



A Tallysman Accutenna® TW8829 GPS L1/L2 + GLONASS G1/G2

The TW8829 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 where light weight is important.

The TW8829 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 TW8829 offers excellent axial ratio and a tightly grouped phase center variation.

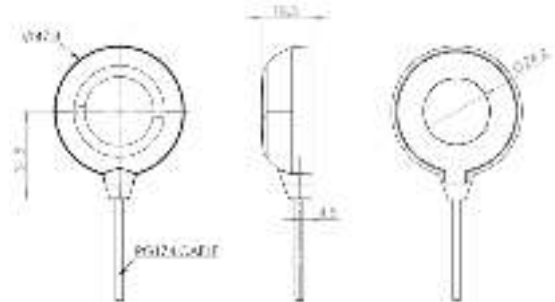
The TW8829 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz, centre), Galileo (1575.42MHz centre), and BeiDou B1 (1575.42MHz centre)

The TW8829 has a pre-filter which increases the antenna's immunity to high amplitude interfering signals, such as LTE and other cellular signals.



Applications

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



(all dimensions in mm)

Features

- Very low Noise Preamp, 2.5dB
- Axial ratio: <2dB typ.
- Tight Phase Center Variation
- LNA Gain 26 dB typ.
- Low current: 12 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits

- Lightweight (52g excluding cable and connector)
- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Excellent signal to noise ratio
- IP67, REACH, and RoHS compliant



TW8829 GPS L1/L2 + GLONASS G1/G2

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

Antenna

| | |
|--|---|
| Patch Architecture | Circular, Dual Feed, Dual Stacked Patch |
| L2 Peak Gain (100mm ground plane), 1227.6-1246MHz | 3.7 dBic peak gain at Zenith |
| L1 Peak Gain (100mm ground plane), 1575.42-1606MHz | 4.0 dBic peak gain at Zenith |
| Axial Ratio, over full bandwidth, both L1 & L2 | ≤ 2dB typ, 1 dB max. at Zenith |
| Polarization | RHCP |

Electrical

| | | |
|----------------------------------|--|---|
| Bandwidth | L2: 1215MHz-1261MHz (Filter bandwidth) | L1: 1557 MHz-1606MHz (Filter bandwidth) |
| Overall LNA Gain | 27dB typ, 26 dB min, each of L1 and L2 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 L2 +/- 100MHz | |
| Supply Current | 12 mA typ. at 25°C. | |
| ESD Circuit protection | 15 KV air discharge. | |
| Out-of-Band Rejection | L1 | L2 |
| | <1450 MHz | >35 dB |
| | <1520 MHz | >30 dB |
| | >1650 MHz | >35 dB |
| | <1170 MHz | >40 dB |
| | <1190 MHz | >30 dB |
| | >1290 MHz | >32 dB |

Mechanicals & Environmental

| | |
|-------------------------------|---|
| Mechanical Size, Ground Plane | 100mm ground plane recommended |
| Cable | 2.6mm OD (RG174) |
| Operating Temperature Range | -40°C to +85°C |
| Weight | 52 g |
| 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

TW8829 - GPS L1/L2 + GLONASS G1/G2 33-8829-xx-yyyy
 Where xx = connector type, yyyy = cable length in mm (all 4 digits required)

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 radomes and connectors.

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