The TW3870/TW3872 employ Tallysman’s unique Accutenna technology providing dual band GPS L1/L2, GLONASS G1/G2 + BeiDou B1 + Galileo E1 coverage and is especially designed for precision dual frequency positioning.

The TW3870/TW3872 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 wide-band LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW3870/TW3872 offers excellent axial ratio and a tightly grouped phase center variation.

The TW3870/TW3872 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz, centre), BeiDou B1 and Galileo E1 (1561 and 1589 MHz).

The TW3872 has a pre-filter which increases the antenna’s immunity to high amplitude interfering signals, such as LTE and other cellular signals.

The TW3870/TW3872 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.

This product is also available in an OEM formats (TW3865, TW3870E, TW3872E, and TW3868)

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

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

**Antenna**
- **Patch Architecture:** Circular, Dual Feed, Dual Stacked Patch
- **L2 Gain (100mm ground plane):** 3.8 dBi Min at Zenith on 100mm Ground Plane
- **L1 Gain (100mm ground plane):** 4.5 dBi Min at Zenith on 100mm Ground Plane
- **Axial Ratio:** ≤ 3dB typ., < 6dB max at Zenith, < 9dB max at horizon
- **1dB Bandwidth:** L2: 1227MHz-1250MHz, L1: 1557MHz-1606MHz
- **Polarization:** RHCP

**Electrical**
- **Bandwidth:** L2: 1213MHz-1261MHz (Filter bandwidth), L1: 1557 MHz-1606MHz (Filter bandwidth)
- **Overall LNA Gain:** 35dB typ, 32 dB min, each of L1 and L2 Bands,
- **Gain Variation with Temperature:** 3dB max over operational temperature range
- **LNA Noise Figure:** < 1.5 dB typ, < 2.5 dB @ 25°C
- **Supply Voltage Range:** +2.5 to 16VDC nominal, up to 50mV p-p ripple
- **EMI Immunity:** 50V/Meter, excepting L1+/-100MHz and L2 +/1- 100MHz
- **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:**
  - **L1:**
    - <1450 MHz: >40 dB
    - <1520 MHz: >35 dB
    - >1650 MHz: >32 dB
  - **L2:**
    - >1130 MHz: >30 dB
    - >1190 MHz: >30 dB
    - >1284 MHz: >32 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, REACH, and RED 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**

TW3870 – GPS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1 (33-3870-xx-yy-zzzz)

TW3872 - GPS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1 (33-3872-xx-yy-zzzz)

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


**Contact Information**

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