



TW1027/TW1029 Low Current GPS Antenna

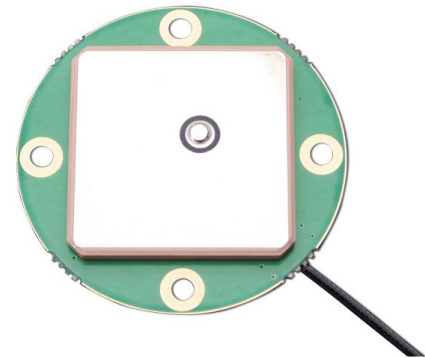
The TW1027/TW1029 is a very low power, compact GNSS antenna covering the GPS L1, frequency band. This antenna features an LNA with a nominal current consumption of just 2mA, with constant performance from 2.5V to 15V supply voltage, and includes protection against close proximity L-band transmitting antennas such as Iridium™ and Globalstar™

The TW1027/TW1029 has among the lowest power consumption available, yet still provides 21dB nominal gain and an excellent Noise Figure. The TW1027/TW1029 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).

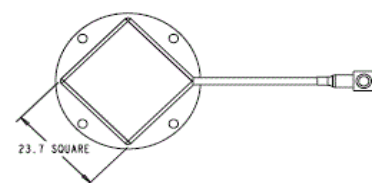
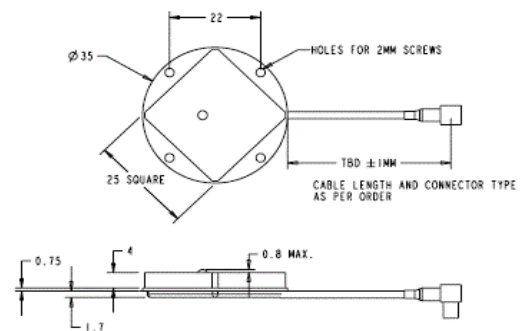
The TW1029 variant provides a “Brick-Wall” pre-filter to protect against saturation by high level sub-harmonics and L-Band signals.

The TW1027/TW1029 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/TW1029 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/3.5dB Typ. (TW1027/TW1029)
- Axial ratio: 4 dB max (GPS)
- TW4122 “Brick-Wall” pre-filter option
- High gain: 24dB/21dB Typ. (TW1027/TW1029)

Benefits

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



TW1027/TW1029 Low Power GPS Antenna

Specifications Vcc = 3V, over full bandwidth, T=25°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	TW1027: Patch -> LNA1->SAW -> LNA2 TW1029: Patch -> Pre-filter SAW-> LNA1> SAW -> LNA2,		
Gain @ 1575.42 MHz	24dB Typ, 21dB Min (TW1027); , 21dB Typ,18dB Min (TW1029)		
Gain flatness	+/- 2 dB		
Out-of-Band Rejection	<1500 MHz	>32 dB (TW1027)	>50dB (TW1029)
	<1550 MHz	>25 dB	>50dB
	>1640 MHz	>35 dB	>70dB
VSWR (at LNA output)	<1.5:1		
Noise Figure	1 dB typ. (TW1027)	3.5dB typ. (TW1029)	
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 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
TW1029 – Prefiltered low current Wideband GPS Antenna	33-1029-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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