



When precision matters.®

A Tallysman Accutenna®

TW3967 Embedded Triple Band GNSS Antenna + L-band Correction Services

The TW3967 is an Accutenna® technology antenna providing triple band GPS L1/L2/L5, GLONASS G1/G2/G3, BeiDou B1/B2, Galileo E1/E5 plus L-band correction services coverage and is especially designed for precision triple frequency positioning. The TW3967 provides superior multi-path signal rejection, a linear phase response, and tight Phase Centre Variation (PCV). This antenna is ideal for precision agriculture, autonomous vehicle tracking and guidance, and other applications where precision matters.

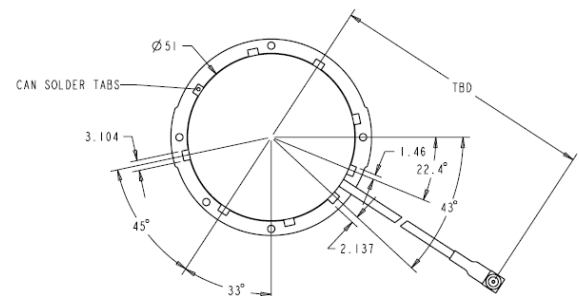
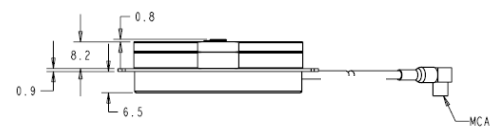
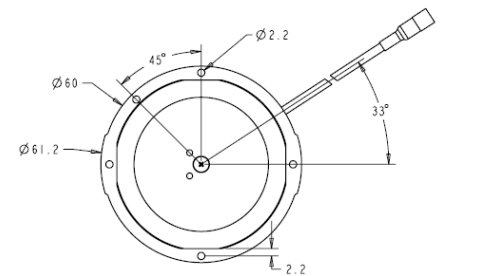
The TW3967 features a precision tuned, twin circular dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wide-band LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The antenna also has a strong pre-filter to mitigate inter-modulated signal interference from LTE and other cellular bands.

The TW3967 offers excellent axial ratio and a tightly grouped phase center variation.

The TW3967 covers from 1164MHz to 1254MHz and 1525MHz to 1606MHz.

The TW3967 is also available with 35dB or 18dB gain with a part number of TW3972E and TW3967LC respectively. A 100mm ground plane is recommended.



Applications

- Precision GPS position
- Triple Frequency RTK receivers
- Mission Critical GPS Timing
- Military & Security
- Network Timing and Synchronization

Features

- Very low Noise Preamp, < 2.5dB
- Axial ratio: <2dB typ.
- Tight Phase Center Variation
- LNA Gain 28 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits

- Ideal for triple band RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- REACH and RoHS compliant



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Specifications (Measured a Vcc = 3V, and Temperature=25°C)

Antenna

| | | | |
|-------------------------------------|--------------------------|----|--------------------------|
| E5a/L5 Gain (100mm ground plane) | | | -1.5dBic typ. at Zenith |
| B2/E5b/G3 Gain (100mm ground plane) | | | 2.5 dBic typ. at Zenith |
| L2 Gain (100mm ground plane) | | | 4.0 dBic typ. at Zenith |
| G2 Gain (100mm ground plane) | | | 2.5 dBic typ. at Zenith |
| E1 Gain (100mm ground plane) | | | 4.0 dBic typ. at Zenith |
| L1 Gain (100mm ground plane) | | | 4.0 dBic typ. at Zenith |
| G1 Gain (100mm ground plane) | | | 2.5 dBic typ. at Zenith |
| Axial Ratio @ zenith | | | |
| L5/E5ab | <1.5 dB typ. 2.0 dB max. | B2 | <1.5 dB typ. 2.0 dB max. |
| L2 | <1.0 dB typ. 1.5 dB max. | G2 | <1.5 dB typ. 2.0 dB max. |
| L-Band | <1.0 dB typ. 1.5 dB max. | | |
| L1/E1 | <1.0 dB typ. 1.5 dB max. | G1 | <1.5 dB typ. 2.0 dB max. |

Electrical

| | | | |
|----------------------------------|-----------|---|-----------------------------|
| Filter Bandwidth | | L2/L5: 1164MHz-1254MHz | L-Band/L1: 1525 MHz-1606MHz |
| Overall LNA Gain | | TW3967: 28dB typ. TW3972E: 35dB typ. | |
| Gain Variation with Temperature. | | 3dB max over operational temperature range | |
| LNA Noise Figure | | 2.5dB typ at 25°C | |
| VSWR (at LNA output) | | <1.5:1 typ 1.8:1 max. | |
| Supply Voltage Range | | +2.5 to 16VDC nominal, up to 50mV p-p ripple | |
| EMI Immunity | | 50V/Meter, excepting L1 +/-100MHz and L2 +/- 100MHz | |
| Supply Current | | 24 mA typ. at 25°C, | |
| ESD Circuit protection | | 15 KV air discharge. | |
| Out-of-Band Rejection | | L5/E5/L2/G2 | L1/E1/B1/G1 |
| | <1050 MHz | >45 dB | <1450 MHz >30dB |
| | <1125 MHz | >30 dB | >1690 MHz > 30dB |
| | >1350 MHz | >45 dB | >1730 MHz > 40dB |

Mechanicals & Environmental

| | |
|-------------------------------|---|
| Mechanical Size, Ground Plane | 60mm x 14.9mm (see drawing on other page), 100mm ground plane recommended |
| Operating Temperature Range | -40°C to +85°C |
| Weight | 70 g (excludes cable) |
| Environmental | RoHS and REACH compliant |
| Shock | Vertical axis: 50 G, other axes: 30 G |
| Vibration | 3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G |

Ordering Information

| | |
|--|----------------------|
| TW3967 – Triple Band GNSS antenna with L-Band Correction(28dB) | 33-3967-xx-yy-zzzz |
| TW3972E – Triple Band GNSS antenna with L-Band Correction(35dB) | 33-3972E-xx-yy-zzzz |
| TW3967LC – Low Current Triple Band GNSS antenna with L-Band Correction(18dB) | 33-3967LC-xx-yy-zzzz |

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

Please refer to the Ordering Guide (<http://www.tallysman.com/index.php/gnss/ordering-guide/>) for the current and complete list of available radomes and connectors.



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