

| Frequency ID               | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35     | 36     | 37     | 38     | 39     | 40     | 41     | 42     | 43     | 44     | 45     | 46     | 47     |        |        |        |        |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (MHz)            | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 | 2510.0 | 2520.0 | 2530.0 | 2540.0 | 2550.0 | 2560.0 | 2570.0 | 2580.0 | 2590.0 | 2600.0 | 2610.0 | 2620.0 | 2630.0 | 2640.0 | 2650.0 | 2660.0 | 2670.0 | 2680.0 | 2690.0 | 2700.0 | 2710.0 | 2720.0 | 2730.0 | 2740.0 | 2750.0 | 2760.0 | 2770.0 | 2780.0 | 2790.0 | 2800.0 | 2810.0 | 2820.0 | 2830.0 | 2840.0 | 2850.0 | 2860.0 | 2870.0 | 2880.0 | 2890.0 | 2900.0 |
| Efficiency (dBi)           | -4.39  | -4.28  | -4.24  | -4.22  | -4.18  | -4.04  | -3.90  | -3.74  | -3.56  | -2.98  | -2.60  | -3.59  | -3.69  | -3.89  | -3.78  | -3.71  | -3.69  | -3.60  | -3.54  | -3.63  | -3.77  | -3.67  | -3.47  | -3.30  | -3.12  | -3.13  | -3.53  | -3.73  | -3.62  | -3.50  | -3.29  | -3.30  | -3.21  | -3.49  | -3.58  | -3.37  | -3.57  | -3.18  | -3.09  | -3.20  | -3.11  | -3.39  | -3.49  | -3.24  | -3.24  | -3.35  | 3.05   |        |        |        |        |
| Gain (dBi)                 | -0.25  | -0.12  | -0.17  | -0.39  | -0.45  | -0.22  | 0.04   | 0.20   | 0.31   | 0.75   | 1.05   | 1.89   | 1.68   | 1.26   | 1.21   | 1.25   | 1.27   | 1.42   | 1.40   | 1.06   | 0.68   | 0.65   | 0.70   | 0.98   | 1.39   | 1.22   | 0.63   | 0.32   | 0.28   | 0.22   | 0.53   | 0.84   | 0.85   | 0.64   | 0.50   | 0.29   | 0.38   | 0.81   | 0.80   | 0.60   | 0.92   | 0.44   | 0.09   | 0.43   | 0.28   | -0.06  | 0.58   |        |        |        |        |
| Efficiency (%)             | 36.43  | 37.34  | 37.71  | 37.86  | 38.22  | 39.47  | 40.74  | 42.67  | 46.12  | 50.30  | 54.62  | 43.79  | 42.75  | 40.86  | 41.89  | 42.60  | 42.76  | 43.66  | 44.22  | 43.35  | 41.96  | 42.99  | 45.03  | 46.77  | 48.78  | 48.65  | 44.39  | 42.33  | 43.49  | 44.69  | 46.87  | 49.75  | 47.71  | 44.81  | 43.87  | 42.92  | 43.96  | 48.07  | 49.10  | 47.86  | 48.87  | 45.86  | 44.10  | 47.72  | 47.47  | 46.29  | 49.52  |        |        |        |        |
| Directivity (dB)           | 4.13   | 4.16   | 4.07   | 3.87   | 3.83   | 3.73   | 3.82   | 3.94   | 3.87   | 3.74   | 3.66   | 5.48   | 5.37   | 5.15   | 4.99   | 4.96   | 4.95   | 5.02   | 4.94   | 4.69   | 4.45   | 4.31   | 4.17   | 4.28   | 4.50   | 4.35   | 4.16   | 4.39   | 4.23   | 4.34   | 4.68   | 4.87   | 4.61   | 4.13   | 4.08   | 4.32   | 3.96   | 3.95   | 3.99   | 3.89   | 3.88   | 4.03   | 3.82   | 3.65   | 3.64   | 3.52   | 3.29   | 3.64   |        |        |        |
| Peak Gain Position (Theta) | 86.00  | 86.00  | 86.00  | 86.00  | 70.00  | 69.00  | 68.00  | 68.00  | 68.00  | 69.00  | 71.00  | 111.00 | 106.00 | 106.00 | 112.00 | 112.00 | 112.00 | 112.00 | 112.00 | 113.00 | 111.00 | 111.00 | 111.00 | 110.00 | 112.00 | 113.00 | 112.00 | 111.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | 64.00  | 63.00  | 62.00  | 61.00  | 115.00 | 114.00 | 113.00 | 112.00 | 111.00 | 109.00 | 109.00 | 116.00 |        |        |        |        |        |
| Peak Gain Position (Phi)   | 128.00 | 128.00 | 126.00 | 123.00 | 250.00 | 250.00 | 247.00 | 246.00 | 246.00 | 243.00 | 243.00 | 91.00  | 262.00 | 263.00 | 93.00  | 96.00  | 97.00  | 97.00  | 100.00 | 83.00  | 79.00  | 79.00  | 79.00  | 79.00  | 78.00  | 84.00  | 89.00  | 87.00  | 82.00  | 80.00  | 250.00 | 91.00  | 92.00  | 90.00  | 89.00  | 228.00 | 243.00 | 259.00 | 268.00 | 90.00  | 84.00  | 78.00  | 74.00  | 69.00  | 63.00  | 62.00  | 109.00 |        |        |        |        |
| Efficiency ThetaPol (%)    | 33.78  | 34.78  | 35.28  | 35.55  | 36.03  | 37.37  | 38.79  | 40.87  | 44.41  | 48.67  | 53.32  | 37.93  | 37.16  | 35.68  | 36.79  | 35.52  | 37.70  | 38.61  | 39.27  | 38.62  | 37.55  | 38.75  | 40.74  | 42.34  | 44.14  | 43.97  | 40.44  | 38.44  | 39.66  | 40.90  | 42.96  | 45.59  | 43.61  | 40.90  | 40.10  | 39.39  | 40.47  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

**0.6mm**



**43.6mm**











