TW1015 Compact Embedded GPS L1 Antenna

The TW1015 by Tallysman Wireless is a small, high performance, low profile, embedded GPS L1 antenna, specially designed for industrial, military, precision positioning and timing applications.

The TW1015 features a high performance custom tuned ceramic patch element, a very low noise amplifier (LNA) and a tight bandpass 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 TW1015 LNA gain is optimised to capture the LNA noise figure for OEM applications.

The built-in 35mm circular ground plane can be augmented with host system ground surfaces

Tallysman offers custom services to assist with integration of the OEM module into end user solution.

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
- LNA gain: 16 dB typ.
- Low current: 5 mA typ.
- ESD circuit protection: 15 KV
- Wide Supply voltage: fixed 2.7V to 10V

Benefits
- Low Profile: 7.25mm
- Great multipath rejection
- Increase system accuracy
- Excellent signal to noise ratio
- Great out of band signal rejection
- Compact form factor
- RoHS compliant

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**TW1015 Compact Embedded GPS L1 Antenna Specifications**

At: Vcc = 3V, over full bandwidth, T=25°C

### Antenna
- **Architecture**: Custom single-feed ceramic patch
- **Antenna Gain (70mm ground plane)**: 4 dBi at 90°, 4 dBi at 90°, 6dBi at 20°
- **Axial Ratio**: 4 dB at 90°, 6 dB at 20°

### Electrical
- **Architecture**: LNA -> SAW filter or
- **Frequency/Bandwidth**: 1575.42 MHz +/- 10MHz
- **Polarization**: RHCP
- **Gain**: 15 dB min. (at 1575.42 MHz)
- **Out-of-Band Rejection**:
  - <1560 MHz: >25 dB
  - >1600 MHz: >30 dB
  - >1620 MHz: >35 dB
- **VSWR (at LNA output)**: <1.5:1
- **Noise Figure**: 1 dB typ.
- **Supply Voltage Range**: 2.7VDC to 3.3VDC
- **Supply Current**: 5 mA typ.
- **ESD Circuit protection**: 15 KV air discharge

### Mechanicals & Environmental
- **Mechanical Size**: 35 mm dia. x 7.5mm
- **Connectors**: Optional
- **Cable**: 1.48mm OD, 15 cm. Custom lengths optional
- **Operating Temp. Range**: -40 to +85 °C
- **Weight**: 50 g
- **Attachment Method**: Adhesive or screw mount
- **Environmental**: 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
**TW1015 – GPS L1 antenna, 32-1015-x -yyyy**

X= Connector type, yyyy = cable length in mm

Please contact Tallysman Wireless for additional information

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