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

Wideband Dual Feed Patch Element
36 MHz
4.5 dBi
<2dB typ. 3dB max.
RHCP

Electrical
Architecture
Filtered LNA Frequency Bandwidth (-2dB)
Gain
Gain flatness
Out-of-Band Rejection
VSWR (at LNA output)
LNA Noise Figure
Supply Voltage Range (over coaxial cable)
Supply Current
Esd Circuit Protection

Dual Feed Patch -> Hybrid->LNA stage 1 -> SAW filter -> LNA stage 2
1557 to 1593 MHz
28dB typ, 26 dB min, 1557 to 1593 MHz
+/- 2dB, 1557 to 1593 MHz
<1525MHz >40 dB
>1615MHz >50 dB
<1.5:1 typ. 1.8:1 max.
1.0dB typ.
+2.5VDC to 16VDC nominal (12 VDC recommended maximum)
10mA typ. 15mA max. (@ 85°C)
15KV air discharge

Mechanicals & Environmental
Mechanical Size
Cable
Operating Temp. Range
Enclosure
Weight
Attachment Method
Environmental
Shock
Vibration
Warranty

38mm x 38mm dia. x 14.3mm High
RG174
-40°C to +85°C (Production design)
Radome and base: EXL9330
50gm (Enclosure + SMA connector 34gm, cable 0.31gm/cm)
Magnetic,
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
TW4821 – BeiDou/GPS/Galileo Antenna
33-4821-xx-yyyy
Where xx = connector type and yyyy = cable length in mm

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Rev 2.2