TW2010 Magnet Mount GPS L1 Antenna

The TW2010 by Tallysman Wireless is a professional grade, magnet mount, GPS L1 antenna, specially designed for industrial, agricultural and military precision positioning and timing applications.

The TW2010 features a high performance custom tuned ceramic patch element, 15 KV ESD circuit protection, a high gain two-stage low noise amplifier (LNA) with a mid section high rejection SAW filter. It covers the GPS L1 and SBAS (WAAS/EGNOS/MSAS) frequency band (1572.5 to 1578 MHz), and it offers great circular polarized signal reception, multipath rejection and out of band signal rejection.

The TW2010 is housed in a compact, industrial-grade weather-proof, magnet mount enclosure, and comes with a bulkhead SMA female connector or with 5 metres of cable and a wide range of connector.

Applications
- High Accuracy & Mission Critical GPS
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

Features
- Very low noise LNA: 1 dB
- Great axial ratio: <4dB at Zenith
- High rejection SAW filter
- High gain: 28 dB typ.
- Low current: 10 mA typ.
- ESD circuit protection: 15 KV
- Wide voltage input range: +3.0 to 10 VDC
- Weather proof housing: IP67

Benefits
- Great multipath rejection
- Increase system accuracy
- Excellent signal to noise ratio
- Great out of band signal rejection
- Ideal for harsh environments
- RoHS compliant

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Specifications

\[ Vcc = 3V, \text{ over full bandwidth, } T=25^\circ C \]

### Antenna
- **Architecture**: Custom single-feed ceramic patch
- **Antenna Gain (100mm ground plane)**: 4 dBi at 90°
- **Axial Ratio (over full bandwidth)**: 4 dB at 90°, 6 dB at 20°

### Electrical
- **Architecture**: Input LNA, mid section SAW filter, output LNA
- **Frequency Bandwidth**: 1572.5 to 1578 MHz
- **Polarization**: RHCP
- **Gain**: 28 dB min. at 90° (at 1575.42 MHz)
- **Out-of-Band Rejection**:
  - <1560 MHz: >42 dB
  - >1600 MHz: >31 dB
  - >1620 MHz: >45 dB
- **VSWR (at LNA output)**: <1.5:1
- **Noise Figure**: 1 dB typ.
- **Supply Voltage Range**: +3.0 to 10 VDC nominal
- **Supply Current**: 10 mA typ.
- **ESD Circuit protection**: 15 KV air discharge

### Mechanicals & Environmental
- **Mechanical Size**: 57 mm dia. x 15 mm H
- **Connectors**: Bulkhead SMA female, or SMA male on flying lead
- **Cable**: 5 metres, custom lengths optional
- **Operating Temp. Range**: -40 to +85 °C
- **Enclosure**: ASA Plastic, Base: Zamak white metal
- **Weight**: 150 g
- **Attachment Method**: Magnet or permanent (pre-tapped 4 x 6-32UNC)
- **Environmental**: IP67 and RoHS compliant
- **Shock**: Vertical axis: 50 G, Other axes: 30 G
- **Vibration**: 3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G
- **Warranty**: One year – parts and labour

### Ordering Information
- TW2010 – GPS L1 antenna, 5 metre cable, SMA Male
- TW2010 – GPS L1 antenna, Bulkhead SMA Female

Please contact Tallysman Wireless for additional information

### Tallysman Wireless Inc
- 106 Schneider Road, Unit 3
- Ottawa ON K2K 1Y2 Canada
- Tel 613 591 3131
- Fax 613 591 3121
- sales@tallysman.com

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