



|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(15°)    | -4.64/-4.48   | -4.52/-4.29     | -4.78/-5.21     | -6.89/-8.58     | -10.02/-11.56   | -12.85/-13.95   | -11.78/-9.71    | -8.63/-8.09       | -7.56/-7.37       | -7.24/-7.30       | -8.02/-9.20       | -10.36/-11.31     | -11.50/-10.54     | -9.63/-9.22       | -9.03/-9.45       | -9.93/-9.52       | -8.93/-8.82       | -7.96/-7.79       | -7.70/-7.27       | -7.08/-6.96       | -6.72/-6.75       | -6.32/-5.54       | -5.12/-4.98       | -5.31/-4.61       |
| Θ(22.5°)  | -3.96/-3.82   | -4.07/-4.13     | -4.47/-5.20     | -6.08/-8.00     | -8.96/-10.15    | -10.26/-9.42    | -8.29/-7.62     | -6.90/-6.03       | -5.71/-6.72       | -7.96/-8.24       | -8.30/-8.55       | -8.74/-8.25       | -8.11/-7.85       | -7.42/-7.89       | -8.61/-9.73       | -9.51/-9.48       | -9.48/-7.99       | -7.31/-7.01       | -6.37/-5.22       | -4.44/-4.00       | -4.04/-4.61       | -5.05/-5.06       | -5.08/-5.33       | -5.57/-4.32       |
| Θ(35°)    | -1.66/-1.27   | -1.84/-2.13     | -2.87/-4.15     | -6.58/-8.91     | -10.30/-10.32   | -8.93/-7.03     | -5.89/-5.40     | -4.86/-4.36       | -4.20/-4.08       | -4.01/-4.16       | -4.08/-4.14       | -4.20/-4.17       | -4.82/-4.93       | -5.13/-6.16       | -6.27/-7.25       | -7.66/-7.65       | -8.32/-10.52      | -11.91/-10.26     | -9.37/-9.04       | -8.11/-6.31       | -5.98/-5.96       | -3.32/-2.36       | -1.76/-1.37       | -1.58/-1.68       |
| Θ(37.5°)  | -2.59/-1.93   | -1.48/-1.40     | -1.86/-2.28     | -3.53/-4.48     | -5.22/-4.57     | -3.75/-3.57     | -3.74/-4.00     | -3.64/-3.82       | -3.88/-3.56       | -3.16/-3.09       | -3.26/-3.20       | -2.37/-1.73       | -2.54/-2.95       | -2.84/-3.83       | -4.76/-4.53       | -5.28/-7.11       | -7.82/-8.01       | -9.85/-13.31      | -10.95/-7.34      | -5.74/-4.74       | -3.53/-2.73       | -1.48/-0.80       | -0.25/-0.38       | -1.18/-1.74       |
| Θ(45°)    | 0.911/0.08    | 1.06/1.06       | 0.61/-0.40      | -1.63/-2.28     | -2.65/-2.87     | -3.41/-3.87     | -3.56/-2.59     | -1.42/-0.85       | -1.17/-1.87       | -2.36/-1.79       | -0.67/-0.32       | -0.060/-27        | -0.46/-0.76       | -0.33/-1.32       | -2.03/-2.57       | -3.47/-3.34       | -4.28/-4.93       | -5.89/-5.88       | -4.54/-3.80       | -3.85/-3.00       | -2.09/-1.17       | -1.01/-0.66       | 0.31/1.20         | 1.421/0.00        |
| Θ(52.5°)  | 1.290/88      | 1.261/96        | 1.960/72        | -1.27/-2.56     | -4.02/-5.92     | -9.74/-9.41     | -7.55/-6.05     | -4.06/-1.69       | -0.150/-45        | 0.381/25          | 1.561/28          | 0.841/36          | 1.580/97          | 0.70/-0.24        | -0.39/-0.70       | -1.53/-2.49       | -3.04/-3.34       | -3.80/-2.70       | -1.92/-1.01       | -0.240/-0.90      | 0.490/90          | 1.181/99          | 2.451/69          |                   |
| Θ(60°)    | 2.672/76      | 2.542/76        | 2.621/01        | -1.16/-2.15     | -2.78/-4.64     | -5.55/-4.78     | -4.65/-5.62     | -6.72/-4.33       | -1.110/29         | 0.770/31          | 0.160/86          | 1.971/73          | 1.872/69          | 2.392/42          | 1.820/70          | 0.24/-0.09        | -1.31/-2.71       | -4.13/-4.32       | -4.02/-3.27       | -2.31/-1.76       | -1.22/-0.18       | 0.841/35          | 2.273/02          | 2.942/43          |
| Θ(67.5°)  | 2.792/98      | 3.283/26        | 2.380/38        | 0.020/51        | -1.43/-4.13     | -3.78/-2.61     | -3.16/-4.54     | -4.94/-2.41       | -0.200/-56        | 0.740/94          | 0.790/63          | 1.962/35          | 2.993/82          | <b>3.942/86</b>   | 1.75/147          | 2.121/08          | -0.35/-1.27       | -1.56/-0.92       | 0.010/38          | 0.210/36          | -0.53/-1.40       | -0.790/72         | 1.422/58          | 3.853/14          |
| Θ(75°)    | 2.933/10      | 3.223/23        | 2.440/67        | 0.540/76        | -1.62/-3.60     | -2.30/-0.69     | -0.41/-2.31     | -4.57/-3.61       | -0.96/-0.03       | -0.370/05         | 1.311/89          | 2.493/13          | 2.663/52          | 3.242/54          | 2.262/63          | 2.451/58          | 0.43/-0.38        | -0.300/-19        | 0.341/03          | 0.770/30          | -0.310/36         | 0.721/69          | 1.632/15          | 2.962/66          |
| Θ(82.5°)  | 2.823/30      | 2.532/30        | 1.38/-0.77      | -0.130/72       | -0.40/-1.04     | 0.711/90        | 1.68/-0.55      | -3.51/-4.46       | -1.31/-0.12       | -1.02/-1.10       | 0.972/51          | 2.682/70          | 2.683/61          | 3.662/69          | 2.242/48          | 1.441/07          | -1.05/-1.82       | -1.90/-0.29       | 0.611/51          | 1.700/58          | 0.24/-0.09        | 0.310/40          | 0.971/40          | 2.322/15          |
| Θ(90°)    | 2.673/30      | 2.581/86        | 0.96/-0.83      | -0.161/30       | -0.04/-1.13     | 0.952/25        | 2.491/46        | -0.64/-2.80       | -1.68/-0.64       | -1.17/-0.83       | 1.633/30          | 3.251/98          | 0.821/58          | 2.281/95          | 1.090/76          | -0.46/-0.72       | -1.65/-0.80       | -0.320/36         | 0.890/74          | 0.011/-1.31       | -1.64/-0.92       | 0.110/62          | 0.961/64          | 2.802/65          |
| Θ(97.5°)  | 2.651/78      | 0.020/56        | 0.07/-0.73      | 1.232/20        | 0.03/-2.17      | -0.780/33       | -0.201/169      | -4.77/-5.84       | -1.84/-0.66       | -0.053/13         | 1.472/53          | 2.370/69          | 0.492/00          | 2.922/95          | 2.210/90          | 0.02/-1.61        | -1.22/-1.68       | -1.29/-0.66       | 0.961/27          | 0.41/-0.46        | -1.75/-1.58       | -1.60/-1.72       | -1.310/97         | 1.542/16          |
| Θ(105°)   | 0.48/-1.18    | -1.70/-2.16     | -1.29/-0.96     | 1.152/64        | 0.78/-3.41      | -2.64/-0.50     | -0.44/-1.89     | -7.58/-8.20       | -2.72/-0.04       | -0.210/60         | 0.060/20          | 0.39/-1.13        | -1.61/-0.00       | 0.711/58          | 1.530/27          | 0.12/-0.08        | -1.15/-0.78       | 0.240/71          | 1.761/60          | -0.15/-0.56       | -1.07/-1.08       | -1.58/-2.25       | -2.030/31         | 0.971/52          |
| Θ(112.5°) | 0.28/-1.43    | -4.16/-3.62     | -2.75/-3.39     | -1.81/-0.52     | -1.58/-5.96     | -6.02/-3.46     | -1.74/-4.14     | -8.38/-4.34       | -0.73/-2.71       | -0.06/-0.97       | -0.43/-2.37       | -1.32/-2.43       | -2.77/-2.59       | -0.980/75         | -0.010/00         | 0.81/-0.93        | -2.18/-3.64       | -2.70/-2.19       | -0.51/-0.58       | -1.57/-0.72       | -0.34/-0.94       | -3.03/-2.77       | -3.04/-0.09       | -0.060/23         |
| Θ(120°)   | -1.04/-0.47   | -5.71/-4.92     | -6.60/-5.67     | -3.80/-4.73     | -4.31/-3.09     | -3.51/-4.50     | -8.62/-12.70    | -7.50/-3.77       | -3.81/-7.60       | -11.31/-5.19      | -2.87/-5.92       | -4.39/-3.71       | -3.23/-5.58       | -4.67/-3.02       | -3.67/-4.54       | -2.54/-1.70       | -2.83/-3.85       | -4.85/-5.83       | -2.54/-4.52       | -5.46/-3.22       | -2.39/-2.42       | -3.79/-4.47       | -7.31/-4.80       | -3.79/-3.89       |
| Θ(127.5°) | -6.90/-10.35  | -7.28/-5.31     | -14.49/-7.53    | -5.40/-10.05    | -14.44/-5.26    | -3.72/-6.14     | -9.94/-12.99    | -6.19/-5.49       | -8.50/-11.84      | -10.34/-9.99      | -13.91/-10.38     | -9.87/-8.54       | -6.36/-5.72       | -5.33/-3.69       | -3.24/-5.18       | -6.52/-3.68       | -3.39/-2.89       | -3.61/-4.77       | -11.28/-5.16      | -3.72/-6.59       | -8.39/-7.23       | -13.15/-13.60     | -11.35/-9.82      | -9.81/-11.71      |
| Θ(135°)   | -7.44/-9.98   | -5.48/-5.50     | -10.23/-12.56   | -8.07/-6.39     | -8.85/-11.69    | -15.32/-14.70   | -13.79/-10.73   | -9.28/-6.97       | -6.50/-7.73       | -10.99/-14.37     | -13.63/-13.23     | -14.29/-14.32     | -10.56/-8.48      | -6.66/-4.41       | -3.29/-4.90       | -7.90/-9.18       | -7.48/-5.38       | -2.94/-5.35       | -5.12/-4.34       | -5.35/-13.28      | -7.67/-7.70       | -14.71/-11.03     | -9.53/-11.97      |                   |
| Θ(142.5°) | -15.80/-8.85  | -10.17/-7.67    | -8.65/-0.99     | -13.62/-13.96   | -8.65/-9.48     | -10.25/-9.34    | -11.81/-6.60    | -6.11/-6.60       | -11.71/-15.43     | -13.16/-11.37     | -10.85/-13.24     | -10.60/-13.06     | -10.56/-8.87      | -6.59/-5.98       | -7.26/-6.70       | -7.19/-8.28       | -4.83/-6.86       | -6.38/-3.11       | -1.37/-2.60       | -6.14/-5.25       | -3.93/-2.68       | -6.40/-10.66      | -14.91/-10.35     | -7.46/-11.83      |
| Θ(150°)   | -9.18/-5.64   | -11.11/-11.25   | -8.26/-6.56     | -11.76/-9.78    | -8.04/-7.66     | -6.33/-6.32     | -8.03/-11.60    | -12.61/-9.13      | -7.00/-7.12       | -9.49/-11.76      | -13.61/-15.06     | -14.11/-15.20     | -15.37/-12.78     | -13.95/-15.21     | -13.32/-12.49     | -12.72/-11.27     | -9.77/-12.46      | -7.08/-5.21       | -5.63/-6.41       | -6.65/-5.43       | -5.24/-6.62       | -9.45/-13.14      | -11.83/-13.33     | -11.72/-10.41     |
| Θ(157.5°) | -13.34/-11.53 | -8.11/-6.58     | -6.42/-6.77     | -8.62/-11.97    | -13.89/-13.25   | -10.63/-10.54   | -11.99/-11.35   | -9.47/-7.06       | -6.66/-8.42       | -12.49/-11.76     | -12.50/-16.03     | -11.15/-9.96      | -14.46/-15.32     | -14.27/-12.94     | -9.97/-8.63       | -7.86/-8.06       | -8.81/-10.26      | -9.61/-7.68       | -8.25/-8.13       | -7.30/-6.30       | -4.66/-4.24       | -5.40/-6.51       | -5.19/-4.29       | -4.63/-5.96       |
| Θ(165°)   | -9.02/-9.69   | -8.51/-7.88     | -6.99/-7.05     | -8.12/-8.96     | -8.97/-9.33     | -10.86/-10.13   | -8.96/-8.73     | -7.52/-7.15       | -6.76/-6.86       | -7.96/-7.10       | -12.71/-10.03     | -8.25/-8.53       | -12.80/-9.50      | -6.96/-6.95       | -9.32/-12.78      | -14.86/-15.22     | -15.38/-13.51     | -13.46/-11.81     | -10.39/-8.21      | -6.50/-6.48       | -7.23/-7.96       | -7.59/-6.52       | -5.70/-7.18       |                   |
| Θ(172.5°) | -8.11/-8.03   | -7.23/-5.79     | -6.23/-8.98     | -11.18/-12.48   | -12.41/-12.76   | -12.68/-12.63   | -11.40/-9.77    | -8.60/-7.70       | -6.77/-6.01       | -5.60/-5.88       | -6.69/-8.38       | -9.72/-10.91      | -11.07/-10.08     | -9.45/-8.66       | -8.52/-9.13       | -10.31/-12.02     | -11.73/-11.22     | -10.59/-9.54      | -9.53/-9.94       | -11.31/-13.89     | -11.45/-8.23      | -6.53/-6.49       | -7.15/-8.46       |                   |
| Θ(180°)   | -15.73/-15.59 | -15.67/-15.43   | -15.09/-13.71   | -11.78/-12.64   | -11.61/-11.82   | -11.82/-12.65   | -12.83/-13.54   | -14.38/-14.82     | -15.87/-15.12     | -13.57/-12.32     | -10.95/-9.73      | -9.01/-8.59       | -8.97/-9.37       | -9.55/-9.07       | -8.91/-8.61       | -8.22/-8.09       | -8.26/-8.02       | -7.61/-7.34       | -7.16/-7.05       | -7.29/-6.90       | -6.90/-6.92       | -6.59/-6.60       | -7.74/-9.50       | -11.63/-14.17     |
| Freq(Hz)  | 6.475GHzPol.  | 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°)     | -6.95/-7.22   | -7.33/-7.54     | -7.62/-8.31     | -8.52/-8.78     | -8.96/-8.23     | -7.28/-6.31     | -6.45/-6.79     | -7.01/-7.42       | -7.47/-7.15       | -7.11/-6.64       | -6.48/-6.41       | -6.16/-6.59       | -5.93/-5.96       | -6.50/-6.69       | -6.89/-7.06       | -7.08/-6.94       | -7.30/-7.56       | -7.23/-6.86       | -6.76/-7.08       | -7.23/-7.07       | -6.78/-6.94       | -7.16/-7.17       | -6.61/-6.91       |                   |
| Θ(7.5°)   | -6.96/-7.09   | -7.11/-5.53     | -5.94/-6.09     | -6.08/-5.98     | -6.24/-6.94     | -7.32/-7.59     | -7.10/-7.17     | -6.93/-5.98       | -5.71/-6.11       | -6.68/-7.07       | -7.54/-7.80       | -8.79/-8.35       | -7.89/-7.50       | -7.47/-7.37       | -7.38/-7.38       | -7.17/-6.93       | -6.64/-6.73       | -6.96/-7.41       | -7.36/-6.54       | -6.20/-6.20       | -6.14/-6.28       | -5.60/-5.35       | -6.46/-6.53       |                   |
| Θ(15°)    | -4.72/-5.24   | -5.40/-5.71     | -5.84/-6.54     | -7.09/-7.91     | -8.26/-8.95     | -8.73/-9.08     | -10.72/-11.37   | -11.00/-9.70      | -8.69/-7.80       | -6.52/-5.95       | -5.61/-5.91       | -6.36/-6.56       | -6.48/-5.68       | -4.73/-4.26       | -4.14/-4.79       | -5.45/-6.58       | -8.09/-8.95       | -8.64/-8.73       | -9.34/-8.76       | -7.76/-6.94       | -6.10/-6.07       | -4.89/-3.88       | -2.73/-2.14       | -3.07/-3.59       |
| Θ(22.5°)  | -4.45/-4.51   | -5.03/-6.40     | -7.02/-7.65     | -8.54/-9.11     | -7.48/-8.55     | -4.47/-3.86     | -4.07/-4.28     | -4.75/-6.26       | -7.93/-8.36       | -8.12/-6.55       | -5.58/-5.89       | -7.17/-7.43       | -6.03/-4.05       | -2.76/-2.60       | -3.91/-5.84       | -8.24/-8.27       | -6.82/-5.99       | -5.85/-6.00       | -5.75/-5.39       | -5.37/-5.15       | -5.31/-5.30       | -5.76/-5.11       | -4.12/-3.41       | -4.03/-3.88       |
| Θ(30°)    | -4.53/-4.54   | -5.11/-4.43     | -5.94/-8.68     | -10.19/-11.13   | -8.64/-7.37     | -6.44/-5.22     | -4.15/-3.15     | -2.81/-3.15       | -4.26/-5.56       | -7.31/-9.99       | -9.83/-7.51       | -6.69/-6.41       | -4.54/-2.54       | 2.39/-4.00        | -6.27/-7.28       | -6.01/-6.25       | -5.86/-6.79       | -7.72/-10.32      | -12.04/-12.35     | -10.75/-9.17      | -8.10/-6.75       | -5.22/-4.79       | -4.97/-4.71       | -4.60/-4.37       |
| Θ(37.5°)  | -3.39/-3.92   | -3.71/-3.65     | -4.64/-6.43     | -8.09/-13.13    | -13.19/-11.27   | -9.93/-9.16     | -7.79/-6.82     | -6.00/-4.57       | -3.44/-3.30       | -3.58/-4.50       | -4.95/-4.62       | -4.50/-4.57       | -3.12/-1.38       | -1.88/-3.75       | -5.31/-5.78       | -5.47/-5.21       | -5.46/-5.87       | -6.97/-9.71       | -9.14/-10.49      | -8.91/-6.70       | -4.41/-3.48       | -2.53/-1.86       | -2.16/-2.37       | -2.03/-1.62       |
| Θ(45°)    | -1.87/-2.17   | -1.58/-1.45     | -1.60/-1.67     | -2.42/-3.17     | -2.81/-2.06     | -1.46/-1.83     | -2.14/-2.22     | -2.53/-2.96       | -4.02/-4.59       | -3.09/-2.10       | -2.61/-2.90       | -1.90/-0.97       | -0.160/-76        | 0.88/-0.22        | -1.77/-2.70       | -3.16/-3.98       | -4.12/-4.49       | -4.23/-5.15       | -5.91/-6.15       | -6.30/-5.00       | -2.68/-1.06       | 0.421/15          | 1.341/15          | 0.62/-0.28        |
| Θ(52.5°)  | 1.520/98      | 1.081/05        | 1.330/86        | -0.56/-1.18     | -1.58/-2.18     | -3.84/-5.35     | -4.93/-3.65     | -2.49/-1.26       | -0.55/-1.12       | -1.60/-0.33       | 0.460/66          | 0.420/32          | 0.841/71          | 1.430/32          | -0.11/-0.20       | -0.82/-1.80       | -2.58/-2.96       | -3.19/-3.29       | -3.60/-3.25       | -3.57/-2.23       | -0.950/35         | 1.812/81          | 3.242/77          | 2.641/89          |
| Θ(60°)    | 0.130/-41     | 2.142/-80       | 2.110/-57       | -1.86/-2.48     | -3.10/-5.84     | -3.50/-5.45     | -4.24/-4.51     | -3.57/-0.88       | 1.372/-22         | 1.240/-52         | 0.660/94          | 1.062/10          | 2.734/-7          | 3.372/50          | 1.861/58          | -3.68/-2.03       | -3.56/-2.86       | -3.08/-1.81       | -1.93/-2.09       | -1.63/-1.43       | -0.83/-0.24       | 1.172/62          | 3.313/03          | 2.472/-11         |
| Θ(67.5°)  | 2.112/09      | 2.933/86        | 4.012/-42       | 1.351/35        | 0.44/-3.53      | -5.18/-2.70     | -1.81/-3.04     | -4.83/-4.64       | -1.121/-19        | 2.142/13          | 1.711/67          | 1.710/96          | 2.062/63          | 2.732/-49         | 2.171/66          | 0.961/-40         | -0.160/-35        | 1.021/01          | 1.690/95          | 1.161/39          | 1.090/21          | 1.031/82          | 3.193/91          | 3.313/09          |
| Θ(75°)    | 2.553/14      | 4.              |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



# Antenna Pattern\_6GHz U-NII 5~8

# Appendix D

|           |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Θ(67.5°)  | -1.96/-2.62   | -4.30/-0.47     | 1.94/1.83       | 0.61/-0.80      | -1.92/-2.48     | -3.21/-3.93     | -3.88/-2.73     | -1.81/-1.50       | -1.74/-1.99       | -1.300/-0.9       | -0.09/-2.21       | -4.20/-1.99       | 0.20/-1.38        | -2.30/-2.59       | -3.42/-3.64       | -3.55/-3.43       | -2.98/-0.38       | 2.32/0.05         | 4.91/4.75         | 3.79/2.35         | 0.17/-1.49        | -1.58/-1.17       | 3.00/2.65         | -0.60/-2.53       |
| Θ(75°)    | -2.53/-1.91   | -2.06/-0.23     | 2.23/3.00       | 1.98/-0.76      | -2.14/-1.40     | -2.66/-5.20     | -4.26/-1.02     | 0.54/-0.17        | -3.18/-4.94       | -1.91/0.52        | 0.82/-1.33        | -4.50/-2.94       | -3.38/-4.47       | -2.16/-0.45       | -1.07/-1.10       | -3.01/-5.48       | -4.11/-0.14       | 4.60/0.00         | <b>6.135/9.2</b>  | 4.10/2.78         | 1.13/0.69         | 0.28/-1.17        | 3.45/3.71         | 1.11/-1.56        |
| Θ(82.5°)  | 0.58/-1.56    | 0.86/-1.41      | 2.90/3.39       | 1.01/-1.27      | -0.96/-0.40     | -1.21/-2.03     | -1.71/0.32      | 1.28/-0.26        | -3.54/-6.09       | -2.89/-0.45       | -0.54/-3.57       | -5.93/-3.81       | -5.06/-4.65       | -0.55/-0.69       | -2.43/-2.32       | -4.79/-7.47       | -6.03/-0.73       | 3.17/5.06         | 5.68/5.14         | 3.29/0.50         | -0.10/-0.36       | -0.88/-1.13       | 1.08/3.10         | 1.99/0.39         |
| Θ(90°)    | -1.63/-0.07   | 0.89/1.96       | 2.43/2.66       | 1.38/-1.91      | -2.50/-0.80     | -0.73/-2.26     | -3.38/-0.81     | 0.68/-0.20        | 4.53/-12.23       | -7.05/-5.02       | -3.24/-3.12       | -5.09/-4.88       | -1.72/-2.54       | 0.57/0.77         | -2.22/-3.71       | -4.97/-10.91      | -8.08/-2.84       | 0.50/0.02         | 4.81/4.34         | 3.24/0.46         | -0.78/-0.11       | 0.96/0.72         | 0.73/2.63         | 2.86/-0.65        |
| Θ(97.5°)  | 1.83/0.37     | 2.42/0.50       | -0.49/-1.51     | 2.01/0.90       | -0.34/-0.62     | -1.05/-2.63     | -2.59/-1.30     | -0.56/-2.10       | -5.71/-4.54       | -5.49/-4.59       | -1.34/-3.16       | -9.11/-4.11       | -1.60/-6.10       | -1.15/-1.01       | -2.39/-7.26       | -6.51/-14.63      | -5.79/-1.32       | 1.14/4.02         | 4.55/5.28         | 3.71/0.25         | -1.43/-0.08       | 1.02/0.40         | -2.36/0.32        | 3.72/2.27         |
| Θ(105°)   | 0.184/0.00    | 3.16/1.42       | 0.64/1.29       | 1.63/0.35       | -0.06/-0.28     | -0.63/-2.29     | -6.23/-4.22     | -2.75/-2.26       | -1.56/-3.84       | -1.14/-0.73       | -0.99/-3.43       | -9.20/-7.75       | -1.23/-8.93       | -5.19/-1.84       | -2.34/-7.34       | -4.94/-10.48      | -2.35/0.68        | 1.56/2.71         | 3.13/3.38         | 1.71/-0.78        | -1.58/-0.25       | 0.60/0.90         | -0.28/-1.02       | 2.05/-1.17        |
| Θ(112.5°) | 0.42/1.01     | 0.63/-1.92      | -5.13/-1.51     | 2.32/3.99       | 3.03/2.05       | -1.36/-4.01     | -6.29/-5.14     | -3.78/-2.91       | -2.68/-9.71       | -9.78/-5.43       | -3.55/-5.16       | -8.75/-6.76       | -0.85/-12.76      | -7.41/-4.39       | -3.23/-9.19       | -3.57/-7.43       | -2.52/0.55        | 1.62/0.38         | 1.52/1.40         | -1.15/-3.60       | -4.11/-1.15       | 0.21/1.13         | 0.79/-2.74        | 1.51/-0.31        |
| Θ(120°)   | -3.88/-0.76   | 2.06/0.49       | -2.89/-2.77     | 0.55/1.88       | 0.90/-2.06      | -3.77/-5.07     | -3.93/-4.90     | -6.00/-5.16       | -6.38/-9.28       | -7.06/-6.68       | -6.39/-8.56       | -6.75/-8.22       | -2.07/-4.68       | -7.12/-7.30       | -3.32/-6.78       | -9.32/-5.45       | -3.73/-2.37       | -1.77/-8.26       | -6.04/-7.58       | -4.25/-3.62       | -5.94/-4.87       | -1.06/-0.45       | -0.70/0.27        | 1.02/-3.10        |
| Θ(127.5°) | -3.15/-0.75   | 0.15/-1.43      | -2.12/-1.54     | 0.06/0.64       | 0.09/0.20       | -0.60/-2.02     | -2.96/-4.97     | -5.64/-6.27       | -7.92/-11.57      | -13.79/-5.91      | -4.63/-6.93       | -6.49/-5.16       | -2.88/-5.80       | -5.82/-10.41      | -4.53/-5.79       | -13.20/-2.34      | -1.45/-2.13       | -1.91/-2.64       | -6.77/-4.94       | -1.32/-4.42       | -8.60/-1.82       | -0.88/1.43        | 0.89/1.32         | 1.73/-0.81        |
| Θ(135°)   | -3.24/-2.22   | -0.66/0.88      | 0.21/-0.54      | 0.57/-0.03      | 0.09/-0.77      | -2.05/-2.97     | -3.10/-3.70     | -3.89/-2.99       | -5.24/-6.46       | -4.88/-6.62       | -5.54/-5.29       | -3.16/-4.89       | -2.13/-5.79       | -6.56/-10.22      | -7.51/-7.04       | -12.51/-7.19      | -3.81/-2.24       | -6.86/-7.96       | -8.53/-8.30       | -1.06/-4.53       | -4.69/-3.70       | -0.82/-1.65       | 0.14/2.08         | 1.20/-0.20        |
| Θ(142.5°) | -0.69/-1.08   | 0.19/-0.08      | -0.29/-0.26     | -0.47/-0.75     | -0.57/-5.75     | -6.80/-8.07     | -10.86/-15.13   | -10.63/-7.53      | -6.31/-5.51       | -5.63/-5.30       | -6.21/-7.66       | -9.20/-6.40       | -5.11/-5.46       | -8.58/-9.59       | -9.79/-13.82      | -12.61/-7.95      | -5.25/-9.94       | -5.08/-4.35       | -5.99/-3.87       | -8.31/-8.08       | -5.53/-4.90       | -5.33/-4.55       | -5.62/-2.02       | -1.32/-0.88       |
| Θ(150°)   | -2.24/-2.33   | -3.17/-4.23     | -5.54/-4.84     | -2.40/-1.54     | -2.13/-8.85     | -6.30/-9.91     | -10.09/-6.42    | -5.12/-5.31       | -6.15/-10.20      | -14.61/-13.79     | -5.55/-1.39       | -0.03/-0.40       | -4.17/-5.72       | -6.50/-14.53      | -14.84/-12.03     | -7.37/-4.83       | -5.27/-8.31       | -12.73/-9.36      | -5.30/-7.29       | -12.78/-10.23     | -7.98/-6.56       | -8.23/-9.07       | -4.60/-3.92       | -7.82/-4.66       |
| Θ(157.5°) | -5.33/-7.97   | -5.99/-3.35     | -0.64/-1.54     | 2.67/3.33       | 3.36/3.00       | 1.69/-0.06      | -2.18/-3.62     | -2.74/-0.90       | 0.67/0.99         | -0.50/-2.16       | -5.39/-10.92      | -6.18/-7.71       | -9.01/-6.83       | -6.15/-4.75       | -3.95/-2.94       | -3.23/-5.74       | -8.84/-9.88       | -12.59/-14.73     | -12.99/-15.21     | -8.29/-3.11       | -1.50/-1.35       | 0.13/0.66         | -0.58/-1.56       | -2.04/-2.98       |
| Θ(165°)   | -7.14/-1.78   | -5.04/-2.78     | -1.13/-0.23     | 0.42/1.03       | 1.27/0.94       | -0.11/-2.50     | -5.28/-5.78     | -4.13/-2.63       | -2.06/-1.60       | -1.12/-1.20       | -3.14/-5.46       | -6.19/-6.98       | -7.57/-7.15       | -7.56/-8.92       | -11.35/-10.48     | -7.46/-5.85       | -5.56/-6.82       | -8.17/-8.72       | -7.59/-4.93       | -2.42/-0.83       | 0.15/-0.10        | -1.01/-1.82       | -2.43/-2.54       | -3.49/-5.48       |
| Θ(172.5°) | -4.27/-2.95   | -2.26/-1.67     | -1.11/-0.96     | -1.18/-1.41     | -1.50/-1.81     | -2.49/-2.99     | -3.06/-4.03     | -5.64/-7.91       | -8.95/-8.46       | -7.40/-6.48       | -4.38/-5.42       | -6.66/-7.54       | -7.43/-7.45       | -7.62/-7.78       | -12.70/-12.14     | -11.88/-9.39      | -6.86/-5.34       | -4.97/-4.57       | -10.70/-12.14     | -4.28/-5.10       | -6.74/-7.23       | -6.82/-7.09       | -7.83/-7.43       |                   |
| Θ(180°)   | -9.58/-11.56  | -13.11/-12.89   | -13.54/-12.88   | -10.37/-9.55    | -9.58/-9.40     | -9.51/-9.75     | -7.86/-6.32     | -5.42/-4.61       | -4.00/-3.97       | -4.20/-4.26       | -4.37/-5.07       | -6.36/-7.24       | -7.39/-6.60       | -6.16/-6.17       | -5.83/-5.73       | -5.96/-6.71       | -6.65/-6.73       | -6.89/-6.59       | -6.51/-6.24       | -6.04/-6.45       | -7.20/-7.67       | -8.17/-8.44       | -8.85/-8.53       | -8.09/-8.37       |
| Freq(Hz)  | 6.475GPol.    | 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°)     | -1.99/-2.27   | -2.56/-2.84     | -2.31/-1.80     | -1.66/-1.95     | -2.23/-2.79     | -2.93/-2.98     | -2.18/-1.61     | -1.28/-1.51       | -1.98/-2.25       | -2.39/-2.25       | -1.80/-1.39       | -1.23/-1.36       | -2.02/-2.71       | -2.97/-2.41       | -1.92/-1.81       | -1.82/-1.46       | -1.58/-2.04       | -2.45/-2.64       | -2.56/-2.46       | -2.08/-1.88       | -2.04/-2.02       | -1.89/-1.73       | -1.98/-2.05       | -2.54/-2.43       |
| Θ(7.5°)   | -2.47/-2.41   | -2.15/-2.08     | -2.00/-2.15     | -2.31/-2.51     | -2.55/-2.36     | -2.09/-1.92     | -2.27/-2.21     | -2.02/-2.13       | -1.80/-1.63       | -1.52/-1.49       | -1.13/-1.29       | -1.30/-1.68       | -2.09/-2.38       | -2.64/-2.57       | -2.40/-1.89       | -1.59/-1.55       | -1.44/-1.49       | -1.91/-1.91       | -1.21/-1.83       | -1.93/-2.07       | -2.04/-1.92       | -1.97/-2.29       | -2.94/-3.49       | -3.81/-3.09       |
| Θ(15°)    | -3.48/-3.07   | -2.40/-2.10     | -2.05/-2.13     | -1.72/-1.62     | -1.72/-1.75     | -1.98/-2.16     | -1.93/-1.77     | -1.91/-2.00       | -2.72/-3.05       | -2.92/-2.90       | -3.26/-4.09       | -4.94/-6.68       | -3.90/-3.06       | -2.22/-1.09       | -0.27/0.38        | 0.09/1.28         | 1.30/1.08         | 0.91/0.93         | 0.45/0.47         | 0.14/0.53         | -0.58/-1.22       | -2.15/-3.62       | -4.40/-4.63       |                   |
| Θ(22.5°)  | -5.11/-4.56   | -3.67/-3.33     | -3.39/-2.48     | -1.67/-1.59     | -2.15/-2.89     | -4.61/-6.08     | -5.92/-5.58     | -5.54/-6.77       | -6.90/-5.63       | -4.49/-4.59       | -5.29/-5.69       | -5.41/-4.65       | -4.78/-4.17       | -2.96/-0.95       | 1.02/2.04         | 2.13/1.88         | 1.62/1.05         | 0.36/-0.35        | -0.99/-0.64       | -0.68/-0.84       | -1.00/-1.31       | -1.60/-1.64       | -1.94/-3.56       | -5.70/-6.20       |
| Θ(30°)    | -5.08/-3.33   | -2.55/-1.71     | -1.02/-0.80     | -1.15/-1.65     | -2.31/-3.14     | -3.70/-4.85     | -4.84/-9.68     | -1.43/-8.11       | -5.36/-4.22       | -3.46/-4.32       | -3.84/-7.46       | -5.23/-5.34       | -5.04/-3.66       | 1.63/1.74         | 1.05/-0.24        | -1.53/-1.47       | -0.42/0.66        | 1.15/1.08         | 0.64/0.42         | -1.05/-0.47       | -1.72/-1.28       | -1.66/-2.45       | -5.01/-5.57       |                   |
| Θ(37.5°)  | -4.07/-3.45   | -3.72/-3.94     | -4.31/-4.16     | -5.23/-4.68     | -7.52/-7.36     | -7.71/-6.59     | -9.39/-9.15     | -9.77/-10.97      | -11.10/-9.72      | -7.46/-5.06       | -4.56/-5.22       | -6.18/-8.07       | -7.31/-4.85       | -8.03/-1.12       | 1.68/0.66         | -1.66/-2.23       | -2.10/-1.23       | -0.37/0.53        | 1.28/1.77         | 1.98/2.08         | 1.02/-0.16        | -1.18/-1.43       | -1.77/-1.87       | -2.87/-4.06       |
| Θ(45°)    | -5.79/-5.87   | -4.86/-3.79     | -3.42/-5.23     | -5.51/-4.20     | -3.59/-4.69     | -6.57/-7.87     | -8.06/-8.51     | -8.53/-8.60       | -9.35/-13.30      | -11.74/-8.54      | -5.74/-3.26       | -2.38/-3.65       | -4.67/-2.85       | -0.54/0.37        | -0.40/-2.38       | -2.74/-1.59       | -0.60/0.02        | 0.76/-0.02        | -0.93/-1.35       | -0.35/0.28        | 1.18/0.79         | 0.89/-0.51        | -0.99/-1.83       | -2.62/-4.21       |
| Θ(52.5°)  | -4.15/-4.08   | -4.05/-4.61     | -5.11/-3.84     | -1.63/-5.66     | -1.14/-2.83     | -3.94/-4.45     | -6.57/-10.46    | -15.24/-14.39     | -11.76/-8.23      | -6.02/-4.53       | -3.45/-1.64       | -1.28/-1.97       | -2.91/-1.66       | -1.26/-0.98       | -2.15/-2.53       | -0.65/0.08        | 0.15/0.01         | 0.53/0.62         | 0.46/0.68         | -0.32/-0.94       | -0.03/0.89        | 0.951/36          | 0.16/-1.25        | -1.98/-4.13       |
| Θ(60°)    | -4.62/-5.06   | -5.98/-4.63     | -5.56/-2.06     | 0.51/0.88       | -0.22/-4.40     | -3.96/-4.65     | -4.70/-5.53     | -8.35/-11.67      | -7.13/-6.22       | -2.56/-1.91       | -1.44/-1.37       | -1.27/-1.30       | -2.46/-3.27       | -2.77/-2.20       | -0.42/-0.06       | -0.91/-2.02       | -0.57/0.85        | 2.12/2.24         | 1.30/-2.29        | -2.35/-1.96       | 0.05/0.83         | 0.82/-2.37        | -2.70/-1.77       |                   |
| Θ(67.5°)  | -2.08/-3.70   | -2.10/-1.92     | -2.46/-1.16     | 0.08/-1.32      | -5.56/-7.15     | -5.16/-4.57     | -6.26/-8.10     | -9.04/-8.34       | -4.19/-2.52       | -2.09/-1.89       | -1.91/-1.90       | -1.58/-0.90       | -1.46/-1.71       | -2.19/-3.77       | -4.54/-4.44       | -1.22/-1.77       | -2.76/-0.45       | 1.48/2.81         | 2.86/3.12         | 2.38/0.58         | -1.14/-1.14       | 0.41/1.83         | 2.10/-0.16        | -0.61/-0.37       |
| Θ(75°)    | -2.63/-5.22   | -2.15/-0.41     | -1.14/-0.72     | -0.35/-2.30     | -5.11/-3.63     | -1.44/-1.37     | -3.51/-1.60     | -7.22/-6.45       | -1.85/-0.17       | -1.86/-2.47       | -3.63/-4.15       | -2.68/-1.77       | -0.71/-1.84       | -1.57/-1.93       | -3.62/-6.15       | -4.15/-3.92       | -2.53/0.94        | 2.60/3.84         | <b>4.08/3.63</b>  | 2.87/1.80         | -0.47/-1.77       | -1.56/-0.17       | 1.72/1.21         | -1.54/-0.68       |
| Θ(82.5°)  | -4.14/-6.02   | -1.79/-0.42     | -1.26/-0.40     | -0.95/-5.04     | -5.33/-2.35     | 0.45/-0.32      | -3.43/-5.62     | -3.83/-2.79       | -4.03/-4.77       | -3.97/-3.31       | -2.96/-3.97       | -5.88/-2.82       | -0.51/-5.25       | -1.27/-0.57       | -5.97/-8.06       | -7.27/-7.38       | -3.98/0.27        | 1.82/2.95         | 2.66/2.33         | 1.55/0.91         | -1.06/-2.20       | -0.91/-0.69       | 1.33/1.62         | 1.07/0.77         |
| Θ(90°)    | 0.07/-0.09    | 2.21/2.22       | -0.13/-0.78     | -2.52/-4.08     | -4.45/-1.29     | 1.08/0.94       | -1.73/-4.84     | -3.98/-2.90       | -5.16/-6.57       | -6.59/-3.92       | -3.34/-4.98       | -8.73/-6.28       | -2.78/-5.73       | -6.71/-1.13       | -4.76/-11.93      | -9.32/-10.64      | -8.90/-1.91       | 0.82/3.31         | 3.45/2.60         | 2.25/-1.18        | -0.74/-2.96       | -1.57/-1.92       | -1.33/0.57        | 1.61/2.17         |
| Θ(97.5°)  | 0.76/0.71     | 2.46/3.03       | 0.49/-2.46      | -4.63/-6.31     | -3.81/0.19      | 1.92/2.10       | -0.58/-1.77     | -0.86/-1.47       | -4.29/-7.36       | -8.54/-6.11       | -5.23/-5.59       | -9.32/-5.72       | -1.86/-6.91       | -6.79/-9.04       | -4.49/-11.02      | -11.25/-10.08     | -9.52/-2.05       | 2.78/1.96         | 0.75/-0.74        | -1.05/-2.64       | -4.71/-5.41       | -4.37/0.14        | 2.90/2.40         |                   |
| Θ(105°)   | 0.86/1.78     | 3.49/3.34       | 1.54/-1.92      | -3.02/-6.72     | -6.60/-1.81     | 0.14/-0.73      | -1.99/-3.32     | -2.08/-2.89       | -5.93/-7.43       | -15.29/-5.68      | -3.79/-4.76       | -10.91/-6.61      | -2.57/-6.07       | -8.56/-2.31       | -4.01/-13.66      | -7.57/-6.48       | -5.41/-1.82       | -0.20/-1.86       | 1.21/1.46         | -0.88/-2.06       | -1.02/-2.90       | -2.79/-1.30       | -4.13/-2.96       | 2.05/2.16         |
| Θ(112.5°) | -0.80/-1.50   | 1.73/0.52       | -0.36/-1.20     | -0.79/-1.76     | -2.22/-2.32     | -2.38/-4.00     | -4.41/-6.38     | -4.56/-6.73       | -4.75/-2.76       | -3.52/-6.93       | -15.40/-7.59      | -1.50/-8.06       | -14.21/-4.66      | -3.61/-11.69      | -9.21/-7.48       | -4.30/-3.58       | -1.58/-1.72       | -1.49/-2.20       | -5.65/-4.01       | -3.05/-3.34       | -2.17/-1.38       | -3.86/-3.10       | -2.40/-1.17       |                   |
| Θ(120°)   | -0.81/-0.03   | 1.33/-1.14      | 0.85/0.73       | 1.01/0.34       | -1.81/-2.35     | -3.28/-3.63     | -5.48/-8.20     | -9.76/-5.32       | -3.83/-3.70       | -4.22/-5.36       | -4.14/-6.24       | -12.37/-9.05      | -3.40/-5.02       | -13.65/-5.98      | -3.90/-10.60      | -10.64/-9.76      | -4.23/-3.86       | -3.21/-8.13       | -9.37/-7.06       | -5.75/-6.08       | -5.08/-3.58       | -1.99/-1.82       | -3.77/-1.82       | 1.05/0.14         |
| Θ(127.5°  |               |                 |                 |                 |                 |                 |                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |



# Antenna Pattern\_6GHz U-NII 5~8

# Appendix D

|           |               |                |                  |                |                |                |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------|---------------|----------------|------------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Θ(120°)   | -0.67/-1.46   | -2.14/-2.70    | -3.72/-5.75      | -6.82/-5.57    | -6.16/-5.13    | -5.29/-6.34    | -4.22/-5.39    | -7.11/-7.65      | -7.66/-5.27      | -4.15/-2.99      | -3.96/-3.16      | -1.38/-1.13      | -3.63/-3.48      | -3.10/-2.91      | -3.60/-3.62      | -5.20/-6.45      | -6.51/-7.09      | -4.47/-1.83      | -2.71/-0.90      | -7.41/-6.80      | -2.58/-6.35      | -7.74/-1.74      | -4.18/-2.78      | -1.70/-2.24      |
| Θ(127.5°) | -0.92/-1.76   | -3.59/-5.34    | -7.97/-9.90      | -8.76/-7.43    | -6.37/-8.10    | -9.41/-12.94   | -14.86/-16.50  | -9.80/-9.87      | -8.38/-8.62      | -8.66/-10.27     | -7.68/-5.55      | -4.70/-4.54      | -4.52/-3.93      | -4.16/-3.80      | -7.54/-5.99      | -4.36/-6.69      | -5.25/-6.18      | -3.12/-11.44     | -7.11/-12.78     | -6.79/-3.01      | -6.87/-8.16      | -8.00/-10.35     | -9.95/-5.88      | -3.70/-3.26      |
| Θ(135°)   | -5.89/-6.08   | -5.59/-7.82    | -12.34/-13.62    | -15.39/-12.20  | -9.25/-5.82    | -5.55/-5.55    | -6.36/-7.39    | -9.87/-10.67     | -11.38/-10.12    | -9.90/-9.70      | -11.13/-10.15    | -7.65/-9.07      | -8.76/-8.31      | -5.09/-6.66      | -9.63/-6.12      | -5.69/-4.34      | -11.42/-11.01    | -2.89/-8.52      | -13.21/-8.76     | -12.45/-5.52     | -8.61/-8.52      | -10.25/-13.48    | -15.75/-9.49     | -6.29/-7.57      |
| Θ(142.5°) | -7.78/-7.75   | -9.45/-10.64   | -9.96/-8.64      | -9.09/-10.68   | -8.10/-6.19    | -5.84/-5.45    | -4.91/-4.80    | -5.09/-6.61      | -7.06/-7.71      | -9.55/-10.68     | -10.80/-12.25    | -13.07/-15.79    | -14.37/-10.12    | -7.75/-7.72      | -10.37/-9.77     | -6.23/-12.00     | -12.75/-8.57     | -6.13/-11.80     | -15.67/-14.72    | -14.98/-11.01    | -11.51/-10.23    | -14.36/-15.48    | -13.72/-10.37    | -12.36/-9.80     |
| Θ(150°)   | -10.37/-9.38  | -8.54/-7.13    | -8.48/-14.65     | -13.53/-8.55   | -5.93/-6.34    | -7.23/-8.11    | -6.87/-6.00    | -5.77/-5.22      | -4.84/-5.57      | -7.88/-10.75     | -11.70/-13.54    | -15.57/-13.81    | -9.54/-8.66      | -8.41/-10.75     | -11.78/-13.90    | -14.72/-14.22    | -12.42/-7.41     | -4.42/-6.16      | -11.14/-12.87    | -10.39/-11.01    | -13.13/-11.22    | -9.95/-6.84      | -5.75/-6.96      | -8.28/-9.12      |
| Θ(157.5°) | -4.25/-6.70   | -6.51/-6.78    | -5.44/-6.54      | -9.91/-11.97   | -8.62/-5.98    | -5.73/-5.88    | -6.20/-6.45    | -6.72/-7.92      | -10.58/-13.33    | -14.62/-14.67    | -12.48/-11.33    | -11.85/-11.34    | -10.03/-10.96    | -13.98/-16.12    | -14.70/-10.36    | -9.05/-13.52     | -15.38/-9.31     | -8.70/-10.09     | -10.20/-7.74     | -6.25/-6.88      | -7.82/-11.59     | -16.08/-10.36    | -9.05/-12.08     | -10.29/-4.52     |
| Θ(165°)   | -2.36/-3.04   | -3.65/-4.89    | -5.88/-6.54      | -8.16/-8.28    | -7.62/-7.13    | -6.76/-6.05    | -5.58/-5.60    | -6.20/-6.92      | -6.98/-6.90      | -7.44/-8.10      | -9.49/-9.25      | -8.82/-9.96      | -12.69/-15.90    | -15.35/-13.91    | -11.92/-9.82     | -9.49/-12.34     | -14.43/-13.75    | -12.90/-13.96    | -13.82/-13.07    | -12.29/-10.07    | -7.51/-6.43      | -6.75/-7.36      | -6.63/-4.38      | -2.71/-2.16      |
| Θ(172.5°) | -6.44/-7.33   | -6.76/-5.93    | -6.37/-6.13      | -6.54/-7.45    | -8.63/-9.31    | -8.95/-9.11    | -9.29/-8.71    | -7.99/-7.66      | -6.96/-7.07      | -7.51/-7.05      | -7.16/-7.80      | -8.76/-9.16      | -8.25/-7.30      | -7.40/-9.23      | -10.71/-11.03    | -11.31/-11.69    | -10.99/-11.22    | -10.75/-10.68    | -10.56/-11.34    | -11.87/-9.15     | -7.52/-7.03      | -7.62/-7.45      | -5.98/-4.68      | -4.82/-5.73      |
| Θ(180°)   | -10.14/-11.03 | -11.50/-12.54  | -13.44/-14.37    | -14.95/-15.80  | -14.84/-14.75  | -14.91/-15.88  | -15.53/-15.31  | -14.52/-15.24    | -13.69/-13.08    | -10.72/-8.38     | -11.65/-12.55    | -10.72/-8.23     | -7.26/-7.62      | -9.21/-10.35     | -10.65/-10.00    | -8.87/-7.71      | -7.29/-7.35      | -7.09/-8.09      | -9.34/-9.46      | -10.80/-8.95     | -8.44/-8.57      | -9.17/-10.18     |                  |                  |
| Freq(Hz)  | 6.475GPol.    | 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°)     | -10.06/-10.41 | -10.17/-10.78  | -11.53/-10.69    | -9.86/-9.72    | -10.05/-10.78  | -11.55/-11.99  | -11.98/-11.51  | -11.56/-11.18    | -10.02/-9.41     | -9.69/-9.95      | -10.23/-10.19    | -10.75/-11.46    | -11.28/-10.40    | -9.49/-9.03      | -8.49/-8.66      | -8.63/-9.19      | -10.20/-10.46    | -9.18/-8.86      | -9.01/-8.67      | -9.81/-10.61     | -9.67/-9.27      | -8.78/-9.12      | -9.50/-9.70      | -9.79/-9.95      |
| Θ(7.5°)   | -8.61/-9.30   | -9.40/-9.42    | -8.70/-8.63      | -8.45/-8.35    | -8.04/-8.82    | -9.54/-10.22   | -10.05/-9.41   | -7.96/-7.67      | -8.10/-9.11      | -9.22/-8.45      | -8.11/-6.55      | -9.42/-10.25     | -10.59/-10.99    | -11.54/-12.16    | -12.98/-12.61    | -11.82/-11.01    | -11.28/-11.04    | -11.19/-11.62    | -11.96/-9.59     | -8.51/-8.54      | -8.69/-8.44      | -8.42/-8.27      | -7.70/-8.00      | -8.49/-8.33      |
| Θ(15°)    | -6.02/-6.99   | -8.46/-8.58    | -8.63/-8.97      | -9.68/-10.27   | -10.60/-10.76  | -11.46/-10.68  | -10.54/-10.41  | -9.70/-8.66      | -9.14/-9.07      | -8.36/-7.69      | -7.46/-7.72      | -8.19/-8.55      | -9.53/-11.02     | -11.23/-10.78    | -9.80/-8.64      | -7.81/-6.88      | -6.11/-5.60      | -5.41/-5.32      | -5.47/-6.16      | -6.67/-5.72      | -5.30/-5.04      | -6.08/-6.45      | -6.40/-6.17      | -5.43/-5.33      |
| Θ(22.5°)  | -5.65/-6.32   | -6.90/-6.65    | -8.89/-9.35      | -8.73/-6.68    | -5.99/-5.81    | -5.51/-5.61    | -6.34/-6.52    | -5.46/-4.58      | -5.10/-5.67      | -6.12/-6.42      | -7.04/-6.65      | -5.43/-5.48      | -6.93/-8.16      | -7.45/-7.01      | -7.41/-7.73      | -8.73/-9.14      | -8.27/-6.40      | -5.06/-4.70      | -5.00/-4.98      | -4.69/-4.47      | -4.51/-5.39      | -4.64/-4.95      | -5.56/-5.56      | -4.90/-5.01      |
| Θ(30°)    | -4.99/-4.39   | -5.12/-5.23    | -5.55/-5.42      | -4.94/-4.82    | -6.04/-8.32    | -8.83/-8.26    | -6.95/-6.40    | -5.98/-5.31      | -3.56/-1.96      | -1.81/-2.10      | -2.60/-3.15      | -3.94/-5.02      | -4.05/-2.97      | -2.55/-2.86      | -4.41/-6.76      | -8.11/-4.03      | -2.77/-2.61      | -2.90/-3.45      | -3.85/-3.34      | -3.72/-4.13      | -3.07/-1.63      | -0.91/-0.59      | -1.93/-3.91      | -5.61/-5.24      |
| Θ(37.5°)  | -3.18/-4.57   | -4.83/-3.97    | -2.54/-1.81      | -1.86/-2.44    | -3.35/-1.0     | -8.95/-11.65   | -10.21/-9.08   | -7.68/-5.25      | -3.06/-1.79      | -1.63/-1.66      | -1.37/-0.90      | -0.50/-0.94      | -0.86/-1.85      | -2.67/-5.21      | -7.64/-5.46      | -3.00/-1.87      | -2.06/-3.55      | -4.29/-6.39      | -8.05/-6.72      | -6.89/-8.24      | -7.54/-5.38      | -3.11/-1.53      | -1.27/-1.23      | -1.66/-2.37      |
| Θ(45°)    | -2.08/-1.75   | -1.07/-0.65    | -2.01/-0.50      | -0.58/-2.99    | -5.20/-8.78    | -12.70/-15.07  | -14.28/-11.65  | -8.68/-7.15      | -5.51/-3.47      | -1.79/-0.58      | 0.71/-1.34       | 1.54/-1.14       | 0.85/-0.71       | -0.79/-3.11      | -3.94/-3.40      | -2.71/-1.82      | -2.71/-2.26      | -1.29/-1.02      | -0.75/-0.15      | 0.69/-0.13       | 0.20/-0.98       | -0.22/-2.33      | -0.72/-0.43      | -0.65/-2.16      |
| Θ(52.5°)  | 0.250/0.50    | 1.181/8.7      | 2.292/3.1        | 1.34/-1.13     | 4.13/-8.23     | -10.47/-11.86  | -13.58/-12.89  | -11.11/-7.95     | -5.48/-3.29      | -1.82/-0.73      | 0.73/2.03        | 2.46/-1.28       | 0.130/0.3        | -0.33/-2.14      | -2.71/-1.72      | -1.72/-2.27      | -1.25/-0.55      | 0.09/-0.54       | -0.95/-0.63      | -0.89/-0.69      | 0.07/0.68        | 0.871/2.6        | 0.300/5.1        | 1.25/0.97        |
| Θ(60°)    | 0.81/0.90     | 2.23/3.14      | 3.903/6.6        | 1.84/-0.51     | 6.04/-5.6      | -3.88/-3.80    | -3.82/-4.41    | -5.29/-5.78      | -1.51/-4.01      | -1.13/-0.70      | 1.271/7.8        | 1.821/2.3        | 2.232/4.1        | 1.41/-0.22       | -1.13/-1.61      | -0.45/-0.68      | -0.66/-1.75      | -4.34/-6.53      | -9.97/-10.98     | -6.93/-3.35      | -1.51/-6.02      | 0.261/8.7        | 2.401/6.7        | 1.371/4.4        |
| Θ(67.5°)  | 2.11/2.64     | 3.804/0.3      | 4.013/0.6        | 1.00/-1.95     | -3.19/-1.84    | -0.63/0.35     | 0.63/0.20      | -0.26/-1.21      | -1.80/-1.21      | 0.271/4.9        | 1.721/3.4        | 0.921/0.8        | 1.682/1.5        | 3.002/7.9        | 2.141/7.7        | 1.740/6.8        | -0.03/-2.09      | -6.09/-8.35      | -7.41/-7.73      | -9.14/-5.07      | -0.23/4.00       | 0.460/5.4        | 1.561/4.6        | 1.221/6.9        |
| Θ(75°)    | 3.423/3.2     | 3.364/3.0      | <b>4.753/6.6</b> | 1.13/-1.57     | -0.98/-0.20    | 0.671/0.9      | 1.841/7.2      | 1.121/3.2        | 0.950/2.8        | 0.711/8.9        | 1.850/4.3        | -1.390/2.9       | 1.812/6.4        | 3.793/0.6        | 3.303/2.7        | 1.871/2.9        | -0.38/-2.75      | -3.73/-2.54      | -2.58/-3.37      | -4.88/-4.14      | -1.001/4.8       | 0.860/2.9        | 1.692/2.1        | 1.832/2.5        |
| Θ(82.5°)  | 3.022/9.8     | 3.023/6.7      | 3.653/3.6        | 1.71/-0.16     | 0.651/9.4      | 1.901/55       | 2.392/4.4      | 2.041/7.5        | 1.150/8.1        | 1.130/7.2        | -0.23/-1.91      | -0.860/8.7       | 1.592/2.0        | 3.733/9.1        | 3.543/0.8        | 0.15/-1.37       | -1.68/-2.65      | -3.65/-2.51      | -1.97/-2.66      | -3.95/-5.72      | -3.91/-0.49      | 0.720/7.7        | 2.082/7.5        | 1.981/5.1        |
| Θ(90°)    | 0.340/-3.2    | -0.572/0.4     | 3.243/3.5        | 2.652/0.0      | 1.612/23       | 2.261/9.6      | 3.303/6.7      | 1.000/5.2        | -0.100/2.2       | 0.771/-1.08      | -0.550/9.0       | 1.892/5.6        | 3.482/8.5        | 1.400/4.9        | -1.18/-1.79      | -1.13/-2.87      | -4.78/-3.39      | -2.08/-2.92      | -5.55/-6.63      | -3.47/-1.89      | -1.070/5.6       | 2.532/7.6        | 1.83/-0.22       |                  |
| Θ(97.5°)  | -4.18/-1.67   | -1.36/-1.41    | 1.752/1.3        | 0.861/0.4      | 1.380/0.1      | 1.04/-0.30     | -0.29/-0.03    | 0.560/2.9        | -0.86/-1.39      | -1.11/-0.79      | 0.161/5.4        | 1.410/4.3        | -0.12/-0.02      | 2.471/8.0        | -0.15/-0.92      | -3.16/-6.03      | -3.18/-5.61      | -7.82/-3.26      | -0.880/0.7       | 0.50/-1.30       | -3.73/-2.07      | -1.221/0.2       | 0.812/4.9        | 1.74/-1.23       |
| Θ(105°)   | -2.99/-2.99   | -1.75/-2.95    | -1.55/-7.03      | -1.74/-1.52    | -0.87/-0.48    | 0.430/6.5      | -0.97/-0.44    | -0.83/-1.63      | -2.21/-3.61      | -4.11/-1.34      | 0.551/0.2        | -0.50/-2.03      | -0.62/-0.48      | 0.35/-1.12       | -2.34/-4.34      | -8.88/-6.66      | -4.32/-6.88      | -6.74/-2.59      | -1.60/-0.63      | -0.46/-0.88      | -2.13/-1.75      | -2.48/-0.61      | -1.33/-0.49      | 0.940/4.7        |
| Θ(112.5°) | -1.80/-1.09   | -1.78/-3.54    | -4.48/-6.13      | -5.47/-6.45    | -7.34/-3.49    | -3.07/-2.02    | -0.89/-2.98    | -4.17/-2.89      | -3.28/-3.26      | -3.83/-3.23      | -1.84/-1.20      | -0.90/-1.50      | -2.09/-2.46      | -2.67/-2.61      | -5.89/-6.65      | -3.82/-9.10      | -8.95/-0.71      | -0.900/4.7       | -0.32/-3.41      | -1.18/-1.82      | -5.57/-4.59      | -4.04/-1.97      | -0.81/-1.37      |                  |
| Θ(120°)   | -3.03/-3.10   | -3.20/-4.27    | -5.61/-8.38      | -12.07/-9.62   | -7.72/-5.05    | -4.42/-5.16    | -9.94/-8.45    | -6.90/-6.87      | -5.57/-8.15      | -6.56/-4.85      | -3.11/-2.64      | -3.75/-5.34      | -5.65/-5.57      | -4.01/-2.33      | -2.63/-4.11      | -7.94/-8.15      | -4.26/-7.36      | -11.37/-2.93     | -3.98/-0.70      | -8.40/-8.04      | -2.85/-8.39      | -8.48/-3.81      | -11.53/-6.25     | -5.83/-4.27      |
| Θ(127.5°) | -7.74/-8.51   | -6.64/-6.38    | -6.09/-7.47      | -14.30/-14.70  | -14.67/-8.43   | -8.40/-10.34   | -13.04/-15.23  | -11.44/-8.50     | -9.64/-8.29      | -7.06/-6.45      | -7.94/-7.40      | -7.00/-8.59      | -13.51/-9.82     | -6.31/-5.00      | -7.85/-5.07      | -4.67/-5.74      | -10.29/-8.69     | -8.69/-10.63     | -5.66/-13.63     | -7.47/-5.18      | -7.15/-10.34     | -13.28/-10.45    | -16.03/-11.45    | -13.50/-9.21     |
| Θ(135°)   | -7.60/-9.24   | -7.46/-3.66    | -4.95/-8.00      | -10.04/-13.73  | -10.75/-8.25   | -7.54/-7.65    | -8.14/-8.41    | -8.56/-8.09      | 9.11/-12.38      | -9.77/-10.70     | -11.20/-11.57    | -10.85/-13.75    | -12.38/-13.46    | -11.22/-8.14     | -11.59/-7.73     | -8.27/-4.39      | -9.97/-9.67      | -3.10/-8.00      | -15.13/-11.04    | -12.32/-5.21     | -8.61/-11.01     | -10.88/-8.27     | -9.47/-11.21     | -15.04/-12.38    |
| Θ(142.5°) | -12.03/-8.44  | -5.60/-5.51    | -4.30/-4.38      | -5.97/-7.92    | -6.96/-6.28    | -4.81/-4.02    | -4.45/-5.26    | -7.34/-11.92     | -11.35/-9.91     | -11.66/-14.02    | -11.93/-9.95     | -7.90/-8.67      | -8.38/-13.07     | -15.57/-10.20    | -14.89/-10.50    | -8.48/-11.87     | -15.74/-12.81    | -7.39/-9.46      | -13.49/-13.90    | -10.95/-8.38     | -9.68/-11.20     | -12.73/-9.84     | -8.64/-7.82      | -14.88/-14.23    |
| Θ(150°)   | -6.17/-7.43   | -6.32/-6.64    | -8.72/-11.96     | -13.78/-12.95  | -10.86/-11.16  | -12.10/-13.58  | -14.25/-13.68  | -10.56/-9.08     | -9.14/-9.92      | -9.28/-8.39      | -8.85/-8.64      | -9.73/-8.83      | -8.34/-6.85      | -6.72/-9.81      | -14.64/-13.35    | -14.74/-14.67    | -12.97/-6.91     | -3.98/-4.92      | -8.16/-11.53     | -14.72/-15.19    | -12.95/-9.20     | -9.28/-8.66      | -9.21/-11.86     | -10.63/-7.63     |
| Θ(157.5°) | -9.96/-7.43   | -5.61/-5.17    | -6.00/-6.60      | -5.59/-4.77    | -5.28/-6.51    | -6.88/-5.38    | -4.86/-5.16    | -6.59/-8.44      | -11.06/-13.18    | -15.36/-14.56    | -12.73/-12.71    | -12.17/-13.60    | -13.71/-11.57    | -11.91/-11.77    | -12.19/-9.89     | -8.92/-12.02     | -12.40/-8.86     | -7.96/-10.18     | -11.91/-9.70     | -8.40/-9.26      | -10.33/-10.34    | -7.17/-5.55      | -5.55/-8.57      | -15.01/-8.96     |
| Θ(165°)   | -3.79/-3.73   | -3.01/-2.79    | -3.44/-5.14      | -6.07/-6.20    | -6.96/-7.85    | -4.98/-5.83    | -4.36/-3.82    | -4.51/-3.83      | -3.21/-3.30      | -4.53/-6.37      | -8.45/-9.00      | -12.22/-9.16     | -12.77/-15.24    | -15.35/-14.97    | -12.60/-11.32    | -10.22/-10.50    | -13.49/-14.40    | -13.29/-13.39    | -14.04/-12.99    | -11.54/-10.49    | -9.73/-9.92      | -9.74/-10.39     | -9.09/-7.50      | -5.10/-3.71      |
| Θ(172.5°) | -5.29/-5.07   | -4.09/-3.91    | -4.58/-5.47      | -6.92/-8.77    | -13.15/-15.82  |                |                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |

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



