



## A Tallysman Accutenna® TW3872E GPS L1/L2 + GLONASS G1/G2 Antenna

The TW3872E employs Tallysman's unique *Accutenna* technology providing dual band GPS L1 & L2, GLONASS G1 & G2, Galileo E1, and BeiDou B1 coverage and is especially designed for precision dual frequency positioning.

This antenna 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 TW3872E has a pre-filter which prevents the front end LNA from being saturated by high near frequency or harmonic signals.

They also offer excellent axial ratio and a tightly grouped phase center variation.

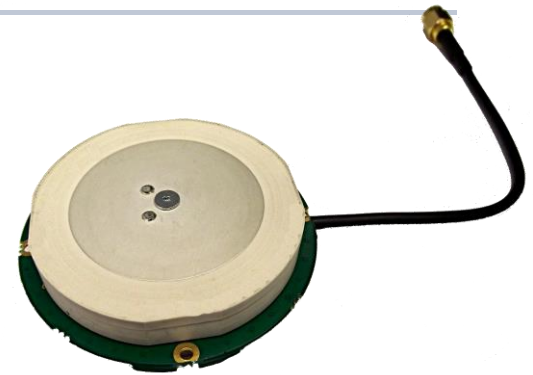
The antenna is supplied with a standard 60mm diameter circular ground plane, with a coaxial cable terminated with a connector (right angle MCX is shown in the drawing). Mounting holes are provided for attachment to larger ground planes. Custom tuning and ground plane options may be available, depending on purchase level commitment.

### Applications

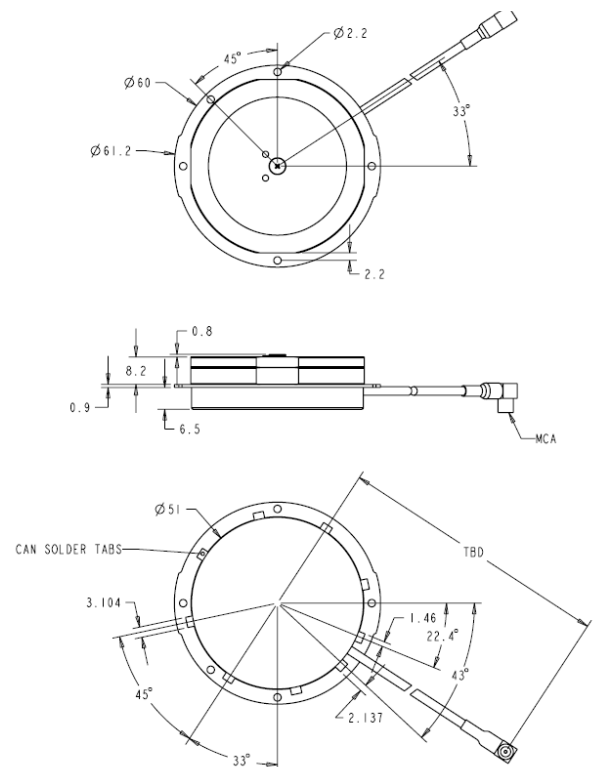
- Precision GPS position
- Dual Frequency RTK receivers
- Mission Critical GPS Timing
- Military & Security
- Network Timing and Synchronization

### 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



TW387xE Dimensions (mm)



### Benefits

- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- IP67 and RoHS compliant



## TW3872E GPS L1 & L2/GLONASS G1 & G2 Antenna

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

#### Antenna

|  |   |
|--|---|
| Patch Architecture                             | Circular, Dual Feed, Dual Stacked Patch             |
| L2 Gain (100mm ground plane), 1227.6-1246MHz   | 3.5 dBic Min at Zenith on 100mm Ground Plane        |
| L1 Gain (100mm ground plane), 1559 -1606MHz    | 4.5 dBic Min at Zenith on 100mm Ground Plane        |
| Axial Ratio, over full bandwidth, both L1 & L2 | ≤ 2dB typ., 1 dB max. at Zenith, 3dB max at horizon |
| 1dB Bandwidth,                                 | L2: 1227MHz-1250MHz    L1: 1559MHz-1606MHz          |
| Polarization                                   | RHCP,   |

#### Electrical

|                                  |   |
|----------------------------------|---|
| Bandwidth                        | L2: 1213MHz-1261MHz (Filter bandwidth) L1: 1559MHz-1614MHz (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                 | 1.5dB typ at 25°C (TW3870E) 2.5dB typ at 25°C (TW3872E)                       |
| 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, 25mA max at 75°C.   |
| ESD Circuit protection           | 15 KV air discharge.  |

|                       |           |           |
|-----------------------|-----------|-----------|
| Out-of-Band Rejection | <b>L1</b> | <b>L2</b> |
|                       | <1450 MHz | >50 dB    |
|                       | <1520 MHz | >30 dB    |
|                       | >1650 MHz | >35 dB    |
|                       | <1180 MHz | >40 dB    |
|                       | <1190 MHz | >30 dB    |
|                       | >1284 MHz | >32 dB    |

#### Mechanicals & Environmental

|                               |   |
|-------------------------------|---|
| Mechanical Size, Ground Plane | 60mm diameter, 0.75mm thick, see mechanical drawing |
| Operating Temperature Range   | -40°C to +85°C                                      |
| Weight                        | 75 g  |
| Attachment Method             | Through hole screws in ground plane                 |
| 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

TW3872E – Pre-filtered GPS L1/L2 + GLONASS G1/G2 antenna    33-3872E-xx-yyyy-zz  
 Where xx = connector type, yyyy= cable length in mm and zz is reserved for Tallysman’s use

Please refer to the Ordering Guide (<http://www.tallysman.com/wp-content/uploads/Current-Ordering-Guide.pdf>) for the current and complete list of available connectors.



An ISO 9001:2015  
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