TW2015 Embedded GPS L1 Antenna

The TW2015 by Tallysman Wireless is a professional grade, embedded GPS L1 antenna, specially designed for industrial, agricultural and military precision positioning and timing applications.

The TW2015 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 TW2015 comes in a compact circular form factor with a built-in 50 mm diameter ground plane, and with a 15 cm RG174 cable.

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

Benefits
- 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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Specifications
Vcc = 3V, over full bandwidth, T=25°C

Antenna
Architecture
Custom single-feed ceramic patch
Antenna Gain (100mm ground plane)
3 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
>42 dB
>31 dB
>45 dB
VSWR (at LNA input)
<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
50 mm dia. x 7.8 mm H
Connectors
Male, SMA straight, MCX right angle or MMCX right angle, other connectors optional
Cable
RG174 / 15 cm, custom lengths optional
Operating Temp. Range
-40 to +85 °C
Weight
100 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
TW2015 – GPS L1 antenna, 5 metre cable, SMA Male
TW2015 – GPS L1 antenna, 5 metre cable, TNC Male
TW2015 – GPS L1 antenna, 5 metre cable, MCX Male

Please contact Tallysman Wireless for additional information

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