

TW3402



GPS-L1/GLONASS-G1 Antenna

Frequency Coverage: GPS L1 | GLONASS G1

The TW3402 employs Calian's patented Accutenna® technology and covers the GPS-L1, GLONASS-G1 and SBAS (WAAS, EGNOS & MSAS) frequency band (1575 to 1606 MHz). It is especially designed for precision industrial, agricultural, safety and security applications. The TW3402 provides truly circular response over the antennas' entire bandwidth thereby producing superior multipath signal rejection.

The TW3402 features a highly circular dual-feed wideband patch element, with a two-stage low-noise amplifier, comprised of one input LNA per feed, a mid section SAW to filter the combined output, and a final output gain stage. This configuration provides an excellent axial ratio that is constant across the full frequency band. A pre-filter on the TW3402 protects against saturation by high-level sub-harmonic and L-Band signals.

The TW3402 is housed in a permanent-mount industrial-grade weatherproof enclosure. Optional components include a 10 cm ground plane (P/N 23-0067-0), an L-bracket mount (P/N 23-0040-0) or a pipe mount (P/N 23-0065-0).



Applications

- High-accuracy & mission-critical global positioning
- Precision agriculture, mining, and construction
- Law enforcement and public safety
- Avionics
- Law enforcement and public safety
- Fleet management and asset tracking

Features

- Great axial ratio: 1.0 dB typ.
- Low noise LNA: 3 dB typ.
- Pre-filtering
- High-rejection SAW filter
- High-gain LNA (26 dB typ.)
- Wide voltage input range (2.5 to 16 VDC)
- Low current: 15 mA typ.
- IP69K weatherproof housing

Benefits

- Excellent circular polarisation
- Excellent multipath rejection
- Excellent signal-to-noise ratio
- Great out-of-band signal rejection
- Increased system accuracy
- Ideal for harsh environments
- CE RED, RoHS, and REACH compliant

About Calian: With global headquarters and manufacturing in Ottawa, Canada, Calian is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at www.calian.com

Revision: 202407

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GPS-L1/GLONASS-G1 Antenna

Frequency Coverage: GPS L1 | GLONASS G1

Antenna - Measured with a 100 mm ground plane

Technology Dual-feed RHCP ceramic patch

| | | Gain | Axial Ratio |
|---------------------------------------|-----|---------------------|--------------|
| | | dBic typ. at Zenith | dB at Zenith |
| GNSS | | | |
| GPS / QZSS | L1 | 4.3 | ≤ 1 |
| | L2 | - | - |
| | L5 | - | - |
| GLONASS | G1 | 4.3 | ≤ 1 |
| | G2 | - | - |
| | G3 | - | - |
| Galileo | E1 | - | - |
| | E5A | - | - |
| | E5B | - | - |
| | E6 | - | - |
| BeiDou | B1 | - | - |
| | B2b | - | - |
| | B2a | - | - |
| | B3 | - | - |
| IRNSS / NavIC | L5 | - | - |
| QZSS | L6 | - | - |
| L-Band Services (1539 MHz - 1559 MHz) | | - | - |
| Satellite Communications | | | |
| Iridium | | - | - |
| Globalstar | | - | - |
| Other | | | |
| Axial Ratio at 10° | | - | Efficiency |
| PCV $\Phi > 15^\circ$ | | - | PCO |

Mechanicals

| | |
|----------------------|---|
| Size | 66.5 mm (dia.) x 21 mm (h.) |
| Weight | 150 g |
| Radome | LEXAN™ EXL9330, Base: Zamac Metal |
| Mount | Through-hole (100 mm ground plane provided) |
| Available Connectors | Please refer to ordering guide |

Environmental

| | |
|-----------------------|---|
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -55 °C to +95 °C |
| Vibration | MIL-STD-810-E - Test Method 514.5 |
| Shock | MIL-STD-810-G - Test Method 516.6 |
| Salt Fog | MIL-STD-810-F - Test Method 509.5 |
| Other Tests | Hail, Humidity, Dust, Rain, Sand, Solar |
| IP Rating | IP69K |
| Compliance | IPC-A-610, FCC, CE RED, RoHS, REACH |

Warranty

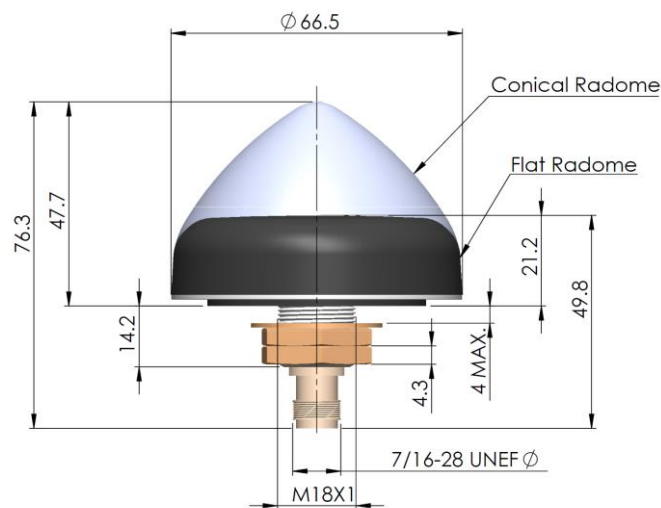
| | |
|------------------|--------------------------|
| Parts and Labour | 3-year standard warranty |
|------------------|--------------------------|

Low Noise Amplifier (LNA) - Measured at 3V and 25°C

| Frequency Bandwidth | | Out of Band Rejection |
|---------------------|---------------|--|
| Lower Band | - | - |
| L-Band Corr. | - | > 70 dB @ < 1500 MHz > 50 dB @ < 1550 MHz > 80 dB @ > 1640 MHz |
| Upper Band | 1575-1606 MHz | |

| | |
|------------------------|--|
| Architecture | Pre-filtered |
| Gain | 26 dB min. |
| Noise Figure | 3 dB typ. |
| VSWR | < 1.5:1 typ., 1.8:1 max. |
| Supply Voltage Range | 2.5 to 16 VDC nominal, up to 50mV p-p ripple |
| Supply Current | 15 mA typ. |
| ESD Circuit Protection | 15 kV air discharge |
| P 1dB Output | 4.0 dBm @ 1575 MHz |
| Group Delay | 11 ns typ. @ (1570.42 to 1580.42 MHz) |

Mechanical Diagram - Units in 'mm' or 'inches' where specified



Ordering Information

Part Number 33-3402-xx-yy-zzzz

Where xx = connector type, yy = shape and colour of radome and zzzz = cable length in mm (where applicable)

Please refer to our **Ordering Guide** to review available radomes and connectors at:
<https://www.tallysman.com/resource/tallysman-ordering-guide/>