# TW3887

CALIAN
Confidence. Engineered.

## Embedded Multi-Constellation Dual-Band Antenna

**Frequency Coverage:** GPS L1, L2 | GALILEO E1, E5b | BEIDOU B1, B2b | GLONASS G1, G2, G3

The TW3887 employs Calian's patented Accutenna® technology providing dual-band GPS-L1/L2, GLONASS-G1/G2 + BeiDou B1/B2b + Galileo E1/E5b coverage and is especially designed for precision dual frequency positioning.

The TW3887 features a precision tuned, circular dual-feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wideband LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW3887 has a pre-filter which increases the antenna's immunity to high amplitude signals, such as LTE and other cellular signals. The TW3887 offers excellent axial ratio and a tightly grouped phase centre variation.

The TW3887 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS-L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS-G1 (1602 MHz, centre), BeiDou B1/B2b (1575 and 1207 MHz) and Galileo E1. (1561 and 1589 MHz).

The antenna is supplied with a standard 60 mm (dia.)iameter circular ground plane, with a coaxial cable terminated with your choice of connector.

Mounting holes are provided for attachment to larger ground planes. Custom tuning and ground plane options may be available, depending on purchase level commitment.

### Applications

- Precision GPS position
- Dual-frequency RTK receivers
- Mission Critical GPS Timing
- Law enforcement and public safety
- Network timing & synchronization

### Features

- Very low noise preamp < 2.5 dB
- Axial ratio: < 2.0 dB typ.
- Tight phase centre variation
- High-gain LNA (28 dB typ.)
- Low current: 24 mA typ.
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC

### Benefits

- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal-to-noise ratio
- 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/gnss

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## Antenna - Measured with a 100 mm ground plane

Technology: Dual-feed Stacked RHCP ceramic patch

| | | Gain<br>dBic typ. at Zenith | Axial Ratio<br>dB at Zenith |
|---|---|---|---|
| **GNSS** | | | |
| GPS / QZSS | L1 | 4.5 | ≤ 1 |
| | L2 | 3.0 | ≤ 1.5 |
| | L5 | - | - |
| GLONASS | G1 | 4.0 | ≤ 1 |
| | G2 | 3.0 | ≤ 1.5 |
| | G3 | 2.8 | ≤ 1.5 |
| Galileo | E1 | 4.0 | ≤ 1 |
| | E5A | - | - |
| | E5B | 2.8 | ≤ 1.5 |
| | E6 | - | - |
| BeiDou | B1 | 4.0 | ≤ 1 |
| | B2b | 2.8 | ≤ 1.5 |
| | 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 Φ > 15° | ± 10 mm | PCO | |

## Mechanicals

| | |
|---|---|
| Size | 62 mm (dia.) x 17 mm (h.) (see diagram) |
| Weight | 70 g |
| Radome | - |
| Mount | 5 x M2 screws |
| 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-810D Method 514.3-1 |
| Shock | Vertical axis: 50 G, other axes: 30 G |
| Salt Fog | MIL-STD-810F Section 509.4 |
| Other Tests | - |
| IP Rating | - |
| Compliance | IPC-A-610, FCC, CE RED, RoHS, REACH |

## Warranty

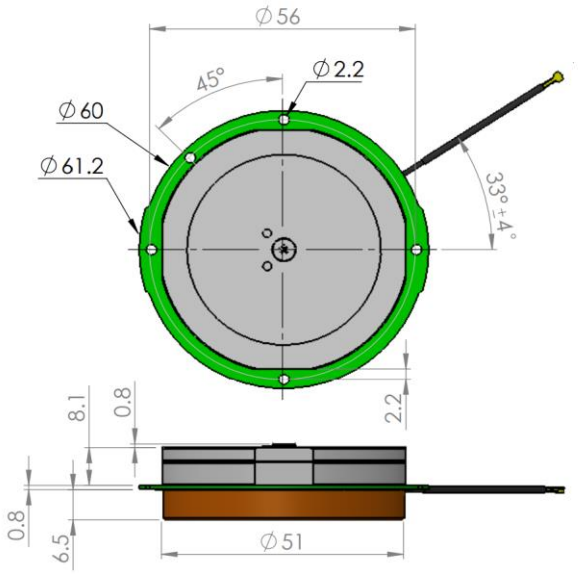
| | |
|---|---|
| Parts and Labour | 1-year standard warranty |

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

| Frequency Bandwith | | Out of Band Rejection |
|---|---|---|
| Lower Band | 1191 - 1255 MHz | ≥ 40 dB @ ≤ 1150 MHz<br>≥ 20 dB @ ≤ 1130 MHz<br>≥ 50 dB @ ≥ 1350 MHz |
| L-Band Corr. | - | ≥ 40 dB @ ≤ 1450 MHz<br>≥ 30 dB @ ≥ 1520 MHz<br>≥ 35 dB @ ≥ 1650 MHz |
| Upper Band | 1559 - 1606 MHz | |

| | |
|---|---|
| Architecture | Pre-filtered |
| Gain | 28 dB typ., 25 dB min. |
| Noise Figure | 2.5 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 | 24 mA typ., 25 mA max. at 75 °C. |
| ESD Circuit Protection | 15 kV air discharge |
| P 1dB Output | - |
| Group Delay | - |

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




## Ordering Information

**Part Number** 33-3887-xx-zzzz

where xx = connector type, and zzzz = cable length in mm

Please refer to our **Ordering Guide** to review available radomes and connectors at:
https://at.calian.com/gnss/information-support/part-number-ordering-guide/



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