A Tallysman Accutenna®

TW3892 GPS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1 + L-Band

The TW3892 precision tuned dual band, Accutenna® technology antenna for reception of GPS L1/L2, GLONASS G1/G2 + BeiDou B1 + Galileo E1+ L-band correction services coverage and is especially designed for precision dual frequency positioning. The TW3892 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.

Architecturally, the TW3892 features a dual feed circular stacked patch element. The signals from the two orthogonal feeds are summed in quadrature, pre-filtered in a low loss filter to protect against a wide range of potentially interfering signals, amplified in high linearity, wide-band LNA, then band-split, tightly filtered and amplified prior to signal recombination at the output.

The TW3892 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz, centre), BeiDou B1, Galileo E1. (1561 and 1589 MHz) and L-band correction services (1525-1559MHz).

The TW3892 is housed in a through-hole mount, weather-proof enclosure for permanent installations. L Bracket or Pipe Mount (part numbers 23-0040-0, 23-0065-0 respectively) are available for non-rooftop installation. A 100mm ground plane is recommended for non-roof-top installations.

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

Features
- Very low Noise Preamp, < 2dB
- Axial ratio: <2dB typ.
- Tight Phase Center Variation
- LNA Gain 35 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits
- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- IP67, REACH, and RoHS compliant
TW3892 GPS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1 + L-Band

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

**Antenna**
- Patch Architecture: Circular, Dual Feed, Dual Stacked Patch
- L1/L2 Gain (100mm ground plane): 4.0 / 4.0 dBi typ at Zenith
- G1/G2 Gain (100mm ground plane): 3.0 / 2.5 dBi typ at Zenith
- Axial Ratio @ zenith:
  - L2: < <1dB
  - L-Band: <1dB
  - L1/E1: <1dB
- 1dB Bandwidth, Polarization: G2 < 1.5dB
  - G1 < 1.5dB
  - L2: 1227MHz-1250MHz
  - L1: 1525MHz-1606MHz

**Electrical**
- Bandwidth:
  - L2: 1213MHz-1261MHz (Filter bandwidth)
  - L1: 1525 MHz-1606MHz (Filter bandwidth)

- Overall LNA Gain:
  - 35dB typ, 32 dB min, each of L1 and L2 Bands,
  - 3dB max over operational temperature range

- Gain Variation with Temperature:
  - 2.5dB typ @25°C
  - <1.5:1

- VSWR (at LNA output):
  - +2.5 to 16VDC nominal, up to 50mV p-p ripple

- Supply Voltage Range:
  - 50V/Meter, excepting L1+/-100MHz and L2 +/100MHz

- EMI Immunity:
  - 24 mA typ. at 25°C, 25mA max at 75°C.
  - 15 KV air discharge.

- Supply Current:
  - 24 mA typ. at 25°C
  - 25 mA max at 75°C.

- ESD Circuit protection:
  - 15 KV air discharge.

- Out-of-Band Rejection:
  - L2:
    - <1130MHz: >40 dB
    - <1190 MHz: >30 dB
    - >1284 MHz: >32 dB
  - L1:
    - <1450 MHz: >30 dB
    - >1690 MHz: >30 dB
    - >1730 MHz: >40 dB

**Mechanicals & Environmental**
- Mechanical Size, Ground Plane:
  - 66mm x 21mm (see drawing on other page), 100mm ground plane recommended

- Operating Temperature Range:
  - -40°C to +85°C

- Enclosure:
  - Radome: EXL9330, Base: Zamak White Metal

- Weight:
  - 185 g

- Attachment Method:
  - Permanent ¾” (19mm) through hole mount

- Environmental:
  - IP67, RoHS, RED, 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

- Salt fog / spray:
  - MIL-STD-810F Section 509.4

**Ordering Information**

TW3892 – GPS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1 + L-band 33-3892-xx-yy-zzzz

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