



TW1421 Dual Feed Embedded GPS/GLONASS Antenna

The TW1421 by Tallysman Wireless is an OEM **dual feed** GPS & GLONASS antenna covering the GPS L1, GLONASS L1 and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). The dual feed architecture provides a low axial ratio, and is especially suitable for high accuracy applications, with excellent multipath rejection and a more linear carrier phase response. 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).

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

Applications

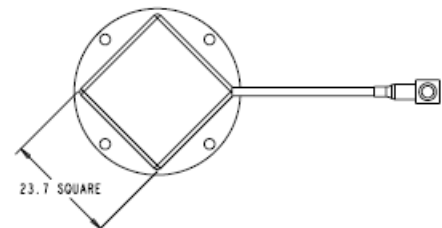
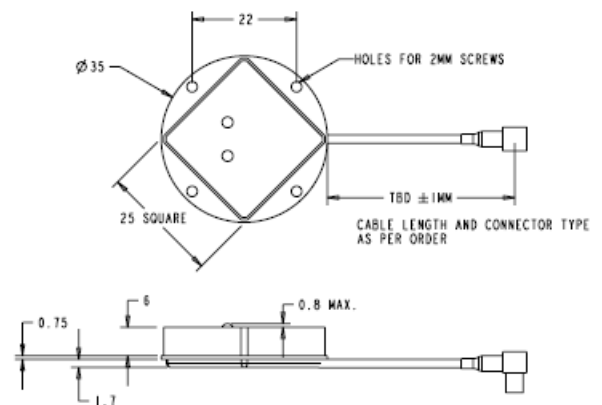
- High Accuracy GPS & GLONASS
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

Features

- Compact Dual Feed Patch Element
- 1dB bandwidth 1575-1606MHz
- Very low noise LNA: <1.25 dB
- 3dB Axial Ratio @ zenith over bandwidth
- LNA gain: 28 dB typ.
- Wide Supply voltage: fixed 2.5V to 10V
- ESD circuit protection: 15KV



TW1421 Dimensions (mm)



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



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	≤3dB 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: >35dB
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	15mA typ, 25m Max (85°C)
ESD Circuit Protection	15KV air discharge

Mechanicals & Environmental

Mechanical Size	35mm dia. x 7.25mm
Connectors	U.FL standard. Other connectors available on request
Cable	1.38mm OD, 15cm. Custom lengths optional
Operating Temp. Range	-40°C to +85°C
Weight	30g
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

TW1421 – OEM Dual Feed GPS/GLONASS antenna, 32-1421-XX –YYYY-ZZ

XX= Connector type, YYYY = cable length in mm, ZZ custom tuned version

Please contact Tallysman Wireless for additional information

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. © 2011 Tallysman Wireless Inc. All rights reserved.