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NavtechGPS

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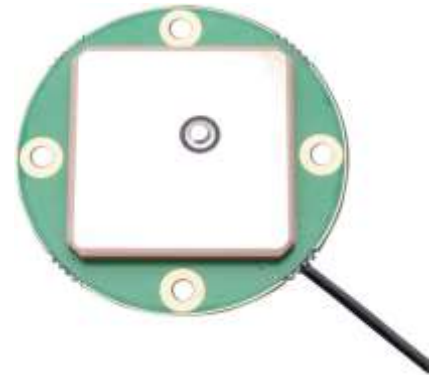
TW1027 Low Current Embedded GPS Antenna

The TW1027 is a very low power, compact GNSS antenna covering the GPS L1, frequency band. This antenna features an LNA with a nominal current consumption of just 2mA, with constant performance from 2.5V to 15V supply voltage, and includes protection against close proximity L-band transmitting antennas such as Iridium™ and Globalstar™

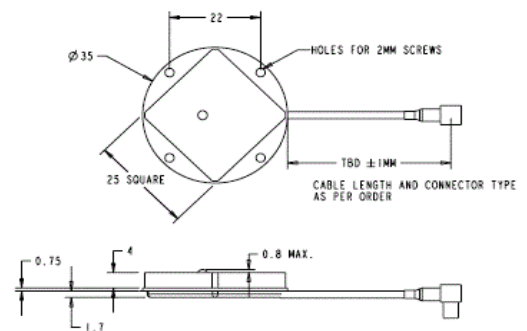
The TW1027 has amongst the lowest power consumption available, yet still provides 21dB nominal gain and an excellent Noise Figure. The TW1027 patch has 40% wider bandwidth for better axial ratio and has 15 KV ESD circuit protection. The LNA has a +/- 10MHz bandwidth that covers the full GPS L1 signal plus the SBAS (WAAS /EGNOS/MSAS) frequency band (1572.5 to 1578 MHz).

The TW1027 is available with a variety of connectors and custom cable lengths.

It is highly recommended to take advantage of Tallysman's custom tuning service to ensure optimal performance of this antenna in your housing and with your ground plane.



TW1027 Dimensions (mm)



Applications

- Battery operated monitoring
- Covert Surveillance
- Fleet Management & Asset Tracking
- Satcom based AVL solutions

Features

- Nominal 2mA current draw
- Invariant response, 2.5 to 16 VDC Supply
- Low Noise 1.0dB
- Axial ratio: 4 dB max (GPS)
- High gain: 24dB

Benefits

- Longer battery life
- Excellent signal to noise ratio
- RoHS compliant
- Excellent out of band signal rejection



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Specifications $V_{cc} = 3V$, over full bandwidth, $T=25^{\circ}C$

Antenna

Architecture	Wideband Single Feed Patch
1 dB Bandwidth	31 MHz
10dB Return Loss Bandwidth	45MHz
Antenna Gain (with 100mm ground plane)	4.5 dBic
Axial Ratio over Bandwidth	4dB @ Fcenter
Polarization	RHCP

Electrical

Architecture	Patch -> LNA1->SAW -> LNA2
Gain @ 1575.42 MHz	24dB Typ, 21dB Min
Gain flatness	+/- 2 dB
Out-of-Band Rejection	<1500 MHz >32 dB
	<1550 MHz >25 dB
	>1640 MHz >35 dB
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.
Noise Figure	1 dB typ.
Supply Voltage Range (over coaxial cable)	+2.5 to 16 VDC nominal (12VDC recommended maximum)
Supply Current	1.75mA typical, 2.2mA max,
Operating Supply Voltage	2.5V to 16V DC.
ESD Circuit Protection	15 KV air discharge

Mechanicals & Environmental

Mechanical Size	35mm dia. x 7.25mm
Cable	RG174
Operating Temp. Range	-40 to +85 °C
Attachment	Adhesive or M2 screw mount
Weight	30g
Environmental	RoHS and REACH compliant
Shock	Vertical axis: 50 G, other axes: 30 G
Vibration	3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G

Ordering Information

TW1027 – Low Current Wideband GPS Antenna 33-1027-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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