TW1017 Compact Embedded Brickwall Filtered GPS L1 Antenna

The TW1017 by Tallysman Wireless is a small, high performance, low profile, embedded GPS L1 antenna, specially designed for industrial and military precision positioning and timing applications.

The TW1017 features a high performance custom tuned ceramic patch element, a tight bandpass SAW filter and a very low noise amplifier (LNA). 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 TW1017 LNA gain is optimised to capture the LNA noise figure for OEM applications.

A SAW pre-filter prevents saturation of the LNA by high signal levels associated with terrestrial L-Band interference.

Tallysman offers custom services to assist in 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

www.tallysman.com
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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°
Axial Ratio
4 dB at 90°, 6dB at 20°

Electrical
Architecture
Input>SAW filter >LNA
Frequency/Bandwidth
1575.42 MHz +/- 10MHz
Polarization
RHCP
Gain
15 dB min. (at 1575.42 MHz)
Out-of-Band Rejection
<25 dB
>30 dB
>35 dB
<1.5:1
3.2 dB typ.
1.48mm OD, 15 cm. Custom lengths optional
VSWR (at LNA output)
<1.5:1
Noise Figure
2.7VDC to 3.3 VDC
Supply Voltage Range
5 mA typ.
Supply Current
15 KV air discharge
ESD Circuit protection
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
5 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
TW1017 - GPS L1 antenna, 32-1017-x –yyyy
X= Connector type, yyyy = cable length in mm

Please contact Tallysman Wireless for additional information

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