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

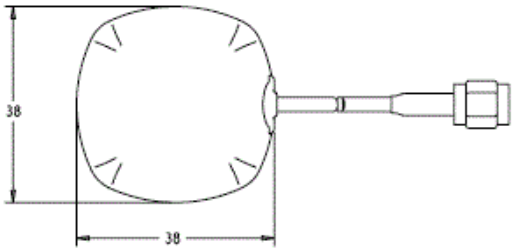
The TW4421/TW4422 employs Tallysman's patented *Accutenna*® technology covering the GPS L1, GLONASS G1, and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). The TW4421/TW4422 features a novel 25mm dual feed wideband patch element that provides a more linear carrier phase response by virtue 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.

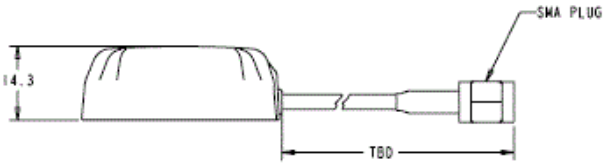
The two feeds from the patch element are summed in a 90° Hybrid then input to a first stage Low Noise Amplifier (LNA), followed by a mid-section SAW and a second low noise gain stage.

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

- 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: 28 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

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

Antenna

Architecture	Wideband Dual Feed Patch Element
1 dB radiated power bandwidth (RHCP)	32 MHz
Antenna Gain (with 100mm ground plane)	4.5 dBic
Axial Ratio over full bandwidth,	<1.5 dB @zenith, ≤2.5dB max
Polarization	RHCP

Electrical

Architecture	Dual Feed Patch -> Hybrid->LNA stage 1 -> SAW filter-> LNA stage 2		
Filtered LNA Frequency Bandwidth	1575 to 1606 MHz		
Gain (1575 – 1606MHz)	TW4421: 28dB min, TW4422: 26dB min		
Gain flatness	+/- 2dB, 1575 MHz to 1606MHz		
		TW4421	TW4422
Out-of-Band Rejection	<1500MHz:	>32dB	>60dB
	<1550MHz:	>25dB	>55dB
	>1640MHz:	>60dB	>65dB
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.		
Noise Figure	1.0dB typ.		
Supply Voltage Range (over coaxial cable)	+2.5VDC to 16VDC nominal (12VDC recommended maximum)		
Supply Current	10mA typ. 15mA max. (@ 85°C)		
ESD Circuit Protection	15KV air discharge		

Mechanicals & Environmental

Mechanical Size	38mm x 38mm dia. x 14.3mm High
Cable	RG174
Operating Temp. Range	-40°C to +85°C
Enclosure	Radome and base: EXL9330
Weight	50gm (Enclosure + SMA connector 34gm, cable 0.31gm/cm)
Attachment Method	Magnetic or Adhesive
Environmental	IP67 and 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

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

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 radomes and connectors.

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