



When precision matters..®

A Tallysman Accutenna® TW1421 Compact Dual Feed Embedded GPS/GLONASS Antenna

The TW1421 employs Tallysman's unique *Accutenna*® technology covering the GPS L1, GLONASS G1, and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). It provides truly circular response over its entire bandwidth thereby producing superior multipath signal rejection. It also offers high out of band signal rejection.

The TW1421 features a novel 25mm wideband patch element with dual-feeds that are summed in a 90° Hybrid and input to a two stage Low Noise Amplifier (LNA), with a mid-section SAW a second low noise gain stage. This configuration provides excellent axial ratio and cross-polarization rejection across the full frequency band.

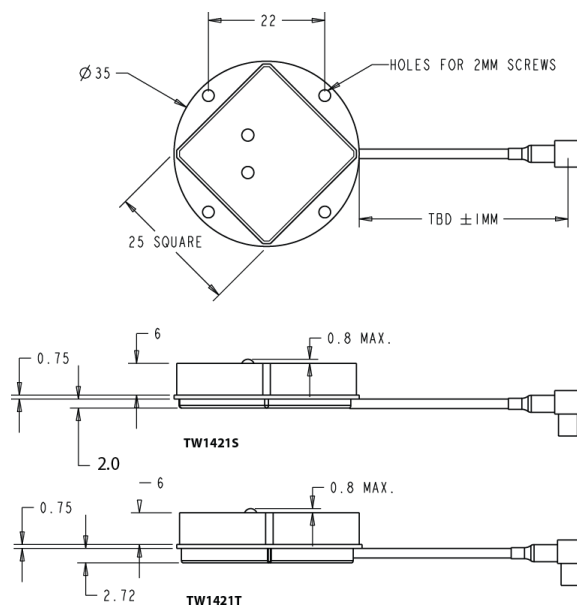
The built-in 35mm circular ground plane should ideally be augmented with a local system ground plane or reflecting surface (DC connection not required).

The height of the RF shield (can) will be selected based upon the connector type. Connectors which require RG174 cable will be used with the taller can. Connectors which require micro-coax cable will be used with the shorter can.

OEM antennas are easily detuned by the local environment. Tallysman offers custom tuning services for optimized integration into OEM end-user modules.

Applications

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



Features

- Compact Dual Feed Patch Element
- 1dB bandwidth 1575-1606MHz
- Very low noise LNA: <1.25 dB
- <1.5 dB Axial Ratio @ zenith over bandwidth
- LNA gain: 28 dB typ.
- Wide Supply voltage: fixed 2.5V to 16V
- ESD circuit protection: 15KV
- Temperature Compensated Gain

Benefits

- Great multipath rejection
- Increase system accuracy
- Improved carrier phase linearity
- Excellent signal to noise ratio
- Great out of band signal rejection
- Compact form factor
- RoHS compliant
- Reliable performance



When precision matters[®]

TW1421 Dual Feed Embedded GPS/GLONASS Antenna

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

Antenna

Architecture	Dual, Quadrature Feeds
1 dB Bandwidth	31MHz
Antenna Gain (with 100mm ground plane)	4.5dBic
Axial Ratio over full bandwidth,	<1.5 dB @zenith, ≤3.0dB max

Electrical

Architecture	One LNA per feed line, mid-section SAW filter
Filtered LNA Frequency Bandwidth	1574MHz to 1606MHz
Polarization	RHCP
LNA Gain	28dB typ., 26dB Min, 1575.42MHz to 1606MHz
Gain flatness	+/- 2dB, 1575MHz to 1606MHz
Out-of-Band Rejection	<1500MHz: >32dB <1550MHz: >25dB >1640MHz: >60dB
VSWR (at LNA output)	<1.5:1
Noise Figure	≤1.25dB typ.
Supply Voltage Range (over coaxial cable)	+2.5 VDC to 16 VDC nominal
Supply Current	10mA typ. 15mA max. (@ 85°C)
ESD Circuit Protection	15KV air discharge

Mechanicals & Environmental

Mechanical Size	35mm dia. x 7.25mm
Cable	1.38mm OD (micro-coax) or 2.6mm OD (RG174)
Operating Temp. Range	-40°C to +85°C
Weight	18g
Attachment Method	Adhesive or M2 screw mount
Environmental	RoHS compliant
Shock	Vertical axis: 50G, other axes: 30G
Vibration	3 axis, sweep = 15 min, 10 to 200Hz sweep: 3G
Warranty	One year – parts and labour

Ordering Information

Part Numbers:

TW1421 – GPS/GLONASS L1 antenna, 33-1421-xx-yyyy-zz

Please refer to the Ordering Guide (<http://www.tallysman.com/wp-content/uploads/Current-Ordering-Guide.pdf>) for the current and complete list of available connectors.

Tallysman Wireless Inc

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

The information provided herein is intended as a guide only and is subject to change without notice. This document is not to be regarded as a guarantee of performance. Tallysman Wireless Inc. hereby disclaims any or all warranties and liabilities of any kind. © 2015 Tallysman Wireless Inc. All rights reserved.

Rev 3.8