



A Tallysman Accutenna™ TW4821 Wideband Dual Feed BeiDou/Galileo/GPS Antenna

The TW4821 employs Tallysman's unique *Accutenna™* technology in a compact magnetic mount antenna covering the BeiDou B1, GPS L1, Galileo E1 and SBAS (WAAS, EGNOS, QZSS & MSAS) frequency band (1557 to 1593 MHz). The TW4821 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 TW4821 is the smallest dual feed, high performance antenna available. It is housed in a compact IP67 magnetic mount enclosure. It is available with a wide range of connector options.

Applications

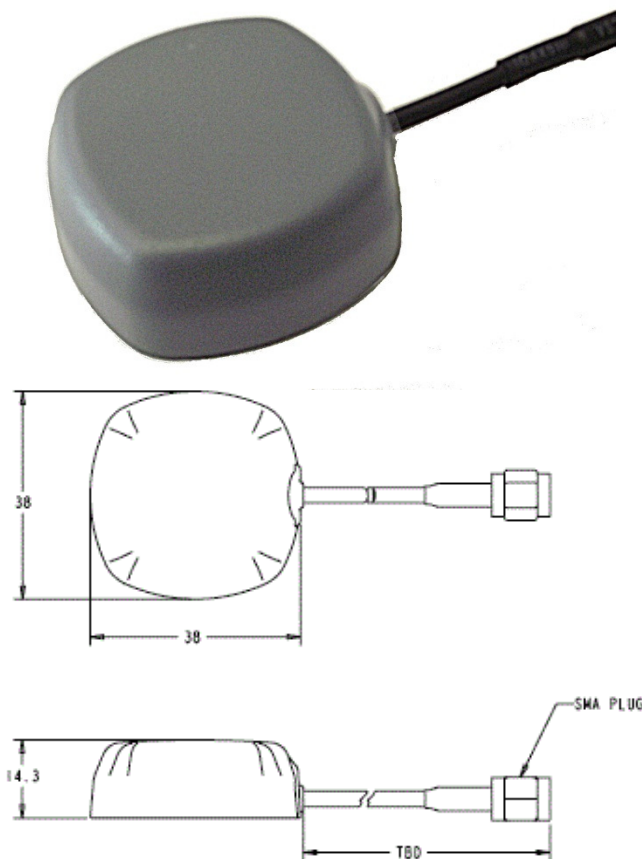
- Cost Sensitive Mission Critical Positioning
- Military & Security
- Covert surveillance
- Fleet Management & Asset Tracking

Features

- Dual feed patch element
- 40% wider bandwidth, small footprint
- Axial ratio: <2dB typ.
- 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: 10mA typ. at 2.3Vcc min.

Benefits

- 1dB Bandwidth Includes BeiDou B1, GPS-L1, and Galileo E1
- Greatly enhanced multipath rejection
- Improved GNSS reliability
- Excellent signal to noise ratio
- RoHS compliant
- Ideal for harsh environments
- Excellent out of band signal rejection





TW4821 Wideband Dual Feed BeiDou/GPS/Galileo Antenna Specifications

Antenna

Architecture	Wideband Dual Feed Patch Element
1.5 dB radiated power bandwidth (RHCP)	36 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 (-2dB)	1557 to 1593 MHz
Gain	28dB typ, 26 dB min., 1557 to 1593 MHz
Gain flatness	+/- 2dB, 1557 to 1593 MHz
Out-of-Band Rejection	<1525MHz >40 dB >1615MHz >50 dB
VSWR (at LNA output)	<1.5:1
LNA Noise Figure	1.0dB typ.
Supply Voltage Range (over coaxial cable)	+2.5VDC to 16VDC nominal (12 VDC 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 (Production design)
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

TW4821 – BeiDou/GPS/Galileo Antenna 33-4821-xx-yyyy

Where xx = connector type and yyyy = cable length in mm

Please refer to the Ordering Guide (<http://www.tallysman.com/orderingguide.php>) for the current and complete list of available connectors.

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