When precision matters...

# A Tallysman *Accutenna*® TW4421/TW4422 Wideband Dual Feed GPS/GLONASS Antenna

The TW4421/TW4422 employs Tallysman's patented *Accutenna*® technology covering the GPS L1, GLONASS G1, and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). The TW4421/TW4422 features a novel 25mm dual feed wideband patch element that provides a more linear carrier phase response by virtue of the axial ratio that is greatly improved across the full frequency bandwidth. It provides truly circular response over its entire bandwidth thereby producing superior multipath signal rejection. It is especially suitable for high accuracy applications while providing high out of band signal rejection.

The two feeds from the patch element are summed in a  $90^{\circ}$  Hybrid then input to a first stage Low Noise Amplifier (LNA), followed by a mid-section SAW and a second low noise gain stage.

The TW4422 has a pre-filter which increases the antenna's immunity to high amplitude interfering signals, such as LTE and other cellular signals

The TW4421/TW4422 is the smallest dual feed, high performance antenna available. It is housed in a compact IP67 magnetic or adhesive mount enclosure. It is available with a wide range of cable and connector options.

The antenna can be ordered without the magnet. In such cases, the magnet is replaced with a plastic plug to provide a smooth under surface, with the option of ordering it with or without 1.1 mm doublesided VHB tape on the bottom.

### Applications

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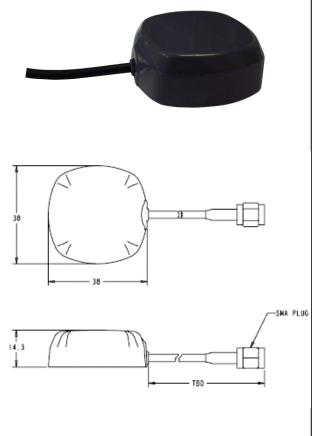
- Cost Sensitive Mission Critical Positioning
- Military & Security
- Covert surveillance
- Fleet Management & Asset Tracking

#### Features

- Dual feed patch element
- Axial ratio: 2.5 dB Max. (GPS & GLONASS)
- Low noise LNA: 1 dB
- High rejection mid-section SAW filter
- High gain: 26 dB typ.
- Wide voltage input range: 2.5 to 16 VDC
- IP67 weather proof housing
- Low Power: 9mA typ. at 2.3Vcc min.

### **Benefits**

- 1dB Bandwidth Includes GPS-L1 & GLONASS
- Greatly enhanced multipath rejection
- Improved GNSS reliability
- Excellent signal to noise ratio
- RoHS compliant
- Ideal for harsh environments
- Excellent out of band signal rejection



# TW4421/TW4422 Wideband Dual Feed GPS/GLONASS Antenna

32 MHz

4.5 dBic

RHCP

Wideband Dual Feed Patch Element

TW4421: 26dB -2/+1, TW4422: 26dB -2/+1

<u>TW4421</u>

>32dB

>25dB

<1.5 dB @zenith, ≤2.5dB max

+/- 2dB, 1575 MHz to 1606MHz

1575 to 1606 MHz

<1500MHz:

<1550MHz:

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

#### Antenna

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Architecture 1 dB radiated power bandwidth (RHCP) Antenna Gain (with 100mm ground plane) Axial Ratio over full bandwidth, Polarization

#### Electrical

Architecture Filtered LNA Frequency Bandwidth Gain Gain flatness

**Out-of-Band Rejection** 

VSWR (at LNA output) Noise Figure Supply Voltage Range (over coaxial cable) Supply Current ESD Circuit Protection

#### **Mechanicals & Environmental**

Mechanical Size Cable Operating Temp. Range Enclosure Weight Attachment Method Environmental Shock Vibration Warranty >1640MHz: >60dB >65dB <1.5:1 typ. 1.8:1 max. 1.0dB typ. +2.5VDC to 16VDC nominal (12VDC recommended maximum) 10mA typ. 15mA max. (@ 85°C) 15KV air discharge 38mm x 38mm dia. x 14.3mm High RG174 -40°C to +85°C Radome and base: EXL9330 50gm (Enclosure + SMA connector 34gm, cable 0.31gm/cm) Magnetic or Adhesive

Dual Feed Patch -> Hybrid->LNA stage 1 -> SAW filter-> LNA stage 2

TW4422

>60dB

>55dB

IP67 and RoHS compliant Vertical axis: 50G, other axes: 30G 3 axis, sweep = 15 min, 10 to 200Hz sweep: 3G One year, parts and labour

## **Ordering Information**

TW4421 – Wideband GPS Antenna TW4422 – Pre-Filtered Wideband GPS Antenna Where xx = connector type and yyyy = cable length in mm 33-4421-xx-yyyy 33.4422-xx-yyyy

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

# **Tallysman Wireless Inc**

36 Steacie Drive Ottawa ON K2K 2A9 Canada Tel +1-613-591-3131 Fax 613 591 3121

sales@tallysman.com

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