

# Pattern Antenna

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## Pattern (BT) Antenna Data Sheet

- Model : D-Audio2.0V -

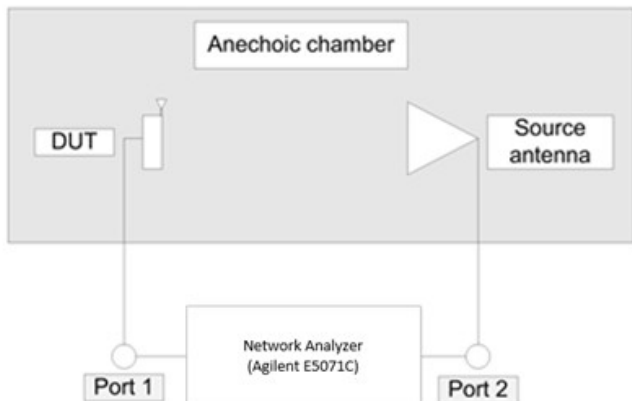
| - Application Frequency - |             |
|---------------------------|-------------|
|                           | Band [MHz]  |
| BT                        | 2400 ~ 2485 |



# Pattern Antenna



## ■ TEST ENVIRONMENT AND METHOD

| TEST ENVIRONMENT                                                                                                                                                                                                                                                                                                            |  |                                                                                     |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                            |  |   |  |
|                                                                                                                                                                                                                                           |  |  |  |
| TEST METHOD                                                                                                                                                                                                                                                                                                                 |  |                                                                                     |  |
|  <pre>graph TD     subgraph Anechoic_chamber [Anechoic chamber]         DUT[DUT]         SA[Source antenna]     end     DUT --- P1((Port 1))     SA --- P2((Port 2))     P1 --- NA[Network Analyzer Agilent E5071C]     P2 --- NA</pre> |  |                                                                                     |  |

# Pattern Antenna



## TEST EQUIPMENT

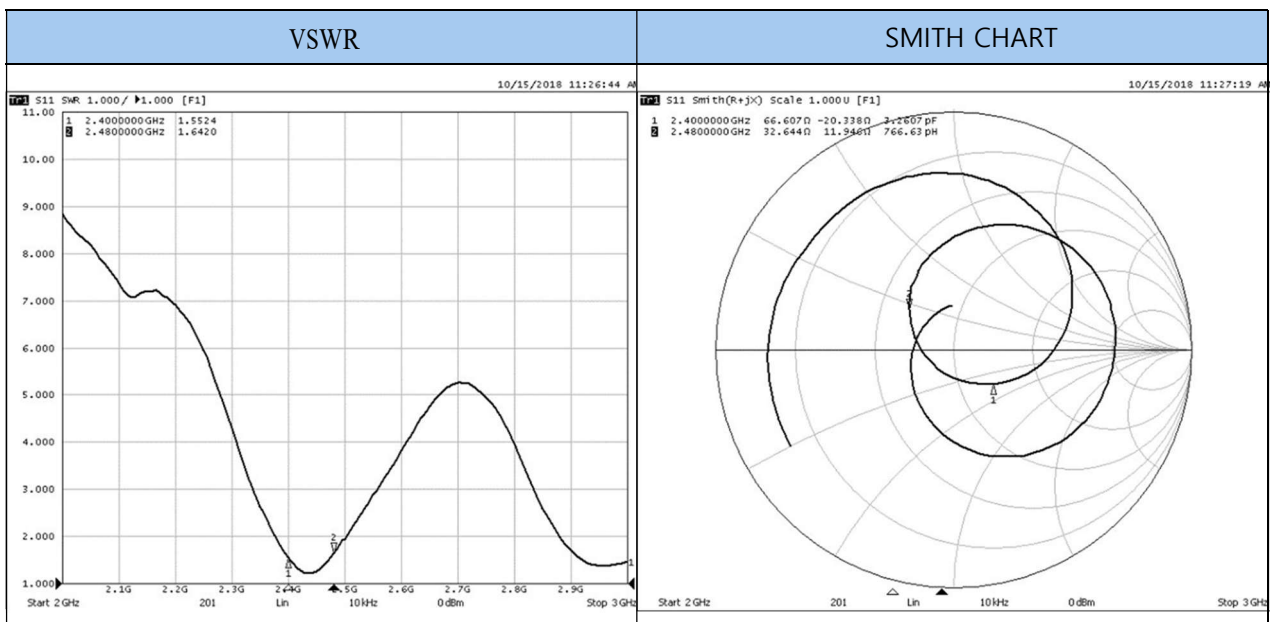
### TEST EQUIPMENT



## ELECTRICAL CHARACTERISTICS

|     |          | PwrSurr |           |           |          | H(Theta=0) |           |           |          | E1(Phi=0) |           |           |          | E2(Phi=90) |           |           |          |         |
|-----|----------|---------|-----------|-----------|----------|------------|-----------|-----------|----------|-----------|-----------|-----------|----------|------------|-----------|-----------|----------|---------|
| No. | Freq.    | Eff.[%] | Avg.[dBi] | Peak[dBi] | Theta[°] | Phi[deg]   | Avg.[dBi] | Peak[dBi] | Phi[deg] | BW[deg]   | Avg.[dBi] | Peak[dBi] | Theta[°] | BW[deg]    | Avg.[dBi] | Peak[dBi] | Theta[°] | BW[deg] |
| 1   | 2400.000 | 35.39   | -4.51     | -2.21     | 60.00    | 270.00     | -4.25     | -3.39     | 270.00   | 47.74     | -6.65     | -2.82     | -30.00   | 34.66      | -3.02     | -2.21     | -60.00   | 76.78   |
| 2   | 2425.000 | 44.83   | -3.48     | -0.18     | 45.00    | 255.00     | -2.98     | -3.41     | 255.00   | 49.95     | -5.25     | -2.18     | -30.00   | 59.76      | -3.11     | -3.00     | -60.00   | 86.19   |
| 3   | 2445.000 | 33.21   | -4.79     | -2.16     | 45.00    | 255.00     | -4.05     | -3.50     | 255.00   | 50.87     | -6.24     | -2.66     | 0.00     | 51.20      | -2.73     | -2.55     | -45.00   | 91.37   |
| 4   | 2465.000 | 31.43   | -5.03     | -2.60     | 45.00    | 255.00     | -4.13     | -3.10     | 255.00   | 62.43     | -6.30     | -3.82     | -135.00  | 24.47      | -3.67     | -3.63     | -45.00   | 96.12   |
| 5   | 2485.000 | 30.73   | -5.12     | -2.78     | 45.00    | 255.00     | -4.27     | -3.12     | 240.00   | 60.70     | -6.14     | -3.23     | -135.00  | 26.57      | -4.22     | -4.12     | -45.00   | 99.41   |

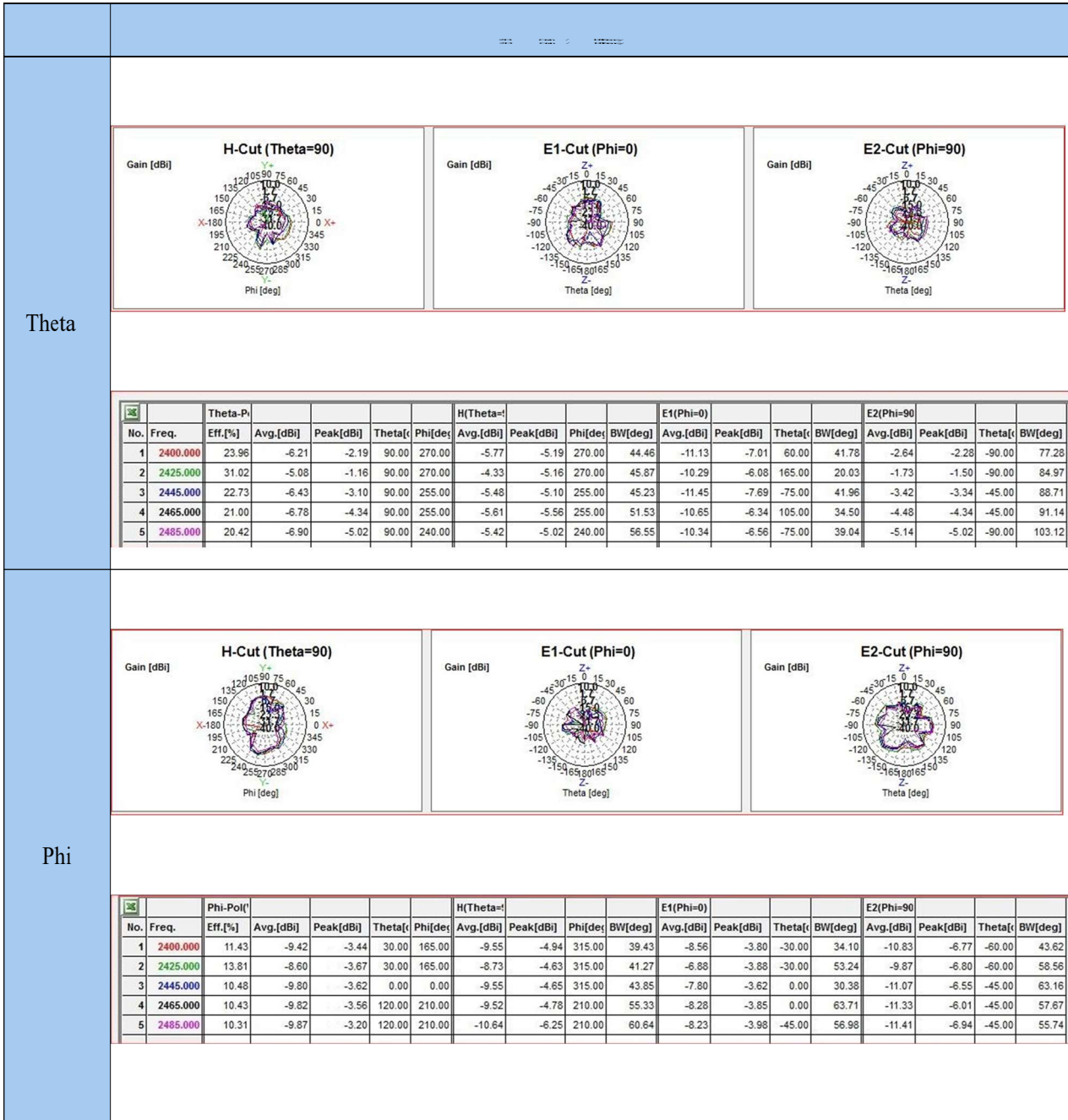
## MEASUREMENT



# Pattern Antenna



## RADIATION PATTERN



# Pattern Antenna

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## Pattern (WiFi) Antenna Data Sheet

- Model : D-Audio2.0V -

| - Application Frequency - |             |
|---------------------------|-------------|
|                           | Band [MHz]  |
| WiFi                      | 2400 ~ 2485 |
|                           | 5150 ~ 5850 |

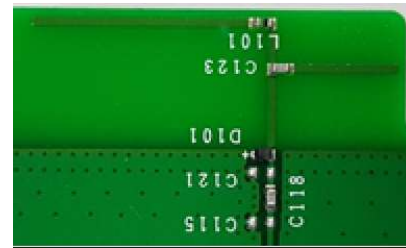
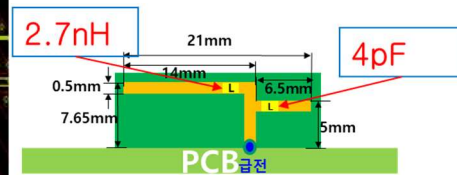
# Pattern Antenna



## GENERAL FEATURES

|              |                 |
|--------------|-----------------|
| Part number  | D-Audio2.0V     |
| Antenna type | PCB Pattern ANT |
| Applications | WiFi            |

## ANTENNA INFORMATION



## ANTENNA RF SPECIFICATIONS

| Item                  | Specification         |       |       |       |       |       |
|-----------------------|-----------------------|-------|-------|-------|-------|-------|
| Frequency Range [MHz] | 2400 ~ 2485,          |       |       |       |       |       |
| VSWR [Max]            | 3:1                   |       |       |       |       |       |
| Bandwidth [MHz]       | 85(2.4GHz), 150(5GHz) |       |       |       |       |       |
| Impedance             | 50Ω                   |       |       |       |       |       |
| Polarization          | Linear                |       |       |       |       |       |
| Freq. [MHz]           | 2400                  | 2445  | 2485  | 5150  | 5485  | 5850  |
| Gain – Azimuth        | -5.54                 | -5.74 | -5.95 | -5.88 | -5.94 | -5.65 |
| Gain – Elevation 1    | -4.58                 | -4.88 | -4.48 | -4.88 | -5.15 | -5.24 |
| Gain – Elevation 2    | -6.18                 | -6.75 | -6.13 | -6.15 | -6.34 | -6.24 |
| Gain – 3D             | -5.89                 | -5.18 | -5.48 | -5.57 | -5.12 | -5.11 |

# Pattern Antenna



## ■ TEST ENVIRONMENT AND METHOD

| TEST ENVIRONMENT |  |
|------------------|--|
|                  |  |
|                  |  |
| TEST METHOD      |  |
|                  |  |

# Pattern Antenna



## TEST EQUIPMENT

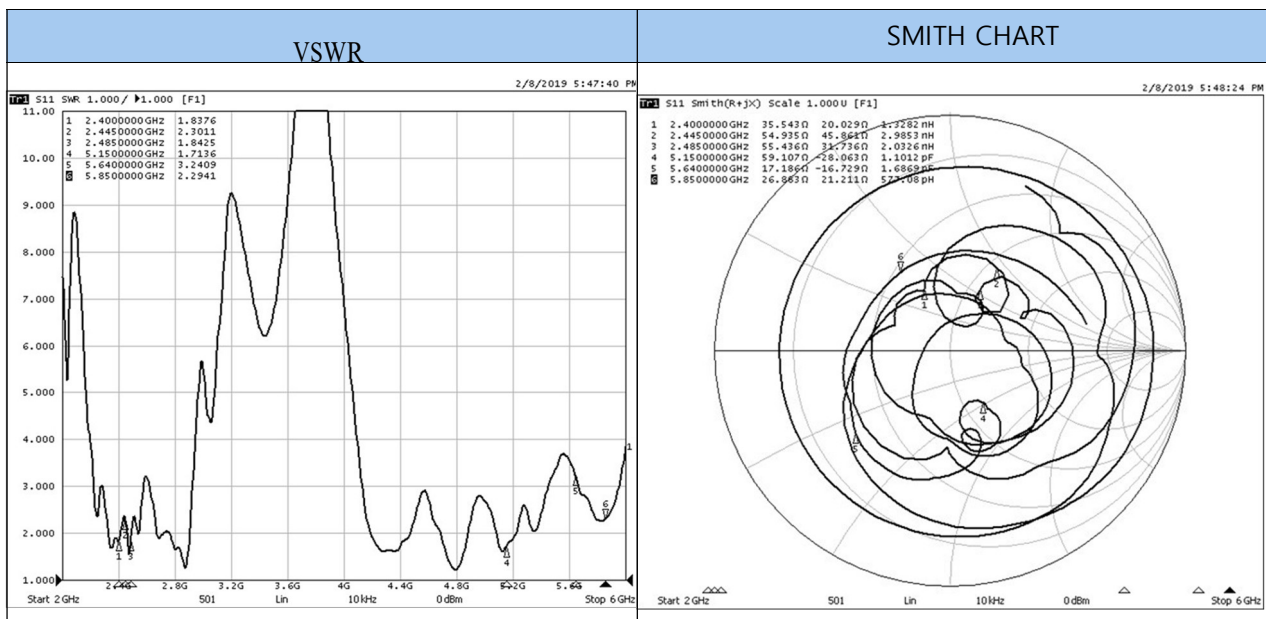
### TEST EQUIPMENT



## ELECTRICAL CHARACTERISTICS

| No. | Freq.    | PwrSum | Eff.[%] | Avg[dBi] | Peak[dBi] | Theta[°] | Phi[deg] | H(Theta=) | Avg[dBi] | Peak[dBi] | Phi[deg] | BW[deg] | E1(Phi=0) | Avg[dBi] | Peak[dBi] | Theta[°] | BW[deg] | E2(Phi=90) | Avg[dBi] | Peak[dBi] | Theta[°] | BW[deg] |
|-----|----------|--------|---------|----------|-----------|----------|----------|-----------|----------|-----------|----------|---------|-----------|----------|-----------|----------|---------|------------|----------|-----------|----------|---------|
| 1   | 2400.000 | 23.67  | -6.26   | -1.26    | 75.00     | 285.00   | -7.02    | -3.71     | 285.00   | 26.33     | -7.25    | -3.43   | 30.00     | 58.02    | -7.18     | -5.41    | -15.00  | 34.12      |          |           |          |         |
| 2   | 2425.000 | 30.64  | -5.14   | -0.62    | 150.00    | 135.00   | -6.56    | -3.40     | 285.00   | 25.45     | -6.29    | -2.42   | 30.00     | 63.56    | -5.90     | -5.68    | -30.00  | 37.19      |          |           |          |         |
| 3   | 2445.000 | 36.76  | -4.35   | -0.01    | 150.00    | 120.00   | -6.23    | -3.21     | 285.00   | 24.97     | -5.45    | -4.33   | 30.00     | 69.60    | -4.82     | -4.74    | 45.00   | 35.25      |          |           |          |         |
| 4   | 2465.000 | 26.66  | -5.74   | -0.43    | 150.00    | 120.00   | -7.87    | -3.86     | 285.00   | 23.67     | -6.77    | -4.60   | 30.00     | 59.90    | -5.74     | -4.30    | 165.00  | 24.56      |          |           |          |         |
| 5   | 2485.000 | 26.47  | -5.77   | -0.04    | 150.00    | 120.00   | -8.15    | -2.57     | 285.00   | 22.42     | -6.71    | -4.68   | 30.00     | 53.39    | -5.11     | -4.42    | 165.00  | 23.80      |          |           |          |         |
| 6   | 5150.000 | 30.90  | -5.10   | -0.61    | 30.00     | 255.00   | -7.34    | -3.42     | 285.00   | 78.13     | -7.06    | -3.20   | 15.00     | 55.74    | -3.19     | -3.10    | -45.00  | 61.41      |          |           |          |         |
| 7   | 5300.000 | 33.90  | -4.70   | -0.18    | 45.00     | 240.00   | -6.97    | -2.20     | 285.00   | 74.62     | -6.34    | -4.12   | 15.00     | 66.07    | -3.26     | -2.97    | -30.00  | 56.71      |          |           |          |         |
| 8   | 5640.000 | 41.42  | -3.83   | -0.77    | 45.00     | 255.00   | -5.44    | -2.34     | 255.00   | 69.49     | -5.04    | -4.90   | -30.00    | 33.78    | -3.21     | -2.46    | -45.00  | 67.53      |          |           |          |         |
| 9   | 5745.000 | 36.08  | -4.43   | -0.96    | 30.00     | 225.00   | -5.74    | -3.02     | 240.00   | 35.06     | -5.60    | -4.22   | -30.00    | 42.00    | -4.05     | -3.67    | -60.00  | 70.68      |          |           |          |         |
| 10  | 5785.000 | 29.47  | -5.31   | -0.18    | 30.00     | 225.00   | -6.63    | -2.82     | 150.00   | 36.20     | -6.21    | -2.54   | -30.00    | 43.00    | -5.11     | -4.47    | -45.00  | 69.74      |          |           |          |         |
| 11  | 5825.000 | 28.75  | -5.41   | -0.44    | 30.00     | 225.00   | -6.83    | -2.43     | 150.00   | 30.10     | -5.98    | -2.18   | -30.00    | 50.25    | -5.50     | -4.21    | -45.00  | 66.95      |          |           |          |         |

## MEASUREMENT



# Pattern Antenna



## RADIATION PATTERN

| Theta | H-Cut (Theta=90) |          |           | E1-Cut (Phi=0) |            |            | E2-Cut (Phi=90) |           |            |            |            |           |          |           |            |
|-------|------------------|----------|-----------|----------------|------------|------------|-----------------|-----------|------------|------------|------------|-----------|----------|-----------|------------|
|       |                  |          |           |                |            |            |                 |           |            |            |            |           |          |           |            |
|       | No.              | Freq.    | Theta-Pol | Eff. [%]       | Avg. [dBi] | Peak [dBi] | Theta [c]       | Phi [deg] | H(Theta=0) | Avg. [dBi] | Peak [dBi] | Phi [deg] | BW [deg] | E1(Phi=0) | E2(Phi=90) |
|       | 1                | 2400.000 | 12.88     | -8.90          | -3.05      | 120.00     | 300.00          | -10.11    | -3.25      | 285.00     | 21.43      | -9.28     | -7.48    | 30.00     | 50.72      |
|       | 2                | 2425.000 | 16.91     | -7.72          | -4.10      | 105.00     | 225.00          | -9.30     | -4.67      | 285.00     | 22.53      | -8.24     | -7.58    | 30.00     | 52.52      |
|       | 3                | 2445.000 | 20.87     | -6.80          | -4.02      | 60.00      | 105.00          | -8.44     | -5.14      | 300.00     | 22.75      | -7.32     | -6.56    | 15.00     | 49.63      |
|       | 4                | 2465.000 | 15.51     | -8.09          | -3.43      | 30.00      | 15.00           | -9.85     | -4.60      | 300.00     | 24.47      | -8.71     | -7.86    | 30.00     | 31.86      |
|       | 5                | 2485.000 | 15.46     | -8.11          | -3.87      | 30.00      | 0.00            | -10.25    | -5.56      | 255.00     | 16.79      | -8.75     | -7.87    | 30.00     | 23.43      |
|       | 6                | 5150.000 | 11.91     | -9.24          | -3.52      | 15.00      | 210.00          | -10.55    | -4.49      | 315.00     | 10.35      | -9.48     | -7.42    | -15.00    | 54.70      |
|       | 7                | 5300.000 | 14.60     | -8.36          | -3.29      | 30.00      | 195.00          | -11.23    | -5.99      | 135.00     | 18.12      | -8.66     | -7.99    | -15.00    | 37.66      |
|       | 8                | 5640.000 | 18.41     | -7.35          | -3.59      | 30.00      | 195.00          | -9.14     | -4.38      | 135.00     | 21.60      | -7.56     | -6.22    | -30.00    | 36.95      |
|       | 9                | 5745.000 | 15.45     | -8.11          | -4.17      | 30.00      | 210.00          | -9.22     | -4.51      | 300.00     | 28.99      | -8.10     | -6.92    | -15.00    | 45.67      |
|       | 10               | 5785.000 | 12.62     | -8.99          | -3.21      | 30.00      | 210.00          | -10.07    | -4.63      | 300.00     | 25.51      | -8.75     | -6.48    | -30.00    | 44.94      |
|       | 11               | 5825.000 | 12.37     | -9.08          | -3.51      | 30.00      | 210.00          | -10.19    | -4.80      | 300.00     | 30.73      | -8.57     | -6.58    | -45.00    | 48.70      |
| Phi   | H-Cut (Theta=90) |          |           | E1-Cut (Phi=0) |            |            | E2-Cut (Phi=90) |           |            |            |            |           |          |           |            |
|       |                  |          |           |                |            |            |                 |           |            |            |            |           |          |           |            |
|       | No.              | Freq.    | Phi-Pol   | Eff. [%]       | Avg. [dBi] | Peak [dBi] | Theta [c]       | Phi [deg] | H(Theta=0) | Avg. [dBi] | Peak [dBi] | Theta [c] | BW [deg] | E1(Phi=0) | E2(Phi=90) |
|       | 1                | 2400.000 | 10.78     | -9.67          | -2.32      | 135.00     | 150.00          | -9.95     | -3.37      | 330.00     | 26.29      | -11.53    | -4.82    | -150.00   | 21.12      |
|       | 2                | 2425.000 | 13.73     | -8.62          | -3.01      | 150.00     | 150.00          | -9.86     | -4.31      | 285.00     | 61.84      | -10.72    | -3.22    | -150.00   | 14.93      |
|       | 3                | 2445.000 | 15.89     | -7.99          | -2.85      | 150.00     | 135.00          | -10.24    | -3.36      | 285.00     | 20.36      | -10.01    | -3.04    | -150.00   | 13.14      |
|       | 4                | 2465.000 | 11.15     | -9.53          | -4.46      | 150.00     | 135.00          | -12.23    | -5.14      | 285.00     | 16.80      | -11.19    | -5.21    | -150.00   | 14.24      |
|       | 5                | 2485.000 | 11.01     | -9.58          | -4.91      | 15.00      | 135.00          | -12.30    | -5.18      | 285.00     | 13.09      | -10.99    | -5.55    | -150.00   | 15.48      |
|       | 6                | 5150.000 | 18.99     | -7.21          | -3.32      | 30.00      | 255.00          | -10.16    | -4.04      | 285.00     | 61.50      | -10.76    | -5.45    | 15.00     | 15.41      |
|       | 7                | 5300.000 | 19.29     | -7.15          | -2.97      | 45.00      | 255.00          | -9.01     | -4.70      | 285.00     | 43.46      | -10.18    | -5.78    | 15.00     | 22.38      |
|       | 8                | 5640.000 | 23.01     | -6.38          | -2.87      | 30.00      | 255.00          | -7.86     | -4.73      | 240.00     | 54.04      | -8.61     | -5.02    | -30.00    | 21.68      |
|       | 9                | 5745.000 | 20.63     | -6.85          | -4.50      | 30.00      | 255.00          | -8.33     | -4.59      | 240.00     | 15.61      | -9.19     | -5.68    | -30.00    | 25.18      |
|       | 10               | 5785.000 | 16.85     | -7.74          | -3.56      | 30.00      | 255.00          | -9.25     | -4.89      | 150.00     | 23.73      | -9.75     | -3.76    | -30.00    | 24.28      |
|       | 11               | 5825.000 | 16.38     | -7.86          | -3.29      | 30.00      | 255.00          | -9.52     | -4.53      | 150.00     | 23.59      | -9.45     | -3.49    | 30.00     | 7.27       |