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

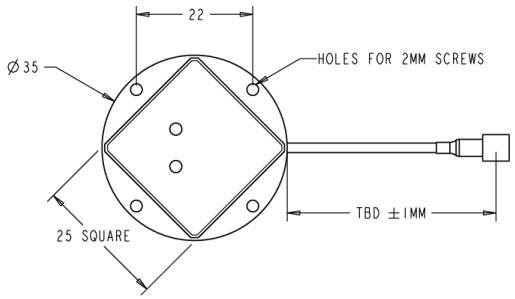
The TW1421 employs Tallysman's unique *Accutenna*™ technology covering the GPS L1, GLONASS G1, and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). It provides truly circular response over its entire bandwidth thereby producing superior multipath signal rejection. It also offers high out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

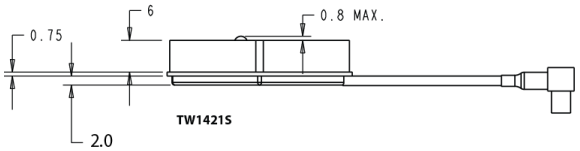
The TW1421 features a novel 25mm wideband patch element with dual-feeds that are summed in a 90° Hybrid and input to a two stage Low Noise Amplifier (LNA),with a mid-section SAW a second low noise gain stage. This configuration provides excellent axial ratio and cross-polarization rejection across the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

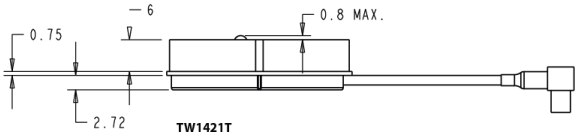
The built-in 35mm circular ground plane should ideally be augmented with a local system ground plane or reflecting surface (DC connection not required).

There are two options: TW1421S which has a lower profile can, mico-coax cable, and a U.FL. connector; or TW1421T which has a taller can, RG174, and a choice of connectors.

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

TW1421 High Gain 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

Legacy Part Numbers:

TW1421T – OEM Dual Feed antenna,	with 2.72 mm can	32-1421T-xx –yyyy-zz
TW1421S – OEM Dual Feed antenna,	with 2.0 mm can	32-1421S-xx –yyyy-zz

Connector: xx = 00 SMA male , 01 = TNC male 02 = MCX male 03 = MMCX male 04 = SMB male
05 = MCX right angle male 06 = MMCX right angle male 08 = H.FL** 09 = U.FL 10 = SMA R/A**
11 = Reverse polarity SMA** ** Premiums apply. Please contact your Distributor

Cable length: yyyy = cable length in mm Custom Tuning: zz = Assigned by Tallysman

* As a result of a growing product portfolio, Tallysman has rationalized its part number system. No changes have been made to the mechanical or electrical properties of these products. Where administratively possible, please use the following Part Numbers.

TW1421T – GPS L1 antenna, 33-1421-xx-yyyy-zz TW1421S 33-1421S-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

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