



TW4421 Wideband Dual Feed GPS/GLONASS Antenna

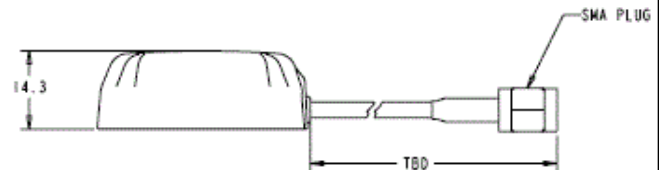
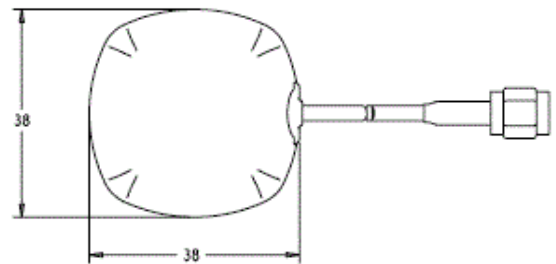
The TW4421 by Tallysman Wireless is a low cost dual feed GPS & GLONASS magnetic mount antenna covering the GPS L1, GLONASS L1 and SBAS (WAAS, EGNOS & MSAS) frequency band (1574 to 1606 MHz). The TW4421 features a novel 25mm dual feed wideband patch element that provides excellent multipath rejection and a more linear carrier phase response by virtue of the axial ratio that is greatly improved across the full frequency bandwidth. It is especially suitable for high accuracy applications, and also offers 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 TW4421 is the smallest dual feed, high performance antenna available. It is housed in a compact IP67 magnetic mount enclosure. It comes with 3 metres of cable with a wide range of connector options.

Applications

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



Features

- Dual feed patch element
- 40% wider bandwidth, small footprint
- Axial ratio: 3 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 10 VDC

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 Wideband Dual Feed GPS/GLONASS Antenna Specifications

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 Bandwidth (over full bandwidth)	<2dB typ. 3dB 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	28dB min, 1575 MHz to 1606MHz
Gain flatness	+/- 2dB, 1575 MHz to 1606MHz
Out-of-Band Rejection	<1500MHz >32dB
Out-of-Band Rejection	<1550MHz >25dB
Out-of-Band Rejection	>1640MHz >35dB
VSWR (at LNA output)	<1.5:1
Noise Figure	1.0dB typ.
Supply Voltage Range (over coaxial cable)	+2.5VDC to 16VDC nominal
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
Connectors	SMA male standard, others available
Cable	RG174 / 3metres, other lengths optional
Operating Temp. Range	-40°C to +85°C
Enclosure	Radome and base: ASA plastic
Weight	50gm (Enclosure + SMA connector 34gm, cable 0.31gm/cm)
Attachment Method	Magnetic,
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

TW4422 – GPS/GLONASS Antenna, 3 metre cable, SMA Male 32-4421-xx-yyyy
xx = cable length connector, (SMA male standard), yyyy= Coaxial cable length (3meters standard)

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