



# Radiated Composite Gain Data of Combination C

# Appendix A.5

|           |               |                |                |                |                |                |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Θ(157.5°) | -18.6/-17.9   | -19.24/-17.98  | -16.37/-13.23  | -11.09/-11.18  | -12.71/-15.01  | -17.03/-19.75  | -18.08/-17.24  | -13.79/-12.35    | -12.5/-13        | -13.37/-12.01    | -11.84/-10.81    | -10.93/-11.1     | -12.94/-15.91    | -17.61/-19.35    | -18.81/-17.52    | -17.35/-19.05    | -18.77/-19       | -18.06/-18.23    | -18.9/-18.48     | -18.79/-14.06    | -12.86/-12.72    | -11.92/-11.95    | -12.76/-16.95    | -17.88/-19.04    |
| Θ(165°)   | -18.6/-18.82  | -19.1/-18.66   | -18.74/-18.79  | -18.02/-18.11  | -17.26/-18.17  | -18.99/-18.59  | -19.03/-18.15  | -19.12/-16.59    | -13.27/-11.39    | -10.36/-10.7     | -10.92/-12.39    | -14.28/-16       | -17.68/-16.48    | -14.59/-14.57    | -18.9/-17.59     | -18.72/-17.7     | -18.08/-18.47    | -19.16/-19.18    | -18.26/-17.59    | -18.43/-14.99    | -12.01/-11.14    | -11.3/-13.24     | -16.57/-10.93    | -18/-19.1        |
| Θ(172.5°) | -17.57/-19.24 | -17.75/-18.08  | -18.01/-17.25  | -17.32/-17.78  | -18.32/-19.16  | -19.13/-17.29  | -14.73/-14.09  | -13.4/-13.78     | -14.62/-15.55    | -15.39/-13.44    | -12.76/-12.56    | -16.43/-13.64    | -16.43/-18.57    | -16.43/-18.57    | -19.12/-19.45    | -18.49/-18.98    | -18.01/-17.95    | -18.85/-18.65    | -18.95/-18.63    | -18.74/-16.33    | -17.72/-19.2     | -11.16/-16.8     | -17.16/-18.26    | -17.89/-16.32    |
| Θ(180°)   | -18.48/-19.15 | -18.36/-17.32  | -17.6/-18.17   | -17.68/-18.56  | -17.95/-18.95  | -17.25/-18.48  | -16.16/-14.81  | -14.73/-14.78    | -14.19/-13.84    | -13.76/-13.15    | -12.99/-13.01    | -14.58/-16.54    | -19.78/-18.55    | -18.35/-17.54    | -17.74/-18.02    | -17.78/-19.28    | -18.03/-18.04    | -17.24/-17.18    | -17.64/-17.85    | -17.9/-18.3      | -19.11/-17.68    | -19.08/-18.86    | -17.77/-19.18    | -19.04/-18.98    |
| Freq(Hz)  | 5.2GPol       | Theta/Ant. 4   | -              | -              | -              | -              | -              | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| Gain      | Φ(0°)Φ(7.5°)  | Φ(15°)Φ(22.5°) | Φ(30°)Φ(37.5°) | Φ(45°)Φ(52.5°) | Φ(60°)Φ(67.5°) | Φ(75°)Φ(82.5°) | Φ(90°)Φ(97.5°) | Φ(105°)Φ(112.5°) | Φ(120°)Φ(127.5°) | Φ(135°)Φ(142.5°) | Φ(150°)Φ(157.5°) | Φ(165°)Φ(172.5°) | Φ(180°)Φ(187.5°) | Φ(195°)Φ(202.5°) | Φ(210°)Φ(217.5°) | Φ(225°)Φ(232.5°) | Φ(240°)Φ(247.5°) | Φ(255°)Φ(262.5°) | Φ(270°)Φ(277.5°) | Φ(285°)Φ(292.5°) | Φ(300°)Φ(307.5°) | Φ(315°)Φ(322.5°) | Φ(330°)Φ(337.5°) | Φ(345°)Φ(352.5°) |
| Θ(0°)     | -14.9/-14.2   | -14.8/-15.07   | -12.92/-11.7   | -11.47/-12.1   | -12.5/-12.73   | -14.62/-16.33  | -15.33/-15.85  | -16.22/-15.49    | -17.73/-19.32    | -17.41/-19.1     | -19.57/-16.14    | -14.28/-13.39    | -13.94/-14.44    | -13.4/-11.97     | -10.92/-11.02    | -11.36/-10.36    | -9.12/-7.34      | -6.13/-5.33      | -5.16/-5.03      | -4.97/-4.85      | -5.01/-5.6       | -6.54/-7.85      | -8.74/-9.87      | -11.53/-13.63    |
| Θ(7.5°)   | -13.48/-11.85 | -11.17/-10.67  | -9.6/-8.2      | -7.48/-7.8     | -8.75/-9.59    | -10.12/-10.4   | -10.09/-10.06  | -10.04/-9.25     | -9.3/-9.4        | -9.26/-9.39      | -10.27/-10.67    | -11.46/-13.39    | -15.75/-16.99    | -15.17/-11.66    | -8.51/-6.55      | -6.26/-7.21      | -7.48/-5.77      | -4.78/-4.34      | -4.75/-6.12      | -7.85/-9.09      | -10.06/-11.23    | -12.64/-13.86    | -13.87/-13.66    | -13.51/-13.5     |
| Θ(15°)    | -14.27/-12.45 | -11/-9.63      | -8.37/-6.53    | -4.89/-4.03    | -3.89/-3.89    | -3.76/-3.46    | -2.61/-2.08    | -2.27/-2.16      | -2.54/-3.02      | -3.72/-4.57      | -5.68/-6.87      | -9.08/-11.86     | -14.26/-14.22    | -12.36/-9.58     | -6.97/-5.79      | -5.78/-6.37      | -6.49/-5.33      | -4.16/-3.81      | -3.95/-4.67      | -5.47/-6.8       | -7.96/-9.43      | -11.85/-15.17    | -19.16/-18.51    | -18.78/-17.73    |
| Θ(22.5°)  | -12.82/-10.09 | -7.06/-4.73    | -3.74/-3.53    | -3.35/-2.39    | -1.58/-1.31    | -1/-0.73       | -0.52/-0.24    | -0.68/-0.86      | -0.85/-1         | -1.4/-1.92       | -2.93/-4.99      | -8.1/-11         | -10.86/-10.7     | -10.26/-9.86     | -10.02/-9.57     | -8.44/-8.23      | -7.58/-5.93      | -5.05/-3.97      | -3.02/-2.1       | -1.68/-1.92      | -2.29/-3.21      | -4.59/-5.88      | -8.34/-11.71     | -17.29/-18.54    |
| Θ(30°)    | -12.84/-10.04 | -6.74/-4.65    | -3.56/-2.62    | -1.63/-0.53    | 0.42/0.5       | 0.68/1.14      | 1.34/1.48      | 1.0/0.1          | -1.15/-1.55      | -1.68/-1.33      | -1.77/-3.44      | -6.52/-9.69      | -9.63/-9.4       | -10.52/-13.98    | -18.2/-14.71     | -9.58/-8.76      | -9.29/-8         | -6.12/-4.21      | -2.71/-1.51      | -1.27/-1.52      | -2.39/-3.71      | -4.81/-6.36      | -8.38/-12.43     | -18/-17.96       |
| Θ(37.5°)  | -11.2/-9.32   | -8.32/-8.26    | -5.57/-2.64    | -0.76/0.55     | 1.81/2.33      | 2.66/2.56      | 2.57/2.56      | 2.06/0.54        | -0.9/-1.48       | -1.74/-1.13      | -1.03/-2.7       | -8.95/-11.32     | -18.61/-18.66    | -10.92/-9.16     | -8.76/-7.49      | -6.76/-6.64      | -5.46/-3.58      | -2.1/-1.58       | -1.9/-3.05       | -4.5/-5.57       | -6.99/-7.94      | -10.26/-14.14    | -15.48/-13.85    |                  |
| Θ(45°)    | -10.08/-9.36  | -11.18/-13.54  | -8.07/-4.38    | -2.48/-0.79    | 0.96/2.07      | 2.51/2.34      | 2.05/2         | 1.74/0.74        | 0.03/-0.35       | -1.77/-2.6       | -2.21/-3.12      | -5.83/-8.41      | -10.58/-13.94    | -17.75/-18.03    | -12.47/-11.19    | -8.4/-6.12       | -5.23/-5.49      | -4.4/-2.66       | -1.57/-1.27      | -1.94/-3.56      | -4.59/-4.86      | -4.3/-4.67       | -6.52/-9.08      | -10.6/-11.3      |
| Θ(52.5°)  | -10.61/-13.42 | -18.52/-16.49  | -13.5/-11.08   | -6.21/-2.49    | -0.15/0.88     | 1.33/1.4       | 1.25/1.2       | 0.71/-0.97       | -1.67/-1.06      | -1.8/-4.09       | -4.67/-5.04      | -6.55/-8.84      | -14.85/-18.01    | -18.92/-14.7     | -11.35/-9.75     | -8.6/-5.75       | -5.01/-4.91      | -6.3/-2.31       | -1.39/-0.66      | -0.93/-2.19      | -0.08/-4.69      | -4.16/-6.33      | -6.11/-8.23      | -9.71/-10.86     |
| Θ(60°)    | -11.78/-15.32 | -17.96/-15.73  | -13.49/-10.92  | -7/-2.58       | -1.1/-1.03     | -1.44/-1.12    | -0.75/-0.29    | -0.1/-1.67       | -3.45/-2.66      | -2.62/-4.93      | -7.15/-6.68      | -6.86/-8.94      | -15.72/-18       | -18.27/-17.85    | -14.57/-11.31    | -8.37/-5.18      | -4.69/-6.62      | -3.55/-1.16      | -0.43/-0.43      | -0.6/-1.83       | -3.54/-4.91      | -4.47/-4.4       | -6.04/-8.27      | -10.89/-11.57    |
| Θ(67.5°)  | -14.78/-18.45 | -14.7/-9.38    | -5.5/-6.32     | -6.61/-3.33    | -2.86/-3.24    | -3.52/-3.73    | -3.78/-3.14    | -2.83/-3.39      | -5.49/-5.19      | -4.97/-6.72      | -9.32/-10.04     | -9.29/-10.87     | -16.92/-18.65    | -15.14/-16.34    | -15.83/-11.77    | -9.96/-7.01      | -5.65/-5.81      | -2.34/-0.48      | -0.18/-0.9       | -1.87/-2.31      | -3.7/-5.42       | -4.81/-4.56      | -6.7/-9.58       | -13.81/-13.96    |
| Θ(75°)    | -17.89/-18.43 | -18.07/-18.61  | -6.13/-8.08    | -8.92/-4.84    | -3.58/-2.91    | -2.71/-1.88    | -1.03/-2.42    | -5.63/-8.14      | -8.92/-6.69      | -6.91/-8.14      | -8.06/-10.36     | -11.58/-11.09    | -13.03/-15.64    | -16.34/-16.48    | -18.03/-15.4     | -16.16/-10.37    | -8.95/-5.07      | -1.27/-0.25      | -0.32/-1.86      | -2.86/-2.69      | -4.4/-7.37       | -6.85/-6.92      | -9.52/-12.92     | -18.89/-16.69    |
| Θ(82.5°)  | -14.91/-16    | -16.2/-8.62    | -8.99/-10.59   | -6.82/-6.01    | -3.86/-4.09    | -5.96/-6       | -6.38/-4.82    | -5.02/-10.69     | -14.47/-8.91     | -10.67/-12.34    | -7.88/-10.36     | -13.76/-12.23    | -14.39/-15.78    | -17.39/-17.88    | -16.14/-13.91    | -8.01/-4.37      | -1.42/-0.15      | -0.20/-3.71      | -3.21/-2.68      | -4.84/-7.23      | -7.24/-9.81      | -14.25/-15.29    | -18.27/-18.47    |                  |
| Θ(90°)    | -16.45/-18.61 | -17.19/-9.99   | -10.85/-9.24   | -9.12/-9.44    | -7.2/-5.84     | -4.83/-5.12    | -6.62/-8.48    | -9.89/-11.89     | -15.81/-15.18    | -11.91/-15.08    | -12.13/-9.84     | -12.04/-13.92    | -11.35/-9.69     | -13.05/-17.38    | -18.8/-18        | -14.23/-10.65    | -7.71/-5.5       | -2.79/-2.31      | -4.06/-4.83      | -2.54/-1.57      | -4.76/-5.56      | -5.58/-10.32     | -14.63/-13.86    | -17.16/-18.01    |
| Θ(97.5°)  | -15.67/-19.01 | -18.15/-18.08  | -14.31/-11.43  | -12.82/-14.66  | -9.34/-7.1     | -5.71/-7.08    | -8.6/-10.4     | -12.92/-15.93    | -17.45/-18.93    | -14.42/-15.79    | -11.98/-11.46    | -13.55/-13.28    | -10.64/-10.04    | -12.51/-13.73    | -18.24/-18.03    | -10.23/-7.84     | -7.58/-8.38      | -6.04/-6.66      | -6.41/-4.7       | -2.28/-2.25      | -4.32/-3.31      | -4.58/-9.49      | -11.48/-13.27    | -15.16/-16.19    |
| Θ(105°)   | -17.67/-19.04 | -15.5/-10.99   | -17.47/-16.94  | -16.51/-18.11  | -10.47/-10.26  | -11.9/-12.27   | -16.23/-15.91  | -12.61/-16.34    | -18.93/-18.61    | -18.81/-15.94    | -13.88/-11.21    | -12.29/-11.77    | -13.22/-12.65    | -18.75/-19.01    | -10.23/-11.68    | -9.71/9.09       | -2.44/-3.96      | -4.83/-4.22      | -6.81/-11.3      | -11.27/-19.31    | -17.93/-18.4     |                  |                  |                  |
| Θ(112.5°) | -18.22/-19.14 | -12.98/-12.93  | -16.04/-15.99  | -16.63/-19.11  | -11.32/-18.45  | -14.68/-12.74  | -18/-18.65     | -12.74/-16.58    | -18.37/-18.01    | -18.24/-13.02    | -16.73/-17.89    | -13.09/-11.84    | -13.95/-15.23    | -12.49/-14.11    | -18.87/-17.13    | -12.98/-11.92    | -16.91/-11.13    | -9.73/-7.85      | -7.59/-5.23      | -5.15/-6.74      | -5.42/-6.36      | -11.6/-12.89     | -17.59/-18.63    | -18.2/-19.1      |
| Θ(120°)   | -18.07/-14.8  | -15.83/-13.41  | -17.38/-16.05  | -16.91/-15.99  | -19/-18.6      | -17.51/-14.8   | -19.02/-12.7   | -16.67/-15.91    | -18.04/-19.7     | -17.6/-12.07     | -16.32/-18.99    | -16.59/-11.64    | -13.21/-14.07    | -12.92/-12.95    | -17.34/-17.81    | -14.17/-18.25    | -15.93/-13.54    | -9.81/-8.54      | -8.37/-6.6       | -5.71/-7.24      | -7.68/-12.5      | -16.81/-14.12    | -17.68/-17.37    | -15.85/-18.17    |
| Θ(127.5°) | -18.35/-19.62 | -14.76/-16.05  | -18.51/-17.32  | -18.89/-16.19  | -17.24/-14.41  | -15.2/-18.68   | -18.78/-18.27  | -18.57/-18.36    | -16.76/-12.27    | -14.99/-16.59    | -19.37/-17.9     | -18.69/-15.22    | -13.52/-12.15    | -12.06/-14.4     | -16.87/-14.95    | -17.11/-19.66    | -17.88/-11.29    | -8.47/-8.46      | -8.12/-8.26      | -8.89/-9.16      | -11.14/-15.91    | -16.78/-13.73    | -18.55/-18.27    | -18.02/-18.8     |
| Θ(135°)   | -17.88/-16.71 | -15.34/-18.01  | -10.78/-13.97  | -17.48/-16.57  | -18.59/-16.23  | -18.79/-18.32  | -18.88/-16.52  | -15.28/-15.62    | -16.8/-14.35     | -14.51/-19.5     | -19.16/-18.12    | -19.2/-16.3      | -12.81/-12.99    | -13.82/-15.22    | -18.34/-18.32    | -18.17/-18.47    | -15.03/-12.23    | -9.23/-8.29      | -9.26/-10.44     | -11.52/-13.11    | -12.78/-12.96    | -12.94/-14.13    | -17.92/-18.81    | -19.05/-17.63    |
| Θ(142.5°) | -10.36/-8.86  | -7.23/-10.63   | -1.66/-6.15    | -16.28/-19.21  | -18.32/-17.8   | -18.49/-18.17  | -19.63/-14.3   | -17.77/-18.24    | -16.59/-14.95    | -17.39/-18.28    | -19.16/-18.44    | -18.97/-18.17    | -18.17/-14.98    | -15.08/-17.82    | -18.87/-18.4     | -17.99/-18.13    | -17.13/-19.24    | -7.41/-9.16      | -13.59/-14.25    | -17.05/-16.85    | -16.56/-12.87    | -14.76/-17.09    | -17.34/-14.91    | -16.82/-12.68    |
| Θ(150°)   | -8.42/-9.36   | -8.11/-9.48    | -16.58/-16.86  | -17.33/-18.98  | -18.92/-18.83  | -17.48/-16.55  | -15.6/-16.71   | -18.82/-19.91    | -17.45/-18.92    | -18.65/-18.17    | -17.86/-19.04    | -18.71/-17.2     | -15.67/-14.98    | -14.94/-16.89    | -15.1/-13.74     | -13.52/-9.45     | -8.33/-10.93     | -14.76/-15.59    | -19.82/-17.96    | -15.51/-15.26    | -18.79/-18.01    | -17.4/-15.64     | -10.2/-13.7      |                  |
| Θ(157.5°) | -15.81/-16.74 | -15.83/-15.19  | -14.53/-15.82  | -17.49/-19.67  | -19.17/-67     | -18.39/-18.06  | -16.08/-14.46  | -16.04/-18.81    | -17.83/-17.67    | -18.63/-18.52    | -18.22/-18.72    | -19.82/-17.44    | -19.17/-19.32    | -18.02/-17.28    | -13.94/-11.41    | -7.95/-10.65     | -15.16/-17.97    | -18.68/-17.5     | -19.07/-14.51    | -14.04/-17.01    | -18.17/-81       | -18.85/-19.17    | -18.13/-17.86    | -14.48/-13       |
| Θ(165°)   | -17.84/-18.11 | -18.79/-17.97  | -18.82/-19.04  | -18.22/-18.61  | -19.17/-18.55  | -19.24/-18.72  | -18.64/-19.35  | -18.43/-17.42    | -18.19/-17.86    | -19.25/-18.14    | -17.8/-18.48     | -18.17/-18.16    | -19.06/-17.78    | -17.21/-16.86    | -13.65/-13.3     | -15.14/-16.6     | -16.72/-18.23    | -17.48/-19.03    | -17.88/-18.42    | -18.71/-17.92    | -18.59/-18.96    | -19.09/-19.17    | -18.48/-18.16    | -18.08/-15.97    |
| Θ(172.5°) | -16.1/-16.01  | -17/-18.59     | -19/-17.75     | -19.24/-18.31  | -15.84/-15.94  | -16.99/-16.03  | -16.55/-18.06  | -17.82/-18.91    | -18.84/-17.9     | -17.63/-18.76    | -18.86/-18.49    | -18.11/-18.25    | -17.67/-14.81    | -12.43/-11.27    | -11.5/-12.81     | -15.2/-14.18     | -18.9/-191       | -18.88/-18.69    | -18.71/-18.3     | -18.67/-18.13    | -16.51/-15.92    | -15.14/-14.17    | -15.31/-15.73    | -15.02/-13.65    |
| Θ(180°)   | -17.66/-19.39 | -18.84/-16.66  | -14.85/-14.59  | -14.57/-14.68  | -16.4/-17.84   | -16.73/-15.46  | -16.73/-15.46  | -10.55/-18.03    | -17.27/-19.01    | -18.64/-19.23    | -18.62/-18.04    | -18.54/-18.63    | -17.3/-15.66     | -15.22/-16.2     | -16.13/-14.98    | -13.79/-13.83    | -16.21/-19.19    | -18.39/-16.71    | -15.04/-18.34    | -18.51/-17.84    | -18.13/-18.12    | -17.42/-18.87    | -16.57/-18.57    | -18.12/-17.65    |
| Freq(Hz)  | 5.3GPol       | Phi/Ant. 4     | -              | -              | -              | -              | -              | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| Gain      | Φ(0°)Φ(7.5°)  | Φ(15°)Φ(22.5°) | Φ(30°)Φ(37.5°) | Φ(45°)Φ(52.5°) | Φ(60°)Φ(67.5°) | Φ(75°)Φ(82.5°) | Φ(90°)Φ(97.5°) | Φ(105°)Φ(112.5°) | Φ(120°)Φ(127.5°) | Φ(135°)Φ(142.5°) | Φ(150°)Φ(157.5°) | Φ(165°)Φ(172.5°) | Φ(180°)Φ(187.5°) | Φ(195°)Φ(202.5°) | Φ(210°)Φ(217.5°) | Φ(225°)Φ(232.5°) | Φ(240°)Φ(247.5°) | Φ(255°)Φ(262.5°) | Φ(270°)Φ(277.5°) | Φ(285°)Φ(292.5°) | Φ(300°)Φ(307.5°) | Φ(315°)Φ(322.5°) | Φ(330°)Φ(337.5°) | Φ(345°)Φ(352.5°) |
| Θ(0°)     | -2.51/-2.22   | -2.32/-2.4     | -2.63/-2.99    | -3.82/-5.05    | -6.22/-7.27    | -7.67/-8.26    | -9.59/-10.65   | -10.73/-10.47    | -10.87/-10.57    | -9.82/-9.21      | -9.34/-9.4       |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |



# Radiated Composite Gain Data of Combination C

# Appendix A.5

|            |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ (0°)     | -9.37/-12.7   | -15.12/-13.22   | -11.03/-7.4     | -4.68/-3.33     | -2.4/-1.69      | -0.93/-0.34     | -0.29/-0.15     | -0.04/-0.15       | -0.53/-1.23       | -1.52/-2.04       | -2.87/-3.93       | -5.47/-7.16       | -9.12/-12.14      | -16.08/-14.06     | -9.83/-7.19       | -4.53/-2.59       | -1.07/-0.18       | 0.38/0.75         | 1.53/-1.9         | 2.21/2.08         | 1.83/-1.48        | 1.02/0.29         | -0.77/-2.44       | -4.55/-6.45       |
| Θ (7.5°)   | -8.18/-8.5    | -9.3/-8.72      | -7.74/-3.78     | -5.93/-4.28     | -3.46/-2.42     | -1.62/-0.77     | -0.48/0.01      | 0.22/0.89         | 0.77/0.65         | 0.41/-0.06        | -0.8/-2.12        | -3.98/-6.36       | -9.66/-16.1       | -18.95/-15.11     | -9.99/-6.88       | -5.31/-4.37       | -2.54/-1.35       | -0.69/-0.69       | -0.81/-0.96       | -0.64/-0.59       | -0.68/-0.88       | -1.2/-1.65        | -2.2/-3.58        | -5.16/-9.57       |
| Θ (15°)    | -8.74/-7.22   | -6.64/-6.89     | -7.02/-6.88     | -7.03/-5.79     | -4.84/-3.74     | -3.64/-3.52     | -4.27/-4.6      | -4.03/-3.14       | -2.19/-1.27       | -0.65/-0.42       | -0.91/-2          | -3.55/-5.92       | -8.88/-13.39      | -18.07/-18.31     | -12.66/-6.64      | -6.78/-4.73       | -2.76/-1.79       | -1.3/-0.96        | -1.29/-1.95       | -3.56/-4.65       | -5.72/-6.65       | -7.18/-7.21       | -7.39/-8.32       | -8.65/-9.32       |
| Θ (22.5°)  | -10.54/-7.51  | -5.22/-3.79     | -2.96/-3.08     | -3.36/-3.3      | -3.25/-2.17     | -1.72/-1.76     | -2.68/-3.98     | -4.35/-4.16       | -3.18/-1.99       | -1.32/-1.1        | -1.85/-3.39       | -5.82/-9.37       | -14.06/-16.5      | -12.07/-8.35      | -5.45/-3.87       | -3.22/-2.13       | -0.78/-0.2        | -0.34/-0.73       | -0.89/-1.6        | -3.61/-5.84       | -7.42/-9.5        | -11.45/-11.24     | -10.95/-11.35     | -11.81/-11.64     |
| Θ (30°)    | -9.87/-6.75   | -4.17/-2.25     | -1.43/-1.34     | -1.54/-0.91     | -0.8/-0.82      | -1.08/-1.89     | -3.23/-5.4      | -5.16/-3.43       | -1.76/-0.73       | -1.17/-1.57       | -2.9/-0.57        | -7.72/-11.04      | -18.16/-18.62     | -9.03/-5.12       | -3.14/-2.38       | -1.96/-1.14       | -1.02/-1.61       | -1.76/-1.59       | -2.14/-3.82       | -4.14/-3.83       | -4.5/-7.17        | -10.36/-11.22     | -11.44/-14.93     | -16.75/-12.75     |
| Θ (37.5°)  | -9.4/-5.42    | -2.48/-1.44     | -1.22/-1.36     | -1.1/0.31       | 1.59/2.8        | 2.95/2.06       | 0.08/-0.34      | -8.03/-4.21       | -1.82/-0.53       | -0.06/-2.15       | -5.18/-11.4       | -12.89/-12.57     | -17.77/-14.43     | -8.12/-5.25       | -3.52/-2.61       | -2.53/-2.68       | -3.59/-4.6        | -4.13/-3.8        | -2.55/-3.02       | -4.35/-5.93       | -8.31/-11.05      | -14.35/-18.05     | -17.81/-11.61     |                   |
| Θ (45°)    | -9.02/-5.57   | -3.42/-3.22     | -3.98/-3.08     | -0.78/-1.81     | 2.79/3.77       | 4.14/3.45       | 1.8/-0.36       | -1.95/-2.33       | -2.84/-4.18       | -5.74/-4.84       | -5.16/-9.9        | -13.59/-9.39      | -11.82/-16.81     | -9.94/-7.33       | -5.74/-4.67       | -5.01/-6.11       | -6.75/-7.07       | -5.38/-3.48       | -2.2/-2.1         | -2.69/-3.12       | -4.88/-9.04       | -14.58/-18.35     | -19.03/-18.9      | -12.06/-9.88      |
| Θ (52.5°)  | -9.02/-8.12   | -8.67/-10.97    | -10.58/-6.38    | -4.08/-1.53     | 0.15/-1.91      | 2.88/3.36       | 2.56/0.42       | -1.69/-1.6        | -1.9/-4.18        | -9.85/-6.65       | -5.24/-11.24      | -14.3/-10.28      | -10.37/-14.68     | -12.96/-12.38     | -12.89/-6.64      | -6.44/-6.87       | -6.93/-5.76       | -2.51/-1.5        | -1.62/-1.17       | -1.68/-2.92       | -4.65/-10.47      | -17.42/-17.57     | -15.61/-10.61     | -7.43/-7.65       |
| Θ (60°)    | -10.58/-11.78 | -15.57/-17.28   | -17.03/-12.06   | -12.71/-7.84    | -4.77/-1.52     | 0.48/-1.9       | 2.12/0.93       | -1.61/-3.48       | -3.07/-2.3        | -7.03/-9.89       | -4.54/-7.66       | -17.14/-13.6      | -12.41/-13.84     | -18.02/-14.1      | -18.63/-12.68     | -8.83/-8.43       | -5.95/-4.05       | -2.91/-1.34       | -0.5/-0.26        | -1.45/-2.63       | -3.4/-8.14        | -13.02/-10.3      | -11.6/-9.88       | -7.06/-7.52       |
| Θ (67.5°)  | -13.55/-18.74 | -11.45/-13.55   | -15.27/-17.04   | -10.09/-6.64    | -7.29/-6.94     | -4.8/-2.99      | -2.54/-3.55     | -4.38/-3.43       | -3.75/-2.02       | -4.46/-10.82      | -5.6/-7.14        | -15.55/-19.16     | -17.37/-16.45     | -19.09/-14.7      | -17.15/-12.64     | -9.9/-7.64        | -3.1/-2.29        | -3.6/-1.72        | 0/-0.15           | -2.53/-3.09       | -2.86/-5.59       | -6.18/-5.78       | -8.15/-7.88       | -7.34/-8.35       |
| Θ (75°)    | -18.82/-18.69 | -10.02/-11.63   | -9.49/-10.75    | -6.21/-3.59     | -2.97/-2.91     | -2.3/-1.14      | -1.05/-4.18     | -14.32/-6.48      | -4.47/-2.55       | -3.61/-9.48       | -8.87/-8.11       | -13.31/-19.14     | -17.33/-16.55     | -17.21/-14.24     | -15.51/-13.29     | -9.8/-7.7         | -3.67/-2.72       | -4.64/-2.43       | -0.41/-0.81       | -3.55/-4.31       | -3.35/-4.36       | -4.98/-5.96       | -8.17/-8.43       | -8.9/-12.5        |
| Θ (82.5°)  | -18.44/-18.54 | -11.1/-11.26    | -8.41/-6.93     | -5.47/-3.27     | -2.04/-3.61     | -6.13/-5.35     | -0.83/-2.74     | -8.79/-12.37      | -7.09/-3.79       | -5.68/-11.56      | -9.42/-11.47      | -14.34/-19.03     | -18.61/-13.07     | -12.81/-11.35     | -18.12/-15.45     | -12.16/-8.99      | -4.45/-5.42       | -6.52/-2.45       | -2.03/-2.89       | -4.7/-5.4         | -4.01/-4.23       | -5.07/-7.23       | -9.44/-9.26       | -8.37/-12.3       |
| Θ (90°)    | -17.95/-19.32 | -13.24/-13.21   | -10.02/-5.61    | -7.14/-5.7      | -4.58/-6.4      | -7.42/-6.15     | -5/-6.92        | -15.25/-15.61     | -10.9/-6.24       | -7.77/-14.91      | -11.29/-15.34     | -18.76/-16.46     | -15.69/-14.54     | -13.28/-11.33     | -19.33/-19.23     | -12.94/-9.72      | -8/-10.89         | -7.28/-3.91       | -3.77/-3.56       | -5.06/-5.64       | -2.66/-4.59       | -6.89/-8.93       | -10.77/-12.81     | -13.49/-18.89     |
| Θ (97.5°)  | -17.22/-17.83 | -12.95/-16.82   | -12.77/-8.3     | -11.93/-10.27   | -8.77/-6.86     | -7.59/-7.76     | -7.14/-8.29     | -13.2/-18.57      | -11.79/-10.8      | -11.37/-18.86     | -11.78/-16.37     | -18.55/-18.69     | -13.07/-13.2      | -12.68/-12.3      | -19.62/-16.24     | -16.4/-16.3       | -17.19/-14.65     | -8.12/-7.09       | -5.97/-5.18       | -17.34/-5.02      | -1.89/-5.58       | -7.45/-9.92       | -11.86/-17.34     | -19.15/-19.11     |
| Θ (105°)   | -18.67/-18.61 | -10.71/-12.81   | -18.22/-9.06    | -16.79/-11.08   | -7.72/-9.22     | -11.65/-10.38   | -10.31/-11.46   | -15.02/-18.59     | -16.12/-12.68     | -19.29/-18.52     | -15.68/-16.58     | -17.35/-19.39     | -13.35/-13.82     | -15.47/-16.99     | -18.14/-18.3      | -14.6/-10.5       | -10.29/-10.33     | -8.43/-4.56       | -7.42/-3.52       | -17.39/-7.87      | -18.68/-13.45     | -16.02/-19.05     | -14.87/-16.54     |                   |
| Θ (112.5°) | -18.25/-19    | -11.01/-10.57   | -16.33/-14.2    | -18.27/-11.37   | -9.52/-10.51    | -13.87/-14.52   | -18.04/-18.03   | -15.87/-18.94     | -18.75/-16.86     | -18.36/-18.51     | -18/-18.15        | -11.5/-17.72      | -18.64/-15.27     | -12.62/-17.8      | -17.97/-18.98     | -17.44/-19.84     | -12.81/-10.82     | -13.18/-13.38     | -7.47/-6.2        | -7.73/-5.41       | -7.19/-7.74       | -11.06/-12.56     | -11.43/-18.32     | -17.52/-16.65     |
| Θ (120°)   | -17.81/-18.88 | -12.85/-17.52   | -13.93/-12.95   | -11.71/-18.83   | -14.73/-14.15   | -18.02/-16.38   | -14.87/-16.26   | -17.95/-19.02     | -18.85/-19.03     | -17.92/-19.15     | -13.66/-16.48     | -17.31/-17.12     | -12.17/-13.49     | -18.23/-18        | -17.67/-19.66     | -15.78/-13.49     | -14.27/-14.4      | -12.97/-14.6      | -7.85/-8.06       | -7.66/-7.45       | -8.28/-10.14      | -17.42/-17.52     | -17.15/-15.72     | -15.93/-19.03     |
| Θ (127.5°) | -19.42/-16.78 | -12.86/-13.95   | -17.94/-18.75   | -17.74/-14.46   | -18.45/-13.34   | -16.1/-17.25    | -17.57/-17.38   | -15.17/-17.56     | -19.24/-14.48     | -17.75/-18.21     | -18.77/-16.01     | -11.4/-15.38      | -18.31/-18.3      | -13.75/-12.7      | -14.16/-13.61     | -13.75/-18.47     | -14.21/-11.88     | -12.97/-12.95     | -10.17/-7.09      | -5.04/-8.39       | -10.09/-14.02     | -11.79/-9.77      | -18.1/-13.57      | -18.14/-18.97     |
| Θ (135°)   | -17.64/-14.33 | -16.53/-15.09   | -9.74/-18.98    | -15.98/-16.38   | -17.28/-18.48   | -18.07/-19.06   | -17.89/-18.31   | -19.37/-18.87     | -12.31/-13.15     | -18.95/-18.81     | -18.28/-17.29     | -18.06/-19.05     | -16.87/-14.72     | -13.55/-14.42     | -14.64/-17.97     | -16.03/-11.19     | -12.26/-13.97     | -14.05/-11.09     | -9.38/-9.8        | -9.4/-10.56       | -13.39/-10.9      | -7.37/-10.7       | -19.14/-17.53     | -17.77/-18.75     |
| Θ (142.5°) | -9.6/-9.87    | -5.88/-10.49    | -13.95/-16.14   | -17.85/-18.39   | -18.23/-18.96   | -17.92/-17.96   | -18.2/-17.97    | -17.81/-17.94     | -18.83/-16.88     | -19.11/-17.97     | -16.42/-18.08     | -18.75/-19.26     | -14.86/-13.86     | -16.32/-18.64     | -19.07/-18.5      | -19.06/-18.59     | -12.71/-15.5      | -11.91/-7.62      | -9.33/-16.43      | -18.7/-16.34      | -19.07/-12.89     | -6.82/-9.61       | -18.48/-17.57     | -18.97/-10.12     |
| Θ (150°)   | -9.42/-10.37  | -6.73/-9.4      | -19.5/-14.3     | -18.7/-18.88    | -18.52/-18.28   | -18.46/-18.05   | -18.32/-17.71   | -14.99/-17.71     | -18.64/-17.7      | -18.16/-17.34     | -18.32/-18.99     | -18.7/-15.33      | -15.65/-18.27     | -18.53/-18.23     | -18.18/-17.12     | -16.44/-17.98     | -11.66/-10.14     | -12.39/-11.4      | -14.87/-19.04     | -16.21/-17.16     | -18.11/-19.6      | -18.42/-17.05     | -10.41/-7.02      |                   |
| Θ (157.5°) | -15.22/-18.93 | -18.15/-17.69   | -17.87/-17.31   | -19.66/-18.83   | -18.44/-18.93   | -18.32/-17.49   | -15.88/-16.65   | -18.46/-18.75     | -18.05/-17.97     | -18.35/-18.2      | -18.38/-18.45     | -17.6/-18.33      | -17.94/-19.15     | -13.79/-13.97     | -18.36/-17.38     | -14.65/-14.03     | -11.81/-15.2      | -17.52/-17.53     | -18.57/-13        | -11.83/-12.62     | -16.45/-18.98     | -19.16/-18.3      | -19.05/-16.01     | -11.46/-11.55     |
| Θ (165°)   | -18.14/-17.9  | -18.14/-18.54   | -18.88/-18.59   | -19.17/-18.13   | -15.5/-16.81    | -19.25/-16.68   | -18.36/-15.77   | -13.1/-14.49      | -18.46/-16.63     | -19.06/-15.92     | -15.99/-15.6      | -18.68/-18.09     | -18.35/-18.41     | -17.93/-18.2      | -18.27/-17.17     | -12.81/-16.63     | -18.32/-18.57     | -17.67/-18.92     | -18.95/-18.93     | -17.57/-13.22     | -12.82/-16.46     | -18.62/-19        | -18/-19.05        | -16.99/-16.4      |
| Θ (172.5°) | -13.68/-16.17 | -18.18/-17.79   | -18.48/-18.23   | -16.19/-12.97   | -11.93/-14.71   | -16.58/-15.88   | -18.11/-18.74   | -18.44/-13.45     | -13.89/-15.47     | -16.51/-16.38     | -16.11/-16.03     | -16.55/-16.41     | -17.76/-19.34     | -18.85/-18.29     | -14.77/-13.12     | -14.68/-15.61     | -16.68/-16.67     | -16.23/-15.32     | -15.11/-14.76     | -15.09/-15.98     | -18.03/-18.13     | -17.21/-18.41     | -13.58/-13.33     | -13.12/-12.14     |
| Θ (180°)   | -18.63/-18.19 | -18.32/-14.68   | -13.44/-14.28   | -15.46/-15.93   | -18.33/-14.62   | -16.61/-15.26   | -16.87/-17.12   | -16.25/-18.36     | -18.91/-18.57     | -18.46/-16.03     | -17.96/-18.18     | -18.91/-18.71     | -17.43/-18.08     | -18.09/-17.88     | -17.71/-19.08     | -17.19/-19.33     | -18.87/-19.17     | -18.66/-18.43     | -17.8/-19.93      | -18.71/-18.91     | -16.03/-14.63     | -15.06/-16.81     | -18.82/-18.8      |                   |
| Freq(Hz)   | 5.785GPol.    | Phi/Ant. 4      | -               | -               | -               | -               | -               | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 |                   |
| Gain       | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ (0°)     | 1.63/1.73     | 1.75/-1.6       | 1.21/0.67       | 0.37/-0.56      | -2.16/-3.74     | -5.27/-6.85     | -9.14/-11.17    | -12.43/-10.48     | -8.51/-6.47       | -4.86/-3.23       | -1.85/-0.86       | -0.23/0.25        | 0.75/1.03         | 1.21/1.53         | 1.51/0.99         | 0.15/-0.65        | -1.48/-2.39       | -4.13/-6.2        | -9.37/-12.22      | -12.73/-10.18     | -7.33/-4.77       | -2.74/-1.25       | -0.25/0.52        | 1.1/-1.51         |
| Θ (7.5°)   | -2.02/-2.03   | -2.03/-2        | -1.75/-1.6      | -1.49/-1.57     | -2.23/-2.65     | -3.13/-3.71     | -3.37/-7.17     | -10.3/-10.44      | -7.89/-5.09       | -2.89/-1.33       | -0.09/0.89        | 1.19/1.23         | 0.98/0.58         | 0.05/-0.37        | -1.07/-1.87       | -2.77/-3.86       | -5.25/-6.67       | -8.64/-11.2       | -15.2/-16.88      | -13.63/-10.28     | -7.91/-5.73       | -3.93/-2.37       | -1.28/-0.51       | 0.0/-46           |
| Θ (15°)    | -3.4/-3.34    | -3.6/-3.85      | -3.81/-4.73     | -5.95/-6.26     | -6.66/-7.04     | -6.4/-6.19      | -6.54/-7.89     | -10.54/-16.33     | -12.58/-6.65      | -3.17/-0.83       | 0.61/1.19         | 1.18/0.67         | -0.37/-1.36       | -1.65/-1.66       | -1.83/-2.01       | 3.1/-6.65         | -6.43/-7.25       | -7.92/-9.84       | -13.4/-18.92      | -17.34/-17.04     | -12.13/-9.6       | -7.92/-6.42       | -5.35/-4.49       | -3.65/-3.11       |
| Θ (22.5°)  | -0.99/-1.73   | -2.79/-4.22     | -5.27/-6.44     | -9.41/-12.64    | -16.33/-18.26   | -17.34/-14.05   | -11.45/-11.92   | -14.96/-19.08     | -14.13/-6.99      | -3.08/-4.12       | 0.74/1.4          | 1.21/0.9          | 1.01/1.39         | 1.59/1.69         | 1.58/0.86         | -0.72/-2.73       | -5.03/-7.38       | -8.89/-11.77      | -14.32/-15.13     | -14.65/-13.71     | -13.19/-12.08     | -10.49/-8.68      | -4.98/-5.58       | -3.59/-2.48       |
| Θ (30°)    | -3.68/-5      | -6.48/-7.7      | -11.13/-17      | -11.53/-9.93    | -3.91/-9.4      | -10.12/-10.86   | -10.54/-12.02   | -16.47/-19.24     | -12.04/-7.88      | -4.27/-1.13       | 0.72/1.63         | 1.86/1.57         | 2.08/3.18         | 3.76/3.79         | 3.14/0.03         | 0.57/-1.6         | -4.55/-7.01       | -9.41/-12.09      | -12.91/-11.7      | -11.1/-9.62       | -9.7/-8.99        | -8.38/-7.05       | -5.3/-3.13        | -1.26/-2.19       |
| Θ (37.5°)  | -3.83/-1.86   | -0.68/-0.21     | 0.55/1.27       | 1.12/0.09       | -0.96/-2.71     | -5.44/-7.18     | -6.28/-6.87     | -10.08/-14.26     | -11.12/-7.98      | -6.32/-3.42       | -0.21/2.25        | 1.21/3.1          | 2.36/3.58         | 3.79/3.34         | 2.46/1.15         | -0.48/-3.39       | -7.42/-10.93      | -12.73/-18.83     | -17.78/-16.39     | -13.53/-11.69     | -9.91/-8.4        | -7.33/-6.59       | -5.12/-4.62       | -4.35/-5.15       |
| Θ (45°)    | 2.34/2.58     | 2.88/0.55       | 4.63/4.81       | 3.92/7          | 1.33/-0.86      | -4.47/-7.55     | -6.34/-8.48     | -5.32/-7.16       | -9.65/-10.62      | -10.33/-6.25      | -1.43/0.38        | 0.04/-0.14        | 1.27/2.64         | 2.83/1.88         | 0.17/-1.13        | -2.23/-6.13       | -1.38/-           |                   |                   |                   |                   |                   |                   |                   |



# Radiated Composite Gain Data of Combination C

# Appendix A.5

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(37.5°)  | 1.22/1.41     | 0.83/-0.12      | -0.58/-0.14     | 0.42/0.18       | -0.28/-1.33     | -3.61/-6.57     | -11.66/-15.13   | -8.78/-5.54       | -3.39/-2.54       | -2.52/-1.04       | 0.19/-0.16        | -0.43/-0.6        | -1.09/-0.41       | 0.05/-1.14        | -2.98/-3.91       | -5.75/-8.11       | -10.27/-18.41     | -7.33/-8.54       | -8.71/-7.32       | -6.99/-8.77       | -13.55/-12.63     | -7.36/-4.65       | -3.3/-2.17        | -2.1/-0.11        |
| Θ(45°)    | 0.42/0.84     | 0.81/0.77       | 0.52/0.97       | 0.63/0.14       | -1.03/-1.43     | -4.16/-7.56     | -10.54/-11.11   | -9.36/-6.15       | -3.74/-2.7        | -3.85/-4.84       | -2.38/-1.44       | -2.35/-2.72       | -3.17/-2.6        | -2.51/-5.52       | -7.43/-8          | -10.62/-9.4       | -11.18/-13.41     | -14.27/-13.38     | -13.54/-14.03     | -8.63/-5.71       | -5.75/-5.44       | -4.87/-4.09       | -3.24/-3.03       | -3.59/-1.67       |
| Θ(52.5°)  | -0.49/-0.07   | -0.84/-0.33     | -0.6/-0.82      | -1.6/-2.64      | -4.85/-6.5      | -6.81/-6.48     | -7.4/-10.94     | -12.77/-8.31      | -7.14/-7.09       | -10.46/-13.29     | -6.62/-4.86       | -5.03/-4.2        | -6.19/-5.27       | -10.1/-9.63       | -7.08/-7.19       | -5.43/-7.13       | -11.42/-18.65     | -17.56/-16.04     | -16.16/-15.39     | -18.02/-11.71     | -6.11/-4.54       | -2.81/-3.25       | -3.31/-3.47       | -4.57/-1.93       |
| Θ(60°)    | -1.28/-1.08   | -2.58/-1.98     | -3.71/-3.62     | -5.62/-9.46     | -7.39/-5.01     | -2.97/-2.63     | -4.49/-10.25    | -14.63/-5.85      | -6.15/-0.72       | -6.01/-4.79       | -2.89/-2.17       | -2.99/-2.58       | -2.49/-2.95       | -8.51/-4.57       | -4.12/-4.54       | -4.87/-5.75       | -9.94/-16.6       | -17.43/-12.36     | -12.49/-12.66     | -11.45/-11.82     | -9.64/-5.24       | -2.58/-2.21       | -2.33/-2.7        | -6.06/-3.12       |
| Θ(67.5°)  | -4.02/-3.47   | -7.84/-11.74    | -18.42/-19.02   | -11.34/-4       | -8.0/-0.31      | -1.44/-2.88     | -3.99/-5.1      | -12.84/-12.37     | -4.92/-3.63       | -2.68/-0.91       | -0.03/-0.12       | 10.52             | 0.14/-1.26        | -2.34/-1.69       | -2.78/-5.1        | -4.74/-7.21       | -11.03/-10.92     | -14.15/-12.62     | -13.74/-10.2      | -10.99/-8.81      | -8.55/-5.45       | -2.36/-3.25       | -3.32/-3.73       | -6.75/-5.85       |
| Θ(75°)    | -8.31/-7.57   | -9.75/-10.23    | -9.72/-6.89     | -2.41/0.01      | 0.59/-0.75      | -3.41/-5.3      | -5.34/-5.03     | -6.82/-14.37      | -9.7/-3.96        | -1.15/-3.07       | -0.42/-0.02       | 0.73/0.87         | -0.25/-0.94       | -3.34/-9          | -7.12/-9.91       | -18.19/-13.61     | -10.79/-8.65      | -10.25/-14.46     | -11.57/-17.67     | -6.48/-5.95       | -2.65/-2.26       | -4.22/-4.28       | -7.98/-7.27       |                   |
| Θ(82.5°)  | -6.14/-3.67   | -0.76/-0.24     | -0.25/-0.01     | 0.81/0.2        | -0.81/-5.79     | -11.68/-8.82    | -7.45/-9.38     | -14/-17.07        | -18.24/-13.85     | -4.62/-1.26       | -1.31/-2.8        | 0.22/0.65         | -0.22/-0.63       | -1.4/-3.03        | -6.67/-12.89      | -16.84/-17.89     | -19.05/-10.84     | -9.79/-12         | -7.85/-8.63       | -9.23/-5.18       | -4.13/-3.35       | -2.57/-2.16       | -1.74/-1.72       | -6.61/-8.7        |
| Θ(90°)    | -2.15/-0.57   | 1.61/1.11       | 0.07/-0.12      | 0.81/-1.38      | -4.89/-8.54     | -6.99/-4.69     | -3.67/-5.01     | -11.46/-18        | -16.5/-10.19      | -8.98/-7.06       | -4.72/-4.78       | -1/-1.26          | -1.94/-2.2        | -2.19/-3.33       | -8.6/-9.73        | -16.16/-18.84     | -16.21/-8.87      | -8.61/-11.42      | -5.38/-7.81       | -6.99/-2.78       | -2.94/-2.92       | -2.5/-2.2         | -1/-0.41          | -2.99/-4.71       |
| Θ(97.5°)  | 0.44/0.31     | 2.38/0.8        | -0.86/-2.17     | -3.8/-5.15      | -4.43/-4.2      | -5.43/-5.88     | -6.15/-8.14     | -14.84/-14.91     | -11.99/-6.2       | -2.55/-0.93       | -1.14/-1.04       | -0.34/-0.88       | -1.4/-0.73        | -3.22/-3.84       | -4.28/-6.15       | -17.57/-14.29     | -12.76/-7.49      | -13.76/-18.85     | -5.63/-6.06       | -9.67/-2.26       | -3.77/-2.33       | -0.99/-0.28       | 1.23/-0.05        | -0.79/-1.34       |
| Θ(105°)   | -0.75/-0.54   | 1.24/0.31       | -2.21/-5.04     | -5.71/-3.34     | -3.58/-3.35     | -6.05/-7.81     | -10.2/-13.83    | -15.59/-12.87     | -7.04/-4.29       | -1.95/0.14        | 0.62/0.59         | 1.11/0.07         | -0.8/-0.59        | -1.66/-2.62       | -2.84/-3.44       | -9.23/-10.71      | -14.17/-8.07      | -10.13/-17.14     | -4.43/-10.01      | -10.19/-4.81      | -6.48/-2.84       | -3.04/-0.76       | 0.56/-1.68        | -1.01/-0.43       |
| Θ(112.5°) | -1.32/-1.1    | -0.86/-2.5      | -4.3/-3.2       | -1.35/-0.96     | -1.12/-3.38     | -11.17/-15.08   | -17.78/-15.08   | -16.16/-18.79     | -18.19/-12.76     | -6.66/-3.58       | -1.9/0.01         | 0.45/0.16         | -0.2/-0.57        | -1.69/-2.01       | -3.77/-4.49       | -5.12/-5.31       | -11.13/-15.04     | -12.49/-12.52     | -14.21/-18.08     | -9.31/-17.85      | -1.57/-6.88       | -6.86/-4.74       | -3.68/0.82        | 0.43/-0.25        |
| Θ(120°)   | -1.18/-1.81   | -0.35/-0.5      | -0.12/-0.46     | -1.06/-0.27     | -1.62/-7.77     | -7.76/-19.1     | -12.61/-14      | -15.72/-18.85     | -7.27/-3.01       | -0.99/0.29        | -0.21/-1.16       | -2.64/-3.38       | -4.32/-4.23       | -1.29/-1.67       | -7.03/-8.73       | -12.89/-17.4      | -14.76/-18.5      | -11.95/-17.8      | -12.94/-15.58     | -6.05/-7.06       | -5.74/-7.12       | -3.82/0.22        | -0.12/-1.08       | -0.56/-1.68       |
| Θ(127.5°) | -1.67/0.77    | 1.64/2.5        | 2.16/1.18       | -0.34/-0.94     | -2.17/-5.48     | -12.69/-14.94   | -18.83/-14.4    | -13.76/-15.98     | -12.04/-4         | -1.19/-0.39       | 0.14/-0.82        | -1.87/-3.92       | -6.08/-7.74       | -10.02/-10.03     | -11.59/-19.32     | -18.4/-18.82      | -12/-16.21        | -18.54/-15.83     | -18.46/-13.95     | -11/-10.46        | -6.83/-13.33      | -6.45/-4.45       | -4.3/-4.65        | -2.63/-3.06       |
| Θ(135°)   | -0.81/-74     | 2.29/-63        | 0.91/-0.27      | -0.35/-0.7      | -2.21/-63       | -10.39/-18.18   | -17.78/-15.08   | -13.07/-13.38     | -16.45/-8.79      | -4.01/-2.08       | -2.31/-3.67       | -2.78/-4.3        | -4.9/-7.92        | -12.29/-11.09     | -12.28/-18.09     | -18.49/-17.02     | -18.77/-17.59     | -17.55/-19.01     | -15.07/-15.43     | -17.55/-9.69      | -9.21/-9.89       | -1.88/-3.87       | -2.58/-2.38       | -3.14/-2.26       |
| Θ(142.5°) | -0.05/0.99    | 1.75/-21        | 0.53/-0.75      | -1.5/-2.86      | -5.2/-10.45     | -18.65/-16.81   | -16.74/-14.89   | -10.02/-9.41      | -15.74/-18.66     | -1.03/-1.69       | -5.19/-5.4        | -6.77/-11.31      | -9.32/-10.29      | -18.25/-17.69     | -18.79/-10.48     | -8.53/-10.49      | -16.29/-19.27     | -18.24/-18.07     | -17.48/-18.83     | -14.5/-10.85      | -8.29/-3.24       | -1.72/-1.68       | -0.37/-0.35       | -1.19/-0.1        |
| Θ(150°)   | -0.85/-0.25   | 0.44/0.29       | -0.65/-1.41     | -3.3/-4.88      | -6.55/-11.27    | -15.87/-18.27   | -17.4/-17.31    | -11.01/-9.55      | -10.35/-13.59     | -18.03/-17.86     | -18.64/-13.44     | -12.54/-12.33     | -8.98/-9.72       | -13.62/-10.32     | -9.45/-14.76      | -17.46/-16.37     | -18.49/-19.27     | -18.51/-17.57     | -17.3/-18.04      | -18.91/-16.78     | -6.51/-2.49       | -1.81/-0.86       | 0.72/0.28         | -0.6/0            |
| Θ(157.5°) | -1.31/-0.57   | -0.37/-0.53     | -1.33/-2.75     | -4.44/-7.9      | -13.2/-16.37    | -17.29/-17.77   | -19.09/-12.77   | -18.01/-10.88     | -10.33/-8.19      | -6.7/-6.35        | -7.03/-8.5        | -10.68/-11.33     | -12.6/-14.87      | -18.9/-15.32      | -12.9/-12.93      | -14.19/-16.56     | -16.55/-18.81     | -18.5/-16.48      | -14.84/-17.3      | -18.42/-13.31     | -7.99/-5.43       | -4.61/-3.86       | -2.2/-1.19        | -1.02/-1.11       |
| Θ(165°)   | -2.95/-2.25   | -2.41/-3.33     | -5.07/-7.85     | -12.78/-18.98   | -18.81/-18.04   | -17.46/-18.69   | -18.29/-18.83   | -12.69/-15.5      | -6.79/-6.07       | -6.18/-7.83       | -10.65/-13.08     | -11.47/-9.28      | -8.53/-9.86       | -12.14/-12.92     | -11.27/-11.65     | -17.33/-15.65     | -17.76/-16.81     | -18.1/-18.43      | -17.79/-17.72     | -13.62/-9.37      | -8.08/-8.26       | -7.44/-4.22       | -5.74/-4.23       | -3.28/-2.86       |
| Θ(172.5°) | -12.72/-13.55 | -14.13/-14.99   | -15.17/-14.08   | -13.56/-14.02   | -16.11/-17.87   | -18.5/-18.47    | -18.54/-15.98   | -11.93/-9.86      | -10.18/-12.67     | -17.32/-16.62     | -11.93/-8.82      | -7.2/-7.35        | -7.93/-9.26       | -11.99/-18.18     | -18.03/-18.6      | -18.39/-17.5      | -18.86/-18.49     | -18.33/-19.33     | -17.93/-19        | -18.39/-17.18     | -17.73/-15.4      | -12.61/-11.3      | -10.5/-9.46       | -8.8/-8.64        |
| Θ(180°)   | -14.44/-14.2  | -13.16/-12.15   | -12.17/-12.71   | -13.5/-14.51    | -15.38/-16.74   | -18.65/-18.7    | -18.83/-18.23   | -18.92/-17.82     | -18.68/-13.81     | -10.65/-9.13      | -8.41/-8.09       | -8.02/-9.41       | -11.53/-14.15     | -16.71/-19.14     | -19.12/-17.71     | -19.94/-18.35     | -17.54/-17.69     | -17.99/-17.98     | -18.39/-18.72     | -17.95/-17.65     | -18.46/-17.75     | -15.75/-15.55     | -15.8/-15.76      | -15.68/-15.34     |
| Freq(Hz)  | 5.63GPol      | Phi/Ant. 5      | +               | -               | +               | -               | +               | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | -8.04/-8.89   | -10.72/-11.75   | -11.42/-9.99    | -7.76/-5.15     | -3.2/-2.05      | -1.72/-1.93     | -1.62/-1.31     | -0.73/-0.49       | -0.4/-0.63        | -1.06/-1.74       | -2.93/-4.19       | -5.26/-6.68       | -8.65/-10.6       | -11.89/-11.68     | -10.82/-8.44      | -5.95/-4.44       | -3.77/-3.6        | -2.78/-1.33       | -0.46/-0.15       | -0.21/-0.39       | -0.43/-0.61       | -1.05/-1.89       | -2.63/-3.64       | -4.74/-5.93       |
| Θ(7.5°)   | -12.13/-12.94 | -12.29/-9.8     | -7.08/-1.57     | -3.79/-2.47     | -1.07/0.15      | 0.52/0.38       | 0.52/0.52       | 0.93/0.78         | 0.28/-0.48        | -1.03/-1.67       | -2.5/-3.77        | -5.16/-6.39       | -8.08/-11.42      | -16.81/-16.6      | -17.88/-10.93     | -7.63/-5.65       | -4.26/-3.03       | -2.02/-0.63       | -0.04/0.29        | 0.52/0.53         | 0.47/0            | -0.8/-1.8         | -3.05/-4.35       | -5.42/-7.06       |
| Θ(15°)    | -17.99/-18.17 | -15.51/-10.34   | -8.09/-6.65     | -5.09/-3.33     | -1.83/-0.51     | 0.18/0.34       | 0.61/0.87       | 1.1/0.87          | 0.39/-0.12        | -0.51/-1.07       | -2.16/-3.57       | -5.18/-7.49       | -10.74/-17.87     | -18.54/-12.84     | -8.78/-5.81       | -3.8/-2.99        | -3.07/-2.82       | -3.67/-3.49       | -2.64/-2.04       | -1.97/-1.85       | -1.29/-1.13       | -1.66/-2.52       | -3.55/-4.94       | -7.34/-10.82      |
| Θ(22.5°)  | -15.73/-18.13 | -12.24/-10.31   | -9.29/-7.64     | -5.96/-3.73     | -1/-1.08        | 2.09/-2.41      | 2.53/0.78       | 2.92/-4.7         | 1.33/-0.18        | -1.11/-2.05       | -2.87/-4.43       | -7.61/-12.99      | -17.41/-18.2      | -17.57/-10.49     | -6.85/-5.71       | -4.98/-3.48       | -2.61/-2.1        | -2.42/-2.83       | -3.24/-3.27       | -2.91/-2.62       | -2.13/-1.92       | -2.31/-3.91       | -6.23/-8.54       | -10.36/-13.23     |
| Θ(30°)    | -11.34/-18.03 | -17.95/-15.31   | -9.24/-5.17     | 2.12/-0.15      | 1.09/1.79       | 2.67/-6.2       | 3.763/4.5       | 2.78/2.35         | 1.80/87           | -0.4/-2.38        | -4.98/-6.37       | -9.91/-17.86      | -17.81/-16.2      | -18.79/-10.85     | -7.19/-5.64       | -2.32/-0.07       | 0.01/-0.54        | -1.85/-2.34       | -1.96/-1.47       | -2.12/-3.35       | -3.02/-2.61       | -3.32/-4.93       | -8.07/-13.1       | -11.75/-10.33     |
| Θ(37.5°)  | -10.83/-18.48 | -16.18/-9.83    | -7.03/-3.58     | -1.48/0.48      | 1.54/2.36       | 3.04/-1.36      | 1.51/0.63       | -0.81/-1.84       | -2.84/-6.19       | -9.28/-15.05      | -18.79/-16.21     | -11.45/-12.72     | -17.13/-12.47     | -16.85/-4.38      | -2.43/-2.08       | -3.9/-4.86        | -3.79/-3.17       | -4.01/-5.85       | -7.19/-7.66       | -7.43/-5.85       | -4.24/-4.51       | -7.33/-16.53      | -13.02/-9.67      |                   |
| Θ(45°)    | -15.19/-15.65 | -8.87/-7.42     | -5.99/-5.49     | -4.29/-2.43     | 0.08/0.66       | 0.15/-1.52      | -3.75/-4.7      | -4.81/-6.3        | -8.18/-8.4        | -9.52/-10.02      | -12.06/-15.83     | -19.05/-18.09     | -11.39/-11.92     | -18.4/-17.9       | -13.96/-9.61      | -11.39/-16.23     | -16.26/-17.39     | -18.97/-19.45     | -17/-12.11        | -8.44/-9.33       | -9.18/-8.6        | -7.91/-8.08       | -10.64/-17.67     | -12.29/-8.54      |
| Θ(52.5°)  | -17.92/-12.13 | -8.97/-10.12    | -10.29/-9.11    | -7.65/-5.65     | -5.16/-4.84     | -7.11/-11.12    | -17.79/-17.45   | -14.36/-13.41     | -13.87/-13.37     | -12.76/-13.11     | -18.23/-15.11     | -13.87/-15.71     | -12.39/-15.87     | -18.71/-17.9      | -17.92/-17.6      | -13.04/-11.51     | -10.58/-11.37     | -12.47/-10.46     | -9.19/-10.29      | -9.97/-7.88       | -8.97/-11.94      | -9.57/-7.76       | -9.91/-10.43      | -17.16/-10.82     |
| Θ(60°)    | -18.77/-13.54 | -11.66/-12.21   | -15.02/-16.97   | -11.47/-9.1     | -10.96/-7.43    | -5.28/-4.71     | -5.91/-6.35     | -4.09/-2.92       | -3.64/-7          | -8.23/-7.89       | -11.14/-14.09     | -17.12/-18.88     | -15.2/-18.37      | -18.14/-12.24     | -6.91/-8.62       | -7.33/-8.86       | -12.52/-11.09     | -8.56/-7.47       | -8.4/-10.3        | -1.59/-9.75       | -7.56/-9.43       | -15.06/-10.56     | -10.34/-13.56     | -18.51/-15.03     |
| Θ(67.5°)  | -15.61/-13.58 | -14.77/-18.25   | -19.17/-17.38   | -14.06/-8.69    | -5.12/-3.98     | -3.81/-4.51     | -5.18/-6.45     | -7.25/-4.33       | -2.27/-3.09       | -8.6/-11.7        | -17.96/-16.84     | -19.05/-19.03     | -19.22/-18.69     | -17.71/-18.6      | -7.42/-7.07       | -7/-14.97         | -12.32/-8.95      | -6.33/-8.25       | -10.35/-8.26      | -7.55/-10.35      | -7.89/-7.32       | -8.6/-12.37       | -11.12/-12        | -17.21/-7.07      |
| Θ(75°)    | -17.81/-17.78 | -17.67/-19.49   | -14.09/-14.49   | -11.44/-5.29    | -5.12/-6.89     | -11.37/-13.28   | -11.42/-10.28   | -17.28/-13.37     | -7.86/-4.81       | -6.81/-18.56      | -18.76/-13.48     | -19.01/-18.14     | -14.29/-15.32     | -17.63/-13.41     | -7.88/-4.84       | -6.31/-10.7       | -11.87/-13.45     | -11.31/-7.18      | -9.14/-11.43      | -9.55/-9.25       | -7.87/-8.32       | -8.76/-12.32      | -18.31/-10.99     | -14.67/-18.78     |
| Θ(82.5°)  | -16.94/-17.64 | -15.47/-17.44   | -15.18/-14.74   | -11.78/-14.77   | -18.43/-9.77    | -7.04/-10.9     | -18.03/-11.8    | -10.88/-12.6      | -9.74/-9.95       | -8.83/-11.79      | -11.67/-14.23     | -16.03/-19.17     | -11.32/-17.94     | -18.41/-12.89     | -8.33/-10.47      | -14.17/-17.43     | -17.44/-11.04     | -8.02/-7.42       | -7/-17.23         | -5.07/-6.19       | -5.64/-8.03       | -11.91/-10.09     | -15.15/-13.05     | -14.78/-16.78     |
| Θ(90°)    | -17.05/-18.16 | -1              |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



# Radiated Composite Gain Data of Combination C

# Appendix A.5

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(90°)    | 0.18/2.12     | 0.47/0.78       | 2.13/1.55       | 0.74/-0.39      | -4.97/-8.76     | -15.7/-15.96    | -8.18/-11.2     | -18.14/-9.78      | -10.51/-8.47      | -7.43/-4.93       | -3.62/-3.34       | -2.27/0.74        | 0.35/-0.27        | 0.75/-1.71        | -4.95/-10.95      | -7.46/-9.89       | -11.56/-10.49     | -7.61/-13.56      | -2.32/-6.59       | -3.26/-0.98       | -1.31/-1.8        | -2.09/-2.51       | -1.27/-0.84       | -1.43/-3.72       |
| Θ(97.5°)  | 1.27/4.22     | 2.5/-8.7        | 1.4/0.48        | -0.98/-5.36     | -5.2/-5.48      | -8.13/-13.51    | -8.52/-12.26    | -18.1/-9.75       | -8.22/-4.91       | -5.62/-5.16       | -4.67/-2.2        | -2.16/0.18        | -0.9/-0.82        | 1.8/-0.96         | -4.69/-4.75       | -7.34/-17.4       | -18.58/-7.23      | -7.85/-12.18      | -3.32/-8.47       | -3.65/-1.43       | -2.14/-1.81       | -2.35/-0.64       | 0.43/0.63         | 1.97/-0.19        |
| Θ(105°)   | 1.93/3.37     | 1.94/1.35       | 0.04/-2.4       | -6.31/-4.86     | -3.09/-1.48     | -5.94/-18.87    | -10.65/-12.03   | -17.97/-7.47      | -6.29/-8.01       | -5.64/-1.43       | 0.37/-0.07        | -0.99/-1.05       | 1.13/-0.05        | 1.17/-0.64        | -0.79/-5.89       | -3.34/-8.89       | -18.74/-12.73     | -14.04/-10.31     | -4.61/-19.01      | -5.45/-4.38       | -3.2/-5.47        | -2.63/0.01        | 0.65/0.64         | 2.48/2.32         |
| Θ(112.5°) | -0.29/-1.87   | -0.79/-2.08     | -4.46/-3.64     | -0.68/0.18      | -2.39/-4.75     | -11.23/-15.48   | -14.52/-18.84   | -12.38/-10.22     | -6.21/-4.99       | -3.61/-2.62       | 0.07/1.54         | 0.98/-0.7         | 0.48/-1.46        | -0.64/-3.04       | -4.51/-7.54       | -10.81/-13.02     | -11.89/-11.8      | -19.1/-11.2       | -7.78/-13.25      | -3.4/-8.16        | -4.91/-6.58       | -2.24/0.27        | 0.29/0.56         | 1.08/0.74         |
| Θ(120°)   | -0.22/-1.02   | -1.69/-1.78     | -3.47/-0.93     | 0.06/0.39       | -1.75/-5        | -14.14/-18.56   | -17.58/-11.38   | -11.64/-12.35     | -5.63/-3.53       | -3.1/-2.38        | -1.04/-0.54       | -0.29/-2.85       | -2.38/-7.93       | -4.96/-5.7        | -6.39/-9.61       | -15.25/-18.93     | -11.81/-19.4      | -18.52/-8.5       | -12.25/-8.58      | -4.94/-4.33       | -4.47/-8.85       | -1.64/-1.01       | 0.42/1.8          | 2.47/1.31         |
| Θ(127.5°) | 0.69/-1.18    | 1.15/-1.77      | 2.91/7.3        | 0.46/-1.32      | -3.42/-5.46     | -9.53/-12.59    | -18.82/-17.22   | -18.42/-18.94     | -9.82/-3.82       | -2.47/-1.79       | -3.21/-2.86       | -2.72/-5.49       | -6.29/-10.22      | -12.48/-10.63     | -14.42/-13.95     | -18.71/-19.05     | -16.81/-18.16     | -12.66/-15.09     | -17.68/-16.83     | -9.55/-9.28       | -3.86/-3.62       | -3.41/-1.83       | -0.33/-0.11       |                   |
| Θ(135°)   | 2.14/3.13     | 2.59/2.04       | 1.74/0.58       | -0.93/-1.76     | -2.79/-7.58     | -14.32/-19.19   | -17.92/-16.08   | -13.24/-13.47     | -12.26/-7.64      | -5.15/-1.7        | -1.61/-3.51       | -6.78/-6.34       | -6.56/-8          | -13.89/-16.84     | -18.08/-17.09     | -17.65/-14.63     | -19.01/-18.83     | -17.87/-18.98     | -11.7/-18.39      | -12.76/-11.04     | -10.07/-7.06      | -5.56/-4.24       | -1.88/-3.05       | -3.79/-1.75       |
| Θ(142.5°) | 1.91/2.74     | 1.04/-0.4       | -1.15/-1.24     | -1.21/-1.28     | -2.79/-5.93     | -12.24/-18.21   | -18.22/-13.05   | -8.59/-9.83       | -16.83/-18.09     | -12.92/-11.61     | -6.08/-4.15       | -4.25/-7.07       | -17.86/-12.36     | -12.08/-14.06     | -16.24/-18.47     | -15.74/-11.35     | -11.3/-13.58      | -12.89/-18.92     | -18.05/-18.68     | -14.13/-11.83     | -4.59/-1.74       | -3.06/-0.71       | 0.14/-0.19        | 0.56/0.93         |
| Θ(150°)   | -0.39/-1.22   | 0.87/0.08       | 0.59/0.21       | -1.49/-3.82     | -6.47/-11.01    | -17.53/-18.59   | -16.42/-18.16   | -16.92/-10.58     | -10.01/-13.02     | -18.01/-17.26     | -16.46/-18.65     | -14.4/-10.65      | -13.31/-14.62     | -17.11/-19.41     | -11.4/-9.86       | -10.98/-11.06     | -13.63/-18.72     | -17.43/-17.79     | -18.7/-17.76      | -16.83/-8.8       | -3.94/-1.82       | -0.69/0.87        | 0.88/0.8          | 1.1/-0.21         |
| Θ(157.5°) | -0.34/0.12    | -0.22/-1.42     | -2.11/-2.8      | -4.21/-6.46     | -8.87/-11.33    | -15.68/-18.93   | -17.97/-13.87   | -9.61/-9.31       | -11.69/-12.08     | -9.57/-7.86       | -6.64/-5.84       | -6.72/-10.02      | -14.26/-13.83     | -14.94/-18.55     | -19.13/-15.99     | -13.78/-13.99     | -15.08/-16.99     | -15.26/-11.83     | -9.5/-11.2        | -18.92/-16.36     | -9/-5.18          | -2.69/-1.61       | -0.98/0.07        | 0.99/0.36         |
| Θ(165°)   | -4.46/-4.23   | -3.94/-4.79     | -6.16/-6.49     | -7.38/-10.21    | -16.24/-18.94   | -18.79/-17.95   | -18.35/-17.52   | -17.07/-13.18     | -10.17/-8.71      | -7.85/-6.93       | -6.35/-6.8        | -8.75/-12.02      | -14.43/-13.61     | -12.56/-13.65     | -16.1/-19.17      | -18.54/-19.04     | -16.08/-15.81     | -18.02/-18.28     | -18.8/-17.83      | -13.5/-12.26      | -12.7/-11.17      | -9.72/-7.22       | -4.45/-2.9        | -2.42/-3.27       |
| Θ(172.5°) | -10.35/-11.69 | -12.35/-12.86   | -12.79/-12.82   | -13/-13.24      | -15.29/-15.21   | -15.01/-17.84   | -18.82/-17.9    | -12.04/-9.68      | -9.38/-9.65       | -10.04/-10.79     | -11.41/-11.83     | -11.02/-10.39     | -10.25/-10.84     | -12.03/-13.44     | -14.34/-15.93     | -18.43/-18.74     | -18.05/-18.9      | -18.21/-18.05     | -18.74/-18.52     | -18.93/-18.5      | -18.34/-18.49     | -19.34/-14.77     | -11.8/-9.66       | -8.4/-7.86        |
| Θ(180°)   | -19.03/-18.4  | -18.96/-18.7    | -18.38/-17.62   | -18.75/-19.24   | -18.3/-19.1     | -19.14/-19.15   | -17.23/-15.99   | -15/-16.87        | -18.49/-18.97     | -14.76/-12.02     | -11.46/-11.53     | -11.94/-13.21     | -15.56/-16.84     | -14.91/-13.29     | -12.96/-13.13     | -13.68/-13.88     | -14.69/-16.67     | -17.75/-18.69     | -18.24/-17.32     | -18.9/-18.4       | -17.29/-15.43     | -14.54/-14.2      | -12.77/-11.17     | -10.3/-10.62      |
| Freq(Hz)  | 5.785GPol.    | Phi/Ant. 5      | -/-             | -/-             | -/-             | -/-             | -/-             | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | -10.06/-9.19  | -7.93/-7.17     | -6.35/-6.44     | -6.44/-5.38     | -3.87/-2.84     | -2.91/-3.52     | -3.81/-3.47     | -3.15/-2.79       | -2.96/-3.47       | -4.05/-5.09       | -6.32/-7.93       | -8.97/-9.61       | -9.76/-9.89       | -9.71/-8.66       | -7.49/-5.98       | -5.32/-5.31       | -5.19/-5.38       | -4.52/-3.67       | -3.2/-3.64        | -4.22/-4.43       | -4.51/-5.27       | -5.98/-6.38       | -6.55/-7.02       | -8.09/-8.51       |
| Θ(7.5°)   | -15.75/-15.87 | -14.58/-13.45   | -13.03/-11.97   | -10.19/-8.89    | -8.28/-7.29     | -5.85/-5.02     | -5.72/-7.14     | -7.58/-5.47       | -4.99/-6.16       | -7.6/-8.04        | -8.4/-8.44        | -8.14/-7.66       | -7.52/-7.91       | -8.29/-8.3        | -8.23/-8.74       | -6.87/-6.43       | -6.68/-5.35       | -4.94/-3.86       | -3.19/-2.93       | -3.24/-3.35       | -3.63/-4.22       | -5.33/-6.34       | -7.37/-8.79       | -11.1/-12.65      |
| Θ(15°)    | -17.27/-17.18 | -17.93/-14.93   | -12.93/-11.63   | -9.73/-7.06     | -4.85/-3.71     | -3.45/-3.46     | -2.7/-2.65      | -3.85/-4.43       | -4.01/-4.32       | -5.18/-6.36       | -7.55/-7.84       | -7.98/-8.37       | -8.81/-10.03      | -11.54/-11.94     | -10.39/-9.78      | -8.77/-7.74       | -6.29/-6.43       | -3.17/-2.62       | -2.8/-2.84        | -3.14/-4.34       | -5.67/-6.8        | -8.14/-10.89      | -14.67/-19.04     |                   |
| Θ(22.5°)  | -17.73/-19.21 | -17.81/-15.1    | -11.97/-10.21   | -8.72/-6.93     | -4.87/-3.17     | -1.88/-2.04     | -1.73/-1.35     | -1.12/-1.1        | -1.18/-1.77       | -2.74/-3.9        | -6.14/-7.14       | -7.9/-9.21        | -12.01/-18.25     | -18.68/-18.12     | -16.74/-11.11     | -7.42/-6.09       | -4.05/-3.17       | -2.56/-2.4        | -2.23/-1.84       | -1.6/-1.45        | -2.01/-3.22       | -4.71/-6.19       | -8.39/-10.91      | -13.37/-18.34     |
| Θ(30°)    | -15.59/-16.47 | -17.76/-17.58   | -14.83/-11.9    | -8.43/-6.04     | -3.68/-1.73     | -0.45/-0.79     | -0.86/-0.32     | -0.4/-0.56        | -0.39/-0.11       | -1.03/-2.95       | -4.94/-7.35       | -8.98/-11.27      | -14.84/-17.34     | -16.25/-17.24     | -9.96/-6.4        | -3.63/-4.38       | -5.28/-5.51       | -3.81/-2.02       | -1.86/-2.58       | -3.02/-2.76       | -2.86/-3.32       | -4.53/-6.62       | -8.97/-11.78      | -10.88/-12.87     |
| Θ(37.5°)  | -11.94/-12.14 | -10.19/-13.73   | -12.05/-10.17   | -5.99/-3.67     | -1.67/-0.04     | 0.90/-9.6       | 0.21/-0.39      | -1.12/-1.3        | -2.92/-2.75       | -3.98/-4.86       | -6.95/-7.6        | -9.46/-12.61      | -13.64/-10.66     | -10.26/-9.21      | -5.39/-3.88       | -4.74/-4.84       | -4.11/-3.76       | -3.84/-4.79       | -6.7/-6.1         | -8.84/-4.71       | -18.34/-4.52      | -6.72/-6.62       | -7.52/-12.79      | -13.03/-11.31     |
| Θ(45°)    | -8.2/-9.54    | -12.3/-12.73    | -8.91/-5.89     | -4.1/-2.3       | -1.15/0.21      | 0.43/0.67       | 0.14/-1.16      | -2.1/-2.84        | -4.5/-6.51        | -6.18/-6.92       | -6.79/-8.74       | -10.65/-13.79     | -16.04/-10.68     | -11.18/-16.26     | -7.74/-7.79       | -5.88/-4.43       | -8.9/-14.4        | -10.99/-6.43      | -5.57/-6.49       | -7.18/-6.72       | -4.57/-3.01       | -4.58/-9.54       | -11.97/-14.65     | -13.24/-9.18      |
| Θ(52.5°)  | -9.52/-8.02   | -11.55/-17.66   | -12.68/-8.87    | -7.09/-6.16     | -6.76/-5.49     | -5.7/-5.81      | -5.37/-5.98     | -9.49/-12.62      | -11.02/-10.78     | -10.2/-13.43      | -13.04/-16.18     | -14.33/-17.14     | -12.27/-8.86      | -18.29/-16.41     | -15.14/-16.66     | -11.31/-16.08     | -16.06/-16.39     | -17.61/-17.6      | -10.72/-11.69     | -15.79/-18.07     | -9.3/-3.78        | -3.09/-6.63       | -12.99/-10.81     | -15.42/-13.43     |
| Θ(60°)    | -9.8/-9.29    | -18.26/-17.3    | -17.3/-14.92    | -18.01/-19.4    | -18.1/-15.38    | -11.84/-9.4     | -10.12/-10.85   | -13.17/-15.83     | -9.07/-8.25       | -9.55/-15.34      | -18.62/-18.93     | -19.31/-18.42     | -12.98/-10.33     | -18/-16.3         | -17.88/-18.63     | -18.66/-17.65     | -14.65/-12.38     | -18.63/-17.83     | -19.1/-14.27      | -13.22/-13.69     | -12.75/-9.05      | -6.27/-6.71       | -8.82/-17.07      | -13.88/-16.89     |
| Θ(67.5°)  | -11.53/-11.54 | -17.54/-18.85   | -18.66/-19.01   | -18.81/-17.31   | -15.85/-10.3    | -4.97/-2.38     | -1.91/-2.36     | -4.33/-6.3        | -6.16/-5.06       | -5.95/-11.43      | -16.07/-18.88     | -18.38/-18.74     | -12.88/-14.49     | -17.24/-17.69     | -10.2/-9.5        | -10.58/-9.26      | -12.73/-13.84     | -15.09/-16.83     | -17.04/-13.38     | -13.05/-15.8      | -11.56/-7.53      | -7.2/-6.68        | -9.26/-16.2       | -14.26/-18.83     |
| Θ(75°)    | -13.36/-11.03 | -18.11/-18.6    | -18.84/-15.02   | -18.4/-17.5     | -15.49/-13.03   | -10.28/-7.26    | -6.68/-4.7      | -7.5/-7.64        | -6.89/-9.26       | -5.88/-7          | -18.74/-18.8      | -15.14/-17.85     | -13.8/-12.69      | -16.65/-18.13     | -11.97/-9.66      | -7.01/-11.1       | -11.2/-13.06      | -13.55/-15.63     | -12.02/-6.42      | -5.94/-9.1        | -18.16/-9.14      | -8.25/-7.3        | -7.09/-10.98      | -19.1/-18.45      |
| Θ(82.5°)  | -16.92/-10.93 | -14.99/-16.06   | -15.58/-14.6    | -18.84/-17.93   | -17.81/-14.87   | -6.25/-3.57     | -3.87/-5.36     | -9.66/-11.6       | -16.51/-14.31     | -16.32/-15.57     | -18.51/-13.61     | -19.11/-13.64     | -15.31/-18.15     | -12.37/-8.61      | -16.05/-15.63     | -15.82/-18.2      | -10.97/-9.89      | -6.8/-7.59        | -11.44/-10.23     | -7.37/-9.62       | -7.7/-10.46       | -18.67/-19.38     |                   |                   |
| Θ(90°)    | -17.38/-11.1  | -13.27/-15.98   | -15.63/-19.04   | -17.14/-16.41   | -11.17/-8.94    | -6.01/-5.65     | -5.84/-3.35     | -5.31/-9.94       | -14.23/-18.19     | -13.4/-17.03      | -18.17/-16.77     | -10.98/-18.6      | -18.91/-18.19     | -16.97/-15.97     | -10.23/-6.71      | -18.25/-14.71     | -15.9/-9.39       | -8.89/-12.2       | -10.9/-8.47       | -10.56/-8.28      | -10.75/-13.94     | -9.75/-10.06      | -9.72/-13.29      | -15.74/-18.24     |
| Θ(97.5°)  | -15.32/-11.72 | -11.8/-15.54    | -17.06/-14.68   | -13.53/-16.3    | -9.06/-12.16    | -10.55/-10.17   | -7.92/-6.94     | -8.02/-8.4        | -13.26/-17.9      | -10.22/-10.24     | -16.78/-16.15     | -10.8/-18.3       | -19.1/-17.18      | -18.14/-18.41     | -10.57/-10.97     | -11.43/-7.25      | -15.36/-4.99      | -7.16/-15.67      | -14.21/-12.86     | -18.2/-14.3       | -10.3/-14.99      | -12.14/-13.94     | -13.47/-15.96     | -15.3/-14.9       |
| Θ(105°)   | -17.22/-8.7   | -10.19/-11.98   | -13.55/-12.49   | -10.04/-15.32   | -15.44/-15.95   | -17.44/-12.66   | -9.35/-11.91    | -8.66/-7.36       | -11.99/-12.39     | -9.45/-8.12       | -10.38/-15.71     | -12.31/-19        | -18.27/-14.18     | -16.41/-14.77     | -13.72/-12.66     | -14.86/-17.71     | -18.86/-8.59      | -7.81/-13.61      | -13.54/-12.23     | -10.64/-10.72     | -10.65/-18.56     | -17.86/-18.56     | -19.19/-18.28     | -18.38/-17.48     |
| Θ(112.5°) | -13.3/-10.75  | -10.43/-14.4    | -11.5/-12.21    | -11.31/-13.21   | -13.88/-7.81    | -11.12/-8.35    | -13.12/-18.28   | -11.13/-8.64      | -13.78/-8.7       | -6.39/-5.47       | -9.28/-15.01      | -13.5/-12.65      | -18.03/-15.55     | -15.3/-14.93      | -17.84/-10.98     | -18.14/-15.96     | -12.56/-5.95      | -3.26/-10.19      | -11.06/-6.62      | -6.54/-12.4       | -14.6/-14.63      | -18.89/-17.98     | -18.78/-15.51     | -16.21/-18.08     |
| Θ(120°)   | -11.64/-8.4   | -11.11/-9.61    | -12.41/-11.96   | -8.94/-8.33     | -7.36/-6.59     | -7.19/-11.93    | -12.5/-12.59    | -19.06/-13.72     | -8.49/-6.94       | -6.21/-6.53       | -7.32/-9.68       | -12.35/-13.19     | -15.18/-10.84     | -13.36/-11.7      | -16.48/-19.15     | -15.02/-17.61     | -18.22/-6.86      | -8.64/-6.78       | -15/-8.81         | -8.99/-19.51      | -14.2/-13.91      | -17.94/-13.62     | -17.32/-18.87     | -18.64/-15.04     |
| Θ(127.5°) | -17.53/-8.82  | -9.93/-8.17     | -9.24/-5.69     | -5.95/-4.9      | -2.43/-3.15     | -4.99/-7.34     | -6.66/-7.92     | -12.78/-15.94     | -7.8/-6.54        | -6.3/-7.55        | -9.26/-11.21      | -9.83/-14.32      | -12.67/-12.45     | -11.06/-19.13     | -12.72/-13.31     | -13.49/-11.1      | -18.94/-18.93     | -11.18/-11.27     | -18.32/-17.38     | -10.86/-9.25      | -9.54/-12.86      | -18.96/-11.62     | -18.25/-18.35     | -17.79/-16.98     |
| Θ(135°)   | -17.98/-13.04 | -9.76/-7.97     | -7.79/-5.99     | -5.22/-2.84     | -2.4/-2.27      | -6.23/-8.73     | -6.07/-5.66     | -8.58/-14.61      | -14.77/-6.54      | -4.04/-4.79       | -7.48/-13.03      | -10.05/-9.93      | -14.37/-18.7      |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



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| Freq(Hz)                                               | 5.2G           | 5.3G         | 5.6G           | 5.785G        |
|--------------------------------------------------------|----------------|--------------|----------------|---------------|
| Ant. 1 Max Gain (dBi)                                  | 6.69           | 7.12         | 7.23           | 6.26          |
| Ant. 3 Max Gain (dBi)                                  | 6.6            | 6.94         | 6.33           | 5.81          |
| Ant. 4 Max Gain (dBi)                                  | 5.86           | 5.91         | 5.78           | 5.79          |
| Ant. 5 Max Gain (dBi)                                  | 3.66           | 3.76         | 4.22           | 4.02          |
| Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/97.5/277.5 | Phi/90/262.5 | Phi/97.5/285   | Phi/90/270    |
| Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/90/270     | Phi/90/262.5 | Phi/90/262.5   | Phi/90/262.5  |
| Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/45/22.5    | Phi/45/30    | Phi/52.5/22.5  | Phi/52.5/30   |
| Ant. 5 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$ | Phi/22.5/97.5  | Phi/30/90    | Theta/97.5/7.5 | Theta/60/22.5 |
| Max Gain (dBi)                                         | 6.69           | 7.12         | 7.23           | 6.26          |
| DG [1SS] (dBi)                                         | 8.84           | 8.68         | 8.4            | 7.27          |
| DG [2SS] (dBi)                                         | 6.69           | 7.12         | 7.23           | 6.26          |
| DG [4SS] (dBi)                                         | 6.69           | 7.12         | 7.23           | 6.26          |





# Radiated Composite Gain Data of Combination D

# Appendix A.6

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(22.5°)  | -2.48/-5.09   | -4.06/-2.66     | -0.60/2         | 1.09/2.78       | 4.18/4.95       | 5.35/-4.4       | 5.58/6.04       | 6.16/5.9          | 5.33/4.73         | 3.95/3.18         | 2.64/1.96         | 1.51/0.72         | -0.26/-1.73       | -1.21/0.8         | 3.11/4.75         | 5.77/6.3          | 6.45/6.36         | 6.19/6.1          | 6.13/6.89         | 5.57/5.39         | 5.28/5.07         | 4.47/3.55         | 2.56/2.01         | 1.54/-0.14        |
| Θ(30°)    | -2.05/-3.37   | -3.79/-2.2      | -1.41/-1.6      | 0.32/63         | 3.87/4.05       | 3.53/3.52       | 3.79/3.96       | 4.28/4.67         | 5.16/-15          | 4.63/4            | 3.05/2.54         | 2.24/-1.78        | 0.71/0.13         | 0.93/2.64         | 4.25/-1           | 5.29/5.26         | 5.17/5.25         | 5.14/4.93         | 4.84/4.5          | 4.68/5.13         | 5.34/5.3          | 4.89/4.12         | 3.05/2.47         | 1.23/-0.57        |
| Θ(37.5°)  | -0.25/-0.78   | -0.52/1.4       | 2.99/3.39       | 3.68/3.58       | 3.24/2.84       | 2.12/1.35       | 0.92/1.23       | 1.08/0.45         | 1.51/2.95         | 3.07/2.79         | 2.29/1.81         | 0.93/0.33         | 0.68/1.56         | 1.96/2.45         | 2.93/-15          | 3.67/3.71         | 3.31/2.65         | 1.64/0.97         | 1.27/1.99         | 2.15/2.91         | 3.74/4.1          | 3.55/1.93         | 0.31/0.57         | 0.01/-1.57        |
| Θ(45°)    | 1.19/1.89     | 2.22/3.45       | 4.07/4.08       | 4.44/-16        | 3.93/3.63       | 2.84/-41        | 0.58/0.39       | 0.03/-0.78        | -1.07/-0.42       | -0.29/-0.8        | 0.13/0.7          | 0.19/-0.65        | 0.06/1.71         | 2.01/2.17         | 2.82/0.4          | 1.66/0.83         | -0.49/-0.69       | -0.91/-1.78       | -1.56/-0.14       | -0.16/-0.93       | -0.32/1           | 1.71/1.18         | 0.31/1.04         | 0.91/0            |
| Θ(52.5°)  | 1.97/2.33     | 3.47/4.29       | 3.62/7.3        | 2.93/25         | 2.84/2.85       | 2.59/1.63       | 1.69/2.06       | 1.49/0.54         | -0.17/-1.25       | -2.38/-4.05       | -3.82/-1.28       | -1.7/-2.18        | 0.37/2.14         | 2.58/1.72         | 1.36/0.84         | -0.64/0.17        | 1.45/-198         | 0.98/-0.76        | -1.85/-2.16       | -0.55/0.16        | -0.09/0.6         | 1.17/1.4          | 1.78/1.85         | 1.87/1.43         |
| Θ(60°)    | 3.08/3.34     | 1.81/2.08       | 0.89/1.3        | 1.61/87         | 2.79/3.15       | 2.18/1.63       | 2.94/3.84       | 3.56/2.35         | -0.51/-2.15       | -2.78/-1.23       | -1.52/-1.62       | 0.18/1.74         | 2.37/0.41         | 1.35/2.24         | 0.68/1.79         | 2.35/0.97         | -0.13/-0.3        | -0.63/-2.89       | -3.8/-2.67        | -0.94/0.09        | 1.31/2.2          | 2.97/2.93         | 1.78/1.84         |                   |
| Θ(67.5°)  | 0.65/1.45     | 0.37/-0.22      | -1.13/-0.41     | 0.84/3.04       | 3.28/2.09       | 3.02/4.91       | 5.62/5.37       | 4.89/4.52         | 3.41/2.71         | 1.09/0.33         | -1.91/-0.07       | -0.77/-0.18       | 1.98/2.22         | 1.26/-1.22        | 1.51/1.76         | 1.85/4.08         | 3.53/2.03         | 1.79/2.66         | 2.24/-0.23        | -1.22/0.73        | 2.38/2.44         | 1.47/1.48         | 2.15/2.57         | 1.14/0.37         |
| Θ(75°)    | -0.21/0.59    | -1.49/-1.32     | -1.09/0.48      | 1.74/2.43       | 1.52/2.34       | 3.13/08         | 2.42/2.03       | 2.22/2.49         | 3.25/3.15         | 2.44/0.14         | -1.03/-0.55       | -0.04/-0.43       | 1.25/-15          | 0.81/0.43         | 0.46/1.4          | 1.86/4.75         | 5.33/5.17         | 5.09/5.95         | 6.08/5.12         | 3.68/3.34         | 4.07/3.52         | 2.56/1.34         | 2.1/2.43          | 1.07/0.08         |
| Θ(82.5°)  | -0.75/-1.17   | -2.95/-1.06     | -0.82/-0.24     | 0.23/0.66       | 1.28/2.49       | 2.85/4.42       | 5.36/5.01       | 3.74/2.47         | 2.01/1.94         | 0.8/-1.28         | -1.44/0.02        | 0.66/0.31         | 1.26/1.21         | 1.56/0.61         | -0.19/0.79        | 2.15/-1           | 5.08/6.14         | 7.82/7.67         | 6.85/6.32         | 5.52/4.28         | 4.37/3.73         | 3.44/2.03         | 0.81/37           | -0.35/-1.01       |
| Θ(90°)    | -2.07/-2.04   | -2.33/-0.7      | -1.07/-1.68     | -0.83/-0.28     | 1.21/1.19       | 2.25/3.38       | 3.75/4.51       | 5.13/3.25         | 2.43/2.23         | 1.19/-0.95        | -0.73/-0.61       | 0.9/-0.36         | 0.63/1.4          | 1.78/1.02         | 0.18/0.79         | 1.34/4.45         | 5.07/6.5          | <b>8.22/8.4</b>   | 7.65/7.48         | 6.36/5.08         | 3.71/2.9          | 2.59/1.72         | 0.37/0.63         | -0.78/-3.17       |
| Θ(97.5°)  | -1.55/-3.25   | -2.69/-2.18     | -2.87/-3.16     | -2.18/-1.37     | -2.11/-1.48     | 0.38/-0.53      | -0.13/-1.74     | 3.57/3.6          | 1.03/1.5          | 1.16/0.11         | -1.07/-0.65       | -1.06/-1.01       | 0.36/0.61         | 0.91/0.97         | -0.58/-0.21       | 0.66/3.32         | 3.18/5.74         | 7.43/7.36         | 6.78/6.89         | 6.57/4.45         | 2.02/1.45         | 1.83/0.6          | -0.98/-1.28       | -2.47/-1.24       |
| Θ(105°)   | -2.01/-3.7    | -3.46/-4.2      | -4.21/-4.42     | -3.84/-2.53     | -4.38/-3.18     | -1.98/-2.11     | -1.95/0.34      | 1.51/1.42         | -0.46/0.19        | -0.21/0.01        | -1.03/-0.62       | -0.74/-2.11       | 0.03/-0.39        | -0.05/0.15        | -1.05/-1.45       | 0.35/0.11         | 0.58/3.18         | 5.09/5.42         | 5.04/5.22         | 0.31/0.75         | -1.98/-2.51       | -1.73/-2.08       | -2.17/-2.5        |                   |
| Θ(112.5°) | -2.71/3.69    | -4.01/-3.88     | -4.6/-4.65      | -4.75/-4.12     | -5.09/-5.18     | -3.51/-2.7      | -4.15/-1.67     | -0.15/1           | -0.35/-2.35       | -1.18/-1.63       | -4.15/-2.21       | -2.28/-1.63       | -0.8/-2.32        | -1.53/-1.8        | -2.15/-2.91       | -0.91/-1.71       | -0.84/0.7         | 3.36/3.31         | 3.33/4.56         | 5.14/-16          | 0.57/-3.21        | -3.16/-3.19       | -3.64/-3.22       | -1.62/-2.7        |
| Θ(120°)   | -4.85/-2.76   | -3.76/-4.3      | -5.71/-4.13     | -4.43/-3.33     | -3.71/-4.43     | -5.89/-5.79     | -7.22/-4.12     | -3.06/0.24        | 0.13/-2.27        | -2.88/-2.28       | -2.51/-2.53       | -3.18/-1.84       | -1.43/-2.63       | -3.38/-3.66       | -4.84/-4.36       | -2.69/-2.88       | -2.28/-0.14       | -0.91/-3.13       | 3.62/-44          | 1.26/-3.3         | -3.16/-1.07       | -3.54/-3.68       | -3.27/-4.06       |                   |
| Θ(127.5°) | -6.26/6.28    | -6.35/-5.06     | -4.48/-3.77     | -2.79/-4.03     | -3.57/-3.52     | -5.61/-8.8      | -5.06/-3.04     | -3.29/-2.81       | -1.87/-3.12       | -3.91/-4.27       | -4.2/-4.73        | -3.09/-3.3        | -3.17/-2.5        | -2.84/-3.34       | -3.14/-3.59       | -4.62/-3.47       | -3.94/-2.95       | -2.67/-4.4        | -3.77/-1.21       | 0.44/0.2          | -1.18/-2.29       | -3.09/-5.84       | -6.31/-4.27       | -4.92/-5.25       |
| Θ(135°)   | -7.29/-6.59   | -6.15/-5.61     | -4.52/-3.93     | -2.23/-1.87     | -2.63/-3.87     | -6.86/-8.29     | -4.82/-1.69     | -2.02/-3.51       | -4.99/-4.27       | -3.72/-3.82       | -5.34/-4.38       | -3.86/-4.21       | -5.56/-3.58       | -4.6/-5.08        | -5.02/-7.21       | -7.49/-4.27       | -3.81/-5.61       | -5.56/-6.59       | -5.76/-2.57       | 0.53/0.04         | -2.18/-3.51       | -3.66/-5.89       | -6.97/-6.87       | -5.81/-7.32       |
| Θ(142.5°) | -8.24/-6.31   | -7.46/-6.03     | -5.38/-6.36     | -3.49/-2.64     | -1.82/-3.43     | -8.14/-5.5      | -2.83/-3.49     | -4.44/-4.02       | -6.04/-6.24       | -5.13/-5.3        | -4.28/-4.05       | -5.94/-7          | -8.25/-7.71       | -8.6/-9.37        | -7.57/-8.59       | -7.8/-6.61        | -6.68/-4.77       | -4.05/-3.75       | -1.83/-1.95       | -2.82/-3.38       | -4.75/-6.5        | -6.29/-6.37       | -8.39/-8.85       |                   |
| Θ(150°)   | -8.41/-6.39   | -5.88/-6.72     | -5.93/-4.68     | -3.77/-3.3      | -3.94/-5.21     | -6.02/-6.55     | -4.87/-3.35     | -3.6/-4.68        | -5.37/-6.93       | -5.96/-6.93       | -8.34/-6.73       | -7.02/-7.84       | -8.43/-9.22       | -6.54/-5.92       | -8.96/-6.06       | -3.04/-3.29       | -6.98/-8.75       | -6.75/-5.25       | -4.56/-3.32       | -1.4/-0.85        | -2.68/-6.21       | -7.12/-5.29       | -6.39/-8.01       |                   |
| Θ(157.5°) | -11.83/-11.75 | -10.25/-7.94    | -6.24/-5.94     | -5.25/-6.07     | -6.79/-5.95     | -5.08/-5.05     | -4.64/-3.94     | -3.11/-3.83       | -5.08/-5.95       | -7.07/-9.3        | -12.1/-12.4       | -10.3/-9.3        | -9.15/-7.96       | -7.32/-7.95       | -8.49/-8.36       | -7.3/-5.23        | -4.15/-5.22       | -6.83/-7.8        | -8.29/-5.76       | -4.82/-5.4        | -5.89/-6.04       | -6.3/-7.59        | -8.44/-8.77       | -10.93/-11.51     |
| Θ(165°)   | -12.53/-12.71 | -10.02/-8.16    | -7.45/-7.09     | -6.76/-7.03     | -8.02/-8.07     | -8.56/-8.08     | -4.78/-3        | -2.64/-3.64       | -4.09/-4.24       | -5.25/-5.68       | -7.37/-7.42       | -6.85/-6.26       | -5.11/-5.11       | -6.18/-7.07       | -6.39/-6.03       | -6.41/-3.38       | -8.34/-8.71       | -9.23/-12.34      | -10.42/-10.07     | -8.34/-7.84       | -7.18/-6.17       | -5.9/-5.97        | -7.16/-9.13       | -12.31/-12.53     |
| Θ(172.5°) | -12.43/-11.99 | -11.61/-10.85   | -11.42/-11.46   | -11.6/-9.22     | -6.62/-6.1      | -6.38/-6.22     | -4.92/-3.64     | -3.58/-3.98       | -4.73/-5.99       | -8/-9.76          | -10.7/-10.82      | -10.63/-10.78     | -10.38/-9.45      | -8.55/-8.13       | -8.3/-8.77        | -8.49/-8.59       | -8/-7.74          | -8.42/-9.43       | -10.66/-12.37     | -10.38/-8.07      | -7.14/-6.99       | -7.17/-7.81       | -9.42/-11.06      | -12.19/-12.1      |
| Θ(180°)   | -11.77/-12.18 | -11.61/-11.59   | -11.16/-10.45   | -9.77/-8.89     | -8.84/-8.63     | -7.73/-6.79     | -6.25/-6.32     | -6.79/-7.27       | -7.71/-7.89       | -7.76/-7.46       | -7.6/-8.23        | -9.02/-9.93       | -11.03/-10.99     | -10.48/-10.35     | -9.44/-8.28       | -7.59/-6.42       | -5.67/-5.11       | -5.48/-5.39       | -5.34/-4.98       | -5.09/-5.5        | -5.76/-6.39       | -9.64/-10.05      | -10.58/-11.97     |                   |
| Freq(Hz)  | 5.65GPol.     | ThetA/-         | -               | -               | -               | -               | -               | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 |
| DG(dB)    | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 7.41/7.06     | 6.91/6.63       | 6.27/6.1        | 5.73/5.16       | 4.28/3.11       | 2.14/-1.6       | -0.23/-0.95     | 0.71/2.55         | 3.92/4.73         | 5.68/6.33         | 6.84/7.15         | 7.28/7.49         | 7.64/7.62         | 7.32/6.92         | 6.55/6.16         | 5.97/5.56         | 4.86/3.89         | 2.53/0.93         | 0.29/0.99         | 2.44/3.62         | 4.55/5.41         | 6.14/6.83         | 7.39/7.74         | <b>7.76/7.67</b>  |
| Θ(7.5°)   | 7.67/7.66     | 7.47/7.2        | 6.69/6.01       | 5.34/4.75       | 3.69/2.26       | 0.67/-0.51      | -1.55/-1.32     | 0.27/2.62         | 4.25/5.26         | 6.07/6.8          | 7.27/7.48         | 7.48/7.46         | 7.41/7.09         | 6.79/6.58         | 6.42/6.15         | 5.64/4.93         | 4.13/3.19         | 2.02/0.95         | 0.27/0.23         | 1.14/2.45         | 3.68/4.7          | 5.46/6.14         | 6.71/7.12         | 7.45/7.67         |
| Θ(15°)    | 6.87/7.09     | 7.05/6.58       | 6.01/5.21       | 3.98/2.95       | 1.59/0.16       | -0.65/-0.71     | -0.75/-0.38     | 0.77/1.94         | 3.13/4.22         | 5.21/6.06         | 6.65/6.99         | 7.13/7.1          | 7.16/-9           | 6.37/6.07         | 5.94/5.67         | 4.87/3.98         | 2.99/1.94         | 0.72/0.35         | -0.13/-1.21       | -1.56/-0.57       | 0.75/1.99         | 3.24/4.27         | 5.14/5.78         | 6.26/6.82         |
| Θ(22.5°)  | 5.33/5.31     | 5.26/5.02       | 4.51/3.86       | 3.18/2.8        | 2.06/0.77       | -0.50/-0.71     | -0.55/-0.28     | 1.29/3.1          | 4.34/4.99         | 5.42/6.03         | 6.46/6.55         | 6.33/6.03         | 6.03/6.22         | 6.53/6.52         | 6.44/6.04         | 5.38/4.88         | 4.45/3.93         | 2.99/1.7          | 0.05/-1.67        | -3.67/-4.29       | -2.62/-0.8        | 0.56/1.82         | 3.01/4.39         | 5.17/5.78         |
| Θ(30°)    | 4.11/4.3      | 4.3/5.8         | 3.47/3.91       | 4.12/4.27       | 3.41/1.6        | 0.2/-0.86       | -2.96/-5.35     | -2.62/0.72        | 3.13/4.85         | 5.63/5.81         | 5.75/5.93         | 5.75/-17          | 4.65/5.15         | 5.75/5.92         | 5.72/5.3          | 5.17/5.12         | 4.7/3.95          | 2.88/1.42         | -0.33/-1.25       | -2.06/-2.39       | -1.15/0.03        | 0.58/1.2          | 1.31/0.6          | 1.76/3.61         |
| Θ(37.5°)  | 2.45/3.15     | 2.32/2.29       | 2.36/3.45       | 3.78/3.93       | 3.59/2.95       | 1.91/0.42       | -1.83/-2.95     | -3.42/-1.46       | 0.22/2.98         | 4.84/5.11         | 4.12/3.38         | 3.25/2.45         | 1.83/2.73         | 3.44/3.07         | 3.48/4.16         | 3.66/3.11         | 2.06/0.25         | -2.07/-3.19       | -1.55/-1.08       | -0.05/-1.08       | -1.65/-0.44       | 0.45/0.27         | -1.24/-1.65       | 0.02/1.83         |
| Θ(45°)    | 1.19/2.33     | 2.15/2.23       | 3.13/3.57       | 3.64/3.32       | 2.73/2.08       | 1.48/1.34       | 1.24/0.95       | 0.52/-0.26        | -0.13/-0.09       | 0.9/2.6           | 2.16/0.63         | 0.75/1.16         | 0.71/0.82         | 1.55/1.41         | 1.82/1.84         | 1.11/1.28         | 1/0.41            | -1.14/-2.17       | -2.11/-1.16       | -0.79/0.84        | 0.95/-0.5         | -0.17/0.3         | -0.9/-1.06        | 0.15/1.47         |
| Θ(52.5°)  | 2.67/3.2      | 2.93/3.02       | 3.08/2.45       | 1.03/0.09       | -0.91/-0.48     | 0.76/2.18       | 2.01/1.07       | 0.21/-0.29        | 0.41/0.66         | -1.52/-0.09       | 0.97/1.11         | -1.72/-0.55       | 0.34/-1.6         | -1.58/-1.21       | -1.43/-3.13       | -2.13/0.04        | -0.53/-2.29       | -0.92/-0.15       | 0.16/0.12         | 0.87/0.33         | -0.5/-2.11        | -3.77/-3.35       | -3.38/-1.81       | -0.90/9.96        |
| Θ(60°)    | 1.91/99       | 2.21/3.1        | 2.49/1.28       | -1.51/-3.29     | -3.61/-2.24     | -0.05/2.12      | 2.31/0.3        | -0.57/-0.72       | -0.89/1.12        | 0.6/-0.68         | 0.83/-0.18        | -2.9/-0.25        | 0.54/-0.32        | -1.21/-0.85       | -2.83/-6.77       | -2.72/-0.85       | -1.43/-0.38       | 0.17/-0.44        | -1.13/-0.21       | 0.3/0.74          | 0.87/-0.85        | -1.29/-1.41       | -1.71/-0.87       | 0.76/0.86         |
| Θ(67.5°)  | 0.65/-0.84    | 1.22/1.46       | 0.27/-1.83      | -4.37/-1.52     | -0.75/-0.98     | -2.66/-0.94     | 0.05/-0.36      | -1.43/-0.66       | -1.63/1.16        | 2.71/2            | 2.64/0.56         | -0.15/2.17        | 2.09/1.5          | -1.91/-0.62       | -2.89/-4.11       | -2.73/-2.66       | -0.20/0.75        | -1.14/-2.17       | -2.11/-1.16       | -0.79/0.84        | 0.95/-0.5         | -0.17/0.3         | -0.9/-1.06        | 0.15/1.47         |
| Θ(75°)    | -0.99/-1.96   | -1.51/-1.46     | -0.33/-1.91     | -0.15/1.76      | 2.67/0.97       | -2.62/-2.79     | -0.01/-0.91     | -3.24/-1.89       | -3.14/-0.58       | 1.60/7.6          | 2.24/1.04         | -0.09/2.13        | 2.12/1.35         | -2.13/-1.27       | -3.77/-4.14       | -4.49/-4.28       | -0.11/-0.48       | -3.72/-2.74       | -0.61/-2.33       | -2.57/0.5         | 1.56/0.1          | -0.26/-0.19       | -0.77/-0.96       | -1.19/-1.19       |
| Θ(82.5°)  | -3.2/-2.9     | -3.45/-0.82     | 1.21/0.63       | 0.45/2.19       | 2/-2.7          | -3.41/-1.4      | 0.07/-1.66      | -5.01/-6.97       | -6.48/-2.97       | -0.12/-1.15       | 0.14/-1.61        | -1.26/0.36        | 0.15/-0.42        | -0.82/-2.74       | -6.58/-6.05       | -5.81/-2          |                   |                   |                   |                   |                   |                   |                   |                   |



|                                                        |                |              |                |               |
|--------------------------------------------------------|----------------|--------------|----------------|---------------|
| Freq(Hz)                                               | 5.2G           | 5.3G         | 5.6G           | 5.785G        |
| Ant. 2 Max Gain (dBi)                                  | 5.48           | 5.33         | 5.66           | 4.49          |
| Ant. 3 Max Gain (dBi)                                  | 6.6            | 6.94         | 6.33           | 5.81          |
| Ant. 4 Max Gain (dBi)                                  | 5.86           | 5.91         | 5.78           | 5.79          |
| Ant. 5 Max Gain (dBi)                                  | 3.66           | 3.76         | 4.22           | 4.02          |
| Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/37.5/202.5 | Phi/37.5/195 | Phi/45/195     | Phi/45/202.5  |
| Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/90/270     | Phi/90/262.5 | Phi/90/262.5   | Phi/90/262.5  |
| Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/45/22.5    | Phi/45/30    | Phi/52.5/22.5  | Phi/52.5/30   |
| Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$ | Phi/22.5/97.5  | Phi/30/90    | Theta/97.5/7.5 | Theta/60/22.5 |
| Max Gain (dBi)                                         | 6.6            | 6.94         | 6.33           | 5.81          |
| DG [1SS] (dBi)                                         | 5.78           | 6.01         | 6.62           | 6             |
| DG [2SS] (dBi)                                         | 6.6            | 6.94         | 6.33           | 5.81          |
| DG [4SS] (dBi)                                         | 6.6            | 6.94         | 6.33           | 5.81          |



# Radiated Composite Gain Data of Combination E

# Appendix A.7

## DG 1SS Result

| Freq(Hz)  | 5.2G/Pol.     | Phi-L           | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| DG(dB)    | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 1.110.12      | -0.89/-1.76     | -1.83/-1.13     | -0.46/0.08      | 0.57/0.9        | 1.09/1.63       | 1.56/2.06       | 2.29/2.68         | 3.01/3.14         | 3.52/3.66         | 3.84/3.38         | 2.7/2.01          | 1.6/0.1           | -1.04/-2.07       | -2.4/-1.65        | -1.03/-2.03       | 0.19/0.56         | 1.43/1.5          | 1.73/2.56         | 3.13/3.43         | 3.56/3.6          | 3.5/3.3           | 3.2/4.8           |                   |
| Θ(7.5°)   | 1.51/0.6      | -0/-0.32        | -0.89/-0.77     | -0.34/0.13      | 0.48/0.74       | 0.78/1          | 1.32/1.63       | 1.76/1.97         | 2.24/2.33         | 2.7/3.11          | 3.1/3.25          | 2.95/2.64         | 2.13/1.73         | 1.12/1.27         | 1.61/2.17         | 2.7/2.3           | 2.99/3.17         | 3.19/3.05         | 2.72/2.57         | 2.7/3.19          | 3.78/4            | 4.01/3.94         | 3.6/3.11          | 2.37/1.55         |
| Θ(15°)    | 1.92/0.92     | 0.58/0.51       | 0.25/0.02       | 0.15/0.86       | 1.34/1.74       | 2.06/2.27       | 2.82/3.33       | 3.84/4.16         | 4.34/4.43         | 4.45/4.38         | 4.2/3.88          | 3.24/2.74         | 2.41/2.1          | 2.07/2.43         | 2.86/2.94         | 2.87/3.01         | 2.83/2.74         | 2.79/2.34         | 1.54/1.32         | 2.22/3.4          | 4.19/4.61         | 4.94/4.99         | 4.81/4.38         | 3.41/2.56         |
| Θ(22.5°)  | 1.4/0.79      | 0.66/0.43       | 0.67/0.54       | 0.89/1.09       | 1.22/1.78       | 2.61/2.8        | 3.05/3.87       | 4.03/4.72         | 5.32/5.51         | 5.26/4.95         | 4.93/4.5          | 3.89/3.33         | 3.41/3.48         | 2.92/2.74         | 2.36/2.14         | 1.98/2.13         | 2.07/1.71         | 1.18/0.71         | 0.74/1.25         | 2.15/3.24         | 5.04/5.15         | 4.94/3.3          | 3.39/2.58         |                   |
| Θ(30°)    | 2.15/1.07     | 1.37/2.02       | 1.47/1.57       | 2.47/2.94       | 2.55/1.93       | 1.47/1.23       | 0.79/0.32       | 1.27/2.51         | 3.73/4.59         | 4.82/4.86         | 4.67/4.55         | 4.39/3.92         | 3.96/4.2          | 4.03/3.98         | 3.56/2.75         | 2.46/2.25         | 2.04/1.32         | 0.94/1.14         | 0.9/0.48          | 1.08/2.18         | 3.08/3.83         | 4.27/4.48         | 4.5/3.85          | 3.16/2.29         |
| Θ(37.5°)  | 4.09/3.34     | 3.72/4.36       | 4.42/4.21       | 4.3/4.43        | 4.12/3.24       | 1.78/-0.39      | -1.79/-0.95     | 0.42/1.4          | 1.96/2.54         | 3.81/4.83         | 5.1/5.2           | 5.09/4.97         | 5.1/4.9           | 4.45/4.17         | 3.76/3.42         | 2.49/1.08         | -0.61/-1.64       | -1.76/-1.62       | -2.39/-3.48       | -4.2/-1.94        | 0.35/2.03         | 2.92/3.66         | 3.91/3.54         | 3.63/3.61         |
| Θ(45°)    | 4.96/4.16     | 4.68/5.16       | 4.98/4.38       | 4.22/4.23       | 3.81/2.06       | -0.27/-1.35     | -1.26/0.5       | 1.43/2.06         | 2.44/2.4          | 3.1/4.28          | 4.71/4.82         | 5.0/4.5           | 5.3/5.06          | 4.48/4.46         | 3.94/2.88         | 1.51/-0.58        | -2.37/-3.86       | -4.62/-6.43       | -9.82/-9.66       | -6.11/-4.73       | -2.49/0.12        | 1.69/2.1          | 3.02/3.77         | 4.36/5.02         |
| Θ(52.5°)  | 4.48/4.31     | 4.93/4.95       | 4.4/3.04        | 1.96/2.66       | 1.87/0.1        | -1.4/-2.61      | -3.27/-1.04     | 1.92/3.56         | 3.97/3.52         | 3.95/4.21         | 4.33/4.57         | 4.71/4.75         | 4.47/3.62         | 2.8/3.07          | 3.09/1.96         | 0.36/-1.04        | -1.82/-1.92       | -2.38/-2.97       | -3.99/-6.15       | -5.28/-3.59       | -1.8/-0.86        | -0.31/0.69        | 2.24/3.8          | 4.47/4.96         |
| Θ(60°)    | 3.61/3.72     | 4.16/4.22       | 3.67/2.67       | 1.72/2.22       | 1.05/0.49       | -0.09/0.1       | 0.15/1.68       | 3.09/3.81         | 4.28/3.37         | 3.92/4.33         | 2.88/3.45         | 3.64/4.22         | 4.04/2.95         | 1.41/2.13         | 1.81/0.65         | 0.06/0.55         | -0.49/-1.14       | -0.67/-1.13       | -2.04/-2.61       | -0.53/0.75        | 0.19/-0.86        | 0.2/2.07          | 3.35/3.8          |                   |
| Θ(67.5°)  | 2.16/2.16     | 2.82/3.4        | 2.92/2.92       | 2.72/2.38       | 1.6/1.4         | 1.14/0.94       | 0.44/1.45       | 2.96/4.86         | 5.08/3.17         | 2.45/2.77         | 1.24/2.41         | 2.11/2.78         | 2.71/2.6          | -0.91/-0.04       | 2.62/1.6          | 2.65/1.86         | 1.87/2.56         | 1.36/0.52         | 1.08/1.57         | 1.51/0.58         | 0.96/1.96         | 2.36/0.86         | 0.54/2.2          | 2.83/2.6          |
| Θ(75°)    | 1.48/1.32     | 1.3/2.81        | 3.26/3.49       | 2.61/2.03       | 1.62/1.01       | -0.47/-3.2      | -3.59/-2.97     | -1.12/2.66        | 4.3/4.05          | 1.88/1.25         | 0.56/1.96         | 1.95/2.16         | 2.81/1.15         | -1.21/-1.28       | -0.85/0.91        | 2.62/3.4          | 2.82/3.32         | 3.05/2.81         | 2.66/1.96         | 3.06/3.03         | 2.49/2.71         | 2.57/1.75         | 0.86/1.49         | 1.43/1.18         |
| Θ(82.5°)  | 1.1/1.01      | 0.79/2.6        | 3.43/2.5        | 1.34/0.52       | -0.07/-1.3      | -2.56/-2.24     | -1.14/0.26      | -0.07/-0.35       | 1.86/2.51         | 1.49/1.23         | 1.29/2.73         | 1.86/-0.67        | -1.19/-3.04       | -0.69/0.32        | 3.42/5.12         | 4.59/3.95         | 3.79/3.03         | 3.47/3.45         | 3.44/2.93         | 1.72/1.96         | 2.07/1.44         | 2.07/1.44         | 0.32/-0.21        |                   |
| Θ(90°)    | 0.57/0.63     | 0.65/2.46       | 2.86/1.38       | 1.07/0.56       | -0.44/-2.38     | -1.37/-2.04     | -2.74/-1.49     | 1.12/0.84         | -1.29/-1.04       | 0.95/0.46         | 0.96/2.12         | 2.69/1.16         | 1.64/-1.17        | -0.85/-2.03       | -1.68/-1.03       | 0.65/1.99         | 3.45/5.59         | <b>5.78/3.96</b>  | 3.19/2.21         | 2.39/2.43         | 3.09/3.23         | 1.64/1.87         | 2.43/1.68         | 0.19/-0.32        |
| Θ(97.5°)  | -0.48/0.94    | 0.67/1.86       | 2.48/0.83       | 0.38/-0.86      | -2.47/-3.56     | -2.76/-3.6      | -3.82/-4.07     | -0.44/1           | -2.36/-3.88       | -1.46/0.14        | 0.71/2.9          | 1.73/0.84         | -0.05/-1.39       | -1.35/-3.43       | -2.64/-1.33       | -0.24/0.22        | 3.08/4.58         | 4.62/3.67         | 2.2/0.62          | 0.7/0.89          | 1.41/1.36         | 0.41/0.91         | 1.22/0.28         | 0.14/-0.62        |
| Θ(105°)   | -1.33/0.74    | -0.33/0.56      | 1.83/0.59       | -0.48/-1.47     | -3.15/-4.02     | -2.79/-4.22     | -4.1/-4.49      | -3.46/0.27        | -1.17/-1.95       | -2.51/0.13        | 1.08/1.13         | 1.01/0.12         | -1.19/-3.04       | -1.95/-4.55       | -5.14/-2.17       | -0.35/-1.22       | -0.61/1.78        | 2.83/1.85         | 0.44/-0.26        | -1.05/-0.49       | -0.13/0.1         | -0.85/-1.27       | -1.65/-1.27       | -1.41/-1.93       |
| Θ(112.5°) | -0.48/0.05    | -1.03/-1.52     | -0.96/-1.16     | -1.45/-1.48     | -3.09/-2.17     | -3.14/-5.02     | -4.94/-4.83     | -4.73/-1.23       | -1.38/-1.06       | -1.73/-0.24       | 0.09/0.45         | -0.37/-2.02       | -3.24/-3.27       | -3.51/-7.19       | -4.64/-3.85       | -2.03/-2.51       | -2.93/-0.14       | 1.1/0.1           | -0.63/-1.5        | -1.99/-2.9        | -1.32/1.13        | -1.72/-3.27       | -3.32/-2.99       | -1.58/-1.36       |
| Θ(120°)   | -1.95/-1.16   | -1.45/-1.39     | -1.07/-0.76     | -1.47/-3.54     | -2.26/-1.57     | -1.95/-3.89     | -5.36/-4.92     | -3.98/-2.98       | -1.86/-1.53       | -2.18/-1.17       | -0.47/-0.24       | -1.02/-3.31       | -3.98/-3.98       | -4.91/-8.59       | -9.56/-5.61       | -3.97/-5.09       | -4.24/-0.04       | -0.12/-2.87       | -5.69/-3.76       | -2.36/-3.36       | -2.36/-1.04       | -2.19/-2.76       | -3.88/-4.98       | -1.74/-0.73       |
| Θ(127.5°) | -3.06/-3.49   | -4.02/-2.2      | -1.79/-1.37     | -0.42/-1.51     | -2.63/-3.69     | -4.23/-5.2      | -4.43/-5.57     | -4.81/-5.01       | -3.81/-4.46       | -2.8/-2.33        | -2.26/-1.17       | -3.32/4           | -5.63/-5.23       | -5.86/-5.48       | -9.39/-8.12       | -5.61/-5.44       | -5.5/-8.36        | -4.89/-4.81       | -7.03/-4.77       | -3.31/-1.71       | -1.83/-2.74       | -3.37/-4.44       | -6.32/-6.14       | -5.36/-5.31       |
| Θ(135°)   | -4.57/-3.79   | -3.89/-4.43     | -3.8/-2.17      | -0.72/0.65      | 1.1/-2.01       | -2.31/-2.59     | -3.84/-3.4      | -5.92/-5.54       | -4.18/-3.7        | -1.72/-1.5        | -3.89/-4.14       | -5.21/-6.68       | -5.99/-7.16       | -1.21/-1.01       | -6.52/-5.73       | -6.88/-9.4        | -8.91/-10.54      | -12.61/-11.1      | -5.27/-3.17       | -2.88/-4.72       | -3.94/-5.12       | -9.66/-8.06       | -6.03/-5.28       |                   |
| Θ(142.5°) | -5.65/-5.55   | -4.05/-4.45     | -5.24/-3.86     | -2.35/-1.08     | -0.8/-2.6       | -4.55/-5.68     | -5.82/-4.66     | -4.27/-5.09       | -8/-9.64          | -10.07/-6.14      | -4.63/-5.09       | -7.08/-9.8        | -7.34/-5.28       | -6.85/-9.71       | -10.33/-10.64     | -8.34/-7.87       | -8.24/-8.84       | -10.97/-11.98     | -7.56/-6.45       | -6.95/-6.85       | -5.02/-5.3        | -7.39/-7.85       | -6.81/-6.45       |                   |
| Θ(150°)   | -8.62/-9.55   | -7.81/-6.18     | -4.21/-3.72     | -3.05/-2.51     | -2.38/-0.42     | -7.64/-6.41     | -3.43/-2.72     | -4.08/-6.65       | -7.49/-8.96       | -8.41/-9.43       | -8.3/-4.7         | -8.93/-10.86      | -9.41/-8.22       | -8.14/-8.26       | -8.56/-10.17      | -11.37/-14.3      | -4.64/-5.22       | -9.58/-11.97      | -12.71/-12.38     | -9.72/-6.02       | -4.56/-5.68       | -6.21/-0.71       | -7.56/-6.4        | -6.11/-6.18       |
| Θ(157.5°) | -7.8/-7.57    | -6.84/-6.78     | -4.63/-4.12     | -3.91/-4.31     | -5.43/-7.04     | -7.41/-6.76     | -5.36/-3.72     | -3.39/-3.61       | -4.7/-5.44        | -5.25/-5.45       | -6.63/-7.77       | -8.59/-7.73       | -7.95/-8.74       | -8.91/-9.86       | -9.13/-7.59       | -7.28/-6.88       | -6.07/-4.77       | -8.11/-8.53       | -10.21/-10.02     | -7.64/-5.86       | -6.07/-6.82       | -6.96/-6.93       | -7.51/-8.15       | -8.09/-8.83       |
| Θ(165°)   | -3.98/-3.94   | -7.55/-6.88     | -6.61/-6.1      | -6.81/-8.05     | -8.79/-8.87     | -10.47/-8.95    | -6.24/-3.74     | -3.05/-3.23       | -3.88/-4.65       | -5.57/-7.06       | -8.73/-9.09       | -10.12/-10.48     | -10.16/-9.61      | -8.47/-8.2        | -8.79/-7.67       | -10.31/-10.94     | -9.83/-9.79       | -10.33/-10.93     | -9.8/-8.53        | -7.97/-7.39       | -7.77/-7.72       | -8.21/-8.7        | -9.46/-9.59       | -9.35/-9.48       |
| Θ(172.5°) | -10.87/-12.38 | -12.28/-12.27   | -12.28/-11.52   | -10.32/-9.69    | -10.24/-9.46    | -8.52/-6.68     | -5.17/-4.93     | -4.87/-5.77       | -7.19/-8.71       | -10.5/-10.46      | -10.13/-10.2      | -9.68/-8.63       | -8.03/-8.5        | -8.29/-8.95       | -9.08/-9.03       | -8.71/-8.18       | -8.42/-8.29       | -9.04/-10.11      | -10.79/-10.66     | -9.36/-8.5        | -8.1/-8.2         | -8.42/-8.63       | -9.45/-9.84       | -9.59/-9.72       |
| Θ(180°)   | -12.71/-12.58 | -12.24/-11.57   | -9.92/-8.64     | -7.56/-7.19     | -6.96/-7.05     | -6.28/-6.29     | -6.28/-7.42     | -8.89/-8.85       | -8.64/-8.29       | -8.84/-8.99       | -9/-9.18          | -10.2/-10.37      | -10.56/-10.23     | -10.11/-10.42     | -10.34/-11.81     | -11.02/-10.19     | -9.28/-8.79       | -8.92/-10.04      | -10.12/-9.65      | -9.28/-9.12       | -9.48/-9.01       | -9.19/-9.42       | -9.5/-10.37       | -10.58/-11.42     |
| Freq(Hz)  | 5.2G/Pol.     | Theta-L         | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 0.4/0.57      | 1.02/1.22       | 1.94/2.15       | 2.3/2.19        | 2.4/2.15        | 1.56/0.86       | 0.52/0.09       | -1.27/-2.2        | -2.92/-2.75       | -2.01/-1.52       | -1.1/-0.51        | 0.32/0.69         | 0.88/0.9          | 2.1/1.78          | 2.43/2.78         | 2.81/2.82         | 2.81/2.78         | 2.78/2.22         | 1.65/0.83         | -0.19/-0.79       | -0.45/0.06        | 0.56/0.77         | 0.95/1.25         | 1.43/1.31         |
| Θ(7.5°)   | 0.77/0.98     | 1.48/1.81       | 2.21/2.57       | 2.52/2.25       | 1.94/1.34       | 0.68/0.09       | -0.45/-1.19     | -1.61/-1.94       | -1.39/-0.63       | 0.07/0.77         | 0.93/1.21         | 1.31/1.51         | 1.41/1.36         | 1.55/1.94         | 2.68/3.35         | 3.53/3.18         | 2.88/3.21         | 3.35/3.07         | 2.42/1.4          | 0.04/-1.01        | -1.25/-0.09       | -0.38/-0.15       | -0.21/-0.3        | -0.04/0.43        |
| Θ(15°)    | 2.18/2.26     | 2.17/2.25       | 2.3/2.74        | 3.06/2.98       | 2.88/2.7        | 2.48/1.86       | 1.3/0.85        | -0.13/-0.15       | 0.84/1.49         | 2.06/2.48         | 2.69/2.68         | 2.33/2.09         | 2.12/2.26         | 2.29/2.33         | 2.62/2.94         | 2.44/2.15         | 1.77/1.94         | 2.12/0.2          | 1.87/1.49         | 1.0/1.5           | -0.42/-0.59       | -0.72/-0.65       | -0.47/0.07        | 0.62/0.91         |
| Θ(22.5°)  | 2.69/2.79     | 2.79/3.11       | 3.38/3.34       | 3.25/3.21       | 3.23/3.11       | 2.55/1.7        | 1.69/1.77       | 2.01/2.22         | 2.87/3.44         | 3.91/4.12         | 4.08/3.66         | 2.73/2.08         | 2.18/2.66         | 2.64/2.62         | 2.08/1.88         | 1.74/1.69         | 1.34/1.7          | 1.78/1.86         | 2.07/1.94         | 1.4/1.23          | 1.05/0.2          | -0.24/0.39        | 1.21/1.77         | 1.67/1.14         |
| Θ(30°)    | 2.52/5.4      | 2.54/2.77       | 3.11/3.57       | 3.44/3.2        | 2.64/1.76       | 1.89/2.55       | 2.53/2.66       | 3.42/3.57         | 3.55/3.95         | 4.27/4.4          | 4.13/3.37         | 3.23/3.39         | 1.41/1.72         | 1.88/1.59         | 1.15/1.16         | 1.33/1.69         | 1.43/1.35         | 1.59/1.76         | 2.19/2.15         | 1.43/0.39         | -0.24/-0.66       | -0.53/-0.01       | 1.09/2.02         | 2.03/2            |
| Θ(37.5°)  | 2.35/2.25     | 1.72/1.57       | 2.28/3.49       | 4/3.46          | 3.27/3.92       | 4.27/4.11       | 3.73/3.51       | 3.94/3.9          | 3.61/3.18         | 2.93/3.5          | 3.05/1.6          | 0.08/-1.03        | -1.47/-1.12       | -0.96/-0.95       | -0.0/6            | 0.63/0.81         | 1.04/1.53         | 1.66/1.36         | 1.73/2.26         | 2.1/1.31          | -0.31/-1.02       | -0.04/0.89        | 1.25/1.57         | 1.21/1.75         |
| Θ(45°)    | 1.64/2        | 1.48/1.05       | 1.84/2.97       | 3.02/2.85       | 3.78/4.74       | <b>4.94/4.8</b> | 4.06/3.86</     |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



# Radiated Composite Gain Data of Combination E

# Appendix A.7

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(22.5°)  | 1.13/-0.33    | -0.71/-0.36     | 0.28/0.09       | 0.47/1.43       | 2.49/3.22       | 3.47/3.35       | 3.18/3.41       | 3.79/4.12         | 4.15/4.33         | 4.39/4.31         | 4.12/3.83         | 3.61/3.03         | 2.45/-1.61        | 1.61/-1.92        | 2.67/3.33         | 3.53/3.61         | 3.32/3.93         | 2.39/2.05         | 2.29/2.39         | 2.47/2.76         | 3.14/3.61         | 3.88/3.84         | 3.56/3.29         | 2.98/2.16         |
| Θ(30°)    | 0.37/0.08     | 0.33/0.27       | 0.14/-0.11      | 0.9/2.12        | 2.93/3.18       | 3.01/3.15       | 3.04/2.49       | 2.55/3.19         | 3.86/4.34         | 4.55/4.49         | 4.98/5.04         | 4.87/4.52         | 3.72/3.51         | 3.94/4.53         | 4.94.77           | 3.96/3.19         | 2.37/2.31         | 1.83/-1.26        | 0.99/0.78         | 1.55/2.64         | 3.48/4.33         | 4.82/4.8          | 4.11/3.56         | 2.63/-1.48        |
| Θ(37.5°)  | 2.07/2.16     | 2.96/3.62       | 4.37/4.84       | 4.84/4.62       | 4.05/3.27       | 2.33/1.64       | 1.34/1.32       | 0.78/0.02         | 0.99/2.57         | 3.42/4.41         | 5.2/5.42          | 5.18/4.87         | 5.12/5.84         | 6.25/6.33         | 5.82/4.83         | 4.13/3.4          | 2.12/0.28         | -1.3/-1.18        | -0.25/0.65        | 0.89/2.23         | 3.53/4.36         | 4.56/3.95         | 3.36/2.55         | 1.47/0.76         |
| Θ(45°)    | 4.14/5.3      | 4.44/5.13       | 5.91/5.98       | 5.65/5.04       | 3.84/2.82       | 1.44/-0.58      | -1.51/-1.08     | -0.71/-0.6        | 0.04/1.28         | 1.76/2.08         | 3.97/5.11         | 4.96/4.32         | 4.86/0.9          | <b>6.51/-6.2</b>  | 5.97/4.2          | 3.03/1.66         | -1.37/-3.62       | -4.59/-5.19       | -5.28/-3.88       | -2.96/-1.88       | 0.09/1.85         | 3.38/3.7          | 3.02/2.64         | 2.08/2.14         |
| Θ(52.5°)  | 3.72/4.88     | 5.04/5.46       | 5.56/4.85       | 4.47/4.1        | 2.74/1.54       | 0.46/-1.44      | -1.84/-1.2      | -1.06/-0.84       | 0.16/1.34         | 1.75/1.79         | 2.85/4.13         | 3.53/2.35         | 3.78/5.1          | 5.36/4.78         | 3.98/3.1          | 2.25/1.45         | 0.53/-0.57        | -2.67/-6.08       | -9.94/-10.63      | -4.99/-2.2        | -1.97/-1.38       | 0.15/1.88         | 2.82/2.94         | 2.54/2.06         |
| Θ(60°)    | 4.81/5.09     | 3.87/4.3        | 3.91/3.47       | 3.58/3.1        | 2.66/1.89       | 0.64/-0.82      | 0.21/45         | 1.35/0.42         | 0.82/1.27         | 2.36/1.89         | 2.33/4.07         | 3.59/2.48         | 3.47/4            | 4.02/2.86         | 2.73/2.57         | 2.38/2.24         | 1/-1.67           | -3.01/-2.75       | -3.78/-5.96       | -5.47/-3.09       | -1.53/-2.09       | -0.31/2           | 3.07/2.87         | 2.68/3.5          |
| Θ(67.5°)  | 3.04/4.01     | 3.13/2.56       | 2.41/1.89       | 2.43/3.85       | 3.461/7.3       | 2.29/3.32       | 3.53/1.1        | 3.45/3.95         | 2.66/2.87         | 2.93/2.59         | 1.76/3.59         | 3.28/3.24         | 4.23/2.58         | 0.75/-1.11        | 0.84/1.44         | 2.73/3.57         | 1.81/-0.89        | -2.32/-1.16       | -0.35/-1.63       | -1.56/0.56        | 1.44/0.62         | 0.44/2.04         | 2.68/2.32         | 1.62/2.46         |
| Θ(75°)    | 3.49/3.94     | 2.53/2.6        | 2.72/2.8        | 3.41/3.77       | 2.31/2.18       | 1.04/0.11       | -1.26/-1.31     | 0.54/2.17         | 3.78/3.89         | 4.15/2.08         | 1.09/2.21         | 2.97/2.93         | 3.58/2.76         | 0.01/-2.53        | -1.55/0.32        | 2.49/3.53         | 3.3/2.36          | 0.89/1.08         | 2.12/2.28         | 1.71/2.53         | 3.28/2.25         | 2.28/2.41         | 2.58/2.11         | 1.98/2.35         |
| Θ(82.5°)  | 3.03/2.81     | 1.77/2.89       | 2.35/-1.33      | 2.39/2.88       | 1.94/0.29       | -0.90/55        | 1.83/1.7        | 0.98/1.09         | 0.79/2.36         | 2.87/0.68         | 1.05/2.59         | 2.92/2.88         | 2.89/2.38         | -0.22/-3.74       | -4.05/-0.64       | 1.86/3.8          | 2.92/3.05         | 3.84/2.58         | 2.15/2.78         | 3.27/3.86         | 4.26/2.64         | 3.33/2.89         | 1.51/1.65         | 1.36/1.6          |
| Θ(90°)    | 2.26/2.11     | 2.39/3.13       | 1.96/0.58       | 1.77/1.71       | 0.59/-0.27      | -0.46/0.58      | 0.68/1.51       | 2.97/0.35         | -0.07/0.4         | 2.07/0.85         | 1.5/2.01          | 3.08/2.42         | 2.44/2.33         | 0.68/-3.89        | -4.82/-2.02       | 0.47/3.65         | 4.04/4.42         | 4.71/3.88         | 2.85/3.26         | 2.36/2.65         | 3.92/2.11         | 2.18/2.39         | 1.13/1.51         | 1.27/0.39         |
| Θ(97.5°)  | 1.76/1        | 1.62/2.01       | 0.27/-0.6       | -0.16/-0.16     | -1.71/-2.57     | -2.1/-2.46      | -2.27/-1.79     | 1.63/2.19         | -1.8/-0.57        | 0.96/0.47         | 1.21/1.66         | 1.73/1.75         | 1.75/1.1          | -0.21/-3.94       | -4.52/-2.9        | -0.09/2.28        | 2.46/3.92         | 4.39/3.35         | 2.47/2.03         | 1.67/0.74         | 1.7/1             | 1.51/1.4          | 0.77/0.76         | 0.28/0.1          |
| Θ(105°)   | 0.76/0.85     | 0.90/62         | -0.6/-0.99      | -0.56/-0.7      | -2.81/-5.25     | -4.4/-4.29      | -2.81/2.08      | -0.57/0.82        | -1.64/-0.54       | -0.3/-0.63        | 0.47/1.11         | 1.36/0.44         | 1.37/0.33         | 0.02/-3.19        | -5.12/-4.82       | -1.7/0.98         | 0.27/2.26         | 2.99/1.97         | 0.62/-0.26        | -0.25/0.13        | -1.2/-0.45        | -1.62/-0.53       | 0.41/-0.16        | -0.23/0.91        |
| Θ(112.5°) | 0.23/0.76     | 0.32/0.16       | -0.71/-1.22     | -0.82/-1.42     | -3.5/-5.65      | -5.2/-4.55      | -4.46/-4.3      | -2.87/0.34        | -0.62/-0.97       | -0.28/-0.91       | -1.91/-0.22       | -0.2/-0.41        | -0.55/-1.17       | -1.37/-5.68       | -4.75/-5.8        | -3.77/-1.86       | -0.61/94          | 2.12/0.38         | -1.13/-0.88       | -0.14/0.05        | -1.17/-1.92       | -3.04/-2.09       | -1.6/-1.34        | -0.48/0.18        |
| Θ(120°)   | -1.62/0.34    | -0.06/-0.79     | -1.6/-1.64      | -1.95/-1.53     | -2.74/-3.78     | -6.02/-6.51     | -6.5/-6.44      | -6.21/-1.28       | -0.35/-0.75       | -1.26/-1.21       | -1.24/-0.76       | -1.47/-1.07       | -2.37/-3.27       | -3.66/-5.5        | -7.89/-6.08       | -3.62/-3.86       | -3.61/0.37        | -0.7/-4.09        | -3.65/-0.71       | -0.09/-0.85       | -0.65/-1.88       | -5.04/-5.1        | -2.62/-2.51       | -1.2/-0.83        |
| Θ(127.5°) | -2.84/-2.23   | -2.28/-1.85     | -1.64/-1.51     | -1.79/-3.68     | -2.59/-2.89     | -6.43/-8.66     | -5/-4.08        | -5.35/-4.86       | -2.65/-2.78       | -2/-2.53          | -2.27/-2.62       | -1.34/-2.92       | -3.02/-3.66       | -3.87/-6.42       | -6.77/-5.24       | -4.19/-5.5        | -7.3/-5.1         | -3.35/-5.78       | -6.85/-5.72       | -3.76/-2.68       | -1.47/2.23        | -4.46/-5.26       | -3.59/-2.98       | -2.34/-2.08       |
| Θ(135°)   | -3.5/-3.49    | -2.9/-2.41      | -2.06/-2.9      | -2.1/-1.83      | -3.07/-4.08     | -7.09/-8.2      | -5.02/-2.7      | -3.6/-4.17        | -5.17/-3.47       | -2.41/-3.06       | -3.58/-2.94       | -2.29/-2.67       | -3.72/-4.57       | -5.79/-7.38       | -10.61/-7.74      | -5.87/-5.18       | -7.87/-9.59       | -6.51/-9.34       | -10.16/-7.67      | -3.24/-2.08       | -1.36/-2.66       | -4.14/-4.91       | -6.01/-5.33       | -3.06/-2.69       |
| Θ(142.5°) | -6.38/-4.19   | -4.81/-4.19     | -3.43/-4.21     | -2.2/-1.55      | -1.41/-3.23     | -8.15/-5.7      | -3.31/-4.07     | -5.37/-4.98       | -5.71/-5.36       | -4.05/-3.83       | -4.01/-4.13       | -4.06/-5.58       | -7.79/-7.57       | -7.77/-9.64       | -11.74/-8.98      | -8.41/-9.67       | -9.95/-8.51       | -5.67/-4.05       | -2.77/-3.46       | -4.27/-6.34       | -4.34/-4.76       | -7.14/-7.46       | -7.48/-7.07       |                   |
| Θ(150°)   | -6.05/-5.84   | -4.96/-4.51     | -5.17/-3.96     | -3.28/2.88      | -3.5/-4.9       | -7.22/-8.08     | -6.13/-3.73     | -6.28/-7.73       | -7.29/-7.07       | -7.04/-6.17       | -6.19/-7.43       | -7.77/-7.23       | -8.33/-8.92       | -7.02/-7.13       | -11.46/-9.91      | -2.54/-2.47       | -6.29/-10.18      | -10.36/-8.52      | -6.49/-5.05       | -4.01/-3.9        | -4.27/-6.19       | -6.19/-4.39       | -6.58/-5.59       |                   |
| Θ(157.5°) | -8.4/-9.16    | -8.3/-6.04      | -4.91/-4.65     | -4.38/-5.39     | -6.81/-6.63     | -6.2/-6.29      | -5.68/-4.33     | -3.08/-3.42       | -6.82/-6.07       | -6.03/-7.25       | -9.22/-9.92       | -9.34/-9.11       | -8.92/-8.48       | -8.69/-9.92       | -10.54/-10.48     | -8.74/-5.45       | -4.39/-7.27       | -10.51/-11.22     | -11.73/-8.01      | -6.35/-5.66       | -5.33/-6.47       | -7.63/-7.73       | -6.98/-6.24       | -6.58/-6.98       |
| Θ(165°)   | -9/-8.67      | -6.84/-6.47     | -6.51/-6.78     | -7.32/-8.22     | -9.2/-8.51      | -8.23/-7.9      | -5.2/-3.34      | -2.4/-2.92        | -3.77/-4.39       | -5.34/-6.14       | -7.07/-7.19       | -8.68/-9.16       | -7.63/-7.05       | -7.59/-8.8        | -8.59/-8.66       | -8.51/-8.87       | -9.62/-10.09      | -10.68/-12.39     | -12.18/-10.87     | -9.95/-9.62       | -8.85/-7.84       | -8.26/-7.85       | -7.25/-7.38       | -7.99/-7.67       |
| Θ(172.5°) | -10.76/-9.94  | -9.55/-9.41     | -10.28/-10.56   | -11.09/-10.36   | -8.52/-8.68     | -9.31/-9.14     | -6.94/-5.15     | -4.99/-5.58       | -6.43/-7.46       | -9.25/-10.98      | -11.83/-11.96     | -11.96/-12.49     | -12.1/-10.72      | -9.71/-8.92       | -8.98/-8.65       | -8.65/-8.7        | -8.68/-9          | -10.11/-10.77     | -11.31/-12.24     | -11.07/-9.38      | -8.97/-9.62       | -10.09/-10.78     | -11.19/-10.88     | -10.64/-10.48     |
| Θ(180°)   | -12.28/-12.1  | -11.46/-11.2    | -11.77/-11.09   | -9.81/-9.06     | -8.86/-8.59     | -8.11/-7.58     | -7.32/-7.73     | -8.36/-8.94       | -9.33/-9.33       | -9.29/-9.13       | -9.35/-9.78       | -10.39/-10.57     | -10.61/-10.08     | -9.82/-9.51       | -9.8/-8.87        | -8.27/-7.92       | -8.76/-8.48       | -8.61/-8.31       | -8.42/-9.08       | -9.16/-9.51       | -10.38/-11.35     | -11.82/-11.81     | -11.73/-12.79     |                   |
| Freq(Pol) | 5.6GPol       | ThetaL          | -/-             | -/-             | -/-             | -/-             | -/-             | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               | -/-               |
| DG(dB)    | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 4.02/3.38     | 3.07/3.12       | 3.3/3.7         | 3.91/3.9        | 3.66/3.14       | 2.78/2.35       | 1.23/0.27       | 0.89/2.19         | 2.89/3.18         | 3.59/4.04         | 4.32/4.46         | 4.32/4.27         | 4.28/4.26         | 4.08/3.93         | 3.99/4.04         | 4.44/4.61         | 4.57/4.21         | 3.69/3.12         | 2.85/2.71         | 3.23/3.73         | 4.26/4.81         | 5.135/3.33        | 5.41/5.21         | 4.82/4.48         |
| Θ(7.5°)   | 4.46/4.59     | 4.52/4.59       | 4.48/4.19       | 4.14/1          | 3.8/3.26        | 2.68/2.37       | 1.73/1.09       | 1.52/2.93         | 4.03/4.53         | 4.93/5.22         | 5.34/5.17         | 4.87/4.47         | 4.13/47           | 3.17/3.33         | 3.84/11           | 4.26/4.27         | 4.23/3.97         | 3.27/2.38         | 1.38/0.71         | 0.84/1.5          | 2.36/3.12         | 3.62/3.97         | 4.24/2.45         | 1.46/4.49         |
| Θ(15°)    | 3.42/3.83     | 4.02/3.9        | 3.81/3.68       | 3.24/3.03       | 2.69/2.2        | 1.58/1.17       | 0.72/0.53       | 1.06/1.92         | 2.87/3.81         | 4.7/5.19          | 5.31/5.17         | 4.93/4.53         | 4.28/3.74         | 3.01/2.82         | 3.14/3.52         | 3.49/3.58         | 3.5/3.51          | 3.01/2.27         | 1.17/-0.5         | -1.69/-1.4        | -0.24/0.96        | 1.89/2.48         | 2.92/3.14         | 3.36/3.66         |
| Θ(22.5°)  | 1.31/32       | 1.6/2.17        | 2.85/3.13       | 3.47/3.58       | 2.94/2.18       | 1.12/0.76       | 0.91/0.87       | 2.08/3.46         | 4.28/4.68         | 4.93/5.25         | 5.33/5.04         | 4.51/4.19         | 4.07/3.94         | 3.83/36           | 3.06/2.83         | 2.71/3.01         | 3.49/3.85         | 3.63/2.97         | 1.88/0.11         | -2.25/-3.15       | -1.85/-0.46       | 0.51/1.45         | 1.95/2.35         | 2.45/2.3          |
| Θ(30°)    | 0.83/-1.22    | 1.56/2.32       | 3.23/4.31       | 4.77/5.02       | 4.35/3.46       | 2.97/2.71       | 1.76/0.53       | 1.83/5.1          | 4.59/5.29         | <b>5.65.6</b>     | 5.29/4.89         | 4.28/3.77         | 3.47/3.55         | 3.56/3.38         | 3.11/2.81         | 2.84/3.1          | 3.04/3.17         | 3.23/2.91         | 1.91/0.35         | -1.03/-1.38       | -0.28/0.63        | 1.04/1.26         | 0.75/-0.62        | -0.45/0.71        |
| Θ(37.5°)  | 1.13/1.84     | 2.55/2.62       | 3.53/4.56       | 4.98/5.35       | 5.16/4.99       | 4.51/3.8        | 2.71/1.98       | 1.38/2.27         | 3.09/4            | 4.75/4.61         | 3.7/2.45          | 1.86/1.04         | -0.05/0.4         | 1.01/0.78         | 1.57/2.75         | 2.57/2.46         | 1.7/0.45          | -0.45/-0.06       | 0.6/0.84          | 0.51/-0.21        | -0.35/0.73        | 1.2/0.71          | -1.37/-3.18       | -2.3/-0.04        |
| Θ(45°)    | 1.09/2.34     | 2.68/2.84       | 3.74/65         | 5.09/5.06       | 4.22/3.67       | 3.25/3.65       | 3.48/3.09       | 3.07/2.63         | 1.83/1.91         | 1.3/-0.32         | -0.71/-0.45       | -1.95/-2.75       | -1.42/-0.51       | 0.71/1.47         | 1.35/1.48         | 1.02/0.47         | 0.11/21           | 2.27/2.03         | 1.57/1.55         | -0.44/-1.02       | -1.14/0.09        | -0.47/-1.02       | -1.81/-2.37       | -1.46/-0.47       |
| Θ(52.5°)  | 1.69/2.1      | 1.64/1.81       | 3.11/3.59       | 2.87/2.04       | 0.62/0.71       | 1.93/3.76       | 4.32/4          | 3.52/3.18         | 3.34/3.32         | 0.24/-0.51        | -0.17/-2.96       | -3.92/-2.62       | -2.9/-6.26        | -5.44/-3.42       | -1.88/-1.8        | -0.29/1.58        | 1.77/0.68         | 1.15/1.91         | 2.48/2.12         | 1.95/2.07         | 1.85/0.83         | -1.65/-3.02       | -3.05/-1.69       | -0.71/0.58        |
| Θ(60°)    | 1.25/0.9      | 0.56/1.63       | 2.83/2.2        | -0.28/-2.75     | -2.78/-0.7      | 1.97/4.23       | 4.56/3.28       | 2.02/2.21         | 1.35/2.55         | 1.28/-1.73        | -0.37/-1.06       | -3.65/-2.01       | -1.62/-2.83       | -4.25/-2.92       | -3.66/-4.86       | -1.91/0.16        | 0.72/1.25         | 1.1/1.01          | 1.12/1.97         | 1.69/1.82         | 2.19/1.41         | -0.43/-2.34       | -2.15/-1.39       | 0.1/0.66          |
| Θ(67.5°)  | 0.61/-0.82    | -0.05/-0.07     | 0.57/-1.63      | -4.63/-2.34     | -0.47/-0.1      | -0.12/1.46      | 1.93/1.29       | 0.86/1.63         | 0.12/1.38         | 1.54/-0.11        | 1.57/0.62         | -0.48/0.87        | 0.3/-0.52         | -3.03/-1.79       | -3.78/-4.2        | -3.18/-1.74       | 0.95/1.52         | 0.36/0.35         | 0.53/0.65         | 0.22/1.31         | 1.47/0.44         | 0.32/-0.72        | -1.87/-1.99       | -1.25/0.54        |
| Θ(75°)    | -1.09/-1.81   | -1.73/-2.89     | -0.61/-2.91     | -1.32/1.07      | 2.43/1.08       | -0.93/0.64      | 3.21/3.17       | 2.28/2.48         | 0.78/1.02         | 0.32/-1.52        | 1.02/0.56         | 0.21/0.93         | 0.68/-1.08        | -2.15/-3.18       | -3.18/-4.45       | -5.24/-2.78       | 0.24/0.19         | -1.3/-0.83        | 1.03/-0.01        | -1.15/0.57        | 1.29/0.12         | -0.26/-1.3        | -2.15/-1.77       | -2.36/-2.11       |
| Θ(82.5°)  | -2.55/-2.91   | -3.45/-2.79     | -0.07/-0.12     | 0.41/2.28       | 2.19/-2.01      | -1.81/0.56      | 1.76/0.19       | -1.21/-0.51       | -0.87/0.13        | -0.6/-0.91        | -0.08/-1.41       | -0                |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |





# Antenna Pattern of 2.4GHz/5GHz

# Appendix B.1

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(22.5°)  | 2.952/46      | 1.961/07        | 0.431/25        | 2.553/09        | 3.443/30        | 2.412/01        | 2.162/48        | 2.642/73          | 2.892/45          | 1.570/10          | -1.30/-0.88       | 0.29/0.81         | 0.31/-0.19        | 0.17/1.65         | 2.753/54          | 3.803/92          | 3.934/03          | 4.073/96          | 3.432/73          | 1.820/95          | 0.460/02          | -0.42/-0.66       | 0.07/1.58         | 3.023/07          |
| Θ(30°)    | 2.221/63      | 0.55/-0.76      | -0.68/-0.1      | 1.830/86        | -1.01/-2.65     | -3.58/-2.54     | -1.25/-0.88     | -0.91/-0.45       | 0.87/1.93         | 2.47/1.85         | -0.43/-2.08       | -0.56/0.57        | -0.04/-1.11       | 0.33/2.27         | 3.14/3.27         | 3.103/37          | 3.834/07          | 3.803/33          | 2.632/18          | 1.851/40          | 0.77/-0.09        | -0.98/-1.91       | -1.80/-0.3        | 1.862/27          |
| Θ(35°)    | -1.36/-2.53   | -3.67/-4.76     | -4.04/-2.87     | -3.82/-6.81     | -11.26/-10.04   | -6.99/-5.78     | -6.26/-6.65     | -6.18/-5.27       | -8.22/-5.53       | 0.54/1.36         | -0.16/-1.97       | -0.79/-0.54       | -0.26/-0.07       | 1.57/1.84         | 1.281/69          | 2.172/33          | 2.21/2.23         | 0.18/-0.57        | -1.95/-2.23       | -2.20/-3.09       | -2.83/-1.70       | -2.08/-4.75       | -5.70/-2.43       | -0.66/-0.43       |
| Θ(45°)    | -6.41/-4.85   | -3.66/-4.89     | -12.24/-12.72   | -12.29/-10.01   | -10.52/-10.90   | -10.04/-8.30    | -6.42/-5.89     | -6.46/-7.02       | -5.75/-5.61       | -3.24/-0.16       | -0.68/-3.95       | -4.70/-1.30       | 0.27/0.95         | 1.14/0.88         | -0.38/0.35        | -0.60/-1.91       | -1.33/-0.37       | -0.69/-1.74       | -1.76/-2.33       | -4.02/-5.45       | -8.11/-8.86       | -5.25/-5.16       | -7.61/-9.32       | -8.74/-6.79       |
| Θ(52.5°)  | -5.77/-5.44   | -1.18/-1.45     | -7.80/-8.73     | -6.07/-5.65     | -5.49/-4.35     | -2.91/-1.47     | -1.26/-1.76     | -1.99/-2.24       | -2.47/-3.58       | -3.59/-1.10       | -1.79/-4.55       | -4.35/-4.05       | -0.99/-0.58       | 0.07/0.05         | -0.65/-1.24       | -4.03/-3.73       | 0.01/1.15         | 1.34/1.73         | 1.87/1.83         | 1.64/0.78         | -0.40/-1.49       | -1.75/-1.86       | -3.99/-8.40       | -8.25/-6.47       |
| Θ(60°)    | -2.82/-1.56   | 0.85/-1.39      | -6.68/-7.18     | -6.79/-3.96     | -2.49/-1.89     | -1.47/-0.77     | -0.76/-1.03     | -1.33/-1.40       | -1.42/-4.34       | -0.06/-1.80       | -0.97/-0.96       | -1.44/-0.50       | 0.06/-1.21        | 1.65/1.61         | 0.06/-1.04        | -2.04/-1.44       | 1.69/-0.69        | -0.39/-0.69       | -0.08/0.28        | -0.98/-0.63       | -0.50/-0.04       | -1.91/-3.67       | -1.53/-4.04       |                   |
| Θ(67.5°)  | -1.51/-2.21   | -1.35/-7.39     | -9.95/-4.78     | -7.29/-3.46     | -3.28/-1.96     | 0.03/0.43       | 0.80/1.10       | 0.77/0.79         | -1.09/0.29        | -0.27/-1.01       | -2.09/-2.79       | -5.54/-3.56       | -2.22/-4.34       | -0.95/-1.72       | -2.84/-0.06       | -2.58/0.99        | 2.96/2.54         | 0.12/-1.77        | -2.70/-3.29       | -5.17/-3.83       | -0.94/-1.05       | -1.30/0.01        | -0.19/0.43        | 0.08/-0.15        |
| Θ(75°)    | -6.32/-4.92   | -5.17/-11.54    | -9.25/-5.10     | -6.83/-3.81     | -3.36/-2.29     | -0.33/-0.25     | -0.36/-0.34     | 2.09/1.64         | 0.95/0.01         | -0.29/-1.14       | -1.85/-2.11       | -5.38/-2.14       | -1.16/-1.66       | -3.10/-1.70       | -1.15/-0.12       | -4.09/0.69        | 3.95/4.45         | 2.49/3.25         | 2.35/0.51         | -1.44/-2.68       | -0.17/-0.52       | -3.66/-3.33       | -1.10/-0.55       | 0.00/-0.90        |
| Θ(82.5°)  | -6.53/-6.08   | -8.75/-7.54     | -8.92/-9.22     | -6.89/-3.73     | -1.92/0.70      | 2.45/-2.42      | 2.95/3.06       | 1.30/1.20         | 0.98/0.33         | -3.68/-1.83       | -3.11/-3.16       | -3.70/-1.58       | 0.77/-1.95        | -1.93/0.47        | -1.31/-1.87       | -6.17/1.76        | 3.83/4.08         | 4.17/6.26         | 5.49/3.28         | 0.37/-2.37        | -0.34/-0.25       | -3.01/-4.29       | -2.18/-1.14       | 0.05/-1.43        |
| Θ(90°)    | -5.73/-3.89   | -9.04/-7.66     | -10.08/-8.73    | -7.16/-2.99     | -0.90/-0.16     | 0.42/0.08       | 1.48/2.75       | 2.68/-0.36        | 0.22/1.68         | -3.42/-7.87       | -8.13/-5.11       | -6.92/-2.85       | -0.56/-0.36       | -2.27/0.84        | -0.51/-2.05       | -3.52/-0.11       | 1.28/2.20         | 3.216.50          | 6.47/5.45         | 3.82/0.54         | -1.59/-1.30       | -1.08/-6.41       | -3.17/-1.25       | -1.48/-4.61       |
| Θ(97.5°)  | -3.32/-5.19   | -10.33/-9.87    | -10.07/-8.74    | -6.29/-4.08     | -3.71/-1.67     | -4.49/-3.09     | -0.61/0.55      | 2.05/-2.74        | -2.90/-0.59       | -4.99/-6.49       | -10.22/-11.96     | -13.10/-5.13      | -3.35/-0.55       | -5.21/-2.23       | -0.88/-3.43       | -1.80/-1.33       | -1.39/-2.04       | 2.13/5.64         | 5.91/6.19         | 5.57/2.66         | -0.87/-0.02       | -1.14/-1.70       | -5.63/-4.26       | -2.47/-3.67       |
| Θ(105°)   | -3.62/-5.17   | -6.07/-8.86     | -7.45/-5.76     | -6.71/-8.17     | -4.77/-6.38     | -10.82/-5.26    | -4.15/-2.48     | 0.56/-1.84        | -4.78/-6.41       | -7.12/-5.19       | -8.00/-11.80      | -14.66/-9.72      | -6.26/-2.55       | -7.11/-0.90       | -1.08/-2.08       | -0.89/-1.88       | -3.71/-4.47       | -0.57/0.07        | 2.93/4.14         | 4.53/4.23         | -2.05/-2.41       | -8.04/-12.85      | -5.95/-2.51       | -2.23/-3.13       |
| Θ(112.5°) | -2.99/-6.81   | -7.27/-9.86     | -9.15/-7.32     | -13.47/-8.32    | -9.06/-11.97    | -8.02/-7.30     | -8.92/-5.03     | -0.71/-2.63       | -3.26/-5.75       | -8.06/-6.61       | -8.82/-12.83      | -13.32/-10.05     | -6.28/-7.52       | -4.53/-1.80       | -1.61/-5.25       | -1.44/-4.68       | -4.89/-3.84       | -3.82/1.85        | 1.99/3.68         | 4.16/4.34         | -2.09/-7.22       | -8.20/-14.60      | -9.54/-3.01       | -1.25/-6.23       |
| Θ(120°)   | -4.99/-9.81   | -9.21/-6.96     | -6.29/-8.46     | -12.80/-10.61   | -13.01/-15.21   | -10.92/-10.24   | -9.43/-4.41     | -2.24/-3.97       | -4.99/-7.84       | -7.76/-6.42       | -7.23/-7.55       | -12.00/-9.37      | -4.74/-4.93       | -3.14/-4.35       | -1.68/-5.24       | -4.36/-6.18       | -5.51/-2.82       | -8.60/-3.72       | -2.75/0.78        | 2.25/2.23         | -0.92/-11.02      | -8.19/-14.53      | -5.75/-9.40       | -4.19/-6.67       |
| Θ(127.5°) | -8.26/-12.25  | -12.17/-10.24   | -10.38/-11.85   | -11.12/-15.79   | -14.95/-12.95   | -14.89/-11.62   | -8.43/-6.15     | -6.66/-5.94       | -5.51/-8.82       | -7.12/-6.28       | -4.42/-9.64       | -15.06/-10.54     | -7.00/-8.06       | -5.61/-6.49       | -1.88/-5.66       | -9.81/-6.55       | -6.45/-5.05       | -8.62/-8.29       | -4.99/-1.97       | 0.40/-2.16        | -8.85/-9.80       | -4.74/-4.83       | -4.74/-4.20       | -5.11/-6.60       |
| Θ(135°)   | -11.27/-10.13 | -15.64/-15.84   | -13.88/-12.09   | -12.85/-12.80   | -14.09/-14.80   | -15.64/-14.77   | -14.42/-12.32   | -11.33/-10.55     | -11.08/-9.29      | -9.20/-7.36       | -5.19/-7.36       | -11.24/-15.66     | -11.76/-7.40      | -6.78/-8.97       | -3.21/-5.51       | -15.39/-4.96      | -4.67/-5.79       | -7.17/-7.88       | -4.88/-2.03       | -0.54/-0.08       | -3.21/-14.51      | -14.37/-13.60     | -7.21/-4.89       | -8.62/-15.15      |
| Θ(142.5°) | -12.55/-13.53 | -15.45/-13.90   | -15.28/-13.81   | -13.62/-13.76   | -14.13/-13.76   | -14.16/-13.46   | -13.22/-13.58   | -12.99/-10.53     | -8.71/-8.36       | -9.06/-8.14       | -5.89/-7.88       | -10.62/-12.27     | -15.32/-12.27     | -14.18/-11.60     | -7.51/-9.05       | -15.73/-6.44      | -7.29/-6.56       | -5.45/-4.90       | -3.86/-3.74       | -4.20/-5.03       | -7.19/-8.86       | -15.06/-13.42     | -10.18/-12.12     | -13.69/-12.21     |
| Θ(150°)   | -11.38/-12.68 | -13.14/-15.09   | -15.94/-13.37   | -10.78/-10.75   | -11.87/-13.12   | -13.95/-13.52   | -12.50/-12.59   | -11.55/-7.76      | -5.66/-5.27       | -5.07/-4.84       | -4.61/-5.28       | -8.99/-9.16       | -11.40/-14.48     | -11.03/-7.79      | -8.51/-8.62       | -9.23/-10.77      | -6.79/-6.95       | -8.99/-8.37       | -4.79/-3.44       | -6.33/-11.25      | -12.16/-11.73     | -8.58/-10.06      |                   |                   |
| Θ(157.5°) | -8.76/-10.79  | -12.75/-14.48   | -12.77/-13.19   | -13.69/-15.44   | -15.78/-14.53   | -14.64/-15.05   | -13.00/-14.13   | -15.89/-15.48     | -15.14/-14.20     | -10.96/-9.92      | -10.68/-10.28     | -10.80/-10.18     | -11.83/-14.34     | -12.09/-10.44     | -8.35/-6.33       | -7.06/-9.77       | -9.24/-6.49       | -5.38/-6.54       | -8.08/-8.81       | -10.34/-12.12     | -10.44/-6.89      | -11.19/-13.84     | -14.19/-15.34     | -11.96/-6.50      |
| Θ(165°)   | -15.73/-11.53 | -8.26/-4.78     | -7.52/-7.66     | -8.56/-9.61     | -9.86/-10.18    | -10.07/-10.28   | -10.30/-9.85    | -10.15/-9.47      | -8.01/-6.60       | -6.40/-8.10       | -10.53/-9.91      | -8.08/-5.78       | -5.02/-5.89       | -8.56/-9.78       | -9.83/-7.49       | -7.09/-6.38       | -9.71/-10.50      | -11.10/-11.88     | -13.65/-14.87     | -13.03/-9.94      | -8.14/-7.40       | -8.74/-11.71      | -12.41/-12.39     | -13.03/-14.56     |
| Θ(172.5°) | -10.22/-9.09  | -8.09/-8.65     | -9.75/-9.23     | -8.36/-7.45     | -7.40/-7.73     | -8.71/-10.55    | -14.02/-15.38   | -15.49/-14.76     | -13.99/-14.84     | -14.93/-14.75     | -12.55/-9.28      | -7.88/-6.67       | -6.51/-7.08       | -8.65/-10.48      | -11.91/-12.01     | -11.80/-11.08     | -11.21/-10.57     | -10.81/-10.94     | -11.11/-11.17     | -10.61/-10.85     | -10.26/-8.29      | -5.65/-4.73       | -5.57/-7.95       | -9.75/-9.97       |
| Θ(180°)   | -10.10/-10.26 | -11.61/-12.66   | -12.88/-10.40   | -7.63/-6.92     | -7.53/-7.70     | -7.46/-7.26     | -7.64/-7.61     | -7.62/-8.05       | -8.26/-8.12       | -8.04/-8.02       | -8.11/-8.23       | -7.51/-7.23       | -7.56/-7.99       | -8.59/-9.29       | -9.38/-8.79       | -8.21/-7.47       | -7.31/-7.68       | -7.78/-7.76       | -8.46/-8.87       | -8.68/-8.89       | -8.31/-7.97       | -8.83/-10.91      | -12.54/-12.29     |                   |
| Freq(Hz)  | 2.450/Pol.    | TotalAnt. 2     | +               | -               | -               | -               | -               | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 4.19/4.24     | 4.65/4.69       | 4.55/4.45       | 4.37/4.34       | 4.29/4.27       | 4.24/4.31       | 3.68/4.00       | 3.45/4.01         | 4.28/4.37         | 4.04/4.76         | 4.48/5.04         | 4.97/5.08         | 4.92/5.06         | 4.84/4.60         | 4.75/4.27         | 4.41/4.32         | 4.07/4.02         | 3.27/3.76         | 3.38/3.53         | 3.73/3.86         | 4.01/4.19         | 4.41/4.55         | 4.52/4.63         | 4.67/4.81         |
| Θ(7.5°)   | 4.58/4.68     | 4.65/4.57       | 4.53/4.44       | 4.35/4.19       | 4.14/3.98       | 4.11/3.72       | 3.76/3.44       | 3.36/4.23         | 3.80/4.56         | 4.70/4.15         | 5.11/4.40         | 4.66/4.75         | 4.92/4.75         | 4.62/4.49         | 4.82/4.24         | 4.14/3.97         | 3.70/3.77         | 3.58/3.70         | 3.42/3.40         | 3.42/3.55         | 3.70/3.85         | 4.02/4.14         | 4.35/4.40         | 4.43/4.59         |
| Θ(15°)    | 4.51/4.64     | 4.73/4.90       | 4.72/4.70       | 4.58/4.47       | 4.34/4.17       | 3.81/3.58       | 3.60/3.64       | 3.59/3.72         | 3.99/4.25         | 4.55/3.74         | 4.14/4.36         | 3.98/4.15         | 4.40/5.34         | 5.29/5.29         | 4.88/4.77         | 4.26/4.10         | 3.97/3.75         | 3.57/3.29         | 3.21/3.09         | 2.99/3.15         | 3.43/3.42         | 3.69/3.89         | 4.02/4.13         | 4.27/4.41         |
| Θ(22.5°)  | 4.80/4.76     | 4.97/5.05       | 5.03/4.88       | 4.65/4.36       | 4.05/3.62       | 3.24/2.91       | 3.26/2.06       | 3.05/2.54         | 4.59/3.14         | 4.13/3.38         | 5.94/5.42         | 5.44/4.70         | 5.34/4.84         | 4.78/4.36         | 4.04/3.84         | 3.67/3.26         | 3.33/3.09         | 2.60/2.46         | 2.29/2.35         | 2.79/3.14         | 2.95/3.11         | 3.41/3.76         | 4.14/4.38         |                   |
| Θ(30°)    | 4.69/4.92     | 5.09/5.22       | 5.06/4.77       | 4.55/4.27       | 3.88/3.47       | 2.95/2.31       | 2.64/2.20       | 2.23/2.43         | 3.02/2.57         | 4.01/1.99         | 2.42/2.93         | 5.47/3.61         | 3.78/5.24         | 5.14/4.70         | 4.17/3.83         | 3.49/3.09         | 2.82/2.19         | 1.71/1.75         | 1.18/1.07         | 1.11/1.24         | 1.42/1.65         | 2.07/2.48         | 2.93/3.44         | 3.95/4.52         |
| Θ(37.5°)  | 4.69/4.88     | 5.15/5.10       | 4.86/4.66       | 4.44/3.94       | 3.03/2.66       | 1.90/1.76       | 1.68/1.70       | 0.54/0.22         | 0.22/1.53         | 2.95/3.92         | 2.29/4.72         | 4.89/4.79         | 4.26/3.77         | 3.27/2.99         | 2.19/1.65         | 1.17/0.75         | 0.42/0.21         | 0.15/0.01         | 0.12/0.21         | 0.31/0.65         | 1.60/2.03         | 2.98/3.38         | 3.91/4.51         |                   |
| Θ(45°)    | 4.56/4.98     | 5.28/5.13       | 4.90/4.52       | 3.73/2.84       | 2.62/2.04       | 1.72/1.08       | 0.67/0.26       | 0.07/-0.10        | -0.41/-0.41       | -0.25/0.67        | 1.65/2.09         | 2.71/3.70         | 2.87/3.12         | 3.26/2.74         | 0.84/-0.04        | -0.67/-0.99       | -0.76/-0.85       | -1.27/-0.62       | -0.57/-0.66       | -0.56/0.09        | 0.59/1.78         | 2.84/3.46         | 3.68/4.48         |                   |
| Θ(52.5°)  | 3.86/4.32     | 4.75/4.46       | 4.19/3.37       | 2.70/2.34       | 1.75/1.00       | 0.13/0.14       | -0.10/-0.21     | -0.52/-0.60       | -1.27/-1.07       | -0.77/-0.03       | 0.31/2.20         | 1.65/2.30         | 2.39/2.51         | 1.82/1.88         | 0.91/0.05         | -1.19/-1.84       | -1.97/-2.20       | -2.11/-1.80       | -1.60/-3.20       | -1.93/-1.09       | -1.18/-0.38       | 0.93/2.13         | 3.11/2.56         | 3.46/3.98         |
| Θ(60°)    | 3.17/3.59     | 3.73/3.33       | 2.84/2.08       | 1.80/1.31       | 0.43/0.21       | 0.34/0.14       | -0.46/-0.52     | -0.67/-1.26       | -1.70/-2.58       | -2.78/-2.26       | -1.97/0.95        | -0.10/-0.67       | 0.93/-0.02        | 1.08/0.83         | -0.40/-1.86       | -4.04/-3.96       | -4.29/-4.86       | -3.20/-4.45       | -2.32/-4.13       | -1.45/-1.45       | -1.72/-1.60       | -0.29/-1.52       | 2.28/2.60         | 2.50/3.13         |
| Θ(67.5°)  | 2.76/2.91     | 2.72/3.26       | 1.80/1.50       | 0.56/0.13       | 0.78/0.10       | -1.04/-2.23     | -2.73/-3.03     | -2.87/-2.63       | -3.74/-5.16       | -4.47/-5.37       | -4.38/-3.84       | -2.98/-2.47       | -0.57/0.19        | -0.41/-1.34       | -3.01/-4.16       | -4.08/-6.29       | -4.37/-4.64       | -3.01/-3.44       | -3.36/-2.53       | -1.51/-1.64       | -3.29/-2.82       | -2.98/-0.69       | 1.02/2.30         | 2.58/2.83         |
| Θ(75°)    | 2.50/2.62     | 2.91/2.23       | 1.94/0.88       | -0.90/-1.63     | -1.70/-3.85     | -4.48/-4.73     | -4.54/-4.32     | -4.36/-4.56       | -4.74/-6.15       | -8.66/-8.19       | -5.94/-4.43       | -5.13/-3.42       | -1.90/-1.01       | -1.42/-3.00       | -4.95/-6.52       | -4.15/-3.68       | -2.45/-2.59       | -3.10/-4.19       | -2.13/-1.64</     |                   |                   |                   |                   |                   |



# Antenna Pattern of 2.4GHz/5GHz

# Appendix B.1

|           |               |                |                |                |                |                |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |             |
|-----------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|
| θ(75°)    | 3.893.88      | 2.23/1.73      | 1.99/1.96      | 1.63/1.06      | 0.05/-2.76     | -5.73/-0.76    | 1.21/2.03      | 3.16/3.58        | 3.45/2.58        | 1.92/0.13        | -0.86/-0.56      | 0.60/0.53        | 0.98/0.64        | -4.77/-7.74      | -5.36/-5.06      | -3.08/-0.58      | -0.15/-2.56      | -4.43/-4.55      | -4.32/-3.81      | -5.06/-3.88      | -1.42/-2.18      | -1.99/-0.72      | -0.96/-1.06      | 1.26/2.96        |             |
| θ(82.5°)  | 3.01/3.29     | 2.53/1.54      | 0.42/0.38      | 1.10/1.25      | -0.33/-7.19    | -6.06/-3.40    | -2.33/-2.07    | -0.43/-1.99      | 1.67/1.62        | 0.80/-0.28       | -0.74/-0.56      | -0.13/-0.10      | 0.03/-0.78       | -4.24/-8.73      | -7.99/-7.32      | -4.61/-1.15      | -0.92/-0.41      | -5.52/-4.98      | -5.43/-4.15      | -5.31/-3.74      | -1.58/-2.57      | -1.12/-0.91      | -1.64/-0.78      | 1.56/2.71        |             |
| θ(90°)    | 2.58/2.73     | 2.45/1.86      | 0.32/0.22      | 0.90/0.42      | -2.86/-2.22    | -3.14/-5.05    | -0.56/-3.03    | -1.55/-2.07      | -1.63/-2.51      | -0.26/-0.19      | -0.26/-0.28      | 0.09/-0.40       | 0.05/-0.98       | -4.04/-8.38      | -5.29/-6.57      | -5.58/-1.08      | 0.13/-1.78       | -5.06/-3.70      | -7.70/-4.74      | -5.16/-6.19      | -2.07/-2.13      | -2.26/-1.84      | -2.73/-0.60      | 0.98/1.79        |             |
| θ(97.5°)  | 1.66/2.05     | 1.75/0.95      | -1.03/-0.66    | 0.03/-0.88     | -3.84/-6.35    | -9.41/-7.33    | -4.89/-2.36    | -0.20/-0.35      | -2.08/-4.36      | -3.11/-2.28      | -1.35/-0.68      | -0.98/-1.20      | -1.48/-3.36      | -4.67/-8.33      | -9.14/-6.89      | -4.77/-2.25      | -0.91/-2.99      | -4.84/-5.88      | -7.81/-6.27      | -5.61/-6.17      | -4.97/-4.36      | -3.64/-3.23      | -2.94/-0.67      | 0.43/1.09        |             |
| θ(105°)   | 0.83/-1.59    | 0.88/0.52      | -0.92/-0.47    | -0.43/-1.62    | -3.59/-9.84    | -13.33/-12.02  | -6.89/-4.42    | -0.94/-0.54      | -1.27/-2.67      | -3.00/-3.51      | -2.53/-2.67      | -3.17/-3.15      | -3.81/-5.85      | -4.54/-9.21      | -10.37/-5.65     | -6.69/-5.44      | -3.06/-4.45      | -4.88/-5.29      | -8.91/-9.05      | -8.44/-6.52      | -7.57/-5.68      | -6.68/-5.17      | -2.64/-0.57      | -0.26/-0.18      |             |
| θ(112.5°) | 0.15/0.98     | -0.03/-0.62    | -1.48/-1.40    | -1.33/-2.82    | -5.54/-13.62   | -15.53/-6.64   | -6.55/-6.39    | -5.28/-1.56      | -1.93/-2.34      | -3.25/-2.60      | -3.05/-3.19      | -4.57/-5.38      | -9.00/-4.84      | -4.72/-13.13     | -8.18/-7.25      | -10.44/-7.51     | -5.07/-4.40      | -5.72/-7.36      | -13.39/-11.04    | -10.04/-5.75     | -6.76/-6.56      | -8.49/-5.34      | -3.90/-2.54      | -1.41/-0.63      |             |
| θ(120°)   | -2.72/-1.17   | -1.54/-2.26    | -1.90/-2.77    | -3.55/-5.18    | -8.56/-12.06   | -14.56/-11.81  | -7.40/-11.16   | -10.05/-5.39     | -5.96/-4.14      | -4.21/-3.49      | -4.16/-3.17      | -4.88/-7.08      | -11.22/-9.80     | -8.25/-9.88      | -9.89/-9.17      | -8.45/-11.78     | -7.86/-3.97      | -7.55/-9.63      | -12.38/-9.59     | -7.34/-6.93      | -8.31/-8.50      | -12.17/-6.76     | -3.13/-2.93      | -2.88/-2.17      |             |
| θ(127.5°) | -3.72/-3.71   | -2.65/-3.64    | -3.95/-4.58    | -7.01/-9.18    | -10.13/-10.02  | -14.84/-13.36  | -9.91/-10.10   | -10.42/-14.74    | -12.32/-5.58     | -6.22/-5.16      | -4.57/-4.59      | -5.90/-7.88      | -10.51/-13.19    | -15.38/-14.96    | -9.87/-9.34      | -11.94/-12.92    | -9.39/-8.65      | -12.63/-12.04    | -11.09/-11.55    | -10.05/-10.62    | -10.10/-12.36    | -14.05/-9.57     | -5.82/-5.28      | -3.43/-2.19      |             |
| θ(135°)   | -4.55/-5.38   | -4.52/-4.31    | -5.00/-6.16    | -8.03/-10.77   | -14.05/-15.94  | -14.44/-14.62  | -12.26/-11.39  | -14.14/-15.34    | -12.15/-9.54     | -7.32/-7.73      | -4.99/-4.34      | -7.33/-7.09      | -8.28/-12.26     | -13.66/-14.50    | -15.95/-11.05    | -8.95/-8.01      | -12.96/-15.77    | -14.04/-12.71    | -12.59/-11.70    | -10.08/-10.28    | -8.29/-8.91      | -14.60/-9.65     | -7.55/-6.97      | -4.19/-2.68      |             |
| θ(142.5°) | -9.55/-9.41   | -7.04/-5.82    | -6.73/-7.55    | -6.65/-8.07    | -10.79/-13.21  | -15.33/-15.48  | -15.93/-15.32  | -15.11/-15.12    | -12.84/-11.37    | -10.21/-7.79     | -7.58/-7.95      | -6.11/-9.52      | -14.13/-10.37    | -11.68/-15.38    | -14.93/-14.86    | -12.60/-9.13     | -10.33/-14.54    | -15.81/-11.25    | -13.36/-14.76    | -15.30/-14.01    | -11.49/-10.46    | -12.09/-13.06    | -13.37/-14.55    | -12.37/-10.02    |             |
| θ(150°)   | -8.55/-10.63  | -9.30/-9.43    | -11.13/-10.38  | -11.04/-8.52   | -10.63/-10.35  | -12.90/-14.02  | -15.69/-13.84  | -13.61/-13.08    | -11.82/-9.43     | -8.87/-10.49     | -8.90/-6.58      | -8.10/-12.43     | -12.58/-13.52    | -14.93/-13.89    | -15.48/-15.48    | -13.30/-13.28    | -12.48/-10.97    | -11.41/-12.67    | -14.81/-15.46    | -15.79/-12.52    | -15.74/-13.83    | -13.98/-12.92    | -11.87/-9.90     | -8.71/-7.86      |             |
| θ(157.5°) | -8.34/-9.74   | -10.65/-9.51   | -9.19/-9.97    | -10.94/-13.29  | -14.10/-15.56  | -12.72/-15.47  | -15.78/-13.38  | -14.27/-13.99    | -13.10/-12.55    | -9.89/-7.69      | -7.41/-9.08      | -12.07/-10.38    | -8.62/-10.78     | -13.69/-12.91    | -11.20/-12.72    | -15.49/-16.10    | -13.00/-12.38    | -13.10/-13.95    | -15.68/-15.59    | -15.05/-15.13    | -12.63/-12.77    | -10.40/-13.54    | -10.38/-7.65     | -5.99/-6.11      |             |
| θ(165°)   | -8.41/-7.76   | -7.60/-8.83    | -9.40/-10.46   | -13.20/-14.81  | -14.74/-14.20  | -14.87/-14.34  | -13.47/-12.37  | -11.25/-11.30    | -11.85/-11.40    | -11.13/-11.39    | -12.82/-13.95    | -14.71/-15.04    | -14.48/-14.70    | -11.71/-10.51    | -11.12/-13.78    | -15.02/-15.29    | -15.19/-15.44    | -16.03/-14.96    | -15.69/-15.23    | -14.98/-15.08    | -15.52/-14.21    | -14.16/-12.22    | -9.50/-7.69      | -6.93/-6.37      |             |
| θ(172.5°) | -12.02/-10.95 | -11.33/-11.87  | -12.77/-13.08  | -14.08/-15.05  | -15.14/-15.69  | -15.08/-15.59  | -14.54/-14.99  | -15.28/-15.08    | -15.11/-15.15    | -14.87/-15.98    | -14.65/-14.64    | -13.99/-14.07    | -13.47/-13.05    | -15.00/-15.37    | -15.34/-14.28    | -15.09/-13.68    | -13.27/-12.67    | -13.20/-14.63    | -15.63/-14.89    | -14.59/-14.21    | -13.57/-13.46    | -13.08/-13.62    | -13.32/-12.29    | -12.12/-11.90    |             |
| θ(180°)   | -14.63/-15.44 | -15.12/-14.60  | -14.77/-14.63  | -15.67/-15.45  | -15.47/-14.86  | -13.92/-13.07  | -11.76/-11.14  | -11.47/-11.54    | -11.95/-11.73    | -11.21/-11.47    | -11.66/-12.67    | -13.65/-14.54    | -15.38/-15.08    | -14.83/-15.05    | -15.28/-15.48    | -15.36/-15.35    | -14.18/-15.15    | -16.41/-14.66    | -14.92/-14.80    | -14.88/-15.44    | -15.57/-15.10    | -14.59/-15.52    | -15.31/-14.97    | -15.21/-15.40    |             |
| Freq(Hz)  | 5.785GPol.    | TotalAnt. 2    | +              | -              | -              | -              | -              | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |             |
| Gain      | Φ(0°)Φ(7.5°)  | Φ(15°)Φ(22.5°) | Φ(30°)Φ(37.5°) | Φ(45°)Φ(52.5°) | Φ(60°)Φ(67.5°) | Φ(75°)Φ(82.5°) | Φ(90°)Φ(97.5°) | Φ(105°)Φ(112.5°) | Φ(120°)Φ(127.5°) | Φ(135°)Φ(142.5°) | Φ(150°)Φ(157.5°) | Φ(165°)Φ(172.5°) | Φ(180°)Φ(187.5°) | Φ(195°)Φ(202.5°) | Φ(210°)Φ(217.5°) | Φ(225°)Φ(232.5°) | Φ(240°)Φ(247.5°) | Φ(255°)Φ(262.5°) | Φ(270°)Φ(277.5°) | Φ(285°)Φ(292.5°) | Φ(300°)Φ(307.5°) | Φ(315°)Φ(322.5°) | Φ(330°)Φ(337.5°) | Φ(345°)Φ(352.5°) |             |
| θ(0°)     | -1.78/-2.44   | -2.66/-3.48    | -3.57/-3.11    | -2.86/-2.83    | -3.11/-3.26    | -3.49/-3.42    | -3.85/-3.54    | -3.58/-3.50      | -3.64/-3.57      | -2.58/-3.42      | -2.67/-2.65      | -2.79/-3.02      | -2.89/-2.93      | -2.98/-2.10      | -2.69/-2.40      | -2.63/-2.32      | -2.08/-2.34      | -1.84/-2.35      | -2.07/-2.34      | -2.24/-2.25      | -2.24/-2.25      | -2.03/-2.06      | -1.70/-1.94      | -1.34/-1.63      |             |
| θ(7.5°)   | -1.86/-1.39   | -1.81/-2.22    | -2.43/-2.49    | -2.32/-2.44    | -2.15/-1.47    | -1.46/-1.18    | -1.70/-1.07    | -1.42/-1.98      | -1.65/-1.86      | -1.81/-1.75      | -2.45/-1.90      | -1.93/-2.11      | -2.26/-2.32      | -2.30/-2.40      | -2.50/-2.90      | -2.98/-3.07      | -3.68/-3.61      | -3.36/-3.45      | -3.79/-3.41      | -3.03/-2.72      | -2.48/-2.10      | -2.01/-1.98      | -2.19/-2.30      | -2.18/-2.35      |             |
| θ(15°)    | 0.20/-0.17    | -0.91/-6.33    | -1.88/-2.09    | -1.91/-1.95    | -2.05/-1.88    | -2.31/-2.09    | -1.35/-1.22    | -0.89/-0.42      | -0.19/-0.11      | -0.16/-0.10      | -0.54/-0.84      | -1.49/-2.41      | -2.66/-2.54      | -2.44/-2.70      | -2.35/-2.43      | -2.92/-3.18      | -3.56/-4.26      | -4.19/-5.02      | -5.06/-4.90      | -4.11/-2.74      | -1.73/-1.27      | -0.73/-0.14      | 0.08/-0.01       | 0.13/-0.14       |             |
| θ(22.5°)  | 0.01/-0.35    | -0.06/-5.14    | -1.12/-0.98    | -1.36/-1.94    | -1.90/-2.08    | -1.89/-1.04    | -0.78/-0.55    | -0.03/0.26       | 0.84/-1.12       | 0.75/0.31        | -0.91/-2.82      | -4.45/-3.98      | -4.07/-4.01      | -4.25/-4.81      | -4.98/-5.34      | -5.29/-4.95      | -4.49/-4.47      | -4.64/-4.59      | -4.92/-5.17      | -4.07/-2.35      | -1.26/-0.56      | 0.06/-0.08       | -0.14/-0.04      | 0.10/0.03        |             |
| θ(30°)    | 0.26/0.40     | 0.29/0.22      | -0.09/-0.94    | -2.31/-3.52    | -2.69/-1.26    | -0.64/0.84     | 1.77/1.65      | 1.59/1.20        | 0.97/1.00        | 1.30/1.25        | 0.40/-1.19       | -1.09/-0.56      | -0.15/-0.68      | -2.08/-3.39      | -4.48/-5.43      | -6.46/-7.86      | -7.07/5.16       | -5.14/-4.88      | -5.36/-3.91      | -2.41/-1.38      | -0.12/-1.16      | 1.32/0.60        | -0.23/-0.72      | -0.22/-0.16      |             |
| θ(37.5°)  | 1.55/2.36     | 2.13/-1.60     | 0.63/-0.95     | -0.88/-2.58    | -2.32/-1.94    | -0.89/0.54     | 1.95/2.70      | 1.86/-2.57       | -1.01/-0.03      | 0.89/-1.65       | 1.76/2.19        | 3.06/3.63        | 3.62/2.95        | 2.15/-1.49       | 2.24/-2.32       | -2.96/-2.68      | -2.96/-4.01      | -3.54/-1.79      | -0.43/0.73       | 0.99/0.31        | -0.43/0.73       | -1.41/-2.82      | -2.29/-0.88      | -0.40/-2.19      |             |
| θ(45°)    | 2.54/3.30     | 3.13/2.25      | 1.14/0.22      | 0.28/0.31      | 0.64/-1.24     | -3.11/-3.12    | -0.72/0.89     | 1.17/0.39        | 1.97/0.37        | -0.34/0.85       | 1.92/2.77        | 2.94/-3.35       | 4.33/-4.47       | 4.02/3.74        | <b>4.15/4.55</b> | 4.16/3.87        | 2.86/0.85        | -2.07/-3.83      | -3.52/-2.52      | -2.67/-4.38      | -3.99/-2.27      | -1.08/-0.76      | -0.02/-0.08      | -0.68/-1.70      | -2.11/-0.01 |
| θ(52.5°)  | 3.45/3.43     | 2.32/1.61      | 0.96/0.93      | 1.33/1.68      | 1.26/-2.53     | -4.85/-2.72    | 0.25/1.72      | 2.33/2.52        | 2.43/3.93        | 4.27/3.90        | 3.97/3.88        | 3.47/1.84        | 0.82/1.60        | 2.86/3.50        | 3.70/3.54        | 2.62/1.65        | -0.02/-2.81      | -3.37/-1.21      | -1.10/-4.00      | -5.88/-3.63      | -2.51/-2.52      | -1.93/-1.01      | -0.88/-1.59      | -1.81/0.35       |             |
| θ(60°)    | 3.56/3.90     | 3.09/1.81      | 0.41/0.50      | 1.41/1.43      | 0.29/-3.76     | -2.97/-0.45    | 0.57/0.76      | 1.22/1.80        | 2.45/3.50        | 4.26/3.79        | 2.76/3.33        | 3.63/-1.25       | -0.85/-0.24      | 0.73/-1.21       | 1.38/-1.98       | 2.03/2.36        | 0.80/-1.66       | -2.39/-2.59      | -3.06/-4.19      | -4.57/-2.61      | -2.25/-2.31      | -1.93/-1.33      | -1.21/-0.69      | -0.40/-2.19      |             |
| θ(67.5°)  | 3.37/3.93     | 3.01/1.94      | 0.32/0.72      | 0.99/0.70      | -0.92/-2.82    | -3.53/-3.04    | -3.35/-4.15    | -2.50/-0.34      | 0.31/0.93        | 2.32/0.94        | -0.31/1.38       | 1.54/-1.03       | -1.50/-3.90      | -5.18/-3.63      | -1.97/0.09       | 1.76/-1.92       | 0.14/-2.38       | -3.30/-3.70      | -5.38/-8.40      | -6.63/-4.39      | -2.12/-2.47      | -1.44/-1.91      | -2.32/-1.39      | -0.19/0.99       |             |
| θ(75°)    | 3.804.11      | 3.52/2.14      | 0.86/1.36      | 1.01/0.46      | -0.31/-3.57    | -13.25/-3.42   | -0.31/0.86     | 1.82/2.37        | 2.85/1.25        | 0.52/-1.62       | -2.60/-0.51      | 0.87/-1.06       | -0.64/-2.28      | -5.88/-7.67      | -5.54/-2.50      | -0.42/-0.54      | -2.00/-6.14      | -7.47/-4.06      | -3.69/-6.11      | -7.82/-3.62      | -3.14/-3.17      | -1.53/-2.44      | -3.08/-0.21      | 1.44/2.34        |             |
| θ(82.5°)  | 2.54/3.14     | 3.11/2.27      | 0.72/0.55      | 0.53/0.79      | -1.06/-8.71    | -6.50/-3.86    | -3.64/-3.20    | -1.15/-1.82      | 1.72/1.30        | 0.14/-0.31       | -1.61/-1.38      | 0.23/-1.26       | 0.64/-1.61       | -5.81/-10.25     | -9.02/-8.70      | -4.61/-2.33      | -4.09/-7.67      | -6.75/-4.31      | -2.42/-3.67      | -6.92/-6.25      | -1.40/-3.01      | -1.88/-3.27      | -3.26/-2.06      | 1.44/2.00        |             |
| θ(90°)    | 1.66/2.54     | 3.13/1.94      | 0.08/-0.24     | -0.11/-0.96    | -3.63/-6.95    | -13.36/-9.38   | -5.43/-3.75    | -2.65/-2.54      | -1.49/-1.78      | -2.43/-3.28      | -1.93/-0.89      | -0.34/-0.46      | 0.61/-0.54       | -4.56/-10.93     | -11.69/-9.49     | -5.17/-1.20      | -1.49/-0.55      | -6.74/-4.78      | -2.98/-2.32      | -5.65/-4.68      | -2.85/-5.38      | -4.28/-4.34      | -2.46/-0.12      | 1.11/-1.11       |             |
| θ(97.5°)  | 0.64/-1.23    | 2.03/-0.09     | -0.30/-1.12    | -1.20/-3.10    | -5.43/-7.59    | -15.44/-9.65   | -5.39/-2.36    | -0.07/-1.12      | -3.09/-5.43      | -5.43/-5.05      | -2.41/-2.04      | -1.98/-1.59      | -0.49/-1.25      | -5.17/-9.96      | -10.94/-11.53    | -5.68/-1.02      | -1.46/-7.58      | -6.67/-5.29      | -6.35/-4.37      | -4.72/-6.53      | -4.61/-7.57      | -7.71/-5.60      | -2.83/-0.80      | -0.41/0.07       |             |
| θ(105°)   | -0.55/0.45    | 1.88/0.80      | -0.60/-1.70    | -2.61/-3.82    | -4.99/-9.74    | -15.25/-11.50  | -6.83/-5.16    | -1.75/-0.88      | -2.83/-2.68      | -3.73/-5.11      | -2.57/-2.71      | -3.68/-4.05      | -3.23/-3.47      | -6.27/-10.34     | -11.49/-9.73     | -5.53/-3.70      | -2.27/-3.96      | -7.20/-5.79      | -10.99/-6.83     | -6.63/-7.50      | -7.70/-8.01      | -10.54/-3.82     | -1.01/-0.41      | -1.32/-0.97      |             |
| θ(112.5°) | -1.39/-0.53   | -0.47/-1.04    | -1.89/-2.27    | -3.81/-4.29    | -7.02/-15.94   | -14.81/-8.56   | -7.97/-9.87    | -2.89/-3.49      | -2.72/-4.33      | -4.54/-5.43      | -2.29/-4.25      | -3.52/-4.48      | -4.85/-11.21     | -12.43/-7.23     | -7.86/-7.11      | -3.85/-3.91      | -9.49/-7.78      | -9.93/-6.45      | -7.21/-6.60      | -9.30/-8.86      | -9.02/-2.64      | -3.05/-2.88      | -2.15/-1.95      | -0.46/-2.48      |             |
| θ(120°)   | -3.38/-1.91   | -2.71/-2.95    | -3.12/-3.21    | -3.91/-5.00    | -6.90/-12.81   | -15.54/-9.20   | -6.43/-9.71    | -7.80/-7.62      | -5.84/-5.87      | -6.39/-4.18      | -3.73/-3.25      | -5.13/-5.97      | -10.80/-10.34    | -7.96/-10.20     | -13.93/-9.74     | -9.26/-6.68      | -6.48/-3.09      | -7.36/-10.09     | -10.06/-6.82     | -7.30/-8.82      | -8.75/-13.23     | -10.25/-3.29     | -2.07/-2.55      | -0.46/-2.48      |             |
| θ(127.5°) | -3.49/-2.10   |                |                |                |                |                |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |             |



# Antenna Pattern of 2.4GHz/5GHz

# Appendix B.1

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(120°)   | -12.33/-9.24  | -6.89/-8.29     | -8.88/-8.79     | -10.68/-12.25   | -15.29/-13.78   | -8.47/-9.35     | -14.91/-10.09   | -4.86/-2.64       | -3.76/-7.39       | -9.50/-7.81       | -12.41/-7.84      | -12.21/-13.36     | -14.61/-9.83      | -12.82/-12.12     | -10.73/-15.44     | -5.18/-6.72       | -6.52/-0.35       | 1.36/-0.23        | -1.63/-2.32       | -1.70/-1.81       | -1.81/-0.65       | -1.31/-4.83       | -10.17/-9.44      | -12.83/-8.78      |
| Θ(127.5°) | -10.34/-13.68 | -15.29/-10.32   | -9.56/-11.02    | -9.96/-14.65    | -14.79/-12.38   | -11.90/-11.55   | -10.45/-9.29    | -7.40/-5.04       | -7.18/-14.68      | -11.16/-7.45      | -15.00/-7.10      | -9.35/-10.00      | -8.28/-5.23       | -7.78/-8.52       | -15.25/-7.00      | -5.74/-6.74       | -9.02/-3.24       | 0.11/-1.27        | -3.56/-2.42       | -1.28/-0.90       | -0.80/-2.50       | -4.21/-6.89       | -9.64/-7.40       | -9.24/-5.79       |
| Θ(135°)   | -10.54/-10.05 | -14.42/-12.29   | -9.31/-10.40    | -10.06/-10.38   | -10.62/-14.18   | -13.69/-10.71   | -9.29/-8.13     | -7.53/-9.22       | -13.52/-13.60     | -8.88/-11.28      | -12.83/-7.57      | -10.14/-7.96      | -7.95/-5.49       | -6.00/-11.58      | -15.11/-10.68     | -5.66/-5.62       | -6.16/-7.08       | -3.40/-3.04       | -5.27/-5.86       | -3.03/-2.42       | -3.66/-5.06       | -6.85/-10.49      | -14.26/-14.37     | -7.66/-6.49       |
| Θ(142.5°) | -10.69/-12.59 | -14.06/-11.39   | -10.17/-11.78   | -10.76/-9.66    | -9.66/-12.95    | -14.40/-11.77   | -11.57/-13.31   | -14.30/-12.13     | -12.02/-12.56     | -15.58/-11.88     | -6.34/-9.43       | -8.79/-6.00       | -4.34/-3.35       | -6.54/-9.83       | -14.05/-12.82     | -9.55/-11.21      | -7.51/-5.82       | -5.73/-5.41       | -6.15/-7.25       | -6.96/-6.96       | -9.29/-12.16      | -14.41/-13.80     | -11.93/-12.56     | -10.51/-8.33      |
| Θ(150°)   | -15.82/-15.49 | -14.64/-15.70   | -11.83/-12.11   | -12.39/-13.77   | -10.85/-9.64    | -12.22/-15.66   | -14.74/-9.97    | -9.55/-12.11      | -10.61/-11.96     | -10.61/-9.58      | -11.24/-9.51      | -5.10/-3.97       | -6.66/-5.88       | -5.10/-3.97       | -12.25/-13.04     | -13.59/-14.06     | -6.11/-5.38       | -7.07/-7.67       | -7.05/-7.96       | -9.00/-9.40       | -10.14/-12.58     | -13.33/-12.50     | -13.32/-10.44     | -9.01/-10.92      |
| Θ(157.5°) | -11.30/-11.23 | -11.39/-12.58   | -13.44/-11.59   | -11.52/-14.27   | -15.21/-14.82   | -12.81/-12.09   | -6.58/-6.63     | -7.35/-9.36       | -12.97/-15.52     | -11.90/-7.83      | -8.91/-8.72       | -9.51/-10.32      | -12.04/-13.12     | -12.32/-10.84     | -4.86/-6.39       | -5.80/-6.19       | -6.98/-6.92       | -7.49/-10.25      | -15.46/-15.19     | -15.35/-13.41     | -12.41/-10.37     | -15.72/-15.47     |                   |                   |
| Θ(165°)   | -10.30/-10.70 | -11.85/-13.67   | -13.28/-12.88   | -11.68/-11.77   | -12.56/-12.63   | -13.34/-12.71   | -10.99/-8.86    | -6.36/-5.37       | -4.52/-4.43       | -5.46/-6.56       | -7.00/-7.82       | -9.19/-10.70      | -10.98/-9.88      | -9.24/-8.98       | -9.79/-8.64       | -7.93/-7.63       | -7.61/-7.44       | -7.73/-8.47       | -7.95/-8.62       | -10.68/-11.04     | -10.75/-11.44     | -13.97/-15.53     | -13.78/-11.34     | -11.39/-11.08     |
| Θ(172.5°) | -10.85/-10.17 | -9.58/-9.59     | -10.40/-12.01   | -12.92/-13.44   | -13.44/-12.35   | -12.33/-12.34   | -11.98/-11.43   | -9.99/-8.82       | -8.82/-9.22       | -9.37/-8.46       | -8.15/-7.36       | -7.68/-7.41       | -6.24/-6.48       | -6.40/-6.95       | -7.29/-7.18       | -7.43/-7.70       | -7.55/-8.04       | -8.57/-8.73       | -9.37/-8.67       | -7.71/-8.42       | -8.75/-8.98       | -8.96/-8.11       | -8.56/-11.49      | -14.61/-13.71     |
| Θ(180°)   | -8.30/-8.26   | -8.77/-8.20     | -8.55/-9.56     | -9.20/-8.31     | -8.02/-8.03     | -7.85/-8.10     | -7.34/-6.55     | -6.67/-7.03       | -7.25/-7.87       | -8.24/-8.56       | -8.29/-8.31       | -8.11/-7.89       | -8.23/-8.43       | -8.27/-7.94       | -8.35/-8.18       | -7.79/-7.58       | -7.18/-6.61       | -6.91/-6.97       | -7.03/-6.74       | -7.59/-6.42       | -6.01/-6.95       | -7.34/-7.60       | -8.68/-9.97       | -9.96/-8.42       |
| Freq(Hz)  | 5.6GPol.      | TotalAnt. 3     | +               | -               | +               | -               | +               | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 | +                 | -                 |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 4.984.69      | 4.684.64        | 4.734.97        | 5.014.98        | 4.965.12        | 5.245.24        | 5.195.17        | 5.225.20          | 5.155.17          | 5.205.18          | 5.015.08          | 5.235.47          | 5.685.69          | 5.535.36          | 5.415.53          | 5.525.34          | 5.075.18          | 5.325.22          | 5.144.99          | 4.874.80          | 4.874.80          | 4.945.17          | 5.175.11          |                   |
| Θ(7.5°)   | 5.695.66      | 5.425.42        | 5.325.21        | 5.054.88        | 4.854.82        | 4.644.41        | 4.074.11        | 4.324.41          | 4.424.33          | 4.404.68          | 4.754.69          | 4.844.92          | 5.055.05          | 5.155.16          | 5.034.88          | 4.894.88          | 4.624.25          | 3.993.91          | 4.074.13          | 4.064.13          | 4.334.37          | 4.204.21          | 4.554.90          | 5.435.65          |
| Θ(15°)    | 4.574.55      | 4.694.53        | 4.464.22        | 3.963.79        | 3.613.06        | 2.582.15        | 1.781.87        | 2.022.02          | 2.262.32          | 2.713.28          | 3.754.04          | 4.344.67          | 5.035.04          | 4.664.41          | 4.113.99          | 3.663.68          | 3.693.40          | 3.072.84          | 2.722.63          | 2.742.70          | 2.933.27          | 3.483.38          | 3.494.24          | 4.965.18          |
| Θ(22.5°)  | 1.831.28      | 0.920.80        | 1.191.41        | 2.042.81        | 3.303.29        | 3.213.35        | 3.513.73        | 3.884.31          | 2.926.29          | 5.014.64          | 4.183.50          | 3.094.64          | 3.974.03          | 3.822.94          | 2.502.77          | 3.404.99          | 4.484.67          | 4.574.31          | 4.125.87          | 3.573.54          | 3.763.54          | 3.343.70          | 3.413.07          |                   |
| Θ(30°)    | 0.380.29      | -0.46/-1.12     | -1.000.40       | 1.792.49        | 2.702.39        | 1.871.32        | 1.051.04        | 1.212.00          | 3.264.46          | 5.315.41          | 4.392.78          | 1.691.70          | 2.132.47          | 1.620.49          | 0.300.97          | 2.072.97          | 3.443.69          | 3.463.42          | 3.373.23          | 3.183.52          | 3.854.29          | 4.053.72          | 2.781.95          | 0.920.55          |
| Θ(37.5°)  | 0.930.58      | -1.09/-0.44     | -2.58/-0.44     | 0.460.11        | -1.70/-3.24     | -4.40/-5.33     | -5.99/-6.41     | -6.75/-6.73       | -5.02/-2.52       | 0.211.67          | 1.29/-0.84        | -3.76/-6.20       | -4.56/-3.77       | -3.38/-5.87       | -5.97/-2.90       | -1.31/-0.78       | -0.17/-0.26       | -0.91/-0.39       | 0.511.37          | 2.012.03          | 2.212.66          | 3.042.74          | 1.09/-0.71        | -0.750.11         |
| Θ(45°)    | -1.50/-0.25   | -1.74/-2.19     | -0.45/-0.34     | -2.07/-5.87     | -8.38/-7.73     | -9.09/-11.43    | -9.27/-6.21     | -8.58/-7.29       | -8.00/-7.65       | -9.17/-7.25       | -4.36/-4.21       | -6.73/-10.17      | -9.49/-6.13       | -4.38/-2.46       | -5.92/-6.62       | -7.22/-4.93       | -2.93/-3.61       | -6.46/-6.07       | -2.410.11         | 0.57/-0.27        | -0.72/-0.37       | 0.851.45          | 0.64/-0.94        | -2.02/-1.63       |
| Θ(52.5°)  | -2.65/-1.80   | -3.85/-2.68     | -1.90/-4.78     | -10.97/-11.84   | -11.11/-7.75    | -5.26/-4.13     | -2.29/-1.07     | -1.53/-3.58       | -4.03/-4.76       | -10.09/-13.92     | -7.97/-5.49       | -6.54/-7.13       | -5.59/-4.86       | -2.96/-3.58       | -5.16/-7.13       | -7.82/-4.42       | -2.83/-3.45       | -5.78/-8.53       | -5.20/-2.09       | -0.82/-1.47       | -2.93/-2.59       | -2.86/-2.71       | -1.39/-1.86       | -3.24/-3.35       |
| Θ(60°)    | -4.14/-4.27   | -5.05/-0.23     | -3.24/-8.06     | -12.91/-10.31   | -2.35/-0.64     | -2.22/-2.15     | -0.22/-0.63     | -1.93/-2.03       | -1.98/-2.36       | -4.09/-0.91       | -10.22/-9.44      | -7.72/-6.17       | -3.37/-3.38       | -4.40/-5.13       | -5.80/-7.08       | -11.05/-6.73      | -4.31/-2.38       | -2.81/-2.38       | -3.41/-4.02       | -1.61/-0.44       | -2.15/-4.54       | -4.19/-3.67       | -1.79/-3.25       | -5.40/-2.02       |
| Θ(67.5°)  | -7.06/-5.32   | -4.54/-2.26     | -11.46/-6.23    | -11.46/-1.69    | -0.28/-1.80     | 0.293.08        | 0.632.65        | 2.351.78          | 0.313.20          | -0.86/-5.25       | -10.23/-7.08      | -8.69/-5.40       | -2.79/-5.07       | -10.86/-12.09     | -8.02/-10.80      | -10.89/-4.43      | -1.97/-0.59       | -0.611.17         | 0.77/-2.76        | -1.960.71         | 0.114.00          | -6.04/-6.43       | -2.83/-2.14       | -6.02/-6.49       |
| Θ(75°)    | -7.97/-3.53   | -3.67/-5.08     | -5.06/-7.45     | -5.37/-2.15     | -2.210.63       | 2.401.41        | 0.640.20        | 0.260.67          | 0.940.01          | -3.94/-7.87       | -11.04/-7.65      | -8.92/-5.92       | -5.64/-6.88       | -15.92/-12.11     | -11.50/-9.41      | -4.740.45         | 2.242.83          | 2.303.72          | 4.252.02          | 0.031.69          | 1.80/-1.38        | -3.77/-4.68       | -2.13/-1.29       | -4.94/-11.04      |
| Θ(82.5°)  | -5.75/-5.56   | -7.77/-5.78     | -6.40/-7.69     | -5.77/-2.61     | -1.030.69       | 0.983.90        | 5.335.00        | 3.791.94          | 0.96/-1.10        | -3.75/-12.44      | -9.23/-9.57       | -7.44/-13.07      | -12.51/-13.77     | -14.63/-11.71     | -8.73/-6.20       | -0.273.21         | 4.084.94          | 4.975.46          | 6.074.65          | 3.353.69          | 3.14/-0.70        | -2.95/-3.63       | -3.17/-2.71       | -5.00/-10.86      |
| Θ(90°)    | -3.99/-6.45   | -5.40/-4.67     | -7.38/-6.72     | -7.17/-0.07     | -2.99/-2.27     | 1.764.19        | 3.873.74        | 4.342.14          | 0.76/-1.74        | -3.72/-8.04       | -6.31/-14.63      | -7.46/-13.30      | -13.05/-11.38     | -9.57/-12.03      | -8.63/-4.73       | -0.712.71         | 4.195.65          | 6.376.39          | <b>6.505.80</b>   | 4.484.26          | 4.180.54          | -3.91/-3.30       | -3.69/-4.51       | -5.21/-8.83       |
| Θ(97.5°)  | -3.97/-5.91   | -7.30/-8.77     | -8.09/-8.03     | -11.38/-5.28    | -5.37/-3.80     | 0.891.37        | 0.190.23        | 2.042.43          | -0.10/-3.71       | -6.70/-6.99       | -6.24/-14.88      | -9.33/-9.89       | -9.14/-8.99       | -10.15/-10.90     | -7.32/-5.20       | -2.350.76         | 2.584.95          | 5.875.80          | 5.875.36          | 4.212.96          | 2.610.85          | -3.73/-3.40       | -4.81/-5.28       | -4.89/-4.91       |
| Θ(105°)   | -4.95/-8.53   | -8.86/-11.43    | -10.07/-10.20   | -8.55/-8.23     | -8.20/-6.73     | -1.45/-2.87     | -2.68/-1.17     | -0.660.77         | -2.49/-6.14       | -7.48/-8.29       | -9.04/-14.88      | -9.10/-14.28      | -5.47/-11.13      | -14.63/-11.71     | -8.73/-6.20       | -0.273.21         | 4.084.94          | 4.975.46          | 6.074.65          | 3.353.69          | 3.14/-0.70        | -2.95/-3.63       | -3.17/-2.71       | -5.00/-10.86      |
| Θ(112.5°) | -7.45/-6.78   | -6.47/-7.45     | -5.55/-7.12     | -7.71/-9.16     | -9.35/-6.47     | -3.39/-7.36     | -7.95/-1.67     | -2.28/-0.95       | -4.39/-9.88       | -1.76/-8.56       | -13.19/-13.83     | -13.25/-10.46     | -7.12/-15.96      | -12.46/-14.09     | -7.05/-6.51       | -5.93/-4.65       | 3.410.57          | 2.132.68          | 3.101.99          | 0.630.12          | -0.26/-1.01       | -4.30/-7.72       | -9.86/-6.53       | -4.96/-5.26       |
| Θ(120°)   | -10.98/-10.00 | -5.58/-5.49     | -9.02/-11.49    | -10.12/-9.21    | -14.47/-7.03    | -11.10/-7.74    | -13.04/-8.65    | -5.87/-2.77       | -4.38/-10.14      | -6.29/-7.40       | -12.03/-13.23     | -14.94/-12.49     | -10.39/-15.69     | -11.39/-13.88     | -10.06/-6.65      | -7.61/-6.30       | -5.50/-2.20       | -0.67/-1.29       | -0.060.31         | -0.88/-1.83       | -0.73/-1.18       | -4.37/-7.84       | -8.47/-6.92       | -10.61/-6.48      |
| Θ(127.5°) | -6.04/-8.61   | -11.32/-8.80    | -11.72/-12.40   | -14.26/-14.97   | -11.31/-8.99    | -12.17/-12.93   | -9.88/-8.93     | -7.73/-6.00       | -5.59/-12.08      | -13.03/-8.48      | -15.29/-13.93     | -7.65/-7.96       | -9.00/-5.92       | -7.49/-8.42       | -13.49/-6.19      | -6.46/-9.06       | -10.72/-8.62      | -1.01/-3.75       | -4.21/-2.26       | -1.85/-2.65       | -2.93/-4.03       | -5.39/-3.77       | -0.96/-5.72       | -5.61/-6.03       |
| Θ(135°)   | -7.84/-8.06   | -6.82/-7.34     | -10.60/-13.91   | -11.94/-14.76   | -13.34/-10.96   | -15.22/-15.03   | -10.91/-7.51    | -6.89/-7.55       | -12.75/-14.93     | -7.21/-8.78       | -11.17/-11.59     | -7.95/-5.98       | -7.11/-7.41       | -8.72/-11.62      | -13.22/-9.74      | -5.62/-5.07       | -10.56/-6.94      | -3.87/-5.71       | -7.14/-4.34       | -2.99/-3.89       | -3.29/-4.63       | -7.71/-7.17       | -14.20/-7.35      | -6.57/-7.61       |
| Θ(142.5°) | -12.31/-12.09 | -15.45/-10.71   | -8.96/-14.50    | -11.67/-12.66   | -11.10/-10.06   | -14.01/-10.93   | -8.36/-10.20    | -12.33/-9.92      | -9.50/-10.64      | -12.64/-9.95      | -6.15/-13.24      | -6.20/-8.51       | -7.34/-6.08       | -8.85/-7.97       | -12.68/-10.56     | -7.95/-12.85      | -14.02/-7.35      | -5.42/-5.67       | -7.66/-7.25       | -5.54/-6.63       | -7.19/-8.41       | -13.57/-14.29     | -10.31/-8.87      | -10.02/-10.89     |
| Θ(150°)   | -15.60/-15.16 | -15.70/-15.22   | -15.47/-15.43   | -15.43/-15.38   | -16.35/-12.91   | -12.35/-16.41   | -15.87/-11.53   | -10.85/-13.41     | -11.84/-10.78     | -8.92/-8.68       | -11.98/-9.71      | -5.31/-8.40       | -6.74/-4.09       | -6.74/-10.89      | -11.21/-19.17     | -13.00/-9.44      | -7.17/-7.85       | -8.71/-7.78       | -7.96/-8.44       | -8.72/-8.58       | -8.82/-10.62      | -12.03/-14.64     | -13.49/-10.96     | -9.42/-10.07      |
| Θ(157.5°) | -12.42/-11.88 | -12.46/-11.80   | -11.92/-13.03   | -12.80/-13.36   | -13.18/-14.15   | -14.17/-14.08   | -12.32/-9.55    | -6.89/-6.13       | -8.01/-12.98      | -15.05/-11.24     | -6.87/-5.54       | -7.89/-8.45       | -6.17/-6.87       | -9.69/-10.63      | -11.74/-14.01     | -11.44/-8.72      | -7.15/-7.55       | -8.00/-7.65       | -8.87/-9.13       | -8.44/-9.45       | -12.73/-15.26     | -15.09/-15.06     | -11.07/-8.22      | -8.98/-14.87      |
| Θ(165°)   | -6.75/-9.52   | -12.01/-13.91   | -15.23/-14.73   | -12.73/-14.01   | -12.96/-14.12   | -14.34/-14.88   | -12.49/-9.90    | -4.27/-6.05       | -4.60/-3.85       | -3.92/-5.10       | -7.13/-8.88       | -10.44/-10.06     | -8.78/-8.92       | -11.61/-12.52     | -10.82/-8.83      | -8.67/-9.04       | -9.50/-9.04       | -8.70/-10.22      | -10.30/-9.86      | -12.26/-14.18     | -14.57/-15.06     | -15.68/-15.10     | -15.88/-15.72     | -12.49/-9.36      |
| Θ(172.5°) | -15.48/-12.90 | -11.30/-11.29   | -12.27/-13.43   | -13.51/-13.43   | -12.73/-12.18   | -13.59/-14.39   | -12.66/-10.36   | -9.22/-8.49       | -8.22/-8.50       | -9.17/-9.15       | -7.80/-6.87       | -7.23/-7.69       | -8.01/-8.         |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



# Antenna Pattern of 2.4GHz/5GHz

# Appendix B.1

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(165°)   | -15.19/-15.44 | -15.93/-15.29   | -15.77/-15.90   | -15.11/-15.34   | -15.10/-15.35   | -16.10/-15.64   | -15.82/-15.70   | -15.75/-13.97     | -12.06/-10.51     | -9.83/-9.98       | -10.11/-11.43     | -12.79/-13.94     | -15.31/-14.07     | -12.70/-12.56     | -12.52/-11.93     | -13.56/-14.12     | -14.34/-15.34     | -15.23/-16.09     | -15.06/-14.97     | -15.55/-13.20     | -11.15/-10.48     | -10.63/-12.25     | -14.41/-15.56     | -15.03/-14.25     |
| Θ(172.5°) | -13.76/-14.32 | -14.35/-15.32   | -15.47/-14.48   | -15.17/-15.03   | -13.90/-14.25   | -14.92/-13.60   | -12.54/-12.63   | -12.06/-12.62     | -13.25/-13.56     | -13.36/-12.18     | -11.81/-11.57     | -12.33/-12.35     | -12.50/-11.92     | -10.97/-10.53     | -10.81/-11.96     | -13.53/-15.53     | -15.42/-15.48     | -15.75/-15.66     | -15.82/-15.45     | -15.69/-15.22     | -14.06/-14.25     | -13.36/-12.48     | -13.13/-13.80     | -13.21/-11.77     |
| Θ(180°)   | -15.04/-16.26 | -15.58/-13.97   | -15.58/-13.01   | -12.67/-13.19   | -14.10/-15.35   | -13.97/-13.70   | -12.66/-13.12   | -12.81/-13.70     | -12.62/-12.74     | -12.58/-11.93     | -11.92/-11.96     | -12.73/-13.08     | -13.92/-14.21     | -14.09/-13.06     | -12.32/-12.43     | -13.91/-16.22     | -15.20/-14.31     | -12.99/-14.71     | -15.00/-15.20     | -15.00/-15.20     | -15.58/-14.87     | -15.24/-15.70     | -14.58/-16.01     | -15.55/-15.25     |
| Freq(Hz)  | 5.3GPol.      | TotalAnt. 4     | +               | -               | -               | -               | -               | -                 | -                 | -                 | +                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | +                 | -                 | -                 | -                 | -                 |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | -1.85/-1.74   | -1.86/-1.21     | -2.01/-2.08     | -2.35/-3.06     | -3.74/-4.10     | -3.96/-4.33     | -6.91/-7.19     | -7.52/-7.67       | -7.26/-6.70       | -6.64/-6.33       | -5.94/-5.62       | -5.13/-4.48       | -3.69/-2.86       | -2.47/-2.04       | -1.21/-0.68       | -0.99/-1.09       | -1.17/-0.85       | -0.82/-0.47       | -0.40/-0.09       | 0.31/-0.04        | 0.51/-0.75        | 1.03/-1.21        | 1.30/-0.99        |                   |
| Θ(7.5°)   | -7.81/-8.12   | -8.00/-7.64     | -7.65/-7.92     | -7.47/-7.06     | -6.99/-6.64     | -5.69/-4.66     | -4.78/-4.45     | -4.03/-3.49       | -2.66/-1.93       | -1.14/-0.37       | 0.14/-0.76        | 1.16/-1.31        | 1.22/-1.16        | 1.15/-1.25        | 1.29/-1.08        | 0.84/-0.62        | 0.39/-0.14        | -0.96/-1.95       | -2.29/-2.43       | -2.54/-2.97       | -3.40/-3.86       | -4.20/-4.38       | -4.26/-4.09       | -3.96/-4.12       |
| Θ(15°)    | -3.56/-3.86   | -4.79/-5.45     | -5.40/-5.08     | -5.33/-5.08     | -4.11/-3.25     | -3.23/-2.26     | -2.30/-2.35     | -2.22/-1.86       | -0.91/-0.34       | 0.02/-0.63        | 1.23/-1.81        | 2.10/-2.27        | 2.21/-2.00        | 1.91/-1.99        | 2.02/-1.52        | 0.80/-0.01        | -0.54/-1.39       | -2.16/-3.09       | -3.63/-4.15       | -4.79/-5.47       | -5.79/-6.04       | -5.99/-5.58       | -5.36/-5.63       | -5.69/-5.86       |
| Θ(22.5°)  | -1.86/-2.20   | -2.84/-2.86     | -2.39/-1.84     | -1.90/-2.41     | -2.47/-1.32     | -0.75/-0.23     | 0.10/-0.14      | -0.10/-0.21       | 0.21/-0.60        | 0.70/-0.98        | 1.20/-1.78        | 2.11/-2.03        | 1.48/-0.44        | -0.12/-0.42       | -0.35/-0.61       | -1.11/-1.66       | -2.46/-3.06       | -4.05/-4.67       | -4.56/-3.87       | -3.59/-2.76       | -2.05/-1.77       | -1.54/-0.83       | -0.24/-0.59       | -1.02/-1.68       |
| Θ(30°)    | -0.77/-0.13   | 0.39/-0.62      | 0.67/-1.02      | 1.12/-0.50      | 0.27/-0.76      | 1.58/-2.27      | 2.31/-1.80      | 0.98/-0.18        | -0.36/-0.58       | 1.25/-1.39        | 1.17/-1.32        | 1.93/-2.04        | 1.80/-0.95        | -0.28/-1.37       | -2.09/-2.35       | -2.02/-2.98       | -3.79/-4.29       | -5.05/-5.07       | -4.15/-2.89       | -2.06/-1.56       | -1.33/-1.57       | -1.82/-1.24       | -0.38/-0.20       | -0.76/-1.46       |
| Θ(37.5°)  | 2.81/-3.34    | 4.22/-4.94      | 5.04/-4.69      | 4.48/-4.12      | 3.74/-3.47      | 3.48/-3.89      | 4.06/-5.1       | 2.49/-0.87        | 0.07/-0.67        | 1.93/-2.11        | 2.14/-2.81        | 3.61/-3.98        | 3.71/-2.67        | 1.17/-0.01        | -1.01/-1.90       | -2.50/-2.95       | -4.55/-5.11       | -4.62/-3.95       | -3.67/-2.83       | -2.71/-3.27       | -3.78/-4.08       | -3.94/-2.68       | -1.23/-1.15       | -0.52/-0.95       |
| Θ(45°)    | 4.81/-4.80    | 5.35/-6.09      | 6.18/-5.62      | 4.98/-4.39      | 4.20/-3.97      | 3.80/-3.85      | 4.19/-4.13      | 3.42/-3.22        | 1.71/-4.44        | 1.84/-1.93        | 1.91/-2.53        | 3.76/-4.29        | 4.14/-3.18        | 1.76/-0.30        | -0.81/-1.38       | -2.21/-2.60       | -3.63/-3.75       | -3.41/-2.50       | -2.20/-1.75       | -1.78/-2.70       | -3.94/-4.28       | -3.39/-1.52       | 0.22/-1.18        | 1.82/-2.47        |
| Θ(52.5°)  | 5.03/-5.12    | 5.20/-5.40      | 5.35/-4.45      | 3.65/-3.43      | 3.42/-3.07      | 3.04/-3.18      | 3.42/-3.39      | 2.97/-2.11        | 1.47/-1.61        | 0.84/-0.54        | -0.01/-1.86       | 2.98/-3.23        | 2.70/-1.65        | 0.43/-0.38        | -0.73/-0.86       | -1.00/-1.49       | -1.88/-2.27       | -2.48/-1.68       | -0.80/-0.61       | -1.31/-2.25       | -2.97/-3.29       | -1.82/-0.14       | 0.45/-0.97        | 2.45/-4.11        |
| Θ(60°)    | 3.86/-4.26    | 3.73/-3.55      | 3.64/-3.26      | 2.42/-2.48      | 1.56/-0.51      | -0.02/-0.50     | 1.63/-2.47      | 2.58/-1.30        | -0.13/-0.11       | -1.78/-0.89       | 2.24/-2.31        | 1.70/-1.02        | 0.41/-0.10        | 0.02/-0.29        | -0.42/-0.87       | -0.88/-1.41       | -1.74/-1.47       | -0.58/-0.07       | -0.12/-0.46       | -1.12/-1.43       | -0.45/-0.09       | -0.53/-0.04       | 1.63/-3.61        |                   |
| Θ(67.5°)  | 2.00/-0.89    | -0.29/-1.50     | 3.43/-2.07      | 0.33/-0.78      | 0.91/-1.60      | -3.32/-2.96     | -1.34/-0.05     | 0.59/-0.05        | -1.98/-1.63       | -0.85/-1.04       | -0.10/-1.32       | 1.03/-0.17        | -0.40/-0.57       | -0.69/-0.33       | -0.67/-1.31       | -1.29/-1.31       | -1.89/-2.07       | -0.94/-0.15       | -0.08/-0.28       | 0.55/-0.12        | 0.30/-1.71        | 1.68/-1.16        | -0.90/-1.65       | -0.12/-1.77       |
| Θ(75°)    | -0.32/-3.13   | -3.84/-1.19     | 3.20/-1.25      | -1.15/-0.10     | 1.24/-0.52      | -0.44/-0.61     | -0.14/-0.70     | -2.03/-2.13       | -2.59/-2.84       | -1.53/-0.71       | 0.57/-1.64        | 1.52/-1.03        | 0.38/-0.37        | -0.91/-1.05       | -1.17/-2.16       | -2.04/-1.98       | -2.90/-2.17       | -0.17/-0.66       | 0.08/-0.87        | -1.47/-0.16       | 0.01/-0.99        | 2.11/-1.16        | -1.31/-2.74       | -2.25/-0.39       |
| Θ(82.5°)  | -2.20/-5.91   | -5.89/-0.17     | 1.41/-1.02      | -1.95/-0.51     | 1.01/-1.37      | -3.75/-4.26     | -3.66/-1.58     | -1.10/-4.62       | -4.94/-2.77       | -1.24/-0.51       | 2.18/-1.57        | 0.13/-0.05        | -0.27/-0.70       | -1.57/-2.08       | -2.93/-3.86       | -3.60/-2.32       | -2.93/-1.60       | -0.47/-0.05       | -0.54/-1.94       | -2.33/-0.99       | -0.26/-1.25       | 2.23/-1.18        | -0.60/-2.32       | -3.95/-2.37       |
| Θ(90°)    | -4.06/-4.98   | -3.75/-3.13     | 0.38/-1.22      | -2.02/-1.80     | -2.00/-3.86     | -3.05/-4.63     | -6.12/-5.60     | -3.75/-3.08       | -4.78/-3.04       | -1.61/-0.40       | 1.72/-1.79        | -3.68/-4.83       | -3.37/-3.10       | -3.63/-2.18       | -1.20/-1.81       | -2.62/-2.62       | -3.29/-0.95       | -1.37/-0.65       | 1.85/-0.49        | -1.30/-0.50       | -0.54/-2.56       | -0.26/-1.09       | -0.54/-2.56       | -4.53/-3.53       |
| Θ(97.5°)  | -6.80/-3.30   | -4.84/-2.69     | -2.31/-2.54     | -4.21/-5.60     | -5.02/-2.85     | -4.11/-6.20     | -7.69/-7.77     | -6.44/-4.77       | -7.57/-3.68       | -0.93/-0.38       | 0.41/-0.59        | -0.63/-0.61       | 0.28/-0.02        | -2.33/-4.18       | -6.22/-4.88       | -3.53/-4.02       | -3.24/-3.00       | -3.42/-4.90       | -5.31/-4.02       | -3.44/-2.33       | -2.22/-0.43       | 0.93/-0.56        | -0.90/-2.04       | -4.36/-5.19       |
| Θ(105°)   | -9.02/-2.99   | -4.99/-4.57     | -3.31/-3.37     | -6.96/-9.77     | -5.99/-4.29     | -8.53/-8.44     | -9.74/-10.47    | -7.85/-6.91       | -8.67/-5.83       | -1.53/-0.67       | -0.62/-0.34       | -0.64/-0.44       | -0.12/-1.75       | -4.58/-5.65       | -7.00/-6.65       | -4.36/-3.91       | -5.03/-6.61       | -6.03/-7.39       | -5.18/-5.33       | -2.99/-2.56       | -4.85/-1.57       | -0.62/-2.08       | -2.83/-3.83       | -7.75/-9.64       |
| Θ(112.5°) | -10.06/-7.00  | -7.53/-6.93     | -4.64/-5.75     | -9.74/-12.52    | -7.28/-5.94     | -10.34/-9.46    | -12.52/-13.30   | -8.74/-9.27       | -10.59/-4.94      | -3.01/-1.20       | -1.83/-2.18       | -5.06/-4.79       | -11.30/-4.39      | -6.62/-7.21       | -8.97/-8.78       | -4.96/-4.87       | -6.26/-7.05       | -4.96/-4.87       | -4.14/-3.24       | -4.11/-1.13       | -5.26/-4.34       | -6.02/-10.19      |                   |                   |
| Θ(120°)   | -6.21/-9.21   | -8.37/-10.39    | -7.04/-4.80     | -7.01/-10.97    | -12.27/-9.71    | -8.97/-10.17    | -15.31/-11.48   | -9.85/-9.46       | -7.51/-6.80       | -4.09/-2.14       | -2.80/-3.89       | -2.92/-2.92       | -4.64/-5.19       | -5.20/-7.78       | -14.47/-11.60     | -8.74/-8.46       | -9.53/-10.17      | -9.79/-7.00       | -7.96/-7.86       | -6.18/-5.96       | -4.81/-5.84       | -7.57/-6.31       | -6.80/-7.85       | -7.51/-8.32       |
| Θ(127.5°) | -6.34/-10.05  | -12.74/-10.90   | -10.29/-8.33    | -6.08/-7.88     | -10.15/-12.20   | -10.60/-14.72   | -13.86/-14.76   | -11.42/-9.63      | -6.57/-6.76       | -4.91/-4.05       | -4.92/-5.30       | -6.93/-7.57       | -5.04/-6.86       | -12.27/-10.89     | -13.13/-12.48     | -11.93/-14.24     | -9.30/-6.66       | -6.34/-6.68       | -7.79/-7.10       | -5.55/-5.70       | -5.60/-6.32       | -9.56/-11.21      | -11.64/-9.81      |                   |
| Θ(135°)   | -7.42/-9.22   | -12.87/-14.85   | -8.70/-9.42     | -6.80/-7.79     | -9.18/-10.77    | -14.25/-15.43   | -15.28/-13.45   | -12.52/-8.68      | -8.67/-7.59       | -6.88/-7.23       | -7.18/-6.81       | -5.32/-4.92       | -5.66/-6.71       | -9.42/-7.14       | -10.92/-14.86     | -11.93/-14.34     | -14.95/-12.08     | -7.70/-6.55       | -8.99/-11.01      | -9.24/-7.35       | -5.57/-5.85       | -10.58/-14.76     | -11.36/-9.52      |                   |
| Θ(142.5°) | -6.10/-6.07   | -5.21/-8.94     | -13.99/-13.26   | -13.63/-12.55   | -11.78/-11.16   | -10.97/-13.24   | -14.85/-13.77   | -14.12/-11.91     | -12.05/-11.81     | -11.78/-9.47      | -9.39/-10.41      | -10.91/-12.13     | -7.50/-5.98       | -7.48/-11.86      | -14.48/-11.33     | -15.86/-15.53     | -15.46/-10.54     | -7.06/-8.02       | -13.91/-13.52     | -11.97/-10.33     | -9.70/-7.04       | -6.35/-9.29       | -11.35/-10.15     | -13.00/-8.03      |
| Θ(150°)   | -5.69/-6.96   | -5.82/-6.45     | -10.59/-10.16   | -11.99/-13.10   | -10.29/-13.60   | -14.37/-13.78   | -13.18/-14.42   | -13.45/-13.32     | -13.21/-12.03     | -10.34/-13.33     | -10.62/-11.84     | -13.53/-13.41     | -11.14/-10.91     | -12.12/-12.24     | -11.86/-14.32     | -15.16/-14.66     | -12.63/-9.57      | -7.81/-8.64       | -11.23/-12.57     | -15.23/-12.77     | -9.51/-8.97       | -11.74/-14.94     | -13.63/-10.76     | -7.28/-9.33       |
| Θ(157.5°) | -13.07/-14.01 | -11.81/-10.72   | -12.08/-13.36   | -12.04/-13.87   | -13.09/-13.67   | -14.35/-14.86   | -13.18/-12.75   | -12.79/-11.95     | -12.74/-12.35     | -11.29/-10.70     | -11.35/-11.35     | -11.39/-11.70     | -12.11/-11.90     | -13.15/-13.42     | -12.41/-10.14     | -8.80/-10.46      | -12.37/-14.25     | -13.64/-14.15     | -14.40/-12.19     | -11.74/-14.31     | -14.24/-14.22     | -13.17/-12.87     | -13.93/-14.66     | -11.43/-10.46     |
| Θ(165°)   | -14.92/-14.81 | -13.61/-14.10   | -15.45/-15.88   | -15.73/-15.04   | -15.76/-15.24   | -15.39/-14.48   | -15.20/-16.11   | -13.45/-11.55     | -9.79/-9.08       | -8.59/-8.32       | -8.69/-9.64       | -10.01/-11.20     | -13.85/-15.92     | -15.13/-14.62     | -13.55/-11.95     | -10.93/-11.21     | -13.25/-14.02     | -15.32/-15.35     | -15.09/-15.21     | -15.49/-15.13     | -12.09/-11.13     | -11.55/-13.59     | -14.98/-15.16     | -14.01/-14.06     |
| Θ(172.5°) | -14.27/-14.27 | -12.65/-11.92   | -13.53/-15.00   | -16.37/-13.67   | -12.17/-12.71   | -15.11/-15.41   | -13.51/-15.32   | -15.75/-14.70     | -15.75/-15.89     | -15.35/-14.64     | -14.32/-15.87     | -15.42/-15.07     | -12.84/-11.49     | -10.48/-10.44     | -10.50/-10.84     | -11.37/-12.68     | -15.12/-15.26     | -15.80/-14.88     | -14.22/-13.72     | -13.38/-13.37     | -14.35/-14.23     | -14.50/-15.28     | -14.13/-15.05     | -12.50/-11.89     |
| Θ(180°)   | -15.22/-15.31 | -15.22/-13.71   | -12.66/-12.18   | -12.74/-12.08   | -13.26/-13.87   | -13.73/-13.08   | -13.59/-14.20   | -13.75/-13.45     | -12.93/-11.78     | -11.61/-11.15     | -11.70/-12.37     | -13.48/-13.63     | -13.00/-13.59     | -14.00/-15.28     | -14.31/-13.00     | -12.50/-13.05     | -14.62/-14.90     | -15.39/-14.24     | -14.95/-15.61     | -15.61/-15.12     | -14.87/-14.48     | -15.22/-15.47     | -15.85/-15.16     | -14.65/-15.81     |
| Freq(Hz)  | 5.6GPol.      | TotalAnt. 4     | +               | -               | -               | -               | -               | -                 | -                 | -                 | +                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 | +                 | -                 | -                 | -                 | -                 |
| Gain      | Φ(0°)/Φ(7.5°) | Φ(15°)/Φ(22.5°) | Φ(30°)/Φ(37.5°) | Φ(45°)/Φ(52.5°) | Φ(60°)/Φ(67.5°) | Φ(75°)/Φ(82.5°) | Φ(90°)/Φ(97.5°) | Φ(105°)/Φ(112.5°) | Φ(120°)/Φ(127.5°) | Φ(135°)/Φ(142.5°) | Φ(150°)/Φ(157.5°) | Φ(165°)/Φ(172.5°) | Φ(180°)/Φ(187.5°) | Φ(195°)/Φ(202.5°) | Φ(210°)/Φ(217.5°) | Φ(225°)/Φ(232.5°) | Φ(240°)/Φ(247.5°) | Φ(255°)/Φ(262.5°) | Φ(270°)/Φ(277.5°) | Φ(285°)/Φ(292.5°) | Φ(300°)/Φ(307.5°) | Φ(315°)/Φ(322.5°) | Φ(330°)/Φ(337.5°) | Φ(345°)/Φ(352.5°) |
| Θ(0°)     | 1.57/-1.62    | 1.65/-2.01      | 1.82/-2.11      | 1.14/-1.10      | 0.98/-0.65      | 0.07/-0.49      | 0.13/-0.02      | 0.07/-0.10        | 0.01/-0.34        | -0.08/-0.07       | 0.24/-0.45        | 0.04/-0.56        | 0.76/-0.92        | 0.87/-1.12        | 1.24/-1.34        | 1.51/-1.66        | 1.88/-1.79        | 1.68/-1.47        | 2.32/-2.34        | 2.32/-2.34        | 2.61/-2.64        | 2.61/-2.64        | 2.40/-2.11        | 1.90/-1.88        |
| Θ(7.5°)   | -1.58/-1.65   | -1.98/-1.66     | -1.14/-1.57     | -1.73/-1.05     | -0.66/-0.30     | 0.01/-0.38      | 0.35/-0.51      | 0.69/-1.57        | 1.75/-2.08        | 2.35/-2.51        | 2.70/-2.74        | 2.65/-2.50        | 2.31/-1.98        | 1.67/-1.22        | 0.83/-0.60        | 0.38/-0.14        | 0.32/-0.20        | 0.07/-0.25        | -0.60/-0.88       | -0.56/-0.47       | -0.32/-0.11       | 0.16/-0.45        | 0.62/-0.23        | 0.01/-0.44        |
| Θ(15°)    | -2.68/-2.99   | -3.38/-3.27     | -3.25/-3.56     | -4.48/-4.34     | -3.91/-3.17</   |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |

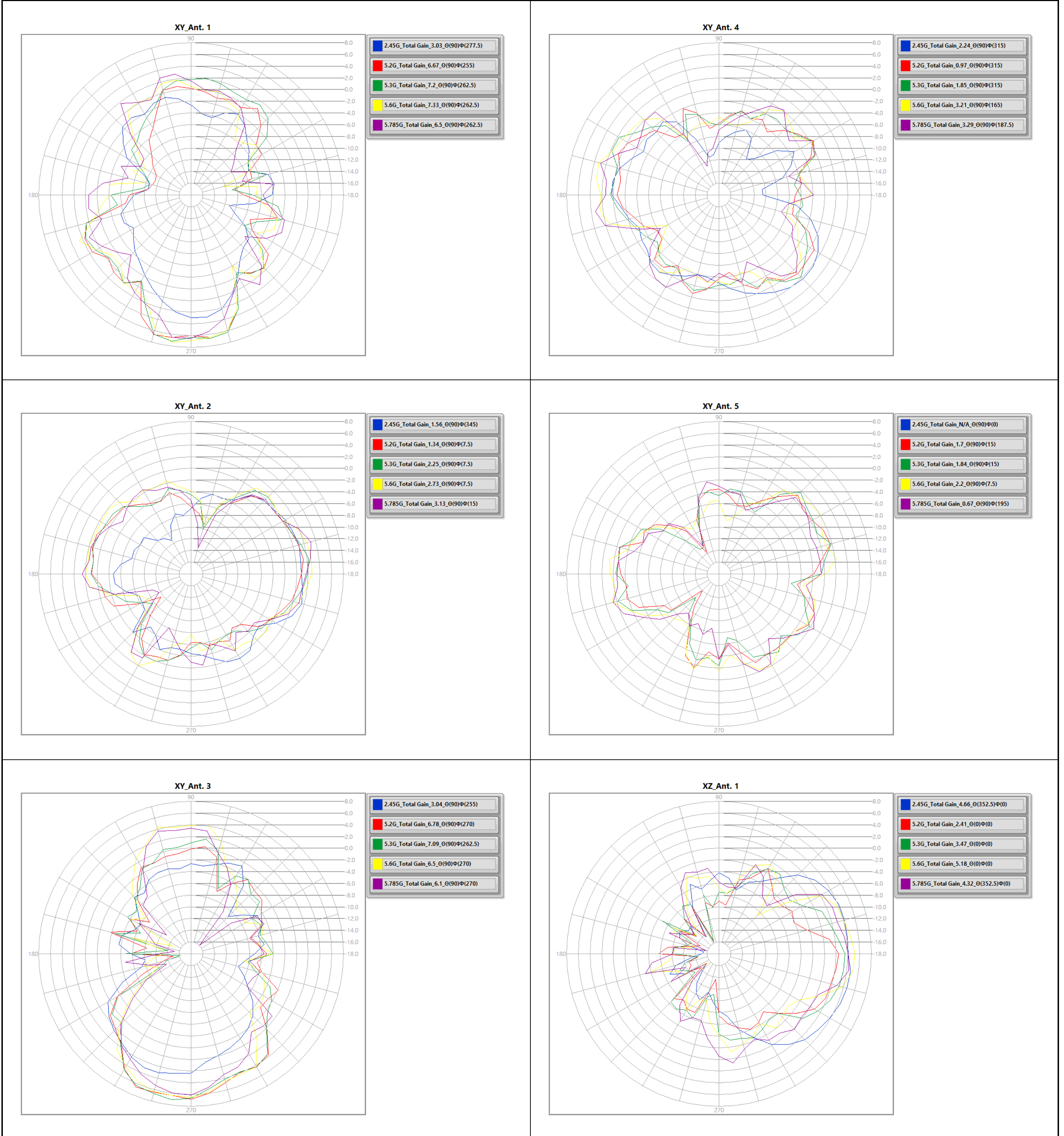


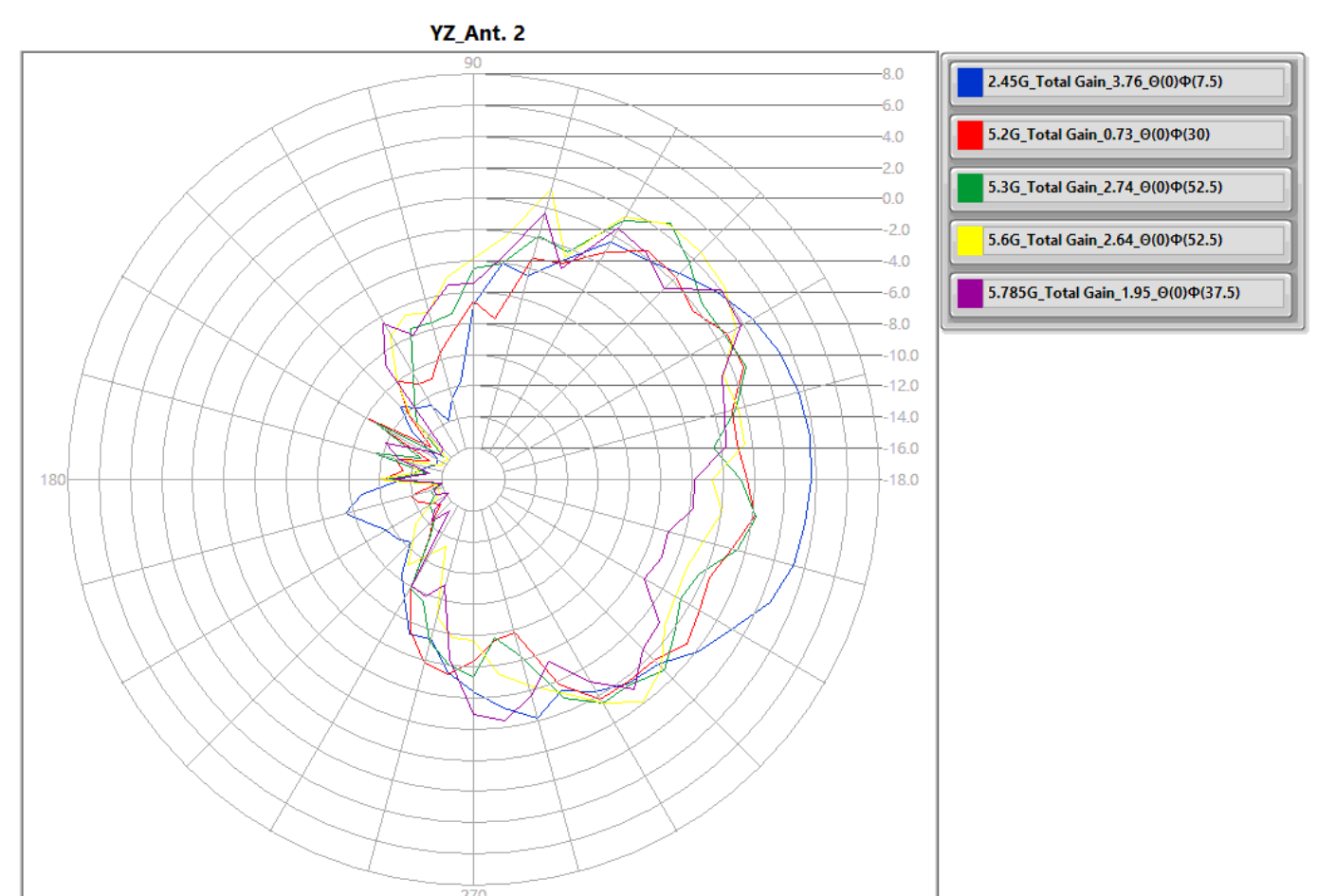
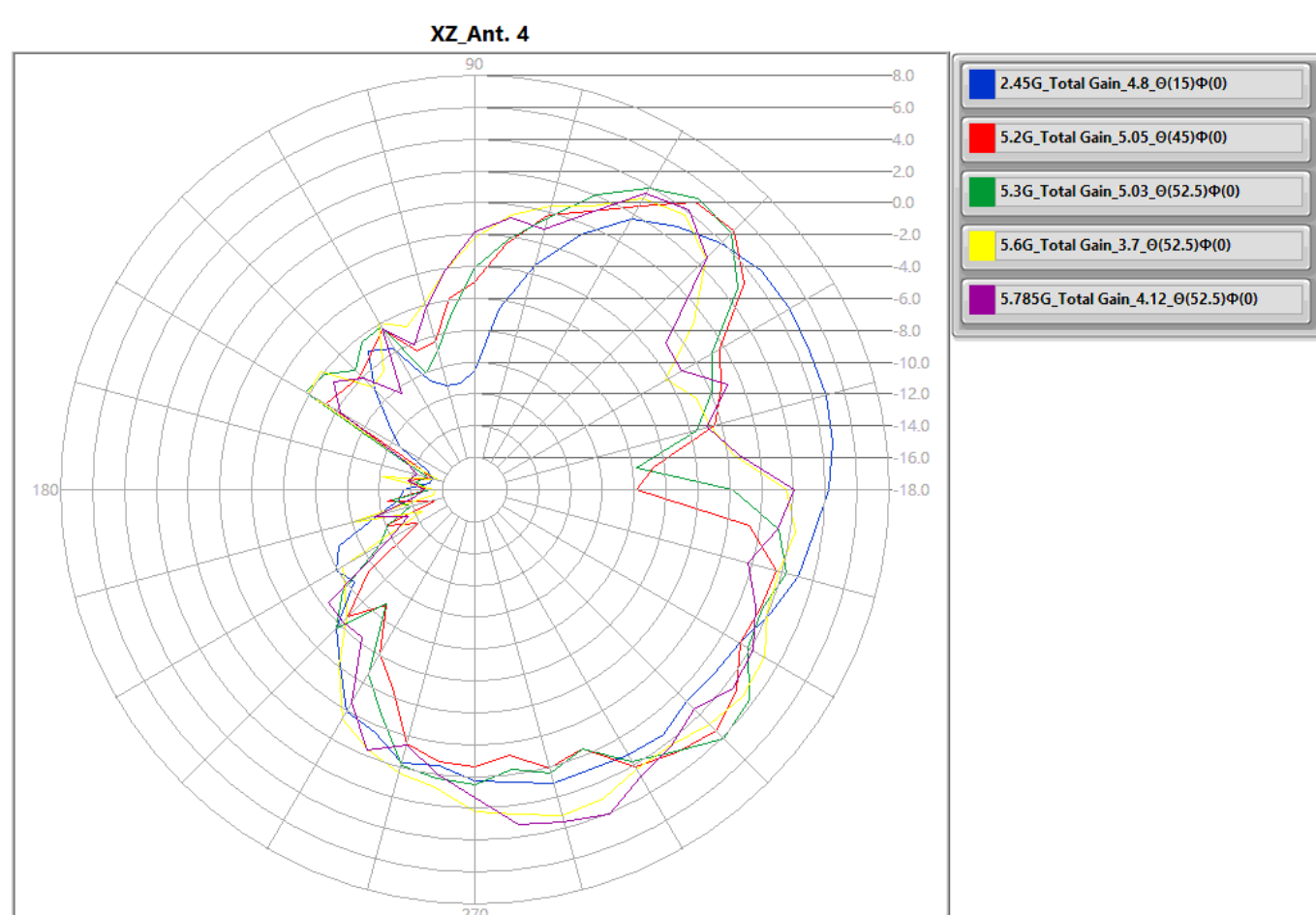
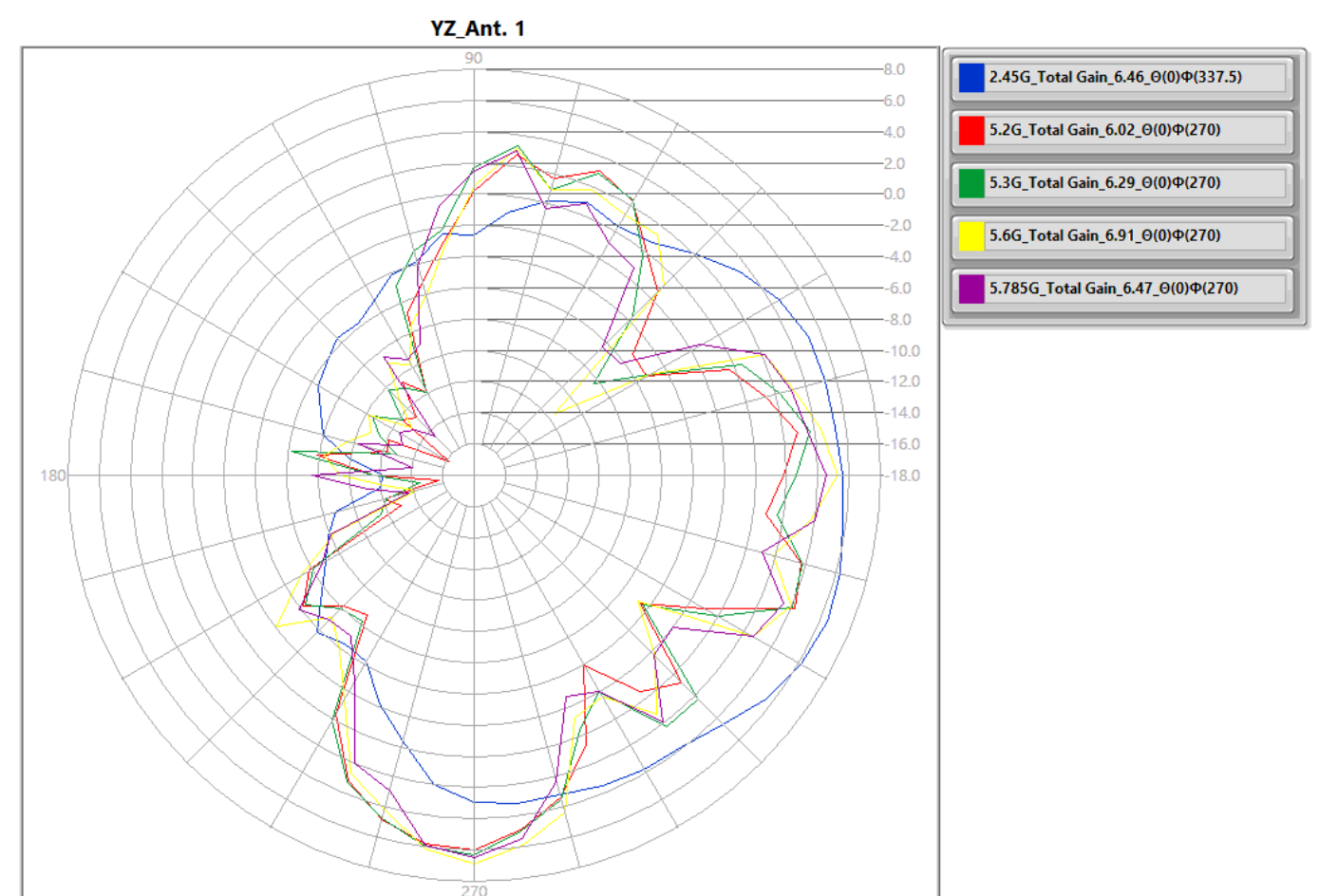
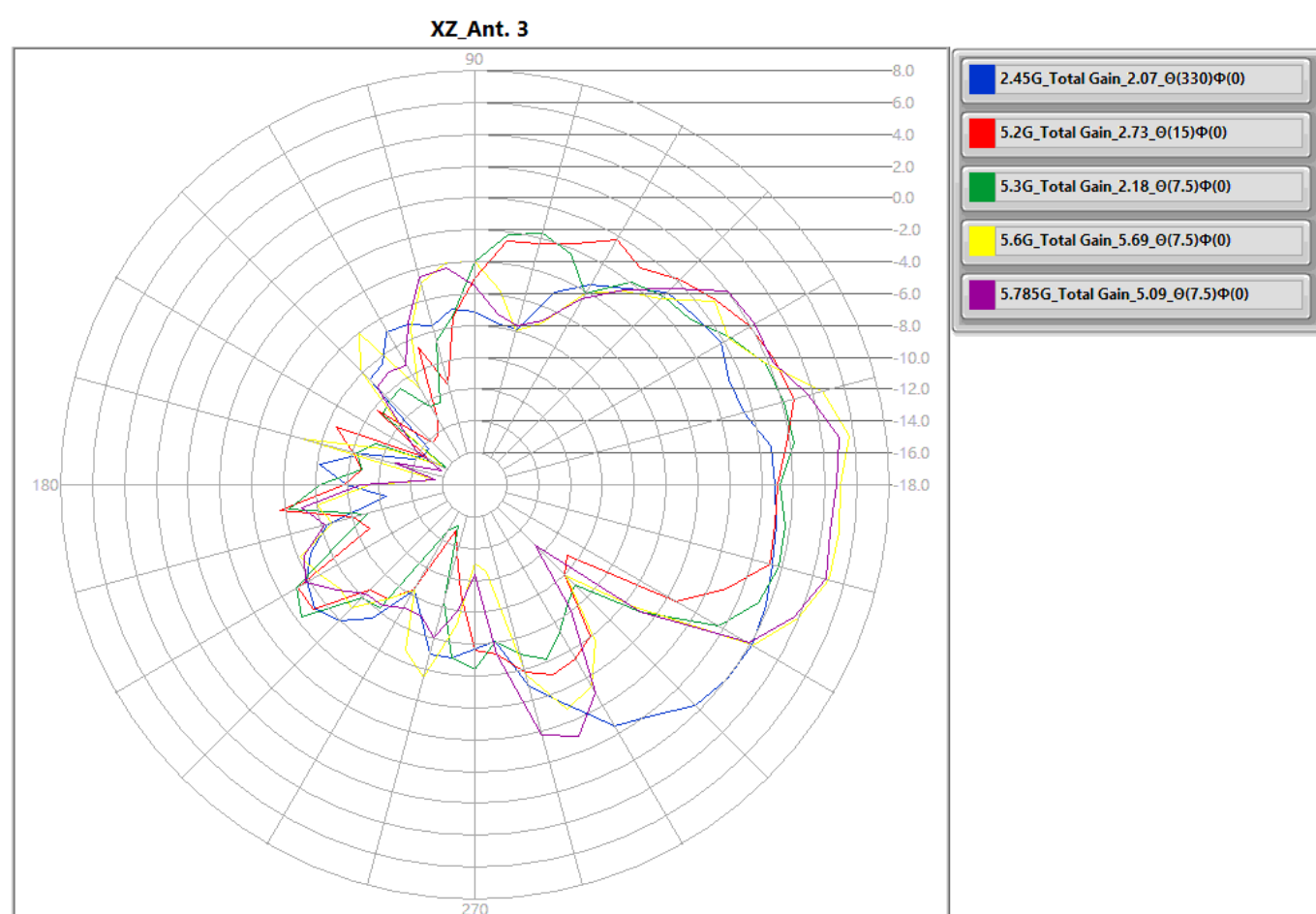
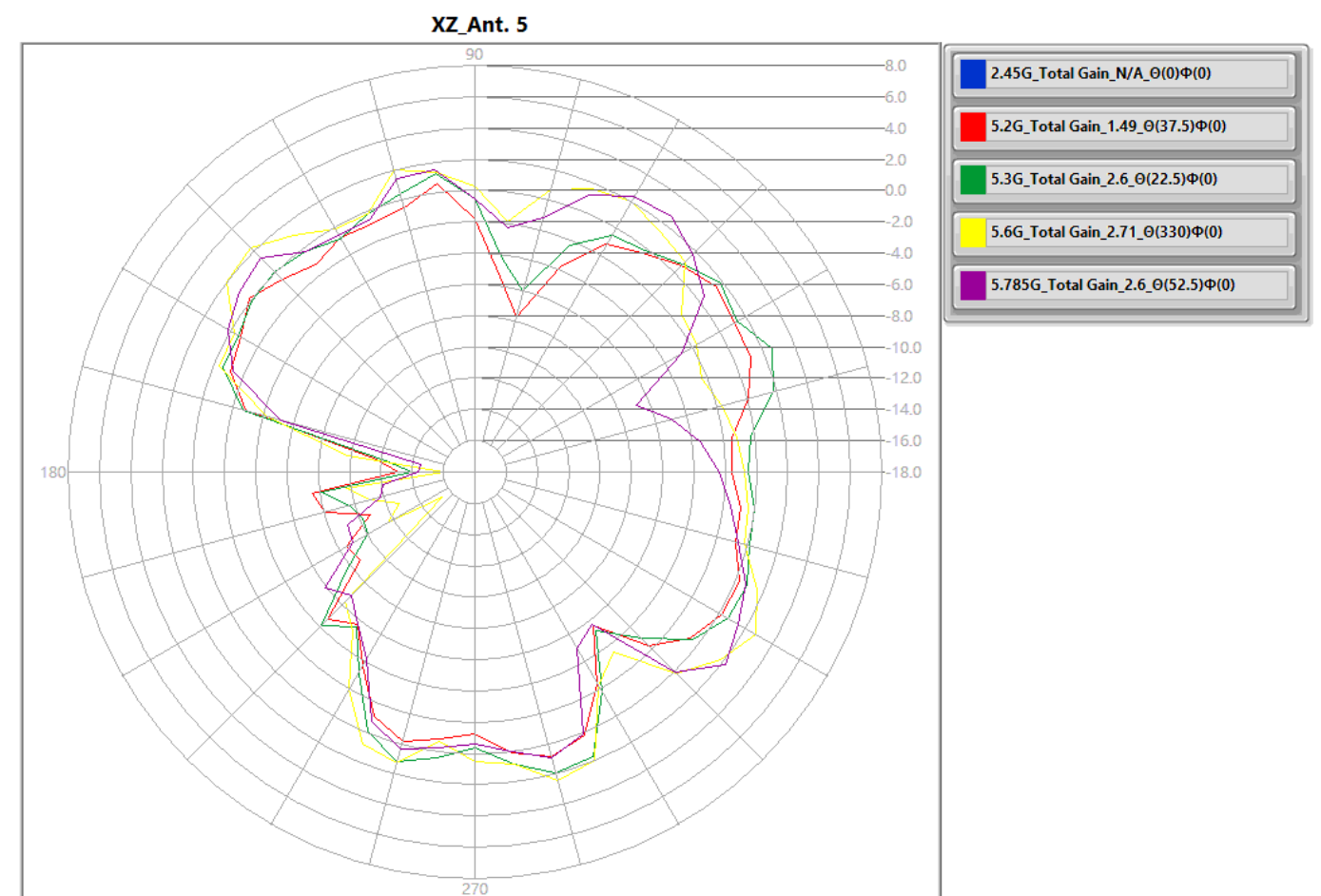
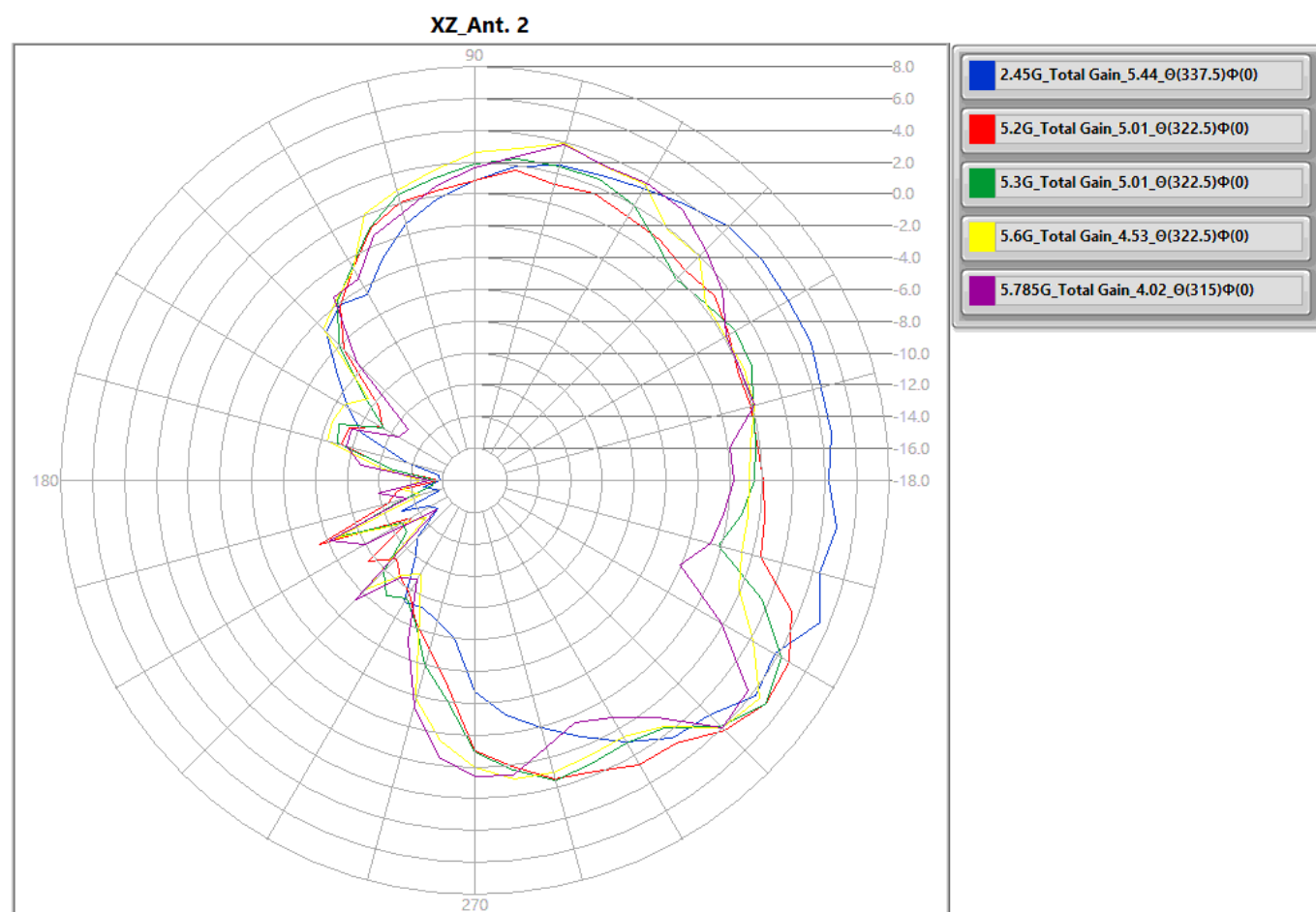
# Antenna Pattern of 2.4GHz/5GHz

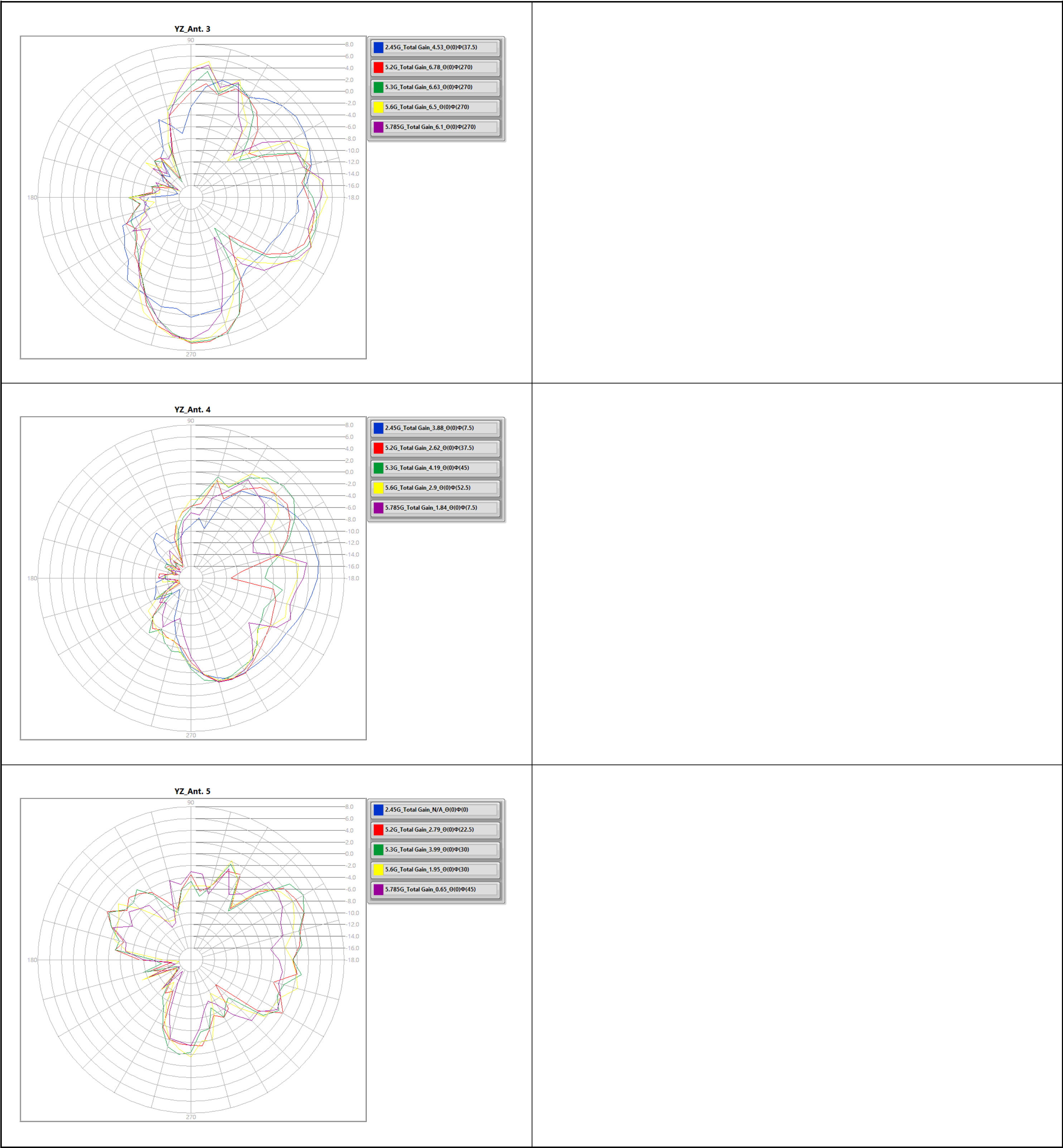
# Appendix B.1

|            |               |                |                |                |                |                 |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|------------|---------------|----------------|----------------|----------------|----------------|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Θ (15°)    | 1.772/2.00    | 1.981/1.84     | 1.611/1.34     | 1.081/0.94     | 0.981/1.23     | 1.371/1.05      | 0.971/1.04     | 1.271/1.12       | 0.841/0.78       | 0.941/1.07       | 1.171/1.32       | 1.201/0.64       | 0.181/0.09       | 0.521/0.89       | 0.921/0.95       | 0.981/0.76       | 0.071/0.52       | -1.721/2.00      | -1.701/1.53      | -1.691/1.77      | -1.191/0.93      | -0.941/0.70      | -0.431/0.18      | -0.121/0.35      |
| Θ (22.5°)  | 2.602/98      | 3.052/7.0      | 2.111/1.35     | 0.671/0.74     | 1.582/58       | 3.062/94        | 2.722/87       | 3.122/82         | 2.151/1.89       | 1.902/16         | 2.442/47         | 1.941/1.25       | 0.841/0.57       | 0.741/1.28       | 1.391/1.10       | 0.751/0.79       | 0.551/0.39       | -0.171/1.09      | -2.151/2.71      | -2.571/2.52      | -2.031/1.66      | -1.671/2.09      | -1.801/1.30      | -0.111/1.11      |
| Θ (30°)    | 1.321/78      | 1.371/69       | 0.401/1.21     | 2.042/85       | 3.383/53       | 3.744/13        | 3.993/58       | 2.882/74         | 3.023/03         | 2.662/38         | 2.502/47         | 2.091/1.43       | 0.701/0.04       | 0.401/1.41       | 1.881/51         | 1.732/31         | 1.680/67         | -0.561/0.87      | -0.841/0.92      | -1.901/3.22      | -2.781/1.69      | -1.681/2.35      | -2.541/2.49      | -1.301/2.04      |
| Θ (37.5°)  | 1.781/36      | -0.161/0.58    | 0.792/28       | 3.474/08       | 4.104/28       | <b>4.307/87</b> | 3.152/42       | 1.831/61         | 1.621/85         | 1.151/0.46       | 1.982/43         | 1.391/0.56       | -0.431/0.96      | -0.241/0.00      | -0.581/0.32      | 0.281/0.13       | -2.341/3.23      | -2.251/1.78      | -2.571/3.49      | -4.231/5.89      | -7.061/5.06      | -2.551/1.70      | -2.071/2.25      | -0.711/1.06      |
| Θ (45°)    | 0.841/92      | 0.691/1.17     | 1.992/60       | 2.893/27       | 3.442/78       | 1.671/0.26      | -2.661/4.07    | -3.281/2.64      | -2.751/1.51      | -0.421/2.10      | -1.111/0.89      | -0.091/2.36      | -2.971/3.72      | -2.991/3.53      | -4.991/4.13      | -6.201/8.03      | -6.971/9.39      | -10.861/9.25     | -9.001/9.34      | -5.511/3.86      | -4.811/4.68      | -3.901/3.26      | -2.821/3.30      | -2.871/0.77      |
| Θ (52.5°)  | -0.131/0.09   | 0.121/1.01     | 0.951/5.0      | 1.421/0.5      | -1.291/3.05    | -3.581/4.62     | -7.571/11.89   | -10.751/7.82     | -7.881/5.61      | -4.431/7.96      | -6.511/3.17      | -6.571/5.07      | -5.261/4.67      | -7.861/9.22      | -8.741/10.54     | -7.441/6.48      | -7.581/9.28      | -11.481/9.90     | -8.411/8.97      | -9.411/5.37      | -4.501/5.24      | -2.911/2.59      | -2.031/2.98      | -2.791/0.83      |
| Θ (60°)    | -0.491/0.68   | -0.831/0.05    | -0.731/0.33    | -1.921/4.51    | -7.121/3.16    | -0.861/0.81     | -2.091/3.52    | -3.441/2.25      | -2.051/2.92      | -3.561/4.11      | -2.561/0.74      | -2.831/2.46      | -1.811/1.41      | -4.141/2.65      | -2.371/3.32      | -3.861/4.96      | -7.761/9.03      | -7.931/6.64      | -6.731/7.15      | -8.291/7.47      | -4.591/3.47      | -1.531/1.29      | -1.551/2.67      | -5.331/1.06      |
| Θ (67.5°)  | -2.281/2.76   | -5.061/6.08    | -6.571/7.94    | -7.511/2.15    | -0.161/0.68    | 0.511/0.44      | -0.421/2.23    | -3.761/3.55      | -1.281/0.07      | -0.471/0.36      | 0.321/1.82       | 1.631/1.74       | 1.701/0.35       | 0.171/0.19       | -0.761/2.77      | -3.031/6.05      | -7.951/8.45      | -5.991/7.81      | -9.181/6.68      | -5.201/6.16      | -4.361/3.05      | -1.971/2.99      | -2.031/2.91      | -5.081/3.92      |
| Θ (75°)    | -6.041/6.25   | -8.671/12.39   | -12.121/8.30   | -2.301/0.87    | 1.311/0.16     | -1.141/2.64     | -5.191/4.65    | -3.021/5.35      | -5.991/2.35      | -0.631/0.58      | 0.011/1.13       | 1.652/0.9        | 1.951/0.85       | 0.371/0.18       | -1.631/2.28      | -3.391/6.02      | -9.791/10.14     | -7.881/4.95      | -5.881/8.64      | -6.511/4.01      | -3.431/3.71      | -2.411/2.54      | -4.021/3.47      | -4.121/5.25      |
| Θ (82.5°)  | -4.271/3.98   | -1.961/2.28    | -0.871/0.57    | 0.861/1.02     | -0.991/3.52    | -4.761/7.09     | -7.151/5.05    | -5.321/9.86      | -8.431/5.86      | -4.321/2.30      | -0.561/0.54      | 1.141/0.68       | 0.861/0.66       | -0.251/1.48      | -4.611/9.22      | -10.881/10.69    | -12.891/8.31     | -4.171/6.13      | -5.661/5.38      | -3.351/1.41      | -1.301/2.47      | -2.761/1.49      | -1.201/3.69      | -5.311/8.20      |
| Θ (90°)    | -0.521/0.18   | 1.841/0.12     | 0.541/0.77     | 1.671/0.87     | -5.841/5.07    | -3.441/3.41     | -4.651/3.86    | -3.971/8.99      | -12.821/12.68    | -9.981/5.42      | -2.731/2.35      | -0.501/0.70      | -0.381/2.43      | -0.191/1.82      | -5.841/7.19      | -12.431/9.48     | -8.451/5.03      | -2.861/3.61      | -2.301/7.06      | -6.281/2.68      | -2.091/1.24      | -3.081/0.99      | -0.151/2.05      | -2.931/5.58      |
| Θ (97.5°)  | 1.211/27      | 3.011/0.66     | 0.041/0.22     | -1.751/4.75    | -3.041/3.44    | -5.421/5.52     | -5.971/7.06    | -5.961/9.94      | -9.681/9.89      | -4.271/0.11      | 0.301/0.58       | 0.321/0.81       | 0.391/0.05       | -0.681/2.16      | -12.551/11.11    | -7.251/1.95      | -3.461/4.37      | -1.881/5.85      | -7.041/3.09      | -2.931/0.66      | -1.401/0.24      | 1.171/1.31       | 0.071/1.13       |                  |
| Θ (105°)   | 0.411/1.12    | 2.041/0.25     | -1.371/3.33    | -4.271/1.95    | -1.431/2.73    | -6.971/10.06    | -9.631/10.52   | -10.521/4.36     | -5.571/7.47      | -2.271/1.43      | 2.031/1.02       | 1.661/0.71       | 1.141/0.27       | 0.541/0.94       | -1.741/1.99      | -6.431/10.06     | -9.851/4.95      | -4.691/10.18     | -2.771/8.64      | -7.751/5.83      | -4.161/1.28      | -3.031/0.65      | -0.071/1.57      | -0.521/0.63      |
| Θ (112.5°) | -0.151/0.82   | 0.391/1.12     | -4.081/3.06    | -0.361/0.21    | -0.511/1.31    | -4.651/5.52     | -8.611/8.51    | -13.391/4.64     | -2.421/2.64      | -2.791/0.04      | 1.681/1.58       | 0.931/0.74       | -0.071/1.27      | -1.581/2.25      | -3.531/3.32      | -9.551/12.21     | -7.781/4.51      | -3.151/6.03      | -5.421/10.37     | -5.331/6.33      | -5.461/3.80      | -3.261/0.98      | 0.331/0.66       | -1.461/0.90      |
| Θ (120°)   | -0.821/0.83   | 1.031/0.09     | 0.831/0.33     | 0.431/0.31     | 0.661/0.81     | -2.631/6.00     | -5.231/6.18    | -11.791/8.84     | -3.421/0.29      | -0.001/0.58      | 0.721/0.06       | -0.411/2.26      | -3.111/4.39      | -3.511/2.51      | -5.181/7.23      | -9.471/15.45     | -8.451/3.18      | -3.721/7.36      | -8.741/5.64      | -2.581/6.26      | -2.851/6.68      | -0.641/0.92      | 0.101/0.61       |                  |
| Θ (127.5°) | -0.211/1.33   | 2.491/3.18     | 3.071/2.37     | 1.961/1.49     | 1.361/0.80     | -4.991/5.61     | -2.941/2.48    | -5.011/10.00     | -4.981/1.91      | -0.281/0.57      | 0.311/0.55       | -1.081/1.64      | -5.531/6.33      | -9.361/6.98      | -9.311/15.47     | -11.621/10.71    | -12.421/12.49    | -11.221/8.87     | -10.061/6.50     | -6.141/6.08      | -5.081/11.77     | -5.251/4.09      | -4.541/3.99      | -2.141/2.84      |
| Θ (135°)   | 0.152/55      | 2.871/2.97     | 2.661/2.31     | 2.521/0.33     | 2.571/0.33     | -3.961/6.44     | -4.171/1.77    | -1.911/5.55      | -12.021/5.19     | -2.061/0.66      | -0.931/1.74      | -2.301/2.97      | -4.061/6.22      | -11.221/30.9     | -12.101/14.98    | -15.691/15.32    | -11.311/11.64    | -13.031/14.97    | -12.831/14.43    | -10.311/5.47     | -5.731/4.48      | -4.491/3.06      | -2.591/2.72      | -2.191/2.31      |
| Θ (142.5°) | -0.0321/8     | 0.0321/8       | 2.021/46       | 2.161/63       | 0.9411/12      | 0.8711/197      | -5.4311/552    | -4.1011/228      | -1.6811/343      | -7.5411/1284     | -10.8211/635     | -3.7911/424      | -5.2911/843      | -7.6711/621      | -12.3211/1541    | -15.3811/1029    | -7.6311/788      | -8.6211/889      | -12.1311/1537    | -14.6211/1434    | -4.9511/190      | -0.2911/002      | 0.2111/011       | 0.0711/022       |
| Θ (150°)   | -0.561/0.60   | 1.711/1.45     | 1.171/1.23     | 0.961/0.11     | -0.721/2.23    | -4.371/4.67     | -1.901/0.08    | 0.281/1.64       | -5.131/8.32      | -9.731/11.26     | -12.591/13.37    | -12.841/13.68    | -10.111/9.39     | -12.361/10.83    | -9.131/11.01     | -13.291/8.97     | -6.561/7.03      | -9.071/13.69     | -15.641/15.72    | -12.591/5.77     | -1.211/0.40      | 0.421/0.10       | 1.211/0.51       | 0.651/0.57       |
| Θ (157.5°) | -0.601/0.41   | 1.071/0.78     | 0.311/0.37     | -1.281/2.95    | -5.421/5.58    | -8.781/4.56     | -3.331/2.78    | -2.771/2.73      | -2.561/3.31      | -4.991/5.10      | -4.871/6.26      | -9.451/11.11     | -10.251/10.75    | -14.561/14.41    | -11.761/8.45     | -6.181/5.28      | -7.011/11.50     | -15.671/15.77    | -15.121/10.91    | -6.751/3.88      | -2.681/2.67      | -2.171/1.42      | -0.811/2.68      | -0.111/0.46      |
| Θ (165°)   | -2.641/2.23   | -2.181/3.07    | -4.561/6.20    | -7.161/7.47    | -8.531/10.98   | -10.581/7.18    | -5.421/4.64    | -3.421/1.82      | -0.991/1.26      | -2.491/4.25      | -6.771/11.68     | -14.611/11.46    | -9.721/10.30     | -12.851/14.01    | -12.141/10.24    | -10.431/11.71    | -13.751/14.82    | -14.871/12.30    | -9.471/7.43      | -6.411/6.65      | -5.111/5.02      | -4.301/2.98      | -2.461/2.25      |                  |
| Θ (172.5°) | -12.221/12.08 | -11.951/11.00  | -9.751/8.74    | -8.491/9.09    | -9.691/8.74    | -6.701/5.42     | -5.101/4.58    | -3.551/3.14      | -4.021/6.05      | -9.891/12.68     | -12.071/9.22     | -8.031/8.00      | -8.071/9.07      | -10.721/12.48    | -15.591/13.70    | -12.621/12.81    | -13.591/14.03    | -14.161/13.03    | -12.931/13.99    | -14.081/12.18    | -9.591/8.66      | -9.011/9.22      | -9.561/9.01      | -6.821/3.13      |
| Θ (180°)   | -14.011/12.13 | -10.541/10.27  | -11.381/12.34  | -12.571/11.87  | -10.571/10.07  | -10.261/11.63   | -11.631/11.46  | -12.501/13.98    | -14.821/13.07    | -8.871/6.52      | -5.681/5.78      | -6.811/8.55      | -10.681/12.84    | -15.081/15.94    | -15.591/15.34    | -15.521/15.56    | -15.491/15.32    | -15.641/15.02    | -15.391/15.31    | -14.921/15.77    | -14.941/15.30    | -16.071/15.76    | -13.851/12.72    | -13.251/13.69    |
| Freq(Hz)   | 5.651/0.0     | TotalAnt. 5    | -              | -              | -              | -               | -              | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| Gain       | Φ(0°)Φ(7.5°)  | Φ(15°)Φ(22.5°) | Φ(30°)Φ(37.5°) | Φ(45°)Φ(52.5°) | Φ(60°)Φ(67.5°) | Φ(75°)Φ(82.5°)  | Φ(90°)Φ(97.5°) | Φ(105°)Φ(112.5°) | Φ(120°)Φ(127.5°) | Φ(135°)Φ(142.5°) | Φ(150°)Φ(157.5°) | Φ(165°)Φ(172.5°) | Φ(180°)Φ(187.5°) | Φ(195°)Φ(202.5°) | Φ(210°)Φ(217.5°) | Φ(225°)Φ(232.5°) | Φ(240°)Φ(247.5°) | Φ(255°)Φ(262.5°) | Φ(270°)Φ(277.5°) | Φ(285°)Φ(292.5°) | Φ(300°)Φ(307.5°) | Φ(315°)Φ(322.5°) | Φ(330°)Φ(337.5°) | Φ(345°)Φ(352.5°) |
| Θ (0°)     | -0.781/0.84   | -0.841/0.73    | -0.641/0.79    | -1.051/0.87    | -0.751/0.99    | -1.081/1.04     | -0.741/0.69    | -0.761/0.89      | -0.921/0.60      | -0.621/0.83      | -0.921/0.89      | -0.941/0.88      | -0.611/0.23      | -0.311/0.88      | -1.371/1.19      | -0.671/0.45      | -0.721/0.90      | -0.801/0.23      | 0.091/0.32       | -1.321/1.59      | -1.061/0.29      | 0.081/0.03       | -0.181/0.58      | -0.741/0.59      |
| Θ (7.5°)   | -1.131/1.09   | -1.041/1.14    | -1.271/1.25    | -1.091/0.98    | -1.391/2.35    | -2.351/1.63     | -1.911/1.56    | -2.921/1.95      | -0.701/0.48      | -0.101/1.56      | -1.211/0.79      | -0.721/0.78      | -0.421/0.27      | -0.631/0.90      | -0.291/0.09      | 0.011/0.29       | 0.051/0.03       | 0.001/0.08       | -0.441/0.47      | -0.891/1.14      | -0.361/0.62      | -0.891/1.14      | -1.361/1.31      |                  |
| Θ (15°)    | -1.631/2.12   | -2.451/2.44    | -2.321/2.19    | -2.071/1.79    | -1.561/1.45    | -1.231/0.62     | -0.071/0.01    | -0.511/1.02      | -1.031/0.47      | -0.061/0.26      | -0.701/0.72      | -0.481/0.49      | -0.151/0.09      | -0.261/0.29      | 0.211/0.50       | 0.411/0.17       | -0.071/0.13      | 0.321/0.87       | 0.721/0.31       | 0.391/0.87       | 1.101/1.16       | 1.101/0.89       | 0.421/0.25       | -0.851/1.55      |
| Θ (22.5°)  | -2.361/4.34   | -5.191/4.74    | -3.771/2.84    | -1.971/0.84    | 0.171/0.77     | 0.641/0.72      | 1.011/1.21     | 1.7021.11        | 1.721/0.84       | 0.801/1.22       | 1.2611.44        | 1.511/1.35       | 1.5611.64        | 1.2411.16        | 1.6711.66        | 0.9811.06        | -0.551/0.79      | -1.211/1.31      | -1.481/2.11      | -3.031/3.23      | -2.791/2.19      | -1.701/1.10      | -0.671/0.55      | 0.021/0.40       |
| Θ (30°)    | -1.661/3.75   | -4.231/3.10    | -2.091/0.80    | 0.3811.49      | 1.751/1.38     | 1.121/1.92      | 1.9511.46      | 1.9121.47        | 2.5021.19        | 1.5911.48        | 2.131/0.03       | 3.1521.87        | 2.7121.28        | 1.5511.68        | 1.8511.45        | 0.571/0.21       | -0.081/0.82      | 0.761/0.24       | -2.051/3.36      | -3.661/4.15      | -4.761/4.92      | -4.501/3.66      | -3.011/2.46      | -1.141/0.41      |
| Θ (37.5°)  | -1.391/2.00   | -1.951/0.50    | 1.791/2.48     | 2.951/3.00     | 3.561/0.33     | 2.231/0.70      | 1.0911.47      | 1.371/0.72       | 1.0811.76        | 1.9811.92        | 1.4721.00        | 2.1721.05        | 1.7611.11        | 0.131/0.24       | 0.131/0.41       | -1.281/0.71      | -0.611/1.92      | -3.831/3.70      | -2.161/1.68      | -2.311/2.67      | -2.241/2.38      | -3.891/5.76      | -5.471/4.55      | -3.021/1.87      |
| Θ (45°)    | 1.021/1.18    | 0.911/1.28     | 2.281/3.39     | 3.751/5.55     | 2.511/0.99     | -0.031/0.83     | -0.991/1.22    | -1.761/1.26      | -0.301/0.34      | -0.921/0.50      | -0.421/0.27      | 0.921/1.04       | 0.271/1.35       | -1.471/0.94      | -1.211/2.58      | -2.361/3.22      | -6.601/5.87      | -4.261/4.56      | -6.511/7.26      | -6.151/5.76      | -4.691/2.88      | -1.731/3.12      | -5.641/4.50      | -3.291/1.12      |
| Θ (52.5°)  | 1.4121.63     | 2.8021.50      | 3.1621.92      | 2.301/0.97     | -1.841/3.94    | -4.671/6.82     | -6.681/7.15    | -7.011/7.50      | -7.161/4.38      | -4.831/5.25      | -4.081/4.50      | -3.541/3.58      | -3.461/6.08      | -6.711/5.93      | -4.551/5.94      | -6.441/4.73      | -5.291/7.07      | -5.151/5.09      | -9.561/15.64     | -6.271/3.61      | -3.361/2.43      | -2.731/2.79      | -4.              |                  |

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







## Total Gain Data

[illegible]



|           |               |               |               |               |               |              |              |              |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |
|-----------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|-------------|--------------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Θ(22.5°)  | 3.97/3.53     | 2.92/2.30     | 1.89/1.47     | 0.94/0.22     | -1.27/-1.20   | -0.22/0.86   | 1.71/2.42    | 2.77/2.69    | 2.39/2.01   | 1.35/0.29    | -0.58/-0.25 | 0.34/-0.01  | -0.56/-1.70   | -2.07/-1.32   | -0.37/0.11    | 0.11/-0.20    | -1.86/-2.57   | -1.50/-0.54   | 0.30/1.20     | 2.01/2.30     | 2.05/2.14     | 2.77/3.06     | 2.73/2.45     | 2.76/3.17     |
| Θ(30°)    | 2.36/2.22     | 1.63/1.55     | 2.16/1.84     | 1.51/0.55     | -0.47/-1.48   | -1.80/-3.15  | -5.19/-5.21  | -2.99/-0.34  | 1.01/1.28   | 1.29/0.30    | -1.10/-2.13 | -1.64/-1.32 | -1.50/-1.85   | -2.10/-2.31   | -1.94/-1.73   | -2.94/-3.42   | -4.56/-2.35   | -0.43/0.57    | 0.89/1.22     | 1.32/0.91     | 0.58/1.00     | 2.07/3.44     | 4.24/3.96     | 3.42/3.24     |
| Θ(37.5°)  | -2.41/-3.43   | -3.06/-1.79   | 0.52/1.69     | 1.96/2.21     | 1.59/-0.11    | -3.39/-8.95  | -9.43/-8.23  | -6.33/-3.65  | -1.86/-0.16 | 0.44/1.05    | -0.22/-1.68 | -1.47/-1.29 | -1.82/-1.10   | -1.88/-6.09   | -3.83/-1.38   | -1.47/-2.51   | -2.69/-2.16   | -1.88/-0.50   | 0.59/0.88     | 0.48/-0.04    | 1.01/2.20     | 2.57/2.23     | 2.82/2.91     | 2.52/1.77     |
| Θ(45°)    | -2.04/-4.68   | -8.49/-5.33   | -1.61/0.43    | 0.61/1.39     | 0.73/-1.70    | -4.83/-9.26  | -8.50/-6.47  | -6.86/-9.70  | -7.56/-3.61 | -1.01/0.81   | 1.04/-0.74  | -2.10/-1.60 | -2.68/-1.84   | -0.50/-1.65   | -0.93/0.37    | -1.34/-2.24   | -1.19/-1.34   | -0.86/-0.07   | -0.38/-2.48   | -5.34/-5.49   | -2.04/0.77    | 1.97/2.06     | 0.53/-0.62    | -0.68/-1.07   |
| Θ(52.5°)  | -0.89/-1.50   | -1.86/-4.56   | -7.09/-7.61   | -4.24/-0.56   | 0.42/-0.95    | -2.77/-4.28  | -3.76/-3.86  | -5.13/-7.49  | -9.16/-7.40 | -3.97/-2.53  | -1.06/-0.30 | 0.25/0.13   | -0.58/0.66    | -1.54/-4.18   | -0.77/0.15    | -0.88/-0.68   | -0.73/-3.21   | -5.36/-4.32   | -4.59/-4.26   | -5.29/-7.18   | -7.17/-3.11   | -2.79/-3.51   | -3.47/-3.86   | -2.67/-2.01   |
| Θ(60°)    | -1.65/-1.01   | -0.82/-3.66   | -6.07/-10.81  | -5.17/-2.61   | -1.23/-1.42   | -3.68/-5.04  | -4.34/-2.70  | -1.25/-2.45  | -5.18/-9.89 | -11.65/-3.25 | 0.42/2.17   | 2.51/2.97   | 2.12/2.35     | 2.14/0.58     | 0.82/-0.35    | -1.95/-0.62   | -2.20/-6.00   | -7.25/-5.55   | -5.58/-8.60   | -12.38/-9.46  | -5.84/-7.00   | -4.76/-6.03   | -7.18/-6.33   | -2.67/-0.70   |
| Θ(67.5°)  | -2.60/-0.82   | 0.93/-0.85    | -0.68/-1.48   | -1.02/-1.27   | -2.55/-3.64   | -7.81/-11.54 | -10.53/-8.65 | -4.00/-0.18  | -0.30/-4.18 | -13.39/-7.38 | -1.11/1.33  | 2.10/2.24   | 1.81/1.71     | 0.89/-0.78    | -1.79/-4.50   | -2.36/-2.96   | -5.36/-6.73   | -9.22/-9.11   | -8.69/-8.02   | -11.38/-12.51 | -8.72/-7.41   | -5.21/-6.89   | -3.32/-3.50   | -1.03/-1.37   |
| Θ(75°)    | -2.77/-1.55   | 0.54/0.45     | 1.51/0.70     | -1.19/-4.27   | -7.21/-7.88   | -6.81/-5.17  | -4.47/-5.05  | -5.86/-2.58  | -0.49/-2.78 | -7.38/-8.55  | -1.96/0.55  | 1.24/2.02   | 2.85/2.70     | 2.54/1.90     | -0.67/-3.98   | -2.84/-4.41   | -2.04/-3.93   | -6.92/-10.96  | -8.69/-5.91   | -5.42/-7.13   | -5.54/-6.99   | -4.59/-4.89   | -4.46/-3.12   | -2.67/-2.64   |
| Θ(82.5°)  | -4.58/-3.36   | 1.04/1.67     | -0.18/0.50    | -2.27/-5.59   | -5.48/-5.73   | -7.29/-6.99  | -6.75/-15.88 | -8.78/-5.98  | -1.98/-0.25 | -1.61/-0.94  | -0.34/-0.65 | -0.51/0.77  | 1.20/0.38     | 1.46/-1.58    | 0.59/-0.25    | -0.70/-3.36   | -0.72/-3.44   | -6.96/-15.03  | -6.01/-4.53   | -2.31/-1.03   | -0.83/-4.25   | -7.29/-7.74   | -6.56/-3.69   | -2.94/-3.27   |
| Θ(90°)    | -9.15/-2.45   | -0.29/0.35    | -1.09/-1.96   | -6.18/-5.52   | -4.38/-6.80   | -6.91/-3.42  | -2.99/-6.82  | -6.40/-5.75  | -4.27/-0.87 | 0.23/1.65    | 1.89/1.20   | -0.82/0.27  | 0.49/1.03     | 2.17/-0.45    | 1.65/-0.79    | -1.37/-5.82   | -1.15/-4.00   | -5.39/-9.77   | -4.21/-2.96   | -4.76/-3.44   | -0.06/-2.08   | -5.26/-7.22   | -6.34/-4.56   | -4.10/-4.39   |
| Θ(97.5°)  | -9.21/-4.55   | -2.48/-2.77   | -3.67/-4.11   | -7.47/-2.38   | -3.28/-9.35   | -9.37/-5.26  | -3.84/-4.75  | -2.07/-1.77  | -4.62/-2.40 | 0.77/3.65    | 3.62/3.51   | 2.49/0.78   | 1.60/0.76     | 1.70/1.83     | 1.11/-0.78    | -3.52/-8.34   | -3.70/-4.54   | -3.62/-8.22   | -6.47/-4.46   | -6.70/-5.63   | -1.53/-2.17   | -5.60/-6.75   | -4.10/-3.93   | -4.92/-5.79   |
| Θ(105°)   | -13.12/-5.67  | -4.01/-4.96   | -4.54/-4.73   | -5.70/-3.02   | -2.45/-12.59  | -10.57/-7.82 | -6.04/-5.03  | -0.69/0.44   | -1.70/-4.39 | -1.07/2.09   | 3.72/4.50   | 3.32/2.54   | 2.66/2.56     | 1.31/0.93     | -0.45/-1.50   | -1.75/-13.59  | -4.51/-4.64   | -3.49/-5.93   | -6.74/-8.67   | -9.76/-4.72   | -4.34/-3.77   | -8.31/-6.01   | -7.13/-4.06   | -6.55/-6.76   |
| Θ(112.5°) | -7.16/-6.85   | -3.92/-9.35   | -6.34/-7.82   | -7.62/-5.04   | -6.28/-9.03   | -8.37/-9.00  | -9.92/-5.08  | -0.32/2.12   | 1.74/-1.34  | -2.08/-0.31  | 1.98/3.55   | 4.02/2.56   | 3.05/1.94     | 1.10/0.02     | -4.24/-3.01   | -6.62/-6.44   | -4.67/-6.39   | -5.43/-5.89   | -11.35/-12.99 | -12.05/-6.29  | -7.66/-5.62   | -9.37/-6.62   | -3.81/-5.07   | -9.43/-10.71  |
| Θ(120°)   | -9.18/-14.54  | -7.24/-12.13  | -10.23/-13.59 | -8.15/-8.00   | -6.00/-5.44   | -9.14/-16.10 | -8.11/-2.36  | 0.18/2.78    | 3.35/1.74   | -1.37/-1.79  | 0.31/2.32   | 2.12/0.81   | 0.64/0.84     | -0.81/-3.01   | -8.17/-1.05   | -2.55/-11.81  | -5.87/-5.17   | -5.26/-5.85   | -15.42/-15.97 | -9.69/-7.50   | -3.78/-10.68  | -8.88/-11.51  | -8.28/-12.44  | -14.80/-11.96 |
| Θ(127.5°) | -8.74/-7.88   | -7.33/-14.26  | -11.56/-10.14 | -8.22/-7.95   | -6.66/-7.38   | -9.55/-7.64  | -2.88/-1.31  | 1.06/1.86    | 3.24/3.03   | 2.49/1.71    | 1.55/0.98   | 0.70/0.46   | 0.07/0.10     | -0.90/0.43    | -2.53/-0.28   | -2.00/-6.93   | -9.87/-7.94   | -6.75/-6.03   | -7.13/-14.38  | -11.65/-15.01 | -9.36/-8.46   | -14.35/-15.49 | -11.14/-14.49 | -12.47/-12.23 |
| Θ(135°)   | -10.27/-15.64 | -7.57/-15.47  | -10.53/-10.17 | -8.13/-7.87   | -7.81/-8.81   | -10.03/-6.96 | -3.73/-1.70  | -0.59/2.10   | 3.42/4.29   | 3.82/2.84    | 2.70/1.86   | 0.62/1.17   | 0.83/0.81     | -0.47/-2.08   | -4.24/-6.39   | -3.71/-3.71   | -2.49/-7.70   | -8.25/-14.24  | -14.17/-12.42 | -10.76/-8.90  | -11.11/-15.75 | -11.41/-9.74  | -12.39/-13.14 | -8.73/-11.92  |
| Θ(142.5°) | -12.94/-14.02 | -10.54/-13.79 | -14.89/-14.86 | -11.93/-9.68  | -8.42/-12.49  | -11.39/-6.68 | -3.86/-1.58  | 0.52/1.95    | 3.13/3.19   | 3.35/3.35    | 2.64/1.78   | 1.76/0.56   | 0.35/-0.19    | -1.74/-2.32   | -3.62/-4.18   | -7.67/-15.55  | -9.13/-6.72   | -6.56/-7.35   | -7.22/-9.88   | -11.89/-14.58 | -9.84/-8.67   | -11.91/-15.07 | -9.18/-8.24   | -14.03/-11.05 |
| Θ(150°)   | -10.96/-13.82 | -12.92/-14.38 | -13.30/-13.19 | -12.10/-14.50 | -12.93/-8.64  | -5.11/-3.66  | -2.45/-0.83  | 0.46/1.37    | 2.22/2.50   | 2.66/3.12    | 2.87/2.74   | 2.41/1.37   | 0.15/-1.76    | -3.31/-4.05   | -2.56/-0.73   | -1.37/-3.08   | -4.89/-4.82   | -4.92/-7.43   | -9.29/-9.91   | -13.89/-13.04 | -12.34/-9.99  | -8.93/-9.90   | -11.11/-9.28  | -11.32/-12.04 |
| Θ(157.5°) | -10.32/-15.20 | -16.06/-10.38 | -8.70/-7.95   | -6.40/-5.83   | -6.04/-5.58   | -4.86/-3.89  | -2.92/-2.05  | -1.33/-1.31  | -1.32/-0.51 | 0.02/-0.15   | -0.00/0.35  | 0.87/-0.06  | -1.27/-0.90   | -0.36/-1.71   | -3.04/-1.47   | -0.51/-1.49   | -3.66/-6.21   | -7.15/-9.91   | -15.47/-15.30 | -13.72/-10.09 | -7.75/-7.88   | -9.05/-11.58  | -13.72/-13.45 | -11.52/-10.26 |
| Θ(165°)   | -14.17/-15.99 | -12.81/-11.40 | -10.26/-9.24  | -7.40/-5.93   | -5.48/-5.13   | -5.17/-6.08  | -5.90/-5.12  | -4.09/-3.28  | -2.87/-2.40 | -1.55/-0.50  | -0.27/-0.27 | -0.79/-2.06 | -2.26/-1.26   | -1.53/-3.40   | -4.68/-4.69   | -4.43/-4.32   | -5.60/-7.37   | -8.90/-8.29   | -8.55/-8.29   | -8.63/-11.36  | -13.13/-14.36 | -13.13/-11.92 | -10.58/-10.25 | -10.34/-11.26 |
| Θ(172.5°) | -15.29/-14.72 | -14.91/-14.73 | -14.03/-13.27 | -12.77/-12.01 | -10.82/-9.75  | -8.52/-7.61  | -6.13/-4.94  | -4.52/-4.32  | -4.26/-3.91 | -4.44/-5.46  | -5.90/-5.52 | -4.71/-4.30 | -4.38/-5.03   | -6.42/-8.18   | -10.95/-11.79 | -10.84/-7.90  | -5.76/-5.21   | -6.01/-8.29   | -11.47/-15.11 | -15.78/-15.10 | -14.01/-11.72 | -11.48/-13.79 | -14.33/-15.33 | -14.47/-14.41 |
| Θ(180°)   | -12.05/-11.29 | -11.53/-11.81 | -11.82/-11.48 | -11.81/-11.87 | -11.56/-10.89 | -10.14/-9.75 | -9.45/-10.09 | -10.42/-9.94 | -9.51/-9.68 | -8.68/-7.87  | -8.01/-8.54 | -8.35/-9.63 | -11.94/-14.88 | -14.61/-14.12 | -14.76/-15.35 | -15.34/-14.09 | -13.42/-12.32 | -11.81/-13.82 | -15.07/-13.44 | -13.18/-14.48 | -15.54/-15.18 | -15.28/-15.29 | -14.77/-15.18 | -15.86/-15.68 |

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

