

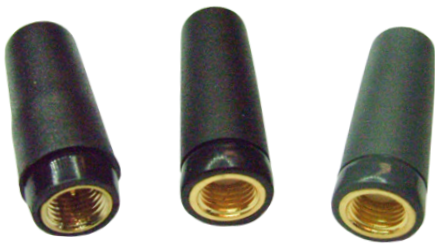


Delta 8A

5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

Key Features

- Supports some 5G NR / 4G LTE bands
- Supports WiFi 2.4 GHz spectrum
- Supports Bluetooth, Zigbee bands
- ¼ wave antenna
- SMA male and Reverse Polarity connector



General Description

The Delta 8A is a ¼ wave antenna design with a loaded helical stub which results in efficient performance with minimal size.

The Delta 8A can be used for WiFi, Bluetooth and Zigbee applications that require an extremely compact antenna. In addition, some LTE bands are supported.

The Delta 8A is supplied, as standard, with an SMA male or Reverse Polarity SMA Male connectors.

Additional Considerations

- Small compact antenna
- Ground Plane Independent

| | | | | |
|--------------------|--------------------|--------------|------------------|-------------------|
| D Direct | 5G New Radio | 4G LTE | BLE Bluetooth | AoA Bluetooth |
| AoD Bluetooth | ZB Zigbee | WLAN 2400 | ISM 2450 | WiFi 4 802.11n |
| WiFi 5 802.11ac | WiFi 6 802.11ax | WiFi 2.4G | IEEE 802.15.4 | |



Delta 8A

5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

Electrical Specifications

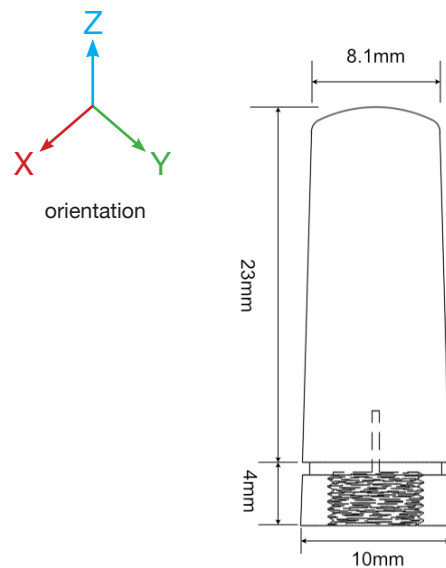
| | |
|---------------------------|----------|
| Impedance: | 50 Ohm |
| Polarization: | Vertical |
| Max Input Power: | 50 W |
| Ground plane independent: | No |

Environmental Specifications

| | |
|------------------------------|---------------|
| Operating Temperature range: | -45 to +75 °C |
| Storage Temperature range: | -45 to +75 °C |

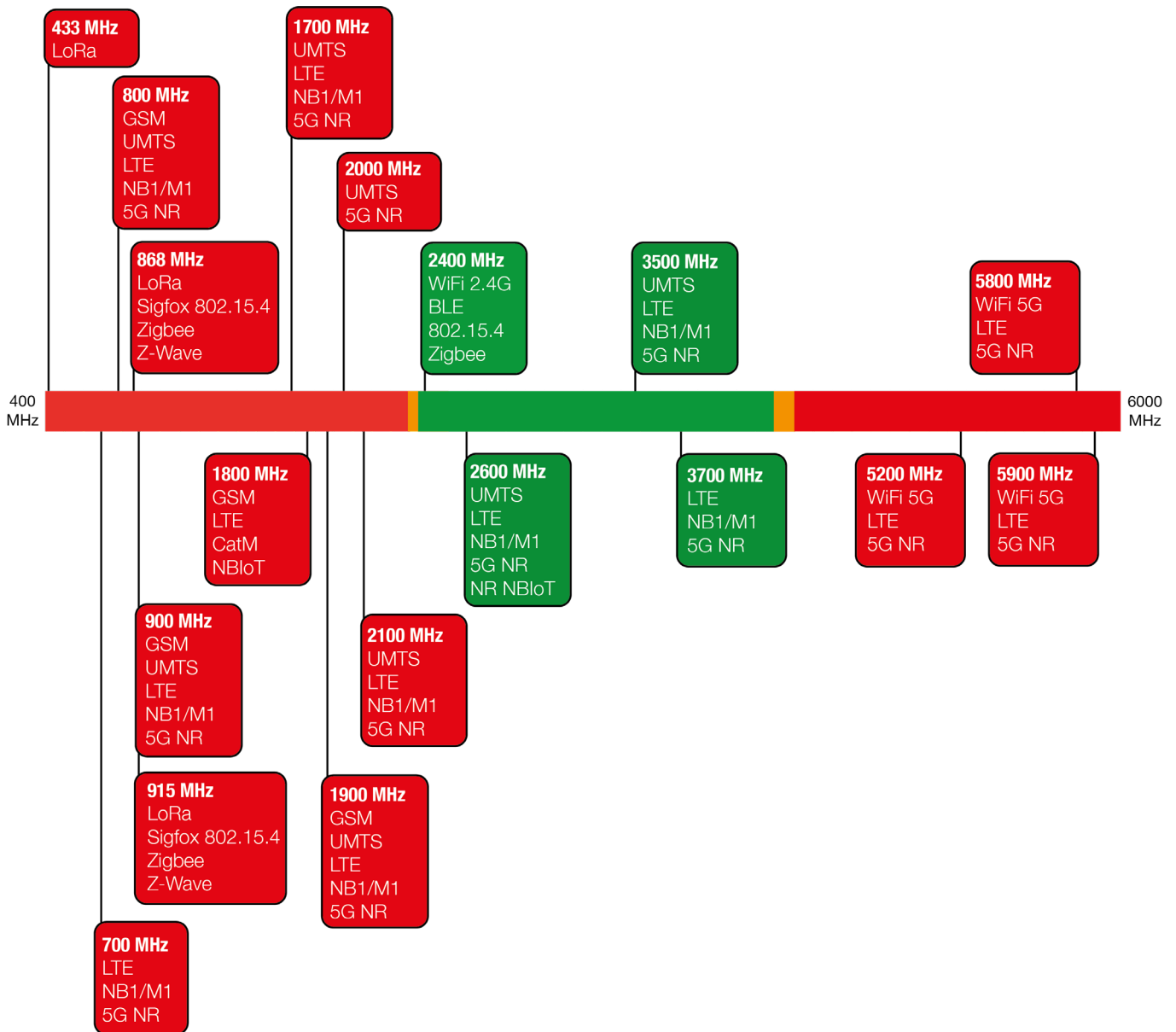
Mechanical Specifications

| | |
|--------------------|-----------------------------|
| Dimensions: | L27 x 10 mm diameter |
| Weight: | 14 g |
| Connector: | SMA Male / reverse polarity |
| Mounting method: | Direct Connect |
| Housing materials: | TPE |





Spectrum Coverage



● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Usable Cellular Frequency Support (2000 MHz – 5900 MHz)

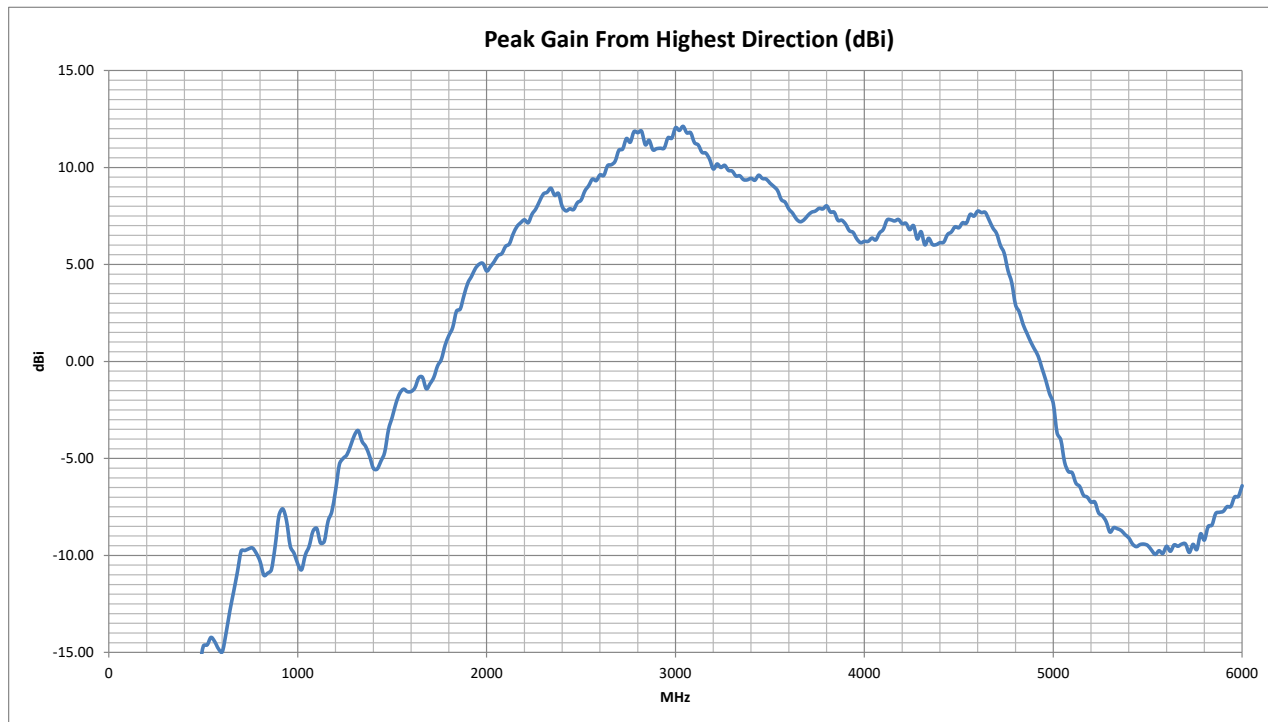
| | 2000 | 2100 | 2300 | 2400 | 2500 | 2600 | 3300 | 3500 | 3700 | 4700 | 5200 | 5900 |
|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| GSM Bands: | | | | | | | | | | | | |
| UMTS Bands: | | | | | | ● | | ● | | | | |
| LTE Bands: | | | | ● | ● | ● | ● | ● | ● | | | |
| LTE Cat M Bands: | | | | | ● | ● | | ● | ● | | | |
| LTE Cat NB Bands: | | | | | ● | ● | | ● | ● | | | |
| 5G NR Bands: | | | | ● | ● | ● | | ● | ● | | | |
| NR Cat NB Bands: | | | | | ● | ● | | | | | | |



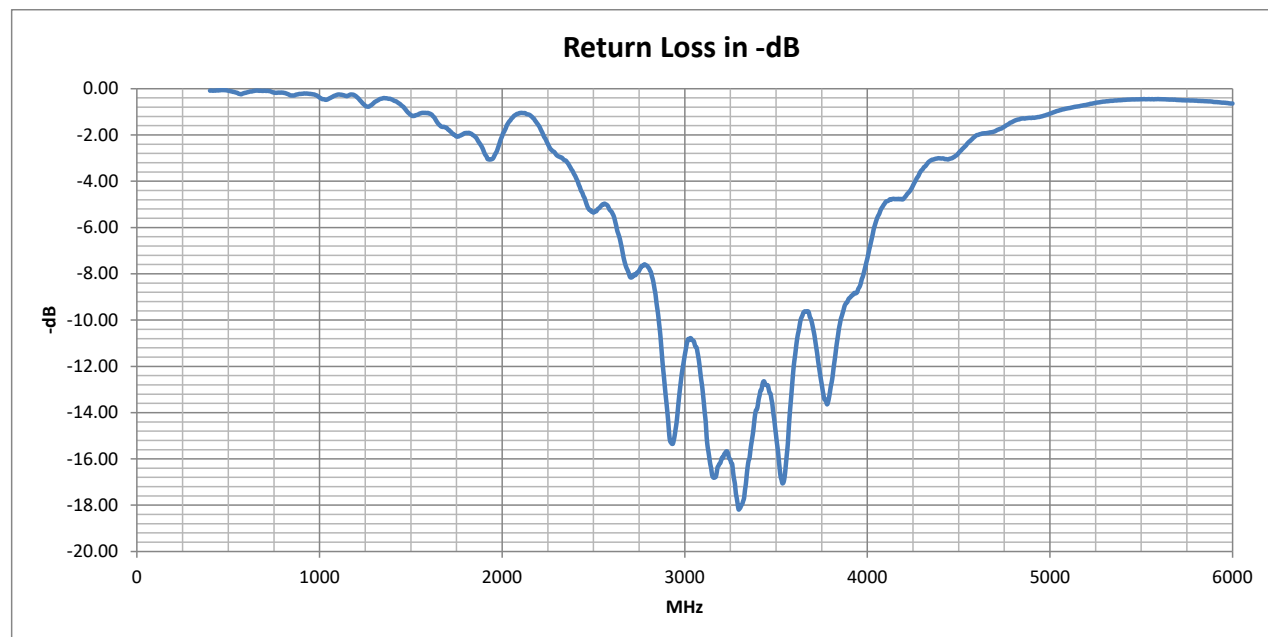
Delta 8A

5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

Peak Gain vs. Frequency



Return Loss

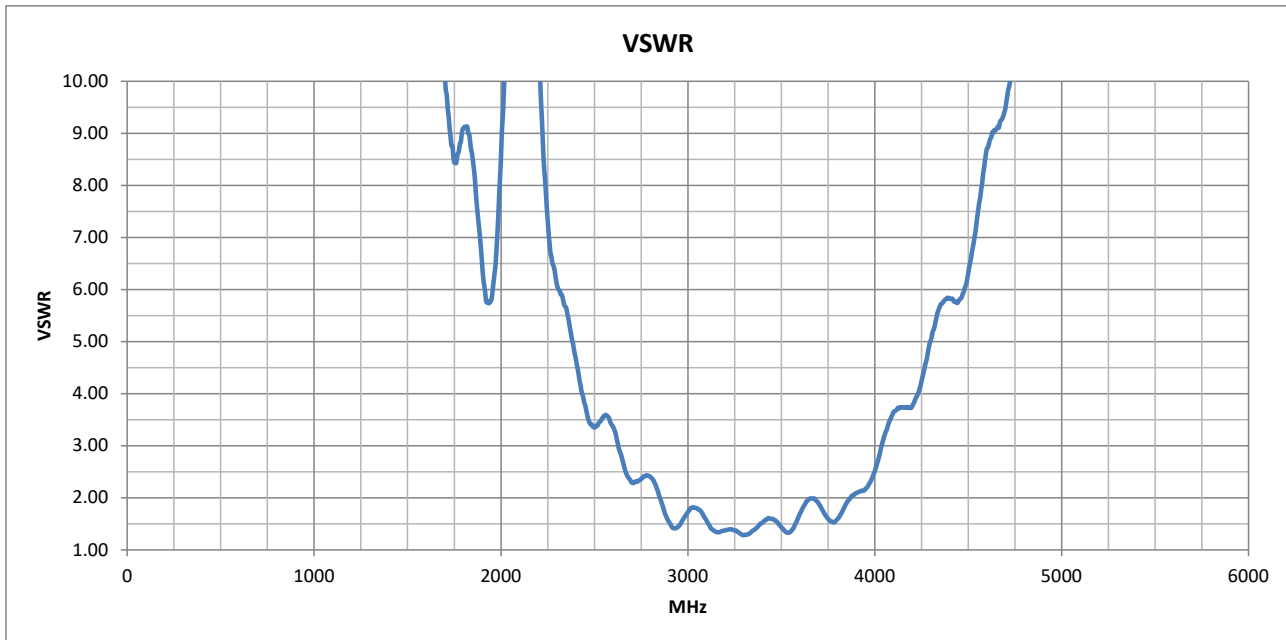




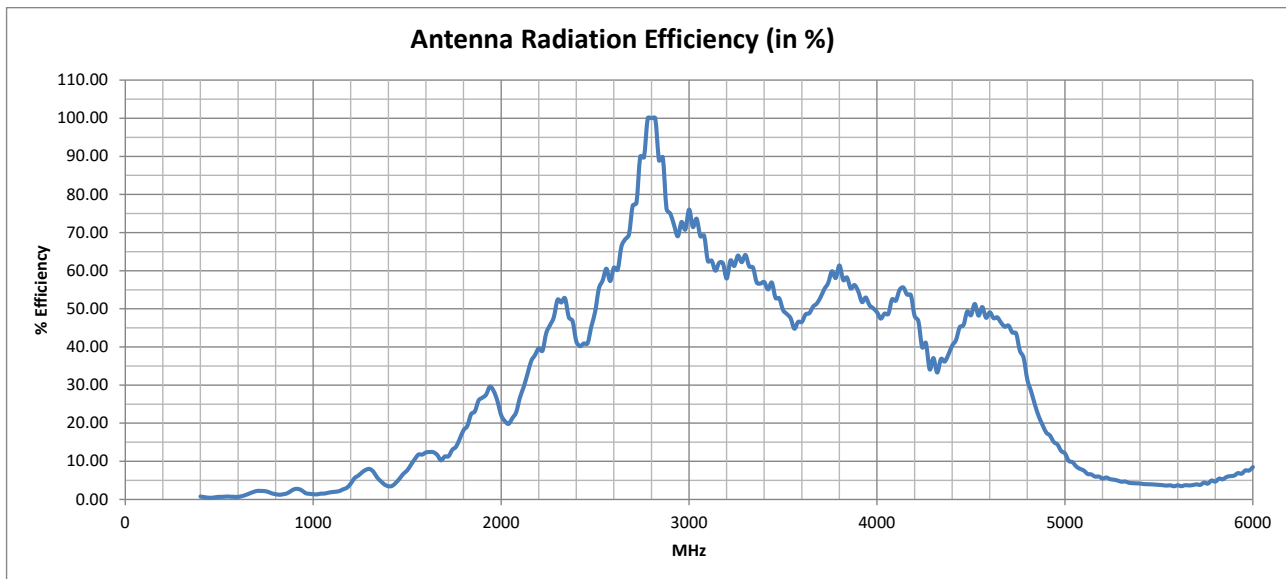
Delta 8A

5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

VSWR



Radiation Efficiency





Cellular Standards Band Support

| GSM (2G) Band | UMTS (3G) Band | E-UTRA (4G) Band | Cat M E-UTRA Band | Cat NB E-UTRA Band | NR (5G) Band | Cat NB NR (5G) Band | Uplink | Downlink | Average Upload Efficiency (%) | Average Download Efficiency (%) | Maximum Upload VSWR | Maximum Download VSWR | Use Indicator |
|---------------|----------------|------------------|-------------------|--------------------|--------------|---------------------|---------------------|---------------------|-------------------------------|---------------------------------|---------------------|-----------------------|---------------|
| | 1 | 1 | 1 | 1 | n1 | n1 | 1920 - 1980 MHz | 2110 - 2170 MHz | 28.22 | 32.85 | 7.01 | 16.57 | ● |
| PCS-1900 | 2 | 2 | 2 | 2 | n2 | n2 | 1850 - 1910 MHz | 1930 - 1990 MHz | 25.23 | 27.70 | 8.47 | 7.77 | ● |
| DCS-1800 | 3 | 3 | 3 | 3 | n3 | n3 | 1710 - 1785 MHz | 1805 - 1880 MHz | 13.36 | 21.91 | 9.73 | 9.13 | ● |
| | 4 | 4 | 4 | 4 | | | 1710 - 1755 MHz | 2110 - 2155 MHz | 12.34 | 31.66 | 9.73 | 16.57 | ● |
| GSM-850 | 5 | 5 | 5 | 5 | n5 | n5 | 824 - 849 MHz | 869 - 894 MHz | 1.32 | 2.16 | 76.60 | 77.07 | ● |
| | 6 | | | | | | 830 - 840 MHz | 875 - 885 MHz | 1.30 | 2.12 | 70.63 | 73.82 | ● |
| | 7 | 7 | 7 | 7 | n7 | n7 | 2500 - 2570 MHz | 2620 - 2690 MHz | 56.42 | 67.20 | 3.59 | 3.12 | ● |
| E-GSM-900 | 8 | 8 | 8 | 8 | n8 | n8 | 880 - 915 MHz | 925 - 960 MHz | 2.52 | 2.19 | 84.16 | 83.75 | ● |
| | 9 | 9 | | | | | 1749.9 - 1784.9 MHz | 1844.9 - 1879.9 MHz | 14.69 | 23.76 | 8.83 | 8.61 | ● |
| | 10 | 10 | | | | | 1710 - 1770 MHz | 2110 - 2170 MHz | 12.79 | 32.85 | 9.73 | 16.57 | ● |
| | 11 | 11 | 11 | 11 | | | 1427.9 - 1447.9 MHz | 1475.9 - 1495.9 MHz | 4.29 | 6.97 | 29.18 | 18.29 | ● |
| | 12 | 12 | 12 | 12 | n12 | n12 | 699 - 716 MHz | 729 - 746 MHz | 2.20 | 2.16 | 196.17 | 158.17 | ● |
| | 13 | 13 | 13 | 13 | n13 | n13 | 777 - 787 MHz | 746 - 756 MHz | 1.55 | 2.05 | 103.11 | 108.33 | ● |
| | 14 | 14 | 14 | 14 | n14 | | 788 - 798 MHz | 758 - 768 MHz | 1.43 | 1.89 | 105.01 | 99.24 | ● |
| | | 17 | | 17 | | | 704 - 716 MHz | 734 - 746 MHz | 2.20 | 2.15 | 190.16 | 140.10 | ● |
| | | 18 | 18 | 18 | n18 | n18 | 815 - 830 MHz | 860 - 875 MHz | 1.23 | 1.77 | 86.88 | 68.80 | ● |
| | 19 | 19 | 19 | 19 | | | 830 - 845 MHz | 875 - 890 MHz | 1.32 | 2.19 | 70.63 | 77.07 | ● |
| | 20 | 20 | 20 | 20 | n20 | n20 | 832 - 862 MHz | 791 - 821 MHz | 1.42 | 1.31 | 68.43 | 104.21 | ● |
| | 21 | 21 | 21 | 21 | | | 1447.9 - 1462.9 MHz | 1495.9 - 1510.9 MHz | 5.22 | 7.86 | 24.30 | 15.64 | ● |
| | 22 | 22 | | | | | 3410 - 3490 MHz | 3510 - 3590 MHz | 54.35 | 46.91 | 1.61 | 1.61 | ● |
| | | 24 | 24 | 24 | n24 | | 1626.5 - 1660.5 MHz | 1525 - 1559 MHz | 12.14 | 10.61 | 14.15 | 16.55 | ● |
| | 25 | 25 | 25 | 25 | n25 | n25 | 1850 - 1915 MHz | 1930 - 1995 MHz | 25.38 | 27.38 | 8.47 | 8.15 | ● |
| | 26 | 26 | 26 | 26 | n26 | | 814 - 849 MHz | 859 - 894 MHz | 1.29 | 2.02 | 88.08 | 77.07 | ● |
| | | 27 | 27 | | | | 807 - 824 MHz | 852 - 869 MHz | 1.24 | 1.60 | 94.39 | 65.53 | ● |
| | | 28 | 28 | 28 | n28 | n28 | 703 - 748 MHz | 758 - 803 MHz | 2.18 | 1.61 | 190.16 | 105.01 | ● |

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Cellular Standards Band Support

| GSM (2G) Band | UMTS (3G) Band | E-UTRA (4G) Band | Cat M E-UTRA Band | Cat NB E-UTRA Band | NR (5G) Band | Cat NB NR (5G) Band | Uplink | Downlink | Average Upload Efficiency (%) | Average Download Efficiency (%) | Maximum Upload VSWR | Maximum Download VSWR | Use Indicator |
|---------------|----------------|------------------|-------------------|--------------------|--------------|---------------------|-------------------|-------------------|-------------------------------|---------------------------------|---------------------|-----------------------|---------------|
| | | 28A | | | | | 703 - 733 MHz | 758 - 788 MHz | 2.20 | 1.71 | 190.16 | 103.35 | ● |
| | | 29 | | | n29 | | N/A | 717 - 728 MHz | N/A | 2.20 | N/A | 184.05 | ● |
| | | 30 | | | n30 | | 2305 - 2315 MHz | 2350 - 2360 MHz | 52.00 | 49.00 | 6.03 | 5.63 | ● |
| | | 31 | 31 | 31 | | | 452.5 - 457.5 MHz | 462.5 - 467.5 MHz | 0.42 | 0.45 | 267.87 | 286.31 | ● |
| | 32 | 32 | | | | | N/A | 1452 - 1496 MHz | N/A | 6.30 | N/A | 23.38 | ● |
| | | 33 | | | | | 1900 - 1920 MHz | 1900 - 1920 MHz | 27.07 | 27.07 | 6.44 | 6.44 | ● |
| | | 34 | | | n34 | | 2010 - 2025 MHz | 2010 - 2025 MHz | 20.74 | 20.74 | 10.91 | 10.91 | ● |
| | | 35 | | | | | 1850 - 1910 MHz | 1850 - 1910 MHz | 25.23 | 25.23 | 8.47 | 8.47 | ● |
| | | 36 | | | | | 1930 - 1990 MHz | 1930 - 1990 MHz | 27.70 | 27.70 | 7.77 | 7.77 | ● |
| | | 37 | | | | | 1910 - 1930 MHz | 1910 - 1930 MHz | 27.64 | 27.64 | 6.08 | 6.08 | ● |
| | | 38 | | | n38 | | 2570 - 2620 MHz | 2570 - 2620 MHz | 59.45 | 59.45 | 3.57 | 3.57 | ● |
| | | 39 | 39 | | n39 | | 1880 - 1920 MHz | 1880 - 1920 MHz | 26.69 | 26.69 | 7.29 | 7.29 | ● |
| | | 40 | 40 | | n40 | | 2300 - 2400 MHz | 2300 - 2400 MHz | 49.15 | 49.15 | 6.08 | 6.08 | ● |
| | | 41 | 41 | 41 | n41 | n41 | 2496 - 2690 MHz | 2496 - 2690 MHz | 60.93 | 60.93 | 3.59 | 3.59 | ● |
| | | 42 | 42 | 42 | | | 3400 - 3600 MHz | 3400 - 3600 MHz | 50.65 | 50.65 | 1.69 | 1.69 | ● |
| | | 43 | 43 | 43 | | | 3600 - 3800 MHz | 3600 - 3800 MHz | 53.63 | 53.63 | 1.99 | 1.99 | ● |
| | | 44 | | | | | 703 - 803 MHz | 703 - 803 MHz | 1.90 | 1.90 | 190.16 | 190.16 | ● |
| | | 45 | | | | | 1447 - 1467 MHz | 1447 - 1467 MHz | 5.31 | 5.31 | 24.51 | 24.51 | ● |
| | | 46 | | | n46 | | 5150 - 5925 MHz | 5150 - 5925 MHz | 4.56 | 4.56 | 38.78 | 38.78 | ● |
| | | 47 | | | n47 | | 5855 - 5925 MHz | 5855 - 5925 MHz | 6.24 | 6.24 | 32.02 | 32.02 | ● |
| | | 48 | | | n48 | | 3550 - 3700 MHz | 3550 - 3700 MHz | 48.56 | 48.56 | 1.99 | 1.99 | ● |
| | | 49 | | | | | 3550 - 3700 MHz | 3550 - 3700 MHz | 48.56 | 48.56 | 1.99 | 1.99 | ● |
| | | 50 | | | n50 | | 1432 - 1517 MHz | 1432 - 1517 MHz | 6.31 | 6.31 | 28.11 | 28.11 | ● |
| | | 51 | | | n51 | | 1427 - 1432 MHz | 1427 - 1432 MHz | 3.92 | 3.92 | 29.41 | 29.41 | ● |
| | | 52 | | | | | 3300 - 3400 MHz | 3300 - 3400 MHz | 59.20 | 59.20 | 1.52 | 1.52 | ● |

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Cellular Standards Band Support

| GSM (2G) Band | UMTS (3G) Band | E-UTRA (4G) Band | Cat M E-UTRA Band | Cat NB E-UTRA Band | NR (5G) Band | Cat NB NR (5G) Band | Uplink | Downlink | Average Upload Efficiency (%) | Average Download Efficiency (%) | Maximum Upload VSWR | Maximum Download VSWR | Use Indicator |
|---------------|----------------|------------------|-------------------|--------------------|--------------|---------------------|-------------------|-------------------|-------------------------------|---------------------------------|---------------------|-----------------------|---------------|
| | | 53 | | | n53 | | 2483.5 - 2495 MHz | 2483.5 - 2495 MHz | 47.16 | 47.16 | 3.41 | 3.41 | ● |
| | | 65 | | 65 | n65 | n65 | 1920 - 2010 MHz | 2110 - 2200 MHz | 26.55 | 34.67 | 9.32 | 16.57 | ● |
| | | 66 | 66 | 66 | n66 | n66 | 1710 - 1780 MHz | 2110 - 2200 MHz | 13.16 | 34.67 | 9.73 | 16.57 | ● |
| | | 67 | | | n67 | | N/A | 738 - 758 MHz | N/A | 2.08 | N/A | 126.62 | ● |
| | | 68 | | | | | 698 - 728 MHz | 753 - 783 MHz | 2.20 | 1.79 | 196.17 | 103.35 | ● |
| | | 69 | | | | | N/A | 2570 - 2620 MHz | N/A | 59.45 | N/A | 3.57 | ● |
| | | 70 | | 70 | n70 | n70 | 1695 - 1710 MHz | 1995 - 2020 MHz | 11.21 | 21.55 | 10.34 | 10.21 | ● |
| | | 71 | 71 | 71 | n71 | | 663 - 698 MHz | 617 - 652 MHz | 1.89 | 1.06 | 203.98 | 206.07 | ● |
| | | 72 | 72 | 72 | | | 451 - 456 MHz | 461 - 466 MHz | 0.42 | 0.44 | 256.70 | 286.43 | ● |
| | | 73 | 73 | 73 | | | 450 - 455 MHz | 460 - 465 MHz | 0.43 | 0.43 | 249.25 | 286.50 | ● |
| | | 74 | 74 | 74 | n74 | | 1427 - 1470 MHz | 1475 - 1518 MHz | 4.87 | 7.55 | 29.41 | 18.46 | ● |
| | | 75 | | | n75 | | N/A | 1432 - 1517 MHz | N/A | 6.31 | N/A | 28.11 | ● |
| | | 76 | | | n76 | | N/A | 1427 - 1432 MHz | N/A | 3.92 | N/A | 29.41 | ● |
| | | | | | n77 | | 3300 - 4200 MHz | 3300 - 4200 MHz | 53.28 | 53.28 | 3.75 | 3.75 | ● |
| | | | | | n78 | | 3300 - 3800 MHz | 3300 - 3800 MHz | 53.55 | 53.55 | 1.99 | 1.99 | ● |
| | | | | | n79 | | 4400 - 5000 MHz | 4400 - 5000 MHz | 36.71 | 36.71 | 16.06 | 16.06 | ● |
| | | | | | n80 | | 1710 - 1785 MHz | N/A | 13.36 | N/A | 9.73 | N/A | ● |
| | | | | | n81 | | 880 - 915 MHz | N/A | 2.52 | N/A | 84.16 | N/A | ● |
| | | | | | n82 | | 832 - 862 MHz | N/A | 1.42 | N/A | 68.43 | N/A | ● |
| | | | | | n83 | | 703 - 748 MHz | N/A | 2.18 | N/A | 190.16 | N/A | ● |
| | | | | | n84 | | 1920 - 1980 MHz | N/A | 28.22 | N/A | 7.01 | N/A | ● |
| | | 85 | 85 | 85 | n85 | | 698 - 716 MHz | 728 - 746 MHz | 2.20 | 2.16 | 196.17 | 160.54 | ● |
| | | | | | n86 | | 1710 - 1780 MHz | N/A | 13.16 | N/A | 9.73 | N/A | ● |
| | | 87 | 87 | 87 | | | 410 - 415 MHz | 420 - 425 MHz | 0.64 | 0.56 | 213.10 | 215.50 | ● |
| | | 88 | 88 | 88 | | | 412 - 417 MHz | 422 - 427 MHz | 0.62 | 0.55 | 207.15 | 215.50 | ● |

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Cellular Standards Band Support

| GSM (2G) Band | UMTS (3G) Band | E-UTRA (4G) Band | Cat M E-UTRA Band | Cat NB E-UTRA Band | NR (5G) Band | Cat NB NR (5G) Band | Uplink | Downlink | Average Upload Efficiency (%) | Average Download Efficiency (%) | Maximum Upload VSWR | Maximum Download VSWR | Use Indicator |
|---------------|----------------|------------------|-------------------|--------------------|--------------|---------------------|---------------------|-----------------|-------------------------------|---------------------------------|---------------------|-----------------------|---------------|
| | | | | | n89 | | 824 - 849 MHz | N/A | 1.32 | N/A | 76.60 | N/A | ● |
| | | | | | n90 | n90 | 2496 - 2690 MHz | 2496 - 2690 MHz | 60.93 | 60.93 | 3.59 | 3.59 | ● |
| | | | | | n91 | | 832 - 862 MHz | 1427 - 1432 MHz | 1.42 | 3.92 | 68.43 | 29.41 | ● |
| | | | | | n92 | | 832 - 862 MHz | 1432 - 1517 MHz | 1.42 | 6.31 | 68.43 | 28.11 | ● |
| | | | | | n93 | | 880 - 915 MHz | 1427 - 1432 MHz | 2.52 | 3.92 | 84.16 | 29.41 | ● |
| | | | | | n94 | | 880 - 915 MHz | 1432 - 1517 MHz | 2.52 | 6.31 | 84.16 | 28.11 | ● |
| | | | | | n95 | | 2010 - 2025 MHz | N/A | 20.74 | N/A | 10.91 | N/A | ● |
| | | | | | n97 | | 2300 - 2400 MHz | N/A | 49.15 | N/A | 6.08 | N/A | ● |
| | | | | | n98 | | 1880 - 1920 MHz | N/A | 26.69 | N/A | 7.29 | N/A | ● |
| | | | | | n99 | | 1626.5 - 1660.5 MHz | N/A | 12.14 | N/A | 14.15 | N/A | ● |
| | | | | | n101 | | 1900 - 1910 MHz | 1900 - 1910 MHz | 26.87 | 26.87 | 6.44 | 6.44 | ● |
| | | | | 103 | | | 787 - 788 MHz | 757 - 758 MHz | 1.48 | 1.98 | 103.31 | 98.27 | ● |

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

NOTE: For each frequency band, Siretta provides a traffic light indication to show the suitability of the antenna for use at that frequency band. Determination of exactly what makes an antenna good or bad at any frequency is subjective.

The view presented is that of Siretta's engineering team having taken into account the efficiency and VSWR measurements. The end user is advised to use their own criteria and/or testing to confirm suitability.



ISM Standards Frequency Support

| Application | Frequency Range | Efficiency (%) | Maximum VSWR | Peak Gain from highest direction (dBi) | Use Indicator |
|------------------------|---------------------|----------------|--------------|--|---------------|
| ISM 433 MHz | 433.05 - 434.79 MHz | 0.48 | 231.87 | -17.4325 | ● |
| IMT 868 MHz | 863 - 870 MHz | 1.74 | 66.52 | -10.13 | ● |
| ISM 915 MHz | 902 - 928 MHz | 2.68 | 84.16 | -7.6 | ● |
| ISM 2.4 GHz | 2400 - 2500 MHz | 42.55 | 4.68 | 8.32 | ● |
| WiFi 2.4G | 2401 - 2483 MHz | 41.52 | 4.66 | 8.201 | ● |
| WiFi 2.4G (USA) | 2401 - 2473 MHz | 41.04 | 4.66 | 8.0575 | ● |
| WiFi 2.4G (Japan) | 2401 - 2495 MHz | 42.23 | 4.66 | 8.285 | ● |
| WiFi 5G (all channels) | 5150 - 5990 MHz | 4.78 | 38.78 | -6.675 | ● |
| WiFi 5G (Ch 32-48) | 5150 - 5250 MHz | 5.70 | 28.38 | -6.675 | ● |
| WiFi 5G (Ch 32-64) | 5150 - 5330 MHz | 5.32 | 32.96 | -6.675 | ● |
| WiFi 5G (Ch 32-161) | 5150 - 5815 MHz | 4.34 | 38.78 | -6.675 | ● |
| WiFi 5G (Ch 32-173) | 5150 - 5875 MHz | 4.44 | 38.78 | -6.675 | ● |
| ISM 5.8 GHz | 5725 - 5875 MHz | 4.95 | 34.75 | -7.795 | ● |

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

NOTE: For each frequency band, Siretta provides a traffic light indication to show the suitability of the antenna for use at that frequency band. Determination of exactly what makes an antenna good or bad at any frequency is subjective.

The view presented is that of Siretta's engineering team having taken into account the efficiency and VSWR measurements. The end user is advised to use their own criteria and/or testing to confirm suitability.

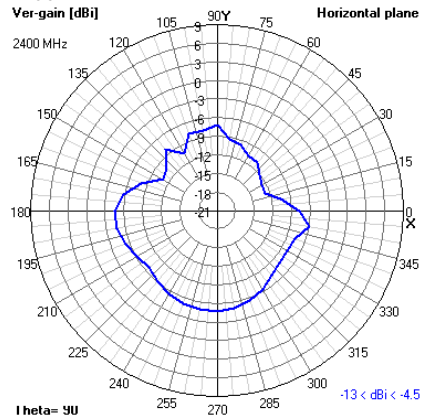


Delta 8A

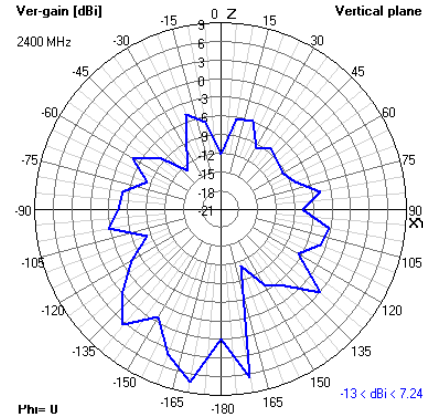
5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

2D Radiation Plots

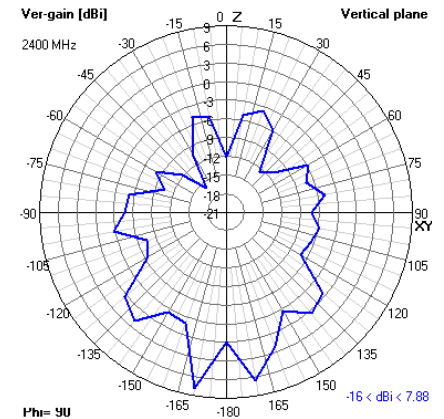
2400 MHz XY



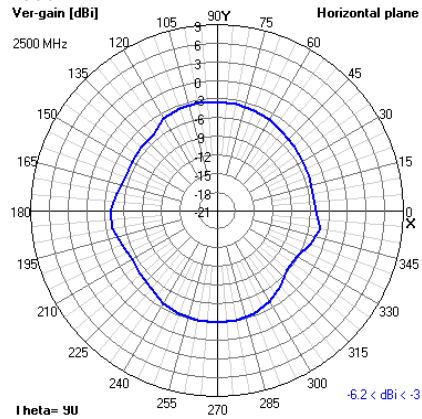
XZ



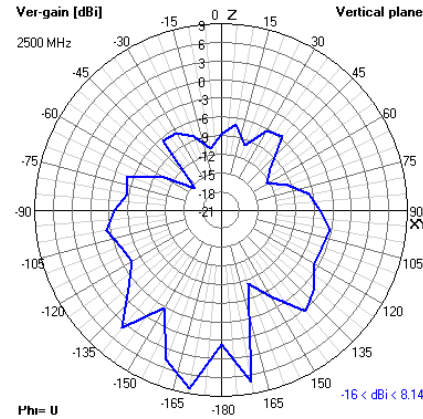
YZ



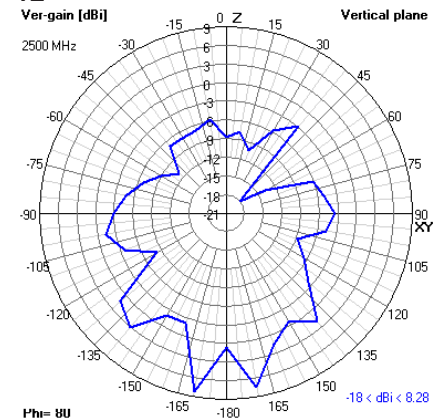
2500 MHz XY



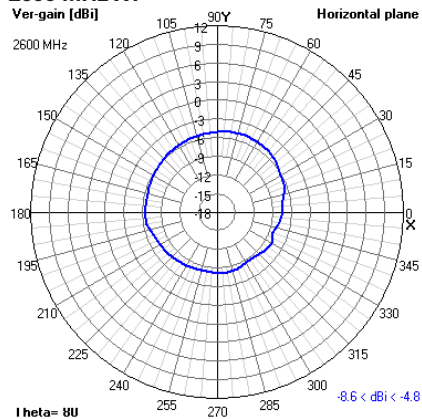
XZ



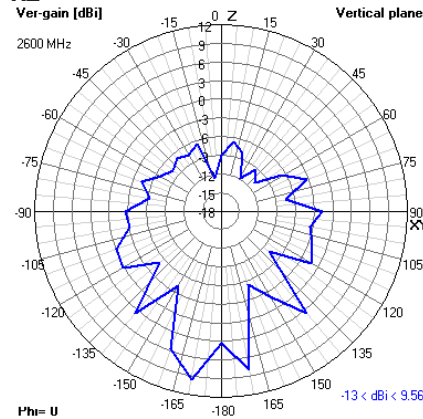
YZ



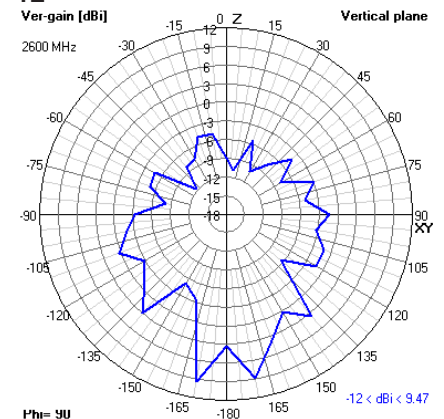
2600 MHz XY



XZ



YZ



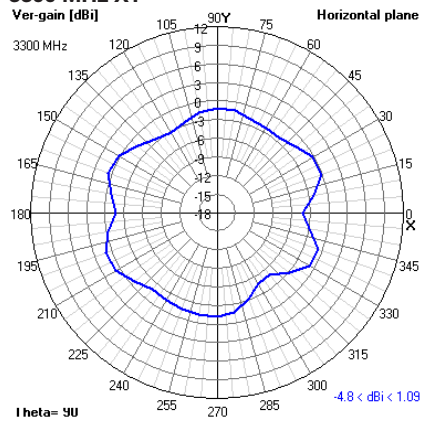


Delta 8A

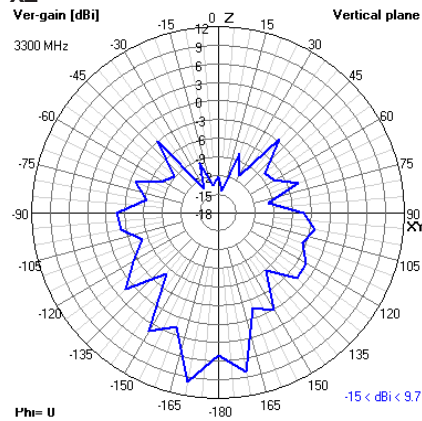
5G/4G & 2.4 GHz Wi-Fi 27mm Stubby Antenna

2D Radiation Plots

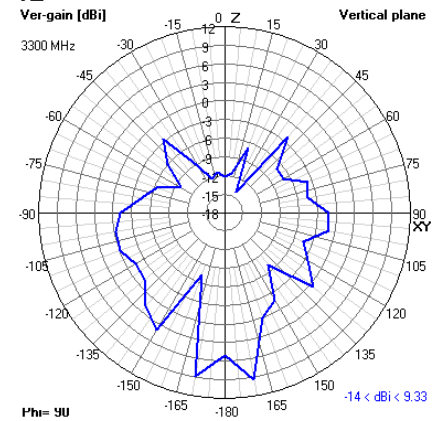
3300 MHz XY



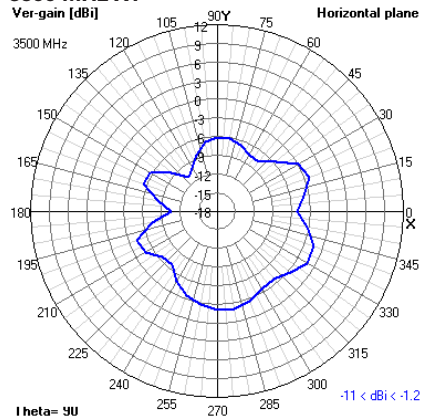
XZ



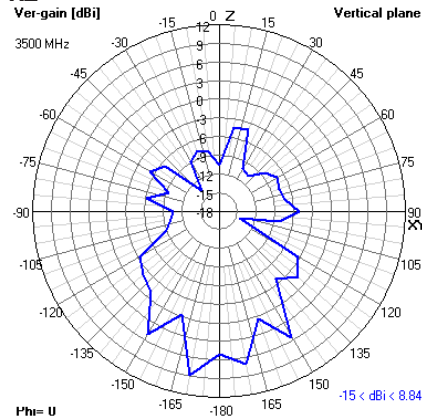
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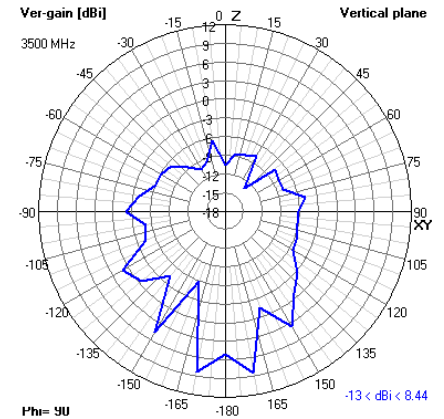
3500 MHz XY



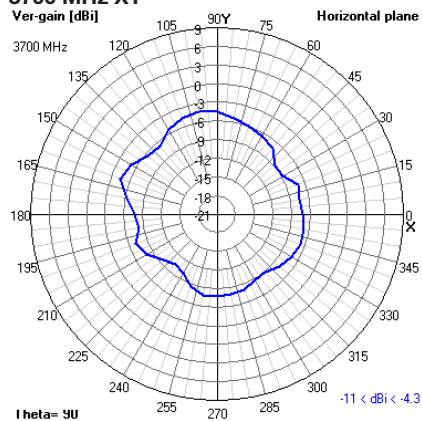
XZ



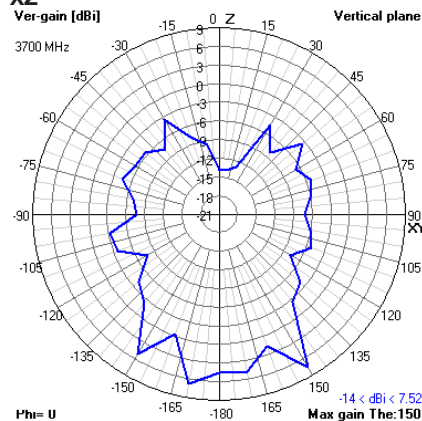
YZ



3700 MHz XY



XZ



YZ

