

# 19-429

# CHELTON

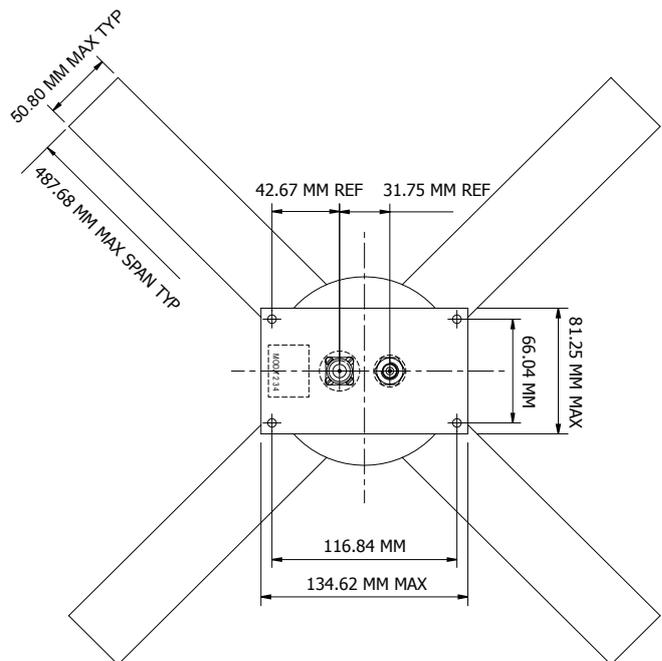
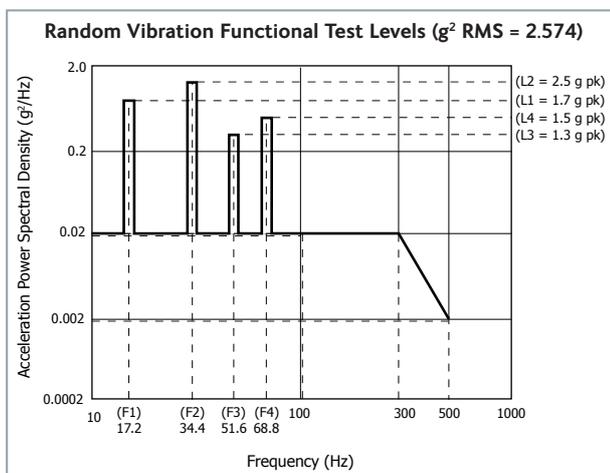
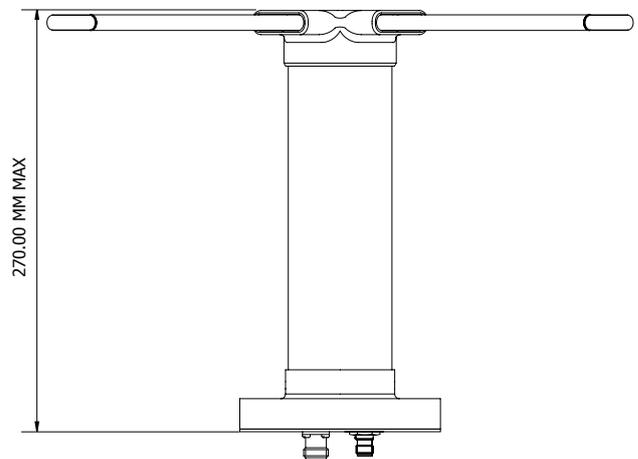
## UHF SATCOM Antenna

The 19-429 UHF SATCOM Antenna is a combined low-high angle, low weight, high efficiency, airborne UHF satellite communications antenna.

The antenna comprises a cylindrical high strength mast, with a rectangular box-section base, supporting a pair of crossed dipoles. High strength glass reinforced plastics (GRP) are used throughout the construction for strength, rigidity and lightness.

The 19-429 provides hemispheric pattern coverage by means of two, independent, collocated elements built into a single shell.

Low angle ( $0^{\circ}$  to approximately  $45^{\circ}$ ) coverage is provided by the vertical element and high angle (approximately  $45^{\circ}$  to  $90^{\circ}$ ) coverage is provided by the circularly polarised element. In this way, full hemispheric coverage is achieved.



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## ELECTRICAL

|                          |   |
|--------------------------|---|
| <b>Frequency</b>         | Low Angle: 240 MHz - 400 MHz<br>High Angle: 225 MHz - 400 MHz   |
| <b>Gain</b>              | Low Angle: Average within 2 dB of a quarter-wave monopole (+4 dBi typical)<br>High Angle: +4.5 dBiC minimum (average full band) at zenith (+6 dBiC typical at zenith) |
| <b>Polarisation</b>      | Low Angle: Predominantly vertical when mounted vertically<br>High Angle: Right Hand Circular Polarisation (RHCP) at zenith  |
| <b>Radiation Pattern</b> | Low Angle: Omnidirectional in azimuth<br>Combined*: Hemispherical<br>*Low/high angle combined   |
| <b>Power Rating</b>      | Low Angle: 100 W max<br>High Angle: 200 W max   |
| <b>Impedance</b>         | 50 ohm nominal  |
| <b>VSWR</b>              | Low Angle: 2.7:1 max<br>High Angle: 2.0:1 max   |
| <b>Isolation</b>         | 20 dB (mid-band)  |
| <b>Connectors</b>        | Low Angle: TNC Female<br>High Angle: N Type Female  |

## MECHANICAL

|                   |                        |
|-------------------|------------------------|
| <b>Dimensions</b> | H 270.00 x W 487.68 mm |
| <b>Weight</b>     | 1.02 kg                |
| <b>Mounting</b>   | 4 holes fixed location |

## ENVIRONMENTAL

|                         |  |
|-------------------------|--|
| <b>Temperature</b>      | MIL-STD-810E, Method 520.1, Procedure III<br>Storage: -57°C to +85°C<br>Operational: -54°C to +71°C                                    |
| <b>Altitude</b>         | Operational: 7620 m  |
| <b>Mechanical Shock</b> | MIL-STD-810E, Method 516.4, Procedures I and V<br>20 g 11 ms terminal sawtooth functional<br>40 g 11 ms terminal sawtooth crash safety |
| <b>Shock</b>            | MIL-STD-810C, Method 516.2, Procedure I<br>15 g, 11 ms, sine   |
| <b>Vibration</b>        | MIL-STD-810E, Method 514.4, Procedure I, Category 6<br>Profile overleaf  |
| <b>Humidity</b>         | 75% at 45°C  |
| <b>Salt Fog</b>         | MIL-STD-810E, Method 509.3, Procedure I<br>48 hours exposed to 5% salt solution  |
| <b>Magnetic Effect</b>  | Less than 1° deflection at 300 mm  |

