



# Antenna Composite Gain Test Report

|                 |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| Equipment       | Verizon Router                                                                    |
| Brand Name      | Verizon                                                                           |
| Model Name      | CR1000B                                                                           |
| Applicant       | Arcadyan Technology Corporation<br>No.8, Sec.2, Guangfu Rd.,Hsinchu, 30071 Taiwan |
| Manufacturer    | Arcadyan Technology Corporation<br>No.8, Sec.2, Guangfu Rd.,Hsinchu, 30071 Taiwan |
| Sample Received | Dec. 14, 2021                                                                     |
| Start Test Date | Jan. 13, 2022                                                                     |
| Final Test Date | Jan. 13, 2022                                                                     |



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[illegible]



## 1. Operation Mode and Antenna Information

| Antenna Position | RF Port | Brand Name | P/N           | Ant. Type   | Connector | Modes of Operation |
|------------------|---------|------------|---------------|-------------|-----------|--------------------|
| 6G Ant1          | 1       | Arcadyan   | 120800098700J | PCB Antenna | N/A       | 6GHz UNII 5~8      |
| 6G Ant2          | 2       | Arcadyan   | 120800098800J | PCB Antenna | N/A       | 6GHz UNII 5~8      |
| 6G Ant3          | 3       | Arcadyan   | 120800098500J | PCB Antenna | N/A       | 6GHz UNII 5~8      |
| 6G Ant4          | 4       | Arcadyan   | 120800098600J | PCB Antenna | N/A       | 6GHz UNII 5~8      |

Note:

6GHz Operation Mode (4TX/4RX)

6G Ant1~4 can be used as transmitting/receiving antenna.

6G Ant1~4 could transmit/receive simultaneously.

## 2. Test Frequency

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

| Band [MHz] | Test Frequency [MHz] |
|------------|----------------------|
| 5925-6425  | 6175                 |
| 6425-6525  | 6475                 |
| 6525-6875  | 6695                 |
| 6875-7125  | 6995                 |

## 3. Testing Location

| Testing Location                    |        |                                                                                            |
|-------------------------------------|--------|--------------------------------------------------------------------------------------------|
| <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 (°C / %) | Test Date     |
|----------------|---------------|---------------|---------------------------|---------------|
| Radiated       | 05CH03-HY     | Rex Liao      | 19-20 / 50-55             | Jan. 13, 2022 |

Note:

Testing Site Information

Brand Name: TDK

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

Characteristic: Fully Anechoic Chamber

## 4. Test Facility and Configuration

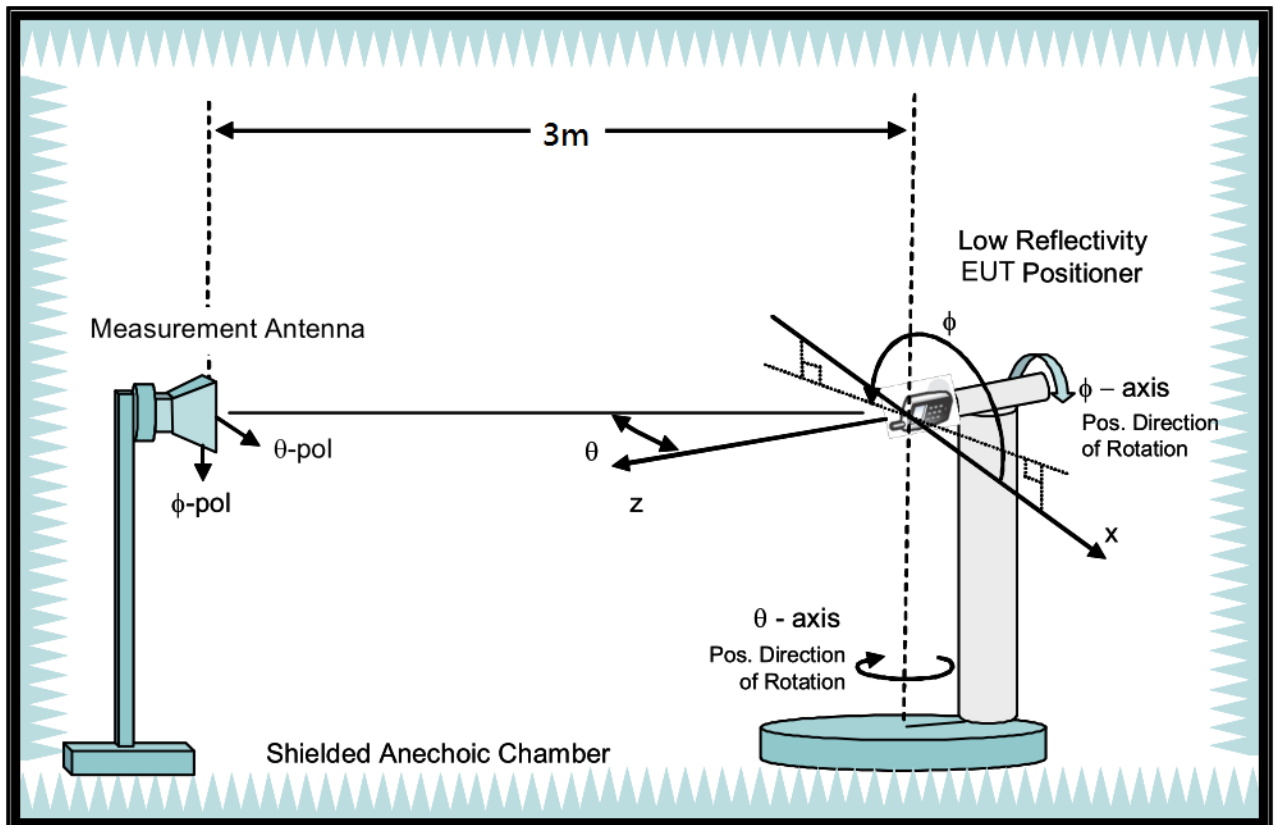
Test configuration: Reference to CITA OTA distributed-axes system configuration.

Chamber: Fully Anechoic Chamber.

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

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

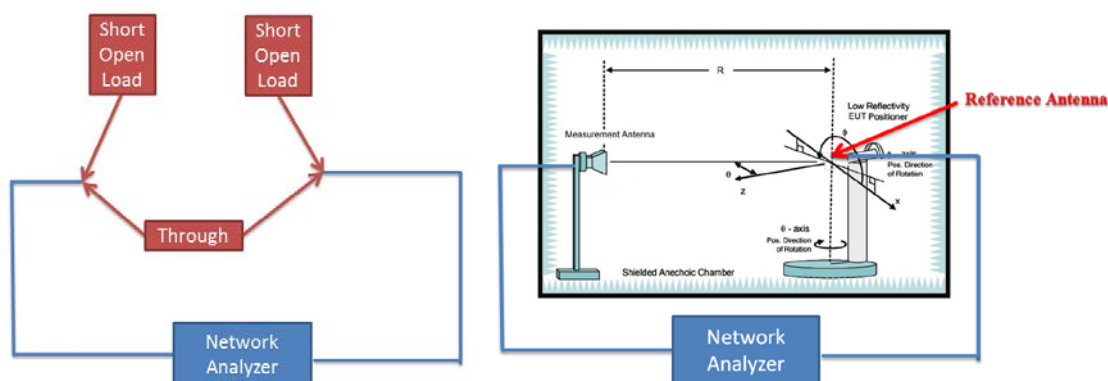
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



## 5. 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.

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

## 6. Test Method

EUT set on multi-axis positioner and adjust EUT's physical center to measurement reference center. Measurement antenna set at phi polarization and 1.5 meter height. Port 1 of Network analyzer connect to antenna 1 of EUT. Record G value every 15 degree from 0 to 345 degree on Phi angle and 0 to 180 on theta angle of multi-axis positioner. Then set measurement antenna to theta polarization and repeat process. Repeat process to each antenna of EUT.

DG steps:

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

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

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

### DG\_1SS max value position

| Frequency (Hz)     | 6.175G | 6.475G | 6.695G | 6.995G |
|--------------------|--------|--------|--------|--------|
| Ant. 1 (dBi)       | -2.23  | 2.59   | 2.06   | 1.41   |
| Ant. 2 (dBi)       | -6.73  | -10.13 | -1.15  | -2.77  |
| Ant. 3 (dBi)       | 1.25   | -1.67  | -6.39  | -4.59  |
| Ant. 4 (dBi)       | 2.68   | 0.89   | 0.71   | 0.43   |
| DG [1SS] (dBi)     | 5.46   | 5.09   | 5.36   | 4.97   |
| Polarization       | Theta  | Theta  | Theta  | Theta  |
| $\Theta(^{\circ})$ | 120    | 90     | 105    | 105    |
| $\Phi(^{\circ})$   | 285    | 75     | 150    | 30     |

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

### DG\_1SS max value position calculation

| Frequency (Hz)                     | 6.175G            | 6.475G             | 6.695G            | 6.995G            |
|------------------------------------|-------------------|--------------------|-------------------|-------------------|
| Ant. 1 [ $10^{(G/20)}$ ]           | $10^{(-2.23/20)}$ | $10^{(2.59/20)}$   | $10^{(2.06/20)}$  | $10^{(1.41/20)}$  |
| Ant. 2 [ $10^{(G/20)}$ ]           | $10^{(-6.73/20)}$ | $10^{(-10.13/20)}$ | $10^{(-1.15/20)}$ | $10^{(-2.77/20)}$ |
| Ant. 3 [ $10^{(G/20)}$ ]           | $10^{(1.25/20)}$  | $10^{(-1.67/20)}$  | $10^{(-6.39/20)}$ | $10^{(-4.59/20)}$ |
| Ant. 4 [ $10^{(G/20)}$ ]           | $10^{(2.68/20)}$  | $10^{(0.89/20)}$   | $10^{(0.71/20)}$  | $10^{(0.43/20)}$  |
| Ant. 1 [ $10^{(G/20)}$ ] value     | 0.774             | 1.347              | 1.268             | 1.176             |
| Ant. 2 [ $10^{(G/20)}$ ] value     | 0.461             | 0.312              | 0.876             | 0.727             |
| Ant. 3 [ $10^{(G/20)}$ ] value     | 1.155             | 0.825              | 0.479             | 0.59              |
| Ant. 4 [ $10^{(G/20)}$ ] value     | 1.361             | 1.108              | 1.085             | 1.051             |
| Sum All Antenna [Amax]             | 3.751             | 3.592              | 3.708             | 3.543             |
| DG [ $10^{\log(Amax^2/N_{ant})}$ ] | 5.46              | 5.09               | 5.36              | 4.97              |

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

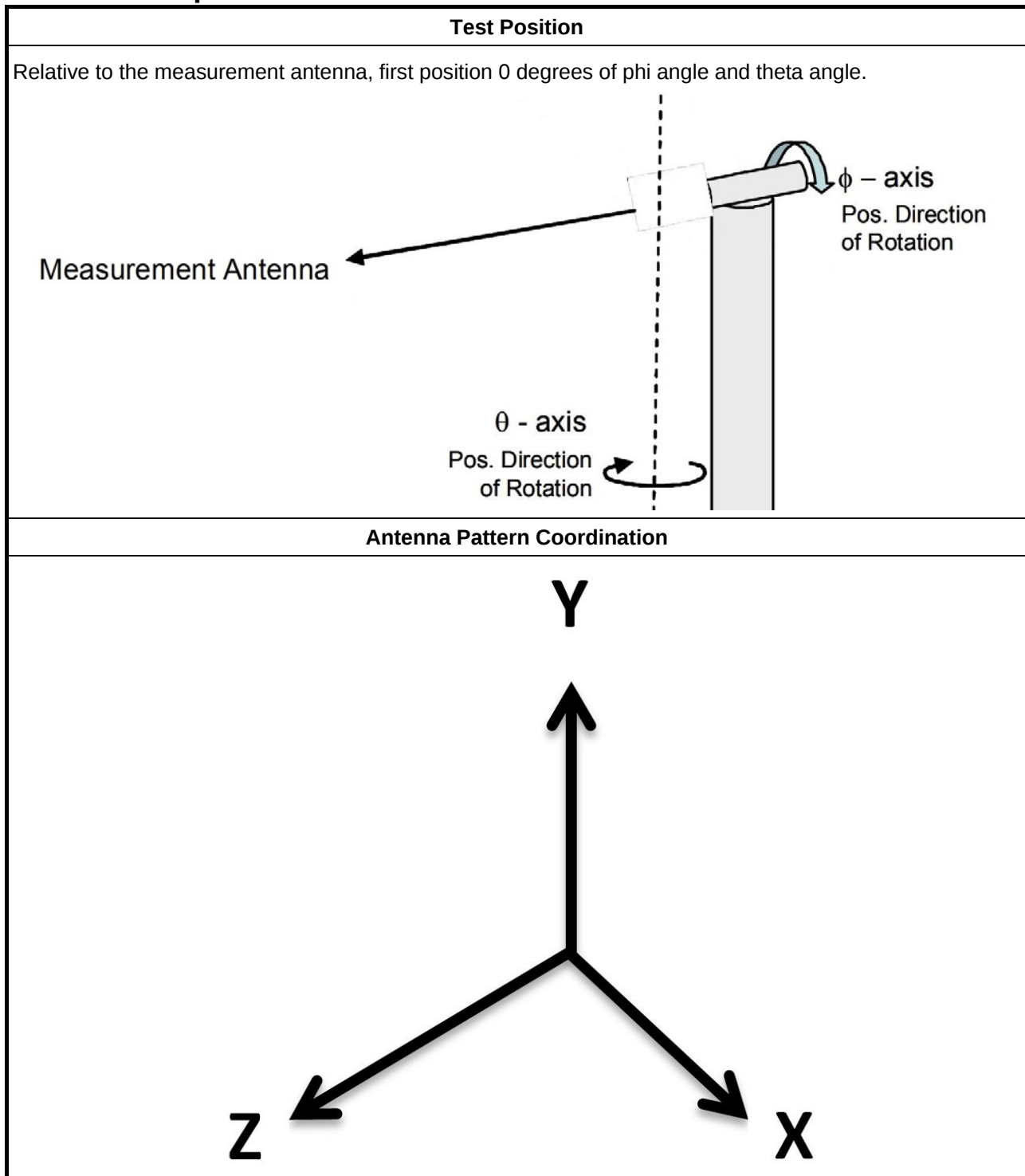
## 8. Summary of Test Result

| Frequency (Hz)                                         | 6.175G        | 6.475G        | 6.695G      | 6.995G       |
|--------------------------------------------------------|---------------|---------------|-------------|--------------|
| Ant. 1 Max Gain (dBi)                                  | 4.18          | 3.86          | 2.19        | 3.24         |
| Ant. 2 Max Gain (dBi)                                  | 4.96          | 4.19          | 3.17        | 3.19         |
| Ant. 3 Max Gain (dBi)                                  | 3.47          | 3.24          | 3.4         | 3.06         |
| Ant. 4 Max Gain (dBi)                                  | 4.13          | 3.66          | 2.47        | 2.73         |
| Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/75/135    | Theta/90/150  | Phi/75/30   | Theta/90/0   |
| Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/105/105   | Phi/120/75    | Phi/105/75  | Phi/120/60   |
| Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/30/225    | Phi/60/210    | Phi/75/180  | Phi/75/180   |
| Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Theta/135/210 | Theta/120/240 | Theta/90/90 | Theta/90/105 |
| Max Gain (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |
| DG [1SS] (dBi)                                         | 5.46          | 5.09          | 5.36        | 4.97         |
| DG [2SS] (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |
| DG [4SS] (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |

Note:

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

## 9. Test Setup



Note:

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

**10. Test Equipment and Calibration Data**

| Instrument    | Brand       | Model No. | Serial No.      | Characteristics | Calibration Date | Calibration Due Date |
|---------------|-------------|-----------|-----------------|-----------------|------------------|----------------------|
| Horn Antenna  | SCHWARZBECK | BBHA9120D | BBHA 9120D-1292 | 1GHz~18GHz      | Aug. 04, 2021    | Aug. 03, 2022        |
| Test Software | SPORTON     | SENSE-RDG | V1.0.6          | -               | N.C.R.           | N.C.R.               |

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

NCR means Non-Calibration required.



## **11. Test Results**

Please refer to the appendix.

|                                           |         |
|-------------------------------------------|---------|
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| Appendix B – Antenna Pattern.....         | Page 21 |
| Appendix C – Test Photos.....             | Page 26 |



| Freq(Hz)                                               | 6.175G        | 6.475G        | 6.695G      | 6.995G       |
|--------------------------------------------------------|---------------|---------------|-------------|--------------|
| Ant. 1 Max Gain (dBi)                                  | 4.18          | 3.86          | 2.19        | 3.24         |
| Ant. 2 Max Gain (dBi)                                  | 4.96          | 4.19          | 3.17        | 3.19         |
| Ant. 3 Max Gain (dBi)                                  | 3.47          | 3.24          | 3.4         | 3.06         |
| Ant. 4 Max Gain (dBi)                                  | 4.13          | 3.66          | 2.47        | 2.73         |
| Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/75/135    | Theta/90/150  | Phi/75/30   | Theta/90/0   |
| Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/105/105   | Phi/120/75    | Phi/105/75  | Phi/120/60   |
| Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/30/225    | Phi/60/210    | Phi/75/180  | Phi/75/180   |
| Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Theta/135/210 | Theta/120/240 | Theta/90/90 | Theta/90/105 |
| Max Gain (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |
| DG [1SS] (dBi)                                         | 5.46          | 5.09          | 5.36        | 4.97         |
| DG [2SS] (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |
| DG [4SS] (dBi)                                         | 4.96          | 4.19          | 3.4         | 3.24         |



DG 1SS Result

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Freq(Hz) | 6.175G | Pol.   | Phi    | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |         |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -1.5   | -0.08  | -0.03  | -1.45  | -1.34  | -1.52  | -1.6   | -1.3    | -0.3    | 0.24    | 0.88    | 0.89    | 1.75    | 0.93    | 0.03    | 0.03    | 0.05    | -1.25   | -2.94   | -2.45   | -1.3    | 0.48    | 0.63    | -0.42   |
| Θ(15°)   | -0.32  | 2.73   | 1.95   | 1.29   | -0.73  | 0.33   | -0.66  | -0.24   | 0.98    | 1.69    | 2.76    | 2.57    | 2.53    | 2.04    | 1.98    | 2.67    | 2.73    | 2.3     | 2.06    | 1.81    | 1.42    | 0.12    | -0.54   | -3.17   |
| Θ(30°)   | -5.15  | -4.49  | -0.44  | 1.49   | 1.68   | 1.42   | 0.98   | -0.27   | -1.73   | -0.98   | 0.26    | -0.48   | -2.93   | -0.63   | 2.67    | 3.31    | 0.1     | -1.29   | -2.95   | -1.85   | -0.61   | -1.83   | -2.51   | -5.11   |
| Θ(45°)   | -1.3   | -0.86  | 0.85   | 1.76   | 0.86   | -1.99  | -0.57  | 0.8     | 2.81    | 0.23    | 2.26    | 4.21    | 2.53    | 1.63    | 1.36    | 0.2     | 0.47    | -0.49   | -0.07   | -1.8    | -2.49   | -1.7    | 1.61    | 0.68    |
| Θ(60°)   | -2.76  | -3.77  | -0.86  | 1.49   | 4.11   | -0.02  | -3.16  | -2.1    | 1.77    | 3.23    | 4.52    | 3.52    | 1.24    | 1.73    | 0.85    | -0.21   | -3.39   | -3.43   | -4.62   | -2.51   | 0.18    | 0.76    | 0.49    | -0.81   |
| Θ(75°)   | -1.27  | 0.35   | -0.59  | 2.12   | 5.29   | 1.03   | -1.94  | -1.35   | 3.24    | 5.02    | 3.75    | 1.13    | 1.7     | 3.3     | 0.83    | -0.2    | -3.31   | -0.91   | -2.88   | -0.7    | 0.38    | -1.62   | 1.77    | 2.15    |
| Θ(90°)   | 0.98   | 0.61   | 3.01   | 0.67   | 3.71   | 1.63   | -0.56  | 0.92    | 1.41    | 5.12    | 4.61    | 0.61    | -1.54   | -0.78   | -0.12   | -0.22   | -4.07   | -1.94   | -3.32   | 0.24    | 0.32    | 0.21    | -1.7    | -0.36   |
| Θ(105°)  | -0.95  | -1.59  | 1.36   | 2.68   | 3.12   | 1.86   | 2.52   | 3.07    | 3.19    | 1.9     | 3.26    | -3.69   | -1.95   | -1.08   | -1.31   | -0.9    | -2.86   | -1.27   | -3.22   | -2.32   | 2.2     | -1.14   | 0.11    | -4.07   |
| Θ(120°)  | -1.56  | 1.8    | -0.37  | -0.8   | 0.59   | 1.03   | 4.52   | 3.54    | 3.97    | 3.66    | 3.71    | 1.16    | 0.01    | 0.84    | 0.02    | 0.32    | -1.57   | -5.57   | -2.98   | 0.69    | -3.01   | -3.06   | -5.04   | -4.85   |
| Θ(135°)  | -6.53  | -6.81  | -6.03  | -2.22  | 0.1    | 1.07   | 1.1    | 2.72    | -0.54   | 3.72    | 4.91    | 0.9     | 0.37    | 2.5     | 1.14    | 0.42    | -7.58   | -5.26   | -2.67   | -1.95   | -6.34   | -3.15   | -6.59   | -5.89   |
| Θ(150°)  | -0.5   | -2.11  | -2.94  | -1.46  | -3.1   | 1      | 2.41   | 1.76    | 0.98    | -0.3    | -0.48   | 0.1     | 1.08    | -0.15   | -0.94   | -1.76   | -1.36   | -6.63   | -10.18  | -7.63   | -2.52   | -3.24   | -5.99   | -3.98   |
| Θ(165°)  | -6.26  | -6.08  | -7.45  | -6.07  | -5.3   | -6.57  | -6.13  | -5.89   | -7.5    | -4.93   | -0.22   | 1.58    | 2.61    | 1.03    | 0.74    | -0.85   | -4.22   | -5.72   | -7.48   | -4.15   | -3.78   | -3.85   | -2.27   | -4.36   |
| Θ(180°)  | -4.56  | -4.42  | -7.27  | -8.07  | -10.54 | -11.42 | -10.71 | -7.69   | -7.84   | -6.7    | -6.45   | -4.71   | -6.16   | -6.52   | -8.07   | -8.08   | -8.25   | -8.69   | -7.8    | -7.57   | -8.35   | -6.92   | -7.5    | -5.17   |
| Freq(Hz) | 6.175G | Pol.   | Theta  | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -3.61  | -0.84  | -0.28  | -0.09  | 0.01   | 0.62   | -0.26  | -1.09   | -0.62   | -0.58   | -0.46   | -0.82   | -0.76   | -0.58   | 0.06    | 0.67    | 0.89    | 0.19    | -1.06   | -1.02   | -1.5    | -1.3    | -1.61   | -2.52   |
| Θ(15°)   | -1.95  | -0.28  | 1.86   | 3.13   | 1.67   | 1.27   | -1.09  | -2.2    | -1.44   | -0.56   | -1.25   | -4.54   | -2.76   | -0.16   | 2.11    | 1.98    | 0.84    | 1.42    | 2.28    | 2.93    | 2.23    | 0.23    | -1.18   | -2.43   |
| Θ(30°)   | 0.18   | -0.09  | 1.23   | 2.17   | 3.91   | 1.64   | 0.08   | 0.93    | 1.76    | 3.07    | 4.04    | 2.45    | -1.95   | -2.76   | 0.17    | 1.15    | 0.12    | -0.8    | -0.82   | -0.14   | -4.23   | -5.12   | 0.69    | 3.43    |
| Θ(45°)   | 3.01   | 2.2    | 1.34   | 2.1    | 3.79   | 1.92   | 3.49   | 1.74    | 2.08    | 0.33    | 0.99    | 2.46    | 0.22    | -0.42   | 2.12    | 1.14    | -0.09   | -1.26   | 0.05    | -1.05   | 1.07    | -0.24   | 0.38    | 3.86    |
| Θ(60°)   | 2.64   | 0.98   | -0.37  | 1.37   | 1.85   | 1.49   | 3.38   | 0.38    | 1.83    | 3.38    | 2.29    | -0.9    | 2.99    | -0.8    | 1.35    | -0.02   | -3.63   | 0.05    | 0.53    | -2.62   | 0.33    | -3.45   | 1.19    | 0.95    |
| Θ(75°)   | 2.6    | 2.08   | 2.77   | 2.35   | 3.27   | 1.84   | 2.75   | 3.84    | 0.91    | 4.77    | 4.78    | 1.14    | 2.86    | -3      | 0.29    | 0.28    | 0.75    | 1.7     | 0.86    | 0.83    | -0.53   | -1.56   | 3.82    | 0.15    |
| Θ(90°)   | 1.52   | 3.02   | 2.2    | -0.37  | 1.51   | 4.3    | 4.26   | 2.79    | 2.3     | 0.48    | 3.92    | 0.77    | 1.54    | 0.93    | 1.25    | -0.61   | 0.48    | -1.76   | -0.53   | 0.85    | -4.35   | -1.75   | 0.59    | 2.01    |
| Θ(105°)  | -0.61  | 1.29   | 0.22   | -0.45  | -0.02  | 0.18   | 2.5    | 3.55    | 1.72    | -2.2    | 3.39    | 0.8     | 2.01    | 3.21    | 2.2     | 0.77    | 2.48    | 2.55    | 0.73    | 3.67    | -1.38   | -2.85   | 0.88    | -3.02   |
| Θ(120°)  | -4.37  | -0.84  | -2.46  | -1.81  | 0.42   | 0.55   | -2.17  | 1.91    | 2.09    | -2.06   | 0.43    | 1.09    | 2.63    | 4.17    | 0.37    | 4.46    | 4.12    | 3.95    | 3.03    | 5.46    | -1.67   | -2.8    | -4      | -3.63   |
| Θ(135°)  | -4.01  | -3.79  | -2.85  | -0.58  | -0.18  | -2.99  | -4.9   | 0.62    | 1.96    | -1.79   | -1.97   | -2.01   | -2.52   | 1.81    | 4.07    | 1.88    | 0.47    | 2.62    | 1.29    | 3.52    | -1.4    | -4.1    | -1.51   | -7.41   |
| Θ(150°)  | -5.73  | -2.17  | -6.15  | -5.09  | -7.8   | -3.63  | -2.64  | -2.18   | -0.6    | -1.1    | -2.53   | -4.49   | -6.53   | -1.57   | -0.25   | -0.03   | 1.45    | 1.03    | -5.81   | -4.22   | 0.05    | -8.19   | -4.92   | -2.91   |
| Θ(165°)  | -2.04  | -3.75  | -5.38  | -5.6   | -3.01  | -3.45  | -5.98  | -4.28   | -4.18   | -4.99   | -4.16   | -3.92   | -3.86   | -0.4    | 0.3     | 1.77    | 1.53    | -0.55   | -3.44   | -1.93   | 0.11    | -0.26   | 1.54    | -2.02   |
| Θ(180°)  | -8.46  | -6.07  | -6.8   | -7.28  | -7.98  | -4.51  | -4.59  | -4.28   | -5.07   | -6.84   | -8.75   | -7.77   | -7.51   | -7.27   | -7.03   | -6.48   | -4.89   | -5.13   | -4.93   | -5.47   | -5.68   | -7.16   | -9.54   | -9.19   |
| Freq(Hz) | 6.475G | Pol.   | Phi    | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -0.7   | -0.11  | 0.4    | 0.3    | 0.8    | -1.25  | -2.88  | -2.95   | -1.07   | -2.01   | -1.19   | -1.13   | 0.26    | 0.08    | -0.07   | 0.46    | -0.35   | -1.71   | -1.43   | -1.05   | -0.63   | 0.19    | -0.19   | 0.02    |
| Θ(15°)   | -5.11  | -4.64  | -4.22  | -4.91  | -4.37  | -3.76  | -3.43  | -2.39   | -0.83   | 0.65    | 0.37    | -0.79   | -0.82   | 2.07    | 3.05    | 1.66    | 0.08    | -2.77   | -2.72   | -0.81   | 0.46    | 0.79    | -1.47   | -4.35   |
| Θ(30°)   | -3.12  | -3.04  | 1.52   | 2.97   | 0.43   | -3.04  | -3.57  | -3.42   | -3.97   | 0.43    | 1.43    | 0.39    | -1.87   | -2.63   | -0.52   | -0.6    | -0.49   | -2.14   | -1.13   | 0.76    | -1.42   | -3.49   | -6.52   | -5.54   |
| Θ(45°)   | -3.5   | -3.31  | -0.61  | 2.09   | 1.91   | -0.9   | -2.54  | 2.15    | -0.29   | 1.14    | 3.16    | 0.51    | -0.59   | 0.83    | 2.27    | -2.57   | -0.31   | -3.44   | -2.56   | -3.31   | -3.56   | 0.45    | 0.39    | -4.21   |
| Θ(60°)   | -2.96  | -1.51  | -0.44  | 1.23   | 1.63   | 0.36   | -1.37  | -1.12   | 0.6     | 1.84    | 3.46    | -0.21   | -0.46   | 2.61    | 4.21    | -1.79   | -4.7    | -7.39   | -8.47   | -6.33   | -3.63   | 2.04    | -0.87   | -2.47   |
| Θ(75°)   | -1.51  | -2.18  | 1.42   | 2.04   | 3.62   | 1.99   | -0.36  | -3.32   | 1.2     | 2.16    | 3.06    | 0.81    | 0.88    | 1.93    | 4.16    | -0.13   | -3.27   | -5.21   | -4.43   | -3.6    | -0.19   | 3.22    | -0.38   | -0.26   |
| Θ(90°)   | -0.89  | 0.58   | 2.6    | 0.97   | 3.26   | 1.43   | 0.35   | 0.86    | 2.34    | 4.07    | 2.5     | -1.15   | -0.87   | -3.23   | 1.38    | 0.86    | -3.99   | -4.02   | -4.54   | -3.13   | -1.35   | -0.59   | -3.97   | -3.18   |
| Θ(105°)  | -2.79  | -2.94  | 0.52   | 2.96   | 2.76   | 1.27   | 1.28   | 2.05    | 0.67    | 2.36    | 0.44    | -1      | -2      | -1.94   | -2.38   | -0.6    | -1.64   | -2.59   | -3.35   | -2.43   | -1.9    | -2.83   | -1.02   | -6.2    |
| Θ(120°)  | -2.62  | -0.67  | -0.06  | -0.59  | -1.46  | 2.83   | 3.5    | 1.23    | -0.04   | 0.62    | 0.82    | -0.08   | -1.66   | -0.14   | -1.1    | -1.5    | -3.06   | -3.41   | -4.69   | -0.09   | -5.05   | -5.05   | -3.18   | -5.14   |
| Θ(135°)  | -4.82  | -3.48  | -1.95  | -1.37  | 0.83   | 0.64   | 0.47   | -0.23   | -0.83   | 3.01    | 2.51    | 0.87    | -0.67   | -0.09   | -0.04   | -1.5    | -3.79   | -3.86   | -4.4    | -4.31   | -6.04   | -6.23   | -4.75   | -5.37   |
| Θ(150°)  | -5.05  | -3.55  | -4.04  | -3.25  | -3.09  | -0.78  | 0.31   | -1.24   | -0.69   | -0.14   | -1.68   | -2.06   | -0.38   | -2.71   | -5.52   | -3.85   | -2.35   | -7.16   | -8.25   | -11.49  | -1.59   | -6.39   | -4.92   | -6.99   |
| Θ(165°)  | -6.41  | -10.45 | -9.4   | -7.37  | -4.4   | -3.25  | -4.46  | -6.33   | -5.93   | -2.4    | -1.48   | -2.56   | -1.76   | -2.97   | -4.82   | -7.73   | -7.63   | -10.23  | -8.45   | -4.77   | -3.78   | -5.45   | -4.48   |         |
| Θ(180°)  | -6.09  | -7.07  | -8.06  | -8.09  | -8.36  | -6.71  | -8.1   | -7.95   | -7.99   | -7.21   | -7.91   | -5.73   | -6.03   | -7.19   | -6.39   | -5.36   | -6.64   | -7.44   | -10.21  | -9.92   | -9.59   | -8.08   | -8.62   | -6.05   |
| Freq(Hz) | 6.475G | Pol.   | Theta  | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -2.77  | -1.02  | -0.22  | -0.03  | -0.11  | -0.83  | -1.35  | -1.42   | -0.05   | -0.12   | -0.42   | -1.26   | -1.32   | -1.11   | -0.42   | 0.37    | 0.22    | -1.35   | -0.93   | -0.72   | -0.45   | -0.51   | -0.57   | -1.08   |
| Θ(15°)   | -0.63  | 1.41   | 2.11   | 2.52   | 0.37   | -2.66  | -2.48  | -0.12   | 1.72    | 2.69    | 2.89    | 2.15    | 0.23    | -1.64   | -2.11   | -3.05   | -4.98   | -3.17   | -2.38   | -3.13   | -6.19   | -8.04   | -6.09   | -2.26   |
| Θ(30°)   | -1.24  | -1.76  | -1.23  | -1.42  | -0.63  | -0.96  | 0.88   | 1       | -0.35   | 1.03    | 1.05    | -2.61   | -5.78   | -4.14   | -0.11   | 0.6     | 1.33    | 0.9     | -2.79   | -4.76   | -2.3    | -1.81   | -0.25   | 0.92    |
| Θ(45°)   | 1.38   | 2.45   | 2.89   | -0.18  | 0.2    | 0.49   | 0.09   | 0.15    | 2.12    | 2.2     | 3.97    | 3.05    | -0.27   | -0.15   | -0.74   | -4.31   | 1.49    | 0.94    | -3.18   | -2.26   | -2.42   | -2.26   | -0.42   | 1.39    |
| Θ(60°)   | 0.04   | 0.32   | 2.95   | 1.78   | -0.16  | 1.3    | 2.15   | -0.68   | 1.91    | 1.26    | 3.56    | 1.97    | 1.22    | 2.73    | 2.96    | -0.18   | -0.81   | 0.51    | -3.29   | -1.89   | -0.13   | -0.24   | 0.15    | 0.01    |
| Θ(75°)   | 1.89   | 1.6    | 3.21   | 1.26   | -0.53  | 1.85   | 1.89   | 1.39    | 1.36    | 2.94    | 3.56    | -0.37   | 1.35    | -0.42   | 0.92    | -1.38   | -2.05   | 2.26    | 1.94    | -0.11   | 0.38    | -0.01   | 0.26    | 1.79    |
| Θ(90°)   | 0.87   | 2.38   | 4.31   | 2.05   | 0.03   | 5.09   | 2.87   | 2.09    | -1.55   | 0.13    | 4.99    | 0.44    | 1.48    | -0.96   | -0.12   | -2.7    | -3.38   | -3.28   | 1.04    | 0       | -4.9    | -2.05   | -0.46   | 0.57    |
| Θ(105°)  | -0.42  | 1.14   | 3.36   | 0.87   | -2.22  | 2.87   | 3.07   | 1.21    | 0.21    | -1.71   | 3.84</  |         |         |         |         |         |         |         |         |         |         |         |         |         |



|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ (180°) | -6.63  | -5.84  | -6.01  | -5.46  | -6.34  | -6.69  | -7.54  | -8.67   | -8.75   | -8.14   | -7.58   | -7.27   | -6.53   | -6.72   | -5.61   | -4.8    | -6.17   | -7.33   | -11.02  | -8.94   | -7.03   | -8.24   | -6.23   | -6.44   |
| Freq(Hz) | 6.995G | Pol.   | Phi    | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -0.72  | 0.99   | 1.7    | 1.81   | 1.76   | 0.01   | -0.26  | 0.32    | -0.64   | -0.94   | -1.84   | -3.01   | -1.57   | 0.27    | 1       | 1.62    | 1.15    | 0.2     | 0.92    | 0.39    | 0.65    | -0.17   | -1.88   | -1.02   |
| Θ (15°)  | 0.61   | 1.55   | 1.73   | 1.17   | 0.28   | -1.45  | -3.26  | -3.61   | -3.54   | -1.84   | -1.6    | -1.29   | -1.8    | -1.74   | 0.27    | -0.03   | -0.4    | 0.48    | -0.42   | -2.02   | -1.15   | -2.12   | -3      | -1.66   |
| Θ (30°)  | -2.8   | -5.55  | -0.13  | 1.1    | 1.15   | -2.55  | -2.23  | -0.87   | -6.66   | -4.27   | -1.34   | -2      | -2.75   | -0.06   | -1.58   | -1.2    | -0.32   | -1.15   | 0.37    | 1.41    | 2.72    | 0.96    | -0.38   | -3.46   |
| Θ (45°)  | 0.56   | -2.46  | -0.2   | -0.39  | -2.95  | -1.73  | -3.88  | -5.61   | -5.51   | -0.15   | 1.1     | -0.36   | -0.67   | 0.63    | 0.98    | -0.92   | -0.6    | -2.21   | -3.01   | -0.43   | -0.26   | -1.08   | 0.19    | -3.41   |
| Θ (60°)  | -2.3   | -0.62  | -0.29  | 0.8    | 0.82   | 0.95   | 0.89   | -1.65   | 0.62    | 1.6     | 0.39    | -0.87   | 1.67    | 0.04    | 0.07    | -0.75   | -0.74   | -2.6    | -5.37   | -3.27   | 1.3     | 2.99    | 0.46    | -4.22   |
| Θ (75°)  | 1.83   | 2.55   | 2.2    | 2.25   | 0.27   | -2.47  | -1.63  | -3.1    | -1.68   | 1.23    | 2.59    | 2.07    | 2.45    | 2.21    | 1.89    | 1.32    | -4.06   | -2.26   | -1.38   | -0.63   | 2.06    | 4.35    | 1.92    | -1.41   |
| Θ (90°)  | -2.81  | -0.63  | 1.1    | 1.37   | 1.33   | 0.64   | 0.23   | -0.56   | 2       | 3.24    | 1.17    | 0.26    | 1.44    | -0.26   | 0.45    | -2.12   | -3.24   | -3.81   | -4.48   | -2.03   | -2.8    | -1.31   | -2.15   | -2.59   |
| Θ (105°) | -2.68  | -0.73  | 0.3    | 2.44   | 0.27   | 0.99   | -0.7   | 0.8     | 0.39    | 0.44    | 0.57    | -1.03   | -1.74   | -3.69   | -0.54   | -0.64   | -3.41   | -3.17   | -4.62   | -3.45   | -4.9    | -2.84   | -2.42   | -2.88   |
| Θ (120°) | -6.44  | -2.12  | -1.62  | 1.98   | 2.18   | 2.82   | -0.16  | 2.1     | 1.5     | 3.98    | 0.82    | -2.94   | -3.98   | -2.27   | -1.66   | -2.63   | -4.84   | -5.13   | -7.97   | -0.01   | -7.11   | -7.53   | -2.16   | -9.03   |
| Θ (135°) | -0.47  | -3.68  | -3.31  | -2.81  | 0.7    | 3.15   | 1      | 0.54    | 0.57    | 1.68    | 0.73    | -4.05   | -4.68   | -7.76   | -2.26   | -4.04   | -2.07   | -3.84   | -7.92   | -3.44   | -7.93   | -4.97   | -3.6    | -2.5    |
| Θ (150°) | -5.47  | -5.87  | -4.61  | -2.95  | -0.61  | 0.53   | 0.09   | -1.02   | -0.26   | 1.7     | -0.55   | -3.02   | -0.69   | -2.93   | -5.25   | -3.99   | -2.87   | -5.46   | -7.91   | -7.98   | -3.19   | -8.08   | -4.99   | -5.71   |
| Θ (165°) | -3.47  | -4.18  | -2.24  | -2.18  | -3.31  | -3.3   | -3.49  | -5.06   | -7.23   | -4.96   | -3.73   | -1.79   | -3.04   | -4.08   | -2.54   | -1.91   | -5.57   | -6.81   | -7.99   | -5.88   | -3.71   | -2.27   | -1.99   | -5.38   |
| Θ (180°) | -8.28  | -8.49  | -9.37  | -8.9   | -8.52  | -6.95  | -5.65  | -5.34   | -4.97   | -5.04   | -4.46   | -6.31   | -7.03   | -6.66   | -6.07   | -6.27   | -7.1    | -6.84   | -6.17   | -6.88   | -6.91   | -6.58   | -5.79   | -6.87   |
| Freq(Hz) | 6.995G | Pol.   | Theta  | -      | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| DG(dBi)  | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | 0.91   | 0.84   | 0.41   | 0.28   | -0.43  | -1.38  | -0.9   | -0.25   | 0.1     | 0.54    | 0.25    | -0.27   | 0.48    | 1.09    | 1.19    | 0.4     | -0.93   | -2.13   | -1.07   | 0.02    | 1.3     | 1.63    | 0.43    | 0.06    |
| Θ (15°)  | -1.54  | -1.75  | -0.45  | -0.89  | -2.17  | -2.53  | -1.06  | 0.86    | 1.99    | 0.84    | -1.78   | -1.83   | -0.65   | 0.13    | -0.99   | -2.31   | -0.06   | -1.06   | -3.04   | -3.67   | -0.62   | -0.67   | -1.1    | -0.86   |
| Θ (30°)  | 1.79   | 0.89   | -0.1   | 2.15   | 3.04   | 1.48   | -0.23  | -0.31   | 0.52    | -0.82   | -2.17   | -6.22   | -7.33   | -8.6    | -3.48   | -0.36   | 1.48    | 2.22    | -1.49   | -2.1    | -1.46   | -0.45   | -0.9    | -0.1    |
| Θ (45°)  | 4.67   | 4.72   | 2.94   | 2.05   | 1.16   | 0.65   | -2.12  | -3.04   | -0.5    | 0.86    | 2.37    | 0.66    | -3.95   | -3.13   | -1.84   | -0.07   | 2.33    | 1.24    | -4.63   | 0.27    | -2.99   | -4.85   | -1.04   | 2.34    |
| Θ (60°)  | 4.64   | 4.35   | -0.41  | 2.31   | -2     | -4.11  | 0.66   | -0.28   | 0.74    | -0.97   | -0.32   | -0.12   | -2.32   | -1.45   | -3.73   | -2.91   | -2.62   | -2.7    | -0.94   | 0.68    | 0.28    | 0.67    | 0.03    | 3.02    |
| Θ (75°)  | 4.62   | 2.75   | 2      | 0.38   | -1.92  | 1.33   | 2.78   | 2.58    | 1.95    | 0.6     | 2.72    | 1.77    | 0.4     | 0.89    | -2.56   | 0.35    | -0.26   | -1.69   | -1.41   | -2.02   | -1.1    | 1.38    | 1.39    | 4.53    |
| Θ (90°)  | 3.37   | 2.07   | 3.51   | 1.41   | 0.11   | 3.68   | 3.07   | 3.39    | 1.26    | 0.89    | 2.55    | 1.61    | 1.36    | 0.27    | -1.68   | -1.57   | -1.67   | -3.2    | -0.82   | -4.79   | -3.84   | 0.06    | -1.05   | 2.68    |
| Θ (105°) | 1.91   | 2.77   | 4.97   | -1.25  | -0.57  | 3.41   | 1.91   | 0.79    | -3.85   | -0.59   | 3.55    | 0.53    | 2.95    | 2.77    | 0.64    | -1.3    | 0.7     | -1.27   | 0.05    | -4.41   | -3.48   | -1.17   | -2.13   | 0.27    |
| Θ (120°) | 0.6    | 0.78   | 2      | -1.34  | -0.17  | -1.23  | -1.85  | 0.48    | 0.2     | -2.94   | 1.78    | -0.54   | 2.49    | 1.36    | -0.56   | -1.11   | 0.38    | 1.61    | 2.75    | -1.06   | -5.7    | 0.51    | -2.63   | -0.18   |
| Θ (135°) | -9.12  | -3.89  | -0.64  | -2.09  | -2.4   | -2.77  | -6.68  | -3.71   | -0.64   | -3.71   | -3.4    | -3.72   | 0.6     | 1.08    | 1.81    | 0.86    | -2.73   | 2.05    | -6.72   | -0.24   | -3.39   | 0.46    | -3.14   | -4.54   |
| Θ (150°) | -4.14  | -3.95  | -3.45  | -3.52  | -4.98  | -3.92  | -3.47  | -1.69   | -0.59   | -2.67   | -2.36   | -4.02   | -3.98   | -6.11   | -1.19   | -4.8    | -1.22   | -2.4    | -6.24   | -2.67   | -5.52   | -4.65   | -4.01   | -7.27   |
| Θ (165°) | -0.62  | -1.6   | -2.1   | -3.61  | -2.32  | -3.38  | -5.83  | -5.05   | -3.99   | -6.14   | -5.56   | -5.92   | -10.69  | -9.9    | -2.21   | -0.69   | -0.05   | -0.71   | -4.13   | -5.24   | -3.55   | -3.81   | -2.14   | -0.92   |
| Θ (180°) | -6.69  | -4.42  | -3.66  | -4.45  | -6.33  | -7.21  | -6.98  | -6.17   | -6.63   | -7.47   | -7.64   | -7.65   | -7.17   | -6.48   | -5.66   | -5.02   | -6.21   | -8.08   | -10.54  | -10.46  | -7.12   | -6.7    | -7.09   | -6.67   |



Gain Result

| Freq(Hz) | 6.175G | Pol.   | Phi    | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -11.77 | -11.33 | -8.59  | -8.62  | -8.05  | -7.89  | -8.56  | -8.41   | -8.09   | -8.6    | -9.07   | -9.6    | -9.2    | -9.92   | -7.78   | -6.88   | -5.93   | -6.59   | -8      | -8.58   | -8.41   | -7.57   | -8.23   | -9.67   |
| Θ(15°)   | -5.53  | -3.52  | -4.88  | -5.65  | -8.9   | -10.76 | -13.25 | -13.91  | -14.02  | -16.96  | -7.81   | -10.06  | -5.27   | -2.99   | -2.82   | -3.06   | -4.04   | -3.23   | -2.82   | -3.89   | -5      | -7      | -7.74   | -8.62   |
| Θ(30°)   | -8.99  | -14.77 | -12.3  | -8.78  | -16    | -12.24 | -9.68  | -15.08  | -18.24  | -7.4    | -1.28   | -3.73   | -11.1   | -7.59   | -5.04   | -9.28   | -13.16  | -5.02   | -7      | -8.36   | -13.41  | -18.71  | -17.58  | -11.28  |
| Θ(45°)   | -4.64  | -5.26  | -2.69  | -7.16  | -18.4  | -9.77  | -9.12  | -9.95   | -2.91   | -7.6    | -7.96   | -4.82   | -11.17  | -6.06   | -4.24   | -15.77  | -10     | -8.24   | -7.51   | -7.26   | -12.38  | -14.45  | -8.88   | -6.98   |
| Θ(60°)   | -7.1   | -7.4   | -5.85  | -4.87  | -1.54  | -3.29  | -17.52 | -6      | -2.88   | 2.7     | -2.43   | -13.1   | -11.18  | -12.93  | -5.2    | -2.15   | -4.16   | -15.6   | -10.21  | -5.94   | -6.15   | -8.02   | -15.98  | -5.69   |
| Θ(75°)   | -9.51  | -6.79  | -5.17  | -1.3   | 3      | -1.2   | -8.41  | -4.95   | -2.23   | 4.18    | -1.12   | -12.61  | -7.12   | -11.11  | -6.59   | -1.79   | -11.95  | -7.05   | -8.43   | -7.45   | -2.52   | -17.35  | -7.43   | -6.01   |
| Θ(90°)   | -7.12  | 0.4    | 3.03   | -2.78  | -1.49  | -4.72  | -6.02  | -6.12   | -7.18   | -0.43   | -2.64   | -13.33  | -13.32  | -10.51  | -9.32   | -8.96   | -16.47  | -8.3    | -12.81  | -3.08   | -2.53   | -3      | -7.78   | -4.59   |
| Θ(105°)  | -9.94  | -7.39  | -0.39  | -1.46  | -0.6   | -2.78  | -4.89  | -15.14  | -6.24   | -15.11  | -10.02  | -18.27  | -14.78  | -14.41  | -10.45  | -12.22  | -9.13   | -12.89  | -18.79  | -7.68   | -6.07   | -8.05   | -9.99   | -16.97  |
| Θ(120°)  | -7.18  | 1.8    | -2.05  | -10.64 | -8     | -16.98 | -3.32  | -6.91   | -8.95   | -7.38   | -13.14  | -11.77  | -7.48   | -14.67  | -18.66  | -12.24  | -5.76   | -18.7   | -17.78  | -5.52   | -7.04   | -7.44   | -5.04   | -14.1   |
| Θ(135°)  | -6.27  | -8.38  | -18.59 | -11.04 | -10.77 | -10.53 | -9.34  | -5.57   | -16.17  | -0.96   | -2.16   | -14.51  | -13.83  | -11.31  | -17.21  | -5.23   | -8.21   | -15.8   | -6.92   | -10.38  | -9.5    | -14.39  | -10.61  | -6.65   |
| Θ(150°)  | -4.89  | -6.63  | -13.57 | -9.32  | -10.6  | -17.26 | -12.31 | -10.08  | -6.37   | -9.29   | -12.54  | -11.88  | -5.01   | -17.98  | -18.65  | -18.59  | -6.62   | -17.38  | -12.59  | -10.42  | -9.25   | -9.68   | -9.22   | -7.8    |
| Θ(165°)  | -14.11 | -13.71 | -11.82 | -11.71 | -12.15 | -15.99 | -14.71 | -18.15  | -18.77  | -11.7   | -6.6    | -3.94   | -2.83   | -4.18   | -4.99   | -6.19   | -7.54   | -5.87   | -6.66   | -7      | -8.25   | -4.75   | -5.39   | -9.39   |
| Θ(180°)  | -18.95 | -15.78 | -14.68 | -14.94 | -18.49 | -18.22 | -19.02 | -13.91  | -17.6   | -18.59  | -18.02  | -17.69  | -18.64  | -18.7   | -18.91  | -18.99  | -17.44  | -17.94  | -17.33  | -14.78  | -19.07  | -18     | -17.89  | -18.31  |
| Freq(Hz) | 6.175G | Pol.   | Theta  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -8.65  | -9.32  | -8.6   | -8.37  | -8.72  | -8.81  | -10.8  | -11.78  | -8.6    | -7.77   | -7.54   | -6.63   | -6.69   | -5.81   | -6.37   | -6.87   | -8.2    | -9.7    | -12.84  | -11.96  | -12.25  | -10.39  | -8.47   | -6.89   |
| Θ(15°)   | -10.77 | -8.25  | -4.26  | -4.87  | -9.02  | -10.91 | -11.99 | -12.9   | -15.88  | -19.25  | -18.31  | -18.34  | -14.21  | -10.91  | -10.86  | -10.81  | -10.42  | -11.81  | -7.66   | -5.23   | -5.19   | -6.64   | -8.53   | -10.55  |
| Θ(30°)   | -9.98  | -11.04 | -9.74  | -12.69 | -10.13 | -8.73  | -9.7   | -11.16  | -12.61  | -4.64   | -0.37   | -1.42   | -6.52   | -5.05   | -0.86   | -1.94   | -8.27   | -13.73  | -7.1    | -5.6    | -7.57   | -9.4    | -6.26   | -3.93   |
| Θ(45°)   | -1.63  | -7.67  | -17.99 | -12.99 | -8.17  | -6.79  | -4.32  | -8.06   | -8.88   | -16.3   | -3.1    | 0.13    | -1.76   | -0.44   | 3.54    | 1.14    | -8.56   | -3.18   | -0.41   | -2.34   | -2.31   | -1.59   | 0.35    | -0.56   |
| Θ(60°)   | -0.66  | -5.67  | -10.44 | -6.69  | -10.64 | -0.98  | -0.93  | -6.58   | -5.77   | -0.91   | -6.32   | -9.54   | 0.07    | -3.6    | 0.34    | -4.24   | -18.01  | -1.05   | -2.81   | -1.68   | -6.18   | -6.73   | -3.18   | 0.83    |
| Θ(75°)   | -0.16  | -1.69  | -2.3   | -1.25  | -5.05  | -0.76  | 0.67   | -1.48   | -9.66   | 2.8     | 1.19    | -3.83   | 0.36    | -7.51   | -6.19   | -12.1   | -10.57  | 0.25    | -5.23   | 0.98    | -7.66   | -2.79   | 0.57    | -0.69   |
| Θ(90°)   | -0.42  | 2.87   | 1.14   | 0.31   | -1.58  | 0.23   | 0.23   | -3.87   | -16.09  | -1.15   | 0.91    | -6.2    | 0.94    | -2.05   | -7.08   | -18.93  | -7.73   | -3.45   | -10.68  | -1.22   | -6.9    | -3.74   | -2.58   | 0.11    |
| Θ(105°)  | -3.41  | -0.9   | -0.14  | 0.31   | -4.08  | -3.4   | -2.61  | -4.76   | -6.19   | -11.15  | -2.57   | -18.34  | -2.56   | -4.4    | -9.93   | -12.33  | -8.45   | 0.52    | -5.33   | -1.63   | -6.41   | -5.44   | -2.7    | -4.17   |
| Θ(120°)  | -8.22  | -1.49  | -1.3   | -2.67  | -11.98 | -5.68  | -12.1  | -5.18   | -14.59  | -11.43  | -8.97   | -14.73  | -11.14  | -5.61   | -14.49  | -3.65   | -4.72   | -0.73   | -0.22   | -2.23   | -16.13  | -7.63   | -2.81   | -5.15   |
| Θ(135°)  | -7.87  | -3.85  | -3.42  | -2.4   | -6.15  | -13.8  | -14.8  | -18.03  | -16.84  | -18.48  | -7.85   | -13.57  | -7.43   | -11.17  | -8.65   | -8.26   | -11.95  | -4.5    | -5.51   | -4.5    | -18.72  | -8.28   | -5.53   | -10.85  |
| Θ(150°)  | -9.79  | -6.75  | -11.82 | -7.55  | -13.14 | -14.47 | -14.85 | -17.9   | -16.33  | -11.36  | -7.8    | -9.4    | -8.84   | -19.01  | -16.76  | -9.09   | -6.49   | -5.17   | -18.17  | -11.48  | -8.82   | -10.75  | -11.34  | -9.29   |
| Θ(165°)  | -5.95  | -4.49  | -6.64  | -9.15  | -11.96 | -17.47 | -17.96 | -14.89  | -10.06  | -14.17  | -11.02  | -15.44  | -15.58  | -11.9   | -17.91  | -5.49   | -2.97   | -5.05   | -6.85   | -5.88   | -4.59   | -3.11   | -4.08   | -6.39   |
| Θ(180°)  | -15.35 | -10.91 | -12.29 | -15.42 | -18.75 | -15.7  | -15.62 | -12.84  | -12.32  | -13.29  | -15.58  | -13.11  | -13.49  | -14.98  | -16.81  | -18.48  | -18.27  | -17.11  | -15.88  | -14.37  | -11.63  | -11.09  | -14.7   | -18.68  |
| Freq(Hz) | 6.475G | Pol.   | Phi    | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -12.83 | -7.55  | -5.06  | -4.5   | -3.11  | -4.46  | -6.85  | -6.68   | -7.79   | -16.06  | -16.23  | -16.75  | -8.96   | -7.99   | -5.67   | -4.1    | -3.63   | -5.15   | -5.35   | -6.77   | -7.45   | -9.02   | -13.62  | -15.49  |
| Θ(15°)   | -18.35 | -11.55 | -13.35 | -14.69 | -13.24 | -11.33 | -8.73  | -5.62   | -6.99   | -7.28   | -10.9   | -13.29  | -7.4    | -3.55   | -3.53   | -6.69   | -9.84   | -10     | -8.31   | -7.45   | -6.18   | -7.41   | -10.77  | -18.17  |
| Θ(30°)   | -18.19 | -18.43 | -7.89  | -7.93  | -18.01 | -13.71 | -13.22 | -11.19  | -15.23  | -7.24   | -13.58  | -16.42  | -17.99  | -10.26  | -13.58  | -18.91  | -10.18  | -11.96  | -5.91   | -5.99   | -9.26   | -11.41  | -17.54  | -18.93  |
| Θ(45°)   | -6.61  | -10.1  | -6.64  | -5.55  | -12.29 | -19.13 | -19.03 | -4.71   | -4.35   | -13.22  | -7.01   | -11.66  | -9.2    | -6.28   | -2.26   | -18.57  | -9.28   | -14.56  | -14.67  | -17.83  | -11.26  | -4.05   | -1.8    | -17.3   |
| Θ(60°)   | -12.44 | -10.21 | -5.47  | -5.09  | -3.06  | -3.64  | -7.61  | -5.75   | -1.25   | -1.92   | -2.31   | -7.03   | -9.36   | -9.87   | -0.68   | -6.01   | -8.73   | -18.41  | -18.65  | -18.02  | -9.26   | -4.57   | -6.24   | -9.74   |
| Θ(75°)   | -16.04 | -3.39  | -0.62  | -1.05  | 0.65   | 0.95   | -9.77  | -7.33   | -2.67   | 0.38    | 0.54    | -5.41   | -19.22  | -8.88   | -0.65   | -4.23   | -14     | -16.2   | -12.38  | -16.94  | -11.81  | -1.36   | -7.66   | -18.25  |
| Θ(90°)   | -7.53  | -2.58  | 3.37   | 0.67   | -2.66  | -6.79  | -8.95  | -8.82   | -5.25   | -1.47   | -1.78   | -10.78  | -18.66  | -16.11  | -5.08   | -4.53   | -16.68  | -10.12  | -9.32   | -9.85   | -6.61   | -4.65   | -9.49   | -11.89  |
| Θ(105°)  | -4.78  | -5.57  | -0.91  | -0.92  | -3.09  | -12.78 | -6.79  | -13.65  | -13.2   | -13.32  | -10.76  | -18.82  | -13.1   | -14.6   | -6.88   | -6.69   | -12.49  | -8.13   | -8.15   | -8.52   | -6.07   | -4.42   | -8.35   | -18.47  |
| Θ(120°)  | -7.55  | -1.77  | -1.05  | -6.56  | -14.41 | -14.61 | -10.79 | -14.67  | -13.05  | -8.34   | -12.74  | -11.8   | -11.87  | -11.22  | -19.11  | -11.15  | -9.76   | -6.73   | -9.96   | -5.85   | -5.7    | -12.04  | -4.27   | -11.11  |
| Θ(135°)  | -4.73  | -5.26  | -12.96 | -18.73 | -8.12  | -11.72 | -19.27 | -8.07   | -17.61  | -2.86   | -2.48   | -8.56   | -13.41  | -16.65  | -13.88  | -14.35  | -7.1    | -16.42  | -8.69   | -15.16  | -13.14  | -14.86  | -9.61   | -9.91   |
| Θ(150°)  | -13.86 | -11.03 | -13.99 | -18.65 | -18.23 | -17.69 | -14.57 | -12.83  | -9.57   | -8.7    | -17.9   | -18.49  | -9.61   | -14.86  | -18.88  | -18.34  | -15.48  | -17.23  | -18.9   | -18.43  | -13.08  | -11.13  | -8.36   | -17.26  |
| Θ(165°)  | -17.92 | -17.78 | -15.61 | -17.01 | -10.12 | -8.78  | -13.23 | -14.33  | -17.92  | -13.52  | -17.39  | -12.43  | -10.41  | -7.63   | -15.04  | -13.13  | -12.7   | -12.59  | -13.95  | -18.56  | -12.57  | -7.42   | -8.4    | -7.71   |
| Θ(180°)  | -17.66 | -17.77 | -13.49 | -11.57 | -9.87  | -10.98 | -18.42 | -14.72  | -19.03  | -13.99  | -16.27  | -11.31  | -10.71  | -11.43  | -8.62   | -8.14   | -10.21  | -12.3   | -17.69  | -18.3   | -19.03  | -17.82  | -18     | -18.08  |
| Freq(Hz) | 6.475G | Pol.   | Theta  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -7.32  | -7.84  | -7.13  | -10.43 | -12.91 | -13.93 | -12.42 | -9.38   | -6.3    | -5.02   | -4.11   | -4.77   | -5.34   | -6.7    | -9.51   | -13.21  | -14.99  | -13.23  | -12.61  | -8.85   | -7.28   | -6.22   | -5.09   | -5.16   |
| Θ(15°)   | -9.12  | -6.86  | -4.45  | -4.28  | -7.75  | -14.94 | -11.78 | -7.61   | -5.15   | -3.32   | -1.47   | -1.08   | -2.02   | -5.39   | -8.03   | -7.12   | -8.35   | -7.5    | -6.69   | -9.75   | -14.07  | -18.8   | -18.12  | -12.45  |
| Θ(30°)   | -17.63 | -14.17 | -9.51  | -8.82  | -12.29 | -9.68  | -5.47  | -4.91   | -4.47   | -4.15   | -6.8    | -9.99   | -18.12  | -9.45   | -4.47   | -10.42  | -4.4    | -1.09   | -4.53   | -18.45  | -8.52   | -7.99   | -10.06  | -10.94  |
| Θ(45°)   | -3.49  | -6.07  | -8.77  | -8.42  | -7.99  | -3.95  | -3.06  | -5.67   | -3.61   | -4.96   | -2.39   | -1.02   | -6.13   | -2.58   | -0.9    | -12.48  | -1.2    | 1.05    | -3.12   | -7.05   | -4.16   | -5.66   | -16.06  | -5.23   |
| Θ(60°)   | -2.41  | -12.54 | -3.14  | -6.31  | -17.26 | -5.73  | -3.65  | -9.45   | -3.47   | -4.76   | -9.14   | -4.47   | -4.26   | -1.5    | 0.61    | -5.49   | -6.94   | 0.77    | -3.88   | -5.43   | -3.56   | -5.2    | -5.13   | -4.49   |
| Θ(75°)   | -6.05  | -5.04  | -0.4   | -2.44  | -3.88  | -0.88  | -1.94  | -12.56  | -7.12   | -1.49   | -0.19   | -6.93   | -2.86   | -3.91   | -1.16   | -7.53   | -16.46  | 0.17    |         |         |         |         |         |         |



Radiated Composite Gain

Appendix A

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ (135°) | -2.84  | -9.35  | -13.65 | -15.56 | -9.04  | -3.48  | -19.14 | -3.94   | -13.65  | -10.09  | -6.28   | -18.64  | -8.44   | -19.19  | -18.02  | -18.14  | -8.71   | -9.73   | -12.43  | -9.77   | -9.52   | -8.68   | -7.73   | -6.78   |
| Θ (150°) | -10.79 | -17.67 | -15.05 | -7.9   | -7.15  | -19.07 | -15.45 | -17.12  | -18.91  | -8.78   | -17.47  | -17.72  | -12.82  | -9.18   | -12.31  | -11.52  | -17.52  | -11.59  | -13.06  | -11.17  | -11.79  | -17.6   | -11.82  | -8.47   |
| Θ (165°) | -9.64  | -7.3   | -7.24  | -8.3   | -14.07 | -14.78 | -14.46 | -15.71  | -18.96  | -19.17  | -14.12  | -10.51  | -11.87  | -8.48   | -9.28   | -9.9    | -10.62  | -18.65  | -18.3   | -11.98  | -7.42   | -8.59   | -6.91   | -8.48   |
| Θ (180°) | -18.78 | -18.87 | -14.38 | -10.92 | -10.49 | -10.78 | -12.65 | -16.58  | -12.17  | -16.16  | -13.54  | -19.33  | -15.71  | -14.38  | -10.48  | -10.85  | -10.12  | -13     | -14.48  | -17.19  | -17.52  | -18.06  | -17.99  | -19.24  |
| Freq(Hz) | 6.995G | Pol.   | Theta  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -2.19  | -2.94  | -4.21  | -6.94  | -10.16 | -15.15 | -12.38 | -8.6    | -5      | -3.3    | -3.22   | -2.86   | -2.97   | -2.43   | -4.18   | -6.58   | -10.16  | -13.65  | -10.38  | -6.65   | -4.52   | -3.07   | -2.64   | -3.8    |
| Θ (15°)  | -19.17 | -18.17 | -17.92 | -13.02 | -8.79  | -8.75  | -7.1   | -6.86   | -7.08   | -7.06   | -6.5    | -5.22   | -3.94   | -3.08   | -3.6    | -6.18   | -6.4    | -5.97   | -7.6    | -10.65  | -8.82   | -8.3    | -10.55  | -17.85  |
| Θ (30°)  | -4.92  | -2.77  | -0.48  | 0.47   | -1.43  | -4.9   | -6.93  | -10.67  | -16.04  | -13.33  | -10.52  | -12.06  | -12.33  | -12.73  | -14.08  | -7.49   | -0.91   | 0.32    | -5.28   | -18.84  | -13.89  | -9.42   | -9.36   | -7.6    |
| Θ (45°)  | 0.5    | -0.57  | -2.92  | -1.98  | -4.39  | -8.76  | -15.44 | -18.05  | -10.36  | -4.01   | 1.75    | 0.87    | -5.71   | -4.71   | -8.87   | -7.95   | -0.63   | -2.22   | -8.59   | -2.18   | -3.5    | -6.89   | -6.79   | -2.09   |
| Θ (60°)  | 1.85   | -1.36  | -17.27 | -3.8   | -6.25  | -18.42 | -7.61  | -8.27   | -10.74  | -13.22  | -9.04   | -3.38   | -11.79  | -3.99   | -6.78   | -10.68  | -4.12   | -3.26   | -2.22   | -1.72   | -0.57   | -3.8    | -3.1    | 1.07    |
| Θ (75°)  | 1.01   | -3.11  | -2.93  | -7.59  | -1.78  | -5.54  | -0.61  | -4.82   | -8.35   | -2.27   | 1.55    | -0.61   | -4.66   | -1.18   | -5.12   | -8.54   | -1.58   | -1.09   | 0.01    | -4.17   | -4.36   | -0.27   | 0.36    | 1.06    |
| Θ (90°)  | 3.24   | -2.59  | -0.94  | -0.71  | -0.81  | -1.33  | 1.18   | -3.58   | -11.72  | -2.28   | 2.52    | -1.38   | -7.79   | -3.48   | -8.26   | -12.59  | -13.3   | -6.06   | 0.74    | -7.5    | -5.05   | -3.5    | 0.62    | 1.82    |
| Θ (105°) | -1.18  | 0      | 1.41   | -2.19  | -5.48  | 0.16   | -0.54  | -6.92   | -13.89  | -4.07   | 0.79    | -13.74  | -4.77   | -7.59   | -7.87   | -11.46  | -10.55  | -6.98   | -1.03   | -6.86   | -12.36  | -2.24   | -3.87   | -0.14   |
| Θ (120°) | -0.82  | 0.72   | 0.99   | -0.51  | -3.45  | -4.52  | -4.72  | -3.89   | -5.27   | -18.21  | -6.4    | -17.96  | -5      | -8.25   | -9.08   | -11.19  | -18.07  | -9.72   | -1.28   | -17.65  | -16.49  | -3.21   | -4.17   | -2.06   |
| Θ (135°) | -15    | -3.13  | -1.24  | -4.8   | -5.55  | -17.8  | -14.5  | -18.99  | -14.87  | -17.46  | -12.65  | -10.65  | -7.8    | -5.73   | -7.79   | -3.03   | -8.85   | -3.59   | -11.79  | -17.89  | -16.08  | -6.02   | -4.26   | -5.48   |
| Θ (150°) | -8.12  | -8.05  | -5.67  | -8.58  | -10.63 | -7.74  | -11.29 | -7.97   | -13.77  | -17.92  | -13.57  | -8.9    | -11.88  | -15.67  | -17.59  | -14.66  | -16.37  | -17.35  | -15.4   | -12.84  | -17.8   | -12.94  | -12.65  | -10.71  |
| Θ (165°) | -5.54  | -5.97  | -7.09  | -7.75  | -5.11  | -8.33  | -17.24 | -18.77  | -15.02  | -18.26  | -13.86  | -14.92  | -16.84  | -19.1   | -8.61   | -8.79   | -10.23  | -7.91   | -9.45   | -12.29  | -19.14  | -18.74  | -18.54  | -8.57   |
| Θ (180°) | -10.05 | -8     | -9.15  | -15.44 | -18.25 | -18.98 | -18.47 | -15.23  | -14.92  | -13.16  | -13.18  | -11.23  | -11.48  | -12.24  | -14.26  | -16.4   | -18.3   | -18.68  | -18.87  | -16.83  | -15.4   | -14.13  | -12.21  | -11.04  |
| Freq(Hz) | 6.175G | Pol.   | Phi    | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -7.84  | -8.62  | -10.22 | -10.33 | -7.17  | -4.34  | -2.69  | -1.97   | -1.61   | -2.27   | -3.08   | -4.02   | -5.47   | -8.84   | -10.95  | -8.45   | -5.1    | -4.26   | -4.28   | -3.46   | -2.7    | -1.51   | -3.34   | -5.27   |
| Θ (15°)  | -10.18 | -8.96  | -8.99  | -5.13  | -3.32  | 0.72   | 1.53   | 1.6     | 1.02    | -0.15   | -3.77   | -9      | -19.61  | -17.14  | -6.33   | -0.78   | 1.25    | 2.24    | 1.57    | 0.72    | -1.27   | -4.91   | -8.06   | -16.18  |
| Θ (30°)  | -18.99 | -15.88 | -7.78  | -3.75  | 0.31   | 1.99   | 3.07   | 0.02    | -4.6    | -5.63   | -7.17   | -9.18   | -14.13  | -16.28  | -9.55   | -5.53   | -5.45   | -8.02   | -8.76   | -5.36   | -0.71   | 0.14    | -3.56   | -18.72  |
| Θ (45°)  | -6.02  | -5.5   | -4     | 0.25   | -1.18  | -4.78  | -0.4   | 1.88    | -0.12   | -0.74   | -3.91   | -3.64   | -4.93   | -8.2    | -9.65   | -5.56   | -2.76   | -1.41   | -2.54   | -3.63   | -3.09   | -4.39   | -4.98   | -5.87   |
| Θ (60°)  | -15.68 | -9.91  | -7.5   | 0.94   | 0.92   | -1.52  | -7.57  | -13.02  | -6.54   | 0.22    | 0.42    | -3.04   | -11.07  | -7.35   | -5.77   | -6.01   | -9.4    | -7.3    | -15.66  | -5.68   | -0.53   | 0.2     | -0.59   | -11.7   |
| Θ (75°)  | -8.2   | -11.56 | -17.34 | -0.65  | -0.23  | 1.06   | -3.4   | -5.87   | -2.69   | -0.43   | -2.7    | -6.93   | -5.5    | -4.21   | -4.51   | -4.96   | -7.04   | -2.78   | -3.94   | -2.14   | -5.15   | -4.35   | 0.16    | -1.89   |
| Θ (90°)  | -7.97  | -16.87 | -15.49 | -2.06  | 2.19   | 2.47   | -1.38  | -0.34   | 0.68    | 2.13    | 0.5     | -7.08   | -7.35   | -12.11  | -5.7    | -6.9    | -7.63   | -2.65   | -1.68   | -0.89   | -2.62   | -8.69   | -6.91   | -7.2    |
| Θ (105°) | -10.43 | -7.38  | -5.42  | 1.91   | 1.59   | 1.6    | 2.48   | 4.96    | 3.04    | 0.3     | -2.67   | -10.27  | -8.79   | -7.63   | -13.74  | -10.76  | -14.93  | -0.12   | -1.93   | -8.9    | -1.52   | -2.71   | -3.22   | -8.19   |
| Θ (120°) | -5.37  | -3.44  | -1.95  | -0.89  | 1.16   | 1.61   | 3.38   | 4.95    | 3.44    | 1.74    | -0.43   | -6.25   | -17.46  | -18.38  | -9.83   | -7.53   | -9.63   | -7.18   | -5.13   | -2.81   | -7.9    | -18.21  | -18.56  | -5.53   |
| Θ (135°) | -13.03 | -16.44 | -9.51  | -1.87  | 3.39   | 3.66   | 1.92   | 2.58    | -0.61   | -2.73   | -4.7    | -7.08   | -14.36  | -4.85   | -16.74  | -17.88  | -18.88  | -13.76  | -6.28   | -9.32   | -16.04  | -9.72   | -18.55  | -17.29  |
| Θ (150°) | -12.42 | -9     | -3.86  | -2.31  | -1.77  | 1.61   | 2.03   | 0.51    | -2.99   | -5.22   | -9.3    | -13.22  | -18.05  | -10.99  | -9.5    | -14.38  | -4.67   | -6.41   | -18.74  | -13.33  | -15.33  | -14.76  | -10.93  | -10.13  |
| Θ (165°) | -9.95  | -9.98  | -15.14 | -14.91 | -8.48  | -8.21  | -10.86 | -12.97  | -15.4   | -14.96  | -18.34  | -16.86  | -10.1   | -14.09  | -18.29  | -19.17  | -17.99  | -16.47  | -18.95  | -10.74  | -14.76  | -18.51  | -9.57   | -8.41   |
| Θ (180°) | -19.01 | -17.36 | -17.77 | -19.38 | -19.12 | -18.79 | -18.14 | -17.12  | -17.67  | -14.02  | -15     | -13.73  | -18.57  | -18.81  | -18.53  | -17.89  | -18.55  | -15.91  | -12.7   | -12.15  | -14.59  | -17.68  | -18.67  | -17.97  |
| Freq(Hz) | 6.175G | Pol.   | Theta  | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -3.94  | -1.05  | -1.37  | -2.41  | -3.43  | -5.09  | -7.96  | -10.25  | -11.04  | -9.25   | -5.14   | -3.43   | -2.02   | -1.78   | -1.56   | -2.02   | -2.67   | -4.95   | -7.73   | -9.57   | -9.51   | -8.71   | -7.5    | -5.86   |
| Θ (15°)  | -1.87  | -1.47  | -1.69  | -0.96  | -2.33  | -5.51  | -12.37 | -15.12  | -8.16   | -4.72   | -3.62   | -4.41   | -5.14   | -2.68   | -0.35   | -1.04   | -3.45   | -4.83   | -4.97   | -4.72   | -4.18   | -4.62   | -4.36   | -3.44   |
| Θ (30°)  | -0.18  | -0.23  | 1.14   | 1.28   | 0.78   | -1.91  | -6.34  | -12.08  | -11.91  | -8.5    | -6.59   | -7.82   | -11.22  | -8.38   | -3.83   | -5.45   | -11.55  | -17.38  | -10.64  | -8.82   | -11.62  | -8.83   | -1      | 1.97    |
| Θ (45°)  | 0.85   | -1.01  | -3.86  | -2.29  | -2.2   | -3.51  | -5.34  | -6.86   | -9.23   | -6.59   | -5.03   | -3.21   | -5.23   | -7.67   | -5.82   | -16.73  | -13.59  | -16.23  | -10.61  | -5.77   | -2.99   | -9.62   | -3.78   | -0.14   |
| Θ (60°)  | -3.52  | -6.28  | -6.51  | 0.77   | -0.24  | -6.06  | -14.45 | -12.67  | -6.89   | -4.77   | -3.53   | -9.45   | -8.12   | -18.33  | -9.31   | -8.37   | -14.89  | -9.46   | -6.84   | -19.21  | -7.16   | -4.69   | -1.29   | -4.14   |
| Θ (75°)  | -4.89  | -2.95  | -6.89  | -3.33  | -3.61  | -10.57 | -10.87 | -5.23   | -7.93   | -5.26   | -7.53   | -6.43   | -7.88   | -19.13  | -8.52   | -6.01   | -11.89  | -8.89   | -4.55   | -18.39  | -5.56   | -5.44   | -2.52   | -11.6   |
| Θ (90°)  | -6.6   | -4.33  | -15.05 | -6.93  | -5.89  | -5.67  | -6.51  | -3.15   | -2.57   | -17.62  | -4.09   | -6.83   | -14.22  | -10.85  | -11.35  | -4.31   | -7.64   | -14.14  | -7.36   | -7.1    | -14.87  | -8.9    | -4.03   | -7.44   |
| Θ (105°) | -8.5   | -3.51  | -7.42  | -7.71  | -8.82  | -10.9  | -6.04  | -2.11   | -4.62   | -9.69   | -3.49   | -2.53   | -7.28   | -5.39   | -12.68  | -8.67   | -7.12   | -19.1   | -6.72   | -3.26   | -7.62   | -10.11  | -4.91   | -5.85   |
| Θ (120°) | -10.92 | -9.52  | -18.28 | -13.34 | -7.65  | -6.13  | -6.75  | -2.79   | 0.41    | -6.54   | -2.54   | 0.02    | -2.36   | -2.23   | -17.83  | -4.92   | -12.07  | -16.59  | -15.24  | -6.73   | -9.99   | -14.55  | -11.07  | -15.54  |
| Θ (135°) | -14.85 | -14.82 | -11.31 | -6.51  | -8.16  | -7.21  | -7.63  | -1      | 0.43    | -5.07   | -2.78   | -4.5    | -4.65   | -4.03   | -8.15   | -8.98   | -13.18  | -14.28  | -11.59  | -13.17  | -17.31  | -14.3   | -8.93   | -15.17  |
| Θ (150°) | -10.71 | -10.5  | -18.32 | -14.38 | -13.79 | -17.65 | -12.61 | -6.65   | -4.5    | -5.43   | -5.18   | -8.69   | -15.69  | -8.75   | -11.66  | -15.37  | -15.38  | -9.01   | -18.36  | -13.11  | -18.73  | -16.66  | -10.52  | -6.04   |
| Θ (165°) | -4.94  | -10.26 | -12.43 | -17.12 | -19.12 | -13.64 | -16.56 | -11.09  | -9.53   | -8.7    | -5.77   | -13.36  | -13.31  | -10.9   | -16.97  | -11.92  | -15     | -18.27  | -12.72  | -6.9    | -5.84   | -5.03   | -6.53   | -6.53   |
| Θ (180°) | -17.25 | -16.97 | -14.93 | -18.78 | -18.96 | -16.86 | -14.97 | -14.78  | -17.75  | -18.78  | -16.12  | -13.42  | -10.83  | -11.72  | -12.63  | -16.27  | -17.12  | -17.65  | -18.57  | -18.97  | -17.66  | -17.74  | -18.99  | -17.62  |
| Freq(Hz) | 6.475G | Pol.   | Phi    | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -11.02 | -18.46 | -17.3  | -10.3  | -6.03  | -4.71  | -4.28  | -3.86   | -2.49   | -3.78   | -4.9    | -7.91   | -10.85  | -17.81  | -18.41  | -10.71  | -6.69   | -4.92   | -2.54   | -1.87   | -1.75   | -2.16   | -3.97   | -6.29   |
| Θ (15°)  | -8.29  | -11.13 | -8.66  | -6.4   | -4.37  | -3.2   | -3.01  | -2.76   | -0.91   | -1.36   | -4.4    | -11.58  | -16.13  | -7.95   | -4.06   | -2.91   | -2.71   | -1.78   | -1.69   | -2.03   | -2.17   | -1.91   |         |         |

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ(90°)   | -7.08  | -2.93  | -3.69  | -4.82  | -10.21 | -15.33 | -14.01 | -8.86   | -6.67   | -13.52  | -6.65   | -12.77  | -8.13   | -11.11  | -11.39  | -10.44  | -15.09  | -7.99   | -16.75  | -13.51  | -17.75  | -16.11  | -6.81   | -4.15   |
| Θ(105°)  | -6.16  | -5.12  | -9.36  | -9.27  | -9.25  | -14.98 | -9.41  | -11.85  | -11.51  | -9.91   | -1.15   | -1.55   | -4.11   | -3.09   | -10.93  | -9.56   | -19.13  | -11.09  | -6.98   | -18.85  | -12.12  | -9.31   | -12.83  | -1.2    |
| Θ(120°)  | -17.74 | -16.33 | -5.53  | -3.99  | -11.25 | -18.1  | -12.01 | -9.66   | -3.42   | -4.2    | -3.17   | -4.25   | -3.75   | -4.81   | -6.88   | -7.42   | -7.91   | -11.79  | -11.46  | -4.74   | -12.33  | -11.22  | -13.03  | -10.08  |
| Θ(135°)  | -9.61  | -8.6   | -5.73  | -1.97  | -4.48  | -18.61 | -11.04 | -9.11   | -6.94   | -10.04  | -4.63   | -7.27   | -2.9    | -3.71   | -4.99   | -16.44  | -19.86  | -15.94  | -18.09  | -18.01  | -18.2   | -17.96  | -11.59  | -11.1   |
| Θ(150°)  | -4.25  | -10.29 | -10.16 | -7.08  | -13.62 | -18.21 | -12.65 | -7.49   | -5.5    | -9.06   | -5.78   | -13.19  | -13.14  | -13.43  | -4.52   | -12.28  | -8.72   | -12.27  | -17.86  | -19.06  | -19.3   | -9.23   | -8.46   | -11.32  |
| Θ(165°)  | -8.25  | -8.05  | -9.8   | -15.61 | -16.56 | -18.37 | -17.89 | -17.68  | -17.78  | -13.19  | -9.23   | -8.29   | -13.17  | -17.29  | -11.28  | -18.88  | -8.27   | -7.64   | -13.64  | -18.13  | -7.46   | -3.88   | -3.1    | -4.25   |
| Θ(180°)  | -16.72 | -18.07 | -17.79 | -18.85 | -17.52 | -19.67 | -18.22 | -18.91  | -18.72  | -18.75  | -15.11  | -14.46  | -15.99  | -16.71  | -15.58  | -18.37  | -18.21  | -17.55  | -18.97  | -18.17  | -18.8   | -18.92  | -15.05  | -15.26  |
| Freq(Hz) | 6.995G | Pol.   | Phi    | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -9.32  | -5.65  | -4.31  | -1.69  | -0.77  | -1.14  | -1.39  | -1.27   | -2.32   | -4.46   | -7.8    | -11.49  | -10.43  | -6.59   | -3.26   | -0.96   | 0.29    | 0.16    | 0.86    | -0.02   | -1.23   | -3.49   | -6.55   | -8.99   |
| Θ(15°)   | -9.72  | -5.31  | -3.28  | -1.44  | -1.55  | -3.01  | -4.16  | -7.47   | -17.48  | -14.07  | -7.92   | -6.14   | -10.05  | -12.28  | -7.8    | -4.7    | -2.16   | 0.38    | 0.44    | -0.77   | -1.69   | -5.34   | -8.22   | -9.62   |
| Θ(30°)   | -4.81  | -18.99 | -6.05  | -2.23  | 0.21   | -0.51  | -1.6   | -2.19   | -6.4    | -16.79  | -12.1   | -7.91   | -10.67  | -14.33  | -15.28  | -8.47   | -2.66   | 0.66    | 0.93    | -0.5    | -3.21   | -7.1    | -2.39   | -3.16   |
| Θ(45°)   | -3.65  | -15.97 | -2.59  | -3.51  | -3.58  | -1.71  | -3.57  | -7.64   | -10.39  | -5.5    | -4.8    | -7.25   | -7.2    | -8.82   | -4.13   | -7.58   | -0.33   | -1.9    | -3.32   | -3.25   | -2.62   | -8.57   | -8.18   | -7.72   |
| Θ(60°)   | -11.18 | -11.45 | -4.68  | -4.5   | 2.32   | 2.19   | 1.04   | 0.25    | 0.21    | -3.22   | -6.01   | -13.48  | -16.14  | -18.69  | -10.84  | -8.19   | 0.34    | -2.78   | -7.48   | -3.84   | 1.79    | 0.03    | -6.34   | -18.42  |
| Θ(75°)   | -12.54 | -4.38  | -1.94  | -1.85  | -0.95  | -2.49  | -2.4   | -6.16   | -8.13   | -5.36   | -5.81   | -10.31  | -12.71  | -14.37  | -0.95   | 0.54    | -8.06   | -6.1    | 0.77    | -1.27   | -1.2    | -1.69   | -3.19   | -16.99  |
| Θ(90°)   | -15.1  | -12.21 | -9.18  | -4.68  | 1.39   | 0.48   | 0.45   | 0.81    | 1.98    | 2.11    | -7.11   | -18.28  | -11.77  | -15.83  | -8.12   | -1.9    | -6.33   | -4.18   | -4.05   | -2.79   | -3.76   | -9.12   | -16.97  | -8.26   |
| Θ(105°)  | -11.61 | -6.24  | -9.39  | -1.23  | 2.15   | 1.51   | -0.69  | 0.38    | -0.34   | -0.64   | -4.77   | -9.96   | -8.55   | -17.41  | -5.43   | -4.68   | -12.06  | -3.97   | -2.97   | -7.02   | -6.74   | -6.84   | -2.77   | -13.3   |
| Θ(120°)  | -14.68 | -1.85  | -3.79  | 0.6    | 3.19   | 2.44   | 2.88   | 2.57    | 2.39    | 0.18    | -7.28   | -12.29  | -11.9   | -13.41  | -11.37  | -17.7   | -10.79  | -15.45  | -10.02  | -3.13   | -9.39   | -14.52  | -8.52   | -18.85  |
| Θ(135°)  | -8.7   | -10.64 | -1.55  | -1.98  | 2.56   | 3.16   | 1.08   | -1.05   | -0.95   | -2.18   | -6.48   | -18.79  | -18.64  | -15     | -14.4   | -15.7   | -7.83   | -7.98   | -12.2   | -9.18   | -17.76  | -6.07   | -18.12  | -13.37  |
| Θ(150°)  | -15.59 | -10.22 | -5.07  | -2.68  | -2.05  | 0.43   | 0.26   | 0.11    | -0.55   | -1.84   | -2.71   | -10.27  | -9.49   | -19.15  | -14.81  | -13.59  | -9.34   | -17.56  | -9.96   | -15.38  | -13.85  | -10.92  | -10.39  | -14.07  |
| Θ(165°)  | -6.32  | -9.74  | -12.95 | -8.27  | -4.43  | -4.51  | -5.41  | -7.43   | -14.1   | -18.08  | -18.06  | -17.97  | -17.03  | -19.72  | -19.21  | -11.14  | -18.36  | -11.45  | -18.04  | -9.64   | -10.45  | -15.47  | -9.84   | -8.23   |
| Θ(180°)  | -18.14 | -18.91 | -18.81 | -18.04 | -18.05 | -16.61 | -17.31 | -17.29  | -18.19  | -19.3   | -19.23  | -18.05  | -17.87  | -17.32  | -13.03  | -13.23  | -13.42  | -11.64  | -12.35  | -14.03  | -16.5   | -19.02  | -18.32  | -18.78  |
| Freq(Hz) | 6.995G | Pol.   | Theta  | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | 0.47   | 0.37   | -1.03  | -2.94  | -6.06  | -9.07  | -10.15 | -7.05   | -4.93   | -3.16   | -1      | -0.64   | 1.32    | 0.49    | -0.65   | -3.27   | -5.39   | -9.19   | -8.77   | -5.12   | -2.48   | -1      | -1.05   | 0.33    |
| Θ(15°)   | -0.13  | -0.14  | -2.21  | -6.07  | -12.86 | -14.51 | -18.77 | -13.15  | -7.1    | -6.8    | -9.96   | -9.88   | -8.44   | -8.29   | -12.25  | -17.31  | -12.93  | -15.33  | -14.06  | -8.47   | -3.58   | -2.89   | -2.92   | -1.21   |
| Θ(30°)   | 2      | -0.31  | -2.69  | -2.3   | -3.31  | -9.12  | -10.4  | -4.25   | -3.27   | -5.29   | -8.09   | -16.28  | -15.07  | -16.82  | -5.24   | -3.4    | -5.57   | -10.29  | -13.52  | -11.72  | -6.01   | -2.66   | -6.43   | -2.93   |
| Θ(45°)   | 0.26   | 1.07   | -1.68  | -2.52  | -5.22  | -8.29  | -19.08 | -17.64  | -12.11  | -8.5    | -15.43  | -10.14  | -10.63  | -11.88  | -16.05  | -16.21  | -14.86  | -7.52   | -12.1   | -17.01  | -18.13  | -12.48  | -5.95   | -3.55   |
| Θ(60°)   | 0.42   | 0.02   | -8.39  | -4.74  | -10.41 | -18.84 | -19.17 | -18.63  | -17.87  | -9.81   | -6.33   | -9.72   | -6.81   | -6.92   | -12.78  | -14.06  | -12.26  | -13.28  | -9.31   | -5.56   | -5.64   | 0.58    | 0.19    | 1.61    |
| Θ(75°)   | -0.83  | -5.65  | -16.89 | -14.73 | -9.45  | -11.54 | -18.91 | -4.62   | -9.05   | -13.49  | -6.8    | -8.89   | -12.99  | -11.4   | -18.68  | -6.07   | -17.75  | -13.77  | -17.26  | -18.72  | -8.69   | -3.78   | -1.94   | 0.17    |
| Θ(90°)   | -2.86  | -2.97  | -2.95  | -10.72 | -7.65  | -5.72  | -7.89  | -6.76   | -5.48   | -7.5    | -6.91   | -9.85   | -8.99   | -12.38  | -11.16  | -16.46  | -7.97   | -16.12  | -8.07   | -16.79  | -17.45  | -11.9   | -16.57  | -6.35   |
| Θ(105°)  | -2.94  | -1.88  | -2.77  | -14.87 | -5.92  | -5.82  | -8.57  | -7.87   | -11.51  | -11.32  | -3.07   | -4.6    | -3.23   | -3.1    | -7.96   | -18.21  | -8.15   | -10.27  | -19.21  | -17.51  | -9.3    | -10.47  | -12.39  | -5.16   |
| Θ(120°)  | -16.57 | -18.72 | -5.08  | -6.02  | -9.49  | -18.54 | -9.79  | -3.93   | -2.45   | -2.93   | -2.03   | -5.31   | -2.73   | -4.02   | -8.79   | -10.48  | -9.59   | -6.72   | -13.51  | -4.31   | -13.95  | -11.62  | -18.08  | -18.27  |
| Θ(135°)  | -14.02 | -18.31 | -6.19  | -6.18  | -5.54  | -8.54  | -8.24  | -6.18   | -6.68   | -4.54   | -5.2    | -9.3    | -2.12   | -7.14   | -5.13   | -16.91  | -17.31  | -7.18   | -15.81  | -13.6   | -13.95  | -11.17  | -16.33  | -12.12  |
| Θ(150°)  | -7.69  | -8.48  | -5.79  | -5.32  | -10.39 | -16.96 | -15.23 | -12.31  | -4.73   | -5.91   | -4.9    | -9.02   | -12.25  | -18.01  | -7.04   | -17.7   | -9.4    | -18.55  | -17.21  | -19.09  | -16.22  | -9.26   | -6.88   | -17.56  |
| Θ(165°)  | -4.85  | -6.28  | -12.7  | -19.47 | -16.96 | -19.08 | -17.91 | -13.6   | -15.12  | -11.57  | -10.33  | -8.24   | -15.99  | -15.43  | -15.53  | -14.6   | -7.45   | -5.11   | -11.22  | -16.73  | -5.68   | -2.02   | -2.79   | -3.29   |
| Θ(180°)  | -17.81 | -17.68 | -18.1  | -17.89 | -18.31 | -18.7  | -17.94 | -18.4   | -17.55  | -18.72  | -18.31  | -18.59  | -18.68  | -18.31  | -18.11  | -17.09  | -19.23  | -16.96  | -17.09  | -18.94  | -17.88  | -17.08  | -18.2   | -19.03  |
| Freq(Hz) | 6.175G | Pol.   | Phi    | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -2.8   | -0.73  | -1.76  | -4.16  | -6.47  | -11.56 | -13.09 | -9.45   | -6.64   | -4.31   | -2.09   | -1.02   | -0.03   | 0.32    | -1.17   | -3.55   | -5.55   | -9.71   | -11.66  | -10.7   | -6.96   | -3.84   | -1.88   | -2.38   |
| Θ(15°)   | -2.39  | 1.27   | 1.87   | 0.77   | -3.28  | -7.26  | -14.21 | -9.35   | -6.02   | -3.95   | -2.15   | -0.22   | 0.76    | 1.65    | 1.34    | -0.92   | -4.49   | -13.03  | -16.25  | -9.11   | -4.89   | -3.05   | -2.26   | -4.36   |
| Θ(30°)   | -8.64  | -4.34  | 0.46   | 1.27   | 0.98   | -4.47  | -18.1  | -5.24   | -2.51   | -3.69   | -5.98   | -3.69   | -1.51   | -0.7    | 1.61    | 3.47    | 0.73    | -7.29   | -15.73  | -8.71   | -11.31  | -12.51  | -6.13   | -8.62   |
| Θ(45°)   | -9.36  | -5.84  | -4.68  | -3.66  | -1.32  | -6.23  | -17.25 | -7.6    | -2.96   | -5.84   | -0.52   | 1.47    | 2.77    | 0.36    | 0.29    | 1.87    | -0.48   | -14.61  | -18.68  | -15     | -16.54  | -3.2    | -1.57   | -3.71   |
| Θ(60°)   | -6.37  | -7.23  | -4.84  | -4.9   | -3.58  | -17.03 | -5.3   | -5.68   | -1.48   | -7.94   | 0.49    | 2.24    | 3.23    | 2.11    | -1.45   | -5.37   | -12.69  | -13.98  | -18.59  | -18.08  | -11.01  | -5.22   | -2.52   | -3.02   |
| Θ(75°)   | -0.98  | -3.05  | -4.06  | -6.08  | -0.68  | -19.24 | -7.58  | -14.43  | -1.35   | -2.62   | 0.7     | 0.46    | 0.22    | -0.19   | -2.66   | -9.6    | -7.36   | -17.55  | -9.4    | -5.95   | -3.53   | -1.17   | -3.05   |         |
| Θ(90°)   | -0.57  | -3.73  | -3.47  | -8.2   | -3.51  | -15.9  | -8.81  | -6.83   | -6.36   | 0.46    | 1.1     | 0.95    | -2.82   | -3.72   | -1.84   | -4.78   | -6.93   | -10.41  | -18.49  | -13.91  | -7.54   | -7.41   | -6.13   | -4.59   |
| Θ(105°)  | -4.52  | -8.25  | -5.87  | -7.51  | -7.44  | -15.76 | -4.41  | -4.33   | -3.72   | -1.15   | 1.33    | -2.33   | -2.46   | -0.53   | -0.5    | -1.96   | -6.29   | -7.88   | -11.14  | -10.67  | -4.58   | -10.97  | -3.98   | -6.79   |
| Θ(120°)  | -6.21  | -9.49  | -13.6  | -11.39 | -6.36  | -6.85  | -2.69  | -7.76   | -0.67   | 0.46    | 2.76    | 1.99    | 2.49    | 1.96    | 2.08    | -0.84   | -6.32   | -9.17   | -6.23   | -4.99   | -6.87   | -9.16   | -12.57  | -12.03  |
| Θ(135°)  | -18.2  | -14.53 | -10.76 | -10.92 | -17.32 | -17.6  | -9.83  | -3.93   | -4.72   | 2.38    | 3.43    | 1.79    | 3.17    | 1.14    | 2.36    | -0.35   | -13.45  | -13.01  | -9.13   | -7.75   | -14.72  | -13.28  | -13.75  | -11.97  |
| Θ(150°)  | -5.57  | -7.51  | -7.76  | -10.2  | -15.19 | -5.86  | -3.59  | -5.14   | -2.37   | -0.67   | -0.57   | 2.85    | 2.58    | 1.16    | -2.23   | 0.67    | -5.33   | -15.91  | -17.86  | -14.15  | -10.08  | -4.35   | -13.48  | -19.6   |
| Θ(165°)  | -15.56 | -9.17  | -15.35 | -18.24 | -17.95 | -19.08 | -12.5  | -9.09   | -8.6    | -5.64   | -1.02   | 0.63    | 1.17    | -0.09   | 0.84    | 0.14    | -5.12   | -13.75  | -18.38  | -8.22   | -4.91   | -7.06   | -6.35   | -10.48  |
| Θ(180°)  | -3.29  | -3.52  | -10.35 | -14.28 | -17.7  | -17.21 | -12.75 | -8.49   | -7.2    | -6.3    | -6.11   | -4.21   | -5.23   | -7.04   | -10.06  | -13.58  | -14.61  | -18.73  | -18.41  | -14.66  | -9.59   | -5.53   | -6.49   | -6.13   |
| Freq(Hz) | 6.175G | Pol.   | Theta  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(1     |         |         |         |         |         |         |         |         |         |         |         |         |         |         |



Radiated Composite Gain

Appendix A

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ(45°)   | -8.61  | -8.01  | -13.04 | -4.15  | -6.46  | -12.22 | -9.04  | -9.05   | -9.91   | -1.04   | 0.55    | -0.63   | -0.89   | 1.84    | 0.13    | -1.75   | -8.28   | -15.97  | -12.65  | -18.99  | -13.69  | -10.11  | -2.88   | -6.17   |
| Θ(60°)   | -7.3   | -3.82  | -5.43  | -0.92  | -9.72  | -4.16  | -7.95  | -10.92  | -6.57   | -1.8    | -0.33   | 1.95    | -0.86   | -1.62   | 0.75    | -3.17   | -9.65   | -18.88  | -14.55  | -8.56   | -14.44  | -10.71  | -6.08   | -5.17   |
| Θ(75°)   | -0.51  | -4.3   | -5.25  | -2.25  | -4.35  | -17.14 | -3.66  | -11.31  | -7.37   | -4.47   | -1.72   | 2.91    | 3.4     | 1.83    | -1.96   | -9.8    | -4.29   | -10.36  | -8.37   | -7.56   | -6.18   | -3.74   | -2.52   | -0.98   |
| Θ(90°)   | -2.6   | -4.44  | -6.19  | -9.64  | -9.63  | -9.94  | -5.42  | -9.7    | -5.94   | -4.12   | -1.78   | 0.18    | 1.23    | -1.07   | -7.51   | -7.2    | -7.38   | -12.99  | -8.71   | -10.9   | -7.85   | -3.84   | -8.9    | -4.34   |
| Θ(105°)  | -10.12 | -7.52  | -8.24  | -12.08 | -11.27 | -11.05 | -9.38  | -7.72   | -4.67   | -3.25   | -3.3    | -1.31   | -1.87   | -2.11   | -1.85   | -3.81   | -4.21   | -8.02   | -13.51  | -7.28   | -15.7   | -9.45   | -9.06   | -10.38  |
| Θ(120°)  | -11.54 | -18.54 | -14.76 | -17.89 | -17.61 | -5.91  | -5.27  | -4.28   | -5.51   | -2.15   | -1.94   | -1.6    | -1.87   | 0.43    | -1.05   | -5.19   | -3.61   | -9.66   | -14.32  | -4.62   | -15.39  | -16.96  | -8.91   | -9.15   |
| Θ(135°)  | -15.89 | -15.22 | -8.71  | -10.48 | -12.47 | -14.91 | -3.69  | -14.5   | -3.42   | -5.44   | -0.62   | 0.91    | -3.27   | -4.96   | -2.62   | -2.1    | -9.34   | -6.59   | -18.34  | -12.66  | -19.15  | -18.01  | -17.78  | -9.67   |
| Θ(150°)  | -10.31 | -8.18  | -6.98  | -13.09 | -17.97 | -12    | -7.69  | -8.74   | -5.58   | -2.67   | -1.91   | -2.1    | -0.67   | -2.49   | -9.28   | -2.78   | -3.1    | -17.94  | -15.99  | -17.84  | -17.31  | -10.68  | -10.38  | -13.12  |
| Θ(165°)  | -18.17 | -15.24 | -13.98 | -10.37 | -16.36 | -18.64 | -8.84  | -8.35   | -7.49   | -5.34   | -1.26   | -0.24   | -2.72   | -1.66   | -1.08   | -3.06   | -9.16   | -12.5   | -18.55  | -17.25  | -9.76   | -6.27   | -17.52  | -14.44  |
| Θ(180°)  | -10.77 | -12.19 | -12.36 | -16.98 | -17.18 | -16.56 | -13.35 | -11.92  | -10.42  | -8.43   | -6.94   | -6.43   | -7.13   | -7.67   | -10.96  | -17.12  | -19.12  | -18.23  | -13.97  | -13.92  | -12.03  | -11.01  | -7.78   | -8.47   |
| Freq(Hz) | 6.695G | Pol.   | Theta  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -12.86 | -7.78  | -5.03  | -3.86  | -3.06  | -3.9   | -5.34  | -6.06   | -5.98   | -8.76   | -14.16  | -18.61  | -16.1   | -8.53   | -4.91   | -2.94   | -1.34   | -3.52   | -2.82   | -3.55   | -5.37   | -8.52   | -15.08  | -19.54  |
| Θ(15°)   | -12.74 | -6.54  | -3.73  | -2.52  | -3.14  | -7.03  | -9.81  | -6.98   | -3.14   | -3.79   | -8.01   | -13.77  | -18.02  | -16.36  | -11     | -7.45   | -7.68   | -5.34   | -7.84   | -8.97   | -10.35  | -11.77  | -17.44  | -18.63  |
| Θ(30°)   | -10.31 | -17.72 | -11.63 | -6.35  | -4.51  | -2.24  | -2.59  | -4.81   | -3.63   | -1.64   | -6.57   | -14.85  | -14.45  | -11.01  | -12.12  | -18.14  | -9.02   | -5.8    | -2.16   | -0.95   | -3.84   | -7.55   | -9.74   | -10.3   |
| Θ(45°)   | -6.59  | -7.19  | -9.86  | -7.16  | -4.39  | -0.17  | -4.07  | -5.55   | -2.38   | -0.82   | -4.16   | -9.32   | -7.59   | -10.19  | -18.23  | -11.75  | -7.44   | -8.44   | -10.83  | -10.64  | -12.56  | -8.99   | -19.17  | -10.74  |
| Θ(60°)   | -6.11  | -4.42  | -4.61  | -5.77  | -10.59 | -1.41  | -1.22  | -5.64   | -0.58   | -3.23   | -4.98   | -7.49   | -6.84   | -10.61  | -11.04  | -11.58  | -8.68   | -19.62  | -7.03   | -6.75   | -12.84  | -17.38  | -4.89   | -4.33   |
| Θ(75°)   | -4.07  | -7.52  | -4.73  | -6.27  | -6.13  | -3.15  | -4.34  | -9.49   | -2.03   | -6.52   | -4.39   | -5.81   | -7.39   | -10.76  | -7.97   | -10.29  | -9.31   | -9.85   | -13.37  | -8.27   | -8.12   | -8.37   | -6.4    | -6.95   |
| Θ(90°)   | -16.52 | -10.01 | -9.48  | -18.64 | -5.85  | -5.85  | -10.31 | -9.34   | -4.37   | -7.05   | -8.71   | -7.27   | -14.44  | -14.22  | -2.86   | -9.16   | -12.69  | -13.5   | -17.63  | -9.04   | -18.19  | -12.99  | -13.81  | -11.7   |
| Θ(105°)  | -18.73 | -16.7  | -13.87 | -16.12 | -17.2  | -10.35 | -14.42 | -11.9   | -13.45  | -11.58  | -6.39   | -8.56   | -12.45  | -7.67   | -4.23   | -7.57   | -7.61   | -11.99  | -4.47   | -8.92   | -15.26  | -9.59   | -16     | -11.1   |
| Θ(120°)  | -11.35 | -4.93  | -8.39  | -12.26 | -8.97  | -10.37 | -18.62 | -8.72   | -18.9   | -17     | -11.07  | -5.99   | -13.55  | -9.45   | -5.14   | -4.43   | -11.18  | -5.27   | -4.24   | -7.55   | -13.42  | -8.34   | -8.88   | -6.45   |
| Θ(135°)  | -11.24 | -8.82  | -13.57 | -17.42 | -18.84 | -7.96  | -6.06  | -7.4    | -12.24  | -11.57  | -9.77   | -9.83   | -18.58  | -7.43   | -9.72   | -2.05   | -8.81   | -2.67   | -12.34  | -1.22   | -7.73   | -7.48   | -14.98  | -17.68  |
| Θ(150°)  | -18.92 | -12.16 | -11.9  | -18.11 | -8.05  | -5.01  | -8.71  | -7.25   | -5.99   | -7.61   | -7.82   | -11.78  | -12.26  | -9.58   | -9.19   | -2.62   | -2.29   | -2.84   | -9.38   | -3.89   | -13.11  | -9.67   | -16.06  | -17.43  |
| Θ(165°)  | -13.4  | -13.26 | -15.75 | -7.81  | -3.68  | -4     | -8.34  | -10.09  | -8.01   | -6.41   | -6.27   | -11.71  | -18.85  | -15.61  | -6.1    | -3.78   | -5.68   | -10.5   | -11.87  | -13.2   | -10.16  | -13.55  | -9.23   | -10.16  |
| Θ(180°)  | -17.9  | -14.08 | -12.18 | -9.57  | -8.61  | -7.5   | -7.93  | -10.86  | -13.11  | -13.39  | -16.54  | -18.13  | -17.61  | -17.81  | -13.87  | -9.17   | -7.7    | -8.72   | -17.03  | -15.6   | -12.1   | -13.63  | -12.06  | -15.72  |
| Freq(Hz) | 6.995G | Pol.   | Phi    | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -5.92  | -5.04  | -4.81  | -6.63  | -9.12  | -13.57 | -18.06 | -19.09  | -12.71  | -9.37   | -7.91   | -7.18   | -5.68   | -5.89   | -5.97   | -7.07   | -9.69   | -15.73  | -18.8   | -18.21  | -14.03  | -9.58   | -7.72   | -6.06   |
| Θ(15°)   | -0.52  | -0.16  | -1.78  | -5.18  | -7.75  | -13.2  | -17.44 | -9.79   | -5      | -2.26   | -1.57   | -0.88   | -1.19   | -3.36   | -7.69   | -13.62  | -18.29  | -12.6   | -13.94  | -17.47  | -11.92  | -6.38   | -3.79   | -2.24   |
| Θ(30°)   | -9.29  | -5.75  | -3.22  | -6.17  | -5.95  | -10.82 | -8.65  | -7.13   | -18.86  | -4.09   | -0.22   | -1.27   | -1.54   | 1.57    | -3.02   | -7.05   | -4.16   | -12.53  | -14.27  | -10.12  | -4.01   | -4.41   | -7.29   | -13.83  |
| Θ(45°)   | -2.81  | -6.93  | -1.12  | -1.26  | -8.47  | -15.25 | -9.85  | -10.08  | -7.96   | -0.72   | 1.75    | 1.56    | -1.72   | -0.14   | 1       | -1.82   | -8.5    | -12.59  | -14.44  | -15.58  | -19.42  | -5.44   | -3.36   | -6.97   |
| Θ(60°)   | -3.04  | -0.14  | -6.47  | -3.05  | -16.16 | -8.23  | -7.36  | -10.97  | -6.75   | -5.8    | -1.54   | 0.19    | 2.75    | -0.26   | 0.62    | 0.01    | -19.2   | -11.8   | -16.02  | -10.61  | -15.36  | -5.76   | -3.39   | -2.29   |
| Θ(75°)   | 2.78   | -2.42  | -6.25  | -0.27  | -3.94  | -13.17 | -6.17  | -8.56   | -4.66   | -3.52   | 0.88    | 2.83    | 3.06    | -0.78   | -4.54   | -8.23   | -9.43   | -15.26  | -6.45   | -4.17   | -0.22   | -3.5    | -0.19   |         |
| Θ(90°)   | -4.33  | -5.02  | -3.62  | -4.76  | -8.85  | -7.85  | -5.32  | -9.85   | -6.1    | -2.82   | -2.14   | 0.21    | 1.83    | 0.91    | -2.24   | -8.72   | -7.53   | -12.01  | -14.99  | -9.24   | -18.57  | -2.39   | -3.88   | -11.96  |
| Θ(105°)  | -2.25  | -4.49  | -5.18  | -5.54  | -18.08 | -8.98  | -9.36  | -6.64   | -5.39   | -2.43   | -0.77   | -9.41   | -3.33   | -5.67   | -9.15   | -5.76   | -8.08   | -9.75   | -14.57  | -5.69   | -14.04  | -15.41  | -18.13  | -6.18   |
| Θ(120°)  | -9.7   | -16.52 | -18.47 | -14.52 | -16.21 | -6.73  | -12.94 | -5.93   | -4.79   | 0.93    | 0.01    | -4.08   | -5.96   | -1.78   | -3.73   | -4.49   | -7.54   | -12.05  | -15.49  | -6.25   | -18.43  | -12.43  | -10.16  | -11.11  |
| Θ(135°)  | -13.69 | -9.54  | -18.25 | -11.66 | -14.65 | -5.56  | -5.51  | -7.3    | -2.11   | -1.31   | -0.09   | -1.71   | -5.19   | -9.25   | -2.89   | -4.51   | -4.79   | -7.07   | -15.5   | -14.12  | -15.47  | -17.43  | -7.8    | -4.6    |
| Θ(150°)  | -11.97 | -6.87  | -10.4  | -15.8  | -9.94  | -5.46  | -6.66  | -6.02   | -2.56   | -1.99   | -3.09   | -2.93   | -0.79   | -3.08   | -7.18   | -5.6    | -3.47   | -8.31   | -17.93  | -16.98  | -14.75  | -17.37  | -15.25  | -12.03  |
| Θ(165°)  | -16.87 | -11.4  | -6.99  | -6.43  | -8.98  | -6.78  | -6.28  | -9.78   | -7.61   | -3.17   | -2.13   | -1.25   | -1.94   | -3.66   | -2.05   | -2.47   | -7.56   | -12.1   | -16.13  | -14.57  | -12.32  | -6.94   | -11.04  | -17.88  |
| Θ(180°)  | -7.94  | -10.31 | -11.74 | -14.68 | -18.22 | -17.07 | -13.47 | -9.57   | -7.64   | -6      | -5.44   | -6.29   | -7.36   | -8.16   | -10.51  | -12.7   | -18.62  | -18.52  | -16.7   | -14.95  | -10.76  | -8.85   | -6.9    | -5.67   |
| Freq(Hz) | 6.995G | Pol.   | Theta  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -18.24 | -18.89 | -14.64 | -9.11  | -5.82  | -4.74  | -4.08  | -5.07   | -6.4    | -8.06   | -11.24  | -15.03  | -18.99  | -18.87  | -10.78  | -9.31   | -9.93   | -8.57   | -6.79   | -8.25   | -7.23   | -6.44   | -11.06  | -13.27  |
| Θ(15°)   | -10.67 | -15.5  | -4.98  | -3.31  | -3.67  | -3.67  | -1.61  | 0.03    | -0.22   | -3.19   | -8.07   | -10.72  | -8.68   | -4.96   | -3.18   | -2.23   | -0.81   | -2.14   | -4.63   | -5.76   | -3.06   | -3.87   | -4.36   | -5.14   |
| Θ(30°)   | -11.27 | -13.03 | -17.64 | -6.53  | -2.71  | -2.08  | -3.51  | -2.7    | -1.79   | -4.77   | -4.6    | -8.36   | -12.47  | -18.17  | -14.47  | -7.96   | -1.75   | -1.87   | -5.63   | -4.53   | -4.95   | -7.4    | -5.78   | -8.18   |
| Θ(45°)   | -4.16  | -6.75  | -6.76  | -7.16  | -2.75  | -1.12  | -0.78  | -5.9    | -2.36   | -1.73   | -2.62   | -6.1    | -10.09  | -11.9   | -7.3    | -3.03   | -4.53   | -5.58   | -14.13  | -9.46   | -18.04  | -15.68  | -6.96   | -5.21   |
| Θ(60°)   | -3.56  | -1.15  | -2.39  | -4.56  | -4.28  | -1.14  | 1.49   | 0.13    | -2.57   | -5.66   | -8.39   | -11.73  | -13.09  | -13.91  | -14.8   | -11.2   | -12.71  | -17.26  | -9.68   | -8.18   | -9.23   | -16.8   | -16.05  | -14.09  |
| Θ(75°)   | -3.64  | -5.14  | -8.39  | -4.1   | -11.36 | -3.59  | -1.73  | -2.66   | -5.59   | -7.03   | -7.62   | -8.05   | -16.7   | -18.07  | -14.48  | -18.42  | -12.72  | -12.49  | -18.16  | -14.26  | -9.66   | -10.05  | -19.11  | -7.57   |
| Θ(90°)   | -9.87  | -16.65 | -13.21 | -10.74 | -9.97  | -3.02  | -13.31 | -6.69   | -7.21   | -9.01   | -10.32  | -6.55   | -10.05  | -18.34  | -11.57  | -15.22  | -18.91  | -7.92   | -14.88  | -17.03  | -16.85  | -7.33   | -11.85  | -17.93  |
| Θ(105°)  | -12.3  | -6.17  | -4.59  | -6.93  | -13.66 | -12    | -8.25  | -11.56  | -19.03  | -11.03  | -9.1    | -7.53   | -9.89   | -7.09   | -4.05   | -8.24   | -14.04  | -7.97   | -6.57   | -13.21  | -12.04  | -13.7   | -17.01  | -17.95  |
| Θ(120°)  | -3.83  | -5.72  | -8.52  | -17.09 | -9.24  | -13.7  | -7.59  | -13.61  | -14.6   | -19.22  | -14.58  | -12.94  | -11.03  | -10.42  | -10     | -10.02  | -10.37  | -5.3    | -2.84   | -11.06  | -14.98  | -3.66   | -7.63   | -3.71   |
| Θ(135°)  | -14.09 | -11.45 | -9.4   | -9.39  | -9.07  | -6.22  | -13.1  | -4.67   | -5.37   | -6.8    | -14.99  | -16.62  | -15.83  | -9.63   | -7.49   | -1.28   | -18.09  | -2.48   | -12.94  | -3.01   | -6.48   | -3.35   | -11.82  | -14.07  |
| Θ(150°)  | -15.55 | -15.31 | -17.72 | -12.68 | -8.98  | -6.57  | -4.98  | -4.71   | -3.1    | -3.93   | -12.68  | -17.73  | -10.5   | -10.33  | -       |         |         |         |         |         |         |         |         |         |



|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ(0°)    | -12.2  | -13.28 | -13.09 | -10.06 | -8.78  | -6.46  | -6.03  | -5.9    | -4.03   | -4.17   | -5.07   | -6.61   | -8.12   | -13.08  | -13.12  | -8.77   | -7.57   | -7.27   | -5.51   | -5.35   | -4.97   | -4.89   | -6.5    | -8.09   |
| Θ(15°)   | -6.95  | -3.57  | -3.05  | -3     | -6.27  | -11.91 | -13.62 | -7.83   | -5.02   | -4.75   | -5.37   | -5.32   | -7.13   | -9.2    | -12.86  | -17.52  | -13.29  | -7.91   | -8.11   | -10.69  | -13.33  | -13.38  | -10.58  | -7.78   |
| Θ(30°)   | -6.54  | -9.21  | -18.71 | -18.52 | -9.33  | -6.38  | -7.34  | -9.49   | -10.6   | -4.69   | -3.39   | -10.87  | -9.44   | -10.8   | -9.54   | -6.06   | -5.08   | -4.48   | -10.14  | -11.16  | -17.08  | -9.31   | -6.9    | -6.2    |
| Θ(45°)   | -5.79  | -2.79  | -1.21  | -2.11  | -6.33  | -11.43 | -11.35 | -2.71   | -3.62   | -5.56   | 0.61    | 0.09    | -4.89   | -18.08  | -15.18  | -13.63  | -5.24   | -3.02   | -12.16  | -5.6    | -8.98   | -14.52  | -5.44   | -7.81   |
| Θ(60°)   | -9.45  | -2.8   | -0.9   | -1.29  | -4.71  | -4.96  | -0.88  | -3.43   | -2.26   | -5.7    | 1.41    | 0.5     | -3.62   | -4.41   | 0.99    | -1.57   | -3.66   | -2.4    | -15.16  | -3.06   | -8.55   | -6.81   | -11.96  | -11.77  |
| Θ(75°)   | -2.95  | -2.8   | 0.41   | -4.5   | -15.6  | -2.33  | 0.32   | 0.77    | -0.16   | -0.8    | 1.38    | -2.44   | -1.91   | -0.75   | -0.82   | -1.17   | -1.75   | -3.74   | -2.05   | -3.3    | -6.87   | -7.83   | -8.59   | -3.97   |
| Θ(90°)   | -4     | -5.49  | 2.23   | -5.21  | -11.97 | 0.89   | 1.87   | 0.77    | -0.34   | -4.41   | 0.9     | -6.98   | -1.72   | -3.31   | -2.54   | -3      | -2.19   | -9.29   | -1.41   | -3.7    | -5.72   | -10.32  | -8.26   | -3.98   |
| Θ(105°)  | -5.79  | -18.08 | -1.84  | -4.91  | -4.85  | 0.15   | 1.45   | -1.18   | -1.26   | -4.16   | 0.53    | -2.55   | -4.5    | -1.89   | 2.32    | 0.54    | 2.68    | -1.56   | -2.75   | -4.27   | -6.92   | -5.42   | -5.44   | -6.85   |
| Θ(120°)  | -14.98 | -6.65  | -9.44  | -17.09 | -1.01  | -2.26  | -2.17  | -3.73   | -6.92   | -6.79   | -0.96   | -4.22   | 0.26    | -0.31   | 2.37    | 2.75    | 3.66    | 0.36    | 0.6     | -0.45   | -2.97   | -5.28   | -18.75  | -8.03   |
| Θ(135°)  | -13.11 | -13.35 | -16.41 | -8.97  | -4.82  | -15.62 | -12.4  | -5.41   | -11.31  | -10.8   | -6.07   | -6.25   | -4.6    | -4.12   | 1.41    | -5.59   | 0.19    | -3.74   | -8.07   | -1.74   | -5.09   | -5.23   | -8.59   | -18.29  |
| Θ(150°)  | -6.96  | -7.22  | -7.55  | -10.82 | -8.89  | -16.76 | -14.05 | -7.04   | -18.49  | -18.51  | -19.05  | -12.82  | -8.95   | -8.88   | -5.05   | -11.95  | -5.01   | -2.77   | -7.55   | -6.57   | -3.7    | -10.09  | -7.35   | -5.01   |
| Θ(165°)  | -6.44  | -9.69  | -14.82 | -17.84 | -15.97 | -12.68 | -13.11 | -18.27  | -18.96  | -18.58  | -18.59  | -16.61  | -9.44   | -6.17   | -3.8    | -3.88   | -7.72   | -17.71  | -14.21  | -11.5   | -9.09   | -7.33   | -4.68   | -6.8    |
| Θ(180°)  | -19.07 | -18.42 | -18.94 | -15.7  | -13.29 | -9.09  | -8.54  | -10.37  | -10.82  | -12.31  | -13.36  | -14.66  | -15.93  | -14.99  | -17.53  | -17.88  | -14.96  | -10.92  | -8.36   | -8.29   | -9.44   | -11.7   | -14.17  | -14.74  |
| Freq(Hz) | 6.695G | Pol.   | Phi    | Ant. 4 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -9.21  | -9.68  | -10.12 | -10.17 | -11.83 | -10.76 | -11.96 | -12.87  | -10.96  | -10.56  | -9.37   | -9.73   | -9.95   | -9.21   | -8.76   | -8.62   | -9.18   | -13.06  | -9.23   | -9.09   | -9.2    | -9.22   | -8.81   | -6.65   |
| Θ(15°)   | -18.55 | -17.32 | -17.96 | -16.25 | -12.72 | -14.65 | -17.44 | -14.67  | -8.54   | -6.84   | -6.6    | -7.02   | -13.51  | -15.99  | -11.38  | -18.39  | -16.68  | -18.47  | -13.61  | -9.15   | -6.78   | -6.29   | -7.69   | -14.62  |
| Θ(30°)   | -12.21 | -10.35 | -9.17  | -11.31 | -15.2  | -16.32 | -15.19 | -10.48  | -11.59  | -13.33  | -14.15  | -8.9    | -8.41   | -7.92   | -16.33  | -12.67  | -17.14  | -8.82   | -5.67   | -5.01   | 3.54    | -9.32   | -18.3   | -17.2   |
| Θ(45°)   | -10.02 | -8.59  | -8.42  | -10.12 | -15.11 | -13.48 | -18.43 | -17.94  | -18.86  | -6.41   | -4.72   | -10.7   | -8.29   | -4.31   | -11.86  | -17.93  | -12.96  | -15.66  | -15.03  | -7.66   | -11.5   | -18.48  | -9.44   | -7.71   |
| Θ(60°)   | -9.33  | -5.58  | -14.98 | -8.8   | -11.06 | -17.9  | -11.54 | -7.4    | -7.56   | -15.16  | -9.01   | -13.83  | -6.54   | -6.21   | -16.45  | -18.37  | -14.99  | -8.16   | -16.04  | -18.25  | -15.61  | -10.32  | -8.11   | -15.25  |
| Θ(75°)   | -10.65 | -14.06 | -18.95 | -18.09 | -11.98 | -8.46  | -7.67  | -6.56   | -14.04  | -6.9    | -17.98  | -7.07   | -3.72   | -4.31   | -15.38  | -9.56   | -18.96  | -11.64  | -18.3   | -12.95  | -13.8   | -4.12   | -17.7   | -10.32  |
| Θ(90°)   | -18.99 | -13.75 | -6.11  | -6.27  | -15.24 | -5.35  | -9.88  | -9.2    | -8.83   | -8.44   | -18.46  | -5.1    | -6.8    | -6.68   | -14.24  | -9.27   | -16.01  | -14.02  | -19.3   | -17.4   | -8.39   | -11.42  | -17.54  | -3.99   |
| Θ(105°)  | -8.5   | -8.95  | -11.88 | -10.9  | -9.64  | -15.96 | -11.18 | -11.42  | -11.5   | -6.41   | -14.89  | -18.34  | -18.69  | -12.52  | -17.95  | -6.2    | -11.35  | -18.64  | -18.46  | -15.04  | -15.18  | -6.65   | -18.01  | -18.21  |
| Θ(120°)  | -18.72 | -17.62 | -16.69 | -5.85  | -15.78 | -8.91  | -12.06 | -14.06  | -13.68  | -7.82   | -17.51  | -11.09  | -7.27   | -18.36  | -8.46   | -8.51   | -11.66  | -9.14   | -13.62  | -19.35  | -12.25  | -15.08  | -9.61   | -18.47  |
| Θ(135°)  | -12.54 | -9.08  | -8.57  | -15.31 | -13.63 | -17    | -12.84 | -17.21  | -14.01  | -6.3    | -11.61  | -12.51  | -13.45  | -9.23   | -6.78   | -12.72  | -18.5   | -3.76   | -10.02  | -6.93   | -16.44  | -11.37  | -15.65  | -17.55  |
| Θ(150°)  | -9.35  | -12.14 | -16.8  | -17.34 | -17.07 | -7.36  | -10.5  | -17.31  | -16.12  | -11.69  | -8.81   | -14.47  | -15.06  | -18.51  | -18.92  | -17.94  | -17.93  | -8.74   | -17.65  | -10.72  | -5.17   | -9.37   | -19.12  | -8.13   |
| Θ(165°)  | -5.87  | -11.17 | -8.29  | -9.33  | -13.67 | -18.8  | -15.55 | -10.94  | -15.47  | -18.13  | -12.63  | -15.14  | -18.21  | -13.73  | -11.37  | -8.64   | -18.87  | -18.83  | -9.54   | -7.8    | -11.78  | -12.02  | -15.3   | -8.04   |
| Θ(180°)  | -11.31 | -14.05 | -13.69 | -11.17 | -12    | -7.2   | -7     | -8.61   | -10.75  | -8.77   | -11.13  | -14.72  | -19.2   | -18.72  | -17.89  | -11.04  | -12.1   | -8.31   | -9.22   | -11.65  | -11.76  | -10.03  | -13.76  | -13.54  |
| Freq(Hz) | 6.695G | Pol.   | Theta  | Ant. 4 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -13.59 | -10.4  | -9.91  | -7.96  | -9.82  | -11.14 | -11.9  | -11.92  | -13.1   | -11.36  | -11.33  | -9.29   | -9.12   | -8.69   | -8.79   | -8.29   | -10.01  | -9.83   | -8.86   | -9.56   | -7.71   | -9.25   | -10.28  | -9.9    |
| Θ(15°)   | -13.4  | -11.02 | -10.35 | -15.83 | -12.51 | -9.79  | -5.52  | -2.66   | -3.86   | -7.14   | -13.56  | -9.62   | -6.98   | -5.24   | -5.24   | -6.52   | -5.96   | -4.94   | -7.26   | -15.03  | -19.03  | -17.68  | -19.44  | -19.12  |
| Θ(30°)   | -13.72 | -18.12 | -15.61 | -9.56  | -11.25 | -11.88 | -10.34 | -11.44  | -8.74   | -5.94   | -10.54  | -17.49  | -19.2   | -6.99   | -5.79   | -7.27   | -7.86   | -6.81   | -16.11  | -12.46  | -10.65  | -13.71  | -11.79  | -14     |
| Θ(45°)   | -5.01  | -3.89  | -1.39  | -1.46  | -5.15  | -4.74  | -10.38 | -5.91   | -8.13   | -0.88   | -2.1    | -10.02  | -9.03   | -8.03   | -5.14   | -5.32   | -4.6    | -2.54   | -5.11   | -5.89   | -7.11   | -15.26  | -8.54   | -6.5    |
| Θ(60°)   | -18.37 | -7.74  | -5.87  | -3.34  | -12.14 | -18.67 | -5     | -3.74   | -5.47   | -2.53   | 1.19    | -6.42   | -5.77   | -6.49   | -1.69   | -4.05   | -7.75   | -6.83   | -8.41   | -7.3    | -9.1    | -13.22  | -5.28   | -8.84   |
| Θ(75°)   | -2.5   | 1.07   | 2.06   | -2.56  | -11.7  | -2.66  | 1.18   | 0.01    | -2.14   | 0.79    | -1.4    | -1.57   | 0.37    | 0.14    | -0.68   | -0.89   | -5.34   | -7.57   | -6.69   | -6.72   | -4.58   | -5.83   | -7.37   | -5.17   |
| Θ(90°)   | -4.57  | -2.86  | 2.39   | -7.71  | -10.68 | 1.14   | 2.47   | -0.6    | 0.25    | -2.69   | -3.6    | -3.87   | 0.91    | 0.82    | -4.58   | 0.2     | -5.99   | -13.8   | -4.58   | -4.22   | -5.23   | -17.6   | -5.76   | -6.93   |
| Θ(105°)  | -14.6  | -13    | -0.07  | -7.9   | -4.62  | -0.34  | -1.37  | -0.07   | -2.08   | -4.37   | 0.71    | -2.45   | -0.3    | -0.04   | -1.35   | -0.06   | 1.43    | -4.86   | -8.53   | -7.23   | -8.35   | -9.96   | -2.58   | -4.2    |
| Θ(120°)  | -7.15  | -8.8   | -4.73  | -12.19 | -3.16  | -3.32  | -8.74  | -4.41   | -16.3   | -5.97   | -2.28   | -1.69   | 1.15    | -1.61   | -0.92   | -0.96   | 1.07    | -0.35   | -1.05   | -3.78   | -5.55   | -3.25   | -18.15  | -5.38   |
| Θ(135°)  | -8.4   | -11.07 | -18.09 | -11.73 | -4.68  | -17.29 | -11.76 | -7.77   | -18.45  | -10.72  | -4.38   | -4.48   | -0.91   | -1.02   | 1.15    | -4.18   | -2.13   | -2.73   | -11.95  | -2.3    | -9.66   | -11.26  | -11.91  | -10.03  |
| Θ(150°)  | -5.54  | -12.17 | -12.44 | -13.56 | -12.31 | -10.65 | -12.25 | -10.2   | -18.53  | -16.76  | -9.75   | -9.81   | -7.78   | -9.11   | -2.52   | -12.63  | -9.88   | -0.81   | -17.46  | -6.89   | -2.58   | -18.82  | -10.34  | -3.78   |
| Θ(165°)  | -10.03 | -12.14 | -14.99 | -18.14 | -15.41 | -14.15 | -13.11 | -16.02  | -13.04  | -14.99  | -11.52  | -15.98  | -11.74  | -7.56   | -5.6    | -2.91   | -2.63   | -8.75   | -18.68  | -14.85  | -11.62  | -9.5    | -5.83   | -5.6    |
| Θ(180°)  | -8.04  | -7.45  | -11.21 | -11.19 | -14.05 | -17.31 | -19.36 | -18.49  | -16.13  | -11.17  | -9.44   | -8.89   | -7.61   | -7.39   | -6.99   | -8.92   | -13.65  | -14.75  | -17.93  | -15.51  | -10.22  | -13.12  | -10.26  | -8.17   |
| Freq(Hz) | 6.995G | Pol.   | Phi    | Ant. 4 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -2.96  | -2.95  | -4.82  | -7.66  | -10.45 | -17.74 | -15.31 | -10.98  | -9.39   | -7.07   | -5.52   | -4.81   | -4.45   | -3.72   | -6.64   | -7.88   | -15.02  | -17.39  | -12.52  | -10.62  | -6.11   | -5.21   | -5.14   | -2.59   |
| Θ(15°)   | -11.01 | -12.92 | -13.46 | -18.8  | -13.92 | -9.22  | -7.81  | -6.75   | -7.61   | -9.94   | -12.68  | -16.56  | -10.03  | -7.9    | -4.16   | -6.79   | -11.37  | -18     | -13.53  | -8.92   | -6.02   | -7.33   | -13.79  | -14.9   |
| Θ(30°)   | -16.2  | -18.39 | -9.57  | -8.88  | -10.55 | -18.74 | -12.84 | -7.5    | -13.55  | -11.76  | -11.07  | -13.62  | -13.32  | -14.87  | -10.61  | -11.81  | -17.79  | -11.56  | -7.11   | -5.1    | -4.29   | -8.38   | -12.69  | -13.35  |
| Θ(45°)   | -10.4  | -9.65  | -13.39 | -17.32 | -12.69 | -11.4  | -18.39 | -17.69  | -15.89  | -9.88   | -8.89   | -17.93  | -7.9    | -6.92   | -10.51  | -18.07  | -13.99  | -11.63  | -13.36  | -9.19   | -9.39   | -14.16  | -8.67   | -14.33  |
| Θ(60°)   | -10.9  | -12.1  | -9.55  | -7.56  | -9.69  | -19.39 | -5.45  | -12.51  | -17.65  | -8.48   | -13.22  | -8.18   | -3.08   | -6.16   | -9.72   | -19.24  | -12.06  | -10.98  | -8.2    | -18.81  | -17.33  | -7.28   | -12.76  | -13.02  |
| Θ(75°)   | -6.62  | -2.46  | -11.55 | -18.82 | -11.55 | -15.24 | -10.65 | -9.18   | -10.84  | -11.52  | -15.35  | -3.91   | 1.93    | -5.27   | -10.38  | -11.19  | -18.5   | -13.71  | -11     | -15.56  | -15.4   | -4.83   | -10.9   | -10.22  |
| Θ(90°)   | -8.83  | -6.03  | -8.92  | -11.48 | -7.94  | -13.82 | -11.53 | -9.57   | -6.38   | -8.84   | -7.55   | -6.96   | -4.37   | -5.4    | -9.3    | -10.79  | -12.64  | -18.5   | -15.4   | -10.49  | -11.93  | -16.77  | -9.93   | -5.21   |
| Θ(105°)  | -11.42 | -11.96 | -9.21  | -15.15 | -14.38 | -10.21 | -9.89  | -4.95</ |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |



Total Gain Data

| Freq(Hz) | 6.175G | Pol.   | Total  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -6.93  | -7.20  | -5.58  | -5.48  | -5.36  | -5.32  | -6.53  | -6.77   | -5.33   | -5.15   | -5.23   | -4.86   | -4.76   | -4.39   | -4.01   | -3.86   | -3.91   | -4.86   | -6.77   | -6.94   | -6.91   | -5.74   | -5.34   | -5.05   |
| Θ(15°)   | -4.39  | -2.26  | -1.55  | -2.23  | -5.95  | -7.82  | -9.56  | -10.37  | -11.84  | -14.95  | -7.44   | -9.46   | -4.75   | -2.34   | -2.19   | -2.39   | -3.14   | -2.67   | -1.59   | -1.50   | -2.08   | -3.81   | -5.11   | -6.47   |
| Θ(30°)   | -6.45  | -9.51  | -7.82  | -7.30  | -9.13  | -7.06  | -6.68  | -9.68   | -11.56  | -2.79   | 2.21    | 0.59    | -5.22   | -3.13   | 0.54    | -1.20   | -7.05   | -4.47   | -4.04   | -3.75   | -6.56   | -8.92   | -5.95   | -3.20   |
| Θ(45°)   | 0.13   | -3.29  | -2.56  | -6.15  | -7.78  | -5.02  | -3.08  | -5.89   | -1.93   | -7.05   | -1.87   | 1.34    | -1.29   | 0.61    | 4.21    | 1.23    | -6.21   | -2.00   | 0.36    | -1.13   | -1.90   | -1.37   | 0.84    | 0.33    |
| Θ(60°)   | 0.23   | -3.44  | -4.55  | -2.68  | -1.04  | 1.03   | -0.84  | -3.27   | -1.08   | 4.27    | -0.94   | -7.95   | 0.38    | -3.12   | 1.41    | -0.06   | -3.98   | -0.90   | -2.08   | -0.30   | -3.15   | -4.32   | -2.96   | 1.70    |
| Θ(75°)   | 0.32   | -0.52  | -0.49  | 1.74   | 3.63   | 2.04   | 1.18   | 0.13    | -1.51   | 6.55    | 3.20    | -3.29   | 1.07    | -5.94   | -3.38   | -1.40   | -8.20   | 0.99    | -3.53   | 1.56    | -1.36   | -2.64   | 1.21    | 0.43    |
| Θ(90°)   | 0.42   | 4.82   | 5.20   | 2.04   | 1.48   | 1.44   | 1.15   | -1.84   | -6.65   | 2.24    | 2.50    | -5.43   | 1.10    | -1.47   | -5.05   | -8.54   | -7.19   | -2.22   | -8.61   | 0.96    | -1.18   | -0.34   | -1.43   | 1.38    |
| Θ(105°)  | -2.54  | -0.02  | 2.75   | 2.52   | 1.01   | -0.07  | -0.59  | -4.38   | -3.20   | -9.68   | -1.85   | -15.29  | -2.31   | -3.99   | -7.17   | -9.26   | -5.77   | 0.71    | -5.14   | -0.67   | -3.23   | -3.54   | -1.96   | -3.95   |
| Θ(120°)  | -4.66  | 3.47   | 1.35   | -2.03  | -6.54  | -5.37  | -2.78  | -2.95   | -7.90   | -5.94   | -7.56   | -9.99   | -5.93   | -5.10   | -13.08  | -3.09   | -2.20   | -0.66   | -0.14   | -0.56   | -6.54   | -4.52   | -0.77   | -4.63   |
| Θ(135°)  | -3.99  | -2.54  | -3.29  | -1.84  | -4.86  | -8.85  | -8.25  | -5.33   | -13.48  | -0.88   | -1.12   | -11.00  | -6.53   | -8.23   | -8.08   | -3.48   | -6.68   | -4.19   | -3.15   | -3.50   | -9.01   | -7.33   | -4.36   | -5.25   |
| Θ(150°)  | -3.67  | -3.68  | -9.60  | -5.34  | -8.68  | -12.63 | -10.39 | -9.42   | -5.95   | -7.19   | -6.54   | -7.46   | -3.51   | -15.45  | -14.59  | -8.63   | -3.54   | -4.92   | -11.53  | -7.91   | -6.02   | -7.17   | -7.14   | -5.47   |
| Θ(165°)  | -5.33  | -4.00  | -5.49  | -7.23  | -9.04  | -13.66 | -13.03 | -13.21  | -9.51   | -9.75   | -5.26   | -3.64   | -2.61   | -3.50   | -4.77   | -2.82   | -1.67   | -2.43   | -3.74   | -3.39   | -3.04   | -0.84   | -1.68   | -4.63   |
| Θ(180°)  | -13.78 | -9.69  | -10.31 | -12.16 | -15.61 | -13.77 | -13.99 | -10.33  | -11.19  | -12.17  | -13.62  | -11.81  | -12.33  | -13.44  | -14.72  | -15.72  | -14.82  | -14.49  | -13.53  | -11.56  | -10.91  | -10.28  | -13.00  | -15.48  |
| Freq(Hz) | 6.475G | Pol.   | Total  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -6.24  | -4.68  | -2.96  | -3.51  | -2.68  | -4.00  | -5.79  | -4.81   | -3.97   | -4.69   | -3.85   | -4.50   | -3.77   | -4.29   | -4.17   | -3.60   | -3.32   | -4.52   | -4.60   | -4.68   | -4.35   | -4.39   | -4.52   | -4.78   |
| Θ(15°)   | -8.63  | -5.59  | -3.92  | -3.90  | -6.67  | -9.76  | -6.98  | -3.49   | -2.96   | -1.85   | -1.00   | -0.83   | -0.91   | -1.36   | -2.21   | -3.89   | -6.02   | -5.56   | -4.41   | -5.44   | -5.53   | -7.11   | -10.04  | -11.42  |
| Θ(30°)   | -14.89 | -12.79 | -5.61  | -5.34  | -11.26 | -8.23  | -4.80  | -3.99   | -4.12   | -2.42   | -5.97   | -9.10   | -15.04  | -6.83   | -3.97   | -9.84   | -3.38   | -0.75   | -2.16   | -5.75   | -5.86   | -6.36   | -9.35   | -10.30  |
| Θ(45°)   | -1.77  | -4.62  | -4.57  | -3.74  | -6.62  | -3.82  | -2.95  | -2.15   | -0.95   | -4.36   | -1.10   | -0.66   | -4.39   | -1.04   | 1.48    | -11.52  | -0.57   | 1.17    | -2.83   | -6.70   | -3.39   | -1.77   | -1.64   | -4.97   |
| Θ(60°)   | -2.00  | -8.21  | -1.14  | -2.65  | -2.90  | -1.55  | -2.18  | -4.21   | 0.79    | -0.10   | -1.49   | -2.55   | -3.09   | -0.91   | 3.02    | -2.73   | -4.72   | 0.82    | -3.74   | -5.20   | -2.52   | -1.86   | -2.64   | -3.36   |
| Θ(75°)   | -5.64  | -1.13  | 2.50   | 1.32   | 1.96   | 3.14   | -1.28  | -6.19   | -1.34   | 2.56    | 3.20    | -3.09   | -2.76   | -2.71   | 2.11    | -2.56   | -12.05  | 0.27    | -1.11   | -1.89   | -2.43   | 0.63    | -1.49   | -2.49   |
| Θ(90°)   | -2.81  | 1.04   | 5.43   | 4.33   | 1.00   | 3.06   | 0.44   | -2.80   | -5.09   | 1.13    | 4.91    | -1.81   | -0.10   | -3.23   | -1.26   | -3.60   | -14.70  | -3.64   | -2.15   | -2.94   | -4.55   | -1.05   | -1.84   | -1.29   |
| Θ(105°)  | -1.74  | 1.36   | 4.24   | 3.75   | -0.88  | 0.72   | 0.17   | -2.44   | -10.80  | -6.88   | 1.41    | -6.24   | -1.54   | -6.96   | -4.20   | -4.13   | -5.22   | -2.59   | -5.52   | -2.64   | -3.08   | 1.15    | -0.02   | -2.23   |
| Θ(120°)  | -2.29  | 0.65   | 3.11   | 1.63   | -4.56  | -2.94  | -3.36  | -2.19   | -8.47   | -7.85   | -3.22   | -9.54   | -9.61   | -8.77   | -12.32  | -3.10   | -3.42   | -0.92   | -3.28   | -4.97   | -3.53   | -5.62   | 0.71    | -1.42   |
| Θ(135°)  | -3.55  | -1.81  | -3.86  | -3.88  | -3.62  | -10.34 | -8.58  | -7.42   | -12.84  | -2.73   | -1.32   | -5.27   | -5.07   | -11.72  | -7.18   | -8.97   | -6.02   | -5.33   | -6.10   | -9.86   | -10.06  | -8.89   | -5.42   | -2.41   |
| Θ(150°)  | -10.57 | -5.77  | -4.92  | -7.71  | -7.86  | -14.96 | -9.83  | -11.26  | -8.98   | -7.92   | -7.65   | -6.28   | -8.00   | -12.85  | -15.83  | -12.06  | -8.81   | -14.93  | -15.54  | -7.92   | -9.61   | -10.53  | -6.37   | -8.15   |
| Θ(165°)  | -4.63  | -6.19  | -5.36  | -5.71  | -4.84  | -8.03  | -11.10 | -11.40  | -13.83  | -9.27   | -9.11   | -8.37   | -9.02   | -7.26   | -11.62  | -6.49   | -8.14   | -9.84   | -11.46  | -12.28  | -7.67   | -4.74   | -5.67   | -4.85   |
| Θ(180°)  | -13.11 | -10.15 | -9.23  | -10.75 | -9.36  | -10.23 | -13.10 | -9.83   | -9.54   | -9.59   | -9.89   | -7.63   | -8.39   | -9.03   | -8.20   | -7.80   | -9.47   | -9.94   | -11.53  | -10.48  | -9.73   | -8.69   | -11.25  | -14.33  |
| Freq(Hz) | 6.695G | Pol.   | Total  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -10.23 | -9.11  | -9.20  | -9.18  | -9.80  | -11.03 | -11.90 | -11.20  | -11.69  | -10.66  | -9.86   | -12.23  | -10.98  | -9.63   | -10.28  | -11.17  | -9.86   | -9.45   | -9.48   | -9.71   | -10.23  | -10.87  | -11.25  | -11.68  |
| Θ(15°)   | -8.29  | -6.34  | -6.70  | -7.95  | -11.45 | -11.10 | -7.47  | -4.48   | -2.02   | -2.36   | -3.40   | -5.24   | -6.39   | -6.15   | -8.23   | -11.74  | -12.22  | -8.62   | -7.35   | -8.13   | -6.10   | -5.02   | -4.51   | -6.59   |
| Θ(30°)   | -6.12  | -3.66  | -1.76  | -3.56  | -9.57  | -3.49  | -2.03  | -2.51   | -6.00   | -13.47  | -13.93  | -12.37  | -7.75   | -2.79   | -4.09   | -12.14  | -5.81   | -1.06   | -0.18   | -1.40   | -3.82   | -3.04   | -3.53   | -5.85   |
| Θ(45°)   | -2.38  | -1.35  | 0.34   | -2.08  | -4.81  | -4.28  | -4.95  | -5.25   | -5.70   | -8.21   | 0.12    | 0.31    | -7.27   | -0.80   | -0.40   | -12.03  | -2.49   | 1.54    | -1.34   | -2.71   | -4.48   | -4.67   | -2.20   | -1.75   |
| Θ(60°)   | -3.96  | -2.65  | 0.61   | -0.22  | 0.24   | -6.03  | -4.71  | -6.90   | -2.14   | 0.05    | -2.37   | -2.09   | -5.23   | -9.27   | -1.31   | -4.97   | -5.64   | -0.49   | -3.67   | -2.60   | -2.66   | -0.53   | 0.46    | -0.71   |
| Θ(75°)   | -3.04  | -6.14  | 3.72   | 2.39   | 0.77   | -1.73  | -1.36  | -5.61   | -2.60   | 1.36    | 0.18    | -3.04   | -1.15   | -5.60   | -5.50   | -5.24   | -9.80   | -0.70   | 1.00    | -1.70   | 0.33    | 0.90    | 0.03    | 0.76    |
| Θ(90°)   | -2.76  | -2.51  | 3.03   | 2.48   | 2.31   | 2.42   | -1.43  | -4.23   | -6.58   | 0.74    | 3.22    | -4.01   | -3.14   | -3.42   | -4.17   | -9.64   | -6.83   | -0.95   | 0.56    | -1.91   | -1.60   | -2.75   | 0.68    | 1.49    |
| Θ(105°)  | 0.39   | -1.26  | 3.00   | 0.48   | -0.02  | 1.84   | -0.87  | -2.91   | -5.58   | -2.59   | 2.14    | -3.27   | -4.68   | -10.72  | -10.41  | -2.83   | -8.12   | -3.32   | -4.43   | -3.66   | -4.05   | -2.89   | -1.95   | -0.28   |
| Θ(120°)  | -3.74  | 0.40   | 1.56   | 0.17   | -8.86  | -1.28  | -4.57  | -2.35   | -4.81   | -4.10   | -2.14   | -9.81   | -7.03   | -9.09   | -6.80   | -2.48   | -4.18   | -1.98   | -0.83   | -3.32   | -7.39   | -11.46  | -3.05   | -4.71   |
| Θ(135°)  | -2.11  | -1.25  | -1.22  | -5.08  | -11.24 | -9.03  | -8.08  | -9.06   | -8.15   | -6.83   | -2.98   | -7.17   | -6.28   | -9.41   | -7.77   | -4.38   | -3.37   | -5.26   | -6.04   | -6.54   | -7.37   | -4.80   | -6.13   | -5.77   |
| Θ(150°)  | -8.58  | -6.88  | -3.66  | -6.90  | -7.56  | -13.66 | -7.49  | -8.79   | -9.68   | -7.81   | -8.84   | -8.97   | -8.09   | -15.28  | -15.32  | -11.51  | -15.54  | -15.30  | -12.55  | -8.51   | -10.67  | -11.94  | -13.16  | -8.43   |
| Θ(165°)  | -4.59  | -5.93  | -5.66  | -6.46  | -6.94  | -10.94 | -11.69 | -10.77  | -12.06  | -12.28  | -9.46   | -9.20   | -13.09  | -11.68  | -6.28   | -4.71   | -6.91   | -7.99   | -10.37  | -10.81  | -9.28   | -10.90  | -7.59   | -5.29   |
| Θ(180°)  | -9.91  | -10.14 | -8.64  | -8.46  | -9.33  | -9.55  | -11.86 | -10.21  | -9.10   | -9.42   | -7.58   | -9.32   | -9.07   | -9.35   | -9.27   | -7.14   | -8.78   | -10.77  | -12.65  | -10.62  | -11.33  | -10.99  | -11.02  | -11.86  |
| Freq(Hz) | 6.995G | Pol.   | Total  | Ant. 1 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -1.65  | -1.50  | -0.79  | -1.08  | -0.56  | -1.87  | -1.64  | -0.93   | -2.31   | -1.94   | -2.57   | -2.71   | -2.47   | -1.18   | -1.38   | -1.76   | -1.86   | -2.40   | -1.67   | -1.71   | -1.51   | -1.78   | -2.40   | -3.46   |
| Θ(15°)   | -4.36  | -3.70  | -2.63  | -1.87  | -2.90  | -5.08  | -6.18  | -6.60   | -6.13   | -5.14   | -5.83   | -4.79   | -3.78   | -2.30   | -0.83   | -0.99   | -1.11   | -1.21   | -4.32   | -9.29   | -7.90   | -7.92   | -9.23   | -8.15   |
| Θ(30°)   | -3.33  | -2.06  | 0.41   | 1.85   | -0.32  | -4.63  | -6.64  | -9.40   | -13.90  | -10.72  | -8.75   | -11.23  | -11.49  | -6.45   | -5.48   | -2.08   | 0.03    | 0.44    | -3.86   | -5.17   | -1.61   | -1.14   | -4.47   | -6.45   |
| Θ(45°)   | 1.22   | 0.79   | -2.80  | -1.59  | -4.12  | -5.63  | -12.29 | -12.87  | -8.83   | -3.62   | 1.79    | 0.96    | -5.15   | -3.35   | -7.74   | -4.46   | -0.12   | -1.79   | -6.10   | 0.41    | 0.07    | -1.90   | -2.38   | -1.50   |
| Θ(60°)   | 2.05   | -0.64  | -5.03  | -1.92  | -3.93  | -6.65  | -7.23  | -7.96   | -4.35   | -1.38   | -3.87   | -3.06   | -9.84   | -2.33   | -4.97   | -7.06   | -2.37   | -2.85   | -2.14   | -1.10   | 1.75    | 0.70    | 0.04    | 1.12    |
| Θ(75°)   | 1.50   | -0.90  | 1.93   | -1.79  | -1.34  | -3.87  | -0.55  | -4.38   | -5.31   | 1.10    | 3.52    | -0.39   | -4.19   | -0.28   | -3.49   | -5.27   | -0.87   | 0.13    | 0.12    | -2.94   | 0.55    | 2.55    | 2.57    | 1.30    |
| Θ(90°)   | 3.42   | -0.66  | 2.11   | 2.27   | -0.06  | -0.12  | 1.30   | -3.43</ |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |



Antenna Pattern

Appendix B

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ (135°) | -7.58  | -5.39  | -0.69  | 2.06   | 2.07   | 1.42   | 0.94   | 0.71    | -0.20   | -3.98   | -3.04   | -5.11   | -2.69   | -3.30   | -4.55   | -11.26  | -8.95   | -10.96  | -11.24  | -12.77  | -15.23  | -7.80   | -10.14  | -6.59   |
| Θ (150°) | -3.68  | -8.63  | -4.39  | -1.42  | -3.22  | -2.30  | -0.41  | 0.32    | -0.53   | -2.51   | -2.84   | -9.71   | -8.76   | -12.33  | -3.00   | -10.96  | -6.65   | -11.11  | -9.70   | -15.58  | -14.43  | -7.60   | -7.90   | -8.13   |
| Θ (165°) | -7.39  | -7.27  | -9.33  | -13.65 | -7.27  | -5.10  | -5.90  | -11.81  | -14.97  | -12.07  | -8.77   | -7.93   | -11.46  | -14.78  | -10.65  | -11.82  | -7.92   | -7.04   | -12.49  | -11.08  | -6.63   | -3.75   | -2.92   | -4.04   |
| Θ (180°) | -14.27 | -15.22 | -15.12 | -15.93 | -14.62 | -15.74 | -15.25 | -15.78  | -15.64  | -14.98  | -13.52  | -12.91  | -14.34  | -14.74  | -13.70  | -15.14  | -15.53  | -14.00  | -15.97  | -13.28  | -14.44  | -14.86  | -13.62  | -13.67  |
| Freq(Hz) | 6.995G | Pol.   | Total  | Ant. 2 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | 0.90   | 1.34   | 0.64   | 0.74   | 0.36   | -0.49  | -0.85  | -0.25   | -0.42   | -0.75   | -0.18   | -0.30   | 1.60    | 1.27    | 1.25    | 1.05    | 1.33    | 0.64    | 1.31    | 1.15    | 1.20    | 0.94    | 0.03    | 0.81    |
| Θ (15°)  | 0.32   | 1.01   | 0.30   | -0.15  | -1.24  | -2.71  | -4.01  | -6.43   | -6.72   | -6.05   | -5.44   | -4.61   | -6.16   | -6.83   | -6.47   | -4.47   | -1.81   | 0.50    | 0.59    | -0.09   | 0.48    | -0.93   | -1.80   | -0.62   |
| Θ (30°)  | 2.82   | -0.25  | -1.04  | 0.75   | 1.81   | 0.05   | -1.06  | -0.09   | -1.55   | -4.99   | -7.26   | -7.32   | -9.32   | -12.39  | -4.83   | -2.22   | -0.87   | 1.00    | 1.08    | -0.18   | -1.38   | -1.33   | -0.95   | -0.03   |
| Θ (45°)  | 1.74   | 1.16   | 0.90   | 0.02   | -1.31  | -0.85  | -3.45  | -7.23   | -8.16   | -3.74   | -4.44   | -5.45   | -5.57   | -7.08   | -3.86   | -7.02   | -0.18   | -0.85   | -2.78   | -3.07   | -2.50   | -7.09   | -3.91   | -2.14   |
| Θ (60°)  | 0.71   | 0.32   | -3.14  | -1.61  | 2.55   | 2.22   | 1.08   | 0.31    | 0.28    | -2.36   | -3.16   | -8.19   | -6.33   | -6.64   | -8.69   | -7.19   | 0.57    | -2.41   | -5.29   | -1.61   | 2.51    | 3.32    | 1.06    | 1.65    |
| Θ (75°)  | -0.55  | -1.96  | -1.80  | -1.63  | -0.38  | -1.98  | -2.30  | -2.31   | -5.56   | -4.74   | -3.27   | -6.53   | -9.84   | -9.63   | -0.88   | 1.40    | -7.62   | -5.41   | 0.84    | -1.19   | -0.49   | 0.40    | 0.49    | -0.08   |
| Θ (90°)  | -2.61  | -2.48  | -2.02  | -3.71  | 1.90   | 1.41   | 1.04   | 1.51    | 2.70    | 2.56    | -4.00   | -9.27   | -7.15   | -10.76  | -6.37   | -1.75   | -4.06   | -3.91   | -2.60   | -2.62   | -3.58   | -7.28   | -13.76  | -4.19   |
| Θ (105°) | -2.39  | -0.52  | -1.91  | -1.05  | 2.78   | 2.25   | -0.03  | 0.99    | -0.02   | -0.28   | -0.83   | -3.49   | -2.11   | -2.94   | -3.50   | -4.49   | -6.67   | -3.06   | -2.87   | -6.65   | -4.82   | -5.14   | -2.32   | -4.54   |
| Θ (120°) | -12.51 | -1.76  | -1.38  | 1.46   | 3.42   | 2.47   | 3.11   | 3.45    | 3.62    | 1.91    | -0.90   | -4.52   | -2.23   | -3.55   | -6.88   | -9.73   | -7.14   | -6.17   | -8.41   | -0.67   | -8.09   | -9.82   | -8.06   | -15.54  |
| Θ (135°) | -7.58  | -9.95  | -0.27  | -0.58  | 3.19   | 3.44   | 1.56   | 0.11    | 0.08    | -0.19   | -2.78   | -8.84   | -2.02   | -6.48   | -4.64   | -13.25  | -7.37   | -4.55   | -10.63  | -7.84   | -12.44  | -4.90   | -14.12  | -9.69   |
| Θ (150°) | -7.04  | -6.25  | -2.40  | -0.79  | -1.46  | 0.51   | 0.38   | 0.35    | 0.85    | -0.40   | -0.66   | -6.59   | -7.64   | -15.53  | -6.37   | -12.17  | -6.36   | -15.02  | -9.21   | -13.84  | -11.86  | -7.00   | -5.28   | -12.46  |
| Θ (165°) | -2.51  | -4.86  | -9.81  | -7.95  | -4.19  | -4.36  | -5.17  | -6.49   | -11.57  | -10.69  | -9.65   | -7.80   | -13.47  | -14.06  | -13.98  | -9.52   | -7.11   | -4.20   | -10.40  | -8.86   | -4.43   | -1.83   | -2.01   | -2.08   |
| Θ (180°) | -14.96 | -15.24 | -15.43 | -14.95 | -15.17 | -14.52 | -14.60 | -14.80  | -14.85  | -15.99  | -15.74  | -15.30  | -15.25  | -14.78  | -11.86  | -11.73  | -12.41  | -10.52  | -11.09  | -12.81  | -14.13  | -14.93  | -15.25  | -15.89  |
| Freq(Hz) | 6.175G | Pol.   | Total  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -2.54  | -0.12  | -0.16  | -1.36  | -1.59  | -1.51  | -1.77  | -2.01   | -1.65   | -1.20   | -0.73   | -0.53   | 0.19    | 0.72    | 0.16    | -0.45   | -0.43   | -0.77   | -1.42   | -1.40   | -1.65   | -1.15   | -0.57   | -1.75   |
| Θ (15°)  | -2.29  | 1.31   | 2.29   | 2.06   | -0.16  | -0.11  | -2.20  | -3.04   | -3.37   | -2.56   | -1.10   | 0.07    | 0.80    | 1.74    | 1.99    | 0.38    | -1.22   | -1.06   | 0.32    | 1.76    | 1.48    | 0.17    | -1.10   | -3.95   |
| Θ (30°)  | -5.30  | -3.04  | 1.18   | 2.53   | 3.37   | -0.29  | -1.89  | 0.83    | 1.89    | 0.80    | -0.07   | 0.21    | -0.08   | -0.63   | 1.79    | 4.57    | 3.48    | 1.59    | -0.14   | -0.63   | -6.37   | -9.85   | -4.57   | -4.97   |
| Θ (45°)  | -2.36  | -0.20  | -1.67  | -1.26  | 2.07   | -1.83  | 1.06   | 0.16    | 0.30    | -2.59   | -0.13   | 1.79    | 2.81    | 0.45    | 0.76    | 3.09    | 2.22    | -7.48   | -15.61  | -12.32  | -3.28   | -1.31   | -1.31   | -0.65   |
| Θ (60°)  | -3.72  | -3.41  | -1.89  | -2.30  | 1.40   | -2.74  | 0.01   | -1.59   | -0.49   | -1.97   | 1.70    | 2.42    | 3.65    | 2.65    | -0.37   | -3.64   | -11.81  | -7.42   | -9.34   | -14.16  | -5.74   | -4.81   | -2.27   | -1.91   |
| Θ (75°)  | -0.48  | -2.35  | -2.72  | -4.95  | 3.24   | -5.31  | -3.22  | -5.10   | -0.21   | -0.03   | 1.68    | 1.30    | 1.26    | -0.01   | -2.46   | -7.27   | -4.63   | -5.43   | -15.17  | -7.03   | -4.82   | -2.77   | -0.03   | -2.55   |
| Θ (90°)  | -0.46  | -2.30  | -3.22  | -7.86  | -0.42  | -6.24  | -3.14  | -5.56   | -3.38   | 0.65    | 1.69    | 1.57    | -1.11   | -3.15   | -1.40   | -4.61   | -6.30   | -8.69   | -12.69  | -12.55  | -6.82   | -4.46   | -4.44   | -4.43   |
| Θ (105°) | -3.72  | -5.10  | -4.92  | -5.30  | -6.08  | -12.48 | -3.73  | -2.53   | -2.51   | -1.01   | 1.67    | -0.77   | -0.21   | 1.07    | 1.10    | -0.95   | -1.64   | -2.66   | -7.01   | -3.86   | -4.44   | -10.31  | -3.83   | -6.52   |
| Θ (120°) | -4.47  | -5.53  | -8.59  | -9.35  | -5.29  | -6.44  | -2.33  | -4.22   | 0.82    | 0.83    | 2.87    | 2.57    | 3.62    | 3.12    | 2.45    | 0.99    | 0.57    | -1.28   | -0.52   | 2.18    | -3.56   | -4.63   | -11.46  | -8.41   |
| Θ (135°) | -14.80 | -11.49 | -7.16  | -6.98  | -6.91  | -3.51  | -8.16  | -0.95   | -0.85   | 2.87    | 3.54    | 1.99    | 3.20    | 2.05    | 3.80    | 2.63    | -5.07   | -0.17   | -0.98   | 0.22    | -1.75   | -11.10  | -5.46   | -10.06  |
| Θ (150°) | -5.08  | -4.26  | -5.19  | -7.05  | -12.52 | -2.25  | -0.95  | -0.25   | 1.11    | 0.81    | -0.14   | 2.92    | 2.67    | 2.16    | -0.52   | 2.88    | 0.41    | -2.40   | -13.90  | -9.49   | -3.14   | -4.02   | -8.12   | -11.03  |
| Θ (165°) | -10.89 | -7.77  | -10.30 | -7.81  | -1.35  | -1.00  | -3.72  | -3.88   | -4.98   | -3.41   | -0.69   | 0.68    | 1.51    | 2.09    | 3.29    | 3.24    | 0.60    | -0.95   | -6.35   | -5.58   | -3.19   | -6.77   | -3.05   | -7.89   |
| Θ (180°) | -2.71  | -2.16  | -6.34  | -6.15  | -7.70  | -4.70  | -4.95  | -4.14   | -4.26   | -5.25   | -5.81   | -4.06   | -4.64   | -6.01   | -6.36   | -4.58   | -2.54   | -3.98   | -5.01   | -7.50   | -7.93   | -4.97   | -6.18   | -5.71   |
| Freq(Hz) | 6.475G | Pol.   | Total  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -1.29  | 0.06   | -0.67  | -0.84  | -0.90  | -2.19  | -1.96  | -2.43   | -1.36   | -1.66   | -1.72   | -1.09   | -0.68   | -0.81   | -0.65   | -0.47   | -1.31   | -3.23   | -2.20   | -1.08   | -1.16   | -1.57   | -2.09   | -1.26   |
| Θ (15°)  | -6.88  | -7.85  | -5.89  | -4.40  | -3.76  | -2.19  | -1.75  | -2.04   | -1.83   | -1.36   | -0.92   | -2.03   | -3.60   | -1.45   | -1.06   | -1.06   | -3.97   | -6.32   | -5.70   | -3.59   | -3.16   | -3.30   | -6.16   | -6.47   |
| Θ (30°)  | -2.61  | -3.19  | 0.80   | 2.39   | 0.67   | -5.66  | -0.73  | 1.43    | -1.42   | 0.33    | 2.35    | 2.67    | 0.12    | -2.97   | 1.34    | 3.14    | 0.66    | -4.98   | -5.78   | -3.68   | -5.41   | -9.83   | -5.30   | -2.51   |
| Θ (45°)  | -2.56  | 0.57   | -0.92  | -2.83  | 0.17   | -0.31  | -1.29  | -2.23   | -0.47   | 3.57    | 2.95    | 0.77    | -0.92   | 0.47    | 0.14    | -0.89   | -1.83   | -12.92  | -6.77   | -8.05   | -13.84  | -4.42   | -2.27   | -2.82   |
| Θ (60°)  | -2.25  | -0.62  | -0.66  | -1.26  | -1.04  | 0.14   | 0.32   | -2.33   | -0.65   | 2.46    | 2.70    | 0.01    | -1.23   | 1.58    | 3.58    | -4.52   | -4.05   | -10.39  | -5.74   | -11.79  | -5.26   | -3.82   | -4.24   | -1.99   |
| Θ (75°)  | -0.16  | -3.30  | -3.54  | -2.63  | 0.14   | -3.59  | -2.40  | -2.51   | -1.10   | 1.73    | 0.63    | 1.86    | 2.11    | -0.99   | 2.32    | -7.47   | -2.94   | -6.53   | -8.16   | -12.76  | -4.66   | -2.22   | -1.77   | -0.92   |
| Θ (90°)  | -0.12  | -0.46  | -4.49  | -6.65  | -0.35  | -1.56  | -5.71  | -3.81   | -2.48   | -1.73   | -0.22   | -0.28   | 0.49    | -7.05   | -0.58   | -2.57   | -4.61   | -9.77   | -7.30   | -6.52   | -5.59   | -3.58   | -7.85   | -3.56   |
| Θ (105°) | -5.10  | -5.58  | -5.72  | -6.01  | -7.93  | -5.58  | -5.56  | -4.17   | -3.31   | -1.04   | -2.42   | -0.79   | -2.10   | 1.09    | -1.50   | -0.82   | 0.89    | -5.52   | -4.20   | -8.34   | -14.66  | -6.10   | -4.13   | -7.26   |
| Θ (120°) | -6.78  | -5.41  | -6.43  | -9.20  | -13.50 | -5.15  | -1.81  | -8.39   | -4.35   | -5.15   | 1.13    | -0.57   | 0.01    | 2.73    | 1.95    | 0.05    | -2.96   | -3.45   | -4.06   | -1.52   | -9.83   | -3.87   | -5.52   | -4.35   |
| Θ (135°) | -10.77 | -11.16 | -9.39  | -7.90  | -8.15  | -8.34  | -0.85  | -4.29   | -3.12   | -0.63   | 1.33    | 1.15    | -0.15   | 0.22    | 1.66    | 2.62    | -4.21   | -3.41   | -4.73   | -1.25   | -3.96   | -12.16  | -9.46   | -8.92   |
| Θ (150°) | -7.22  | -5.10  | -5.62  | -13.63 | -9.40  | -1.74  | -1.27  | -4.21   | -0.98   | 1.11    | -0.08   | -0.93   | -0.08   | 0.66    | -4.29   | 1.07    | 0.22    | -1.13   | -11.35  | -3.16   | -5.81   | -6.52   | -7.21   | -9.24   |
| Θ (165°) | -12.08 | -10.05 | -13.07 | -8.75  | -2.04  | -1.49  | -3.46  | -5.52   | -6.79   | -5.13   | -1.05   | -0.24   | -2.74   | -0.77   | 0.26    | -0.10   | -3.83   | -4.03   | -5.77   | -9.33   | -6.48   | -7.15   | -7.59   | -12.78  |
| Θ (180°) | -6.43  | -4.99  | -6.19  | -7.79  | -7.23  | -4.69  | -5.18  | -6.74   | -6.52   | -6.91   | -7.54   | -5.65   | -6.25   | -8.11   | -7.86   | -5.78   | -4.99   | -5.62   | -8.91   | -10.82  | -9.19   | -6.94   | -7.67   | -7.86   |
| Freq(Hz) | 6.695G | Pol.   | Total  | Ant. 3 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ (0°)   | -3.02  | -1.95  | -1.67  | -2.48  | -2.73  | -3.74  | -5.15  | -5.00   | -3.71   | -3.45   | -3.55   | -4.06   | -2.34   | -1.17   | -1.58   | -1.34   | -0.92   | -3.39   | -2.54   | -2.41   | -2.52   | -2.69   | -2.71   | -2.32   |
| Θ (15°)  | 0.13   | 0.42   | 0.75   | -0.52  | -2.78  | -6.75  | -9.07  | -6.66   | -2.97   | -1.91   | -1.98   | -2.28   | -3.75   | -4.15   | -4.15   | -3.30   | -4.14   | -4.47   | -7.48   | -6.67   | -5.07   | -4.58   | -5.57   | -2.20   |
| Θ (30°)  | -3.60  | -2.80  | -0.46  | 0.42   | -2.24  | -2.15  | -2.45  | -4.61   | -1.88   | 1.59    | 0.77    | -0.55   | -0      |         |         |         |         |         |         |         |         |         |         |         |



Antenna Pattern

Appendix B

|          |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Θ(90°)   | -3.27  | -3.60  | 2.80   | -4.76  | -5.18  | 1.29   | 2.22   | 1.60    | 0.24    | -1.59   | 1.22    | -5.46   | -1.03   | -1.14   | -1.28   | -2.29   | -2.09   | -7.87   | -1.30   | -3.54   | -5.30   | -6.58   | -6.59   | -3.58   |
| Θ(105°)  | -4.99  | -11.64 | -1.27  | -3.87  | -4.21  | 0.75   | 1.73   | 0.15    | -0.32   | -1.14   | 0.78    | -2.12   | -3.86   | -1.79   | 2.36    | 1.26    | 2.99    | -1.31   | -2.63   | -4.09   | -6.07   | -3.52   | -4.71   | -6.54   |
| Θ(120°)  | -11.07 | -4.57  | -8.89  | -9.46  | -0.93  | -1.10  | -1.50  | -2.60   | -6.61   | -3.88   | -0.80   | -3.34   | 0.59    | 0.07    | 2.73    | 2.82    | 3.84    | 0.51    | 0.66    | -0.24   | -2.80   | -2.75   | -15.52  | -7.46   |
| Θ(135°)  | -11.88 | -12.07 | -12.78 | -7.78  | -3.17  | -8.12  | -9.29  | -4.93   | -9.42   | -3.73   | -4.77   | -5.07   | -2.23   | -1.50   | 2.11    | -4.54   | 0.36    | -1.81   | -7.66   | 0.93    | -4.36   | -4.25   | -6.50   | -11.46  |
| Θ(150°)  | -5.09  | -5.45  | -7.25  | -8.91  | -8.42  | -10.14 | -8.74  | -5.76   | -15.41  | -15.56  | -9.66   | -7.92   | -6.92   | -7.42   | -4.50   | -11.26  | -3.95   | -1.99   | -6.23   | -5.99   | 0.61    | -9.02   | -6.59   | -3.65   |
| Θ(165°)  | -2.86  | -9.02  | -11.41 | -9.69  | -10.14 | -11.67 | -11.20 | -8.53   | -10.82  | -13.25  | -7.56   | -7.95   | -7.11   | -4.94   | -2.68   | -3.65   | -7.15   | -14.02  | -11.60  | -7.95   | -6.13   | -5.55   | -3.29   | -4.49   |
| Θ(180°)  | -8.17  | -10.76 | -11.55 | -9.72  | -10.73 | -7.01  | -8.03  | -9.80   | -10.09  | -11.32  | -12.04  | -12.50  | -12.34  | -10.45  | -9.44   | -6.32   | -7.32   | -7.32   | -7.66   | -7.81   | -8.96   | -10.95  | -12.71  | -7.69   |
| Freq(Hz) | 6.695G | Pol.   | Total  | Ant. 4 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -7.86  | -7.01  | -7.00  | -5.92  | -7.70  | -7.94  | -8.92  | -9.36   | -8.89   | -7.93   | -7.23   | -6.49   | -6.50   | -5.93   | -5.76   | -5.89   | -6.56   | -8.14   | -6.03   | -6.31   | -5.38   | -6.22   | -6.47   | -4.97   |
| Θ(15°)   | -12.24 | -10.11 | -9.66  | -13.02 | -9.60  | -8.56  | -5.25  | -2.39   | -2.59   | -3.98   | -5.80   | -5.12   | -6.11   | -4.89   | -4.29   | -6.25   | -5.61   | -4.75   | -6.35   | -8.15   | -6.53   | -5.99   | -7.41   | -13.30  |
| Θ(30°)   | -9.89  | -9.68  | -8.28  | -7.34  | -9.78  | -10.55 | -9.11  | -7.92   | -6.92   | -5.21   | -8.97   | -8.34   | -8.06   | -4.42   | -5.42   | -6.17   | -7.38   | -4.69   | -5.29   | -4.29   | -2.77   | -7.97   | -10.91  | -12.30  |
| Θ(45°)   | -3.82  | -2.62  | -0.60  | -0.91  | -4.73  | -4.20  | -9.75  | -5.65   | -7.78   | 0.19    | -0.21   | -7.34   | -5.63   | -2.77   | -4.30   | -5.09   | -4.01   | -2.33   | -4.69   | -3.68   | -5.76   | -13.57  | -5.96   | -4.05   |
| Θ(60°)   | -8.82  | -3.52  | -5.37  | -2.25  | -8.56  | -15.26 | -4.13  | -2.19   | -3.38   | -2.30   | 1.59    | -5.70   | -3.13   | -3.34   | -1.55   | -3.89   | -7.00   | -4.43   | -7.72   | -6.96   | -8.22   | -8.52   | -3.46   | -7.95   |
| Θ(75°)   | -1.88  | 1.20   | 2.09   | -2.44  | -8.83  | -1.65  | 1.71   | 0.87    | -1.87   | 1.47    | -1.31   | -0.49   | 1.80    | 1.47    | -0.54   | -0.34   | -5.16   | -6.13   | -6.40   | -5.79   | -4.09   | -1.88   | -6.99   | -4.01   |
| Θ(90°)   | -4.42  | -2.52  | 2.96   | -3.92  | -9.38  | 2.02   | 2.72   | -0.04   | 0.76    | -1.67   | -3.46   | -1.43   | 1.59    | 1.53    | -4.13   | 0.66    | -5.58   | -10.90  | -4.44   | -4.02   | -3.52   | -10.48  | -5.48   | -2.21   |
| Θ(105°)  | -7.55  | -7.51  | 0.21   | -6.14  | -3.43  | -0.22  | -0.94  | 0.24    | -1.61   | -2.26   | 0.83    | -2.34   | -0.24   | 0.20    | -1.26   | 0.89    | 1.65    | -4.68   | -8.11   | -6.56   | -7.53   | -4.99   | -2.46   | -4.03   |
| Θ(120°)  | -6.86  | -8.26  | -4.46  | -4.94  | -2.93  | -2.26  | -7.08  | -3.96   | -11.79  | -3.79   | -2.15   | -1.22   | 1.73    | -1.52   | -0.22   | -0.26   | 1.30    | 0.19    | -0.82   | -3.66   | -4.71   | -2.97   | -9.04   | -5.17   |
| Θ(135°)  | -6.98  | -6.95  | -8.11  | -10.15 | -4.16  | -14.13 | -9.26  | -7.30   | -12.68  | -4.96   | -3.63   | -3.85   | -0.67   | -0.41   | 1.80    | -3.61   | -2.03   | -0.20   | -7.87   | -1.01   | -8.83   | -8.30   | -10.38  | -9.32   |
| Θ(150°)  | -4.03  | -9.14  | -11.08 | -12.04 | -11.06 | -5.69  | -8.28  | -9.43   | -14.15  | -10.51  | -6.24   | -8.53   | -7.04   | -8.64   | -2.42   | -11.51  | -9.25   | -0.16   | -14.54  | -5.39   | -0.67   | -8.90   | -9.80   | -2.42   |
| Θ(165°)  | -4.46  | -8.62  | -7.45  | -8.79  | -11.44 | -12.87 | -11.15 | -9.77   | -11.08  | -13.27  | -9.03   | -12.53  | -10.86  | -6.62   | -4.58   | -1.88   | -2.53   | -8.34   | -9.04   | -7.02   | -8.69   | -7.57   | -5.37   | -3.64   |
| Θ(180°)  | -6.36  | -6.59  | -9.27  | -8.17  | -9.89  | -6.80  | -6.75  | -8.19   | -9.64   | -6.80   | -7.19   | -7.88   | -7.32   | -7.08   | -6.65   | -6.84   | -9.80   | -7.42   | -8.67   | -10.15  | -7.91   | -8.30   | -8.66   | -7.06   |
| Freq(Hz) | 6.995G | Pol.   | Total  | Ant. 4 | -      | -      | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Gain     | Φ(0°)  | Φ(15°) | Φ(30°) | Φ(45°) | Φ(60°) | Φ(75°) | Φ(90°) | Φ(105°) | Φ(120°) | Φ(135°) | Φ(150°) | Φ(165°) | Φ(180°) | Φ(195°) | Φ(210°) | Φ(225°) | Φ(240°) | Φ(255°) | Φ(270°) | Φ(285°) | Φ(300°) | Φ(315°) | Φ(330°) | Φ(345°) |
| Θ(0°)    | -2.39  | -2.09  | -3.04  | -3.22  | -3.67  | -4.24  | -3.76  | -3.92   | -5.42   | -4.92   | -4.93   | -4.65   | -4.26   | -2.67   | -3.69   | -2.84   | -3.67   | -3.71   | -3.28   | -3.53   | -2.69   | -3.77   | -4.61   | -2.49   |
| Θ(15°)   | -7.90  | -7.42  | -6.33  | -7.60  | -8.61  | -6.96  | -5.05  | -3.07   | -2.18   | -3.24   | -6.55   | -6.31   | -4.91   | -5.15   | -3.79   | -6.44   | -6.76   | -9.38   | -10.57  | -8.42   | -5.72   | -7.05   | -12.02  | -10.00  |
| Θ(30°)   | -8.18  | -9.81  | -8.60  | -6.97  | -3.80  | -3.39  | -4.82  | -5.80   | -5.63   | -5.24   | -7.50   | -10.94  | -10.54  | -10.34  | -5.98   | -6.14   | -14.86  | -5.90   | -4.44   | -1.73   | -2.58   | -5.17   | -5.58   | -5.93   |
| Θ(45°)   | -2.20  | -0.23  | -1.55  | -4.94  | -6.59  | -4.55  | -8.13  | -3.62   | -4.47   | -6.02   | -4.25   | -11.15  | -7.38   | -5.29   | -2.70   | -2.68   | -0.60   | -3.15   | -7.61   | -1.11   | -4.37   | -9.13   | -5.72   | -3.79   |
| Θ(60°)   | -5.34  | -4.15  | -2.94  | -0.96  | -8.44  | -15.26 | -3.17  | -6.37   | 0.20    | -1.74   | -2.57   | -1.84   | -0.73   | -3.89   | -5.33   | -3.43   | -6.82   | -5.86   | -5.63   | -7.12   | -10.65  | -5.57   | -11.58  | -8.54   |
| Θ(75°)   | -1.37  | 1.79   | 2.32   | -1.18  | -9.87  | -0.98  | -0.56  | -1.24   | 2.12    | -2.33   | -3.25   | -0.03   | 2.88    | 0.79    | -3.12   | 1.03    | -2.42   | -8.35   | -5.65   | -3.37   | -6.19   | -3.01   | -6.27   | -0.96   |
| Θ(90°)   | -4.71  | 0.54   | 1.73   | -1.00  | -5.13  | -0.05  | 0.94   | 2.98    | 1.49    | -2.37   | -2.81   | -1.06   | 2.92    | 1.32    | -1.95   | 1.19    | -0.44   | -9.14   | -12.73  | -5.42   | -5.77   | -3.40   | -7.26   | 0.32    |
| Θ(105°)  | -2.90  | -5.69  | 0.88   | -8.69  | -3.67  | 1.73   | -1.35  | 1.67    | -2.44   | -2.49   | -0.53   | -0.11   | 2.23    | 2.03    | -1.44   | -0.05   | 2.64    | -4.22   | -5.08   | -7.68   | -5.61   | -3.14   | -3.49   | -3.48   |
| Θ(120°)  | -6.00  | -5.20  | -5.96  | -5.80  | -3.14  | -0.67  | -9.86  | -2.66   | -3.84   | -2.93   | 1.08    | 0.46    | 1.28    | 0.51    | -0.24   | -0.17   | 2.72    | 0.70    | -0.27   | -1.27   | -4.78   | -5.16   | -5.46   | -7.38   |
| Θ(135°)  | -4.25  | -8.16  | -11.78 | -11.09 | -10.28 | -5.68  | -6.23  | -13.55  | -2.86   | -6.16   | -6.90   | -5.07   | -1.95   | -0.03   | 1.53    | -4.14   | -1.22   | -3.20   | -10.00  | 0.17    | -5.21   | -3.54   | -5.50   | -9.99   |
| Θ(150°)  | -6.96  | -9.15  | -12.84 | -12.97 | -8.83  | -6.05  | -6.22  | -7.12   | -7.75   | -5.92   | -5.70   | -6.16   | -4.49   | -6.42   | -2.65   | -6.78   | -3.40   | -2.06   | -9.94   | -5.59   | -0.70   | -9.70   | -4.53   | -8.25   |
| Θ(165°)  | -4.10  | -6.21  | -3.48  | -8.08  | -12.10 | -11.43 | -12.00 | -9.80   | -8.32   | -12.33  | -12.63  | -8.40   | -11.32  | -12.93  | -3.38   | -3.14   | -3.05   | -3.35   | -5.77   | -7.95   | -7.28   | -4.29   | -4.97   | -7.23   |
| Θ(180°)  | -8.22  | -5.95  | -7.47  | -5.91  | -7.93  | -8.60  | -6.41  | -6.30   | -8.73   | -8.15   | -7.35   | -8.07   | -7.59   | -6.23   | -5.66   | -5.37   | -7.11   | -6.81   | -6.69   | -7.68   | -7.86   | -7.42   | -7.56   | -7.18   |

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