TW4327/TW4329 Low Current GPS/GLONASS Antenna

The TW4327/TW4329 is a very low power, compact wideband GNSS antenna covering the GPS L1, GLONASS L1 and SBAS (WAAS, EGNOS & MSAS) frequency bands (1575 to 1606 MHz).

This antenna features a bigger patch element with 40% wider bandwidth and a smaller footprint than most of its competitors. The LNA has a typical current consumption of just 1.75mA, with constant characteristics over supply voltages from 2.5V to 16V. The LNA is a two stage amplifier with a mid-section high rejection SAW filter, with an optional anti-jamming pre-filter (TW4329).

The TW4327/TW4329 are amongst the lowest power devices available, yet still provide excellent noise figure with 21dB nominal gain (TW4327).

The TW4329 variant provides a “Brick-Wall” pre-filter to protect against saturation by high level sub-harmonics and near L-Band signals.

The TW4327/TW4329 are housed in a very small footprint IP67 compliant magnetic mount enclosure.

Applications

- Battery operated Mission Critical Positioning
- Military & Security
- Covert surveillance
- Fleet Management & Asset Tracking

Features

- 40% wider bandwidth, small footprint
- Axial ratio: 6 dB Typ. (GPS & GLONASS)
- Low noise LNA: 1 dB
- High rejection mid-section SAW filter
- Available Pre-filter (TW4329)
- High gain: 28 dB typ.
- Wide voltage input range: 2.5 to 16 VDC

Benefits

- 1dB Bandwidth includes GPS-L1 & GLONASS
- Excellent multipath rejection
- Improved GNSS reliability
- Excellent signal to noise ratio
- RoHS compliant
- Ideal for harsh environments
- Excellent out of band signal rejection
TW4327/TW4329 Low Current GPS/GLONASS Antenna Specifications

Antenna
Architecture: Wideband Single Feed Patch
1 dB radiated power bandwidth: 31 MHz
10dB Return Loss Bandwidth: 45 MHz
Antenna Gain (with 100mm ground plane): 4.5 dBiC
Axial Ratio over Bandwidth (over full bandwidth): 6 dB typical, 8 dB Maximum.
Polarization: RHCP

Electrical
Architecture:
LNA stage 1 -> SAW filter -> LNA stage 2 (TW4327)
SAW Pre-filter -> LNA stage 1 -> SAW filter -> LNA stage 2 (TW4329)
Filtered LNA Frequency Bandwidth: 1574 to 1606 MHz
Gain: 28 dB min., 1575.42 to 1606 MHz
Gain flatness: +/- 2 dB, 1575 to 1606 MHz
Out-of-Band Rejection:
Out-of-Band Rejection: <1500 MHz >40 dB (TW4327) >70 dB (TW4329)
<1530 MHz >35 dB (TW4327) >70 dB (TW4329)
>1640 MHz >45 dB (TW4327) >65 dB (TW4329)
VSWR (at LNA output): <1.5:1
Noise Figure: 1.5 dB typ. (TW4327); 3.9 dB typ. (TW4329)
Supply Voltage Range (over coaxial cable): +2.5 to 12 VDC (recommended, 16 VDC maximum)
Supply Current: 1.75 mA typical, 2.0 mA max,
ESD Circuit Protection: 15 KV air discharge

Mechanicals & Environmental
Mechanical Size: 38 mm x 38 mm dia. x 14.3 mm H
Cable: RG174
Operating Temp. Range: -40 °C to +85 °C
Enclosure: Radome and base: ASA plastic
Weight: 50 gm (Enclosure + SMA connector 34 gm, cable 0.31 gm/cm)
Environmental: IP67 and RoHS compliant
Shock: Vertical axis: 50 G, other axes: 30 G
Vibration: 3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G
Warranty: One year, parts and labour

Ordering Information
TW4327 – Low Current GPS/GLONASS Antenna, 33-4327-xx-yyyy
TW4329 – Low Current GPS/GLONASS Antenna, with pre-filter 33-4329-xx-yyyy
Where xx = connector type, 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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