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When precision matters..®

A Tallysman Accutenna® TW7875 Magnetic Mount Dual Band (L1/L5) GNSS Antenna

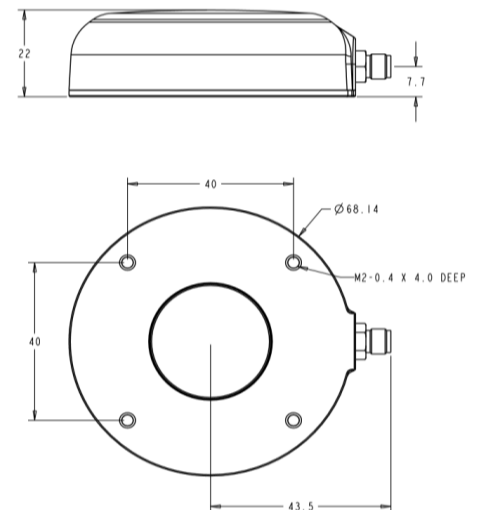
The TW7875 is precision tuned dual band, *Accutenna*® technology antenna for reception of GPS L1/L5, GLONASS G1, BeiDou B1, Galileo E1/E5a, NavIC L5 and is especially designed for precision dual frequency positioning. The TW7875 provides superior multi-path rejection and axial ratio, a linear phase response, and tight Phase Centre Variation (PCV), while protecting against intermodulation and saturation caused by high level cellular 700MHz signals. This antenna is ideal for precision agriculture, autonomous vehicle tracking and guidance, and other applications where precision matters.

The TW7875 features a precision tuned, twin circular dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, pre-filtered to minimize interference from out of band signals such as Cellular LTE then amplified in a wide-band LNA and band-split for additional filtering and amplification stages prior to recombination at the output.

The TW7875 provides reception for signals in the bands 1164MHz to 1189MHz and 1557MHz to 1606MHz. It is housed in a magnetic mount, weather-proof enclosure.



TW7875 Dimensions (mm)



Applications

- Precision GPS position
- Dual Frequency RTK systems
- Mission Critical GPS Timing
- Military & Security

Features

- Very low Noise Preamp, < 2.5dB
- Axial ratio: <2dB typ.
- IP67 Housing
- LNA Gain 32 dB typ.
- Low current: 24mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits

- Ideal for dual band RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- IP67, REACH, RED, and RoHS compliant



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TW7875 Magnetic Mount Dual Band (L1/L5) GNSS Antenna

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

Antenna

| | |
|---|---|
| Patch Architecture | Circular, Dual Feed, Dual Stacked Patch |
| L5 Gain (100mm ground plane), 1164-1189MHz | 4.0 dBic Min at Zenith on 100mm Ground Plane |
| L1 Gain (100mm ground plane), 1575.42MH-1606MHz | 4.5 dBic Min at Zenith on 100mm Ground Plane |
| Axial Ratio, over full bandwidth, both L1 & L5 | ≤ 2dB typ., 1 dB max. at Zenith, 3dB max at horizon |
| 1dB Bandwidth | L5: 1164MHz-1189MHz L1: 1557MHz-1606MHz |
| Polarization | RHCP |

Electrical

| | | | | |
|----------------------------------|--|--------|-----------|--------|
| Bandwidth | L5: 1164MHz-1189MHz (Filter bandwidth) L1: 1557 MHz-1606MHz (Filter bandwidth) | | | |
| Overall LNA Gain | 32dB typ, each of L1 and L5 Bands, | | | |
| Gain Variation with Temperature. | 3dB max over operational temperature range | | | |
| LNA Noise Figure | 2.5dB typ @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 L5 +/- 100MHz | | | |
| Supply Current | 24 mA typ. at 25°C, 25mA max at 75°C. | | | |
| ESD Circuit protection | 15 KV air discharge. | | | |
| Out-of-Band Rejection | L1 | | L5 | |
| | <1450 MHz | >40 dB | <1040MHz | >60 dB |
| | <1520 MHz | >30 dB | <1120MHz | >40 dB |
| | >1650 MHz | >35 dB | >1225MHz | >30 dB |

Mechanicals & Environmental

| | |
|-------------------------------|---|
| Mechanical Size, Ground Plane | 69mm (dia) x 22mm (H) |
| Operating Temperature Range | -40°C to +85°C |
| Enclosure | Radome: EXL9330, Base: Zamak White Metal |
| Weight | 180 g |
| Attachment Method | Magnetic Mount. Four-threaded holes (#6x32, 4mm deep) in the base allow for screw mounting. |
| Environmental (housing) | IP67, RoHS, RED, and REACH compliant |
| Shock | Vertical axis: 50 G, other axes: 30 G |
| Vibration | MIL STD 810D |
| UV | MIL-810G Method 505.6, Procedure II |

Ordering Information

TW7875 – Dual Band L1/L5 GNSS antenna

33-7875-xx-yyyy

Where xx = connector type and yyyy = 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 connectors.

Tallysman



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