Θ(130°)  | -16.65/-18.06 | -15.04/-10.19 | -10.12/-16.38 | -17.87/-9.77  | -6.07/-17.26  | -6.31/-9.98    | -9.5/-6.68     | -8.38/-8.11    | -6.87/-4.92    | -3.21/-3.82    | -8.49/-10.67   | -7.62/-8.87    | -18.44/-14.29  | -15.4/-14.96   | -14.82/-14.25  | -18.34/-15.37  | -18.62/-13.66  |                |
| Θ(140°)  | -11.37/-13.29 | -11.23/-13.73 | -16.75/-15.31 | -11.81/-12.99 | -12.81/-4.83  | -4.65/-8.36    | -10.38/-13.83  | -18.32/-18.8   | -14.12/-11.71  | -8.92/-5.96    | -10.12/-13.68  | -11.92/-15.44  | -17.13/-14.12  | -18.52/-18.41  | -12.97/-17.85  | -18.65/-12.71  | -12.11/-12.14  | -17.85/-18.41  |
| Θ(150°)  | -14.01/-12.51 | -14.7/-16     | -17.52/-12.97 | -8.08/-9.03   | -8.32/-10.48  | -5.16/-7.41    | -10.78/-10.45  | -9.26/-11.41   | -14.31/-11.04  | -8.52/-11.12   | -15.83/-14.1   | -15.08/-19.15  | -18.06/-18.59  | -14.72/-9.03   | -10.02/-18.6   | -18.04/-17.79  | -15.83/-17.96  | -18.42/-17.27  |
| Θ(160°)  | -11.52/-11.69 | -12.1/-11.17  | -8.78/-8.4    | -10.57/-16.67 | -19.01/-11.25 | -9.06/-10.64   | -15/-17.07     | -17.98/-17.96  | -14.99/-14.92  | -18.25/-15.08  | -17.09/-18.61  | -15.72/-14.63  | -17.09/-18.61  | -14.82/-14.52  | -14.87/-13.51  | -13.27/-11.91  |                |                |
| Θ(170°)  | -13.72/-14.46 | -15.97/-19.45 | -19/-17.58    | -16.44/-12.87 | -9.83/-7.81   | -7.46/-7.56    | -10.42/-14.87  | -17.34/-18.16  | -18.24/-18.66  | -16.31/-14.84  | -13.22/-12.66  | -13.95/-15.1   | -15.3/-15.79   | -18.14/-18.65  | -17.77/-17.8   | -18.5/-17.91   | -18.93/-19.04  | -16.25/-15.6   |
| Θ(180°)  | -11.31/-11.25 | -11.4/-11.84  | -12.67/-13.58 | -14.13/-15.48 | -16.9/-18.39  | -17.76/-17.7   | -14.12/-12.41  | -11.44/-11.47  | -10.98/-11.8   | -12.13/-13.72  | -13.79/-14.39  | -15.02/-14.6   | -14.45/-15.09  | -15.89/-15.79  | -15.16/-15.83  | -15.17/-13.48  | -13.11/-12.91  | -11.9/-11.16   |
| Freq(Hz) | 5.3GPol.      | PhiAnt. 4     | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -14.35/-16.67 | -16.36/-13.57 | -10.36/-7.7   | 6.34/-5.1     | 4.5/-5.52     | -3.23/-2.89    | -2.61/-2.43    | -2.63/-3.6     | -4.23/-5.59    | -7.63/-11.09   | -16.72/-18.41  | -13.49/-8.25   | -5.4/-3.63     | -2.44/-1.96    | -2.11/-2.8     | -3.2/-3.61     | -5.05/-6.59    | -8.3/-10.52    |
| Θ(10°)   | -11.64/-19.44 | -18.28/-13.7  | -8.94/-6.62   | -4.19/-3.08   | -2.49/-2.5    | -3.43/-4.57    | -8.24/-7.6     | -16.87/-11.89  | -7.52/-13.69   | -2.28/-5.23    | -2.32/-4.81    | -2.32/-9.62    | -7.28/-5.23    | -4.07/-2.69    | -2.32/-2.38    | -2.71/-4.05    | -5.6/-8.38     |                |
| Θ(20°)   | -11.02/-10.1  | -8.51/-6.43   | -4.78/-3.43   | -2.65/-2.25   | -2.58/-3.19   | -5.67/-9.33    | -15.62/-18.74  | -18.51/-15.92  | -13.41/-13.44  | -13.03/-14.26  | -13.99/-14.01  | -12.96/-10.72  | -8.84/-7.29    | -5.47/-3.93    | -3.68/-4.02    | -3.89/-3.48    | -3.87/-5.16    | -6.68/-9.26    |
| Θ(30°)   | -18.57/-15.2  | -8.79/-6.09   | -5.21/-5.39   | -4.21/-3.92   | -4.69/-6.97   | -8.26/-11.82   | -18.4/-12.89   | -8.86/-8.64    | -11.5/-15.62   | -17.94/-18.02  | -13.42/-12.82  | -14.94/-15.23  | -11.46/-8.91   | -7.01/-4.71    | -4.69/-7.4     | -8.01/-6.96    | -6.48/-6.1     | -8.85/-14.9    |
| Θ(40°)   | -19.16/-14.18 | -7.72/-8.41   | -1.96/-1.29   | -2.42/-5.14   | -7.77/-9.84   | -10.15/-10.87  | -14.89/-11.54  | -6.32/-5.43    | -7.77/-9.28    | -12.13/-10.13  | -15.28/-18.93  | -16.19/-14.05  | -10.45/-10.53  | -16.19/-14.05  | -6.03/-7.66    | -14.5/-18.95   |                |                |
| Θ(50°)   | -18.68/-18.54 | -19.06/-18.53 | -11.36/-4.89  | -2.09/-2.54   | -5.44/-4.64   | -7.87/-13.21   | -13.21/-5.24   | -2.51/-3.72    | -7.62/-9.68    | -6.23/-5.93    | -8.28/-13.94   | -12.7/-12.83   | -14.35/-16.28  | -18.69/-11.82  | -6.32/-9.56    | -13.66/-8.11   | -5.95/-8.42    | -15.61/-18.12  |
| Θ(60°)   | -9.84/-8.15   | -9.07/-9.61   | -9.4/-11.74   | -10.11/-8.72  | -9.15/-5.34   | -8.35/-16.05   | -17.1/-15.25   | -1.77/-6.44    | -10.24/-10.17  | -7.58/-7.21    | -7.15/-9.82    | -17.17/-15.67  | -19.26/-18.27  | -17.46/-10.3   | -7.64/-10.18   | -7.88/-5.73    | -5.95/-16.48   | -14.22/-11.47  |
| Θ(70°)   | -10.53/-10.45 | -12.17/-7.77  | -5.33/-6.24   | -7.48/-9.74   | -8.28/-3.76   | -8.72/-10.18   | -10/-13.97     | -8/-18.15      | -12.88/-13.22  | -17.41/-18.94  | -11.29/-13.45  | -16/-14.34     | -18.59/-19.16  | -16.68/-13.87  | -12.04/-9.25   | -11.56/-18.98  | -18.41/-17.73  | -13.13/-12.87  |
| Θ(80°)   | -18.38/-16.74 | -18.59/-16.5  | -12.47/-7.03  | -3.9/-4.52    | -5.24/-8.7    | -5.92/-6.04    | -17.08/-10.87  | -6.91/-5.31    | -7.14/-9.4     | -11.97/-11.85  | -14.16/-17.98  | -12.86/-17.48  | -16.25/-17.28  | -19.01/-14.11  | -12.86/-17.8   | -19.51/-19.22  | -17.51/-19.3   |                |
| Θ(90°)   | -16.83/-18.56 | -16/-19.03    | -10.29/-4.27  | -4.41/-8.42   | -6.49/-5.2    | -2.59/-3.63    | -4.17/-2.87    | -5/-7.5        | -9.82/-18.94   | -18.01/-16.17  | -17.55/-17.67  | -17.69/-18.59  | -15.69/-15.5   | -15.57/-14.85  | -17.18/-10.86  | -17.09/-15.85  | -17.5/-17.99   | -16.05/-16.3   |
| Θ(100°)  | -12.92/-14.67 | -14.98/-13.79 | -10.49/-7.32  | -8.98/-4.38   | -5.66/-8.36   | -4.04/-1.19    | 1.06/-1.21     | -1.46/-10.27   | -17.42/-13.75  | -11.45/-14.04  | -18.21/-17.85  | -10.91/-10.26  | -19.04/-17.47  | -15.88/-12.22  | -13.63/-11.16  | -8.57/-16.38   | -18.21/-14.96  | -10.62/-11.83  |
| Θ(110°)  | -15.78/-17.83 | -17.88/-8.98  | -8.85/-12.22  | -5.71/-1.26   | -5.68/-7.44   | -9.87/-2.97    | -16.21/-14.31  | -3.57/-7.61    | -10.84/-11.84  | -10.48/-17.93  | -11.6/-13.2    | -18.19/-16.64  | -10.46/-19     | -17.59/-7.56   | -12.86/-14.78  | -18.66/-18.43  | -15.18/-17.6   |                |
| Θ(120°)  | -18.06/-18.41 | -13.5/-10.55  | -7.12/-3.77   | -3.26/-6.75   | -4.29/-2.06   | -2.91/-2.7     | -0.66/-1.54    | -7.36/-18.19   | -9.42/-8.69    | -8.71/-13.87   | -11.96/-10.97  | -18.48/-17.1   | -19.07/-17.3   | -15.52/-12.02  | -16.4/-15.34   | -12.59/-17.51  | -18.47/-17.49  | -18.96/-17.81  |
| Θ(130°)  | -18.7/-14.56  | -12.23/-8.25  | -4.25/-3.64   | -5.34/-2.18   | -1.37/-1.31   | -5.71/-3.95    | -2.54/-7.12    | -4.27/-9.61    | -11.16/-9.35   | -13.96/-13.37  | -8.31/-8.56    | -16.18/-15.29  | -13.22/-15.91  | -19.06/-11.04  | -11.65/-11.89  | -18.5/-16.06   | -12/-16.57     |                |
| Θ(140°)  | -19.64/-13.25 | -15.46/-13.19 | -8.89/-5.99   | -4.31/-5.13   | -1.18/-8.42   | -9.74/-5.73    | -6.06/-9.95    | -17.57/-13.29  | -14.73/-10.16  | -9.41/-17.12   | -16.7/-17.75   | -18.67/-9.97   | -10.28/-14.43  | -17.66/-9.77   | -13.31/-18.06  | -17.86/-18.43  | -18.98/-19.18  |                |
| Θ(150°)  | -10.49/-9.5   | -8.34/-8.31   | -7.86/-9.88   | -16.41/-12.41 | -9.98/-10.2   | -7.33/-3.48    | -4.5/-9.68     | -12.92/-13.86  | -15.3/-17.55   | -17.27/-19.04  | -18/-17.51     | -18.94/-16.9   | -11.09/-9.92   | -13.37/-18.83  | -19.07/-17.06  | -16.59/-18.17  | -18.43/-19.18  | -14.55/-16.82  |
| Θ(160°)  | -17.15/-17.97 | -16.28/-15.82 | -17.96/-17.4  | -14.3/-13.4   | -14.49/-15.75 | -10.62/-7.4    | -6.95/-8.02    | -9.73/-10.89   | -12.09/-15.18  | -16.17/-11.16  | -8.74/-9.03    | -11.04/-18.77  | -18.66/-17.92  |                |                |                |                |                |



Radiated Composite Gain Data

Appendix A

|          |               |               |               |               |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Θ (30°)  | -13.26/-16.37 | -15.83/-14.52 | -11.43/-9.76  | -9.73/-11.26  | -13.64/-18.55 | -17.89/-14.95   | -10.16/-7.13    | -9.34/-18.24    | -13.88/-9.43    | -8.12/-7.3      | -8.74/-11.17    | -13.93/-11.95   | -7.38/-5.93     | -5.34/-4.95     | -4.05/-3.4      | -4.85/-7        | -9.36/-11.45    | -11.51/-11.05   |
| Θ (40°)  | -17.48/-18.73 | -18.15/-13.93 | -10.88/-8.32  | -7.4/-7.04    | -6.64/-11.8   | -18.44/-14.82   | -9.14/-8.66     | -17.82/-12.79   | -9.68/-9.17     | -17.2/-17.25    | -18.76/-17.56   | -17.45/-17.31   | -11.6/-7.89     | -7.13/-6.47     | -6.85/-6.3      | -8.4/-7.47      | -9.1/-13.42     | -18.83/-18.86   |
| Θ (50°)  | -13.19/-12.58 | -18.42/-18.5  | -15.04/-10.77 | -9.36/-6.36   | -4.88/-8.9    | -18.16/-17.59   | -14.57/-10.86   | -15.43/-8.08    | -4.5/-3.86      | -5.2/-7.4       | -7.52/-8.18     | -8.56/-7.76     | -7.08/-7.76     | -8.06/-6.7      | -11.29/-15.48   | -7.7/-7.45      | -13.56/-18.49   | -15.29/-13.89   |
| Θ (60°)  | -5.58/-5.79   | -9.35/-17.13  | -18.61/-12.25 | -7.5/-5.09    | -4.22/-8.72   | -11.05/-10.94   | -10.86/-8.17    | -8.56/-8.95     | -10.11/-12.08   | -9.23/-8.58     | -7.33/-8.56     | -9.91/-10.02    | -8.75/-11.72    | -18.72/-13.25   | -10.27/-9.33    | -7.15/-6.71     | -7.75/-9.65     | -17.14/-12.45   |
| Θ (70°)  | -6.88/-7.89   | -11.62/-18.63 | -18.17/-9.31  | -2.64/-2.44   | -6.72/-12.06  | -6.06/-8.51     | -14.06/-13.02   | -8.77/-4.42     | -5.39/-10.54    | -18.32/-10.88   | -8.5/-7.75      | -8.52/-11.71    | -9.27/-16.98    | -14.36/-11.52   | -10.07/-9.67    | -8.3/-9.25      | -13.06/-13.59   | -18.63/-12.38   |
| Θ (80°)  | -11.62/-9.19  | -9.69/-18.4   | -11.05/-4.29  | -0.16/-1.13   | -9.8/-12.66   | -4.07/-10.91    | -8.43/-8.22     | -11.84/-6.76    | -3.43/-6.15     | -19.37/-10.59   | -7.7/-7.45      | -12.89/-15.12   | -13.32/-18.49   | -15.76/-18.29   | -9.38/-11.24    | -14.37/-10.88   | -15.99/-15.09   | -19.21/-16.3    |
| Θ (90°)  | -9.93/-10.91  | -15.45/-18.8  | -14.87/-6.49  | -0.61/-0.39   | -1.51/-4.49   | -9.89/-8.61     | -5.1/-3.29      | -2.81/-4.38     | -5.91/-6.35     | -15.05/-18.82   | -10.64/-10.21   | -12.4/-8.18     | -14.01/-17.81   | -18.04/-10.7    | -5.69/-10.6     | -13.41/-18      | -18.44/-15.17   | -13.63/-16.47   |
| Θ (100°) | -10.87/-17.1  | -18.03/-18.12 | -9.01/-0.99   | -0.31/-1.62   | -1.25/-5.75   | -3.17/-1.11     | -5.57/-3.16     | -2.28/-3.03     | -8.04/-16.18    | -16.43/-11.8    | -10.86/-7.61    | -10.74/-12.16   | -17.69/-18.38   | -12.22/-8.81    | -7.64/-12.91    | -10.4/-17       | -18.86/-15.35   | -15.18/-10.9    |
| Θ (110°) | -18.56/-18.68 | -18.41/-18.31 | -6.76/-2.09   | -4.07/-7.76   | -3.91/-4.33   | -1.28/-1.32     | -3.36/0.25      | -3.12/-10.86    | -12.16/-13.04   | -17.88/-14.05   | -15.15/-17.87   | -18.69/-16.91   | -19.35/-16.59   | -11.63/-11.43   | -7.8/-12.27     | -18.65/-17.19   | -18.02/-12.83   | -16.35/-19.26   |
| Θ (120°) | -14.21/-13.6  | -10.37/-16.87 | -8.18/-5.24   | -4.31/-3.81   | -7.15/-7.15   | -2.87/-4.26     | -2.41/-0.32     | -2.57/-11.21    | -15.59/-5.96    | -6.62/-8.19     | -14.64/-11.2    | -11.81/-18.67   | -18.79/-13.94   | -16.01/-9.99    | -17.96/-7.42    | -10.91/-16.61   | -18.33/-11.35   | -19.17/-19.04   |
| Θ (130°) | -18.02/-14.77 | -11.87/-10.2  | -5.38/-5.65   | -7.89/-9.25   | -6.41/-2.78   | -0.95/-1.57     | -0.43/-0.95     | -7.82/-14.34    | -18.04/-11.31   | -8.77/-14.38    | -14.39/-9.36    | -8.9/-9.08      | -14.89/-12.65   | -16.13/-13.95   | -8.57/-10.64    | -13.89/-19.24   | -10.74/-9.99    | -10.31/-14.11   |
| Θ (140°) | -16.52/-18.18 | -15.8/-9.12   | -7.54/-10.25  | -10.95/-4.72  | -2.97/-5.7    | -7.15/-8.03     | -3.45/-0.69     | -4.45/-7.95     | -7.64/-15.81    | -9.4/-6.83      | -11.25/-18.46   | -18.25/-14.34   | -14.96/-16.83   | -11.71/-7.59    | -18.3/-16.5     | -18.83/-14.23   | -14.42/-17.84   | -17.3/-13.17    |
| Θ (150°) | -15.27/-15.9  | -18.49/-18.34 | -14.91/-12.76 | -9.79/-6.88   | -10.23/-14.21 | -15.15/-8.9     | -5.58/-4.89     | -7.44/-9.47     | -6.08/-5.63     | -8.24/-13.34    | -19.68/-18.23   | -16.44/-17.58   | -18.61/-15.77   | -14.33/-18.55   | -18.79/-15.58   | -17.79/-17.23   | -11.39/-11.74   | -17.42/-18.27   |
| Θ (160°) | -17.22/-18.12 | -16.09/-14.03 | -9.78/-8.14   | -8.07/-11.51  | -13.65/-12.09 | -12.16/-9.67    | -7.91/-6.87     | -7.29/-9.05     | -12.07/-14.56   | -18.29/-17.63   | -12.38/-12.51   | -15.51/-14.31   | -12.79/-11.66   | -11.69/-10.98   | -13.36/-17.12   | -18.38/-14.81   | -14.6/-16.99    | -17.06/-18.54   |
| Θ (170°) | -19.08/-18.16 | -16.36/-13.74 | -11.98/-14.23 | -17.23/-18.88 | -18.71/-18.58 | -19.33/-15.14   | -12.71/-12.86   | -14.35/-15.32   | -17.47/-18.64   | -15.45/-11.59   | -12.87/-15.4    | -18.28/-17.51   | -18.67/-17.88   | -13.06/-14.49   | -17.91/-19.24   | -19.3/-18.14    | -17.38/-18.51   | -18.71/-17.79   |
| Θ (180°) | -9.78/-10.14  | -10.59/-10.05 | -10.75/-12.33 | -13.17/-14.86 | -15.45/-17.75 | -18.57/-17.75   | -18.61/-18.14   | -18.52/-17.91   | -15.65/-13.11   | -12.82/-10.77   | -10.45/-10.56   | -9.7/-9.27      | -9.59/-11.21    | -11.51/-13.14   | -13.2/-14.67    | -16.81/-17.36   | -15.71/-13.86   | -11.95/-11.57   |
| Freq(Hz) | 5.785G/Pol    | Theta/Ant. 4  | -/-           | -/-           | -/-           | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             | -/-             |
| Gain     | Φ(0°)/Φ(10°)  | Φ(20°)/Φ(30°) | Φ(40°)/Φ(50°) | Φ(60°)/Φ(70°) | Φ(80°)/Φ(90°) | Φ(100°)/Φ(110°) | Φ(120°)/Φ(130°) | Φ(140°)/Φ(150°) | Φ(160°)/Φ(170°) | Φ(180°)/Φ(190°) | Φ(200°)/Φ(210°) | Φ(220°)/Φ(230°) | Φ(240°)/Φ(250°) | Φ(260°)/Φ(270°) | Φ(280°)/Φ(290°) | Φ(300°)/Φ(310°) | Φ(320°)/Φ(330°) | Φ(340°)/Φ(350°) |
| Θ (0°)   | -3.84/-3.34   | -3.9/-4.22    | -5.23/-5.53   | -6.92/-8.85   | -11.66/-15.14 | -18.45/-16.26   | -12.31/-8.2     | -5.89/-4.53     | -3.87/-3.12     | -2.98/-2.75     | -3.27/-5.05     | -5.61/-6.36     | -8.97/-10.15    | -15.01/-18.95   | -18.75/-14.19   | -10.58/-9.04    | -6.86/-5.97     | -5/-4.25        |
| Θ (10°)  | -2.8/-2.92    | -3.75/-5.23   | -6.12/-8.16   | -10.2/-12.57  | -17.04/-19.35 | -17.12/-18.85   | -16.1/-12.47    | -10.05/-8.45    | -7.44/-5.94     | -4.76/-4.53     | -4.3/-4.81      | -4.99/-6.21     | -7.03/-8.49     | -11.41/-17.26   | -19.29/-16.37   | -10.53/-7.2     | -5.31/-3.84     | -3.35/-3.07     |
| Θ (20°)  | -2.44/-2.42   | -2.89/-4.24   | -6.25/-7.64   | -10.4/-18.4   | -18.35/-18.49 | -14.43/-13.81   | -13.53/-10.51   | -8.33/-7.99     | -8.54/-9.38     | -8.97/-7.11     | -6.47/-5.37     | -4.38/-4.62     | -6.81/-9.45     | -15.96/-18.36   | -17.73/-18.63   | -15.1/-8.41     | -5.98/-4.85     | -3.74/-3.46     |
| Θ (30°)  | -1.69/-1.1    | -1.17/-1.38   | -1.59/-1.82   | -4.57/-9.87   | -12.18/-15.52 | -18.92/-18.94   | -18.85/-18.15   | -18.52/-18.19   | -15.94/-14.86   | -12.91/-10.11   | -7.46/-6.8      | -6.81/-6.75     | -7.86/-10.96    | -16.32/-15.9    | -16.44/-17.76   | -14.14/-11.5    | -7.47/-5.04     | -3.46/-2.11     |
| Θ (40°)  | -3.12/-1.78   | -0.96/-1.21   | -1.95/-3.29   | -4.73/-6.32   | -8/-10.14     | -15.95/-15.38   | -13.85/-13.66   | -10.45/-8.05    | -8.81/-10.62    | -12.2/-11.38    | -7.51/-6.97     | -7.48/-11.04    | -17.23/-15.76   | -12.86/-10.94   | -12.74/-18.63   | -13.44/-7.16    | -5.53/-5.04     | -3.83/-2.48     |
| Θ (50°)  | -3.38/-4.25   | -3.29/-2.92   | -2.47/-2.84   | -4.89/-6.92   | -6.48/-5.97   | -7.45/-5.56     | -6.22/-7.57     | -12.77/-9.73    | -14.3/-17.85    | -14.02/-11.25   | -10.08/-9.48    | -8.35/-13.78    | -18.65/-13.45   | -8.71/-7.8      | -7.47/-10       | -10.41/-7.57    | -5.99/-5.37     | -4.36/-4        |
| Θ (60°)  | -2.67/-2.22   | -1.37/-0.67   | 0.02/0.63     | -2.86/-10.46  | -10/-7.54     | -3.68/-2.71     | -17.89/-11.5    | -1.4/-1.12      | -5.52/-8.98     | -8.55/-8.59     | -11.44/-14.42   | -10.87/-11.63   | -15.87/-14.37   | -13.54/-10.41   | -5.42/-13.48    | -13.65/-12.26   | -8.9/-4.58      | -4.4/-3.09      |
| Θ (70°)  | -10.01/-6.58  | -4.18/-1.39   | -0.74/-0.5    | -5.17/-14.08  | -11.03/-9.81  | -4.96/-4.86     | -1.87/-0.98     | -1.83/-4.73     | -5.77/-5.96     | -7.31/-6.18     | -8.6/-15.44     | -18.38/-14.66   | -12.3/-16.25    | -9.07/-7.14     | -10.13/-16.1    | -10.32/-11.81   | -5.97/-4.9      | -9.16/-12.78    |
| Θ (80°)  | -16.55/-8.57  | -4.14/-4.07   | -4.8/-3.85    | -8.14/-12.61  | -10.43/-4.05  | -2.24/-3.71     | -0.16/0.06      | -0.24/-1.45     | -1.54/-1.04     | -0.94/-1.92     | -8.68/-13.74    | -18.8/-18.19    | -13.28/-9.49    | -7.54/-8.85     | -4.61/-11.02    | -12.22/-9.96    | -6.4/-5.59      | -6.83/-10.46    |
| Θ (90°)  | -18.69/-11.52 | -9.2/-10.98   | -7.37/-2.4    | -2.6/-5.15    | -7.18/-0.23   | 1.33/-1.79      | -0.69/2.35      | 2.62/0.71       | 0.76/-1.23      | -3.89/-5.07     | -6/-12.19       | -18.04/-18.33   | -15.58/-18.85   | -10.14/-12.25   | -8.42/-15.48    | -13.66/-10.36   | -9.5/-5.93      | -7.61/-18.86    |
| Θ (100°) | -15.86/-14.93 | -12.39/-11.38 | -6.04/-3.75   | -5.79/-7.63   | -9.34/-4.12   | 0.2/-0.68       | -0.15/0.65      | 1.71/3.22       | 1.87/-2.79      | -4.81/-5.35     | -6.85/-8.84     | -7.09/-18.63    | -11.19/-8.87    | -4.91/-6.12     | -6.55/-15.95    | -16.24/-8.57    | -5.18/-7.28     | -13.91/-18.41   |
| Θ (110°) | -12.73/-17.04 | -17.55/-14.35 | -15.22/-8.4   | -8.78/-14.21  | -14.82/-5.22  | -2.64/-0.55     | 0.32/15         | 3.05/2.24       | -0.71/-1.5      | -0.99/-2.64     | -4.4/-6.91      | -12.5/-18.84    | -17.35/-6.95    | -11.37/-4.56    | -15.47/-11.22   | -10.99/-12.3    | -7.46/-7.48     | -9.07/-14.03    |
| Θ (120°) | -18.19/-13.35 | -12.43/-11.25 | -7.15/-5      | -7.58/-8.78   | -6.81/-3.55   | -3.31/0.35      | 1.71/2.16       | 0.95/-1.91      | -2.06/-0.92     | -1.08/-0.82     | -3.76/-3.17     | -1.75/-7.97     | -6.73/-14.7     | -9.64/-10.97    | -9.69/-15.58    | -13.27/-10.42   | -13.09/-12.3    | -15.26/-18.54   |
| Θ (130°) | -17/-13.15    | -8.46/-13.74  | -16.23/-18.83 | -19.13/-12.58 | -6.04/-11.08  | -4.86/-0.93     | -2.04/-0.95     | -1.5/-4.46      | -2.91/-3.44     | -2.66/-1.08     | -4.64/-4.2      | -5.71/-17.78    | -7.34/-8.88     | -17.58/-7.96    | -12.69/-13.1    | -18.38/-18.57   | -10.35/-13.66   | -10.75/-10.54   |
| Θ (140°) | -18.34/-14.08 | -13.57/-16.29 | -17.67/-12.2  | -6.61/-5.49   | -10.02/-7.06  | -0.42/-1.75     | -4.44/-4.16     | -5.26/-11.38    | -6.18/-4.96     | -4.91/-4.12     | -7.75/-8.76     | -13.87/-8.78    | -13.96/-8.11    | -10.67/-10.18   | -18.53/-18.8    | -14.37/-7.34    | -9.29/-18.17    | -16.66/-17.25   |
| Θ (150°) | -14.55/-18.46 | -18.02/-16.59 | -9.06/-5.02   | -4.45/-5.57   | -8.18/-7.4    | -3.93/-5.49     | -7.02/-7.52     | -10.8/-16.15    | -12.63/-9.87    | -8.99/-9.41     | -11.05/-17.56   | -11.72/-6.94    | -7.55/-11.54    | -14.43/-17.73   | -15.51/-16.72   | -9.67/-14.59    | -17.19/-15.52   | -15.76/-14.21   |
| Θ (160°) | -9.43/-12.93  | -16.89/-12.22 | -8.13/-6.17   | -4.8/-5.57    | -8.65/-13.92  | -13.18/-12.11   | -14.69/-18.9    | -18.62/-18.54   | -16.65/-19.45   | -17.24/-17.74   | -17.46/-18.1    | -18.45/-19.05   | -18.29/-18.47   | -14.93/-11.91   | -13.3/-17.79    | -17.32/-17.92   | -18.69/-16.81   | -13.15/-12.39   |
| Θ (170°) | -18.36/-16.12 | -12.45/-9.92  | -8.83/-7.16   | -5.72/-6.98   | -8.06/-8.92   | -11.03/-10.82   | -11.04/-10.66   | -10.22/-9.03    | -9.52/-8.7      | -10.1/-12.22    | -14.96/-13.6    | -15.51/-17.68   | -18.78/-18.1    | -18.08/-17.32   | -12/-10.08      | -9.72/-10.54    | -13.29/-16.28   | -18.15/-18.18   |
| Θ (180°) | -18.98/-17.94 | -18.35/-18.79 | -15.59/-12.97 | -11.25/-9.96  | -8.48/-8.42   | -8.26/-8.45     | -8.12/-8.1      | -7.74/-8.13     | -8.51/-10.67    | -13.55/-17.89   | -18.61/-19.17   | -17.57/-14.6    | -10.95/-10.13   | -11.08/-9.48    | -9.25/-8.07     | -8.91/-9.22     | -10.16/-11.9    | -12.86/-15.73   |



Total Gain Data

| Freq(Hz) | 2.45GPol.     | TotalAnt. 1   | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -7.31/-6.57   | -6.08/-6.68   | -6.04/-6.41   | -6.71/-6.88   | -7.27/-7.24   | -7.64/-8.34    | -8.40/-8.78    | -7.62/-7.14    | -7.52/-8.19    | -9.55/-10.43   | -8.35/-8.33    | -7.32/-6.43    | -6.50/-6.20    | -6.32/-6.50    | -6.50/-6.41    | -6.46/-6.36    | -6.55/-6.38    | -7.29/-7.42    |
| Θ(10°)   | -10.29/-9.48  | -8.26/-7.02   | -6.91/-7.09   | -6.71/-6.58   | -6.02/-6.11   | -6.50/-7.41    | -8.14/-8.76    | -8.00/-7.38    | -7.00/-7.61    | -8.93/-9.00    | -7.90/-6.69    | -6.09/-6.83    | -6.15/-6.66    | -6.99/-7.71    | -8.73/-9.24    | -10.29/-10.69  | -10.59/-11.39  | -11.46/-11.27  |
| Θ(20°)   | -9.65/-9.85   | -9.96/-8.45   | -7.68/-7.08   | -5.95/-5.10   | -4.58/-4.35   | -4.94/-5.64    | -6.65/-7.43    | -7.21/-6.58    | -6.62/-7.54    | -9.40/-11.98   | -11.82/-10.05  | -7.54/-5.94    | -5.78/-5.86    | -6.89/-8.44    | -10.78/-14.78  | -14.13/-14.17  | -13.05/-12.38  | -11.33/-10.38  |
| Θ(30°)   | -6.12/-6.82   | -7.88/-8.14   | -8.42/-7.13   | -6.01/-4.59   | -3.57/-3.35   | -3.52/-3.94    | -3.83/-3.45    | -2.56/-1.94    | -1.95/-2.58    | -4.42/-7.32    | -13.55/-14.79  | -12.64/-10.79  | -6.13/-6.05    | -6.88/-9.16    | -12.59/-13.14  | -12.64/-10.23  | -8.16/-7.53    | -7.56/-6.23    |
| Θ(40°)   | -3.36/-3.29   | -3.78/-4.42   | -4.55/-4.23   | -3.34/-2.17   | -1.42/-0.92   | -0.65/-0.23    | 0.48/1.30      | 1.66/1.70      | 1.40/0.80      | -0.21/-1.77    | -4.25/-8.73    | -14.82/-12.20  | -8.30/-7.41    | -9.28/-12.18   | -13.05/-11.30  | -8.84/-7.38    | -6.47/-6.00    | -5.15/-4.32    |
| Θ(50°)   | -2.68/-2.98   | -3.36/-3.68   | -2.90/-1.26   | 0.07/1.00     | 1.31/1.42     | 1.75/2.71      | 3.81/4.24      | 4.07/3.44      | 2.55/1.62      | 0.63/-0.52     | -2.39/-5.46    | -11.76/-13.03  | -7.27/-5.95    | -8.64/-11.18   | -10.66/-9.52   | -8.73/-8.11    | -6.99/-5.19    | -4.10/-3.14    |
| Θ(60°)   | -1.34/-2.75   | -4.03/-4.82   | -3.55/-0.31   | 2.30/3.66     | 3.91/3.59     | 3.37/3.07      | 3.70/3.80      | 4.18/3.31      | 2.17/1.19      | 0.05/-0.66     | -5.58/-7.37    | -10.69/-10.87  | -10.69/-7.17   | -7.61/-8.39    | -8.58/-7.43    | -5.59/-4.62    | -4.11/-3.28    | -1.92/-1.53    |
| Θ(70°)   | -1.34/-2.03   | -2.70/-2.90   | -2.76/-0.13   | 2.90/3.73     | 4.44/4.55     | 4.11/4.00      | 3.71/2.98      | 2.77/1.68      | 0.47/-0.64     | -1.75/-1.71    | -1.08/-1.39    | -3.71/-10.93   | -12.69/-6.30   | -5.10/-5.89    | -8.69/-7.61    | -3.79/-2.73    | -3.40/-3.34    | -2.14/-1.53    |
| Θ(80°)   | -0.77/-0.69   | -0.51/0.05    | -0.65/-1.06   | 0.91/1.78     | 3.27/4.37     | 4.32/3.47      | 2.35/1.99      | 0.51/-0.82     | -2.26/-3.80    | -4.99/-4.52    | -3.85/-4.16    | -6.28/-13.58   | -11.45/-6.30   | -5.02/-7.10    | -11.24/-6.19   | -3.07/-2.80    | -3.00/-3.24    | -2.33/-1.11    |
| Θ(90°)   | -0.42/-0.98   | -0.39/0.87    | 0.60/-0.47    | -0.69/-0.30   | 2.08/4.17     | 4.34/2.78      | 0.33/-1.23     | -1.58/-1.20    | -1.36/-2.65    | -3.81/-3.87    | -3.66/-4.89    | -7.68/-12.58   | -10.35/-7.90   | -8.05/-12.44   | -11.43/-5.08   | -3.31/-2.62    | -1.33/-0.82    | -0.69/-0.30    |
| Θ(100°)  | -1.70/-2.91   | -2.32/-0.74   | -0.23/0.05    | -0.77/-4.56   | -4.32/0.27    | 1.70/1.08      | -1.04/-2.34    | -1.80/-0.57    | -0.03/-0.59    | -1.58/-2.48    | -3.62/-5.68    | -9.51/-11.88   | -10.84/-11.10  | -12.25/-11.81  | -7.23/-4.48    | -2.80/-1.39    | -0.66/-0.58    | -1.05/-1.44    |
| Θ(110°)  | -3.00/-3.28   | -3.74/-4.89   | -4.33/-1.85   | -0.99/-3.39   | -9.26/-4.07   | -0.58/-0.04    | -1.59/-3.95    | -3.92/-1.41    | 0.01/0.36      | -0.22/-0.98    | -2.54/-4.07    | -7.55/-8.12    | -8.02/-9.26    | -9.04/-9.59    | -7.57/-4.81    | -2.72/-0.98    | -0.54/-1.66    | -2.67/-2.87    |
| Θ(120°)  | -5.23/-3.02   | -3.54/-6.04   | -5.79/-2.95   | -0.73/-0.99   | -3.98/-3.80   | -0.33/-1.02    | 0.41/-1.59     | -1.55/-0.34    | -0.37/-1.54    | -2.89/-5.41    | -6.92/-6.06    | -6.08/-12.49   | -6.08/-7.80    | -9.62/-6.00    | -4.75/-6.66    | -5.80/-8.67    | -1.55/-8.89    |                |
| Θ(130°)  | -6.22/-4.65   | -7.50/-13.14  | -6.77/-3.66   | -2.74/-3.18   | -3.17/-0.61   | 1.16/1.61      | 0.65/-0.92     | -2.03/-2.41    | -2.97/-3.46    | -3.68/-3.31    | -2.79/-3.95    | -6.07/-9.53    | -13.88/-10.27  | -7.94/-7.50    | -7.38/-6.23    | -6.39/-7.81    | -9.91/-10.73   | -10.63/-9.16   |
| Θ(140°)  | -6.48/-8.04   | -11.55/-12.10 | -6.21/-3.78   | -3.77/-4.77   | -3.45/-1.30   | -0.15/0.04     | -1.15/-2.31    | -3.21/-3.89    | -5.08/-6.34    | -6.92/-7.27    | -8.14/-9.46    | -8.87/-9.60    | -5.90/-5.95    | -7.63/-9.14    | -11.62/-13.34  | -12.26/-10.42  | -7.44/-5.38    | -4.57/-9.14    |
| Θ(150°)  | -6.99/-10.24  | -13.91/-14.79 | -9.77/-7.07   | -6.15/-5.50   | -4.01/-2.32   | -1.66/-1.98    | -8.27/-8.98    | -8.26/-7.32    | -6.02/-6.49    | -8.78/-9.86    | -8.26/-7.28    | -7.35/-8.16    | -8.46/-8.84    | -9.33/-7.68    | -8.96/-9.98    | -9.33/-5.21    | -4.97/-5.86    |                |
| Θ(160°)  | -8.47/-8.88   | -9.00/-8.71   | -9.07/-8.95   | -9.47/-8.20   | -6.31/-5.19   | -5.06/-5.16    | -6.17/-7.69    | -9.63/-10.73   | -11.73/-12.54  | -11.48/-9.15   | -8.83/-9.10    | -9.71/-9.46    | -7.91/-7.25    | -8.29/-8.86    | -10.41/-11.76  | -10.76/-9.02   | -8.81/-8.73    | -9.05/-9.09    |
| Θ(170°)  | -12.48/-12.42 | -11.83/-11.52 | -11.19/-11.74 | -10.80/-9.13  | -7.86/-4.74   | -6.84/-6.86    | -6.64/-6.88    | -7.62/-7.09    | -7.28/-7.62    | -8.02/-8.48    | -8.94/-9.06    | -8.33/-7.89    | -9.27/-9.85    | -10.72/-10.76  | -11.10/-11.83  | -12.27/-11.84  | -12.29/-12.19  |                |
| Θ(180°)  | -10.29/-9.90  | -9.99/-10.17  | -9.58/-9.74   | -9.40/-8.93   | -8.50/-7.92   | -8.01/-8.12    | -8.47/-8.55    | -9.13/-9.96    | -9.81/-10.17   | -11.01/-10.02  | -10.33/-9.31   | -8.84/-8.05    | -8.14/-8.77    | -9.53/-10.79   | -11.66/-13.24  | -14.20/-12.55  | -11.15/-9.72   | -9.56/-9.14    |
| Freq(Hz) | 5.2GPol.      | TotalAnt. 1   | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -9.60/-9.30   | -9.29/-10.63  | -11.00/-10.98 | -10.23/-10.07 | -10.03/-11.35 | -10.15/-11.95  | -12.92/-11.84  | -9.79/-8.92    | -9.45/-11.13   | -10.15/-8.21   | -8.57/-8.08    | -7.52/-7.47    | -7.71/-8.54    | -7.57/-8.08    | -7.51/-7.61    | -7.52/-7.47    | -7.51/-8.54    | -9.43/-9.04    |
| Θ(10°)   | -8.27/-7.44   | -8.04/-7.92   | -8.26/-6.81   | -6.15/-6.39   | -6.59/-6.36   | -5.76/-4.76    | -4.00/-4.34    | -5.08/-5.75    | -6.26/-6.41    | -7.66/-7.87    | -8.46/-10.20   | -10.09/-11.01  | -11.27/-13.35  | -11.54/-13.50  | -15.22/-14.63  | -13.41/-11.88  | -10.49/-10.61  | -9.66/-8.96    |
| Θ(20°)   | -9.93/-8.65   | -7.72/-7.09   | -6.23/-5.53   | -5.09/-6.47   | -6.14/-6.52   | -4.62/-2.81    | -2.48/-3.33    | -5.30/-3.71    | -8.19/-7.19    | -7.11/-9.28    | -10.82/-11.39  | -12.66/-15.35  | -15.35/-14.89  | -13.26/-11.95  | -13.08/-14.78  | -14.01/-12.56  | -10.45/-9.29   | -10.01/-7.44   |
| Θ(30°)   | -11.70/-12.01 | -12.80/-11.17 | -8.25/-6.85   | -5.89/-4.69   | -5.79/-6.03   | -6.07/-3.23    | -2.44/-4.44    | -6.32/-8.94    | -7.28/-6.60    | -7.09/-10.66   | -14.74/-15.06  | -14.56/-13.32  | -12.42/-11.07  | -12.07/-12.47  | -12.07/-12.47  | -12.07/-12.47  | -11.63/-12.84  | -11.63/-12.84  |
| Θ(40°)   | -5.52/-4.74   | -3.80/-2.57   | -1.49/-0.84   | -1.91/-3.08   | -2.62/-2.74   | -4.35/-4.53    | -3.57/-3.74    | -2.93/-2.11    | -2.98/-3.91    | -4.57/-5.50    | -5.76/-6.81    | -10.86/-14.33  | -15.37/-13.90  | -11.47/-12.88  | -12.93/-10.26  | -11.64/-11.96  | -14.59/-12.53  | -12.31/-8.69   |
| Θ(50°)   | -11.50/-9.42  | -9.89/-4.73   | -2.69/-1.10   | 1.69/0.58     | 0.74/0.37     | -1.11/-1.56    | -1.10/-2.14    | -3.92/-3.40    | -6.17/-10.77   | -14.83/-13.80  | -11.98/-7.47   | -8.73/-13.80   | -12.02/-11.73  | -14.33/-11.31  | -13.13/-15.53  | -13.45/-13.59  | -10.64/-13.08  | -15.43/-13.03  |
| Θ(60°)   | -5.59/-5.07   | -2.92/-2.87   | -4.88/-4.56   | 0.86/1.46     | 1.11/2.92     | -0.20/-2.02    | 0.70/1.13      | -2.96/-3.18    | -10.21/-10.53  | 5.88/-9.31     | -12.41/-10.53  | -9.51/-15.76   | -9.51/-13.06   | -15.29/-10.19  | -12.10/-9.90   | -14.18/-12.86  | -13.74/-10.50  | -8.01/-5.94    |
| Θ(70°)   | -6.37/-5.57   | -2.76/0.36    | 1.14/-1.20    | 0.92/3.29     | 1.66/3.32     | 2.25/-0.57     | 1.57/1.98      | 0.78/1.95      | 1.83/-1.63     | -5.25/-9.44    | -9.56/-9.56    | -9.53/-14.38   | -14.58/-14.11  | -15.10/-13.90  | -10.99/-12.59  | -12.52/-14.91  | -10.16/-6.70   | -8.16/-7.34    |
| Θ(80°)   | -6.49/-6.04   | -3.67/-9.02   | 0.52/-0.51    | 0.05/4.14     | 5.03/5.56     | 1.49/0.59      | -0.57/0.41     | -0.21/1.51     | 1.74/-0.69     | -4.31/-6.09    | -6.67/-7.41    | -7.57/-6.35    | -7.67/-11.78   | -9.26/-10.22   | -15.22/-11.38  | -15.02/-8.67   | -8.46/-14.97   | -12.93/-9.56   |
| Θ(90°)   | -5.29/-5.41   | -3.39/-2.87   | -3.13/-2.57   | -3.05/-0.82   | 3.79/4.92     | 2.04/0.74      | -1.87/0.34     | 1.32/-0.23     | -1.27/-2.44    | -4.00/-4.87    | -6.39/-9.71    | -9.84/-10.42   | -14.68/-11.89  | -11.92/-11.28  | -14.98/-13.31  | -9.94/-12.74   | -10.35/-5.60   |                |
| Θ(100°)  | -6.89/-5.43   | -2.78/-4.86   | -6.65/-5.03   | -2.75/-1.89   | 0.12/3.33     | 1.85/0.67      | -2.57/-0.90    | -2.34/-5.91    | -5.34/-1.92    | -1.37/-3.58    | -5.98/-4.92    | -6.28/-9.07    | -11.66/-9.29   | -15.27/-12.68  | -11.14/-8.41   | -10.69/-9.59   | -11.14/-8.41   | -8.65/-6.96    |
| Θ(110°)  | -8.80/-7.43   | -5.58/-6.09   | -6.33/-6.44   | -6.40/-3.59   | 0.63/2.10     | 0.72/-3.17     | -1.83/-3.38    | -4.75/-6.41    | -4.53/-2.55    | -2.00/-4.83    | -5.19/-3.97    | -12.49/-11.78  | -9.59/-12.77   | -14.79/-15.39  | -15.27/-10.84  | -10.80/-9.16   | -9.65/-7.48    | -7.14/-11.80   |
| Θ(120°)  | -12.49/-10.95 | -13.59/-10.52 | -5.65/-4.68   | -4.87/-4.97   | -3.07/-3.53   | -1.77/-3.81    | -1.64/0.40     | -0.90/-1.31    | -1.48/-2.14    | -2.58/-3.26    | -3.86/-4.06    | -5.68/-8.22    | -13.37/-10.76  | -13.81/-8.30   | -15.06/-11.32  | -15.52/-10.16  | -14.18/-13.51  | -10.89/-14.40  |
| Θ(130°)  | -7.54/-5.89   | -10.21/-14.70 | -11.58/-10.26 | -6.07/-5.71   | -7.32/-9.14   | -1.12/-2.63    | -4.94/-5.37    | -5.28/-7.02    | -11.73/-9.49   | -5.02/-6.74    | -8.02/-6.74    | -12.96/-12.05  | -14.59/-12.05  | -12.96/-12.05  | -12.96/-12.05  | -12.96/-12.05  | -12.96/-12.05  | -12.96/-12.05  |
| Θ(140°)  | -12.63/-10.98 | -8.20/-7.13   | -8.94/-10.86  | -8.59/-6.67   | -5.68/-6.58   | -5.73/-7.13    | -5.91/-4.13    | -4.06/-6.14    | -9.03/-12.70   | -15.41/-11.43  | -9.24/-7.36    | -6.53/-12.42   | -12.98/-6.77   | -5.51/-13.64   | -14.09/-13.36  | -13.86/-12.14  | -7.59/-7.48    | -9.46/-12.01   |
| Θ(150°)  | -11.44/-7.99  | -5.90/-4.98   | -4.64/-6.45   | -5.06/-4.17   | -4.20/-5.32   | -4.56/-5.54    | -6.23/-5.46    | -5.99/-7.87    | -9.35/-9.94    | -10.91/-13.67  | -14.94/-9.21   | -4.44/-3.26    | -8.06/-14.33   | -11.61/-10.90  | -15.00/-11.03  | -11.72/-12.94  | -9.80/-9.35    | -10.83/-11.43  |
| Θ(160°)  | -7.51/-9.22   | -9.00/-8.34   | -9.45/-9.14   | -7.47/-7.02   | -6.80/-5.93   | -5.33/-5.50    | -6.41/-5.46    | -8.51/-9.40    | -6.51/-8.40    | -8.25/-6.17    | -11.77/-13.57  | -15.56/-11.76  | -10.08/-15.14  | -14.08/-15.14  | -15.25/-15.30  | -10.62/-11.59  | -12.96/-11.49  | -6.24/-6.13    |
| Θ(170°)  | -5.50/-6.47   | -7.70/-6.63   | -12.41/-15.08 | -13.86/-12.14 | -11.25/-9.73  | -8.82/-9.11    | -8.51/-8.11    | -7.27/-6.34    | -5.04/-4.60    | -4.12/-3.07    | -4.08/-5.37    | -6.24/-7.72    | -8.85/-11.11   | -15.73/-14.05  | -10.31/-8.27   | -6.16/-5.18    | -5.60/-6.17    | -5.96/-5.86    |
| Θ(180°)  | -13.29/-12.53 | -12.54/-12.68 | -13.50/-12.24 | -10.61/-9.58  | -9.42/-9.21   | -8.80/-8.43    | -7.94/-7.26    | -8.57/-9.69    | -11.11/-12.16  | -12.65/-14.34  | -14.14/-13.16  | -10.62/-8.99   | -8.46/-9.71    | -14.15/-14.69  | -15.34/-13.78  | -14.78/-14.98  | -14.68/-13.71  | -14.75/-13.87  |
| Freq(Hz) | 5.3GPol.      | TotalAnt. 1   | +-            | +-            | +-            | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             | +-             |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -5.84/-6.58   | -5.99/-5.74   | -6.71/-7.44   | -7.75/-7.46   | -7.75/-7.49   | -6.35/-6.62    | -7.65/-7.48    | -6.69/-6.26    | -7.12/-7.77    | -6.56/-6.00    | -7.36/-6.76    | -5.75/-5.56    | -5.55/-5.62    | -5.47/-4.91    | -4.79/-5.51    | -5.89/-4.95    | -4.64/-5.01    | -5.57/-5.62    |
| Θ(10°)   | -5.85/-6.19   | -5.86/-5.48   | -5.70/-6.17   | -6.89/-6.49   | -5.13/-4.39   | -4.11/-3.81    | -6.37/-7.85    | -9.80/-9.78    | -7.14/-6.14    | -6.93/-7.82    | -7.88/-9.72    | -1             |                |                |                |                |                |                |



# Antenna Pattern

# Appendix B

|          |               |               |               |               |                   |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(60°)   | -4.36/-5.09   | -4.25/-2.27   | -0.42/0.83    | 2.06/2.94     | 3.33/2.99         | 2.31/1.73      | 1.79/1.85      | 2.01/1.76      | 1.53/1.18      | 0.80/0.71      | 1.16/2.16      | 2.84/3.03      | 2.65/2.16      | 1.88/1.67      | 1.11/0.19      | -0.91/-1.48    | -1.76/-2.12    | -2.86/-3.71    |
| Θ(70°)   | -10.25/-11.10 | -9.01/-4.17   | -0.71/-1.28   | 2.44/3.39     | 3.78/3.61         | 2.88/1.94      | 0.98/0.21      | -0.24/-0.66    | -1.03/-1.68    | -2.43/-2.23    | -1.34/-0.15    | 0.83/1.28      | 0.92/0.48      | 0.22/0.33      | 0.00/-0.83     | -1.79/-3.35    | -4.84/-5.73    | -7.01/-8.13    |
| Θ(80°)   | -10.65/-13.12 | -9.64/-5.05   | -1.25/-1.08   | 2.27/2.84     | 2.93/2.59         | 1.97/1.09      | -0.21/-1.40    | -2.60/-3.86    | -5.40/-6.43    | -5.26/-4.37    | -3.07/-1.48    | -0.13/0.98     | 0.98/0.37      | -0.52/-0.87    | -0.47/-0.23    | -0.70/-2.16    | -4.59/-7.04    | -8.34/-9.11    |
| Θ(90°)   | -10.54/-15.66 | -9.86/-5.63   | -2.95/-1.06   | 0.40/1.33     | 1.68/1.93         | 2.21/2.19      | 1.95/1.21      | -0.33/-3.01    | -5.45/-5.19    | -4.76/-4.58    | -4.46/-2.92    | -1.36/0.37     | 1.23/0.62      | -1.53/-3.11    | -2.33/-1.12    | -0.87/-2.37    | -4.88/-6.69    | -7.39/-8.38    |
| Θ(100°)  | -9.04/-12.96  | -8.84/-5.46   | -4.66/-4.23   | -3.76/-2.48   | -0.77/-1.27       | 2.44/2.83      | 2.63/1.71      | -0.39/-4.24    | -7.44/-6.81    | -6.96/-7.78    | -7.05/-6.69    | -3.39/-0.26    | 0.84/0.51      | -0.59/-1.68    | -1.86/-1.40    | -1.53/-2.95    | -4.46/-4.79    | -5.18/-7.02    |
| Θ(110°)  | -7.96/-12.79  | -9.59/-9.90   | -9.85/-11.27  | -10.00/-6.95  | -1.99/-1.56       | 2.47/2.32      | 1.64/0.65      | -2.07/-6.37    | -11.29/-11.34  | -9.37/-1.79    | -8.65/-1.14    | -8.44/-4.65    | -0.15/-0.56    | -1.10/-2.11    | -3.76/-4.93    | -5.39/-5.74    | -6.62/-7.02    |                |
| Θ(120°)  | -9.79/-11.98  | -11.28/-7.58  | -6.70/-6.10   | -5.24/-5.40   | -3.61/-1.04       | -0.22/-1.00    | -1.24/-0.91    | -1.46/-3.54    | -6.57/-7.89    | -4.91/-3.58    | -3.78/-5.35    | -7.98/-8.38    | -5.45/-2.89    | -1.53/-1.65    | -2.85/-4.05    | -4.74/-4.80    | -4.87/-6.06    | -9.13/-11.29   |
| Θ(130°)  | -11.68/-14.33 | -14.29/-10.92 | -7.61/-5.21   | -3.60/-3.68   | -4.49/-4.78       | -4.87/-5.63    | -5.21/-3.62    | -3.34/-3.86    | -5.47/-8.17    | -8.41/-7.73    | -7.76/-6.63    | -6.19/-9.50    | -6.59/-7.21    | -6.53/-0.54    | -5.02/-5.78    | -6.13/-5.63    | -5.50/-6.66    | -8.09/-10.16   |
| Θ(140°)  | -11.67/-12.15 | -12.56/-12.51 | -10.76/-7.90  | -4.95/-3.58   | -4.08/-6.02       | -10.77/-7.99   | -7.47/-8.95    | -9.86/-9.87    | -8.53/-7.33    | -6.99/-6.99    | -7.61/-9.48    | -11.29/-9.38   | -9.38/-11.15   | -12.39/-9.15   | -7.68/-7.74    | -9.12/-11.49   |                |                |
| Θ(150°)  | -7.45/-7.58   | -7.87/-9.15   | -9.55/-8.29   | -6.26/-4.75   | -4.89/-7.05       | -10.70/-12.34  | -10.61/-8.90   | -8.54/-7.61    | -7.40/-8.16    | -9.75/-12.53   | -13.04/-13.63  | -13.06/-10.28  | -9.34/-9.75    | -10.68/-10.66  | -10.51/-11.31  | -12.24/-10.17  | -8.07/-7.14    | -6.93/-6.98    |
| Θ(160°)  | -8.61/-9.12   | -10.06/-10.16 | -10.45/-9.84  | -9.03/-8.72   | -10.19/-13.15     | -14.36/-13.21  | -10.30/-10.06  | -10.05/-11.14  | -12.86/-13.82  | -14.27/-15.37  | -14.84/-14.72  | -14.54/-11.58  | -10.24/-10.55  | -11.21/-11.19  | -11.04/-9.55   | -9.52/-8.75    | -7.97/-7.59    | -7.33/-7.80    |
| Θ(170°)  | -10.69/-11.09 | -11.31/-11.33 | -11.14/-10.74 | -11.85/-12.99 | -12.86/-11.92     | -12.90/-10.97  | -9.44/-9.01    | -8.78/-9.05    | -9.15/-9.84    | -10.70/-10.39  | -10.94/-12.03  | -14.54/-15.86  | -15.56/-16.38  | -15.44/-14.64  | -14.95/-13.39  | -12.00/-10.61  | -10.65/-10.24  | -9.87/-9.86    |
| Θ(180°)  | -8.95/-8.85   | -9.09/-9.61   | -9.82/-10.96  | -11.21/-11.50 | -11.79/-12.10     | -11.35/-11.12  | -11.36/-10.85  | -10.48/-9.67   | -9.11/-9.22    | -8.61/-8.47    | -8.75/-9.41    | -10.01/-10.79  | -11.89/-12.90  | -13.45/-13.39  | -13.22/-12.42  | -11.88/-11.34  | -10.68/-9.88   | -8.80/-8.30    |
| Freq(Hz) | 5.2GPol.      | TotalAnt. 2   | -/-           | -/-           | -/-               | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)      | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | 0.20/0.25     | 0.02/-0.06    | -0.08/0.05    | 0.18/0.16     | 0.09/-0.02        | -0.04/-0.43    | -0.33/-0.36    | -0.37/-0.37    | -0.14/-0.14    | -0.15/0.03     | -0.00/0.14     | -0.11/0.00     | 0.13/0.11      | 0.28/0.41      | 0.35/0.02      | -0.19/-0.48    | -0.32/-0.07    | -0.07/0.16     |
| Θ(10°)   | 0.68/0.71     | 0.54/-0.42    | -0.01/-0.02   | -0.18/-0.55   | -0.56/-0.54       | -0.73/-0.48    | -0.31/-0.12    | 0.06/0.31      | 0.19/0.51      | 0.74/0.78      | 0.66/0.25      | 0.03/-0.06     | 0.10/-0.05     | 0.10/0.05      | -0.19/-0.16    | -0.74/-0.63    | -0.49/-0.31    | -0.02/0.34     |
| Θ(20°)   | 1.10/1.11     | 1.02/0.89     | 0.79/0.81     | 0.74/0.50     | 0.42/0.07         | -0.12/-0.13    | 0.19/0.40      | 0.58/0.54      | 0.48/0.05      | -0.40/-0.61    | 0.11/0.72      | 0.10/1.07      | 0.34/-0.02     | -0.10/0.04     | 0.02/0.26      | 0.02/0.31      | 0.52/0.92      |                |
| Θ(30°)   | -0.25/-0.03   | 0.09/-0.10    | 0.32/0.56     | 1.20/1.40     | 1.18/0.68         | 0.56/0.89      | 0.99/0.51      | -0.71/-1.89    | -2.91/-3.75    | -4.17/-3.71    | -2.43/-1.73    | -1.45/-1.05    | -0.51/0.23     | 0.61/0.36      | -0.20/-0.60    | -0.27/0.03     | 0.12/0.26      | 0.03/-0.63     |
| Θ(40°)   | -3.26/-2.08   | -1.14/-1.40   | -1.10/-0.71   | -0.44/0.55    | 1.08/1.17         | 1.28/0.99      | 0.42/-0.53     | -1.10/-1.60    | -1.98/-3.37    | -4.71/-4.34    | -3.63/-2.68    | -1.99/-1.74    | -0.85/0.21     | 0.56/0.96      | 0.58/-0.37     | -1.35/-1.35    | -1.71/-2.48    | -3.09/-2.83    |
| Θ(50°)   | -4.76/-4.58   | -3.74/-3.56   | -2.48/-1.36   | -0.64/-0.68   | -0.35/0.46        | 1.63/1.50      | -0.24/-0.65    | -0.17/-1.27    | -2.19/-3.44    | -6.35/-4.20    | -0.66/-1.51    | -2.25/-1.47    | -0.58/0.21     | -0.60/-0.02    | -0.66/-1.51    | -1.71/-1.65    | -3.23/-4.76    | -4.78/-4.29    |
| Θ(60°)   | -8.85/-8.50   | -7.31/-5.93   | -3.79/-2.07   | -0.14/-0.82   | -1.64/-0.50       | 0.70/1.13      | 1.48/0.94      | -0.05/-1.43    | -2.34/-3.66    | -4.08/-5.08    | -4.68/-4.80    | -2.95/-1.52    | -1.71/-1.09    | -0.38/-1.21    | -2.37/-2.50    | -1.78/-3.47    | -7.12/-6.82    | -6.77/-8.03    |
| Θ(70°)   | -6.57/-7.14   | -6.13/-6.72   | -7.22/-5.22   | -0.11/0.13    | 0.68/0.92         | 0.59/0.05      | 0.50/0.07      | -1.29/-2.22    | -2.80/-4.62    | -6.11/-8.00    | -7.31/-6.32    | -5.05/-4.68    | -2.85/-2.98    | -2.56/-2.98    | -4.92/-2.56    | -4.82/-6.13    | -6.68/-8.64    | -11.55/-9.97   |
| Θ(80°)   | -8.39/-7.94   | -6.76/-6.33   | -4.45/-1.94   | -0.61/1.49    | <b>2.68/-1.88</b> | 1.83/1.07      | -3.42/-3.96    | -3.96/-5.93    | -5.64/-6.46    | -6.09/-7.32    | -2.89/-3.51    | -2.89/-1.58    | -4.54/-6.07    | -5.45/-6.07    | -9.40/-11.00   | -12.27/-10.05  |                |                |
| Θ(90°)   | -14.76/-14.50 | -15.34/-12.35 | -13.19/-12.23 | -6.77/-3.32   | 0.12/-0.37        | -0.58/-1.02    | -0.58/-1.02    | -5.15/-5.84    | -5.88/-6.55    | -6.82/-6.50    | -4.93/-4.83    | -3.48/-4.62    | -6.77/-6.16    | -3.51/-2.97    | -3.35/-4.53    | -11.73/-12.28  | -10.59/-10.37  |                |
| Θ(100°)  | -13.40/-14.54 | -14.95/-14.33 | -11.33/-8.33  | -5.52/-4.17   | -3.48/-2.40       | -2.99/-3.76    | -4.38/-6.43    | -6.91/-7.17    | -7.22/-15.15   | -6.37/-7.42    | -7.82/-8.66    | -9.02/-4.74    | -6.50/-4.16    | -2.61/-4.09    | -3.84/-4.13    | -4.47/-7.32    | -11.94/-15.32  | -13.43/-10.91  |
| Θ(110°)  | -15.51/-13.34 | -7.56/-9.50   | -12.23/-7.95  | -5.95/-5.94   | -6.25/-6.72       | -6.87/-6.53    | -3.34/-2.79    | -5.82/-11.30   | -15.46/-14.78  | -11.57/-7.21   | -6.62/-6.51    | -9.84/-6.31    | -7.84/-6.19    | -4.08/-5.52    | -10.44/-5.63   | -6.60/-12.05   | -15.67/-15.26  | -14.81/-11.68  |
| Θ(120°)  | -13.01/-10.60 | -8.28/-9.59   | -14.33/-15.81 | -13.47/-15.54 | -5.36/-6.43       | -13.47/-15.44  | -4.31/-5.29    | -7.16/-12.61   | -15.01/-14.80  | -12.34/-12.49  | -10.47/-13.71  | -9.76/-8.65    | -12.29/-11.64  | -9.59/-8.96    | -12.16/-13.07  | -12.09/-14.72  | -15.23/-15.71  | -13.62/-13.98  |
| Θ(130°)  | -11.04/-10.93 | -10.87/-12.37 | -10.99/-8.88  | -7.88/-7.41   | -9.41/-6.55       | -2.61/-3.98    | -7.54/-8.44    | -11.71/-12.06  | -12.15/-14.87  | -14.34/-10.23  | -8.55/-11.48   | -10.44/-10.70  | -7.92/-13.13   | -13.49/-14.75  | -8.79/-9.86    | -11.58/-14.47  | -12.02/-15.03  | -12.36/-11.00  |
| Θ(140°)  | -9.07/-9.55   | -10.23/-11.18 | -10.38/-11.04 | -13.52/-15.16 | -14.00/-6.99      | -4.04/-4.23    | -6.55/-10.47   | -13.11/-14.40  | -13.21/-10.92  | -12.79/-7.64   | -8.41/-10.16   | -10.49/-9.42   | -10.05/-8.47   | -10.91/-12.73  | -6.90/-7.92    | -14.73/-15.32  | -14.89/-14.47  | -12.68/-13.75  |
| Θ(150°)  | -14.65/-16.04 | -15.56/-15.68 | -15.06/-15.41 | -12.98/-10.64 | -9.47/-9.84       | -8.15/-9.22    | -10.22/-13.86  | -13.40/-14.58  | -13.68/-12.26  | -12.07/-14.41  | -13.83/-14.99  | -15.12/-14.95  | -13.97/-15.31  | -14.65/-14.53  | -13.83/-14.99  | -15.74/-15.27  | -15.23/-15.71  | -15.64/-14.69  |
| Θ(160°)  | -14.30/-14.31 | -14.14/-13.50 | -12.09/-11.68 | -12.01/-12.10 | -13.58/-14.06     | -15.59/-14.50  | -15.32/-13.04  | -11.39/-11.89  | -13.27/-13.40  | -11.67/-11.93  | -12.09/-12.16  | -14.06/-15.53  | -15.10/-15.08  | -13.65/-13.64  | -15.91/-15.43  | -15.18/-15.28  | -14.93/-15.20  | -15.44/-14.86  |
| Θ(170°)  | -10.77/-10.16 | -11.01/-11.97 | -13.32/-13.36 | -13.43/-13.35 | -13.25/-14.06     | -15.59/-15.10  | -13.91/-12.91  | -12.33/-12.72  | -13.72/-13.84  | -14.64/-15.69  | -14.07/-14.11  | -13.82/-12.18  | -12.54/-13.57  | -15.80/-14.97  | -15.05/-15.24  | -15.05/-15.21  | -15.50/-14.04  | -12.22/-10.51  |
| Θ(180°)  | -11.99/-12.48 | -12.67/-13.83 | -14.12/-13.61 | -13.05/-13.64 | -13.33/-13.67     | -14.43/-14.74  | -15.57/-15.22  | -15.71/-15.10  | -15.47/-15.65  | -15.18/-15.46  | -15.00/-15.43  | -15.50/-15.45  | -14.83/-15.18  | -15.24/-15.38  | -15.12/-15.38  | -15.93/-14.56  | -13.43/-12.55  |                |
| Freq(Hz) | 5.3GPol.      | TotalAnt. 2   | -/-           | -/-           | -/-               | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            | -/-            |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)      | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | 1.05/1.09     | 1.34/1.68     | 1.63/1.89     | 1.91/1.98     | 1.92/1.77         | 1.67/1.61      | 1.33/1.14      | 1.03/0.86      | 0.77/0.68      | 0.62/0.95      | 1.29/1.77      | 1.74/1.87      | 1.89/1.84      | 1.60/1.27      | 1.11/1.07      | 1.14/1.17      | 1.05/1.08      | 0.80/0.78      |
| Θ(10°)   | 1.08/1.14     | 1.13/1.03     | 1.15/1.27     | 1.20/1.23     | 1.12/1.04         | 1.11/1.04      | 0.97/1.08      | 1.39/1.74      | 1.63/1.59      | 1.64/1.69      | 1.78/2.16      | 2.24/2.12      | 2.12/1.96      | 1.57/1.30      | 1.21/0.97      | 0.96/0.87      | 0.76/0.59      | 0.59/0.70      |
| Θ(20°)   | 1.47/1.92     | 2.22/1.71     | 1.70/2.15     | 2.31/2.09     | 1.44/0.95         | 0.48/0.57      | 0.90/1.04      | 1.18/1.26      | 1.10/0.31      | 0.01/-0.12     | 0.04/0.68      | 1.52/1.97      | 2.26/2.37      | 2.57/2.26      | 2.02/1.66      | 1.01/0.49      | 0.19/-0.07     | -0.04/0.54     |
| Θ(30°)   | 0.14/0.84     | 1.02/1.01     | 1.47/2.13     | 2.97/2.98     | 2.51/1.10         | 0.30/0.87      | 1.88/1.89      | 0.63/-0.76     | -1.66/-1.98    | -1.86/-1.27    | -0.47/0.38     | 0.45/0.58      | 0.91/1.28      | 1.17/0.85      | 1.06/0.72      | 0.37/0.04      | 0.50/0.69      | 0.38/0.18      |
| Θ(40°)   | -3.91/-3.05   | -1.63/-0.68   | 0.16/0.06     | 0.94/2.72     | <b>3.84/-1.33</b> | 2.23/2.46      | 2.35/1.55      | -0.36/-1.74    | -2.97/-4.35    | -4.64/-2.61    | -1.61/-0.82    | -0.22/-0.43    | -0.02/0.51     | 1.03/1.38      | 1.05/-0.22     | -1.29/-0.97    | -0.97/-1.52    | -1.90/-2.99    |
| Θ(50°)   | -8.66/-4.74   | -3.97/-2.44   | -0.73/-0.95   | -0.48/0.96    | 2.27/2.86         | 3.15/2.96      | 1.85/0.02      | -0.13/-0.67    | -2.32/-4.77    | -5.53/-5.14    | -3.87/-1.26    | 0.60/0.80      | 0.35/0.49      | 0.98/0.87      | 0.86/-0.41     | -2.15/-2.22    | -2.96/-3.42    | -4.84/-5.29    |
| Θ(60°)   | -7.76/-7.33   | -5.53/-4.24   | -3.44/-2.76   | -1.18/-0.67   | 0.39/1.76         | 2.72/2.78      | 0.98/0.12      | -0.42/-2.28    | 3.26/2.67      | -0.93/-3.82    | -4.51/-4.59    | -1.53/-0.22    | -0.78/-0.71    | 0.51/0.01      | -0.91/-2.72    | -2.52/-3.76    | -6.31/-7.93    | -7.46/-8.36    |
| Θ(70°)   | -6.04/-5.75   | -6.20/-5.79   | -5.02/-2.37   | 0.17/0.69     | 1.20/2.63         | 2.37/2.02      | 3.20/2.89      | 0.61/-0.61     | -1.56/-3.74    | -5.00/-5.13    | -3.91/-5.14    | -3.57/-0.99    | -0.63/-1.80    | -1.22/-1.67    | -3.31/-2.79    | -4.07/-6.68    | -7.90/-8.34    | -8.37/-8.52    |
| Θ(80°)   | -6.95/-8.32   | -10.16/-16.80 | -16.05/-8.35  | -4.62/-0.41   | 3.05/3.51         | 2.50/2.85      | 1.97/0.19      | -0.92/-1.94    | -3.01/-3.39    | -3.45/-3.77    | -4.30/-6.10    | -5.33/-5.77    | -1.25/-0.98    | -3.08/-2.54    | -4.08/-2.39    | -6.44/-6.43    | -7.32/-10.37   | -10.07/-9.70   |
| Θ(90°)   | -11.86/-14.83 | -14.09/-11.60 | -15.22/-10.68 | -5.17/-0.77   | 2.65/1.59         | 1.45/1.93      | -2.70/-5.49    | -4.93/-4.44    |                |                |                |                |                |                |                |                |                |                |



# Antenna Pattern

# Appendix B

|          |               |               |               |               |               |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(160°)  | -5.87/-4.79   | -4.41/-4.28   | -4.79/-5.32   | -6.26/-6.69   | -6.15/-5.90   | -5.53/-6.36    | -7.12/-8.71    | -9.75/-9.44    | -8.73/-8.70    | -8.23/-8.59    | -9.35/-9.99    | -10.96/-11.30  | -10.95/-9.99   | -9.04/-8.56    | -8.90/-10.56   | -11.99/-12.50  | -11.46/-10.16  | -8.98/-7.56    |
| Θ(170°)  | -9.31/-9.34   | -9.69/-10.59  | -10.98/-10.89 | -11.34/-11.29 | -10.86/-10.14 | -9.70/-9.00    | -9.09/-8.24    | -8.30/-8.54    | -8.56/-8.38    | -7.74/-7.97    | -7.78/-7.93    | -8.32/-8.47    | -8.54/-9.21    | -8.91/-9.21    | -9.65/-10.14   | -10.64/-11.13  | -10.66/-10.07  | -9.80/-9.90    |
| Θ(180°)  | -11.46/-11.66 | -12.58/-13.16 | -13.19/-13.38 | -13.13/-12.67 | -12.87/-12.07 | -10.84/-10.44  | -9.23/-10.44   | -9.86/-9.72    | -9.23/-9.63    | -9.50/-9.77    | -8.52/-9.16    | -9.48/-10.36   | -11.77/-11.89  | -12.16/-11.89  | -11.76/-11.89  | -11.46/-11.34  | -11.32/-12.26  | -12.96/-12.40  |
| Freq(Hz) | 5.2GPol.      | TotalAnt. 3   | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -6.09/-6.60   | -7.12/-7.02   | -7.05/-7.30   | -6.76/-6.80   | -6.83/-6.88   | -6.76/-6.80    | -6.54/-6.21    | -6.06/-6.13    | -6.75/-7.48    | -6.91/-5.98    | -5.90/-6.44    | -6.32/-7.64    | -7.19/-6.86    | -7.19/-6.86    | -6.32/-6.18    | -6.53/-7.18    | -6.90/-6.53    | -6.29/-6.97    |
| Θ(10°)   | -4.59/-4.62   | -4.38/-4.51   | -4.35/-4.90   | -5.26/-5.80   | -6.40/-6.21   | -5.58/-5.03    | -4.25/-3.68    | -3.09/-2.92    | -2.55/-2.47    | -2.91/-3.64    | -4.08/-4.05    | -4.44/-5.17    | -6.78/-7.97    | -8.52/-9.20    | -8.86/-7.20    | -6.14/-5.54    | -4.71/-4.88    | -4.51/-4.27    |
| Θ(20°)   | -13.99/-13.98 | -11.86/-10.63 | -8.80/-7.75   | -5.98/-3.93   | -3.43/-3.50   | -3.73/-3.47    | -2.96/-2.16    | -2.10/-2.06    | -2.84/-3.68    | -4.59/-6.88    | -9.22/-8.63    | -6.95/-5.65    | -6.22/-7.25    | -9.60/-13.19   | -9.82/-6.17    | -5.20/-5.17    | -6.49/-8.29    | -10.02/-12.20  |
| Θ(30°)   | -9.88/-8.14   | -6.86/-6.04   | -6.06/-8.00   | -10.09/-6.32  | -2.72/-1.49   | -2.41/-5.06    | -5.51/-4.52    | -3.69/-4.48    | -7.48/-11.82   | -13.14/-14.13  | -13.35/-11.85  | -13.48/-12.90  | -8.53/-7.77    | -9.81/-14.50   | -13.00/-7.93   | -7.60/-10.35   | -15.11/-14.51  | -13.64/-11.45  |
| Θ(40°)   | -6.71/-6.56   | -6.63/-5.45   | -5.16/-4.87   | -5.77/-7.68   | -4.42/-2.06   | -3.66/-8.35    | -3.70/-2.01    | -3.74/-6.23    | -6.22/-6.14    | -5.83/-7.34    | -8.79/-9.83    | -10.73/-15.24  | -12.81/-9.91   | -12.10/-16.27  | -10.58/-11.10  | -12.64/-10.81  | -10.22/-8.95   | -7.70/-7.73    |
| Θ(50°)   | -9.96/-8.31   | -8.44/-8.87   | -7.35/-7.36   | -11.07/-7.35  | -3.51/-1.53   | -3.65/-2.59    | 0.01/-3.63     | -8.30/-8.37    | -10.51/-14.91  | -15.02/-14.96  | -11.87/-9.32   | -12.62/-15.28  | -15.55/-13.86  | -15.71/-10.96  | -9.07/-10.08   | -10.16/-10.32  | -11.09/-11.97  | -13.41/-11.07  |
| Θ(60°)   | -5.17/-4.10   | -4.91/-8.09   | -6.79/-1.99   | -2.05/-3.63   | -4.79/-2.02   | -0.46/-0.71    | -0.43/-4.75    | -6.89/-10.79   | -12.93/-14.87  | -12.41/-15.14  | -12.93/-14.87  | -12.41/-15.14  | -11.87/-11.55  | -14.49/-14.73  | -9.19/-13.42   | -9.25/-12.70   | -15.47/-15.44  | -9.07/-6.51    |
| Θ(70°)   | -3.00/-1.80   | -1.56/-2.08   | -1.11/-1.76   | -2.52/-2.66   | -4.20/-6.03   | 0.64/-1.46     | 1.21/-0.75     | -2.32/-1.90    | -3.31/-4.05    | -5.89/-9.85    | -12.38/-15.95  | -10.25/-10.09  | -15.87/-11.86  | -13.83/-14.86  | -8.27/-14.87   | -10.91/-16.14  | -13.04/-9.57   | -6.93/-5.12    |
| Θ(80°)   | -2.99/-1.46   | -0.74/-0.09   | 0.05/-1.57    | -1.21/-0.19   | 1.37/-3.22    | 2.17/-2.45     | 1.21/-1.24     | -2.99/-1.24    | -2.50/-5.39    | -8.29/-7.56    | -6.84/-6.98    | -15.46/-12.91  | -9.15/-7.02    | -7.15/-12.46   | -9.83/-11.07   | -9.53/-13.85   | -11.43/-10.70  | -6.97/-5.09    |
| Θ(90°)   | -4.60/-2.21   | -1.54/-1.16   | -1.30/-1.23   | -2.46/-1.98   | -1.12/-0.59   | 1.89/-0.28     | -2.94/-4.85    | -1.98/-1.02    | -2.97/-4.59    | -9.65/-11.56   | -11.28/-11.71  | -10.62/-15.37  | -11.32/-11.11  | -15.37/-9.21   | -7.18/-7.26    | -8.48/-11.08   | -11.25/-10.28  | -6.78/-4.20    |
| Θ(100°)  | -2.92/-2.20   | -2.11/-2.57   | -1.91/-1.56   | -3.89/-3.17   | -2.55/-1.29   | 1.08/-2.38     | -3.53/-2.67    | -2.05/-4.56    | -4.88/-4.25    | -6.05/-5.59    | -6.67/-9.45    | -11.41/-12.43  | -8.25/-11.13   | -7.00/-6.87    | -11.84/-14.13  | -13.39/-14.26  | -14.04/-8.79   | -3.21/-2.26    |
| Θ(110°)  | -3.36/-5.42   | -6.53/-4.80   | -2.97/-5.24   | -5.02/-3.24   | -3.44/-2.88   | -1.84/-4.42    | -4.25/-2.50    | -3.11/-12.24   | -3.37/-4.00    | -4.91/-2.51    | -4.50/-9.76    | -11.10/-13.42  | -7.32/-10.02   | -7.53/-9.26    | -12.88/-14.65  | -14.70/-10.34  | -10.05/-12.46  | -5.97/-3.36    |
| Θ(120°)  | -6.83/-5.97   | -6.83/-6.19   | -6.97/-14.64  | -9.14/-4.86   | -8.07/-5.76   | -1.04/-4.19    | -7.06/-7.41    | -8.62/-11.18   | -8.00/-4.94    | -8.83/-11.94   | -7.81/-9.89    | -9.90/-10.32   | -11.91/-11.54  | -8.83/-11.94   | -9.16/-9.98    | -6.96/-9.34    | -10.05/-8.07   | -10.05/-8.07   |
| Θ(130°)  | -8.61/-6.50   | -7.24/-8.36   | -9.08/-10.89  | -6.78/-6.56   | -13.22/-11.10 | -5.28/-6.48    | -7.83/-14.45   | -7.07/-6.67    | -9.02/-8.22    | -12.91/-15.51  | -10.11/-7.82   | -15.26/-14.37  | -10.34/-9.89   | -6.36/-8.18    | -14.57/-7.48   | -7.23/-6.81    | -4.89/-4.91    | -11.44/-8.92   |
| Θ(140°)  | -5.88/-6.60   | -7.80/-8.28   | -11.41/-12.11 | -13.61/-15.02 | -14.60/-11.67 | -10.16/-10.23  | -6.79/-6.63    | -15.47/-10.30  | -9.68/-8.79    | -8.39/-11.53   | -14.16/-13.70  | -13.95/-15.14  | -12.91/-9.46   | -8.42/-9.76    | -9.73/-12.63   | -15.60/-7.87   | -5.14/-8.53    | -10.28/-7.87   |
| Θ(150°)  | -9.51/-9.25   | -12.97/-16.01 | -14.46/-14.14 | -14.09/-11.78 | -9.27/-11.58  | -14.41/-15.29  | -13.04/-10.98  | -15.60/-14.99  | -15.35/-13.42  | -10.10/-9.21   | -13.31/-15.42  | -12.26/-12.17  | -11.73/-11.21  | -12.58/-12.97  | -10.09/-10.43  | -10.68/-11.87  | -10.68/-11.87  | -10.68/-11.87  |
| Θ(160°)  | -13.09/-14.11 | -12.87/-12.36 | -11.51/-12.35 | -12.97/-10.96 | -10.49/-12.23 | -10.44/-9.23   | -8.94/-11.02   | -11.17/-11.58  | -13.23/-15.26  | -14.00/-12.92  | -13.84/-15.31  | -14.12/-11.86  | -14.55/-15.01  | -13.17/-12.06  | -15.91/-15.25  | -12.79/-11.46  | -11.59/-11.90  | -10.64/-11.21  |
| Θ(170°)  | -13.79/-13.73 | -13.50/-13.62 | -14.28/-15.47 | -13.59/-12.48 | -11.67/-11.13 | -12.00/-13.07  | -14.64/-15.53  | -14.81/-14.04  | -15.98/-15.72  | -15.73/-15.45  | -15.05/-15.90  | -15.31/-15.16  | -14.30/-13.74  | -12.86/-12.32  | -11.00/-10.79  | -11.95/-12.52  | -12.10/-12.43  | -12.60/-13.17  |
| Θ(180°)  | -11.28/-11.79 | -13.41/-12.87 | -12.29/-12.61 | -13.20/-13.45 | -14.03/-15.01 | -13.15/-12.85  | -11.73/-12.37  | -13.22/-14.02  | -14.03/-13.28  | -12.35/-13.23  | -13.09/-12.68  | -13.76/-15.29  | -15.46/-14.58  | -13.67/-11.93  | -12.45/-13.52  | -14.07/-12.94  | -12.63/-11.27  | -12.63/-11.27  |
| Freq(Hz) | 5.3GPol.      | TotalAnt. 3   | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -5.95/-5.94   | -6.56/-6.21   | -6.78/-6.90   | -6.25/-6.71   | -7.13/-7.49   | -7.71/-7.56    | -7.60/-6.94    | -6.84/-6.81    | -6.67/-7.56    | -6.87/-6.40    | -6.27/-6.44    | -5.84/-6.41    | -6.32/-7.39    | -6.48/-6.44    | -6.24/-5.65    | -5.92/-5.84    | -5.92/-5.84    | -5.92/-5.84    |
| Θ(10°)   | -3.24/-3.28   | -3.21/-3.32   | -3.22/-2.99   | -3.09/-3.51   | -3.96/-5.07   | -5.79/-5.91    | -5.08/-3.71    | -3.06/-1.82    | -1.56/-1.73    | -1.87/-2.03    | -2.78/-3.63    | -3.80/-3.89    | -5.42/-6.29    | -7.22/-8.15    | -8.74/-8.60    | -7.06/-5.80    | -5.20/-4.64    | -4.13/-3.24    |
| Θ(20°)   | -9.09/-8.63   | -8.66/-6.70   | -6.51/-5.03   | -3.71/-3.20   | -3.07/-3.46   | -3.94/-3.88    | -2.06/-0.83    | -0.58/-0.68    | -1.20/-2.42    | -3.96/-4.42    | -4.28/-4.62    | -5.11/-5.98    | -6.23/-7.86    | -9.99/-13.72   | -12.99/-8.65   | -6.41/-5.38    | -5.91/-7.15    | -9.41/-10.33   |
| Θ(30°)   | -5.96/-5.76   | -4.77/-3.91   | -2.97/-3.58   | -5.16/-6.25   | -5.26/-7.98   | -2.23/-3.40    | -13.98/-1.98   | -15.62/-9.42   | -11.72/-2.70   | -11.48/-15.37  | -12.05/-6.04   | -15.09/-15.37  | -15.19/-8.54   | -15.09/-15.37  | -15.19/-8.54   | -11.05/-9.09   | -6.83/-5.95    | -6.83/-5.95    |
| Θ(40°)   | -7.32/-7.19   | -4.89/-3.12   | -2.41/-1.91   | -2.31/-3.56   | -4.90/-1.50   | -0.54/-4.47    | -4.52/-1.99    | -2.26/-4.76    | -5.00/-6.03    | -6.73/-8.03    | -10.59/-12.68  | -10.98/-10.69  | -7.76/-7.35    | -11.79/-13.94  | -8.93/-9.82    | -8.70/-9.68    | -9.80/-5.32    | -4.23/-6.01    |
| Θ(50°)   | -9.78/-8.43   | -6.48/-4.80   | -3.94/-3.23   | -4.48/-4.22   | -3.57/-1.66   | -1.59/-2.21    | 1.04/-0.20     | -4.60/-4.70    | -9.07/-9.12    | -9.41/-7.74    | -8.15/-9.80    | -14.67/-12.67  | -7.88/-7.00    | -12.85/-11.32  | -9.53/-11.08   | -9.54/-11.89   | -7.56/-7.54    | -9.60/-9.34    |
| Θ(60°)   | -6.22/-4.45   | -3.32/-3.32   | -7.38/-3.32   | -5.16/-3.24   | -4.21/-6.24   | -0.04/-0.60    | -13.45/-1.38   | -11.22/-6.72   | -15.59/-9.64   | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  | -14.48/-14.08  |
| Θ(70°)   | -3.17/-1.90   | -1.12/-2.10   | -1.93/-0.81   | -1.94/-1.68   | -2.95/-2.20   | 1.69/-0.78     | 1.84/-0.01     | -0.23/-0.55    | -3.33/-4.13    | -6.46/-12.36   | -14.97/-10.54  | -6.58/-9.81    | -9.34/-6.51    | -15.66/-10.86  | -9.55/-14.87   | -13.11/-14.65  | -16.35/-8.68   | -5.00/-4.45    |
| Θ(80°)   | -2.92/-1.37   | -0.69/-0.21   | 0.31/-0.83    | 0.09/-3.11    | -1.15/-0.22   | 1.59/-2.74     | 2.78/-0.05     | -0.12/-0.64    | -1.98/-2.87    | -4.31/-5.38    | -7.66/-15.55   | -9.77/-6.08    | -6.50/-7.35    | -7.22/-13.24   | -11.62/-11.43  | -9.89/-10.72   | -10.96/-7.08   | -5.26/-4.00    |
| Θ(90°)   | -5.62/-3.50   | -0.75/-0.30   | 0.42/-0.28    | 1.53/-0.13    | 0.18/-1.41    | 3.68/-2.12     | -1.74/-2.38    | -0.30/-0.69    | -3.70/-7.38    | -7.78/-8.35    | -8.50/-10.83   | -10.56/-5.04   | -8.07/-4.96    | -5.77/-9.27    | -11.12/-11.00  | -6.54/-12.45   | -9.12/-7.05    | -6.38/-6.45    |
| Θ(100°)  | -4.12/-2.47   | -0.93/-0.59   | -1.74/-0.59   | -0.64/-6.62   | -0.84/-0.41   | 2.53/-0.34     | -0.69/-2.30    | 0.69/-2.30     | -5.37/-3.47    | -6.33/-9.84    | -10.69/-9.31   | -10.18/-8.59   | -4.94/-7.41    | -13.12/-11.34  | -12.69/-6.27   | -13.12/-11.50  | -12.69/-6.27   | -4.73/-5.05    |
| Θ(110°)  | -3.84/-2.91   | -2.21/-2.46   | -1.67/-0.54   | -3.54/-5.74   | -3.89/-1.87   | -0.41/-1.89    | -5.91/-2.03    | -1.54/-7.15    | -3.00/-3.16    | -5.32/-1.61    | -4.94/-9.73    | -6.37/-8.80    | -8.53/-10.28   | -6.48/-10.54   | -10.34/-14.08  | -15.66/-10.67  | -11.93/-8.35   | -4.84/-3.75    |
| Θ(120°)  | -5.63/-5.78   | -6.17/-7.21   | -2.11/-7.36   | -9.21/-8.85   | -8.10/-5.19   | 0.20/-1.87     | 4.19/-3.64     | -8.30/-9.55    | -7.85/-3.69    | -5.77/-5.77    | -6.47/-9.02    | -9.88/-6.26    | -10.61/-8.54   | -6.06/-9.60    | -16.04/-10.75  | -10.76/-5.59   | -8.78/-9.74    | -9.61/-10.12   |
| Θ(130°)  | -6.49/-4.05   | -2.67/-3.50   | -6.19/-8.00   | -8.21/-7.11   | -8.21/-7.11   | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    | -8.21/-7.11    |
| Θ(140°)  | -5.37/-5.53   | -6.24/-7.60   | -8.97/-10.71  | -14.44/-13.50 | -10.39/-11.86 | -7.70/-7.08    | -4.64/-6.36    | -15.14/-7.87   | -8.01/-7.05    | -5.77/-10.75   | -11.21/-11.74  | -10.17/-11.78  | -11.91/-9.78   | -5.50/-8.01    | -8.11/-15.45   | -11.36/-6.04   | -4.91/-8.28    | -8.57/-8.56    |
| Θ(150°)  | -8.07/-6.19   | -8.27/-11.23  | -15.11/-14.30 | -10.97/-6.53  | -5.71/-10.10  | -15.49/-13.89  | -10.26/-9.27   | -11.96/-14.98  | -15.20/-13.88  | -11.87/-10.47  | -10.38/-9.24   | -10.40/-12.59  | -10.26/-14.27  | -9.29/-10.31   | -10.44/-11.78  | -9.96/-7.13    | -9.45/-8.04    | -8.22/-9.46    |
| Θ(160°)  | -12.40/-12.45 | -10.67/-9.09  | -8.11/-8.31   | -7.43/-6.29   | -6.07/-8.99   | -15.21/-11.19  | -9.78/-5.56    | -12.64/-14.59  | -11.65/-11.19  | -14.56/-13.10  | -15.34/-15.53  | -14.56/-13.14  | -16.35/-15.65  | -14.18/-13.14  | -13.02/-10.42  | -14.18/-13.14  | -8.35/-6.66    | -8.35/-6.66    |
| Θ(170°)  | -10.39/-6.61  | -10.36/-10.74 | -11.13/-11.23 | -10.94/-10.48 | -9.43/-9.08   | -10.07/-11.71  | -13.03/-12.09  | -12.94/-13.84  | -13.55/-15.32  | -15.19/-15.62  | -14.55/-15.32  | -15.34/-15.89  | -15.21/-15.18  | -14.39/-12.23  | -11.73/-11.28  | -11.25/-11.82  | -11.60/-11.07  | -11.18/-11.12  |
| Θ(180°)  | -12.54/-13.14 | -12.31/-13.14 | -14.05/-15.08 | -14.40/-14.41 | -14.25/-15.29 | -13.54/-11.71  | -11.62/-11.55  | -12.03/-12.26  | -12.25/-13.83  | -13.42/-11.43  | -10.50/-11.34  | -13.87/-13.21  |                |                |                |                |                |                |



# Antenna Pattern

# Appendix B

|          |               |               |               |               |               |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Θ(50°)   | -7.73/-6.29   | -4.33/-3.39   | -2.51/-1.70   | -2.22/-4.25   | -5.70/-3.95   | -7.40/-14.59   | -12.42/-6.24   | -3.44/-4.34    | -7.29/-7.04    | -6.38/-6.60    | -8.88/-7.55    | -6.07/-5.79    | -8.22/-11.51   | -13.40/-7.41   | -4.48/-5.57    | -5.11/-3.60    | -4.20/-5.96    | -7.23/-7.17    |
| Θ(60°)   | -6.93/-4.39   | -2.91/-2.05   | -1.53/-2.27   | -3.45/-5.98   | -5.72/-3.28   | -4.39/-4.99    | -7.68/-3.90    | -3.00/-6.06    | -7.59/-8.05    | -8.51/-9.44    | -12.64/-13.54  | -9.12/-6.83    | -7.75/-11.93   | -10.53/-7.65   | -6.96/-4.59    | -3.91/-4.31    | -6.54/-12.39   | -11.50/-9.40   |
| Θ(70°)   | -8.37/-6.47   | -5.54/-3.24   | -1.46/-0.92   | -0.38/-2.08   | -2.13/-4.72   | -3.42/-2.08    | -9.59/-13.68   | -9.02/-6.49    | -7.77/-7.80    | -8.01/-9.17    | -8.82/-8.35    | -8.56/-11.59   | -12.71/-12.20  | -12.55/-9.58   | -9.08/-5.64    | -6.88/-10.34   | -8.14/-6.66    | -5.69/-6.23    |
| Θ(80°)   | -15.01/-12.89 | -8.42/-3.30   | -1.93/-1.39   | -1.48/-1.18   | 0.32/-3.28    | -3.75/-3.98    | -3.94/-1.77    | -2.84/-4.93    | -5.53/-6.26    | -10.64/-13.36  | -12.34/-6.56   | -6.43/-6.94    | -7.12/-15.01   | -15.76/-8.42   | -6.34/-6.07    | -11.11/-8.76   | -7.90/-12.36   | -13.37/-13.24  |
| Θ(90°)   | -10.02/-8.91  | -4.81/-2.65   | -2.76/-2.40   | -4.68/-0.55   | 0.84/-0.83    | -2.07/-1.13    | 0.42/-1.00     | -0.83/-3.32    | -5.46/-7.49    | -10.01/-13.56  | -13.51/-9.08   | -8.85/-10.56   | -15.20/-10.79  | -9.74/-6.20    | -6.69/-9.27    | -8.41/-9.18    | -12.07/-10.05  | -9.39/-10.57   |
| Θ(100°)  | -12.14/-10.07 | -7.08/-6.01   | -5.05/-6.62   | -3.25/-0.70   | -0.37/-2.63   | -0.72/-1.07    | 2.85/-3.95     | 2.34/-1.03     | -2.39/-2.17    | -2.94/-6.61    | -11.60/-15.90  | -13.22/-13.24  | -13.63/-14.67  | -11.69/-8.38   | -11.71/-7.15   | -5.08/-14.01   | -11.04/-9.76   | -7.82/-8.73    |
| Θ(110°)  | -13.53/-13.22 | -11.77/-9.86  | -8.95/-4.47   | -1.52/-0.52   | -4.03/-4.95   | -3.81/-2.31    | 0.86/-1.89     | -0.95/-4.33    | -4.24/-3.07    | -3.41/-4.51    | -9.17/-9.56    | -6.96/-8.42    | -10.20/-15.77  | -9.74/-12.19   | -14.56/-7.56   | -8.87/-11.36   | -13.57/-7.53   | -8.90/-14.79   |
| Θ(120°)  | -12.93/-12.75 | -13.68/-11.91 | -6.37/-1.83   | -2.70/-3.81   | -0.65/-2.39   | -1.83/-1.34    | -0.56/-0.34    | -3.25/-6.99    | -4.22/-2.20    | -2.46/-3.25    | -7.57/-8.16    | -7.87/-15.06   | -13.05/-14.23  | -13.06/-9.88   | -14.79/-13.91  | -9.38/-9.65    | -10.07/-10.88  | -14.15/-11.00  |
| Θ(130°)  | -14.42/-9.14  | -8.02/-7.31   | -6.43/-6.48   | -5.62/-1.31   | -0.78/-3.84   | -3.32/-3.48    | -2.75/-1.85    | -4.12/-6.38    | -6.59/-4.42    | -3.03/-3.20    | -5.65/-8.91    | -7.08/-8.39    | -9.69/-12.81   | -9.32/-12.89   | -15.76/-7.60   | -8.46/-10.57   | -15.37/-12.47  | -12.69/-12.32  |
| Θ(140°)  | -10.68/-10.00 | -9.89/-11.59  | -11.29/-8.17  | -6.43/-6.80   | -6.96/-3.37   | -3.42/-4.25    | -5.61/-11.34   | -15.56/-15.61  | -11.38/-9.62   | -7.12/-5.59    | -9.59/-12.20   | -11.04/-13.94  | -14.14/-12.02  | -13.34/-10.22  | -8.80/-11.04   | -13.40/-11.76  | -11.05/-11.27  | -15.10/-15.65  |
| Θ(150°)  | -10.44/-8.82  | -9.64/-9.37   | -9.28/-7.85   | -4.73/-4.56   | -5.09/-3.95   | -3.47/-3.51    | -5.44/-8.68    | -8.82/-10.71   | -12.78/-10.23  | -8.17/-10.40   | -13.87/-11.87  | -11.18/-15.82  | -12.44/-10.43  | -11.21/-8.48   | -9.26/-15.80   | -15.04/-15.39  | -14.23/-14.97  | -15.15/-12.86  |
| Θ(160°)  | -10.74/-10.81 | -10.92/-10.28 | -8.32/-6.80   | -6.87/-8.80   | -11.15/-9.26  | -6.84/-6.86    | -7.96/-10.86   | -13.41/-13.47  | -15.56/-15.15  | -12.85/-10.39  | -9.53/-10.89   | -12.85/-13.97  | -14.62/-13.79  | -13.94/-15.18  | -15.76/-15.18  | -12.65/-10.76  | -12.65/-10.76  | -11.06/-10.85  |
| Θ(170°)  | -11.07/-10.34 | -10.79/-11.04 | -10.24/-10.65 | -10.25/-10.12 | -8.15/-6.50   | -5.87/-5.36    | -6.39/-7.16    | -7.45/-7.98    | -9.59/-10.82   | -10.37/-10.59  | -11.65/-11.51  | -12.74/-13.30  | -12.03/-11.45  | -11.23/-12.59  | -13.33/-14.47  | -15.62/-15.32  | -15.40/-16.04  | -14.45/-13.44  |
| Θ(180°)  | -8.39/-8.54   | -8.61/-8.84   | -9.31/-9.93   | -10.05/-11.00 | -11.32/-11.80 | -12.25/-12.62  | -11.92/-11.34  | -10.79/-10.69  | -10.31/-11.03  | -11.12/-12.47  | -12.61/-13.13  | -13.27/-12.78  | -12.92/-13.14  | -13.45/-12.66  | -11.49/-11.37  | -10.69/-9.81   | -9.85/-10.10   | -9.49/-9.03    |
| Freq(Hz) | 5.3G/Pol.     | Total/Ant. 4  | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -4.06/-3.80   | -3.12/-3.18   | -2.93/-2.64   | -2.82/-2.72   | -2.87/-2.49   | -2.70/-2.66    | -2.47/-2.13    | -1.79/-1.75    | -1.54/-1.56    | -1.67/-1.84    | -1.91/-2.46    | -2.42/-2.00    | -1.75/-1.37    | -1.20/-1.38    | -1.81/-2.65    | -3.05/-3.23    | -3.89/-4.06    | -4.19/-1.47    |
| Θ(10°)   | -1.80/-1.33   | -1.19/-1.18   | -1.18/-1.41   | -1.40/-1.60   | -1.45/-2.14   | -1.28/-1.41    | -0.97/-9.39    | -5.93/-6.61    | -7.14/-8.60    | -9.97/-9.39    | -8.98/-9.61    | -7.58/-5.65    | -4.78/-3.86    | -3.21/-2.29    | -1.96/-2.10    | -2.16/-1.81    | -1.84/-2.41    | -2.34/-2.43    |
| Θ(20°)   | -2.45/-2.02   | -1.53/-1.15   | -1.17/-1.10   | -1.03/-0.92   | -1.64/-2.66   | -5.44/-8.92    | -13.29/-15.52  | -15.27/-14.17  | -12.12/-11.60  | -11.70/-12.88  | -12.60/-12.31  | -10.75/-8.99   | -7.41/-6.27    | -5.00/-3.78    | -3.52/-3.79    | -3.73/-3.33    | -2.85/-2.24    | -2.00/-2.21    |
| Θ(30°)   | -2.74/-2.16   | -0.59/-0.68   | -1.61/-2.10   | -1.86/-2.27   | -3.63/-6.67   | -7.90/-9.96    | -11.65/-11.81  | -8.45/-8.17    | -10.66/-11.70  | -8.53/-6.52    | -5.21/-2.20    | -6.81/-9.95    | -10.33/-4.70   | -6.12/-5.42    | -4.54/-6.78    | -7.68/-6.53    | -5.14/-4.09    | -4.62/-0.40    |
| Θ(40°)   | -1.24/-0.51   | 0.64/-0.67    | 1.14/-0.99    | -0.30/-3.11   | -6.64/-9.15   | -6.01/-9.28    | -10.20/-9.70   | -6.42/-6.06    | -15.61/-5.22   | -8.32/-9.46    | -8.08/-9.06    | -9.75/-7.60    | -6.03/-7.81    | -5.77/-6.95    | -11.71/-7.75   | -13.94/-15.18  | -12.65/-10.76  | -3.18/-1.37    |
| Θ(50°)   | -4.19/-3.11   | -2.14/-1.95   | -1.73/-0.65   | 0.17/-1.23    | -5.17/-4.44   | -7.56/-10.00   | -10.47/-3.72   | -1.12/-2.83    | -7.18/-9.10    | -5.02/-4.01    | -6.11/-8.26    | -6.54/-7.53    | -11.30/-11.65  | -14.82/-6.75   | -4.28/-8.78    | -11.68/-7.58   | -5.71/-6.01    | -5.40/-5.13    |
| Θ(60°)   | -4.31/-2.04   | -1.07/-0.68   | -1.18/-3.73   | -3.69/-4.73   | -6.31/-2.96   | -7.96/-13.46   | -5.84/-0.22    | -0.32/-4.58    | -10.87/-7.06   | -5.30/-4.76    | -5.50/-8.50    | -11.64/-8.03   | -9.80/-14.04   | -13.73/-7.55   | -5.77/-8.46    | -7.50/-5.29    | -4.78/-9.85    | -8.62/-6.18    |
| Θ(70°)   | -5.39/-3.83   | -3.24/-2.86   | -1.90/-4.14   | -0.35/-2.74   | -2.82/-2.69   | -7.36/-3.51    | -7.20/-6.98    | -6.97/-7.95    | -6.22/-6.92    | -6.77/-7.95    | -10.09/-11.80  | -13.22/-11.03  | -15.38/-11.21  | -6.35/-7.22    | -10.21/-14.89  | -11.24/-9.49   | -6.51/-6.62    |                |
| Θ(80°)   | -11.57/-8.61  | -6.82/-5.42   | -3.86/-1.14   | 0.71/-1.20    | 1.14/-2.01    | -4.70/-3.58    | -5.24/-0.53    | 0.61/-0.66     | -1.71/-3.04    | -5.89/-8.38    | -10.93/-12.15  | -12.03/-11.79  | -11.36/-12.89  | -10.18/-6.99   | -3.98/-5.20    | -10.93/-8.24   | -7.86/-8.99    | -10.34/-12.75  |
| Θ(90°)   | -12.54/-8.84  | -5.38/-3.37   | -1.31/-0.76   | -1.21/-1.68   | 2.07/-0.33    | -0.39/-0.08    | 1.74/-2.29     | 2.29/-1.16     | -0.76/-4.29    | -8.65/-12.47   | -13.33/-10.30  | -8.72/-10.05   | -9.02/-12.43   | -12.52/-4.79   | -2.46/-7.95    | -8.95/-9.84    | -8.88/-10.76   | -11.47/-13.33  |
| Θ(100°)  | -9.66/-7.53   | -5.92/-3.60   | -2.98/-2.37   | 3.75/-0.37    | 0.53/-1.05    | -1.76/-1.62    | 4.08/-12       | -1.28/-1.06    | -3.56/-4.29    | -12.15/-11.41  | -12.57/-11.97  | -15.44/-11.97  | -8.54/-8.59    | -6.26/-11.02   | -11.53/-9.75   | -6.81/-7.97    |                |                |
| Θ(110°)  | -9.45/-7.81   | -10.62/-8.25  | -4.21/-2.37   | -1.15/-0.04   | -1.75/-3.31   | -5.77/-0.44    | 4.18/-4.76     | 2.85/-0.92     | -3.59/-1.02    | -1.45/-2.73    | -3.51/-5.70    | -9.43/-13.33   | -12.06/-8.34   | -4.55/-8.12    | -11.19/-7.15   | -7.04/-11.73   | -9.21/-5.99    | -6.39/-10.81   |
| Θ(120°)  | -10.19/-9.13  | -11.75/-9.53  | -3.48/-0.51   | -2.27/-5.29   | -1.38/-1.15   | -0.48/-0.22    | 0.62/-0.66     | -1.62/-6.27    | -4.45/-2.54    | -2.31/-2.55    | -4.66/-3.26    | -4.15/-12.02   | -8.18/-14.50   | -13.53/-8.87   | -13.71/-11.85  | -10.89/-10.50  | -7.52/-8.28    | -12.54/-14.25  |
| Θ(130°)  | -12.69/-12.77 | -10.62/-5.72  | -2.96/-2.97   | -5.17/-1.62   | -1.01/-2.61   | -0.19/-0.44    | -0.88/-0.01    | -1.46/-3.23    | -3.13/-3.78    | -4.34/-5.44    | -7.54/-7.28    | -5.84/-7.55    | -11.75/-12.21  | -15.44/-10.15  | -10.68/-10.55  | -14.99/-11.08  | -10.23/-10.45  |                |
| Θ(140°)  | -10.85/-8.86  | -9.79/-9.41   | -8.41/-5.73   | -3.76/-4.89   | -5.48/-1.84   | -1.36/-2.20    | -3.36/-5.54    | -9.76/-6.77    | -10.06/-8.92   | -6.29/-7.15    | -9.12/-11.19   | -6.65/-10.32   | -15.83/-7.21   | -14.82/-9.06   | -7.52/-11.65   | -12.02/-11.47  | -8.65/-9.13    | -13.31/-15.98  |
| Θ(150°)  | -8.69/-7.49   | -7.01/-7.49   | -7.54/-6.48   | -7.13/-7.60   | -4.26/-2.76   | -3.72/-2.59    | -4.14/-1.11    | -8.84/-9.09    | -12.99/-12.94  | -7.83/-8.82    | -13.11/-15.27  | -15.72/-14.54  | -10.29/-9.37   | -12.15/-9.20   | -8.68/-13.19   | -11.05/-13.37  | -15.06/-16.08  | -12.95/-8.90   |
| Θ(160°)  | -9.60/-9.61   | -8.91/-8.46   | -7.75/-7.80   | -9.46/-12.33  | -11.29/-7.88  | -6.81/-6.25    | -6.56/-7.67    | -9.16/-10.08   | -10.99/-13.45  | -13.67/-10.41  | -7.69/-6.35    | -6.43/-8.28    | -10.85/-13.25  | -12.05/-9.36   | -10.76/-13.28  | -13.21/-12.28  | -13.43/-12.83  | -12.16/-9.57   |
| Θ(170°)  | -9.86/-9.99   | -10.77/-11.58 | -12.83/-12.79 | -7.44/-6.15   | -5.26/-5.33   | -4.89/-5.05    | -5.83/-7.15    | -8.07/-9.09    | -9.26/-9.17    | -9.38/-11.08   | -12.12/-15.00  | -11.49/-8.44   | -14.17/-15.00  | -10.56/-11.38  | -14.17/-15.71  | -15.05/-15.65  | -13.46/-11.20  |                |
| Θ(180°)  | -7.57/-8.15   | -8.33/-5.57   | -9.54/-11.36  | -11.56/-11.09 | -11.73/-13.10 | -14.16/-13.44  | -12.74/-12.62  | -12.74/-12.86  | -11.74/-10.89  | -11.42/-11.99  | -12.91/-13.04  | -11.66/-11.04  | -11.62/-11.30  | -11.62/-11.34  | -10.81/-9.20   | -7.84/-7.54    | -7.58/-7.08    | -7.39/-7.75    |
| Freq(Hz) | 5.6G/Pol.     | Total/Ant. 4  | -             | -             | -             | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              |
| Gain     | Φ(0°)Φ(10°)   | Φ(20°)Φ(30°)  | Φ(40°)Φ(50°)  | Φ(60°)Φ(70°)  | Φ(80°)Φ(90°)  | Φ(100°)Φ(110°) | Φ(120°)Φ(130°) | Φ(140°)Φ(150°) | Φ(160°)Φ(170°) | Φ(180°)Φ(190°) | Φ(200°)Φ(210°) | Φ(220°)Φ(230°) | Φ(240°)Φ(250°) | Φ(260°)Φ(270°) | Φ(280°)Φ(290°) | Φ(300°)Φ(310°) | Φ(320°)Φ(330°) | Φ(340°)Φ(350°) |
| Θ(0°)    | -7.00/-7.62   | -7.05/-6.86   | -6.29/-6.84   | -6.28/-7.12   | -7.63/-7.51   | -8.05/-8.89    | -8.59/-8.37    | -7.06/-6.25    | -6.86/-7.24    | -8.40/-7.73    | -8.03/-8.10    | -7.37/-8.08    | -8.75/-4.72    | -8.56/-7.95    | -7.80/-7.15    | -7.26/-7.37    | -8.00/-7.79    | -7.13/-7.00    |
| Θ(10°)   | -6.38/-6.44   | -5.90/-5.77   | -7.07/-6.75   | -7.09/-7.82   | -8.68/-8.52   | -7.54/-7.40    | -6.13/-5.21    | -4.28/-3.49    | -2.89/-2.76    | -2.36/-2.25    | -2.87/-2.79    | -2.86/-3.52    | -4.51/-5.65    | -7.21/-7.20    | -6.68/-6.86    | -6.85/-6.32    | -7.08/-6.50    | -5.84/-6.40    |
| Θ(20°)   | -2.80/-2.49   | -2.33/-2.20   | -3.20/-5.38   | -6.60/-9.30   | -9.65/-9.66   | -9.00/-7.56    | -6.55/-5.19    | -3.80/-3.75    | -4.26/-4.54    | -2.96/-2.26    | -2.96/-2.25    | -2.96/-2.25    | -4.18/-4.18    | -5.41/-6.55    | -7.37/-7.04    | -5.41/-6.55    | -4.45/-3.90    | -2.88/-2.43    |
| Θ(30°)   | -5.15/-5.91   | -2.89/-4.29   | -2.02/-2.44   | -2.53/-3.22   | -4.13/-3.71   | -11.55/-14.49  | -10.87/-8.19   | -9.40/-13.24   | -14.31/-12.26  | -10.26/-7.21   | -4.80/-3.17    | -3.48/-4.36    | -4.33/-3.73    | -3.88/-4.50    | -4.75/-6.36    | -5.34/-3.38    | -3.61/-3.90    | -4.85/-5.85    |
| Θ(40°)   | -6.13/-6.94   | -5.02/-4.39   | -3.60/-4.22   | -4.74/-4.07   | -2.95/-4.81   | -7.83/-7.94    | -8.00/-9.24    | -11.75/-15.28  | -13.00/-10.87  | -11.44/-12.17  | -11.92/-8.22   | -5.00/-3.73    | -5.59/-6.35    | -7.29/-6.66    | -7.17/-7.23    | -5.44/-4.22    | -3.44/-5.07    | -8.34/-8.09    |
| Θ(50°)   | -2.34/-2.09   | -1.37/-1.03   | 0.07/-0.76    | -3.59/-5.89   | -6.11/-5.34   | -7.97/-8.65    | -11.44/-14.60  | -14.15/-13.60  | -12.87/-11.04  | -9.85/-8.27    | -7.51/-6.21    | -6.13/-4.26    | -4.73/-6.33    | -6.30/-4.90    | -4.04/-2.45    |                |                |                |
| Θ(60°)   | -4.50/-4.77   | -3.16/-1.07   | -0.19/-0.24   | 0.04/-0.99    | -5.83/-6.60   | -4.86/-1.52    | -7.05/-1.62    | -2.92/-3.88    | -2.87/-5.37    | -8.38/-8.82    | -8.06/-10.48   | -9.64/-12.18   | -11.08/-11.29  | -6.56/-6.78    | -6.56/-4.67    | -6.27/-10.04   | -9.20/-5.40    | -4.90/-5.79    |
| Θ(70°)   | -5.59/-4.04   | -2.13/-0.75   | -0.72/-0.52   | -0.46/-0.23   | -3.98/-6.13   | -4.73/-5.01    | -1.88/-1.28    | -5.11/-3.48    | -1.97/-3.53    | -5.09/-4.71    | -5.90/-9.36    | -14.79/-9.76   | -7.86/-11.71   | -7.69/-6.84    | -7.78/-6.73    | -10.43/-8.65   | -7.43/-5.90    | -5.33/-5.35    |
| Θ(80°)   | -8.29/-8.15   | -4.21/-2.49   | -2.92/-0.26   | 2.43/-1.43    | -2.62/-2.21   | -0.55/-4.18    | -1.03/-0.07    | -0.65/-0.6     |                |                |                |                |                |                |                |                |                |                |

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

