A Tallysman Accutenna®
TW1829 GPS L1/L2 + GLONASS G1/G2

The TW1829 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 TW1829 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 TW1829 offers excellent axial ratio and a tightly grouped phase center variation.

The TW1829 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz, centre), Galileo E1 (1575.42MHz centre), and BeiDou B1 (1575.42MHz centre).

The TW1829 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

Features
• Very low Noise Preamp, 2.5 dB
• Axial ratio: <2 dB 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 16 VDC

Benefits
• Lightweight (37g 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
**TW1829 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 dBi peak gain at Zenith
- **L1 Peak Gain (100mm ground plane)**, 1575.42MHz-1606MHz: 4.0 dBi 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: <1450 MHz >35 dB, <1520 MHz >30 dB, >1650 MHz >35 dB
  - L2: <1170 MHz >40 dB, <1190 MHz >30 dB, >1290 MHz >32 dB

**Mechanicals & Environmental**
- **Mechanical Size, Ground Plane**
  - 48mm(d)x12.2mm(h) 100mm ground plane recommended
- **Cable**
  - 1.38mm OD (micro-coax) or 2.6mm OD (RG174)
- **Operating Temperature Range**
  - -40°C to +85°C
- **Weight**
  - 37 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**

TW1829 - GPS L1/L2 + GLONASS G1/G2

Where xx = connector type, yyyy = cable length in mm (all 4 digits required)


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